Dear Delegates

It is our pleasure to welcome you to the 12th annual meeting of the Society for Research on Nicotine and Tobacco, Europe. This year the conference is being held jointly with the UK Centre for Tobacco Control Studies, a UK Clinical Research Collaboration centre for public health research excellence that includes tobacco control researchers in nine UK universities. The theme for the conference is ‘Translating Science to Policy’ in recognition of the unique opportunity that the meeting provides for researchers and practitioners from a range of disciplines, from basic science to applied policy research, to come together to examine new ways of understanding nicotine addiction and addressing the harm caused by tobacco. We are delighted to welcome over 400 delegates to this year’s conference from across the world. We hope that you will enjoy the conference and take the opportunity to explore the city of Bath, a beautiful and historic setting that has been designated as a UNESCO world heritage site.

Yours

Professor Marcus Munafò
University of Bristol, UK

Professor Linda Bauld
University of Bath, UK

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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1200</td>
<td>Registration opens</td>
<td>Founders Hall</td>
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<tr>
<td>1300</td>
<td>Exhibitor set up</td>
<td>Founders Hall</td>
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<td>1300</td>
<td>SRNT Europe Board pre-meeting</td>
<td>8 West 2.20</td>
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<td>1300</td>
<td>nAChR Drug Discovery pre-meeting</td>
<td>3 East 2.20</td>
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<tr>
<td>1830</td>
<td>Opening Remarks and Welcome</td>
<td>University Hall</td>
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<tr>
<td></td>
<td><strong>Linda Bauld</strong>, University of Bath, UK</td>
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<td></td>
<td><strong>Cristiana Chiamulera</strong>, University of Verona, Uk</td>
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<tr>
<td>1900</td>
<td>Keynote: Priorities for tobacco control in Europe</td>
<td>University Hall</td>
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<td></td>
<td><strong>John Britton</strong>, University of Nottingham, UK</td>
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<tr>
<td>1900</td>
<td>Welcome Reception</td>
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<td>2130</td>
<td>End of day one</td>
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<th>Time</th>
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<tbody>
<tr>
<td>0930</td>
<td>Symposia</td>
<td>Various locations</td>
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<td><em>As there are several presenters in each session, we have not listed</em></td>
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<td><em>full details in this outline programme section. Full details can be found</em></td>
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<td></td>
<td>Interactions of nicotine acetylcholine receptor in disease</td>
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<td></td>
<td>Cutting edge techniques to identify genes associated</td>
<td>3 East 2.2</td>
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<td></td>
<td>in tobacco/nicotine dependence – A translational perspective</td>
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<td></td>
<td>Evaluating Smokefree legislation: opportunities and challenges</td>
<td>3 East 2.1</td>
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<td>A discursive space “The nursing role in tobacco control research and practice”</td>
<td>3 East 3.8</td>
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<td>Smoking relapse: patterns, prevention, and future perspectives</td>
<td>3 East 2.4</td>
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<td>Smoking during pregnancy: processes and interventions</td>
<td>3 East 3.5</td>
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<td>1100</td>
<td>Coffee break/exhibition</td>
<td>Founders Hall</td>
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<tr>
<td>1130</td>
<td>Pre-clinical theme lecture: Critical analysis of nicotine’s impact on tobacco addiction</td>
<td>University Hall</td>
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<td></td>
<td>Jean-Pol Tassin, Université Paris VI, France</td>
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<tr>
<td>1230</td>
<td>Lunch/posters/exhibition</td>
<td>Founders Hall</td>
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<tr>
<td>1300-1400</td>
<td>Fringe meeting: Nicotine and Tobacco Research editors and deputy editors</td>
<td>8 West 2.13</td>
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**Oral presentations (Clinical)**
*Full details of all the presenters for the oral sessions can be found from page 28 onwards in this booklet*

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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1430</td>
<td>Comparing abrupt and gradual smoking cessation: a randomized trial</td>
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<tr>
<td></td>
<td>Jean-Francois Etter</td>
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<td></td>
<td>Does stopping smoking shortly before surgery lead to post-operative complications?</td>
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<td>A review and meta-analysis</td>
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<td></td>
<td>Katie Myers</td>
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<td></td>
<td>Smoking and cardiovascular disease risk reduction intervention among people with severe mental disorders: interim results of a randomised controlled trial</td>
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<td>Amanda Baker</td>
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<td>Reducing smoking relapse via self-help booklets: The forever free studies</td>
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<td></td>
<td>Thomas Brandon</td>
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<td>Cold calling smokers for proactive telephone counselling: what are their long-term cessation rates?</td>
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<td>Flora Tzelepis</td>
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<td>Feasibility evaluation of a leaflet and SMS text-message based tailored self-help smoking cessation intervention for pregnant smokers: the MiQuit study</td>
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<td>Felix Naughton</td>
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<tr>
<td>1430</td>
<td>Pre-cessation use of varenicline: Effects on ad-lib smoking, post-cessation withdrawal discomfort, and short-term smoking cessation rates Hayden McRobbie</td>
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<td>1430</td>
<td>Is pre-cessation NRT effective? Results from a new systematic review Chris Bullen</td>
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<td>1430</td>
<td>Levels of nicotine dependence and predicting outcomes in a smokeless tobacco cessation trial Karl Fagerstrom</td>
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<td></td>
<td><strong>(Policy)</strong></td>
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<td></td>
<td>But it just has that sort of feel about it, a leper’ - stigma, smokefree legislation and public health Deborah Ritchie</td>
<td>3 East 3.8</td>
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<tr>
<td></td>
<td>Local clean air ordinance coverage in the Appalachian region of the USA Amy Ferketich</td>
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<td></td>
<td>These things don’t happen in Greece’ - a qualitative study of young people's attitudes to the Greek smokefree legislation Amanda Amos/Ioannis Tamvakas</td>
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<td>How the tobacco industry attempted to undermine the first EU tobacco products directive Anna Gilmore</td>
<td>3 East 2.4</td>
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<td>Transnational tobacco corporation strategies to influence the WHO's framework convention on tobacco control Heide Weishaar</td>
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<td>Policy barriers imposed on access to tobacco dependence treatments in the USA Helen Halpin</td>
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<td>I make my Dad smoke outside'; children’s views and experiences of SHS in the home and car in two communities of contrasting socio-economic profiles Neneh Rowe-Dewar</td>
<td>3 East 3.5</td>
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<td>‘Buy me cigarettes, be my friend’ - negotiating access to tobacco following the increase in the minimum age of sale increase in the UK in October 2007 Thomas Tjelta</td>
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<td></td>
<td>Smoker’s perceptions of cigarette brand image: does plain packaging make a difference? Janne Scheffels</td>
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<tr>
<td>1530</td>
<td><strong>Coffee break/Exhibition</strong></td>
<td>Founders Hall</td>
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<tr>
<td>1600</td>
<td><strong>Clinical theme lecture:</strong> Nicotine dependence treatment: A translational approach Caryn Lerman, University of Pennsylvania, USA</td>
<td>University hall</td>
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<td>1700</td>
<td><strong>End of day two</strong></td>
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<tr>
<td>1700 – 1730</td>
<td>Fringe meeting: SRNT Europe Members</td>
<td>3 East 2.1</td>
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<tr>
<td>1715 – 1830</td>
<td>Fringe meeting: training of practitioners in smoking cessation</td>
<td>8 West 2.20</td>
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<td>1915</td>
<td><strong>Drinks and gala dinner</strong> (ticket only event)</td>
<td>Pump Rooms</td>
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<tr>
<td>Time</td>
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<td>0930</td>
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<td>As there are several presenters in each session, we have not listed full details in this outline programme section. Full details can be found from page 21 onwards in this brochure</td>
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<tr>
<td></td>
<td>Nicotinic receptors as therapeutic targets for compromised cognitive performance in neuropsychiatric disorders</td>
<td>University Hall</td>
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<td>Smoking, smoking cessation and suicide related outcomes</td>
<td>3 East 2.2</td>
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<td></td>
<td>Global tobacco control efforts via Quitlines - Who are we reaching and what do they use?</td>
<td>3 East 2.1</td>
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<td></td>
<td>Reducing the availability and use of cheap tobacco: an update on evidence, public health and tobacco industry strategies</td>
<td>3 East 3.8</td>
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<td>Moving away from cigarettes as “portable therapy” for smokers with mental health problems: translating evidence from public health, clinical and training settings into policy</td>
<td>3 East 2.4</td>
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<td>Smoking, smoking cessation and suicide related outcomes</td>
<td>3 East 3.5</td>
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<tr>
<td>1100</td>
<td>Coffee break/exhibition</td>
<td>Founders Hall</td>
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<tr>
<td>1130</td>
<td>Public Health/Epidemiology theme lecture: Smoking reduction: why and how Paul Aveyard, University of Birmingham, UK</td>
<td>University Hall</td>
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<tr>
<td>1230</td>
<td>Lunch/posters/exhibition</td>
<td>Founders Hall</td>
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**Oral presentations (Pre clinical)**

*Full details of all the presenters for the oral sessions can be found from page 38 onwards in this booklet*

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<thead>
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<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>1430</td>
<td>Post-retrieval disruption of appetitive memories in two models of operant conditioning:</td>
<td>3 East 3.5</td>
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<tr>
<td></td>
<td>study of nicotine and food self-administration in rats</td>
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<tr>
<td></td>
<td>Alessia Auber</td>
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<td></td>
<td>Behavioural interactions between varenicline and nicotine in the rat</td>
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<td></td>
<td>David Balfour</td>
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<td></td>
<td>The role of goal-directed and habit learning in human nicotine dependence</td>
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<td></td>
<td>Lee Hogarth</td>
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<td></td>
<td>Attentional bias in smokers: Exposure to dynamic smoking cues in contemporary movies</td>
<td>3 East 2.2</td>
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<tr>
<td></td>
<td>Kirsten Lochbueller</td>
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<td></td>
<td>Attention bias towards smoking related cues in both smokers and controls: How smoking valence and emotional content impact upon Stroop results</td>
<td>3 East 2.2</td>
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<td></td>
<td>Katriona O’Sullivan</td>
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<td>A 15 min brisk walk and run reduces visual attentional bias to smoking and food images among abstinent smokers</td>
<td>3 East 2.2</td>
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<td>Adrian Taylor</td>
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**Wednesday**

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<th>Time</th>
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<tr>
<td>1430</td>
<td>Meta-analysis of the effects of nicotine and smoking on human performance</td>
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<td></td>
<td>Stephen Heishman</td>
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<td></td>
<td>Effects of nicotinized and denicotinized cigarette smoking on response to 7.5% carbon dioxide anxiety challenge in regular cigarette smokers</td>
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<td></td>
<td>Angela Atwood</td>
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<td></td>
<td>Exposure to cigarette smoke constituents in adult Polish smokers of conventional cigarettes and a prototype cigarette that heats rather than burns tobacco</td>
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<td></td>
<td>Haziza Christelle</td>
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<td></td>
<td><strong>(Public Health/Epidemiology)</strong></td>
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<td></td>
<td>Approaches to tobacco control and population effects: how good is the evidence that standard approaches are equitable</td>
<td>3 East 3.8</td>
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<td></td>
<td>Christine Paul</td>
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<td></td>
<td>Social inequalities in quitting: what factors mediate the relationship between socio-economic position and smoking cessation?</td>
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<td></td>
<td>Rosemary Hiscock</td>
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<td>Adolescent psychological and social predictors of young adult smoking acquisition and cessation: a 10 year longitudinal study</td>
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<td></td>
<td>Roy Otten</td>
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<td>Second hand smoke exposure in non smoking adults in England and changes changes over an 11 year period</td>
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<td></td>
<td>Michelle Sims</td>
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<td>No change in smokefree homes policies despite intensive media campaigns over two years</td>
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<td>Natalie Walker</td>
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<td>Associations between weight change over eight years and baseline body mass index in a cohort of continuing and quitting smokers</td>
<td>University hall</td>
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<td></td>
<td>Debra Lycett</td>
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<td></td>
<td>Treatment of tobacco dependence in the Czech republic</td>
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<td>Eva Kralikova</td>
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<td>Moderating effects of dissonance reducing justifications on the relationship between self-efficacy and motivation to quit smoking: findings from the ITC four country survey</td>
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<td>Thomas Tjelta</td>
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<td>1530</td>
<td>Coffee break/Exhibition</td>
<td>Founders Hall</td>
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<tr>
<td>1600</td>
<td>Policy theme lecture: Young people and smoking prevention- Opportunities and challenges</td>
<td>University hall</td>
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<td>Amanda Amos, University of Edinburgh, UK</td>
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<td>1700</td>
<td>End of day three</td>
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<tr>
<td>1700 – 1930</td>
<td>Pfizer sponsored satellite session</td>
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### Thursday

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<td>0930</td>
<td>Symposia</td>
<td>Various locations</td>
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<td><em>As there are several presenters in each session, we have not listed full details in this outline programme section. Full details can be found from page 24 onwards in this brochure.</em></td>
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<td></td>
<td>Waterpipe smoking – Update on use and health hazards</td>
<td>3 East 2.2</td>
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<td>Progress, problems, and promise of concatemeric nicotinic acetylcholine receptor expression approaches</td>
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<td>Differential impacts of tobacco control policies in Europe: Findings from the ITC Project control research and practice”</td>
<td>3 East 2.4</td>
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<td>How to conduct effective mass media campaigns</td>
<td>3 East 3.8</td>
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<td></td>
<td>Tobacco industry efforts to shape EU policymaking rules – The promotion and use of impact assessment and risk assessment to undermine tobacco control</td>
<td>3 East 3.5</td>
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<tr>
<td>1100</td>
<td>Coffee break</td>
<td>Level One Café</td>
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### Oral presentations (mixed)

*Full details of all the presenters for the oral sessions can be found from page 46 onwards in this booklet.*

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<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1130</td>
<td>Did the introduction of varenicline in England substitute for, or add to, the use of other smoking cessation medications?</td>
<td>3 East 2.2</td>
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<tr>
<td></td>
<td>Daniel Kotz</td>
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<td></td>
<td>Is the use of nicotine replacement therapy for cutting down and for periods of temporary abstinence associated with motivation to quit and self-efficacy?</td>
<td>3 East 2.2</td>
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<tr>
<td></td>
<td>Emma Beard</td>
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<td></td>
<td>Case studies of tobacco dependence treatment in Brazil, England, India, South Africa and Uruguay</td>
<td>3 East 2.2</td>
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<tr>
<td></td>
<td>Rachael Murray</td>
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<td>“We are, then, in the business of selling nicotine, an addictive drug”:</td>
<td>3 East 2.2</td>
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<td></td>
<td>What the tobacco industry doesn’t say about Green Tobacco Sickness</td>
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<td></td>
<td>Nathaniel Wander</td>
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<td>It sounds like the replacement I need to help me stop smoking:</td>
<td>3 East 2.2</td>
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<td></td>
<td>Use and acceptability of “e-cigarettes” among UK smokers</td>
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<td></td>
<td>Martin Dockrell</td>
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<td></td>
<td>Patterns of use of electronic nicotine delivery devices (ENDS) among Polish e-smokers</td>
<td>3 East 2.1</td>
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<td></td>
<td>Maciej Goniewicz</td>
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<td>Using computer-tailored feedback to reach smokers who do not use the NHS clinics: the ESCAPE trial</td>
<td>3 East 2.1</td>
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<td></td>
<td>Hazel Gilbert</td>
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<td></td>
<td>Effectiveness of a smoking cessation intervention using web-based enrolment and follow-up: Outcomes at end-of-treatment, 6- and 12-months</td>
<td>3 East 2.1</td>
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<tr>
<td></td>
<td>Laurie Zawertailo</td>
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<td></td>
<td>Factors increasing adherence for Web-Assisted Tobacco Interventions (WATIs): A systematic review</td>
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<td>Trevor van Mierlo</td>
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### Thursday

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<tr>
<td></td>
<td><strong>Oral presentations (rapids)</strong></td>
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<td><em>Details of all the presenters for the oral sessions can be found from page 46 onwards in this booklet</em></td>
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<td><strong>Evening type is associated with current smoking and nicotine dependence in population based FINRISK 2007 study</strong></td>
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<td></td>
<td><strong>Ulla Broms</strong></td>
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<td><strong>Gene-environment interactions between depressive symptoms and smoking quantity</strong></td>
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<td><strong>Kaisu Keskitalo-Vuokko</strong></td>
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<td><strong>Association of current symptoms of depression and smoking behaviour to Cue-induced cravings for cigarettes</strong></td>
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<td><strong>The impact and costs of reimbursed smoking cessation medication in Denmark – the case of varenicline</strong></td>
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<td><strong>Nicotine dependence level (FTND) moderates difference in smoking cessation response to OROS-methylphenidate by ADHD subtype (Predominantly Inattentive vs. Combined Hyperactive/Impulsive and Inattentive)</strong></td>
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Plenary Abstracts
Monday 6th September

1900 University Hall

Priorities for tobacco control in Europe

Author and presenter:
John Britton, University of Nottingham and UKCTCS, UK

Abstract
Around 30% of adults in living in the European Union – about 120 million people – smoke tobacco, and represent a major current and future public health problem. Although the prevalence of smoking in the EU is falling slowly, trends in prevalence within individual countries differ substantially, as does the extent to which countries have introduced and implemented a wide range of tobacco control policies.

In this presentation I will review progress with a range of tobacco control policy initiatives in the EU, to identify priorities for future implementation, and to identify some priority areas for further research. Much of the evidence I will present will reflect work carried out by colleagues in the UK Centre for Tobacco Control Studies, on the measurement of prevalence in Europe, on pricing, point of sale promotion, smoke-free policy, health promotion and harm reduction.

I will also explore some of the country characteristics that determine engagement with and success of tobacco control measures.

About the presenter
John Britton is Professor of Epidemiology and Head of Division of Epidemiology and Public Health at the University of Nottingham, and a consultant in respiratory medicine at Nottingham City Hospital. He is director of the UK Centre for Tobacco Control Studies.

Tuesday 7th September

1130 University Hall

Critical analysis of nicotine’s impact on tobacco addiction

Author and presenter:
Jean-Pol Tassin, Université Paris VI, France

Abstract
Tobacco is a potent reinforcing agent in humans, and nicotine is generally considered to be the major compound responsible for its addictive properties. However, animal experiments indicate some discrepancies between the effects of nicotine and those of other drugs of abuse.

For example, the capacity of repeated nicotine to elevate dopamine levels in the nucleus accumbens is controversial and we have shown that repeated nicotine treatments in rats induce a behavioural sensitization which vanishes more quickly than that for other drugs of abuse. Furthermore, although psychostimulants and opiates induce a substantial locomotor hyperactivity both in rats and mice, nicotine is a weak locomotor stimulant in rats and generally fails to induce locomotor hyperactivity in mice at any dose. These differences could suggest that the addictive effects of tobacco are not only due to nicotine.

Actually, tobacco and tobacco smoke are known to contain monoamine oxidase inhibitors (MAOIs), such as harmaline, norharmane or acetaldehyde. We have shown that MAOI pre-treatment allows the maintenance of behavioural sensitization to nicotine in rats, thus suggesting a role of MAOIs in the addictive properties of tobacco. More recently, tranylcypromine, a potent MAOI, was found to be able to trigger a locomotor response to nicotine in mice and nicotine self-administration in rats. Moreover, increases in extracellular 5-HT levels appeared to be crucial for these effects (Villegier et al., 2006).

Nicotine increases serotonergic neurons firing. However, this increased release of 5-HT -in absence of MAOI- is transient because of a retro-feedback inhibition on 5-HT1A autoreceptors. We have therefore proposed that MAOIs, because of their enhancing effects on extracellular 5-HT levels, compensate the consequences of the indirect inhibition of serotonergic cells by nicotine, thus suggesting a mechanism by which MAOI's contained in tobacco smoke could act in synergy with nicotine to induce addiction (Tassin, 2008). Recent experiments using 5-HT1A agonists and antagonists have indicated that MAOIs contained in tobacco desensitize 5-HT1A autoreceptors to trigger the strong addictive properties of tobacco (Lanteri et al., 2009).

In humans, nicotine replacement therapies are the most widely used form of pharmacological intervention, but seem to lack efficacy. Interestingly, most of tobacco smokers
(> 80%) relapse after a few-week withdrawal, i.e. when inhibition of monoamine oxidises activity by tobacco and tobacco smoke is likely to have disappeared. MAOIs, or any compound able to desensitize 5-HT1A autoreceptors, may provide a more complete scheme of the addictive properties of tobacco in experimental models of reward.

About the presenter
Jean-Pol Tassin, following many years at the College de France in Paris, is currently team leader in the laboratory of “Physiopathology of Central Nervous System Diseases” (Inserm U952) at the University Pierre et Marie Curie (Paris VI). He was drawn to addiction by his early research on nerve terminals in the prefrontal cortex and the effects of stress and long-term isolation on the meso-cortical pathway. Moving to studies on the impact of psychostimulants on cortical and sub-cortical neurons, his critical insight was to connect the disruption of nonadrenaline and serotonin neuron interaction with addictive behaviour. Jean-Pol Tassin’s research showed how these neurons, when exposed to repeated psychostimulant abuse, become ‘uncoupled,’ thereby inducing distress, or withdrawal, for which further administrations of the drug are needed to achieve relief. Later refinements to this groundbreaking model have highlighted the key role played in tobacco addiction by monoamine inhibitors present in cigarettes.

Tuesday 7th September
1600 University Hall

Nicotine Dependence Treatment: A Translational Approach

Author and presenter:
Caryn Lerman, University of Pennsylvania, USA

Abstract
The important goal of treating nicotine dependence can be realized by research that translates discoveries in basic neuroscience, pharmacology, genetics, and behavioral science to develop new treatment models that can be translated readily into the clinic and community. This presentation will review recent research aimed at elucidating the molecular, neural and behavioral basis of early nicotine abstinence symptoms that prompt smoking relapse, discuss efforts to translate these findings into improved and targeted pharmacotherapies for nicotine dependence treatment.

About the presenter
Caryn Lerman received her Bachelor of Science degree from Penn State University and her Ph.D. in Clinical Psychology from the University of Southern California. She is the Mary W. Calkins Professor in the Department of Psychiatry and the Annenberg Public Policy Center at the University of Pennsylvania. She is also Director of Penn’s Tobacco Use Research Center and Deputy Director of the Abramson Cancer Center. Dr. Lerman’s research focuses on nicotine dependence pharmacogenetics and medication development. She has published over 295 peer-reviewed articles and has been a recipient of the American Psychological Association Award for Outstanding Contributions to Health Psychology, the Cullen Award for Tobacco Research from the American Society of Preventive Oncology, the American Cancer Society Cancer Control Award, and the Alton Ochsner Award for Research Relating Tobacco and Health. She has served on the National Cancer Institute Board of Scientific Advisors and the National Advisory Council for Human Genome Research, and currently serves on the Advisory Council for the National Institutes on Drug Abuse. Dr. Lerman is the President of the Society for Research on Nicotine and Tobacco.
Wednesday 8th September

1130 University Hall

Smoking reduction: why and how

Author and presenter:
Dr Paul Aveyard, University of Birmingham and UKCTCS, UK

Abstract
Current public health policies encourage smokers to worry about their continued smoking, encourage smokers to make abrupt attempts to stop smoking, and supporting these efforts when they do so. However, although most smokers are worried by their smoking and say they want to quit, relatively few are ready to stop smoking or try to do so. A much larger proportion of smokers try to control their smoking by reducing it. One view would be that encouraging smokers who feel that they cannot stop now to reduce their smoking would lead to improved population quit rates, because smokers who reduce are more likely to stop than those who take no action on their smoking. Another view, supported by US national guidelines, would be that this will divert smokers who would have quit abruptly to reduce smoking instead, and be happy with that state of affairs. In this lecture, I will look at the evidence that reduction could help two groups of smokers: smokers who are committed to stopping and smokers who have no immediate plans to quit. I will review the evidence on whether smoking reduction offers an effective route to cessation and the evidence and the evidence on the effectiveness of reduction methods. Among smokers with no immediate plans to quit, I will review the evidence that smoking reduction leads to cessation and the evidence on whether smoking reduction programmes divert smokers from the best (cessation) to a second best choice (reduction). I will also review the evidence on what is known about the efficacy of smoking reduction methods amongst this group of smokers.

About the presenter
Dr Paul Aveyard is a public health physician and general practitioner. He is based at the University of Birmingham and is funded by the National Institute for Health Research in the UK for work in the field of tobacco control, in which field he has been researching for ten years. His work consists mainly of randomised controlled trials of pharmacological and non-pharmacological approaches to helping people stop smoking. He is an editor of Addiction, a substance use journal, and also of the Cochrane Tobacco Addiction Review group.

Wednesday 8th September

1600 University Hall

Young People and Smoking Prevention- Opportunities and Challenges

Author and presenter:
Professor Amanda Amos, University of Edinburgh and UKCTCS, UK

Abstract
Preventing the uptake of smoking is a key element of tobacco control strategies across Europe. Smoking prevalence among young people is declining in many European countries. However in others, particularly in Central and Eastern Europe, rates among girls and young women are still increasing. Across Europe tobacco companies are developing new marketing strategies aimed at ensuring that young people continue to take up smoking, even in countries where there are restrictions on tobacco promotion.

This presentation will consider the opportunities for smoking prevention in Europe and some of the main challenges that need to be addressed. An overview will be given of current smoking patterns and trends in young people in Europe and what we know about what influences smoking uptake. Drawing on a review carried out for the British Department of Health, the presentation will outline the current evidence on the effectiveness of different types of smoking prevention interventions. New approaches that appear promising will be highlighted and gaps in the research evidence will be identified. The implications for tobacco control research, policy and practice will be discussed.

About the presenter
Professor Amanda Amos is Professor of Health Promotion and Head of Public Health Sciences at the University of Edinburgh. She has been involved in tobacco research for over twenty years. She had led a number of tobacco control studies, including three recent qualitative studies evaluating the impact of the smokefree legislation on individual and communities in Scotland and England. She is a board member of ASH Scotland, a founder member of The International Network of Women Against Tobacco and a senior editor of the international journal Tobacco Control.
The University of Bath is one of the UK’s leading universities with a vibrant and innovative academic community.

Its small friendly campus overlooks the beautiful UNESCO world heritage city of Bath.

The University has over 13,959 students and 2,685 staff.

It was ranked 9th in both the Independent Complete University Guide 2009 and the Guardian University Guide 2010.
Symposia
Symposia

Tuesday 7th September  0930 - 1100
There are six symposia running simultaneously during this slot.

University Hall

Interactions of nicotine acetylcholine receptor in disease

Chairs: Susan Wonnacott, University of Bath, UK and Sherry Leonard, University of Colorado, US

Presenters:
Steve Heinemann, Salk Institute, San Diego, CA, USA
Wouter DeJonge, Tytgat Institute for Liver and Intestinal Research, Amsterdam
Maryka Quik, Center for Health Sciences SRI International, CA, USA
Sherry Leonard, Department of Psychiatry, University of Colorado, Denver, USA

Abstract
Neuronal nicotinic acetylcholine receptors are expressed in both the brain and in the periphery. Phylogenetically, these genes are the oldest of the ligand-gated ion channel family. Recent data suggests that nicotinic receptors may have diverse roles in normal pathways and in disease. Nicotine in tobacco products is protective in some conditions and not beneficial in others. Neuronally, nicotinic receptors can have both pre-and postsynaptic localization, where they participate in neurotransmitter release and/or in regulation of gene expression, playing an important role in cognitive and sensory processing. In the periphery, nicotinic receptors are associated with peptide release and activation of the immune system. The alpha7* nicotinic receptor has been associated with several neuropsychiatric disorders, including Alzheimer’s disease, Parkinson’s, and schizophrenia, but the deficit and receptor function in each may be quite different. Recently the alpha7* receptor was found to be protective in inflammatory processes; subjects with decreased expression of this gene (CHRNA7) may be more susceptible to infection and stress. Speakers will present and discuss our current knowledge of the roles and interactions of alpha7* and other nicotinic receptors in disease.

3 East 3.8

A discursive space: “The nursing role in tobacco control research and practise”

Chair: Emma Croghan, Dept of Health, UK

Presenters:
Linda Sarna, School of Nursing, UCLA, USA
Deborah Ritchie, Nursing Studies, University of Edinburgh, UK

Abstract
Translating research into practice is a central priority for nursing. The symposium will highlight recent nurse-led research and how they are being translated into policy and clinical practice, as summarized in the 2009 Annual Review of Nursing Research. The symposium will conclude with the opportunities of translating research into nursing practice. Guidelines into practice The development, implementation and mid-point (6-month) evaluation of study in the United States “From Guideline to Practice: A Nursing Intervention to Help Smokers Quit” will be presented. This was project designed to translate the US Tobacco Treatment Dependence Guideline into nursing practice by using an innovative web based intervention, Helping Smokers Quit (HSQ), using an intervention/control, two-group, pre-post design, based upon the RE-AIM model as a theoretical framework. Nurses’ performance of cessation intervention at baseline and six months was assessed. The study is being conducted in 28 acute care hospitals in California, Indiana and West Virginia. At baseline, we assessed knowledge and practices of 1789 nurses (432 in control and 1357 in intervention hospitals). At the six months follow up, we obtained responses from 1724 nurses (382 in control and 1342 in intervention hospitals), and of those, 333 had both baseline and 6-month data. Of the 333 nurses, over 93% were female, 42 years of age and 11% were current smokers. At baseline, both groups had a very low rate of assisting with quitting (30% of all nurses), arranging for follow-up (approximately 12%) and less than 10% referred patients to the quitline. At the 6 months follow up, nurses in intervention hospitals referred patients to the quit line more often (43% in control vs. 56% in the intervention group, p=0.05), and nurses in both intervention and control provided smoking cessation advice and assessed willingness to quit more often. Smoke-free Homes A study in Scotland of two panels of tobacco control experts considered the implications of the findings from a qualitative smoke-free home study. These related to: improving knowledge about SHS among carers and professionals; the goal and approach of future interventions (incremental/harm reduction or total restrictions); the complexity of the interventions; and issues around protecting children. In conclusion the expert panels were very aware of the sensitivities around the boundary between the private home and public health interventions; but also the lack of evidence on the relative effectiveness of specific individual and community approaches on increasing restrictions on smoking in the home.
3 East 2.4

**Smoking relapse: Patterns, prevention, and future perspectives**

**Chair:** Ann McNeill, University of Nottingham, UK

**Presenters:**
- Ann McNeill, UKCTCS and University of Nottingham, UK
- Jo Leonardi-Bee, UKCTCS and University of Nottingham, UK
- Katie Myers, UKCTCS and Queen Mary University, UK
- Hayden McRobbie, UKCTCS and Queen Mary University, UK

**Abstract**

*This symposium is convened by the UKCTCS, UK*

Effective relapse prevention (RP) is an important clinical priority. Despite improvements in helping people to stop smoking, progress on helping people stay stopped has been slow largely because the evidence for the effectiveness of relapse prevention interventions (RPIs) is still emerging. Recently, two teams of researchers from the UK Centre for Tobacco Control Studies (UKCTCS) have been involved in research concerning the effectiveness and cost-effectiveness of relapse prevention interventions (RPIs) among general population smokers and RPIs in pregnancy. This symposium will present an overview of this research, providing the audience with updated evidence and an understanding of the ways forward in research and practice.

Presentation one will discuss the updated review of effectiveness of RPIs which eliminated heterogeneity by only pooling follow up data retrieved at similar time points. The review found promising evidence for the effectiveness of pharmacotherapies eg abstinent smokers who were provided with bupropion for an additional 16 to 45 weeks were one and half times more likely to remain abstinent at 12 months follow-up compared to placebo controls (Pooled OR 1.49; 95% CI 1.10 to 2.01, I² = 0%). Pharmacotherapies were also found to be highly cost effective when used for RP: eg, compared with ‘no intervention’ bupropion resulted in an incremental QALY increase of 0.07, with a concurrent NHS cost saving of £68. Presentation two will look at a recent systematic review of 16 randomized controlled trials which derived relapse curves for smokers receiving treatment. The relapse patterns for the three medications studied differed markedly soon after quitting, but then became similar showing steady declines from six months onwards. The review demonstrated that eliminating relapse after three months could potentially increase 12 month quit rates by 14%, 13% and 24% for NRT, bupropion and varenicline respectively. Presentation three will be a systematic review of experimental and qualitative literature on relapse prevention in pregnant smokers. Only two types of interventions were evaluated so far, with negative results. Alternative approaches will be presented and discussed.

Presentation four will put forward the argument that RPIs have been largely dominated by a ‘skills-based’ approach which focuses on teaching clients to identify relapse situations and put in place coping strategies, maintaining that occasional lapses are not important and clients should return to abstaining. McRobbie will discuss better practical strategies for managing lapses and preventing relapse based on current research.

3 East 2.2

**Cutting edge techniques to identify genes associated in tobacco/nicotine dependence: A translational perspective**

**Chairs:**
- Mohammed Shoaib, Newcastle University, UK
- Marcus Munafo, University of Bristol and UKCTCS, UK

**Presenters:**
- Rick Bernardi, Central Institute of Mental Health (ZI), University of Heidelberg, Germany
- Andrew Bergen, SRI International, California, USA
- Elliot Hong, University of Maryland School of Medicine, Baltimore, USA
- Marcus Munafo, Bristol University and UKCTCS, UK

**Abstract**

*This symposium brings together researchers from the nicotine field to present evidence from various disciplines to bring highlight the advantages of the techniques implemented to understand genetic variations in response to nicotine from a translational perspective. The overall contributions in the field of genetic achievements by each presenter and the will be discussed by Dr Marcus Munafo who will also provide an update on the recent breakthroughs in the field of genetics of nicotine dependence.*
3 East 2.1

Evaluating smokefree legislation: Opportunities and challenges

Chairs: Anna Gilmore, UK Centre for Tobacco Control Studies, University of Bath, UK

Presenters:
Sean Semple, Department of Environmental & Occupational Medicine, University of Aberdeen, UK
Michelle Sims, School for Health, University of Bath, UK
Lisa Szatkowski, UKCTCS, UK, University of Nottingham, UK
Laurence Moore, Cardiff Institute for Society, Health and Ethics, Cardiff University, UK

Abstract
This symposium is convened by the UKCTCS, UK
Smokefree legislation has been implemented in a large number of European countries and there is now a growing body of research documenting its impacts on secondhand smoke exposure, quit attempts, smoking prevalence and health. As the number of studies grows and evaluations become increasingly sophisticated in their design and analysis, it is becoming clear that results may differ both between countries and between population subgroups within countries. Reasons for this variation include genuine differences in underlying population attributes (such as pre-legislative second-hand smoke exposure levels) as well as differences in study design and ability to control for bias and confounding (particularly given that many such evaluations rely on routine data sources). Simultaneously, understanding of the health impacts of secondhand smoke exposure and the exposure-response relationship is growing. This symposium will present the latest results from evaluations of smokefree legislation in the UK while simultaneously exploring the methodological and contextual factors which influence the conclusions drawn by such studies and highlighting issues that future evaluations should consider. Presentation one will feature data from the studies looking at changes in exposure to secondhand smoke in bar and pub venues in Scotland, England and Wales. The presentation will also discuss recent evidence on exposure-response relationships between fine particulate air pollution and cardio-pulmonary health. Presentation two will describe an evaluation of the impact of English smokefree legislation on hospital admissions for myocardial infarction and discuss the complexities of evaluating impacts in population subgroups including differing underlying trends in such groups. Presentation three will discuss the growing utility of large datasets of primary care medical records for policy evaluation, where study power is not an issue but the quality of recorded smoking data has, in the past, proved poor. Presentation four will describe the impact of the Welsh smokefree legislation on children’s exposure to secondhand smoke, examining how impacts vary according to pre-legislative exposure levels and identifying the implications of these findings.

3 East 3.5

Smoking during pregnancy: Processes and interventions

Chair: Peter Hajek, Queen Mary, University of London, UK

Presenters:
Tim Coleman, UKCTCS, UK, University of Nottingham, UK
Linda Bauld, UKCTCS, UK, University of Bath, UK
Ivan Berlin, Pitié-Salpêtrière University Hospital, Paris, France
Michael Ussher, St. George’s University of London, UK

Abstract
This symposium is convened by the UKCTCS, UK
Maternal smoking in pregnancy causes substantial harm to infants and is a major public health problem. Women who smoke during pregnancy are often reluctant to engage with smoking cessation services and success rates are fairly low. Further research is necessary to understand the harm of smoking in pregnancy, the nature of smoking addiction for these women and to develop more effective smoking cessation interventions. This symposium will present findings from four areas of research on smoking and smoking cessation during pregnancy. Two of the presentations focus on smoking interventions. The first of these will present findings from a systematic review on the effects of nicotine replacement therapy (NRT) in pregnancy. Results are discussed in the context of different study designs and approaches to analysis. The need for placebo controlled trials is highlighted. The second presentation will summarise findings on the effectiveness of financial incentives for smoking cessation during pregnancy. The presentation will highlight key issues relating to the implementation of financial incentive schemes and will summarise findings from evaluations of existing incentive schemes in the UK. The other two presentations will address the processes of smoking harm and smoking addiction during pregnancy. The first of these will present data showing that smoking is associated with monoamine oxidase inhibition in pregnant women and in their newborns at birth, and will discuss the potential health implications for the child. The final talk with present the findings of a study comparing the tobacco withdrawal syndrome in pregnant and non-pregnant women. This presentation will highlight the distinctive pattern of tobacco withdrawal during pregnancy and the implications of this for characterising tobacco addiction during pregnancy for designing appropriate smoking cessation interventions.
University Hall

Nicotinic receptors as therapeutic targets for compromised cognitive performance in neuropsychiatric disorders

Chair: Mohammed Shoaib, Newcastle University, UK

Presenters:
Jesper Andreason, University of Copenhagen, Copenhagen, Denmark
Mohammed Shoaib, Newcastle University, UK
Carsten Geissing, Cambridge University, UK
Alexandra Potter, University of Vermont, Burlington, USA

Abstract
The symposium will focus on the therapeutic utility of nicotine and nicotinic agonists to restore/improve cognitive performance. Evidence from preclinical and clinical studies will aim to highlight the beneficial effects of nicotine – the underlying neurobiological aspects will come from imaging, behavioural and cognitive tasks within a broad range of neuropsychiatric disorders.

3 East 3.8

Reducing the availability and use of cheap tobacco: An update on evidence, public health and tobacco industry strategies

Chair: Luk Joossens, European Cancer League, Brussels, Belgium

Presenters:
Belinda Iringe-Koko, University College London, UK
Andrea Crossfield, Smokefree North West, UK
Patricia Hodgson, Yorkshire & Humber DH, UK (author not presenting)
Frank Chaloupka, University of Illinois, USA
Anna Gilmore, UKCTCS and University of Bath, UK

Abstract
Tobacco taxation, the most effective tobacco control intervention available, is undermined by the availability of cheap tobacco products. Interventions to reduce the availability and use of cheap tobacco are therefore key to tobacco control. Cheap tobacco is available in many guises. Legal sources include duty free products, cheap cigarettes (available, inter alia, as a result of industry promotions and pricing strategies) and roll your own tobacco. Illegal sources include smuggled, bootlegged or counterfeit products. This symposium, convened by the UK Centre for Tobacco Control Studies (UKCTCS), aims to bring together the latest research in this field in order to explore public and stakeholder attitudes to use and control of illicit tobacco, tobacco industry efforts to keep tobacco cheap and potential solutions to reduce the availability and use of cheap tobacco. Presentation one will look at how the efforts to tackle illicit tobacco require complex relationships between multiple agencies. The success of such programmes can hinge on the shared understanding and goals of these alliances. We report on a qualitative exploration of the perspectives of stakeholders involved in joint efforts to tackle smuggling in part of the UK. Presentation two looks at the results from a 2009 survey of over 6000 participants aged 14 upwards in the North of England provide information on the size of the illicit market and how messages to reduce demand for cheap tobacco can be developed and appropriately targeted. Presentation three is based on a forthcoming systematic review to be published as part of an IARC handbook and will review industry pricing strategies and price related marketing efforts. Presentation four looks at how market failure, in the form of market power, compounded by tobacco control policies, has given the tobacco industry immense pricing power. This novel work proposes as a solution a system of price-cap regulation (similar to that widely used in the utilities sector) wherein manufacturers’ (but not retail) prices are capped. This would ensure that prices faced by the consumer remain high, address market failure, increase government revenue and bring other public health benefits.
3 East 2.2

Smoking, smoking cessation and suicide related outcomes

Chairs: Ivan Berlin, Faculté de médecine Université P. & M. Curie, Paris, France
Lirio S Covey, New York State Psychiatric Institute, USA

Presenters:
Lirio S Covey, New York State Psychiatric Institute, New York, USA
Tellervo Korhonen, University of Helsinki and National Institute for Health and Welfare, Finland
Jaakko Kaprio, University of Helsinki and National Institute for Health and Welfare, Finland
Ivan Berlin, Hôpital Pitié-Salpêtrière, Faculté de médecine Université P. & M. Curie, Paris, France

Abstract
A debate has recently risen, triggered by reports of suicide related outcomes (SRO: completed suicide, suicide attempt, suicide ideation, wish to die) when taking smoking cessation medications as to ascertain whether these outcomes are related to smoking, to smoking cessation or to medications as an aid to help smokers quit. This symposium proposes to present recent data about SRO outcomes in relationship with smoking and smoking cessation with exclusion of smoking cessation medications. The first presentation will aim to answer the question whether cigarette smoking predicts or not suicide ideations among adolescents. Results are based on the FinnTwin12 longitudinal data with assessments of cigarette smoking at ages of 12, 14, 17 and 22 as well as of suicide ideations at age of 14 and 22. Data were collected by questionnaires (at age 12, in school, and at age 17 by mail), and by interviews using a structured psychiatric instrument (SSAGA) at ages 14 and 22. Samples sizes range from 1295 to 1852 at different time points. The second presentation will provide answers to the question whether cigarette smoking predicts SRO and whether this relationship is mediated by depressed mood and life satisfaction among adults. Results are based on the Finnish Adult Twin Cohort longitudinal data and the Finnish Causes of Death Registry data with assessments of cigarettes smoking from 1975 through 1990 and SRO from 1975 through 2008. The third presentation will show results of a clinical smoking cessation study which assessed weekly mood and suicide ideation in smokers with previous history of major depression. This study found that abstinence predicted improved mood at the next assessment week and conversely, an impaired mood predicted non-abstinence at the succeeding week. Among abstainers mood, suicide ideation and anxiety scores were significantly lower than among non abstainers following a cessation attempt. The fourth presentation will report on longitudinal data, 3-years apart, from Waves 1 and 2 of the National Epidemiologic Study on Alcohol and Related Condition (NESARC). Subjects were 4073 adult respondents who completed SRO items in Waves 1 and 2. The results indicate an increased risk for incident SRO with incident smoking, continued smoking, and a return to smoking, but no increased risk with incident or persistent ex-smoking.

3 East 2.4

How to conduct effective tobacco mass media campaigns

Chair: TBC

Presenters:
Christelle Delaunay, French National Committee against Tobacco (CNCT), France
Karine Gallopol-Morvan, University of Rennes 1, France
Gerard Hastings, UKCTCS and University of Stirling, UK
Pierre Arwidon, Institut National de Prévention et d’Éducation pour la Santé, France

Abstract
Article 12 of the WHO Framework Convention on Tobacco Control requires “each party [to] promote and strengthen public awareness of tobacco control issues, using all available communications tools, as appropriate.” In this regard anti tobacco campaigns remain a vital communication tool and a good way to fight tobacco companies’ initiatives, with millions of pounds spent on advertising. This symposium considers effective ways of conducting tobacco mass media campaigns. Presentation one will discuss the interest of social marketing to improve mass media campaigns using its methodology and tools. All the key stages including market research, analysis of the competitor, segmentation, targeting, advertising strategy and evaluation, such as gold rules for an effective tobacco campaign, will be illustrated for an easy and quick appropriation. Presentation two will then focus on the marketing activities of the tobacco industry, since an important social marketing rule is to know its commercial competitor. Advertising and marketing tools used to create a strong and positive demand for tobacco brands and to target people, children, and women will be discussed, e.g. product placement in movies, sponsorship, commercial gifts, tobacco packaging, digital media, and sustainable activities. Presentation three will concentrate on the European Help anti tobacco campaign which has been running for five years and is the world’s biggest anti-smoking mass media campaign, aimed at tobacco prevention and cessation and informing about the dangers of passive smoking. Data will be presented from the annual pan-European evaluation survey showing how it has begun to develop the hallmarks of a public health brand. Finally, as monitoring and evaluation are crucial for determining and improving the impact of anti tobacco campaigns, presentation four will look at different relevant indicators such as memorisation of the message, attitude toward it, and intentions to quit smoking.
Moving away from cigarettes as “portable therapy” for smokers with mental health problems: Translating evidence from public health, clinical and training settings into policy

Chairs: Amanda Baker, University of Newcastle, Australia
Ann McNeill, UKCTCS and University of Nottingham, UK

Presenters:
Amanda Baker, Centre for Brain and Mental Health Research, University of Newcastle, NSW, Australia
Billie Bonevski, Centre for Health Research & Psycho-oncology, University of Newcastle, Australia
Jenny Bowman, School of Psychology, University of Newcastle, Australia
Elena Ratschen, UKCTCS and University of Nottingham, UK
Robyn Richmond, School of public health and community medicine, University of New South Wales, Australia
Louise Thornton, Centre for Brain and Mental Health Research, University of Newcastle, Australia
Paula Wye, Hunter New England Population Health, NSW, Australia

Abstract
Smoking remains common among people with mental health problems and is associated with significant morbidity and mortality. Illness, socio demographic, lifestyle, institutional and tobacco industry influences are all associated with this high prevalence. Presentation one presents evidence regarding: the efficacy of existing public health approaches; clinical interventions in a variety of settings; and mental health staff training programs, with a view to policy change. Presentation two looks at a study which was conducted on acute inpatient wards to explore issues related to the smokefree policy and smoking from a staff and inpatient perspective, involving qualitative and quantitative methods. The subsequent pilot intervention revealed challenges related to illness related issues, substantial systemic issues and a prevailing ‘smoking culture’ in the settings studied. Potential ways to overcome these challenges are considered. Presentation three: In a study of 89 people with psychotic disorders 93% recalled having seen public health messages regarding tobacco. However, despite this and high scores on a tobacco knowledge questionnaires, participants stated that anti-smoking advertising did not help them quit, and they described deliberately disregarding health warnings and continuing to smoke. Presentation four describes the challenges posed by different settings (inpatient discharge, homelessness support, prison) in which smokers with mental health problems present and reasons for optimism. Inpatient setting: An ‘integrated’ intervention trial is underway, linking inpatients from the smokefree setting with community supports for smoking cessation upon discharge. Homeless people: A survey of 38 homeless adults found that 75% were smokers, 81% of whom were interested in quitting and 70% would attend a quit smoking program. Prisoners: 436 prisoners have been recruited into a randomized controlled trial of a smoking cessation intervention. Follow up is underway, with excellent follow-up rates. Baseline data will be presented. Presentation five: Total smoking bans and nicotine dependence treatment need to be adopted in all psychiatric settings and health services to convey the message that smoking is an unacceptable health behaviour to an already disadvantaged population.
Global tobacco control efforts via quitlines: Who are we reaching and what do they use?

**Chairs:** Harry Lando, University of Minnesota, USA

**Presenters:**
- Terry Bush, Free & Clear, Seattle, USA
- Asgeir Helgason, Karolinska Institutet, Stockholm, Sweden
- Marc C Willemsen, Primary Care, Maastricht University, The Netherlands
- Deborah J Ossip, Department of Community and Preventative Medicine, University of Rochester, USA

**Abstract**
Clinical practice guidelines and the World Health Organization recommend quitlines as a cost-effective method for increasing the reach of evidence based treatments. All 50 states in US, all of Canada and many countries in Europe offer free telephone based counselling for tobacco users. Despite their proven effectiveness and easy access, quitlines reach a minority of smokers (<10% in US, <1% in Europe). Research is needed to discover ways to maximize the potential of phone based treatments to serve more people. A first step is to understand the characteristics of the population using quitlines and the types of services they use in order to further expand these services. In this symposium, we will describe quitline services offered in North America and Europe, the personal and tobacco use characteristics of callers and the services they use (e.g. reactive or proactive phone counseling, web-based support, NRT). Presentation one will present information on the United States (15 state quitlines) and Canadian quitlines (6 of 10 provinces). Presentation two will describe the services provided in Sweden and Iceland and the association between “Stage of Change” at first call and 12-month outcomes will be discussed. Presentation three will present data from the European Network of Quitlines, including characteristics of callers and factors associated with receipt of various types of quitline services. Each presenter will discuss gender differences in calls to the quitlines and outcomes in relation to proactive vs. reactive counseling. Presentation four will discuss methods for calculating the reach of quitlines for subgroups such as those most at risk for smoking related diseases. The reach effects across various subpopulations in these countries will be compared and contrasted. The Chair will open the discussion on the implications of the findings and the value of quitlines in global tobacco control activities.

Waterpipe smoking: Update on use and health hazards

**Chair:** Thomas Schulz, German Federal Institute for Risk Assessment, Germany

**Presenters:**
- Paul Aveyard, UKCTCS, UK, University of Birmingham, UK
- Jens Schubert, German Federal Institute for Risk Assessment, Germany
- Thomas Schulz, German Federal Institute for Risk Assessment, Germany

**Abstract**
The waterpipe is a traditional aid for tobacco consumption in Asia and Northern Africa. Although exact numbers are missing to date, web blogs, “hookah bar” advertisements and the advent of popular waterpipe stores indicate that both the general interest and the number of young people smoking water pipes have considerably grown in recent years in European countries and North America. This progression would follow an increase in the prevalence of waterpipe smoking well-documented in the Eastern Mediterranean Region and North Africa and possibly results in part from people’s perception that the water would filter toxic compounds, thus rendering the practice less harmful than conventional smoking. Using a waterpipe is so different from smoking a cigarette (e.g., heavily flavoured tobacco, charcoal as external heat source, temperature of tobacco) that extrapolations are unapt. First investigations in Europe showed that waterpipe smoking is a common part of student culture in Britain and popular among German adolescents. Yet, information on health risks associated with waterpipe smoking is extremely rare. In fact, only little data on the composition of the waterpipe smoke is published in the literature. Besides first studies from Lebanon publishing data on polycyclic aromatic hydrocarbons and aldehydes in waterpipe smoke systematic studies have been initiated in Berlin, Germany at the Federal Institute for Risk Assessment. Presentation one of this symposium will focus on smoking prevalence in UK students. Using a commercially available smoking device for waterpipes Jens Schubert and Dr. Thomas Schulz investigated waterpipe smoke for a variety of toxic compounds and the presentations that follow explore this: Presentation two will present data on polycyclic aromatic hydrocarbons and tobacco specific nitrosamines and he will explain the origin of the huge tar values found.
in waterpipe smoke. Presentation three will present data on aldehydes and on the cytotoxicity of waterpipe smoke. It is important to emphasize that any appropriate risk characterization and quantitative risk assessment relies on measures of the real internal exposure and body burden accompanied with the practice of inhaling putatively toxic compounds present in water pipe smoke. Due to the lack of data on the toxicological effects of water pipe smoke, the medical community and public health decision-makers are as yet not well prepared in providing meaningful advice regarding this increasingly important worldwide health issue.

3 East 2.4

Differential impacts of tobacco control policies in Europe: Findings from the ITC Project

Chairs: Abraham Brown, Centre Tobacco Control Research, University of Stirling, UK
Ann McNeill, UKCTCS and University of Nottingham, UK

Presenters:
Romain Guignard, Institut national de prévention et d’éducation pour la santé, France
Ute Mons, German Cancer Research Center, Heidelberg, Germany
Gera E Nagelhout, School for Public Health and Primary Care (CAPHRI), Maastricht University, The Netherlands
Abraham Brown, Centre for Tobacco Control Research & UKCTCS, UK, University of Stirling, UK

Abstract
To date, few studies have examined the effectiveness of tobacco control policies across different European countries, research complicated by different languages used and distinct cultural contexts. The ITC Project is a long established study using very similar questionnaires and methodology, involving longitudinal cohort of smokers across over 70% of the world’s tobacco users. Since 2002, seven survey waves in the UK, two in France, two in Germany, and three in the Netherlands have been conducted, thus providing a unique dataset enabling comparisons of the impact of tobacco control policies across these European countries, the focus of this symposium. Presentation one will compare data on the impact of smoke-free legislation. Remarkable declines in smoking in public places and increases in support across the countries were observed eg French smokers’ support for the ban in bars increased from 28% pre- to 60% post-ban. However, the data indicate that smoke-free laws introduced in Germany and the Netherlands are less effective than those in France and UK. Presentation two will present data comparing changes in quitting behaviour before and after smoke-free legislation. Presentation three will present results of smokers’ reactions to the same EU-text-only warning labels (apart from the language) and investigate the inter-country variability: French and British smokers notice and read the warning labels significantly more often than German and Dutch smokers. Presentation four will show data on attitudes to forthcoming/potential future policies, including point of purchase display bans, generic packaging and smoke-free cars; eg 76% UK, 89% French, 82% German and 96% Dutch smokers support bans on smoking in cars with children (Netherlands question concerned pre-school children).
3 East 2.1
Progress, problems, and promise of concatameric nicotinic acetylcholine receptor expression approaches.

Chair: Paul Whiteaker, Barrow Neurological Institute, Phoenix, US

Presenters:
Isabel Bermudez, School of Life Sciences, Oxford Brookes University, UK
Mirko Moroni, Neuroscience, Physiology, Pharmacology Dept. University College of London, UK

Abstract
Considerable progress has been made in defining the subunit composition of the nicotinic acetylcholine receptor (nAChR) subtypes that drive the initiation and maintenance of nicotine dependence. These nAChR subtypes are, in many cases, complex. For example, ventral tegmental area dopamine neurons express a variety of alpha6beta2* nAChR subtypes including alpha6beta2alpha6beta2beta3, alpha6beta2alpha6beta2beta3, and alpha6alpha4beta2beta3. Subunits in the widely-expressed alpha4beta2* nAChR subtype are expressed in two different ratios, with different agonist activation affinities. Recent evidence indicates that variation at the CHRNAS/A3/E4 gene cluster (encoding alpha5, alpha3, and beta4 nAChR subunits) in understanding the specific properties and roles of nAChR subtypes associated with nicotine dependence. Historically, heterologous expression of defined nAChR subtypes has been a key tool in understanding their properties, and in developing compounds with subtype selectivity or fine-tuned interactions between subtypes. Such compounds would be valuable research tools, and leads for improved smoking cessation therapies. However, the traditional approach of heterologously expressing nAChR subunits and allowing them to self-assort into functional nAChR subtypes is not suitable for complex subtypes. For example, expression of individual alpha6beta2* subtypes from up to four different subunits is not feasible. Similarly, completely specific expression of alternate alpha4beta2* nAChR isotypes is difficult when using separate subunits, as is ensuring consistent incorporation of the accessory alpha5 gene into host nAChR subtypes. Recently, multiple laboratories have begun to adopt a concatameric receptor approach to expressing nAChR subtypes. Multiple nAChR subunits are covalently linked by short peptide sequences, allowing precise definition of subunit ratios and order. This approach holds, and is beginning to fulfill, the promise of heterologously expressing physiologically relevant, complex, nAChR subtypes with absolutely-defined subunit compositions and orders. The nominated speakers are pioneers in applying concatameric receptor techniques to the nAChR field and will share their progress, and offer insights into the difficulties, applications, and promise of this urgently-needed new research tool.

3 East 3.5
Tobacco industry efforts to shape EU policymaking rules: The promotion and use of impact assessment and risk assessment to undermine tobacco control

Chair: Gary Fooks, University of Bath, UK
Anna Gilmore, UKCTCS and University of Bath, UK

Presenters:
Stella Aguinaga Bialous, Tobacco Policy International, San Francisco, USA
Gary Fooks, University of Bath, UK
Luk Joossens, European Cancer League, Brussels
Fiona Godfrey, European Respiratory Society, Brussels

Abstract
This symposium is convened by the UKCTCS, UK. Most research exploring tobacco industry efforts to influence policy has focused on attempts to influence either the science of tobacco-related harm or policies aimed at controlling the consumption and marketing of tobacco products. Consequently, we know far less about indirect methods of policy influence which work to transform the way in which all policies (not just those relating to tobacco) are developed. The first presentation addresses this gap by exploring how one of the world’s largest tobacco transnationals, British American Tobacco (BAT), has been leading business efforts to overhaul the process of European Union (EU) policymaking. It will look at BAT’s ongoing efforts to develop and promote regulatory tools such as impact and risk assessment, both of which are now firmly embedded within EU policymaking and which effectively constitute new channels of political influence for tobacco companies. The second presentation will show how these changes offer the potential to circumvent efforts to minimise tobacco industry influence over public health policy, making them in many respects more fundamental than other efforts to influence EU policy that have previously emerged. The session will begin by recounting the tobacco industry’s responses to the US Environmental Protection Agency’s (EPA) assessment that Environmental Tobacco Smoke was a human carcinogen. This involved a well-resourced and ultimately successful campaign to influence EU policy that have previously emerged. The session will then go on to explore how this campaign encouraged BAT to promote impact and risk assessment in the EU. It will then reveal how BAT helped coordinate a massive European lobbying campaign to promote the regulatory reforms required to make these processes mandatory, a campaign in which BAT’s specific interests were kept well-hidden from policymakers. The documents reveal that BAT believed the campaign’s success represented “an important victory” for the company, and should be exported to other regions. The third paper illustrates the risks of impact assessment to public health by historically exploring how the industry has misused economic arguments to challenge European tobacco control directives. The final presentation will draw on recent policy developments in the EU to consider how impact assessment actually does appear to be functioning with regards to the development and implementation of tobacco control policies. The session will conclude with a discussion about the implications of these findings for public health research and policy in the EU.
Oral Presentations
Comparing abrupt and gradual smoking cessation: a randomized trial

Presenter: Jean-Francois Etter, University of Geneva, Switzerland

Objectives: We tested whether smoking cessation rates differed when smokers quit smoking abruptly or when they reduced their cigarette consumption gradually before quitting.

Methods: A randomized controlled trial and an observational study on the Internet, in 2007-2009. Daily smokers who had no strong preference for either abrupt or gradual cessation were randomly assigned to receiving the instruction of either quitting abruptly and immediately (n=375), or of gradually reducing their cigarette consumption by half over the next 2 weeks and then quit (n=375). Daily smokers who strongly preferred to quit abruptly were instructed to quit immediately (n=1758), and daily smokers who strongly preferred to quit gradually were instructed to reduce their cigarette consumption by half over the next 2 weeks and then quit (n=1236). Follow-up surveys were conducted after 4 weeks.

Results: At baseline, those who preferred the abrupt method were the most motivated to quit and the most confident in their ability to quit. After 4 weeks, smoking cessation rates were 15.4% in those who preferred to quit abruptly, 7.4% in those who preferred to quit gradually and 9.9% in those who had no preference for either method (p<.001). In the latter group, quitting abruptly was as effective as quitting gradually (quit rates = 11.7% for those randomized to gradual and 8.0% for those randomized to abrupt, p=0.09).

Conclusions: Preference for the abrupt method was associated with higher motivation to quit, higher self-efficacy and higher quit rates at follow-up. In those who had no strong preference for either method, advice to quit abruptly or gradually produced similar results.

Does stopping smoking shortly before surgery lead to post-operative complications? A review and meta-analysis

Presenter: Katie Myers, Queen Mary University of London, UK

Co authors Peter Hajek and Hayden McRobbie

Background: Concerns have been expressed that stopping smoking within eight weeks of surgery may be detrimental to post-operative outcomes. This has generated uncertainty among healthcare professionals who consider smoking cessation advice in the hospital setting an important priority. Smokers who stop smoking shortly before surgery (recent quitters) have worse surgical outcomes than those who stop 8 weeks or more before surgery (early quitters) but this may indicate only that recent quitting is less beneficial than early quitting, rather than that it is risky.

Objectives: We sought to examine post-operative complications between recent quitters and patients who continue to smoke in order to provide an evidence-based recommendation to front-line staff.

Methods: We searched the Cinhal, Medline and PsycINFO electronic databases for reports allowing a comparison of post-operative complications in recent quitters and continuing smokers. Data were extracted from all interpretable studies by two reviewers and entered into three separate meta-analyses which considered all available studies and studies which validated self-reported abstinence (to assess possible benefits), and studies of pulmonary complications only (to assess possible risks).

Results: Only nine studies met the inclusion criteria. One found a beneficial effect of recent quitting compared to continuing smoking and none identified any detrimental effects. Results from meta-analyses will be presented showing the risks of stopping smoking within 8 weeks of surgery compared to continuing smoking. Conclusion: Smoking cessation prior to surgery is important to minimise post-operative complications. The findings of this study will be relevant for policy makers and healthcare providers.
Smoking and cardiovascular disease risk reduction intervention among people with severe mental disorders: interim results of a randomised controlled trial

Presenter:
Amanda Baker, Centre for Brain and Mental Health Research, Australia

Co authors
Robyn Richmond, Frances Kay-Lambkin, Sacha Filia, David Castle, Jill Williams and Vanessa Clark

Objectives: People with severe mental disorders have much higher rates of cardiovascular disease (CVD) risk factors, including smoking, and CVD is the largest cause of death among people with severe mental disorder. To our knowledge, this is the first randomised controlled trial to evaluate the effectiveness of a multi-component intervention addressing smoking as well as multiple CVD risk factors among people with a severe mental disorder.

Methods: 250 smokers with a severe mental disorder residing in the community will be randomly assigned to the multi-component intervention or to a control condition. Primary outcome variables include: CVD risk score, continuous and point prevalence abstinence rates, and smoking reduction status. Assessments occur at 15 weeks and 12 months post baseline.

Results: Interim baseline, treatment retention and 15 week assessment results will be reported. At the time of writing, 69 participants had completed the baseline and 36 had completed 15-week assessments for the trial. Preliminary results from exploratory data analyses were in support of the study hypotheses. Thus, there had been a significant reduction in the number of cigarettes smoked between baseline (M = 30.16, SD = 13.57) and 15-weeks (M = 12.22, SD = 11.24). Four people (5/36, 13.9%) reported carboxymeter verified abstinence at 15-weeks. Additional CVD risk behaviours, such as activity levels, have shown improvement at 15-weeks. It should be noted that as the 15-week assessment occurs as a measure of within-treatment progress, treatment continues over a 9 month period, and these changes are expected to be enhanced over that time.

Reducing smoking relapse via self-help booklets: The forever free studies

Presenter:
Thomas Brandon, University of South Florida, USA

Co authors
Lauren R. Melzer, Kristen M. Sismilich, Vani Nath Simmons and Marina Unrod

Objectives: Up to 95% of smokers relapse following a given smoking cessation attempt. Although relapse-prevention therapies have been developed, they have received mixed empirical support, and they have suffered from limited dissemination and usage. The goal of our research over the past 15 years has been to develop and test relapse-prevention interventions that are easier to disseminate and more attractive to smokers, compared to traditional face-to-face counseling approaches.

Method and Results: With this goal, we developed the Forever Free relapse-prevention program, a series of booklets based on relapse theory and empirical smoking cessation findings. In two randomized controlled trials, these booklets were found to significantly reduce smoking relapse among recent quitters through up to two years of follow-up (Brandon et al., 2000, 2004). Moreover, they were found to be highly cost-effective in terms of predicted QALY saved (Chirikos et al., 2004). Recently, these booklets were adapted for use by pregnant women, a population with exceptionally high rates of smoking relapse following childbirth. Because previous research identified level of partner support as a key outcome predictor, we developed one booklet specifically for the partner, with guidance on providing support for smoking abstinence. Results indicated overall benefits of the Forever Free for Baby and Me booklets through 8 months postpartum. However, efficacy was moderated by the women's perceived level of partner support at baseline, such that those with generally supportive partners benefited the most from the intervention, compared to a usual care condition. Both the original booklets and the pregnancy-specific ones have been “transcreated” into Spanish, with attention to both linguistic and cultural appropriateness across Hispanic groups. An ongoing effectiveness trial is testing the added value of the Forever Free booklets when provided to callers to a telephone quitline service (New York State), compared to usual care. Finally, another ongoing study is examining whether a modified set of booklets is efficacious for promoting both initial smoking cessation as well as maintenance of abstinence—as opposed to solely preventing relapse, as was their original intended purpose. Preliminary studies suggested that they were much more effective for smoking cessation than typical self-help interventions, perhaps because of their greater content.

Conclusions: This presentation will summarize the Forever Free line of research, including published, recently completed, and ongoing studies. Adoption of these booklets throughout the United States will be described, and their broader public health potential will be discussed.
3 East 2.2

Cold calling smokers for proactive telephone counselling: what are their long-term cessation rates?

**Presenter:**
Flora Tzelepis, University of Newcastle, Australia

**Co authors**
Christine L Paul, Raoul A Walsh, Patrick McElduff and Jenny Knight

Existing reviews have shown that proactive telephone counselling for smoking cessation is efficacious. However, these reviews failed to differentiate between studies based on recruitment channel (active versus passive) which is important given current interest in active recruitment strategies for quitlines. Additional shortcomings include limited attention to crucial methodological issues and combination of different lengths of abstinence in meta-analyses. This review aims to: i) assess the methodological quality of studies; and ii) conduct meta-analyses to examine the proactive telephone counselling effect on point prevalence abstinence and prolonged abstinence separately at mid and long-term assessments and according to recruitment channel and methodological quality.

**Methods:** Medline, PsycINFO, Current Contents, Embase.com, CINAHL and Scopus were searched for publications prior to 31 December 2008. Inclusion criteria were: randomised controlled trial (RCT) of proactive telephone counselling as either the primary intervention or an adjunct to self-help materials; adult current smokers from the general community; cessation outcomes reported at least 6 months post-recruitment; and English language peer-reviewed publication. Methodological quality assessments used the Quality Assessment Tool for Quantitative Studies, a published instrument. A random effects meta-analysis was used to pool the cessation outcomes at mid and long-term follow-ups.

**Results:** Twenty-four RCTs were included in this systematic review. Seven trials involved active recruitment, 16 passive recruitment and one mixed recruitment methods. Based on the Quality Assessment Tool for Quantitative Studies, the global methodological quality ratings indicated two strong, 10 moderate and 12 weak studies. The results of meta-analyses that included all relevant studies for point prevalence and prolonged abstinence separately at mid and long-term follow-ups will be discussed. When trials were segregated by recruitment channel and methodological quality there were circumstances under which a significant proactive telephone counselling treatment effect was not found.

**Conclusions:** The recruitment channel and methodological quality of trials impacted on efficacy estimates of proactive telephone counselling. The quality of proactive telephone counselling trials needs improvement.

3 East 2.2

Feasibility evaluation of a leaflet and SMS text-message based tailored self-help smoking cessation intervention for pregnant smokers: the MiQuit study

**Presenter:**
Felix Naughton, University of Cambridge, UK

**Co authors**
Toby Prevost, Hazel Gilbert and Stephen Sutton

Self-help interventions are attractive to pregnant smokers and can increase quitting among this priority group (Naughton et al, 2008; Addiction, 103, 566-579). No published studies have yet explored the feasibility and acceptability of enhancing self-help for pregnant smokers by delivering support via individually tailored text-messages. This formed the objective of the current study.

**Methods:** Pregnant smokers were randomly allocated either to receive the MiQuit intervention, an intensive programme of tailored text-messages and a tailored self-help leaflet (N=102), or to a control group, receiving a non-tailored self-help leaflet (N=105). At 3-months follow-up, intervention acceptability, self-efficacy, health beliefs and process outcomes were assessed. Self-report and cotinine validated 7-day point prevalence abstinence was assessed to estimate a range of plausible effect sizes.

**Results:** 9% of MiQuit participants discontinued the text-messages. Compared to controls, MiQuit participants reported greater use and perceived value of the leaflet, were more likely to set a quit date (p=0.05) and reported higher levels of self-efficacy (p=0.02), harm beliefs (p=0.05) and determination to quit (p=0.02). There were no significant differences in self-reported abstinence (MiQuit 22.9%, control 19.6%; odds ratio=1.2, 95% CI 0.6–2.4) or cotinine validated abstinence (MiQuit 12.5%, control 7.8%; odds ratio=1.7, 95% CI 0.7–4.3). The findings suggested ways of improving the intervention.

**Conclusions:** Delivering tailored smoking cessation support via leaflet and text-message to pregnant smokers in the UK is feasible and acceptable and shows promise. As this type of novel support programme can bypass many of the barriers pregnant smokers experience accessing one-to-one support and is of low cost, its potential should be investigated further.
Pre-cessation use of varenicline: Effects on adlib smoking, post-cessation withdrawal discomfort, and short-term smoking cessation rates

Presenter: Hayden McRobbie, Queen Mary University of London, UK

Co authors Peter Hajek and Katie Myers

Background: Varenicline acts to alleviate post-quitting withdrawal discomfort and also reduces the ‘reward’ associated with smoking. The current treatment regimen relies primarily on the withdrawal relief mechanism. However, its effect on reducing the reward associated with smoking by using it prior to quitting could also augment its efficacy for smoking cessation. Objectives: To examine the effect of extended use of varenicline prior to stopping smoking on the reward obtained from smoking, ad-lib smoke intake, post-cessation withdrawal discomfort, and rates of smoking cessation.

Methods: Smokers seeking treatment were randomly allocated to varenicline starting four weeks prior to the target quit date (TQD), or placebo for 3 weeks, followed by the standard varenicline treatment. Both groups up-titrated their varenicline dose from 1mg per day in the first week to 1mg twice daily thereafter, and used varenicline for up to 3 months after TQD. Smoking rates, carbon monoxide (CO) and cotinine levels, and ratings of cigarettes and satisfaction derived from smoking measured by two additional Mood and Physical Symptoms Scale (MPSS) items and by Modified Cigarette Evaluation Questionnaire (mCEQ) were collected throughout the pre-quit period. Withdrawal ratings (MPSS) and smoking status were recorded after TQD weekly for 4 weeks and at 3 months. Continuous abstinence rate was defined as not a puff since TQD validated by CO readings where scheduled. Participants lost to follow-up were counted as non-abstainers.

Results: Results will be presented showing the effects of varenicline pre-loading on a range of outcome variables, and examining whether any effects of pre-loading on ad-lib smoke intake and enjoyment of cigarettes plateau within 4 weeks of use. The data will be presented on effects of pre-loading on abstinence rates and on whether any such effect is mediated by reductions in post-cessation cigarette withdrawal symptoms.

Conclusion: This study will have implications for considering whether varenicline has a potential in harm reduction, and whether randomised trials of varenicline preloading with long-term follow-ups in smokers who are motivated to stop smoking and in those not ready to quit are warranted.

Is pre-cessation NRT effective? Results from new systematic review

Presenter: Chris Bullen, University of Auckland, New Zealand

Co authors Marewa Glover, Colin Howe, Murray Laugesen, Natalie Walker, Robyn Whittaker, Ruey Bin Lin, Hayden McRobbie and Anthony Rodgers

Objectives: To summarise the most recent evidence on effectiveness and safety of pre-cessation nicotine replacement therapy in smokers wanting to quit.

Methods: Systematic review and meta-analysis.

Results: There are only a handful of pre-cessation studies, most of them small in size apart from two recently published medium to large pragmatic trials, one of patch and/or gum, and the other of gum alone, all in moderately dependent smokers wanting to stop smoking. There are as yet no trials of other forms of NRT used in this manner. In meta-analyses of all six identified studies that used pre-cessation nicotine patches, there was a significant overall benefit on cessation at six months with a pooled effect of around a 25-30% increase in quit rates compared with standard treatment regimens, depending on the model used. Pre-cessation nicotine patch use was safe and well-tolerated in all studies. There is, however, insufficient evidence to support the use of pre-cessation nicotine gum. Potential mechanisms of action are discussed.

Conclusions: Pre-cessation nicotine patch offers a marginal cessation benefit over standard treatment regimens in moderately dependent smokers and is safe.
Levels of nicotine dependence and predicting outcomes in a smokeless tobacco cessation trial

Presenter:
Karl Fagerstrom, Grass Roots Group PLC, UK

Co authors
Hans Gilljam, Michael Metcalfe, Serena Tonstad and Michael Messig

Objectives: Smokeless tobacco (ST) is the main form of tobacco use among certain populations in Norway and Sweden. In a study where varenicline improved continuous abstinence rate (CAR) from ST, a modification of the Fagerstrom Test for Nicotine Dependence (mFTND) to address ST use instead of smoking was used along with salivary cotinine as indicators of dependence. The objective of this post-hoc analysis was to evaluate the predictive value of baseline salivary cotinine and mFTND score on outcome in a trial of varenicline versus placebo for ST cessation.

Methods: A double-blind, placebo-controlled, multicentre, randomized trial carried out in men and women aged =18 years, who used ST =8 occasions per day, on average with no period of abstinence within 3 months before screening. The mFTND (range, 1-10) and salivary cotinine were recorded at baseline. The upper limit of quantification for salivary cotinine levels was 500 ng/mL. Questions on the mFTND included: time to first ST use on waking; number of ST uses per day; type and size of ST used; whether ST is kept in the mouth most of the time; are tobacco juices swallowed; duration of time in the mouth for each ST use; and is ST used when ill in bed. In the post-hoc analyses, Week 9-12 CAR (primary endpoint) and Week 9-26 CAR (key secondary endpoint) were analyzed using logistic regression models with terms for study centre, treatment group, salivary cotinine group, or mFTND total score and the interaction between treatment and cotinine group or mFTND total score. The Spearman correlation between salivary cotinine and mFTND was calculated.

Results: ST users in both groups had high baseline salivary cotinine concentrations (<361 ng/mL cotinine: n=90/399 [22.6%] participants; 361-499 cotinine: n=90/399 [22.6%] participants, =500 ng/mL cotinine: n=219/399 [54.8%] participants) and mean baseline scores on the mFTND of 7.5 (SD 1.6). Baseline salivary cotinine levels and mFTND scores were correlated at baseline (r=0.22; P<0.01). However, when we examined the CARs at Weeks 12 and 26, we found that neither baseline cotinine nor baseline mFTND scores were predictive of outcome.

Conclusion: The ST users in this trial had high nicotine dependence. There was a significant correlation between baseline salivary cotinine and mFTND score, however, contrary to expectation, neither were predictive of abstinence.
smoke-free could be a useful focus for smoking cessation services to engage with smokers who are ambivalent about the smoke-free legislation and or wanting to quit. This would be a useful addition to future implementation of tobacco control policy; and act as counters to ameliorate the cumulative impact of smoker-related stigma.

3 East 3.8

Local clean air ordinance coverage in the Appalachian region of the USA

Presenter:
Amy Ferketich, Ohio State University, USA

Co authors
Alex Liber, Michael Pennell, Jana Hammer, Darren Nealy and Micah Berman

The Appalachian region in the U.S. is characterized by a long history of tobacco farming, a high smoking prevalence, and socioeconomic disadvantage. The objectives of this study were to quantitatively and qualitatively examine the pattern of, and factors associated with, adoption of clean indoor air (CIA) ordinances in Appalachia.

Methods: CIA ordinances in the Appalachian communities in six states were collected and reviewed. The prevalence a comprehensive CIA ordinance in workplaces, restaurants, and bars were estimated. Additionally, a strength score was computed, which was a measure of the level of protection from secondhand smoke in seven locations. Logistic and linear mixed effects models were fit to determine if the presence of a comprehensive ordinance and the strength of the ordinance, respectively, were related to measures of community disadvantage. Qualitative interviews were conducted with 24 local tobacco control leaders from both communities with an ordinance and without an ordinance in order to examine the factors that facilitated or impeded passage of the ordinance.

Results: Of the 332 communities included in the analysis, only 16.6%, 15.1%, and 10.7% had adopted a comprehensive workplace, restaurant, or comprehensive bar ordinance, respectively. While 170 communities had passed a CIA ordinance, most were weak, as the average ordinance achieved only 43% of the total possible points. Communities with a higher average unemployment rate were less likely and those with a higher average education level were more likely to have a comprehensive ordinance and a strong ordinance. The qualitative interviews revealed that there was no “one size fits all” model for passage of CIA ordinances. Some communities formed strong coalitions and others had one or two local leaders who pushed for passage. The major barriers included lack of inertia on the part of policymakers, as well as both libertarian and economic arguments made by community members.

Conclusions: The majority of residents in these communities are not protected from the dangers of secondhand smoke. It is our recommendation that CIA efforts should be statewide and that efforts to pass strong state CIA laws should take priority over local initiatives in these states. The recent passage of a CIA law in North Carolina that will ban smoking in restaurants, bars, and government workplaces in 2010 demonstrates that it is possible to pass a strong law, although not 100% comprehensive for every indoor place, in tobacco-growing state.
Greece has the highest smoking prevalence in the EU, with adolescents having high levels of exposure to secondhand smoke (SHS). In July 2009 national smokefree legislation was implemented in Greece. This study explored Greek young people’s attitudes to smoking, SHS and the impending legislation. The intention was to increase understanding of adolescents’ views and perceptions on these issues and generate contextualised accounts to help explain the subsequent success or otherwise of the Greek ban.

Methods: Qualitative semi-structured interviews with 11 small friendship groups of 14-16 year old smokers and non-smokers in Rhodes. The interviews were conducted in May-June 2009 and were analysed thematically.

Results: Participants described social worlds in which smoking and exposure to SHS was viewed as normal and acceptable. There was little awareness of the health risks of SHS. Smoking was perceived to be both an inherent part of socialising and highly addictive. Thus the ‘right’ to smoke unhindered in public places was viewed as greater than that of not being exposed to SHS. There was limited awareness and understanding of the impending smokefree legislation. Participants drew on their experience of previous legislation, the perceived rebellious independent nature of Greeks, and their cynicism about the Government in concluding that the legislation would be ineffective.

Conclusions: The perceived social norms around smoking and exposure to SHS combined with a poor understanding of the health risks of SHS and negative attitudes about the impending legislation help to explain the subsequent limited impact of the Greek smokefree legislation.

Background: In 2001, despite substantial industry opposition, the European Union passed a new Tobacco Products Directive (TPD) that included by-brand ingredients disclosure, prohibition of misleading descriptors such as “light” and “mild” and a requirement for such provisions to cover cigarettes manufactured for export. Revisions to the TPD are currently being considered and understanding how the industry attempted to undermine the original TPD, one of only two major tobacco control directives passed in the last 15 years, can help inform approaches to the revised directive.

Objectives: To examine industry strategies to influence the TPD. Methods: Analysis of internal documents made public following litigation and interviews with policy actors. Results: The industry mounted high-level efforts to sabotage the TPD. British American Tobacco’s aggressive ‘block, amend or delay’ tactics differed from Philip Morris’ ‘constructive engagement’ causing conflict within the industry. Nevertheless exaggerated and often spurious industry arguments on legal (the EU Treaties’ competence in public health), trade (violation of trade agreements) and economic (job losses) issues were formulated and carried considerable weight among the carefully targeted audiences of civil servants and politicians from EU institutions and Member States. The industry also mobilised unions, factory workers and third party alliances in support and mounted legal challenges against the TPD.

Conclusions: The industry will employ tenuous arguments to stall legislation. The tobacco control community needs to ensure policymakers are aware of the real trade, legal and economic issues around public health measures and not just industry perspectives. The institutional pluralism of the EU facilitates lobbying by well funded industry groups, yet a divided tobacco sector is less able to lobby effectively.
Translational tobacco corporation strategies to influence the WHO's framework convention

Presenter: Heide Weishaar, University of Edinburgh, UK

Co authors: Anna Gilmore, Jeff Collin, Katherine Smith, Thilo Grüning and Sema Mandal

Objectives: In successfully negotiating the WHO Framework Convention on Tobacco Control (FCTC), the World Health Organization has undertaken a significant innovation in global health governance that has contributed to the transformation of the international tobacco control agenda. Identified from the outset as an unparalleled threat to the future of the global tobacco industry, transnational tobacco companies (TTCs) initiated a remarkably extensive and diverse campaign to undermine the proposed convention. This article provides the first systematic and comprehensive review of TTC strategies to influence the FCTC negotiations, with important implications for countering future global and national efforts to thwart tobacco control initiatives.

Methods: Analysis of internal tobacco industry documents made public through a series of litigation cases, triangulated by data from official documentation relating to the FCTC process and websites of organisations cited in the documents.

Results: The strategies identified are clustered in two major categories which inform and build on each other. The first comprises efforts to frame debates in order to undermine the FCTC and the second outlines the dissemination of industry arguments through direct and indirect lobbying. Frames used to counter the FCTC include highlighting alleged damaging economic consequences; making dubious claims about conflicts with trade agreements; depicting tobacco as a high income country issue being imposed on developing countries; presenting TTCs as socially responsible; and claiming the FCTC conflicts with both ‘good governance’ principles and national sovereignty. Industry lobbying comprised the targeting of national FCTC delegations and national political actors, the use of media and scientists, seeking to enlist diverse allies, and using stakeholder consultation to delay decisions and secure industry participation in FCTC negotiations.

Conclusions: This paper illustrates the comprehensiveness of the tobacco industry’s efforts to undermine the FCTC and demonstrates the application of strategies previously identified at national level in a new global context. The paper indicates substantial collaboration across tobacco companies but also suggests that varying corporate structures and regional strengths can lead to significant divergence of interests and strategies. Awareness of complex set of TTC strategies employed at global level can help guard against industry influence in the development of future tobacco control initiatives and in the implementation and further development of the FCTC. Additionally, such awareness can advance general understanding within public health of potential political strategies employed by corporations to undermine global health initiatives. Such insights have broad relevance across non-communicable diseases.

Policy barriers imposed on access to tobacco dependence treatments in the USA

Presenter: Helen Halpin, University of California, Berkeley, USA

Objectives: CDC has tracked Medicaid coverage of tobacco dependence treatments (TDTs) for a decade. However, they are often subject to the same utilization restrictions that are put on other insured services and access to them is not uniform within Medicaid programs. We sought to document these limitations and barriers.

Methods: The UC Berkeley Center for Health and Public Policy Studies conducted its annual survey of Medicaid programs (N=51; response rate = 100%) in the fall of 2008 to update Medicaid coverage for TDTs and detail restrictions on access and on how coverage varies within the fee-for-service (FFS) program and Medicaid managed care (MMC).

Results: Over the last decade, access to effective TDTs under Medicaid has increased dramatically from 23 states in 1998 to 43 in 2008. Of these, 41 place limits on their access, with 32 requiring copayments, 25 limiting duration of treatment, 21 requiring prior authorization approvals, and 13 requiring enrollment in behavioral modification to gain coverage for pharmacotherapy. Only two states (New Mexico and New Jersey) did not report having any limitations on TDT coverage. Of the 32 Medicaid programs contracting with MMC, only 13 reported covering the same TDTs for their FFS populations.

Conclusions: While states rely on the evidence-base in the clinical practice guideline to decide which TDTs to cover, they may have undermined the future impact of these policies as a result of a basic misunderstanding of how preventive care is best delivered to a population. Policy research suggests that 1) requiring copayments for TDTs reduces their use and quit rates, particularly in low-income populations; 2) there is no evidence that limiting treatment duration prevents over-utilization -- TDTs are underutilized, 3) requiring prior authorization from insurance administrators provides no added value and only delays treatment, and 4) requiring enrollment in counseling to obtain pharmacotherapy coverage adds no value in terms of successful quitting at twice the cost . Finally, differences in Medicaid coverage under FFS vs MMC also reduce access to services. As a result, the policies imposed on Medicaid TDT coverage mean that states and the population at risk are less likely to realize potential health improvements or cost savings. It is not only critical that research on efficacy and effectiveness of treatment influence coverage decisions, but also that research on financing and delivery system impacts influence the administrative policy decisions under which these treatments will be made available and utilized.
Oral presentations

3 East 3.5

*I make my Dad smoke outside*: children’s views and experiences of SHS in the home and car in two communities of contrasting socio-economic profiles

**Presenter:**
Neneh Rowa-Dewar, University of Edinburgh, UK

**Co authors**
Amanda Amos and Sarah Cunningham-Burley

**Objectives:** Much progress has been made in recent years in reducing individual's exposure to second-hand smoke (SHS) in public places. However many children continue to experience high levels of SHS exposure with the associated health risks in their homes and cars. Children from socio-economically disadvantaged households are at particular risk as their parents are more likely to smoke and less likely to enforce smoking restrictions in the home. The objectives of this study are to explore children's experiences and views on SHS and how these interact with wider factors in communities of contrasting socio-economic profile. Such perspectives on SHS exposure within the home and car are virtually absent within existing literature and will be discussed in relation to the current policy context relating to smoking in the home and car.

**Methods:** This qualitative study explores the experiences of 38 children aged between 10-15 who participated in paired interviews and focus groups. Participants were drawn from advantaged and disadvantaged areas of Edinburgh.

**Results:** Children’s accounts of actively attempting to negotiate adult-imposed smoking restrictions within the home are near universal. Nevertheless, their contrasting experiences and involvement in decisions around SHS exposure in the home and car appear to be structured by wider social norms present in their communities. Specifically, the social stigma of smoking and smoking in the home and car featured more prominently in accounts of the participants from the advantaged community.

**Conclusions:** Children and young people play an important role in negotiating smoking in private places. Their experiences also highlight the significant differences in smoking norms within communities of contrasting socio-economic profiles. It is important to consider the findings in any future policies relating to smoking in private spaces.

3 East 3.5

*Buy me cigarettes, be my friend* - negotiating access to tobacco following the increase in the minimum age of sale in the UK in October 2007

**Presenter:**
Thomas Tjelta, University of Edinburgh, UK

**Co authors**
Amanda Amos and Deborah Ritchie

**Background:** The legal minimum age of sale for tobacco in the UK was raised from 16 to 18 years in October 2007 as part of a range of preventive measures to reduce the availability, affordability and attractiveness of tobacco products for young people. National survey data have shown subsequent reductions in the proportion of young people ‘usually’ accessing cigarettes from shops. However, these have coincided with an increase in the proportion of young people accessing cigarettes from social and ‘informal’ sources, and the range and nature of consequences associated with the age increase is yet to be evaluated.

**Objectives:** This paper reports the preliminary findings of a qualitative PhD study focussing on 13 and 15 year olds’ smoking and cigarette access behaviours in two areas of deprivation following the increase in the age of sale. Rituals and currencies associated with cigarette access from social and retail sources will be identified, inter-community variation will be explored and findings will be located in the context of national survey data to consider implications for policy, research and practice.

**Methods:** Twenty four individual, paired and triadic qualitative semi-structured interviews were undertaken with 13 and 15 year olds between March and September 2010 in two disadvantaged communities in Edinburgh. The interviews explored perceptions and experiences around smoking and cigarette access. Participants were recruited via youth clubs, detached youth-workers and ‘third sector’ organisations. The interviews were recorded, transcribed and analysed thematically. Findings: The key themes relating to young people's smoking and cigarette access behaviours will be presented. Preliminary findings suggest proxy sales may represent a preferred means of cigarette acquisition, with several participants describing the process in language analogous with the notions of lifestyle, identity and risk associated with the act of smoking. Tobacco may also be accessed via ‘fag-houses’ where illicit and/or counterfeit products are available for around half the standard retail cost.

**Conclusions:** Conclusions will be drawn in relation to the extent to which the increase in the age of sale is perceived by young people to have impacted on smoking and cigarette availability, the utility of legislative developments in curtailing underage cigarette access, and whether and in what ways disadvantaged young people are engaging with the broader smoking prevention agenda.
3 East 3.5

Smoker’s perceptions of cigarette brand image: does plain packaging make a difference?

Presenter: Janne Scheffels, Sirus, Norway

Background: The tobacco industry has long recognized the importance of packaging in complementing and extending the imagery created by advertising. When there is less opportunity to draw on traditional means of advertising, packaging must play a more important role in establishing and driving brand image. To limit the impact of brand image and package design as tobacco promotion, proposals to impose ‘plain packaging’, implying that packs would be stripped of colours, brand imagery and corporate logos, have emerged.

Research question: How can plain packaging effect smokers’ perceptions of cigarette brands, and of smoking in general?

Data: Focus groups interviews with daily, occasional and former smokers (N=60), aged 18-50. Existing packs and examples of potential plain packs used as stimulus material.

Results: Brand choice was described as a way to express identity. Compared with current cigarette packs with complete branding, cigarette packs that displayed progressively less branding design elements were perceived increasingly unfavourable.

Conclusion: Brand image appears to be an important element in the image of smoking, and the package important as a carrier of brand image. Findings indicate that plain packaging policies can be an effective strategy for tobacco control, but may also add to smokers’ experience of stigmatization.
Memories, including drug-associated memories, are not consolidated forever: their retrieval induces a labile phase during which they could be disrupted or reconsolidated. This may offer the opportunity to selectively inhibit cue reactivity and relapse to drug-seeking. Aim of our project is to investigate if it is possible to disrupt nicotine memories reconsolidation by associating extinction to retrieval, according to a recent work showing that extinction may disrupt fear-memory reconsolidation (Montfils et al, 2007).

We assessed the effects of extinction, applied after retrieval of nicotine-related cues (CS) in rats trained to nicotine self-administration (N-S/A), at renewal and spontaneous recovery tests. Sixty male Sprague-Dawley rats were trained to a schedule of IV 0.03 mg/kg/infusion nicotine or food (F-S/A) self-administration. Both nicotine and control food groups were divided in two sub-groups exposed to Retrieval (exposure to CS every 40s) or No-Retrieval (no CS) in a different context (context-B) from the nicotine or food associated one (context-A). One hour after the end of retrieval or no-retrieval session, N-S/A and F-S/A groups were exposed to Extinction session in context-B (responding for delivery of 1-s CS), session duration up to extinction of responding on nicotine-paired lever (ALP). After 24 hours, rats were placed in context-A for the renewal test session (responding for delivery of 1-s CS). Twelve days later, they were tested for spontaneous recovery of responding on a similar schedule.

Temporal analysis (at three 1-h time-bin) of responding during Renewal test session showed no statistically significant effect when comparing ALP in N-S/A Retrieval-Extinction vs. N-S/A No-Retrieval-Extinction. However, a statistically significant decrease of responding was observed during the second 1-h time bin in F-S/A Retrieval-Extinction vs. F-S/A No-Retrieval-Extinction group (unpaired Student’s t test, P<0.05). Spontaneous recovery test showed no statistically significant differences between both groups at any 1-h time-bin. Our preliminary findings show that under present protocol, extinction reduce reconsolidation of food memories, but not of nicotine. These data suggest that experimental conditions, also called ‘boundaries’ for assessing reconsolidation (Lee, 2009), needs to be further explored with different protocols in order to evaluate the effects of extinction (or other treatments) vs. reconsolidation of nicotine memories.
### 3 East 3.5

**The role of goal-directed and habit learning in human nicotine dependence**

**Presenter:**
Lee Hogarth, University of Nottingham, UK

**Objectives:** Contemporary addiction theory makes paradoxical claims about the learning abnormality underlying drug dependence. Whereas some theories argue that hypersensitivity to the rewarding effects of the drug gives rise to greater goal-directed intentions to obtain the drug, other theories argue that a predilection for habit learning augments automatic control over drug seeking by drug paired stimuli with a concomitant loss of intentional regulation.

**Methods:** To address this paradox, we undertook a series of outcome revaluation studies translated from animal behavioural neuroscience to probe the goal-directed vs. habitual status of tobacco seeking in student smokers dichotomised by level of nicotine dependence and impulsivity.

**Results:** The results of the studies show that whereas nicotine dependence is associated with hyper-valuation of tobacco as a goal of intentional tobacco seeking, the partially orthogonal trait impulsivity is associated with a predilection for habitual control over this behaviour.

**Conclusions:** It is argued that dissociable abnormalities in goal-directed and habit learning play differential roles in uptake and perseveration across the life course of smoking behaviour.

### 3 East 2.2

**Attention bias in smokers: Exposure to dynamic smoking cues in contemporary movies**

**Presenter:**
Kirsten Lochbuehler, Radboud University Nijmegen, The Netherlands

**Co authors**
Hubert Voogd, Ron H. J. Schole and Rutger C. M. E. Engels

**Objective:** Research has shown that smokers have an attentional bias for pictorial smoking cues. The objective of the present study was to examine whether smokers also have an attentional bias for dynamic smoking cues in contemporary movies and therefore fixate more quickly, more often and for longer periods of time on dynamic smoking cues than non-smokers.

**Method:** By drawing upon established methods for assessing attentional biases for pictorial cues, we aimed to develop a new method for assessing attentional biases for dynamic smoking cues. We examined smokers’ and non-smokers’ eye-movements while watching a movie clip by using eye-tracking technology. The sample consisted of 16 smoking and 17 non-smoking university students.

**Results:** Smokers initially directed their gaze more quickly towards smoking-related cues \(p = .01\), focusing on them more often \(p = .05\) and for a longer duration \(p = .01\) compared to non-smokers.

**Conclusions:** Our results confirm the results of traditional pictorial attentional bias research. Using a new methodology, eye-tracking technology combined with exposure to dynamic cues of different lengths and in different contexts, proved to be an effective method in investigating the different aspects of attention and their broader public health potential will be discussed.
**3 East 2.2**

**Attention bias towards smoking related cues in both smokers and controls: How smoking valence and emotional content impact upon Stroop results**

**Presenter:**
Katrina O’Sullivan, Trinity College Dublin, Ireland

**Co authors**
Louise M. Hopper and Michael J. Gormley

**Background:** The modified-Stroop task is yet to successfully differentiate smokers from non-smoking controls. When directly compared, non-smokers demonstrate a bias that is similar in magnitude to current-smokers.

**Aims:** The current study aimed to identify the factors that facilitate the smoking Stroop bias in a smoking and a non-smoking control group. A smoking-valenced Stroop task was employed. This task used smoking-positive, smoking-negative and neutral images. It was predicted that smokers and non-smokers attentional bias would be related to different properties of the smoking images.

**Method:** In phase 1 of the study a set of valenced nicotine images were created; 80 respondents (23 smokers, 19 ex-smokers and 38 non-smokers) rated 72 smoking images for smoking affective valence, non-smoking related emotional content and smoking-saliency. Six smoking-positive images and 6 smoking-negative images were selected from these images for phase 2, the Stroop study. Twenty-eight non-smokers and 27 smokers participated in this part of the study. For reliability purposes the smoking images were re-rated. The valence-smoking Stroop task was completed by all participants in phase 2.

**Results:** Smokers consistently rated smoking-positive images more positive than non-smokers. There were no differences in ratings for negative-smoking images. Overall smokers and non-smokers demonstrated an attentional bias for smoking stimuli compared to neutral stimuli. A Stroop difference score was calculated by subtracting the responses to smoking-positive and smoking-negative images from responses to neutral images. For smokers the difference between smoking-positive and smoking-negative RT score was negative (-21ms) and driven by a longer RT for smoking-negative images. This difference was significantly different from non-smokers, their RT was positive (+10ms) and driven by a longer RT to smoking-positive images. Non-smokers emotional rating of the smoking images was correlated with Stroop performance ($r = .42$). Smokers ratings of smoking images was not related to stroop performance.

**Discussion:** Overall, results suggest that smokers’ and non-smokers’ attention is biased towards smoking-related images and that this bias is driven by the smoking-valence of the image. Smokers increased response time for smoking-negative images may be indicative of a pre-existing positivity bias. Incongruency between this bias and the smoking-negative information may interfere with smokers’ performance on the modified Stroop task. Non-smokers' results also support the incongruency argument. With a pre-existing negativity bias interfering with responses to smoking-positive images. Non-smokers results also suggest an emotionality effect. Future research should consider measuring the properties of addiction stimuli and its relationship with stroop performance.

**3 East 2.2**

**A 15 min brisk walk and run reduces visual attentional bias to smoking and food images among abstinent smokers**

**Presenter:**
Adrian Taylor, Exeter University, UK

**Co authors**
Tom Morris and Laurie Thompson

**Objectives:** Smokers gain c.7kg within a year of quitting, due to slower metabolism and snacking. Weight gain also leads to smoking cessation relapse. Physical activity (PA) reduces cravings for snacks and cigarettes but less is known about responses to cues that trigger relapse. Janse van Rensburg, Taylor & Hodgson (2009) reported that a single bout of moderate intensity exercise reduced attentional bias towards still smoking images. The aim of the study was to experimentally examine if a brief bout of moderate and vigorous PA, compared with a passive control condition, reduces attentional bias to video images of cigarettes and snack food.

**Methods:** Ten regular smokers (and self-declared snackers) abstained for 15hrs, confirmed by expired CO. In a randomised counterbalanced cross-over design, on separate days, subjects undertook 15 mins of brisk walking, running or sitting. Pre- and post-treatment, attentional bias was assessed using a Eyeline?

**Eye-tracking System:** After calibration, attentional bias (% first fixation and % dwell time on salient images), was assessed during passive viewing of randomly presented 8 paired food v. neutral and 8 paired smoking v. neutral video clips, filling a 14 inch monitor.

**Results:** ANOVAs revealed significant time x condition interactions for % fixations on food images ($P < .01$), and smoking images ($P < .05$). Running reduced attentional bias to both food and smoking cues. Walking reduced attentional bias to smoking cues. Conversely, a period of inactivity led to increases in visual bias towards smoking and food images.

**Conclusions:** Abstinent smokers may find short bouts of exercise useful to keep attention from cues that may otherwise heighten desire and wanting for cigarettes and snack food. Unlike a previous study (Taylor & Oliver, 2009) with non-smokers, a 15 min walk did not reduce visual bias for food cues.
Meta-analysis of the effects of nicotine and smoking on human performance

Presenter: Stephen Heishman, NIH/NIDA, USA

Co authors Bethea A. Kleykamp and Edward G. Singleton

Objective: Empirical studies indicate that nicotine enhances some aspects of attention and cognition, suggesting a role in the maintenance of tobacco dependence. The purpose of this meta-analytic review was to update the literature since our previous review (Heishman et al., 1994) and to determine which aspects of human performance were most sensitive to the effects of nicotine and smoking.

Method: Literature searches were conducted using MEDLINE®, EMBASE™, and PsycINFO® and were limited to peer-reviewed journal articles written in English involving humans published from 1994 through 2008. Of 256 articles identified, 50 met the following criteria for inclusion in the meta-analysis: (a) administration of nicotine in laboratory sessions, (b) measurement of performance after nicotine administration, (c) subjects (aged 18-59) were nondeprived or minimally-deprived smokers (< 2 hr), or nonsmokers, (d) use of a placebo control, (e) random assignment, and (f) reporting of data that allowed for effect size calculations. Forty-one studies (48 experiments) contributed effect size data to meta-analyses of the following nine performance domains: fine motor, alerting attention-accuracy and response time (RT), orienting attention-accuracy, long-term episodic memory-accuracy, working memory-accuracy, and working memory-RT. Effect sizes ranged from 0.16 to 0.44. Significant effect sizes were not observed for orienting attention-RT, short-term episodic memory-accuracy, and working memory-RT. Analyses were conducted using Comprehensive Meta-Analysis 2.0 software.

Results: We found significant positive effects of nicotine or smoking on six domains: fine motor, alerting attention-accuracy and response time (RT), orienting attention-accuracy, short-term episodic memory-accuracy, and working memory-RT. Effect sizes ranged from 0.16 to 0.44. Significant effect sizes were not observed for orienting attention-accuracy, long-term episodic memory-accuracy, and working memory-accuracy.

Conclusion: The significant effects of nicotine on motor abilities, attention, and memory likely represent true performance enhancement because they are not confounded by withdrawal relief. The beneficial cognitive effects of nicotine have implications for initiation of smoking and maintenance of tobacco dependence. Future research is needed on performance measures that yielded an insufficient number of effect sizes to be included in the present analysis, such as executive attention, semantic memory, and prospective memory.

Effects of nicotinized and denicotinized cigarette smoking on response to 7.5% carbon dioxide anxiety challenge in regular cigarette smokers

Presenter: Angela Attwood, University of Bristol, UK

Co authors Jayne E. Bailey, David J. Nutt, Alia F. Ataya and Marcus R. Munafó

Cigarette smoking is associated with elevated risk of affective disorder, and there is a growing consensus that this relationship is bidirectional. Smokers frequently report that smoking is anxiolytic, and that exposure to stress increases the likelihood of relapse. We have explored this relationship using a carbon dioxide (CO2) challenge, which acts as a robust anxiogenic stimulus, and we have previously reported attenuated increases in anxiety responses following this challenge in abstinent compared to non-abstinent smokers.

Here we extend this work to investigate the effects of smoking a nicotinized or denicotinized cigarette on response to CO2 challenge among acutely abstinent regular smokers. Cigarette smokers (N = 24) who reported smoking within 60 minutes of waking abstained from smoking for 12 hours, and were randomized to smoke either a nicotinized or denicotinized cigarette on the test day. They then underwent a 20-minute inhalation of 7.5% CO2-enriched air. Measures of anxiety, affect, heart rate and blood pressure were taken before and after the inhalation. There was a significant gas × cigarette interaction for positive affect (F [1, 20] = 3.70, p = 0.069), reflecting a lesser reduction in positive affect, and a lesser increase in anxiety, among those who smoked a nicotinized cigarette compared to those who smoked a denicotinized cigarette. These data extend our previous findings, and suggest that the acute administration of nicotine via smoking may reduce response to physiological anxiety challenges.

These findings are apparently at odds with our previous data suggesting greater anxiety reactivity in non-abstinent compared with abstinent smokers. One possibility is that nicotine administration via smoking after a period of acute abstinence may reduce responding to such challenges in the short-term, but that over longer periods the presence of nicotine potentiates anxiety reactivity. Another possibility is that relative reductions in self-reported anxiety may reflect associative learning processes governed by the amelioration of withdrawal symptoms following cigarette smoking. The relationship between abstinence, smoking and anxiety is complex and requires further research.
**Public Health / Epidemiology**

### 3 East 3.8

**Approaches to tobacco control and population effects: how good is the evidence that standard approaches are equitable**

**Presenter:**
Christine Paul, University of Newcastle, Australia

**Co authors**
Billie Bonevski, Jamie Bryant and Rob Sanson-Fisher

**Objectives:** Inequalities in smoking rates are evident in a number of countries, and the disadvantaged usually bear a disproportionate burden of smoking-related mortality and morbidity. Questions have been raised regarding whether major tobacco control efforts such as media campaigns, taxes on tobacco and restrictions on smoking increases are sufficiently effective to be considered equitable. Widely-available cessation support such as that provided by quitlines or pharmacotherapies is intended to provide population-wide cessation, but may exacerbate inequity. The objective of the presentation is to evaluate the soundness of the evidence base for the view that current approaches are equitable.

**Method:** This quality of the available evidence regarding a range of tobacco control measures and their relative impacts on advantaged and disadvantaged groups are examined via literature review and synthesis.

**Results & Conclusions:** Large gaps are evident in both the types of disadvantage studied. The quality of the available evidence is also poor in relation to particular tobacco control approaches. A research agenda for addressing key questions surrounding the reduction of tobacco-related health inequality is proposed.
Social inequalities in quitting: what factors mediate the relationship between socio-economic position and smoking cessation?

Presenter: Rosemary Hiscock, University of Bath, UK
Co authors Ken Judge and Linda Bauld

Objective: Although it is well established that smokers from lower socio-economic groups are less likely to be successful in a quit attempt than more affluent smokers, even when they access smoking cessation services, less attention has been paid to why such groups find quitting challenging. Our objective was to assess the impact of various smoking-related mechanisms – social support to quit, addiction, motivation, treatment compliance and programme characteristics – on the relationship between cessation outcomes and socio-economic position (SEP).

Methods: This was an observational study using routine monitoring data, collected by smoking cessation services from three UK contrasting sites, linked with survey data for 3,231 clients who accessed services between 2001 to 2003 (Nottingham and North Cumbria) and in 2007 (Glasgow). The outcome measure was CO validated smoking status at 52 week follow up. SEP was measured by a count of indicators of affluence (housing tenure, entitlement (or not) to free prescriptions, employment status, neighbourhood Index of Multiple Deprivation quintile and household type). Quit rates were calculated by study site and programme format (one to one or group). Logistic regression was used to determine predictors of quitting and predictors of inequalities in quitting through the extent to which the relationship between SEP and quitting was attenuated by demographic and cessation related mechanisms.

Results: A clear gradient can be observed in quit rates by SEP with the most advantaged smokers more than three times (14.1%) more likely to succeed in quitting (p<.001). After adjustment for demographic factors, those service recipients in the most advantaged SEP group were significantly more likely to have remained abstinent at 52 week follow up than those who were most disadvantaged (OR 2.5, CI 1.5 – 4.2). When the smoking cessation related mechanisms were added to a fully-specified logistic regression model across the three treatment locations the odds ratio was attenuated (OR 2.1, CI 1.2 – 3.6).

Conclusion: The factors most likely to attenuate the relation between SEP and quitting varied by study site and type of intervention but most commonly were age, addiction, and treatment compliance. However, particular caution is required in interpreting the compliance findings due to ambiguity over the direction of causality. Motivation, support and programme features, although they were predictors of quitting, did not explain the relationship between SEP and quitting.

Adolescent psychological and social predictors of young adult smoking acquisition and cessation: a 10 year longitudinal study

Presenter: Roy Otten, Radboud University Nijmegen, The Netherlands
Co authors Jonathan B. Bricker, Jingmin Liu and Arthur V. Peterson

Abstract Aims: A ten-year prospective study of the extent to which theory-based adolescent psychological and social factors directly predict and moderate the prediction of young adult smoking acquisition and cessation.

Design: Prospective community-based sample. Participants: A total of 2,970 adolescents participating in the large Washington State Hutchinson Smoking Prevention Project (HSPP) longitudinal cohort.

Measurements: Psychological factors (i.e., parent-noncompliance, friend-compliance, rebelliousness, thrill seeking, and achievement motivation) and social environmental factors (i.e., parent’s and friend’s smoking) were measured when adolescents were 17-18 years old. Smoking acquisition and cessation were assessed at both at ages 18 and 28.

Findings: Psychological and social factors predicted 3% to 7% probability (p <.05) of smoking acquisition, and a nonsignificant to 24% probability (p <.05) of not quitting smoking during young adulthood. Both friend-compliance and rebelliousness were more powerful predictors of young adults not quitting smoking than of smoking acquisition.

Conclusions: First evidence that parent noncompliance, friend compliance, and a lack of achievement motivation predict smoking acquisition and (with the exception of parent non-compliance) not quitting smoking during young adulthood. Targeting these psychological processes in interventions would be valuable.
Second hand smoke exposure in non-smoking adults in England and changes over an 11 year period

**Presenter:** Michelle Sims, University of Bath, UK

**Co authors**
Anna Gilmore

**Objectives:** To explore trends in and determinants of adult non-smokers’ exposure to secondhand smoke (SHS), whether exposure changed after the introduction of smokefree legislation in England on 1st July 2007 and whether changes vary by sociodemographic status.

**Methods:** We used serum cotinine data from the Health Survey for England, collected in six of 11 annual, nationally representative surveys undertaken between 1998 and 2008. We conducted multivariate logistic regression analyses, accounting for stratification and clustering in the survey design, to explore trends in and impacts of smokefree legislation on SHS exposure as measured by the proportion of the population unexposed to SHS (cotinine level below the minimum detectable limit of 0.1ng/ml).

**Results:** The proportion of nonsmoking adults not exposed to SHS has increased markedly from just under 20% in 1998 to over 50% in 2008. After adjusting for the pre-legislative trends and predictors of exposure, there was a significant increase in the proportion of the population unexposed after legislation was introduced. The magnitude of this change appears to vary among different subgroups of adults.

**Conclusion:** Over a recent 11 year period the proportion of the adult population unexposed to SHS has increased. Making all enclosed public and work places smokefree on 1st July 2007 made a significant contribution above and beyond this underlying trend demonstrating the positive effect of the legislation. Some population subgroups remain significantly exposed and further efforts are needed to protect them.

No change in smokefree homes policies despite intensive media campaigns over two years

**Presenter:** Natalie Walker, University of Auckland, New Zealand

**Co authors**
Colin Howe, Michele Grigg, Chris Bullen, Marewa Glover, Robyn Whittaker and Anthony Rodgers

**Objectives:** To determine if there was a change in smokefree home policies between two samples of New Zealand smokers, who called the national quitline and took part in cessation trials, one in 2006-7 and the other in 2007-2008.

**Methods:** Between March 2006 and May 2007, 1,100 smokers were recruited in a trial to investigate whether pre-quit NRT had any effect on smoking cessation (the PQNIQ trial). Between July 2007 and January 2009, 1410 smokers were recruited into a trial to investigate whether improved access and greater choice of NRT had any effect on smoking cessation (the SONIQ Trial). Both trials identified participants through the telephone-based national Quitline cessation service, using the same inclusion and exclusion criteria, and with the same questions asked at baseline. We examined differences in the baseline data for the two trials in respect to smokefree home policies.

**Results:** The sociodemographic profile of participants in both trials was very similar. Almost 90% of participants in both samples lived in a household with other people that were daily smokers. Over the three year period the two trials were run, there was no significant increase in the proportion of smokers reporting that they had a smokefree home (63% for PQNIQ vs 65% for SONIQ, p>0.05. In both trials, a smokefree home policy was less likely to be in place if the trial participant was Maori (indigenous New Zealander), male, had left school before Year 12 or with no school qualification, or had a higher level of nicotine dependence (Fagerstrom score > 5). The proportion of smokers living in households with one or more children under the age of five also did not change between the studies (21% for PQNIQ vs 20% for SONIQ, p>0.05).

**Conclusions:** Extensive media advertising and other forms of awareness raising about the benefits of smokefree homes and the adverse impacts of second-hand smoke exposure on children appears to have had no impact on changing such behaviour among New Zealand smokers calling Quitline over a two year period.
Associations between weight change over eight years and baseline body mass index in a cohort of continuing and quitting smokers

Presenter:
Debra Lycett, University of Birmingham, UK

Co authors
Paul Aveyard, Marcus Munafò, Elaine Johnstone and Michael Murphy

Objective: To examine the association between weight change over 8 years and baseline body mass index (BMI) in a cohort of continuing and quitting smokers.

Methods: This was an 8 year prospective cohort study of participants who were enrolled in a clinical trial of nicotine patch or placebo in Oxfordshire general practices and were reviewed 8 years later. At entry all participants were smoking over 15 cigarettes a day; smoking status was verified by CO measurement and salivary cotinine throughout the trial. Weight and BMI was recorded at trial entry and after 8 years. 85 participants were biochemically proven abstinent at 3, 6, 12 months and 8 years (abstainers), 613 smoked throughout the 8 years (smokers), 26 people quit for a whole year but were smoking again by 8 years (relapsed), 116 people smoked for the first year but were abstinent at 8 years (late abstainers). Means, SDs, and 95% confidence intervals were calculated for change in weight by smoking status. Linear regression analysis, using baseline BMI as an effect modifier, were used to investigate whether the effect of smoking status on weight change was dependent on baseline BMI in smokers and abstainers. Polynomial regression modelling proceeded with separate regression equations for smokers and abstainers. Confounding variables were adjusted for.

Results: Abstainers gained 8.79kg, (SD 6.36), [95% CI 7.42, 10.17]. Smokers gained 2.24kg (6.65) [1.7, 2.77]. Relapsed smokers gained 3.28kg (7.16) [0.328, 6.24]. Late abstainers gained 8.33kg (8.04) [CI 6.85, 9.81]. The association between baseline BMI and weight change was modified by smoking status. In smokers there was a negative linear association of BMI, while in abstainers, a J-shaped curve fitted best. These models estimated mean weight change over 8 years in abstainers of +9.8kg, +7.8kg, +10.2kg, +19.4kg and in smokers of +3.9kg, +2.6kg, 1.0kg and -0.8kg where BMI was 18.3, 23.4, 29.4 and 36.4 respectively. These models were robust to sensitivity analysis.

Conclusion: This is the first study to look for and find a J-shaped association between starting BMI and weight change in quitting smokers. If confirmed, knowing that obesity predicts greater weight gain on smoking cessation will help guide investigations into causes and other predictors of weight gain. Together these are the potential targets for future weight prevention interventions in quitting smokers.

Treatment of tobacco dependence in the Czech republic

Presenter:
Eva Kralikova, University Hospital Prague, Czech Republic

Co authors
Alexandra Kmetova, Lenka Stepankova, Kamila Zvolska, Jan Zajak and Marek Maly

Objectives: Tobacco dependence is the most frequent diagnosis in the CR with about 2,250,000 patients, about 250,000 of them in the age under 18.

Methods: we describe the current system of treatment of tobacco dependence in the CR Results: Czech guidelines endorsed by 19 medical associations were published 2005, currently revised. Short intervention by each health professional - mostly done the first 2 As (Ask, Advice), but the remaining As mostly not. Guidelines for nurses published in 2010. Specialized treatment to those who need it: Since 1985 some smoking cessation is offered, since 2005 systematic creation of centres for treatment of tobacco dependence started. Currently 31 centres working across the country. At least 1 doctor (with special training) and one nurse (with special training), based at hospitals, use of evidence-based treatment: psychobehavioural intervention, pharmacotherapy – nicotine replacement therapy, bupropion, varenicline and/or combination.

Giving feedback: special software which serves as medical documentation and/or for statistical purposes, CO monitoring, follow-up one year. Centres are mostly based at pneumological, internal or cardiological clinics. We collaborate with the Mayo Clinic Nicotine Dependence Centre which serves as a model for us. Two codes are paid by health insurance companies: 60 minutes intervention, and 30 minutes controls. Medication is not reimbursed to patients. Basic outcome from our centre: 2,666 patients treated, from them 2,044 after one year follow up (1,029 male, 1,015 female), from them 531 abstainers (531/2044 – 26 %), 27.8 % abstinent male, 24.1 % abstinent female. Further results will be discussed.

Conclusions: treatment of tobacco dependence is available, but in limited availability, poorly covered. Growing interest declared among both doctors and nurses.
Oral presentations

3 East 3.5

Moderating effects of dissonance reducing justifications on the relationship between self-efficacy and motivation to quit smoking: findings from the ITC four country survey

Presenter:
Omid Fotuhi, University of Waterloo, Canada

Co authors
Geoffrey T. Fong, Mark P. Zanna, K. Michael Cummings, Ron Borland and Hua-Hie Yong

Objectives: According to Festinger’s theory of Cognitive Dissonance, smokers who are aware of the harmful effects of smoking, yet continue to smoke will experience an unpleasant emotional state, known as cognitive dissonance, which they are motivated to reduce. These smokers are likely to change their beliefs about smoking in order to relieve their dissonance, such as endorsing more justifications for smoking. Recent research has demonstrated that smokers who engage in dissonance reducing strategies have a reduced motivation to quit smoking (Borland et al., 2009). Individual differences in Self-efficacy (SE) have also been shown to be powerful predictors of cessation outcome. People who feel more confident in their ability to quit smoking or stay quit after treatment are ultimately more successful. However, no studies have looked at the moderating role of dissonance reducing justifications on the relation between self-efficacy and quit intentions. The aim of this study was to assess whether the relation between perceived self-efficacy and quitting motivation is moderated by dissonance reducing justifications.

Methods: To test this hypothesis, a measure for dissonance reduction was computed using measures of common justifications used for smoking, including perceived benefits of smoking, self-exempting beliefs, and risk minimizing beliefs. We analyzed data from wave 7 of International Tobacco Control (ITC) Four Country Survey – a cohort study of over 2000 smokers in each of the four countries: Canada, United States, United Kingdom, and Australia. We conducted hierarchical regression analyses to test the independent effects of justifications and self-efficacy as well as their interaction on quit intentions.

Results: The results indicate that individuals who justify less about smoking ($\beta=-.52, p<.001$) and those with a higher self-efficacy ($\beta=.118, p<.001$) are more likely to intend to quit. The interaction term was also significant ($\beta=.065, p<.001$) and explained a significant incremental portion of the variance ($R^2=.14, p<.001$), which suggests that the effect between self-efficacy and quit intentions was moderated by justifying smoking ($\beta=.23$ for low justifications, and $\beta=.53$ for high justifications). In other words, those who believe they can quit are more likely to intend to do so but only if they haven’t justified their smoking. That is, justifications seem to “trump” or inhibit the role of self-efficacy on the motivation to quit. Conclusions: These findings highlight the psychological barriers that diminish motivation to quit and suggest that successful interventions to motivate quitting must deal with the defensive use of justifications. Further implications and country differences are discussed.

Thursday 9th September

Oral mixed

University Hall

Did the introduction of varenicline in England substitute for, or add to, the use of other smoking cessation medications?

Presenter:
Daniel Kotz, Maastricht University Medical Centre, The Netherlands

Co authors
Jenny Fidler and Robert West

Objectives: Varenicline has recently been added to the market as a new drug for smoking cessation. The aim of the current study was to assess whether varenicline substituted for, or added to, the use of other smoking cessation medications.

Methods: We used data from 6646 smokers taking part in the “Smoking Toolkit Study”; a series of monthly household surveys of representative samples of the English population. We analysed the percentage of smokers attempting to quit and using nicotine replacement therapy (NRT) over-the-counter, NRT on prescription, bupropion, or varenicline from November 2006 to December 2009. This survey thus covered three periods: (1) after the launch of varenicline but before the publication of the National Institute of Health and Clinical Excellence (NICE) guidance on varenicline in July 2007; (2) the first year following the NICE guidance; and (3) more than one year after the NICE guidance.

Results: Varenicline usage was negligible in the first period, increased steadily during the second period and levelled off at 6.4% of those making a quit attempt in the third period ($p<.001$ for the trend). The percentage of quitters using any smoking cessation medication increased by approximately 4% from 44.5% in the first period to 48.6% in the third ($p<.001$). The use of NRT over-the-counter decreased by about 3% (35.4%-32.4%), whereas the use of NRT on prescription increased by about 2% (8.1%-10.4%), and use of bupropion remained unchanged. There was a progressive decrease in the rate of attempts to stop smoking over the period of the study.

Conclusions: The use of varenicline only began after being recommended by NICE. We did not find evidence that introduction of varenicline led to a reduction in use of other prescription medication for smoking cessation. The fall in use of NRT over-the-counter seems unlikely to be related to introduction of varenicline.
Is the use of Nicotine Replacement Therapy for cutting down and for periods of temporary abstinence associated with motivation to quit and self-efficacy?

Presenter: Emma Beard, University College London, UK

Co author Robert West

Background: There is growing interest in using NRT for ‘harm reduction’. This includes use as an aid to cutting down and in situations when smoking is not permitted. A key question is whether this has any effect on cessation rates. Some argue that it may promote quitting through enhanced self-efficacy and motivation to quit, while others that it might deter quitting by leading smokers to be less concerned about the effects of smoking on their health. Evidence from RCTs support the prior argument, that cessation rates are enhanced by the use of NRT for harm reduction. However, it is unclear how far these findings generalise to smokers in the general population.

Methods: Data was used from the Smoking Toolkit Study, a cross-sectional household survey of English adults aged 16+. 12,221 participants were recruited and asked whether they were cutting down, if so whether they used NRT, and whether they used NRT for periods of enforced abstinence. A number of demographic variables and nicotine dependence, as well as desire to quit, intention to quit and self-efficacy, were assessed. Findings: 53% of smokers reported they were cutting down, 14% that they were cutting down with NRT and 14% were using NRT for temporary abstinence. Use of NRT to cut down and for temporary abstinence was strongly positively associated with desire and intention to quit. No significant association was found with self-efficacy.

Conclusion: Cross-sectional survey data cannot establish a causal link but these data establish a prima facie case that the use of NRT for cutting down and temporary abstinence may promote rather than deter quitting, through increasing an individuals’ motivation and intention to quit but not through boosting self-efficacy.

Case studies of tobacco dependence treatment in Brazil, England, India, South Africa and Uruguay

Presenter: Rachael Murray, University of Nottingham, UK

Co authors Ann McNeill and Martin Raw

Objectives: The objective of this study was to describe the tobacco dependence treatment systems in five countries at different stages of development, and from different income levels and regions of the world. It is hoped that these data may prove useful to countries seeking to implement Article 14 in the future.

Methods: Data were drawn from an earlier survey of treatment services, from Party reports to the Secretariat of the Framework Convention on Tobacco Control, and from correspondents in the five countries (Brazil, England, India, South Africa and Uruguay). These data were entered onto a standard template, discussed with the correspondents to ensure they were accurate and assist with interpretation. These templates were then used as a basis to form descriptions of the countries’ treatment systems.

Results: Two of the middle income countries (Brazil and India) have based their treatment on specialist support and both consequently have very low population coverage for treatment. Two countries (England and Uruguay) have integrated broad reach approaches like brief advice with intensive specialist support and these countries are now focusing on monitoring performance and quality. There is limited treatment established in South Africa, and treatment does not currently appear to be a priority at a national level. Cost is a significant barrier to improving treatment coverage.

Conclusions: Perhaps unsurprisingly, the greatest challenges appear to be faced by large, lower income countries that have prioritised more intensive but low reach approaches to treatment, rather than developing and utilising basic infrastructure, including brief advice in primary care, quitlines and access to low cost medications.
"We are, then, in the business of selling nicotine, an addictive drug": What the tobacco industry doesn’t say about Green Tobacco Sickness

Presenter: Nathaniel Wander, University of Edinburgh, UK

Co authors Vijaylakshmi Patel and Jeff Collin

Background: In responding to corporate responsibility advocates in 2008, Altria and Philip Morris International (PMI) claimed ignorance of the health impacts of Green Tobacco Sickness (GTS)—transdermal nicotine poisoning common among those who work with tobacco leaves in fields and drying barns. A PMI spokesman said: "[T]his was an issue we missed…. We didn’t realize how serious it is." Avowing eagerness to remedy the situation, the companies subsequently plead inability to enforce their good will on ‘independent’ tobacco growers. Since, they have pursued only weak and ineffective practices while widely promoting their benevolent intentions.

Objectives: To discover what the tobacco industry—particularly Altria/PMI—knew about GTS, when it was learned, and what was done with the knowledge.

Methods: The Legacy Tobacco Documents Library, http://legacy.library.ucsf.edu, plus tobacco industry websites were searched for evidence of tobacco companies’ knowledge of/engagement with GTS. The results of these searches were interpreted by triangulation with medical, tobacco agriculture, and economic and social development literatures.

Results: Contrary to PMI’s spokesman, analysis of internal corporate documents demonstrates that the tobacco industry has been aware of the dangers of transdermal nicotine poisoning for 75 years, and has monitored the developing literature on nicotine poisoning among tobacco farm workers since its inception in the 1970s. The industry has sequestered this knowledge and refrained from contesting a medical literature which, however sympathetic to tobacco workers, essentializes GTS, variously locating the problem in agricultural working conditions, growers’ greed, or workers’ powerlessness and/or ignorance, rather than in the commercial interests of transnational tobacco companies (TTCs).

Conclusions: Beyond further detailing the scope of tobacco industry duplicity, such findings have important policy implications. Firstly, they demonstrate that there is no clear congruence of interest between tobacco farmers and TTCs, a significant finding given industry claims of contributing to economic and social development via agriculture. Secondly, this paper conceptualizes Green Tobacco Sickness as a business-as-usual outcome of tobacco industry practices to optimize nicotine production in tobacco agriculture. We assert that, while no one sets out with the deliberate aim of poisoning farm workers any more than of poisoning cigarette-smokers, such poisoning is a predictable outcome of being “in the business of selling nicotine, an addictive drug”.

“IT sounds like the replacement I need to help me stop smoking”: Use and acceptability of “e-cigarettes” among UK smokers

Presenter: Martin Dockrell, Action on Smoking and Health, UK

Co authors Suzanne Devai Indu, Hari Goli Lashkari and Ann McNeill

Background: A safe and satisfying alternative to smoking could contribute importantly to smoking cessation and tobacco harm reduction. In recent years a variety of inhaled nicotine devices, often known as e-cigarettes have become commercially available. So far, attention has focussed on the safety to users and those around them. However, if they are to provide a real alternative to smoked tobacco they must also be acceptable to smokers.

Aim: This study systematically investigates smokers’ knowledge of and attitudes to these products.

Methods: Awareness and use of e-cigarettes among current smokers was measured as part of an annual GB wide survey of 12,597 adults. Qualitative research was then conducted on-line with a sample of 26 smokers who had tried e-cigarettes and face to face with a sample of 11 smokers who had not. This informed the development of an on-line survey of 1,380 smokers including 486 smokers who had used e-cigarettes.

Results: In the national survey 9% of smokers reported having tried e-cigarettes whilst 3% were still using them at the time of the survey. 52% reported having heard of e-cigarettes but not tried them. In the survey of smokers, affordability was rated as an important factor for use by 55% smokers and safety by 45%. When asked in the focus groups to design an ideal replacement to cigarettes, smokers who had not tried e-cigarettes proposed devices that look, feel and taste like cigarettes. The smokers survey showed, among smokers who had not tried e-cigarettes, women and heavy smokers were particularly interested in finding out more, those who had tried e-cigarettes put greater importance on strength of nicotine dose and an authentic smoking experience and only 23% of those who had tried them rated e-cigarettes as “satisfying” or “very satisfying”. While using e-cigarettes ranked highly as a reason initially to try e-cigarettes, it ranked less high as a reason they would recommend them to others. These data demonstrate a widespread interest among smokers, particularly heavy smokers, for alternatives to smoking and highlight a variety of factors limiting the acceptability of products currently available.
Patterns of use of electronic nicotine delivery devices (ENDS) among Polish e-smokers

Presenter: Maciej Łukasz Goniewicz, Medical University of Silesia, Poland

Co authors: Wioleta Zielinska-Danch, Bartosz Koszowski, Jan Czogala and Andrzej Sobczak

Background: The electronic nicotine delivery systems (ENDS) are new cigarette-like plastic devices that generate vapor by heating nicotine solution in a mixture of propylene glycol and water. ENDS are commonly called electronic cigarettes or e-cigarettes and are advertised as a safer alternative for conventional cigarettes. These products are gaining popularity around the world.

Objective: To investigate patterns of use of ENDS among Polish e-smokers.

Methods: We surveyed 257 ENDS users in Poland using a web-based questionnaire. The main outcome measures were current patterns of ENDS use, previous history of smoking or current smoking behaviors.

Results: The surveyed was completed by 170 (60%) e-smokers. 83% were regular smokers when they started using ENDS and 66% declared not smoking regular cigarettes at the time survey was taken. 47% declared using ENDS as smoking cessation tools and 41% as a safer alternative to regular cigarettes. 46% of surveyed e-smokers used ENDS for less than one month and 40% for less than half year. Almost all e-smokers (98%) used their ENDS everyday. Among them 40% used ENDS more than 25 times a day, 27% used ENDS 16-25 times a day, and 29% used ENDS 6-15 times a day. 46% of surveyed e-smokers used ENDS with medium level of nicotine (8-16 mg per one cartridge), 25% with higher and 8% with lower levels. However, 23% of e-smokers refilled cartridges with nicotine solutions by themselves and only 3% used cartridges with zero nicotine.

Conclusions: We showed for the first time data on patterns of use of ENDS. Our data suggest that ENDS might potentially reduce the exposure to tobacco smoke among their users. More research is needed to assess if ENDS might be effective smoking cessation tools.

Using computer-tailored feedback to reach smokers who do not use the NHS clinics: the ESCAPE trial

Presenter: Hazel Gilbert, University College London, UK

Co authors: Irwin Nazareth and Richard Morris

Objectives: Smoking continues to be a leading preventable cause of disease and death. It is also the key modifiable behaviour for maximum health gain, and yet less than 5% of smokers attend NHS clinics for help to quit, and a high proportion of smokers have no plans to quit in the near future. There is an urgent need both to offer a range of interventions that appeal to different needs and preferences, and to reach a greater proportion of the smoking population to encourage attempts to quit. Brief, computer-tailored interventions have the potential to engage with smokers who are not able or willing to attend clinics for intensive help. The ESCAPE trial aimed to assess the effect of computer-tailored feedback reports, sent to smokers with varying levels of motivation, on quit rates and quitting activity.

Method: A random sample of smokers, identified from GP records, were sent an assessment (Smoking Behaviour Questionnaire). Smokers returning the questionnaire were randomised to receive either standard generic materials, or individually-tailored feedback reports, adapted to an appropriate level of readability for smokers of all educational levels, and incorporating cognitive strategies and motivational interviewing techniques appropriate for smokers not ready to quit. Smoking status was assessed at a 6-month follow-up.

Results: We recruited 6,911 participants between August 2007 and December 2008. The sample included a high proportion of participants with low qualifications (61.9%), included occasional, non-daily and less dependent smokers, and a large proportion of smokers who were not planning to quit in the near future (86%). Three-month and one-month prolonged abstinence rates at the 6-month follow-up were higher in the Intervention Group than in the Control Group, but not significantly so (3.3% v 2.8% and 5.8% v 4.9%) respectively. Quit attempts were significantly higher in the Intervention Group (31.3% v. 28.8% p<0.02).

Conclusions: As only 5% of smokers present themselves for therapy, it is important to reach those who do not, and also to target smokers from all backgrounds and of all dependencies to encourage them to change their habits. The computer tailored feedback prompted significantly more quit attempts than the standard generic material. Proactive recruitment of smokers from general practice is a successful strategy, engaging more of the smoking population in completing an assessment, and encouraging reflection in smokers who have no plans to quit in the near future.
Effectiveness of a smoking cessation intervention using web-based enrollment and follow-up: Outcomes at end-of-treatment, 6- and 12-months

Presenter:
Laurie Zawertailo, Centre for Addiction and Mental Health, Canada

Co authors
Sarwar Hussain, Bianca Filoteo and Peter Selby (presenting)

Objectives: In order to increase the reach but reduce the cost of providing smoking cessation interventions at a population-level we explored the utility of the internet to recruit and enroll smokers interested in quitting using nicotine replacement therapy (NRT). This is one of several models of NRT distribution that was implemented and evaluated as part of a large scale study, the Smoking Treatment for Ontario Patients (STOP) Study.

Methods: Interested persons logged on to the study website www.stopstudy.ca and, if they met the basic inclusion criteria (at least 18 years old, smoking at least 10 cigarettes/day, and not pregnant or lactating) consented to participate in the study. They completed the baseline questionnaire on-line and submitted their mailing address. A package containing 5-weeks of NRT patches, a list of additional smoking cessation resources and a self-help booklet was couriered to them. They were then e-mailed follow-up questionnaires to complete at the end-of-treatment and at 6- and 12-months post-treatment. If they did not complete the follow-up by e-mail they were telephoned by a study research assistant and the questionnaire was completed over the phone.

Results: 6689 people enrolled in the study over the internet (2884 males, 3799 females; mean age: 40 years (SD: 12). Of these, 3048 completed follow-up at end of treatment, a 45% response rate, while 2353 and 1829 completed the 6- and 12-month follow-ups respectively. At end-of-treatment, the 7-day point-prevalent self-reported quit rate among respondents was 27.6% (95% CI: 26.0, 29.2). This decreased slightly to 24.5% (95% CI: 22.7, 26.2) at 6-months and 26.7% (95% CI: 24.7, 28.8) at 12-month follow-up.

Conclusion: Quit rates using a web-based enrollment and follow-up system are comparable to those seen in other models of the STOP Study utilizing either in-person or telephone-based procedures. This indicates that the internet is a useful tool for recruiting participants in a smoking cessation study with no apparent detrimental effect on outcome. Regression analysis of the predictors of successful cessation in this sample will be presented as well as comparisons to other STOP Study models of NRT distribution.

Factors Increasing Adherence for Web-Assisted Tobacco Interventions (WATIs): A Systematic Review

Presenter:
Trevor van Mierlo, Evolution Health Systems, Canada

Co authors
Kristen Hart, Rachel Fournier and Peter Selby (presenting)

Objective: Web Assisted Tobacco Interventions (WATIs) and other web-based behavior change programs are typically affected by high attrition. The objective of this systematic review is to summarize attributes of adherence that have been identified in peer-reviewed publications based on WATI research. To identify attributes of adherence and factors that increased engagement, a literature review of Randomized Controlled Trials (RCTs) and Observational Studies (OS) and Meta-Analysis (MA) was conducted.

Methods: A review of 24 RCTs, 26 OSs and 4 MAs were reviewed to identify WATI attributes that increased engagement. Analysis was conducted by two coders who met regularly to discuss conflict as well as criteria for eligibility and inclusion. Nine categories of adherence were identified and included in the results.

Results: The most important attributes that were identified were access to social networking and brief, interactive self-assessments with personalized feedback. Other significant attributes found to increase engagement included technical design promoting self-guided exploration of program content, reach, and the use of other media such as text messaging or email. Further results and findings will be discussed.

Conclusions: Attributes that support engagement are available in the literature. This evidence can help provide a foundation for design and development of WATI programs and other web-based behavior-change programs. WATIs face a unique challenge: while technology evolves rapidly, the process of scientific analysis is necessarily thorough, but subsequently may be unable to keep pace with novel technological innovations that attract quitters and increase adherence. Limitations will be discussed. Further research in the efficacy of WATI is required.
Gene-environment interactions between depressive symptoms and smoking quantity

Presenter: Kaisu Keskitalo-Vuokko, University of Helsinki, Finland

Co authors: Teuvo Korhonen and Jaakko Kaprio

Objectives: The association between smoking and depression is well-established. However, relative importance of genetic and environmental factors underlying this association remains unclear. The aim of this study was to investigate genetic and environmental interactions between depressive symptoms measured by the Beck Depression Inventory (BDI) and current number of cigarettes smoked per day (CPD) using quantitative genetic modeling of twin data.

Methods: The data were drawn from the Older Finnish Twin cohort’s third study wave. Questionnaires were sent in 1990 to same-sexed twin pairs born between 1930-1957 and participating in earlier survey(s). Data on total of 12,063 individuals were available for analyses. This included 1465 full monozygotic (identical) and 2779 dizygotic (non-identical) twin pairs. The BDI sum scores ranged from 0 to 49 (mean 5.2; median 4.0). CPD was measured as a categorical variable and replies on all response alternatives (1=0; 2=40) were obtained.

Results: Based on the univariate modeling, additive genetic (A) and specific environmental (E) factors were adequate to explain the variation of both traits, while evidence for common environmental (C) effects was not found. Bivariate Cholesky decomposition revealed that the phenotypic correlation (r=0.09) between BDI and CPD was explained moderately by shared genetic (rg=0.18) and environmental (re=0.08) factors. The linear GxE models were built in two ways 1) using CPD as the trait and BDI as the moderator and 2) vice versa. The moderating effects were significant in both A and E variance components, and the value of both variance components increased with increasing moderator value. Thus, the influence of genetic effects on variance of smoking quantity was enhanced in subjects with elevated depression score and vice versa; the more subjects smoked, the larger role genes played in depressive symptom counts.

Conclusions: In conclusion, these analyses provide evidence that both shared genetic and environmental factors as well as gene-environment interactions underlie the comorbidity of smoking with depression.

Association of current symptoms of depression and smoking behaviour to cue-induced cravings for cigarettes

Presenter: Andrea H. Weinberger, Yale University School of Medicine, USA

Co authors: Sherry A. McKee and Tony P. George

Objectives: Adults with depression smoke at higher rates than other adults. Little is known about the ways that depression is associated with smoking-related behavior such as smoking cue reactivity. The purpose of this study was to examine the association of a diagnosis of depression, current depressive symptoms, and smoking consumption to cue-induced cravings for cigarettes.

Methods: Participants (n=52) were adult daily cigarette smokers without current substance use disorders or serious psychiatric disorders apart from depression. The sample included 30 smokers with no history of depression, 13 smokers with a history of depression and no current treatment, and 8 smokers receiving antidepressant treatment. Participants completed a laboratory session during which they were exposed to smoking-related cues (e.g., cigarettes, ashtrays) after smoking one of their preferred brand cigarettes (Satiated Condition), and an hour after smoking (Brief Deprivation Condition). Cravings for cigarettes were assessed before and after exposure to smoking cues.

Results: Cue-induced cravings were not significantly different among the three depression status groups. Current symptoms of depression and number of cigarettes smoked per day were significantly associated with change in cravings from pre- to post-exposure to smoking objects in the Satiated Condition. Greater current symptoms of depression and greater smoking consumption were related to higher levels of cue-related cravings. A current diagnosis of depression and other smoking variables (e.g., duration of smoking) were not associated with cue-induced cravings. There were no significant associations between symptoms of depression or smoking consumption and increases in cravings during the Brief Deprivation Condition.

Conclusions: Current symptoms of depression were significantly related to cue-induced cravings in satiated adult smokers, but not in adults with one hour of smoking deprivation. Future research should examine the relationship of depressive symptoms to craving after longer periods of abstinence. Information about smoking cue reactivity can be used to enhance smoking cessation interventions for smokers who have a difficult time quitting including adults with depression.
Evening type is associated with current smoking and nicotine dependence in population based FINRISK 2007 study

Presenter: Ulla Broms, University of Helsinki, Finland

Co authors: Marjaana Pennanen, Kristiina Patja, Hanna Ollila, Tellervo Korhonen, Ari Haukkala, Annamari Tuulio-Henriksson, Tiina Laatikainen, Markku Koskenvuo, Timo Partonen, Markku Peltonen and Jaakko Kaprio

Background: Diurnal type refers to person's preference to wake and the onset of alertness, which can be dichotomized as morning or evening type. This diurnal type has been associated with smoking in two separate studies among adolescence and young adults in similar way. Also a recent Finnish study of adults indicated that the evening type is strongly associated not only with being a smoker but also with a higher risk of nicotine dependence.

Aim: Our aim was to explore whether smoking habits and nicotine dependence differ by diurnal type in the population based Finnish FINRISK 2007 study. Design and methods: Cross-sectional population based data (N=7750) with diurnal type were collected in 2007. A subsample of ever smoking individuals, including 1746 current, occasional and former smokers was collected from same individuals some weeks later with nicotine dependence measurements. Regression analyses were used to examine the association between diurnal type and smoking status and nicotine dependence.

Measurements: Subjects were classified by self-report into four categories: morning type, somewhat morning type, somewhat evening type, evening type. Among ever smokers detailed smoking history was collected. Nicotine dependence was measured by Fagerström Test for Nicotine Dependence (FTND), Hooked On Nicotine Checklist (HONC) and Nicotine Dependence Syndrome Scale (NDSS).

Findings: Evening types were more likely to be current daily smokers (vs. non-smokers) (age-sex adjusted OR= 1.33, 95% CI 1.08, 1.63) compared to morning types. Gender by diurnal type interaction was non-significant (p=0.34). Among current daily smokers, the age-gender adjusted risk of being a heavy smoker (=20 CPD, 73% men) was 1.90 (95% CI 1.07, 3.40) among evening types compared to morning types. Gender by diurnal type interaction was non-significant (p=0.27). Evening type daily smokers scored higher than morning types in nicotine dependence with HONC scale (beta=-0.74, 95% CI 0.05, 1.43, p=0.038), NDSS scale (beta=-2.29, 95% CI 0.15, 4.43, p=0.038) and FTND scale (beta=-0.65, 95% CI -0.01, 1.30, p=0.054) in gender-age adjusted analyses.

Conclusions: Results indicate that diurnal evening type is associated with current daily smoking and higher scores on nicotine dependence measures (FTND, HONC and NDSS). Understanding the underlying cause of these associations could help us to understand better the causes of nicotine addiction.

Discourses around the development and circulation of Nicotine Replacement Therapy products

Presenter: Catriona Rooke, The University of Nottingham, UK

In the UK the various forms of nicotine-containing products available to consumers fall under different areas of regulatory governance. Conventional tobacco products are governed by a variety of different legal instruments which control the way that they can be advertised, marketed, sold and consumed but exert little control over the content of products themselves. On the other hand, Nicotine replacement therapies (NRTs) are regulated as medicines by the UK Medicines and Healthcare products Regulatory Agency (MHRA). The safety, efficacy, manufacture, packaging and marketing of medical products are strictly controlled. Outside of the regulatory governance of tobacco and medicinal nicotine products lie various ‘lifestyle’ products such as e-cigarettes, which are controlled by consumer protection regulations. Recently, there has been growing concern that this division of regulatory responsibility for nicotine-containing products is having an adverse effect on the availability of acceptable alternatives to cigarettes. This presentation will investigate the impact of this division of regulatory responsibility on the innovation of new NRT products within the pharmaceutical industry. I draw on twenty in-depth qualitative interviews with key stakeholders, including tobacco dependence scientists and those who work with NRTs in the pharmaceutical industry, as well as analysis of various documents, such as official reports and journal articles. I consider the various discourses that arise in this area, including: problems in the existing NRT network, for example issues around treatment, distribution and compliance; different conceptions of what a ‘better’ nicotine product might be and how these relate to understandings about what smokers want; perceived barriers to innovation; and the issue of ‘borderline’ products.
The impact and costs of reimbursed smoking cessation medication in Denmark – the case of varenicline

Presenter: Peter Bo Poulsen, Pfizer, Denmark

Co authors
HJ Randskov, Ballerup, J Dollerup, Ballerup and P Tønnesen

According to the World Health Organization tobacco smoke is the leading preventable cause of death in the world with 50% of smokers dying from a smoking-related disease. Furthermore, smoking has a major impact on health care and societal costs. Reimbursement of smoking cessation (SC) medication increase the number of smokers trying to quit as well as the quit rate.

Objectives: The objective of the analysis was to estimate the economic consequences of introducing reimbursement of varenicline for pharmacological SC in Denmark; i.e. compare reimbursement costs with corresponding savings in the healthcare sector and society due to less smoking and thus fewer smoking-related disease events.

Methods: A costing template developed by the National Institute for Health and Clinical Excellence (NICE) for implementation of varenicline in smoking cessation in the United Kingdom (http://guidance.nice.org.uk/TA123/ CostTemplate/xls/English) was adjusted and applied for Denmark. The costing template is a static model that presents the consequences of SC intervention and benefits of abstinence at 2, 5, 10 and 20 years after intervention. Danish data on number of smokers and motivated quitters, the costs of varenicline and disease events, as well as Danish reimbursement rules were applied.

Results: The national health insurance costs for reimbursing a quit-motivated smoker 12 weeks of prescribed varenicline amount to €124-258 (1 Euro = 7.45 DKK); with low co-payment for persons with chronic diseases. Reimbursing 40,000 smokers will cost the health insurance 5-10 million. (37-77 million. DKK). However, the benefit will be 9,000 abstinent persons (after 12 months), thus preventing respectively 2,110, 3,383 and 5,214 disease events (50% COPD) after respectively 2, 10 and 20 years; however, relapse has to be considered. After 2 years, the healthcare sector savings from fewer emergency hospital contacts amount to 6 million. (47 million. DKK), while societal savings (incl. lost production) amount to 38 million. (281 million. DKK). After 20 years healthcare savings increase to 19 million. (141 million. DKK) and 113 million. (846 million. DKK) in societal savings.

Conclusions: The break-even between higher health insurance costs and the conservative saved cost estimate due to fewer emergency hospital contacts will appear less than 2 years after reimbursement of varenicline for low co-payment persons (124). Varenicline is reimbursed in e.g. Sweden, UK, Ireland and Belgium, but not in Denmark. A limitation of the analysis is that relapse was not considered.

Weight gain after smoking cessation: a meta-analysis

Presenter: Henri-Jean Aubin, Hôpital Emile Roux, France

Co authors
Amanda Parsons, Deborah Lycett, Pierre Lahmek and Paul Aveyard

Objectives: Although there is consistent evidence that quitting smoking is frequently followed by an increase in body weight, the extent of weight gain is variable depending on reports. The purpose of this review was to update the estimate of weight gain at various time points.

Methods: We searched included studies of the Cochrane review on Interventions for preventing weight gain after smoking cessation (1). We considered only placebo-treated smokers, and excluded those who received an additional pharmacotherapy. Mean (SD) weight change (kg) from baseline for abstinent participants at each time point given were combined using a random effects inverse variance model to estimate overall summary mean. We also calculated a summary estimate of the SDs weighted by number of participants.

Results: From the 55 trials screened, 36 studies were included in the analysis after the selection process. Weighted mean (95%CI) weight gain from baseline was 0.99 (0.52, 1.46) at 1 month, 2.29 (2.05, 2.54) kg at 2 months, 2.70 (2.21, 3.19) kg at 3 months, 4.09 (3.61, 4.56) kg at 6 months, 5.04 (4.46, 5.62) kg at 12 months after target quit date. The mean SDs were 1.2, 1.9, 2.7, 3.6, 4.7 at 1, 2, 3, 6, 12 months respectively. Using the means and SDs, we calculated that at 12 months post-cessation, 14%, 21%, 50%, and 15% of participants gained 0 kg - 5 kg - 10 kg, respectively. Sub-group analyses with abstinence definition (point prevalence vs continuous/prolonged), study purpose, and world region showed no significant effect (alpha = 1%) at months 1, 2, 6, 12 time points. Mean weight gain was significantly lower in Asian studies than western studies at month 3 (unique time point available for Asian studies).

Conclusions: Weight gain was most pronounced during the first 3 months post-cessation with an average weight gain of around 1kg per month, and a further gain of 2kg during the remaining 9 months. The wide SD of similar size to the mean indicate large variation in weight change after cessation, with a proportion of people losing weight as well as many gaining much more than the mean figures we reported.

3 East 2.1

**Nicotine dependence level (FTND) moderates difference in smoking cessation response to OROS-methylphenidate by ADHD subtype (Predominantly Inattentive vs. Combined Hyperactive/Impulsive and Inattentive)**

**Presenter:**
Lirio S. Covey, Columbia University, USA

**Co authors**
Mei-Chen Hu, Judith Weissman, Ivana Croghan, Lenard Adler, Edward Nunes and Theresa Winhusen

**Objective:** Studies have suggested that the Attention Deficit Hyperactivity Disorder (ADHD) subtypes represent distinct clinical categories rather than points on a single continuum. Divergence in treatment response is a potential indicator of categorical distinction. The present study explored whether treatment response in the form of smoking abstinence rates and improvement in ADHD symptoms would differentiate smokers by ADHD subtype.

**Method:** This study is a secondary analysis of data from a multi-site trial of OROS-methylphenidate (OROS-MPH) vs. placebo for improving the prolonged abstinence rate in adult smokers with ADHD who received standard smoking cessation treatment (nicotine patch and counseling). Participants were 254 smokers meeting DSM-IV criteria for ADHD and classified as ADHD-Combined Hyperactive/Impulsive + Inattentive (ADHD-C, n=167) or ADHD-Inattentive (ADHD-IN, n= 87).

**Results:** Demographic characteristics, smoking history, psychiatric background, and OROS-MPH efficacy relative to placebo for improving ADHD symptoms, were similar by ADHD subtype. However, smoking cessation response to OROS-MPH differed as a function of ADHD. In addition, nicotine dependence level moderated the direction of cessation response. In the OROS-MPH condition, the prolonged abstinence rate was significantly higher in the ADHD-C than the ADHD-IN subgroup (60.0% vs. 31.1%, p 7), treatment with OROS-MPH produced a higher rate of prolonged abstinence than placebo in ADHD-C than ADHD-IN smokers (p<0.05); among low-dependence smokers (FTND <7), OROS-MPH efficacy relative to placebo was significant in the ADHD-IN (p<0.05) but not in the ADHD-C subgroup. Of interest, re-analysis of data from smokers in an open trial of nicotine patch and bupropion (Covey et al, 2008) produced a congruent result, i.e. abstinence rates at the end of eight-week treatment differed as a function of ADHD symptom subtype and nicotine dependence level.

**Conclusion:** Opposite directions of smoking cessation response to OROS-MPH and in moderation by nicotine dependence level imply clinically distinct entities within ADHD. The further implication of distinct underlying neurobiological mechanisms suggests the need for targeted treatments according to ADHD subtype. Further research is warranted to identify and characterize smokers responsive to OROS-methylphenidate and those who are not.

3 East 2.1

**A methyl scan of nicotine’s pyrrolidinum ring reveals different structural requirements for activation of human a4β2 and a7 nicotinic acetylcholine receptors**

**Presenter:**
William R Kem, University Florida College of Medicine, USA

**Co authors**

**Objectives:** In spite of remarkable advances in understanding nAChRs, the manner in which nicotine’s structure determines its potency and efficacy at nAChRs is still poorly understood. We have used a “methyl scan” approach to assess the importance of various regions in the pyrrolidinum ring of nicotine for interaction with a4β2 and a7 nAChRs, the two major brain receptor subtypes implicated in cognitive function.

**Methods:** We synthesized nicotine analogs with methyl substituents at each of the eight potential sites of methylation, used chiral HPLC to resolve racemic samples into their individual enantiomers and for the first time functionally characterized their actions on these nAChR subtypes. We also investigated the effect of replacing the nicotine 1’N-methyl with larger alkyl substituents. Human nAChRs were expressed in Xenopus oocytes and studied using the two electrode voltage clamp method; peak currents were used to assess responses of both receptors and were normalized with respect to near maximal ACh responses.

**Results:** While most methyl substitutions decreased potency, the 2’(R)- and 3’(R)-methylnicotines were significantly more potent than nicotine on the a7 nAChR. Interesting differences in interactions of the methyl-nicotines with the two nAChRs were also observed. For instance, replacement of the original 1’-N-methyl of nicotine with an ethyl group nearly abolished nicotine activation of a4β2 nAChR, but activation of a7 nAChR was much less affected. A 3’(R)-methyl substitution enhanced a7 potency, but reduced a4β2 potency. While 4’(R)- and 4’(S)- methyl substitutions did not affect potency, efficacy was significantly reduced, especially for the a7 nAChR. An especially significant finding was that 5’(R)-methylation selectively abolishes interaction at a4β2 without causing a large decrease in a7 potency and efficacy. Quaternizing the pyrrolidinum nitrogen by adding a second methyl substituent decreased (>100-fold) potency and binding at both nAChRs, consistent with the postulated requirement for an H-bond between the pyrrolidinum nitrogen and Thr backbone carbonyl group.

**Conclusion:** The differences we have observed for methylated-nicotine interactions with the two major human brain AChRs suggest that the structures of nicotine and related molecules can be further manipulated to provide new drug candidates that preferentially activate particular nAChR subtypes.
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The efficacy of a 4mg nicotine lozenge in smokers who smoke their first cigarette within 5 minutes of waking

Authors: Angela DeVeaugh-Geiss, Frederick G. Saunders, Mitchell L. Kotler, Michael J. Durcan

Presenter: Angela DeVeaugh-Geiss, GlaxoSmithKline, USA

Abstract

Background: Time To First Cigarette (TTFC) from the Fagerström Test for Nicotine Dependence is regarded as a strong indicator of nicotine dependence. This single-item is a strong predictor of cessation success, with a dose-related association between relapse and TTFC (≤5 minutes, 6-30 minutes, 31-60 minutes, and >60 minutes).

Objective: To explore the efficacy of 4mg nicotine lozenge vs. placebo in the subgroup of smokers who smoke their first cigarette within 5 minutes of waking (TTFC=5) and 6 to 30 minutes after waking (TTFC 6-30). The 4mg nicotine lozenge is indicated for smokers who have their first cigarette within 30 minutes of waking.

Methods: Data from a randomized, double-blind, placebo-controlled study comparing the nicotine lozenge or placebo for smoking cessation were examined. Subjects were assigned to treatment based on nicotine dependence (i.e., TTFC); low dependence smokers (TTFC>30 minutes) were randomized to the 2mg lozenge or placebo and high dependence smokers (TTFC=30 minutes) were randomized to the 4mg lozenge or placebo. The current analysis focuses on the subgroup of subjects randomized to the 4mg lozenge or matching placebo. The primary outcome of interest was carbon monoxide (CO) confirmed four week continuous abstinence at Week 6 (28-day abstinence); CO confirmed continuous abstinence through Weeks 12, 24, and 52 were also explored. A logistic regression was performed on the outcome for each time point and subgroup of interest; effects of treatment and site were used as independent variables in the models.

Results: Data from 437 subjects with a TTFC=5 minutes and 463 subjects with a TTFC between 6 and 30 minutes were analysed. Treatment with the 4mg lozenge was associated with a significantly greater 28-day abstinence at week 6 in both the TTFC=5 subgroup (active vs. placebo: 47.3% vs. 16.6%, odds ratio [OR]=4.51, 95% confidence interval [CI]: 2.89, 7.03) and the TTFC 6-30 subgroup (active vs. placebo: 50.0% vs. 24.9%, OR=3.02, 95% CI: 2.04, 4.47). Although abstinence declined over time, a significant difference was seen in favor of active treatment at Weeks 12, 24 and 52 for both the TTFC=5 and TTFC 6-30 subgroups.

Conclusions: The 4mg nicotine lozenge is efficacious as an aid to smoking cessation even in the most highly dependent smokers.

Smoking cessation, age of the first cigarette, and body weight

Authors: Alexandra Kmetova, Eva Kralikova, Lenka Stepankova, Jan Zajak, Marek Maly

Presenter: Alexandra Kmetova, University Hospital Prague, Czech Republic

Abstract

Introduction: The sooner the smoker starts to smoke, the stronger the dependence and the bigger the health impact. AIM: To assess the correlation of the weight gain with the age of the first cigarette and nicotine dependence.

Methods: Data of patients of our Tobacco Dependence Centre collected between 2005 – 2009, after one year follow-up, abstinence validated by carbon monoxide measurement.

Results: We analyzed sample of patients - abstainers (N=421) one year after the intervention. Weight at the first visit was 78.14 kg (+/-18.04), after one year 82.65 kg (+/-18.04). The mean weight gain was 5.25 kg (+/-5.23). The weight gain did not correlate with the age of the first cigarette. Further details will be shown.
Gender differences in smoking relapse

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Pilar Gargallo
Isabel Nerín.

Presenter:
Adriana Marqueta, Smoking Cessation Clinic, Zaragoza, Spain

Abstract
Objective: To identify if men and women relapse for different reasons.

Methods: Analytical and longitudinal study. Patient who remain abstinent for three months after treatment of smoking cessation. Study variables: sex, age and number of cigarettes per day. The reasons of relapse are: negative emotional states, self control, positive external situations, interpersonal conflict and positive emotional states. The data collection of relapse was done by telephone interview.

Results: 798 smokers were abstinent at the end of the treatment (three months), 54.8% (437) men and 45.2% (361) women. Average age 43.75 ± 9.85, years and 24.33 ± 9.87 cigarettes per day. 43.1 % relapsed due to a negative emotional state, 29.4% due to self control, 22.2% due to a positive external situation, 2.9% due to a interpersonal conflict and 2.3% due to a positive emotional state. The data collection of relapse was done by telephone interview.

Conclusions: Causes of relapse differ significantly for men and women. While men are influenced by positive emotional states like celebration, women relapse due to negatives emotional states like depression or anxiety.

Differences between men and women treated in a Smoking Cessation Clinic.

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Presenter:
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Abstract
Objective: To determine the profile of men and women who ask for treatment in a Smoking Cessation Clinic.

Methods: Analytical and longitudinal study. Patients treated in a Smoking Cessation Clinic. Study variables: sex, education level, number of cigarette per day, onset age of smoking and alcohol consumption. Diseases: hypertension, cholesterol, cardiovascular disease, anxiety or depression with pharmacological treatment, in the past or nowadays, and psychiatric disorder.

Results: 1475 current smokers, 770 men (52.2%) and 705 women (47.8%). There are statistical differences between men and women in every variable (p=0.05). 40.4 % (285) of women have higher education whereas 27% (208) of men have higher education. Males smoke more than females, 26.84 ± 11.76 vs. 23.72 ± 8.94, and also are more likely to start smoking before women, 16.34 ± 3.33 vs. 17.70 ± 4.42 years. A percentage of 34.4 men drink alcohol every day whereas only 14.5% of women do it. Men also suffer from cardiovascular diseases whereas women suffer from anxiety or depression illness. 12.2 % of men have hypertension vs. 7.9% of women, 12.3% cholesterol vs. 6.2 %, and 10.8% have cardiovascular disease vs. 4.8 %. A percentage of 47.4 women have had anxiety or depression with pharmacological treatment at least one time in her life vs. 23.8% (183) of men, and 15.9% of women (112) in the beginning of the smoking cessation were in treatment for this issue against 5.7% of men. There are also higher percentages of women with psychiatric disorders 1.8% whereas only 0.8% of men suffer from psychiatric disorders.

Conclusions: In a sample of smokers, there are big differences between males and females. Women have higher education level, they smoke and drink alcoholic drinks less than men and they have less cardiovascular risk factors but have a higher probability to suffer from anxiety or depression.
**Gender differences in the two items of the Fagerström test**

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**Abstract**

**Objectives:** To evaluate gender differences in the two main items of the Fagerström test for nicotine dependence (FTDN).

**Methods:** Analytical and longitudinal study. Patients treated in a Smoking Cessation Clinic. Study variables: sex, age, number of cigarettes per day, Fagerström Test for nicotine dependence and two items of the test: “On average, how many cigarettes are you currently smoking each day?” and “How soon after you wake up do you smoke your first cigarette?”

**Results:** 1302 current smokers, 678 men (52.1%) and 624 women (47.9%). Mean age: 43.37 ± 10.19 years. The total sample smoked 25.28 ± 10.43 cigarettes per day, men smoked 26.69 ± 11.51 cigarettes whereas women smoked 23.73 ± 8.87 cigarettes (p<0.0001). There were no statistical differences in the nicotine dependence by sex, men: 6.25 ± 2.22 and women: 6.16 ± 2.20 but there were in the two items of the Fagerström Test: 35.5% of men smoked more than 30 cigarettes per day vs. 23.2% of women, and 37.5% of women smoked between 11 and 20 cigarettes each day vs. 25.1% of men. (p<0.0001). About “How soon after you wake up do you smoke your first cigarette?” 13.6% of men smoked in the first 60 minutes after waking up against 9.6% of women, while 14.1% of women spend more than 60 minutes against 10.2% of men (p=0.012).

**Conclusions:** In spite of the fact that women smoke less cigarettes per day than men and they smoke later the first cigarette of the day, they do not have less nicotine dependence. It is necessary to study other aspects related to the addiction in women.

**Medical advice regarding smoking cessation: Results from the second survey of all Swiss primary care physicians**

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Anne-Katharina Burkhalter  
Hans Krebs  
Jacques Cornuz

**Presenter:**
Anne-Katharina Burkhalter, Cancer League / Swiss Heart Foundation, Switzerland

**Abstract**

**Objectives:** The purpose of this survey in 2008 was to assess actual clinical practice of Swiss primary care physicians in smoking cessation counselling - and thus checking for a possible improvement of number and quality of their interventions since 2002. An initial survey of physicians regarding the status of smoking cessation counselling is available for 2002. In 2002 the National Stop Smoking Program had just started, it included a training program for smoking cessation in primary care. In order to improve physicians’ smoking cessation knowledge and skills, this project offered educational courses together with documentations like a reference manual, guidelines, several algorithms or patients’ brochures. A total of sixty teachers were trained in several instruction courses in order to disseminate the smoking cessation program nationwide.

**Methods:** The 2008 survey of Swiss physicians addressed all 7523 primary care physicians, all Swiss pneumologists, gynaecologists and paediatricians, together with a sample testing of 1029 physicians in clinic. Using the national registry of the Swiss physicians, an invitation letter and a questionnaire were mailed to all 8552 doctors. Non-responders received a single reminder letter eight weeks later. Evidence-based smoking cessation interventions that were asked for consisted of prescription of NRT, of bupropion or varenicline, direct smoking cessation counselling, recommendation to attend group smoking cessation therapy, and referral to a smoking cessation specialist for counselling. Questions about actual screening practice will also be treated (by Jacot-Sadowski). Data were processed anonymously.

**Results:** With a response rate of 41%, 3629 physicians out of 8552 primary care physicians that we wrote to, state that their current practice actually offers smoking cessation counselling. 90% of responders that had attended a course in smoking cessation counselling, offer assistance to all those patients who are motivated to stop smoking. Today, 62% of all physicians always ask patients about smoking (vs. 78% in 2002), 76% are asking patients about their motivation to stop smoking (vs. 64% in 2002). Here, pneumologists- gists perform best at 97% while gynaecologists have barely changed their practice at 66% and offer support to a mere 43% of patients.

**Conclusions:** The majority of participating Swiss physicians practice recommended smoking cessation interventions with patients motivated to stop smoking. However, the number of physicians practicing these interventions could be increased and implementation of the interventions could be improved; smoking cessation training courses are an effective means of achieving both goals.
**Accuracy of smoking topography measurements in population studies**

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**Presenter:**
Bartosz Koszowski, Medical University of Silesia, Poland

**Abstract**

Introduction: Smoking topography is a tool to study compensation behavior among smokers. It can be measured with portable devices which record the number of puffs, puff volume, intervals between puffs, and other puffing patterns. In population studies, when comparing puffing profiles, it is necessary to have accurate and precise data. Since smokers are usually naïve to topography monitors, their puffing behavior might change from one measurement to the other. Therefore we hypothesized that results of a single topography measurement do not provide accurate values.

**Methods:** 66 regular smokers (27 male and 39 female; age: 36±12 and 33±13; CPD: 18±11 and 16±11; FTND: 3.3±2.3 and 5.0±2.5, respectively), not familiar with topography devices, participated in the study. Each volunteer smoked five of their own cigarettes and the puffing behavior was measured with the CressMicro pocket device (Borgwaldt GmbH, Germany). Mean values of various puffing patterns and relative differences for each single measurement (n=5) were calculated. Then the relative differences were compared using a one-way analysis of variance.

**Results:** ANOVA showed no differences between mean values of five consecutive measurements and a single measurement (p<0.05). There were also no significant differences between individual measurements (p<0.05). Comparing the mean values of five consecutive measurements and the results of the first measurement, the following relative differences were found: 1.00 (95% CI 0.95-1.04) for number of puffs, 1.02 (95% CI 0.97-1.08) for puff volume, and 0.95 (95% CI 0.88-1.02) for puff intervals.

**Conclusions:** For the purpose of population studies it is enough to take one topography measurement in order to obtain accurate and precise data on puffing behavior.

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**A novel cancer prevention management strategy at the Comprehensive Cancer Center Freiburg (CCCF), Germany**

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**Presenter:**
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**Abstract**

**Objectives:** Smoking is a significant risk factor for cancer. Over 90% of smokers consider quitting, but do not use professional support, thus foregoing higher chances of success. Hospitalized patients are especially receptive to cessation advice, but structured counseling of smoking in-patients is rarely available. The aim of the project at the Comprehensive Cancer Center Freiburg (CCCF)/University Medical Center Freiburg (UMCF) is to establish a Cancer Prevention Management Team (CPMT) to identify smoking patients, motivate them to quit and link them to appropriate smoking cessation programs offered by external providers.

**Methods:** The CPMT has implemented structures to identify smoking patients to provide them with counseling based on Motivational Interviewing, to enhance their motivation to quit and to refer them to suitable cessation programs. Enrolled patients will be referred to one form of cessation treatment (structured multicomponent program) and receive continued telephone support by the CPMT. Patients unwilling to use any cessation therapy will be observed. Follow-up data on all enrolled patients over a period of 12 months are being analysed.

**Results:** CPMT structures and a screening system for smoking patients have been successfully implemented in 16 departments of the UMCF. A network of 52 regional cessation providers has been established. First results (after 12 months) show that out of 404 counselled smoking patients, 218 patients (54%) were included in the project: - 187 (85,8%) were included in the treatment arm, of these, 64 (29,4%) were referred to formal multicomponent cessation programs, 44 (20,2%) are using psychological therapy only, 41 (18,8%) are using medication and self-help material and 38 (17,4%) are using self-help material or hotline only. - 25 (11,5%) were included in the observation arm. Out of these, 14 (6,5%) quit smoking without using support and 11 (5%) still remain ambivalent. - 6 (2,7%) are still in the process of decision making. A total of 11 (5%) patients dropped out due to death. The Extension of the prevention-program to other CCCs in Germany is in process. Tailored training materials are being used to assist with the implementation of CPMTs at other CCCs.

**Conclusion:** A novel cancer prevention program was implemented at the UMCF. New structures, cooperation’s and networking have enabled the CPMT to put the project plan into practice. Based on this experience the program can now be extended to other CCCs in Germany with the underlying aim
The risk level of liver cancer cases among smokers in developing countries

Authors: Emmanuel Odiase, Nick Eke

Presenter: Emmanuel Odiase, SmokeFree Foundation, Abuja, Nigeria

Abstract
Introduction: Tobacco use is a rising concern for the developing world. It causes about 5 million deaths yearly and is projected to cause 10 million deaths yearly by 2025 with 80% of these deaths from the developing countries if current trends continue. Tobacco is also a major risk factor for all kinds of cancer including liver cancer. Goal: To help determine whether the risk of liver cancer is also a major risk factor for all kinds of cancer including liver cancer from the developing countries if current trends continue. Tobacco causes at least 10 million deaths yearly by 2025 with 80% of these deaths worldwide. It causes about 5 million deaths yearly and is projected to increase to at least 20 million deaths yearly (mean 22/day: RR = 1.45, 95% CI 1.18-1.79) than non-smokers, giving a sensitivity of 92% and specificity of 95%.

Methods: In this study, we ascertained retrospectively the smoking habits of 24,000 adults who had died from liver cancer (cases) in 10 Chinese cities, 7 Indian Cities and 5 Nigerian Cities. These areas were chosen for reasons of high population. Smokers from these three countries constitute 40% of smokers worldwide. Calculations of the smoker risk ratios (RR) for liver cancer mortality were standardised for age and locality. We used Cox proportional hazard regression models to adjust for confounding variables. We conducted analyses on the entire study population, among male and female smokers who had smoked for at least 20 years separately for each country.

Results: Among adult men (aged 35+) there was a 36% excess risk of death from liver cancer (smoker standardised risk ratio [RR] = 1.36, with 95% confidence interval [CI] 1.29-1.43, p<0.00001; attributable fraction 18%). In the general male population, this indicates absolute risks of death from liver cancer before age 70 of about 4% in smokers (in the absence of other causes). The RR was approximately independent of age, was similar in urban and rural areas, was not significantly related to the age when smoking started but was significantly (p<0.001) greater for cigarette smokers than for smokers of other forms of tobacco. Among men who smoked only cigarettes, the RR was significantly (p<0.001 for trend) related to daily consumption, with a greater hazard among those who smoked 20/day (RR 1.50, 95% CI 1.39-1.62) than among those who smoked fewer (mean 10/day: RR = 1.32, 95% CI 1.23-1.41). Smoking was also associated with a significant excess of liver cancer death in women (RR 1.17, 95% CI 1.06-1.29, p=0.003; attributable fraction 3%), but fewer women (17%) than men (62%) were smokers, and their cigarette consumption per smoker was lower. Among women who smoked only cigarettes, there was a significantly greater hazard among those who smoked at least 20/day (mean 22/day: RR = 1.45, 95% CI 1.18-1.79) than among those who smoked fewer (mean 8/day: RR = 1.09, 95% CI 0.94-1.25).

Conclusion: This study goes to show that even though liver cancer from tobacco use kills about 200,000 people yearly in these three developing countries, the deaths from lung cancer (1.5 million yearly worldwide) is still higher than liver cancer deaths. To verify my tobacco control profile and work around the world, please send a mail requesting more information.

An evaluation of a novel semi-quantitative saliva test for cotinine and other nicotine metabolites

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Presenter: Graham F. Cope, GFC Diagnostics Ltd, UK

Abstract
Objectives: Cotinine, the major metabolite of nicotine is the analyte of choice to assess smoking habit. A number of point-of-care urine cotinine tests are available for use in extra-laboratory situations to validate self-reported smoking and in some instances provide feedback to improve smoking cessation. Urine testing is however inappropriate in some instances, such as in dentistry. Saliva testing is more desirable but problematic, due to the lower cotinine concentrations compared to urine. A current colorimetric urine test assay, which detects cotinine and the other nicotine metabolites, was improved by the inclusion of a novel condensing reagent and optimisation of the remaining reagents. The aim of this study was to evaluate the test in a community-based investigation.

Methods: Volunteers (n=100), aged between 21 and 67 years (38% female), including 39 smokers with a daily cigarette consumption of five or more cigarettes a day (mean 16.2), provided a saliva sample using a manufactured sponge and collecting vessel. One ml of saliva was eluted using the test's fixed-volume syringe. The sample was introduced onto freeze-dried reagents and quickly shaken. A sample positive for nicotine metabolites turned pink within one minute but 4 minutes was left for full colour development. The resultant colour was compared to a four-point colour chart and the level of smoking recorded. Samples from non-smokers remained unchanged.

Results: A positive test colour was obtained from 36 of the 39 smokers and a negative result from 58 of the 61 non-smokers, giving a sensitivity of 92% and specificity of 95%. The semi-quantitative test results significantly correlated with daily cigarette consumption (p<0.01); with light smokers (6-10 cigarettes per day) having a colour chart mean of 2.3; 11-15 a day a mean of 2.7; 16-20 a day, 3.5 and more than 20 a day mean 3.0. The limit of visual detection was equivalent to 50 ng/ml cotinine.

Conclusions: The new assay was found to be suitable for detecting cotinine and other metabolites in saliva samples collected from volunteers in the community. The sensitivity and specificity and limit of detection were comparable with the other commercial saliva cotinine test currently available. A dedicated colorimeter to quantify the result is under development. The visual impact of the test increases awareness and the feedback can be an important adjunct to smoking interventions in oral disease.
Predictors of Quit Success in Belgian Participants of a Varenicline Observational Study

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Presenter:
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Abstract
Objectives: To evaluate factors that may be predictive of outcome – total score on the Fagerstrom Test of Nicotine Dependence (FTND), time to first cigarette on waking and the use of behavioural support – in a trial of varenicline as a smoking cessation aid in Belgian smokers treated in a “real world” setting as part of routine clinical practice.

Methods: This was a 12-week, prospective, observational, non-comparative study. Participants were adult smokers who were motivated to quit and who had been prescribed varenicline in accordance with the European product license. In this post-hoc analysis, the Week 12 and 24 seven day point prevalence of abstinence rates (7-day PPA) were analyzed using logistic regression models to compare groups. The odds ratios (ORs) between groups were reported as well as the 95% confidence intervals (CIs) for the odds ratios. Adverse events (AEs) were also evaluated.

Results: In total, 226 Belgian participants received varenicline. Their mean age was 46.1 (SD 12.6) years, 56.2% were male, and 95.6% were Caucasian. Participants had smoked for an average of 28.3 (SD 12.9) years, with a mean of 22.2 (SD 8.4) cigarettes per day. Mean FTND score was 6.0 (SD 2.2), with answers to question 1 of the FTND showing that most participants smoked within 30 minutes of waking (60 mins 7.5%). Behavioural support was received by 61.1% of participants. The 7-day PPAs at Weeks 12 and 24 were 61.1% and 45.6%. The FTND score (high [=6] versus low [<6] scores) did not predict 7-day PPA at Week 12 (OR 0.65 [95% CI 0.38, 1.11]; P=0.12) or Week 24 (OR 0.62 [95% CI 0.36, 1.06]; P=0.08). Time to first cigarette on waking (FTND question 1) significantly predicted 7-day PPA success at Week 12 (OR 0.69 [95% CI 0.50, 0.94]; P=0.02) and Week 24 (OR 0.70 [95% CI 0.52, 0.94]; P=0.02), with the odds of success decreasing by approximately 30% with each increase in time category. Behavioural support significantly increased the likelihood of success at Week 12 (OR 6.18 [95% CI 3.41, 11.2]; P<0.01) and Week 24 (OR 5.37 [95% CI 2.89, 9.98]; P<0.01). The most frequent AEs were nausea (9.3%), sleep disorder (4.4%), gastritis (2.7%), fatigue (2.7%) and insomnia (2.2%).

Conclusion: Factors predictive of success in this “real world” observational trial of varenicline included time to first cigarette on waking and behavioural support, but not total FTND score.

A Pilot Study to Assess Smokeless Tobacco Use Reduction with Varenicline

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Jon O. Ebbert
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Presenter:
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Abstract
Long-term smokeless tobacco (ST) use is known to increase the risk for oropharyngeal cancer, heart attack, and stroke. Extant literature on cigarette smokers suggests that smoking reduction increases smoking abstinence among smokers not interested in quitting. Similarly, a reduction strategy may increase ST abstinence rates among ST users not interested in quitting. The purpose of this open label, one-arm, Phase II clinical trial was to evaluate the safety and tolerability of varenicline with the goal of reducing ST use and to evaluate the level of interest among ST users in reducing their use. Of the 48 ST users who responded to our recruitment advertisement, we enrolled 20 ST users who had no plans to quit but were interested in decreasing their ST use. The 20 ST users enrolled were all male with a mean age of 42.8 ± 11.7 years who used an average of 3.9 ± 1.7 pouches per week for 18.6 ± 8.6 years with an average FTND-ST score of 5.9 ± 1.7. At end of treatment (12 weeks), 60% (N=12) of the participants reduced their ST use by = 50% of whom 25% (N=3) were abstinent from ST. At the end of the study (6 months), 50% (N=10) reduced by = 50% of baseline use of whom 40% (N=4) were abstinent from ST. Of the 12 subjects who achieved = 50% reduction at end of treatment, 9 maintained reduction at 6 months. One person who did not achieve = 50% reduction at end of treatment was able to achieve 50% reduction by 6 months. Thirty seven adverse events were noted among 19 of the 20 subjects enrolled. The most common side effects were nausea (N=5) and sleep disturbance/vivid dreams (N=8). Varenicline may be effective in reducing ST use and achieving ST abstinence among ST users with no plans to quit but who are interested in reducing their ST use.
Screening interventions in smokers by primary care physicians

Authors: Isabelle Jacot Sadowski, Gonsseth Semira Locatelli, Isabella Clair Carole, Cornuz Jacques

Presenter: Isabelle Jacot Sadowski, University of Lausanne, Switzerland

Abstract

Objectives: Several potential methods might be available to decrease the important burden of smoking-related diseases in smokers, by screening for lung cancer, heart and vascular diseases. However, except screening for abdominal aortic aneurism in men aged 65 to 75, no screening test has been shown as effective to reduce the morbidity and mortality, and not to harm by overdiagnosis and overtreatment. Evidence-based clinical guidelines recommend against or cannot give a formal recommendation for or against: lung function testing (LFT), peak flow, EKG, ankle/brachial index (ABI), chest radiography, thoracic CT, carotid ultrasonography and electron-beam computer tomography. This study aimed at evaluating primary care physicians’ (PCP) self-reported practices towards such screening procedures in asymptomatic smokers.

Methods: We used the national registry of the 8852 Swiss PCPs to mail them a questionnaire on their practice regarding smoking cessation interventions and screening procedures in their asymptomatic smoking patients. Evidence-based smoking cessation interventions were: prescription NRT, bupropion or varenicline, direct smoking cessation counselling, recommendation to attend group smoking cessation therapy, and referral to a smoking cessation specialist for counselling. An efficacy score was defined as positive if ≥2 smoking cessation interventions were performed indicating good physician practice. A parsimoniousness score was defined as positive if at most 1 not recommended screening intervention was performed. A multivariable logistic model was estimated to identify factors related to a positive parsimoniousness score. Results: The response rate was 41% (n=3629). Fifty-six percent were over age of 50, 70% were male, 12% reported being smokers and 25% attended smoking cessation training. The most reported smoking cessation intervention was NRT prescription (74%) and a positive efficacy score was obtained by 84% of respondents. Almost half of the respondents (45%) reported performing LFT, 31% peak flow, 48% chest radiography, 40% EKG, 14% ABI and 6% thoracic CT in asymptomatic smoking patients. A positive parsimoniousness score was obtained by 46% of respondents. Having a positive efficacy score made physicians to be less parsimonious than their colleagues (OR 0.29, 95% CI 0.23 to 0.36, p<0.001).

Conclusions: The majority of respondents practice recommended smoking cessation interventions. However, this study suggests that PCPs with interest and knowledge in smoking cessation interventions perform more frequently not recommended screening interventions in their asymptomatic smoking patients. Smoking cessation training should address screening issues in smokers and contain information on updated evidence-based screenings tests.

Strength of urges to smoke as a measure of severity of tobacco dependence: comparison with the Fagerström Test for Nicotine Dependence and its components

Authors: Jennifer Fidler, Lion Shahab, Robert West

Presenter: Jennifer Fidler, University College London, UK

Abstract

Objectives: Cigarette dependence is a condition in which smokers experience urges to smoke that overwhelm and undermine their resolve not to. Measuring the strength of urges to smoke during the course of normal smoking in a culture where smoking is restricted could provide a good measure of the severity of tobacco dependence. The most important criterion for such a measure is how well it predicts failure of attempts to stop smoking. This study compared ratings of strength of urges to smoke (SUTS) on a normal smoking day with the Fagerström Test of Nicotine Dependence (FTND) and its components, including the Heaviness of Smoking Index (HSI).

Methods: A representative sample of 2593 adult smokers in England were surveyed and followed up 6 months later. SUTS, FTND, HSI, cigarettes per day and time to first cigarette were measured at baseline together with data on age, social grade and gender. The outcome measure was self-reported abstinence for at least one month in 513 smokers who at 6-month follow up had made an attempt to stop smoking at least a month ago.

Results: In logistic regressions, all dependence measures predicted success of subsequent quit attempts but SUTS had the strongest association (Wald statistics for SUTS, FTND and HSI: 14.6: p<0.001, 8.0: p=0.005, and 9.0: p=0.003 respectively). In multiple logistic regressions when SUTS was entered as a predictor of abstinence together with other dependence measures, it remained as the only predictive dependence measure.

Conclusions: Ratings of strength of urges during a normal smoking day appears to be a better predictor of achieving abstinence following a quit attempt than other dependence measures. As such it may be a better measure of tobacco dependence.
A Review of Cost-effectiveness of Varenicline and Comparison of Cost-effectiveness of Treatments for Major Smoking-Related Morbidities

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Miny Samuel
Stephen M. Beard

Presenter:
Koo Wilson, Pfizer Ltd, UK

Abstract
Objective: This review aims to examine economic evaluations of varenicline, to compare the reported cost-effectiveness of varenicline with that of treatments for major smoking-related diseases, and to evaluate the findings for decision making.

Method: A literature search was performed to identify published articles in English indexed in MEDLINE and the Cochrane Library (Issue 1, 2009), which includes the Economic Evaluation Database. Additional sources also were searched to identify unpublished varenicline studies, including conference abstracts. The search for varenicline studies was limited from 2006 to October 2009; searches for all other types of studies were limited from 1990 to October 2009.

Results: The search yielded a total of 20 relevant economic evaluations of varenicline. In addition, 37 reviews of economic evaluations in chronic obstructive pulmonary disease, non-small cell lung cancer, and cardiovascular disease, as well as studies evaluating the impact of economic rewarding were considered in this review. From these identified economic evaluations, the incremental cost-effectiveness ratios (ICERs) for varenicline range from dominance (more effective and cost saving) to €18,582 per QALY (including indirect costs). These estimates appeared substantially lower when compared with ICERs reported for secondary prevention of smoking-related diseases, which in some cases were as high as €66,218 per quality-adjusted life-year.

Conclusions: Varenicline appears to be cost-effective from the perspective of both health care payers and employers, due to reduced health care consumption and costs. The cost-effectiveness of varenicline also compares favourably to that of interventions recommended for the treatment and prevention of smoking-related diseases.

Success rates of tobacco dependence treatment among patients with and without depression history

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Jan Zajak
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Presenter:
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Abstract
Objectives: Higher prevalence of smoking among depressive patients as well as the risk of depression in smokers is well documented. Also the proportion of patients with history of depression among those seeking intensive treatment of tobacco dependence is notably high. By contrast, the evidence of success rates in those subgroups of patients is controversial.

Aim: To compare one year abstinence in our patients according to depression history (no history of depression versus depression history or presence)

Methods: According to the evidence based treatment we use psychobehavioural interventions as well as pharmacotherapy (nicotine, bupropion, varenicline or combinations). We follow them one year, smoking status is validated by carbon monoxide in expired air. We analyzed a sample of patients (N=2,044) treated 2005 – 2009.

Conclusion: Current or former depression treatment was found in 16.73 % (342/2044). One year abstinence in this depressive subgroup was 24.26 % (83/342), in patients without depression 26.32% (448/1702). Discussion: The non-significant difference in smoking cessation success rates support the fruitfulness of tobacco dependence treatment in patients with depression as well as in psychiatric settings.
Higher percentage of baseline cotinine replacement is related with long-term smoking abstinence

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Abstract

Objectives: Nicotine replacement therapy (NRT) is widely used for smoking cessation, but only 20% smokers quits smoking successfully. Considering the interindividual variability of plasma nicotine and cotinine concentrations together with the lack of clinical end-points for NRT patches dosing, it seems clinically important to investigate the utility of a therapeutic drug monitoring approach. We retrospectively studied our ambulatory patients with different type of nicotine dependence treated with transdermal nicotine therapy associated with individual counselling and valued the relationship between plasma nicotine and cotinine replacement, revealed after two weeks of treatment, and smoking abstinence after 12 months.

Methods: We studied 94 patients (M/F, 59/35, mean age 51±11.5 years, mean weight 74±15.5 Kg) habitual smokers of cigarettes (24.1±9.6 cigarettes/day) between 2002 and 2009. Baseline nicotine and cotinine levels were obtained while smokers were smoking at the usual rate. Blood sampling was performed in the afternoon, at least after 6 hours of waking and after 2 hours from the last cigarette smoked. An initial nicotine patch dose was prescribed considering the number of cigarettes smoked and the relatively nicotine daily dose, the results of Fargéström Tolerance Questionaire and the baseline nicotine concentration. After the patients reached the steady-state between 1 and 2 weeks, the serum nicotine and cotinine concentrations were rechecked, nicotine and cotinine replacements were calculated and the dose of nicotine eventually modified. After 12 months the mean of abistent patients was 49%. Retrospectively, we divided all the patients in three groups according to the baseline cotinine levels: A 300 ng/ml. In every group, we verified the mean cotinine replacement at two weeks and observed the percentage of non-smokers after 12 months.

Results: Group A and B (19 and 34 patients) presented 63 e 62 % of abistentes while group C (41 patients) only 34 % (A vs B, P=0.84; A vs C, P= 0.06; B vs C, P=0.03). Groups A and B presented higher levels of baseline cotinine replacements (114±58 % and 74±23, respectively) than group C (56±25 %) with significant statistically differences.

Conclusions: This study confirms that the long term probability of smoking abstinence is inversely correlated to the replacement of baseline cotinine values. So therapeutic cotinine monitoring should be taken in consideration from physicians to identify smokers who could benefit from the NRT but even to personalize the nicotine doses and to reach the 100% of replacement.

Reduced-nicotine content cigarettes in pregnancy

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Presenter: Margaret S. Chisolm, Johns Hopkins University, USA

Abstract

Objectives: The Family Smoking Prevention and Tobacco Control Act (FSPTCA) was signed into United States (US) law by President Obama on June 22, 2009. This historic legislation grants the US Food and Drug Administration (FDA) authority to regulate tobacco products as “appropriate for the protection of public health.” Among other things, the FSPTCA provides the FDA with regulatory authority to establish tobacco product standards that can include reduction of nicotine if such reduction would protect public health. Despite smoking’s identification as the leading risk factor for pregnancy-related morbidity and mortality, 12% of US women smoke cigarettes while pregnant. Nicotine replacement therapy (NRT) lacks cessation efficacy in pregnancy and may harm the developing fetus. The use of reduced-nicotine content (RNC) cigarettes has been hypothesized as a strategy to prevent and/or reduce cigarette smoking in the overall population and may also be beneficial in pregnancy. However, RNC cigarettes have been associated with compensatory smoking, and non-nicotine ingredients and byproducts of cigarette smoke with poor pregnancy outcomes, so the use of these products in pregnancy may have unintended public health consequences. The goal of this review is to identify the current body of knowledge on this topic and to identify research needs relevant to the FSPTCA, especially regarding unintended public health consequences of a potential FDA policy to reduce nicotine content in cigarettes.

Methods: We reviewed the available literature on RNC cigarettes in pregnancy.

Results: We identified three cohort studies and one intervention trial of RNC cigarettes in pregnant humans. Two cohort studies indicate that RNC cigarettes in pregnancy are related to increased fetal growth, however the third cohort study does not support this finding. The trial data (n of pregnant smokers = 6) include no pregnancy outcomes, but suggest that RNC cigarettes in pregnancy are associated with decreased maternal smoking duration and nicotine intake.

Conclusions: The identified studies point to a possible benefit of RNC cigarettes on maternal smoking duration and nicotine intake, but results regarding neonatal outcomes are mixed. More evidence regarding RNC cigarettes in pregnancy is needed to determine any unintended maternal and child public health consequences related to reducing the level of nicotine in cigarette tobacco.
Intensive Treatment of Tobacco Dependence in an Out-Patient Addiction Services Setting

Authors:
Milan Khara

Presenter:
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Abstract
Background: Patients engaged in addiction treatment for a variety of substance use disorders are disproportionately affected by tobacco use morbidity and mortality. However, with appropriately intensive intervention, such individuals can succeed in smoking cessation. The Tobacco Dependence Clinic (TDC) is a program that provides counselling and pharmacotherapy (at no financial cost) through Vancouver Coastal Health Addiction Services, Canada.

Objectives: To a) describe the smoking cessation program provided by the TDC and b) examine smoking cessation outcomes of drug treatment clients in the TDC.

Methods: Clients receive up to 26 weeks of group counselling in conjunction with pharmacotherapy for smoking cessation. Data from 202 participants engaged by the TDC were analyzed. Outcome measures include seven day point prevalence abstinence (validated by expired CO). RESULTS: On an intent-to-treat analysis (n = 202), end of treatment smoking abstinence rate was 33%. Predictors of smoking abstinence were: a) using a greater number of evidence based modalities to quit smoking in the past, b) having a lower CO level at baseline, and c) a greater number of total visits to the TDC. Predictors of treatment completion were: a) being female, and b) having a lower CO level at baseline.

Conclusions: Smoking cessation among drug treatment patients is an important factor in reducing the harms associated with tobacco use. These individuals can successfully quit smoking if given access to appropriately intensive tobacco dependence treatment which may incorporate extended duration of care and aggressive use of pharmacotherapy in an “off-label” manner.

Mediators for Changing Dentists’ Tobacco Control Attitudes and Behavior

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Presenter:
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Abstract
Objective: To determine the effect of training intensity and third party reimbursement on dentists’ tobacco control attitudes and behaviors.

Methods: Among 265 randomly selected dental practices, 65 were randomly assigned to Usual Care (UC); the remainder were randomly assigned to one of 4 groups: low-intensity training (LIT); high intensity training (HIT); low-intensity training plus reimbursement (LITR); and high-intensity training plus reimbursement (HITR). After dentist baseline assessment, dentist and patient-reported outcomes were questionnaire-assessed 12 months post intervention by mail. Positive change scores in dentists’ attitudes and behaviors were compared between UC vs. any intervention group; HIT vs. LIT groups; and reimbursement (R) vs. no-R groups using the Mann Whitney Test or Chi Square. Patient reported tobacco control behaviors of dentists were compared for the same 3 comparisons.

Results: Assess, Assist, and Arrange behaviors of all intervention dentists (N=265) significantly improved from baseline to follow-up compared to UC dentists, and in the HIT group compared to the LIT group (all P<0.03). Significant mediators of positive change for “Assessing” were “feeling well prepared” and “feeling effective”; and for “Assisting” were “feeling effective” and “feeling that one had knowledge of pharmaceutical products” (P<0.01). Patients of intervention group dentists reported higher dentist tobacco control behavior scores compared to patients of UC group dentists (OR 1.7, 95% CI: 1.1-2.6). Patients of dentists who submitted claims compared to patients of dentists in the non-reimbursement groups were significantly more likely to report that they cut down their tobacco use; read information provided on the benefits of quitting; and sought help from family and friends with the quitting process (all P<0.01).

Conclusion: Feeling prepared and effective are important for dentist behavior change, but patients of dentists who submitted claims had the best outcomes.
Translating Brief Tobacco Interventions into Standard Nursing Practice in Acute Care

Authors:
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Scott Sellick

Presenter:
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Abstract
Background: This presentation reports on the translation of a brief tobacco intervention into standard nursing practice in acute care northern rural community hospitals.

Method: Eleven of the 12 NW Ontario community hospitals with average annual admissions of 93 to 1328 participated. Nurses were trained to provide a brief 5A tobacco cessation intervention (ask, advise, assess, assist, arrange) and asked to provide the intervention to all inpatients. Intervention was cued by a one-page intervention form in patients’ charts, which was included as part of quality chart audits in most hospitals (none of the hospitals used electronic charting). Patient materials including cessation booklets and Smoker’s Helpline pamphlets, and fax referral program information was offered.

Results: Over 14 months, 5,351 intervention forms were collected; 3% (183) were blank and 97% (5,168) documented tobacco use (ask). Tobacco use prevalence was 30% (1,573/5,168), consistent with the average smoking rate documented by admission clerks suggesting that all smokers were being identified. Among tobacco users, 56% were female, average age was 44 (SD=16), and average cigarettes/day=14 (SD=9, mode=25). Seventy-eight percent of smokers (1,220/1,573) were advised to quit by their attending nurse, 91% (1,427/1,573) were assessed for interest in quitting among whom 53% were interested (755/1,427), 71% were assisted (1,110/1,573) to quit, and follow-up was arranged for 20% (314/1,573). Among those who received assistance, 21% received a booklet and were offered pharmacotherapy, 22% received a booklet only, 24% were offered pharmacotherapy only, and 3% received counselling without either a booklet or pharmacotherapy. Among those receiving a booklet, 71% (487/689) received the “Want to Quit” booklet, 26% (177/689) received the “Don’t Want to Quit” booklet, and 3% (25/689) received both booklets.

Discussion: Adherence to completing the forms and providing the brief intervention, up to the 4th step (assist) was quite remarkable, especially given this was the first research study these hospitals had been involved with and that the first time the nurses were asked to provide tobacco cessation interventions. The low ‘arrange’ rates indicate a need to understand why this step is not being provided even though materials and a fax referral system has been established, and also signals a potential need for additional training. Given high rates of smoking in these communities and the success with translating a tobacco cessation intervention into standard nursing practice, this brief inpatient intervention has the potential to make an important contribution to lowering tobacco use rates in NW Ontario and enhancing health outcomes.

Individual differences in response to denicotinized cigarettes for smoking cessation among treatment-resistant smokers

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Presenter:
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Abstract
Objectives: Nicotine replacement therapies (NRTs) are a mainstay of the therapeutic approaches employed in smoking cessation. Although NRTs can help alleviate cravings and symptoms of withdrawal, overall effects in terms of quit rates are modest. Smokers may differ in the extent to which nicotine and non-nicotine constituents of tobacco contribute to maintaining their addiction. Denicotinized cigarettes represent a novel approach to targeting non-nicotine factors, which may improve cessation outcomes among individuals who respond poorly to NRTs. In this study, we examined the efficacy of denicotinized cigarettes as a smoking cessation aid among NRT treatment-resistant smokers.

Methods: 30 current daily smokers (mean age 40.5, SD 11.1) were recruited from the general community. Participants reported making at least two prior smoking cessation attempts using NRTs. Participants were assigned to receive 8 weeks of either NRT products alone or NRT products in addition to denicotinized cigarettes. During an initial baseline session, participants completed a number of descriptive measures of tobacco use patterns and a battery of self-report questionnaires. Subsequent follow-up sessions assessed recent smoking patterns and level of dependence.

Results: At the end of the 8-week treatment phase, significant reductions in tobacco dependence levels were observed among all participants, with no differences between those who received NRTs and those also receiving denicotinized cigarettes. Although the denicotinized cigarette group showed an initial decline in the number of preferred-brand cigarettes smoked relative to the NRT group, the groups did not differ in terms of overall quit rate at the end of the treatment phase. Both groups showed a significant decline in average weekly number of cigarettes smoked.

Conclusions: Although denicotinized cigarettes have shown promise as a means of addressing the non-nicotine factors in tobacco addiction, among a sample of highly dependent smokers, we found no evidence for their efficacy over and above concurrent NRT treatment. Further research is needed to develop effective means of increasing smoking cessation outcomes among treatment resistant smokers.
Do smokers titrate for both nicotine and non-nicotine tobacco components?

Authors: Sean P. Barrett
Presenter: Sean P. Barrett, Dalhousie University, Canada

Abstract
Objectives: The nicotine titration hypothesis predicts that smokers adjust their smoking behaviour in order to achieve or maintain optimal nicotine levels; however, it is possible that smokers may also adjust their smoking behaviour in response to non-nicotine smoking components as well. The present study examined possible titration for nicotine and non-nicotine smoking factors.

Methods: Twenty-one smokers completed two randomized double-blinded smoking sessions during which they were required to self-administer two cigarettes to completion 5 minutes apart. In one session participants self-administered nicotine-containing cigarettes (0.6 mg nicotine; 10 mg ‘tar’) and in the other session they self-administered denicotinized cigarettes (<0.05 mg nicotine; 10 mg ‘tar’).

Results: Consistent with the nicotine titration hypothesis, participants smoked each denicotinized cigarette more rapidly than each nicotine-containing cigarette (ps<0.01). However, in both conditions the first cigarette was self-administered more rapidly than the second (ps<0.01), suggesting that smokers may also titrate for non-nicotine smoking components.

Conclusions: These findings are consistent with the hypothesis that a combination of nicotine and non-nicotine smoking factors contributes to the regulation of smoking behaviour.

Correlates of Readiness to Quit Smoking among College Student Smokers

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Presenter: Margaret M. Walsh, University of California, San Francisco, USA

Abstract
Rates of college student smoking and smoking initiation during college have recently increased in the U.S. College students tend to have difficulty quitting smoking on their own, yet participate in formal cessation interventions at relatively low rates.

Objectives: This study was conducted to investigate the correlates of motivation to quit smoking among college students. Knowledge of the factors that promote readiness to change smoking may inform strategies for increasing treatment demand in this population.

Methods: Participants were non-treatment seeking daily smokers (N=111) participating in a randomized trial of motivational intervention and contingency management for smoking cessation. Participants were 18 to 24 years old, M = 19.7, SD = 1.5); 38.2% were females; 77% were White, 8.2% were Hispanic/Latino, 6.4% were Black/African American). Participants varied in current smoking from 1 to 41 cigarettes per day (M = 12.2, SD = 6.9) and in readiness to change (ranged from 1 to 10 on readiness ladder, M = 5.55, SD = 1.5). All baseline assessments occurred prior to initiation of intervention.

Results: Motivation to change smoking was significantly associated with: fewer cigarettes per day (r=-.31) in past 30 days; more consecutive days abstinent in past 30 days (r=.27); later age of onset smoking (r=.31); having made a quit attempt in the past 30 days (t(109)=3.56) or in the past 6 months, (t(109)=2.58); parent disapproval of smoking (r=-.24); best friend smoking status (r=.19); pressure from friends to quit (t(108)=2.3); current health concerns (t(108)=2.10); expectancies for positive reinforcement due to smoking (r=.32); and higher self-efficacy for resisting smoking (r=.27). Motivation to change smoking was not associated with level of nicotine dependence; withdrawal severity; biomarker (CO or cotinine) levels; or current depressive symptoms; alcohol or marijuana use (quantity or frequency); normative perceptions about smoking among peers or adults; amount of smoking in social network; smoking outcome expectancies for negative consequences, negative reinforcement, or weight control; pressure from parents; future health concerns; or concerns about cost.

Conclusions: Many commonly perceived barriers to smoking cessation (e.g., dependence, withdrawal, co-occurring substance use or affective symptoms) were unrelated to motivation for cessation in this population. However, numerous factors were found to be associated with increased motivation; attempting to increase the experience or salience of such factors may be effective in increasing demand for treatment in this population.
Posters

Smoking Intervention Studies Involving Varenicline, Patch, or No Pharmacotherapy: College Student Interest and Concerns

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Tracy O’Leary Tevyaw
Peter M. Monti

**Presenter:** Suzanne Colby, Brown University, USA

**Abstract**
Epidemiological data show that young adult smokers do not tend to use empirically-supported treatments when making quit attempts. Data from behavioral cessation trials with college students have shown very low quit rates relative to comparable trials in general adult populations.

**Objectives:** This study was conducted to evaluate the feasibility of enrolling college student smokers into clinical trials involving two efficacious pharmacotherapies: nicotine patch and varenicline.

**Methods:** Participants were undergraduate students enrolled in one of three colleges in the northeastern U.S. who were taking part in a larger longitudinal study of college student alcohol use. Of the 102 students invited to participate based on having reported smoking in the prior year, 40 students responded (18 to 22 years old, M = 19.8, SD = 1.0); 67.5% were females).

**Results:** Participants varied substantially in current cigarettes per day (M = 5.1, SD = 6.2) and in readiness to change (ranged from 1 to 10 on readiness ladder, M = 5.6, SD = 2.4). Student interest (maybe or yes) was greater for a study involving no pharmacotherapy (80%) than one involving varenicline (62.5%) or patch (67.5%). Among students who were disinterested or equivocal (no or maybe), open-ended concerns were elicited. Some student concerns were shared across all intervention types, including the amount of time involved and a lack of interest in quitting smoking. Other concerns were shared across both pharmacotherapy interventions: general concern about taking medication and potential side effects; not wanting to take a medication to quit smoking (substituting one drug for another); the belief that they don’t smoke heavily enough to warrant taking medication to quit; belief that they can quit without medication; and concerns about interaction effects with other medications they are taking. Concerns that were unique to nicotine patch intervention included: skepticism about its efficacy for quitting smoking; fear of the patch/belief that nicotine is dangerous; and tried it in the past and didn’t like it. There were no concerns expressed that were unique to participating in a varenicline trial or a non-pharmacological trial.

**Conclusions:** College students have negative opinions and some misperceptions about taking medications for smoking cessation which in turn present a barrier to use of these empirically supported cessation treatments. Findings may be useful in delineating areas for public health messages to address.

Effectiveness of varenicline compared to bupropion and nicotine replacement therapy (NRT) for smoking cessation in two smoking specialized units of the Spanish primary care setting.

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**Presenter:** Silvia Díaz, Pfizer Ltd, Spain

**Abstract**
Objective: The objective of this study was to estimate the effectiveness of varenicline, bupropion and nicotine replacement therapy (NRT) in smoking cessation in two specialized smoking units belonging to primary care centers.

**Material and methods:** A multicenter longitudinal observational study was designed. Patient’s data were collected retrospectively based on their clinical records. Patients over the age of 18, who initiated treatment of smoking cessation between 1/01/2006 and 1/12/2008 with varenicline, bupropion or nicotine replacement therapies (NRT), were included in the analysis. Patient’s follow-up was conducted from time-baseline (day 1) and assessed at 6 and 12 months. Main variables included in the study were: comorbidities, effectiveness (continuous abstinence) and pharmacological tolerability. Statistical analysis was performed by means of a logistic regression model and Kaplan-Maier survival curves; p<0.05.

**Results:** A total of 957 smokers patients treated with NRT (53.0%), bupropion (25.1%) and varenicline (21.9%) were included in the analysis. The mean age of participants was 47.6 (11.3) years and 58.6% were men. 32.0% of the patients attended the smoking specialized units for physical dependence; the average duration of smoking was 19.5 (6.7) years. At 6 months, 61.2% (95% CI: 54.6-67.8%) of participants in the varenicline group were continuously abstinent from smoking compared with 56.9% (95% CI: 50.6-63.2%) in the bupropion group and 52.3% (95% CI: 48.0-56.6%) in the NRT group; p = 0.003. At 12 months, the rate of continuous abstinence was 57.4% (95% CI: 50.7-64.1%) in the varenicline group compared with 52.9% (95% CI: 46.6-59.2%) in the bupropion group and 47.1% (95% CI: 42.8-51.4%) in the NRT group; p = 0.002. Results of the regression model showed that the abstinence rate at 12 months was associated with the number of previous attempts to quit smoking (OR: 2.2 [95% CI: 1.8-2.7]), the average number of cigarettes / day (OR: 1.1 [95% CI: 1.0–1.2]) and the presence of previous dyslipidemia (OR: 1.5 [95% CI: 1.1-2.0]). Pharmacological tolerability was similar between groups except for symptoms of irritability which were lower in the varenicline group: 4.3% compared to 8.3% in the bupropion group and 10.3% in the NRT group.

**Conclusion:** Varenicline appeared to be an effective and safety alternative compared with bupropion and NRT on smoking cessation in the primary care setting.
Social value of varenicline as a smoking cessation therapy in Spain: A willingness to pay study.

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Jose María Abellán,
Verónica Sanz de Burgos

Presenter:
Silvia Díaz,
Pfizer Ltd, Spain

Abstract
Objectives: The main objective of the study was to estimate the willingness to pay for treatment with varenicline for smoking cessation. Additional aims were to understand the Spanish population’s perception about the efficacy of smoking cessation treatments and opinions about the possibility that these treatments could be financed with public funds.

Methods: A representative sample of the Spanish population (=21 years) was interviewed by phone to assess their maximum willingness to pay for a 3-month treatment course with varenicline. The drug was described in terms of efficacy and most frequent adverse events (without mentioning its commercial name). Efficacy and safety data of varenicline were obtained from a recent meta-analysis (Reus et al., 2007). The sample was composed of smokers, non-smokers and ex-smokers. Questions included in the survey were adapted to be consistent with the experiences of these groups.

Results: Only 50.6% of smokers would be willing to take a drug for smoking cessation treatment provided for free. However, 58.5% of non-smokers would advise a smoker friend to take the drug. The main objection to treatment is the belief that it “isn’t true that it is easier to quit smoking with these drugs”. Only 35.7% of the sample declared a positive willingness to pay. Nevertheless, 57.2% of those interviewed were favourable about public financing of smoking cessation treatments (63.3% in the smokers group). The average willingness to pay for varenicline amounts to €235.6 in the group of smokers. Assuming a linear relation between the willingness to pay and the incremental effectiveness, the willingness to pay per quitter would be €1,685.

Conclusions: There is a negative bias against the utilization of smoking cessation medicines. Many of those polled don’t seem to perceive the therapeutical value of these drugs. A possible explanation lies in the overestimation of the ability to control one’s own impulses. That bias becomes particularly important towards habits with a high component of addiction such as a smoking habit. In the light of these findings the public administration could implement policies that help smokers to take decisions for their own benefit.

Smoking status and eosinophilia

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Presenter:
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Abstract
Objectives: Eosinophilia is a known risk factor for increased mortality, but its association with behavioral risk factors such as smoking is not known.

Methods: 14 560 Koreans with normal leukocyte counts who underwent comprehensive medical testing at a health promotion center in a tertiary referral hospital from May 1995 to February 2004. We defined eosinophilia as =500 cells per ?L blood. Trained personnel measured height and weight, and information about smoking and alcohol consumption was obtained by questionnaire. We measured the odds ratios by multiple logistic regression analysis, adjusting for age, sex, parasitic infections, allergy history, and current medications.

Results: 1414 (9.7%) of subjects had eosinophilia. In univariate analysis, eosinophilia was significantly associated with current smoking, obesity, alcohol consumption, parasitic infections, male sex, and younger age (P = 0.001). In multiple regression analysis, we found that current smoking was associated with eosinophilia (odds ratio [OR], 2.02; 95% confidence interval [CI], 1.67 - 2.44). In addition, eosinophilia was significantly associated with alcohol consumption (OR, 1.32; 95% CI, 1.14 - 1.53).

Conclusions: Smoking, and alcohol consumption were independently associated with eosinophilia. Our finding suggests that eosinophilia has clinical implications as a marker of smoking status. A prospective study is needed to determine whether smoking cessation affects eosinophilia status.
Prescribing of smoking cessation medication in England since the introduction of varenicline

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Ann McNeill
Tim Coleman
Lisa Szatkowski
Sarah Lewis

Presenter:
Tessa Langley, University of Nottingham, UK

Abstract

Objectives: Bupropion and nicotine replacement therapy (NRT) have been available as smoking cessation aids via the UK NHS since June 2000 and April 2001 respectively. Varenicline, a new smoking cessation medication, became available on NHS prescription in December 2006. We used data from The Health Improvement Network (THIN), a database of UK electronic primary care records, to investigate the impact of varenicline’s introduction on recent trends in prescribing of smoking cessation medications in England.

Methods: We extracted data on all patients in THIN from June 2000 to June 2009 and calculated monthly rates of prescribing of varenicline, NRT and bupropion per 100,000 population for the study period. We calculated rates for the overall population, men and women, and different socio-economic groups, based on Townsend score. We examined prescribing rates for individual medications and also for all smoking cessation medications together (i.e. varenicline, bupropion and NRT), comparing trends before and after the introduction of varenicline.

Results: Prescribing of varenicline has developed rapidly since it became available on the NHS, and it is now the second most commonly prescribed stop smoking drug in England after NRT. Aside from a brief peak when legislation banning smoking in public places was introduced, NRT prescribing rates have been lower since varenicline was introduced. Bupropion prescribing, which has declined since reaching a peak in 2001, also increased briefly around the time of the introduction of smokefree legislation, but has since declined further. These trends were observed in both men and women, and across all socio-economic groups. Varenicline appears to have displaced some prescribing of other smoking cessation medications rather than resulting in increased overall prescribing of smoking cessation medications.

Conclusions: These results suggest that varenicline has been readily accepted as a standard therapy by English GPs who are issuing fewer prescriptions for NRT and bupropion. As a result, the introduction of varenicline may not have led to a greater proportion of smokers being prescribed smoking cessation medication.

Translating hospital-based tobacco cessation research findings into a “real world” hospital setting

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Beth Allison
Valerie Titan
David Gonzales

Presenter:
David Gonzales, OHSU Smoking Cessation Center, USA

Abstract

Objectives: To translate evidence-based hospital initiated tobacco dependence treatment into a “real world” academic health center hospital to achieve effective results.

Methods: Oregon Health & Science University (OHSU) is an academic health center in Portland, Oregon, USA. OHSU uses an electronic medical record (EMR) system. Translating evidence-based tobacco dependence treatment into the OHSU system required 1) determining how to integrate the 5 A’s tobacco treatment into the appropriate key points of the hospital workflow; 2) identifying the roles and responsibilities for the members of the medical team; 3) creating or modifying the EMR to establish appropriate clinical pathways to support and document the treatment process; and 4) providing information and education to the medical team through existing communication channels. Key members of the medical team include nurses completing the initial patient admission assessment; nurses advising patients about smoking and making referrals for treatment, physicians ordering treatment, especially at admission, and the tobacco cessation nurse practitioner responding to consult orders to complete treatment via bedside assessment and treatment plans, discharge recommendations, and follow-up. The EMR system went online in April 2008. Since June, 2008, three methods have been used to promote integration of tobacco treatment: 1) general education and outreach information to all medical staff and specifically to cardiac and pulmonary units (June 2008 – May 2009); 2) proactive outreach to MD’s on cardiac and pulmonary units to prompt consult orders for smokers identified in daily EMR reports (June - December 2009), and 3) adding the option for nurses to make a referral via the EMR for a tobacco consult and launching a nursing education program “Ask, Educate, Refer” (AER) to increase nursing education and consult referrals (Jan 2010 to date). Quality improvement measures for this analysis were: 1) percent changes in documentation of smoking status over time and 2) number of consult referrals over time.

Results: Documentation of smoking status for all patients increased from 69% in June, 2008 to 87% in May 2009 and on the cardiac and pulmonary units from 83% to 95%. Referrals for consults increased from 24/month from June 2008 – May 2009; to 42/month with proactive MD outreach from June – December 2009; to 51/month with the current AER program.

Conclusions: Documentation of tobacco status can be improved through general education. Changing provider behavior to actively order or refer for treatment via EMR requires direct and specific education, prompting and outreach.
Varenicline vs bupropion or N.R.T. in patients which consume anxiolytics, antidepressants, and other psychotherapeutic drugs, a blind retrospective study

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Abstract
The consumption of psychotropic drugs, 12 months prior to the initiation of the process of cessation and during the six months post initiation of treatment, on the first 159 individuals who attended our smoking cessation unit was compared. 75 had received therapy with nicotine patches, 32 bupropion and 52 varenicline; all patients could also have received other forms of NRT. 32.7% (n=52) of the patients consumed psychotropic drugs the year prior to the smoking treatment initiation. Ten of these (19.2%) received more psychotropic drugs (more doses or new prescriptions) during the six months following cessation. Of those who did not consume psychotropic drugs before the cessation attempt (107), 8 (7.5 %) required medication. Of those patients who consumed psychotropic drugs the year before, those who received varenicline (n=11) had greater probability to improve their symptoms (less or no consumption of psychotropic drugs after six months following cessation) than the patients who received the nicotine patch (n=32) or bupropion (n=11): 45.4% vs. 12.2%; p:0.025, OR=6.0 [1.3-27.2]. The rate of cessation of these patients after six months was greater in those who have been treated with varenicline (9/11) than in those who had been treated with other drugs (15/41): p:0.015, O.R.: 7.8 [1.5-41.0], and there were no differences between patches and Bupropion. This preliminary work has led us to the following conclusions: 1) Patients who had consumed psychotropic drugs prior to the intent of cessation can quit smoking. In our sample of patients, 46% reached 6-month abstinence. Of those, 20% reduced or eliminated the use psychotropic drug after initiating the cessation attempt. This fact increased significantly the pos-si-bi-lities of maintaining the 6-month abstinence (x6.5). 2) In the group of patients who consumed psychotropic drugs prior to treatment (n=52), those who received varenicline showed greater probability of consuming less drugs after the cessation (x6.6) and higher abstinence rates after six months (x7.8) compared to those patients who used either bupropion or NRT. 3) Although our sample is small, due to the fact that we have reached the standard level of statistical significance (p<0.05) and that the present study did not receive any funding, our data suggests that varenicline may be a drug especially useful for smoking cessation in at least some patients with psychiatric symptoms.

Homeless Smokers’ Interest in Providing Peer Social Support for Quitting

Authors:
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Presenter:
Kathryn Goldade, University of Minnesota, USA

Abstract
Peer social support for quitting smoking is emerging as a potentially effective and novel approach to improving sustainability of smoking cessation, yet requires further evidence of efficacy. Prevalence of smoking among homeless persons is alarmingly high at 70%, three times the national average. Tobacco-related causes of mortality, cancer and heart disease, constitute two of the top three killers of homeless persons. Further, according to preliminary findings of a community-based cessation trial with homeless persons, there is a high motivation (9.1 on 10 point scale) to quit smoking, and high levels of addiction (51.4% smoke within 5 minutes of waking), further supporting the need for effective cessation programs for this population. Due to uniquely social living conditions of homeless persons, we explore peer social support as a potential tool for enhancing smoking cessation in a homeless population. Data for the current study was derived from a 2009 statewide survey of homeless Minnesotans (n=6,090). Within survey respondents, 47.3% of participants were women, 52.7% were men. The prevalence of current smoking was 69.5%; 30.5% reported not smoking any cigarettes in the last thirty days. Of the non-smokers, 46.1% (755) were former smokers and 53.9% (882) were never smoker. Former smokers knew, on average 1.8 persons who successfully quit smoking. Of the former smokers, only 12.5% received help from friends or relatives to quit smoking. Males (65.1%) were significantly more interested in helping homeless smokers quit when compared to their female (51.4%) counterparts (p<.001). Additionally African American participants were significantly more willing to help other homeless smokers quit when compared to Whites (p< .05). Findings from the present study suggest the need for training homeless persons on providing peer-support for quitting. Results from this study suggest support of culturally tailored peer social support programs among homeless smokers.
The impact of smoking urge on attentional bias for smoking-related images in smokers when compared to non-smoking controls.

Authors: Louise M. Hopper, Katriona M. O’Sullivan, Michael J. Gormley

Presenter: Louise M. Hopper, Trinity College Dublin, Ireland

Abstract

Background: Previous research has demonstrated an important role for attentional bias in the development and maintenance of addiction, yet conflicting results have been found regarding the factors that can be correlated with attentional bias for smoking-related cues. Aims or Objectives: This study used a pictorial modified-Stroop task to demonstrate the existence of an attentional bias for smoking-related stimuli in smokers as compared to non-smoking controls. In addition, it sought support for a multidimensional view of urge, defined as the momentary but immediate need to smoke a cigarette, and predicted that levels of smoking urge would influence Stroop results. Finally, it was expected that ratings of smoking-related images would vary with both smoking status and urge levels.

Method: 28 non-smokers (18 female) and 27 smokers (13 female) participated in this study. Prior to completing the Stroop task, urge levels were manipulated using imagery scripts, sub-dividing the smokers into high-urge (n=13) and no-urge (n=14) groups. Non-smokers received the no-urge script as a control. Both a single-item and the multi-dimensional Questionnaire of Smoking Urges (QSU) were used to measure subjective smoking urge at three time periods; on arrival, post-imagination, and post-Stroop. Participants also rated the affective valence of the Stroop smoking-related images.

Results: Both smokers and non-smokers demonstrated an attentional bias for smoking-related, in comparison to neutral, images. Mean Stroop reaction times did not differ significantly between the high- and no-urge smoking groups, and no significant correlations were found between Stroop response and urge at any time period. Smokers were found to rate positive smoking images more positively than non-smokers, and QSU Factor 1 scores (clear intention to smoke with anticipation of positive affect) at time 3 were significantly correlated with smokers positive image ratings.

Discussion: Finding a modified-Stroop effect in smokers and non-smokers is problematic for theories of addiction based on the saliency of drug-related stimuli and suggests the existence of other factors which are confounding attentional bias results. Urge scripts were shown to be successful at manipulating smoking-urge in a laboratory setting and differential findings from single- and multi-item urge assessment support a multidimensional view of smoking-urge. Positive aspects of urge were seen to predict explicit positive ratings of smoking-related stimuli. Future research should examine potential confounds, such as affective value, in the stimuli used in attentional bias tasks, their interaction with urge, and investigate the implications of urge differences on the efficacy of treatment programmes and in predicting relapse.

An exploratory trial to evaluate the effects of a physical activity intervention as a smoking cessation induction and cessation aid among the ‘hard to reach.’

Authors: Adrian Taylor, Anne Rowlands, Colin Green, Rod Taylor, John Campbell, Richard Byng, Richard Ayres, Paul Aveyard, Michael Unship, Robert West, Susan Michie

Presenter: Adrian Taylor, University of Exeter, UK

Abstract

National Health Service (NHS) smoking cessation treatment aims to help people to remain abstinent after a quit attempt but as few as 22% are abstinent at 12 months. Recruitment of smokers into such a service is increasingly difficult, especially among ‘hard to reach’ smokers. In contrast, 57-66% of smokers would like to cut down but are not yet ready to quit, and nicotine assisted reduction studies have shown increased quit attempts and cessation rates (Wang et al, 2008). However, little is known about using physical activity (PA) to aid smoking reduction, and enhance attempts to quit.

Phase 1 will establish, though interviews with smokers and professionals, acceptable ways to increase PA among ‘hard-to-reach’ smokers using a tailored counselling intervention, as a way of facilitating smoking reduction, and increase attempts to quit and 4 week post-quit rates. We will also explore the utility of various approaches (eg, GP invitation, community advertising) to recruit ‘hard to reach’ smokers and conduct assessment procedures.

Phase 2 will provide information to use in the planning of a larger trial, by conducting a pilot trial in which 120 smokers (wishing to cut down) will be randomly allocated equally to: (i) brief advice on cutting down; (ii) PA intervention + brief advice. Those wishing to quit in (i) will receive standard NHS support, plus ongoing support for PA. The PA intervention will involve Health Trainer counseling, use of pedometers and subsidised physical activity options. Smoking status will be assessed at 8 and 16 weeks after baseline, and at 4 weeks after any quit attempt. Other outcomes will include: number of quit attempts; quality of life; withdrawal symptoms and cravings, readiness to quit, confidence to quit and stay quit, use of other behavioural and pharmacological support, physical activity and weight.
Motives and strategies to quit smoking and reasons to relapse differ by socioeconomic status

Authors:
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Mette Aadahl,
Ulla Toft
Torben Jørgensen

Presenter:
Charlotta Pisinger, University Hospital, Glostrup, Denmark

Abstract
Objective: To investigate motives, strategies and experiences to quit smoking and reasons to relapse as a function of socioeconomic status (SES). Methods: A population-based study, Inter99, Denmark. 3,684 daily smokers completed questionnaires at baseline. Cross-sectional baseline-data (1999-2001) were analysed in adjusted regression analyses. Results: These findings were consistent across three definitions of SES (employment, school education, occupational education); smokers with low SES were significantly more likely than smokers with high SES to report that they wanted to quit because smoking was too expensive (OR for low school education: 1.85(1.4-2.4)) or because they had health related problems (OR:1.75(1.4-2.2)). When looking at previous quit attempts, smokers with low SES were significantly more likely to report that it had been a bad experience (OR: 1.41(1.1-1.8)), and that they had relapsed because they were more nervous/restless/depressed (OR: 1.43(1.1-1.8)). Conclusion: This study shows that smokers with low SES have other motives to quit and other reasons to relapse than smokers with high SES. Future tobacco prevention efforts aimed at smokers with low SES should maybe focus on advantages of quitting smoking right now, using high price of cigarettes and health advantages of quitting as motivating factors and by including components of mental health as relapse-prevention.
Environmental health impact assessment methodologies for estimating the public health impacts of environmental tobacco smoke exposure in the home

Authors: Amy Shafrir, Araceli Sanchéz, Jiménez Fintan Hurley, Emma Doust

Presenter: Amy Shafrir, Institute of Occupational Medicine, UK

Abstract

Objectives: The aim of this research is to evaluate two different environmental health impact assessment (EHIA) methodologies to assess the health impacts of environmental tobacco smoke exposure (ETS) from living with a smoker in terms of their feasibility and usefulness for public policy.

Methods: The study compared two ways of classifying exposure to ETS – classification as living or not living with a smoker (binary approach) and estimated PM2.5 exposure (pollutant-based approach). These exposure metrics were used to assess the health impacts of ETS exposure in the home among adults and children within the EU. Using the binary approach, the risks for various health endpoints were compared between adults (lung cancer and coronary heart disease) and children (respiratory illness/symptoms and SIDS) living with a smoker and those not living with a smoker. Exposure-response functions for the health endpoints were obtained from the epidemiology literature and combined with the population exposed to ETS at home and background rates of disease to estimate the population attributable fraction for the health endpoints. In the pollutant-based approach, we will model the levels of PM2.5 exposure in the home for both adults and children in the EU. The output of the model will then be used in the calculation of the population attributable fraction due to ETS for each of the selected health endpoints.

Results: The results for the binary approach indicate that approximately 3% (1,000 cases) and 2% (2,000 cases) of lung cancer cases among females and males, respectively, are attributable to ETS exposure in the home within the EU. Additionally, approximately 3% of all coronary heart disease deaths (14,000 deaths) and hospital admissions (80,000 admissions) are attributable to ETS exposure in the home among males and females. The binary approach has proved to be feasible; however, difficulty was experienced in obtaining the proportion of the population exposed to ETS in the home. As the research is ongoing, we plan to have results from the pollutant-based, PM2.5, approach before September enabling us to show results for the two methodologies at the conference.

Conclusions: From the results of the binary and pollutant-based approaches, we intend to provide an estimate of the health burden attributable to ETS from living with a smoker in the EU and to make recommendations on which method is more appropriate for public policy or for certain circumstances.

Modeling smoking in relation to educational level for adolescents: effects and costs of two tobacco control programs for lower educational levels

Authors: Boukje van Gelder, Eelco Over, Rudolf Hoogenveen, Marc Willemse, Antonia Verweij, Mariel Droomers, Talitha Feenstra

Presenter: Boukje van Gelder, RIVM, The Netherlands

Abstract

Objectives: Especially among adolescents with a lower educational level or lower socio-economic status (SES), smoking prevalence rates are high. These youths increase their risk for health problems and mortality at later ages. Therefore, reducing the number of smoking adolescents has high priority. The objective is to estimate the effects and costs of two (evidence-based) smoking prevention programs in Dutch lower vocational schools on smoking prevalence at age 16 and 26. Methods: Policy scenarios describe implementation of two smoking prevention programs, Computer Tailoring program (CT) to 7th grade students and Healthy Schools and Stimulants program (HSS) to 9th grade students tailored to lower educational levels. Effectiveness was taken from literature, participation among schools was based on a questionnaire and costs were estimated bottom up. The effects of the policy scenarios on smoking prevalence were estimated using a simulation model of the changes in educational level and smoking behavior for adolescents. Representative national cross sectional studies gave estimates of smoking class transition rates (start, stop and relapse) by educational level (lowest, low, intermediate and high). Results: After implementation of the CT- and HSS- smoking prevention programs by 5% till 69% of lower vocational schools, the smoking prevalence of these students decreased with maximal 0.81% points (95% CI: [0.08;1.24]) at age 16 and 0.26% points (95% CI: [0.03;0.40]) at age 26. For all 16 year olds, overall smoking prevalence decreased with maximal 0.43% points (96% CI: [0.04;0.66]) resulting in a reduction of at most 0.14% points (95% CI: [0.01;0.21]) at the age of 26. Costs per smoker avoided were lowest (€7800) for offering CT to 7th grade students. Costs were highest (€3600) for offering HSS to 9th grade students. Conclusions: Implementing effective smoking prevention programs at lower vocational schools could decrease smoking prevalence at age 16 and 26 year. This requires broader implementation of school programs with evidence based effectiveness.
Advancing outdoor smoke-free policies through effective knowledge translation with key stakeholders

Authors: Claire Munhall
Ryan David Kennedy

Presenter: Ryan David Kennedy, University of Waterloo, Canada

Abstract
Objectives: In 2008, the Canadian city of Woodstock, in Southwestern Ontario, passed the most comprehensive outdoor smoke-free ordinance in the country. A comprehensive pre-post cohort survey evaluation of the policy was conducted, which demonstrated that the outdoor smoke-free ordinance (OSFO) had effectively reduced involuntary exposure to second-hand smoke in the environments it regulated. The evaluation also demonstrated that the law had increased quit intentions among smokers, had helped some smokers to quit, and helped smokers that had quit to stay quit. An effective means to translate the knowledge was needed. Researchers partnered with key tobacco control and public health stakeholders across Ontario to explore options.

Methods: The findings from the study were presented to a community of practice (COP) coordinated by Cancer Care Ontario for Tobacco-free Sports. This COP had representation from each Tobacco Control Area Network (TCAN) in Ontario and most public health units. This group was engaged through their online web-community and at their annual face-to-face meeting to provide input into how best to share research findings with their decision-makers. The facilitated on-line discussion and face-to-face meeting sought to identify a suitable format or medium to disseminate the findings, the content priorities to address concerns or barriers, and a dissemination plan.

Results: Stakeholders agreed that a short video was the preferred approach because the medium is easy to uptake, and provides a quick way to present findings with their decision-makers. The facilitated on-line discussion and face-to-face meeting sought to identify a suitable format or medium to disseminate the findings, the content priorities to address concerns or barriers, and a dissemination plan.

Conclusions: By involving stakeholders in the development process of the knowledge translation piece many issues were addressed to ensure the knowledge translation piece will be a useful tool for tobacco control advocates. Researchers in many different fields can use this process to increase knowledge translation and expand smoke-free policies using scientific evidence effectively.

Simulation of the effect of an intervention that reduces number of friends who smoke, on transition from non- to daily smoking in adolescents

Authors: Erika Dugas
Paul Wileyto
Magdalena Lagerlund
Jennifer O’Loughlin

Presenter: Erika Dugas, Centre de Recherche CHUM, Canada

Abstract
Objectives: To simulate the impact a theoretical intervention for adolescents that reduces the number of friends who smoke, on transition from non- to daily smoking.

Methods: Data were drawn from the NDIT (Nicotine Dependence in Teens) Study, a prospective cohort investigation of 1293 grade 7 students recruited in a convenience sample of 10 secondary schools in Montreal, Canada in 1999. Questionnaires were administered every 3 months for 5 years until students graduated from secondary school (total of 20 survey cycles). Friends smoking was measured in each survey cycle on a 5-point response scale (none, a few, about half, more than half, most or all). We used Ordinal Logistic Regression to estimate a Markov transition matrix, and we then used the transition matrix to simulate the adoption of smoking behaviour over the follow-up period according to reductions in the proportion of participants with friends who smoke of 10% and then 25%.

Results: Among non-smokers at baseline, 139 (10.8%) began smoking daily during follow-up. Without intervention, the modeled proportion of daily smokers matched the 10% observed empirically. A 10% reduction in the proportion of participants who reported that only a few friends smoke to none, resulted in a 4% reduction in daily smoking at the end of follow-up. Similarly, a 25% reduction resulted in 22% fewer daily smokers.

Conclusions: Peer/friends smoking may be an important target for youth tobacco control interventions in terms of preventing daily smoking.
**An exploration of the determinants of smoking cessation in women**

**Authors:** Fay Beck, Linda Bauld, Amanda Amos, Rosemary Hiscock

**Abstract**

**Objective:** The objective of this study was to examine the characteristics of clients utilizing two smoking cessation services in England in order to find out whether any gender differences existed. The study also aimed to examine the determinants of 52 week smoking cessation success in women, depriving women and men.

**Method:** Secondary data analysis was performed on data collected from two smoking cessation services between May and November 2002. Univariate and multivariate analyses were conducted in the form of chi square tests and logistic regressions.

**Results:** There were some socioeconomic gender differences within the sample. Men were more likely to pay for their prescriptions than women (63.7% vs. 47.2%, p <001) and were more likely to be homeowners (54.6% vs. 49.6%, p = .001). Women were less likely to live with a partner than men (41.9% vs. 30.6%, p <.001) and more likely to be single parents (10.7% vs. 1.4%, p<.001). Within this sample women were more likely to be classified as being in the most deprived quintile on the Index of Multiple Deprivation (48.4% vs. 41.4%, p = .002). There were some smoking related gender differences. Women tended to smoke fewer cigarettes than men per day (p <.001) and were more like to smoke in order to cope (23% vs. 17.5%) whereas men were more likely to state they smoked for pleasure (23.1% vs. 17.1%). Men were also more likely than women to have successfully quit smoking (CO validated) at 52 weeks (17.3% vs. 12.9%, p = .007). Age (OR 1.02, CI 1.003 – 1.046), paying prescriptions costs (OR 1.74, CI 1.101 – 2.761), not living with other smokers (OR 1.64, CI 1.032 – 2.620), being extremely prescriptions costs (OR 1.74, CI 1.101 – 2.761), not living with a partner (5-6 weeks OR 2.22, CI 1.214 – 4.048 or 7 + weeks OR 3.55, CI 2.053 – 6.126) were all determinants of 52 week cessation in women. Determinants of smoking cessation in deprived women and men were also examined.

**Conclusion:** There appear to be socio-economic and smoking-related gender differences in the characteristics of the clients using the smoking cessation services in England. There are also some gender differences in the determinants of smoking abstinence. However, further research is required to understand the way these variables affect smoking cessation.

**Differences in lifestyle and values between primary snus users, dual users and smokers in Norway**

**Authors:** Gunnar Sabo

**Presenter:** Gunnar Sabo, Sirus, Norway

**Abstract**

**Objectives:** One of the worries associated with promotion of snus as a harm reducing tool is that new groups, who otherwise would not have started to smoke, may start with snus. Even if snus use is increasing in Norway, little is known about the possible recruitment of new groups to nicotine via snus. Studies from Finland and Sweden show that snus users tend to share the same socio-demographic and lifestyle profiles as smokers, yet few (if any) of these studies has distinguished between primary snus users, dual users and snus users who are former smokers.

In this paper I compare lifestyle and value profiles (as well as basic socio-demographics), between six tobacco use group categories: primary snus users, ex-smoking snus users, dual users, unique smokers, former smokers and never smokers. If primary snus users display a profile more similar to non-smokers than either those who combine (or has combined) snus with smoking or exclusive smokers, the “new groups” hypothesis is supported.

**Data and Method:** Norsk Monitor is a bi-annual survey of Norwegian life-style and values. Data from 2007 and 2009 was pooled to achieve a total N of 4216 respondents between 15 and 54 years, of which 12 % were snus users, 24 % were exclusive smokers, 23 % were ex-smokers and 41 % were never smokers. Multiple classification analysis (MCA) was applied to construct a space of life-style and values, using 20 variables with 130 response categories as active points. Socio-demographic variables were then projected into this space as supplementary points (5 variables, 39 response categories).

**Findings:** Primary snus users differ sharply in lifestyle and values from unique smokers, while they are more similar to snus users who has previously smoked (and to a lesser extent, dual users). The lifestyle of primary smokers consist in little contact with neighbors, all the more contact with friends, few health problems, high alcohol consumption, a liberal view on use of substances (alcohol and cannabis) as well as high scores on risk values. In terms of social position, primary snus users are young males, polarized as a group with regards to economical capital, as some are students with low income and some leaders with high income. Unique smokers tend to have health problems; they seldom or never exercise and score low on risk values, even if they are often heavy gamblers.

**Conclusion:** The “new groups” hypothesis is considered as partially supported.
Beliefs about the harmfulness of snus compared to cigarettes among Norwegian GPs.

Authors: Ingeborg Lund Janne Scheffels
Presenter: Ingeborg Lund, Sirus, Norway

Abstract

Background: Research has advised us that the health risks associated with Swedish moist snuff (snus) use are quite small in comparison with the health risks associated with cigarette smoking. However, as information about these risk differences is scarce and ambiguous, erroneous ideas of more or less equal harm from snus and cigarettes are common in the general population.

Objectives: This paper presents the results from a survey among general practitioners in Norway, with the aim to measure the GPs' perceptions of the relative risk potential in cigarettes and snus.

Data: A questionnaire was administered to GPs in 2008. Approximately 900 doctors participated, giving a response rate of about 50%. Perceived relative risk was measured by the question: In terms of health risks, how do you think daily use of snus compares to daily use of cigarettes? Answer categories ranged from ‘snus is much more harmful’, to ‘snus is much less harmful’.

Results: Only 36 percent of the GPs believed that snus was much less harmful than cigarettes, while 20 percent said they did not know the relative risk, that the two products were equally harmful, or that snus was the more harmful product. GPs that rated snus as less harmful would more often suggest snus as an aid in smoking cessation. There was no association between perceived relative risk of snus and cigarettes and the GPs’ tendency to recommend other types of quitting aids.

Conclusion: Almost two thirds of the GPs had beliefs about the relative risk between snus and cigarettes that were at odds with scientific consensus. This shows that more and better information is needed, particularly from the health authorities, to bring the medical profession up to date in these questions.

The potential of community service organisations for delivering smoking cessation support to disadvantaged smokers

Authors: Jamie Bryant Billie Bonevski Christine Paul Jon O’Brien Wendy Oakes
Presenter: Jamie Bryant, University of Newcastle and Hunter Medical Research Institute, Australia

Abstract

Objectives: Accessing and engaging disadvantaged individuals for smoking cessation represents a significant challenge. Community service organisations that provide welfare and other support services to disadvantaged members of the community represent a promising setting for providing smoking cessation support, however the potential of these services is only beginning to be explored in Australia. As part of Cancer Council NSW Tackling Tobacco program, this study aimed to explore the acceptability and feasibility of community service delivered smoking cessation support from the perspectives of community service managers, staff and their disadvantaged clients.

Methods: In-depth interviews were conducted with managers and focus groups were conducted with staff and their disadvantaged clients. Discussions and interviews explored the acceptability of providing cessation support to clients, barriers to providing support, and the types of strategies likely to be both desirable and feasibly integrated into usual care. Discussions with clients explored the acceptability of receiving cessation support in this setting. Discussions were audio-taped, transcribed and analysed using thematic analysis techniques. Managers, staff and clients also completed a survey to quantitatively explore the types of support desired.

Results: Thirty-two clients participated in six client focus groups, thirty five staff participated in six staff focus groups and eight managers completed telephone interviews. Acceptability of both providing and receiving cessation support in the community service setting was high. The majority of managers and staff reported that providing smoking cessation support fit well with their aim of improving client welfare, however identified several perceived barriers to providing support including being of low priority, insufficient resources and inadequate staff training. Brief intervention approaches were preferred by managers and staff. Financial and non-financial incentives and access to free or subsidised nicotine replacement therapy was desired by clients.

Conclusion: Community service organisations represent a novel and acceptable access point for delivering smoking cessation support to disadvantaged smokers, however little is currently being done to engage organisations to provide this support. Further research is needed to assess the uptake of smoking cessation support by disadvantaged smokers in this setting and test the effectiveness of this approach.
Measures of nicotine dependence in adolescents: An update of the evidence 2000-2010

Authors:
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Joseph R. DiFranza

Presenter:
Jennifer O’Loughlin, University of Montreal, Canada

Abstract
Objective: Lack of consistency across studies on the prevalence, natural course, determinants, and outcomes of nicotine dependence (ND) relates in part to the lack of a standardized, widely-accepted measure of ND in youth. Our objective was to summarize new knowledge about youth ND scales in the 10 years since Colby et al. (2000) reviewed existing scales and concluded that more research is needed to develop theoretically coherent, clinically relevant, and psychometrically sound measures.

Method: English language articles published between 2000-10 were identified through PubMed, and screened for two inclusion criteria: the study included a population-based sample of adolescents and/or young adults; and indicators of validity and/or reliability of the ND scale were reported. Based on growing understanding that the physiologic abnormality that characterizes ND and allows for its diagnosis is a withdrawal state that emerges whenever an addicted user attempts to forgo use, we discussed the content of each item in each ND scale retained, and then categorized each item into one of 11 item content categories. Each scale was then categorized as one of: (i) scale with most items measuring ND/withdrawal, (ii) mixed scale (that measures ND/withdrawal and other related constructs), or (iii) scale without a preponderance of items that are unambiguous ND/withdrawal indicators.

Results: We categorized two scales (Hooked on Nicotine Checklist, Withdrawal Symptom Cluster) as having most items measuring ND/withdrawal; six as mixed scales (Nicotine Dependence Syndrome, DSM IV, ICD-10 Tobacco Dependence, Dimensions of Tobacco Dependence Scale, Autonomy Over Smoking Scale, ND/Cravings Symptom Cluster Scale); and five as scales without a preponderance of ND/withdrawal items (Fagerström Test for Nicotine Dependence, Modified Fagerström Tolerance Questionnaire, Stanford Dependence Index, Nicotine Dependence Scale for Adolescents, Self-Medication Symptom Cluster).

Conclusions: In spite of good to excellent psychometric properties, existing ND scales vary widely in the degree to which their items measure ND/withdrawal. Many existing items may be endorsed for reasons other than dependence or describe situations that are not relevant to adolescents, and therefore could generate false positive responses and lack specificity. No existing measure addresses the full spectrum of clinically recognized features of nicotine withdrawal beginning with withdrawal-induced-wanting which is often the first symptom of developing ND.

Trends and determinants of people's knowledge of the illnesses caused by second-hand smoke (SHS), and the relationship between knowledge and SHS-related behaviours

Authors:
Karen Evans

Presenter:
Karen Evans, University of Bath, UK

Abstract
Objective: To explore over an 11-year period (1996-2007) in England: (1) respondents’ knowledge of illnesses that can be caused by SHS (2) factors influencing knowledge; (3) the relationship between knowledge and SHS-related behaviour including whether homes are smokefree and if respondents smoke in the presence of children.

Methods: Analyses of cross-sectional data from the smoking module of the nationally representative Omnibus Survey. Knowledge of 10 individual SHS-related illnesses were explored. A composite knowledge score was created combining knowledge of the 10 illnesses; ≥6 correct answers equating to good knowledge. Multivariate logistic regression was performed to elicit the determinants of ‘good’ or ‘poor’ knowledge. Trends over time and the relationship between knowledge and SHS-related behaviours explored.

Results: When all years were pooled (N=30,745), over 80% of respondents were aware that SHS causes respiratory illnesses such as childhood asthma (84%), chest infections (90%), adult asthma (84%), lung cancer (86%) and bronchitis (85%). Respondents were less aware that SHS causes child ear infection (33%) and cot death (55%), and coronary heart disease (71%) and coughs and colds in adults (68%). Respondent’s knowledge of respiratory illness has remained high over the study period. There has been a small increase over time in the knowledge that SHS causes cot death and ear infections in children and adult lung cancer and coronary heart disease. Age, social class, car ownership, smoking status, number of children in the household, age of the youngest child in the household and year all independently predicted levels of knowledge. Just 15% of respondents with poor knowledge reported having a smokefree home, compared to 34% of respondents with good knowledge. Similarly, 45% of smokers with poor knowledge smoked when in a room with a child compared to 27% of smokers with good knowledge.

Conclusions: Knowledge of the illnesses that SHS can cause is poor for particular illnesses and population subgroups. Individuals who smoke, have lower occupational status, have no car and live in a home with a higher number of children or adults are independently less likely to have ‘good’ knowledge. There's a relationship between knowledge and SHS-related behaviours. Although causality cannot be determined through cross-sectional data, the fact that knowledge is a key construct in many health behaviour change theories, suggests that improving knowledge in these sub-groups may be a useful step in securing further reductions in exposure to SHS (Glantz & Bishop, 2010).
The fluidity of home smoking rules in disadvantaged households: the need to address risk perceptions and rationalisations

Abstract
Objectives: In the UK, approximately two million children are regularly exposed to second-hand-smoke at home, with close to half of all children living in a household with at least one smoker. One of the most effective ways to reduce second hand smoke exposure in children is to encourage parents and other adults (caregivers) to make their homes completely smoke-free, however, this may require substantial behaviour change and there is evidence to suggest that some caregivers may face significant barriers when trying to implement and maintain a smoke-free home. Those living in more disadvantaged circumstances, who are more likely to smoke, may encounter particular difficulties, for example due to the limitations of the physical environment of their home. The aim of this qualitative study was to explore the motivators and barriers to achieving a smoke-free home and to examine how we might best help caregivers to protect their children from exposure to second hand smoke.

Methods: In-depth, semi-structured interviews were conducted with twenty-two disadvantaged smoking caregivers of children under five years, who were accessing Government led caregiver support and advice services (Children’s Centres) in Nottingham, UK. Data were systematically coded and analysed using NVivo software to identify emergent main and sub themes, and to explore data trends and patterns.

Results: Caregivers had some general knowledge of the dangers of second hand smoke, but few could identify specific disease outcomes. All interviewees described rules around smoking in the home, with the majority restricting smoking to a single room, however, these rules tended to be transient and fluid, varying with life events. Caregivers rationalised relaxing their rules, with reference to barriers such as an unwillingness to smoke outside in bad weather, the desire or need to smoke whilst caring for children, a lack of autonomy in enforcing rules and home space restrictions; continued exposure was seen as a lesser evil.

Conclusions: The findings from this qualitative study highlight the need to develop and evaluate targeted interventions that explore and address these personal conflicts and risk perceptions to increase the likelihood of smoking caregivers being able to initiate and maintain a smoke-free home for their children.

Study participants’ attitudes to smoke-free legislation: does it play a role in the health improvements reported?

Abstract
It has long been recognised that second-hand smoke (SHS) is harmful to health and that people who work in occupations with high exposures to SHS may be at particular risk. A number of initiatives have been introduced throughout the world to reduce the exposure to SHS in different settings. Over the past 5 years all four countries of the UK have introduced smoke-free legislation to prohibit smoking in public places. The evaluation of smoke-free legislation in both Scotland and England collected data on changes in bar workers’ self-reported health and also on attitudes towards the legislation. This paper examines the interaction between study participants’ pre-legislative attitude towards the smoke-free intervention and changes in their individual self-reported health. In the lead up to both the Scottish and English smoke-free legislation bar workers were recruited and asked questions about their attitudes to the legislation, their health symptoms and their exposures to SHS. They were then asked the same questions immediately after the legislation was implemented and again a year later. Previous work published on these studies has described the reductions seen in fine particulate matter, salivary cotinine levels and the number of self-reported health symptoms; and an improvement in the attitudes of bar workers towards the smoke-free legislation. Here we describe the change in health symptoms for workers in both Scotland and England and investigate the relationship between the changes in health symptoms and the initial attitude of the workers towards the ban. As the symptoms are self-reported they are subjective and open to reporting bias. Our analysis shows that there was no evidence of a relationship between initial attitude towards smoke-free legislation and change in number of health symptoms reported for bar workers from England, but there was a suggestion of a relationship between the change in respiratory symptoms and the initial attitude about whether the ban was needed to protect the health of bar workers for those from Scotland. These results suggest that it may be important to take into account participants’ attitudes to interventions when investigating self-reported symptoms and to adjust results accordingly.
Attitudes, Knowledge and Reasons for Use of Tobacco among People with Psychotic Disorders: A Mixed Method Exploration

Authors: Louise Thornton, Amanda Baker, Martin P. Johnson

Abstract

Objectives: Tobacco use is extremely common among people with psychotic disorders, as high as 90%. Smoking is associated with high treatment costs due to a range of negative consequences, including shortening the lifespan of people with psychotic disorders by 20 years through smoking-related illnesses. It is therefore important that effective prevention and intervention strategies for tobacco use among people with psychotic disorders are developed. To do so, it is suggested that the attitudes towards tobacco, knowledge and reasons for use of people with psychotic disorders must be more clearly understood.

Method: Improving on previous research, this study employed a mixed method design in which both quantitative and qualitative data were elicited. 89 participants with a diagnosed psychotic disorder completed a self-report assessment battery, eight of whom also completed semi-structured telephone interviews.

Results: Quantitative and qualitative results revealed that tobacco was primarily used as part of a coping repertoire and for its perceived positive effects on mental health. Participants had high knowledge of tobacco, high exposure to tobacco public health campaigns and perceived tobacco smoking to pose a moderate risk to people's physical health. However, they also described that anti-smoking advertisements did not help them quit, or increase their motivation to quit, smoking.

Conclusion: The results of the current study suggest people with psychotic disorders are well educated about the dangers of smoking. However, barriers to cessation, such as the positive effect tobacco was perceived to have on mental health, may outweigh the perceived risk of harm from smoking. These results highlight the importance of adopting new policies regarding prevention and intervention for tobacco use among people with psychotic disorders.

Smokefree legislation in England: Impact on quit attempts and implications for smoking cessation services

Authors: Lucy Hackshaw, Linda Bauld, Andy McEwen, Robert West

Abstract

Introduction and Objectives: On July 1st 2007 England implemented smokefree legislation (SF). The primary aim of SF is to protect workers and the public from exposure to second-hand smoke. However, emerging evidence suggests that SF can also encourage cessation. This paper examines links between SF and quitting behaviour, including findings from studies conducted in the UK, the USA and Ireland. It outlines findings from new research which explores the impact of SF on the uptake of services to support smokers to quit, conducted in England in 2007 and 2008.

Methods: National household surveys were conducted in England between January 2007 and December 2008. The sample (10,560 adults) was weighted to match census data and included those who reported having smoked within the past year. Data was collected on quit attempts made in the past 12 months and future intentions to quit. Surveys of smoking cessation service managers were conducted in England between March–May 2007 (pre-SF; n=125) and between May–June 2008 (post-SF; n=86). Data explored preparation for SF, anticipated and actual impact of SF. Interviews were conducted with smokers to explore the impact of SF on quitting behaviour.

Results: A greater percentage of smokers reported making a quit attempt in July and August 2007 (8.6%, n=82) compared with July and August 2008 (5.7%, n=48) (Fisher’s Exact =0.022). In the five months following SF 19% (n=75) of smokers making a quit attempt reported that they had done so in response to SF. The mean percentage increase in smokers attending smoking cessation services in the run up to SF (16.2%, CI=13.2-19.2) was lower than the mean anticipated demand prior to SF (42.5%, CI=37.4-47.8) (Chi-squared = 73.35, p <.0001). Smokers reported that SF encouraged them to reduce consumption, maintain abstinence and make a quit attempt.

Conclusions: SF in England was associated with a significant temporary increase in the percentage of smokers attempting to stop, this corresponded with an increased demand for smoking cessation services. Implications for jurisdictions planning to implement SF are discussed.
The roles of motivation to quit, nicotine dependence, and environmental smoke exposure in the process of adolescent smoking cessation

Authors: Marloes Kleinjan, Rutger C.M.E. Engels, Jan van Leeuwe, Johannes Brug, Rinka van Zundert, Regina J.J.M. van den Eijnden

Presenter: Marloes Kleinjan, Radboud University, The Netherlands

Abstract

Objectives: Efforts related to adolescent smoking have mainly focused on preventing the initiation of smoking. Relatively little research has been done on the predictors of smoking cessation among adolescents. To develop effective approaches to reduce youth smoking, a better understanding of the mechanisms underlying smoking cessation in adolescents is needed. It is recommended that multiple levels of influence should be considered in interventions aimed at the adolescent smoker, including psychological, addictive, peer and parental influences. However, the mechanisms by which these variables influence the process of smoking cessation in adolescents are not well elucidated.

Methods: This prospective study tested two models among 850 adolescent smokers (aged 13-17 years), specifying the direct and indirect relations between adolescents’ motivation to quit smoking, levels of nicotine dependence, and smoking behavior of their parents and friends. One year later quit attempts and actual smoking cessation were assessed.

Results: Consistent with studies among adult smokers, we found that, compared to motivation to quit, reported symptoms of nicotine dependence in adolescents were more strongly related to actual smoking cessation. In explaining the number of quit attempts, however, motivation to quit remained a significant predictor even when the impact of nicotine dependence was corrected for. Furthermore, even though parental and peer smoking have previously been linked directly to achievement of smoking cessation, we found that the direct paths between parental and peer smoking and the number of quit attempts and smoking cessation were not significant. Instead of a direct relation, parental smoking and peer smoking were inversely related to smoking cessation through motivation to quit and nicotine dependence.

Conclusions: Among adolescent smokers, motivation to quit seems particularly important in determining whether one will try to quit or not, whereas nicotine dependence seems particularly important in determining whether (or not) a quit attempt will be successful. Parental and peer smoking apparently affect adolescent smoking cessation by enhancing experienced nicotine dependence symptoms. In turn, cessation attempts seem to be affected by parental and peer smoking through a lower psychological motivation to quit and increased experience of nicotine dependence symptoms. The findings of the present study emphasize that interventions targeting adolescent smoking cessation should be developed and tested within and outside the school setting, as well as within the family situation. In addition, the strong impact of nicotine dependence on successful smoking cessation indicates that a more direct approach may be needed to lower nicotine dependence among adolescents.

Smokeless tobacco cessation in UK-resident Bangladeshi women

Authors: M. F. Haque, R. E. Croucher, S.S. Islam

Presenter: M. F. Haque, Queen Mary University of London, UK

Abstract

Background: Many UK resident Bangladeshi women chew tobacco in paan. There is limited evidence of nicotine dependency and the outcomes of tobacco cessation in this population. Aim: to describe nicotine dependency and tobacco cessation outcomes in a sample of UK resident Bangladeshi female tobacco in paan chewers.

Objectives: 1) to report features of tobacco with paan chewing and any relationship with nicotine dependency, 2) to report tobacco cessation outcomes comparing behavioural support alone with behavioural support and nicotine replacement therapy.

Methods: Data was collected in a prospective cohort study amongst UK resident adult Bangladeshi women (n=165), consecutively recruited into a tobacco cessation programme. Participants completed interviews containing validated items on demographics, tobacco use behaviour and cessation. Dependency was measured using the Smokeless Tobacco Dependency Scale (Severson et al. 2004) (Score range: 3-19). Cessation status was self-reported. Data was analysed using logistic regression analysis.

Results: 150 participants completed the study. Mean age was 51 (SD = 14) years. 59% had not completed any formal education. There was no significant demographic differences between those completed the study and those who dropped out. Mean length of chewing career was 20 (SD = 7.4) years, and mean number of daily chews was 11.25 (SD = 5.5). Most (69.3%) chewed two tobaccos (zarda and tobacco leaf) together in their paan. Mean dependency score was 16 (SD = 3) and higher dependency was significantly related to greater number of daily chews. At study completion 28.7% had successfully quit tobacco in paan, with 67.4% of these receiving behavioural support and nicotine replacement therapy. There was no relationship between successful quitting and dependency level. At baseline higher dependency was related to oral pain symptoms (OR 1.969, 95% CI: 1.663-5.846). Those receiving behavioural support alone were more likely to report oral pain symptoms at study completion (OR 7.233, 95% CI: 1.560-13.527) compared to those who received behavioural support and NRT. Use of two tobaccos (zarda and tobacco leaf) compared to one tobacco alone at study baseline protected against oral pain symptoms (OR 0.145, 95% CI: 0.038-0.555). At study completion behavioural support alone was more likely to report oral pain symptoms than study completion (OR 0.145, 95% CI: 0.038-0.555). At study completion behavioural support and NRT compared to behavioural support alone was protective of onset and/or continuation of oral pain symptoms (OR 0.112, 95% CI: 0.029-0.427).

Conclusions: In this cohort of UK resident adult Bangladeshi women tobacco in paan chewers’ tobacco dependency was high. Superior cessation outcomes were obtained with behavioural support and nicotine replacement therapy.
TEACH: Two-year follow-up survey results from a knowledge translation and capacity building project

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Presenter:  
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Abstract  
Objective: To evaluate self-reported practice outcomes via follow-up with health practitioners attending tobacco cessation training, and to test whether there are significant differences in knowledge transfer activities and treatment applications two years post-training.

Methods: TEACH (Training Enhancement in Applied Cessation Counselling and Health) participants trained in February 2007 participated in anonymous online follow-up surveys 6-months and 2-years post-training. These surveys assessed self-reported knowledge, skills and practice application of tobacco interventions, including types of services offered (group versus individual counselling), intervention intensity (number and duration of treatment sessions), number of people counselled, barriers and enablers of practice change, and practitioner-initiated knowledge transfer among peers and community networks. TEACH is a university-accredited, interprofessional tobacco cessation certificate program offered to over 15 disciplines. Since the project began in 2006, TEACH has trained over 1300 practitioners in Ontario, Canada. Ongoing Community of Practice activities (continuing professional education, peer-to-peer networking, and consultation/coaching) promote sustainable knowledge transfer and practitioner engagement/networking.

Results: Of 127 participants in the February 2007 training, 71 responded at 6-month follow up (time1) and 51 responded at 2-year follow up (time2). A significant increase in the number of clients counselled with individual (a = 0.01), and group therapy (a = 0.023) was observed from time 1 to time 2. At time 2, 92.1% reported formal and informal knowledge transfer activities. The most reported barriers to practice change included time (53.1%), client motivation (46.9%) and funding (40.8%). Practice enablers included: accessing community resources, developing peer counselling and support programs, using motivational interviewing (MI) techniques, practitioner persistence, and organizational and system-level advocacy.

Conclusions: These findings suggest that increased knowledge and application of training objectives are observed as soon as 6-months post-training and increase over time, resulting in greater treatment capacity. Results from TEACH follow-up survey data suggest that knowledge and capacity-building are sustained 2-years post-training. The impacts of training may extend to practitioners’ networks due to their knowledge transfer initiatives. These survey results are an innovation in evaluation outcome data of health education programs.

Meanings of Smoking and Smoking Media Literacy in Smoking Initiation of Thai Adolescents

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Presenter:  
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Abstract  
Objectives: The purpose of this study was to assess meanings of smoking and smoking media literacy in Thai adolescents and determine association of these factors in smoking initiation.

Methods: More than 2,500 adolescents in four schools in Chiang Mai, Thailand completed a survey instrument containing the Meanings of Smoking Index (MSI), Smoking Media Literacy Scale (SML), and items assessing current smoking, lifetime smoking, and susceptibility to smoking. Factor analysis of the MSI was conducted to determine relevant factors within the index in this particular sample of adolescents. Logistic regression was used to determine association of smoking behavior and susceptibility to smoking with specific meanings of smoking and with the SML. A similar study is currently being conducted among Hungarian adolescents and it is anticipated that preliminary results from this study will be available in time for the conference and be able to provide some comparative data among a European adolescent sample.

Results: Factor analysis determined six factors of salient meanings within the MSI: coping, social acceptance, stimulation, weight concern, independence, and difficulty refusing smoking. In the logistic regression models all of these factors, except for independence, were associated with current smoking. Fewer of the factors were associated with lifetime smoking (coping and weight concern) and susceptibility (coping, weight concern, and independence). The specific meanings of smoking items with the highest association with current and lifetime smoking were: helps to fit in, helps to deal with stress, and keeps me from being bored. Curiosity about smoking and not liking refusing offerings of smoking were the items most associated with susceptibility to future smoking. Within the logistic regression models, SML was associated with lowered risk of current and lifetime smoking, but not with susceptibility to smoking.

Conclusions: These findings indicate that meanings of smoking may be important determinants of smoking initiation. Among Thai students, smoking appears to be a means of social acceptance, stimulation, and coping with stress and difficulties. Smoking prevention programs may benefit by helping adolescents deal with these psychosocial issues, in addition to the issues of weight concern and difficulty refusing offerings of smoking. Our finding showing a protective effect of smoking media literacy and smoking also suggests that media literacy education may protect Thai adolescents from the influences of tobacco marketing and advertising exposure.
Social Normative Beliefs Regarding Smoking Thai Adolescents

Authors: Randy M. Page, Jiraporn Suwanteerangkul, Arielle Sloan, Jennifer Kironde, Rebecca Ricks, Maria Kemeny

Abstract
Objective: The purpose of this study was to examine the social nature of smoking behavior among a school-based sample of Thai adolescents by investigating specific social normative beliefs regarding to smoking. In particular, this study incorporates three measures of smoking normative beliefs theorized by Primack to be independently associated with adolescent smoking behavior and susceptibility to future smoking and health behavior models used to explain youth smoking behavior. These three measures of normative beliefs are perceived prevalence of smoking, perceived popularity of smoking among successful/elite elements of society, and perceived disapproval by friends and family.

Methods: Subjects consisted of approximately 2,500 Chiang Mai, Thailand high school students representing rural, urban, suburban, and vocational high schools. Subjects completed a survey instrument containing Primack’s normative belief measures (perceptions the prevalence of smoking, disapproval by parents/peers, smoking among the successful/elite) and also items assessing parental and closest friends smoking, Iterative principle components factor analysis determined the underlying factor structure of the normative belief items and logistic regression identified specific normative beliefs associated with smoking behavior (current smoking, ever tried smoking, and susceptibility to smoking).

Results: As hypothesized, the Thai adolescents highly overestimated smoking prevalence among their peers. Logistic regression models showed that parent/peer disapproval was associated with lower risk of current smoking and susceptibility to future smoking, but not associated with ever tried smoking. Perceived prevalence among successful/elite members of society was associated with higher odds of current smoking, ever tried smoking, and susceptibility to future smoking. Perceived prevalence of smoking was not associated with any of the smoking behavior outcomes. As expected, the strongest predictor of smoking behavior was having close friends who smoke. Parental smoking and attending a vocational high school were also predictive of smoking behavior. The risk of smoking was highest among students attending vocational high schools.

Conclusion: These findings are consistent with previous research showing that adolescents highly overestimate smoking prevalence. Youth smoking prevention program planners working with Thai adolescents should consider assessing and taking into account normative beliefs and develop strategies that provide accurate information about the actual prevalence of smoking, the types of individuals who smoke, and approval/disapproval of smoking by parents and peers. This research will be interpreted in light of a similar study currently being conducted in Hungary.

Second-hand Smoke in the Common Spaces of Family-Occupied Multi-Unit Dwellings – A study of Government Owned Housing in the Region of Waterloo, Ontario

Authors: Ryan David Kennedy, Claire Munhall

Abstract
Objectives: Second-hand smoke (SHS) in private areas of multi-unit dwellings (MUDs) is gaining interest among tobacco control and public health advocates. MUDs include homes such as apartment buildings, row houses, and condominiums. It is established that people who live in multi-unit dwellings can be exposed involuntarily to drifting SHS entering their units. Most social housing units in Canada are in MUDs. People of lower socio-economic status are more likely to smoke and less likely to quit smoking. This study sought to understand how SHS drift can impact air quality in the common spaces of MUDs in a social housing context. Studies were conducted in an apartment that housed families. Particulate matter (PM2.5), an established proxy measure for SHS, was measured to compare air quality in different parts of a building. These studies were done in March 2010 in Waterloo, Ontario.

Methods: The MUD studied included 8 apartments that were open to each other through common hallways and stairwells. Some apartment units were known to be smoke-free. Air quality monitoring was conducted in 3 indoor common spaces including, 1) the front lobby area, 2) the back stairwell and 3) the 3rd floor hallway. An outdoor sample was also taken on the city sidewalk as an ambient background reading. Researchers measured PM2.5 using a TSI Sidepak air quality monitor, following established collection methods. Samples were collected twice a day, for 7 consecutive days. Baseline readings were collected for 10 minutes, and each indoor common space in the MUD was collected for a minimum of 30 minutes.

Results: Average ambient readings for particulate matter were 11 micrograms/m3 over the week. Air quality samples taken in the three indoor environments were elevated relative to background, both in the afternoon and evening. The average weekly evening readings for the indoor common spaces were: 50 micrograms/m3 for the lobby, 64 micrograms/m3 for the 3rd floor hallway and 83 micrograms/m3 for the back stairwell.

Discussion: The World Health Organization (WHO) suggests that annual average exposure to PM2.5 should not exceed 10micrograms/m3, and a 24-hour mean should not exceed 25 microgram/m3. The results of this study show that second-hand smoke can impact air quality in the common spaces of multi-unit dwellings to a level far above the recommended guidelines.
The bad with the good? The relation between gender empowerment and female-to-male cigarette smoking rates across 88 countries

Authors:
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Geoffrey T. Fong

Presenter:
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Abstract
Objectives: Worldwide, men smoke at nearly five times the rate of women. However, there is wide variation across countries in gender smoking ratio (GSR: ratio of female-to-male smoking rates). GSR approaches 1 in most high-income countries (e.g., Iceland, Norway) but is close to 0 in others (e.g., Bangladesh, China). Differences between men’s and women’s smoking have been attributed to social norms against women smoking, and to women’s lower social status and economic resources. To examine if women’s empowerment is related to current differences in male and female smoking prevalence rates within countries worldwide, we tested the hypothesis that GSR would be positively correlated with gender empowerment: in countries with higher gender empowerment, the GSR would be closer to 1. We further tested whether this relation would hold after partialling on other possible explanations for cross-country variation in GSR.

Methods: We correlated the GSR (calculated from the 2008 WHO Global Tobacco Control Report) and the UNDP’s Gender Empowerment Measure (GEM) across 88 countries for which data was available. The GEM includes measures of women’s income, political participation, and presence in technical/professional positions. Because a country’s progression through stages of the tobacco epidemic and its GSR has been attributed to its level of development, we also examined this relation partialling on economic development (Gross National Income (GNI) per capita), and income inequality (Gini).

Results: The GSR was strongly correlated with the GEM, $r = 0.68$, $p<0.0001$. This correlation remained significant when partialling on GNI per capita and the Gini, $r = 0.42$, $p<0.0001$. In fact, the partial regression coefficient for GSR (Beta = 0.47, $p<.0001$) was much greater by far than that of the other two predictors (ln(GNI per capita); Beta = 0.33, $p<.01$; Gini: Beta=0.07, $p=0.41$).

Conclusions: The findings identify a challenge for countries undergoing economic development and increasing gender equality: can such progress take place without a corresponding increase in smoking rates among women? These findings thus highlight the need for strong tobacco control, particularly targeted toward women, in countries in which gender equality is increasing.

Attitudes towards tobacco in a Spanish population

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Presenter:
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Abstract
Objectives: The main objective of the study was to study the perception about tobacco use in a Spanish population.

Methods: A representative sample of the Spanish population (≥21 years) was interviewed by phone. The random sampling procedure was carried out in consecutive phases (municipality, address and individuals by sex and age). The sample was composed of smokers, non-smokers and ex-smokers. Non-smokers were asked about a smoker they know and ex-smokers about their past as smokers. The interview included questions about smoking habit intensity, motivations to quit smoking and health impact perception.

Results: A total of 2,011 subjects were interviewed (39.0% smokers, 29.3% non-smokers and 31.6% ex-smokers). Smokers declared a consumption of 1-10 cigarettes/day (48.3%); 11-20 cigarettes/day (32.9%) and >20 cigarettes/day (18.9%). Ex-smokers declared a higher intensity in their past consumption (38.8%; 31.5% and 29.7% respectively) while the response from the non-smokers was 42.2%; 33.1% and 24.7% respectively. 33.0% of smokers declared they didn’t want to quit smoking no matter how easy. This value rose to 45.9% in the non-smokers group. 18.3% of smokers who wanted to quit smoking reported a planned quit attempt in the next 3 weeks and 72.8% of them were expecting to succeed. The main reason stated by smokers to not make a quit attempt was: “It calms me in stressful situations” (66.3%) whereas the main reason to make a quit attempt was: “It’s a high risk for my health” (75.2%). Almost all of those interviewed agreed with the statement “tobacco increases the risk of respiratory diseases, heart attack and lung cancer”. However only 36.0% of smokers highly agreed with the statement “tobacco is damaging to my health”. Very few smokers had ever asked for help to quit smoking: 15.0% from their physician and 11.2% from their pharmacist.

Conclusions: A third of smokers don’t want to quit smoking. However non-smokers think that this percentage is higher. Smokers perceive tobacco as something harmful, but most don’t consider that smoking is damaging their health at present. This could be the reason why very few smokers ask for help to quit smoking or try to quit smoking in a the short-term. Therefore health professionals should be proactive in encouraging smokers to make a quit attempt and offer to help them.
Effectiveness of smoke-free policy enforcement: a cross-sectional study of Lisbon taxis – preliminary results

Authors:
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José Manuel Calheiros

Presenter:
Sofia Belo Ravara, Centro Hospitalar da Cova da Beira, Portugal

Abstract
Introduction: Smoke-free policy enforcement is crucial to effective tobacco control. Under current Portuguese law, smoking is banned on public transport.

Methods: To evaluate the effectiveness of current smoke-free policy, a survey of Lisbon taxi drivers was carried out. The survey (January-December 2009) was based on direct structured interviews while using taxi services.

Results: 196 male taxi drivers participated in the survey. Mean age was 53 years. Of the responders, 40% admitted being current smokers, smoking on average 24 cigarettes per day, 33% were ex-smokers. Of the smokers, 59% did not want to quit and 60% admitted smoking inside their taxi. When questioned about their colleagues smoking behavior, 71% reported that colleagues smoked inside their taxis. 15% of the drivers allowed clients to smoke inside the taxi, while prior to the current law 74% did so. The major reason for not allowing smoking was the legal ban and associated fines (73%), 83% of the drivers reported that clients still asked to smoke in their taxis and 84% of the drivers agreed with the smoking ban in closed spaces. When questioned about their understanding of the ban, 40% mentioned “health protection”, 35% “respect for non-smokers”, 6% “disease prevention” and 12% did not know the reason. Only one driver had attended a smoking prevention session. All taxis displayed the required signs. Stale smoke smells were detected by the person conducting the survey in 33% of the cars. None of the taxi drivers received a fine for non compliance.

Conclusions: The high prevalence of smoking among Lisbon taxi drivers contributes directly to low compliance with the smoking ban. While most taxi drivers approve the ban, most who are also smokers do not comply with it. Media campaigns promoting smoking prevention and awareness among taxi drivers and better law enforcement would contribute directly to improved tobacco control in Portugal.

Hospital staff, tobacco control attitudes and beliefs: a cross-sectional study in a Portuguese hospital before the national smoking ban

Authors:
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Calheiros J M
Aguiar P
Taborda Barata L

Presenter:
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Abstract
Objectives: Hospitals should play an exemplary role in making smoke-free environments the social norm. Little is known about Portuguese health care providers’ (HCPs) attitudes to tobacco control and smoke-free policies (SFPs). As part of a tobacco control program, a Portuguese teaching hospital surveyed hospital staff (HS) smoking behavior and attitudes before the national smoking ban came into force on 1 January 2008. The study aimed to assess staff smoking behavior and tobacco control attitudes and beliefs.

Methods: An observational, descriptive, questionnaire-based cross-sectional study was conducted, including all eligible staff. Smoking behaviour and tobacco control attitudes and beliefs were the main outcomes. The level of statistical significance was set at p < 0.05.

Results: Five hundred and eighty-nine (52.9%) of the 1,112 staff returned the questionnaire: mean age 38.3 ± 9.9 years; 65.1% females. Smoking prevalence was 40.6% in males, 23.5% in females (smoking behaviour was presented in another communication). Most of the responders (97.8%) believed that second-hand smoking (SHS) is harmful and that the hospital should be smoke free (91.8%). Although 73.5% of the staff reported being frequently exposed to SHS in the hospital, only 42.8% reported being disturbed and 28.3% had mentioned expressing their discomfort about being frequently exposed to SHS. Most of the HS agreed with the national smoking ban (93.9%), 74.6% thought that it would help smokers quit, but again only 25.6% reported being disturbed and expressing their discomfort to SHS exposure in public places. Multivariable analyses showed that smoking status was the most important predictor of tobacco control attitudes and beliefs (p<0.001).

Conclusions: Although the great majority of HS had positive attitudes to SFPs, most of the staff did not report being disturbed by SHS exposure and only a minority had mentioned expressing their discomfort, as observed in the latest national health survey. As in other studies, this illustrates an important barrier to successful SFP implementation since staff will not enforce the SFP and will not challenge smokers on the premises. This may be a predictor of non-compliance with the national smoking ban, especially if effective enforcement is lacking. In addition, smoking prevalence was high. High smoking rates among HCPs may contribute directly to low compliance with the smoking ban and poor involvement in smoking cessation. Further multicentre studies monitoring smoking prevalence, smoking ban compliance and smoking cessation practices, should be carried on in Portugal.
Hospital staff, smoking prevalence and smoking behaviour: a cross-sectional study in Portuguese hospital before the national ban

Authors: Sofia Belo Ravara, Calheiros J M, Aguiar P, Taborda Barata L

Abstract

Objectives: In Portugal there is limited data on smoking prevalence from workplaces and health care providers (HCPs). In October 2007, as part of a smoke-free hospital policy, a Portuguese teaching hospital surveyed hospital staff (HS) smoking prevalence and behavior, before the national smoking ban came into force on January 2008.

Methods: An observational, descriptive, questionnaire-based cross-sectional study was conducted, including all eligible staff. Smoking prevalence and behaviour were the main outcomes. The level of statistical significance was set at p < 0.05.

Results: Five hundred and eighty-nine (52.9%) of the 1,112 staff returned the questionnaire: mean age 38.3 ± 9.9 years; 65.1% females. Smoking prevalence was 40.6% in males, 23.5% in females (p < 0.001); 43% in auxiliaries and 18.9% among physicians (p = 0.02). Multivariable analyses showed that being younger than 55 years was the most important predictor for being a smoker (age < 55 years OR: 3.78; 95% CI: 1.43-9.97; p = 0.007), followed by being a male (OR: 2.32; 95% CI: 1.58-3.40; p < 0.001) and by being an auxiliary (OR: 2.15; 95% CI: 1.40-3.31; p < 0.001). HS reported smoking more often in the hospital (70.3%) than at home (43.7%) or in the car (53.8%). Nurses (81.1%) and other health professionals (81.1%) were those who reported smoking more often in the hospital. Besides occupation (p = 0.05), smoking in the hospital was associated with higher nicotine dependence (time of the first cigarette: p = 0.003; number of cigarettes per day: p < 0.001), and shift work (p = 0.002). Although most smokers wanted to quit and had already tried (65.8%), only a few admitted that they might need help (32.0%) and very few admitted readiness to quit (20.0%).

Conclusions: Smoking prevalence was high, especially when compared with local Portuguese population data. Smoking prevalence was highest among the less qualified HCPs and non-HCPs. The lowest rates were observed among physicians, in line with declining prevalence trends among physicians in Portugal. Health promotion and smoking prevention should be top priorities in all health care institutions, including Health Sciences Schools. Hospital-based health education and smoking cessation programs should focus on a gender-specific perspective, as females are the main providers of practical patient care in hospitals and their smoking prevalence rate is high. Further multicentre studies monitoring smoking prevalence among HCPs should be carried on in Portugal.

A comparison of tobacco control spend and paths taken to quit in England and California

Authors: Amir Shroufi, John Powles

Abstract

Objectives: There are a number of pathways to becoming an ex-smoker: with professional assistance - via the NHS smoking cessation services, or a GP prescription for nicotine replacement drugs - or without professional assistance, either using over the counter nicotine replacement products or without such aid ("cold turkey"). Smokers contemplating quitting do not act in a vacuum. Behavioural theory such as Ajzen’s theory of planned behaviour describes how behavioural beliefs, normative beliefs and control beliefs all influence behavioural intent and subsequent action. This framework highlights the importance of the wider social environment in tobacco control. Tobacco control activities which aim to change the wider social environment include social marketing, smoking bans, restrictions on availability, pricing, advocacy (and unplanned publicity), grass roots activism and others. In England the majority of tobacco control spend is directed towards smoking cessation services. Most of those who quit smoking in England do not however use these services. Other jurisdictions which have successfully reduced smoking prevalence to low levels have spent little on formal cessations services. California has achieved large reductions in smoking prevalence by concentrating on changing the social environment and “de-normalising” tobacco use. Here we show how resources are allocated between programme areas in both England and California, and compare the success of these programmes in terms of the proportion of smokers successfully quitting each year.

Methods: For England and California we obtained data on the number of smokers attempting to quit between 2007 and 2009 from published sources. We also obtained data on the numbers quitting by method of quitting, and the success rates of those methods. We used published data on relapse following cessation to adjust all data to reflect estimated abstinence at 12 months. We obtained published information on tobacco control budget allocations for the UK and the Californian Tobacco Control Programme. We also obtained data on programme spend through direct correspondence with the Californian Tobacco Control Programme leads. We went on to represent the path taken by quitters graphically. We also illustrated graphically the proportion of tobacco control resources directed at smoking cessation, and towards other areas of tobacco control.

Conclusions: UK tobacco control programmes may be able to learn from successful programmes elsewhere. It is notable that the highly successful Californian programme directs a much smaller proportion of its resources to smoking cessation activities that do UK programmes.
The need for combined steps to reduce the smoking prevalence in Denmark

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Abstract
The smoking prevalence in Denmark for daily smokers >14 years of age has been around 21.4-25.6% for the past seven years (2004-2010), i.e. 1.1-1.3 million smokers. Including non-daily smokers in the same period the decrease in smoking prevalence has been limited (26.5-28.0%) Government initiatives were introduced in 2007 (public smoking bans, free-of-charge smoking cessation (SC) courses), followed by a public media awareness campaign and slightly higher cigarette taxes in 2009-2010.

Objectives: The objective of this analysis was to evaluate the collective impact of tobacco control (TC) and SC initiatives (smoking ban, awareness campaigns, tax increases, municipal and SC courses, GP SC interventions, reimbursement of SC medicine) on smoking prevalence in Denmark.

Methods: Evidence from the literature evaluating impact and effectiveness of relevant TC and SC initiatives was found using Medline, as well as search in “grey literature” (e.g. government reports). Danish statistics about smoking prevalence, municipality SC course activities, and prevention visits at GP clinics were applied. The percentage point reduction of smoking prevalence for each initiative was determined.

Results: Based on international experiences (Italy, Australia) public smoking bans and awareness campaigns show a potential reduction of prevalence by 1.4-1.9%-point each. Price increases of 10% (i.e. tax increases) will reduce the prevalence by 0.2%-point, primarily re young smokers. Intensified number of free-of-charge SC courses due to a new healthcare law in January 2007 (6,500 participants in municipal courses 2007-09) reduce the prevalence by 0.1-0.3%-point. Based on the December 2006 smoking prevalence level (24.7%) (a public smoking ban was introduced in August 2007) the collective impact of these TC initiatives may reduce the smoking prevalence to 20.4-21.2%. Recent guidelines (Australia, US and UK) recommend pharmacological support combined with SC counseling by healthcare personnel to increase quit rates. SC at Danish GP clinics with 800,000 annual preventive visits and increased use of SC medication as well as reimbursement of SC medication can further reduce smoking according to Cochrane reviews.

Conclusions: More combined TC and SC initiatives are needed to reduce smoking prevalence in Denmark significantly below 20%, including higher utilization of the GP capacity and the added benefits of reimbursed SC medication. A study limitation: the analysis conservatively assumes that all initiatives are mutually exclusive and that all motivated quitters are equally motivated. This may lead to higher analytical reductions of smoking prevalence than what can be achieved in reality.

“Smokefree 08” Austria: OTC - status of NRT helps addicted smokers to quit

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Presenter: Ernest Groman, Nicotine Institute, Vienna, Austria

Abstract
In 2008 the non-smoking project named „Smokefree 08“ was conducted by the collaboration of various institutions*. The project consisted in a folder that was distributed to all Austrian pharmacies (approximately 1100) with the demand to display and advertise them. The named folder contained a brochure about smoking and nicotine in general, methods to quit smoking, information about nicotine replacement therapy (NRT) and the possibility to sign up for a lottery if the receiver of the folder agreed to reduce or stop the smoking consumption for at least two months (with or without medication). 418 smokers participated in the lottery and registered themselves. After a few months we contacted the people by email and post asking them for their current smoking habits and their use of NRT. 216 persons (51.7%) returned valid answers and described their success or failure. An interesting finding was that smokers with a strong dependency on nicotine used on average more NRT than smokers with a weaker dependency: Of the heavy smokers who needed to smoke their first cigarette in the morning after a maximum of five minutes only 23.4% tried to quit or reduce smoking without any additives, compared to 47% of the less dependent smokers. Although the smokers differed in their degree of dependency on nicotine there was no significant difference found in success concerning abstinence and reduction. This leads us to the reasonable conclusion that the use of NRT in “strong” addicts provokes the chance of success to rise to the same level as that of “weaker” addicts. These results clearly show the importance of the OTC-status of NRT. Many smokers of our sample went to the pharmacy to buy NRT and quitted smoking without additional external help. That way smokers can be reached that normally would not go to a physician for getting a prescription and therefore would have a smaller chance of success because of the lack of NRT that obviously is very efficient.
Harmful and Distasteful Constituents in Illicit Tobacco: a reconsideration of the utility of the message in tobacco control campaigns

Author and presenter
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Abstract
Amongst members of the tobacco control community, the use of the message that illicit tobacco contains more harmful and distasteful constituents (HDCs) than licit tobacco is considered a controversial message, based on an uncertain body of evidence and with the potential to imply that licit tobacco is the ‘safe’ alternative. Nevertheless, this message is regularly used in campaigns against illicit tobacco and is felt to be very effective by campaigners in the wider public health and law enforcement sectors. It is also attractive to the press. This paper examines this controversy, pulling together evidence from the scientific literature, market research that has been carried out on a number of illicit tobacco campaigns in England and interviews with stakeholders in the North of England Tackling Illicit Tobacco to Improve Health programme. It finds that the arguments on both sides of the controversy are partially supported by the evidence and that smokers’ perspectives on this issue are not fully understood. The paper concludes with an analysis of how the message is received and incorporated by smokers of illicit tobacco and considers the utility of this message in tobacco control campaigns.

The relation between smoking and retinol concentration in plasma of active and passive smokers

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Presenter:
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Abstract
Objectives: Tobacco smoke contains free radicals which weaken the antioxidant barrier of the human body by decreasing the quantity of non-enzymatic antioxidants. It has been shown that both active and passive smoking decrease plasma levels of alpha-tocopherol, lycopene and alpha- and beta-carotene. However, little is known about the effect of smoking on plasma or serum retinol concentration, and the available results are divergent. The aim of the study was to assess the effect of active and passive smoking on retinol concentration in blood plasma of healthy men.

Methods: In the research there were 336 participants (healthy men, mean age: 41.2). Their smoking status was assessed based on plasma cotinine levels. There were 130 active and 84 passive smokers. In the control group, 112 volunteers exhibited no detectable plasma cotinine levels. Plasma retinol concentration was determined via HPLC.

Results: There were no significant differences in plasma retinol concentration between active and passive smokers and persons not exposed to tobacco smoke. There was no correlation between cotinine and retinol concentration. Multiple regression analysis showed that predictive accuracy for plasma retinol concentration changes as follows: creatinine less than cotinine, less than age, less than BMI, however, only the latter value was statistically significant (beta=0.2035, p=0.012).

Conclusion: Tobacco smoke does not change retinol concentration in plasma. It might therefore suggest that retinol plays an irrelevant role in the process of inactivation of free radicals derived from tobacco smoke.
Tobacco nitrosamine N-nitrosonornicotine as inhibitor of rat nicotinic acetylcholine receptors

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Presenter:
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Abstract
Objectives: The addictive effect of tobacco has been attributed to nicotine as an agonist of nicotinic acetylcholine receptors (nAChR). However, substances with higher affinities for some human nAChR subtypes than that of nicotine were found in tobacco (Biochem. Pharmacol. 55: 1377, 1998), increasing the spectrum of possible drugs that can explain or interfere with the smoking habit. In the present study, our aim is to elucidate the interaction between rat nAChR and N-nitrosonornicotine (NNN), a compound present in tobacco and possibly involved in smoke addiction.

Methods: Whole-cell currents were measured by using the patch-clamp technique with PC12 (rat adrenal pheochromocytoma) cells and HEK (human embryonic kidney) cells transfected with rat a3 and ß4 nAChR subunits. NNN activity was studied in the presence of nicotine, carbamoylcholine and alone. Ligands were applied by the cell-flow technique.

Results: NNN, at the concentration of 3 mM, reduced the currents generated by the variety of nAChR expressed in differentiated PC12 cells (27%±16% of control, n=2). EC50 values of 1.00±0.05 mM and 2.5±0.4 mM, respectively, were obtained for whole-cell currents elicited by HEK cells stimulated with 100 µM nicotine or 1.5 mM carbamoylcholine in the presence of increasing NNN concentrations (n=21, r2=0.99 for nicotine; n=26, r2=0.97 for carbamoylcholine). Plotting of the data (current/current in the presence of NNN versus concentration of NNN) revealed best curve fits to a linear model, indicating non-competitive action of NNN on nAChR activity stimulated by nicotine (Kd=0.57±0.02 mM, r2=0.98) and carbamoylcholine (Kd=1.01±0.08 mM, r2=0.90). Dose-response relationships for a3ß4 nAChR activation obtained in the absence or presence of 4 mM NNN revealed EC50 values of 1.1±0.2 mM and 0.9±0.2 mM, respectively, while carbamoylcholine-provoked maximal responses were reduced to 59±12% (n=18, r2=0.92) in the presence of NNN when compared to receptor responses obtained in the absence of the inhibitor (100±7%, n=24, r2=0.99), again suggesting a non-competitive inhibition mechanism.

Conclusions: NNN inhibits at least one of the subtypes of nAChR expressed by PC12 cells and acts as a non-competitive inhibitor of rat a3ß4 nAChR. Although NNN showed high affinity for human receptors (Biochem. Pharmacol. 55: 1377, 1998), it did not reveal similar characteristics when interacting with rat receptors, in agreement with the observation that rats are not a good model for studies of nicotine addiction. The present work leads to a better understanding of the addictive effect of tobacco and possibly involved in smoke addiction.

Comparison of biomarkers of exposure to smoke constituents in Japanese smokers of menthol and non-mentholated cigarettes

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Abstract
Objective: The objective of this analysis was to compare the levels of biomarkers of exposure (BoExp) to 2-aminophthalylamine (2-NA), 4-aminobiphenyl (4-ABP), 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK), carbon monoxide (CO), nicotine, and pyrene in male and female Japanese smokers of menthol and non-mentholated, cigarettes, and nonsmokers.

Methods: Post-hoc analysis of data from a multicenter, observational, ambulatory study in male and female Japanese smokers and nonsmokers. BoExp were determined in blood for CO (hemoglobin saturation [%COHb]), in plasma for nicotine (plasma cotinine [pCOT]), and in 24-h urine for aromatic amines (unmetabolised 2-NA and 4-ABP), nicotine (the molar sum of cotinine, trans-3’-hydroxycotinine, nicotine, and their respective glucuronide conjugates [Neq]), NNK (4-methylnitrosamino)-1-(3-pyridyl)-1-butanone plus glucuronide conjugates [total NNAL]), and pyrene (1-hydroxypyrene plus glucuronide and sulphate conjugates [total 1-OHP]). Nicotine dependence in smokers was assessed using the Fagerström Test for Nicotine Dependence (FTND).

Results: The analyzed population consisted of 345 (219 male, 126 female) non-smokers and 648 (417 male, 231 female) smokers including 152 (79 male, 73 female) smokers of menthol cigarettes and 496 (338 male, 158 female) smokers of non-menthol cigarettes. Mean BoExp levels were higher in smokers than in non-smokers: COHb (3.72±1.18 vs. 1.99±0.39 %), pCOT (223.61±126.02 vs. 2.50±0.00 ng/ml), Neq (8.04±6.27 vs. 0.34±0.17 ng/day), total NNAL (231.33±194.81 vs. 6.49±7.03 ng/day), total 1-OHP (316.94±238.56 vs. 179.95±575.63 µg/day), 2-NA (19.27±14.78 vs. 3.67±4.05 ng/day), and 4-ABP (12.54±18.07 vs. 3.50±8.48 ng/day).

No consistent differences were apparent between menthol vs. non-menthol smokers: COHb (3.86±1.36 vs. 3.68±1.12 %), pCOT (197.70±117.90 vs. 231.54±127.47 ng/ml), Neq (6.84±5.74 vs. 8.41±6.39 ng/day), total NNAL (287.93±249.11 vs. 220.14±173.80 ng/day), total 1-OHP (289.24±208.31 vs. 325.43±246.66 µg/day), 2-NA (17.21±14.51 vs. 19.90±14.82 ng/day), and 4-ABP (11.03±8.89 vs. 13.00±20.05 ng/day).

The average FTND score was 4.1±2.1 vs. 4.9±2.0. Trends for increased BoExp levels were generally observed with increasing cigarette tar and nicotine delivery, and number of cigarettes per day (CPD) in smokers of both menthol and non-mentholated cigarettes. Average FTND scores increased with CPD in both smokers of menthol and non-mentholated cigarettes, but showed no clear relation to cigarette tar and nicotine delivery.

Conclusion: Smoking menthol cigarettes in the Japanese population does not appear to influence exposure to the selected smoke constituents compared to smoking non-mentholated cigarettes. These findings are consistent with observations in the US population indicating no significant difference in exposure to cigarette smoke constituents between smokers of menthol and non-mentholated cigarettes.
Influence of smoking topography on respirable suspended particulates (RSP) from tobacco smoke

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Abstract

Objectives: Respirable Suspended Particulates (RSPs) pose a health risk to both active and passive smokers. As research has shown, secondhand tobacco smoke is a significant source of RSPs in indoor environments. We hypothesized that the levels of RSPs delivered with mainstream (MS) and sidestream (SS) tobacco smoke are affected by the way the cigarettes are smoked (smoking topography). The aim of the study was to assess RSP levels in MS and SS of cigarettes smoked with a wide variety of topography parameters. We also simulated active and passive smokers’ exposure to RSPs derived from tobacco smoke using mathematic models.

Methods: Tobacco smoke was generated using automatic smoking machine with various topography parameters (puff volumes [V], puff flows [F] and intervals between puffs [T]). One brand of full flavored cigarettes commercially available in Poland was used for all RSPs measurements. Topography parameters were modified as follows: V from 25 to 60mL; F from 27 to 52mL/sec, and T from 20 to 60sec. SS was sampled according to ISO 3308 standard. MS and SS were collected in containers of 10L and 60L, respectively. RSP2.5 were measured using DustTrakTM 8520 (TSI®, USA).

Results: RSP2.5 levels in MS varied from 0.14±0.01 (V=25mL, F=52mL/sec, T=60sec) to 2.21±0.17mg/cig (V=60mL, F=52mL/sec, T=20sec). RSP2.5 levels in SS varied from 2.79±0.03 (V=25mL, F=41mL/sec, T=60sec) to 18.3±1.0mg/cig (V=35mL, F=35mL/sec, T=20sec). RSP2.5 levels in MS and SS generated with standard ISO conditions (V=35mL, F=17.5mL/sec, T=60sec) were 0.39±0.02 and 3.71±0.24mg/cig, respectively. RSP2.5 levels determined with topography conditions which corresponded to the way Polish smokers smoke cigarettes (V=60mL, F=38mL/sec, T=20sec) were 0.74±0.08 for MS and 3.31±0.17mg/cig for SS. There was a positive correlation between both V and F and RSP2.5 levels in MS.

Conclusions: Smoking topography strongly affects active and passive smokers’ exposure to RSP2.5. If one smoker smoked twenty cigarettes during a single day in a room with poor ventilation, RSP2.5 indoor air concentration would exceed almost 50 times the WHO air quality standard of 25µg/m3.

Association of the CHRNA5-A3-B4 gene cluster with heaviness of smoking

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Presenter:
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Abstract

There is consistent evidence from twin and adoption studies that genetic factors contribute to the aetiology of cigarette smoking. Nevertheless, despite a large number of candidate gene studies, few reported associations have proven to replicate reliably. Recently however, variation in the 15q24 nicotinic receptor cluster CHRNA5-A3-B4 has shown promise as a candidate region for smoking behaviour. Polymorphisms in this cluster have been linked to multiple smoking-related phenotypes (e.g., nicotine dependence; smoking quantity) and smoking-related diseases (e.g., lung cancer). Two SNPs in this region, rs16969696 in CHRNA5 and rs1051730 in CHRNA3, have generated particular interest. We sought to evaluate the strength of evidence for the association between the rs16969696 and rs1051730 SNPs and heaviness of smoking, as measured by daily cigarette consumption. We used meta-analytic techniques to evaluate existing published data, and contacted study authors where necessary for additional data. We tested both dominant and recessive models of genetic action, and explored which SNP provided a stronger genetic signal. Meta-analysis revealed evidence of association between both the rs16969696 (dominant: d = -0.05, 95% CI -0.08, -0.02, p = 0.002; recessive: d = -0.06, 95% CI -0.09, -0.04, p = 0.001) and rs1051730 (dominant: d = -0.09, 95% CI -0.13, -0.05, p = < 0.001; recessive: d = -0.12, 95% CI -0.15, -0.08, p < 0.001) SNPs and daily cigarette consumption. The difference in effect size estimate did not differ by model of genetic action for rs16969696 (p = 0.13), but was larger for the recessive model for rs1051730 (p = 0.013). The difference in effect size estimate did not differ by SNP for a dominant model of genetic (p = 0.16), but was larger for rs1051730 for a recessive model (p = 0.032). Our data suggest a small effect of both the rs16969696 and rs1051730 SNPs on cigarette consumption. These effects appear to act recessively, and the rs1051730 SNP may provide a stronger signal, although evidence for this was indirect. Furthering our understanding of the genetic contribution of smoking-related behaviours may ultimately enable us to improve and personalise smoking cessation treatments, which may help to reduce the substantial global health concern associated with tobacco use.
Levels of non-tobacco-specific nitrosamines in US and Swedish smokeless tobacco products

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Presenter:  
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Abstract

Objectives: IARC Monograph 89 summarised the presence of 28 chemical agents in smokeless tobacco products (STP) including a number of nitroso species (TSNAs, nitrosoacids, and a range of non-tobacco specific nitrosamines - NTSNA). A number of NTSNA species have been identified in STPs such as (abbreviation and IARC classification): NDMA (2A), NDEA (2A), NEMA (2B), NDPA (2B), NDBA (2B), NPIP (2B), NPYR (2B), NMOR (2B), NDELA (2B), NDIPA (3), NDIPA (not classified), and NDBzA (not classified). Research has shown changes in levels of TSNAs in STPs over the last 30 years, therefore an up-to-date survey on the levels of NTSNAs was considered necessary to characterise currently available STPs.

Method: 70 STPs available on the Swedish and US markets were sampled in October 2008, consisting of 32 Swedish loose and pouched snus products and 38 US products including chewing tobacco, dry snuff, pellets, moist snuff and plug. STPs were sampled to include products from all major manufacturers. Analysis for NTSNAs was undertaken by a contract laboratory using established methods (NDMA, NEMA, NDEA, NDPA, NDBA, NPIP, NPYR) and newly developed methods (NDIPA, NMOR, NDELA, NDIPA, and NDBzA).

Results: No NDELA or NDIPA was detected in any of the samples tested. All of the products examined had levels of NEMA, NDEA, NDPA, NDBA and NPIP below the limits of quantification of the methods. NDBzA was detected in four snus products but none of the other smokeless products; NDPA was quantified in 3 snus products only; NMOR was quantified in one snus and two moist snuff products only. A significant proportion of the dry and moist snuff products had quantifiable levels of NDMA and NPYR; one snus product also had a quantifiable level of NDMA.

Conclusions: Levels of NTSNAs in contemporary smokeless tobaccos are very low, and in the majority of cases at or below the limit of quantification or detection of the analytical methods used in this study.

Impact assessment of proposed limits on US and Swedish smokeless tobacco products

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Presenter:  
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Abstract

Objectives: IARC Monograph 89 summarised the presence of 28 chemical agents in smokeless tobacco products (STP) including a number of tobacco specific nitrosamines (TSNAs), Benzo(a)pyrene (B(a)P), metals, volatile nitrosamines and aflatoxins. Recently two groups have proposed the establishment of toxicant content limits for STPs. The WHO Study Group on Tobacco Product Regulation (TobReg) proposed regulatory limits (dry weight basis) of 2µg/g for the combined concentration of NNN and NNK, and 5 ng/g for B(a)P. The European Smokeless Tobacco Council (ESTOC) has proposed the following toxicant limits – combined concentrations of NNN, NNK, NAB and NAT: 10µg/g; NDMA: 10ng/g; B(a)P: 20ng/g; Lead: 2µg/g; and Cadmium: 2µg/g; and sum of four specified aflatoxins: 5ng/g. This study was conducted to understand how the contents of contemporary US and Swedish smokeless tobacco products compare to these proposed limits.

Method: 70 major STPs were sampled in October 2008, consisting of 32 Swedish loose and pouched snus products and 38 US products (chewing tobacco, dry snuff, pellets, moist snuff and plug). STPs were sampled to include products from all major manufacturers. Analysis for TSNAs was undertaken by the British American Tobacco GR&D laboratory; B(a)P analysis was conducted in the GR&D laboratory and also by an independent contract laboratory; NDMA, lead and cadmium analyses were conducted by independent laboratories. Aflatoxins were not measured in this study.

Results: Under the TobReg proposals the following products failed the proposed limits – (NNN+NNK): all dry snuff, moist snuff and plug products, half of the chewing tobacco products and two snus products, and; B(a)P: all dry snuff, moist snuff, plug, moist pellet products and one snus product. Under the ESTOC proposals the following products failed the limits - TSNAs: all dry and moist snuff products; B(a)P: most dry snuff, all moist snuff and the moist pellet products; NDMA: one third to one half of dry and moist snuff products; cadmium: no products; lead: one snus and one chewing tobacco product.

Conclusions: A significant number of products fail to meet both of the proposed limits; there are differences between the two proposals but overall a greater number of products failed to meet the TobReg proposal than the ESTOC proposal (31 in contrast to 25).
Pharmacogenetics of smoking cessation therapy. Influence of genetic variation in the serotonin transporter on smoking cessation success using antidepressant therapy

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Presenter: Marieke Quaak, Maastricht University, The Netherlands

Abstract

Background: Tobacco smoking continues to be the largest, preventable, cause of premature morbidity and mortality throughout the world. Although most smokers are highly motivated to quit and several smoking cessation therapies are available, cessation rates remain very low. Currently, two forms of antidepressant therapy are used for smoking cessation: bupropion and nortriptyline. Based on their mechanism of action, variations in the serotonin transporter gene (SLC6A4) are expected to influence smoking cessation rates.

Objectives: We investigated whether functional variants in SLC6A4 influence smoking cessation rates and treatment response. This might increase understanding of the underlying pharmacological mechanisms and could open doors for personalized therapy.

Methods: Subjects participated in a randomized, placebo-controlled trial on the efficacy of bupropion and nortriptyline for smoking cessation among smokers with, or without, COPD. The main outcome measures were prolonged abstinence from smoking after 12 weeks (end-of-treatment; EOT) and at 6- and 12-month follow-up. Subjects were genotyped for three functional variants in SLC6A4: 5-HTTLPR, STin2, and rs25531.

Results: Carriers of the 5-HTTLPR high-activity L-variant had significantly higher cessation rates with bupropion compared to placebo (38% and 31% vs. 16% and 14% at 6- and 12-months respectively). The same pattern was seen in the nortriptyline group, and in both the bupropion and nortriptyline group for the rs25531 SNP, however effects were non-significant. The STin2 variant seems to have little effect. Combining the three variants resulted in increased cessation rates compared to placebo with a combination of high-activity variants for both bupropion and nortriptyline (60% vs. 0% at both 6- and 12-months with bupropion; 54% and 46% vs. 0% at 6- and 12-months with nortriptyline).

Discussion: Both bupropion and nortriptyline are more effective in the presence of high-activity variants of the serotonin transporter, probably by blocking the increased serotonin transporter activity, hereby increasing serotonin levels. Prospective studies have to assess if this can improve cessation rates when bupropion and nortriptyline treatment is targeted at individuals based on their genotypes.

Different presynaptic nicotinic receptor subtype stimulate endogenous GABA release from rat hippocampal synaptosomes via two distinct mechanisms of action

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Presenter: Massimo Grilli, University of Genova, Italy

Abstract

Objectives: The aim of the present work was to investigate the presence of different nicotinic acetylcholine receptor (nAChR) subtypes on gamma-aminobutyric acid (GABA) nerve endings in rat hippocampus.

Methods: We used some selective alpha7 and alpha4ß2 nAChR agonists to assess whether, to what extent and through which mechanisms they stimulate endogenous GABA release from purified hippocampal synaptosomes in superfusion.

Results: All agonists tested elicited a significant GABA overflow, which was comparable to that elicited by 9 mM KCl. Choline (Ch), a selective alpha7 receptor agonist, evoked GABA overflow that was external Ca2+ dependent, but unaltered in presence of Cd2+, tetrodotoxin (TTX) and the selective alpha4ß2 receptor antagonist dihydro-ß-erythroidine (DHßE). On the other hand, the effect of Ch was completely blocked by the selective alpha7 receptor antagonist methyllycaconitine (MLA) and by dantrolene suggesting that GABA release might be triggered by Ca2+ entry into synaptosomes through the alpha7 nAChR channel and subsequent synaptosomal calcium release from ryanodine-sensitive intracellular stores. Also 5-Iodo-A-85380 dihydrochloride (5IA85380), a selective alpha4ß2 receptor agonist, elicited GABA overflow, which was external Ca2+ dependent, blocked by Cd2+, significantly inhibited in presence of TTX and DHßE, but unaffected by MLA and dantrolene, thus confirming the involvement of an alpha4ß2 nAChR in the 5IA85380-induced GABA release that seems to occur following membrane depolarization and opening of voltage operated calcium channels.

Conclusions: To conclude rat hippocampal synaptosomes possess alpha7 and alpha4ß2 nAChR subtypes which can modulate endogenous GABA release via two distinct mechanisms of action.
**Chronic nicotine treatment significantly affects the function of presynaptic NMDA receptors modulating noradrenaline release from rat hippocampus**

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**Abstract**

**Objectives:** It is widely accepted that several effects of nicotine are mediated not only by the dopamine (DA) release in the terminal fields of the mesencephalic dopaminergic systems. Accordingly there is also evidence that nicotine may influence several other neurotransmitters that can indirectly affect the DA systems. In particular presynaptic glutamatergic, noradrenergic and cholinergic systems has been reported to play an important role in the mechanism of action of nicotine. The objective of this study was to investigate the effects of chronic administration of (-)-nicotine on the function of the N-methyl-D-aspartate (NMDA) presynaptic receptors modulating [3H]NA release in rat hippocampus.

**Methods:** Neurotransmitter release from rat superfused synaptosomes prelabelled with [3H]NA was studied in control animals and chronic nicotine animals (14 days; via osmotic mini-pumps; saline vs 0.125 mg/Kg/h (-) nicotine).

**Results:** Exposure of hippocampal synaptosomes of rats treated with vehicle to different concentration of NMDA produced an increase of [3H]DA overflow with an EC50 of 14.5 ± 5.5 µM. This effect was significantly potentiated in synaptosomes from animals chronically treated with (-)nicotine suggesting an up-regulation of the NMDA presynaptic heteroreceptor (EC50 = 10.5 ± 0.5 µM). The K+-evoked release of [3H]NA was not modified by the long term (-)nicotine administration. Sensitivity to non selective or subtype selective NMDA receptor antagonists (MK-801, ifenprodil and Zn2+ ions) were not modified in the chronically treated animals. Also the apparent affinity of glycine was unmodified in these rats. The results show that chronic (-)nicotine affects the function of presynaptic NMDA receptors which regulate [3H]NA release in the rat hippocampus.

**Conclusions:** To conclude chronic nicotine treatment significantly enhances NMDA evoked [3H]NA release from rat hippocampus synaptosomes.

**Methadone and buprenorphine bind to a7 but not to a4ß2 nAChRs expressed in SH-SY5Y and SH-EP1 cell lines**

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Reeta Talka, University of Helsinki, Finland

**Abstract**

Nicotinic acetylcholine receptors (nAChR) are ligand gated ion channels, which consist of either muscle-type (a1, ß1, d, ?) or neuronal-type (a2-10, ß2-4) subunits. The opioid system consists of three receptors; µ-, d- and ?, which are stimulated by opioid peptides. Methadone is a µ-opioid agonist and buprenorphine acts as partial agonist at µ-, ?, - and d-opioid receptors. Endogenous opioid plasma levels are increased following smoking. In SH-SY5Y and SH-EP1 cell lines nicotine and methadone have been shown to increase the level of free intracellular Ca2+ and to inhibit 3H-epibatidine or 3H-methyllycaconitine –binding. The responses to both nicotine and methadone are sensitive to blockade by nAChR antagonists, suggesting that methadone has nAChR agonist properties similar to nicotine. SH-SY5Y, SH-EP1-ha4ß2, SH-EP1-ha7 and SH-EP1 cell lines were used in these studies. SH-SY5Y cell line is a human neuroblastoma cell line naturally expressing a3, a5, a7, ß2, and ß4 nAChR subunits as well as µ- and d-opioid receptors. SH-EP1 is a human epithelial cell line with native expression of µ- and d-opioid receptors but no endogenous expression of nAChRs. SH-EP1-ha4ß2 and SH-EP1-ha7 cell lines have been transfected with a4ß2 and a7 nAChR subunit genes to express human a4ß2 and a7 nAChRs, respectively. In binding studies we used 150 pM tritiated epibatidine, an agonist that binds in at least seven nAChR subtypes. Methadone was able to inhibit 3H-epibatidine binding in SH-SY5Y and SH-EP1-ha7 cell lines whereas in SH-EP1-ha4ß2 and SH-EP1 cell lines methadone did not show any inhibition. Buprenorphine was able to inhibit 3H-epibatidine binding only in SH-EP1-ha7 cell line. Nicotine inhibited 3H-epibatidine binding in all cell lines, except for SH-EP1 cells. The IC50 values of both methadone and buprenorphine inhibition of epibatidine binding demonstrated lower affinity to nAChRs than inhibition with nicotine. These findings suggest, that methadone and buprenorphine bind to nAChRs and that they have different binding properties. Methadone seems to bind to a7 and a3 subunit containing nAChRs whereas buprenorphine binds only to nAChRs containing a7 subunit.
Genetic polymorphisms of CYP2A6 and their impact on smoking behaviour among Chinese smokers in Southern China

Authors: Sean P. David, Tao Liu, Rachel Tyndale, Hui Wang, Qian Zhou, Peng Ding, Yanhui He, Xueqing Yu, Wei Chen, Casey Crump, Xiaozhong Wen, Weiqing Chen

Presenter: Sean P. David, Stanford University School of Medicine, USA

Abstract

Objectives: This study aimed to investigate the frequencies of CYP2A6 genetic polymorphisms in smokers from southern China, and to evaluate associations with tobacco smoking phenotypes.

Method: Participants were 1344 Chinese smokers who participated in a community-based chronic disease screening project in Guangzhou and Zhuhai from 2006 to 2007 who were interviewed with a structured questionnaire about socio-demographic status and smoking behaviours. DNA from venous blood was genotyped for CYP2A6 *4, *5, *7, *9 and *10 alleles, which are associated with diminished or absent enzymatic function. Binary logistic regression was used to evaluate association with lifetime smoking milestones including daily cigarette consumption.

Results: Participants were 94.2% male (mean age: 54.61±11.92 years). The frequencies of CYP2A6 *4, *5, *7, *9 and *10 alleles were 8.52%, 1.23%, 6.51%, 13.76% and 2.46%; 48.81% were categorized by genotype as normal-, 15.33% as intermediate-, 24.40% slow-, and 11.46% poor-metabolizers. Compared with normal metabolizers, poor metabolizers were more likely to report initiating smoking regularly later in life (OR=1.48, 95%CI: 1.03, 2.12), smoking for a shorter duration (OR=1.57, 95%CI: 1.02, 2.42), consuming fewer daily cigarettes in the past amongst former-smokers (OR=2.02, 95%CI: 1.38, 2.95) or present amongst current smokers (OR=2.02, 95%CI: 1.32, 3.10), fewer pack-years (OR=1.63, 95%CI: 1.14, 2.33), and were less likely to have reported quitting smoking and remaining abstinent (OR=0.50, 95%CI: 0.31, 0.81).

Conclusion: This study demonstrates that decreased activity CYP2A6 alleles are prevalent in southern Chinese and that poor metabolism is associated with a reduction in many dimensions of smoking behaviour.

Chromosome 15 CHRNAS-CHRNAS-CHRNB4 nicotine receptor subunit shows linkage to smoking behavior and nicotine dependence in Finnish family data


Presenter: Ulla Broms, University of Helsinki, Finland

Abstract

Phenotypes for smoking and nicotine dependence (ND) are partly genetically determined. Multiple Genome-Wide Association studies (GWAS) have indicated risk for ND on CHRNAS-CHRNAS-CHRNB4 nicotine receptor subunit gene cluster on chromosome 15 (15q24-25.1). Earlier linkage studies have not found evidence for linkage of smoking behavior or ND to chromosome 15q25. Using a large family data set, we set out to examine if there is linkage to this area with phenotypes related to smoking, ND and alcohol use. Sample was drawn from the Finnish Twin Cohort study comprising of adult twins born 1938-57. Based on earlier health questionnaires, the twin pairs concordant for ever-smoking were identified and recruited along with their family members (mainly siblings) for the Nicotine Addiction Genetics (NAG) Finland study (N=2263), as part of the consortium among Finland, Australia and USA. Participants were telephone interviewed using the diagnostic SSAGA protocol including the section on smoking behavior and ND during 2001-2005. Altogether 516 individuals were successfully genotyped for rs1051730 and related SNPs. The binary smoking and alcohol use related phenotypes examined were (a) smoking immediacy (whether the second cigarette was smoked same or next day after the first one), (b) regular smoking (smoked >100 cigarettes during lifetime and for at least once a week for a minimum period of two months in a row), (c) ND (measured by the DSM-IV criteria), and (d) regular drinking (drinking =1 alcoholic drink at least once a week). We report both linkage LOD-scores and association results of smoking and alcohol use related phenotypes. Results of linkage for binary phenotypes are based on software package Merlin LOD-scores using the diagnostic SSAGA protocol and the diagnostic SSAGA protocol including the section on smoking behavior and ND during 2001-2005. 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The binary smoking and alcohol use related phenotypes examined were (a) smoking immediacy (whether the second cigarette was smoked same or next day after the first one), (b) regular smoking (smoked >100 cigarettes during lifetime and for at least once a week for a minimum period of two months in a row), (c) ND (measured by the DSM-IV criteria), and (d) regular drinking (drinking =1 alcoholic drink at least once a week).
Preclinical assessment of the abuse liability of smokeless tobacco: Efficacy of intravenous versus subcutaneous nicotine self administration

Authors: Darlene H. Brunzell, Yun Ding, Karen E. Boschen, Justin L. Poklis

Abstract
Smokeless tobacco products, such as snus, are promoted as less harmful than cigarettes; however, little is known regarding the potential abuse liability of these products that are primarily absorbed through mucosal membranes. As nicotine is thought to be the main addictive ingredient in tobacco, these preclinical studies utilized 0.03 mg/kg/infusion intravenous (i.v.) and subcutaneous (s.c.) nicotine administration during 10 days on a fixed ratio schedule (FR1) followed by progressive ratio (PR) training. In a separate group of rats, liquid chromatography/tandem mass spectrometry was used to analyze nicotine and cotinine levels in serum and brain following a single s.c. and i.v. exposure session. Adult, Long Evans male rats received 5-20 i.v. or s.c. infusions of nicotine in sterile saline or vehicle over 20 min under isoflurane anesthesia. Serum was collected via cardiac puncture and brain tissues were harvested at 30 min, 1 hr or 24 hrs following the first infusion. Nicotine was extracted from serum and brain by liquid/liquid extraction using ammonium hydroxide and methylene chloride. Analysis was performed using an Applied Biosystems 3200 Qtrap with a turbo Vsource for Turboion Spray tandem mass spectrometry. Multi reaction monitoring with a Shumadzu SCL HPLC system. Reaction monitoring ions were 163>130 and 163>117 m/z for nicotine, 177>80 and 177>98 m/z for cotinine, with internal standard of 167>134 m/z nicotine-d4 and 180>80 m/z for cotinine-d3. Compared to i.v. rats, s.c. animals showed a delayed acquisition of nicotine self-administration as measured by a significant session x route interaction during the first 5 days of FR1 training (p < 0.01), perhaps due to the more rapid distribution of nicotine in the brain following i.v. administration. Serum nicotine and cotinine concentrations achieved by s.c. and i.v. administration of nicotine were within the range observed in smokers, but brain levels of nicotine were significantly higher in i.v. animals at 30 min. There was no behavioral difference observed between s.c. and i.v. rats during the last 5 days of FR1 training reflecting that s.c. and i.v. rats showed a similar level of responding maintained by nicotine following repeated exposure. Route of nicotine administration had no effect on a single session of PR responding, suggesting that s.c. and i.v. animals were similarly motivated to self administer nicotine. Together these data suggest that nicotine products that are absorbed through the skin may have less abuse liability during initial exposures, but may have similar abuse liability to more rapid routes of administration following repeated use.

Targeting memory reconsolidation for smoking cessation: neuroethical implications

Authors: Christian Chiamulera, Vincenzo Tedesco, Alessia Auber

Abstract
In tobacco addiction, several discrete and proximal stimuli may become components of memories associated with cigarette smoking (e.g., social events, drinking, relax, etc.). Retrieval of smoking-related memories is a potent trigger of lapse and relapse even after months of abstinence. Retrieval is also a labile phase during which memories could be disrupted or undergo reconsolidation, the process of memory update and maintenance. Selective disruption of traumatic- or drug-related engrams could be of therapeutic benefit for post-traumatic stress and drug addiction disorders. In fact, recent studies suggest that specifically targeting brain mechanisms underlying reconsolidation (for example by using the anti-adrenergic drug propranolol) may have beneficial effect vs. relapse. Beside the pharmacological intervention, it has been also proposed that the exposure to a behavioral procedure, such as extinction immediately after retrieval, may prevent fear memories reconsolidation suggesting a similar effect against drug addiction memories. This could offer the potential to apply an extinction therapy that generalize from clinical setting to other context. The general aim of our basic research is to explore the bio-behavioural mechanisms underlying nicotine memory reconsolidation, in order to identify novel pharmacological and non-pharmacological therapies to be potentially integrated into existing relapse prevention programs. It has been recently announced that a clinical trial is ongoing to study propranolol effects vs. nicotine memory reconsolidation in smokers. Experimental conditions, also called ‘boundaries’, needs to be explored in order to evaluate the optimal conditions under which the effects of memory reconsolidation disruption could be of value in the clinic. An outcome of our research is to assess efficacy and safety of the selective disruption of smoking memory reconsolidation. It will be important to assess the potential ethical risk of the use of these procedures outside the clinical therapeutic setting, for instance by private organizations or by individuals. There is the risk of ‘cosmetic’ re-shaping of personal history, such as self-deletion of selective unwanted memories or just modification of negative emotional memory of past life. The availability of memory reconsolidation disruption protocols could make widespread and easier individual smoker self-therapy. The translational integration into clinical and social intervention protocols should be taken in consideration at this early stage of research. In a public therapeutic setting, selective memory deletion will need to be under strict bioethical control through ethical committee approval, the use of validated protocols and novel formulations of patient’s informed consent.
Processing bias to smoking related stimuli after acute alcohol administration: Comparing daily and weekly smokers

Authors: Emma L Mullings, Marcus R Munafö

Presenter: Emma L Mullings, University of Bristol, UK

Abstract
Smokers report, when trying to achieve nicotine abstinence, first lapses back to smoking often involves the consumption of alcohol. Alcohol may therefore increase the incentive value of cigarettes and related stimuli. This study attempts to elucidate the underlying mechanisms by which this may occur. Daily smokers (n=32) and social smokers (n=32) were recruited from the general population (50% male) and were required to abstain from smoking overnight for 12 hours. Participants were randomised to receive either an alcoholic beverage or placebo equivalent. For male participants, alcoholic drinks contained 0.4 g/kg as vodka (37.5%) with chilled tonic water and a pub shot measure of lime cordial, making the alcoholic beverage one part alcohol to 3 parts tonic water. Drink volumes were reduced by 8% for women. After drink consumption, all participants completed a cognitive battery comprising the visual probe task and Stroop task, the order of which was counterbalanced across participants. Reaction time data, with stimulus type (smoking, neutral) as the within-subject factor and smoking status (daily, social) and challenge condition (alcohol, placebo) as the between-subject factors, revealed for the visual probe task a significant main effect of picture type (F[1, 58] = 5.69, p = 0.028), reflecting faster reaction times to probes replacing smoking pictures compared to neutral pictures. This was qualified by a marginal picture type x challenge x smoking status interaction (F[1, 58] = 3.45, p = 0.068). Stratification by challenge and smoking status indicated faster reaction times to probes replacing smoking pictures for daily smokers receiving alcohol only (p = 0.070). For the Stroop task, a significant main effect of word type was revealed (F[1, 59] = 19.13, p < 0.001), reflecting slower reaction times to colour name smoking words compared to neutral words. This was qualified by a trend towards a word type x smoking status x challenge interaction (F[1, 59] = 2.69, p = 0.106). Stratification by challenge and smoking status indicated slower reaction times to colour name smoking words for daily smokers receiving alcohol only (p = 0.005). Although only marginally significant, these data suggest that a processing bias for smoking related information can be induced by alcohol consumption in abstinent daily smokers, but not in abstinent weekly smokers. These findings provide a possible mechanism of action underlying smoking relapse episodes that are frequently associated with alcohol consumption.

Public Health /Epidemiology
Correlates of non daily smoking among young adults

Authors: Carla Berg, Rashelle B. Hayes, Pamela M. Ling, Nikki Nollen, Won S. Choi, Erin Murtha, Jasjit S. Ahluwalia

Presenter: Carla Berg, Emory University, USA

Abstract
Objectives: Cigarette smoking remains one of the leading causes of preventable disease in the United States. Despite substantial efforts to decrease its prevalence, 18.1% of Americans continue to smoke. While daily tobacco consumption in the United States is declining, nondaily smoking (smoking on some days but not every day) is increasing. The purpose of this study was to determine characteristics of nondaily smokers versus nonsmoker and versus daily smokers among college students.

Methods: We contacted 8,834 undergraduate students at a two-year college and a four-year university in October, 2008, with 2,700 completing the 108-item online survey (30.6% response rate). Our current analyses focused on the 2,682 undergraduate students aged 18-30.

Results: Overall, 64.7% (n=1,736) were nonsmokers, 22.1% (n=593) were nondaily smokers, and 13.2% (n=353) were daily smokers. Among nondaily smokers, the average number of days of smoking was 9.49 (SD=9.24). The multinomial logistic regression model comparing nonsmokers and daily smokers to nondaily smokers indicated that being a nonsmoker (vs. a nondaily smoker) was related to older age (OR=1.03, CI 1.01, 1.05), parents having less education (OR=0.78, CI 0.63, 0.96), having children in the home (OR=1.35, CI 1.05, 1.75), and not having parents that smoked (OR=0.60, CI 0.48, 0.75). Also, this model indicated that being a daily smoker (vs. a nondaily smoker) was related to being older (OR=1.03, CI 1.01, 1.05), attending a two-year college (OR=2.04, CI 1.52, 2.70), and having parents that smoked (OR=1.59, CI 1.15, 2.22). We also found that nonsmokers (vs. nondaily or daily smokers) were more receptive to smoke-free policies (p<.001), believed in greater harm of occasional smoking (p<.001), and less often consumed alcohol and other forms of tobacco (p<.001). Nondaily smokers were more receptive to smoke-free policies than daily smokers (p<.001). Moreover, nondaily smokers were less likely to have made a recent quit attempt than daily smokers (p<.001), but were more likely to report being ready to quit in the next month (p<.001). Nondaily smokers (vs. daily smokers) were more likely to smoke for social reasons (p=.01) and to increase their smoking when consuming alcohol (p=.005); daily smokers were more likely to smoke to increase self-confidence (p=.002), to relieve boredom (p<.001), and to regulate affect (p<.001).

Conclusions: These findings highlight that nondaily smokers constitute the majority of young adult smokers and are distinct from daily
Effect of smoking on obesity in a national representative sample of Korean men: the third and the fourth Korea National Health and Nutrition Examination Survey (KNHANES)

Authors: Cheol Min Lee Kiheon Lee

Presenter: Cheol Min Lee, Seoul National University Hospital, Seoul, South Korea

Abstract
Objective: Although the impact of smoking cessation on body weight increase has been suggested in previous studies, the association between smoking status and obesity has not been fully examined yet in Korea. We aimed to assess the cross-sectional associations between smoking and obesity in a national representative sample of Korean men.

Methods: Data from the Third Korea National Health and Nutrition Examination Survey (KNHANES III) in 2005 and part of the KNHANES IV in 2007 were pooled. Among male subjects, 3,501 men with intact information about smoking were finally included for analysis. Height, body weight, and abdominal circumference (AC) were measured and body mass index (BMI) was calculated. Age-adjusted means were generated using analysis of covariance. Information about smoking status and smoking amounts was gained by using interviews and questionnaire assessments. The association of obesity and abdominal obesity with smoking status and smoking amounts were examined using multiple logistic regression analysis.

Results: Age-adjusted means of body mass index and abdominal circumference was higher in former smokers (N=1,206, BMI 24.43 Kg/m², AC 85.29cm) and never smokers (N=725, BMI 23.98 Kg/m², AC 84.14cm) than current smokers (N=1,570, BMI 23.66 Kg/m², AC 83.97cm) (p < 0.05). Smoking amounts were associated with higher age-adjusted means of BMI and AC in groups of each former smokers and current smokers (p < 0.05). Age-adjusted means of BMI and AC of current smokers who smokes more than 20 cigarettes a day were higher than those of never smokers (p < 0.05). The risk of developing abdominal obesity in ex-smoker less than 47 years old was significantly higher than never smoker (adjusted OR, 2.95; 95% confidence interval, 1.23-4.35), after adjusted for age, income, education, alcohol intake, medication, and physical activity.

Conclusions: Current male smokers have less body mass index and waist circumference than never smoker, but the risk of obesity and abdominal obesity may be different according to age group.

A comparison of snus consumption in Sweden and Norway

Authors: Chris Proctor Helena Digard Graham Errington Audrey Richter Kevin McAdam

Presenter: Chris Proctor, British American Tobacco, UK

Abstract
Objectives: Sweden is an established market for snus, an oral tobacco product associated with substantially lower health risks than cigarette smoking (1), while Norway is a maturing market. Daily snus consumption data is available for snus users in Sweden (2), but not for Norway.

Method: We conducted an internet survey of 1663 snus users in Norway in the second quarter of 2009 which addressed consumption per day, usage factors and behaviours.

Results: Of the 1663 snus users, 727 were daily users. Of these, 31% were loose snus users, 49% were pouched users, with the remaining 20% using both pouched and loose snus. Comparative data for Sweden were: 38% loose snus, 59% pouched snus, 3% both (2). Males comprised 85% of the daily snus users in Norway compared to 88% in Sweden. The majority of female daily users in Norway (88%) were pouched snus users compared to 42% of males, in comparison to 93% females and 54% males in Sweden. Average daily consumption in g/day was calculated by two methods; self-reported number of portions consumed per day and number of snus tins consumed per week. Both methods gave similar calculated consumptions (g/day). The average consumption of loose snus users in Norway (approx. 22g/day) was twice that of pouched users (approx. 11g/day). The average daily consumption for daily pouched snus users was similar to that reported by Swedish pouched users (11g/day vs 12g/day)(2). However the average consumption of daily loose snus users was lower in Norway (22g/day vs 30g/day). The observed difference in the quantity of snus consumed daily for loose users compared to pouched users in Norway was primarily due to a larger portion size for loose snus users, as the number of portions of snus consumed on average per day by the loose users and pouched users were similar (10.6 portions vs 10.8 portions, respectively), as also observed in Sweden (2).

Conclusion: Despite the different histories of snus use in Sweden and Norway, the consumption patterns in the two countries appeared to be similar although combined use of loose and pouched snus is currently more common in Norway. References: (1)Tobacco Advisory Group of the Royal College of Physicians. Harm reduction in nicotine addiction. London: RCP, 2007. (2) H. Digard et al, Patterns and behaviours of snus consumption in Sweden. Nicotine & Tobacco Research. 11(10), 1175-1181, 2009
Subjective and reinforcing effects of electronic cigarettes in male and female smokers

Authors: Christine Darredeau, Mallory Campbell, Kirsten Temporale, Sean P. Barrett

Presenter: Christine Darredeau, Dalhousie University, Canada

Abstract

Objectives: Electronic cigarettes have been marketed as a safer alternative to smoked tobacco products and even as a smoking cessation aid; however, concerns have been raised about the lack of research confirming their safety and efficacy or evaluating their addictive potential. This project examined the subjective and reinforcing effects of electronic cigarettes with different nicotine content in male and female smokers.

Methods: Eleven adult smokers completed two randomized double-blinded laboratory sessions following overnight abstinence from smoking. Participants received electronic cigarettes that differed across sessions in their manufacturer-reported nicotine content (i.e., nicotine-containing or nicotine-free). They completed subjective assessments at baseline and immediately following sampling of the electronic cigarette, and were then invited to earn additional puffs using a computerized progressive ratio task.

Results: In both conditions, sampling of the electronic cigarette was followed by a reduction in self-reported cigarette craving (especially in women), and self-administration rates were low.

Conclusions: Findings suggest that regardless of nicotine content, electronic cigarettes may provide an effective means of relieving acute tobacco craving in at least some smokers.

The effects of nicotine on gambling reinforcement: A laboratory investigation of craving, mood, heart rate, and betting patterns during video lottery terminal (VLT) play

Authors: Daniel S. McGrath, Evan A. Schmid, Sherry H. Stewart, Sean P. Barrett

Presenter: Daniel S. McGrath, Dalhousie University, Canada

Abstract

Objectives: A growing body of evidence suggests that gambling frequently co-occurs with tobacco smoking (McGrath & Barrett, 2009), yet little is known about the degree to which concurrent tobacco use contributes to gambling behaviour. Several studies have also noted that tobacco-using pathological gamblers experience more severe gambling and higher rates of other co-morbid substance abuse problems (e.g., Petry & Oncken, 2002). Currently, there is no conclusive evidence that nicotine use affects the propensity to gamble; however, an increasing number of recent studies using animal models suggest that nicotine can augment the reinforcement value of other addictive behaviours, even those that involve non-pharmacological stimuli (Chaudri et al., 2007). Unfortunately, little is known regarding the potential role nicotine plays in the reinforcement of comparable behaviour in humans. The purpose of the current study was to examine the potential augmenting effects of nicotine on the reinforcement value of gambling behaviour.

Methods: Twenty-eight (15 males) regular gamblers who smoke daily were recruited for a within-subjects laboratory experiment. Each participant took part in two counterbalanced conditions, a nicotine inhaler and a placebo inhaler condition, and then was given access to playing a video lottery terminal (VLT). Subjective cravings for cigarettes and gambling were measured with Visual Analog Scales (VAS: Bond & Lader, 1974), mood was measured with the stimulation and sedation subscales of the Biphasic Alcohol Effects Scales (BAES; Martin et al., 1990), heart rate was recorded, and gambling behaviour was monitored.

Results: Linear mixed models revealed that average ratings for craving cigarettes were significantly lower in the placebo than in the nicotine condition. However, no differences were found between the conditions for craving VLT gambling. Similarly, no differences in pharmacology were found for the BAES stimulation (or sedation) scale but, nicotine appeared to potentiate gambling-related heart rates increases – a putative physiological marker for reward susceptibility (Stewart, Peterson, Collins, Eisner, & Ellery, 2006). Lastly, in terms of gambling behaviour, no between-group differences were found for money spent, average bet size, or number of maximum bets.

Conclusions: Despite increases in physiological arousal to gambling, nicotine did not appear to otherwise augment the reinforcing value of gambling in terms of subjective stimulation, cravings for gambling, or gambling behaviour, relative to placebo. These results suggest that use of nicotine replacement therapies may be appropriate for gamblers who are attempting to quit smoking.
Evolution of Fagerström score over the time in adolescent according to the age of initiation of smoking habit

Authors:  
Bertrand Dautzenberg  
Pierre Birkui  
Maryvonne Noelle  
Jacqueline Rubal  
Marie-Dominique Dautzenberg  

Presenter:  
Bertrand Dautzenberg, Hôpital de la Pitié-Salpêtrière, France  

Abstract  
In France initiation of smoking habit occur mainly between 12-18 years. The aim of the study is to analyze how the age of initiation of tobacco influences the initiation of tobacco dependence.  

Methods: We conduct each year from 1991 a survey of smoking habit of schoolchildren in Paris area with the support of Paris Scholl authorities (Rectorat de l’Académie de Paris) and of the Paris Sick Fund (CPAM Paris) on 2% of Paris Schoolchildren. We had introduced the Fagerström test for the smoker in the annual questionnaire in 1995.  

Results: Among the cohort, 11 250 schoolchildren declare be daily smoker, report the date of initiation of smoking, age sex and complete the Fagerström nicotine dependence test and where included in analysis. The mean Fagerström score increases from 1.20 after one year of smoking to 2.05 after 4 years. In smoker who start to smoke before 15 years the Fagerström score increase from 1.29 the first year to 2.21 after more 4 years of smoking. In smoker who starts after 15 years old the Fagerström score increase from 1.15 after the first year of smoking to 1.77 after more 4 years of smoking. The increase of Fagerström score is 36% higher in teenagers who start to smoke before 15 years than after. If the question 1 of Fagerström test on the delay from the first cigarette is removed, this increase remains higher (34%) in those who start early. The early initiation provides a 70% higher increase in boys, and a 21% higher increase in girls.  

Conclusion: The increase of Fagerström score is higher in teenagers who start to smoke before 15 years than after.

Indoor smoking ban decrease dramatically pollution but had no influence on sale of cigarettes in France

Authors:  
Bertrand Dautzenberg  
Marie-Dominique Dautzenberg  
Joseph Osman  
Joëlle Visier  

Presenter:  
Marie-Dominique Dautzenberg, Hôpital de la Pitié-Salpêtrière, France  

Abstract  
Body: In 2003-2004, a tobacco plan has been implemented as a part of cancer plan to reduce smoking rate in France. This plan includes new advertisings, end of <19 cigarettes packs, 42% increase of tobacco price and prevention campaigns. In 2007-2008, 4 years later, France had set a smoking ban in two steps: February 2007 for public and working places and end of exemption to hospitality sector on January 1st 2008. The first plan has been set to reduce tobacco consumption and related diseases, the second plan have been set to reduce passive smoking. The interaction between the two plans has been assessed according to available data.  

Results: The 2003-2004 plan has been very effective to reduce tobacco consumption (1.5 million smokers less, two fold decrease smoking rate of Paris schoolchildren and decrease of cig. sales from 80529 million/y to 54924 million/y from 2002 to 2005. This plan had no significant influence on smoking in public and working places. The 2007-2008 smoking ban had a strong effect on passive smoking. Indoor pollution by PM1 had >80% decreased in working place and hospitality sector where smoking remained allowed before. PM2.5 indoor pollution who were in 12% of case in working place and in 60% of case in hospitality sector over the 25 mcg/m3 limit value before ban was in All case above after the ban; The mean value of PM2.5 particulate pollution who was 3 time the street level in working smoking place and 12 times higher the street level in hospitality sector fail above the street level after the smoking ban. The remaining indoor pollution, not related to tobacco smoke was them lower than outside. Less than 9% of population report violation of the ban in January 2008. But during this period the tobacco sale remains the same from 2005 to 2009 (54979 million cig/y) and no survey report a significant variation in smoking rate in general adult population.  

Conclusions: French experience shows that a plan design to decrease consumption could be dramatically effective but has poor influence on passive smoking. In mirror a plan designed to decrease passive smoking protects from passive smoking but has no effect on active smoking. Tobacco control plan needs to include actions against both active and passive smoking to be effective as no interaction exists between the 2 aspects of tobacco control.
The French network of the 650 tobacco cessation clinics

Authors: Bertrand Dautzenberg, Pascale Sommero, Joëlle Visier, Joseph Osman, Marie-Dominique Dautzenberg

Abstract
French government took 10 years ago the decision to implement tobacco cessation clinic (TCc) in each of the 98 French departments with at least 1 TCc half day of activity for 500 000 /inhab. Before 2000, no coordination existed between the antismoking facilities created since1970. From 2000 to 2010 the OFT had maintaining the list and main characteristics of tobacco cessation clinics (TCc) in France. Method: The database of French TCc has been analyzed on the 1 January 2010.

Results: The number of SC had increased from 275 in 2001 to 505 in 2004 and 670 in 2010 according to the date of creation of smoking clinic reported by TCc. More one smoking clinic exist for 1/100 000 inhabitants, but with territorial inequalities. Only 2 out of 98 French departments had no TCc. The city of Paris had the higher number of Tcc (n=48). A total of 398 TCc are hospital based (59.5%) and 272 based in the community, mainly in nonprofit sector. Tobacco cessation clinics are set in pulmonary units in 145 cases, addiction units in 143, general medicine units in 110, preventive unit in 88, cardiology units in 35, and maternity units in 28 or other specialties in 33. In 88 cases the SC are independent of other medical units. A CO analyzer is used for more than 90% of smokers in 74% Tcc. Urine cotinine is measured in routine in only 60 Tcc. The Fagerström test is used for the list and main characteristics of tobacco cessation clinics (TCc) in France. The city of Paris had the higher number of Tcc (n=48). A total of 398 TCc are hospital based (59.5%) and 272 based in the community, mainly in nonprofit sector. Tobacco cessation clinics are set in pulmonary units in 145 cases, addiction units in 143, general medicine units in 110, preventive unit in 88, cardiology units in 35, and maternity units in 28 or other specialties in 33. In 88 cases the SC are independent of other medical units. A CO analyzer is used for more than 90% of smokers in 74% Tcc. Urine cotinine is measured in routine in only 60 Tcc. The Fagerström test is used for all patients in 90% of Tcc, the Humor test (HAD test) is used by 81% of Tcc. All Tcc used nicotine replacement therapy and most of them, drugs of prescription. Only 38 SC (6%) use occasionally acupuncture as adjuvant therapy for cessation. The CBT are used in 238 of Tcc. Face-to-face visit are provide in all center, associated with group sessions in 27% of Tcc.

Conclusions: Tobacco cessation clinics are available on the near whole French territory with one TCc/100 000 hab. Constant improving is noticed but not all TCc reach the standard level and > 90% of French who quit don’t refer to TCc to stop.

Predictors of Long-Term Quitting Among Chinese Smokers Following Treatment: The Role of Personality Traits

Authors: Doris YP Leung, Tai-hing Lam, Sophia SC Chan

Abstract
Objectives: Research suggests some personality traits may be relevant to engagement in smoking but few studies examined the association between personality traits and smoking cessation. This study aims to determine whether personality traits correlate with smoking and cessation behaviour of smokers who received cessation counselling in a Chinese population.

Methods: A cross-sectional telephone follow-up (average 7 years) survey was conducted by trained telephone interviewers from Feb to Aug 2008. The participants were 1173 Chinese smokers who had attended the first smoking cessation clinic in Hong Kong from Aug 2000 to Jan 2002 and received stage-matched individualized cessation counselling. Three lucky draws of prize HK$1,000 (US$1=HK$7.80) each were offered to boost the response rate. We used logistic regression analysis with backward elimination to identify factors associated with quitting. The factors studied included five personality traits (Neuroticism, Extraversion, Openness to Experience, Conscientiousness, Agreeableness) at the follow-up survey and seven factors at baseline including stage of readiness to quit, Fagerstrom score of nicotine dependency, intensity of counseling received, gender, age, marital status, and daily cigarette consumption.

Results: A total of 480 participants completed the survey (a response rate of 41%). 152 refused, 522 were lost to contact and 19 were reported dead. Compared to those not completed the survey, more completers were male (83.8% vs 76.0%; p=0.002) and younger when starting smoking (18.2±4.6 years vs 17.6±4.8 years; p=0.002). Among the 480, 207 (43%) reported no smoking in the past 30 days. Logistic regression showed that conscientiousness was positively (Odds Ratio (OR)=1.51, 95% CI=1.01-2.25) and openness to experience was negatively correlated with smoking and cessation behaviour of smokers who received cessation counselling in a Chinese population.

Conclusions: In line with previous studies that conscientious was a predictor of the likelihood of restricting indoor smoking, our results showed that conscientious was associated with a greater likelihood of quitting among smokers who had received smoking cessation treatment. Extraversion was not associated with smoking cessation in our study. The results might be due to subjects who were dominant and self-confident were likely to be less responsive to a cessation intervention as they might think they have the power to control their own situation.
Biochemical measurement of passive smoking as a predictor of cause-specific mortality: evidence from the UK Health and Lifestyle Survey

Authors: 
Elisabeth Kvaavik  
Catharine R. Gale  
Rachel Huxley  
Karl Erik Lund  
David Batty

Presenter: 
Elisabeth Kvaavik, Sirus, Norway

Abstract

Objectives: Several studies have examined the influence of self-reported passive smoking on mortality, but findings are inconsistent. Few studies have used an objective measurement of passive smoking, which may provide a more accurate estimate of the association. Hence, the primary objective of this study was to examine the relationship between levels of salivary cotinine and mortality - in a sample of non-smoking men and women in UK-wide, general population-based study.

Methods: The Health and Lifestyle Survey (HALS) is a UK-wide prospective study of 5352 (3051 [57.0%] women) aged = 25 years at baseline in 1992. Data were collected on self-reported smoking habits, salivary cotinine, height, weight, chronic diseases, blood pressure and socioeconomic status. Mortality follow-up ended 30 June 2009.

Results: Of 3480 (1926 [55.3%] women) participants with complete data in 1992, 2423 (1367 [56.4%] women) were self-reported former or never smokers; this was the analytical sample. During 17 years of follow-up there were 557 (265 [47.6%] women) deaths from all-causes, comprising 234 (116 [49.6%] women) from cardiovascular disease (CVD) and 144 (72 [50.0%] women) from cancer. Multiple-adjusted hazard ratios (HR) and 95% confidence intervals (CI) for all-cause mortality and CVD mortality in men, but not in women. Further studies are required to ascertain if passive smoking is less toxic in women than men.

Conclusions: Passive smoking gave rise to an increased risk of CVD mortality in men, but not in women. Further studies are required to ascertain if passive smoking is less toxic in women than men.

A prognostic tool to identify youth at high risk of becoming daily smokers

Authors:  
Erika Dugas  
Igor Karp  
Gilles Paradis  
Marie Lambert  
Jennifer O’Loughlin

Presenter: 
Erika Dugas, Centre de Recherche CHUM, Canada

Abstract

Objectives: To develop a prognostic tool (nomogram) for use by health practitioners, to identify adolescents at high risk of daily smoking.

Methods: Data were drawn from the NDIT Study, a prospective cohort investigation of 1293 grade 7 students recruited in 10 secondary schools in Montreal, Canada in 1999. Questionnaires were administered every 3 months for 5 years (total of 20 survey cycles). The nomogram was developed using the estimates of regression parameters from multivariable logistic regression analyses. The dependent variable was an indicator of initiation of daily smoking (yes/no), while the independent variables included 7 items (age (11-19 years); ever smoked (yes/no); ever felt like you needed a cigarette (yes/no); parent(s) smoke (yes/no); sibling(s) smoke (yes/no); friend(s) smoke (yes/no); and ever drank alcohol (yes/no)) selected a priori because (i) they were associated with daily smoking; (ii) collecting accurate data from youth on these variables in a clinical setting is feasible. Potential overfitting bias was addressed and corrected using bootstrap cross-validation. The model’s goodness-of-fit and predictive ability were assessed by R-squared, c-statistic, and the Hosmer-Lemeshow test. The fitted regression model was transformed into a user-friendly nomogram, such that the risk of daily smoking can be easily computed by summing points for responses to each item. The total number of points is then aligned with a bar code depicting the estimated 1-year probability of daily smoking, ranging (potentially) from 0 to 100%.

Results: The fitted model was characterized by reasonably good fit and predictive ability. Figure 1 (sent by email to Melanie Hassell begin_of_the_skype_highlighting end_of_the_skype_highlighting) presents the nomogram for calculating the 1-year risk of initiating daily smoking. Based on the figure, a 12-year old (90 points), who has smoked (75 points), whose parents smoke (20 points) but not his siblings or friends (0 points), who does not drink alcohol (0 points), but has felt like having a cigarette (60 points) accumulates 245 points. His/her 1-year risk of daily smoking is approximately 25%. Because the prevalence of smoking in Canada is 18%, we propose that adolescents with a 1-year risk above this may need to be targeted for intensive intervention.

Conclusions: Nomograms to identify youth at high risk of daily smoking may eventually be an important component of a comprehensive tobacco control system for youth.
Proactive telephone counselling for smoking cessation: meta-analyses of the impact of recruitment channel and methodological quality on efficacy

Authors:
Flora Tzelepis
Christine L Paul
Raoul A Walsh
Patrick McElduff
Jenny Knight

Presenter:
Flora Tzelepis, University of Newcastle, Australia

Abstract
Objectives: Existing reviews have shown that proactive telephone counselling for smoking cessation is efficacious. However, these reviews failed to differentiate between studies based on recruitment channel (active versus passive) which is important given current interest in active recruitment strategies for quitlines. Additional shortcomings include limited attention to crucial methodological issues and combination of different lengths of abstinence in meta-analyses. This review aims to: i) assess the methodological quality of studies; and ii) conduct meta-analyses to examine the proactive telephone counselling effect on point prevalence abstinence and prolonged abstinence separately at mid and long-term assessments and according to recruitment channel and methodological quality.

Methods: Medline, PsycINFO, Current Contents, Embase.com, CINAHL and Scopus were searched for publications prior to 31 December 2008. Inclusion criteria were: randomised controlled trial (RCT) of proactive telephone counselling as either the primary intervention or an adjunct to self-help materials; adult current smokers from the general community; cessation outcomes reported at least 6 months post-recruitment; and English language peer-reviewed publication. Methodological quality assessments used the Quality Assessment Tool for Quantitative Studies, a published instrument. A random effects meta-analysis was used to pool the cessation outcomes at mid and long-term follow-ups.

Results: Twenty-four RCTs were included in this systematic review. Seven trials involved active recruitment, 16 passive recruitment and one mixed recruitment methods. Based on the Quality Assessment Tool for Quantitative Studies, the global methodological quality ratings indicated two strong, 10 moderate and 12 weak studies. The results of meta-analyses that included all relevant studies for point prevalence and prolonged abstinence separately at mid and long-term follow-ups will be discussed. When trials were segregated by recruitment channel and methodological quality there were circumstances under which a significant proactive telephone counselling treatment effect was not found.

Conclusions: The recruitment channel and methodological quality of trials impacted on efficacy estimates of proactive telephone counselling. The quality of proactive telephone counselling trials needs improvement.

Smoking and Cloninger’s Temperament and Character Inventory

Authors:
Jean-Francois Etter

Presenter:
Jean-Francois Etter, University of Geneva, Switzerland

Abstract
Objectives: Cloninger’s neuro-psycho-pharmacological theory identifies four heritable temperament traits that are linked to neurotransmitter activity and three acquired character traits. We tested whether these personality traits were associated with smoking behaviour and predicted smoking cessation and tobacco withdrawal symptoms.

Methods: Internet cohort study in 2005-2009. The Temperament and Character Inventory (TCI, 226 items, French version) was assessed in 2993 people (1593 current-, 969 former- and 419 never smokers). Subsets of participants indicated their smoking status after 30 days (n=1452, 48.5%) and answered the TCI again and reported withdrawal symptoms after 61 days (n=644, 21.5%).

Results: Compared with never- and former smokers, daily smokers had higher scores of Harm Avoidance and lower scores of Persistence and Self-Directedness. Daily smokers had higher scores of Novelty Seeking than never smokers. In daily smokers, the level of tobacco dependence was associated with higher scores of Harm Avoidance and lower scores of Reward Dependence, Self-Directedness and Cooperativeness. In the 60 daily smokers who had stopped smoking after 61 days, after adjustment for tobacco dependence level and baseline withdrawal ratings, Self-Directedness predicted lower scores of depressed mood and anxiety at 61-day follow-up, and Harm Avoidance predicted higher scores of depressed mood at 61-day follow-up. Personality ratings did not predict smoking cessation at follow-up in daily smokers or relapse in former smokers.

Conclusions: A consistent association was found between smoking and high Harm Avoidance and low Self-Directedness. Knowledge about these associations may be useful to clinicians, to tailor counselling.
The relative role of nicotine dependence and smoking-related cognitions in adolescents’ process of smoking cessation

Authors: Kathrin Schuck, Roy Otten, Rutger Engels, Marloes Kleinjan

Abstract
Introduction: The present study evaluated the predictive role of distinct components of nicotine dependence (craving, withdrawal, physical tolerance) in relation to smoking-related cognitions (attitudes, perceived social norms, self-efficacy) in adolescent smoking cessation. Smoking cessation is commonly regarded as a processes rather than a dichotomous event. The present study aimed to evaluate whether cessation-related antecedents (dependence components and cognitions) differ as a function of process stage.

Methods: A total of 850 adolescent smokers (age 14-16) participated in the present study. Smoking behavior was assessed one year after baseline. In the process of smoking cessation, we distinguished between distinct behavioral transitions, respectively periodic quitting, reduction in smoking behavior, and prolonged cessation.

Results: All components of nicotine dependence had a distinct role in predicting behavioral change towards cessation. Furthermore, each behavioral transition was predicted by a distinct set of variables, indicating that the contributions of cessation-related factors vary across the course towards cessation. Overall, the findings suggest that smoking-related cognitions (i.e., pros of quitting and perceived social norms) are particularly relevant in the initiation of behavioral change, such as periodic quitting, whereas nicotine dependence, craving in particular, becomes increasingly important in the maintenance of behavioral change, such as prolonged smoking cessation.

Discussion: Implications encompass enhanced attention to the multidimensional nature of nicotine dependence and the value of comparing different behavioral transitions in a comprehensive understanding of cessation-related factors.

First smoking experience among school-aged children with and without asthma

Authors: Linda Ringlever, R. Otten, R.C.P. Van Schayck, R.C.M.E. Engels

Abstract
Adolescents with asthma are as likely, or even more likely, to smoke as their peers without asthma (Hublet et al., 2007; Precht et al., 2003; Zbikowski et al. 2002). This is alarming, because individuals with asthma are at particular risk for adverse health consequences of tobacco smoke. In order to have effective programs preventing smoking behaviour among these medically at-risk children, more information is needed about differences in the earliest stages of smoking between children with and without asthma. This information is needed, since smoking initiation at a young age increases the risk of regular smoking later in time, and in turn severe health consequences. Higher rates of smoking among adolescents with asthma could be explained by a common liability for both asthma and smoking initiation. For instance, parental smoking increases the likelihood of onset and progression of asthmatic symptoms, yet it also increases the risk for children to start smoking. The present study tests whether an association between asthma and first active smoking experience can, in fact, be explained by shared risk factors such as socio-economic status (SES), parental smoking behaviour, and/or child internalising and externalising behaviour.

Method: Data were gathered during the baseline measurement of a randomised controlled trial to evaluate a smoke prevention program in the Netherlands. A total of 1479 mother and child dyads participated, of which 220 children (14.9%) were ever diagnosed for childhood asthma.

Results: Logistic regression analysis revealed that children diagnosed with asthma were 2.27 times more likely to have taken a puff of a cigarette as compared to children without asthma (10.5% vs. 5.4%). No differences were found for parental smoking and SES, but children with asthma showed slightly higher scores on both internalising and externalising behaviour. The association between asthma and first smoking remained significant after adding these factors to the regression model (adjusted OR = 2.01).

Discussion: Suggestions are given for preventing children from taking up smoking already at the age of 9-12 years old. Especially for children with asthma, both physicians and parents should not underestimate smoking rates among children and young adolescents with asthma. Several risk factors for smoking among children with asthma were tested in this study. However, more research is needed for insight into the mechanism behind this higher likelihood of smoking among children with asthma.
Anxiety Sensitivity and Smoking: A matter of gender?

Authors: 
Margarita Kapsou 
Vasos Pavli 
Maria Karekla

Presenter: 
Margarita Kapsou, University of Cyprus, Cyprus

Abstract
Anxiety Sensitivity (AS) refers to the fear of anxiety and physical sensations related to anxiety (Reiss & McNally, 1985). High levels of AS have been linked with certain forms of psychopathology, particularly anxiety disorders, as well as maladaptive behaviours such as smoking. Previous research indicates that high AS is associated with numerous aspects of cigarette smoking, such as smoking motives, smoking outcome expectancies (e.g. negative affect reduction), and perceived barriers to quitting, as smokers with high AS perceive the prospect of quitting as both more difficult and more personally threatening compared to smokers with low ASI. The present study investigated the relation between AS and smoking in a sample of Cypriot college students, and its relation to dependence and motivation to quit among the smokers in the sample. Since previous research suggests that women usually report higher levels of AS compared to men, we also examined the relation between AS and smoking separately for men and women. Participants were 176 college smokers (91 female Mage = 20.70, S.D. = 1.95, M = 17.53, S.D. = 8.58 cigarettes per day) and 168 college nonsmokers (84 female, Mage = 20.61 S.D. = 1.20), recruited from various universities and colleges in Cyprus. All participants completed the Greek adaptation of the Anxiety Sensitivity Index-16 (ASI-16; Peterson & Reiss, 1992; in our sample α = .92). Smokers also responded to questions about their smoking history, behaviour, and intentions. Consistent with previous studies, women in the overall sample scored higher than men on the ASI, (t(342) = 6.92, p < .05). ASI did not relate to smoking heaviness, higher dependence, or previous quit attempts among smokers for either men or women. Our findings suggest that, in our sample, AS is linked to smoking specifically in men, whereas women smokers and nonsmokers had comparably high ASI scores. Also, contrary to previous studies, our findings suggest that, for our nonclinical sample of college students, AS did not relate to higher levels or dependence or greater effort to quit. Further studies using longitudinal designs could inform as to whether AS can predict smoking-related outcomes later in life.

Depressive symptoms, beliefs about smoking and cigarette use among Chilean Youth

Authors: 
Paula Repetto 
Yerko P. Molina 
Eliana Guic 
Lilian Ferrer 
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Presenter: 
Paula Repetto, P.Universidad Catolica de Chile, Chile

Abstract
Depressive symptoms have been systematically found to predict cigarette smoking among youth. There are several explanations about these findings, among this it has been proposed a self-medication hypothesis that proposes that youth may use cigarette to improve their mood. Besides the improvement in mood, it has been proposed that youth may smoke to control their weight and also as a way to become more physically attractive for others. In the present study we explored the relationship between depressive symptoms, beliefs about cigarette smoking effects on mood, weight control, and physical attractiveness, and smoking in a sample of 743 Chilean youth (mean age 16.4; SD = 2.94; 54.5% females), who completed a self-administered questionnaire of a longitudinal study that has been examining determinants of changes in cigarette use in this population. We explored whether beliefs about the effects of smoking would mediate the relationship between depressive symptoms and smoking, using a Structure Equation Modeling (SEM). The findings suggest that the relationship between depressive symptoms and cigarette smoking (measured as total number of cigarettes smoked in their lives and days they usually smoke in a week), is mediated by beliefs that smoking will improve their mood. We did find, however, that depressive symptoms predicted beliefs that cigarettes will help to them look more physically attractive, but not to control their weight (CFI= 0.95, RMSEA = 0.043). Further analyses, however, suggest that there might be an interaction of sex by depressive symptoms that influences beliefs about the effects of smoking on weight control that are significant for females and not males. These results suggest that youth that may have higher depressive symptoms may have beliefs that smoking will help them to improve their mood and is additional evidence about the self-medication hypothesis. Further discussion focuses on implications for research and practice.
Determinants of nicotine dependence in UK-resident Yemeni khat chewers

Authors: 
S. Salam
R. E. Croucher
S. S. Islam

Presenter: 
S. Salam, Queen Mary University of London, UK

Abstract

Background: Khat leaves are chewed in UK communities which originated from Yemen, Somalia, and Ethiopia. Khat chewing is often associated with tobacco smoking. The determinants of self-reported nicotine dependence in khat chewers await identification.

Objectives: 1) to establish demographic, socio-cultural, psychosocial and khat chewing behavioural data for khat chewers; 2) to explore how these characteristics are associated with self-reported ‘high’ nicotine dependence.

Methods: A cross-sectional study involved face-to-face structured interview schedule amongst 204 Yemeni male khat chewers, aged 18 years and above residents in Sheffield-UK selected at random visits to places of khat sale, was conducted. Smoking data was collected using Fagerstrom Test of Nicotine Dependence (FTND) (Heatherton et al., 1991). Data was analysed using simple descriptive, univariate and hierarchical logistic regression analyses.

Results: A sub-sample of 91 khat chewers was identified as regular cigarette smokers. Of these, forty-four percent self-reported ‘high’ nicotine dependence (score ≥ 6). In univariate analysis, statistically significantly association with self-reported ‘high’ nicotine dependence included, starting smoking elsewhere than Yemen, being in ‘other’ marital status, having low social participation, having high composite khat behavioural and being dependent on khat. In the final model of multivariate analysis, respondents who started smoking outside the Yemen OR=3.39, 95%CI 1.14-10.08, being in ‘other’ marital status OR=3.03, 95%CI=1.10-3.98, with low social participation OR=4.92, 95%CI=1.68-14.41 and being dependent on khat (OR=3.58, 95% CI=1.35-9.48) were more likely to self-report ‘high’ nicotine dependence.

Conclusions: In this study sample self-reported high nicotine dependence was found associated with demographic and psychosocial factors.

The separate and combined effects of nicotine and alcohol on gambling reinforcement

Authors: 
Sean Barrett
Sherry H. Stewart
Pamela Collins

Presenter: 
Sean Barrett, Dalhousie University, Canada

Abstract

Objectives: Smoking, drinking and gambling commonly co-occur yet little is known about how acute tobacco and/or alcohol use affects gambling reinforcement. This study examined the unique and combined effects of alcohol and nicotine on subjective and behavioural responses to gambling on an electronic video lottery terminal.

Methods: Sixteen regular gamblers completed four counterbalanced double-blinded experimental conditions in which they consumed either an alcohol beverage and nicotine-containing cigarettes, an alcohol beverage and denicotinized cigarettes, a placebo beverage and nicotine-containing cigarettes, or a placebo beverage and denicotinized cigarettes prior to engaging in a gambling task.

Results: Administration of nicotine-containing tobacco and alcohol was found to be associated with increased subjective ratings of “like gambling” and “excitement” as well as with an increased heart rate during gambling relative to the placebo beverage and denicotinized tobacco condition (p<0.05). No other differences were evident between any of the conditions.

Conclusions: Findings suggest that the combination of nicotine-containing tobacco and alcohol may affect the reinforcing value of gambling to a greater extent than either substance alone.
Evaluation among pharmacists on the level of knowledge of smoking cessation and their attitude towards delivering smoking cessation

**Authors:**
Silvia Buchler, Kurt Hersberger, Isabel Amor, Vanda Schwalm, Hans Krebs, Andreas Schmid, Jean-Luc Forni

**Presenter:**
Andreas Schmid, pharmaSuisse, Switzerland

**Abstract**

**Objectives:** The aim of this study was to evaluate to what extent pharmacists feel it is important for pharmacies to play a role in smoking cessation (SC), what attitude they take towards counselling clients on smoking cessation and what needs in terms of information and education pharmacists have.

**Methods:** As part of the project “Smoking Cessation Counselling in Pharmacies” of the Swiss national stop smoking programme, a questionnaire containing 44 questions was sent to all 1728 pharmacies in Switzerland.

**Results:** 561 valid questionnaires were returned (32.4%). 13.2% of the responding pharmacists are current daily or non-daily smokers (6.6% and 6.6%) which is well below the average smoking rate of the Swiss population of 27% (national survey 2008). 80.0% say they received training to counsel smokers, of which 69.6% say they received training by a producer of SC medication. 24.7% feel they are sufficiently trained to deliver short intervention and only 12.7% say they received enough training for SC counselling. The interest in further training is high accordingly: 38.1% wish to learn more on SC medication, 39.2% more on short intervention and 45.8% wish to receive comprehensive training in SC (multiple answers possible). A total of 96.1% of the responding pharmacists see it as their role to assist smokers willing to quit and 82.1% think that clients would expect them to be able to counsel on SC. However, only 26.3% think that clients would expect to be approached by a pharmacist about SC. Of those respondents who did not implement the short intervention (n=144) in their pharmacy 61.1% assume clients to be interested, 45.2% say it is because they lack adequate/appropriate training, 36.8% say they lack the time, 33.4% think it is ineffective and 20.2% say it is because they do not get paid. Only 11.1% say it is because they are not interested in doing so.

**Conclusion:** Although pharmacists received a lot of training in the past, the training was often concentrating on SC medication and therefore a majority of pharmacists feel inadequately trained to deliver short intervention or even smoking cessation counselling. Pharmacists see it as their role to assist smokers willing to quit but feel it would not be well tolerated by clients to be proactively asked about SC.

Evaluation among oral health professionals on the level of knowledge of smoking cessation and their attitude towards delivering smoking cessation

**Authors:**
Silvia Buchler, Walter Clemens, Ulrich P. Saxer, Michael M. Bornstein, Hans Krebs, Christoph Ramseier

**Presenter:**
Silvia Buchler, Swiss National Stop Smoking Programme, Switzerland

**Abstract**

**Objectives:** The aim of the study was to assess to what extent oral health professionals are evaluating the smoking status of their patients and what attitude they take towards counselling patients on smoking cessation.

**Methods:** In 2008, as part of the project “Smoking – Intervention in the dental practice” of the Swiss national stop smoking programme, a questionnaire containing 29 questions was sent to 3311 dentists of the Swiss Dental Association. Data obtained was compared to the results of two previous surveys conducted in 2002 (baseline) and 2005.

**Results:** 1102 (33.3%) valid questionnaires were returned. 8% (compared to 11% in 2002) of the responding dentists are current smokers; which is well below 27%, the average smoking rate of the Swiss population. 77% of the respondents document the smoking status of their patients, up from 54% in 2002 and 66% in 2005. 73% declare to ask their patients routinely about their willingness to quit and more than a third (35%) ask smokers if they would like to be assisted in an attempt to quit, up from 17% in 2002. 27% recommend nicotine replacement therapy, down from 35% in 2005. 25% routinely deliver a short intervention (defined as: ask about smoking status, inform on effects of smoking on oral health, evaluate motivation to stop smoking and advise patients willing to quit on possibilities for counselling). Of those who did not implement the short intervention in their practice 43% indicate they refrain from doing so because they assume patients are not interested, 35% because they lack the time and 41% because they lack specific training. Only 6% believe that they could lose patients if they performed a short intervention and 17% say they do not offer counselling because of the lack of reimbursement.

**Conclusions:** Most dentists are aware of the implications of smoking on oral health. However, the majority do not deliver short interventions. More education and training is needed for dentists to raise their confidence in counselling patients. Dentists are cautious to talk about smoking cessation as they assume that patients do not expect to be approached by a dentist on this subject. Informing the public on the connections of smoking and oral health might decrease dentists’ inhibitions to bring up this topic with their patients.
Smoking prevalence prediction, Italy, 2010-2050

Authors:
Giuseppe Gorini
Giulia Carreras
Laura Iannucci

Presenter:
Giuseppe Gorini, Institute for the Study and Prevention of Cancer, Italy

Abstract
Objectives: Smoking prevalence in Italy has substantially declined in the last decades, with a 37-percent reduction from 1980. This reduction is in part attributable to the development of tobacco control policies (increasing taxes, advertising ban, smoking ban, smoking cessation clinic development). Aim of this work is to predict the future smoking prevalence in Italy, 2010-2050, according to the tobacco control policies that will be implemented.

Methods: A dynamic model to describe the evolution in Italy of the number of smokers, never smokers and former smokers was developed [1]. Unknown parameters of initiation and cessation rates were estimated by fitting the model with historical smoking prevalence figures, Italy, 1986-2009 [2]. The estimated parameters were then used to predict future smoking prevalence under the following four different scenarios. Scenario 1: 2009 initiation and cessation rates; Scenario 2: half 2009 initiation rate; Scenario 3: double 2009 cessation rate; Scenario 4: half 2009 initiation rate and double 2009 cessation rate.

Results: The model produced a good fit for observed prevalence (R2 =0.81 and 0.90 for women and men, respectively). The projected smoking prevalence figures, 2010-2050, under the four different scenarios were calculated. Smoking prevalence in women (17.0% in 2009) will reach 11.8%, 7.3%, 8.8%, and 5.1% in 2050, under scenarios 1, 2, 3, and 4, respectively. In men prevalence (29.5% in 2009) will reach 21.4%, 14.1%, 14.8%, and 9.5% in 2050, under scenarios 1, 2, 3, and 4, respectively.

Conclusion: The model simulates scenarios that may arise from the development of tobacco control policies not yet implemented in Italy, such as further tax increases, mass media interventions, pictorial warnings on packages, enforcement of banning the sales to minors, total reimbursement of tobacco cessation treatments with a further development of Quitlines. In order to go below a prevalence of 10%, further measures recommended by WHO-FCTC should be implemented, such as changing the tobacco product regulation from a free to a regulated market (lowering carcinogens, toxicants, and nicotine in tobacco products; increasing availability of nicotine replacement therapy (NRT) in retail tobacco outlets, and incentives to try NRT). References 1. Institute of Medicine. Ending the tobacco problem. Washington, CD: The National Academies Press, 2007. 2. Italian Institute of Statistics (ISTAT). The System of Multipurpose Surveys. Contents and Survey Methodology. Metodi e Norme, 31. ISTAT, 2006.
Do Mental Health Inpatients Want To Quit Smoking?

Authors:
Jenny Bowman
Kathleen McElwaine
Lyndell Moore
Margaret Terry
Richard Clancy
Jenny Knight
Amanda Baker
Paula Wye
John Wiggers

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Abstract
Objectives: Barriers to the provision of smoking cessation care for mental health inpatients include staff views that patients do not want to quit. The little evidence available however suggests such views may not reflect reality. This paper reports the findings of a survey of mental health inpatients at a large adult psychiatric hospital in New South Wales (NSW) Australia, assessing: smoking prevalence, nicotine dependence, ‘stage of change’, motivation to quit, and the existence and nature of previous quit attempts.

Methods: Patients were interviewed within the inpatient setting of a large regional mental health facility in NSW using a structured survey tool, incorporating the Fagerstrom Dependence Scale, Reasons for Quitting Scale, Readiness and Motivation to Quit Smoking Questionnaire, and a number of brief measures developed for this study concerning smoking and quitting behaviour.

Results: Findings are reported for 201 patients, utilising descriptive statistics to report smoking prevalence, motivation to quit and previous quit attempts. Key findings include a smoking prevalence of 57.7%, and a quit ratio of 22.7%. The majority of smokers indicated a desire to one day quit smoking (67.3%), and more than one-third reported that they planned to do so soon (36.1%). Furthermore, 82.6% of smokers had tried to quit at some time, and of this group of smokers who had ever made a quit attempt, the majority (51.1%) made a quit attempt within the last 12 months.

Conclusions: The study has provided quantitative data on motivation to quit smoking and previous quit attempts made, for mental health inpatients. Its findings show that mental health inpatients are motivated to quit, with the majority having made several quit attempts in the past. However, the low quit ratio suggests that smokers in this population have particular difficulty maintaining a quit attempt. These findings will enable mental health staff to be better informed and hence assist in removing barriers to the provision of nicotine dependence care for this significant population of smokers, and facilitate the development of cessation strategies.

Patterns of use and prevalence of new combustible and non-combustible tobacco products among adolescents in Southern Poland

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Abstract
Background: Public health policy and tobacco control programs in Poland do not address the issue of new emerging tobacco products, i.e. non-combustible potential reduced-exposure products (PREPs) like snus, snuff, e-cigarettes, and combustible waterpipes. Objectives: The aim of the study was to evaluate the patterns of use and prevalence of PREPs and waterpipes among Polish adolescents.

Methods: We surveyed in person 769 volunteers in the age of 16-19 attending secondary schools in Southern Poland. We designed an 89-question survey concerning their social status, cigarette smoking history, use of PREPs, attitudes and believes about health and social consequences related to various tobacco products.

Results: We found that 35% of surveyed students smoked cigarettes. Out of this group 15% were daily smokers who smoked 10-20 cigarettes per day, 9% of cigarette smokers also used e-cigarettes, 7% used snus, 59% used snuff and 76% smoked waterpipes. Among non-smoking students, 3% used e-cigarettes, 1% used snus, 29% used snuff and 32% smoked waterpipes. All e-cigarette smokers used these devices every day, 11% of smokers and 6% of non-smokers used snus every day, 2% of both groups used snuff every day, and waterpipe was smoked every day by 2% and 1%, respectively. The majority of the surveyed students declared to be occasional users of PREPs and to smoke waterpipes during social meetings.

Conclusions: The new tobacco products have gained popularity among young Poles. We recommend that the Polish tobacco control programs and anti-smoking campaigns for adolescents start paying attention to PREPs.
Determination of polycyclic aromatic hydrocarbons, tobacco specific nitrosamines and humectants in mainstream water pipe smoke

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Abstract  
During the last few years water pipe tobacco smoking has become increasingly popular among young people. Surveys from different geographic regions demonstrate that water pipe tobacco smoking is a global trend and not only restricted to the Eastern Mediterranean Region. At present an estimation of the risk for human health caused by water pipe smoking is still difficult due to the lack of reliable studies in this field. The purpose of this study is to generate relevant data on the hazards of water pipe smoking and to support public health authorities in assessing associated risks and providing advice to the general public. After establishing a smoking machine protocol, we collected mainstream water pipe smoke on glass fibre filters and analysed it for nicotine, polycyclic aromatic hydrocarbons (PAHs), tobacco specific nitrosamines (TSNAs) and humectants. Quantitative analyses were carried out with GC/FID, GC-MS and HPLC-MS/MS. The contents of carbon monoxide were determined directly from the smoke. For comparison, the concentrations of PAHs and TSNAs were also determined in the mainstream smoke of the 3R4F Kentucky Reference Cigarette. In water pipe smoke we measured high levels of carbon monoxide (367 mg/session, ± 9%), nicotine (7.7 mg/session, ± 5%), naphthalene (3200 ng/session, ± 6%); 3R4F: 35 ng/cigarette, ± 6%); phenanthrene (1330 ng/session, ± 14%); 3R4F: 118 ng/cigarette, ±11%); as well as propylene glycol (211 mg/session, ± 3%) and glycerol (423 mg/session, ± 4%). The contents of benzo[a]pyrene were just slightly elevated compared to cigarette smoke (16 ng/session, ± 26%; 3R4F: 6 ng/cigarette, ± 6%), and TSNAs concentrations were even smaller (4-(methylnitrosamino)-1-(3-pyridinyl)-1-butanolamine (NNK): 46 ng/session, ± 18%; 3R4F: 101 ng/cigarette, ± 4%); N-nitrosornicotine (NNN): 34 ng/session, ± 18%; 3R4F: 137 ng/cigarette, ± 4%). In our studies we detected and quantified a wide range of harmful substances present in water pipe smoke, some of them at extremely high levels. The levels of carbon monoxide present in the water pipe smoke give rise to qualified concern, in particular for the exposure of pregnant women or individuals suffering from cardiac diseases.

Addressing social inequalities in smoking by partnering with community social services: The Tackling Tobacco Research Project

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Presenter:  
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Abstract

Objectives: Smoking prevalence among those living in poverty, with a mental illness, of low educational attainment or indigenous background is at least twice that of the general population in Australia. Similar disparities exist in other developed countries and closing tobacco-related disparities have been identified in the UK and US as national health priorities. These disparities in smoking rates translate to substantial health inequalities. Smoking also contributes to poor quality of life, depression and financial stress. There is an urgent need for intervention research aimed at reducing tobacco-related inequalities. Community service organisations provide essential care and assistance to people experiencing hardship. In 2009 the Australian Council of Social Services reported that their member agencies provided services to over 3.1 million Australians in need. Those most in need are more likely to attend community social services; eg, Indigenous people are almost 7 times more likely to use community services and the unemployed almost twice as much than their representation in the general community would suggest. Thus interventions delivered through this setting have the potential to reduce the social gradient in smoking rates. This paper will describe a program of research aimed at addressing smoking amongst socially disadvantaged clients of community social services.

Methods: A program of research incorporating qualitative methods, a descriptive survey, and a validation of self report study will be described.

Results: Over 80% of clients completed a touch screen computer survey (n=400) in the community social service setting. The results show that 50% of adult clients attending community social services report smoking daily. Clients reported to find the suggestion that case-workers address their smoking as acceptable. Service staff also reported that they believed addressing smoking was part of their role as care givers to people experiencing hardship, however they reported a number of barriers. The accuracy of self-reported smoking status (against carbon monoxide as gold standard) was high.

Conclusions: This research shows that the community social service sector is an appropriate and acceptable setting for the delivery of smoking cessation interventions in order to reach disadvantaged groups. The paper will outline a planned randomised controlled trial which will use the community social service setting as an access point for addressing smoking among a heterogeneous group of disadvantaged people.
Estimating the economic impact of smoking cessation among smoking COPD patients in Norway

Authors: Gry Stine Kopperud, Stian Lunde, Hans Petter Strifeldt, Lars Rune Aadland, Trude Tangen Volla, Pfizer Norway

Presenter: Lars Rune Aadland, Pfizer Norway, Norway

Abstract

Introduction: Chronic Obstructive Pulmonary Disease (COPD) is mainly caused by smoking. Smoking cessation (SC) is the single most important intervention for preventing disease progression, and recommended in guidelines. 55-60% of Norwegian patients diagnosed with COPD are daily smokers. The Norwegian Institute of Public Health (NIPH) estimated yearly COPD cost to NOK 4.5 billions (42% direct, and 58% indirect costs). Limited knowledge exists of the economical impact of reducing smoking prevalence in the COPD population. This information is crucial when estimating future Norwegian treatment cost for COPD.

Objectives: The aim of this study is to explore the economical impact of SC by treating the motivated COPD smokers with varenicline.

Methods: A model was developed to compute per-member-per-year costs associated with SC in COPD. Inputs included COPD prevalence and yearly cost, the proportion of motivated quitters and drug costs. Norwegian statistics on COPD smoking prevalence and Medline search for statistics regarding motivated quitters were applied. The effectiveness of varenicline in COPD patients and cost data were applied from NIPH and Norwegian Medicine Agency.

Results: Smoking COPD patients cost NOK 2.43 billions yearly. Treatment of the motivated COPD quitter with varenicline cost NOK 25 millions. Clinical studies demonstrate 18.6% success rate (continued abstinence rate week 9-52) for SC among COPD patients with varenicline, hence adding NOK 63 millions as saving. The net gain from SC in motivated COPD patients amount to NOK 38 millions in year one. SC gives a 3 percent point reduction in prevalence. Assuming the applied average cost is too high, the model predicts a “first year break even cost” of NOK 11.800 per patient.

Conclusions: Reduced smoking prevalence among COPD patients will have substantial short- and long-term positive cost effects as both the disease progression and treatment costs are reduced. Utilization of varenicline for smoking cessation among COPD patients will contribute to reducing the current smoking prevalence in this population below 50%. The analyses may be an optimistic estimate, assuming that the average COPD patient stops smoking, and thereby reduces the long-term cost due to a decline in disease progression. However there are far more mild and moderate COPD compared to severe patients. This reduces the magnitude of the possible overestimate. COPD costs are documented to be alarmingly high. Our analysis demonstrates cost saving expectation within one year.

Tobacco Use among long distance commercial automobile drivers in Ibadan, Nigeria

Authors: Victor Lasebikan, O. Baiyewu

Presenter: Victor Lasebikan, University of Ibadan, Nigeria

Abstract

Summary Background: Tobacco use is very common among automobile drivers in terms of the ease of its use, and its stimulating effects. The objectives of the study were to identify pattern of tobacco use among long distance commercial drivers in general and also with respect to their status (hired or owner) and also to identify the profile of reported health problems in the past year, among them.

Method: Four hundred and twenty two commercial drivers selected through a multi stage stratified sampling technique from four motor parks in Ibadan were interviewed using the alcohol and drug section of the CIDI. The CIDI auto program was used to generate psychiatric diagnosis. The CIDI auto is a computer program which could concurrently generate both ICD 10 and DSM IIIR diagnoses using various indices which includes physical and social health problems. Focus group discussion and direct observation were also conducted in each of the study parks.

Results: Their median age was 39 years, 76.8% were married, 5.0% had no formal education. Alcohol was the most prevalent currently used substance, 324 (76.8%). Lifetime prevalence of tobacco use was 91.8%, current use rate was 68.5%, 63% reported combined use with both cannabis and alcohol respectively. Of the profile of problems associated with tobacco use, health problems were most prevalent (45%), followed by injuries 23%. Multivariate analysis showed that the most significant predictor of tobacco related injuries was use of tobacco with alcohol, OR = 5.7, 95% CI (1.3 – 11.5) p < 0.01, age group 54-64 years, OR = 8.8 95% CI (2.5 – 21.9), p = 0.00.

In conclusion, tobacco use is highly prevalent among commercial drivers, and is associated with health hazards and injuries if used in combination with alcohol and also among older drivers. The government therefore needs to increase health education awareness programs on the health hazards of tobacco and the risk involved in combining it with alcohol in order to commuters’ safety.
Children’s exposure to Secondhand Smoke in Malaysia

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Abstract
Objective: To determine the effectiveness of smoking restriction after the implementation of smoke-free legislation in Malaysia.
Method: This cross-sectional study collected data on salivary cotinine levels among school children (n=956) in two states in Malaysia. A questionnaire providing details of self-reported exposure was also completed by each child’s parent or guardian.
Results: The overall geometric mean (GM) salivary cotinine concentration for non-smoking school children is 0.59ng/ml (95%CI 0.52 to 0.69) which is 2.7 times higher than similar data in Scotland Akhtar et al. 2007). Further stratification of household smoke exposure generates the following means: children living with non-smoking parents 0.37ng/ml, children living with a smoker father 0.9 ng/ml, children living with two smokers (father and extended family member) 1.14ng/ml children living with two smoking parents 2.26ng/ml. More than 55% of children live with an active smoker and 28% of children had concentrations >3ng/ml, higher than the average reported for workers in Scottish bars prior to smoke-free laws. Conclusion: High cotinine concentrations among children living in non-smoking households suggest significant SHS exposures occur outside the home. Limited enforcement of current restrictions in Malaysia together with the partial nature of the regulations results in Malaysian children being exposed to higher level of SHS. There is a clear need for revised legislation to improve indoor air quality in Malaysia and reduce non-smokers’ exposure to SHS in enclosed public spaces.
Children’s exposure to Secondhand Smoke in Malaysia

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