

From: "Stan Shatenstein" <shatensteins@sympatico.ca>

To: [Undisclosed-Recipient:](#)

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Subject: STAN Bulletin: 19th Edition: 30-July-2012

Smoking & Tobacco Abstracts & News

STAN Bulletin

19th Edition

30-July-2012

Editor's note: As has been noted before, spaces are used in the In the News section to indicate separate links, thus the positive judgments against Philip Morris et al. are contained here and below in two separate documents: [DC Court Rulings](#).

Stan Shatenstein

In the News:

- India: [New survey shows health warnings have helped smokers quit](#)
- Philippines: [WHO urges senate to defy tobacco lobby & boost cigarette taxes](#)
- Saudi Arabia: [Interior Minister bans selling cigarettes to people under 18](#)
- S. Korea: [Ruling party lawmaker submits a bill to increase cigarette prices](#)
- Uganda: [Tobacco Industry Shelves Input During Hot Debate On Control Bill](#)
- UK: [BLF: Comment: British Lung Foundation: We must protect children from smoking in cars](#)
- UK: Wales: [Ash: Opinion: Cigarettes kill; they should not be packaged like perfume: Plain Packs Protect Petition](#)
- US: [ALEC: Can Tobacco Cure Smoking & Are Health Care Companies in Bed with Industry?](#)
- US: [PM: Appeals court upholds sanctions \[DC Court Rulings\]; Cigarette pack warnings ruling left intact](#)
- US: [RAI: Reynolds developing new smokeless products: Vuse: E-cigs, snuff, lozenges, NRT](#)
- US: [Ex-smokers have higher risks for bowel diseases \[Am J Gastroenterol - Higuchi\]](#)

Noteworthy:

"We found that about 90% of cities with comprehensive policies disallowing cigarette smoking in freestanding bars may allow HTS [hookah tobacco smoking] via exemptions. We also found that community population density is associated with HTS policy environment. These results may be valuable to researchers, lawmakers, health policy officials, and advocacy group leaders seeking to improve policy in this area." [Primack BA et al. US Health Policy Related to Hookah Tobacco Smoking, [AJPH](#)]

In this Edition:

- Addict Disord Their Treat - Chisolm: US: Smoking, Depression, Opioid Dependence & Neonatal Outcomes
- ACER - Burns: Cigarette Smoke Exposure Greatly Increases Alcohol Consumption in Adolescent Mice
- AJPH - Primack: US: Health Policy Related to Hookah Tobacco Smoking
 - BMC Pub Health - Pircher: Australia: NT: Trend analysis of hospital admissions attributable to smoking, 1998-2009
 - Br J Cancer - Peto: That the effects of smoking should be measured in pack-years: misconceptions
 - CC&C - Gawron: US: Lifetime risk for cancer death by sex & smoking status: lifetime risk pooling project
 - Cardiol J - Aksoy: Turkey: AML: Oxidative stress & CAD severity in young smokers with acute myocardial infarction
 - Commun Ment Health J - Smith: US: NY: Buffalo: Complete Smoking Ban Effects on Psychiatric Facility Inpatients

- EJPH - Levy: UK: Tobacco control policy: blueprint for the rest of Europe?
- Genes Brain Behav - Jackson: Acute behavioral effects of nicotine in HINT1 knockout mice
- HER - Arora: India: ACTIVITY: Adult & youth discussions to inform community-based TC programme development
- JMIR - Ybarra: Turkey: Design considerations in developing a smoking cessation text messaging program
- J Proteome Res - Ma: Smoke-Induced Signal Molecules in Altered LDL Protein 5 Mice Bone Marrow Cells
- J Youth Stud - Page: Middle East: GYTS: Marlboro & other usual brand choices by youth smokers
- Lipids Health Dis - Yan-Ling: China: Smoking & serum lipid/lipoprotein among nonagenarians/centenarians
- Neuropsychopharm - Hilario: Reward Sensitization: Repeated Nicotine Exposure & Withdrawal Effects in Mice
- PLoS One - Mamun: Australia: Brisbane: Maternal smoking during pregnancy predicts adult offspring CV risks
- Prev Chron Dis - Warner: US: MA: Integrating Tobacco Cessation Quitlines Into Health Care, 2002-2011
- Rheumatol Int - Gyger: Does cigarette smoking mitigate the severity of skin disease in systemic sclerosis?
- Salud Pub Mex - Ramírez-Ortiz: Mexico: Effects of social networks on tobacco use among high-school adolescents
- Scand J Med Sci Sports - Martinsen: Norway: Adolescent elite athletes' smoking, snus & alcohol use
- Scand J Prim Health Care - Toljamo: Finland: Young male smokers, nicotine dependence & unsuccessful quit attempts
- Science - Brandon: Book Review: Proctor: Golden Holocaust: Big Tobacco Indicts Itself
- Toxicol Sci - Ebert-McNeill: Cadmium intake & smokers' systemic exposure in postmenopausal women & matched men
- Transl Psych - de Zeeuw: Prenatal CS or alcohol exposure & cerebellum volume in ADHD & typical development

Abstracts:

Cigarette Smoking and Neonatal Outcomes in Depressed and Non-Depressed Opioid-Dependent Agonist-Maintained Pregnant Patients

[Addict Disord Their Treat](#). 2011 Dec;10(4):180-187.

[Chisolm MS](#), [Acquavita SP](#), [Kaltenbach K](#), [Winklbaur B](#), [Heil SH](#), [Martin PR](#), [Stine SM](#), [Coyle M](#), [Leoutsakos JM](#), [Tuten M](#), [Jansson LM](#), [Backer PM](#), [Jones HE](#).

Abstract

AIMS:

To investigate whether cigarette smoking and/or depression contribute to neonatal abstinence syndrome (NAS) severity.

DESIGN:

Cohort study analyzing data from a randomized, controlled trial of methadone versus buprenorphine.

SETTING:

Seven study sites that randomized patients to study conditions and provided comprehensive addiction treatment to pregnant patients.

PARTICIPANTS:

119 of 131 opioid-dependent pregnant patients who completed the MOTHER study.

MEASUREMENTS:

Smoking data and depression status were obtained from the Addiction Severity Index and Mini International Neuropsychiatric Interview, respectively. Neonatal outcomes (birth weight, preterm delivery and NAS pharmacologic treatment) were collected from the medical charts. Study site was a fixed-effect factor in all analyses.

FINDINGS:

Cigarette smoking was reported by 94% of participants and depression identified in 35%. Smoking was associated with low birth weight, preterm delivery, and NAS pharmacologic treatment in both depressed and non-depressed participants. The association between smoking and NAS treatment differed significantly between depressed and non-depressed participants. Among non-depressed participants, adjusting for site and illicit drug use, each additional average cigarette per day (CPD) increased the odds of NAS treatment by 12% [95%CI: (1.02-1.23), $p=0.02$]. Among depressed participants, each additional average CPD did not statistically increase the odds of NAS treatment [OR: 0.94, 95% CI: (0.84-1.04), $p=0.23$].

CONCLUSIONS:

These results are consistent with the hypothesis that NAS expression is influenced by many factors. The relationship between CPD and NAS pharmacologic treatment is attenuated among depressed women in this study for reasons currently unknown. Further investigations are needed to clarify the complex relationships among maternal smoking, depression, and NAS.

http://journals.lww.com/addictiondisorders/Abstract/2011/12000/Cigarette_Smoking_and_Neonatal_Outcomes_in.3.aspx

Also:

Investigation of the Alcohol, Smoking, and Substance Involvement Screening Test (the ASSIST) Version 3.0 in Pregnancy
http://journals.lww.com/addictiondisorders/Abstract/publishahead/Investigation_of_the_Alcohol_Smoking_and.99911.aspx

Cigarette Smoke Exposure Greatly Increases Alcohol Consumption in Adolescent C57BL/6 Mice

[Alcohol Clin Exp Res](#). 2012 Jul 24. doi: 10.1111/j.1530-0277.2012.01911.x. [Epub ahead of print]

[Burns BE](#), [Proctor WR](#).

Abstract

BACKGROUND:

Alcohol and tobacco are often used together, and alcoholism is much more common among smokers compared with nonsmokers. Studies in humans suggest that nicotine (an active ingredient in cigarette smoke) can increase the consumption of alcohol. Research on rats and mice demonstrated mixed results; some studies report that nicotine increases alcohol consumption, while others show a decrease in drinking. Because cigarette smoke includes many other chemicals, these also may play a significant role in alcohol consumption. For example, 2 of these other constituents, monoamine oxidase inhibitors and acetaldehyde, increase alcohol tolerance and/or alcohol consumption in rodents. This study was designed to investigate how cigarette smoke from tobacco may modify self-administration of alcohol in adolescent C57BL/6 mice, a critical time when adolescent humans begin abusing drugs.

METHODS:

C57BL/6 male mice (4 to 5 weeks old) were acclimated for 3 weeks to consume a 10% (w/v) alcohol solution during a 2-hour daily access in the dark. Subsequently, half the animals were exposed to cigarette smoke for 6 h/d for 16 days. The remaining animals (control) were placed in a smoke-free adjacent chamber. Immediately following the 6-hour period in the

chambers, the control and smoke-exposed mice were given access to the 10% alcohol solution for 2 hours.

RESULTS:

Animals exposed to cigarette smoke for 6 h/d consumed approximately 3- to 5-fold more alcohol than the mice in the control group throughout the 16-day study. The mice in the smoke group had a blood alcohol concentration that was nearly 4-fold that of the control mice.

CONCLUSIONS:

Cigarette smoke increases alcohol consumption several fold higher than reported studies using nicotine treatment alone in adolescent rodents. Thus, this model should be useful to determine the roles of other bioactive components in cigarette smoke that may be important in the high co-abuse of smoking and alcohol consumption.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1530-0277.2012.01911.x/abstract>

US Health Policy Related to Hookah Tobacco Smoking

[Am J Public Health. 2012 Jul 1. \[Epub ahead of print\]](#)

[Primack BA](#), [Hopkins M](#), [Hallett C](#), [Carroll MV](#), [Zeller M](#), [Dachille K](#), [Kim KH](#), [Fine MJ](#), [Donohue JM](#).

Abstract

Objectives. Although US cigarette smoking is decreasing, hookah tobacco smoking (HTS) is an emerging trend associated with substantial toxicant exposure. We assessed how a representative sample of US tobacco control policies may apply to HTS. **Methods.** We examined municipal, county, and state legal texts applying to the 100 largest US cities. We developed a summary policy variable that distinguished among cities on the basis of how current tobacco control policies may apply to HTS and used multinomial logistic regression to determine associations between community-level sociodemographic variables and the policy outcome variable. **Results.** Although 73 of the 100 largest US cities have laws that disallow cigarette smoking in bars, 69 of these cities have exemptions that allow HTS; 4 of the 69 have passed legislation specifically exempting HTS, and 65 may permit HTS via generic tobacco retail establishment exemptions. Cities in which HTS may be exempted had denser populations than cities without clean air legislation. **Conclusions.** Although three fourths of the largest US cities disallow cigarette smoking in bars, nearly 90% of these cities may permit HTS via exemptions. Closing this gap in clean air regulation may significantly reduce exposure to HTS.

<http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2012.300838>

Trend analysis of hospital admissions attributable to tobacco smoking, Northern Territory Aboriginal and non-Aboriginal populations, 1998 to 2009

[BMC Public Health. 2012 Jul 24;12\(1\):545. \[Epub ahead of print\]](#)

[Pircher SL](#), [Li SQ](#), [Guthridge SL](#).

Abstract

BACKGROUND:

Tobacco smoking is a well-recognised risk factor for many diseases. This study assesses the extent of smoking-attributable hospitalisation in the Northern Territory (NT) Aboriginal and non-Aboriginal populations, and examines smoking-attributable hospitalisation trends for the years 1998/99 to 2008/09.

METHODS:

Hospital discharge data were used for the analysis. The proportion of conditions attributable to tobacco smoking was calculated using the aetiological fraction method. Age-adjusted smoking-attributable hospitalisation rates were calculated to describe the impact of tobacco smoking on the health of Territorians. A negative binomial regression model was applied to examine trends in smoking-attributable hospitalisations.

RESULTS:

Aboriginal Territorians were found to have higher rates of smoking-attributable hospitalisation, with Aboriginal males more than three times and Aboriginal females more than four times more likely to be hospitalised for smoking-attributable conditions than their non-Aboriginal counterparts. The age-adjusted hospitalisation rate for Aboriginal males increased by 31% and for Aboriginal females by 18% during the study period. There were more modest increases for NT non-Aboriginal males and females (5% and 17% respectively). The increase among Aboriginal males occurred up until 2005/06 followed by moderation in the trend. There were small reductions in smoking-attributable hospitalisation rates among all populations in younger age groups (less than 25 years).

CONCLUSIONS:

Aboriginal Territorians experience much higher smoking-attributable hospitalisation rates than non-Aboriginal Territorians. The scale of the smoking burden and suggestion of recent moderation among Aboriginal men reinforce the importance of tobacco control interventions that are designed to meet the needs of the NT's diverse population groups. Preventing smoking and increasing smoking cessation rates remain priorities for public health interventions in the NT.

<http://www.biomedcentral.com/1471-2458/12/545/abstract>
<http://www.biomedcentral.com/content/pdf/1471-2458-12-545.pdf>

Note: Open Access. Full text PDF freely available from link immediately above.

Editorial

That the effects of smoking should be measured in pack-years: misconceptions 4

[Br J Cancer](#). 2012 Jul 24;107(3):406-7. doi: 10.1038/bjc.2012.97.

[Peto J](#).

Abstract

Lung cancer incidence in smokers is roughly proportional to dose rate (cigarettes per day) but increases much more rapidly with duration of smoking. The assumption that the incidence rate is proportional to total lifetime dose (the product of dose rate and duration) has been known to be wrong for many years, but total dose in pack-years is still often included, either alone or together, with more fundamental parameters such as dose rate, in regression analysis of epidemiological data. This is mathematically unnecessary and scientifically unhelpful.

...A careful analysis of the deviations from the simplified model described above and explicit alternative models are needed to advance our understanding of carcinogenesis. For example, age (or age at starting to smoke) may have some independent role in addition to smoking duration ([Moolgavkar et al. 1989](#)). This could be due to artefacts such as trends in tar level, or age-related changes in amount smoked leading to errors in estimated dose in both prospective and case-control studies. If true, however, it would suggest a promoting effect on cells that were initiated spontaneously before smoking began, which is a plausible extension of the model. Science advances by developing and testing plausible models, not by regression analysis of gross deviations from models that are clearly wrong. Lung cancer risk is not proportional to pack-years, so complex modelling of the variation in ERR per pack-year in relation to more fundamental variables such as smoking rate ([Lubin et al. 2007](#)) is unlikely to be biologically informative. The mechanistic insights and hypotheses from pre-molecular cancer epidemiology ([Doll. 1978](#)) may soon be testable, but they are in danger of being forgotten just as the genetic events that underlie such patterns are being discovered ([Pleasance et al. 2010](#)).

<http://www.nature.com/bjc/journal/v107/n3/full/bjc201297a.html>

Lifetime risk for cancer death by sex and smoking status: the lifetime risk pooling project

[Cancer Causes Control](#). 2012 Jul 24. [Epub ahead of print]

[Gawron A](#), [Hou L](#), [Ning H](#), [Berry JD](#), [Lloyd-Jones DM](#).

Abstract

BACKGROUND:

Understanding how sex and tobacco exposure may modify lifetime risks for cancer mortality is important for effective communication of risk in targeted public health messages.

OBJECTIVE:

To determine lifetime risk estimates for cancer death associated with sex and smoking status in the United States.

METHODS:

A pooled cohort design using ten well-defined epidemiologic cohorts including middle-aged and older individuals was used to estimate the lifetime risk for cancer death at selected index ages, with death from non-cancer causes as the competing risk, by sex and smoking status.

RESULTS:

There were a total of 11,317 cancer-related deaths. At age 45 years, the lifetime risk of cancer death for male smokers is 27.7 % (95 % CI 24.0-31.4 %) compared to 15.8 % (95 % CI 12.7-18.9 %) for male non-smokers. At age 45 years, the lifetime risk of cancer death for female smokers is 21.7 % (95 % CI 18.8-24.6 %) compared to 13.2 % (95 % CI 11.0-15.4 %) for female non-smokers. Remaining lifetime risk for cancer death declined with age, and men have a greater risk for cancer death compared to women. Adjustment for competing risk of death, particularly representing cardiovascular mortality, yielded a greater change in lifetime risk estimates for men and smokers compared to women and non-smokers.

CONCLUSIONS:

At the population level, the lifetime risk for cancer death remains significantly higher for smokers compared to non-smokers, regardless of sex. These estimates may provide clinicians with useful information for counseling individual patients and highlight the need for continued public health efforts related to smoking cessation.

<http://www.springerlink.com/content/35w105288538t041/>

Oxidative stress and severity of coronary artery disease in young smokers with acute myocardial infarction

Cardiol J. 2012;19(4):381-6.

[Aksoy S](#), [Cam N](#), [Gurkan U](#), [Oz D](#), [Ozden K](#), [Altay S](#), [Durmus G](#), [Agirbasli M](#).

Abstract

Background: Cigarette smoking increases the oxidative stress mediated vascular dysfunction in young adults. We aimed to investigate the relation between the oxidative stress indices and coronary artery disease (CAD) severity in young patients presenting with acute myocardial infarction (AMI).

Methods: Young patients (aged 35 years) who were admitted consecutively to our hospital with a diagnosis of AMI were included in the study. Age matched healthy subjects were selected as controls. Oxidative stress indices including lipid hydroperoxide (LOOH), total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), paraoxonase (PON) and arylesterase (ARE) activities were measured in serum. CAD severity was assessed by calculating the SYNTAX (Synergy Between Percutaneous Coronary Intervention with Taxus and Cardiac Surgery Study) score. We analyzed the association between the oxidative indices and CAD severity.

Results: Forty two young patients were admitted to the hospital with AMI (age 32.4 ± 2.6 years; 39 males, 3 females). Current and heavy smoking was commonly observed among the patients (79%). All patients underwent emergency coronary angiography. Twenty-eight healthy subjects were selected as controls. Patients had significantly higher OSI and TOS levels (median, interquartile range) [0.44 (0.26-1.75) vs 0.25 (0.22-0.30), $p = 0.001$ and 6.0 (4.4-20.8) vs 4.1 (3.7-4.6), $p = 0.001$], respectively, and lower TAS and LOOH levels [1.6 ± 0.1 vs 1.7 ± 0.1 , $p = 0.02$ and 3.0 ± 0.8 vs 3.6 ± 0.4 , $p = 0.001$], respectively, compared to the control group. CAD severity correlated positively with OSI ($r = 0.508$, $p = 0.001$) and TOS levels ($r = 0.471$, $p = 0.002$). Subjects with an intermediate to high SYNTAX score (≥ 22) demonstrated significantly higher OSI (median, interquartile range) [0.40 (0.34-1.75) vs 0.34 (0.26-0.68), $p = 0.01$] and TOS [6.9 (4.4-20.8) vs 5.8 (4.5-11.4), $p = 0.01$] levels compared to subjects with low SYNTAX score.

Conclusions: Oxidative stress is an important contributor to CAD severity among young smokers. Elevated OSI and TOS levels reflect disease severity and vascular damage related to heavy smoking in early onset CAD.

http://www.cardiologyjournal.org/en/abstrakt.phtml?id=110&indeks_art=1602

Note: Open Access. Full text PDF freely available from link immediately above.

Effects of a Complete Smoking Ban on Inpatients at an Intermediate to Long-Term Psychiatric Facility

[Community Ment Health J.](#) 2012 Jul 25. [Epub ahead of print]

[Smith PH](#), [Homish GG](#), [Kozłowski LT](#), [Spacone C](#), [Trigoboff E](#), [Joffe S](#).

Abstract

The majority of research on reactions to smoking bans in psychiatric facilities focuses on staff feedback in acute inpatient settings. The purpose of this pilot study was to assess inpatient attitudes about a complete smoking ban in an intermediate to long-term psychiatric facility. One hundred inpatients were surveyed via questionnaire. Inpatients reported changes in smoking and improvements in health as a result of the ban, despite evidence of non-compliant smoking at the facility. There was evidence that inpatients perceived others' attitudes about the ban to be worse than reality. The findings from this pilot study suggest that consequences of smoking bans in psychiatric facilities are not as negative as some perceive. Smoking bans in intermediate to long-term settings may result in improvements in health among both smoking and non-smoking patients.

<http://www.springerlink.com/content/6000855145172305/>

Tobacco control policy in the UK: blueprint for the rest of Europe?

[Eur J Public Health.](#) 2012 Jul 23. [Epub ahead of print]

[Levy DT](#), [Currie L](#), [Clancy L](#).

Abstract

Introduction: With male smoking prevalence at 30% in 1998, the UK implemented stricter tobacco control policies, including a comprehensive cessation treatment programme. We evaluate their effect.

METHODS:

Data for the UK (excluding Northern Ireland) are applied to 'SimSmoke', a simulation model used to examine the effect of tobacco control policies over time on smoking initiation and cessation. Upon validating the model against smoking prevalence, the model is used to distinguish the effect of policies implemented between 1998 and 2009 on smoking prevalence. Using standard attribution methods, the model estimates lives saved as a result of policies.

RESULTS:

The model predicts smoking prevalence accurately between 1998 and 2009. A relative reduction of 23% in smoking rates over that period is attributed to tobacco control policies, mainly tax increases, smoke-free air laws, advertising restrictions and cessation treatment programmes. The model estimates that 210 000 deaths will be averted by the year 2040, as a consequence of policies implemented between 1998 and 2010.

CONCLUSIONS:

The results document the UK's success in reducing smoking prevalence and prolonging lives, thereby providing an example for other European nations. When Framework Convention for Tobacco Control- (FCTC) consistent policies are also implemented, the model projects that smoking prevalence will fall by another 28% with an additional 168 000 deaths

averted by 2040.

<http://eurpub.oxfordjournals.org/content/early/2012/07/23/eurpub.cks090.abstract>

Acute behavioral effects of nicotine in male and female HINT1 knockout mice

[Genes Brain Behav.](#) 2012 Jul 24. doi: 10.1111/j.1601-183X.2012.00827.x. [Epub ahead of print]

[Jackson KJ](#), [Wang JB](#), [Barbier E](#), [Chen X](#), [Damaj MI](#).

Abstract

Human genetic association and brain expression studies, and mouse behavioral and molecular studies implicate a role for the histidine triad nucleotide binding protein 1 (HINT1) in schizophrenia, bipolar disorder, depression, and anxiety. The high comorbidity between smoking and psychiatric disorders, schizophrenia in particular, is well established. Associations with schizophrenia and HINT1 are also sex specific, with effects more predominant in males; however, it is unknown if sex differences associated with the gene extend to other phenotypes. Thus, in the current study, using a battery of behavioral tests, we elucidated the role of HINT1 in acute nicotine-mediated behaviors using male and female HINT1 wild-type (+/+) and knockout (-/-) mice. Results show that male HINT1 -/- mice were less sensitive to acute nicotine-induced antinociception in the tail-flick, but not hot plate test. At low nicotine doses, male and female HINT1 -/- mice were less sensitive to nicotine-induced hypomotility, though the effect was more pronounced in females. Baseline differences in locomotor activity observed in male HINT1 +/+ and -/- mice were absent in females. Nicotine did not produce an anxiolytic effect in male HINT1 -/- mice, but rather an anxiogenic response. Diazepam also failed to induce an anxiolytic response in these mice, suggesting a general anxiety phenotype not specific to nicotine. Differences in anxiety-like behavior were not observed in female mice. These results further support a role for HINT1 in nicotine-mediated behaviors, and suggest that alterations in the gene may have differential effects on phenotype in males and females.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1601-183X.2012.00827.x/abstract>

Discussions with adults and youth to inform the development of a community-based tobacco control programme

[Health Educ Res.](#) 2012 Jul 22. [Epub ahead of print]

[Arora M](#), [Tewari A](#), [Dhavan P](#), [Nazar GP](#), [Stigler MH](#), [Juneja NS](#), [Perry CL](#), [Reddy KS](#).

Abstract

Project Advancing Cessation of Tobacco in Vulnerable Indian Tobacco Consuming Youth (ACTIVITY) is a community-based group randomized intervention trial focused on disadvantaged youth (aged 10-19 years) residing in 14 low-income communities (slums and resettlement colonies) in Delhi, India. This article discusses the findings of Focus Group Discussions (FGDs) conducted to inform the development and test the appropriateness of Project ACTIVITY's intervention model. The findings of the FGDs facilitated the understanding of factors contributing to increased tobacco uptake and cessation (both smoking and smokeless tobacco) among youth in this setting. Twenty-two FGDs were conducted with youth (10-19 years) and adults in two urban slums in Delhi. Key findings revealed: (i) youth and adults had limited knowledge about long-term health consequences of tobacco use; (ii) socio-environmental determinants and peer pressure were important variables influencing initiation of tobacco use; (iii) lack of motivation, support and sufficient skills hinder tobacco cessation and (iv) active involvement of community, family, religious leaders, local policy makers and health professionals is important in creating and reinforcing tobacco-free norms. The results of these FGDs aided in finalizing the intervention model for Project ACTIVITY and guided its intervention development.

<http://her.oxfordjournals.org/content/early/2012/07/22/her.cys084.abstract>

Design considerations in developing a text messaging program aimed at smoking cessation

[J Med Internet Res.](#) 2012 Jul 24;14(4):e103.

[Ybarra ML](#), [Holtrop JS](#), [Bağcı Bosi AT](#), [Emri S](#).

Abstract**BACKGROUND:**

Cell phone text messaging is gaining increasing recognition as an important tool that can be harnessed for prevention and intervention programs across a wide variety of health research applications. Despite the growing body of literature reporting positive outcomes, very little is available about the design decisions that scaffold the development of text messaging-based health interventions. What seems to be missing is documentation of the thought process of investigators in the initial stages of protocol and content development. This omission is of particular concern because many researchers seem to view text messaging as the intervention itself instead of simply a delivery mechanism. Certainly, aspects of this technology may increase participant engagement. Like other interventions, however, the content is a central driver of the behavior change.

OBJECTIVE:

To address this noted gap in the literature, we discuss the protocol decisions and content development for SMS Turkey (or Cebiniz birakin diyori in Turkish), a smoking cessation text messaging program for adult smokers in Turkey.

METHODS:

Content was developed in English and translated into Turkish. Efforts were made to ensure that the protocol and content were grounded in evidence-based smoking cessation theory, while also reflective of the cultural aspects of smoking and quitting in Turkey.

RESULTS:

Methodological considerations included whether to provide cell phones and whether to reimburse participants for texting costs; whether to include supplementary intervention resources (eg, personal contact); and whether to utilize unidirectional versus bidirectional messaging. Program design considerations included how messages were tailored to the quitting curve and one's smoking status after one's quit date, the number of messages participants received per day, and over what period of time the intervention lasted.

CONCLUSION:

The content and methods of effective smoking cessation quitline programs were a useful guide in developing SMS Turkey. Proposed guidelines in developing text messaging-based behavior change programs are offered.

<http://www.jmir.org/2012/4/e103/>

Note: Open Access. Full text html freely available from link immediately above.

Smoke-Induced Signal Molecules in Bone Marrow Cells from Altered Low-Density Lipoprotein Receptor-Related Protein 5 Mice

J. Proteome Res., 2012, 11 (7), pp 3548–3560

Publication Date (Web): **May 22, 2012**

Danjun Ma, Yan Li, Bryan Hackfort, Yingchun Zhao, Jing Xiao, Patrick C. Swanson, Joan Lappe, Peng Xiao, Diane Cullen, Mohammed Akhter, Robert Recker, and Gary Guishan Xiao

Abstract

Mechanism underlying smoke-induced loss of bone mass is unknown. In this study, we hypothesized that protein signals induced by smoking in bone marrow may be associated with the loss of bone mass. Using a proteomics approach, we identified 38 proteins differentially expressed in bone marrow cells from low-density lipoprotein receptor-related protein 5 (*Lrp5*) mice exposed to cigarette smoking. Smoking effects on protein expression in bone marrow among three genotypes (*Lrp5*^{+/+}, *Lrp5*^{G171V}, and *Lrp5*^{-/-}) varied. On the basis of the ratio of protein expression induced by smoking versus nonsmoking, smoke induced protein expression significantly in wild-type mice compared to the other two genotypes (*Lrp5*^{G171V} and *Lrp5*^{-/-}). These proteins include inhibitors of β -catenin and proteins associated with differentiation of osteoclasts. We observed that S100A8 and S100A9 were overexpressed in human smokers compared to nonsmokers,

which confirmed the effect of smoking on the expression of two proteins in *Lrp5* mice, suggesting the role of these proteins in bone remodeling. Smoke induced expression of S100A8 and S100A9 in a time-dependent fashion, which was opposite of the changes in the ratio of OPG/RANKL in bone marrow cells, suggesting that the high levels of S100A8 and S100A9 may be associated with smoke-induced bone loss by increasing bone resorption.

<http://pubs.acs.org/doi/abs/10.1021/pr2012158>

Related coverage:

Solving the mystery of how cigarette smoking weakens bones - Medical Xpress
<http://medicalxpress.com/news/2012-07-mystery-cigarette-weakens-bones.html>

Marlboro and other usual brand choices by youth smokers in Middle Eastern countries

Journal of Youth Studies

[Volume 15, Issue 4](#), 2012, pages 519-539

Version of record first published: 01 Mar 2012

[Randy M. Page](#)

Abstract

This study analyzed data from 118,743 adolescents completing 30 different Global Youth Tobacco Surveys conducted in 15 different Middle Eastern countries between 1999 and 2007 to determine the proportion of young smokers who usually smoked Marlboro, other cigarette brands, or no usual brand smoked in these countries. Marlboro was the most prevalent brand smoked in 7 of the 15 Middle Eastern countries examined, the second most common brand smoked in four Middle Eastern countries, and the third most common in eight of the countries. Marlboro smokers were found to exhibit stronger commitment to smoking, to smoke more frequently, to have more close friends who smoke, to score higher on beliefs that smoking is attractive, and to score lower on the belief that smoking is harmful in comparison to other brand smokers. Understanding youth smokers' brand preferences and choices is advantageous because it provides insight into what influences young people to start and continue to smoke, and subsequently may inform smoking prevention and control strategy development. This information can be incorporated into targeted mass media campaigns and other interventions to counter advertising and marketing messages.

<http://www.tandfonline.com/doi/abs/10.1080/13676261.2012.663899>

Cigarette smoking and its association with serum lipid/lipoprotein among Chinese nonagenarians/centenarians

[Lipids Health Dis.](#) 2012 Jul 24;11(1):94. [Epub ahead of print]

[Yan-Ling Z](#), [Dong-Qing Z](#), [Chang-Quan H](#), [Bi-Rong D](#).

Abstract

OBJECTIVE:

Cigarette smoking had been confirmed as an increased risk for dyslipidemia, but none of the evidence was from long-lived population. In present study, we detected relationship between cigarette smoking habits and serum lipid/lipoprotein (serum Triglyceride (TG), Total cholesterol (TC), Low-density lipoprotein (LDL) and high-density lipoprotein (HDL)) among Chinese Nonagenarians/Centenarian.

METHODS:

The present study analyzed data from the survey that was conducted on all residents aged 90 years or more in a district, there were 2,311,709 inhabitants in 2005. Unpaired Student's t test, chi2 test, and multiple logistic regression were used to analyze datas.

RESULTS:

The individuals included in the statistical analysis were 216 men and 445 women. Current smokers had lower level of TC (4.05 +/- 0.81 vs. 4.21 +/- 0.87, $t = 2.403$, $P = 0.017$) and lower prevalence of hypercholesteremia (9.62% vs. 15.13%, $\chi^2 = 3.018$, $P = 0.049$) than nonsmokers. Unadjusted and adjusted multiple logistic regressions showed that cigarette smoking was not associated with risk for abnormal serum lipid/lipoprotein.

CONCLUSIONS:

In summary, we found that among Chinese nonagenarians/centenarians, cigarette smoking habits were not associated with increased risk for dyslipidemia, which was different from the association of smoking habits with dyslipidemia in general population.

<http://www.lipidworld.com/content/11/1/94/abstract>
<http://www.lipidworld.com/content/pdf/1476-511X-11-94.pdf>

Note: Open Access. Full text PDF freely available from link immediately above.

Reward Sensitization: Effects of Repeated Nicotine Exposure and Withdrawal in Mice

[Neuropsychopharmacology](#). 2012 Jul 25. doi: 10.1038/npp.2012.130. [Epub ahead of print]

[Hilario MR](#), [Turner JR](#), [Blendy JA](#).

Abstract

Tobacco dependence is an addiction with high rates of relapse, resulting in multiple quit attempts in individuals who are trying to stop smoking. How these multiple cycles of smoking and withdrawal contribute to nicotine dependence, long-term alterations in brain reward systems, and nicotine receptor regulation is unknown. Therefore, to evaluate how multiple exposures of nicotine and withdrawal periods modulate rewarding properties of nicotine, we used intracranial self-stimulation to measure alterations in the threshold of brain stimulation reward. In addition, we employed the conditioned place preference (CPP) paradigm to evaluate positive context conditioning following each withdrawal period and measured levels of neuronal nicotinic receptors in cortex, striatum, and hippocampus. We found that repeated nicotine exposure and withdrawal enhanced brain stimulation reward and reward sensitivity to acute injections of nicotine. This increased reward was reflected by enhanced CPP to nicotine. Chronic nicotine is known to up-regulate nAChRs (nicotinic acetylcholine receptors) and we found that this up-regulation was maintained for up to 8 days of withdrawal in the striatum and in the hippocampus, but not in the cortex, of animals exposed to multiple nicotine exposure and withdrawal periods. These results demonstrate that repeated exposures to nicotine, followed by withdrawal, induce a persistent increase in both brain reward function and sensitivity to the hedonic value of nicotine and long-lasting up-regulation of neuronal nicotinic receptors. Together, these data suggest that a continuing increase in brain reward function and enhanced sensitivity to nicotine reward following repeated withdrawal periods may be one reason why smokers relapse frequently.

<http://www.nature.com/npp/journal/vaop/ncurrent/full/npp2012130a.html>

Maternal smoking during pregnancy predicts adult offspring cardiovascular risk factors - evidence from a community-based large birth cohort study

[PLoS One](#). 2012;7(7):e41106. Epub 2012 Jul 19.

[Mamun AA](#), [O'Callaghan MJ](#), [Williams GM](#), [Najman JM](#).

Abstract

BACKGROUND:

Maternal smoking during pregnancy is associated with offspring obesity. However, little is known about whether maternal smoking in pregnancy predicts other offspring cardiovascular risk factors including waist circumference (WC), waist-hip-

ratio (WHR), pulse rate (PR), systolic (SBP), and diastolic blood pressure (DBP).

METHODS:

We studied a sub-sample of 2038 (50% males) young adults who were born in Brisbane, Australia to investigate the prospective association of maternal smoking during pregnancy with young adult cardiovascular risk factors. We compared offspring mean BMI, WC, WHR, SBP, DBP and PR and the risk of being overweight and obese at 21 years by three mutually exclusive categories of maternal smoking status defined as never smoked, smoked before and/or after pregnancy but not in pregnancy or smoked during pregnancy and other times.

RESULTS:

Offspring of mothers who smoked during pregnancy had greater mean BMI, WC, WHR and PR and they were at greater risk of being obese at 21 years compared to offspring of those mothers who never smoked. The mean of these risk factors among those adult offspring whose mothers stopped smoking during pregnancy, but who then smoked at other times in the child's life, were similar to those mothers who never smoked. These results were independent of a range of potential confounding factors.

CONCLUSION:

The findings of this study suggest a prospective association of maternal smoking during pregnancy and offspring obesity as well as PR in adulthood, and reinforce the need to persuade pregnant women not to smoke.

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0041106>

Note: Open Access. Full text PDF freely available from link immediately above.

Integrating Tobacco Cessation Quitlines Into Health Care: Massachusetts, 2002–2011

Prev Chronic Dis 2012;9:110343.

Donna D. Warner, Thomas G. Land, Anne Brown Rodgers; Lois Keithly

Abstract

QuitWorks is a Massachusetts referral program that links health care organizations, providers, and patients to the state's tobacco cessation quitline and provides feedback reporting. Designed collaboratively with all major Massachusetts health plans, QuitWorks was launched in April 2002. In 2010, approximately 340 institutions and practices used QuitWorks. Between April 2002 and March 2011, approximately 3,000 unique providers referred patients and 32,967 tobacco users received referrals.

An analysis of QuitWorks data showed 3 phases in referrals between April 2002 and March 2011: referrals increased from April 2002 through November 2005, plateaued during December 2005 through January 2009, then substantially increased during February 2009 through March 2011. Factors responsible include partnerships with stakeholders, periodic program promotions, hospital activities in response to Joint Commission tobacco use measures, service evolutions, provision of nicotine replacement therapy for referred patients, and electronic referral options. QuitWorks' history demonstrates that tobacco cessation referral programs can be successfully sustained over time; reach substantial numbers of tobacco users, benefit providers and health care organizations; and contribute to sustainable systems-level changes in health care.

http://www.cdc.gov/pcd/issues/2012/11_0343.htm

http://www.cdc.gov/pcd/issues/2012/pdf/11_0343.pdf

Note: Open Access. Full text PDF freely available from link immediately above.

Does cigarette smoking mitigate the severity of skin disease in systemic sclerosis?

[Rheumatol Int.](#) 2012 Jul 25. [Epub ahead of print]

[Gyger G](#), [Hudson M](#), [Lo E](#), [Steele R](#); [Canadian Scleroderma Research Group \(CSRG\)](#), [Baron M](#).

Abstract

Cigarette smoking has significant negative effects on vascular, pulmonary and gastrointestinal outcomes in systemic sclerosis (SSc). The objective of this study was to study the effect of cigarette smoking on the extent of skin disease in SSc. Subjects were patients enrolled in the Canadian Scleroderma Research Group cohort. Smoking history was obtained by patient self-reports. The extent of skin involvement was measured using the modified Rodnan skin score. The effect of smoking on the skin score was assessed using the comprehensive smoking index (CSI), which integrates smoking intensity, duration and time since cessation into a single covariate of smoking effect. The regression model was adjusted for gender, ethnicity and disease duration. This study included 606 SSc patients, of which 87 % were women and 90 % were white; mean disease duration was 11 (± 9) years, and mean modified Rodnan skin score was 10 (± 9). Of these, 16 % were current, 42 % past and 42 % never smokers. There was a 16 % reduction in skin score (odds ratio 0.84, 95 % confidence interval 0.75, 0.95, $p = 0.0029$) for every 0.1 unit change in CSI. The effect of smoking on skin disease appeared cumulative and irreversible. Smoking was significantly associated with less extensive skin disease in SSc. This hypothesis-generating study provides new avenues of research, especially insofar as the role of nicotine in SSc is concerned and given that safe nicotine replacement therapy exists.

<http://www.springerlink.com/content/w545p06170062717/>

The effects of social networks on tobacco use among high-school adolescents in Mexico

[Salud Publica Mex.](#) 2012 Aug;54(4):433-41.

[Ramírez-Ortiz G](#), [Caballero-Hoyos R](#), [Ramírez-López G](#), [Valente TW](#).

Abstract

OBJECTIVE:

To identify the effect of centrality in social network positions on tobacco-use among high-school adolescents in Tonalá, Jalisco, Mexico.

MATERIALS AND METHODS:

Longitudinal sociometric social network data were collected among 486 high-school adolescents in 2003 and 399 in 2004. The survey included: social network components, smoking and sociodemographic characteristics. Social network measures of centrality were calculated and multivariate logistic regression was used.

RESULTS:

Ever used tobacco (OR= 44.98), marginalized-low stratum (OR= 2.16) and in-degree (OR=1.10) predicted tobacco use. Out-degree (OR= 0.89) and out-in-degree (OR= 0.90) protected against tobacco use.

CONCLUSION:

Nominating more friends rather than receiving such nominations was protective for tobacco use. Popular students, those receiving many nominations, were at higher risk for tobacco use. Involvement of leaders with capacity to influence might be an efficient strategy for dissemination of preventive messages.

<http://bvs.insp.mx/rsp/articulos/articulo.php?id=002750>

<http://bvs.insp.mx/rsp/files/File/2012/vol%2054%20No%204/10effects%2011295.pdf>

Note: Open Access. Full text PDF freely available from link immediately above.

[Scand J Med Sci Sports](#). 2012 Jul 26. doi: 10.1111/j.1600-0838.2012.01505.x. [Epub ahead of print]

[Martinsen M](#), [Sundgot-Borgen J](#).

Abstract

The purpose was to examine cigarette smoking, use of snus, alcohol, and performance-enhancing illicit drugs among adolescent elite athletes and controls, and possible gender and sport group differences. First-year students at 16 Norwegian Elite Sport High Schools (n = 677) and two randomly selected high schools (controls, n = 421) were invited to participate. Totally, 602 athletes (89%) and 354 (84%) controls completed the questionnaire. More controls than athletes were smoking, using snus, and drinking alcohol. Competing in team sports was associated with use of snus [odds ratio = 2.8, 95% confidence interval (CI) 1.6 to 4.7] and a similar percentage of male and female handball (22.2% vs 18.8%) and soccer players (15.7% vs 15.0%) reported using snus. For controls, not participating in organized sport was a predictor for smoking (odds ratio = 4.9, 95% CI 2.2 to 10.9). Female athletes were more prone to drink alcohol than males (46.3% vs 31.0%, $P < 0.001$). Only, 1.2% athletes and 2.8% controls reported use of performance-enhancing illicit drugs. In conclusion, use of legal drugs is less common among athletes, but this relationship depends on type of sport and competition level. The association between team sports and use of snus suggests that sport subcultures play a role.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0838.2012.01505.x/abstract>

Young male daily smokers are nicotine dependent and experience several unsuccessful quit attempts

[Scand J Prim Health Care](#). 2012 Jul 25. [Epub ahead of print]

[Toljamo T](#), [Hamari A](#), [Nieminen P](#), [Kinnula VL](#).

Abstract

Objective. Previous studies on smoking cessation have generally been conducted with adolescents or adults. Very little is known about the cessation attempts, their success, and/or use of pharmacological aids in young adult smokers who want to quit. The present study aimed to investigate quitting attempts in a group of both young male daily and occasional smokers. **Design and subjects.** 614 male smokers aged 18-26 years completed a standardized questionnaire about their smoking habits, quit attempts, and aids used in smoking cessation. **Results.** Nearly all daily smokers (95.3%, 95% CI 93.1-96.8) were nicotine addicted to some extent according to the standardized questionnaire, and the more addicted they were, the more often they had tried to quit ($p = 0.025$). Of the daily smokers, 55.6% (95% CI 51.3-59.9) had made quit attempts and 36.2% (95% CI 32.1-40.4) had used nicotine replacement therapy (NRT). In all, 34.1% (95% CI 25.2-44.3) of all occasional smokers reported having intended to quit but they had seldom made more than one attempt whereas 20.2% of daily smokers had made at least three attempts. The stronger the nicotine dependence in daily smokers was, the more likely the subject was to have attempted to use NRT (quite dependent 23.8% vs. totally dependent 48.9%) ($p < 0.001$). **Conclusions.** A high proportion of young male daily smokers were nicotine addicted. Young smokers make many unsuccessful attempts to stop smoking using nicotine replacement therapy (NRT) on their own. A better availability of professional cessation services directed to young adult smokers is needed.

<http://informahealthcare.com/doi/abs/10.3109/02813432.2012.704809>

<http://informahealthcare.com/doi/pdf/10.3109/02813432.2012.704809>

Note: Open Access. Full text PDF freely available from link immediately above.

Public Health

Big Tobacco Indicts Itself

Science 27 July 2012:
Vol. 337 no. 6093 pp. 412-413

[Thomas H. Brandon](#)

Golden Holocaust Origins of the Cigarette Catastrophe and the Case for Abolition *by Robert N. Proctor* University of California Press, Berkeley, 2012. 772 pp. \$49.95. £34.95. ISBN 9780520270169.

An author takes a risk in using the word “holocaust.” When employed as a lazy rhetorical tool, the word can trivialize the magnitude of death and suffering inflicted on entire communities and populations during World War II. Robert Proctor (a historian of science at Stanford University) is well aware of the potency of the word he uses to describe the actions of the tobacco industry—responsible for 100 million deaths worldwide during the past century and a projected 1 billion deaths by 2100. He observes that globally smoking causes one excess death for every million cigarettes (the output of a single cigarette-making machine in under an hour). Punctuating the point, he calculates that the tobacco industry kills one person for each \$10,000 in profit. Despite general awareness that tobacco smoking is harmful, the sheer scale of destruction is often not appreciated. Proctor's *Golden Holocaust* brings it into focus.

A meticulous prosecutor, Proctor details past and present actions of the tobacco industry and its many coconspirators, drawing heavily on over 70 million pages of internal industry documents disclosed as a result of the Master Settlement Agreement of 1998. [Archived by the American Legacy Foundation, these documents are available for public searching at [\(1\)](#).] The nature of the industry's activities will not surprise the readers: It paid athletes and other celebrities to smoke. While publicly denying that cigarettes were harmful or addictive, it suppressed its own research reaching those very conclusions. It manipulates nicotine delivery to maximize addiction potential. Its filters and “light” cigarettes do not reduce the dangers of smoking...

Proctor offers another 18 reasonable recommendations for reducing the burden of tobacco. These include increased taxes (on cigarettes and cigarette-making machines), a complete ban on public smoking (indoors and out), bans on marketing and promotion of tobacco, R ratings for films depicting smoking, more-graphic warning labels, and restricting sales to only state-licensed outlets. He also argues that the public health community must reclaim the rhetorical high ground through language that does justice to the unparalleled human toll exacted by the tobacco industry. Ergo the title of his book.

<http://www.sciencemag.org/content/337/6093/412.summary>

Cadmium intake and systemic exposure in postmenopausal women and age-matched men who smoke cigarettes

[Toxicol Sci.](#) 2012 Jul 24. [Epub ahead of print]

[Ebert-McNeill A](#), [Clark S](#), [Miller J](#), [Birdsall P](#), [Chandar M](#), [Wu L](#), [Cerny E](#), [Hall P](#), [Johnson M](#), [Isales C](#), [Chutkan N](#), [Bhattacharyya MH](#).

Abstract

Mean blood cadmium concentrations are 2- to 3-fold higher in smokers than non-smokers. The basis for this phenomenon is not well understood. We conducted a detailed, multifaceted study of cadmium exposure in smokers. Groups were older smokers (62±4 yr, n = 25, 20% male) and non-smokers (62±3 yr, n = 16, 31% male). Each subject's cigarettes were machine-smoked, generating individually-paired measures of inhaled cadmium (I-Cd) vs. blood cadmium (B-Cd); I-Cd and B-Cd were each evaluated three times, at monthly intervals. Urine cadmium (U-Cd) was analyzed for comparison. In four smokers, a duplicate-diet study was conducted, along with a kinetic study of plasma cadmium (P-Cd) vs. B-Cd. Female smokers had a mean B-Cd of 1.21 ng Cd/mL, with a nearly 10 fold range (0.29-2.74 ng Cd/mL); non-smokers had a lower mean B-Cd, 0.35 ng Cd/mL ($p < 0.05$), and narrower absolute range (0.20-0.61 ng Cd/mL). Means and ranges for males were similar. Estimates of cadmium amounts inhaled daily for our subjects smoking ≥ 20 cigarettes/d were far less than the 15 μg Cd reported to be ingested daily via diet. This inhaled cadmium amount was too low to alone explain the 3.5-fold elevation of B-Cds in our smokers, even assuming greater cadmium absorption via lungs than GI tract; cadmium accumulated in smokers' lungs may provide added cadmium. Finally, B-Cd appeared to be linearly related to I-Cd values in 75% of smokers, while 25% had far higher B-Cds, implying a possible heterogeneity among smokers regarding circulating cadmium concentrations and potentially cadmium toxicity.

<http://toxsci.oxfordjournals.org/content/early/2012/07/24/toxsci.kfs226.abstract>

Prenatal exposure to cigarette smoke or alcohol and cerebellum volume in attention-deficit/hyperactivity disorder and typical development

[Transl Psychiatry.](#) 2012 Mar 6;2:e84. doi: 10.1038/tp.2012.12.

[de Zeeuw P](#), [Zwart E](#), [Schrama R](#), [van Engeland H](#), [Durstun S](#).

Abstract

Prenatal exposure to teratogenic substances, such as nicotine or alcohol, increases the risk of developing attention-

deficit/hyperactivity disorder (ADHD). To date, studies examining this relationship have used symptom scales as outcome measures to assess the effect of prenatal exposure, and have not investigated the neurobiological pathways involved. This study explores the effect of prenatal exposure to cigarettes or alcohol on brain volume in children with ADHD and typically developing controls. Children with ADHD who had been exposed prenatally to either substance were individually matched to children with and without ADHD who had not been. Controls who had been exposed prenatally were also individually matched to controls who had not been. For prenatal exposure to both smoking and alcohol, we found a pattern where subjects with ADHD who had been exposed had the smallest brain volumes and unexposed controls had the largest, with intermediate volumes for unexposed subjects with ADHD. This effect was most pronounced for cerebellum. A similar reduction fell short of significance for controls who had been exposed to cigarettes, but not alcohol. Our results are consistent with an additive effect of prenatal exposure and ADHD on brain volume, with the effects most pronounced for cerebellum.

<http://www.nature.com/tp/journal/v2/n3/full/tp201212a.html>

<http://www.nature.com/tp/journal/v2/n3/pdf/tp201212a.pdf>

Note: Open Access. Full text PDF freely available from link immediately above.

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Stan Shatenstein
Editor & Publisher, STAN Bulletin
Smoking & Tobacco Abstracts & News
5492-B Trans Island
Montreal, QC Canada H3W 3A8
shatensteins@sympatico.ca

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