

# Library Watch on nicotine

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## **Active smoking compromises IVF outcome and affects ovarian reserve.**

Freour T; Masson D; Mirallie S; Jean M; Bach K; Dejoie T et al. *Reproductive Biomedicine Online* 16(1): 96-102, 2008. (41 refs.)

Although the association between smoking and female infertility is now largely demonstrated, the proportion of smokers in women of reproductive age remains important. Tobacco contains numerous toxicants that could affect ovarian reserve and lead to poor prognosis in assisted reproductive techniques. To investigate the effect of female active smoking on ovarian reserve and IVF outcome, smoking status, hormonal status, i.e. serum FSH, oestradiol and anti-Mullerian hormone (AMH), ovarian response to hyperstimulation, i.e. mature oocytes retrieved, and IVF outcome, i.e. clinical pregnancy, were retrospectively analysed in 111 women undergoing IVF-embryo transfer cycles. Compared with non-smokers (n = 71), active smoking women (n = 40) had decreased ovarian response (12.12 +/- 5 versus 8.62 +/- 4 mature oocytes retrieved) to hyperstimulation and lower clinical pregnancy rate (29.6 versus 10.0%). Serum AMH concentrations were lower in the smoker group (3.86 +/- 1.92 versus 3.06 +/- 1.68 mu g/l) and had no predictive value for ovarian response, inversely to non-smokers. In conclusion, active smoking is associated with poor prognosis in assisted reproduction cycles, i.e. ovarian response and pregnancy, and leads to altered ovarian reserve, as reflected by decreased serum AMH concentrations. Copyright 2008, Reproductive Healthcare Ltd.

## **Genetics and smoking cessation: Improving outcomes in smokers at risk. (review).**

Lerman CE; Schnoll RA; Munafo MR. *American Journal of Preventive Medicine* 33(6, Supplement S): S398-S405, 2007. (92 refs.)

This article reviews evidence supporting the potential utility of a pharmacogenetic approach to the treatment of nicotine dependence. There is substantial evidence that nicotine dependence and smoking persistence are heritable, and are determined by a complex interplay of polygenic and environmental influences. The most robust evidence for specific genetic influences on

nicotine dependence is found in studies of genetic variation in nicotine-metabolizing enzymes. Data also support the role of genes in the dopamine and opioid pathways as predictors of dependence and smoking relapse; however, the evidence for genetic associations is not always consistent. Emerging data from pharmacogenetic trials of nicotine-dependence treatment are promising, suggesting that genetic profiles of smokers someday may be used by providers to choose the type, dose, and duration of treatment for individual smokers. However, additional trials including larger and more diverse populations are needed before such data can be translated to practice to reduce smoking prevalence and tobacco-related disease. Copyright 2007, Elsevier Science.

## **Global perspective on tobacco control. Part I. The global state of the tobacco epidemic.**

Slama K. *International Journal of Tuberculosis and Lung Disease* 12(1): 3-7, 2008. (36 refs.)

Tobacco smoking is losing adherents in some countries, and a number of international developments may dramatically change the choices people make concerning tobacco. However, the growth of chronic obstructive pulmonary disease (COPD) in the world is nevertheless assured-tobacco consumption is rising globally because of increased consumption in many low-income countries. Risk of COPD is strong wherever smokers are found, and even among former smokers, it remains high for decades. Both COPD and smoking produce lower measurable quality of life assessment, but little attention is given to the association, apart from noting that cessation rates are poor among COPD patients. Tobacco smoking rates vary; men usually smoke more than women in overall consumption and in prevalence. Current available estimates are 49% for men and 8% for women in low- and middle-income countries, and 37% for men and 21% for women in high-income countries. These figures give little information, however, because there can be variations within and across populations. What is important is that about a third of all adults in the world currently smoke, and that it will take a tremendous turnaround to put a halt to the overall growth of tobacco use. Smoking-related COPD rates

will continue to be high for some time. The future of COPD is related most dramatically to low- or middle-income countries, where more than four in five current smokers in the world live. The predictable health consequences of smoking, including an enormous burden in COPD, have only begun to emerge. Copyright 2008, International Union Against Tuberculosis and Lung Disease.

**Lifetime medical expenditure and life expectancy lost attributable to smoking through major smoking related diseases in Taiwan.**

Chung CW; Wang JD; Yu CF; Yang MC. *Tobacco Control* 16(6): 394-399, 2007. (18 refs.)

Objective: To estimate the lifetime financial burden on Taiwan's national health insurance (NHI) system, life expectancy and years of life expectancy lost (YLEL) attributable to smoking from major smoking related diseases. Methods: 10 major smoking related diseases (seven cancers, stroke, acute myocardial infarction and chronic obstructive pulmonary disease) were selected for this study. A survival analysis was conducted on linked cohorts from the National Death Registry database and the National Cancer Registry (NCR) and patients at the National Taiwan University Hospital (NTUH). Estimation of the smoking attributable fraction (SAF) for the study diseases was undertaken by combining the relative risks of smokers against non-smokers and the prevalence of smoking in Taiwan. The YLEL attributable to smoking was calculated for the study diseases by combining the survival analysis results, the SAF and the annual incidences of each disease. The lifetime medical expenditure for the study diseases was estimated by integrating the survival curve and the mean annual medical costs calculated from NHI reimbursement records. Results: There were 241 280 incidents of the 10 study diseases in 2001, of which about 53 648 cases (22.2%) were attributable to smoking, with a total YLEL of 191 313 at an average of about 3.6 YLEL per case. For each case, the average survival time was about 10.2 years. Under two different annual discount rates, the total lifetime financial burden on the NHI was estimated at between \$ 291 million (pound 147 million; epsilon 216 million) (3% discount) and \$ 336 million (1% discount) for all diseases attributable to smoking in 2001, accounting for about 24.6% of the total estimated lifetime medical expenditure for all incidents of the 10 study diseases. Conclusions: Smoking places tremendous financial and health burdens upon both society and individuals. A much more stringent tobacco control strategy is needed to curb the damage from smoking. Copyright 2007, MBJ Publishing Group.

**Long-term behavior in treated alcoholism: Evidence for beneficial carry-over effects of abstinence from smoking on alcohol use and vice versa.**

Hintz T; Mann K. *Addictive Behaviors* 32(12): 3093-3100, 2007. (16 refs.)

Co-dependence of alcohol and nicotine is quite frequent. Research results on the mutual influence one drug has on the other-i.e., on the further course of the dependence-has been inconclusive. Our primary aim is to investigate the natural course of smoking behavior in a long term follow-up study with alcohol-dependent patients who completed an inpatient treatment program. A sample of 139 out of originally 190 patients was successfully followed up 7 years after index alcohol treatment. After 7 years, 56% of patients (total surviving sample: 46%, 21 [11.1%] patients deceased during the follow-up time interval) were abstinent. Our results show that being a non-smoker at treatment entry is a predictor for alcohol abstinence 7 years later. The rate of non-smokers among the abstinent patients increased by 32%. Potential explanations for our findings lie in carry-over effects. Skills and insights gained in treatment of alcohol dependence could be instrumental in coping with smoking behavior as well. Non-smokers may have more functional coping abilities from the beginning. We conclude that it is warranted and recommendable to explore the willingness of alcohol-dependent patients to quit smoking and to offer them treatment options addressing this point. Copyright 2007, Elsevier Science.

**National income, inequality and global patterns of cigarette use.**

Pampel F. *Social Forces* 86(2): 445-466, 2007. (50 refs.)

Declining tobacco use in high-income nations and rising tobacco use in low- and middle-income nations raises questions about the sources of worldwide patterns of smoking. Theories posit a curvilinear influence of national income based on the balance of affordability and health-cost effects. In addition, however, economic inequality, gender inequality and government policies may moderate the rise and fall in smoking prevalence with national income. This study tests these arguments using aggregate data for 145 nations and measures of smoking prevalence circa 2000. The results show nonlinear effects of national income for males that take the form of an inverted U, but show linear effects for females. They also show non-additive effects of economic inequality for males that moderate both the rise and decline of smoking with national income and non-additive effects of

gender equality for females that moderate the positive effect of national income. Copyright 2007, University of North Carolina Press.

**Philip Morris's website and television commercials use new language to mislead the public into believing it has changed its stance on smoking and disease.**

Friedman LC. *Tobacco Control* 16(6): article 9, 2007. (24 refs.)

Objectives: This paper analyses Philip Morris's evolving website and the legal strategies employed in its creation and dissemination. Methods: Internal tobacco documents were searched and examined and their substance verified and triangulated using media accounts, legal and public health research papers, and visits to Philip Morris's website. Various drafts of website language, as well as informal discussion of the website's creation, were located in internal Philip Morris documents. I compared website statements pertaining to Philip Morris's stance on cigarette smoking and disease with statements made in tobacco trials. Results: Philip Morris created and disseminated its website's message that it agreed that smoking causes disease and is addictive in an effort to sway public opinion, while maintaining in a litigation setting its former position that it cannot be proved that smoking causes disease or is addictive. Conclusions: Philip Morris has not changed its position on smoking and health or addiction in the one arena where it has the most to lose—in the courtroom, under oath. Copyright 2007, MBI Publishing Group.

**Randomized controlled trial of physical activity counseling as an aid to smoking cessation: 12 month follow-up.**

Ussher M; West R; McEwen A; Taylor A; Steptoe A. *Addictive Behaviors* 32(12): 3060-3064, 2007. (14 refs.)

There is some evidence to suggest that regular supervised physical activity may be useful as an aid to smoking cessation. It is unclear whether less extensive interventions confer similar benefits. This study examined whether physical activity counseling alone increases long-term smoking abstinence and physical activity levels and reduces weight gain. 299 male and female smokers were randomized to a 7-week smoking cessation program, including nicotine replacement therapy, plus either (i) physical activity counseling ('exercise', N = 154), or (ii) health education advice ('control', N = 145). There was no significant difference in rates of continuous smoking abstinence between the exercise group and the controls at 12 months following the quit day (9.1% versus 12.4%). Significant increases in physical activity levels

observed for the exercise group versus the controls at six weeks were not maintained at 12 months. There was a non-significant tendency for less weight gain in the exercise group versus the controls at 12 months (P = 0.06). Further trials are needed to examine the effect of more extensive physical activity interventions on smoking cessation, physical activity levels and post-cessation weight gain. Copyright 2007, Elsevier Science.

**The demand for health insurance coverage for tobacco dependence treatments: Support for a benefit mandate and willingness to pay.**

Halpin HA; McMenamin SB; Shade SB. *Nicotine & Tobacco Research* 9(12): 1269-1276, 2007. (25 refs.)

One solution for reducing tobacco use is to expand health insurance coverage for tobacco dependence treatments (TDTs), but the public demand for a coverage mandate is unknown. This study finds that demand for coverage of TDTs among a random sample of adult Californians with employer-sponsored health insurance is strong, with 62% indicating that health insurers should be required to offer coverage as part of their standard plans and a majority (56%) indicating a willingness to pay \$3 more for their annual health insurance premium to finance cessation coverage. Compared to never smokers, current and former smokers are no more likely to support a benefit mandate to require coverage of cessation treatments, but the adjusted odds are approximately three times greater that current and former smokers are willing to pay \$3 more toward their annual premium to finance cessation coverage. Liberals had higher adjusted odds of supporting a benefit mandate and of being willing to pay a higher premium compared to conservatives. Non-whites had higher adjusted odds of supporting a mandate compared to whites, with no differences by race/ethnicity in willingness to pay a higher premium. There were no differences in preferences for a benefit mandate or willingness to pay a higher premium as a function of age, gender or income. These findings have important policy implications for a state health insurance mandate to cover tobacco dependence treatments. Copyright 2007, Taylor & Francis.

**The effect of retail cigarette pack displays on impulse purchase.**

Wakefield M; Germain D; Henriksen L. *Addiction* 103(2): 322-328, 2008. (43 refs.)

Aims: To assess the extent to which point-of-purchase (POP) cigarette displays stimulate impulse purchases. Design: Telephone-administered population survey. Setting: Victoria, Australia. Participants: A total of 2996 adults, among whom 526 smoked factory-made cigarettes and 67 were recent quitters (quit in the past

12 months). Measurements: Reported cigarette purchase behaviour; perceived effect on smoking of removing cigarettes from view in retail outlets; reported urges to buy cigarettes as a result of seeing the cigarette display. Findings When shopping for items other than cigarettes, 25.2% of smokers purchased cigarettes at least sometimes on impulse as a result of seeing the cigarette display. Thirty-eight per cent of smokers who had tried to quit in the past 12 months and 33.9% of recent quitters experienced an urge to buy cigarettes as a result of seeing the retail cigarette display. One in five smokers trying to quit and one in eight recent quitters avoided stores where they usually bought cigarettes in case they might be tempted to purchase them. Many smokers (31.4%) thought the removal of cigarette displays from stores would make it easier for them to quit. Conclusions: POP cigarette displays act as cues to smoke, even among those not explicitly intending to buy cigarettes, and those trying to avoid smoking. Effective POP marketing restrictions should encompass cigarette displays. Copyright 2008, Society for the Study of Addiction to Alcohol and Other Drugs.

#### **The impact of smoking bans on alcohol demand.**

Gallet CA; Eastman HS. *Social Science Journal* 44(4): 664-676, 2007. (41 refs.)

Although many studies find that smoking bans reduce cigarette demand, arguments can be made for smoking bans also affecting alcohol demand. Accordingly, in this paper we address the determinants of state-level alcohol demand, which we treat as a function of various economic and demographic variables, as well as smoking bans. Results reveal that smoking bans reduce the demand for beer and spirits. Furthermore, smoking bans tend to intensify the complementary relationship between cigarettes and alcohol, which suggests that smoking bans have altered consumer demographics in the alcohol market. We also find the nature of the smoking ban matters, as bans specific to

restaurants and bars lead to larger reductions in beer and spirits consumption, but increase the demand for wine. Copyright 2007, Elsevier Science.

#### **Waterpipe smoking and nicotine exposure: A review of the current evidence. (review).**

Neergaard J; Singh P; Job J; Montgomery S. *Nicotine & Tobacco Research* 9(10): 987-994, 2007. (38 refs.) The waterpipe, also known as shisha, hookah, narghile, goza, and hubble bubble, has long been used for tobacco consumption in the Middle East, India, and parts of Asia, and more recently has been introduced into the smokeless tobacco market in western nations. We reviewed the published literature on waterpipe use to estimate daily nicotine exposure among adult waterpipe smokers. We identified six recent studies that measured the nicotine or cotinine levels associated with waterpipe smoking in four countries (Lebanon, Jordan, Kuwait, and India). Four of these studies directly measured nicotine or cotinine levels in human subjects. The remaining two studies used smoking machines to measure the nicotine yield in smoking condensate produced by the waterpipe. Meta-analysis of the human data indicated that daily use of the waterpipe produced a 24-hr urinary cotinine level of 0.785  $\mu\text{g/ml}$  (95% CI=0.578-0.991  $\mu\text{g/ml}$ ), a nicotine absorption rate equivalent to smoking 10 cigarettes/day (95% CI=7-13 cigarettes/day). Even among subjects who were not daily waterpipe smokers, a single session of waterpipe use produced a urinary cotinine level that was equivalent to smoking two cigarettes in one day. Estimates of the nicotine produced by waterpipe use can vary because of burn temperature, type of tobacco, waterpipe design, individual smoking pattern, and duration of the waterpipe smoking habit. Our quantitative synthesis of the limited human data from four nations indicates that daily use of waterpipes produces nicotine absorption of a magnitude similar to that produced by daily cigarette use. Copyright 2007, Taylor & Francis.