

# Library Watch on nicotine

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## **A Clinical Practice Guideline for Treating Tobacco Use and Dependence: 2008 Update - A US Public Health Service report. (review).**

Fiore MC; Jaen CR; Baker TB; Bailey WC; Bennett G; Benowitz NL et al. *American Journal of Preventive Medicine* 35(2): 158-176, 2008. (147 refs.)

Objective: To summarize the U.S. Public Health Service guideline Treating Tobacco Use and Dependence: 2008 Update, which provides recommendations for clinical interventions and system changes to promote the treatment of tobacco dependence. Participants: An independent panel of 24 scientists and clinicians selected by the U.S. Agency for Healthcare Research and Quality on behalf of the U.S. Public Health Service. A consortium of eight governmental and nonprofit organizations sponsored the update. Evidence: Approximately 8700 English-language, peer-reviewed articles and abstracts, published between 1975 and 2007, were reviewed for data that addressed assessment and treatment of tobacco dependence. This literature served as the basis for more than 35 meta-analyses. Consensus process: Two panel meetings and numerous conference calls and staff meetings were held to evaluate meta-analyses and relevant literature, to synthesize the results, and to develop recommendations. The updated guideline was then externally reviewed by more than 90 experts, made available for public comment, and revised. Conclusions: This evidence-based, updated guideline provides specific recommendations regarding brief and intensive tobacco-cessation interventions as well as system-level changes designed to promote the assessment and treatment of tobacco use. Brief clinical approaches for patients willing and unwilling to quit are described. Copyright 2008, Elsevier Science.

## **An algorithm for choosing among smoking cessation treatments.**

Hughes J. *Journal of Substance Abuse Treatment* 34(4): 426-432, 2008. (45 refs.)

Currently, there are nine validated medications, four validated psychosocial strategies, and three validated ways to deliver psychosocial treatments for smoking cessation. This article presents an algorithm based on a literature review and the author's clinical experience.

The algorithm integrates the recommendations of the major guidelines and meta-analyses and provides rationales for its treatment decisions. The algorithm suggests a brief assessment followed by use of one to two medications and counseling in most smokers. Because all treatments appear equally effective and have few adverse events, the algorithm suggests clinicians inform smokers of the pros and cons of the different treatments, and recommend use of one or more of each. If a smoker fails to quit, the algorithm suggests an assessment of why relapse occurred and then a more intense treatment, a new treatment, or both. Copyright 2008, Elsevier Science.

## **Characteristics associated with rapid transition to tobacco dependence in youth.**

Storr CL. *Nicotine & Tobacco Research* 10(6): 1099-1104, 2008. (25 refs.)

Epidemiologic data suggests the smoking trajectory for some adolescents escalates rapidly and that tobacco dependence can develop quickly after initiation. In this study, we examine variation in cigarette consumption and individual characteristics associated with the rapid development of tobacco dependence, focusing particularly on the 24-month interval after tobacco initiation. The analysis is based on public use data files of the National Household Survey on Drug Abuse conducted in 1994-1996. Representative samples of adolescents aged 12-17 years old, totaling 13,831, completed a standardized interview assessing demographic characteristics, tobacco involvement and past year dependence, and psychological functioning over the preceding 6-month period as assessed by the Youth Self-Report. Analyses were restricted to the 1,734 youth who had started smoking within 0-24 months prior to being assessed, of which the onset for 70% of them was between 11-24 months. Logistic regression models took into account sample weights and used a variance estimation procedure appropriate for the complex multistage sampling design. Overall, 210 recent initiators met dependence criteria (13.5%, 95% CI=12.0-15.2). Dependent smokers had greater cigarette involvement than youth who had not transitioned to being tobacco dependent by the time of assessment. Variation in mental health and

sociodemographic characteristics were also detected. Disruptive behavior ( $p=.05$ ) and being female ( $p=.02$ ) were associated with being tobacco dependent. The rapid transition to dependence in youth depends not only on cigarette consumption features, but may also be associated with individual characteristics. Copyright 2008, Taylor & Francis.

### **Cigarette taxes and the transition from youth to adult smoking: Smoking initiation, cessation, and participation.**

DeCicca P; Kenkel D; Mathios A. *Journal of Health Economics* 27(4): 904-917, 2008. (42 refs.)

Many policy makers continue to advocate and adopt cigarette taxes as a public health measure. Most previous individual-level empirical studies of cigarette demand are essentially static analyses of the relationship between the level of taxes and smoking behavior at a point in time. In this study, we use longitudinal data to examine the dynamics of young adults' decisions about smoking initiation and cessation. We develop a simple model to highlight the distinctions between smoking initiation, cessation, and participation. We show that because smoking participation reflects past decisions regarding initiation and cessation, the price elasticity of smoking participation is a weighted average of corresponding initiation and cessation elasticities, a finding that applies more broadly to other addictive substances as well. The paper's remaining contributions are empirical. We use data from the 1992 wave of the National Education Longitudinal Study, when most of the cohort were high school seniors, and data from the 2000 wave, when they were about 26 years old. The results show that the distinction between initiation and cessation is empirically useful. We also contribute new estimates on the tax-responsiveness of young adult smoking, paying careful attention to the possibility of bias if hard-to-observe differences in anti-smoking sentiment are correlated with state cigarette taxes. We find no evidence that higher taxes prevent smoking initiation, but some evidence that higher taxes are associated with increased cessation. Copyright 2008, Elsevier Science BV.

### **Design and baseline characteristics from the KAN-QUIT disease management intervention for rural smokers in primary care.**

Cox LS; Cupertino AP; Mussulman LM; Nazir N; Greiner KA; Mahnken JD et al. *Preventive Medicine* 47(2): 200-205, 2008. (61 refs.)

Objective. To describe the design, implementation, baseline data, and feasibility of establishing a disease management program for smoking cessation in rural

primary care. Method. The study is a randomized clinical trial evaluating a disease management program for smoking cessation. The intervention combined pharmacotherapy, telephone counseling, and physician feedback, and repeated intervention over two years. The program began in 2004 and was implemented in 50 primary care clinics across the State of Kansas. Results. Of eligible patients, 73% were interested in study participation. 750 enrolled participants were predominantly Caucasian, female, employed, and averaged 47.2 years of age ( $SD = 13.1$ ). In addition to smoking, 427 (57%) had at least one additional major risk factor for cardiovascular disease (diabetes, hypertension, high cholesterol, heart disease or stroke). Participants smoked on average 23.7 ( $SD = 10.4$ ) cigarettes per day, were contemplating (61%) or preparing to quit (30%), were highly motivated and confident of their ability to quit smoking, and reported seeing their physicians multiple times in the past twelve months (Median=3.50; Mean=5.48;  $SD=6.58$ ). Conclusion. Initial findings demonstrate the willingness of patients to enroll in a two-year disease management program to address nicotine dependence, even among patients not ready to make a quit attempt. These findings support the feasibility of identifying and enrolling rural smokers within the primary care setting. Copyright 2008, Elsevier Science.

### **Diminished autonomy over tobacco can appear with the first cigarettes.**

Scragg R; Wellman RJ; Laugesen M; DiFranza JR. *Addictive Behaviors* 33(5): 689-698, 2008. (16 refs.)

Individuals have lost full autonomy over their smoking when quitting becomes unpleasant or difficult. We examined autonomy in relation to smoking frequency and lifetime cigarette use. A self-administered questionnaire was completed by three convenience samples of Year 10 students (ages 14-15) in New Zealand between 2002 and 2004 ( $n=96,156$ ). The Hooked On Nicotine Checklist was used to measure diminished autonomy. Diminished autonomy was reported by 46% of subjects who smoked less often than monthly and by 25%-30% of current smokers who had smoked only one cigarette in total. The prevalence of diminished autonomy increased with increasing frequency of current use and with increasing lifetime use. Symptoms developed earlier among girls than boys. The data confirm previous reports that diminished autonomy appears soon after the onset of intermittent tobacco use and extends this literature by providing the first description of how diminished autonomy develops in relation to the total number of cigarettes smoked. These data suggest that

smoking one cigarette in total can prompt a loss of autonomy. Copyright 2008, Elsevier Science.

### **Menstrual phase effects on smoking relapse.**

Allen SS; Bade T; Center B; Finstad D; Hatsukami D. *Addiction* 103(5): 809-821, 2008. (94 refs.)

**Aims:** To examine if menstrual phase affects relapse in women attempting to quit smoking. **Design:** An intent-to-treat randomized smoking cessation trial where women were assigned to quit smoking in either the follicular (F) or luteal (L) menstrual phase and were followed for up to 26 weeks. They were assessed for relapse by days to relapse and relapse phase to determine if those who begin a quit attempt during the F phase were more successful than those who begin during the L phase. **Setting** Tobacco Use Research Center, University of Minnesota, Minneapolis, Minnesota. **Participants** A total of 202 women. **Measurements** Latency to relapse from continuous and prolonged abstinence, point prevalence, phase of relapse, first slip within the first 3 and 5 days post-quit date, subject completion rates and symptomatology (i.e. withdrawal and craving). **Findings:** The mean days to relapse from continuous abstinence and relapse from prolonged abstinence for the F group were 13.9 and 20.6 days, respectively, and 21.5 and 39.2 days, respectively, for the L group. Using point prevalence analysis at 14 days, 84% of the F group had relapsed compared with 65% of the L group [ $\chi^2(2) = 10.024$ ,  $P = 0.002$ ; odds ratio (OR) = 2.871, 95% confidence interval (CI), 1.474-5.590]. At 30 days, 86% of the F group relapsed, compared with 66% of the L group ( $\chi^2(2) = 11.076$ ,  $P = 0.001$ ; OR = 3.178, 95% CI, 1.594-6.334). **Conclusion** Women attempting to quit smoking in the F phase had less favorable outcomes than those attempting to quit in the L phase. This could relate to ovarian hormones, which may play a role in smoking cessation for women. Copyright 2008, Society for the Study of Addiction to Alcohol and Other Drugs.

### **Perceived safety and efficacy of nicotine replacement therapies among US smokers and ex-smokers: Relationship with use and compliance.**

Shiffman S; Ferguson SG; Rohay J; Gitchell JG. *Addiction* 103(8): 1371-1378, 2008. (24 refs.)

**Aim:** Nicotine replacement therapy (NRT) is effective for smoking cessation, but most smokers try to quit without using it. We examined the impact of misperceptions of NRT safety and efficacy on its use. **Design and participants:** A total of 3203 current and former US smokers completed a national mail-out survey of issues and attitudes related to smoking cessation. **Findings** Two-thirds (66%) of respondents either agreed that 'Stop-smoking products with

nicotine are just as harmful as cigarettes' or were unsure whether the statement was true. These respondents were less likely to have used NRT in the past [30% versus 49%; odds ratio (OR) = 0.45, 95% confidence interval (CI): 0.39-0.53] and less likely to consider using NRT during future quit attempts (40% versus 53%; OR = 0.60, 95% CI = 0.51-0.71). Additionally, of the respondents who had used nicotine gum in the past 12 months ( $n = 407$ ), those who had concerns about the safety of NRT reported using fewer pieces of gum per day during treatment (six versus eight pieces/day;  $P < 0.05$ ), and were less likely to report that they used the gum for greater than 4 weeks (28.5% versus 46.8%; OR = 0.45, 95% CI: 0.27-0.76). A large proportion of the respondents also stated that they did not believe NRT to be efficacious. **Conclusions:** The findings suggest that many smokers are misinformed about the health risks of NRT and that these misperceptions impede not only the adoption of NRT but also compliance during treatment. Misperception of NRT safety is one barrier to effective use of NRT and probably reduces success in quitting. Copyright 2008, Society for the Study of Addiction to Alcohol and Other Drugs.

### **Physical activity as a strategy for maintaining tobacco abstinence: A randomized trial.**

Prochaska JJ; Hall SM; Humfleet G; Munoz RF; Reus V; Gorecki J et al. *Preventive Medicine* 47(2): 215-220, 2008. (56 refs.)

**Objectives.** For smoking cessation, physical activity (PA) may help manage withdrawal symptoms, mood, stress, and weight; yet studies of PA as an aid for smoking cessation have been mixed. This study examined: (1) the impact of an extended relapse prevention program on increasing moderate to vigorous PA (MVPA) in adults enrolled in a tobacco cessation treatment trial; (2) whether changes in MVPA were associated with sustained abstinence from smoking; and (3) mechanisms by which MVPA may support sustained abstinence from smoking. **Methods.** In a randomized controlled trial conducted from 2003-2006 in San Francisco, California, 407 adult smokers received a 12 week group-based smoking cessation treatment with bupropion and nicotine patch with the quit date set at week 3. At week 12, participants were randomized to no further treatment or to 40 weeks of bupropion or placebo with or without an 11-session relapse prevention intervention of which 2 sessions (held at weeks 16 and 20) focused on PA. Participants receiving the PA intervention ( $n=163$ ) received a pedometer, counseling to increase steps 10% biweekly towards a 10,000 steps/day goal, and personalized reports graphing

progress with individualized goals. The International Physical Activity Questionnaire assessed weekly minutes of MVPA at baseline and weeks 12 and 24. Sustained abstinence from tobacco at week 24 was validated with expired carbon monoxide. Results. In a repeated mixed model analysis, intervention participants significantly increased their MVPA relative to control participants,  $F(1,475)=3.95$ ,  $p=.047$ . Pedometer step counts also increased significantly,  $t(23)=2.36$ ,  $p=.027$ , though only 15% of intervention participants provided 6 weeks of pedometer monitoring. Controlling for treatment condition, increased MVPA predicted sustained smoking abstinence at week 24, odds ratio=1.84 (95% CI: 1.07, 3.05). Among participants with sustained abstinence, increased MVPA was associated with increased vigor ( $r=0.23$ ,  $p=.025$ ) and decreased perceived difficulty with staying smoke-free ( $r=-0.21$ ,  $p=.038$ ). Conclusion. PA promotion as an adjunct to tobacco treatment increases MVPA levels: changes in MVPA predict sustained abstinence, perhaps by improving mood and self-efficacy. Copyright 2008, Elsevier Science.

#### **The effects of changes in smoking prevalence on obesity prevalence in the United States.**

Flegal KM. *American Journal of Public Health* 97(8): 1510-1514, 2007. (17 refs.)

Objectives. Reduction of cigarette smoking is an important public health goal. However, lower smoking prevalence may be associated with increased obesity prevalence. I sought to estimate the effect of decreases in smoking prevalence on obesity prevalence in the United States population. Methods. I combined current weight data by smoking status from the 1999-2002 National Health and Nutrition Examination Survey (NHANES) with smoking prevalence data from past NHANES surveys to estimate weight status had smoking prevalence not changed. Results. Even relatively large changes in the prevalence of smoking were estimated to have little effect on obesity prevalence. For example, if smoking prevalence in 1999-2002 were at the higher 1971-1975 smoking level, the estimated 1999-2002 obesity prevalence would be 22.5% rather than the actual value of 23.9%, a difference of only 1.4 percentage points. Estimates for other weight categories were similarly small. Conclusions. Decreases in the prevalence of cigarette smoking probably had only a small effect, often less than 1 percentage point, on increasing the prevalence of obesity and decreasing the prevalence of healthy

weight in the population. Copyright 2007, American Public Health Association.

#### **Gender, economics and culture: diversity and the international evolution of smoking prevalence.**

Stevens ARA; Caan W. *Journal of the Royal Society for the Promotion of Health* 128(3): 113-116, 2008.

(20 refs.)

Aims: To examine whether the observed diversity between national patterns of smoking prevalence could require modification of the World Health Organization (WHO) linear model for an international 'smoking pandemic' (a worldwide epidemic) to address data from non-western countries. Method: We conducted secondary research using current measures in three publicly available databases: Globalink, the International Labour Organization and the World Bank (all internet-accessible). The measures we used are the separate percentage data for men and women on: smoking and employment and national income per capita (US\$) and percentage growth per annum. Results: Regression analysis showed that women smokers were more frequent in countries with higher national income, but women were less likely to smoke in countries of rapid growth. Men were less likely to smoke in countries with higher national income, but more likely to smoke in countries of rapid growth. Two principle components together explained 62% of all the variance in the international data. The largest factor was positively correlated with the percentage of employed females, the percentage of female smokers and national income per capita, but negatively correlated with the percentage of male smokers and percentage annual growth. The effect of female employment was not continuous, but above a threshold of 51%, was associated with a higher prevalence of female smoking. The smaller, second factor was only weakly correlated with any smoking variables. Conclusions: In his 1994 model (subsequently adopted by the WHO) Lopez looked at historical trends in 'stages' of smoking prevalence. These have been associated with 'stages' of economic development. We extended this analysis to look at a dynamic change (% annual growth) and a social indicator (employment). Male and female smoking is affected differentially by economic change and by level of income. These are also strongly related to the percentage of women in employment. This has implications for workplace policies on smoking. Copyright 2008, Sage Publications.