

Library Watch on nicotine

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The relationship of cigars, marijuana, and blunts to adolescent bidi use.

Delnevo CD; Hrywna M. *Public Health Reports* 121(5): 603-608, 2006. (27 refs.)

Objective. Previous research suggests that bidi, cigar, and marijuana use may be interrelated, but to date, this hypothesis has not been empirically tested. Methods. We explored the relationships among use of these products using data from 17,429 youths who completed the 2001 National Household Survey on Drug Abuse. Variables of interest included demographics, tobacco use (i.e., cigarettes, cigars), marijuana use, and blunting (i.e., cigars filled with marijuana). Adjusted odds ratios (AOR) for past-month bidi use were generated for each variable; regression models were also generated separately by race/ethnicity. Results. Overall, 1.1% of the youths surveyed reported past month bidi use; higher prevalence was noted for those who were past-month users of cigarettes (4.6%), cigars (7.0%), marijuana (5.8%), and blunts (7.3%). Logistic regression yielded significant odds ratios for all tobacco products, marijuana, and blunts, with the greatest odds associated with past-month cigarette use. Interestingly, the pattern varied notably by race. Among white youth, the greatest odds for past-month bidi use were associated with cigarette use (AOR=3.9), while among black youth the greatest odds were associated with blunting (AOR=9.5). Conclusion. The findings demonstrate that the use of cigars and blunts is highly associated with bidi use among youths and these patterns differ by race/ethnicity. Tobacco control efforts that target youths must address other tobacco products and marijuana and should be tailored appropriately and effectively, with consideration of racial, ethnic, and cultural variations. Copyright 2006, Association of Schools of Public Health.

The Fagerstrom Test for Nicotine Dependence-Smokeless Tobacco (FTND-ST).

Ebbert JO; Patten CA; Schroeder DR. *Addictive Behaviors* 31(9): 1716-1721, 2006. (16 refs.)

Few nicotine dependence measures have been developed for smokeless tobacco (ST) users. Existing measures are limited by the requirement to rate the nicotine content of ST brands for which data is scarce

or non-existent. We modified the Fagerstrom Test for Nicotine Dependence (FTND) for ST users, referred to this scale as the FTND-ST, and evaluated its characteristics in a population of 42 ST users. The correlation between the FTND-ST total score and the serum cotinine concentrations was 0.53 ($p < 0.001$). Internal consistency reliability assessed using the coefficient alpha was 0.47. Correlations and the coefficient alpha are similar to those reported for commonly used nicotine dependence measures. Development and refinement of nicotine dependence measures for ST users are essential steps in order to advance the field of ST research. Copyright 2006, Elsevier Science.

Increased reach and effectiveness of a statewide tobacco quitline after the addition of access to free nicotine replacement therapy. (editorial).

An LC; Schillo BA; Kavanaugh AM; Lachter RB; Luxenberg MG; Wendling AH; Joseph AM. *Tobacco Control* 15(4): article 286, 2006. (36 refs.)

Background: Tobacco users receiving behavioural and pharmacological assistance are more likely to quit. Although telephone quitlines provide population access to counselling, few offer pharmacotherapy. Objective: To assess change in cessation rates and programme impact after the addition of free nicotine replacement therapy (NRT) to statewide quitline services. Design, setting, participants: An observational study of cohorts of callers to the Minnesota QUITPLAN(SM) Helpline before ($n = 380$) and after ($n = 373$) the addition of access to free NRT. Intervention: Mailing of NRT (patch or gum) to callers enrolling in multi-session counselling. Main outcome measure: Thirty-day abstinence six months after programme registration. Results: The number of callers increased from 155 (SD 75) to 679 (180) per month pre-NRT to post-NRT (difference 524, 95% confidence interval (CI) 323 to 725). Post-NRT, the proportion of callers enrolling in multi-session counselling (23.4% v 90.1%, difference 66.6%, 95% CI 60.8% to 71.6%) and using pharmacotherapy (46.8% v 86.8%, difference 40.0%, 95% CI 31.3% to 47.9%) increased. Thirty-day abstinence at six months increased from 10.0% pre-NRT to 18.2% post-NRT (difference 8.2%, 95% CI 3.1% to 13.4%). Post-NRT

the average number of new ex-smokers per month among registrants increased from 15.5 to 123.6 (difference 108.1, 95% CI 61.1 to 155.0). The cost per quit pre-NRT was \$ 1362 (SD \$ 207). The cost per quit post-NRT was \$ 1934 (\$ 215) suggesting a possible increase in cost per quit (difference \$ 572, 95% CI -\$ 12 to \$ 1157). Conclusion: The addition of free NRT to a state quitline is followed by increases in participation and abstinence rates resulting in an eightfold increase in programme impact. These findings support the addition of access to pharmacological therapy as part of state quitline services. Copyright 2006, BMJ Publishing Group.

Cytisine for smoking cessation: A literature review and a meta-analysis. (review).

Etter JF. *Archives of Internal Medicine* 166(15): 1553-1559, 2006. (42 refs.)

Background: Cytisine is an agonist of nicotinic receptors; in particular, it binds strongly with alpha(4)beta(2) nicotinic receptors. Cytisine has been used to treat tobacco dependence for 40 years in Eastern Europe. The objective of this study was to review the literature on the effect of cytisine on smoking cessation. Methods: Review of PubMed, EMBASE, Psychological Abstracts, BIOSIS, Google.com, and Scholar.google.com, using the keywords cytisine, cytisin, zytisin, cytisinum, Tabex, and smoking cessation. Experts and the manufacturer of Tabex were contacted. Placebo-controlled trials were included in a meta-analysis. Results: Ten studies reported the effects of cytisine on smoking cessation, including 4 controlled studies (3 placebo controlled). Nine studies used the Bulgarian drug Tabex, containing 1.5 mg of cytisine per tablet, and one Russian study used buccal films containing either 1.5 mg of cytisine or 0.75 mg of cytisine plus 0.75 mg of anabesine. All studies were published between 1967 and 2005 in Bulgaria, Germany, Poland, and Russia. There were 4404 smokers treated with cytisine and 3518 in control conditions. The pooled odds ratio after 3 to 8 weeks in the 3 placebo-controlled trials (2 were double blind and 1 was randomized) was 1.93 (95% confidence interval, 1.21-3.06). For the 2 placebo-controlled double-blind trials with a longer follow-up, the pooled odds ratio after 3 to 6 months was 1.83 (95% confidence interval, 1.122.99). One placebo-controlled double-blind trial had follow-up after 2 years (odds ratio, 1.77; 95% confidence interval, 1.29-2.43). Some adverse effects were reported. Most trials were, however, of poor quality. Conclusions: Cytisine may be effective for smoking cessation. This fact remained largely unnoticed in the English-language literature. Copyright 2006, American Medical Association.

Nicotine replacement therapy for long-term smoking cessation: A meta-analysis. (review).

Etter JF; Stapleton JA. *Tobacco Control* 15(4): article 280, 2006. (29 refs.)

Objective: To assess if the effect of a single treatment episode with nicotine replacement therapy (NRT) enhances smoking cessation over many years. Data sources: Meta-analysis of all randomised controlled trials of NRT with final follow-up more than one year after the start of treatment. Twelve eligible trials were identified, all placebo-controlled, having final follow-ups ranging from 2-8 years. All had earlier follow-ups at 12 months. They comprised 2408 active and 2384 placebo treatment participants. Data synthesis: The odds ratio (OR) in favour of NRT at final follow-up was 1.99 (95% confidence interval (CI) 1.50 to 2.64). There was no evidence that the effect varied according to length of final follow-up (b = 0.92, p = 0.28) or duration of initial NRT treatment (b = 0.99, p > 0.5). The overall relapse rate between the 12 months and final follow-up was 30.0% (95% CI 23.5% to 37.5%). This rate did not differ between NRT and control groups (OR 1.11, 95% CI 0.78 to 1.59), or length of initial NRT treatment. There was also no evidence that it varied according to length of final follow up. Due to relapse, the overall efficacy of NRT treatment in terms of additional ex-smokers declined from 10.7% over and above placebo (6.6% to 14.8%) after one year to 7.2% (3.8% to 11.3%) at an average of 4.3 years follow up. Conclusions: The relative efficacy of a single course of NRT remains constant over many years. The majority of relapse after 12 months occurs within the first or second year and is not detectable thereafter, suggesting that NRT has a permanent effect on smoking cessation. However, initial relapse after one year has the effect of diminishing the number of ex-smokers that can be ultimately attributed to NRT. Results after only 6-12 months of follow-up, as used in existing reviews and treatment guidelines, will overestimate the lifetime benefit and cost-efficacy of NRT by about 30%. Because the long-term benefit of NRT is modest, tobacco dependence treatment might be better viewed as a chronic disorder, requiring repeated episodes of treatment. Copyright 2006, BMJ Publishing Group.

The reinforcing effects of nicotine and stimulant medication in the everyday lives of adult smokers with ADHD: A preliminary examination.

Gehricke JG; Whalen CK; Jamner LD; Wigal TL; Steinhoff K. *Nicotine & Tobacco Research* 8(1): 37-47, 2006. (62 refs.)

Whereas the smoking prevalence rates in the general population are declining, rates among people

diagnosed with attention-deficit/hyperactivity disorder (ADHD) continue to be elevated. Previous research has shown that nicotine may improve attention and mood, suggesting that nicotine may help ameliorate the attentional and emotional problems associated with ADHD. The present study examined the effects of nicotine with and without stimulant medication on ADHD symptoms, moods, and arousal in the everyday lives of smokers with ADHD. A total of 10 smokers with ADHD who were being treated with stimulant medication were asked to abstain from smoking while participating in the study. Participants underwent four conditions in randomized order: (a) Nicotine patch+stimulant medication, (b) nicotine patch only, (c) placebo patch+stimulant medication, and (d) placebo patch only. Each condition continued for 2 days, during which self-reports of ADHD symptoms and moods were obtained using electronic diaries. Lightweight ambulatory monitors recorded cardiovascular activity at each diary entry. Smoking abstinence was verified by expired carbon monoxide and salivary cotinine analysis. Results showed that nicotine patches and stimulant medication alone and in combination reduced difficulty concentrating and core ADHD symptoms compared with placebo patch only. Borderline improvement in impatience and self-control was seen with nicotine patch administration primarily on day 1. Nicotine patches also tended to elevate systolic and diastolic blood pressure compared with placebo patch during day 2. The findings suggest that smokers with ADHD experience nicotine-related reductions in ADHD symptoms during their everyday lives. Copyright 2006, Taylor & Francis Ltd.

Determinants of the rate of nicotine metabolism and effects on smoking behavior.

Johnstone E; Benowitz N; Cargill A; Jacob R; Hinks L; Day I et al. *Clinical Pharmacology & Therapeutics* 80(4): 319-330, 2006. (39 refs.)

Background: Studies on cytochrome P450 (CYP) 2A6 suggest that genotype affects the rate of nicotine metabolism and, consequently, cigarette consumption. However, known alleles of CYP2A6 associated with fast or slow metabolism are relatively uncommon, and there remains considerable variation in metabolic activity among those with presumed wild-type CYP2A6 alleles, suggesting that other genetic or environmental factors also influence the rate of nicotine metabolism. Methods. We investigated determinants of the rate of nicotine metabolism and effects on smoking behavior in a United Kingdom cohort who participated in a placebo-controlled trial of smoking cessation via nicotine replacement therapy. Those who continued to smoke cigarettes at the 8-year

follow-up formed our study group (N = 545). The ratio of the nicotine metabolite trans-3'-hydroxycotinine to cotinine in plasma was used as an index of CYP2A6 activity and thus as a marker of the rate of nicotine metabolism. Results: The nicotine metabolite ratio was associated with sex (P < .0001), CYP2A6 genotype (*1B, *2, *4, *9, and *12) (P < .0001), CYP2B6 haplotype (*4-dominant) (P = .02), plasma nicotine concentration (P < .0001), and age (P = .02) but was not associated with dependence score (P > .20). The ratio also predicted the number of cigarettes smoked at will per day, although the association was weak (F_{1,492} = 4.05, P = .04). Conclusion: In this cohort the rate of nicotine metabolism is related to age, sex, CYP2A6 genotype, and CYP2B6 genotype and may affect the level of tobacco consumption. Copyright 2006, Mosby Inc.

A Phase II study of St. John's Wort for smoking cessation.

Lawvere S; Mahoney MC; Cummings KM; Kepner JL; Hyland A; Lawrence DD et al. *Complementary Therapies in Medicine* 14(3): 175-184, 2006. (43 refs.) Objectives: To examine the feasibility and efficacy of St. John's Wort (SJW) for smoking cessation. Design: This one-arm Phase II study utilized an exact two-stage group sequential design with a 1-week run-in period between the start of SJW treatment and the designated quit date. A total of 37 smokers (ages 18-65 years, smoking ≥ 10 cigarettes/day) were started on SJW. Thirteen failed to make a verified quit attempt on the predesignated date and were taken off study resulting in 24 evaluable subjects. Setting: Smokers completed clinic visits at a cancer center with interval telephone calls and mailings. Intervention: Standardized SJW, 450 mg capsules taken orally twice daily along with cessation counseling messages. Main outcome measures: Subjects completed validated surveys and a focused physical examination at baseline. Evaluable subjects were defined as those subjects who made a confirmed quit attempt on their "quit date" 1 week following initiation of SJW. Smoking status was determined through self-report and bioverification using carbon monoxide (CO) testing. Results: Among evaluable subjects, the 12-week quit rate was 37.5% (9/24). Quitters had no significant change in weight from baseline to 12-weeks cessation. Use of SJW was generally well tolerated. Conclusions: Based upon these results (which suggest that SJW may be effective in maintaining smoking cessation) and the high compliance and few AEs, we conclude that SJW demonstrates feasibility for use in smoking cessation. If SJW proves to be effective in larger controlled

studies, it could represent a less expensive, more readily accessible and well-tolerated agent to promote tobacco cessation. Copyright 2006, Churchill Livingstone.

Effects of a smoke-free law on hair nicotine and respiratory symptoms of restaurant and bar workers.

Hahn EJ; Rayens MK; York N; Okoli CTC; Zhang M; Dignan M et al. *Journal of Occupational and Environmental Medicine* 48(9): 906-913, 2006. (59 refs.)

Objective: Bar and restaurant workers' exposure to secondhand smoke (SHS) was compared before and 3 and 6 months after implementation of a smoke-free ordinance. Methods: Hair nicotine, self-reported exposure to SHS, and respiratory symptoms were assessed on 105 smoking and nonsmoking workers from randomly selected establishments in Lexington, Kentucky. Thirty-eight percent were current smokers with more than half smoking 10 or fewer cigarettes per day. Workers provided a hair sample at baseline and at the 3-month interview. Results: There was a significant decline in hair nicotine 3 months post law when controlling for cigarettes smoked per day. Bar workers showed a significantly larger decline in hair nicotine compared with restaurant workers. The only significant decline in SHS exposure was in the workplace and other public places. Regardless of smoking status, respiratory symptoms declined significantly postlaw. Conclusions: Hospitality workers demonstrated significant declines in hair nicotine and respiratory symptoms after the law. Comprehensive smoke-free laws can provide the greatest protection to bar workers who are the most vulnerable to SHS exposure at work. Copyright 2006, Lippincott, Williams & Wilkins.

Accessing adult smokers in the pediatric setting: What do parents think?

Moss D; Cluss PA; Mesiano M; Kip KE. *Nicotine & Tobacco Research* 8(1): 67-75, 2006. (30 refs.)

The anticipation of negative parental reaction is cited by pediatricians as a common barrier to intervening with parents who smoke. In an effort to clarify perceived versus actual parent reaction, the present study investigated the reactions of a diverse parent sample toward pediatricians addressing parental smoking in the outpatient setting. This study represents a descriptive cross-sectional in-person survey of 906 parents interviewed exiting four geographically diverse pediatric practices. Only 3% of

the sample felt their smoking status was not the pediatrician's business, 89% stated they believe it is an important part of a pediatrician's job to ask about their smoking status, and 8% stated it wouldn't matter if the pediatrician asked. Demographic characteristics were associated with a positive attitude about being asked. Compared with nonsmokers, fewer smokers had positive attitudes (81% vs. 91%, $p=.0002$); and more highly educated parents were more strongly positive about being asked (91% vs. 83%, $p5.006$). Among 187 smokers, 177 (95%) would appreciate or feel okay about the physician's concern if advised to quit and 57% reported wanting some kind of smoking cessation help from the pediatrician's office. In a heterogeneous sample of parents, strong support exists for pediatricians addressing parental smoking at pediatric office visits. This finding is encouraging for pediatricians who are concerned about negative parental reaction. Copyright 2006, Taylor & Francis Ltd.

Maternal smoking during late pregnancy and offspring smoking behaviour.

Munafò MR; Wileyto EP; Murphy MFG; Collins BN. *Addictive Behaviors* 31(9): 1670-1682, 2006. (29 refs.) We explored the influence of maternal smoking during late pregnancy on the likelihood of smoking among offspring in adolescence and adulthood, using birth cohort data collected in the United Kingdom as part of the 1958 National Child Development Study. Longitudinal analysis indicated that maternal smoking during late pregnancy was associated with an increased likelihood of being a non-smoker at 16-year, 23-year and 33-year follow-up. This association differed between male and female offspring, with women showing no significant association and men showing an increased likelihood of being a non-smoker. There did not appear to be any association between maternal smoking during late pregnancy and cigarette consumption among offspring who reported smoking for either sex. These results are inconsistent with some previous reports that maternal smoking during pregnancy increases the likelihood of smoking among female offspring, although the observation of a moderating effect of sex on smoking behaviour is consistent with several previous reports. We discuss possible mechanisms for this association, and suggest factors that may account for the observed sex differences in this association, and the discrepancy between our results and some previous reports. Copyright 2006, Elsevier Science.