

Library Watch on nicotine

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Adolescent smoking cessation. (review).

Camenga DR; Klein JD. *Current Opinion in Pediatrics* 16(4): 368-372, 2004. (38 refs.)

Purpose of review: Approximately 25% of high school students report current cigarette use, 85% of adolescents think about quitting, and around 80% of current smokers made a quit attempt in the past year. This review analyzes recent additions to the adolescent smoking cessation literature from June 1, 2003 to May 1, 2003. Recent findings Adolescent attitudes toward smoking cessation are largely affected by their smoking history. Youth cessation interventions largely focus on behavioral interventions, and research concerning these interventions has yielded mixed results. Little data exist about the effectiveness of nicotine replacement therapy in adolescents, but there is growing evidence that youth use this pharmacotherapy. Recent research has explored the use of nicotine replacement therapy as an adjunct for enhanced smoking reduction in adults, and future research may focus on this tactic for youth as well. Internet cessation adjuncts and telephone quit lines also serve as future frontiers for adolescent smoking cessation research. Summary Information concerning adolescent smoking behaviors, effective interventions, and smoking cessation therapy continue to grow and provide data that improve our understanding of adolescent smoking cessation. Although we cannot directly extrapolate the adult findings to this population, adult cessation research continues to inform future adolescent cessation efforts. Copyright 2004, Lippincott, Williams & Wilkins.

Concurrent alcohol and tobacco dependence: Mechanisms and treatment.

Drobes DJ. *Alcohol Research & Health* 26(2): 136-142, 2002. (45 refs.)

People who drink alcohol often also smoke and vice versa. Several mechanisms may contribute to concurrent alcohol and tobacco use. These

mechanisms include genes that are involved in regulating certain brain chemical systems; neurobiological mechanisms, such as cross-tolerance and cross-sensitization to both drugs; conditioning mechanisms, in which cravings for alcohol or nicotine are elicited by certain environmental cues; and psychosocial factors (e.g., personality characteristics and coexisting psychiatric disorders). Treatment outcomes for patients addicted to both alcohol and nicotine are generally worse than for people addicted to only one drug, and many treatment providers do not promote smoking cessation during alcoholism treatment. Recent findings suggest, however, that concurrent treatment for both addictions may improve treatment outcomes. Public Domain.

Meta-analysis of the efficacy of nicotine replacement therapy for smoking cessation: Differences between men and women.

Cepeda-Benito A; Reynoso JT; Erath S. *Journal of Consulting and Clinical Psychology* 72(4): 712-722, 2004. (60 refs.)

Gender differences in the efficacy of nicotine replacement therapies (NRTs) were examined in a meta-analytical review of 90 effect sizes obtained from a sample of 21 double-blind, placebo-controlled randomized studies. Although NRT was more effective for men than placebo at 3-month, 6-month, and 12-month follow-ups, the benefits of NRT for women were clearly evident only at the 3- and 6-month follow-ups. Giving NRT in conjunction with high-intensity nonpharmacological support was more important for women than men. That is, NRT and low support were efficacious for women at only short-term follow-up, and men benefited from NRT at all the follow-ups regardless of the intensity of the adjunct support. The results suggest that long-term maintenance of NRT treatment gains decrease more rapidly for women than men. Copyright 2004, American Psychological Association.

Nicotine conjugate vaccine: Is there a right to a smoking future?

Hasman A; Holm S. *Journal of Medical Ethics* 30(4): 344-345, 2004. (7 refs.)

Tobacco consumption is believed to be one of the world's greatest preventable health problems. According to the World Health Organisation, 1.1 billion people worldwide are addicted to nicotine with tobacco causing an estimated four million premature deaths every year. The development of a nicotine conjugate vaccine suggests that immunisation may hold promise as a future therapeutic and preventive strategy for tobacco smoking and nicotine addiction. Allowing parents to immunise their children against smoking could be an infringement of children's right to an open future, however, and is not ethically unproblematic. Copyright 2004, British Medical Journal Publishing Group.

Comparison of daily life habits and health examination data between smokers and ex-smokers suggests that ex-smokers acquire several healthy-lifestyle practices.

Kawada T. *Archives of Medical Research* 35(4): 329-333, 2004. (17 refs.)

Background. The association between smoking and health status including healthful life habits was evaluated in subjects living in a rural Japanese area. Methods. A cross-sectional survey was conducted with subjects who were smokers and ex-smokers ranging in age from 40 to 59 years who participated in health examinations in 1993 in 17 towns of Gunma Prefecture, Japan. A total of 4,629 of 6,076 subjects (76.2%) agreed to an interview by our public health nurses. Numbers of smokers and ex-smokers among subjects were 2,681 and 245, respectively. Results. Percentages of subjects in their 40s ($p < 0.01$) who ate breakfast daily and those of subjects in their 50s ($p < 0.05$) who exercised more than once a week were significantly higher among ex-smokers than among smokers. Mean body mass index (BMI) was higher in ex-smokers than in current smokers in their 40s ($p < 0.05$) and 50s ($p < 0.01$), and mean high-density lipoprotein cholesterol level (HDLC) was also significantly higher in ex-smokers than in current smokers in their 40s ($p <$

0.05). Furthermore, two-way analysis of variance on BMI and HDLC was conducted considering smoking and drinking habits. BMI was related only with smoking both in subjects in their 40s ($P < 0.05$) and those in their 50s ($p < 0.001$). HDLC was related with both smoking and drinking in subjects in their 40s and to only drinking in subjects in their 50s ($p < 0.001$). Conclusions. Ex-smokers performed regular exercise more often and showed improvement of lipid metabolism. To clarify cause-effect relationship between smoking and health status or habits, a follow-up study including factors such as smoking status, pulmonary function, exercise habits, and obesity should be conducted. Copyright 2004, Elsevier Science.

Nicotine serves as an effective reinforcer of intravenous drug-taking behavior in human cigarette smokers.

Harvey DM; Yasar S; Heishman SJ; Panlilio LV; Henningfield JE; Goldberg SR.

Psychopharmacology 175(2): 134-142, 2004. (45 refs.)

Rationale: Although numerous studies have documented that nicotine can function as an effective reinforcer of intravenous self-administration behavior in animals, it has not been clearly shown to maintain intravenous self-administration behavior above vehicle placebo levels in humans. Objectives: To compare the reinforcing effectiveness of nicotine versus saline placebo in human research volunteers responding under fixed-ratio (FR) schedules of intravenous drug self-administration while systematically increasing response requirements. Methods: Eight male cigarette smokers resided in an inpatient research unit. During 3-h sessions, intravenous injections of nicotine and saline were available concurrently and were contingent on responding (pulling a lever). Nicotine dose (0.75, 1.5, 3.0 mg/injection), time out (TO) value after each injection (1-20 min) and FR response requirement (10-1600) were varied in different subjects over consecutive sessions. Results: Number of nicotine injections/session significantly decreased as dose/injection increased and the number of self-administered nicotine injections was significantly

greater than the number of self-administered saline injections across conditions. When FR value was progressively increased over sessions, response rates for nicotine, but not saline, injections increased, with maximal rates at the highest FR values. Rates of responding and injections/session were markedly and significantly higher for nicotine than for saline at FR values of 200 and above. Subjects rated effects of nicotine as both significantly more positive and more negative than saline placebo, with positive ratings significantly higher than negative ratings. Conclusions: Nicotine functioned as a prototypic drug of abuse, serving as an effective reinforcer of intravenous drug-taking behavior in human cigarette smokers. Subjects adjusted their responding to response requirements in a way that maintained relatively constant levels of nicotine injections per session. Copyright 2004, Springer.

Nic-Quitter's aid.

Dolan KA. *Forbes* 174(2): 180, 2004

A new approach to nicotine addiction is emerging: an experimental vaccine to block the nicotine from entering the brain to deliver its pleasurable rush. Nicotine floats around the blood like any other foreign antigen, but its molecules are small enough both to slip past the blood-brain barrier and elude the immune system's policing antibody cells. A nicotine vaccine would work like other vaccines, provoking the body into producing targeted antibodies that, in this case, latch onto molecules so they're too big to enter the brain. Several companies are pursuing nicotine vaccines. One NicVax vaccine is being studied. Preliminary quitting rates are due out later this year from its study of 63 smokers who were injected with the vaccine. Efforts date to 1996, when the company came up with a workable vaccine for *Staphylococcus aureus*, a leading cause of infection in hospitals. Staph molecules are good at eluding the immune system because they're disguised by an abundant coat of sugars. Fattom's solution was to link the sugars to a larger carrier protein, in this case an inactivated bacteria called *Pseudomonas*. The immune system spots the combination and produces antibodies that then bind to the staph molecules in the body, preventing infection. It was thought the same

process would work on other elusive molecules, such as nicotine. Early-stage human trials completed in 2002 have shown that nicotine antibodies are still at measurable levels in the blood for 7 to 14 days after one shot. Side effects such as soreness and redness at the injection point clear up in a few days. Copyright 2004, Forbes Inc.

Testing the interaction between parent-child relationship factors and parent smoking to predict youth smoking.

Tilson EC; McBride CM; Lipkus IM; Catalano RF. *Journal of Adolescent Health* 35(3): 182-189, 2004. (37 refs.)

Purpose: To examine if parental smoking modifies the association between parent-child connectedness and parental disapproval of youth smoking with smoking behavior among minority youth. Methods: Baseline data from an urban Seattle, Washington neighborhood-based intervention trial to reduce risk behaviors among minority males and females aged 11-15 years were used to identify 428 minority youth-parent/guardian pairs. Parental smoking status, assessed by telephone interview, and youth reports of connectedness and parental disapproval, assessed by questionnaire, were tested in Chi-squared stratified analysis and logistic regression to predict youth smoking. Results: The majority (86%) of the parents/guardians were the natural parent of the surveyed child (67% mother; 19% father). Parental mean age was 41 years, 54% reported household incomes less than \$30K, and 26% were current smokers. Youth had a mean age of 13 years, 28% self-identified as African-American, 37% as Asian, and 35% as "Multi-ethnic"; 41% reported ever smoking, and 9% reported smoking within the past 30 days. Perceived parental disapproval of smoking was not associated with youth smoking behavior. Among youth whose parent did not smoke, those who reported low level of parent-child connectedness were two times more likely to report ever having smoked than those who reported high levels of connectedness. Among youth whose parent smoked, connectedness was not associated with youth smoking. The interaction between connectedness and parental smoking status and its relationship to youth smoking remained

significant after controlling for covariates. Conclusion: Overall, high levels of parent-child connectedness are protective against youth smoking. However, family connectedness may not protect children from becoming smokers when parents smoke. Copyright 2004, Society for Adolescent Medicine.

Screening adolescents for nicotine dependence: The Hooked on Nicotine Checklist.

Wheeler KC; Fletcher KE; Wellman RJ; Difranza JR. *Journal of Adolescent Health* 35(3): 225-230, 2004. (28 refs.)

Purpose: To evaluate the Hooked On Nicotine Checklist's (HONC) internal consistency, reliability over time, correlation with self-described smoking behavior, and to compare the results with previous studies of the onset of nicotine dependence in youths. Methods: Ninth-grade students were recruited from a regional school district, Subjects (Ss; n = 371; 91% of the 9th-grade class) were 48.8% male, 97% white, aged 13.8-15.6 years. Ss self-administered a questionnaire on smoking experiences. The HONC was completed by 88 (23.7%) who had puffed on a cigarette at least once; 74 were retested 2 weeks later. Responding "yes" to any of the 10 HONC items indicate; nicotine dependence (ND); the number of items endorsed indicates the degree of its severity. Results: The internal consistency of the HONC is high overall ($\alpha = 0.90$; n = 88), and test-retest reliability for the entire HONC is excellent (intraclass correlation = 0.88, $p < .001$). Individual items generally showed good to excellent reliability over time (Median Yules' Y = 0.71, range = 0.41-0.82). HONC scores were strongly correlated with self-reported smoking ($r = 0.70$, $p < .001$, n = 88). Conclusions: Adding the HONC to routine adolescent health examinations, health classes, and prevention programs may make adolescents more aware of

their symptoms of ND and enable intervention before ND progresses. Copyright 2004, Society for Adolescent Medicine.

Smoking abstinence after hospitalization: Predictors of success.

MacKenzie TD; Pereira RI; Mehler PS. *Preventive Medicine* 39(6): 1087-1092, 2004. (29 refs.)

Background. Our objective was to explore the relationship between baseline characteristics of hospitalized smokers and 6-month to 2-year self-reported quit rates. Methods. We surveyed adult smokers (n = 154) admitted to the Medicine service of an urban public hospital. We used the pharmacy database, a follow-up telephone survey, and medical records to characterize nicotine patch use and post-discharge smoking abstinence. Results. Among the 102 patients for whom smoking status at least 6 months after discharge was known, 18 (18%) were not smoking at last contact (mean follow-up 20 months). Individual factors associated with quitting include confidence to quit within 1 week, stage of change other than precontemplation, filling a nicotine patch prescription after discharge, number of previous quit attempts, and increasing age. With multivariate modeling, only confidence to quit [OR 9.8, confidence interval (CI), 2.8-35.0] and the number of previous quit attempts (OR 1.3 per attempt, 95% CI, 1.0-1.5) remained significantly associated with future abstinence. Conclusions. A high level of confidence to quit and multiple prior quit attempts are strongly associated with future abstinence among hospitalized patients who smoke. Using a simple confidence-to-quit scale to target interventions to patients with high confidence may improve the effectiveness of smoking cessation programs. Copyright 2004, The Institute for Cancer Prevention.