

Acute nicotine reinforcement, but not chronic tolerance, predicts withdrawal and relapse after quitting smoking.

Perkins KA; Broge M; Gerlach D; Sanders M; Grobe JE; Cherry C et al. *Health Psychology* 21(4): 332-339, 2002. (42 refs.)

Little research has examined the association of tobacco dependence with nicotine tolerance or reinforcement in a clinical sample. Smokers preparing to quit smoking participated in laboratory sessions to assess nicotine tolerance on subjective, cardiovascular, and performance measures and to assess nicotine reinforcement using a choice procedure. Participants were then provided with individual counseling (but no medication), made a quit attempt, and were followed for 1 year to determine clinical outcome, as determined by postquit withdrawal and days to relapse. Nicotine tolerance was unrelated to either withdrawal or relapse. However, acute nicotine reinforcement was significantly related to both greater withdrawal and faster relapse. Results challenge the common assumption that nicotine tolerance is closely related to dependence but suggest that nicotine reinforcement may have theoretical and clinical significance for dependence. Copyright 2002, American Psychological Association, Inc. and Division of Health Psychology.

Cardiovascular effects of nasal and transdermal nicotine and cigarette smoking.

Benowitz NL; Hansson A; Jacob P III. *Hypertension* 39(6): 1107-1112, 2002. (36 refs.)

The purpose of this study was to compare circadian blood pressure and heart rate patterns and other cardiovascular effects of nicotine delivered rapidly (via nasal spray, NNS), slowly (transdermal nicotine, TDN), by cigarette smoking (rapid delivery of nicotine plus other smoke toxins), and placebo NNS. Twelve healthy cigarette smokers were studied on a research ward when they smoked cigarettes (16 per day) or used TDN (15 mg/16 h), NNS (24 1-mg doses per day), or placebo NNS, each for 5 days. There were no significant differences in systolic blood pressure, but diastolic blood pressure was slightly increased during cigarette smoking. Plasma epinephrine, beta-thromboglobulin, and fibrinogen levels were higher during cigarette smoking than with TDN. For most measurements, NNS values were intermediate between and not significantly different from those of cigarette

smoking and TDN. We conclude that, at recommended doses, TDN and NNS have fewer effects on biomarkers of cardiovascular risk than does cigarette smoking. Copyright 2002, American Heart Association.

Asthma exacerbation after administration of nicotine nasal spray for smoking cessation.

Roth MT; Westman EC. *Pharmacotherapy* 22(6): 779-782, 2002. (8 refs.)

A 58-year-old man experienced an asthma exacerbation after administration of nicotine nasal spray for smoking cessation. His medical history was significant for asthma, chronic obstructive pulmonary disease, hypertension, and tobacco use when he was prescribed nicotine nasal spray for smoking cessation in an outpatient setting. Within the first 3 days of administering the spray, he developed wheezing, coughing, and significant shortness of breath, which required hospitalization. The patient was hospitalized for 48 hours and discharged with a diagnosis of asthma exacerbation probably related to administration of nicotine nasal spray. Prudent administration of nicotine nasal spray is recommended in patients with underlying respiratory disease. Patients should be counseled on the potential adverse effects of treatment and proper administration techniques in order to minimize these effects. Copyright 2002, Pharmacotherapy Publications, Inc.

Effectiveness of a pharmacist-based smoking-cessation program and its impact on quality of life.

Zillich AJ; Ryan M; Adams A; Yeager B; Farris K. *Pharmacotherapy* 22(6): 759-765, 2002. (39 refs.)

We conducted a prospective, open-label trial to evaluate the effectiveness of a pharmacist-based, comprehensive, smoking-cessation program with 31 self-referred subjects. A secondary goal was to measure changes in health-related quality of life (HRQOL) during the cessation attempt. The program consisted of weekly, 1-hour group sessions over 12 weeks. It incorporated nicotine replacement therapy (patch, gum) with extensive behavior modification counseling. Trained pharmacists served as program facilitators. Smoking cessation was chemically verified at 3 and 6 months by exhaled carbon monoxide. The patients' HRQOL was measured using the smoking-cessation quality of life questionnaire at baseline, 2 weeks, and 1, 2, 3, and 6 months. Chemically verified abstinence rates at 3 and 6 months were 42% (13 patients) and 26% (8

patients), respectively. Among patients who quit, vitality, mental health, and self-control significantly improved during the 3-month program. Six-month cessation rates were modest, although HRQOL improved within 3 months of abstinence. Copyright 2002, Pharmacotherapy Publications, Inc.

Fetal environment and subsequent obesity: A study of maternal smoking.

Power C; Jefferis BJMH. *International Journal of Epidemiology* 31(2): 413-419, 2002. (41 refs.)

Background The intrauterine environment may influence the development of obesity, but as yet, the long-term effect of growth in utero is unclear. We studied maternal smoking during pregnancy to gain insight on how an insult affecting fetal growth might subsequently influence obesity risk through childhood to age 33. **Methods** Data from the 1958 British birth cohort (all births in England, Wales and Scotland, 3-9 March 1958), including body mass index (BMI), maternal smoking during pregnancy and several potential confounding factors. We assessed obesity risk at ages 7, 11, 16, 23 and 33 associated with maternal smoking. Adjusted odds ratios (OR) for obesity at age 33 were estimated for 2918 men and 2921 women with complete data. **Results** Infants of mothers who smoked in pregnancy were lighter at birth than infants of non-smokers, but from adolescence (age 11 for females, 16 for males) they had an increased risk of being in the fattest decile of BMI. The OR for obesity associated with maternal smoking increased with age, suggesting strengthening of the relationship over time. At age 33 the OR was 1.56 (95% CI: 1.22-2.00) for men and 1.41 (95% CI: 1.12-1.79) for women. This was robust to adjustment for factors in early life, childhood and adulthood. **Conclusions** An elevated risk of obesity among the offspring of smokers was not accounted for by other known influences. Findings are consistent with a long-term effect of intrauterine environment on adiposity, possibly through fetal nutrition, although other mechanisms should be investigated in future studies of obesity. Copyright 2002, International Epidemiological Association.

Hubble-bubble (water pipe) smoking: Levels of nicotine and cotinine in plasma, saliva and urine.

Shafagoj YA; Mohammed FI; Hadidi KA.

International Journal of Clinical Pharmacology and Therapeutics 40(6): 249-255, 2002. (26 refs.)

Objectives: The purpose of the present study was to assess the levels of nicotine and cotinine in biological fluids (plasma, saliva, and urine) following hubble-bubble (HB) smoking. **Methods:** Fourteen healthy male volunteers, aged 28 +/- 8 years, body weight of 82.7 +/- 13.53 kg,

participated in the study. All volunteers were habitual HB smokers for 3.29 +/- 1.90 years who smoked at least 3 runs per week with an average of 20 g Mua'sel per run. Volunteers were requested to avoid smoking, at least 84 hours prior to the time of the study. After baseline samples were taken, volunteers started smoking 20 g of Mua'sel for a period of 45 minutes. Heparinized blood samples (5 or 10 ml each) were drawn for nicotine and cotinine analysis before, during and after the smoking period. Saliva samples were collected just before smoking (time 0) and at the end of smoking (45 min). Urine also was collected at time 0 and 24-hour urine collection was also taken to measure nicotine and cotinine excretion. Nicotine and cotinine were extracted from samples and assayed by gas chromatography. All data are presented as mean +/- SEM throughout the text, Tables and Figures unless indicated otherwise. **Results:** Plasma nicotine levels rose from 1.11 +/- 0.62 ng/ml at baseline to a maximum of 60.31 +/- 7.58 ng/ml (p < 0.001) at the end of smoking (45 min). Plasma cotinine levels increased from 0.79 +/- 0.79 ng/ml at baseline to its highest concentration of 51.95 +/- 13.58 ng/ml (p < 0.001) 3 hours following the end of smoking. Saliva nicotine levels significantly rose from 1.05 +/- 0.72 to 624.74 +/- 149.3 ng/ml and also saliva cotinine levels significantly increased from 0.79 +/- 0.79 ng/ml to 283.49 +/- 75.04 ng/ml. Mean amounts of nicotine and cotinine excreted in urine during the 24-hour urine collection following smoking were equal to 73.59 +/- 18.28 and 249 +/- 54.78 mug, respectively. **Conclusion:** Following a single run of HB smoking, plasma, saliva and urinary nicotine and cotinine concentration increased to high values. This observation suggests that HB may not be an innocent habit, as people believe. Copyright 2002, Dustriverlag DR Karl Feistle.

New smokers and quitters: Transitions in smoking status in a national population.

Willemsen MC; Hoogenveen RT; van der Lucht F.

European Journal of Public Health 12(2): 136-138, 2002. (16 refs.)

Background: Few studies have examined individual transitions in smoking status in national populations. **Methods:** A representative sample of 21,970 men and women aged 15-64 were questioned regarding current smoking status and smoking status 12 months ago. **Results:** 1.56% of respondents had started to smoke and 1.58% had quit smoking. Becoming a smoker was significantly associated with younger age and lower social economic status (SES). Among women, many new smokers were between the age of 30 and 34, presumably due to relapse after pregnancy. High SES smokers quit at a

younger age than lower SES groups. Conclusion: To reduce smoking prevalence in The Netherlands, more attention should be given to women aged 30-34 years and to people from the lower SES groups, especially those under the age of 45. Copyright 2002, Oxford University Press.

Psychosocial antecedents of tobacco chipping.

Presson CC; Chassin L; Sherman SJ. *Health Psychology* 21(4): 384-392, 2002. (37 refs.)

The authors examined adolescent antecedents and adult correlates of tobacco "chipping" compared with heavy smoking, experimental smoking, and nonsmoking in a representative community sample. As adolescents, future "chippers" had some smoking risk factors (attitudes, health beliefs, smoking intentions, and tolerance for deviance) and several protective factors (high values for academic success, internal locus of control, supportive relationships, and little smoking among peers and parents). As adults, risk factors included lessened belief in nicotine's addictiveness, lower conscientiousness, higher extraversion, and lower positive affect and life satisfaction; protective factors included high levels of educational attainment and employment and low levels of negative affect and stress (men only). Thus, chippers experience a complex mixture of risk and protective factors for smoking. Copyright 2002, American Psychological Association, Inc. and Division of Health Psychology.

Religious involvement and cigarette smoking in young adults: The CARDIA Study.

Whooley MA; Boyd AL; Gardin JM; Williams DR. *Archives of Internal Medicine* 162(14): 1604-1610, 2002. (30 refs.)

Background: Results of previous studies have suggested that involvement in religious activities may be associated with lower rates of smoking. We sought to determine whether frequent attendance at religious services is associated with less smoking among young adults. Methods: This prospective cohort study of 4569 adults aged 20 to 32 years included approximately equal numbers of blacks and whites and men and women from 4 cities in the United States who attended the 1987/1988 examination of the Coronary Artery Risk Development in Young Adults (CARDIA) study. Frequency of attendance at religious services and denominational affiliation were determined by self-report questionnaire in 1987/1988. Cigarette smoking was determined by interview at this time and again 3 years later. Results: Of 4544 participants who completed the tobacco questionnaire in 1987/1988, 34% (891/2598) who attended religious services less than once per month or never and 23% (451/1946) who attended religious services at least once per month reported current

smoking (odds ratio [OR], 1.7; 95% confidence interval [CI], 1.5-2.0; $P < .001$). This association between less frequent attendance at religious services and current smoking was found in most denominations and remained significant after adjusting for potential confounding variables (OR, 1.5; 95% CI, 1.3-1.8; $P < .001$). During 3-year follow-up, nonsmokers who reported little or no religious involvement had an increased risk of smoking initiation (adjusted OR, 1.9; 95% CI, 1.3-2.7; $P < .001$). Conclusions: Young adults who attend religious services have lower rates of current and subsequent cigarette smoking. The potential health benefits associated with religious involvement deserve further study. Copyright 2002, American Medical Association.

Prevalence of cigarette smoking among rural adolescents in the United States.

Aloise-Young PA; Wayman JC; Edwards RW. *Substance Use & Misuse* 37(5/7): 613-630, 2002. (27 refs.)

Results are reported from a national U.S. study of cigarette smoking carried out from 1996 to 2000 involving 68,270 adolescents: Hierarchical linear modeling was used to model smoking as a function of grade, gender, region, and community size (rurality). Significant effects were found for rurality, region, grade, and gender. The highest levels of smoking were found for rural adolescents, and adolescents living in the South. Males smoked more than females in all regions except the West, where the reverse was true. Given that rural adolescents smoke more "heavily" than do their nonrural peers, researchers must devote more attention to understanding the factors that underlie smoking initiation in rural youth. Copyright 2002, Marcel Dekker, Inc.

Smoking cessation: Progress, priorities, and prospectus. (review).

Niaura R; Abrams DB. *Journal of Consulting and Clinical Psychology* 70(3): 494-509, 2002. (162 refs.)

The authors review developments in understanding smoking cessation interventions over the past decade. Noteworthy is the unprecedented growth of research and knowledge that has left a deeper understanding of how best to use new and existing behavioral and pharmacologic tools and strategies to help smokers quit. The status of public-health-level interventions is evaluated, questions are raised concerning their efficacy, and suggestions are offered for further refinement of these intervention strategies. Development of cessation guidelines is reviewed, and the state of knowledge concerning behavioral and pharmacologic interventions is summarized. The authors also present agendas for behavioral

and pharmacologic research related to smoking cessation and discuss individual difference factors among smokers that may prove to be important in designing new and refining existing treatments. Copyright 2002, American Psychological Association., Inc

Predictors of change on the smoking uptake continuum among adolescents.

Kaufman NJ; Castrucci BC; Mowery PD; Gerlach KK; Emont S; Orleans CT. *Archives of Pediatrics & Adolescent Medicine* 156(6): 581-587, 2002. (30 refs.)

Context: Understanding how advertising and other risk and demographic factors affect adolescent susceptibility to smoking would allow for the development of more effective youth-targeted tobacco prevention and cessation programs and policies. Objective: To examine the effect of various demographic and risk factors on different stages of smoking among adolescents. Design: A nationally representative cross-sectional survey, The Robert Wood Johnson Foundation's Survey of Tobacco Price Sensitivity, Behavior, and Attitudes Among Teenagers and Young Adults. Subjects: The Robert Wood Johnson Foundation's Survey of Tobacco Price Sensitivity, Behavior, and Attitudes Among Teenagers and Young Adults included 17287 adolescent respondents (aged, 13-19 years) in 1996. Main Outcome Measures: Stage of susceptibility and correlates of progression toward regular smoking. Results: Of all nonsmoking adolescents, 32% were susceptible smokers (have never smoked, but might) with younger adolescents almost 3 times more likely than older adolescents to be susceptible. Female subjects were 54% more likely than male subjects to be susceptible. In addition to exposure to others' smoking, owning or willingness to own tobacco promotional items, having a favorite cigarette advertisement, skipping school, poor school performance, and lack of attendance in religious activities were associated with progression along the uptake continuum. Conclusions: Improved understanding of the tobacco use trajectories of adolescents and the risk factors associated with progression will help clinicians and tobacco control advocates create effective youth- targeted

interventions and policies. Findings suggest that physicians and other health care providers should redouble their efforts to ask preadolescents and young adults about smoking or the likelihood of their smoking. Nonsmokers should also be advised about the addictive nature of tobacco products and the resulting loss of control that accompanies addiction. Copyright 2002, American Medical Association

Reliability of selected measures of nicotine dependence among adolescents.

O'Loughlin J; Tarasuk J; Difranza J; Paradis G. *Annals of Epidemiology* 12(5): 353-362, 2002. (39 refs.)

PURPOSE: To examine the test retest reliability, internal consistency, and convergent construct validity of selected measures of nicotine dependence (ND) among adolescents. METHODS: Self-reports of sociodemographic characteristics and smoking behavior were collected in a convenience sample of 238 high school students aged 13 to 19 years. ND was measured in the Hooked on Nicotine Checklist (HONC), the Stanford Dependence Index (SDI) and in 45 new items identified in consultation with experts and focus group interviews with adolescent smokers. RESULTS: Test retest reliability among past 3-month smokers indicated good to excellent reliability coefficients for HONC items (K 0.61 to 0.93), except one item that tapped feelings of depression on withdrawal (K = 0.34). Intraclass correlation coefficients for SDI items ranged from 0.71 to 0.77. Test retest reliability coefficients for the 45 new items ranged from 0.20 to 0.90. The HONC and SDI demonstrated good internal consistency (Cronbach's alpha = 0.90 and 0.78, respectively). Convergent construct validity against cigarette exposure was demonstrated for the HONC, SDI, and most of the 45 new items. CONCLUSIONS: The HONC and SDI demonstrated excellent and good psychometric properties, respectively. Most of the 45 new items hold promise as indicators of ND in youth, and should be further investigated. Copyright 2002, Elsevier Science Ltd.