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Nondaily and Social Smoking an Increasingly Prevalent Pattern

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Nondaily and social smoking (smoking primarily in social situations) are increasingly prevalent. Social smokers differ from daily smokers in their demographics, psychological profile, and degree of nicotine addiction. Current methods used to screen for tobacco dependence often miss social smokers, who tend to self-categorize as “nonsmokers.” The available, albeit limited, literature on whether social smokers exhibit nicotine dependence is controversial. While there are no data on the direct health risks associated with social smoking, data on light active smoking and passive smoking suggest that intermittent tobacco use carries health risks, particularly for cardiovascular disease. Because social smokers consume less and tend not to show signs of nicotine dependence, pharmacotherapies, which are designed to counter withdrawal symptoms, may not be relevant. However, social smokers may be more motivated to quit when educated on the dangers of their secondhand smoke. There is a need for new research on defining the health impact of nondaily and social smoking.

While daily tobacco consumption in the United States is declining,¹ nondaily smoking is increasing.² Nondaily smoking (smoking on some days but not every day) is a distinct pattern of tobacco use that falls under the broader category of light (low-volume) or intermittent smoking. There is not a consensus on how to study nondaily smokers; some investigators have grouped nondaily smoking with other forms of light tobacco use, while others have studied it as a separate entity. Regardless of the precise definition, nondaily and social smokers are intermittent tobacco users who, alone with occasional, low-rate daily and very light smokers, are often not identified in clinical practice because they do not consider themselves smokers. Because nondaily smoking is increasing in prevalence, representing up to one-fourth of current tobacco users,² there is a need to improve clinicians' ability to identify and treat these types of smokers.

Current smoking cessation strategies were developed for established smokers who consume 1 or more packs of cigarettes per day, meet clinical criteria for nicotine addiction, and experience clear physical and psychological effects of tobacco. Nondaily smoking has not been a focus of cessation efforts, nor has it been incorporated into national clinical guidelines for treating tobacco dependence, partly because nondaily smoking has been considered a transient behavior associated with smoking initiation or quit attempts.³

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Nondaily Smoking: An Increasingly Prevalent Pattern

While nondaily smoking has been viewed as an unstable condition between daily smoking and quitting, newer research shows that this pattern of tobacco use can also represent a chronic low-level (< 10 cigarettes per day) form of consumption.^{3,4} For example, longitudinal studies have shown that many nondaily smokers sustain their habit for 1 to 2 years, if not indefinitely.⁵

Rates of nondaily (intermittent) smoking have also increased as part of a national decline in daily tobacco consumption.¹ In the United States, between 1996 and 2001 non-daily smoking increased in 31 of 50 states, going from 16% in 1997 to 19% in 1999, reaching 24% of current smokers in 2001.² Eighteen- to 29-year-olds were particularly affected: rates of young adult smokers who consume fewer than 5 cigarettes per day increased from 4.7% in 1992 to 6.0% in 2002.¹ This change may have occurred as a result of a rise in tobacco control policies, including home and workplace restrictions, coupled with society's progressive denormalization of smoking.^{1,4}

Implementation of workplace restrictions on tobacco use has also been shown to increase the odds of a smoker being a light or intermittent user (odds ratio [OR], 1.28; 95% confidence interval [CI], 1.18-1.38).¹ Similarly, the strength of tobacco control policies in a smoker's state of residence predicts light smoking: those living in a state ranked in the top third for tobacco control increased the odds of light smoking (OR, 1.68; 95% CI, 1.53-1.85) as opposed to those living in a state with the lowest tertile of tobacco control.¹ Smokers who enforced smoke-free policies at home had nearly 3 times the odds of being a light or intermittent user (OR, 2.8; 95% CI, 2.60-3.04).¹ These studies suggest that as society continues to pass smoke-free policies, health care professionals will encounter nondaily smoking patterns more frequently.

Demographics and Psychological Profile

Nondaily smokers differ from daily smokers. In particular, nondaily smokers tend to be younger, female, better educated, wealthier, and from minority backgrounds (African American and Hispanic) when compared with daily smokers.^{3,6} Nondaily smoking has also been associated with excessive alcohol use, particularly binge drinking, on US college campuses.^{7,8} Of the 74% of college students who report non-daily smoking, 86% state they smoke cigarettes when they are under the influence of alcohol compared with 63% of heavier smokers.⁷

Nondaily smokers often do not consider themselves smokers and consequently are underidentified by clinicians: 42% of nondaily smokers classified themselves as non-smokers when questioned about their use of tobacco products.⁹ This propensity to self-label as a non-smoker reinforces nondaily smokers' perception that nondaily smoking does not carry significant health risks.⁹

Social Smokers: A Subset of Nondaily Smokers

Social smoking is 1 subset of non-daily smoking that is defined more by behavior than by volume of consumption, where tobacco use is primarily paired with group activities or social situations. Studies on social smoking, which first appeared in the public health literature in the 1990s, depicted social smokers as experimenting, affluent, white college students who smoked socially to gain peer acceptance.¹⁰ The limited published data on social smoking indicate that social smokers, unlike other nondaily smokers, tend not to smoke alone and restrict their use to social situations at parties, bars, or nightclubs.¹⁰ Social smokers generally categorize themselves as nonsmokers when asked by family, friends, or health care providers. They often do not view their smoking as a marker of personal addiction and tend to underrecognize the health risks associated with their tobacco use.¹⁰

While awareness of social smoking is relatively new in medicine and public health, it has been a focus of the tobacco companies for more than 30 years.¹¹ As early as the 1970s, confidential industry research found that social smokers represented 20% to 25% of all smokers and had varying socioeconomic backgrounds, levels of education, and ethnicities.¹¹ Industry research found that social smokers often did not identify themselves as smokers and denied nicotine dependence.¹¹ They purchased cigarettes primarily by the pack to limit consumption, smoking on average fewer than 10 cigarettes a day, while commonly smoking more on weekends or at parties. Social smokers generally showed little interest in quitting, because they believed that they could stop at any time.¹¹ With these observations, industry marketers designed cigarettes and advertising campaigns to appeal to social smokers.¹¹

To our knowledge, there are currently no published studies in the public health literature or tobacco industry documents on the rate at which social smokers transition into daily smokers. However, clinicians cannot solely view social smoking as a transient practice; it may be a stable pattern of consumption. There is a need for more research on social smoking because it is important for clinicians to understand how many social smokers progress to daily smoking and any additional risk factors that may signal a change in smoking behavior.

Nondaily and Social Smoking: Nicotine Dependence

Few studies have examined the role of nicotine addiction among non-daily and social smokers. While there are data that indicate that these groups can abstain from tobacco use for days without exhibiting signs of with-drawal,¹² there are also studies that suggest that intermittent tobacco users may experience sudden urges to smoke and difficulty with achieving cessation as a result of physiologic addiction.¹³ For example, a study of very light (1-3 cigarettes per day) adolescent smokers found no evidence to suggest active signs or symptoms of nicotine withdrawal, as measured by changes in heart rate and neuropsychological testing, after 24 hours of abstinence.¹² In another study that examined the effect of brief, low-dose exposure to nicotine on the brain, the authors speculated, based on a theoretical model, that intermittent tobacco use may trigger upregulation of nicotinic acetylcholine receptors, resulting in a heightened physiologic response to an occasional cigarette.¹³ Questions over nicotine dependence among nondaily and social smokers are an area of research that is controversial and in need of more study.

Nondaily and Social Smoking: Health Risks

There is sparse empirical evidence on the health impact specifically of non-daily and social smoking. However, some studies have examined the health effects of light (low-volume) and intermittent smoking, which may have a health impact similar to that of nondaily and social smoking. Also, studies summarized in the 2004 US Surgeon General's report on the health consequences of smoking include information on the dose-response relationship between active smoking and disease¹⁴ that indicates that even low levels of exposure carry substantial risks, particularly for cardiovascular disease, lung and gastrointestinal cancers, lower respiratory tract infections, cataracts, compromised reproductive health, and osteoporosis.¹⁴

Implications for Cessation Strategies for Nondaily and Social Smokers

Nondaily and social smokers' psychological profiles suggest that simply communicating the health risks associated with their tobacco use is probably not an effective way to motivate them to quit. The strategies used to identify and counsel non-daily and social smokers may require an approach different from the standard "5A's" smoking cessation recommendations.¹⁴ The fact that nondaily and social smokers are unlikely to label themselves as smokers and feel immune to the health effects of their tobacco use calls into question the effectiveness of our current strategies that have been designed to identify and treat daily, heavier users. Part of the difficulty in treating nondaily and social smokers is both a lack of understanding of what cessation messages will reach them and a lack of appropriate screening measures that afford their proper identification. For example, when clinicians ask patients, "Are you a smoker?" they run the risk of missing nondaily and social smokers who do not consider themselves tobacco users.

Moreover, to our knowledge, there are currently no studies that have looked at outcomes for cessation interventions designed specifically for nondaily and social smokers. Available treatment options, such as nicotine replacement, bupropion hydrochloride, and varenicline (Chantix), focus on daily smokers who consume more than 10 cigarettes per day and suffer from nicotine addiction.¹⁵ Since non-daily and social smokers consume less tobacco than daily smokers and some light or intermittent users, they may not show signs of nicotine dependence; pharmacotherapies designed to counter withdrawal symptoms have yet to be studied in this population.

In conclusion, until recently, nondaily smoking, including social smoking, has not been recognized as an important stable pattern of tobacco use. Tobacco industry and, more recently, public health research indicates that nondaily and social smoking includes stable patterns of chronic low-level consumption and comprises about one-fourth of all smokers (and growing) of varying age, ethnicity, socioeconomic status, and educational background. Clinician education and training programs need to improve their screening and identification of nondaily and social smokers. Once identified, clinicians must recognize that nondaily smokers, especially social smokers, may be more motivated to quit by messages stressing the harm of secondhand smoke and by encouragement to break associations between social activities and tobacco use rather than by an emphasis on personal health risks. As society

continues to pass smoke-free policies that limit tobacco use, clinicians will encounter nondaily and social smoking more frequently, highlighting the need for more research on the health impact of nondaily and social smoking as well as the role for cessation strategies in minimizing such impact.

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References

1. Pierce JP, White MM, Messer K. Changing age-specific patterns of cigarette consumption in the United States, 1992-2002: association with smoke-free homes and state-level tobacco control activity. *Nicotine Tob Res.* 2009; 11(2):171-177. [PubMed: 19246423]
2. Centers for Disease Control and Prevention (CDC). Prevalence of current cigarette smoking among adults and changes in prevalence of current and some day smoking—United States, 1996-2001. *MMWR Morb Mortal Wkly Rep.* 2003; 52(14):303-307. [PubMed: 12731700]
3. Hassmiller KM, Warner KE, Mendez D, Levy DT, Romano E. Nondaily smokers: who are they? *Am J Public Health.* 2003; 93(8):1321-1327. [PubMed: 12893622]
4. Shiffman S. Light and intermittent smokers: background and perspective. *Nicotine Tob Res.* 2009; 11(2):122-125. [PubMed: 19246630]
5. Hennrikus DJ, Jeffery RW, Lando HA. Occasional smoking in a Minnesota working population. *Am J Public Health.* 1996; 86(9):1260-1266. [PubMed: 8806378]
6. Gilpin E, Cavin SW, Pierce JP. Adult smokers who do not smoke daily. *Addiction.* 1997; 92(4):473-480. [PubMed: 9177069]
7. White HR, Bray BC, Fleming CB, Catalano RF. Transitions into and out of light and intermittent smoking during emerging adulthood. *Nicotine Tob Res.* 2009; 11(2):211-219. [PubMed: 19246434]
8. Harrison EL, Desai RA, McKee SA. Nondaily smoking and alcohol use, hazardous drinking, and alcohol diagnoses among young adults: findings from the NESARC. *Alcohol Clin Exp Res.* 2008; 32(12):2081-2087. [PubMed: 18828805]
9. Fergusson DM, Horwood LJ. Transitions to cigarette smoking during adolescence. *Addict Behav.* 1995; 20(5):627-642. [PubMed: 8712060]
10. Moran S, Wechsler H, Rigotti NA. Social smoking among US college students. *Pediatrics.* 2004; 114(4):1028-1034. [PubMed: 15466101]
11. Schane RE, Glantz SA, Ling PM. Social smoking: implications for public health, clinical practice, and intervention research. *Am J Prev Med.* 2009; 37(2):124-131. [PubMed: 19589449]
12. Rubinstein ML, Benowitz NL, Auerback GM, Moscicki AB. Withdrawal in adolescent light smokers following 24-hour abstinence. *Nicotine Tob Res.* 2009; 11(2):185-189. [PubMed: 19246428]
13. DiFranza JR, Wellman RJ. A sensitization-homeostasis model of nicotine craving, withdrawal, and tolerance: integrating the clinical and basic science literature. *Nicotine Tob Res.* 2005; 7(1):9-26. [PubMed: 15804674]
14. The Health Consequences of Smoking: A Report of the Surgeon General. Rockville, MD: US Dept of Health and Human Services; 2004.
15. Food and Drug Administration. Recommendations for Use of Prostep (Nicotine Transdermal Patch). Rockville, MD: US Dept of Health and Human Services; 2001.