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## Who's Quitting Now? Dependence and Smoking Cessation among Canadians

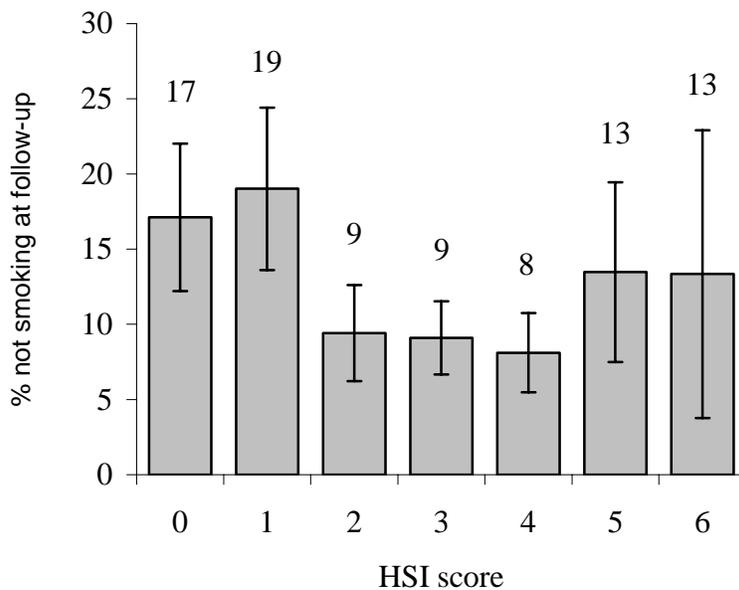
Nicotine addiction is considered a major impediment to quitting smoking.<sup>1</sup> Indeed, some investigators believe that the proportion of heavily addicted (or “hardcore”) smokers in the population will increase as more smokers give up smoking.<sup>2</sup> But *are* heavily addicted smokers the least likely to quit in the general population?

### Method

We analyzed data from the National Population Health Survey, a longitudinal survey representative of Canadians living in households. Our study focused on the 2,938 adult respondents (older than 18) who were daily smokers in 1996-97. The Heaviness of Smoking Index (HSI), which measures the number of cigarettes smoked per day and the time from waking to the first cigarette of the day, was used to assess how addicted each smoker was on a scale of 0 to 6 (where a higher score meant a higher level of dependence).<sup>3</sup> Logistic regression analyses were used to determine if HSI could predict those still smoking at two- and four-year follow-ups, controlling for age, sex, education, income, depression, and smoking restrictions at work and at home.

### Results

- Smokers with very low HSI scores (0 and 1) were most likely to report having stopped smoking at the two-year follow-up.
- Smokers with moderate HSI scores (2-4) were least likely to report having stopped smoking.



Note: Percent of adult (≥18 years) daily smokers in cycle 2 (1996-97) reporting not smoking at 2-year follow-up by HSI score at baseline, NPHS; n=2,938. Analytic weights were applied.



- Even after adjustment for age, sex, education, income, depression scores, and smoking restrictions at home and work, smokers with moderate levels of dependence were least likely to have quit. This pattern continued after 4 years of follow-up.

## Discussion

This study found that people at all levels of addiction have relatively modest success in quitting smoking—the challenge of becoming and remaining smoke-free is not restricted to heavy smokers. Even smokers at the lowest levels of addiction continued to smoke at a four-year follow-up. Despite popular misconceptions, at a population-level, heavily addicted smokers are better able than some less nicotine-dependent smokers to quit and remain non-smoking for a long time.

Recent work by Zhu suggests that encouraging quit attempts may be a particularly effective way to reduce the prevalence of smoking.<sup>4</sup> Smokers assessed as being more heavily nicotine-dependent may find it harder to maintain cessation, but they may also be more motivated to quit and remain smoke-free. Alternatively, given that moderately dependent smokers are the least likely to quit and that most daily smokers (63%) are categorized as moderately dependent, additional efforts to help this group quit may be warranted. Programs and policies aimed at highly dependent smokers won't have as great an impact as those aimed at this "moderate" group.

Continuing to create an environment supportive of quit attempts and successful smoking cessation will have a large influence in reducing smoking rates among Canadians.

This update highlights recent findings from: Chaiton MO, Cohen JE, McDonald PW, Bondy SJ. The Heaviness of Smoking Index as a predictor of smoking cessation in Canada. *Addictive Behaviors* (in press 2006). The abstract is available from: [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list\\_uids=16930848](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16930848) [cited 2006 November 20, 2006]. Readers are encouraged to refer to the journal article for a more detailed report.

## References

<sup>1</sup> U.S. Department of Health and Human Services. *The Health Consequences of Smoking: Nicotine Addiction, A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Health Promotion and Education, Office on Smoking and Health; 1988. [cited 2006 November 30] Available from: [http://www.cdc.gov/tobacco/sgr/sgr\\_1988/index.htm](http://www.cdc.gov/tobacco/sgr/sgr_1988/index.htm)

<sup>2</sup> Augustson E, Marcus S. Use of the current population survey to characterize subpopulations of continued smokers: national perspective on the "hardcore" smoker phenomenon. *Nicotine & Tobacco Research*. 2004;6:621-9.

<sup>3</sup> Heatherton TF, Kozlowski LT, Frecker RC, Rickert W, Robinson J. Measuring the heaviness of smoking: using self-reported time to the first cigarette of the day and number of cigarettes smoked per day. *British Journal of Addiction*. 1989;84:791-9.

<sup>4</sup> Zhu SH. Increasing cessation in the population: quit attempts vs. successful quit attempts. The 13th World Conference on Tobacco OR Health; 2006 Jul 14; Washington, DC.