

D. CONSUMERS USE TOBACCO PRODUCTS FOR DRUG EFFECTS**1. To Satisfy Addiction**

Nicotine, at levels present in commercially marketed tobacco products, is addictive to most users. Most people who use tobacco products do so to maintain their addiction.

A number of studies have been conducted to determine the prevalence of tobacco or nicotine dependence among smokers according to accepted definitions of dependence. Major recent studies conclude that at least 75% and as many as 90% of frequent smokers meet the criteria for addiction established by major public health organizations.¹⁴⁵

In a 1987 paper by Hughes et al.¹⁴⁶ the authors reported on their efforts to determine the prevalence of tobacco dependence using several diagnostic measures. The study participants included 1,006 middle-aged men in the Minneapolis-St. Paul metropolitan area.¹⁴⁷ The mean number of cigarettes smoked per day in this sample was 28, and the mean number of years smoked was 33. Forty-two percent (n=423) of the subjects had made at least three prior attempts at quitting; 61% (n=614) had made at least one unsuccessful attempt to stop

¹⁴⁵ Hughes JR, Gust SW, Pechacek TF. Prevalence of tobacco dependence and withdrawal. *Am J Psychiatry*. 1987;144(2):205-208. The precise number of tobacco users found to meet the criteria for nicotine dependence varies depending on the population studied and the study methods used. See Appendix 1.

¹⁴⁶ *Id.*

¹⁴⁷ Although utilizing a sample of men only may raise questions about the generalizability of these findings, as the authors point out, previous studies have found that age and sex have little or no effect on tobacco dependence and withdrawal. See:

Shiffman SM. The tobacco withdrawal syndrome. In: Krasnegor NA, ed. *Cigarette Smoking as a Dependence Process*. NIDA Research Monograph 23. DHEW Publication No. ADM 79-800. Washington, DC: U.S. Government Printing Office. 1979.

Hughes JR, Hatsukami D. Signs and symptoms of tobacco withdrawal. *Arch Gen Psychiatry* 1986;43:289-294.

smoking. The investigators concluded that 90% (n=905) of the smokers fulfilled the DSM-III criteria for tobacco dependence.

Hale et al. surveyed 201 residents of Burlington, VT. Using the DSM-III-R criteria for drug dependence, the researchers concluded that 80% of the current tobacco users were dependent (Male=91%, Female=71%). The most commonly met criteria were unsuccessful attempts to control use despite a persistent desire to quit (93%) and experiencing withdrawal symptoms when stopping or cutting down (74%).¹⁴⁸

In another study, Cottler compared the various DSM and ICD diagnostic criteria for nicotine dependence among persons who reported smoking or using tobacco daily for 1 month or more during their lives. Sixty-three percent of the sample included patients from substance abuse treatment programs; 37% of the sample was drawn from the general population. Among the 677 nicotine users who fulfilled the smoking or tobacco use requirement, 77% were deemed dependent under the DSM-III diagnostic criteria. Eighty percent met the criteria for dependence according to the DSM-III-R criteria. Under the old ICD-10 criteria, 92% were found to be dependent, compared with 86% under the new ICD-10 criteria.¹⁴⁹

Woody et al. analyzed the responses of 1,100 subjects who had identified themselves as having used tobacco six or more times during their lives. Subjects were all between 18 and

¹⁴⁸ Hale KL, Hughes JR, Oliveto AH, et al. Nicotine dependence in a population-based sample: problems of drug dependence, 1992. Proceedings of the 54th Annual Scientific Meeting of the College on Problems of Drug Dependence. NIDA Research Monograph 132. NIH Publication No. 93-3505. Washington, DC. U.S. Government Printing Office. 1993.

¹⁴⁹ Cottler LB. Comparing DSM-III-R and ICD-10 substance use disorders. *Addiction*. 1993;88:689-696.

44 years of age. The researchers found that 87% of those who used tobacco six or more times were dependent under the DSM-III-R criteria.¹⁵⁰ These studies show that a consistently high percentage of smokers are dependent on nicotine, despite the different measuring tools used to evaluate dependence.

As described on p. 90 et seq., studies have also shown that a significant proportion of smokeless tobacco users are addicted.

¹⁵⁰ Woody GE, Cottler LB, Cacciola J. Severity of dependence: data from the DSM-IV field trials. *Addiction*. 1993;88:1573-1579.

2. To Affect Mood and Control Weight

a. Mood

Surveys show that people use tobacco to achieve a relaxing effect, both in stressful situations and to enhance pleasure.¹⁵¹ For example, one survey found that 65% to 75% of adults believed that smoking reduced nervous irritation.¹⁵² Similarly, a recent survey of young people aged 10 to 22 found that of daily smokers, 72.8% said that smoking relaxed them. Of daily smokeless tobacco users, 53.8% reported that smokeless tobacco relaxed them.¹⁵³ Studies also have shown that smokers use cigarettes in an attempt to reduce negative feelings.¹⁵⁴

The 1988 Surgeon General Report reviewed the epidemiological literature on the effects of smoking on mood and concluded:

The conclusion from this literature is that in the general population, persons perceive that smoking has functions that are relevant for mood regulation. Persons report that they smoke more in situations involving negative mood, and they perceive that smoking helps them to feel better in such situations These data do not necessarily indicate that the various functions characterize different types of smokers; rather, they suggest that most functions are salient to an individual but are operative at different times or in

¹⁵¹ Surgeon General's Report. 1988. *Nicotine Addiction*. Pages 394-399.

¹⁵² See:
McKinnell AC. Smoking motivation factors. *Br J of Soc and Clin Psych*. 1970;49(1):8-22.

Surgeon General's Report. 1988. *Nicotine Addiction*. Page 399.

¹⁵³ See CDC, note 86, *supra*.

¹⁵⁴ See:
Horn D. Some factors in smoking and its cessation. In: Borgatta EF, Evans RR, eds. *Smoking Health and Behavior*. Chicago, IL: Aldine Publishing Co.; 1968:12-21.

Ikard FF, Green DE, Horn D. A scale to differentiate between types of smoking as related to the management of affect. *Int J Addict*. 1969;4(4):649-59.

different situations."¹⁵⁵

b. Weight Control

Numerous studies show that smokers believe that smoking keeps weight down and that weight control is a significant motivation to continue smoking.¹⁵⁶ In two surveys of young people, between a third and one-half of smokers offered weight control as a reason for smoking.¹⁵⁷ It has also been suggested that weight gain that occurs after smoking cessation causes many smokers to relapse to smoking.¹⁵⁸

Research indicates that smoking may play a role in regulating weight. The 1988 Surgeon General's Report summarized the available data:

*In summary, there is substantial evidence of an inverse relationship between cigarette smoking and body weight. Of 71 studies reported since 1970, 62 (87%) collectively indicate that smokers weigh less than nonsmokers and that people who quit smoking gain weight.*¹⁵⁹

Animal studies indicate that nicotine administration results in weight loss or decreased weight gains and that cessation of nicotine results in body weight gains greater than those of controls [animals who did not receive nicotine].

¹⁵⁵ Surgeon General's Report. 1988. *Nicotine Addiction*. Page 399.

¹⁵⁶ See:

Pomerleau CS, Ehrlich E, Tate JC, Marks JL, Flessland KA, Pomerleau OF. The female weight-control smoker: a profile. *J Substance Abuse*. 1993;5:391-400.

Feldman W, Hodgson C, Corber S. Relationship between higher prevalence of smoking and weight concern amongst adolescent girls. *Canadian Journal of Public Health*. 1985;76(3):205-206.

Surgeon General's Report. 1988. *Nicotine Addiction*. Pages 414-432.

¹⁵⁷ Surgeon General's Report. 1988. *Nicotine Addiction*. Page 438.

¹⁵⁸ *Id.* at pp. 414, 438-441.

¹⁵⁹ *Id.* at p. 431.

Recent research on nicotine polacrilex gum with humans corroborates the role of nicotine in body weight effects.¹⁶⁰

It is clear from the evidence that consumers use tobacco products for several well-defined and well-documented drug effects. Most significantly, consumers use tobacco products to maintain their addiction to nicotine. Consumers also use tobacco for a variety of ancillary drug effects. These include the effects of nicotine on mood and weight control.

¹⁶⁰ *Id.* at p. 432.