

Relationships Between Smoking and Other Unhealthy Habits: United States, 1985

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Introduction

Smoking has been identified as the number one cause of preventable death in the United States (Office on Smoking and Health, 1979). Extensive medical research has clearly documented the deleterious health effects of smoking. Additional evidence has indicated that combining smoking with other unhealthy behaviors can multiply the probability of serious illness; for instance, combining smoking and heavy drinking greatly increases the probability of oral cancer (Office on Smoking and Health, 1979). Although exploring possible effects for health outcomes of combining smoking with other bad habits is beyond the scope of this report, the following analysis can answer the question of whether smokers have other unhealthy habits that may, based on other available evidence (Belloc and Breslow, 1972; Wiley and Camacho, 1980), increase their probability of succumbing to serious illness, disability, and even death.

Earlier research efforts have examined smoking behavior in relation to specific behaviors such as alcohol and caffeine use (Istvan and Matarazzo, 1984), food consumption (Grunberg and Morse, 1984), body weight (Albanes, Jones, Micozzi, and Mattson, 1987), and exercise (Faulkner, Bailey, and Mirwald, 1987; Salonen et al., 1987). Other investigators have studied interrelationships among a wider variety of behaviors (Blair, Jacobs, and Powell, 1985; Langlie, 1979; Mechanic and Cleary, 1980; Norman, 1985).

This report presents national data on the interrelationships between smoking and eight other behaviors judged to be unhealthy based on currently available evidence. Cross-sectional and longitudinal studies performed in Alameda County, California, since the mid-1960's found that certain health behaviors were related to subsequent morbidity and mortality (Belloc and Breslow, 1972; Breslow and Enstrom, 1980; Wiley and Camacho, 1980). The behaviors studied in Alameda County were smoking, alcohol consumption, hours of sleep, exercise, eating

breakfast, snacking, and being overweight. This report follows the Alameda model, including behaviors that, although not measured identically, are conceptually similar to those shown in the Alameda study to be related to health status and survival.

A similar report using data from the 1983 National Health Interview Survey (NHIS) Alcohol and Health Practices Questionnaire has also been prepared (Hendershot and Bloom, unpublished). Information such as this may aid health educators in planning more effective smoking cessation programs. The case of alcohol and smoking is illustrative. Evidence suggests that a substantial proportion of smokers are heavier drinkers, according to criteria established by the National Institute on Alcohol Abuse and Alcoholism (Hendershot and Bloom, unpublished). It might be hypothesized that, at least for some portion of the smoking population, alcohol consumption may interfere with attempts to quit smoking by reducing the smoker's resolve to quit smoking. If this premise is correct, health promotion efforts aimed at smokers could benefit from simultaneously promoting reduction (or elimination) of alcohol consumption. Similarly, smokers have been found to be less likely to exercise (Hendershot and Bloom, unpublished). Health educators might consider the possibility that increasing smokers' participation in sports activities might stimulate physiological or psychological responses that would enhance the desire to quit smoking. Although reasons for associations between smoking and other health practices are not well understood, it is important to consider such associations when designing programs to change behavior. The following analysis illuminates a number of behaviors other than smoking that could receive attention in lifestyle-oriented smoking cessation programs.

Methods

This report is based on data from the 1985 National Health Interview Survey of Health Promotion and Disease

Prevention (NHIS-HPDP). The NHIS is a continuous, nationwide, household interview survey of the civilian noninstitutionalized population of the United States, conducted by the National Center for Health Statistics. The NHIS consists of two parts: (a) a basic health and demographic questionnaire that remains the same from year to year and (b) special topic questionnaires that change from year to year. In 1985 the special topic section was devoted entirely to health promotion topics. A detailed description of the survey and its methods is available (NCHS, 1986, 1988).

The sample for the NHIS-HPDP consisted of one randomly selected adult per family, aged 18 years or over. Self-response was required. HPDP questionnaires were completed for 33,630 persons, representing an estimated 90 percent of eligible respondents. This analysis is limited to the 32,517 persons aged 20 years and over.

Table 1 shows the percent of current smokers, former smokers, and never smokers who had each of the eight unhealthy behaviors: sleeping six hours or less, skipping breakfast, snacking daily, being less physically active than other per-

Table 1. Percent of persons 20 years of age and over who had selected unhealthy behaviors by smoking status, number of cigarettes smoked daily, health practices, and sex: United States, 1985

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes]

Health practices and sex	Smoking status				Number of cigarettes smoked daily ¹			
	All smoking statuses	Never smoker	Former smoker	Current smoker	Less than 15	15-24	25-34	35 or more
Sleeps 6 hours or less								
Both sexes.....	22.3	20.9	20.9	25.3	22.6	23.9	27.9	33.1
Male.....	22.9	21.5	21.3	26.0	23.8	23.8	28.0	32.7
Female.....	21.7	20.6	20.3	24.5	21.7	24.1	27.8	34.0
Never eats breakfast								
Both sexes.....	24.3	18.3	19.0	37.6	28.0	38.0	45.7	50.6
Male.....	25.3	20.8	19.2	35.6	25.0	34.3	43.4	47.9
Female.....	23.5	16.8	18.5	39.6	30.3	41.6	48.8	55.6
Snacks daily								
Both sexes.....	38.4	38.2	40.3	37.5	34.3	37.4	41.3	41.7
Male.....	39.8	40.7	39.6	39.2	35.5	39.4	42.9	41.0
Female.....	37.2	36.8	41.3	35.8	33.5	35.4	38.9	43.0
Less physically active ²								
Both sexes.....	18.9	17.3	18.1	21.8	21.0	21.3	23.1	24.0
Male.....	15.6	13.5	15.1	18.5	17.3	17.7	19.7	21.1
Female.....	21.8	19.6	22.7	25.2	23.8	24.9	27.9	29.5
Sedentary ³								
Both sexes.....	56.7	55.3	54.3	58.9	54.5	59.8	60.8	63.4
Male.....	50.5	43.2	50.7	55.5	50.4	55.6	57.4	60.6
Female.....	62.3	62.3	59.7	62.4	57.6	64.1	65.6	68.9
Overweight ⁴								
Both sexes.....	24.6	25.3	29.0	20.1	18.9	17.7	22.6	26.9
Male.....	26.7	26.1	32.2	22.0	18.8	19.1	24.9	29.9
Female.....	22.8	24.9	24.2	18.1	18.9	16.4	19.2	21.1
Heavier drinker ⁵								
Both sexes.....	7.8	3.6	9.0	12.9	10.0	10.9	16.9	22.0
Male.....	13.2	7.9	12.3	19.6	16.3	16.7	22.6	28.8
Female.....	3.0	1.1	3.9	5.9	5.3	5.1	8.9	8.7
Consumes 5 drinks or more ⁶								
Both sexes.....	12.1	7.2	11.9	20.1	15.4	20.6	24.0	26.7
Male.....	20.9	16.1	17.0	30.9	26.1	32.2	33.3	33.9
Female.....	4.4	2.1	4.4	9.1	7.6	9.1	11.2	13.1

¹Current smokers only.

²Based on perceived level of physical activity.

³Sedentary equals energy expenditure on leisure activity of 0.0-1.4 kilocalories/kilogram/day.

⁴20 percent or more above desirable weight, based on 1983 Metropolitan Life Insurance Company standards (1983, *Statist. Bull.* 64(1):2-9). National Health Interview Survey data are self-reported, and estimates may vary from those that would be obtained if physical measurements were taken.

⁵Measure developed by the National Institute on Alcohol Abuse and Alcoholism. Categories based on ounces of ethanol consumed during the past 2 weeks; heavier drinker is defined as having had an average 1.0 ounce of ethanol (2 drinks) or more per day.

⁶5 drinks or more on 10 days or more in the past year.

sons of the same age, being sedentary in terms of leisure time sports activities, being significantly overweight (20 percent or more), drinking heavily (an average of two drinks or more daily), and having five drinks or more on 10 days or more in the past year. Table 2 shows the same relationships as those shown in table 1, after adjusting for differences in the age distributions in the various smoking status groups. Because health behaviors vary substantially by age, it is important to rule out age as the explanation for observed differences among groups

with different smoking patterns. For this reason, discussion of results will be limited to the age-adjusted table (table 2). It should be noted, however, that the actual prevalence levels of behaviors are the unadjusted figures in table 1.

In this report, terms such as "similar" and "no difference" mean that there is no statistically significant difference between the measures being compared. Terms relating to difference (for example, "greater than" or "less than") indicate that differences are statistically significant. The *t*-test, with a

Table 2. Age-adjusted percent of persons 20 years of age and over who had selected unhealthy behaviors by smoking status, number of cigarettes smoked daily, health practices, and sex: United States, 1985

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes]

Health practices and sex	Smoking status				Number of cigarettes smoked daily ¹			
	All smoking statuses	Never smoker	Former smoker	Current smoker	Less than 15	15-24	25-34	35 or more
Age-adjusted percent								
Sleeps 6 hours or less								
Both sexes.....	22.3	21.0	21.2	24.6	22.6	23.3	27.1	31.6
Male.....	22.8	21.5	22.5	24.9	23.7	22.5	26.0	31.1
Female.....	21.6	20.4	19.9	24.4	21.8	23.9	28.6	34.1
Never eats breakfast								
Both sexes.....	24.4	18.1	21.2	35.4	26.7	35.9	42.1	47.6
Male.....	24.8	18.9	22.3	33.3	23.4	31.9	39.4	45.5
Female.....	24.0	17.7	19.8	37.6	29.2	39.8	45.9	51.7
Snacks daily								
Both sexes.....	38.4	38.4	40.8	36.9	33.6	36.8	40.4	42.4
Male.....	39.6	39.3	40.4	38.5	34.7	38.2	42.3	42.5
Female.....	37.4	37.6	41.5	35.3	32.7	35.2	37.7	42.5
Less physically active ²								
Both sexes.....	18.9	17.2	18.4	21.8	20.8	21.0	23.1	26.1
Male.....	15.7	13.2	14.6	18.8	18.0	17.7	19.0	23.6
Female.....	21.9	19.9	23.3	24.9	23.0	24.5	29.9	30.9
Sedentary ³								
Both sexes.....	56.7	55.6	52.3	60.6	57.0	61.7	64.1	64.7
Male.....	51.0	46.6	47.7	57.2	53.0	57.6	60.5	62.1
Female.....	61.8	61.1	58.5	64.3	60.0	65.7	68.8	70.5
Overweight ⁴								
Both sexes.....	24.6	26.4	27.0	19.6	19.3	17.4	22.2	22.4
Male.....	26.5	28.1	30.0	21.2	19.4	18.7	23.0	27.2
Female.....	22.7	24.9	23.0	17.9	19.3	16.0	20.5	19.7
Heavier drinker ⁵								
Both sexes.....	7.8	3.6	8.9	12.6	9.5	10.7	16.9	22.5
Male.....	13.1	7.9	12.7	18.9	15.3	15.5	21.8	28.9
Female.....	3.0	1.1	3.7	6.1	5.2	5.7	10.2	9.5
Consumes 5 drinks or more ⁶								
Both sexes.....	12.1	6.8	14.1	18.7	13.6	19.0	22.1	26.2
Male.....	20.5	13.8	21.2	28.7	23.0	29.3	30.6	33.0
Female.....	4.6	2.2	5.0	8.5	6.7	8.7	10.4	13.2

¹Current smokers only.

²Based on perceived level of physical activity.

³Sedentary equals energy expenditure on leisure activity of 0.0-1.4 kilocalories/kilogram/day.

⁴20 percent or more above desirable weight, based on 1983 Metropolitan Life Insurance Company standards (1983, *Statist. Bull.* 64(1):2-9). National Health Interview Survey data are self-reported, and estimates may vary from those that would be obtained if physical measurements were taken.

⁵Measure developed by the National Institute on Alcohol Abuse and Alcoholism. Categories based on ounces of ethanol consumed during the past 2 weeks; heavier drinker is defined as having had an average 1.0 ounce of ethanol (2 drinks) or more per day.

⁶5 drinks or more on 10 days or more in the past year.

critical value of 1.96 (0.05 level of significance), was used to test all comparisons. Lack of comment regarding the difference between any two statistics does not mean the difference was tested and found to be not significant.

Definition of terms

Smoking

Current smokers are defined as persons who had smoked at least 100 cigarettes in their lifetime and reported that they were smoking at the time of interview. Former smokers had smoked 100 cigarettes in their lifetime but were not currently smoking. Never smokers had never smoked 100 cigarettes. Unless otherwise indicated, the term “smokers” in this report refers to current smokers.

Sleep

Sleeping 6 hours or less a night has been defined as an unhealthy habit by other researchers (Belloc and Breslow, 1972; Wiley and Camacho, 1980). It was selected for this analysis on that basis.

Breakfast and snacking

Skipping breakfast and snacking regularly have been identified elsewhere as poor eating habits (Belloc and Breslow, 1972). Breakfast and snacks were respondent-defined in the NHIS-HPDP, and frequency was reported as almost every day, sometimes, rarely, or never. In the interest of brevity for discussion of these behaviors, “almost every day” is abbreviated to “every day,” and “rarely or never” is shortened to “never.” The terms “skipping breakfast” and “never eating breakfast” are used interchangeably.

Physical activity

Two measures of physical activity were included. The first, physical activity level relative to other persons one's own age, is a subjective indicator, combining an assessment of one's own activity level with an assessment of the activity level of one's contemporaries. This indicator offers comparability with an earlier survey (Hendershot and Bloom, unpublished). The second measure of physical activity is based on a more rigorous definition of exercise levels. Respondents were asked to report their participation in 23 leisure time physical activities (such as walking, jogging, gardening, aerobics, golf, and tennis) over the past 2 weeks. Their participation was converted into total kilocalories of energy expended over a 2-week period and averaged over the 14 days to obtain a daily energy expenditure. Persons with kilocalorie levels of under 1.5 per day were defined as sedentary for this analysis. A more complete description of this methodology has been published previously (Schoenborn, 1986).

Overweight

Overweight is defined as being 20 percent or more above desirable body weight according to the 1983 Metropolitan Life Insurance Company height and weight tables (Metropolitan Life Insurance Company, 1983). All height and weight data in the NHIS-HPDP were self-reported. Further information on this variable is available in the Technical notes.

Heavier drinker

The National Institute on Alcohol Abuse and Alcoholism has defined “heavier drinker” as a person consuming an average of 1.0 ounce or more of ethanol per day; that is, about 2 average-sized drinks of beer, wine, or liquor. The National Institute on Alcohol Abuse and Alcoholism definition was used for classifying persons in this analysis. Information was collected on the frequency of alcohol consumption over the 2 weeks preceding the interview and the average quantity consumed per occasion. These data were then converted into ounces of ethanol using a factor of 0.5 ounce per drink. The number of ounces were summed and then averaged over the 14-day period to obtain an average daily amount consumed.

Five drinks or more

Because health-related patterns in drinking behavior may be masked by using an average daily alcohol consumption (for instance, a person with an average daily alcohol consumption of 2 drinks per day could have consumed 28 drinks in a weekend or 2 drinks a day for 14 days over any given 2-week period), an indicator of repeated heavy drinking episodes was also employed. Respondents were asked on how many days in the past year they had had five drinks or more. For this report, the cutoff of 10 days or more was selected because it suggests that this drinking involved more than holiday-type drinking.

Findings

Sleep

Table 2 shows that, controlling for differences in age composition, about 22 percent of U.S. adults slept an average of 6 hours or less each night. Current smokers were more likely than both former and never smokers to sleep this little. In 1985, approximately one-fourth of current smokers slept 6 hours or less compared with about 21 percent of former smokers and persons who had never smoked. The association between current smoking and getting less sleep was found for men and women. Male current smokers were more likely to sleep 6 hours or less (24.9) than males who had never smoked (21.5). Similarly, female current smokers were more likely to sleep 6 hours or less (24.4) than women who had never smoked and women who had quit smoking—about 20 percent for the latter two groups.

Among current smokers, sleeping 6 hours or less was related to the number of cigarettes smoked. Almost one-third of smokers in the heaviest smoking category (those smoking 35 cigarettes or more daily) slept 6 hours or less compared with 27.1 percent of those smoking 25–34 cigarettes, 23.3 percent of those smoking 15–24 cigarettes, and 22.6 percent of those smoking fewer than 15 cigarettes per day. This dose-response relationship between number of cigarettes smoked and sleeping habits was similar for men and women. Women who smoked 35 cigarettes or more daily were the most likely to sleep 6 hours or less of any of the groups shown in table 2 (34.1 percent).

Skipping breakfast

Table 2 shows that, controlling for differences in age composition, skipping breakfast was more prevalent among smokers

than nonsmokers. On average, more than one-third of current smokers never ate breakfast compared with 21.2 percent of former smokers and 18.1 percent of never smokers. The relationship between cigarette smoking and skipping breakfast was found for both men and women. Male current smokers were more likely to skip breakfast (33.3) than male former smokers (22.3) and male never smokers (18.9). Female current smokers also were more likely to skip breakfast (37.6) than female former smokers (19.8) and female never smokers (17.7). Female smokers were more likely than male smokers to never eat breakfast 37.6 and 33.3, respectively).

Among smokers, skipping breakfast was associated with the amount smoked, the highest prevalence being among those smoking a greater number of cigarettes. Persons smoking 35 cigarettes or more daily were more likely to never eat breakfast (47.6) than persons smoking 25–34 cigarettes (42.1), 15–24 cigarettes (35.9), and less than 15 cigarettes daily (26.7). As was the case with unhealthy sleeping habits, female heavy smokers (35 cigarettes or more daily) were the most likely to have unhealthy breakfast habits of any group shown. About 52 percent of female smokers smoking 35 cigarettes or more daily never ate breakfast compared with 39.8 percent of females smoking 15–24 cigarettes and 29.2 percent of females smoking less than 15 cigarettes daily. A similar relationship between breakfast habits and number of cigarettes smoked was found for men. Male smokers who smoked 35 or more cigarettes daily were more likely to skip breakfast (45.5) than males smoking 25–34 cigarettes (39.4), males smoking 15–24 cigarettes (31.9), and males smoking less than 15 cigarettes daily (23.4).

Snacking

Table 2 shows that, controlling for differences in age composition, about 37 percent of current smokers snacked every day compared with 40.8 percent of former smokers and 38.4 percent of never smokers. On average, about 35 percent of female current smokers snacked daily compared with 41.5 percent of female former smokers and 37.6 percent of female never smokers. For males, snacking habits of smokers versus nonsmokers were not significantly different.

Although smokers on the whole tended to be less likely to snack every day than nonsmokers, heavier smokers were *more* likely to snack. About 42 percent of persons who smoked 35 cigarettes or more daily snacked every day compared with 36.8 percent of those who smoked 15–24 cigarettes daily, 33.6 percent of those who smoked less than 15 cigarettes daily, and 38 percent of those who had never smoked. Males smoking 35 cigarettes or more daily were more likely to snack every day (42.5 percent) than males smoking less than 15 cigarettes daily (34.7 percent). Females who smoked 35 cigarettes or more daily were more likely to snack every day (42.5 percent) than females smoking 15–24 cigarettes daily (35.2 percent) and females smoking less than 15 cigarettes daily (32.7 percent).

Less physically active

Table 2 shows that, controlling for differences in age composition, the perception of being less physically active was more prevalent among current smokers than former and never

smokers. About 22 percent of current smokers perceived themselves to be less physically active than their contemporaries compared with 18.4 percent of former smokers and 17.2 percent of never smokers. About 19 percent of male current smokers reported being less physically active than their contemporaries compared with about 15 percent of male former smokers and about 13 percent of male never smokers. About 25 percent of female current smokers reported being less physically active than their contemporaries compared with about 20 percent of female never smokers.

Compared with lighter smokers, heavier smokers tended to be less physically active than their contemporaries. About 26 percent of those smoking 35 or more cigarettes daily were less physically active than their contemporaries, compared with about 21 percent of smokers smoking less than 25 cigarettes daily. About 24 percent of males smoking 35 cigarettes or more daily were less physically active than their contemporaries, compared with 18.0 percent of males smoking less than 15 cigarettes daily. Similarly, among females smoking 35 cigarettes or more daily, about 31 percent reported being less physically active than their contemporaries, compared with 23 percent of females smoking less than 15 cigarettes daily. Women were more likely than men to report being less physically active than others the same age, across all smoking statuses and all smoking levels.

Sedentary activity level

Table 2 shows that, controlling for differences in age composition, current smokers were more likely to be sedentary in terms of leisure time sports activities (60.6 percent) compared with former smokers (52.3 percent) and never smokers (55.6 percent). Male current smokers were more likely to be sedentary (57.2 percent) than male former smokers (47.7 percent) and male never smokers (46.6 percent); the difference between former and never smokers was not statistically significant. As with males, female current smokers were more likely to be sedentary (64 percent) than were female nonsmokers. In contrast to the findings for males, female former smokers were somewhat less likely to be sedentary (58.5 percent) than females who had never smoked (61.1 percent).

For smokers, sedentary behavior also was associated with the number of cigarettes smoked. About 65 percent of those smoking 35 cigarettes or more daily were sedentary compared with 57 percent of those smoking less than 15 cigarettes daily. This association was found for males and females. Males smoking 35 cigarettes or more daily were more likely to be sedentary (62.1 percent) than males smoking 15–24 cigarettes daily (57.6 percent) and males smoking less than 15 cigarettes daily (53.0 percent). Females smoking 35 cigarettes or more daily were more likely to be sedentary (70.5 percent) than females smoking less than 15 cigarettes daily (60.0 percent). Females were more likely than males to be sedentary, across all smoking statuses and regardless of the number of cigarettes smoked.

Overweight

Table 2 shows that, controlling for differences in age composition, current smokers were less likely to be significantly

overweight (20 percent or more above desirable body weight) than former and never smokers. About 20 percent of current smokers were significantly overweight compared with 27 percent of former smokers and 26.4 percent of never smokers. Male current smokers were less likely to be overweight (21.2 percent) than male former smokers (30.0 percent) and male never smokers (28.1 percent). Similarly, female current smokers were less likely to be overweight (17.9 percent) than female former smokers (23.0 percent) and female never smokers (24.9 percent).

Among male smokers, overweight was related to the number of cigarettes smoked daily, but not in the expected direction. Although smokers on the whole were *less* likely to be overweight, the heaviest smokers were the *most* likely of the smokers to be overweight. Prevalence of overweight among males smoking 35 cigarettes or more daily (27.2 percent) was similar to that of males who had never smoked (28.1 percent). Overweight was substantially less prevalent among males smoking fewer than 25 cigarettes daily (about 19 percent). No clear pattern emerged for female smokers in the relationship between number of cigarettes smoked daily and prevalence of overweight.

Heavier drinker

Table 2 shows that, controlling for differences in age composition, current smokers were more likely than former and never smokers to be heavier drinkers. About 13 percent of current smokers were heavier drinkers compared with 8.9 percent of former smokers and 3.6 percent of never smokers. About 19 percent of male current smokers were heavier drinkers compared with 12.7 percent of male former smokers and 7.9 percent of male never smokers. Female current smokers were more likely to be heavier drinkers (6.1 percent) than female former smokers (3.7 percent) and female never smokers (1.1 percent). Males were more likely than females to be heavier drinkers regardless of smoking status.

Heavier smoking was associated with heavier drinking in the expected direction. Current smokers smoking 35 cigarettes or more daily were more likely to be heavier drinkers (22.5 percent) than those smoking 25–34 cigarettes daily (16.9 percent), 15–24 cigarettes daily (10.7 percent), and less than 15 cigarettes daily (9.5 percent). The dose-response relationship was clearest for males. Among males smoking 35 cigarettes or more daily, 28.9 percent were heavier drinkers compared with 21.8 percent of males smoking 25–34 cigarettes daily, 15.5 percent of males smoking 15–24 cigarettes daily, and 15.3 percent of those smoking less than 15 cigarettes daily. Among females, the relationship between number of cigarettes smoked and heavier drinking habits was dichotomous: About 10 per-

cent of females who smoked 25 cigarettes or more daily were heavier drinkers compared with 5–6 percent of females who smoked fewer than 25 cigarettes. Males were substantially more likely than females to be heavier drinkers, regardless of smoking status or amount smoked.

Five drinks or more

Table 2 shows that, controlling for differences in age composition, current smokers were more likely to have had five drinks or more on 10 days or more during the past year than either former or never smokers. About 19 percent of current smokers had exhibited this drinking behavior compared with 14.1 percent of former smokers and 6.8 percent of never smokers. Male smokers were more likely to have had five drinks or more this many times (28.7 percent) than male former smokers (21.2 percent) and male never smokers (13.8 percent). As with males, female current smokers were more likely to report this behavior (8.5 percent) than were female former smokers (5.0 percent) or never smokers (2.2 percent). Consuming five drinks or more at least 10 times in the past year was more common among males than females across all smoking statuses.

Having five drinks or more on 10 days or more during the past year was also related to the amount smoked. Current smokers smoking 35 cigarettes or more daily were more likely to report this behavior (26.2 percent) than those smoking 25–34 cigarettes (22.1 percent), 15–24 cigarettes (19.0 percent), and less than 15 cigarettes daily (13.6 percent). Males smoking 35 cigarettes or more daily were 10 percentage points more likely to have had five drinks or more at least 10 times over the past year (33.0 percent) than males smoking less than 15 cigarettes daily (23.0 percent). Females smoking 35 cigarettes or more daily were more likely to have had five drinks or more (13.2 percent) than females smoking 15–24 cigarettes daily (8.7 percent) and females smoking less than 15 cigarettes daily (6.7 percent). As was found with the “heavier drinker” classification discussed above, drinking five alcoholic beverages or more was considerably more common among males than among females, regardless of smoking status or amount smoked.

Summary

Overall, these results suggest that smoking is related to other unhealthy behaviors. Compared with nonsmokers, smokers are more likely to get little sleep, skip breakfast, not exercise actively, and drink heavily. In contrast, smokers were less likely to be overweight and less likely to snack daily than were nonsmokers, the more favorable weight status and snacking behavior tending to be most characteristic of lighter smokers.

References

- Albanes, D., D. Y. Jones, M. S. Micozzi, and M. E. Mattson. 1987. Associations between smoking and body weight in the U.S. population: Analysis of NHANES II. *Amer. J. Pub. Health* 77(4):439-44.
- Belloc, N. B., and L. Breslow. 1972. Relationship of physical health status and health practices. *Prev. Med.* 1(3):409-21.
- Blair, S. N., D. R. Jacobs, and K. E. Powell. 1985. Relationships between exercise or physical activity and other health behaviors. *Pub. Health Rep.* 100(2):172-80.
- Breslow, L., and J. E. Enstrom. 1980. Persistence of health habits and their relationship to mortality. *Prev. Med.* 9:469-83.
- Faulkner, R. A., D. A. Bailey, and R. L. Mirwald. 1987. The relationship of physical activity to smoking characteristics in Canadian men and women. *Can. J. Pub. Health* 78:155-60.
- Grunberg, N. E., and D. E. Morse. 1984. Cigarette smoking and food consumption in the United States. *J. Appl. Social Psychology* 14(3):310-17.
- Hendershot, G. E., and B. Bloom. 1987. Health habits of smokers. Data from the National Health Interview Survey. Unpublished document.
- Istvan, J., and J. D. Matarazzo. 1984. Tobacco, alcohol, and caffeine use: A review of their interrelationships. *Psychol. Bull.* 95(2):301-26.
- Langlie, J. K. 1979. Interrelationships among preventive health behaviors: A test of competing hypotheses. *Pub. Health Rep.* 94(3):216-25.
- Mechanic, D., and P. D. Cleary. 1980. Factors associated with maintenance of positive health behavior. *Prev. Med.* 9:805-14.
- Metropolitan Life Insurance Company. 1983. *Statist. Bull.* 64(1):2-9.
- National Center for Health Statistics, A. J. Moss. 1986. Current estimates, United States, 1985. *Vital and Health Statistics*. Series 10, No. 160. Pub. No. (PHS) 86-1588. Public Health Service. Washington: U.S. Government Printing Office.
- National Center for Health Statistics. C. A. Schoenborn. 1988. Health promotion and disease prevention, United States, 1985. *Vital and Health Statistics*. Series 10, No. 163. Pub. No. (PHS) 88-1591. Public Health Service. Washington: U.S. Government Printing Office.
- Norman, R. M. G. 1985. Studies of interrelationships amongst health behaviours. *Can. J. Pub. Health* 76:407-10.
- Office on Smoking and Health. 1979. *Smoking and Health, A Report of the Surgeon General*. DHEW Pub. No. (PHS) 79-55566. Public Health Service. Washington: U.S. Government Printing Office.
- Salonen, J. T., P. Happonen, R. Salonen, H. Korhonen, A. Nissinen, P. Puska, J. Tuomilehto, and E. Vartiainen. 1987. Interdependence of associations of physical activity, smoking, and alcohol and coffee consumption with serum high-density lipoprotein and non-high-density lipoprotein cholesterol—A population study in Eastern Finland. *Prev. Med.* 16:647-58.
- Schoenborn, C. A. 1986. Health habits of U.S. adults: The Alameda 7 revisited. *Pub. Health Rep.* 101(6):571-80.
- Wiley, J. A., and T. C. Camacho. 1980. Lifestyle and future health—Evidence from the Alameda County study. *Prev. Med.* 9:1-21.

Technical notes

Data presented in this report were obtained from household interviews of the National Health Interview Survey (NHIS). These interviews were conducted among a probability sample of the civilian noninstitutionalized population of the United States. During 1985, 91,531 persons living in 34,844 households were interviewed. The total noninterview rate for the NHIS was about 4.3 percent, including 2.6 percent due to respondent refusal and the remainder due to failure to find an eligible respondent at home after repeated calls. Detailed information on the design of the survey is available elsewhere (NCHS, 1986, 1988).

Questions concerning health promotion and disease prevention were asked of a subsample, one person aged 18 years and over per family. This report is based on data for the 32,517 subsample respondents who were 20 years of age and over. Self-reporting was generally required for these questions, but proxy responses were accepted when subsample persons were physically or mentally incapable of answering the questions for themselves. Persons with unknown health practice characteristics are excluded only from the analysis for that health practice. The response rate for the NHIS Health Promotion and Disease Prevention Questionnaire was about 90 percent. Item nonresponse for the data discussed in this report ranged from 0.5 percent for breakfast to 3.6 percent for desirable weight.

The measure of desirable weight used in this report was based on the 1983 Metropolitan Life Insurance Company (MLIC) standards of desirable weights for men and women, which were derived from the 1979 Body Build and Blood Pressure Study conducted by the Society of Actuaries (MLIC, 1983). Desirable weights are shown for small, medium, and large frames for men and women. For NHIS analyses, the midpoint of the desirable weight range for the medium frame category was used as the "desirable weight" for a particular height, with certain adjustments. The MLIC standards were developed based on weight in indoor clothing and height with 1-inch heels. Respondents to the NHIS were asked to report their height without shoes and their weight without clothes or shoes. To compensate for these differences, the MLIC standards were adjusted by subtracting 2 pounds from the midpoint of the medium frame category for both sexes and subtracting 1 inch from the height.

Because the estimates shown in this report are based on a sample of the population rather than on the entire population, they are subject to sampling error. Standard errors appropriate for estimated percents of persons are shown in table I. Population sizes for each of the smoking groups are shown in table II.

To understand better the limitations of the estimates pre-

Table I. Standard errors, expressed in percentage points, of estimated percents: 1985 National Health Interview Survey of Health Promotion and Disease Prevention

Base of percent in thousands	Estimated percent				
	2 or 98	5 or 95	10 or 90	20 or 80	50
50	5.1	8.0	11.0	14.7	18.4
70	4.3	6.8	9.3	12.4	15.5
100	3.6	5.7	7.8	10.4	13.0
300	2.1	3.3	4.5	6.0	7.5
500	1.6	2.5	3.5	4.6	5.8
700	1.4	2.1	2.9	3.9	4.9
1,000	1.2	1.8	2.5	3.3	4.1
5,000	0.5	0.8	1.1	1.5	1.8
10,000	0.4	0.6	0.8	1.0	1.3
20,000	0.3	0.4	0.6	0.7	0.9
30,000	0.2	0.3	0.5	0.6	0.8
50,000	0.2	0.3	0.3	0.5	0.6
100,000	0.1	0.2	0.2	0.3	0.4

sented in this report, data users are encouraged to familiarize themselves with the survey design, the methods used in estimation, and the general qualifications of the data, which are described in appendix I of Health Promotion and Disease Prevention, 1985 (NCHS, 1988). The NHIS Health Promotion and Disease Prevention questionnaire is shown in appendix III of that report.

NOTE: A list of references follows the text.

Suggested citation

National Center for Health Statistics, C. A. Schoenborn and V. Benson, 1988. Relationships between smoking and other unhealthy habits: United States, 1985. *Advance Data From Vital and Health Statistics*. No. 154. DHHS Pub. No. (PHS) 88-1250. Public Health Service, Hyattsville, Md.

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Table II. Number of persons 20 years of age and over by smoking status, number of cigarettes smoked daily, and sex: United States, 1985

Smoking status, number of cigarettes smoked daily, and sex	Number in thousands
Both sexes, all smoking statuses ¹	163,693
Never	71,590
Former	39,918
Current	48,792
Less than 15 cigarettes	14,982
15-24 cigarettes	20,267
25-34 cigarettes	6,597
35 cigarettes or more	6,524
Male, all smoking statuses ¹	77,187
Never	26,293
Former	24,086
Current	25,021
Less than 15 cigarettes	6,421
15-24 cigarettes	10,193
25-34 cigarettes	3,881
35 cigarettes or more	4,298
Female, all smoking statuses ¹	86,505
Never	45,297
Former	15,831
Current	23,771
Less than 15 cigarettes	8,561
15-24 cigarettes	10,074
25-34 cigarettes	2,716
35 cigarettes or more	2,227

¹Includes unknown smoking status.

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