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Implications for the Practicing Physician of the Psychosocial Dimensions of Smoking*

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SMOKING AS A SOCIAL ACT OF A BIOSOCIAL ORGANISM

Smoking is most often approached from one of two perspectives, either as an addiction or as a behavior. The two are often seen as mutually exclusive. This distinction probably arises from our intellectual tradition of viewing psyche and soma as opposed. However, this distinction does not correspond to the biosocial organism that is the human being. An important example of the interaction of psyche and soma is smoking: a behavior which is maintained by strong psychologic and biologic forces and which has severe health effects. Nevertheless the separation of psyche and soma is convenient for exposition; noting that others have addressed the biologic and neuropsychologic components of smoking,[1] it will be our task to address more closely the social and behavioral components of the smoking process.

A key point of this article is that smoking evolves. Smoking can be viewed as a career. One doesn't just wake up one morning smoking 30 cigarettes a day, nor wake up on another morning, once again a nonsmoker. Smoking may begin as an experiment. But one has to learn how to smoke and ultimately one has to learn how to quit. These are processes which evolve over time, determined by a multitude of factors. As a direct outgrowth of the complexity of the interactions among biologic and social events in the career of a smoker, physicians and other health professionals will find a multiplicity of roles they can play in addressing the smoking issue.

In adolescence, the major determinants of smoking are parents' smoking and pressure from one's peers.[2,3] Many of the social factors that were important in the initiation of smoking remain important for its maintenance in young adulthood.[4] The young adult who leaves home will continue to have many friends who smoke. Particularly important is the smoking status of one's spouse or others with whom the smoker lives. Some authors have described a rationalization factor in which younger smokers convince each other that quitting smoking is not so difficult and the health effects not so dangerous as long as one does not continue smoking for several years.[4,5] It may be that older adult smokers use a similar rationalization process, but with a different theme, convincing each other that quitting is just too difficult a process and not worth the effort. Indeed, the adult smoker often perceives a cigarette as having many important benefits, eg, a vehicle for relaxation, or conversely, a means of stimulation for greater mental alertness.

The smoker of 20 cigarettes a day for 20 years who puffs an average of seven times for each cigarette will have a history of over one million inhalations. Thus, the smoker inhales more often than he or she does almost anything else except breathe and blink. This leads smoking to become a strongly conditioned or "overlearned" habit. The strength of that conditioning is evidenced by the fact that reports on the use of nicotine polacrilex in cessation programs indicate people still relapse several months after quitting, while still using nicotine polacrilex to provide them with nicotine. While the smoking may have been associated with an *individual* cue in tens of thousands of conditioning trials, the strength of the smoking habit is also supported by the *variety* of different social, physical, or emotional cues linked to cigarettes. A number of psychologic models address this. For instance, Leventhal and Cleary[6] have suggested a multiple regulation model to explain the powerful conditioning of smoking. It assumes that the smoker regulates emotional states by the act of smoking. These states then become conditioned to smoking and the influx of nicotine and other substances it provides. When these states are then experienced without cigarettes, strong cravings may result.

Where smoking may have initially been associated only with getting together with friends before school in the morning, it soon generalizes to talking with friends on the phone, watching television, and taking a break after an exam. The established smoker reaches

the point where having a cigarette is conditioned to most, if not all, of the activities in his or her daily life. Twenty-year smokers, having inhaled over a million times, have provided themselves with many opportunities for this conditioning to take place. Many of their cues are aspects of important social relationships or important pleasures (socialization, relaxation, sex) or stress reduction. All of these link smoking to numerous, ubiquitous, and personally important parts of the smoker's life.

Mausner[7] makes the point that smoking is a complex social ritual that, as an important expressive behavior, often helps define the individual's self-concept. The rich social meanings of smoking are readily apparent in the rebellion and identity assertion of the adolescent or the Madison Avenue images of the smoker as a suave, cosmopolitan, sexy adult or as a modern, independent woman who's "come a long way."

Smoking is also convenient and a symbol of autonomy. For many, it is one of the few easily available and reliable sources of pleasure which they control. For example, some employees may resist smoking restrictions at work because smoking is one of the few things they control and through which they may control their own time during the work day. Taking a break for a cigarette is still more accepted than taking a break for a few moments' relaxation.

The importance of smoking as a social act of a biosocial organism is also seen in the marketing budgets of the major tobacco companies, almost $2.6 billion in 1983 in the United States, according to the Federal Trade Commission. The cigarette is our most heavily marketed consumer product. (Marketing includes advertising and other forms of promotion, such as the cigarette companies' sponsorship of entertainment events or distribution of free samples.) Though in recent years the major tobacco companies have begun to diversify, cigarettes continue to be the predominant part of their business because the percentage of gross sales which are profit is higher for cigarettes than for other consumer products.[8]

Why People Want to Quit Smoking

Although millions of Americans currently smoke cigarettes, cigarette smoking has decreased since the publication of the first Surgeon General's report on Smoking and Health in 1964. According to the 1983 report, 38 percent of men and 30 percent of women over 18 smoke, as compared to 50 percent of men and 33 percent of women over 18 in 1963.[9] In late 1987, survey reports have indicated the prevalence among the total adult population has fallen even further, to 26.5 percent.[10] In addition, the per capita consumption of cigarettes in the United States has decreased by 20 percent over the 20-year period, 1963-83.

As research has been unable to identify any single,

crucial motive for smoking, so a crucial motive for quitting has not been found. Individuals' attempts to quit are often highly idiosyncratic. Nevertheless, several reasons for quitting are often reported. Many individuals accept the general health risks of smoking and want to eliminate its adverse effects on their health and the quality of their lives. In contrast to those individuals who quit smoking for general health reasons, other individuals want to quit because of specific medical risks. Individuals who have genetic, metabolic, or occupational risk factors for specific diseases are often strongly advised not to smoke because of the increased avoidable risks that are involved. Examples include asbestos workers or those with diabetes. Other individuals decide to quit smoking after symptoms of diseases related to smoking have been identified.

The potential effects on family members encourage some individuals to quit smoking. Parents may decide that they want to provide positive role models for their children. Others consider the potential health effects of involuntary or passive smoking. Lower respiratory tract infections are also more frequent in infants continually surrounded by smoke. In addition, many pregnant women decide to quit smoking. Smoking by pregnant women has a variety of adverse consequences for the unborn child. Some of the risks include a higher mortality rate among babies of smoking mothers, a lighter birth weight which appears to be due to the retardation of fetal growth, and a 10 to 20 percent increased risk of spontaneous abortion. Other complications of pregnancy include placenta previa, abruptio placenta, bleeding during pregnancy, and premature rupture of the membranes.[11,12]

Some individuals want to quit smoking because their habit has become too expensive. In addition to the cost of the cigarettes, there are enormous economic costs. The health care costs attributable to cigarette smoking now exceed $17 billion per year. If lost work and productivity are included, the costs are in excess of $41 billion per year. In terms of individuals' incentives for cessation, it is estimated that the lifetime medical expenses and loss of earnings attributable to smoking for a two-pack-a-day smoker under 50 exceed $34,000.[13]

Other reasons for quitting include gaining control over one's life and combatting the addictive nature of the habit. Reevaluation of the reasons for beginning to smoke and a realization that smoking no longer fills the function it once did lead some smokers to decide to quit. For example, many individuals began to smoke because they were seeking social acceptance or felt pressure to conform, to deal with stress and to help them to relax, or because advertising portrayed smokers as sexy, accomplished, and independent. With time, these individuals may have continued to smoke because of the pharmacologic effects of nicotine and

other components of the cigarette and because of the conditioning of smoking to many daily activities and experiences. Recognizing that smoking doesn't fulfill the fantasies that led to its inception, many decide it's time to quit.

Today, many social circles hold it more acceptable to be a nonsmoker than a smoker. This may be enhanced by antismoking campaigns in the mass media, many communities, and worksites. Many individuals choose to quit smoking because of the social symbolic value of being a nonsmoker. Unfortunately, studies now indicate smoking is considerably more common among lower socioeconomic groups than among the middle class. This may reflect isolation of low SES smokers from nonsmoking campaigns developed by middle class professionals.

STAGES OF QUITTING

Recently, investigators have begun to develop a stage analysis of the quitting process. Prochaska and DiClemente[14] describe a four-stage process which includes precontemplation, contemplation, action, and maintenance. The smoker who is in the stage of precontemplation is unlikely to be responsive to direct intervention. Such individuals display little emotional reaction or concern for the negative aspects of smoking, nor are they likely to seek environments in which smoking is not the norm. What brings the smoker from precontemplation to contemplation is unclear, but heavy-handed messages to precontemplators may just increase their defenses, not their desire to quit. Once at the stage of contemplation, however, the smoker may become much more open to information about the smoking habit and its dangers. This openness to new information may lead to a reevaluation of smoking, a commitment to quit, and willingness to take action.

During the action stage, the smoker continues to make use of self-reevaluation, as well as stimulus control and reinforcement management techniques (described below). At this stage smokers also begin to rely more on helping relationships for support and understanding. In the maintenance stage, social support, stimulus and reinforcement management continue to be emphasized, though to a lesser extent. In fact, the support offered by others for a new behavior, which is no longer quite so new, may become less apparent.

One can add to Prochaska and DiClemente's four stages of quitting a fifth stage: relapse. If relapsers try again to quit, they tend to use a combination of the strategies seen in all of the earlier stages. What they may need most is reassurance and encouragement that they have learned something from their previous efforts. They need to be assured that not succeeding on the first attempts does not mean their cases are

hopeless. In a survey we conducted, those who had successfully quit smoking on their own for at least six months (mean = five years) reported an average of 2.6 failures before they finally succeeded.[15]

In evaluating the different stages, Prochaska and DiClemente make several important points. First of all, the movement from contemplation to action is not simply a cathartic process. Rather, it entails making a decision *and* acquiring the skills to implement it. These skills may range from the cognitive (learning what to expect following cessation) to the social (learning how to ask a coworker not to smoke in one's office). It is important to note that learning the skills and gaining confidence that "it can be done" may come *before* the final decision to make the attempt. Prochaska and DiClemente also found that self-liberation is emphasized more during the action stage than during contemplation. That is, exhortations to "get the monkey off your back" may help those actively trying to quit more than those who haven't yet decided they want to. Finally, procedures to control or minimize temptations continue to be emphasized during the maintenance stage, suggesting that maintenance is an active stage of continuing change rather than simply the absence of change or maintenance of the status quo.

From a practical perspective, it is important that the physician understand that quitting itself is a career. Smokers in the initial stage of precontemplation are not going to be open to heavy-handed tactics. If pushed too hard, they may simply find another physician. This does not mean that these smokers are unreachable, but that they must be approached without too much pressure. Calm, factual presentations of the risks in a low-key and matter-of-fact manner may be effective, especially in response to an expression of interest by the patient or at the time of feedback of results of tests, such as spirometry, concerning diseases related to smoking. Later, in the stage of contemplation, smokers will be ready for a more systematic presentation of the facts and will often ask directly for help.

In the action stage, individuals need plans not only for quitting, but for what they are going to do after they quit. Quitters also need support for the major change in living patterns they are trying to accomplish. In the maintenance stage, they will need continued support and periodic reminders to stay with their plan of action. While it "does get better," relapse after several months is common. In the face of old temptations, continued vigilance is appropriate for at least six months to one year after quitting. Finally, the smoker who has relapsed should receive continued support and encouragement. Recalling that quitting is an extended career of many stages should help the clinician see that relapse is not the end of that career. Rather, it is the precursor to renewed action. Dealing

with relapse will be discussed later in this article.

IMPLICATIONS FOR PHYSICIANS

Smoking is a chronic behavior which extends over time, developing and continuing in a career of different stages. Quitting smoking, too, extends over time, developing and continuing through different stages, including failed attempts. Physicians may take diverse roles regarding psychosocial and physical factors at each of these stages of smoking and quitting. In the "career" of a smoker, the physician may range from discouraging the adolescent who is contemplating initiating smoking, to provoking the interest of the adult "precontemplator," to reassuring the relapser, to continuing to support and encourage the long-term quitter. The contributions of the individual clinician will depend on the circumstances of the smoker, the stage of smoking career, current medical circumstances, and the clinician's own professional interest and practice goals.

Obviously, physicians can't "do it all," and there is no reason to expect that they would. The dimensions of smoking and quitting are broader than any one profession or provider can encompass. Conventional clinical activities such as brief explanation of risks and encouragement of corrective action, prescription of nicotine polacrilex, and follow-up to encourage success may be adequate for many smokers. For others, referral to self-help or group cessation programs may be worthwhile. With this range of conventional medical activity—explanation to referral—the physician can have a very constructive impact on smokers. These activities may be well summarized by viewing the physician not as the provider of a wide range of smoking cessation services, but as a catalyst of his or her patient's progression through the career of quitting.

The physician may also catalyze promotion of non-smoking among co-workers, within health-care institutions, within the community, and in workplace settings. For instance, are cigarettes sold in your hospital? Does your respiratory therapist smoke in front of patients with emphysema? What is the hospital's policy for smoking? Does the hospital have a policy for smoking employees? Does it provide clinics for employees who want to quit smoking? Does it have smoking areas? Does it allow patients who do not want to be in a smoking room to be transferred?

The physician can also play an important role with the media. Physicians or health professionals who become identified to the press as knowledgeable about smoking will find that they are called at least once a month to react to stories on smokers' versus nonsmokers' rights, the dangers of smoking and pregnancy, the dangers of passive smoking, etc. There are a multitude of ways in which the physician can be instrumental in catalyzing an atmosphere that encourages nonsmoking.

WAYS OF QUITTING: THE PROCESS BY CHANNEL MATRIX

There are several processes or methods available to the smoker who decides to quit. These include:
1) nicotine replacement
2) aversive conditioning
3) stimulus control and contingency management
4) social support

In turn, these processes or methods of quitting can be provided to the smoker through a number of different channels:
1) organized cessation clinics such as offered by local hospitals or voluntary health organizations
2) individual counseling
3) community or workplace promotions
4) mass media
5) minimal educational programs such as flyers or handouts
6) books and manuals

Each of these six channels may deliver one or several of the four methods of quitting. This gives both the smoker and the physician a wide matrix from which to choose. The physician can be involved in some 24 different combinations, *eg*, being interviewed on television, prescribing nicotine polacrilex to individual patients, or catalyzing public service organizations to offer a cessation program in the community.

The following sections will discuss several of the processes or methods of quitting, nicotine replacement, aversive conditioning, stimulus control, and contingency management. Social support will be discussed in a subsequent section on maintenance of cessation and relapse.

Nicotine Replacement

Of course, nicotine is a powerful drug which has been clearly implicated in the maintenance of smoking.[1] In the past decade, strides have been made in use of nicotine replacement to encourage quitting. In general, use of nicotine polacrilex along with other cessation interventions tends to enhance the immediate and long-term impact of those interventions. For instance, general practitioners' advice to quit delivered along with a booklet on how to do so achieved long-term abstinence of 4.1 percent while these, along with an offer of a prescription of nicotine polacrilex, achieved long-term abstinence of 8.8 percent.[16] A 14-session smoking cessation clinic focusing on psychologic procedures such as discussed below achieved 28 percent abstinence while the same program with nicotine polacrilex achieved 44 percent abstinence.[17]

Both the psychologic procedures and the nicotine polacrilex make a contribution. For instance, a psychological cessation program *without* gum achieved 30 percent abstinence, besting a weekly drop-in clinic plus nicotine polacrilex which achieved 23 percent

abstinence. But the combination of nicotine replacement and adequate psychological intervention was most effective, achieving 50 percent abstinence.[18]

It is important that nicotine polacrilex not be prescribed as a "magic pill." Rather, it must be used as an adjunct to concerted efforts to quit. Prescriptions should be offered with referral to community smoking cessation clinics, advice on obtaining self-help manuals, such as discussed below, or, at a minimum, brief counseling regarding proper use of nicotine polacrilex and follow-up. The prescription should not be given until a clear plan has been developed by the patient. Actual cessation, not cutting down or trying to quit, should occur before nicotine polacrilex is taken. Useful information on how to instruct patients in use of nicotine polacrilex is available from the manufacturer and its representatives.

Aversive Conditioning

Popularized by the work of Lichtenstein and colleagues[19] in the early 1970s, rapid smoking has been a reliable but not widely utilized cessation treatment. It usually entails puffing approximately every 10 s of one or two cigarettes or until on the verge of nausea. This is often repeated within a single session, with several sessions scheduled at the time of cessation and for several weeks or until the patient feels confident of remaining abstinent. Initial reports indicated extended abstinence rates of as high as 60 to 70 percent, but further follow-up two to six years after cessation indicated more modest abstinence rates in the neighborhood of 30 percent.[20] More recently, less extreme approaches to aversive conditioning have been developed, such as normal paced aversive smoking.[21] In one test of such a procedure, Hall and colleagues[22] found aversive smoking plus psychological procedures to encourage cessation to achieve 46 percent abstinence one year after quitting, in comparison to 30 percent abstinence for the psychological procedures without aversive smoking.[22] The original rapid smoking procedure has also appeared recently to be both safe and useful with pulmonary and cardiac patients, achieving abstinence at two-year follow-up in nine of 18 patients.[23]

As with nicotine polacrilex, rapid smoking or aversive smoking should be used as adjuncts to psychological cessation programs. Without encouragement to quit and support in doing so, as well as other psychological procedures such as discussed below, it is unlikely to be effective.[24]

Stimulus Control

Some of the most effective methods for quitting offered by the various providers are referred to by the general term "stimulus control." These include: 1) limiting the number of cues for smoking, and 2) "cue extinction" procedures to reduce the ability of cues to evoke desires for cigarettes. Stimulus control techniques are ways of controlling the stimuli that have been conditioned to serve as cues for smoking. The first step in stimulus control is often self-monitoring. The smoker may record every cigarette, along with the time, place, and reason for smoking. This can increase awareness of the internal and external cues that trigger the need for a cigarette. The next step is to limit exposure to these cues. For example, if coffee is a cue, the quitter may drink tea in its place during the initial period of abstinence. Stimulus-control techniques can also include avoiding circumstances or cues that are likely to tempt. It is important to pinpoint temptation, whether it be a specific time, place, emotion, or social setting. This enables avoiding the cue that triggers the desire to smoke.

Unless the smoker is to make many radical changes in lifestyle, he or she must eventually face those situations in which temptation is strong. The smoker will not unlearn the association between coffee and cigarettes without experiencing a cup of coffee without a cigarette. To help the smoker with this process in our own clinics, we use a technique we call "cue extinction." Seven to ten days *before* giving up cigarettes altogether, smokers select three cues, such as coffee, that they feel will be most difficult for them to endure without a cigarette. Until they quit, they continue smoking at their normal rate, but do *not* smoke in the *presence* of their three selected cues. (A guideline for this is to wait at least ten minutes until after the cue has passed before lighting a cigarette.) This procedure is based on classic or "Pavlovian" conditioning in which extinction entails presenting the conditioned stimulus (the cup of coffee) *without* the unconditioned stimulus (the cigarette). By quit day, participants report that formerly compelling cues have lost much of their ability to provoke urges to smoke.

Contingency Management

In contingency management, the quitter arranges that some reward or punishment be contingent upon critical behavior during a specified period, for instance, smoking no cigarettes between the fourth and seventh days after cessation. The quitter may establish this informally, or by written contract, shared perhaps with friends and family or with a professional. Generally, private contracts are less effective than those known to at least one other person. Contracts will generally be more effective if they reward desirable rather than punish undesirable behavior. Contracts should not be based on long-term outcomes. The contract should spell out a frequent, clear and contingent reward. The reward does not have to be large, but it should be frequent. The kids agreeing to clear off the table each night that mother or father does not

smoke will probably be more effective than a new set of silverware at the end of the month. The more frequent, clear, and specific the contract, the better.

"Self-Help"

One method of quitting we have left out to this point is self-help. An often-quoted statistic is that 95 percent of all smokers quit on their own. This is an undocumented figure, first used in an NIH pamphlet back in 1977,[25] and since then quoted frequently. Self-help is actually a misnomer—no one quits in a void. Behavior always results from the interaction between the person and the environment. Those who are viewed as having quit through self-help will often have been encouraged by several of the channels noted above, such as individual counseling from a physician or a TV show on quitting.

Self-help may be a damaging myth because it may cause people to focus too much on vague, supposedly internal sources of change, such as determination and insight. Smokers may wait for some imagined insight that they expect to make quitting automatic. Instead, they need to instigate changes in their routines or obtain help from friends or professionals in order to quit. The myth of self-help may also undermine confidence by leading smokers to attribute relapse to immutable forces such as a supposed "lack of will-power." Such attributions of failure often go hand-in-hand with the assumption that willpower is something "you either have or you don't." Putting the two together, relapse becomes evidence for a nonremediable lack of a necessary condition for success. Such an analysis of relapse is unlikely to prompt renewed efforts to quit.

If you were to question someone closely who said that they quit simply by determination, insight, or by "making up my mind," you would probably find that, in fact, they made several changes in their environment to help them quit. People who quit smoking need to *do* things. They need to change their routines. They need to encourage their friends not to offer them cigarettes or smoke in front of them in tempting situations. They need to ask for help or cooperation. Most important, they need *not* to be distracted from *doing things* by a rhetoric of "will power."

Description and Results of Stimulus Control, Contingency Management, and Social Support Programs

This section will review some of the smoking cessation programs that are typical of what is offered in the community. First, at Washington University we developed a 15-session program that included such techniques as target-date quitting (in which participants select their own quit date), cue extinction, and self-management of cues and incentives. The program included no aversive or pharmacologic components.

At the six-month follow-up, participants' reports of abstinence were validated by analyses of salivary thiocyanate. The percentage abstinent, that is, the percentage of participants who had not smoked in the seven days preceding the six-month follow-up, was about 30 percent.[26] This statistic takes into consideration those who may have quit, relapsed, and quit again, outcomes of obvious interest. In actuality, virtually all who are abstinent for at least seven days at a six- or 12-month follow-up have been abstinent for extended periods of at least several months, most often since their initial quit dates. This study demonstrated that a comprehensive behavioral and educational program could obtain validated, appreciable abstinence rates among heavy smokers (minima: 20 cigarettes per day for at least five years; means: 32 cigarettes per day for 22 years).

One of the more well-known programs in the smoking literature is the Multiple Risk Factor Intervention Trial (MRFIT). This program included a full range of stimulus control and contingency management techniques along with regular follow-up, repeat treatment, involvement of spouses, buddy systems, and other social support procedures. Forty-four percent of all 4,103 smoking men in the MRFIT had stopped by the end of the initial, four-month intensive cessation program. Of these, 929 or 23 percent remained nonsmokers throughout the four-year follow-up period. Continued treatment and follow-up helped still more to quit. The nonsmoking prevalence rate at the four year follow-up was 40 percent.[27]

In much of our work at Washington University, we now use the Freedom from Smoking program of the American Lung Association (ALA). This program was developed in the late 1970s through a joint committee with representatives from the American Thoracic Society and ALA staff and volunteers. The program includes both a seven-session, outpatient, group clinic as well as a self-help alternative consisting of two self-help manuals. The clinic and self-help manuals employ stimulus control, self-control, and contingency management techniques similar to those already described. For the seven-session clinic, the quit date is planned for the third meeting of the program. Following the quit date, participants initiate a "plan-of-action" they have developed for coping with any temptations to smoke that may arise. In addition to stimulus control techniques, a buddy system and relaxation exercises are used. The program was evaluated in six different cities. The prevalence of not smoking at 12-month follow-up was 30 percent. There was no pharmacologic check on the veracity of the self-reports. Most local Lung Associations or other agencies such as the American Cancer Society, or American Heart Association, include professionals eager to work with physicians in identifying sources of referrals to these

or similar smoking cessation programs.

A versatile component of the ALA program is the self-help version of Freedom from Smoking. This includes a cessation manual, "Freedom from Smoking in Twenty Days" which offers participants the choice of reducing their smoking gradually or quitting cold turkey. In addition to the cessation manual, there is a maintenance manual, "A Lifetime of Freedom from Smoking." This includes material for coping with tension, social cues for cigarettes, weight gain, and other obstacles that arise during maintenance. Distributed by mail, the combination of the two manuals attained a nonsmoking prevalence of 18 percent, assessed by telephone interview one year after receipt of the materials.[28]

What was most interesting about the follow-up data for the ALA self-help program was that at the one- and three-month follow-up, the quit rate was about 12 percent. It then rose to 15 percent at six months and 19 percent at nine months, and back to 18 percent at 12 months. The manuals appeared to have continued to recruit smokers to cessation during the course of the follow-up. In contrast, most cessation clinics reported in the literature are followed by a continuing diminution in the prevalence of nonsmoking at greater durations of follow-up. There may be two reasons that the Lung Association data indicate a reversal of this pattern. One is the natural history of individuals' attempts at self-help using these manuals. It may be the nature of self-help for people to try it, go back to it, try again, and gradually reach their goal. In contrast, smokers joining a highly structured comprehensive cessation clinic may perceive themselves as having failed if they do not quit according to the schedule of the program. Such participants may even feel that there is no point in trying again, having failed with what they view as a state-of-the-art program. With self-help manuals, in contrast, there is more of a suggestion of continuing effort. A second reason for the continued increase in the prevalence rate of nonsmokers using the manuals may be that the Freedom from Smoking manuals are very attractive and well-produced. People are not likely to throw them out after having used them for a week. They may put them on the shelf for a time, but eventually pull them down and try again at what may be a better time for quitting.

MAINTENANCE

As was already noted, most smokers do not quit successfully the first time they attempt to do so. Therefore, it is important that we understand something about how relapse occurs. Marlatt and Gordon[29,30] present a model which is very useful in this regard. Relapses frequently occur when a person is under emotional stress. The quitter may also be given social prompts or encouragement or direct facilitation by peers to resume smoking. After a slip, Marlatt suggests that an "abstinence violation effect," may compound the problem. This may occur in the following sequence: some negative affect leads to lowered self-confidence which in turn leads to a smoking slip. Having a cigarette leads to a further reduction in self-confidence which, in turn, leads to the conclusion that the case is "hopeless." This results in abandonment of the quit attempt. Critical to the abstinence violation effect is weighting too heavily the implications of a single slip, justifying the conclusion that one's case is hopeless.

An alternative to the abstinence violation effect may be the case where the ex-smoker, rather than being low in self confidence, becomes over-confident. This is the individual who may have had several months of not smoking, who is at a party or some special occasion and decides that he or she can have "just one." This slip leads to several cigarettes that day or the next. Then, the self confidence plummets and the abstinence violation effect unfolds as above.

Overzealous health professionals may contribute to the abstinence violation effect by implicitly encouraging the belief that one slip is a sign of a hopeless case. Too strong an exhortation to quit may lead the patient to feel like a failure after a slip and, in turn, decrease confidence in future ability to quit. Instead, the physician must encourage determination but also the belief that mistakes can be overcome. It may be helpful here to reassure the smoker that successful, long-term quitters report an average of two to three failed attempts prior to quitting.

One of the best predictors of maintained abstinence is self-efficacy.[31] Self-efficacy entails the beliefs that one has the skills to be successful, that circumstances will be favorable to the use of those skills, and thus, that one will be able to succeed in stopping smoking. The chief determinants of self-efficacy are not mere verbal reassurances, but pertinent experiences and opportunities to learn and practice skills. Counseling should identify individuals' skills and strengths, and encourage patients to think about their application to smoking cessation.

There are many reasons why people fail to cease smoking or relapse after an attempt to quit on their own or in a clinic. We commonly hear that the reason for failures is weak motivation. This is only an apparent explanation. It renames the problem as "low motivation" but leaves unexplained the reason "motivation" may be low. A more robust explanation of failure is needed. Among possible bases of better explanations of relapse are stress, failure to use skills for coping with stress, and gaps in social support for nonsmoking.

Relapse crises are often precipitated by stress and negative affect. In response to surveys, would-be

quitters attribute about 80 percent of smoking relapse to interpersonal conflict.[29,32] In a prospective study of quitters, Ashenberg, Morgan, and Fisher[33] found level of stress to predict subsequent relapses. Others[34] have also hypothesized that current life stress affects success in smoking cessation programs. Life stress coupled with a firmly established pattern of using cigarettes to alleviate anxiety may produce strong temptations to relapse.

It is tempting to think that if stress causes relapse, then teaching smokers skills for coping with stress will help them achieve abstinence. This may not be the case. Ashenberg and colleagues[33] found that relapsers did *not differ* from smokers in their stress-coping skills. Rather, they reported failing to use those skills they did have in the specific situations in which they relapsed. Similarly, Shiffman[35] found that subjects *using* strategies for coping with temptations, almost regardless of the strategies chosen, were less likely to have relapse than subjects who did not use any strategies. Thus, the occurrence of stress and failure to use stress-coping skills already learned appear to be important antecedents of relapses.

Work on stress has some specific implications for counseling smokers. One should emphasize the need to minimize exposure to stressful events shortly after quitting. Smokers may expect to continue with life as usual after quitting. This is naive. The importance and difficulty of quitting justify, for instance, altering patterns to avoid stressors for a time after cessation. Some stressful events are unavoidable. If quitters understand the relationship between stress and relapse, they may better prepare themselves for such stressors. Since relapse is predicted by the failure to use coping skills an individual already possesses, treatment should encourage quitters to *use* their skills rather than teach new coping skills to handle stress. In this way, a quitter under stress will not have to *add* to the stress by attempting to develop a new way of coping. Also related to stress and relapse is that friends, co-workers, and relatives need to understand the recent quitter's special vulnerability to stress. The quitter needs empathy and understanding, instead of nagging. Even well intentioned inquiries about progress may be received by the quitter as nagging. Learning "not to nag" is more commonly reported by spouses of successful quitters.[36] It appears that the smoker wants to know that someone is available and willing to listen, but wants to be in control of where and when.

Social Support

The best predictors of relapse may be the quality of support or nature of examples provided by spouse, friends, and co-workers. Those quitters who have few friends or relatives who smoke are more likely to have continued success.[37-39] Unmarried smokers and smokers with limited circles of friends are less likely to quit. Our own research in the worksite indicates that quitters who work with nonsmokers are more likely to be successful in maintaining their abstinence than quitters who must work with smokers.[40] In group programs which emphasize social support by buddies or interaction and cohesion among fellow participants, abstinence rates were higher than in control groups during the program, but fell to the control group level by the six- or 12-month followups.[41] This indicates that continued social support is essential to maintenance. Indeed, recent research indicates that numbers of friends and family members who smoke may be a better predictor of long-term abstinence (12-month) than short-term (three-month).[42]

Finally, social support needs also to come from smokers. Those who relapse often report having been *offered* their relapse cigarette by a smoker. Would-be quitters' reports of smokers offering cigarettes or smoking in front of them predicted subsequent relapse.[43] Refusing cigarettes to the person who has recently quit smoking, or, at least, hesitating to comply with a request, may be a tremendous help to the quitter.

SUMMARY AND CONCLUSIONS

The multifaceted nature of smoking includes its physiologic, social, and psychologic dimensions and its career features. It develops over time, through phases such as experimentation or conditioning. It also is given up over time, often after several unsuccessful attempts. Several repetitions of a sequence of considering cessation, attempting to quit, and relapsing are likely to precede permanent cessation. Those who are not ready to commit themselves to quitting may be reached by low-key information more than by too forceful exhortation. Those who are ready to quit may select from among a range of approaches, including group clinics, "self-help" manuals, and physician counseling. Maintenance requires as much attention as does cessation. Cooperation from those around the quitter, reminders to *use* skills for coping with stressors or temptations, and continued encouragement from the physician may all encourage long-term abstinence.

Owing to the multifaceted nature of smoking and quitting and the multiple approaches to cessation and its maintenance, the physician may best be viewed as a catalyst for nonsmoking. If appropriate to his or her practice, this may include extended patient counseling, but those unable to provide this may still make great contributions through brief information on why it is important to quit, encouragement to do so, timely referral to other staff or to materials and programs available in the community, and continued expression of interest in the patient's efforts and/or success. All

these may catalyze quitting without demanding excessive time or skills beyond those commonly employed by the physician. In catalyzing nonsmoking, the physician can also be an effective proponent of community or voluntary agency programs as well as institutional and governmental policies to limit smoking in health care facilities and public places. The American College of Chest Physicians' policy encouraging nonsmoking among its Fellows and in their offices is an excellent example of this catalyst role.

REFERENCES

1 Henningfield J. Nicotine dependence. Chest 1988; 93:37S-55S
2 Pomerleau OF. Behavioral factors in the establishment, maintenance, and cessation of smoking. In: US Dept of Health, Education, and Welfare, Smoking and Health: A report of the Surgeon General (DHEW Publication No. (PHS) 79-50066). Washington, DC: U.S. Government Printing Office, 1979
3 Evans RI. Smoking in children and adolescents: Psychosocial determinants and prevention strategies. Ibid
4 Kozlowski LT. Psychosocial influences on cigarette smoking. Ibid
5 Green DE. Psychological factors in smoking. In; US Dept of Health, Education, and Welfare, Research on Smoking Behavior (DHEW Publication No. (ADM) 78-581). Washington, DC: U.S. Government Printing Office, 1977
6 Leventhal H, Cleary PD. The smoking problem: A review of the research and theory in behavioral risk modification. Psychological Bulletin, 1980; 88:370-405
7 Mausner JS. Cigarette smoking among patients with respiratory disease. Am Rev Respir Dis 1970; 102:704-13
8 Fisher EB Jr, Rost K. Smoking cessation: A practical guide for the physician. Clin Chest Med 1986; 7:551-65
9 US Department of Health and Human Services. The health consequences of smoking: Cardiovascular disease. A Report of the Surgeon General. Washington, DC: U.S. Government Printing Office, 1983.
10 Centers for Disease Control. Cigarette smoking in the United States, 1986. Morbidity and Mortality Weekly 1987; 36:581-85
11 Kline J, Stein ZA, Susser M, Warburton D. Smoking: A risk factor for spontaneous abortion. N Engl J Med 1977; 297:793-96
12 National Institute of Child Health and Human Development. Pregnancy and infant health. In: US Dept of Health and Human Services, Smoking and Health: A report of the Surgeon General (DHEW Publication No. (PHS) 79-50066). Washington, DC: U.S. Government Printing Office, 1979
13 Oster G, Colditz GA, Kelly NL. The economic costs of smoking and benefits of quitting. Lexington, Massachusets: D. C. Health and Company, 1984
14 Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: Toward an integrative model of change. J Consulting Clin Psychol 1983; 51:390-95
15 Fisher EB, Jr, Fondren DP. Undirected smoking cessation: A survey of successful quitters. Unpublished manuscript St Louis: Washington University, 1988
16 Russell MAH, Merriman R, Stapleton J, Taylor W. Effect of nicotine chewing gum as an adjunct to general practitioner's advice against smoking. Br Med J 1983; 287:1782-85
17 Hall SM, Tunstall C, Rugg D, Jones RT, Benowitz N. Nicotine gum and behavioral treatment in smoking cessation. J Consult Clin Psychol 1985; 53:256-58
18 Killen JD, Maccoby N, Taylor CB. Nicotine gum and self-regulation training in smoking relapse prevention. Behavior Therapy 1984; 15:234-48
19 Lichtenstein E, Harris DE, Birchler GR, Wahl JM, Schmahl

DP. Comparison of rapid smoking, warm, smoky air, and attention placebo in the modification of smoking behavior. J Consult Clin Psychol 1973; 40:92-8
20 Lichtenstein E, Rodrigues MRP. Long-term effects of rapid smoking treatment for dependent cigarette smokers. Addictive Behav 1977; 2:109-12
21 Lando HA. Successful treatment of smokers with a broad-spectrum behavioral approach. J Consult Clin Psychol 1977; 45:361-66
22 Hall SM, Rugg D, Tunstall C, Jones RT. Preventing relapse to cigarette smoking by behavioral skill training. J Consult Clin Psychol 1984; 52:372-82
23 Hall RG, Sachs DPL, Hall SM, Benowitz NL. Two-year efficacy and safety of rapid smoking therapy in patients with cardiac and pulmonary disease. J Consult Clin Psychol 1984; 52:574-81
24 Danaher BG. Research on rapid smoking: Interim summary and recommendations. Addictive Behav 1977; 2:151-66
25 Department of Health, Education, and Welfare. The smoking digest: Progress report on a nation kicking the habit. (NIH Pub. No. 79-1549). Bethesda, MD: National Cancer Institute, National Institutes of Health, 1977 (reprinted, 1979)
26 Lowe MR, Green L, Kurtz S, Ashenberg Z, Fisher EB, Jr. Self-initiated, cue extinction, and covert sensitization procedures in smoking cessation. J Behavioral Med 1980; 3:357-72
27 Hughes GH, Hymowitz N, Ockene JK, Simon N, Vogt TM. The multiple risk factor intervention trial (MRFIT). V. Intervention on smoking. Prev Med 1981; 10:476-500
28 Davis AL, Faust R, Ordentlich M. Self-help smoking cessation and maintenance programs: A comparative study with 12-month follow-up by the American Lung Association. Am J Pub Health 1984; 74:1212-17
29 Marlatt GA, Gordon JR. Determinants of relapse: Implications for the maintenance of behavior change. In: Davidson PO, Davidson SM, eds. Behavioral medicine: Changing health lifestyles. New York: Brunner/Mazel, 1980.
30 Marlatt GA, Gordon JR, eds. Determinants of relapse. New York: Guilford, 1985
31 Condiotte MM, Lichtenstein E. Self-efficacy and relapse in smoking cessation programs. J Consult Clin Psychol 1981; 49:648-58
32 Lichtenstein E, Antonuccio DO, Rainwater G. Unkicking the habit: The resumption of cigarette smoking. Presented Western Psychological Association Meeting Seattle, April, 1977
33 Ashenberg ZS, Morgan GD, Fisher EB, Jr. Psychological stress and smoking recidivism. Citation Award Paper, Society of Behavioral Medicine Annual Convention, Philadelphia, May 1984
34 Gunn RC. Smoking clinic failure and recent life stress. Addictive Behav 1983; 8:83-7
35 Shiffman S. Relapse following smoking cessation: A situational analysis. J Consult Clin Psychol 1982; 50:71-86
36 Fisher EB, Jr, Mozenter R, Morgan GD. Maintenance of smoking cessation and spouse social support. Presented at Control Data Corporation Conference on Family and Health, Minneapolis, 1982
37 Eisinger RA. Psychosocial predictors of smoking recidivism. J Health and Soc Behav 1971; 12:355-62
38 Graham S, Gibson RW. Cessation of patterned behavior: Withdrawal from smoking. Soc Sci and Med 1971; 5:319-37
39 West DW, Graham S, Swanson M, Wilkinson G. Five year follow-up of a smoking withdrawal clinic population. Am J Pub Health 1977; 67:536-44
40 Bishop DB, Fisher EB, Jr. Employer assisted smoking elimination: The second year (9/83-10/84). Annual report to the American Lung Association of Eastern Missouri, St. Louis, 1984
41 Etringer BD, Gregory VR, Lando HA. Influence of group cohesion on the behavioral treatment of smoking. J Consult Clin

Psychol 1984; 52:1080-86

42 Mermelstein R, Cohen S, Lichtenstein E, Baer JS, Kamarck T. Social support and smoking cessation and maintenance. J Counseling Clin Psychol 1986; 54:447-53

43 Morgan GD, Ashenberg ZS, Fisher EB, Jr. Abstinence from smoking and the social environment. J Consult Clin Psychol 1988 (in press)

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