

# Smoking and Diabetes

AMERICAN DIABETES ASSOCIATION

**BACKGROUND** — As documented in the American Diabetes Association's technical review "Smoking and Diabetes" (1), a large body of evidence from epidemiological, case-control, and cohort studies provides convincing documentation of the causal link between cigarette smoking and health risks. Cigarette smoking is the leading avoidable cause of mortality in the U.S., accounting for ~434,000 deaths each year. Cigarette smoking accounts for one out of every five deaths in the U.S. and is the most important modifiable cause of premature death. Cigarettes provide the delivery system for nicotine, an addictive substance related to various pharmacological, biochemical, and psychological processes that interact to support a compulsive pattern of drug use.

Much of the prior work documenting the impact of smoking on health did not discuss separately results on subsets of individuals with diabetes, suggesting the identified risks are at least equivalent to those found in the general population. Other studies of individuals with diabetes consistently found a heightened risk of morbidity and premature death associated with the development of macrovascular complications among smokers. The cardiovascular burden of diabetes, especially in combination with smoking, has not been effectively communicated to both people with diabetes and health care providers. Smoking is also related to the premature development of microvascular complications of diabetes and may have a role in the development of type 2 diabetes (1).

General smoking prevalence has decreased over the past 10 years because of extensive public health efforts, which include making the population aware of the health hazards of active and passive smoking, implementation of smoking

cessation interventions, and policy changes. However, 26–28% of American adults continue to smoke, with variations reported by ethnic and sociodemographic groups. These figures mirror the prevalence of tobacco use among individuals with diabetes. It appears adolescents may initiate smoking after being diagnosed with diabetes and that the prevalence of tobacco use decreases with disease duration (1–3).

## Effectiveness of smoking cessation counseling

Smoking cessation is one of the few interventions that can safely and cost-effectively be recommended for all patients and has been identified as a gold standard against which other preventive behaviors should be evaluated. A number of large randomized clinical trials have demonstrated the efficacy and cost-effectiveness of certain forms of provider and behavioral counseling in changing smoking behavior of primary care and hospitalized patients. This work, combined with the more limited studies specific to individuals with diabetes, suggests that smoking cessation counseling is effective in reducing tobacco use in this high-risk group (3,4).

Several treatment characteristics have been identified as critical to achieve cessation. These characteristics include counseling by multiple health care providers, use of individual or group counseling strategies, use of interventions including problem-solving or skills training components with social support, and use of pharmacotherapy such as nicotine replacement therapy (NRT) (1). Smoking cessation pharmacotherapy appears to limit withdrawal symptoms and increase abstinence and is an efficacious strategy for provoking abstinence when used as an adjunct to

cessation counseling. Therefore, the extensive benefits of quitting versus the heightened risks of continuing to smoke should guide the decision regarding use of nicotine replacement therapy and other pharmacological aides for cessation among individuals with diabetes. The benefits greatly outweigh any risks of NRT except in special circumstances such as pregnancy, where providers need to make individual decisions.

Although many large-scale well-controlled outcome studies have included patients with diabetes, seldom have results been reported separately for diabetes versus other participants. Special issues that affect successful abstinence have been identified in these studies and include weight management and depression. Postcessation weight gain may be an impediment to smoking cessation, especially among women or other people concerned with weight management (4). The presence of comorbid psychiatric conditions such as depression is associated with prevalence of smoking and heightened relapse after quitting. Though not reported separately, these issues are expected to be at least equally relevant for diabetic patients as for general patients (1).

Smoking cessation delivery systems Despite demonstrated efficacy and cost-effectiveness, smoking cessation has not received the priority it deserves from health care providers. Only about half of individuals with diabetes are advised to quit smoking by their health care providers (1). One important means of assuring systematic advice regarding the prevention and cessation of tobacco use is through training of health care providers and the development of smoking cessation delivery systems. The development of such systems, designed to prevent and treat smoking, is cost-effective. These systems should reflect institutional changes resulting in the systematic identification of and intervention with all tobacco users at every visit, so that evaluating smoking status becomes as routine as checking vital signs (1,4).

The recommendations in this paper are based on the evidence reviewed in the following publication: Smoking and diabetes (Technical Review). *Diabetes Care* 22:1887–1898, 1999.

The initial draft of this paper was prepared by Debra Haire-Joshu, PhD, Russell E. Glasgow, PhD, and Tiffany L. Tibbs, MA. The paper was peer-reviewed, modified, and approved by the Professional Practice Committee and the Executive Committee, October 1999.

Abbreviations: NRT, nicotine replacement therapy.

Table 1—Recommendations regarding diabetes and smoking

## Assessment of smoking status and history

- Systematic documentation of a history of tobacco use must be obtained from all adolescent and adult individuals with diabetes.

## Counseling on smoking prevention and cessation

- All health care providers should advise individuals with diabetes not to initiate smoking. This advice should be consistently repeated to prevent smoking and other tobacco use among children and adolescents with diabetes under age 21 years.
- Among smokers, cessation counseling must be completed as a routine component of diabetes care. Every smoker should be urged to quit in a clear, strong, and personalized manner that describes the added risks of smoking and diabetes.
- Every diabetic smoker should be asked if he or she is willing to quit at this time. If no, initiate brief and motivational discussion regarding the need to stop using tobacco, the risks of continued use, and encouragement to quit as well as support when ready. If yes, assess preference for and initiate either minimal, brief, or intensive cessation counseling and offer pharmacological supplements as appropriate.

## Effective systems for delivery of smoking cessation

- Training of all diabetes health care providers in the Agency for Health Care Policy and Research Guidelines regarding smoking should be implemented.
- Follow-up procedures designed to assess and promote quitting status must be arranged for all diabetic smokers.

**RECOMMENDATIONS** — The rationale for the prevention and cessation of smoking among individuals with diabetes is substantial. The purpose of this position statement is to provide guidelines for inclusion of the prevention and cessation of tobacco use as an important component of state-of-the-art clinical diabetes care. These guidelines are based on the body of evidence summarized in the American Diabetes Association's technical review on smoking and diabetes (1). The guidelines are appropriate for use by health care providers engaged in the care and management of individuals with diabetes. The guidelines are summarized in Table 1 and address the following three primary areas.

## Assessment of smoking status and history

The routine and thorough assessment of tobacco use is important as a means of preventing smoking or encouraging cessation. Special considerations should include assessment of level of nicotine dependence, which is associated with difficulty in quitting and relapse. Other issues particularly

relevant to diabetic smokers include screening for depression or negative affect (1,3,4).

## Counseling on smoking prevention and cessation

Health care providers should advise all individuals with diabetes not to initiate tobacco use of any kind. For people who smoke, effective cessation treatments are available and should be incorporated into routine diabetes care. There is a dose-response relationship between type, intensity and duration of treatment, and smoking cessation. In general, minimal interventions are defined by <3 min of counseling, whereas brief interventions are defined as 3–10 min of counseling (4). More intensive interventions include >10 min of counseling, skills training, and problem-solving content, conducted over a period of several weeks and multiple sessions. More intense interventions are most effective in producing long-term abstinence from tobacco and are recommended for smokers willing to participate (1,3,4).

Pharmacological supplements are effective elements to include for smoking cessation in conjunction with behavioral inter-

ventions. The evidence is clear that use of NRT combined with behavioral counseling is more effective and much more beneficial than simply prescribing NRT alone. The risks of continued smoking compared with the use of pharmacological supplements needs to be considered in the presence of special circumstances, such as pregnancy or other diabetic complications. Health care providers should also be cognizant of special issues that may affect successful cessation, such as weight management. Health care providers should emphasize smoking cessation as a priority of state-of-the-art care for all diabetic smokers.

## Effective systems for delivery of smoking cessation

Health care providers need to be aware of and implement smoking cessation guidelines such as those developed by the Agency for Health Care Policy and Research (4). Effective systems for implementing these guidelines should be incorporated into the routine practice of diabetes care. System components include the repeated conduct and documentation of routine screening for smoking status, integrated advice, counseling and support regarding cessation, and follow-up. Reimbursement for delivery of smoking cessation services as a core component of diabetes care should be enacted (1).

## References

1. Haire-Joshu D, Glasgow RE, Tibbs TL: Smoking and diabetes (Technical Review). *Diabetes Care* 22:1887–1898, 1999
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