

Circulation

JOURNAL OF THE AMERICAN HEART ASSOCIATION



Smoking Cessation Strategies for the 21st Century

Douglas E. Jorenby

Circulation 2001;104:e51-e52

DOI: 10.1161/hc3601.097690

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75214

Copyright © 2001 American Heart Association. All rights reserved. Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://circ.ahajournals.org/cgi/content/full/104/11/e51>

Subscriptions: Information about subscribing to *Circulation* is online at
<http://circ.ahajournals.org/subscriptions/>

Permissions: Permissions & Rights Desk, Lippincott Williams & Wilkins, a division of Wolters Kluwer Health, 351 West Camden Street, Baltimore, MD 21202-2436. Phone: 410-528-4050. Fax: 410-528-8550. E-mail:
journalpermissions@lww.com

Reprints: Information about reprints can be found online at
<http://www.lww.com/reprints>

CARDIOLOGY PATIENT PAGE

Smoking Cessation Strategies for the 21st Century

Douglas E. Jorenby, PhD

Cigarette smoking is the leading preventable cause of illness and premature death in the United States, claiming over 400 000 lives a year because it directly increases the risk of dying from heart disease, stroke, emphysema, and a variety of cancers.¹ Approximately 25% of adults in the United States continue to smoke, despite information about the unequivocally negative health consequences of smoking.² Part of the reason for continued cigarette smoking is the addictive nature of nicotine, a substance found in all types of tobacco products. In the 1988 *Surgeon General's Report on the Health Consequences of Smoking*,³ nicotine was declared an addictive drug similar to heroin or cocaine. It is important to emphasize that nicotine itself is probably not responsible for most of the negative health consequences of smoking. Instead, persons who stop using nicotine-containing tobacco products experience an unpleasant withdrawal syndrome that may include such symptoms as depressed mood, disrupted sleep, irritability, frustration, anger, anxiety, difficulty concentrating, restlessness, decreased heart rate, and increased appetite or weight gain.⁴ The extremely unpleasant nature of withdrawal from tobacco helps explain why many people who make an effort to stop smoking start up again, often within a matter of hours or days.

Help Is Available

Despite nicotine's powerful addictive properties, many effective treatments to help people stop smoking exist. In June 2000, the US Public Health Service released a Clinical Practice Guideline, *Treating Tobacco Use and Dependence*,⁵ which summarized almost 25 years of scientific research on techniques for effective cessation of cigarette smoking. The Guideline found clear scientific evidence that 5 different medications are helpful in assisting people who wish to quit smoking and also found evidence that certain types of counseling increased a person's chance of quitting permanently. The Guideline recommended that smokers be offered both counseling and medication to increase their chance of success.

Counseling for Smoking Cessation

Self-help materials, the most common type of counseling, were not found to be particularly effective.⁵ Both individual counseling and group counseling, however, were found to increase the success rates for cessation of smoking. Proactive telephone calls are a relatively new form of delivering counseling and are also quite effective.⁵ A number of states now have "quit lines" that can provide this kind of proactive counseling to residents at no charge.

Regardless of how counseling is delivered, certain types of information increase the chance of success. A problem-solving approach works well for many smokers. An example of this would be thinking about times of the day one is likely to smoke (eg, first thing in the morning or after meals) and then planning something to distract oneself when the urge strikes (eg, leaving the situation or deep breathing). Social support, in the form of encouragement, caring, and concern, clearly increases the success rate of smoking cessation. Social support can come both from healthcare providers (intra-treatment social support) and from family, friends, and other community members (extra-treatment social support).

Medication for Smoking Cessation

The US Food and Drug Administration (FDA) has approved 5 medications as smoking cessation aids, all of which are effective. Of these, 4 are nicotine-replacement therapies (gum, inhaler, nasal spray, and patch) thought to relieve nicotine withdrawal symptoms and urges to smoke while not exposing the user to the carbon monoxide, tar, and carcino-



Figure 1

From the Department of Medicine, Center for Tobacco Research and Intervention, University of Wisconsin Medical School, Madison.

Correspondence to Douglas E. Jorenby, PhD, University of Wisconsin Medical School, 1930 Monroe St, Suite 200, Madison WI 53711.

(*Circulation*. 2001;104:e51-e52.)

© 2001 American Heart Association, Inc.

Circulation is available at <http://www.circulationaha.org>

TABLE 1. FDA-Approved Smoking Cessation Medications

| Name | Forms | Dosage | Length of Use | Precautions/ Contraindications | Side Effects |
|------------------------------|---|---|---|-----------------------------------|-------------------------|
| Bupropion, sustained-release | Zyban (prescription only) | 150 mg in morning for 3 days, then 150 mg twice a day | Begin 1–2 wks before quit date, then 7–12 wks | Seizure, eating disorder | Insomnia, dry mouth |
| Nicotine gum | Nicorette, Nicorette DS, Nicorette Mint, Nicorette Orange (OTC only) | Up to 24 pieces/day; <25 cigs/day → 2 mg; ≥25 cigs/day → 4 mg | Up to 12 wks | | Sore mouth, dyspepsia |
| Nicotine inhaler | Nicotrol Inhaler (prescription only) | 6–16 cartridges/day | Up to 6 mo | | Mouth/throat irritation |
| Nicotine nasal spray | Nicotrol NS (prescription only) | 8–40 doses/day | 3–6 mo | Dependency | Nasal irritation |
| Nicotine patch | Nicoderm CQ (OTC only), generic/house brand patches (OTC and prescription) Nicotrol (OTC only) | 21 mg/24 h; 14 mg/24 h; 7 mg/24 h; 15 mg/16 h | 4 wks; then 2 wks; then 2 wks 8 wks | | Local skin reaction |

OTC indicates over the counter. Zyban, Nicorette, and Nicoderm are products of Glaxo SmithKline; Nicotrol is a product of Pharmacia, Inc.

TABLE 2. Benefits of Smoking Cessation

| Short-Term Benefits | Long-Term Benefits |
|---|--|
| Blood pressure returns to presmoking levels within 20 minutes. | Lung function improves up to 30% within 2 to 3 months. |
| Carbon monoxide levels drop within hours. | Risk of coronary heart disease is reduced by 50% after 1 year. |
| Money is saved each day by not buying cigarettes. | Risk of stroke is similar to that of a nonsmoker within 5 to 15 years. |
| Sense of smell and taste improve within days. | Patient enjoys increased self-esteem due to quitting smoking. |
| Patient earns greater self-respect because of a real sense of accomplishment in quitting. | |

Based on references 3 and 7.

gens in cigarette smoke. The other, a non-nicotine agent called bupropion, appears to act on pathways in the brain that are involved in nicotine addiction. The Guideline⁵ recommends that all smokers willing to make an attempt at quitting should be offered one or more of the medications listed in Table 1.

Benefits of Quitting Smoking

Because of the extremely addictive nature of cigarette smoking, patients should not become discouraged if initial attempts to stop are unsuccessful. Repeated attempts are worth the effort, not only from the perspective of the individual smoker, but also from that of their families and society at large, as well. The health consequences of continued cigarette smoking extend to healthy nonsmokers through passive or second-hand smoking.⁶ Table 2 lists some of the physical and psychological benefits of smoking cessation. It is important to note that even smokers who quit in their 60s experience not only a better quality of life but a longer life expectancy compared with those who continue smoking.⁷

For more information, including a 5-Day Plan for quitting smoking and tips for the first week, visit the Tobacco Cessation Guideline at the Virtual Office of the Surgeon General, available at <http://www.surgeongeneral.gov/tobacco/default.htm>.

References

- Centers for Disease Control and Prevention. Perspectives in disease prevention and health promotion smoking-attributable mortality and years of potential life lost—United States, 1984. *MMWR Morb Mortal Wkly Rep.* 1997;46:444–451.
- Centers for Disease Control and Prevention. Cigarette smoking among adults—United States, 1997. *MMWR Morb Mortal Wkly Rep.* 1999;48:993–996.
- US Department of Health and Human Services. *The Health Consequences of Smoking: Nicotine Addiction: A Report of the Surgeon General.* Atlanta, Ga: US Dept of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health; 1988. DHHS publication (PHS) (CDC) 88–8406.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV.* 4th ed. Washington, DC: American Psychiatric Association; 1994:242–247.
- Fiore MC, Bailey WC, Cohen SJ, et al. *Treating Tobacco Use and Dependence: Clinical Practice Guideline.* Rockville, Md: US Dept of Health and Human Services Public Health Service; 2000.
- Otsuka R, Watanabe H, Hirata K, et al. Acute effects of passive smoking on the coronary circulation in healthy young adults. *JAMA.* 2001;286:436–441.
- US Department of Health and Human Services. *The Health Benefits of Smoking Cessation: A Report of the Surgeon General.* Rockville, Md: US Dept of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health promotion, Office on Smoking and Health; 1990. DHHS publication (CDC) 90–8416.