

# Prevention and cessation best options to reduce tobacco-related heart disease

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Tobacco use is the leading preventable cause of death in the world and encompasses a variety of products, including cigarettes, e-cigarettes and smokeless tobacco. Combustible cigarettes remain the most common tobacco product used by U.S. adults, but studies have shown no level of cigarette consumption is safe. A new review—published today in the *Journal of the American College of Cardiology*—examines policies to achieve complete cigarette abstinence as part of efforts to reduce the risk of heart disease.

"This manuscript is the second in an eight-part health promotion series where each paper will focus on a different risk factor for cardiovascular disease, and given the ongoing prevalence of [tobacco](#) use globally, this paper should have particular resonance," said Valentin Fuster, MD, Ph.D., MACC, editor-in-chief of the *Journal of the American College of Cardiology*. "The editors and I are quite excited about this series, as we feel it could have tremendous impact in informing clinicians about the prevention of cardiovascular disease."

"Essentially, tobacco use is a chronic disease that begins in childhood," said Sara Kalkhoran, MD, MAS, a clinician investigator in the Division of General Internal Medicine at Massachusetts General Hospital and lead author of the review. "Nearly all cigarette smokers start [smoking](#) during adolescence, and for millions of individuals it becomes an established, lifelong habit. Clinicians must consider smoking cessation a primary component of caring for adult patients who smoke to reduce the risk of tobacco-related disease."

Current smokers are at increased risk for many types of [heart disease](#) compared to nonsmokers, including:

- Two to three times higher odds of heart attack
- Two to three times higher risk of death from ischemic heart disease
- Twice the risk of death from stroke
- Two- to three-fold higher odds of peripheral artery disease
- Two times higher incidence of atrial fibrillation

According to the review, quitting smoking is an ongoing process that includes periods of regular smoking, reduced smoking and no smoking. It takes most smokers multiple attempts to successfully quit and there is a low success rate as most smokers do not use the effective, evidence-based treatments available.

Multiple factors influence starting and maintaining a tobacco use habit. Socioecological models create a framework for categorizing these factors into levels of influence: intra-individual, interpersonal, community/organizational and societal/policy.

## **Intra-individual**

Smoking is more common among non-Hispanic white adolescents and adolescents with lower socioeconomic status. Other factors associated with smoking at the individual level include psychological factors—like impulsivity, stress, depression and anxiety—and genetic factors.

## **Interpersonal**

At this level, peers have the strongest effect on youth smoking habits: those who do smoke are likely to be friends with smokers, and

nonsmokers who have friends who smoke are more likely to start.

## Community/Policy

Community and policy factors often go hand-in-hand to influence smoking habits. Raising the tobacco excise tax at the federal, state or local government-level to increase the price of cigarettes is one of the strongest policy tools available to discourage smoking. Marketing, including advertisements and promotional efforts at events for teens, is strongly associated with smoking initiation and continued smoking. Smoke-free laws and policies has been associated with lower odds of smoking among adolescents and young adults. Tobacco 21, a policy aiming to raise the legal age to purchase nicotine and tobacco products to 21, has recently gained traction. A 2015 National Academy of Science report concludes the policy will likely reduce tobacco initiation amongst adolescents.

Barriers to smoking cessation can also be categorized in the socioecological model. Individually, nicotine dependence is a major barrier to quitting and dependence is stronger in some smokers, such as those with low socioeconomic status, mental illness and other substance use disorders. At the interpersonal level, living with other smokers is associated with reduced success of quitting, while living in a smoke-free home is associated with increased cessation. Community and [policy](#)-level interventions, such as smoke-free worksites, cigarette prices and comprehensive [tobacco control programs](#) including education campaigns on cessation resources promote smoking cessation.

The benefits of quitting smoking begin within hours and the risks of coronary heart disease and stroke are almost eliminated within 15 years. For smokers with pre-existing disease, smoking cessation rapidly reduces cardiovascular risk as well. According to the researchers, this makes treating tobacco use a priority for secondary prevention.

Reducing cigarette consumption still carries significant health risks, and clinicians' goal should be total cessation for their patients who smoke.

Nonsmokers who are exposed to secondhand smoke are at increased risk of [coronary heart disease](#) and stroke. Governments and private-sector organizations have created laws and policies to protect nonsmokers from these health risks by prohibiting smoking in workplaces, restaurants, bars and other locations. Comprehensive smoke-free policies have been associated with reductions in hospitalizations or deaths from heart attack, other heart disease, stroke and respiratory disease.

"Implementing effective [tobacco control policies](#) like increasing cigarette prices through tobacco excise taxes, adopting smoke-free policies indoors, mandating warning labels on [tobacco products](#) and supporting public education campaigns to promote cessation are a key public health priority," said Nancy Rigotti, MD, the Director of the Tobacco Research and Treatment Center at Massachusetts General Hospital and senior author on the review. "Quitting smoking is incredibly important to heart health. Cardiologists have the opportunity to promote cessation among their patients at-risk or already impacted by heart [disease](#)."

Clinicians can do so in a variety of ways, including:

- Routinely screening for tobacco use and secondhand smoke exposure with patients
- Providing smoking cessation intervention in the hospital and sustaining such intervention post-discharge
- Offering evidence-based [smoking cessation](#) treatments, including medications and counseling, to all current smokers at every visit

Other strategies explored in the review include harm reduction, which includes policies such as reducing the nicotine content in cigarettes.

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