

How much does smoking cessation cut CHD risk?

Evidence-based answer

Significantly. Patients with coronary heart disease (CHD) who refrain from smoking over a 2-year follow-up period decrease their relative risk (RR) for morbidity and mortality by about one third (strength of recommendation [SOR]: **A**, meta-analysis of 20 cohort studies). People who maintain

abstinence after coronary artery bypass surgery are more likely to avoid angina, repeat revascularization, significant physical impairment, and CHD-related hospital admissions than patients who continue to smoke (SOR: **A**, 4 cohort studies with 1- to 20-year follow-up).

Evidence summary

The influence of cigarette smoking on the development of CHD has been well documented.^{1,2} RR ranges from 1.5 to 3, depending on variables such as age, sex, and quantity of tobacco used.³ Quitting smoking reduces overall mortality more than other forms of secondary prevention, including aspirin, β -blockers, angiotensin-converting enzyme inhibitors, and cholesterol-lowering statins.³ In the wake of such evidence-based findings, the American Heart Association and American College of Cardiology Task Force developed clinical practice guidelines that recommend complete smoking cessation for secondary prevention of CHD in cardiac patients.⁴

0 cigarettes = lower mortality and morbidity

A Cochrane Heart Group meta-analysis examining all-cause CHD mortality in 20 cohort studies (n=12,603 patients), found a 36% reduction in mortality risk for CHD patients who quit smoking compared with those who didn't

(RR=0.64; 95% confidence interval [CI], 0.58-0.71).³ The review also noted a reduction in risk for nonfatal myocardial infarctions (RR=0.68; 95% CI, 0.57-0.82).³ The authors didn't report how soon after smoking cessation mortality risk declined.

The authors acknowledge several limitations of the review, including the use of observational data and crude estimates, as well as potential publication bias and the misclassification of smoking status. Notably, however, their findings are consistent with the landmark prospective, community-based cohort Framingham Heart Study (N=1422), which indicates that smoking status predicts overall and morbidity-free survival at age 85.⁵

Smoking cessation has also been found to significantly affect morbidity among cardiac patients. Short-term benefits have been demonstrated in CHD patients after a myocardial infarction or coronary artery revascularization.⁶ Smoking status at 1-year follow-up was associated with a significant reduction in subsequent cardiac events

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Patients with CHD who refrain from smoking for at least 2 years decrease their risk for morbidity and mortality by about one third

(myocardial infarction, ischemic cerebrovascular event, revascularization, or death from CHD) when smokers who quit after an initial CHD event were compared with continuing smokers (odds ratio=0.71; 95% CI, 0.38-1.33).⁶

Going the distance is worth it

Regarding the role of extended abstinence on subsequent cardiac events, long-term quit status in post-coronary artery bypass graft (CABG) surgery patients has been found to predict decreased morbidity and lower rates of repeat revascularization surgery. Findings from the Coronary Artery Surgery Study show that, at 10-year follow-up, nonsmokers were more likely to be free of angina (54% of nonsmokers vs 42% of smokers; $P=.02$, NNT=8.3) and less likely to experience moderate to severe physical limitations (13% of nonsmokers vs 24% of smokers; $P=.0004$; NNT=9.1). Nonsmokers also had fewer CHD-related admissions than smokers (2.6 vs 3.8; $P<.0001$).⁷

Another study found similar results at 20-year follow-up: Patients who had quit smoking underwent fewer repeat CABGs than smokers (RR=1.41; 95% CI, 1.02-1.94).⁸ The difference between post-CABG survival curves for quitters versus smokers increased from 3% at 5 years (98% vs 95%) to 15% at 15 years (70% vs 55%; $P<.0001$; NNT=6.7).⁸

Recommendations

The US Department of Health and Human Services recommends smoking cessation as an integral part of both primary and secondary prevention of CHD. Quit-

ting reduces development of atherosclerosis and lowers the incidence of initial and recurrent myocardial infarction, thrombosis, cardiac arrhythmia, and death from cardiovascular causes.² ■

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Quitting smoking reduces overall mortality more than other secondary prevention measures, including aspirin, β -blockers, ACE inhibitors, and statins

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