

# Quitting smoking has favorable metabolic effects

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Credit: Vera Kratochvil/public domain

People who quit smoking have improved metabolic effects, a new study finds. The results will be presented in a poster Thursday, March 5, at ENDO 2015, the annual meeting of the Endocrine Society in San Diego.

"In general, people think that when they stop [smoking](#), they are going to gain weight and their diabetes and insulin resistance are going to get worse, but we didn't find that," said principal investigator Theodore C. Friedman, MS, MD, PhD, chair of the Department of Internal Medicine of Charles R. Drew University of Medicine and Science in Los Angeles, California. "Our study showed that [insulin resistance](#) was basically the same and some of the fat redistribution seemed to be better. Initially fat might have gone into the abdomen, but later, it went back to the thigh, which is more benign."

In this study, researchers enrolled healthy, ½-to-2 pack-per-day smokers into an 8-week smoking cessation program of behavioral counseling plus oral bupropion (Phase I), followed by a 16-week maintenance period without counseling or

bupropion wherein subjects either remained abstinent or naturally resumed/increased smoking (Phase II).

Before and after Phase 1, the researchers measured the subjects' number of cigarettes per day, breath [carbon monoxide](#), urine nicotine metabolites, weight, body composition, [fat distribution](#), free fatty acids, and rate of glucose release from the liver and overall glucose utilization.

Study results showed that [smoking cessation](#) over 8 weeks was associated with a slight and transient worsening of central fat distribution, followed by a larger, favorable reversal over subsequent months. Over 24 weeks, hepatic glucose output improved in relation to lifestyle changes, weight change correlated directly with reduced nicotine metabolites, and reduced carbon monoxide and/or nicotine metabolites correlated with increased glucose uptake and utilization of carbohydrate substrates as the preferred metabolic fuel.

"Smoking cessation appears to have complex but generally favorable [metabolic effects](#), and they should be encouraged. Cessation also seems to lead to beneficial effects in terms of where the fat is and what happens with hepatic glucose release from the liver," he said.

Provided by The Endocrine Society

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