

Smoking and body weight—what's the connection?

October 3 2016, by Peter Janiszewski, Ph.d.



Credit: AI-generated image ([disclaimer](#))

As our readers may recall, my wife and I spent a couple of weeks in Spain in late August. I [previously documented](#) the mileage we accrued while exploring various cities in that beautiful country. Two things I always notice when in Europe are the following: many Europeans smoke, but few are overweight or obese. Although I was aware of this

association for years, I wanted to see what the literature had to say about the connection between smoking and weight.

Here's what I quickly found:

- Studies looking merely at associations between two variables certainly back up the observation that [smoking](#) is associated with lower weight
- When people quit smoking, they tend to gain weight
- Conversely, although they may be of lower weight, some research suggests that long-time smokers have a metabolically more adverse fat distribution, characterized by increased belly fat

How does smoking potentially affect body weight?

According to a [small recent study](#), smoking has an acute negative effect on dietary intake.

In a randomized crossover study, 14 healthy males who participated in two conditions following a night of abstinence from smoking: A) smoking two cigarettes of their brand and 2) the S-sham (control) where no smoking occurred. Approximately an hour after, the participants were offered a variety of snacks.

What happened?

Those who smoked a couple of cigarettes and then snacked consumed 152 calories less than the control group. Thus, much like the caffeine in coffee, the nicotine in cigarettes suppresses appetite.

And how exactly is this happening? Although the jury is still out, there is some data that alterations in the levels or signaling of leptin (satiety

hormone) and ghrelin (hunger hormone) may be involved.

Do reductions in smoking rates in North America explain the obesity epidemic?

Naturally, given the above, decreased smoking rates in North America (which should be heartily celebrated) have been offered as a potential contributor to the increasing obesity rates.

However, a [2008 study by prominent researcher Katherine Flegal](#) suggests that the contribution of lower [smoking rates](#) to increasing obesity rates is very minor, at best.

In the study, Flegal examined current weight data by [smoking status](#) from the 1999–2002 National Health and Nutrition Examination Survey (NHANES – a massive database of US citizens) with smoking prevalence data from past NHANES surveys to estimate weight status had smoking prevalence not changed.

Her analysis revealed that even large changes in the prevalence of smoking had have little effect on obesity prevalence.

For instance, if smoking prevalence in 1999–2002 were the same as it was in 1971–1975, the estimated 1999–2002 [obesity prevalence](#) would be 22.5% rather than the actual value of 23.9% (a difference of 1.4 percentage points).

The author's conclusion: "decreases, even substantial decreases, in the prevalence of cigarette smoking would likely have only a small effect, generally less than 1%, on increasing the prevalence of obesity and decreasing the prevalence of healthy weight."

Of course, the major caveat here is that this is a study of association not causation, so interpret these findings with a grain of salt. Nevertheless, it does cast doubt on the notion that smoking cessation is a major driver of the obesity epidemic.

In conclusion, the inverse association between smoking and [obesity rates](#) has been well documented (the number of variables that could confound this observation are countless). Although nationwide smoking cessation may have contributed to the North American obesity epidemic, the effect appears to be rather minor.

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