

# Are Antibiotics Making Us Fat?

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Dec 13, 2011

Farmers have long used antibiotics to fatten up livestock—and now there's growing evidence that these drugs may have the same effect on people. What's more, instead of being miracle cures, there's now scary speculation that antibiotics could be jeopardizing our health by making us more prone to lifestyle diseases, from type 2 diabetes to heart attacks and fatal strokes. If that sounds far-fetched, consider this: States with the highest rates of antibiotic prescriptions also rank as the least healthy, Wired magazine reported on November 25.

When the nonprofit research group Extending the Cure recently mapped antibiotic prescriptions by state, it found the heaviest use (measured per 1,000 people) in the eastern half of the US, particularly West Virginia, Kentucky, Tennessee, Louisiana, and Alabama, all of which comprise the so-called Stroke Belt, due to the high rate of stroke fatalities. According to CDC data, *Wired* adds, these states (and to a lesser extent, much of the eastern US) also have higher rates of obesity, diabetes, and heart attacks, compared to the western US. While these correlations don't prove that antibiotic overuse triggers these diseases, studies suggest that it could drive up obesity by changing how our stomachs work. Here's a look at the findings.

## **First shown to cause weight gain in 1954.**

More than a half century ago, a randomized study published in *Nutrition* reported that Navy recruits who were given daily doses of broad-spectrum antibiotics, such as chlortetracycline or penicillin, to prevent strep infections gained 4.8 pounds over 7 weeks, compared to a 2.7 pound gain in recruits given a placebo.

## **Eradicating beneficial gut bacteria.**

In the early 20<sup>th</sup> century, *helicobacter pylori* was the dominant stomach microbe, Dr. Martin Blaser, a microbiologist professor at New York University Langone Medical Center, recently reported in Nature. Today, the average American child receives 10 to 20 courses of antibiotics by age 18, and fewer than 6 percent of US kids carry the organism. While that may not sound like a problem, given that *H. pylori* raises risk for stomach ulcers and gastric cancer, Dr. Blaser has discovered that killing off this bug dramatically changes how the stomach works, tricking the body into overeating.

## **A six-fold rise in hunger hormones.**

Normally, after a meal, levels of the hunger hormones ghrelin and leptin drop, signaling that we're full. However, a 2011 study by Dr. Blaser and other scientists found that after veterans were treated with antibiotics to eradicate *H. pylori*, they had 20 percent rise in leptin levels after a meal, while levels of ghrelin skyrocketed six times higher. And 18

months after treatment, on average, participants had a 5 percent rise in their body mass index. That would be a 10-pound gain in someone with a starting weight of 200.

### **Links to other diseases.**

“Overuse of antibiotics could be fuelling the dramatic increase in conditions such as obesity, type 1 diabetes, inflammatory bowel disease, allergies and asthma, which have more than doubled in many populations,” reports Dr. Blaser, who was recently awarded a \$6.5 million grant from the NIH to study links between disappearing gut bacteria and obesity. Conversely, New York University epidemiologist Yu Chen found that infection with *H. Pylori*, which typically occurs before age 10, reduced risk for childhood-onset asthma, skin allergies and hay fever.

### **A biological weapon against asthma and obesity.**

Swiss and German researchers have discovered that infecting mice with *H. pylori* actually prevents asthma, an airway disease that’s reached epidemic levels as the levels of the once common stomach bug wane. Dr. Barry Marshall, the Australian biologist who received the 2005 Nobel Prize in Medicine for discovery of *H. pylori* as the cause of gastritis and stomach ulcers, even predicts that one day, a weakened strain of the bacteria will be used to treat both asthma and obesity, according to the *New York Times*.

### **Using probiotics to slim down.**

While antibiotics may make us fat, probiotics appear to have the opposite effect. Last year, a randomized study of overweight people with large waists found that those who drank fermented milk containing the probiotic *Lactobacillus* daily for 12 weeks reduced both belly fat and body weight, compared to a control group who didn’t receive probiotics. A 2009 study found that a year after giving birth, women who took daily probiotic supplements containing *Lactobaccillus* and *Bifidobacterium* during the first trimester of pregnancy were much less likely to develop abdominal obesity, the most dangerous type of fat.

### **The bottom line.**

While research into the link between antibiotics and fat is still ongoing, overuse of these powerful drugs is already widely recognized as dangerous due to the growing threat of drug-resistant superbugs. Therefore, the best way to protect your health—and perhaps avoid packing on extra pounds—is to only take antibiotics when medically necessary. They don’t work on colds, flu or other viral illnesses.