

Overuse or careless use of antibiotics early in life seems to be particularly problematic for future gut health and immunity. (GETTY IMAGES)

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"Better safe than sorry" were <u>Andrea Duclos'</u> famous last words. She said them to herself when accepting a prescription for antibiotics about two years ago. The now 32-year-old founder of the lifestyle blog OhDearDrea in West Palm Beach, Florida, had recently returned from a nearly three-week trip to India with some digestive distress and a cut she didn't want to become infected. Antibiotics seemed like the obvious next step, and the clinician at her local walk-in clinic agreed.

But Duclos was more sorry than safe. As soon as she began her course of antibiotics – a broad-spectrum type often reserved for serious infections – she developed high fevers and increasingly intense body aches that shot from the bottoms of her feet to the top of her head.

"One day into the antibiotics, it was a downward spiral," Duclos remembers. "I got to the point where I couldn't get out of bed to walk." Doctors tested her for exotic <u>mosquitoborne diseases</u> like chikungunya, which came up negative.

A week after finishing the drug, Duclos' symptoms got worse – and now included <u>diarrhea</u>that had her running to the bathroom upward of 20 times a day. She lost 15 pounds in two weeks. "It was a nightmare," she says.

[See: 10 Weird Things That Can Make You Poop.]

It wasn't until Duclos did some of her own frantic research from a hospital bed that she asked to be tested for a Clostridium difficile (aka C. diff) infection. The condition is typically caused when antibiotics wipe out the gut's "good" bacteria and allow the "bad" bacteria Clostridium difficile to flourish. The test came back positive.

"I was relieved to finally have that answer, but there was still so much going on ... in my body," says Duclos, who was prescribed an antibiotic that targets C. diff but didn't begin to feel even mildly functional for about five months. Even today, she experiences residual symptoms like <u>ringing in her ears</u> and teeth grinding.

"Would those not have been there had I been diagnosed sooner or had this been handled sooner?" she wonders.

What do antibiotics have to do with it?

Antibiotics are a life-saving invention: Put simply, their job is to kill bacteria that cause conditions like <u>urinary tract infections</u> and pneumonia, and to prevent illness-causing bacteria from growing in vulnerable places like wounds. But the drugs suffer from a lingering reputation as harmless and, as such, are often used for conditions like sore throats they rarely effectively treat, says <u>Dr. Eugene B. Chang</u>, a professor and researcher at the University of Chicago and member of the scientific advisory board for the American Gastroenterological Association Center for Gut Microbiome Research and Education.

"The consequence is that we have been giving out antibiotics to not only people with sore throats and common ailments, but even to healthy people as a knee-jerk response if anybody comes in with an ailment," he says.

That's a problem for several reasons, not the least of which is the destruction of gut bacteria necessary to maintain many aspects of health. Overuse or careless use of antibiotics early in life seems to be particularly problematic for future <u>gut health</u> and immunity. Even some women who take certain antibiotics while pregnant may negatively affect the microbiome of their <u>future children</u>, Chang's research in mice is suggesting.

"These microbes that you acquire from your mother are very important during early life because they educate the immune system not to react to the types of [healthy] microbes that live in your gut," he says.

[See: 9 Ways to Boost Your Immune System.]

Ideally, unnecessary antibiotic use is avoided altogether, but in reality, many people like Duclos are already suffering the gastrointestinal consequences. "People always want to know, 'Is this permanent?'" says <u>Dr. Chad Larson</u>, a naturopathic doctor in Solana Beach, California, and advisor on the clinical consulting team for Cyrex Laboratories. "Fortunately, the gut is very reparable."

While Chang says <u>fecal microbiota transplants</u> are promising treatments for difficult-totreat conditions like C. diff infections, for now, the most widespread approach for healing the gut is food-based. "Diet has to be the centerpiece," Larson says. He and others recommend following the "5-R" approach with the help of a health care professional:

1. Remove.

Eliminate foods that may be causing digestive distress: namely sugars, processed foods and refined flours and refined vegetable oils. "We know those will further disrupt an already disrupted microbiome," Larson says. "We've got to get those foods out." While Duclos has always been a relatively healthy (and <u>vegan</u>) eater, she now completely avoids gut-aggravating meals like pizza and nachos, and has cut out gluten and <u>refined sugar</u>.

2. Replace.

Fill up on foods like fruits and vegetables with the type of fiber on which good gut bacteria like to feast. Niki Strealy, a registered dietitian in Portland, Oregon, who specializes in digestive health, says foods like bananas, rhubarb, kiwi, lentils and oats can be among the easiest on digestion. Duclos – who eats a diet that's 80 percent carbohydrates, which are easier for the body to digest than fats and protein – recommends blending fruits and vegetables in smoothies or soups if they don't sit well or taste good otherwise. "Your goal is to repopulate your stomach with as much healthy food and bacteria as you can," she says.

3. Re-inoculate.

Eat <u>fermented foods</u> like yogurt, kombucha and kefir, and work with a professional to find a probiotic supplement that works for you, if necessary. Larson recommends looking for a "top shelf" variety that contains two to five strains that are identified by name on the label. While Duclos took a probiotic daily at first, she now mostly just uses them when necessary, like when traveling.

4. Repair.

Vitamins like zinc, glutamine, fish oil and vitamins A, C and E can help repair the gut, Strealy says. Sometimes herbs like slippery elm and marshmallow root help it heal too, Larson adds. "It can vary quite a bit from person to person," he says.

[See: Pharmacist Recommended Vitamins and Supplements.]

5. Rebalance.

Just as the gut affects nearly every aspect of health, nearly every aspect of health affects the gut. "Getting adequate sleep and managing stress and getting enough exercise – those are all important pieces of the puzzle as well," Strealy says. For Duclos, that meant <u>slowing down</u>. "I've learned to be more patient with my body and realize that down time is not wasted time," she says. "Resting time is so important – especially when you're healing."



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