

New clues point to why colorectal cancer is rising in young people

Scientists identified a link between colorectal cancer and a toxin in the gut. Eating more fiber may help reduce your risk.

Today at 6:00 a.m. EDT



Column by [Trisha Pasricha, MD](#)

It's one of the most pressing medical mysteries of our time: Why are so many young people getting colorectal cancer?

Colorectal cancer rates have been declining among U.S. adults over age 50 since the 1980s. But, for younger adults, the trend is rapidly going in the wrong direction. While the overall numbers are still relatively low, colorectal cancer will become the leading cause of cancer-related deaths for adults in their 20s, 30s and 40s by 2030.

New evidence suggests the reason may trace back to early childhood.

In a study recently published in [Nature](#), scientists unveiled a link between the rise in young colorectal cancers and a toxin called colibactin. For years, we've known that colibactin, produced by certain strains of bacteria like E. coli, can mutate our DNA and potentially cause colorectal cancer.

Colibactin is only one of the many known triggers for colorectal cancer. But what researchers recently discovered is that people with colorectal cancer who are under age 40 are far more likely to have colibactin-linked mutations in their tumors compared with older adults — more than 3.3 times more likely.

Here's where the plot really thickens.

Thirty to 40 percent of healthy adults have colibactin-producing bacteria in their microbiomes, the trillions of bacteria inside our gut that help with digestion and support the immune system. Only a fraction of those people will get colorectal cancer. So something else is reacting with colibactin and paving the way for cancer.

It turns out that X factor may be your childhood diet.

How fiber can protect our gut

In a separate study published in Nature Microbiology, researchers found that fiber may impact colibactin's role in the gut. They found that the guts of mice fed a low-fiber diet became colonized with higher numbers of colibactin-producing bacteria. Their colons also developed chronic low-grade inflammation, which accelerated colorectal tumor production.

But when scientists fed the mice a fermentable soluble fiber each day, their microbiomes transformed: That inflammation subsided, and they became resistant to colonization by colibactin-producing bacteria.

In other words, fiber prevented colibactin-producing bacteria from causing cancer.

This tracks well with data in human studies. With every 10 grams of fiber you eat each day — that's about the amount in a cup of beans — there's a 10 percent lower risk of colorectal cancer.

Colorectal cancer can take years to fully blossom, so the idea is that when these processes take hold in early childhood, cancer manifests at a younger and younger age. In fact, research has shown that colibactin can start setting the stage for cancer before we turn 10 years old.

This is why I tell my patients to eat a diversity of fiber-rich plants — and to make sure their children do the same.

A parent's role in shaping the microbiome

Our microbiome is most malleable during early childhood. It's heavily shaped by things like our mother's health, whether we were born by a cesarean or vaginal birth, our exposure to animals and, of course, our diets. For instance, a recent study in JAMA Network Open found that girls born via cesarean delivery had greater odds of developing colorectal cancer before age 50 compared with those delivered vaginally (for reasons that are still unclear, this does not appear to be the case for boys, but scientists speculate that this may be due to how sex hormones influence the microbiome). And the Nurses Health Study II revealed that for each serving of a sugary beverage — such as soft drinks or sports drinks — consumed daily in adolescence, participants had a 32 percent higher risk of developing colorectal cancer before age 50.

Childhood risk factors are notoriously difficult to study, and there are many remaining questions about how different factors — including the environment, chemical exposures in daily life and our mother's health — may influence the risk of colorectal cancer. But scientists are developing experiments to collect information and samples — like stool or blood — early in life and plan to track them into adulthood. Those will take time to give us answers, but it's a payoff we really need.

Many of my patients worry about how antibiotics might disrupt the microbiome. This isn't usually a concern for adults: Antibiotics might disrupt the microbiome temporarily, but it usually bounces back.

It's more complicated when antibiotics are given to people who are pregnant or babies because these affect a developing microbiome at a very impressionable time. However, antibiotics — in infancy or otherwise — have not been shown to “cause” cancer in any study. While you shouldn't take antibiotics unnecessarily, you should use them if your doctor recommends them.

Lowering your risk of colorectal cancer

Besides increasing your overall fiber intake, here are three things you can do to reduce the risk for you and your family:

- **Make simple healthier food swaps:** Sugar-sweetened beverages, processed and red meats, refined grains and alcohol have all been shown to raise the risk of colorectal cancer — and that risk can start in your childhood. I recommend reducing your intake of all these foods. Instead, try drinking sparkling water and eating more fish and whole grains.
- **Trade out sedentary activity for physical activity:** Small steps, like exercising a half hour each week instead of sitting on the couch, can build to a big impact. In one study of almost 90,000 female nurses, those who spent about two hours per day watching TV had a 69 percent increased risk of getting colorectal cancer at a young age compared with people who watched less than one hour of TV per day — even after controlling for factors like BMI, family history, smoking and diet.
- **Stay up-to-date on screenings:** Colonoscopies are a great screening tool, but they also prevent colorectal cancer by removing polyps — small, abnormal growths — before they turn into cancer. If you're between the ages of 45 and 75, then you should be screened.

What I want my patients to know

It worries me that fewer than 20 percent of people ages 45-49 are up-to-date with colorectal cancer screening. The most common symptom of colorectal cancer among younger people is rectal bleeding. While blood in your poop can be due to any number of less worrisome causes such as hemorrhoids, which are incredibly common, it's never normal. If you see blood, inform your physician.



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