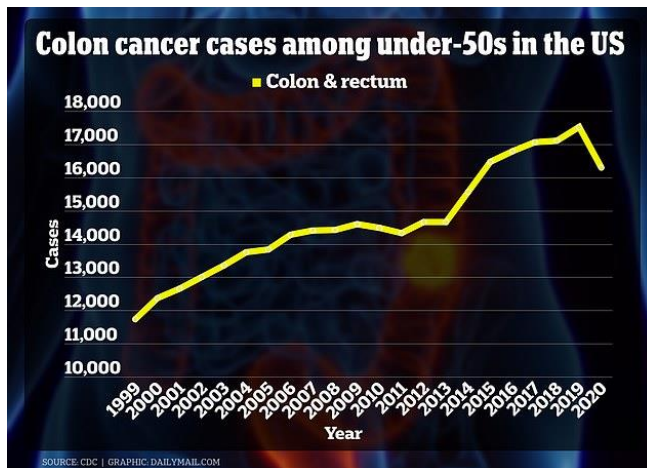


Rise in cancer-causing germs: Researchers say dental plaque could be behind the mysterious rise in aggressive colon tumors – as a separate study links strep throat to stomach cancer

Emma James



A puzzling rise in aggressive colon and stomach cancers may be due in part to bacteria, according to two new studies.

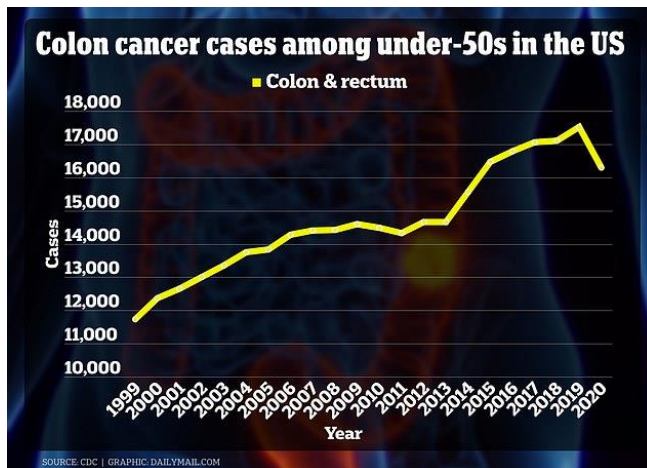
Experts are baffled by the alarming rise in tumors of the colon and rectum over the past two decades, increasingly affecting young people.

Theories for the increase include an increase in the number of people with diets rich in junk food and rising obesity rates. But now researchers at the Fred Hutchinson Cancer Center in Seattle have discovered that *Fusobacterium nucleatum*, which lives in dental plaque, could explain why some colon tumors are so difficult to treat.

Half of all CRC tumors – the most aggressive and deadly type – contained bacteria that can travel from the mouth to the intestines through swallowing.

Meanwhile, Chinese and Singaporean scientists showed in a study this week that bacteria called *Streptococcus anginosus*, which are normally found in the throat, mouth and vagina, can promote the growth of stomach cancer.

S. anginosus colonizes the mucous membranes in the nose and mouth and can cause abscesses, tissue infections such as flesh-eating disease, infections of the inner lining of the heart, and joint infections.



The graphic above shows the number of colon cancer cases in people under 50 per year. There was a decline in 2020 as the Covid pandemic resulted in fewer people reporting for check-ups



Colon cancer can cause blood to appear in the stool, change bowel habits, and create a lump in the intestines that can lead to constipation. Some people also experience weight loss due to these symptoms

The researchers hope their discoveries will lead to improved cancer treatments that target the bacterial microbiome in the gut and eliminate the stealthy bacteria.

Researchers at the cancer center conducted laboratory studies to find out how the bacterium *Fusobacterium nucleatum* influences the environment that allows tumor cells to grow.

They isolated the bacterial strains from cancer patients killed from North America and Europe. They also examined the genetic makeup of the bacteria in more detail.

Samples from cancer patients were analyzed to determine the presence of the bacteria. This included extracting DNA from tissue samples and using genetic sequencing techniques to identify the species.

They then analyzed the frequency of the bacteria in stool samples from people with and without colon cancer to determine a possible connection between the colonization of the bacteria in the body and the triggering of the disease.

The researchers found that in about 50 percent of cancer cases, a specific subtype of the bacterium was present in the tumor tissue. However, the researchers did not provide information about how advanced the stages of these cancers were.

They found this microbe in greater numbers in stool samples from colon cancer patients than in stool samples from healthy people.

They discovered that cancer treatments that target both the bacteria in the body and the tumor cells could improve patient outcomes.

The researchers said the bacteria could be the cause of the increase in cancers in young people, but they can't say this with certainty because many of their study participants were over 50.

But co-lead author Dr. Susan Bullman said the findings "raise the question of whether there are elevated levels of this bacterium in young colorectal cancer, which is on the rise worldwide for unknown reasons."



Actor Chadwick Boseman died in 2020 after a four-year battle with colon cancer

Meanwhile, researchers in Asia reported that another common and usually harmless bacterium plays an important role in the development of stomach cancer: *S. anginosus*, which is part of the normal flora of the mouth, nose, throat, intestines and vagina.

The bacteria can lead to abscesses, pneumonia, heart infections, urinary tract infections and tissue infections.

In studies on mice, they found that when the body's immune system is weakened, the bacteria can spread to other parts of the body and trigger an inflammatory response that can lead to acute damage to the stomach lining, an infection called gastritis.

This can trigger cancer growth and, in some cases, double the tumor size. Another type of bacteria, *Helicobacter pylori*, is also known to cause stomach ulcers, increasing a person's risk of developing stomach cancer, the fifth most common type worldwide.

Professor Joseph Sung Jao-yiu from the Chinese University of Hong Kong and co-author of the study said: "This lays important foundations for further human studies that will help doctors better treat and prevent stomach cancer caused by bacteria."

Tumors receive great help from the bacteria that live in our mouths, throats and intestines. These bacteria are generally harmless, aside from occasionally causing treatable illnesses.



As shown above, lack of energy, unwanted weight loss, constant indigestion, difficulty swallowing, nausea, and a lump at the top of your stomach are all warning signs and symptoms of stomach cancer

Colorectal cancer (CRC) rates in young age groups in the United States have seen a historic 50 percent increase since 1999 in adults under the age of 50 – what is considered early-stage cancer, or when cancer occurs between the ages of 18 and 49.

Around 52,000 people die every year.

Studies suggest that cases worldwide in this age group have increased 80 percent in three decades, from 1.82 million in 1990 to 3.26 million cases per year in 2019.

The *F. nucleatum* bacteria lurks in the mouth and makes treating the cancer much more difficult by acting as a protective coating around tumor cells and protecting them from targeted drugs.

In their study published in the journal *Nature*, Hutch Center cancer researchers examined the concentration of the bacterium in colored tumor tissue from 200 colon cancer patients.

Dr. Susan Bullman, a cancer researcher at Fred Hutch, said: "We have seen time and time again that patients with colorectal tumors containing *Fusobacterium nucleatum* have poorer survival and a poorer prognosis than patients without the microorganism."

“We are now finding that a specific subtype of this microbe is responsible for tumor growth.” It suggests that therapeutics and screenings that target this subgroup within the microbiota would help people who are at higher risk of more aggressive colorectal cancer .”

Actor Chadwick Boseman, famous for his roles in the films “Black Panther” and “Get on Up,” died of early colon cancer at the age of 43.

About 11,000 Americans die from stomach cancer every year. 62 percent of people with stomach cancer are diagnosed after the cancer has already spread regionally or beyond the site of origin. This makes treatment incredibly difficult.

Prof Sung, co-leader of the Asian study, said: “Our results suggest that long-term *S. anginosus* infection causes intense chronic gastritis comparable to *H. pylori* infection.”

“In fact, these two pathogens could work together to promote stomach inflammation and ultimately stomach cancer. This could change our approach to preventing and treating the disease.”

Their research was published in the journal *Cell*.

<https://ustimespost.com/rise-in-cancer-causing-germs-researchers-say-dental-plaque-could-be-behind-the-mysterious-rise-in-aggressive-colon-tumors-as-a-separate-study-links-strep-throat-to-stomach-cancer/>