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Bug that causes stomach cancer could play a role in colorectal cancer

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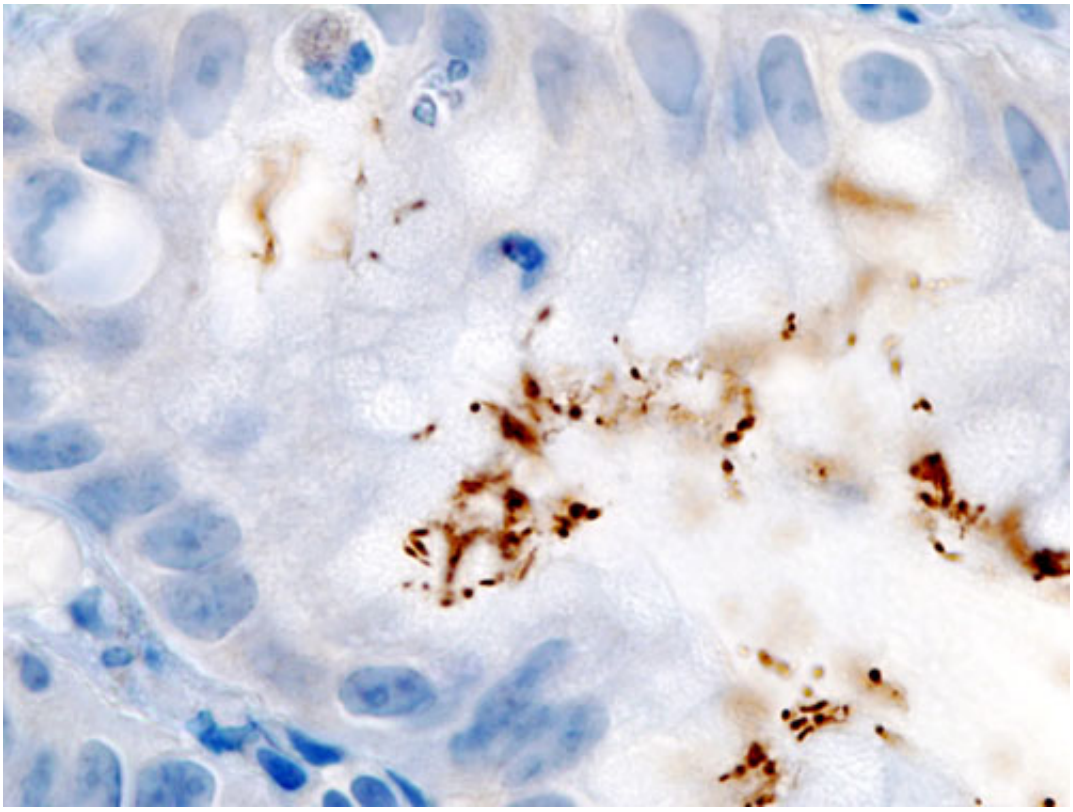

Histopathology of Helicobacter pylori infection in a gastric foveolar pit demonstrated in endoscopic gastric biopsy. Credit: Wikipedia.

A bacterium known for causing stomach cancer might also increase the risk of certain colorectal cancers, particularly among African Americans, according to a study led by Duke Cancer Institute researchers.

The finding, published online Oct. 5 in the journal *Gastroenterology*, describes an association between antibodies to *H. pylori* bacteria and an increased risk of colorectal cancers, although it does not establish the bacteria as a definitive cause; those studies are ongoing.

But in an analysis of more than 4,000 colorectal cancer cases culled from large, diverse cohort studies, the researchers found a significant correlation between colorectal cancer incidence and those who had been infected with a virulent strain of *H. pylori* that is especially common among African Americans.

"The link between infection and cancer is intriguing, particularly if we can eradicate it with a simple round of antibiotics," said lead author Meira Epplein, Ph.D., co-leader of Cancer Control and Population Sciences at Duke Cancer Institute. "Our study provides strong evidence that we need to pursue this research to establish a definitive cause-and-effect."

Epplein and colleagues collected data from 10 large regional and national studies, including the Southern Community Cohort Study, the Nurses Health Study, the Women's Health Initiative and the American Cancer Society's Cancer Prevention Study-II, among others.

They analyzed blood samples from more than 8,400 ethnically and regionally diverse study participants—half who went on to develop colorectal cancer and the other half with no such diagnosis.

The researchers found that *H. pylori* infections were equally common in both the cancer and non-cancer group, with 4 in 10 patients in both groups testing positive for exposure to the bacterium.

But stark racial differences also appeared. White patients had below average H. pylori infection rates, and Asian Americans had average

rates. For black and Latino patients, however, the rates were much higher. Among African Americans, 65 percent of the non-cancer patients and 71 percent of the colorectal cancer patients had *H. pylori* antibodies; among Latinos, 77 percent of the non-cancer group and 74 percent of the cancer group had antibodies.

Further analysis showed that antibodies to four *H. pylori* proteins were most often present among the different ethnic groups with colorectal cancer. One *H. pylori* protein in particular, VacA, had the strongest association with increased odds of colorectal cancer among the African American patients in the study, and, specifically, high levels of antibodies to this protein were associated with colorectal cancer incidence in both African Americans and Asian Americans.

"It was surprising to find VacA antibodies increased the odds of colorectal cancer in African Americans and Asian Americans, and not in whites and Latinos," Epplein said. "This is a big question—are people harboring different bacteria based on genetic origin or heritage? This is part of what we need to figure out."

Epplein said additional studies might also determine whether antibodies to the H. pylori VacA protein could serve as a marker of colorectal cancer risk if it isn't causing the cancer directly.

Provided by Duke University Medical Center