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Researchers help identify genetic variants for colorectal cancer

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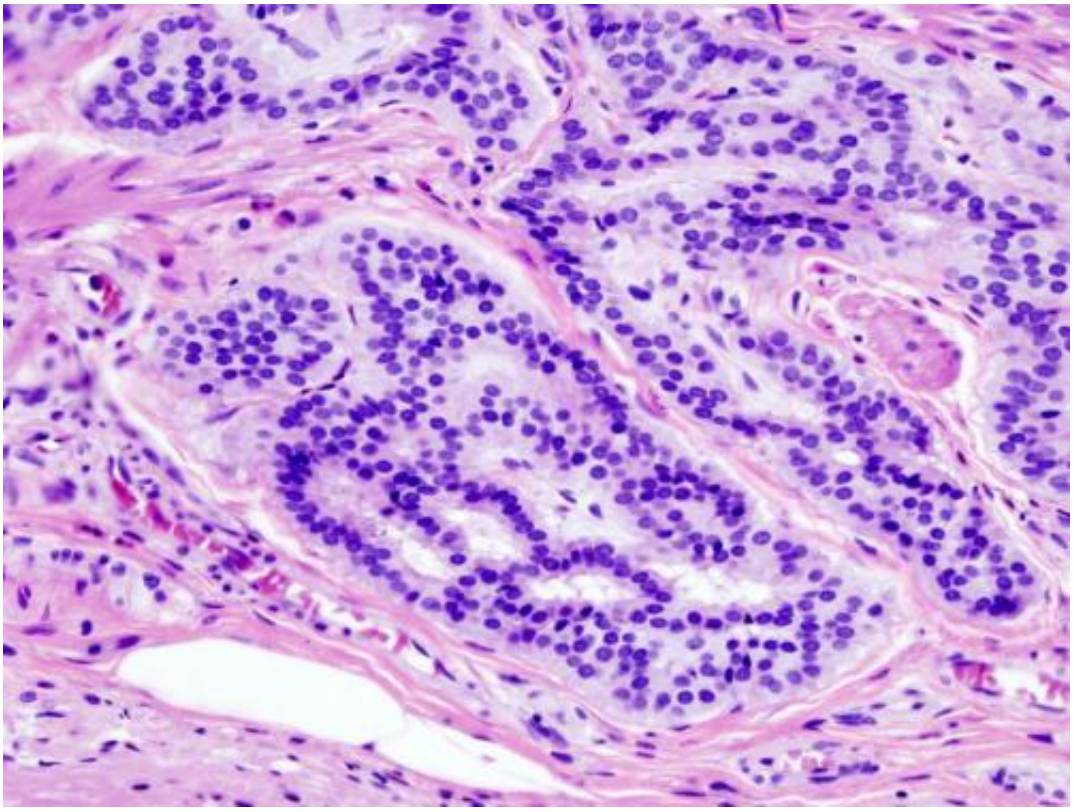

Cancer—Histopathologic image of colonic carcinoid. Credit: Wikipedia/CC BY-SA 3.0

Six genetic variants associated with an increased risk of colorectal cancer were newly identified by University of Hawai'i Cancer Center researchers as part of a large international collaboration. The discovery will help identify high-risk individuals who should be prioritized for

colonoscopy screening, potentially resulting in tumors being found earlier and increased patient survival.

"Genetic risk variants will soon be used to predict risk in the general population and, with that knowledge, people with high risk can be screened earlier by their physician," said Loic Le Marchand, MD, PhD, a professor in the UH Cancer Center's Epidemiology Program. "The advantage of screening and detecting tumors early is that it results in a much improved survival."

Colorectal cancer is more than 90 percent curable when the tumor is diagnosed before it has extended beyond the intestinal wall, according to Hawaii Cancer Facts & Figures.

In a study published in the journal *Nature Communications*, Le Marchand and colleagues compared DNA differences in the blood of people who have cancer and those who do not in order to identify these risk markers.

"There are millions of differences in our genome and many variants do not have much significance, but some are found to be risk markers for colorectal cancer," said Le Marchand.

The study looked at 38,000 individuals of European descent with and without colorectal cancer, along with 15,000 individuals of Japanese or African-American descent studied by the UH Cancer Center. By increasing the sample size, researchers have a chance to find rare genetic differences.

Colorectal cancer is the second cause of cancer deaths in Hawai'i. There are an estimated nearly 700 new cases of colorectal cancer in the state each year. About half of these patients will succumb to their disease. Japanese males and women have the highest colorectal cancer rates in the state.

Le Marchand and colleagues plan to continue expanding the study in order to eventually precisely identify a person's risk for colorectal cancer.

"Our aim is to have in the future these and other risk variants part of a blood test. The test would predict risk of colorectal cancer in combination with a family history and a simple lifestyle questionnaire. We hope to have this in clinical trials within five years," said Le Marchand.

More information: Fredrick R. Schumacher et al. Genome-wide association study of colorectal cancer identifies six new susceptibility loci, *Nature Communications* (2015). DOI: 10.1038/ncomms8138

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