Colon cancer link to obesity uncovered

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A new study reveals the first-ever genetic link between obesity and colon cancer risk, a finding that could lead to greater accuracy in testing for the disease, said a researcher at the University of Alabama at Birmingham (UAB).

The discovery also may improve efforts to ward off colon cancer with obesity-fighting activities like exercise, weight loss and healthy eating.

The findings are published in *JAMA*, the *Journal of the American Medical Association*.

"Our hope is that we can significantly improve the screening and early detection for this disease, and open new avenues for better understanding the genetic and lifestyle factors that influence colon cancer risk," said Boris Pasche, M.D., Ph.D., director of the division of hematology and oncology at the UAB Comprehensive Cancer Center and lead author of the *JAMA* study.

The research focuses on a gene called ADIPOQ that results in the formation of a fat hormone called adiponectin. It shows those who inherit a common genetic variant of ADIPOQ carry up to 30 percent reduced risk of colon cancer compared to others.

In other words, Pasche said, those identified without the gene variant or those who have unhealthy blood levels of adiponectin may benefit from early colorectal testing. Additional studies are needed to confirm whether those without the variant benefit from cancer-prevention

lifestyle changes such as diet and exercise.

Colon cancer is the third-leading cancer killer of Americans. This year 149,000 people will be diagnosed with colon cancer and 50,000 will die from the disease, according to estimates from the American Cancer Society.

One-third of people with colon cancer have a clear family history of the disease, and now scientists are homing in on the exact DNA sequences or mutations within the ADIPOQ gene that influence colon cancer risk, Pasche said.

It has already been proven that obesity is influenced by genetics, and colon cancer is influenced by genetics. The *JAMA* study is the first to make a three-way scientific connection between genetic variation, obesity and colon cancer risk.

Other research has shown adiponectin is associated with diabetes, insulin resistance, cardiovascular disease and with influencing cell growth in colonic tissues. Exactly how adiponectin or its genes directly impact tumor growth is still unknown, but those cell pathways are being widely studied, Pasche said.

A separate gene variant in ADIPOQ is a known modifier for breast-cancer risk, according a recent study in the journal *Cancer Research* that was co-authored by Pasche.

Source: University of Alabama at Birmingham