

# New studies highlight obesity's impact on gastrointestinal health

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The association between obesity and gastrointestinal-related cancers and coronary artery disease; the link between an overweight or obese body mass index and the severity of Crohn's disease; and whether inflammatory bowel disease is an independent risk factor for coronary artery disease, were among the highlights of new research that was presented this week at the American College of Gastroenterology's (ACG) 75th Annual Scientific meeting in San Antonio.

## Obesity Linked to Increased Liver Cancer Risk, Adenoma Recurrence

Although [liver cancer](#) (hepatocellular [carcinoma](#)/HCC) in the absence of cirrhosis, [fibrosis](#) or [hepatitis](#) B is a rare occurrence, estimates show up to 10 percent of liver cancer occurs in non-cirrhotic livers.

"Previous studies have suggested that [obesity](#) and insulin resistance may be risk factors for non-cirrhotic hepatocellular carcinoma, prompting us to analyze data from a cohort of 12 patients with non-cirrhotic HCC who underwent partial hepatectomy between January 2008 and September 2009 at a single center," said researcher Benjamin Mitlyng, M.D., a fellow with the University of Minnesota's Division of Gastroenterology, Hepatology and Nutrition. "We evaluated preoperative data including age, gender, presence of liver disease, body mass index (BMI), number of lesions and other comorbidities; data related to the resection, such as background history, tumor size, and vascular invasion; as well as post-

operative complications and mortality," Dr. Mitlyng explained.

The study, "Hepatocellular Carcinoma in the Non-Cirrhotic Liver is Associated With a High Body Mass Index Independent of Steatosis," found that patients with non-cirrhotic HCC had a high prevalence of diabetes and elevated BMIs despite a lack of steatosis. However, even with advanced disease, patients tolerated resection very well with minimal complications, no operative mortality and average tumor-free follow-up of 17.5 months, according to the study.

"These findings support previous data that there may be an association with non-cirrhotic HCC and an elevated BMI as well as diabetes independent of steatosis," said Dr. Mitlyng.

[Body Mass Index](#) was also linked with adenoma recurrence in the short and long-term, in another study unveiled today, "The Association of Obesity with Short and Long-Term Risk of Adenoma Recurrence: Analysis of the Polyp Prevention Trial and Continued Follow-Up Study."

"Previous prospective studies have evaluated the association between obesity and colorectal adenoma recurrence within four years of follow-up, a relatively short duration," said Adeyinka Laiyemo, M.D. "We aimed to examine long-term cumulative risk of adenoma recurrence in association with obesity among participants in the Polyp Prevention Trial (PPT), a multicenter, randomized controlled trial that evaluated the effect of a low fat, high fiber, fruits and vegetable diet on the risk of colorectal adenoma recurrence," explained Dr. Laiyemo.

The study, found that at baseline, approximately 50 percent of the 760 participants were overweight (BMI 25-29 kg/m<sup>2</sup>) and 25 percent were obese (BMI = 30 kg/m<sup>2</sup>). The mean age of participants was 59.7 years and 66 percent were males. The mean total duration of follow-up was 8.4 years (range 4.9 -12.4 years).

"When compared with participants with normal BMI, overweight and obese participants have an elevated risk of adenoma recurrence during both short and term and long-term," said Dr. Laiyemo. "Since BMI was positively associated with adenoma recurrence in short and long-term, lifestyle modification should be encouraged."

## **High Prevalence of Coronary Artery Disease in Patients with Non-Alcoholic Fatty Liver Disease**

With Non-Alcoholic Fatty Liver Disease (NAFLD) affecting up to 20 percent of adults and nearly five percent of children, researchers aimed to assess the prevalence and predictors of [coronary artery disease](#) (CAD) in patients with NAFLD. NAFLD is a very common disorder and refers to a group of conditions where there is accumulation of excess fat in the liver of people who drink little or no alcohol. Both NAFLD and CAD are complications of metabolic syndrome.

A total of 93 patients who had a suspicion of CAD and were scheduled for cardiac catheterization were included in the study, "High Prevalence of Coronary Artery Disease (CAD) in Patients with Non-Alcoholic Fatty Liver Disease (NAFLD)," which found that among the 60 patients with available abdominal imaging, the prevalence of NAFLD was 30 percent.

"These patients who were found to have NAFLD were older, more commonly male, had higher weight and were also more commonly diabetic, hypertensive and had hyperlipidemia," explained researcher Noreen Hossain, M.D., of the Center for Liver Diseases, Inova Fairfax Hospital, Fairfax, Va. "The prevalence of angiographically-proven coronary disease in the NAFLD cohort was 61 percent compared to 26 percent in the non-NAFLD controls," said Dr. Hossain.

"As a result, NAFLD is strongly associated with angiographically-proven

CAD," explained Dr. Hossain. "We found that diabetes is independently associated with both NAFLD and CAD."

## **Is Inflammatory Bowel Disease A Risk Factor for Coronary Artery Disease?**

The link between chronic bowel inflammation and coronary artery disease (CAD) was explored in another study, "Is Inflammatory Bowel Disease a Risk Factor for Coronary Artery Disease," which focused on 79 patients who had confirmed [inflammatory bowel disease](#) (IBD) and CAD diagnosis. Forty-six patients had ulcerative colitis and 52 percent were males in the study group, compared to 40 percent males in the control group. Using the Framingham risk score (FRS), which is calculated based on age, sex, hypertension, diabetes, tobacco use, total cholesterol and HDL values, the study found that FRS was lower in patients with IBD and CAD compared with the control group of patients with just CAD, implying that IBD is an independent risk factor for CAD.

"Recurrent flares of intestinal mucosal inflammation leads to the presence of excess pro-inflammatory cytokines and serum soluble adhesion molecules in IBD that could promote atherosclerosis-related inflammation, alter lipid metabolism, and contribute to plaque instability and rupture," said researcher Tarun Rustagi, M.D., of the Department of Internal Medicine, University of Connecticut. "Our results are in accordance with those published by smaller studies." Dr. Rustig also explained that further prospective cohort studies are needed to accurately investigate the incidence of CAD in patients with IBD.

In other findings, Crohn's disease patients who are overweight or obese (BMI>25) are more likely to have more severe disease characterized by a higher likelihood of Vitamin D deficiency, stricturing ileocolonic

disease, and are more likely to require surgery compared to normal weight patients (BMI

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