Height May Factor Into Colorectal Cancer Risk

According to a meta-analysis, the tallest individuals, compared with the shortest, had a 24% increased risk of developing colorectal cancer.

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A meta-analysis conducted by Johns Hopkins Medicine researchers supports evidence that taller adults may be more likely to develop colorectal cancer or colon polyps than shorter adults.

The researchers noted that previous studies comparing taller height and colorectal cancer have yielded conflicting results due to inconsistent measures of height and the exclusion of the risk of adenomas, or precancerous colon polyps. (These polyps, which increase the risk of developing colorectal cancer, can be removed during a colonoscopy.)

“This is the largest study of its kind to date. It builds on evidence that taller height is an overlooked risk factor and should be considered when evaluating and recommending patients for colorectal cancer screenings,” Gerard Mullin, MD, associate professor in the Division of Gastroenterology and Hepatology at Johns Hopkins Medicine, said in a Johns Hopkins press release.

Mullin and his team emphasized that the study merely backs the well-observed association between taller height and colorectal cancer risk and does not prove causation.

“One possible reason for this link is that adult height correlates with body organ size. More active proliferation in organs of taller people could increase the possibility of mutations leading to malignant transformation,” said Elinor Zhou, MD, co–first author of the study report.

Published in Cancer Epidemiology, Biomarkers & Prevention, the meta-analysis identified 47 international observational studies involving 280,660 cases of colorectal cancer and 14,139 cases of colorectal adenoma. Original data from the Johns Hopkins Colon Biofilm study were also examined. The study analyzed 1,459 adults undergoing outpatient colonoscopies to consider the correlation between cancer and bacteria attached to the walls of the colon, known as biofilm.

Because the definition of tallness varies around the world—what is considered tall in Japan may not be considered tall in the United States, for example— the Johns Hopkins team compared the highest versus the lowest percentile of various study groups.

“The findings suggest that, overall, the tallest individuals within the highest percentile of height had a 24% higher risk of developing colorectal cancer than the shortest within the lowest percentile,” said Mullin in the press release. “Every 10-centimeter increase (about 4 inches) in height was found to be associated with a 14% increased risk of developing colorectal cancer and 6% increased odds of having adenomas.”

In the United States, the average height of men is 5 feet 9 inches; the average height of women is 5 feet 4 inches, according to the Centers for Disease Control and Prevention. When comparing these heights to the meta-analysis data, this means men and women who are 4 inches above the average U.S. height or taller are at increased risk.

The percentage results had to be adjusted for such known risk factors as age, personal or family history of colorectal cancer or adenomas and a personal history of chronic inflammatory bowel disease.

“Greater awareness by the public and government will help promote more interest and funding for more research, which ultimately could change guidelines for physicians to consider height as a risk for cancer,” Mullin said.

If confirmed, tallness may be as significant as other well-known risk factors, many of which are modifiable. In the United States, for example, more than half of all colorectal cancers are connected to habits such as insufficient physical activity, unhealthy diet, cigarette smoking and high alcohol consumption.

Colorectal cancer screenings, which include not only colonoscopies but also noninvasive methods, such as home tests, should begin at age 45 for people at average risk, according to federal medical guidelines. Individuals at higher genetic risk (such as family history) may be counseled to begin such screenings earlier. While gastroenterologists currently rely on these genetic and age-related risks to recommend such screenings, this meta-analysis may encourage those professionals to take tallness into consideration as well.

To read about how one Native American copes with colorectal cancer, see “A Colon Cancer Diary.”
