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Sedentary Behavior Linked to Recurrence of Precancerous Colorectal Tumors

NATIONAL HARBOR, Md. — Men who spend the most time engaged in sedentary behaviors are at greatest risk for recurrence of colorectal adenomas, benign tumors that are known precursors of colorectal cancers, according to results presented here at the [12th Annual AACR International Conference on Frontiers in Cancer Prevention Research](#), held Oct. 27–30.

The majority of colorectal cancers arise from precursors called colorectal adenomatous polyps, or colorectal adenomas, which can be removed during a colonoscopy. Although there is extensive evidence supporting an association between higher overall levels of physical activity and reduced risk of colorectal cancer, few studies have focused on the impact of sedentary behavior on colorectal cancer risk.

“Sedentary behavior is emerging as a risk factor for poor health,” said Christine L. Sardo Molmenti, Ph.D., M.P.H., postdoctoral research fellow in the [Department of Epidemiology](#) at Columbia University Mailman School of Public Health in New York. “Even among those who fulfill daily recommendations for physical activity, lengthy periods of sedentary behavior have been associated with early morbidity and mortality, leading to the ‘active couch potato’ paradigm.

“To our knowledge, this study is the first to specifically investigate the association between sedentary behavior and recurrence of colorectal adenomas. Given the substantial increase in risk of colorectal adenoma recurrence we observed for men with the highest sedentary time, we believe it would be beneficial to see ‘reduce prolonged sitting time’ added to the list of public health recommendations currently in place for health promotion and disease prevention.”

Sardo Molmenti and colleagues performed a pooled analysis of participants of two randomized, double-blind, placebo-controlled phase III clinical trials conducted at the University of Arizona Cancer Center in Tucson: The Wheat Bran Fiber Study and the Ursodeoxycholic Acid Trial.

All participants in the trials had one or more colorectal adenomas removed during a colonoscopy conducted in the six months prior to their trial enrollment. Among the participants were 1,730 who had completed a self-administered questionnaire that included questions about leisure, recreational, household, and other categories of activity at enrollment, and had undergone a follow-up colonoscopy.

When the researchers analyzed all the data together, they found no association between activity type and colorectal adenoma recurrence. However, when they examined the data for men and women separately, they found that men who reported spending more than 11.38 hours a day engaged in sedentary behaviors, such as writing, typing or working on a computer, and reading, were 45 percent more likely to experience colorectal adenoma recurrence compared with men who spent fewer than 6.90 sedentary hours a day. No association between sedentary time and colorectal adenoma recurrence was observed for women.

Further analysis showed that men who reported high levels of sedentary behaviors and low levels of participation in recreational activities such as walking, jogging, and playing golf, were 41 percent more likely to experience colorectal adenoma recurrence compared with men who reported low levels of both sedentary behaviors and recreational activity. According to Sardo Molmenti, this confirms that sedentary behavior appears to independently contribute to increased cancer risk beyond the accompanying reduction in physical activity.

The researchers plan to conduct further studies to determine more clearly the role of sedentary behavior in cancer risk. According to Sardo Molmenti, new tools and methods are needed to better classify and quantify sedentary behaviors.

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Presenter: Christine L. Sardo Molmenti, Ph.D., M.P.H.

Title: Sedentary behavior is associated with colorectal adenoma recurrence in men

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The association between physical activity and colorectal adenoma is equivocal. This study was designed to assess the relationship between various physical activity types and colorectal adenoma recurrence in a pooled sample of participants from the Wheat Bran Fiber and Ursodeoxycholic Acid phase III clinical trials with available data from the baseline Arizona Activity Frequency Questionnaire and a follow-up colonoscopy (n=1,730). Logistic regression modeling was used to estimate the relationship between sedentary, recreational, and household activity on colorectal adenoma recurrence overall and stratified by gender. No statistically significant associations were found between any activity type and colorectal adenoma recurrence overall however, males with the highest sedentary time demonstrated a statistically significant 45% higher odds of adenoma recurrence. Compared to the lowest quartile of sedentary time, the ORs (95% CIs) for the second, third, and fourth quartiles among men were 1.31 (0.93, 1.84), 1.47 (1.04, 2.09) and 1.45 (1.02, 2.06) respectively (P trend=0.03). In males, those with low recreational activity and high sedentary time was also associated with greater risk for recurrent adenoma, with an OR (95% CI) of 1.41(1.00-2.00) for high sedentary time/low recreational activity compared to the reference group (low sedentary time/low recreational activity). Our results suggest that sedentary time is associated with a higher risk of colorectal adenoma recurrence among men, supporting a role for sedentary lifestyle in the early stages of carcinogenesis. Efforts to intervene on sedentary time should be evaluated as a method for reducing recurrent adenomas.