

AICR 2021 Cancer Research Highlights: Fruits and Vegetables, Coffee, Cholesterol, Sitting, Sugary Beverages

The American Institute for Cancer Research (AICR) highlights significant diet and exercise findings for cancer prevention.

December 23, 2021 By Mya Nelson at the American Institute for Cancer Research

In a year dominated with health news related to COVID-19, this year revealed a lot of important research findings related to lifestyle and cancer risk and survivorship. When added to the body of previous research, 2021 study findings give important insights into how diet, physical activity and weight may help reduce cancer risk and improve survivors' health.

Here, we highlight key studies published this year—much of it funded and related to AICR's Cancer Prevention Recommendations—that helped to shift this research forward.

Fruits and vegetables may lower breast cancer risk

Evidence is clear that having too much body fat increases the risk of post-menopausal breast cancer. But research is less clear when it comes to what women eat and drink independent of weight. An AICR-supported study published in October found a relatively small but significant effect that older women eating high amounts of fruits and vegetables may have lower risk of breast cancer when compared to women consuming relatively low amounts.

The study was a systematic review of previous research, pooling the relevant findings to calculate the risks. Overall, the researchers found a 9 percent lower risk of overall breast cancer when comparing highest versus lowest fruit and vegetable consumption. The link was especially strong for breast tumor cancer cells that have no estrogen or progesterone receptors (ER-and PR-). These hormone-negative tumors are less common but more challenging to treat.

A possible link between high cholesterol and breast cancer recurrence

Breast cancer cells that break away from the main tumor may settle in other parts of the body, such as the bone marrow, liver or lungs. Called metastatic breast cancer, it can occur months or years after treatment, but little is known about why the cancer cells re-emerge.

Sparked by AICR funding, studies published this year provided a deeper understanding of how a

cholesterol by-product and foods fried at high temperatures—such as bacon—may play a role in triggering breast cancer recurrence. The research suggests that cholesterol is important for the regulation of cancer and immune cells, which may help explain a link between earlier recurrence and high cholesterol levels. This year laboratory studies continued to hone in on the workings of one cholesterol byproduct, 27-HC, and how that may promote tumor metastasis.

Still in relatively early stages, this innovative [research](#) offers potential to understand how cholesterol-containing foods and how they are cooked may make a difference for breast cancer survivors.

Decaf and regular coffee benefits for liver health and cancer survivors

AICR reports have previously found strong evidence that coffee protects against liver and endometrial cancers. This year saw more positive studies related to coffee and cancer, with one of the largest studies on [coffee and breast cancer survivorship](#). Funded by AICR, the study looked at the coffee and tea consumption habits of 8,900 breast cancer survivors over a median of close to a dozen years.

The study found that drinking two to three cups of coffee a day linked with a lower risk of dying overall and from breast cancer, respectively, when compared to noncoffee drinkers during the course of the study. Three cups of daily tea after diagnosis also linked with a lower risk of dying from any cause compared with nondrinkers.

The second study, published in June, adds to the research on liver health. This study included close to half a million people in the United Kingdom who were followed for a median of almost 11 years. Compared to noncoffee drinkers, coffee drinkers had a lower risk of chronic liver disease and of dying from the disease regardless of the amount of coffee they drank or the type of coffee: decaffeinated, instant or ground.

Chronic liver disease is a growing and major global health problem that increases the risk of liver cancer. The study found only a limited link with coffee reducing liver cancer risk, but it indicated an association.

Both studies show a correlation, they do not directly connect the beverage alone to either increasing survival or improving liver health.

More movement, less sitting, may help cancer survivors' quality of life

As the evidence related to physical activity and health continues to mount, a study published this year pointed to how both activity and less sedentary time affected fatigue and other quality-of-life issues among colorectal cancer survivors.

This study, funded in part by the World Cancer Research Fund—AICR's international affiliate—followed close to 400 colorectal cancer survivors for up to two years after treatment. In comparing different individuals, people who increased their time being sedentary between six weeks and two years after treatment reported decreased physical function and increased fatigue; those who spent more time in moderate to vigorous activity reported better health-related quality-

of-life and less fatigue.

Analysis suggested the combination of less sitting and more activity was especially associated with better quality of life, including ability to function and less fatigue.

And for breast cancer survivors having overweight ... diet and exercise matter

Exercising combined with eating a healthy diet may help breast cancer survivors having overweight or obesity improve their ability to carry groceries and perform other daily physical activities, according to a study published this past June. In this study, researchers compared [the effect of different lifestyle interventions on survivors' quality of life](#). The strong study design adds an important understanding of how lifestyle affects pain, fatigue and other mental and physical challenges that plague many breast cancer survivors after treatment.

The study assigned 351 breast cancer survivors having overweight or obesity to one of four lifestyle groups. One group of women focused on exercise, a second on diet and a third on diet combined with exercise. The fourth group served as the comparison. By the end of the study, when compared to the control group, the women in the diet group lost an average of 6 percent of their body weight and the women in the diet and exercise group lost slightly more than 7 percent.

The [study](#) includes authors supported by AICR.

Sugary beverages link to higher risk of colorectal cancer among young women

Drinking sugar-sweetened sodas and other beverages may increase the risk of younger women developing colorectal cancer, found a study that was published this year in the journal Gut. The study, which includes one author funded by AICR, may help explain the troubling increase in the rise of colorectal cancer among younger men and women in recent years.

Colorectal cancer diagnosed among adults younger than 50 is called “early-onset colorectal cancer” and it may have distinct risk factors and biology compared to colorectal cancers diagnosed among older adults. Here, the study analyzed data from approximately 95,000 women who were between the ages of 25 and 42 when they entered the study in 1989. The women regularly answered questions about what beverages they drank and other dietary habits.

Compared to women who drank less than one eight-ounce serving per week of sugar-sweetened beverages, those who drank two or more servings per day had just over twice the risk of developing early-onset colorectal cancer.

The findings tie together with previous papers by the same research team that point to diet, obesity and metabolic syndrome as potential culprits in the increasing cases of early-onset colorectal cancer.

Following AICR’s Cancer Prevention Recommendations decreases premature mortality among colorectal cancer survivors

Independent studies—not funded by AICR—testing the most recent AICR Cancer Prevention

Recommendations found that following AICR's diet, physical activity and weight recommendations may lengthen the lives of colorectal cancer survivors.

The study scored, then analyzed adherence of the AICR Recommendations among 1,491 patients with colorectal cancer over a median follow-up of almost eight years.

Published in October, the [study](#) concluded that survivors who most adhered to the Recommendations had a lower risk of dying from any cause, compared to those who least followed the Recommendations during the course of the study. When BMI was removed from the score because of the potential disease-related weight loss that may have occurred, a link was seen between following the other recommendations and a lower risk of both colorectal cancer and overall mortality.

Thanks to all of the [AICR grantees](#), scientists everywhere, study participants and all who are involved in this field of research. You can read more about the latest research and AICR grantees in our Research section.

AICR Impact

The American Institute for Cancer Research helps the public understand the relationship between lifestyle, nutrition and cancer risk. We work to prevent cancer through innovative research, community programs and impactful public health initiatives.

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