Does Eating Fruits and Vegetables Lower Breast Cancer Risk? It Just Might, Study Suggests

A new review suggests that eating more fruits and vegetables has a modest but significant benefit in lowering breast cancer risk.

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The research between diet and breast cancer shows that what women eat matters when it comes to lower risk, with the clear link due to weight. AICR—and other health organizations—have found strong evidence that having overweight and obesity increases the risk of post-menopausal breast cancer. Eating plenty of fruits and vegetables checks one key habit for getting to and staying a healthy weight.

But when it comes to fruits and vegetables independently, research is less clear about whether these food groups link to lower breast cancer risk.

A new review of the evidence suggests they do, finding a modest but significant effect that consuming relatively high amounts of fruits and vegetables lowers the risk of breast cancer compared to eating lower amounts. The link was especially strong for hormone-negative 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.

The study was published in the British Journal of Cancer.

Veggies and fruits—AICR's findings

In 2018, AICR/WCRF's systematic review of the global research found there was not enough evidence to conclude there was a clear connection between breast cancer risk and fruits and vegetable consumption. The AICR/WCRF report used an independent panel of leading experts to analyze the global evidence.

The report did find indications that non-starchy vegetable consumption decreases the risk of ER-negative breast tumors. Limited evidence also pointed to carrots and other foods containing carotenoids as lowering the risk of breast cancer overall, with the association stronger for ER-negative tumors. Yet for both of these dietary categories, the report concluded that evidence was

too limited to make a clear link.

Carotenoids are an orange-colored phytochemical found in many fruits and vegetables, such as pumpkins, carrots, apricots and spinach. (The green-colored chlorophyll in spinach and kale masks the orange phytochemical.) We have written about some of that research here.

The latest review

In this new review, a team of researchers identified the relevant publications through November 2020 that investigated the effects of fruits and vegetable consumption among people. The majority of these studies were the type that followed a group of people and assessed their diet and disease over time. Follow-up times ranged from 4 years to almost 24 years.

Pooling the data, the review paper found a 9 percent lower risk of overall breast cancer when comparing highest versus lowest fruits and vegetable consumption. Categories of high versus low varied among the studies. For example, a 2006 paper that showed vegetable consumption—but not fruits—linked to lower breast cancer risk had the lowest median vegetable intake at 77 grams and the highest at 402. That's about one daily carrot compared to five. A 2018 paper compared fewer than five servings of daily fruits and vegetables to five or more.

When separating cancers by menopausal status, the link was seen only for post-menopausal. The paper then analyzed the data according to the breast tumors' hormone receptors, finding that consuming the highest amounts of total fruits and vegetables compared to the lowest amounts reduced risk whether or not the tumor had receptors for estrogen and progesterone. Here, the link was more pronounced among hormone-negative tumors, with an 11 percent reduced risk for hormone-positive and a 26 percent lower risk of hormone-negative. Fruits alone did not link to a lower risk of any hormone type.

Interestingly, the paper did not find a link with lower breast cancer risk and carotenoid-rich cruciferous vegetables or any other category of plant foods.

Diet and lowering breast cancer risk

The paper shows an association between diet and lower breast cancer risk, but by itself, does not show that eating fruits and vegetables directly causes lower risk. The lead author of this paper is an AICR grantee Maryam Farvid, PhD, who has conducted numerous studies on diet and breast cancer.

As in other observational dietary studies there are several caveats: for example, the majority of papers adjusted for obesity and other risk factors, but not all did and each differed. Most of the studies also gathered food intake through self-reported data, a common approach but one that may lead to inaccuracies and miss dietary changes over time.

AICR/WCRF continues to assess the evidence on how diet may affect breast cancer risk, says Nigel Brockton, PhD, AICR's Vice President of Research. Clear evidence shows that being physically

active and not drinking alcohol link to lower risk for women of all ages. For older women, staying a healthy weight is one of the most important steps to lower risk.

As the evidence in diet and breast cancer continues to build, there are still plenty of reasons to eat hearty amounts of fruits and vegetables. These plant foods are packed with a variety of phytochemicals, fiber and nutrients the body needs for good health, and many are studied for their anti-cancer activity. The latest WCRF/AICR report found that fruits and vegetables link to lower risk of mouth, tongue and other oral cancers. AICR research has also found that fruits, vegetables and other foods containing fiber reduce the risk of colorectal cancers.

AICR recommends eating at least 3.5 to 5 cups of fruits and vegetables daily. That, along with whole grains and other plant foods, sets up an eating pattern linked to lower risk of several cancers.

For help adding more fruits and vegetables into your day, AICR's Healthy10 Challenge is an online program you can join for free.

Read more about AICR's research for lower breast cancer risk.

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