# Could Eating Broccoli Help Prevent Fatty Liver Disease?

A compound found in veggies such as broccoli, kale and Brussels sprouts may help prevent a liver condition that increases cancer risk.

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Eating cruciferous vegetables may help prevent non-alcoholic fatty liver disease (NAFLD), an accumulation of fat in the liver that is associated with obesity and which increases the risk of developing several cancers, especially liver cancer.

A new study conducted in humans, animals and cell models found that a compound called indole, which is found in vegetables in the cruciferous family is associated with lower fat in the liver and anti-inflammatory benefits to the organ. Cruciferous vegetables include broccoli, cabbage, kale, cauliflower and Brussels sprouts. They have long been studied for their potential cancer-preventive properties.

“Based on this research, we believe healthy foods with high capacity for indole production are essential for preventing NAFLD and are beneficial for improving the health of those with it,” Chaodong Wu, MD, PhD, a Texas A&M AgriLife research faculty fellow and the principal study investigator, said in a press release. “This is another example where altering the diet can help prevent or treat disease and improve the well-being of the individual.”

NAFLD and its more severe form, non-alcoholic steatohepatitis (NASH), are a growing cause of serious liver disease, including cirrhosis, liver cancer and the need for a liver transplant.

Gut bacteria can have both a positive and negative impact on NAFLD progression, in part through the production of indole. Previous studies have found that the compound, which is the product of the amino acid tryptophan, likely has a preventive as well as therapeutic effect on fatty liver disease.

The new study, which was published in the journal Hepatology, studied the association between indole and liver inflammation, a driver of NAFLD, in 137 Chinese people with the condition as well as among animals with a similar liver condition and in cell models.

The human participants who had a higher body mass index (BMI) tended to have lower levels of indole in their blood than leaner individuals. Additionally, those who had lower indole levels had

greater fat deposits in the liver.

As for the animal research, the study authors found that treating with indole the animals that had liver disease that mimics fatty liver reduced the accumulation of fat and inflammation in their livers.

In the cell studies, the investigators found that indole not only lowered the fat in liver cells, it also had an impact on the intestine, which sent out molecular signals that suppressed inflammation.

“Foods with a high capacity of indole production or medicines that mimic its effects may be new therapies for treatment of NAFLD,” Wu said.

“Preventing NAFLD’s development and progression may depend on nutritional approaches to ensure that gut microbes allow indole and other metabolites to function effectively,” Wu continued. “Future research is needed to investigate how certain diets may be able to achieve this.”

To read a press release about the study, click here.

To read the study abstract, click here.

For related content, see Cancer Health’s article, “Fruits and Vegetables May Help Prevent Colon and Rectal Cancer.”

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