

Coffee and veggies may protect against COVID-19

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Sip a venti dark roast and eat a salad. A new Northwestern Medicine study shows coffee consumption and eating lots of vegetables may offer some protection against COVID-19.

The authors believe this is the first study using [population data](#) to examine the role of specific dietary intake in prevention of COVID-19.

"A person's nutrition impacts immunity," said senior author Marilyn Cornelis, associate professor of preventive medicine at Northwestern University Feinberg School of Medicine. "And the [immune system](#) plays a key role in an individual's susceptibility and response to [infectious diseases](#), including COVID-19."

Being breastfed may also offer protection as well as eating less processed meats, the study found.

"Besides following guidelines currently in place to slow the spread of the virus, we provide support for other relatively simple ways in which individuals can reduce their risk and that is through diet and nutrition," Cornelis said.

The paper on nutrition and COVID-19 protection was published recently in the journal *Nutrients*.

One or more cups of coffee per day was associated with about a 10% decrease in risk of COVID-19 compared to less than one cup per day. Consumption of at least 0.67 servings per day of vegetables (cooked or raw, excluding potatoes) was associated with a lower risk of COVID-19 infection. Processed meat consumption of as little as 0.43 servings per day was associated with a higher risk of COVID-19. Having been breastfed as a baby reduced the risk 10% compared to not having been breastfed.

While the study shows diet appears to modestly reduce disease risk, the Centers for Disease Control and Prevention recommends vaccines as the most effective way to prevent COVID-19 disease, especially severe illness and death. COVID-19 vaccines also reduce the risk of people

spreading the virus that causes COVID-19.

Thus far, most COVID-19 research has focused on individual factors assessed after a positive COVID-19 test. Individuals with suppressed immune systems such as the elderly and those with existing comorbidities including cardiovascular diseases, hypertension, diabetes and obesity, are more likely to experience severe outcomes of COVID-19.

But other than weight management, less attention has focused on other modifiable risk factors preceding COVID-19 infection, said Cornelis, who studies how diet and nutrition contribute to chronic disease.

Dr. Thanh-Huyen Vu, the study's first author and a research associate professor of medicine at Northwestern, is now leading analyses to determine whether these protective diet behaviors are specific to COVID or respiratory infections more broadly.

Exact mechanisms linking these diet factors to COVID are unknown.

"Coffee is a major source of caffeine, but there are also dozens of other compounds that may potentially underlie the protective associations we observed," Cornelius said. "Associations with processed meat, but not red meat, point to non-meat factors."

Using data from the UK Biobank, researchers examined the associations between dietary behaviors measured in 2006-2010 and COVID-19 infections in March to December 2020, before vaccines were available. They focused on 1) diet factors for which data were available and previously implicated in immunity based on human and animal studies; 2) self-reported intakes of coffee, tea, vegetables, fruit, fatty fish, processed meat and red meat. An early-life exposure to breastmilk also was analyzed.

Among the 37,988 participants tested for COVID-19 and included in the study, 17% tested positive.

The observational nature of the UK Biobank research limits the extent to which mechanisms of protection can be tested, Cornelis said. However, much of her nutrition research uses genetics, and with all UK Biobank participants currently genotyped, she hopes to use this information to gain better insight into how [diet](#) and nutrition offer protection from the [disease](#).

More information: Thanh-Huyen T. Vu et al, Dietary Behaviors and Incident COVID-19 in the UK Biobank, *Nutrients* (2021). [DOI: 10.3390/nu13062114](#)

Provided by Northwestern University

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