

A new study links poor gut health to high risk of more severe COVID-19

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“Following a diverse diet, rich in fruits, vegetables, whole grains and fermented foods, could play a protective role against severe forms of COVID-19. A new review presents the hypothesis highlighting the link between a less diversified microbiota, a high intake of processed foods and refined sugars and severe Covid-19 cases in Western countries.

How can it be that wealthy countries such as the USA or Western European nations that have good medical infrastructures are among the hardest hit by the virus? That is the question the microbiologist Heenam Stanley Kim, from Korea University’s Laboratory for Human-Microbial Interactions in Seoul, kept asking himself about the COVID-19 pandemic.

Several factors can be put forward to explain the pandemic numbers in western countries, such as lockdown policies and implemented testing strategies, as well as an ageing population. However, Kim brings a whole other explanation to the table focusing on his own expertise: microbiology.

All these countries also have in common the so-called Western diet, high in processed foods and refined sugars, but low in fiber. This diet could potentially be involved in reducing the gut microbiota’s diversity. Loss of diversity has been observed in patients with chronic conditions. So, thought Kim, what if a weak gut microbiota was also linked to more severe COVID-19? And, in reverse, a more diverse diet, rich in fiber, fermented foods and probiotics, could have a protective role?

Kim explores this hypothesis in a review published recently in the journal of the American Society for Microbiology, *mBio*. He examines emerging evidence that suggests that poor gut health can negatively affect COVID-19 prognosis.

According to Kim, if the virus is able to penetrate the gastrointestinal cells, it can worsen a patient's outcome, and a weak gut microbiota makes it easier for the virus to enter the organism.

In fact, despite mainly being viewed as a respiratory disease, COVID-19 can also reach other organs such as the kidneys, liver, heart, brain and the gastrointestinal tract.

Although the link has not yet been properly investigated, there are some studies done with a small number of subjects that point out that COVID-19 patients have less diverse bacteria in their guts compared to healthy people. Plus, it is known that a less diverse microbiome is linked to poorer overall health.

In fact, previous studies have already shown that the elderly and people with medical conditions such as diabetes, obesity or high blood pressure are more likely to have an altered gut microbiota. They are also the most vulnerable to severe forms of COVID-19, as previously discussed on this blog. Gut microbiota imbalance can affect the gut barrier and make it easier for pathogens to cross it, escaping from the intestinal tract and spreading through the blood to infect new organs.

According to Kim, if this link between poor gut health and a higher risk of suffering from more severe forms of COVID-19 is proven, strategies such as following a more diverse diet, increasing the amount of fruits, vegetables, whole grains and fermented foods can help decrease that risk.

This dietary adaptation may be the most easy and effective method that can be considered, as a preventative solution, that could increase the health status of the population.”

Reference:

Kim HS. Do an altered gut microbiota and an associated leaky gut affect COVID-19 severity? *mBio*. 2021;12(1). doi:[10.1128/mBio.03022-20](https://doi.org/10.1128/mBio.03022-20)