

# Food's transit time is a key factor in digestive health

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The time it takes for ingested food to travel through the human gut – also called transit time – affects the amount of harmful degradation products produced along the way. This means that transit time is a key factor in a healthy digestive system. This is the finding of a study from the National Food Institute, Technical University of Denmark, which has been published in the renowned journal *Nature Microbiology*.

Food has to travel through eight meters of intestine from the time it enters the mouth of an adult person until it comes out the other end. Recent research has focused mainly on the influence of the bacterial composition of the gut on the health of people's digestive system.

Taking this a step further, Postdoc Henrik Munch Roager from the National Food Institute has studied how food's transit time through the colon affects gut bacteria's role in the activity and health of the digestive system by measuring the products of bacterial activity, which end up in urine.

## The effect of food's transit time

Intestinal bacteria prefer to digest dietary carbohydrates, but when these are depleted, the bacteria start to break down other nutrients such as proteins. Researchers have previously observed correlations between some of the bacterial protein degradation products that are produced in the colon and the development of various diseases including colorectal

cancer, chronic renal disease and autism.

"In short, our study shows that the longer food takes to pass through the colon, the more harmful bacterial degradation products are produced. Conversely, when the transit time is shorter, we find a higher amount of the substances that are produced when the colon renews its inner surface, which may be a sign of a healthier intestinal wall," Henrik's supervisor and professor at the National Food Institute, Tine Rask Licht, explains.

It is commonly thought that a very diverse bacterial population in the gut is most healthy, however both the study from the National Food Institute and other brand news studies show that bacterial richness in stool is also often associated with a long transit time.

"We believe that a rich bacterial composition in the gut is not necessarily synonymous with a healthy [digestive system](#), if it is an indication that food takes a long time to travel through the colon," Tine Rask Licht says.

## **Better understanding of constipation as a risk factor**

The study shows that transit time is a key factor in the activity of the intestinal bacteria and this emphasizes the importance of preventing constipation, which may have an impact on health. This is highly relevant in Denmark where up to as much as 20% of the population suffers from constipation from time to time.

The National Food Institute's findings can help researchers better understand diseases where constipation is considered a risk factor, such as colorectal cancer and Parkinson's disease as well as afflictions where constipation often occurs such as ADHD and autism.

## **Influencing food's transit time**

Tine Rask Licht emphasizes that people's dietary habits can influence transit time:

"You can help food pass through the colon by eating a diet rich in fibre and drinking plenty of water. It may also be worth trying to limit the intake of for example meat, which slows down the transit time and provides the gut bacteria with lots of protein to digest. Physical activity can also reduce the time it takes for food to travel through the colon."

**More information:** Henrik M. Roager et al. Colonic transit time is related to bacterial metabolism and mucosal turnover in the gut, *Nature Microbiology* (2016). [DOI: 10.1038/nmicrobiol.2016.93](https://doi.org/10.1038/nmicrobiol.2016.93)

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