life but better

How often you poop could suggest more than you think, study finds

By Kristen Rogers, CNN

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45 comments

Bowel movement frequency could influence many other health factors, a new study suggests. Ekaterina Demidova/Moment RF/Getty Images

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(CNN) — How often you poop may influence more than whether you're uncomfortably bloated. The frequency may also affect your gut microbiome and risk of chronic disease, a new study has found.

Gut bacteria that digest fiber, for example, seemed to thrive in participants who pooped once or twice a day, according to the study published Monday in the journal Cell Reports Medicine. But bacteria associated with the upper gastrointestinal tract or protein fermentation were enriched in those with diarrhea or constipation, respectively.

The authors also found younger people, women and participants with a lower body mass index had less frequent bowel movements.

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“Many people with chronic diseases, including Parkinson’s and chronic kidney disease, report having had constipation for years prior to the diagnosis,” said the study’s senior author, Dr. Sean Gibbons, who has lost family members to Parkinson’s disease.

“However, it is unclear whether or not these bowel movement frequency aberrations are

Institute for Systems Biology in Seattle, added via email.

This quandary is what motivated the researchers to study the associations between bowel movement frequency and genetics, the gut microbiome, blood plasma chemistries and blood metabolites — small molecules that are participants in and products of metabolism — to assess whether the pattern may be negatively affecting the body prior to a disease diagnosis, Gibbons said.

The authors examined the health and lifestyle data of more than 1,400 healthy adults who had participated in a scientific wellness program at Arivale, a consumer health company that operated from 2015 to 2019 in Seattle. Participants, nearly 83% of whom were White, answered questionnaires and consented to blood and stool sampling.

Self-reported bowel movement frequency was separated into four groups: constipation (one or two bowel movements per week), low-normal (three to six weekly), high-normal (one to three per day) and diarrhea.

The authors also found that several blood metabolites and blood plasma chemistries were linked with different frequencies. Byproducts of protein fermentation such as p-Cresol-sulfate and indoxyl sulfate, known to cause kidney damage, were enriched in constipated participants. Blood levels of indoxyl sulfate were also associated with reduced kidney function. And chemistries linked with liver damage were higher in people with diarrhea, who also had more

inflammation.

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The authors believe their findings are "preliminary support for a causal link between bowel movement frequency, gut microbial metabolism, and organ damage," according to a news release.

"What's exciting to me about this study is that we have long known about a connection between constipation and chronic kidney disease, but the potential mechanisms have never been well understood," said Dr. Kyle Staller, director of the Gastrointestinal Motility Laboratory at Massachusetts General Hospital and associate professor of medicine at Harvard Medical School, via email.

"This study provides one pathway by which future studies could investigate this connection over time ... to learn whether people with low bowel movement frequency produce more potentially toxic metabolites and subsequently develop kidney disease," added Staller, who wasn't involved in the study.

Understanding gut health

"There are some important limitations here that make the findings less translatable to the average person," Staller said, including that the study doesn't prove a cause-and-effect relationship. The data result from participants studied at a single point in time, so other factors could be at play. It's also possible a person's gut microbiome could be influencing bowel movement frequency.

Bowel movement frequency also isn't the most ideal measure of bowel function, he said.

"We know that normal bowel movement frequency ranges from (three) bowel movements per week to (three) bowel movements per day, but the best measure of how fast things are moving through our gut is stool form," Staller added. "That is, when stools are harder, they have been sitting in the colon for longer — what we call a longer transit time.

"When stools are softer, the opposite is true. Thus, a more ideal measure of bowel function would be stool consistency rather than frequency."

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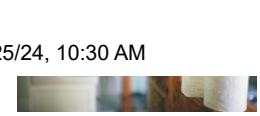

Additionally, many of the findings are based on the group with low to normal bowel movement frequency — three to six times per week — with few derived from those who were constipated or had diarrhea, experts said.

“Ideally, we would see kind of a ‘dose-response relationship,’ where the worse the constipation, the worse the kidney function and the higher number of these potentially harmful metabolites in the blood as a marker.”

What’s more, bacterial species in participants’ stools were detected by a type of technology that indicates only a larger group, or genus, the bacteria belong to, rather than specific species — which could have differential effects even when from the same group, he added.

Participants with generally normal bowel movement frequency also had important differences in lifestyle, such as consuming more fruits and vegetables, being better hydrated and exercising more, said Dr. Rena Yadlapati, a professor in the division of gastroenterology at the University of California San Diego who wasn’t involved in the study.

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Regarding the potential processes behind the authors’ hypothesis, “prior work has established that gut microbes undergo a switch between fiber and protein fermentation, depending on gut transit time,” Gibbons said via email. “Over normal transit times (normal BMFs), gut microbes ferment dietary fibers into healthy organic acids that maintain intestinal homeostasis.

“However, if stool stays in the gut for too long (constipation), the microbes start to run low on fiber and they switch to fermenting protein (and eating our mucus layer, which is also protein rich),” Gibbons added. “Protein fermentation in the gut gives rise to these toxic compounds that are found in the blood.”

All considered, Staller doesn’t think anyone should see the findings as a reason to worry about how fast their gut is moving, he said. “Much of the data is derived from people that we physicians would consider normal, and there are not enough truly constipated individuals from which we can draw hard conclusions.”

What’s more important, he added, is the fact that the study reaffirmed the ability of dietary factors to also affect gut function.

Experts' understanding of the interactions between resident gut bacteria and bodily functions "is growing by leaps and bounds daily," Staller said.

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"However, any attempt to simplify this knowledge into cultivating the 'ideal' gut microbiome is a ways off," he added. "Our knowledge in this field is just too underdeveloped to make sweeping changes to our lives based on the findings of a study like this just yet."

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C **Chas**
17 hours ago
This article is about poop, not politics. I understand they can be confused, but do try to keep up.
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L **Logicat**
1 day ago
When constipated and feel the need to go start drinking a lot of water. Works best on an empty stomach as it will work its way through. The best natural relief.

"Do I look all rancid and clotted? You look at me, Jack. Eh? Look, eh? And I drink a lot of water, you know. I'm what you might call a wa...

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B **bobo123**

1 day ago

I've gone from pooping every day, to pooping every 3 or 4 days, and doing nothing but pooping that day.

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C **cnn-user-rg296f**

1 day ago

Cool article. Can someone just tell me how many times a day I'm supposed to make, please???

Reply ·

GS **Grand Scale**

1 day ago

A cup of coffee in the morning does it for me.

Reply ·

L **LordDagda**

2 hours ago

Incidentally, beer is also a natural laxative. Enjoy!

Reply ·

M **MickDolan**

1 day ago

What about going 3-5 times daily?

Reply · 1

OT **Oliver Twist**

1 day ago

I suffer from a form of Spina Bifida and MS (ain't I the happy camper) and constantly trying to avoid constipation, but what the article said is true, hard bowel movements mean the waste remains in the body for a longer time and many in our group also find that leads to hemorrhoids when going to th...

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Reply ·

JJ **Just a regular Joe**
1 day ago
The authors also found ... participants with a lower body mass index had less frequent bowel movements. - you mean, people who eat more have more BMs? Amazing discovery
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R **RememberLingere**
1 day ago
Every morning at 430. Its my alarm clock.
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TT **Tracyann Thomas**
1 day ago
An Ayurvedic Practitioner and Holistic Nutritionist here. Bowel movements are a very important indication of health, as they eliminate waste from the body and they are also an indication of how well we're digesting. Digestion is the seat of our health and it is how we convert food into energy and...
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B **BillC**
21 hours ago
at minimum you are wrong. 1/day is fine, but as you age, you may find that you don't go every day and there is NOTHING wrong with that. The body knows what it needs and it doesn't have to go every day.
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GS **groom of the stool**
21 hours ago
>>An Ayurvedic Practitioner and Holistic Nutritionist here.

Bless your heart.
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