

## Everybody poops. But here are 9 surprising facts about feces you may not know.



Everybody poops.

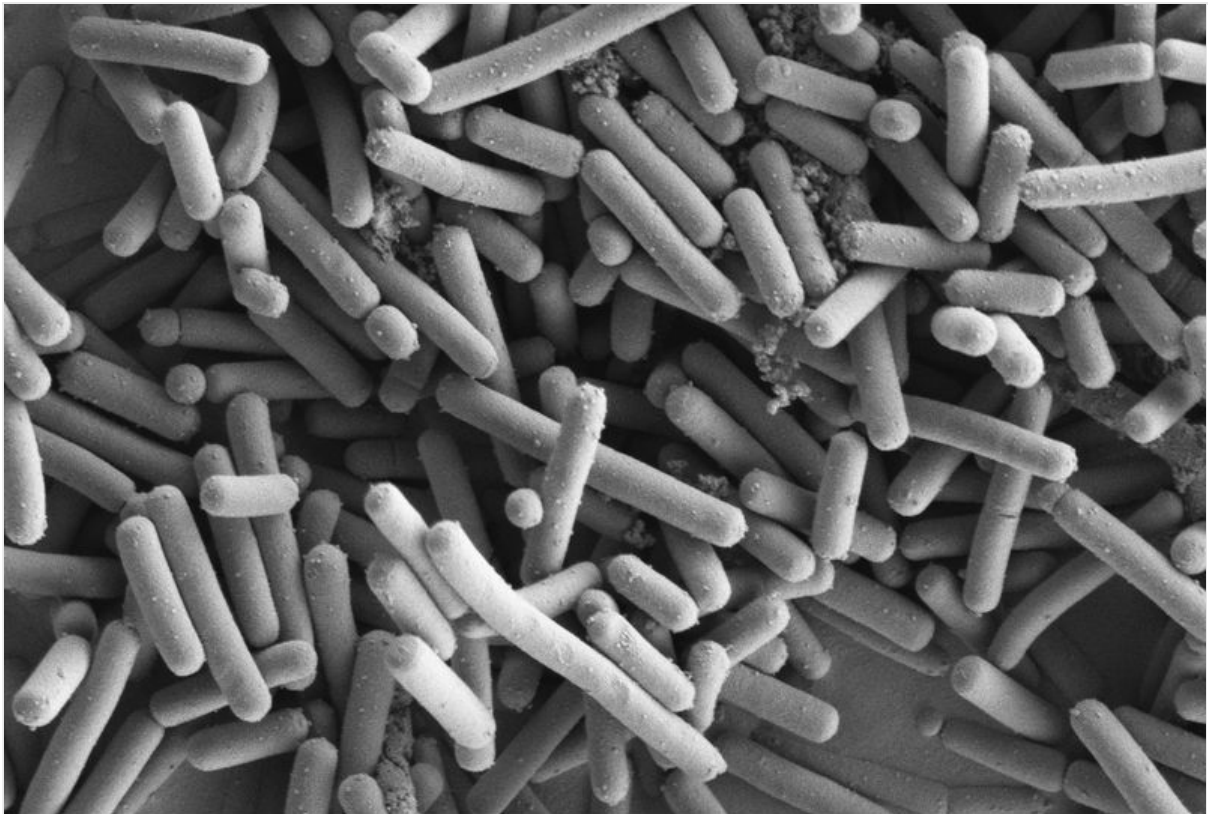
But that doesn't mean everybody's aware of all there is to know about it.

Poop is not just a laughing matter. The scientists and doctors who study feces have found that it's the byproduct of a **diverse community of bacteria in your gut** that impacts your health in all sorts of ways. Paying closer attention to your stool can tell you about the condition of these vital bacteria — and your overall health.

With that in mind, I spoke to **Robynne Chutkan**, a gastroenterologist at Georgetown Hospital and the author of *Gutbliss* and the forthcoming *The Microbiome Solution*: a pair of books about the gastrointestinal tract, the microbes that live in it, and the stool that comes out of it.

Here are some facts about poop you might like to know.

### **1) Poop is mostly bacteria — not old food**



*Lactobacillus johnsonii*, a beneficial species of gut bacteria. (Kathryn Cross, IFR)

It's tempting to think of feces as simply the used-up remains of the food you ate — the stuff that makes it through after digestion.

In reality, this stuff is present, but 50 to 80 percent of your poop (excluding water) is actually bacteria that had been living in your intestines and was then ejected as food passed through. Many of the bacteria in poop are still alive, but some are dead — carcasses of species that bloomed as they fed on the indigestible plant matter you consumed, then died shortly afterward.

But it's not all bacteria. Your poop also includes some of this indigestible plant matter — like the cellulose in vegetables — with the exact proportions dependent on your diet. Your poop also contains small amounts of your own tissue: intestinal lining cells that were sloughed off during digestion. And, of course, there's water.

## **2) Poop is brown because of dead red blood cells and bile**



**(Nina Helmer)**

Your feces' color is the result of a chemical called **stercobilin**. That chemical ends up in your poop in two ways: it is byproduct of the hemoglobin in broken-down red blood cells, and it also comes from bile, the fluid secreted into your intestines to help digest fat.

Chutkan says that in a person with an optimally-functioning digestive system, "the ideal stool is a deep chocolatey color — like melted chocolate."

Without stercobilin present, poop would be a pale grey or whitish color. We know this because people who have liver disease or clogged

bile ducts (causing little or no bile to get to their intestines) have light-colored feces, a condition known as acholic stool.

Other colors of poop can be a sign of other conditions. Yellow stool can be the result of a parasitic infection, or pancreatic cancer. Black or dark red poop can be an indication of bleeding in the upper GI tract — or of eating beets. Green feces can also be the sign of an infection. If your poop is blue, it's probably just because of blue food coloring.

### **3) Men and women poop differently**



### **(Hey Paul Studios)**

Because of anatomical differences, men and women's GI tracts work a little differently. These differences are so significant, in fact, that Chutkan says she could perform a colonoscopy and correctly guess the patient's sex without knowing it beforehand.

For starters, women have wider pelvises than men, as well as extra internal organs (such as the uterus and ovaries) in the region. As a



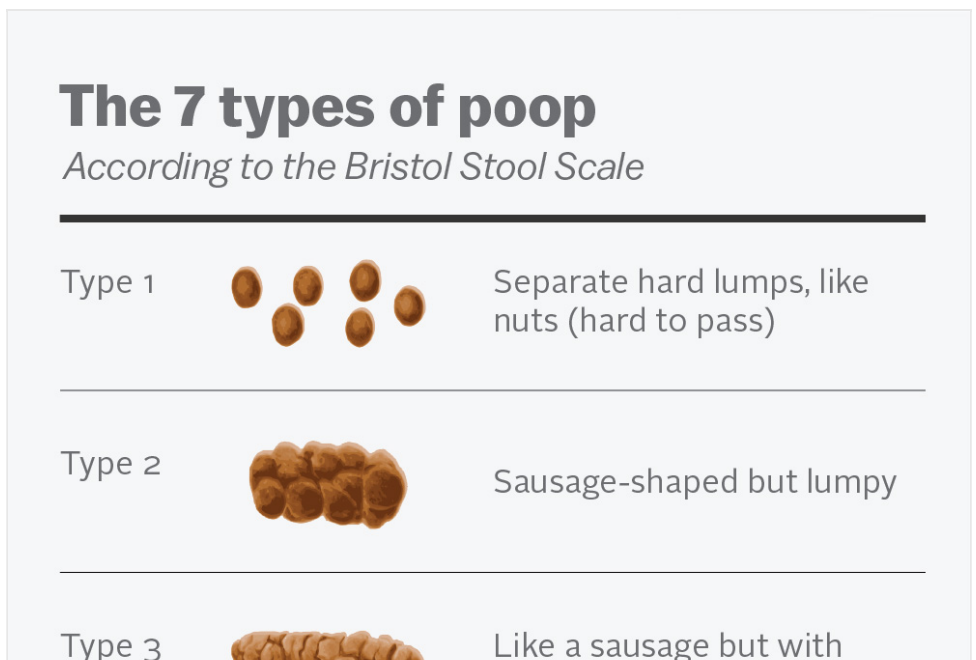
result, their colons hang a bit lower than men's, and are a bit longer: on average, **by ten centimeters**. Finally, men have more rigid abdominal walls that help push food through the GI tract more effectively.

All this, Chutkan says, "makes the passage of stool much more challenging for women." Food takes longer to transit through most women, she says, making them more prone to bloating. Men, on the other hand, are generally much more regular.

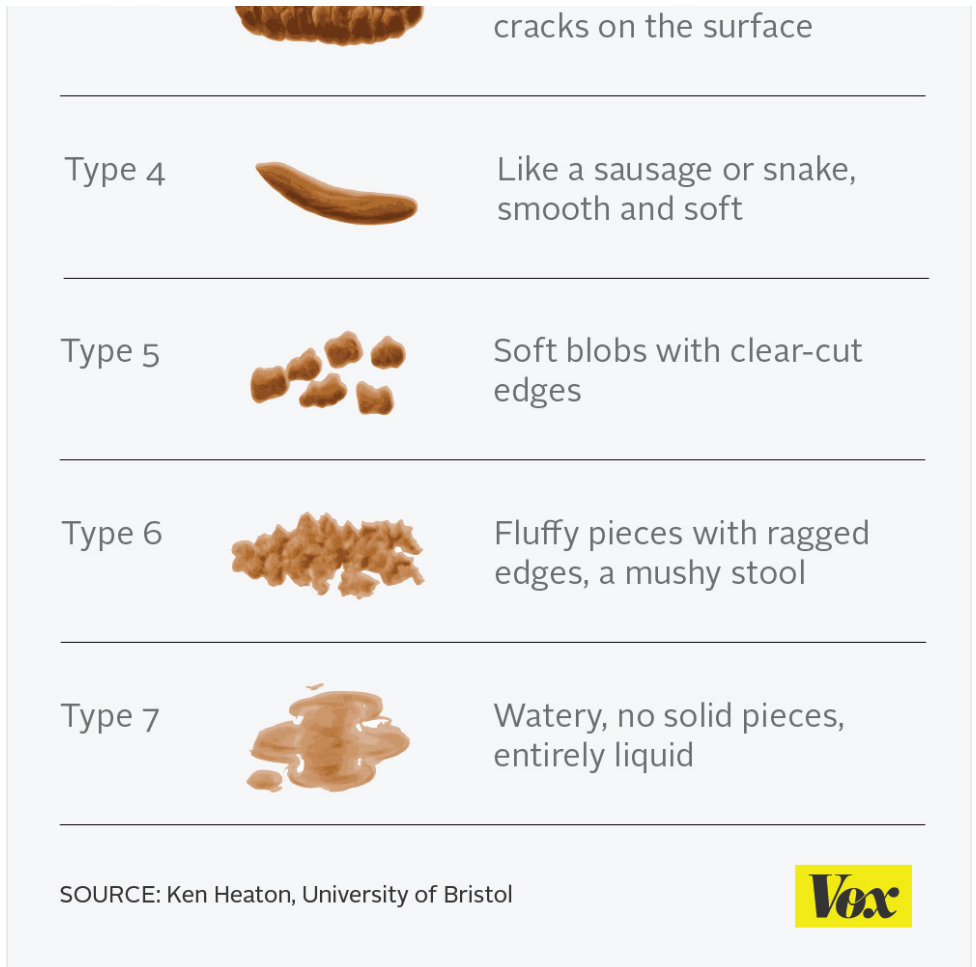
#### 4) The ideal poop is a "continuous log" — and sinks to the bottom of the toilet

Although Chutkan cautions that there's no single "ideal poop," she notes that there are some characteristics that are a sign of a healthy digestive system and microbiome.

There are some doctors that say pooping three times a week is sufficient, but Chutkan says that



you should probably make a bowel movement every day — assuming you're eating food every day. (In some cases,



irregularity can actually be caused by extreme stress, as hormones like adrenaline and cortisol can **slow down the digestive process.**)

Under ideal conditions, she says, "it should be very easy to pass — almost effortless." And it should take the form of a continuous log or two, with a diameter similar to that of a circle you can make with your index finger and thumb.

Finally, poop should sink, not float. **Floating stool** is usually a sign of poor nutrient absorption or excessive gas.



Of course, poops come in all shapes and sizes — as shown in the **Bristol stool scale**, created by the University of Bristol's Ken Heaton, at right — but Chutkan says the ideal poop is a three or four on the scale.

If your poop isn't a perfect, easy, continuous log, it's not necessarily a sign that you're sick. But it may be a sign that you're not eating enough fiber, or that your gut microbiome isn't in great shape.

## **5) Gut bacteria and plant fiber are essential for good poop**



So much fiber. (Shutterstock.com)

The key to good poops, Chutkan says, is straightforward: "What really makes a good stool is large amounts of the indigestible plant matter that feed gut bacteria." This plant fiber — mostly **cellulose** — also directly adds bulk to poop, so a plant-heavy diet is critical for nice, solid bowel movements.

But having a diverse and healthy community of gut bacteria is also essential — and for many people, overuse of antibiotics is a problem. **Research has shown** that a single course of ciproflaxin, for instance, can disrupt a third of the microbe species naturally present in our gut, and **other work has suggested** that in some people, the microbiome might never really recover. Over-the-counter **probiotic products**, meanwhile, usually just have a single species of bacteria, and can't replace the diversity of microbes that have been lost.

Killing your gut bacteria can lead to many problems, in some cases giving harmful bacteria, like ***C. difficile***, more space to proliferate. But it can also lead to overly soft, unpleasant poops. For these reasons, Chutkan recommends thinking carefully before asking for (or accepting) a case of antibiotics, and making sure that the infection you're seeking to treat really needs it.

## **6) You can see corn in your poop because of cellulose**



(Shutterstock.com)

The explanation for the widely-observed corn-kernel-in-poop phenomenon is pretty simple: the outside of a kernel of corn is made of cellulose, that indigestible plant fiber. We can digest the inside of the kernel, but the hull makes it through us unscathed.

This is also true for lots of other parts of plants — like, for example, kale stems — but corn's bright yellow color stands out, making it easy to spot.

There's a benefit to this phenomenon. If you're interested in tracking

how long it takes food to transit through your body — whether to gauge the health of your digestive system, or just to satisfy your curiosity — you can use corn kernels as a tracker.

## **7) People living in different parts of the world have different poop**



(Shutterstock.com)

It might not be a huge surprise, because different diets lead to different types of poop. But Chutkan says that the feces of most people in the developing world are noticeably different from those of people

eating a Western diet, mostly because the latter contains so much less fiber.

A very fiber-heavy diet — the type eaten by many people in developing countries, and by some vegetarians in the US — leads to much denser and bulkier poops. "They're bigger movements that come out more easily," she says. "And there's very little need to wipe — it's a much cleaner evacuation."

Western-style stools, by contrast, are much softer, and the colon has to push harder to get them out.

## **8) Baby poop is really, really weird**



Post-meconium bliss. (Shutterstock.com)

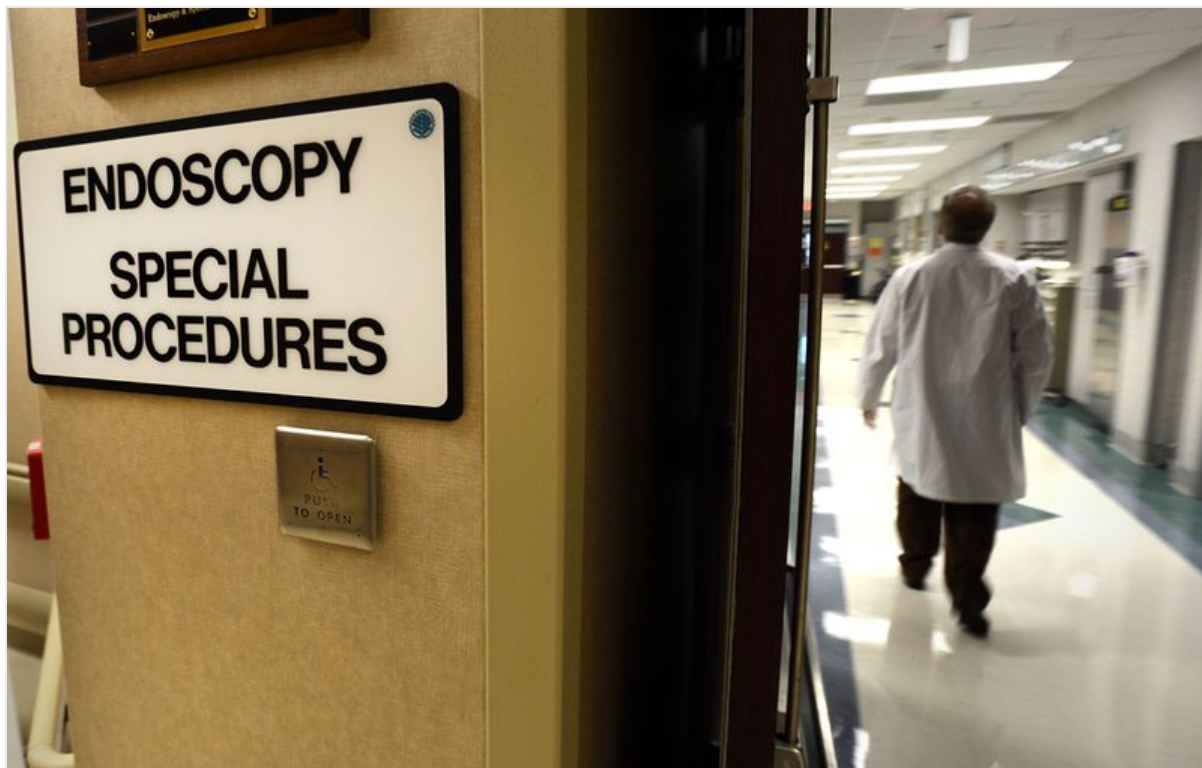
The first few bowel movements of a newborn infant are called **meconium** — and if you've never seen it before, it's pretty bizarre.

It's the result of nutrients consumed by the infant inside the womb, and it's a dark green, tar-like substance. It looks so different from normal poop because of the sorts of things the baby was consuming in the uterus: amniotic fluid, blood and skin cells, and mucus.

Strangely, meconium is also usually odorless. The baby's poop will not stay that way.



## 9) Poop transplants can be an effective medical treatment



A doctor prepares for a fecal transplant in a North Carolina hospital. (Todd Sumlin/Charlotte Observer/MCT via Getty Images)

It might seem crazy, but **research increasingly tells us** that the most effective way to treat *C. diff* — the harmful bacteria that can proliferate in your intestines if beneficial bacteria are wiped out — is by taking a healthy person's poop and putting it in your own GI tract. The formal name for this is a fecal transplant.

That doesn't mean you should try it at home. But **controlled studies** have found that fecal transplants have success rates around 90 percent, higher than any antibiotic. This makes sense: a *C. diff*



infection is often caused by an antibiotic indiscriminately killing beneficial bacteria in someone's intestines, so re-colonizing them with healthy bacteria is a means of crowding the *C. diff* out.

This is becoming an increasingly mainstream procedure, and researchers are currently working on alternate means of fecal transplant deliveries, like frozen poop or **pills that can be taken orally**.

**Further reading: Everybody farts. But here are 9 surprising facts about flatulence you may not know.**

**WATCH: 'The fascinating process of human decomposition'**