mystery science

Grades K-5
Mini-Lesson: “How do germs get inside your body?”

VIDEO TRANSCRIPT

VIDEO 1

[Video Call]

- Hi, Doug!

- Hi, Natasha!

- I have a question for you. How do germs get inside of your body?

- Ooh, that's a great question.

From the time all of us are really young, adults are telling us about germs, right? Like, if food falls on the floor—don't eat that. It might have germs on it. We're told it's important to cover up our mouths when we sneeze and to wash our hands before we eat. It seems like germs must be everywhere. But what really are germs anyway? I mean, you might know that they're extremely tiny living things that can make you sick. They're so small that you can't see them with your eyes alone. But, what I mean is, it's not like germs make you sick just by being near you. Otherwise, we'd be getting sick all the time. When we do get sick, somehow it means germs were able to get inside our bodies in order to make us feel that way. How do they do that? What do you think?

VIDEO 2

Well, before I tell you this, maybe one thing that might surprise you is that people haven't always known that germs are what make us sick. In fact, before the microscope was invented, no one even knew that germs existed. They were just too small for anyone to have noticed them. If you've ever been curious, here is what some of them look like. There are lots of different kinds of germs, and different germs cause different sicknesses. Like this one here, this is one of the germs that causes the common cold. Here's one that can cause you to throw up, one that you might hear people call a stomach bug. Or, here's one of the germs that cause the flu. The discovery of germs was really important because once we figured out that it's germs that cause people to get sick, we could finally start to do something about how to stop them. Figuring out how to kill germs once they're inside your body—that involves medicine, everything from the traditional knowledge of helpful plants to the discovery of special medicines, like vaccines and antibiotics. But what if you could figure out how to stop germs from ever getting into your body in the first place? How do they even get into your body? From all of the things you hear adults say about washing your hands and not touching things on the ground, maybe it's tempting to think that just touching germs alone can make you sick. Maybe they can get through your skin. But by doing careful experiments, scientists have been able to figure out that this is not how most germs get into your body. It turns out most germs, especially ones that cause colds and flu, are only able to get into your body through openings—places like your mouth, your nose, your eyes. Wait, so as long as you just make sure not to get any germs into your mouth, or your nose, or your eyes, you're basically sure to not catch a cold or get the flu? Whoa! Does this mean you could even stand right next to someone who has these germs in their body and not ever get sick? Well, technically, yes. But here's where things get a little tricker than it first seems. You

see, what if that person sneezes or coughs? Check out what happens when you sneeze or cough as seen in slow motion. Do you see all those tiny droplets that go into the air? If the person sneezing or coughing is sick, each one of those droplets is likely to contain some of the germs that are making them sick. If you breathe those germs in, either through your nose or your mouth, now you might get whatever sickness they have. Seeing a slow-motion video like this makes it so real—why everyone is always saying to cover your mouth when you cough or sneeze. At least then the droplets won't go into the air. They stay in your elbow or tissue instead. But someone else sneezing or coughing into the air isn't the only way germs can get inside your body. You would be surprised at how often we rub our eyes, rub our noses, or put our fingers near our mouths, even without realizing it. Sometimes, especially when people know there are germs going around, you'll hear adults give the advice, "Try not to touch your face." That can be so hard to follow, though. Like, what if you've got an itch, and you just have to touch your face? And I mean, what are we just supposed to never touch our faces? You can't do this, or this? Well, the good news is, touching your fingers to any part of your face doesn't mean germs are definitely going to get inside your body. It's only a concern if your hands might have germs on them, like, for example, if you've been touching a surface that lots of other people touch. This is the reason why everyone is always saying to wash your hands really well. It's because we often bring our hands near our faces, whether it's to rub our eyes or even just when we're eating. If each of us makes sure we wash our hands before we touch our face or before we eat, the soap and water rinse any germs off so that those germs will go down the drain and not into your body. So in summary, a lot of the germs that make us sick get into our bodies through openings like our mouths, nose, and eyes. But by practicing good hygiene, we can make it harder for germs to get near these openings in the first place. That's all for this week's question. Thanks, Natasha, for asking it!