

Unit 3 listening 1

Germ myths

HOST: Welcome to *Health Beat*. In this digital age, we're constantly exposed to medical claims. "Wonder drugs" that cure disease ... foods that can cause cancer ... but which claims are true and which complete nonsense? Joining us this month to talk about germs and disease is Dr. Mitchell of the Mayweather Institute in New York. Dr. Mitchell, welcome to the show.

DR. MITCHELL: Thanks for having me.

HOST: OK, so to start us off, Dr. Mitchell, what exactly are germs?

DR. MITCHELL: By germs, we mean bacteria and viruses that can cause diseases. For example, tuberculosis is caused by a bacterium. The common cold and influenza are caused by viruses.

HOST: ... and is it true that dangerous germs are all around us?

DR. MITCHELL: While it is true that germs are everywhere, it's a myth that all germs are dangerous. Most are not harmful, and, in fact, some "good" bacteria in our bodies help us to digest food.

HOST: So you mean that we don't need to worry about germs so much?

DR. MITCHELL: Erm ..., no. To clarify, I'm saying we need to keep in mind that just because germs exist everywhere, this doesn't mean that ALL germs we come in contact with cause diseases.

HOST: But many people think they will, don't they? One of our listeners claims that money spreads diseases because it has a lot of germs on it. Is that true?

DR. MITCHELL: It is a classic myth that money is a major way that diseases are spread. Of course, any money we use – both banknotes and coins – might have picked up some bacteria or viruses as it circulates from person to person. How many bacteria a banknote has depends on how old it is, and this varies from country to country. However, you don't need to worry about it too much. Just remember to wash your hands after handling money.

HOST: So, you either wash your hands all the time, or you get sick?

DR. MITCHELL: No, no ... in actual fact you could wash your hands all the time and still get sick. Just make sure you wash your hands regularly ... especially after you've come into contact with things that have been handled by many different people, like banknotes ... handrails on trains ...

HOST: OK, good advice. Next, people claim that they get sick when they fly because the air is circulated and recirculated on the plane the whole flight. Is it true that breathing in recirculated air on flights makes passengers sick?

DR. MITCHELL: Actually, the air you breathe on a plane is pretty fresh. High-efficiency air filters remove about 99.9% of any bacteria and viruses in the air that's pulled into the plane. What's more, recirculated air is continuously released from the plane and replaced with fresh air from the outside. The average plane's air is refreshed about 20 times an hour. In comparison, the air in an average office is only changed about 12 times an hour!

HOST: So why do people think that planes make them sick?

DR. MITCHELL: Well, let's say a passenger comes down with a cold after a flight. This

reinforces the myth that the air was the cause. In fact, the cold virus might have been spread from touching the seat tray, or it could have been spread by turning a door handle. Or it may have been spread by a passenger sitting nearby who was coughing and sneezing. We don't know the true cause.

HOST: So, your main point is that the recirculated air isn't the way that germs are spread on flights.

DR. MITCHELL: Exactly. There are lots of different ways to get sick on a plane, but it's very unlikely to be caused by recirculated air.

HOST: Another listener believes the kitchen is the dirtiest room in the house. That isn't true, is it?

DR. MITCHELL: Well, in fact, some say it is. Kitchens are, in fact, full of germs that can cause diseases. For example, many people use a wet sponge or cloth to clean up. They don't realize that dangerous germs might have been spread as they cleaned. The kitchen table looks clean, but it isn't. And, the kitchen floor is another place we know that can have a high concentration of germs. Here's another myth related to the kitchen floor: the "five-second rule." The rule is: If you drop some food on the floor, but you pick it up within five seconds, then it's still OK to eat it. That's not valid, of course. As soon as the food touches the floor, it comes into contact with bacteria. This usually means it's unsafe to eat.

HOST: We're out of time. Thank you, Dr. Mitchell. To recap: Germs are everywhere; not all germs are dangerous. Money's not likely to make us sick, but the kitchen might.

Words and expressions

tuberculosis *n.* 结核病（尤指肺结核）

digest *v.* 消化（食物）

handrail *n.* （通道、楼梯等的）扶手，栏杆

air filter 空气过滤器

come down with 患，得，染上（小病）

reinforce *v.* 加强；强化（观点、思想或感觉）

seat tray *n.* （前排）座椅托盘

sponge *n.* （擦洗用的）海绵（块）

valid *adj.* 有效的；正式认可的

recap *v.* 扼要重述；概括

Unit 3 Listening 2

Disease detectives

There are many diseases we know about and understand the causes of. However, sometimes there are outbreaks of a disease that are unexpected and nobody understands why so many people are getting sick.

Today, I'm going to discuss two case studies, one in Senegal, in West Africa, and the other in Guam, an island in the Pacific Ocean. In both places, there were epidemics affecting many people. Researchers had to investigate the causes of these epidemics.

The first situation, in Senegal, concerns a disease called schistosomiasis. Schistosomiasis is caused by a parasite released into rivers by freshwater snails. When anyone comes into contact with the river, the parasite is transmitted to their skin, causing fevers, coughs, stomach pains,

and general sickness.

Although schistosomiasis is one of the most common diseases from a parasite in the world, no one in this part of Senegal had had it before 1986 –the year the Diama Dam was built on the Senegal River. Soon after the dam was built, people started to become ill. In fact, by 1988, 90% of the population had come down with the disease. Finding a solution to this health crisis became critical. After a lot of research, scientists traced the problem back to the dam. This is what they found.

Before the dam was built, there were a lot of prawns in the Senegal River. The prawns ate the freshwater snails that lived in the river, and there was no disease. However, the construction of the dam caused the water in the river to flow differently. This, in turn, changed the prawns' natural habitat, and eventually led to their extinction. With no natural predators left in the river, the snail population increased rapidly. More snails led to more parasites in the river water, and suddenly many people started to become very ill.

A group of researchers called "Project Crevette" decided that the best way to eliminate the disease was to restore the environmental conditions of the river so the prawns would be able to live there again. If the prawns returned to the river, they would eat the snails. This would mean fewer parasites in the river and ultimately less disease. This approach to solving a health problem is significant because it focuses on the main cause of the disease rather than simply giving people medicine to treat the disease.

Now, let's look at a case study in Guam – a small island in the Pacific Ocean. In the late 1940s, the local people – known as the Chamorro – contracted a neurological disease called lytico-bodig. As the disease only seemed to affect the Chamorro, scientists argued that something in their diet must be the cause.

Every day, the Chamorro made bread using the seeds of the cycad plant. These seeds were known to contain a toxin, so researchers initially thought that the flour must be the cause of the epidemic. However, the seeds were washed several times before they were used and this removed most of the toxins, meaning that the flour couldn't have caused the disease.

At this point, the researchers discovered two interesting facts – more men had the disease than women, and men ate more meat than women. The most commonly eaten meat in the area was the flying fox, and the flying fox regularly ate the seeds of the cycad plant. This meant that there was a high concentration of toxins in the meat of the flying fox, and this fact led researchers to suspect that the meat may have been the cause of the epidemic. Later, they learned that when the flying fox population declined due to overhunting, the incidence of lytico-bodig also started to decrease, and this confirmed that flying fox meat was the cause of the epidemic.

So these are just two examples of the various factors that need to be taken into account when investigating an unusual incidence of a disease. Personally, I think they are quite interesting case studies because they demonstrate that while researching diseases can be challenging, it's also incredibly rewarding.

Words and expressions

schistosomiasis *n.* 血吸虫病

parasite *n.* 寄生虫

habitat *n.* （动植物的）生活环境；（动物的）栖息地

predator *n.* 掠食动物，捕食性动物

ultimately *adv.* 最后，最终

neurological *adj.* 神经系统的；神经（病）学的

cycad *n.* 苏铁属植物（俗称“铁树”）

incidence *n.* （尤指罪行、疾病等的）发生率

Proper names

Senegal 塞内加尔（非洲国家）

Guam 关岛（位于太平洋西部）

the Diama Dam 迪亚马大坝（塞内加尔河上修建的水坝）

Project Crevette 青虾计划（一个致力于恢复河流中虾的数量的项目）

Chamorro 查莫罗人（居住在关岛的土著）

lytico-bodig 肌萎缩侧索硬化-帕金森-痴呆（一种神经系统疾病，曾存在于关岛）