

Talking with children about germs

Although parents, teachers, and public health officials are increasingly eager to address the dangers of illnesses, talking with children about sanitation, disease prevention, and being sick is often ineffective. In order to have meaningful conversations with children, adults need accurate facts and the ability to translate information into concrete, developmentally appropriate experiences.

It's not helpful to tell children that germs are everywhere, that they make you sick, and that being clean means staying healthy. Not only is this bad science, it's not convincing: If germs are everywhere and make people sick, why are we not all sick all the time? And don't some clean people sometimes get sick too?

Often children get their ideas of germs from the media—like cleanser commercials that equate bleach-laden, germ-killing wipes with good health and happiness. Currently, every media report leads with updates on the Coronavirus (COVID-19) that has impacted many people in Asia and, to date, few in the United States. Images—especially those of hundreds of people in face masks—are frightening and the news is challenging for even adults to understand.

To help children learn the basics of good health, early care and education professionals have the responsibility to both inform themselves and to share authentic science in ways children can use and understand.

What are germs?

Germs are small, too small to be seen without the aid of powerful microscopes. This presents two challenges to teachers of young children: understanding the basics of *epidemiology* (the study of illness and public health) and translating that understanding into something children can use and appreciate.

Our bodies are amazing systems. They work hard to help us function optimally and maintain health. Good nutrition, regular exercise, and other habits like regular medical check-ups and routine immunizations can help ensure robust health—while poor habits doom us to preventable illness.

Unfortunately, some body invaders or germs—*bacteria*, *viruses*, *fungi*, and *protozoa*—can cause disease. Germs draw energy from their living hosts and can damage or destroy the cells they inhabit. Their waste products are called *toxins*. Toxins cause the symptoms of an illness like sneezing, coughing, and diarrhea; these are also often the route of contagion—sharing the germs with others.

Bacteria are single-celled organisms that get nutrients from the environment. Some bacteria are useful, and even essential, to our health—we couldn't digest food without the bacteria in our gut. Some, however, target parts of our bodies and can cause such conditions as dental cavities, urinary tract infections, and



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strep throat. Some, but not all, bacterial infections can be treated by physicians with antibiotics.

Viruses can't grow, reproduce, or survive without a host. They live for only a short time outside a living cell but once they find a host they spread easily and quickly to make a person sick. Viruses are responsible for common and relatively mild illness like colds but are also the infecting agent for more severe illnesses like smallpox, HIV/AIDS, and the flu. The current outbreak of coronavirus, COVID-19, causes a respiratory infection that seems to be related to an older respiratory illness, SARS. These viruses can be detected by sophisticated lab tests, but there are no drugs that cure.

WHAT DO YOU THINK GERMS LOOK LIKE?

Fungi are multi-celled, plant-like organisms that generally aren't contagious or dangerous to healthy people. Fungi grow, live, and reproduce in damp, warm environments. Common fungal infections are athlete's foot, vaginal yeast infections, and oral thrush.

Protozoa are single-celled animals like bacteria. They need moisture to grow and reproduce, making them the most prevalent in contaminated water. Drinking and bathing in contaminated water can lead to intestinal infections. In the United States, the most common protozoan infections are *Toxoplasmosis* (resulting from contact with parasitic protozoa in infected cat feces) and *Giardia* (typically from fecal-oral contamination or unclean water).

Tools for illness prevention

Among young children, most disease-causing germs are spread through the air (in sneezes or coughs) or through contact with bodily fluids and excrement (blood, mucus, saliva, and feces). Preventing direct contact with these substances is the first line of defense. Disease risk is also minimized with proper cleaning and sanitation procedures (including hand-washing) and vaccinations.

Use the general recommendations below for avoiding common illnesses. Most are reflected in

best program practices and the recommendations of the Centers for Disease Control and Prevention (CDC), child care licensing rules, and state health authorities.

- First, and most essential, is to model, teach, and practice thorough hand washing following state licensing rules and the recommendations of health authorities. The CDC offers posters detailing handwashing technique at www.cdc.gov/handwashing/posters.html.

Thorough washing is key:

- Wet the hands with warm water, add pump-dispensed soap,
- rub vigorously for at least 15 seconds away from the water (not under it),
- rinse the soap from the hands, and
- dry with a disposable, single-use paper towel or an electric dryer.

Remember: Antibacterial soap is only minimally effective against bacteria, and is completely ineffective in killing viruses. Further, hand sanitizing solutions, including alcohol-based gels, aren't as effective as using soap and water.

- Avoid crowded, overheated areas where germs thrive and are easily shared. At naptime, for example, position children head-to-foot so that it's less likely a child will cough or sneeze onto another.
- Practice, model, and teach children to sneeze and cough into the elbow or toward the floor. Have tissues within easy reach and remember to wash hands.



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- Scrupulously follow recommended diaper changing and toileting procedures.
 - Avoid sharing personal items like hats, combs, bedding, towels, food, and eating utensils.
 - Follow recommended food service procedures for sanitation, labeling, avoiding cross-contamination, storage, preparation and serving temperatures, and family meal service.
 - Stay up-to-date on evidence-based information, recommendations, and activities related to infection, contagion, and classroom exclusion.
 - Keep hands away from eyes, nose, and mouth.

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It's tempting to think "because I told you so" will be enough to help young children form good health habits. But in fact, children need concrete, hands-on experiences to learn new concepts—especially those as complex and invisible as health and disease prevention.

Adults have ultimate responsibility for ensuring a safe and healthy environment for children. It's also appropriate to engage children in the quest for health. And while investigating microscopic germs isn't possible or advisable, try to explore the concepts and practices that keep us all healthy.

Talking with children—asking questions that let you know what children already know and where misconceptions lie—is an important starting place. Open-ended questions, ones that can't be answered *yes* or *no*, offer teachers opportunities to get conversations started.

Invite children to share what they know about germs with questions like these:

- What do you think germs look like?
- How do we know germs are around?
- Why do we wash hands after using the toilet?
- How do we know we can spread germs from one person to another?
- What does it feel like when we're getting sick?
- What can we do to keep from sharing the germs that make us sick?

Make sure children understand that their opinions will be accepted and not ridiculed. Listen to all ideas and work to correct misinformation gently and accurately.

Help children make connections between what they observe and possible causes. For example, build

on the curiosity and concern expressed when children notice that a classmate has been absent. Talk with children about their friend's illness, and tie the conversation to activities in all areas of the curriculum. You might use medical props in dramatic play, provide materials for get-well cards in art, make a chart indicating the days the friend is absent, and read resource books.

Talk with children about good hygiene—routine activities like toothbrushing, bathing, and cleaning fingernails—and practice techniques with real tools.

And finally, do what you can to allay the fears that are generally unfounded. While we always want to show compassion for those who are sick, we also want to help children know that they can learn the many simple practices proven to help them stay healthy. ■