A .gov website belongs to an official government organization in the United States. A lock ( ) or https:// means you've safely connected to the .gov website. Share sensitive information only on official, secure websites. Many diseases and conditions are spread by not washing hands with soap and clean, running water.

CDC recommends cleaning hands in a specific way to avoid getting sick and spreading germs to others. The recommendations for effective handwashing and use of hand sanitizer was developed based on data from a number of studies.

Learn more about the science behind how to wash your hands and why clean hands help keep you stay healthy. Feces (poop) from people or animals is an important source of germs like Salmonella, E. coli O157, and norovirus that cause diarrhea, and it can spread some respiratory infections like adenovirus and hand-foot-mouth disease. These kinds of germs can get onto hands after people use the toilet or change a diaper, but also in less obvious ways, like after handling raw meats that have invisible amounts of animal poop on them. A single gram of human feces—which is about the weight of a paper clip—can contain one trillion germs. Germs can also get onto hands if people touch any object that has germs on it because someone coughed or sneezed on it or was touched by some other contaminated object. When these germs get onto hands and are not washed off, they can be passed from person to person and make people sick. Handwashing with soap removes germs from hands. This helps prevent infections because: Teaching people about handwashing helps them and their communities stay healthy. Handwashing education in the community: About 1.8 million children under the age of 5 die each year from diarrheal diseases and pneumonia, the top two killers of young children around the world. Preventing sickness reduces the amount of antibiotics people use and the likelihood that antibiotic resistance will develop. Handwashing can prevent about 30% of diarrhea-related sicknesses and about 20% of respiratory infections (e.g., colds). Antibiotics often are prescribed unnecessarily for these health issues. Reducing the number of these infections by washing hands frequently helps

prevent the overuse of antibiotics—the single most important factor leading to antibiotic resistance around the world. Handwashing can also prevent people from getting sick with germs that are already resistant to antibiotics and that can be difficult to treat. Why? Because hands could become re-contaminated if placed in a basin of standing water that has been contaminated through previous use, clean running water should be used. However, washing with non-potable water when necessary may still improve health. The temperature of the water does not appear to affect germ removal; however, warmer water may cause more skin irritation and is more environmentally costly. Turning off the faucet after wetting hands saves water, and there are few data to prove whether significant numbers of germs are transferred between hands and the faucet. Using soap to wash hands is more effective than using water alone because the surfactants in soap lift soil and microbes from skin, and people tend to scrub hands more thoroughly when using soap, which further removes germs. To date, studies have shown that there is no added health benefit for consumers (this does not include professionals in the healthcare setting) using soaps containing antibacterial ingredients compared with using plain soap. As a result, FDA issued a final rule in September 2016 that 19 ingredients in common "antibacterial" soaps, including triclosan, were no more effective than non-antibacterial soap and water and thus these products are no longer able to be marketed to the general public. This rule does not affect hand sanitizers, wipes, or antibacterial products used in healthcare settings. Why? Lathering and scrubbing hands creates friction, which helps lift dirt, grease, and microbes from skin. Microbes are present on all surfaces of the hand, often in particularly high concentration under the nails, so the entire hand should be scrubbed. Why? Determining the optimal length of time for handwashing is difficult because few studies about the health impacts of altering handwashing times have been done. Of those that exist, nearly all have measured reductions in overall numbers of microbes, only a small proportion of which can cause illness, and have not measured impacts on health. Solely

reducing numbers of microbes on hands is not necessarily linked to better health. The optimal length of time for handwashing is also likely to depend on many factors, including the type and amount of soil on the hands and the setting of the person washing hands. For example, surgeons are likely to come into contact with disease-causing germs and risk spreading serious infections to vulnerable patients, so they may need to wash hands longer than someone preparing their own lunch at home. Nonetheless, evidence suggests that washing hands for about 15-30 seconds removes more germs from hands than washing for shorter periods. Accordingly, many countries and global organizations have adopted recommendations to wash hands for about 20 seconds (some recommend an additional 20-30 seconds for drying): Why? Soap and friction help lift dirt, grease, and microbes—including disease-causing germs—from skin so they can then be rinsed off of hands. Rinsing the soap away also minimizes skin irritation. Because hands could become re-contaminated if rinsed in a basin of standing water that has been contaminated through previous use, clean running water should be used. While some recommendations include using a paper towel to turn off the faucet after hands have been rinsed, this practice leads to increased use of water and paper towels, and there are no studies to show that it improves health. Why? Germs can be transferred more easily to and from wet hands; therefore, hands should be dried after washing. However, the best way to dry hands remains unclear because few studies about hand drying exist, and the results of these studies conflict. Additionally, most of these studies compare overall concentrations of microbes, not just disease-causing germs, on hands following different hand-drying methods. Nonetheless, studies suggest that using a clean towel or air-drying hands are best. Having clean hands is one of the best ways to avoid getting sick and prevent the spread of germs to others. Languages Language Assistance Languages Language Assistance

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