

Washing hands – Avoiding illnesses

We use our hands to perform a wide variety of activities every day: We touch objects, lift them, hold onto them. We also touch our food with our hands, rub our eyes, and affirm our social contact with people through handshakes. In doing all these things, we continually pick up microbes and pass them on. As a result, our hands harbor a large number of different germs (bacteria, virus, fungi). Most of them are harmless and their presence is sometimes actually useful. However, some pathogens can transmit dangerous diseases. If these kinds of germs cling to our hands, we also pass them on to other people or become infected ourselves.

What diseases can the germs cause?

Germs can cause a wide variety of diseases, including some very serious ones.

Certain strains of **bacteria**, for example, are responsible for severe epidemics such as diphtheria, cholera, or typhus. Most diarrheal diseases can also be traced back to bacteria. Bacterial infections have been successfully treated with antibiotics for a long time. However, the number of antibiotic-resistant germs, often referred to as “hospital germs,” is rising dramatically. Even tuberculosis, an epidemic that had nearly died out, is gaining ground again around the world as it develops resistance to antibiotics. The order of the day is thus stepped-up prevention through hygiene.

Specific **viruses** trigger infectious diseases such as the flu, colds, measles, rubella, mumps, chicken pox, hepatitis, and even meningitis. Unlike bacterial diseases, they cannot be treated with antibiotics. In practice, there are no specific remedies against viruses. However, remedies called virostatic agents can be used against some viral infections, such as the flu, herpes, and HIV. In many cases, they slow down the replication of the viruses without actually killing them.

Infections caused by **fungi** (mycoses) originate primarily on the skin, on the genitals, and in the gastrointestinal tract. The most common diseases include tenacious athlete's foot and nail fungus infections. External fungal infections can be successfully inhibited using corresponding medications (antimycotics). Fighting internal fungal infections, though, is often extremely difficult or totally ineffective due to the side effects of the antimycotics.

How can diseases be spread via our hands?

In the case of contact or smear infections, pathogens are transmitted by touching an object that has been contaminated with infectious bodily secretions such as droplets produced by coughing, saliva, urine, or stool. The microorganisms cling to the surface of the hand upon contact and from there can enter the body, for example, via the mouth, nose, eyes, or breaks in the skin. Classic ways to transmit germs are shaking hands, touching door handles, and grasping handholds while riding public transportation. Many gastrointestinal infections are transmitted in this way.

Note: Other ways of becoming infected – without the hands being involved – are inhaling droplets and exchanging bodily fluids.

How can the transmission of germs via the hands be prevented?

Each and every person is responsible for practicing careful hygiene in order to prevent the spread of germs and thus the transmission of diseases. The most important and the easiest means of preventing a large number of infections is conscientious hand washing.

Wash your hands, and do it right

Wash your hands before every meal.

This prevents germs on your own hands from entering your body through your mouth and causing damage.

Always wash your hands after using the bathroom.

This is imperative, because this is the only way to avoid spreading germs from your own intestinal tract or urine to other people – not only if you shake their hands, but also, for example, when you reach for the bowl of chips at a party.

Wash your hands after covering your mouth and nose when you sneeze or cough.

It is better to use your hand to cover your mouth and nose when you cough or sneeze rather than freely scatter your germs in your surroundings. However, the cold viruses then cling to your hands. That's why it is absolutely essential to use a new tissue every time for hygienic reasons. Alternatively, you can sneeze or cough into your elbow, which keeps your hands free from germs.

Wash your hands thoroughly with soap.

When you wash your hands, you should first wet your hands, and then rub soap or any other hand cleanser on your palms, on the backs of your hands and fingers, and between your fingers. It should take at least 30 seconds to wash your hands thoroughly. Then thoroughly rinse your hands by rubbing them under warm water if possible (cold water can also be used, but then it takes longer). Afterwards, dry your hands with a clean hand towel or a paper towel.

Why is it so important to use soap when washing your hands?

The tensides in soap can alter the adhesion of foreign bodies (including microbes) on the skin so that the foreign bodies can be washed off. This process cannot take place to the same extent if the hands are washed with water alone without using soap. However, you should not use too much soap, since it can affect the sensitive protective acid mantle of the skin. This mantle, an acidic film consisting of water and oils, protects the skin from drying out and from pathogens. Too much soap or excessive washing can impair the natural defense function of the skin. However, if you use normal amounts of moisturizing soaps or skin cleansers, you don't run this risk when washing your hands.

Disinfecting your hands

Disinfecting your hands is even more effective. While 80 percent of germs survive during regular hand washing, 99.9 percent of germs are killed by disinfection. Unlike washing with soap, disinfection does not remove the skin's natural protective acid mantle. However, depending on the composition of the hand sanitizer used for disinfection, the alcohols in the sanitizer can irritate and degrease the skin. For this reason, hand sanitizers frequently contain moisturizing substances or alcohols that are less irritating to the skin. Using a hand sanitizer to clean hands is usually necessary only for people who work in the healthcare field, e.g., at hospitals, doctors' offices, or nursing care facilities. In private households, thorough washing with soap is usually sufficient.