

- COVID-19

## How to have good hand hygiene

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The Covid-19 pandemic highlighted the importance of hygiene in preventing disease. While masking is very important in preventing Covid-19 transmission, washing your hands continues to be a cornerstone of infection prevention in general. This is especially true for viruses, bacteria, and other pathogenic organisms that are transmitted by direct contact as well as those that are transmitted via the fecal-oral route.

Instead of a disinfecting soap (like povidone-iodine or chlorhexidine-based preparations), you can instead use non-irritating soap for scrubbing followed by disinfecting alcohol hand rub or wearing sterile gloves. If there are multiple procedures, re-sterilizing is not necessary if there is gross soiling and a repeat disinfection with alcohol hand rub is sufficient prior to the next procedure. This has been a great relief to surgeons because I remember even as a medical student, I thought that my skin was going to come off whenever I scrubbed to assist in surgery. Some of my classmates were even told that they got as red as their ears and their faces.

Alcohol-based handrubs are excellent for quick disinfection especially when washing facilities are not readily available. Alcohol rubs for disinfection should range from 60 to 80% concentration of alcohol, whether isopropyl alcohol or ethanol. Other alcohol preparations are available but may be more toxic than these two alcohols, especially when there is a risk of ingestion by small children. For proper disinfection for lay persons, alcohol sanitizer should be spread

Whether handwashing with soap and water or sanitizing with handrubs, proper hand hygiene prevents infection and decreases the risk of antimicrobial resistance. Who would have thought that something as simple could save so many lives? It's all in your hands.



With the rise of antimicrobial resistance globally wherein we are literally running out of antibiotics to treat resistant organisms, preventive behaviors are becoming more and more indispensable. All it takes is some soap and water or a bit of hand sanitizer. If you don't get sick in the first place, then you won't have to spend all that money on expensive antibiotics.

I often get asked, is it better to wash your hands or use an alcohol-based hand sanitizer? This is an ongoing area of study and there are numerous caveats. What is certain is that either hand washing or hand sanitizing is better than not cleaning your hands. Standards of handwashing or sanitizing are different for lay people and for healthcare workers. In general, healthcare workers use more intensive techniques, especially when caring for patients and when performing surgery. Patients in the hospitals tend to be sicker and the environmental bacteria tend to be more resistant to antibiotics and disinfection. Protocols for lay handwashing and sanitizing are not as stringent, but nevertheless save many lives when consistently followed since everyone can participate.

When should we wash or disinfect our hands? For lay people, especially during the pandemic, WHO prescribed six moments of hand hygiene.

For healthcare workers, WHO recommends these moments.

These also apply for those taking care of a sick relative at home:

Proper handwashing for lay people, according to the WHO, includes washing the different areas of the hands, which includes the back of the hand, in between digits, and under the nails. The ideal amount of time is at least 20 seconds. Some people sing the entire "Happy Birthday" song during hand washing to ensure they washed long enough.

For healthcare workers, handwashing usually lasts 40 to 60 seconds for routine care of patients. For surgical scrubbing, it can be as long as five minutes because even the wrists and arms need to be cleaned. Historically, surgeons have done up to 10-minute scrubs using brushes which unfortunately resulted in irritated skin especially when doing multiple procedures in a day. To address these concerns, WHO no longer recommends the use of brushes and has stated that five minutes is adequate. Alternatively, WHO has also recommended that instead of a disinfecting soap scrub (like povidone-iodine or chlorhexidine-based preparations), surgeons can instead use non-irritating soap for

scrubbing followed by a disinfecting alcohol hand rub prior to wearing sterile gloves. If there are multiple procedures, rescrubbing is not necessary if there is no gross soilage and a repeat disinfection with alcohol hand rub is sufficient prior to the next procedure. This has been a great relief to many surgeons because I remember that even as a medical student, I felt that my skin was going to come off whenever I scrubbed to assist at surgery. Some of my classmates were even proud of how red their skin got as a result of their vigorous and thorough scrubbing. Thank God we now know better.

Handwashing is excellent for cleaning hands when they are visibly soiled. Using clean water and a non-irritating soap mechanically removes dirt and microorganisms from your hands. It is best to avoid antibacterial soaps and harsh detergents because these can strip the skin of essential oils, upsets the pH balance of healthy skin, and kills good bacteria that usually crowd out harmful microorganisms. Some medicated soap preparations can cause dermatitis and eczema of the skin, particularly those that contain iodine and triclosan. Good handwashing is appropriate whenever the hands become contaminated with dirt and grime. Using emollients and moisturizers or a soap that contains these is important if you are washing your hands many times a day in order to prevent excessive drying and cracking of the skin.

Alcohol-based handrubs are excellent for quick disinfection especially when washing facilities are not readily available. Alcohol rubs for disinfection should range from 60 to 80% concentration of alcohol, whether isopropyl alcohol or ethanol. Other alcohol preparations are available but may be more toxic than these two alcohols, especially when there is a risk of ingestion by small children. For proper disinfection for lay persons, alcohol sanitizer should be spread all over the hands including the spaces in between. Enough alcohol disinfectant should be used to cover all hand surfaces. The hands should feel wet for at least 20 seconds while spreading the liquid over the hands. Keep rubbing the hands together until they feel dry. If you disinfect many times a day, using an alcohol handrub with some moisturizer or emollient will prevent skin irritation and drying. For surgical disinfection, an approved hospital-grade alcohol rub is used for a longer period of time (some alcohol handrubs recommend two or more consecutive applications, read the label for specific instructions) following proper handwashing and prior to putting on sterile gloves. Other disinfectants

I often get asked, is it better to wash your hands or use an alcohol-based hand sanitizer? used for surgical preparation include chlorhexidine and iodine formulations, although these are likely more irritating than alcohol handrubs especially with repeated use throughout the day. Whether handwashing with soap and water or sanitizing with handrubs, proper hand hygiene prevents infection and decreases the risk of antimicrobial resistance. Who would have thought that something as simple could save so many lives? It's all in your hands.