

## TECHNIQUE

The purpose of washing your hands is to remove dirt, organic material and transient microorganisms. To be effective, washing should be of sufficient duration for mechanical action and allow antimicrobial products enough contact time to achieve desired results.

During handwashing, areas of the hands that are frequently missed or given insufficient attention include parts of thumbs, backs of fingers, backs of hands and beneath fingernails. Pay particular attention to these areas.

Hand antiseptics reduce, destroy or remove transient microorganisms from hands. This can occur in conjunction with handwashing if the soap or detergent used contains antiseptics. Antiseptic handrubs containing alcohol perform the same function if hands are not soiled with dirt or organic material.

Most antiseptics do not promote greater skin damage than plain soap, despite opinions to the contrary. Often the damage results from a harsh detergent base.

A surgical hand scrub is performed to remove transient flora and to reduce resident flora during surgery. Such scrubbing provides protection in case of glove tears. First, thoroughly wash your hands and forearms to remove dirt and transient bacteria. Use a brush and nail cleaner under your fingernails. The American College of Surgeons suggests a surgical scrub, including nail and fingertip areas, lasting at least 120 seconds. Alcohol-based preparations can be used either alone or in conjunction with nonmedicated soap.

Any handwashing product can be contaminated or support growth of microorganisms. Bar soap should be changed frequently. Small bars and soap racks (to promote drying) are recommended. Liquid products should be stored in closed containers and dispensed from disposable containers or containers which can be thoroughly washed and dried before refilling. Non-antimicrobial soaps (and lotions) usually contain preservative systems to help reduce the possibility of contamination. The efficacy of these preservative systems against microbes should be demonstrated using *in-vitro* Preservative Effectiveness Testing.

Type of Hand Care	Purpose	Method
Handwash	Remove soil and transient microorganisms	Soap or detergent for at least 10-15 seconds
Hand antiseptics	Remove or destroy transient microorganisms	Antimicrobial soap or detergent or alcohol-based hand rub for at least 10-15 seconds
Surgical hand scrub	Reduce, remove or destroy transient microorganisms and reduce resident flora	Antimicrobial soap or detergent preparation and brushing to create friction for at least 120 seconds, or alcohol-based preparation for at least 120 seconds

Source: Larson; EL, 1992, 1994 APIC Guidelines Committee. "APIC Guideline for Handwashing and Hand Antisepsis in Health Care Settings." *AJIC (American Journal of Infection Control)* 1995, 23:251-269.

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# HANDWASHING

YOUR MOST POWERFUL DEFENSE  
AGAINST INFECTIONS



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## BACKGROUND

Handwashing is known to reduce patient morbidity and mortality from nosocomial infection. It causes a significant decrease in the carriage of potential pathogens on the hands.

The type of soap and rinse used is dependent on the work being performed.

- Plain soap mechanically removes transient bacteria from the skin. It does not kill the bacteria released by shedding of skin squames.
- Antimicrobial soap mechanically removes, kills or inhibits microbial flora. There are varying levels of activity among antimicrobial soap products. Some antimicrobial soaps may be formulated primarily for effectiveness against transient organisms, while others may also demonstrate activity against resident organisms. Products may demonstrate bactericidal activity (killing of organisms), bacteriostatic activity (inhibition of organisms), or persistent activity (sustained reduction or inhibition of organisms over time).
- Antiseptic handrubs kill or inhibit microbial flora, but do not remove soil. There are also varying levels of activity among handrub products.

Your choice in soaps or handrubs should be based on:

- the degree of contamination.
- mechanically removing the transient flora.
- the level and type of antimicrobial effectiveness required (e.g. bacteriostatic, bactericidal, and/or residual activity against transient or resident organisms).

## HANDWASHING TIPS

Handwashing is the single most important procedure for preventing nosocomial infections.

Body secretions, surfaces and hands of all healthcare workers can carry bacteria, viruses and fungi that are potentially infectious to themselves and others, including you.

Handwashing is recommended when there is contact with a patient.

Handwashing is necessary before and after situations in which hands are likely to become contaminated with blood, body fluid, secretions and excretions or any items soiled with these.

Wash your hands before and after wearing gloves. Gloves are not a substitute for handwashing.

The generally accepted rule for handwashing is:

- 10-15 seconds of vigorous rubbing that generates friction.
- if hands are visibly soiled, rub longer.
- lather every surface well; especially around the nails.
- use the correct type of soap and rinse according to the situation (i.e., plain, antiseptic or antimicrobial soap or alcohol-based rinse).
- rinse in a flowing stream of water.
- in the absence of water, use alternative agents like detergent-containing towelettes (for removal of light soil) and alcohol-based handrubs (for reduction of microbial flora). Do not use handrubs if hands are soiled.
- dry your hands with paper towels or hand dryers (activate lever-operated dispensers before washing and activate hand dryers with elbows).

When in doubt, healthcare workers should wash their hands.

## TERMS

**Antimicrobial soap:** contains an ingredient with activity against skin flora. Activity should be demonstrated both in *in-vivo* (human) testing and *in-vitro* (laboratory) testing. Examples of *in-vivo* include the Health Care Personnel Handwash Test (bactericidal activity) and Agar Patch Testing (persistent bacteriostatic activity). Examples of *in-vitro* testing include MIC testing (bacteriostatic activity) and Time Kill testing (bactericidal activity).

**Nosocomial:** acquired in a healthcare facility.

**Plain or nonantimicrobial soap:** detergent-based cleanser in any form. The primary purpose is the physical removal of dirt and contaminating microorganisms. The soap has no bactericidal activity although it may contain a low concentration of antimicrobial ingredients as preservatives.

**Resident flora or “colonizing flora”:** microorganisms persistently isolated from the skin of most people. These are normal residents of the skin and are not readily removed by mechanical friction. They can be removed or reduced by products containing antimicrobial agents such as CHG or alcohol.

**Transient flora or “contaminating or noncolonizing flora”:** microorganisms isolated from the skin but not demonstrated to be consistently present in the majority of people.

**Squames:** dead skin cells.