Handwashing

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The NMC Code of Professional Conduct (2004) states that ‘you must... act to identify and minimise risk to patients and clients’. The Health and Safety at Work Act (1974) places a duty on workers to avoid or reduce risk if technically possible.

Handwashing is a simple and effective infection control intervention.

### When to wash hands

Hands should be washed:
- When they are visibly soiled;
- Before an aseptic or sterile procedure;
- When they feel dirty or sticky;
- Following frequent applications of a decontaminant gel.

Hands may also be washed before and after patient contact or putting on gloves. If hands are not soiled or sticky, a decontaminant rub or gel may be used. Where handrubs are not available, the hands should be washed.

### Anatomy and physiology

All humans have bacterial flora on their skin, although the quantities present vary (Price, 1938). The bacterial flora on the hands can be divided into two groups:
- Transient;
- Resident.

Resident flora are found on the surface of the skin and under the superficial layers (stratum corneum). They live and multiply on the hands. A common example is *Staphylococcus epidermidis*. Resident bacterial hand flora are unlikely to cause infections on the skin surface but may be problematic if they enter wounds or body cavities.

Transient bacterial flora are frequently acquired from contact with surfaces, substances or people. An example is *Staphylococcus aureus*. They may or may not colonise the hands and are more easily removed by handwashing than resident flora. Transient flora may be pathogenic and cause health care-associated infections.

The aim of handwashing is to remove transient and some resident flora to prevent transmission of pathogenic micro-organisms to patients. The action of friction (rubbing hands together and drying with a towel) and the effect of soap and water remove debris and micro-organisms. Scrubbing should be avoided as this may damage the skin.
Preparation
Taylor (1978) found that the handwashing techniques of health professionals were often inadequate, and training is therefore useful. Posters are a good reminder of the correct technique and the importance of handwashing.

In clinical settings, sinks should be at the correct height for professionals to stand while handwashing. Elbow or wrist action taps should be adjusted for easy operation.

A foot-operated lidded bin is preferable. Liquid soap and disposable towels should be wall-mounted near the sink.

In the community, health professionals may have to adapt to the available facilities, possibly carrying a supply of disposable towels and liquid soap.

In some settings, facilities and supplies may be more restricted but the general principles are the same. It is important not to contaminate hands from the operation of the taps or waste bin.

Nails should be kept clean and short, and varnish or other decorations avoided. Abrasions or cuts should be covered with a waterproof plaster.

Prior to washing the hands, rings, bracelets and wristwatches should be removed, and long sleeves rolled up.

The procedure
If a patient or relative is present, explain that you are going to wash your hands. Turn on the water and check the temperature is comfortable. Wet hands under running water.

- Apply soap or detergent to the palms of the hands and rub palms together vigorously (Fig 1);
- Place the right palm over top of the left hand and rub. Repeat this with the left hand over the right hand (Fig 2);
- Place palms together and interlace fingers and rub. Link fingers so that the backs of fingers are against the opposite palm and rub (Fig 3);
- Place the fingertips in the palm of the opposite hand, rotate and rub. Repeat this for the other hand (Fig 4);
- Grasp the right thumb with the left hand, rotate and rub. Repeat with the opposite thumb (Fig 5);
- Grasp the left wrist with the right hand. Rotate and rub. Repeat this for the other wrist. (Ayliffe et al, 1988) (Fig 6);
- Rinse hands thoroughly, holding them downwards;
- Turn off taps with elbows or wrists. If this is not possible, use a disposable paper towel to touch the tap while turning it off;
- Dry hands thoroughly using as many disposable paper towels as necessary. Place used towels in a foot-operated waste bin.

This entire procedure normally takes 15–30 seconds. A longer surgical scrub will require extra soap or detergent.

REFERENCES