



HAND HYGIENE

KEY POINTS

Use alcohol gel on hands or on non-sterile gloves immediately before you touch a patient

Learn how to clean your hands effectively

Wash your hands with soap and water:

- When starting a shift
- When visibly soiled
- Before drug rounds
- When serving food

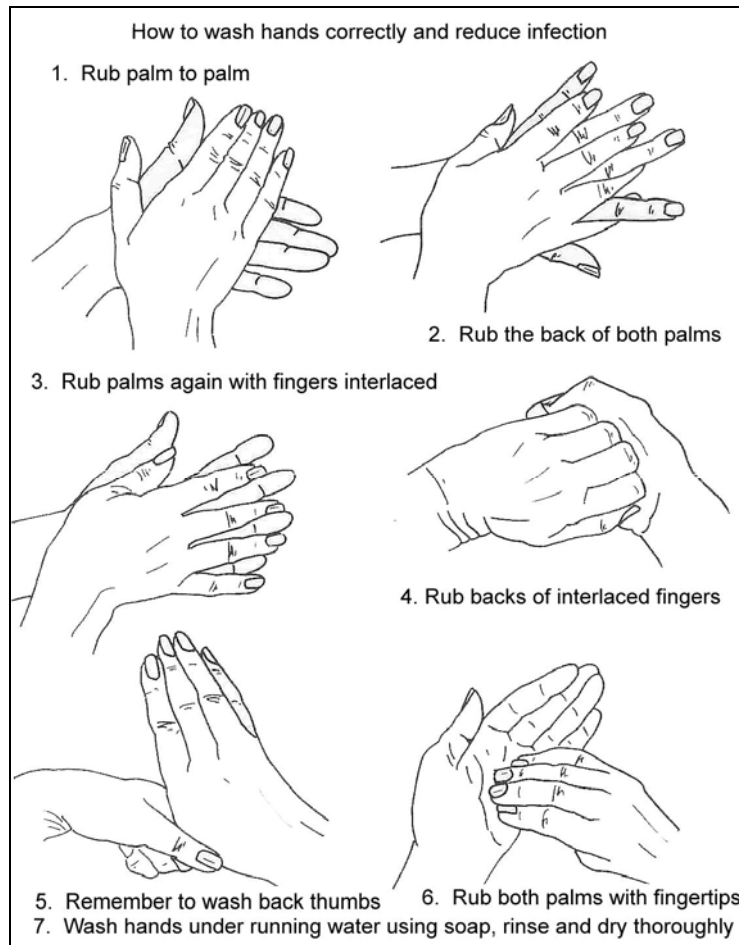
INTRODUCTION

Hand hygiene is the single most important way of reducing cross-infection. During clinical work, wear sleeves above the elbows and **DO NOT WEAR** a wristwatch or costume jewellery. Hand washing should be carried out using either liquid soap (social hand washing) or using an approved skin disinfectant before a clinical procedure. Alcohol gel is now widely available as an alternative to hand washing to reduce bacterial load on *clean* hands.

- Roll up sleeves and take off wristwatch and other jewellery
- If unable to remove wedding ring, wash and dry thoroughly around and under it
- Use running hot water, wet your hands and dispense one squirt of the recommended liquid soap or antiseptic into the palm of the hand
- Hold hands down below elbow height to prevent water running onto forearms
- Rub hands together vigorously to lather all surfaces of hands and wrists, paying particular attention to thumbs, finger tips and finger webs
- Rinse hands thoroughly
- Turn off water using elbows or wrists on elbow taps, then dry hands thoroughly on a paper towel; If elbow taps are not present, first dry hands thoroughly, then turn off the taps using a **fresh** paper towel
- Dispose of towels into domestic waste (black) bag (do not contaminate your hands by touching the bin lid)

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HOW TO WASH YOUR HANDS



NOTES ON HANDWASHING

Hand cream. It is advisable to carry one's own personal tube of hand cream. Do NOT use multi-dose pots of cream, as these may become contaminated.

Skin lesions. If any member of staff has a hand lesion, or experiences skin problems associated with hand washing, he or she should consult the Occupational Health Department. If skin problems such as eczema are present, then staff should report to the Occupational Health Department or ICN or manager for advice. Staff with eczema are at high risk of acquiring resistant hospital-associated staphylococci.

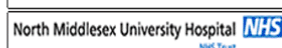
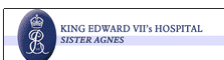
Cuts and abrasions on the hands must be adequately covered with an impermeable dressing when starting duty.

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WHEN TO WASH YOUR HANDS

BEFORE

- Before the administration of drugs
- Before serving meals and drinks
- Before meal breaks or drinking beverages (**please do not eat on the wards**)

AFTER

- After removing gloves
- If your hands are soiled
- After contact with body secretions or excretions
- After cleaning spillages
- After using the toilet
- At the end of a span of duty

Use exactly the same technique for applying alcohol gel

PROTECTIVE CLOTHING - Glove usage

General comments

Note that non-sterile gloves protect the worker not the patient. If you employ good hygiene practices and clean your hands properly, you do not need gloves for most clinical purposes. When gloves are put on, they acquire your hand flora, so if you want gloved hands to be properly decontaminated, first, clean your hands properly before putting them on and secondly, rub the gloved hands with alcohol gel.

Gloves have a dual role:

1. To provide a barrier for personal protection* (use non-sterile gloves)
2. To reduce the risk of transmission to patients (use surgical gloves)

*(and thus form part of the Personal Protective Equipment under the Health and Safety at Work Act 1974)

Gloves should be worn when dealing with body fluids, secretions and excretions, and for nursing patients in source isolation. Gloves must be changed after nursing patients in source isolation or when they have been contaminated. They should be removed immediately and discarded into yellow plastic waste bags and hands should be washed and dried thoroughly to

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remove allergenic components of the glove material before the next task.

If, in special instances, gloves need to be worn for long periods of duty, then gloved hands must be washed and dried, or rubbed with alcohol gel with the same frequency as un-gloved hands.

Important: Make a risk assessment of the procedure and decide whether to wear gloves. Choose your gloves according to the procedure to be carried out.

The risk assessment should include:

- The nature of the task (is patient or carer protection or both required?)
- The risk of exposure to blood or body fluids
- The risk of contamination
- The barrier efficacy of the gloves
- The choice of gloves (sterile, non-sterile, type of material)
- The risk of sensitisation

For aseptic techniques (mainly in the operating theatre, but also whenever an aseptic procedure is done at ward level), choose sterile gloves. For all other procedures, if gloves are considered necessary to protect the carer from contact with blood or other body fluids, choose non-sterile gloves. Remember that organisms from the hands get onto the gloves when they are put on and organisms picked up during a procedure are put back onto the hands when they are removed. Therefore gloves are no substitute for hand hygiene. Gloves can be disinfected by washing or applying alcohol gel (which does not degrade NRL gloves over >1h of use.)

Gloves must fit properly. For this reason non-elastic gloves (plastic and vinyl) are generally not satisfactory. Tight gloves increase the risk of dermabrasion and finger muscle fatigue. Long term wearing of gloves leads to air occlusion and excessive sweating.

Powdered gloves are now discouraged. If provided they must be returned to stores as not suitable. Gloves should be low in extractable proteins (<50mcg/g) and residual chemicals (<0.1% w/w). Gloves deteriorate with time and should not be used >3y after manufacture.

Gloves other than domestic (e.g. Marigold-type) are single use only. They must be discarded as clinical waste (yellow bag) except after food handling. There must be sufficient supplies of appropriate glove types and sizes in clinical areas.

PERFORATIONS

In surgery, perforations of gloves occur in 13-43% of operations. Double gloving is recommended for exposure prone procedures especially when perforation is a risk. Using two colour gloves will indicate perforation and the inner glove generally remains intact.

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RECOMMENDED GLOVE USAGE		
Activity	Choose	Alternative
All surgery	Sterile Latex	Nitrile or polypropylene
All aseptic procedures with blood exposure Sterile pharmaceutical procedures	Sterile Latex	Nitrile or polypropylene
Non aseptic procedures with exposure to blood Handling sharps Handling cytotoxics Handling disinfectants Tasks which may pull, twist or stretch gloves	Non-sterile latex	Non-sterile nitrile or polypropylene
Handling aldehydes	Non-sterile, nitrile or polypropylene	
Aseptic procedures, contact with blood unlikely	Sterile vinyl	
Short-lived and non-manipulative tasks Low risk of contact with blood Tasks unlikely to pull, twist or stretch gloves Cleaning with detergent	Non-sterile vinyl	
Food handling	Non-sterile polythene	
Cleaning	Domestic quality (eg Marigold)	

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GLOVE MATERIALS

Natural rubber latex NRL

Long standing use. Close fitting. Established impermeable to blood borne viruses. Can reseal. Comfortable. Contain many chemicals and >200 proteins which may cause sensitisation.

NRL with hydrogel

Easy to put on.

Nitrile (acrylonitrile)

Good biological barrier and resistant to glutaraldehyde. Similar chemical range as NRL. Occasional sensitivity seen. Difficult to sterilise. Release cyanide on incineration.

Tactylon (multipolymer synthetic styrene-ethylene-butadiene-styrene)

Similar elasticity and strength to NRL. No NRL proteins and chemicals. Rapidly broken down with non-solid methacrylates (eg bone cement).

Neoprene (polychloroprene)

Good alternative to NRL

Vinyl (polyvinyl chloride)

Lower strength than NRL. Increased permeability to viruses. Leakage rate up to 63%. Inflexible. Cheap. Reserve for activities with no blood contact, brief activities with no glove stress. Incineration leads to vinyl chloride (carcinogenic).


Polythene (ethylene co-polymer)

Heat sealed seams likely to split. Ill-fitting. Thin. Tear easily. Do not resist stress. 85% permeable within 10' of use. No indications for clinical use.

Cornstarch powder

Replaced talc. But may also cause peritonitis and granulomas. When airborne as dust may carry chemicals from NRL. May contaminate prosthetic materials and act as a nidus of infection. Must not be used.

NOTE: Polythene gloves are not recommended.

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SENSITISATION

If gloves supplied cause irritation, then staff must consult Occupational Health or Infection Control Nurse. It is wise to take an example of the glove and its name with you if visiting OH to discuss this problem. Reactions to gloves must be reported to the Medical Devices Agency by Occupational Health.

Natural latex gloves are associated with hypersensitivity reactions in between 6 and 18%. Alternative materials are therefore used. The preferred alternative material for sterile surgical gloves is synthetic nitrile/polypropylene and for non-surgical procedures is vinyl.

Natural rubber has many chemicals added during processing. These are partially washed off after the gloves have been made. However, residual chemicals may be allergenic. Cornstarch increases leaching of chemicals from rubber. Atopic people (with eczema and asthma) and those allergic to foods (eg avocado, passion fruit, banana, chestnut and potato) are more likely to be sensitised. Frequent use increase risk of sensitisation. Patients may be sensitive if repeatedly exposed. Their notes should be marked.

Carers with suspected allergy must go to Occupational Health for advice. Once sensitized, many household effects may cause problems. Type 1 hypersensitivity is dangerous (risk of anaphylaxis) so appropriate precautions must be taken and a risk assessment be performed as to appropriateness of employment. It is almost impossible to construct an NRL-free environment.

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HAND CARE

Guidelines based on ICNA booklet: Glove usage guidelines 1999

- Apply soap and skin wash products to wet hands
- Rinse and dry hands carefully
- Use hand creams with a non-ionic base
- Take care not to get cuts and abrasions
- Cover cuts with impermeable dressings
- Wear NRL gloves for contact with blood and body fluids
- Use sterile gloves when performing aseptic or clean procedures
- Wash hands after glove removal
- Keep nails short
- Do not wear false nails or nail varnish on duty
- Do not wear watches, bracelets and rings with stones
- Report hand problems to Occupational Health

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SUMMARISED POINTS

- In order to reduce exposure to NRL, wear gloves only when necessary
- Only use NRL gloves when <50mcg/g latex proteins and <0.1% w/w residual proteins
- Wearing gloves is not a substitute for hand hygiene
- Cornstarch powdered gloves must not be used
- Vinyl gloves are not a satisfactory substitute for NRL for protection against blood borne viruses
- Polythene gloves must not be used
- Gloves can be decontaminated (as hands) between patients for non-critical procedures but should be changed when starting a new critical procedure
- Wash hands after taking gloves off (if alcohol gel is used to disinfect the hands, then wash the hands regularly and thoroughly at the end of a shift to remove allergens)

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