

NON-STERILE GLOVES: APPROPRIATE USE IN HEALTHCARE SETTINGS

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Question

What is the best available evidence regarding appropriate use of non-sterile gloves in healthcare settings?

Clinical Bottom Line

Infection prevention and control protocols are applied by healthcare workers for all patient care activities, regardless of known or suspected infection status; this includes the use of non-sterile (NS) gloves.^{1,2,3,4} Using NS gloves correctly can protect both patients and healthcare workers from potential exposure to infectious agents that may be carried on the hands.^{1,2,3,4} However, NS gloves do not provide complete protection against hand contamination and thus wearing NS gloves does not replace the need to perform proper hand hygiene.⁴ There are specific clinical situations when NS gloves should be worn and changed, and those where their use is not required.⁴ The evidence informing this evidence summary is based on one systematic review, expert opinion and clinical practice guidelines.^{1,2,3,4}

- The wearing of gloves is not an alternative to hand decontamination and safe hygiene practices. Appropriate hand washing with soap and water, or an alcohol-based hand rub, should be performed before donning and after doffing gloves.¹ (Level 2 Level 5)
- Wearing gloves may contribute to the prevention of cross-transmission from healthcare workers to patients, and vice versa.¹ (Level 2)
- NS gloves should be worn during standard aseptic non-touch technique (ANTT), and during patient care when there is a likelihood of coming into direct contact with blood or other potentially infectious materials (e.g. body fluids, moist body substances and saliva, mucous membranes and non-intact skin) and/or contaminated items and/or surfaces.^{3,4} (Level 5)
- Gloves should be changed between episodes of care for different patients, to prevent transmission of microorganisms (including multidrug-resistant microorganisms such as vancomycin-resistant enterococcus [VRE], methicillin-resistant Staphylococcus aureus [MRSA]), and/or during the care of a single patient, to prevent cross-transmission of body sites.⁴ (Level 5)
- A hand health assessment is required before donning of gloves; any scratches or abrasions should be covered in order to prevent infectious agents from entering the body.^{2,3} (Level 5)
- Gloves should be removed and discarded promptly once an episode of patient care is completed.⁴ (Level 5)
- Wearing gloves for extended periods of time can increase the risk of skin issues such as irritation and dermatitis.⁴ (Level 5)
- Gloves should be changed if they become torn or heavily contaminated.² (Level 5)
- The reuse or reprocessing of gloves is not recommended, even in healthcare settings with low resources or where glove supply is limited. Failure to remove gloves between patients or different body sites may

contribute to the transmission of organisms.^{1,4} (Level 2 and Level 5)

- NS gloves should be put on last, after all other PPE. To put on gloves: (1) remove the first glove without touching the container; (2) advance the fingers into the glove and do not touch with ungloved hand; (3) remove the second glove with the non-gloved hand and avoid touching your forearm; (4) turn the external surface of the glove (close to the wrist) over your fingers and advance hand into the second glove.^{2,3} (Level 5)
- The order for removing PPE is gloves, apron, eye protection, and surgical mask. To remove gloves: (1) grasp the outside of the glove with the opposite gloved hand and peel off; (2) hold the removed glove in the gloved hand; (3) slide the fingers of the ungloved hand under the remaining glove at the wrist; (4) peel the second glove off over the first glove and (5) discard in a lined waste bin.^{2,3} (Level 5)

Characteristics Of The Evidence

This evidence summary is based on a structured search of the literature and selected evidence-based health care databases. The evidence in this summary comes from:

- A systematic review of 18 observational and five quasi-experimental studies.¹
- Expert opinion.^{2,3}
- Clinical practice guidelines.⁴

Best Practice Recommendations

- Non-sterile gloves should be used during standard ANTT, and during patient care when there is a likelihood of coming into direct contact with blood or other potentially infectious materials (eg, body fluids, moist body substances and saliva, mucous membranes and non-intact skin) and/or contaminated items and/or surfaces. (Grade B)
- A hand health assessment (e.g. assessing for areas of open skin that need covering) should be performed before donning of gloves. (Grade B)
- Hand hygiene must be performed immediately before donning of gloves. (Grade B)
- Gloves should be changed if they are torn or heavily contaminated. (Grade B)
- Gloves should be removed and discarded immediately once an episode of patient care is completed. (Grade B)
- Hand hygiene must be performed immediately after doffing of gloves. (Grade B)
- Prolonged and indiscriminate use of gloves should be avoided as it may cause adverse reactions and skin sensitivity. (Grade B)

References

1. Picheansanthian W, Chotibang J. Glove utilization in the prevention of cross transmission: a systematic review. JBI Database System Rev Implement Rep. 2015;13(4):188–230.
2. Cochrane J, Jersby M. When to wear personal protective equipment to prevent infection. Br J Nurs. 2019;28(15):982-4.
3. Ford C, J Park L. How to apply and remove medical gloves. 2019; 28(1):26-8.
4. World Health Organization. Gloves Use Information Leaflet. 2009:4.

Archived Publications

1. JBI-ES-2062-1 (Published at 12 October 2021)

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For details on the method for development see Munn Z, Lockwood C, Moola S. The development and use of evidence summaries for point of care information systems: A streamlined rapid review approach. *Worldviews Evid Based Nurs.* 2015;12(3):131-8.

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