

Patient skin preparation

The following extract is taken from **Standards and Recommendations for Safe Perioperative Practice (Fifth Edition)**, Section 5, Infection Prevention and Control, page 234, published by The Association for Perioperative Practice.

STANDARD

The risk of postoperative surgical site infections are minimised through the effective management of skin preparation of the surgical site.

Effective skin preparation greatly reduces the number of bacteria on the patient's skin, which limits the risk of surgical site infections.

Surgical site infections (SSIs) reduce the health-related quality of life of patients and use valuable hospital resources. SSIs are the most common infections acquired in hospital and can significantly impact the wellbeing of patients, causing anxiety, pain and distress. Patients with SSIs face extended hospital stays and longer recovery times, as well as potential loss of earnings for working patients. Alongside the negative consequences for patients, every SSI places a financial burden on healthcare organisations, with an average doubling of costs and the loss of bed space due to extended stays (Badia et al 2017).

Bacteria on the patient's skin around the surgical site are the most common cause of SSIs (Jolivet & Lucet 2019). The number of bacteria on the patient's skin can be significantly reduced by effective surgical skin preparation. The risk of even invasive surgeries can be reduced at the level of the skin though effective skin preparation (Jolivet & Lucet 2019).

Surgical skin preparation is the process of disinfecting the skin to reduce the number of transient and resident skin bacteria. Transient bacteria do not normally colonise the skin and are easily removed by washing. Resident bacteria are more difficult to remove and grow even on normal skin, which is why disinfection is required. Surgical skin preparation should be carried out on visibly clean skin. The application

technique must also be effective in cleansing deeper layers of the skin, as 20% of bacteria reside under the skin and in hair follicles. Gentle back and forth application of antiseptic solution is the most effective technique for reducing the bacterial load of the skin (Casey et al 2017).

Surgical skin preparation must not damage or irritate the skin, as this can increase the risk of infection.

RECOMMENDATIONS FOR LOCAL POLICY

Before skin preparation

5.7.1 Patients should shower or bath using soap on the day before or on the day of surgery. On the occasion that a patient arrives at the theatre unclean or with visibly dirty skin, the patient must be washed before skin preparation (NICE 2019).

5.7.2 The skin should be assessed for any breaks, cuts, abrasions and sores. Breaks in the skin reduce its effectiveness as a barrier against microorganisms. Any skin breaks should be documented. The presence of moles, warts, rashes or other skin conditions at the surgical site should also be documented.

5.7.3 Any patient allergies or contraindications must be identified before surgery. Allergies and contraindications may include latex, chlorhexidine, alcohol or iodine. Patient allergies to cleansing agents should be documented and a suitable alternative for skin preparation used. Some formulations do not have UK Marketing Authorisation (formerly known as 'product licenses') for use, in which case the prescriber should follow relevant professional guidance. Medicinal products with marketing authorisation should be used wherever possible (GMC 2014). For further information on the use of unlicensed products, staff should refer to *Good*



Practice in Prescribing and Managing Medicines and Devices: Prescribing unlicensed medicines (GMC 2014).

References and further reading

Badia JM, Casey AL, Petrosillo N, Hudson P, Mitchell S, Crosby C 2017 The impact of surgical site infection on healthcare costs and patient outcomes: A systematic review of the economic and quality of life burden associated with surgical site infections in six European countries *Journal of Hospital Infection* 96 (1) 1-5

Casey AL, Badia JM, Higgins A, Korndorffer J, Mantyh C, Mimoz O, Moro M 2017 Skin antisepsis: it's not only what you use, it's the way that you use it *Journal of Hospital Infection* 96 (3) 221-222

General Medical Council 2014 **Good practice in prescribing and managing medicines and devices** [online] Available from: <https://www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/prescribing-and-managing-medicines-and-devices> [Accessed March 2021]

Jolivet S, Lucet JC 2019 Surgical field and skin preparation *Orthopaedics & Traumatology: Surgery & Research* 105 (1) 1-6

National Institute for Health and Care Excellence 2019 **Surgical site infections: prevention and treatment** (NG125) [online] Available from: <https://www.nice.org.uk/guidance/ng125> [Accessed March 2021]