Surgical Wounds

promoting healthy skin

Champions for Skin Integrity

This guidelines summary has been developed for health professionals caring for persons with surgical wounds. Management of surgical wounds should be undertaken by health professionals with expertise in the area.

For this summary, all recommendations have had their levels of evidence classified as follows:

Level I	Evidence from a systematic review or meta-analysis of at least two level II studies
Level II	Evidence from a well-designed randomised controlled trial (for interventions), or a prospective cohort study (for prognostic studies)
Level III	Evidence from non-randomised studies with some control or comparison group
Level IV	Evidence from studies with no control or comparison group
EO	Consensus statements provided by a national or international panel of experts in the area.

This is a summary of guidelines from the following sources, which may be accessed as required:

1. Harris CL et al. 2017. Best practice Recommendations for Prevention and Management of Surgical Wound Complications. Wound Care Canada. www.woundscanada.ca/
2. World Health Organisation. Global Guidelines for the Prevention of Surgical Site Infection. 2nd ed. 2018. https://www.who.int/publications/i/item/9789241550475
3. Wounds UK. Post-operative wound care: reducing the risk of surgical site infection. 2020. https://www.wounds-uk.com/resources/details/post-operative-wound-care-reducing-the-risk-of-surgical-site-infection
4. Liu D, et al. The effect of preoperative smoking and smoke cessation on wound healing and infection in post-surgery subjects: meta-analysis. Int Wound J. 2022;19:2101-6.
5. Saravana-Bawan B, et al. Relationship between visceral obesity and post-operative complications: Meta-analysis. Journal Surg Res. 2021;267:71-81.
6. Gu A, et al. Preoperative malnutrition correlates with postoperative wound complications after joint arthroplasty: systematic review. J Arthroplast 2019;34:1013-24.
7. Sandy-Hodgetts K, et al. ISWCAP Best Practice Statement for early identification and prevention of surgical wound complications. Wounds International. 2020. www.woundsinternational.com
8. Morgan-Jones R, et al. Incision care and dressing selection in surgical wounds. Wounds International. 2021. www.woundsinternational.com
9. Haesler E, Carville K. 2023. Australian Standards for Wound Prevention and Management. AHRA, Wounds Australia, WAHTN. https://woundsaustralia.org/
10. Sun W, et al. Effectiveness of moist dressings in wound healing after surgical suturing. Int Wound J. 2023;20:69-78.
11. Chen P-J et al. Topical antibiotic prophylaxis for surgical wound infections: Systematic review. BJS Open. 2021;5(6).
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16. Xu H, et al. Safety of intraoperative hypothermia for patients: Meta-analyses. BMC Anesthesiology. 2020;20(1).
17. Ahmed I et al. Use of triclosan-coated sutures to prevent surgical site infections. BMJ Open. 2019;9(9).
18. National Institute for Health and Care Excellence. Surgical site infections. 2020. www.nice.org.uk/guidance/ng125
19. Avsar P et al. Impact of care bundles on incidence of surgical site infections: Systematic review. Adv Skin Wound Care. 2022;35:386-93.

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Assessment

1. Complete a holistic assessment to identify factors that may affect surgical wound healing in the pre-operative, intra-operative and post-operative phases.[1] (EO)

2. Assess surgical wounds using a standardised wound assessment tool (e.g., OASIS-C).[1] (II)

3. Risk factors which may impact wound healing or increase complications include:
   - older age[2,3] (II)
   - smoking[1,4] (I)
   - high BMI[1,2,5] (I)
   - diabetes mellitus (poor glycaemic control)[1-3] (I)
   - malnutrition[1,3,6] (IV)
   - radiotherapy or chemotherapy[3] (EO)
   - long-term use of steroids[3] (EO)
   - longer pre-operative length of stay[2] (II)
   - type of surgical wound (e.g. severity, contaminated)[1,2] (II)
   - longer duration of procedure[1,2] (II)

4. Assess regularly for signs of complications, e.g., prolonged inflammation (beyond day 5), change in level of pain, increased exudate, malodour, swelling or fluid collection under wound.[7] (EO)

5. Determine the effectiveness of interventions and reassess if healing is not occurring at the expected rate.[1] (EO)

Management and Prevention of Complications

6. Develop and implement a plan of care, including the person, family and carers.[1,7] (EO)

7. Do not shave or remove hair prior to surgery. If necessary, remove with a clipper.[2] (I)

8. Leave the wound undisturbed as long as possible post-surgery (e.g., 3-4 days), unless there are reasons for earlier attention e.g. dressing saturation.[3,8] (EO)

9. Use an appropriate aseptic technique for changing or removing wound dressings.[9] (EO)

10. Use sterile saline to cleanse surgical wounds healing by primary intention up to 48 hours after surgery.[1] (EO)
    Consider showering or washing with potable tap water of closed incisions after a risk assessment.[9] (I)

11. Debride devitalised or infected tissue using methods appropriate for the person and health professional.[1,9] (EO)

12. Choose an appropriate dressing for moisture balance to promote surgical wound healing.[1] (EO)
    Dressings maintaining a moist environment are preferred compared to gauze for healing and prevention of SSI.[10] (I)

13. Do not use topical antimicrobial agents for surgical wounds that are healing by primary intention after clean and clean-contaminated surgery to reduce the risk of surgical site infection.[11] (I)

14. It is uncertain whether covering surgical wounds healing by primary intention with wound dressings, or any specific type of dressing, reduces risk of surgical site infection.[2,12] (II)

15. Negative pressure wound therapy may reduce risk of infection for surgical wounds healing by primary closure.[13] (I)

16. Develop a plan to reduce risk factors for poor surgical wound healing.[1] (EO)

17. Advise clients to avoid tobacco smoking before elective surgery and in the postoperative period.[1,4] (I)

18. If needed (according to circumstance), consider use of surgical prophylactic antibiotics within 120 minutes before incision to decrease surgical site infection risk.[1,2,14] (III)

19. Skin preparation with alcohol-based chlorhexidine gluconate may prevent post-operative SSIs in comparison to povidone-iodine preparation.[15] (I)

20. Consider use of warming strategies to avoid hypothermia during the perioperative phase to reduce risk of SSI.[2,14,16] (I)

21. Tricolsan-coated sutures may help prevent SSI.[17] (I)

22. Nasal mupirocin and chlorhexidine body wash may be useful if there is a risk of *Staphylococcus aureus* SSI.[18] (II)

23. Optimise glucose control for both those with diabetes and those without diabetes in the perioperative phase to reduce the risk of SSI.[2] (III)

24. Ensure optimal levels of nutrition for healing.[9] (EO)

25. The use of care bundles is associated with decreased prevalence of SSI.[19] (II)

26. Educate the person, family and carers to promote wound healing,[1,3,9] including information on signs & symptoms of SSI and contact details of health professionals if concerns arise.[3] (EO)