Pharmaceutical Society of Australia

Pharmacist quick reference guide: choosing an antiseptic for an acute wound

Acute wounds include abrasions, lacerations, skin tears, and burns. They usually progress through wound healing phases without complications.[1]

ASSESS wound and patient

Some wound factors to consider[1,2]

- Location, depth and size
- How the wound occurred (traumatic, foreign body)
- Duration
- Maceration or desiccation
- Wound debris
- Contamination or infection

Some patient factors to consider[1,2]

- Age
- Medical conditions (e.g. dermatitis, thyroid disease)
- Pregnancy or breastfeeding
- Allergies
- Medicines (e.g. lithium)

IRRIGATE the wound using normal saline or warm water

DETERMINE need for antiseptic

- Topical antiseptics are suitable for cleaning contaminated acute, traumatic wounds (caused by injury).[1]
- Antiseptic solutions can be used if the wound is dirty or clinically infected.[3]
- **Avoid topical antibiotics unless specifically indicated** – they have no effect on healing and promote bacterial resistance.[1,3,4]

Acute wound antiseptic	Benefits	Precautions	Recommended use
Povidone-iodine (PVP-I) cream, ointment, solution, spray[1,3–8]	• Prevent and treat infection • Broad-spectrum (bacteria, viruses, fungi) • Effective against MRSA • Fast acting (from 30 secs) • No evidence of resistance	• Avoid use - under occlusive dressings - in thyroid disease or being treated with lithium - pregnancy - breastfeeding - <6 months of age • Cytotoxic *(in vitro)*	• Minor wounds at risk of infection • Local infection • Wound irrigation (solution, spray) • Pre-procedural skin preparation (solution)
Chlorhexidine cream, solution[1,4–6,9,10]	• Broad-spectrum (bacteria, viruses, fungi) • Effective against MRSA	• Narrower spectrum of activity than povidone-iodine • Inactivated by organic matter (e.g. pus) • Tolerance and resistance to chlorhexidine has been reported • Local irritation can occur • Cytotoxic *(in vitro)*	• Minor wounds at risk of infection • Local infection (cream) • Wound irrigation (solution) • Pre-procedural skin preparation (solution)
Cetrimide + chlorhexidine cream[1,6,9–11]	• Cleansing (detergent properties) • Broad-spectrum (bacteria, viruses, fungi) • Effective against MRSA	• Narrower spectrum of activity than povidone-iodine • Inactivated by organic matter (e.g. pus) • Tolerance and resistance to chlorhexidine has been reported • Local irritation can occur • Cytotoxic *(in vitro)*	• Minor wounds at risk of infection
Hypochlorous acid + sodium hypochlorite hydrogel, solution[1,3,5,6,12]	• Broad-spectrum (bacteria, viruses, fungi) • Non-cytotoxic • Non-irritating • Maintain optimal wound bed pH • Oxidative processes soften and remove slough and necrotic tissue • Fast acting	• Limited clinical evidence to support routine use • No residual effect • Not for use if there are signs of infection	• Cleanse and irrigate minor wounds

Acute wound antiseptic	Benefits	Precautions	Recommended use
Octenidine ± phenoxyethanol solution[3–5,10]	• Broad-spectrum (bacteria, yeast, fungi) • Effective against multidrug-resistant organisms • Non-cytotoxic • Non-sensitising • Reduce microbial load • Effective in short contact time and low concentrations • Sustained effect	• Limited clinical evidence to support routine use • Antiseptic properties can change in the presence of exudate, albumin or blood	• Minor wounds at risk of infection • Local infection • Wound irrigation
Polyhexamethylene biguanide (PHMB) + betaine hydrogel, solution[1,4,5,12]	• Surfactant activity to remove wound debris and biofilm • Broad spectrum (bacteria, viruses, fungi, parasites) • Effective against MRSA • Non-cytotoxic • Reduces microbial load • Supports wound bed preparation • Sustained effect	• Limited clinical evidence to support routine use • Long exposure time required to reach full bactericidal efficacy (15 minutes)	• Dirty wounds • Local infection • Wound irrigation
Chloroxylenol cream, liquid[1,11]	• Skin and wound disinfection • Non-irritant when diluted	• Narrow spectrum of activity • Inactivated by organic matter (e.g. pus) • Irritating/painful on application (unless diluted)	• Minor wounds at risk of infection • Surface disinfectant
Hydrogen peroxide cream, solution[1,3,6,7]	Effervescence of solution is useful for wound cleansing and removing wound debris	• May sting on application • Can damage granulation tissue and impair wound healing • Cytotoxic • No longer widely used as an antiseptic	Minor wounds at risk of infection
Medical grade honey[1,4,5,7,13]	• Antimicrobial • Effective against MRSA • Promotes healing • Enzyme in honey produces hydrogen peroxide • Anti-inflammatory • Non-toxic	• Allergy risk (if allergic to bee products) • Local irritation can occur • Must be medical grade	Minor wounds at risk of infection
Tea tree oil (melaleuca oil) cream, ointment, spray[1,6,14]	• Some antibacterial activity • Effective against MRSA	• Poor quality evidence, higher quality trials are needed • Variability in tea tree preparations • Local irritation can occur	Minor wounds at risk of infection

PRACTICAL TIPS for using an antiseptic

- Wash hands thoroughly and put on sterile gloves before applying antiseptics.[15]
- Avoid mixing antiseptics as this can lead to reduced effectiveness.[6]
- If the wound is dirty, use a 20 mL syringe and a 19G needle to flush the wound with antiseptic before closing (more than 20 mL of antiseptic may be needed).[15]
- If using creams or ointments, apply a thin layer to the affected area as directed by manufacturer.[6]

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