




# Topical antibiotics for skin infections: when are they appropriate?

## What prescribers need to know:

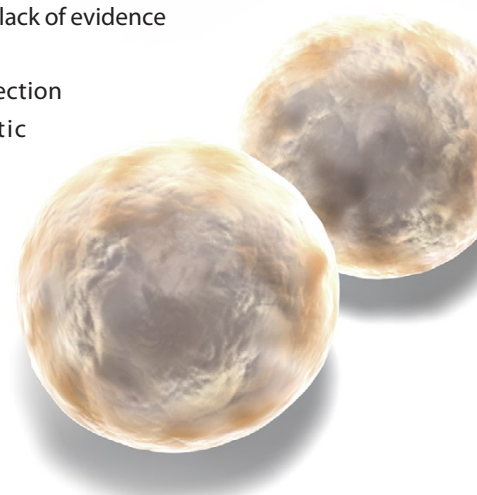
- In primary care, many skin infections are relatively minor and do not need to be treated with antibiotics. Management should focus on good skin hygiene measures and a trial of a topical antiseptic
- Do not prescribe topical antibiotics for patients with infected eczema, for wound management, for other skin infections, or first-line for impetigo. If antibiotic treatment is required, prescribe an oral medicine
- Topical antibiotics may be appropriate as a second-line option for patients with areas of localised impetigo, if first-line management with hygiene measures and topical antiseptics has not resolved the lesions or for *Staphylococcus aureus* nasal decolonisation
- If a topical antibiotic is prescribed, patients should be instructed to use it for no longer than seven days. The practice of saving an unfinished tube as a “first-aid” measure for household members should be strongly discouraged

 For further information on the changing role of topical antibiotics in New Zealand, see: “Topical antibiotics for skin infections – should they be prescribed at all?”

## Few clinical situations require topical antibiotics

In the community, many patients have skin and soft tissue infections that are relatively minor, e.g. scrapes and scratches or mild folliculitis. These types of infections do not usually require antibiotic treatment as they will generally improve with good skin hygiene measures, e.g. cleaning and covering the lesion.<sup>1</sup> A prescription for a topical antiseptic (rather than a topical antibiotic) is a pragmatic next step if hygiene interventions are not sufficient, although guidance on the use of antiseptics varies and there is a relative lack of evidence for their effectiveness.<sup>2–4</sup>

If a patient has an infection that requires antibiotic treatment, e.g. they have extensive infection, systemic symptoms or co-morbidities that place them at higher risk of infection or poor healing, in most cases prescribe an oral not a topical antibiotic.



## Topical antibiotics and antiseptics available in New Zealand

Two topical antibiotics and two topical antiseptics for use on the skin are currently subsidised in New Zealand.\*

The topical antibiotics are:<sup>6</sup>

- Fusidic acid (sodium fusidate) cream or ointment 2% – 15 g tube, fully subsidised
- Mupirocin ointment 2% – 15 g tube, partially subsidised

The topical antiseptics are:<sup>6</sup>

- Hydrogen peroxide cream 1% – 15 g tube, fully subsidised (also available over-the-counter in a 10 g or 25 g tube)
- Povidone-iodine ointment 10% – 25 g tube, fully subsidised (also available over-the-counter in a range of tube sizes)

\* Other topical antibiotics are available, e.g. for acne and for infections of the eye and nose, including fusidic acid as an eye gel (Fucithalmic). Compound preparations, e.g. fusidic acid + betamethasone valerate (Fucicort, partly subsidised) and hydrocortisone + natamycin + neomycin (Pimafucort, fully subsidised) are also available. The use of these medicines is not covered in this resource, however, similar restraints with prescribing should also apply to these medicines.

👁 For a snapshot of national and individual prescribing data for these topical medicines, see: “Prescribing of topical medicines for skin infections”



Mupirocin  
Ointment 15g 2%  
Each g contains:  
Mupirocin 20 mg

Fusidic acid 20 mg  
Each g contains:  
Antibiotic 15g cream 2%  
Fusidic Acid

Due to increasing resistance, infectious diseases experts recommend that topical antibiotics should have a very limited role in clinical practice.<sup>2,5</sup> Currently the two clinical situations where their use may still be appropriate are:

- As a second-line option for patients with areas of localised impetigo (e.g. less than three lesions) if first-line management with hygiene measures and topical antiseptics has not resolved the lesions within an appropriate timeframe, e.g. five to seven days. If a topical antibiotic is prescribed, fusidic acid should be used; mupirocin is reserved for treating MRSA infection. In many cases of impetigo, treatment with an oral antibiotic is more appropriate
- Some patients with recurrent skin infections due to *Staphylococcus aureus* may require nasal decolonisation with either fusidic acid or mupirocin once susceptibility is known. If the isolate is resistant to both topical antibiotics or there is active infection, oral antibiotics may be required (see below)

👁 See sidebar “Topical antibiotics and antiseptics available in New Zealand” for information on available medicines

If topical antibiotics are prescribed, instruct the patient to use the medicine for up to seven days only and to discard the tube after this time. The practice of saving an unfinished tube as a “go-to” first-aid measure for household members should be strongly discouraged.<sup>5</sup>

### Limit the use of fusidic acid in the management of impetigo

Impetigo is regarded as a self-limiting condition although treatment is often initiated to hasten recovery and to reduce the spread of infection.<sup>7</sup> There is, however, a lack of quality evidence-based research on the optimal management of impetigo.<sup>2</sup> Recent expert opinion is that first-line management in the majority of children with mild to moderate impetigo is good skin hygiene and topical antiseptic preparations.

👁 For further information on current views on the role of topical antibiotics, see: [www.goodfellowunit.org/podcast/topical-antibiotics-emma-best](http://www.goodfellowunit.org/podcast/topical-antibiotics-emma-best)

Skin hygiene measures in children with impetigo should start with the “clean, cut (nails) and cover” message, which also applies to patients with other skin infections or injuries.<sup>2</sup> Advise parents or caregivers to use a clean cloth soaked in warm water to gently remove crusts from lesions. Infectious diseases experts then recommend the application of a topical antiseptic such as hydrogen peroxide or povidone-iodine. These antiseptic preparations can also assist in softening the

crusted areas. Parents and caregivers should be advised to keep the affected areas covered with dressings to reduce the spread of infection to others. The child should be excluded from school or pre-school until the lesions have dried up or for 24 hours after oral antibiotic treatment has been initiated.<sup>8</sup> If required, assess and treat other household members who may be infected.

Oral antibiotics are recommended if:

- Lesions are extensive or there is widespread infection
- Systemic symptoms are present
- Good hygiene and topical antiseptic treatment has failed

The first choice for an oral antibiotic should be flucloxacillin. An appropriate dose for a child is:

- Flucloxacillin: 12.5 mg/kg/dose, four times daily, for five days (maximum 500 mg/dose)

Alternative oral antibiotics if there is allergy or intolerance to flucloxacillin include erythromycin, co-trimoxazole (first choice if MRSA is present) and cefalexin.

Topical fusidic acid should only be considered as a second-line option for areas of very localised impetigo (e.g. less than three lesions) if the first-line measures have been unsuccessful.

### Decolonisation for patients with recurrent skin infections

Patients with recurrent skin infections and their family members may require decolonisation to reduce *S. aureus* carriage. The initial focus should be on good personal hygiene and environmental decolonisation.<sup>9</sup> If this approach has been unsuccessful and the patient continues to have recurrent skin infections, antibiotics may be required.

#### Advise intensification of personal hygiene measures

Patients should be advised to intensify personal hygiene practices and not to share items such as razors, towels or linen. The regular use of antibacterial soaps or washes and weekly dilute bleach baths is often advocated, although the evidence base for this is variable.<sup>8-11</sup> One approach is to prescribe triclosan 1% as a liquid soap to reduce the bacterial load on the skin. This can be used daily for five to seven days then reduced to once or twice weekly. Triclosan 1% is fully subsidised in a 500 mL bottle, provided the patient has recurrent *S. aureus* infection and the prescription is endorsed accordingly.

#### Environmental decolonisation is recommended

Environmental measures should include cleaning of regularly touched surfaces and frequent washing of clothes, towels and linen.<sup>9</sup> The use of heat, e.g. hot water, hot dryer cycle or ironing, when laundering towels and linen is often recommended.

There is some evidence to support this practice and/or the use of an activated oxygen bleach product.<sup>13</sup>

#### Antibiotics are indicated if skin infections are recurrent despite other measures

If the patient continues to have recurrent skin infections despite optimal care and hygiene measures, personal decolonisation with antibiotics may be required and also considered for family members.<sup>9</sup> A nasal swab to determine whether the patient has *S. aureus* nasal colonisation should be requested, if this has not already been done. Consider discussing an appropriate decolonisation regimen with an infectious diseases expert as advice is likely to vary due to local resistance patterns. There is a lack of consensus on the most effective decolonisation method and increasing antibiotic resistance continues to drive research into alternative options both in New Zealand and internationally. For example, the antiseptic povidone-iodine used intranasally has been suggested as an alternative to a topical antibiotic, but consistent evidence for its effectiveness is lacking.<sup>12, 14</sup>

**Topical antibiotic treatment** – if topical antibiotics are recommended, the appropriate topical antibacterial (either mupirocin or fusidic acid as guided by the sensitivity results) should be applied to the anterior nares, twice daily, for five to seven days. They should not be administered if the patient still has an active skin infection as the skin infection can be a source from which nasal carriage is re-established. Good personal hygiene measures and environmental decolonisation measures should be ongoing.

**Oral antibiotic treatment** – although international guidelines do not recommend the routine use of oral antibiotics for decolonisation there may be a role for this strategy when first-line measures have been unsuccessful or when there is active infection.<sup>15</sup> Prescribing a combination of oral antibiotics (usually two) has been found to be effective for decolonisation, however, they may need to be used concurrently with topical antibiotics to achieve eradication of *S. aureus* from the nose.<sup>12, 15</sup> The choice of oral antibiotics should usually be made after a discussion with an infectious diseases physician or clinical microbiologist and in addition should be guided by the sensitivity results from nasal swabs. A typical oral regimen for an adult with recurrent skin infections would include both rifampicin\* (e.g. 300 mg, twice daily) and flucloxacillin (e.g. 500 mg, three or four times daily).<sup>\*\* 12, 15</sup> Both oral antibiotics are taken for one week and then repeated for one week each month for three to six months.

\* Rifampicin requires specialist approval for prescription. This can be obtained from an infectious disease specialist or a clinical microbiologist at a community laboratory and the prescription endorsed accordingly.

\*\* Alternative antibiotics to flucloxacillin include co-trimoxazole or doxycycline (used in combination with rifampicin)

## Many patients with mild bacterial skin infections do not require antibiotics

### Folliculitis is often self-limiting

Folliculitis is a collective term for a group of skin conditions which can be due to bacterial infection but can be also caused by fungi and viruses. A sterile folliculitis can be the result of occlusion, e.g. from the use of emollients (particularly paraffin-based ointments), or adhesive dressings.<sup>16</sup> In addition, environmental factors, e.g. hot, humid weather, shaving and other forms of hair removal, medicines such as topical or oral corticosteroids and immunosuppression may all contribute to folliculitis.<sup>16, 17</sup>

Superficial folliculitis is a mild, self-limiting condition and patients usually do not require topical or oral antibiotic treatment. Management should focus on effective skin hygiene, avoiding or treating any underlying cause and topical antiseptics.<sup>17</sup> If the skin lesions are spreading, persistent or recurrent, oral antibiotics, such as flucloxacillin may need to be considered.

### Furuncles (boils) and carbuncles are treated with incision and drainage

Larger lesions such as furuncles and carbuncles that extend into the subcutaneous tissue and are fluctuant should be managed with incision and drainage alone. Patients do not usually need antibiotic treatment unless there is associated cellulitis or the patient becomes systemically unwell.<sup>18</sup> An oral antibiotic, e.g. flucloxacillin, would be appropriate in these situations.

## Take a pragmatic approach to the management of skin infections

Although management for skin infections in primary care cannot be directed by a conclusive evidence base, the consensus from infectious diseases experts is that, given the rise in antibacterial resistance rates in New Zealand, topical antiseptics and education about good skin hygiene practices presents a pragmatic approach when managing patients with skin infections. Inappropriate use of topical antibiotics has been clearly shown to be associated with rapidly rising resistance. Clinicians need to be mindful of this and alter their management accordingly.

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