



[Authoritative facts](#) about the skin from the [New Zealand Dermatological Society Incorporated](#).

[Home](#) | [Treatments](#)

Penicillin

Penicillin antibiotics are the most commonly used antibiotics in the treatment of skin infections. Penicillin was one of the first antibiotics used in clinical medicine and continues to be prescribed today. Unfortunately, its extensive use has resulted in increasing resistance of some common bacteria to many forms of penicillin.

Penicillin antibiotics are effective against the common bacteria causing skin infections including:

- [Staphylococcus aureus](#)
- [Streptococcus pyogenes](#)
- Other streptococci and staphylococci
- [Meningococci](#)
- Gonococci
- Corynebacteria
- Listeria
- Spirochaetes (e.g. [syphilis](#))
- Some anaerobes
- Some Gram negative organisms.

In general, all streptococci are sensitive to simple penicillin. There has been increasing penicillin resistance in pneumococci, but penicillin remains the drug of choice even in localised pneumococcal skin infections.

Many staphylococci are no longer sensitive to simple penicillin due to the bacteria producing an enzyme that inactivates it, called penicillinase (also known as beta lactamase). Penicillin antibiotics with penicillinase resistance include flucloxacillin and amoxicillin with clavulanic acid (amoxiclav). The latter is a broad-spectrum antibiotic that is best reserved for mixed bacterial infections. Some antibiotics are resistant to flucloxacillin as well ([MRSA](#)).

Penicillin antibiotics most commonly used in skin infections are (New Zealand trade names in parentheses):

- Flucloxacillin (Floxapen, Flucloxin, Staphlex)
- Dicloxacillin (Diclocil)
- Penicillin V oral tablets (Cilicaine VK capsules, Compocillin V suspension)
- Penicillin G intravenous (Benpen)
- Amoxicillin and clavulanic acid, oral or intravenous (Augmentin, Synermox)

It is recommended that flucloxacillin, dicloxacillin and penicillin be taken on an empty stomach but amoxicillin with clavulanic acid can be taken with meals.

Warnings, Precautions and Contraindications

Penicillin antibiotics should be avoided in patients with suspected penicillin allergy. However some studies suggest that true allergy may be present in only 1 in 10 individuals thought to be allergic. Penicillin may cross react with cephalosporins in 5–10% of those with penicillin allergy.

Penicillin is one of the safer antibiotics to use in patients who have kidney or liver disease but the dose may need to be adjusted.

Flucloxacillin or amoxicillin with clavulanic acid should be used with caution in those with pre-existing liver disease. Dicloxacillin may be less likely to injure the liver.

Penicillins are not thought to have any adverse effect when used in pregnant or breast-feeding women.

Side Effects

Penicillin antibiotics are generally well tolerated but occasionally result in:

- Allergic reactions including [urticaria](#), [angioedema](#), [erythema multiforme](#), [toxic epidermal necrolysis](#), toxic erythema, exfoliative dermatitis, [anaphylaxis](#) (collapse)
- Gastrointestinal upset: stomatitis, glossitis, nausea, vomiting, diarrhoea (including the serious disease pseudomembranous colitis)
- Liver disease (especially flucloxacillin and amoxicillin with clavulanic acid)
- Blood reactions (very rare): haemolytic anaemia, thrombocytopenia, leucopenia (i.e. low haemoglobin, platelet &/or white cell count)
- Kidney reactions (very rare): interstitial nephritis
- Neurotoxicity from very high dose treatment (very rare): confusion, twitching, seizures. This is more likely in those with renal failure

Drug Interactions

Drug interactions are uncommon. Penicillin should be used with caution if the patient is taking the following drugs:

- Anti-inflammatories, aspirin and probenecid, as these may compete for elimination and result in penicillin toxicity.
- Oral contraceptives, as penicillin antibiotics occasionally reduce their effectiveness.

Related topics

- [Bacterial skin infections](#)
- [Methicillin \(meticillin\) resistant staphylococcus aureus](#)
- [Streptococcal skin infections](#)
- [Impetigo](#)
- [Folliculitis](#)
- [Boils](#)

Further reading

- [Medsafe](#): consumer information information about medicines

Books:

See the [DermNet NZ bookstore](#)

Author: Dr Amy Stanway MBChB,
Department of Dermatology, [Health Waikato](#), Private Bag 3200, Hamilton, New Zealand.

DermNet does not provide an on-line consultation service.
If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

Created 2001. Last updated 26 Dec 2006. © 2008 NZDS. Disclaimer.