Diabetic foot infection: antimicrobial prescribing

### Background

In people with diabetes, all foot wounds are likely to be colonised with bacteria. Diabetic foot infection has at least 2 of:

- local swelling or induration
- erythema
- local tenderness or pain
- local warmth
- purulent discharge

Severity of diabetic foot infection is classified as:

- Mild - local infection with less than 2 cm erythema
- Moderate - local infection with more than 2 cm erythema or involving deeper structures (such as abscess, osteomyelitis, septic arthritis or fasciitis)
- Severe - local infection with signs of a systemic inflammatory response

### Prescribing considerations

When choosing an antibiotic, take account of:

- the severity of infection (mild, moderate or severe)
- the risk of complications
- previous microbiological results
- previous antibiotic use
- patient preference

Give oral antibiotics first line if possible

Review intravenous antibiotics by 48 hours and consider switching to oral antibiotics if possible

Review need for continued antibiotics regularly

### Give advice about:

- possible adverse effects of antibiotics
- seeking medical help if symptoms worsen rapidly or significantly at any time, or do not start to improve within 2 to 3 days

### When microbiological results are available:

- review the choice of antibiotic, and
- change the antibiotic according to results, using a narrow spectrum antibiotic, if appropriate

### Do not offer antibiotics to prevent diabetic foot infection

Advise seeking medical help if symptoms of diabetic foot infection develop

### Refer to hospital immediately and inform multidisciplinary foot care service if:

- ulceration with fever or any signs of sepsis, or
- ulceration with limb ischaemia, or
- suspected deep-seated soft tissue or bone infection, or
- gangrene

For all other active diabetic foot problems, refer to foot service within 1 working day

When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.
## Choice of antibiotic: adults aged 18 years and over

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Dosage and course length</th>
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<tbody>
<tr>
<td><strong>Mild infection</strong> - first choice oral antibiotic for 7 days (up to a further 7 days may be needed based on clinical assessment; guided by microbiological results when available)</td>
<td><strong>Flucloxacillin</strong> 500 mg four times a day</td>
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| **Mild infection** - alternative oral antibiotics (for penicillin allergy or if flucloxacillin unsuitable) for 7 days (up to a further 7 days may be needed based on clinical assessment; guided by microbiological results when available) | **Clarithromycin** 500 mg twice a day  
**Erythromycin (in pregnancy)** 500 mg four times a day  
**Doxycycline** 200 mg on first day, then 100 mg once a day |
| **Moderate infection** - first choice antibiotics for a minimum of 7 days (up to 6 weeks for osteomyelitis) based on clinical assessment; guided by microbiological results when available | **Flucloxacillin with or without**  
**Gentamicin and/or**  
**Metronidazole** 400 mg three times a day orally or 500 mg three times a day IV  
**Co-amoxiclav with or without**  
**Gentamicin and/or**  
**Metronidazole** 400 mg three times a day orally or 500 mg three times a day IV  
**Co-trimoxazole (in penicillin allergy) with or without**  
**Gentamicin and/or**  
**Metronidazole** 400 mg three times a day orally or 500 mg three times a day IV |
| **Severe infection** - first choice antibiotics for a minimum of 7 days (up to 6 weeks for osteomyelitis) based on clinical assessment; guided by microbiological results when available for at least 48 hours (until stabilised) | **As for moderate infection, but additional choices of:**  
**Piperacillin with tazobactam** 4.5 g three times a day IV (increased to 4.5 g four times a day if severe infection)  
**Ceftriaxone with**  
**Metronidazole** 400 mg three times a day orally or 500 mg three times a day IV  
**Intravenous antibiotics to be added if suspected or confirmed MRSA infection (combination therapy with an intravenous antibiotic listed above)**  
**Vancomycin** 15 to 20 mg/kg two or three times a day (maximum 2 g per dose), adjusted according to serum-vancomycin concentration  
**Linezolid (if vancomycin cannot be used; specialist advice only)** 600 mg twice a day |

1. See BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breast-feeding, and administering intravenous antibiotics.  
2. Oral doses are for immediate-release medicines.  
3. Skin takes some time to return to normal, and full resolution of symptoms at 7 days is not expected.  
4. Review the need for continued antibiotics regularly.  
5. Give oral antibiotics first-line if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics.  
6. Review intravenous antibiotics by 48 hours and consider switching to oral antibiotics if possible.  
7. Other antibiotics may be appropriate based on microbiological results and specialist advice.  
8. Therapeutic drug monitoring and assessment of renal function is required (BNF, February 2019).  
9. Therapeutic drug monitoring and assessment of renal function is required. A loading dose of 25 to 30 mg/kg (maximum per dose 2 g) can be used in seriously unwell people to facilitate rapid attainment of the target trough serum vancomycin concentration (BNF, February 2019).