Daptomycin is a cyclic lipopeptide antibiotic with potent bactericidal activity against Gram positive organisms including Streptococci, coagulase negative Staphylococci and Staphylococcus aureus, including methicillin resistant Staphylococcus aureus (MRSA) and glycopeptide intermediate Staphylococcus aureus (GISA).

**Indications**

1) **Gram positive bacteraemia** with or without infective endocarditis in the following situations:
   - MRSA bacteraemia where vancomycin MIC > 1 and patient is not clinically responding
   - SAB 2nd line treatment - [click here](#) for national SAB guidance
   - Alternative to vancomycin if patient intolerant or penicillin allergic

2) **Skin and soft tissue infection**, where there is either:
   - Suspicion of resistant organism (MRSA etc)
   - Intolerance of first and second line intravenous antimicrobials (flucloxacillin, clindamycin, vancomycin)
   - As outpatient parenteral therapy (OPAT) when there is a desire to avoid using β-lactam agents such as ceftriaxone (allergy, high *Clostridium difficile* risk) and glycopeptides are inappropriate and oral linezolid or clindamycin (allergy, high *Clostridium difficile* risk) are not a option or suitable - [click here](#) for linezolid prescribing guidance

3) **Prosthetic joint infection**
   - As an alternative to glycopeptides

4) **Vascular grafts**
   - As an alternative to glycopeptides
**Note:** Daptomycin is not effective in lung tissue and should be avoided in patients with significant pulmonary disease (pneumonia or lung abscess) but can be used in patients with right sided endocarditis/tricuspid valve endocarditis with septic emboli.

**Dosing**

The licensed dose of daptomycin is 4-6mg/kg daily. There is increasing evidence that this dose is insufficient and therefore the Infection Specialist providing advice will usually recommend an ‘off label’ dose of 8-10mg/kg daily.

If any of the following are present then the 8-10mg/kg daily dose should be used:

- Soft tissue infection in intravenous drug users
- Features of necrotising fasciitis
- Diabetic foot infection
- Strong clinical suspicion of bacteraemia
- Strong clinical suspicion of underlying osteomyelitis
- Creatinine clearance <30mmol/l (dose should be every 48h or post-dialysis)
- Clinical failure with glycopeptide

Dose for uncomplicated skin and soft tissue infections should be 4-6mg/kg once daily.

Daptomycin vials are available in 350mg and 500mg strengths. The dose should be rounded to minimise wastage.

Exposure to daptomycin in obese patients is increased by 25-30% but current guidance is still to calculate the dose based on total body weight but monitor for toxicity.

**Monitoring**

Daptomycin is usually well tolerated. Common adverse effects include gastrointestinal disturbance, injection site reactions and headache. More specifically, myopathy is seen in approximately 2% of patients receiving daptomycin, although the majority of these patients do not require treatment to be necessarily stopped.

- Renal function and creatine kinase should be measured prior to therapy with daptomycin and monitored at least weekly.
- If the patient is on concurrent statins these should be stopped, if possible, for the duration of therapy but ensure they are restarted at the end of daptomycin treatment.
- If creatine kinase rises more than five times the upper limit of normal stopping daptomycin / switching agent should be considered.
- The probability of creatine kinase elevations, with or without myopathy, increases with daily dose and when the pre dose level is >24mg/L.
- Routine TDM is not warranted but may be considered when the CK is > 5 times ULN and continuing daptomycin therapy is imperative.
• The patient should also be monitored for neuropathy.

References
Diagnosis and Management of PJI: IDSA Guidelines. CID 2013:56(1):e1-25
Bhavani et al. Daptomycin Exposure and CPK Elevation. CID 2010;50(12):1568-1574
UKMI 2013. How should antibiotics be dosed in obesity? www.evidence.nhs.uk