antibiotics

beta-lactams

↳ PENICILLIN

MOA: bind to penicillin binding protein (PBPs) within the cell wall = inhibiting cell wall synthesis, causing cell lysis & destruction

- **Penicillin G / Penicillin V**
  - staphylcoccus aureus (penicillin-susceptible)
  - minimum to no gram-activity
  - = skin infections (resistance developed overtime)
  - = drug of choice for syphilis
  - ~ IV - penicillin G
  - ~ IM - penicillin G
  - ~ po (low absorption rate) - penicillin V
    - ↳ limited use
- **Oxacillin / Nafcillin / Dicloxacillin**
  - developed to treat penicillin-resistant staph aureus
  - ~ methicillin-suspectible staph aureus (MSSA)
  - = drug of choice for serious MSSA infections (eg. blood stream)
  - very short half-life (dosed q4h)
  - * cleared by liver (no renal adjustment)
  - (oral option - dicloxacillin - not commonly - need frequent dosing)

Adverse Effects
- hypersensitivity rxn (rash)
- renally eliminated
  - * except oxacillin / nafcillin
    - ↳ hepatically cleared
- GI intolerance (diarrhea)

↳ AMINO-PENICILLIN

- **Amoxicillin / Ampicillin**
  - developed to provide gram- & gram+ (streptococcus, e.coli, haemophilus influenza, enterococcus faecalis)
  - ~ poor oral bioavailability
  - = otitis media
  - = acute pharyngitis
  - (not for hospital infections - bc gram- will be resistant)

beta-lactamase inhibitors

- **Amoxicillin-Clavulanate (Augmentin)** -> more GI complaints
- **Ampicillin-Sulbactam (Unasyn)**
- **Pipercillin-Tazobactum (Zosyn)**
  - inhibit activity of beta-lactamases (preserve activity of counterpart)
  - = used for hospital infections due to expanded activity spectrum