What 's up ninja nerds in this video today we 're going to be talking about antibiotics and there is so much to talk about it is insane here 's what i really want you guys to do i 'm telling you it will really benefit you if you do this. Go down the description box below click on the link to our website to download the illustrations for this video. There is a plethora of antibiotics within this category of reducing the cross-linking. Certain types of bacteria have developed resistance against the actual penicillinase bacteria. Certain bacteria break down the beta-lactam ring of the penicillins and render the antibiotic ineffective. There is actually five generations of cephalosporins and as we go down you 'll see they have they go from gram-positive coverage to more gram-negative coverage as you go down but we 'll get into that when we get into antibiotic coverage in the spectrum.

Some bacteria very nasty bacteria have the ability to produce a very interesting enzyme called beta lactamase. We need drugs that can actually break the beta-lactamase a particular enzyme. What are the drugs that are going to work to inhibit this beta lactamicase what are those drugs these are those that we add on. We covered the cell wall synthesis inhibitors with the beta-lactams like glycopeptide like vancomycin and we talked about the beta lactamase inhibitors. The next part will be the bacterial coverage or the antibiotic spectrum of specific antibiotics. We'll also go through all the other antibiotics and their mechanism of action. Bacteriocidal agents kill bacteria they blow them up the cell membrane integrity they alter the permeability and increase the risk of blowing the bacteria up so they kill bacteria but this one it does n't really do anything to kill the bacteria it just reduces the growth or the division of the bacteria that 's called bacteriostatic.

called metronidazole is a pretty interesting agent can kill a lot of anaerobes some like really like weird types of pathogens as well. Metronidazole increases the formation of something called your reactive oxygen species like free radicals that can actually produce damage to the bacteria. Fluoroquinolones are called for fluro quinolones and there 's a bunch of that actually part of this category they inhibit the dna gyrase they inhibit the actual topoisomerase enzyme and so it produces a multiple well particularly they inhibit ligating the annealing portion of it and then they increase the activity of the cutting portion the nucleus portion. For these your aminoglycosides and tetracyclines i want you to remember primarily three. tobramycin is a is a good one amy casein is a pretty good one and gentomycin is also a pretty one as well. For the tetracclines there is doxycycline and termacycline that's really it you can consider minocycline.

The most common ones that you 'll see on your exam or in the clinical world is going to be these so misa is what 's called your methicillin sensitive staphylococcus aureus there 's a couple antibiotics that work relatively well against this without being too broad and so the ones that i would want you guys to remember is think about first your beta lactams if you will. Daptomycin does cover mrsa but you have to be very careful it only covers it on the skin or right-sided endocarditis. The other one here will actually just continue on penicillin you can also consider your amino penicillins. For strep pneumonia fluoroquinolones will cover strep dumo. These would be the primary ones for strep pneumo if you had out of all of these which ones would you pick to be the best ones i would say your penicillin your amino penicils and your third gen cephalosporins would be best ones these ones down here fluoroquinolones are okay mackerel is a lot of resistance cleaned up and then again on top of that your tetracycline's not really as well.