

# *Penicillin G*

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## *Clinical application*

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- Penicillin G is used for streptococcal infections that include pneumonia, otitis media, and meningitis. In addition, penicillin G is effective against *N. Meningitides*, *Clostridium tetani*, and *Corynebacterium diphtheriae*.

## *DOSING INFORMATION*

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- Oral doses are 375 mg to 1 g divided 3 to 4 times daily.
- Intravenous doses are 300,000 units to 1.2 million units/day divided every 3 to 4 times daily.

## *PHARMACOKINETICS*

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- ***Absorption:*** from the gastrointestinal tract.
- ***Protein binding:*** 65%.
- ***Elimination half-life:*** 20 to 50 min.
- ***Metabolism:*** approximately 30% is hepatically metabolized to penicilloic acid and 79% to 85%.
- ***Excretion:*** urine as unchanged drug.

## *MECHANISM OF ACTION*

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- Penicillin G inhibits bacterial cell wall synthesis by binding to one or more of the penicillin-binding proteins.

## *ADVERSE EFFECTS*

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- ***HEMATOLOGICAL:*** Hemolytic anemia, Granulocytopenia, Leucopenia, Neutropenia.
- ***CVS:*** Myocardial infarction, Cardiac arrest, Myocardic jerks.
- ***CNS:*** Convulsions, Muscular twitching, Neuropathy.

## *ADVERSE EFFECTS (CONT.)*

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- ***GIT:*** Abdominal pain, Porphyria, Pseudomembranous colitis, Tongue Discoloration.
- ***Renal:*** Nephrotoxicity.
- ***Liver:*** Hepatotoxicity.
- ***Dermatological disorder:*** rash, chronic urticaria.

## *CONTRAINDICATION*

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- History of anaphylaxis, accelerated or serum sickness reaction to previous penicillin administration.



## *DRUG INTERACTION*

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- Acetylcysteine.
- Aminoglycoside.
- Cimetidine.
- Chloramphenicol.