

NAME(S): **Generic:** simvastatin (sim va STAT in) | **Brand:** Zocor

THERAPEUTIC CATEGORY: **Antilipemic Agent** | HMG-CoA Reductase Inhibitor

DOSAGE FORM & STRENGTH: **Tablet:** 5 mg, 10 mg, 20 mg, 40 mg, 80 mg | **Suspension:** 20 mg/5 mL, 40 mg/5 mL

INDICATION(S) & DOSING(S): ADULTS

1. **Heterozygous familial hypercholesterolemia:** General dosing is b/t 5-40 mg PO qpm. When initiating start 10-20 mg PO qpm with adjustments every 4 wks. Max 40 mg/day. Start 40 mg qpm if high CV event risk.
2. **Homozygous familial hypercholesterolemia:** General dosing is 40 mg PO qpm. Max 40 mg/day.
3. **Cardiovascular event prevention:** General dosing is b/t 10-40 mg PO qpm. | In **Atherosclerotic cardiovascular disease (ASCVD):** General dosing is b/t 10-40 mg PO qpm. Dose adjustments q4wks. Consult ACC/AHA cholesterol guidelines for most current information. Dosing is based on levels of therapy (i.e. moderate-intensity, high-intensity, or low-intensity therapy. Also understand which level of intensity each statin falls into. Fore example, atorvastatin and rosuvastatin are examples of high and moderate intensity statins while most others are categorized as moderate to low intensity statins depending on the dose).

INDICATION(S) & DOSING(S): PEDIATRICS

1. **Heterozygous familial hypercholesterolemia:** [10-17 yo, males and females prior to first menstruation] General dosing is b/t 10-40 mg PO qpm. When initiating start 10 mg po qpm. Max 40 mg/day.
2. **Homozygous familial hypercholesterolemia:** [10 yo and older] General dosing is 40 mg po qpm. Max 40 mg/day.

MECHANISM OF ACTION & PHARMACOLOGY

- **MOA:** A derivative of lovastatin. Simvastatin works through competitive inhibition of the HMG-CoA reductase enzyme. This enzyme is the rate-limiting step in the synthesis of cholesterol. Simvastatin also improves endothelial function, reduces inflammation at coronary plaque sites, inhibits platelet aggregation, and has an anticoagulant effect. | 85% is **absorbed** following initial administration due to extensive first-pass effect. <5% reaches general circulation. | **Metabolized** hepatically via the CYP3A4 with extensive first-pass effect. | 60% **excreted** in feces and 13% through the urine. | **Onset of Action** is >3 days with the peak effect at 2 weeks. LDL-C reduction with 20-40 mg/day is between 35-41%. Average HDL-C increase is b/t 5-15%. Average TGC reduction is b/t 7-30%. | **Time to Peak** is b/t 1.3-2.4 hours. | **Half-Life Elimination** is unknown. | 95% **protein bound**.

SPECIAL POPULATIONS & CONSIDERATIONS

- **Renally Impaired:** Experience higher systemic exposure in severe renal impairment. | **Elderly:** HMG-CoA reductase inhibition is increased 45%. | **Dosing considerations:** Simvastatin should be limited to patients unable to tolerate high-intensity statins. | Contraindicated in **pregnancy** | **Caution:** Alcohol abuse, pts 65 years and older, Chinese, females of reproductive potential, renal impairment, diabetes mellitus, and hypothyroidism.

SIDE EFFECTS:

- **General:** Headache, vertigo, A-fib, edema, abdominal pain, constipation, gastritis, nausea, upper respiratory infection, and bronchitis.
- **Serious:** Rhabdomyolysis, muscle pain/tenderness/weakness (esp. w/ fever or unusual tiredness), yellowing eyes/skin, dark urine, and persistent n/v.



DRUG INTERACTIONS

- **General:** Blood thinners (warfarin); as well as danazol, daptomycin, gemfibrozil, and cyclosporine.
- **Drugs that can reduce simvastatin removal from system (↑toxicity):** “Azole” class of antifungals (ketoconazole and voriconazole) as well as macrolide antibiotics (clarithromycin and erythromycin).
- Certain foods and dietary supplements such as **red yeast rice** b/c it may contain lovastatin and **grapefruit**.

MONITORING PARAMETERS

- Lipid panel (TC, HDL, LDL, TGL), hepatic transaminase levels, CPK, diabetes onset, and pregnancy.

PATIENT COUNSELING INFORMATION

- Simvastatin is used to slow the progress of heart disease as well as lowering TGLs and LDLs while increasing HDLs. It may also be used to lower the chance of heart attack and stroke.
- Generally taken in the evening in order to get the best benefits from the medication.

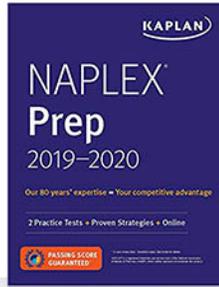
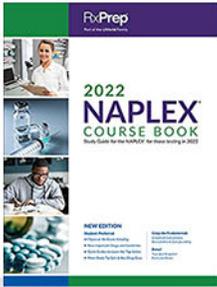
REFERENCE(S)

- <https://online.epocrates.com/drugs/1438/simvastatin>
- <https://www.drugs.com/ppa/simvastatin.html>
- <https://www.webmd.com/drugs/2/drug-6105/simvastatin-oral/details>
- <https://ehhapp.org/StatinIntensity>

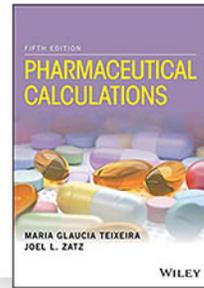
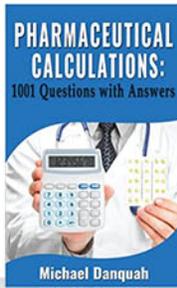
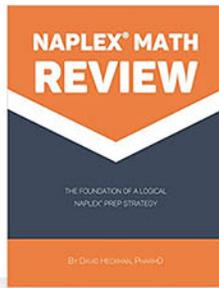
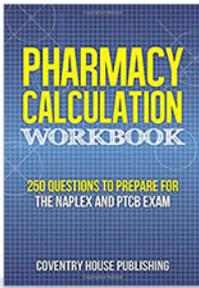


PREPARE FOR SUCCESS!

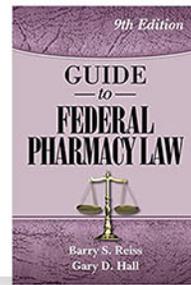
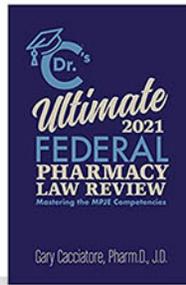
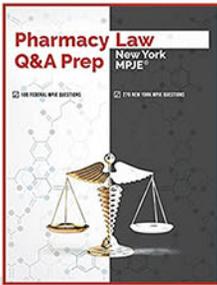
Comprehensive (NAPLEX)



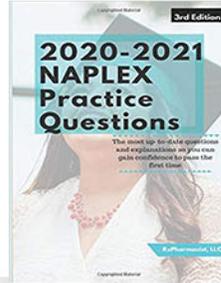
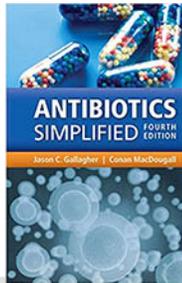
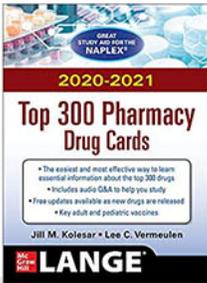
Calculations (NAPLEX)



Pharmacy Law (MPJE)



Supplemental



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Here are some NAPLEX & MPJE prep recommendations to help you do everything you can to **pass the first time!**

HEY STUDENT!

When I was P1 one of the best pieces of advice I got from those before me was to use a NAPLEX Prep book while learning each topic.

This helps focus your learning and the repetition helps to retain info and indirectly prepare you for the NAPLEX



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