

44. Which *one* of the following medications is NOT contraindicated in combination with simvastatin 40 mg/ezetimibe 10 mg?
- (A) Danazol.
 - (B) Amiodarone.
 - (C) Nefazadone.
 - (D) Gemfibrozil.
 - (E) Ciprofloxin.

■ Items 45–49

A diabetic patient on simvastatin 20 mg has the following lipid profile:

Total cholesterol	200 mg/dL
Triglycerides	250 mg/dL
HDL-C	40 mg/dL
LDL-C	110 mg/dL

An additional therapy is added in combination with simvastatin 20 mg. For *each* numbered follow-up lipid profile (45–49), select the *one* lettered additional (combination) therapy (A, B, C, D, E) associated with it in this patient. Each lettered additional (combination) therapy may be selected *only once*.

- (A) Fenofibrate 145 mg.
 - (B) Niacin extended-release 1,000 mg/day.
 - (C) Concentrated (85%) ethyl-ester omega-3 fatty acid, 4 capsules/day.
 - (D) Pioglitazone 30 mg qd.
 - (E) Ezetimibe 10 mg qd.
45. Total cholesterol 196 mg/dL
Triglycerides 200 mg/dL
HDL-C 46 mg/dL
LDL-C 100 mg/dL
Non-HDL-C 145 mg/dL
46. Total cholesterol 185 mg/dL
Triglycerides 180 mg/dL
HDL-C 44 mg/dL
LDL-C 105 mg/dL
Non-HDL-C 141 mg/dL

47. Total cholesterol 186 mg/dL
Triglycerides 180 mg/dL
HDL-C 40 mg/dL
LDL-C 110 mg/dL
Non-HDL-C 146 mg/dL
48. Total cholesterol 205 mg/dL
Triglycerides 200 mg/dL
HDL-C 45 mg/dL
LDL-C 120 mg/dL
Non-HDL-C 160 mg/dL
49. Total cholesterol 174 mg/dL
Triglycerides 225 mg/dL
HDL-C 41 mg/dL
LDL-C 88 mg/dL
Non-HDL-C 133 mg/dL
50. When adding high-dose extended-release niacin therapy to a statin, which *one* of the following side-effects can be observed?
- (A) Elevation in fasting serum glucose.
 - (B) Marked rise in risk for rhabdomyolysis.
 - (C) Decreased serum uric acid levels.
 - (D) Increased platelet counts.
51. Which *one* of the following statements is INCORRECT regarding intestinal cholesterol absorption?
- (A) Cholesterol absorption efficiency and cholesterol synthesis are inversely related and they can reliably be depicted by serum non-cholesterol levels.
 - (B) CHD patients with low cholesterol absorption markers are more overweight and have high cholesterol synthesis marker sterols.
 - (C) LXR activation increases expression of ABCG5 and ABCG8 resulting in decreased intestinal cholesterol absorption.
 - (D) The Niemann-Pick C1 Like 1 (NPC1L1) protein is highly expressed in the jejunum and selectively absorbs cholesterol but not plant sterols.
 - (E) Statins have been shown to decrease intestinal cholesterol absorption.

Bibliography

1. Pauciuolo P, et al: Efficacy and safety of a combination of fluvastatin and bezafibrate in patients with a mixed hyperlipidemia (FACT study). *Atherosclerosis* 2000;150:429–436.
2. Diabetes Atherosclerosis Intervention Study Investigators. Effect of fenofibrate on progression of coronary artery disease in type 2 diabetes: the Diabetes Atherosclerosis Intervention Study: a randomized study. *Lancet* 2001;357:905–910.
3. Davidson MH, et al: Comparative effects of lipid-lowering therapies. *Prog Cardiovas Dis* 2004;47:73–104.

Item XX

Answer X

The addition of ezetimibe to ongoing statin therapy reduces LDL-C by approximately 18%. Each doubling of a statin's dose reduces LDL-C by approximately 6%. Consequently, the use of ezetimibe yields an LDL-C reduction on par with three statin titration steps.

Bibliography

1. Knopp RH, et al: Effects of ezetimibe, a new cholesterol absorption inhibitor, on plasma lipids in patients with primary hypercholesterolemia. *Eur Heart J* 2003;24:729–741.

Item XX

Answer X

The intestines are active in both cholesterol absorption and lipoprotein synthesis. Therefore, specific pharmacological inhibition of cholesterol or bile acid absorption or bile acid production influences LDL levels by upregulating hepatic LDL receptors. Ezetimibe inhibits the Niemann-Pick C1 Like 1 (NPC1L1) receptor on the intestinal villi resulting in the inhibition of both cholesterol and plant sterol absorption. Colesevelam is a potent bile acid sequestrant (BAS) and, therefore, interrupts bile acid re-absorption by the ileal bile acid transporter (IBAT). Interruption of bile acid re-absorption results in a depletion in hepatic bile acid stores resulting in upregulation of LDL receptors. Neomycin also decreases hepatic bile acid stores by inhibiting the colonic bacterial flora production of bile acid for absorption. Plant stanols inhibit the micellar formation of biliary cholesterol which is necessary for adequate intestinal absorption. Orlistat is a pancreatic lipase inhibitor thereby decreasing intestinal fat absorption and inducing steatorrhea (Figure 7).

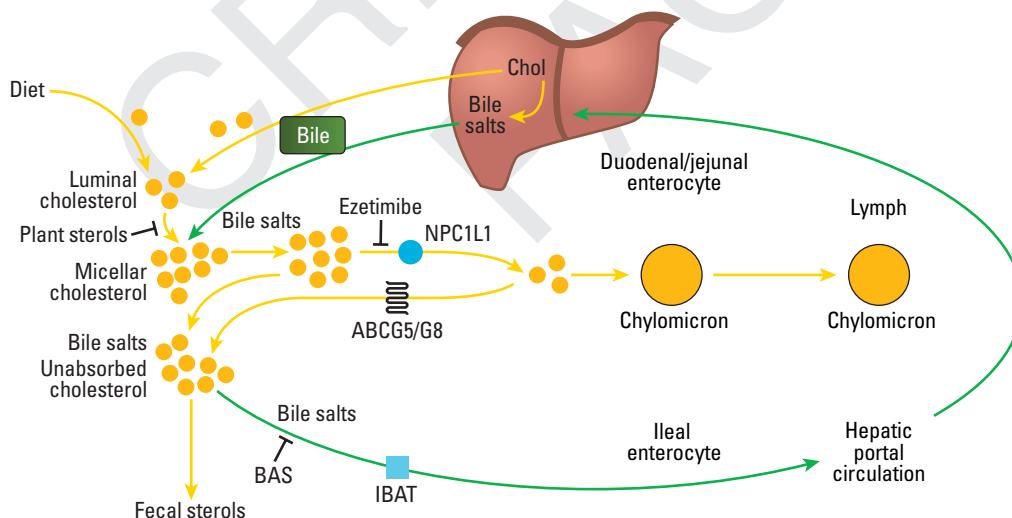


Figure 7. Mechanism of Intestinal-Acting Agents