



Vitamin D

Intolerance to statins often occurs in people who are vitamin D deficient and can be reversed with supplementation. Low vitamin D is a risk factor for statin-induced myalgia (muscle pain)^{33,34,35,36}

Coenzyme Q10

Statins block the enzyme needed to make CoQ10, a key nutrient for mitochondrial energy metabolism and proper heart function. Depletion of coQ10 via statin use, which is recognized in the drug manufacturer's patent, is well established and can cause common side effects such as muscle pain (myopathy) and fatigue,^{1,2,3,4,5}

Carnitine

Statins can deplete tissue levels of carnitine. Trials of combined treatment (carnitine + statin) reduce lipoprotein(a), a type of lipid that typically does not respond to statin treatment and prevents statin-induced damage to muscles.^{6,7,8,9}

Selenium

The pattern of side effects with statin drugs resembles selenium deficiency. One reason for this may be that statins inhibit the biosynthesis of selenium-containing enzymes (selenoproteins) such as glutathione peroxidase, which are needed for proper heart, antioxidant, and thyroid function.^{22,30,31,32}

Magnesium

Biochemically speaking, magnesium acts like a statin by regulating cholesterol production via the same enzymatic pathway. Evidence suggests that combining magnesium with a statin may yield better clinical outcomes.^{10,11,12}

STATINS

Vitamin B3

Niacin (vitamin B3) has lipid-lowering effects independent of statins; Often prescribed together, niacin + statin therapy may have synergistic benefit for some patients, but emerging research suggests combining treatment may increase adverse events.^{13,14,15,16,17}

Vitamin E

Relieves statin-induced muscle pain in some patients; tocotrienols (one form of vitamin E) inhibit the same enzyme (HMG-CoA reductase)* targeted by statins (also called HMG-CoA reductase inhibitors), thus lowering cholesterol by a similar mechanism. Statins decrease vitamin E levels in the blood.^{21,22,23}

Vitamin K

Statins inhibit vitamin K; deficiency in vitamin K is linked to atherosclerosis as it is a cofactor to the enzyme (matrix Gla-protein) that prevents arterial plaque formation, suggesting that statins may actually increase the risk of atherosclerosis (blocked arteries).^{22,23,24,25}

Zinc

Although statins can lower blood levels of zinc, excess zinc may reduce effectiveness of statins. Zinc-containing proteins may compensate for reduced cholesterol synthesis from statins by upregulating genes that increase cholesterol production, thus reducing statin efficacy.^{18,19,20,21}

*HMG-CoA = hydroxyl-3-methylglutaryl coenzyme A

Additional nutrients may affect or be affected by statin usage. This list is not exhaustive.

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