

Table of Potential Interactions DiaVis Ingredients & Diabetes-Related Medications/Tests

Note: This chart includes potential interactions with anti-diabetic medications and tests, and also takes into account other drugs that are commonly used to prevent or treat diabetic complications. Agents for pain control of diabetic neuropathy include tricyclic antidepressants, serotonin reuptake inhibitors and antiepileptic drugs; Agents that are related to cardiovascular disease include cholesterol-lowering medications, anti-hypertensive medications, and drugs used to treat heart disease; Anti-hypertensive drugs are also used to prevent or treat diabetic nephropathy, and include ACE inhibitors, angiotensin II receptor blockers, diuretics, beta blockers, and calcium channel blockers.

Ingredient	Potential Interaction (Ingredient Effect on Drug)	Evidence	Potential Mechanism	Comments (Including select drug effect on ingredients)	Suggested Follow-up
Vitamin A, biotin, lutein & quercetin	None known				
Beta-carotene	Cholesterol-lowering statins; Not of clinical significance at the levels of beta carotene, vitamins C & E included in DiaVis	In one clinical trial, concomitant use of beta-carotene with high dose selenium, vitamin C, & vitamin E decreased effectiveness of a combination of niacin & simvastatin . However the antioxidants levels in DiaVis are only a small fraction of the amts shown to interact. Further, a 2 nd trial using lower antioxidant doses than the 1 st study, found no statin interactions.	<i>Very high dose</i> antioxidant combo may blunt effect of statins in raising HDL. Mechanism unclear	The bile sequestrants Cholestyramine & colestipol can reduce absorption of fat-soluble vitamins, including beta-carotene	If practical for patient, DiaVis & sequestrant drug can be taken at separate meals
Vitamin D	Thiazide diuretics Unlikely to be of clinical significance when dose of vitamin D is <i>below</i> the tolerable upper intake level (UL) of 2000 IU, as it is in DiaVis	Thiazide diuretics could lead to hypercalcemia if <i>very high</i> dose vitamin D & calcium are taken concurrently. Avoid vitamin D doses above the UL in people taking vitamin D and digoxin concurrently.	Thiazide diuretics decrease urinary calcium excretion, while vitamin D facilitates calcium absorption	Low vitamin D levels are very common in patients with chronic kidney disease. Some patients with renal disease or failure are treated with activated vitamin D drugs or vitamin D receptor activators.	Primary care doctor may monitor serum calcium in diabetics with renal failure taking activated vitamin D drugs
Vitamin E	Anticoagulant/Antiplatelets Not of clinical significance at RDA level of vitamin E in DiaVis	Clinical data suggest that this interaction is dose-dependent, and potentially of clinical significance only with 800 IU/day or higher	<i>Very high dose</i> Vitamin E may inhibit platelet aggregation	<i>See comments for beta carotene</i>	None warranted
Vitamin C	Tests for glucose in urine. Not of clinical significance at the level of vitamin C in DiaVis	<i>Large</i> (gram) amts. of vitamin C can cause false results in glucose urine tests. However, vitamin C levels in DiaVis are below those shown to interfere with	Increase measured by copper reduction (Clinitest), & decrease tested by	Dihydropyridine calcium channel blockers including nicardipine & nifedipine inhibit uptake of vitamin C by intestinal cells in-vitro.	None warranted

		these tests.	glucose oxidase (e.g. Clinistix)	Not known whether of clinical significance in humans	
Vitamin B1 (Thiamine)	None known			Theoretically, metformin (glucophage) might reduce thiamine activity. This is based on animal research, & has not yet been substantiated in people taking metformin.	
Vitamin B2 (Riboflavin)	None known			Tricyclic anti-depressants have structural similarities to riboflavin & can interfere with vitamin B2 activation	
Vitamin B3 (Niacinamide)	None known	Do not confuse niacinamide with nicotinic acid (aka niacin). <i>Very high</i> (gram) amts of niacin impair glucose tolerance dose-dependently, while niacinamide form & dose in DiaVis does not.		Bile acid sequestrants can bind niacin and decrease absorption.	
Folic Acid	None known			Reduced vitamin B12, & to a lesser extent, folate, levels occur in some diabetics & can contribute to hyperhomocysteinemia. The reduced folate levels have been linked to metformin use in some cases, possibly due to lower folate absorption. Cholestyramine & colestipol also reduce folate absorption.	
Magnesium	Calcium channel blockers (CCB). Not of clinical significance at the dose of magnesium included in DiaVis	<i>Very high doses</i> of magnesium could theoretically have additive effects with CCBs	Magnesium inhibits calcium entry into smooth muscle cells	Loop diuretics (& to a lesser extent thiazide diuretics), interfere with magnesium reabsorption in the kidneys & may lower serum magnesium. Insulin can enhance renal excretion of magnesium.	None warranted
Zinc	None known			Thiazide diuretics increase urinary zinc excretion by 50- 60%, & decreased serum zinc sometimes seen	
Chromium	Anti-diabetic Unlikely to be of clinical import at	Clinical evidence that taking chromium picolinate orally can decrease fasting blood		Chromium might lower blood glucose levels in those with inadequate chromium status.	Type-1 & 2 diabetics on insulin or oral anti-

	the dose included in DiaVis	glucose, insulin levels, and HbA1c & increase insulin sensitivity in type 2 diabetics is mixed; Chromium seems to help only those low in chromium & with impaired glucose. Chromium potentiates the action of insulin.		Theoretically, chromium might increase the risk of hypoglycemia if used with other diabetes drugs, but this has been observed only at higher levels of supplemental chromium (500-1,000 mcg) than the dose in DiaVis (200 mcg). 100-300 mcg of chromium is classified as a maintenance level dose	diabetic drugs should inform their primary care doctor that they are taking DiaVis as a routine precaution
Alpha Lipoic Acid	Anti-diabetic Not of clinical significance at the dose included in DiaVis	Theoretically, concomittant use of very high dose alpha lipoic (1200 mg) with anti-diabetic drugs might cause additive hypoglycemic effects. But, co-administration of high dose alpha-lipoic & glyburide or acarbose did not cause detectable interactions in a clinical trial.			None warranted
Pycnogenol/ Pine Bark Extract.	Anti-diabetics Unlikely to be of clinical import, but monitor Could affect requirements for anti-hypertensive meds (ACE inhibitors, nifedipine) May be of clinical significance	In a controlled trial of type-2 diabetics, pycnogenol was reported to lower blood glucose and HbA1c without altering the dosage of standard oral anti-diabetic drugs (Sulfonylurea, Biguanide, Acarbose). Also, in a preliminary report, pycnogenol modestly lowered blood glucose in mild type-2 diabetics not taking anti-diabetic meds. Pycnogenol/pine bark extract is included in DiaVis for potential effects on retinal microcirculation. But additional effects may be noteworthy. In 2 controlled trials with limited sample sizes of hypertensives & type-2 diabetics, pine bark reportedly reduced edema, blood pressure & use of ACE inhibitors or nifedipine.	Shown to improve capillary leakage May inhibit alpha-glucosidase – an intestinal enzyme involved in metabolism of carbohydrates	Though reports are preliminary, modest blood pressure and/or blood glucose lowering would benefit pre- & type-2 diabetics with mildly elevated blood pressure or impaired glucose tolerance & not on medications. While a controlled trial reported that use of pine bark extract did not alter the dose of standard anti-diabetic medications, usual monitoring of blood glucose is prudent Monitoring blood pressure of those taking anti-hypertensive drugs may be warranted over first months of taking DiaVis should medication dose require alteration.	Type-1 & 2 diabetics on insulin, oral anti-diabetic or anti-hypertensive drugs should inform their primary care doctor that they are taking DiaVis