

Drug-Supplement Interactions

Updated May 2025

Many prescription medication users in the U.S. are also taking natural supplements. These combinations can lead to various drug-supplement interactions. The following table outlines some of the most used supplements and their key interactions. Each interaction is rated based on the potential severity as follows:

- **Major** - Do not use the combination together. These combinations can result in serious consequences and should be avoided altogether.
- **Moderate** - Use with caution or avoid the combination. Some combinations can result in interactions that do not cause serious harm, but are still bothersome.
- **Minor** - Be watchful with the combination. In some cases, certain combinations of drugs and supplements may cause an interaction, but the outcome is not severe or bothersome.

Despite these general classifications, it is important to understand that different people respond differently to medications and supplements. It is possible that certain interactions will occur in some people, but not others.

Supplement	Medication(s)	Rating	Comments
Ashwagandha	Thyroid hormones	Moderate	Ashwagandha might increase thyroid hormone levels. Taking ashwagandha while using thyroid hormone medications may cause additive effects.
Garlic	Over 50% of prescription medications	Moderate	Garlic, when taken in amounts greater than what is typically found in food, might alter the function of cytochrome P450 (CYP) 3A4 and CYP2E1. The chemical "allicin" in garlic seems to be the cause of this interaction.
Glucosamine	Warfarin (Coumadin)	Major	Taking glucosamine along with warfarin might increase INR and increase the risk of bleeding. This interaction has been reported in people taking glucosamine with or without chondroitin.
Green tea	Hepatotoxic medications	Moderate	Green tea extracts, but not the actual green tea beverage, have been linked to many reports of liver damage. There is concern that combining green tea extracts with hepatotoxic medications might have additive effects.
Fruit Juices <ul style="list-style-type: none"> • Orange • Grape • Grapefruit • Apple • Cranberry 	Over 50% of prescription medications	Moderate to Major	Certain fruit juices can alter the absorption and/or metabolism of various medications. Depending on the juice, this can be due to the inhibition or induction of enzymes (including cytochrome P450, or CYP, enzymes) or transporters (such as organic anion-transporting polypeptides, or OATP).
Hypoglycemic Agents	Medications for diabetes	Moderate to Major	Using substances with hypoglycemic potential along with medications for diabetes might have additive effects.
Magnesium	Antibiotic drugs <ul style="list-style-type: none"> • Quinolones • Tetracyclines 	Moderate	Magnesium can interfere with the absorption of certain antibiotics by forming insoluble complexes. Patients should be advised to take magnesium at a different time than their antibiotic dose.
Probiotics	Antibiotic drugs	Moderate	Probiotics may contain live, active organisms, and taking them at the same time as antibiotics could reduce effectiveness of probiotics. Tell patients to separate administration of antibiotics and these preparations by at least two hours.
Red Yeast Rice	HMG-CoA reductase inhibitors ("statins")	Moderate	Red yeast rice contains varying concentrations of the drug lovastatin. Combining red yeast rice with prescription statins might increase the chance of statin-related side effects including liver damage, muscle pain, and muscle damage.
Sedative Agents	CNS Depressants	Moderate to Major	Some supplements can cause sedation and drowsiness. There is concern that combining these supplements with sedative medications might have additive effects.
Serotonergic Agents	Serotonergic drugs	Moderate to Major	Some supplements can increase serotonin levels. Combining these supplements with serotonergic medications can have additive effects, increasing the risk of serious side effects, including serotonin syndrome.
St. John's Wort	Over 50% of prescription medications	Moderate to Major	St. John's wort can induce various cytochrome P450 (CYP) enzymes, possibly reducing the effectiveness of many medications.

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