



THE  
**PEOPLE'S  
PHARMACY**

## *Graedon's Guide to*

# *Drug & Nutrient Interactions*

## *King Features*

**“Drug-nutrient interactions are a commonly overlooked aspect of the prescribing practices of physicians. As more pharmaceutical agents become available, attention should be focused on interactions of drugs with foods and nutrients.”**

Dr. Aldo Trovato,  
Dale N. Nuhlicek,  
and Dr. John E. Midtling,  
Medical College of Wisconsin,  
in “Drug-Nutrient Interactions,”  
*American Family Physician*, 1991,  
vol. 44, pp. 1651-1658.

**A**s nutritional supplements gain rapidly in popularity, the significance of interactions between nutrients and medications is also increasing dramatically. Postmenopausal women are taking calcium and vitamin D to ward off osteoporosis; many men are taking beta-carotene and vitamin E to help prevent heart attacks. Any number of other health-conscious people are taking vitamins or minerals for a variety of reasons: to help ensure a healthy pregnancy, to strengthen the immune system, to reduce the risk of cancer. Although more studies are needed to confirm whether these health benefits are significant, doctors and patients can no longer assume that drug-nutrient interactions are esoteric or unusual.

In some instances, a mineral or vitamin may render a medicine ineffective. Because tetracycline binds strongly to calcium, forming an insoluble complex, patients are often warned to “avoid dairy

products.” That warning should also extend to calcium supplements, and even calcium carbonate antacids like Tums, but it is not always made explicit. The doctor may be well aware that Dilantin is up to 50 percent less effective at preventing seizures when taken with vitamin B<sub>6</sub> (80 mg), but he may not realize when a patient is self-treating with this vitamin for premenstrual symptoms or carpal tunnel syndrome. Needless to say, the consequences can be serious indeed.

Certain medications may deplete the body of a specific nutrient, so more than usual is required. Cholesterol-lowering drugs like Questran may interfere with the absorption of a number of nutrients, including the fat-soluble vitamins A, D, K and possibly E. A multiple-vitamin supplement may be desirable, but it should not be taken with or shortly after Questran.

### **NUTRIENTS AND NONPRESCRIPTION DRUGS**

Just because a drug is available over the counter doesn't mean it's nutritionally innocuous. Antacids and laxatives are notorious for their ability to interfere with good nutrition if they are taken regularly for months or years. Aluminum-based antacids, such as **Alternagel**, **Amphojel**, **Maalox** or **Mylanta**, may interfere with normal calcium metabolism. Aluminum can form compounds with phosphates, removing them from the body. As a result of this imbalance, bones may lose the calcium that keeps them strong. Occasional use should not pose a serious risk, but an antacid habit might make osteoporosis worse. Such antacids can also interfere with thiamine absorption, so if you need one, try not to take it at meal-time.

Bone strength may also be threatened by phenolphthalein-type laxatives, including **Correctol** and **Ex-Lax**, among others. These compounds interfere with vitamin D as well as calcium, so regular use should be avoided.

Mineral oil laxatives such as **Agoral**, **Haley's M-O**, or **Nujol** can prevent absorption of fat-soluble vitamins, including vitamin A, vitamin D, vitamin E and vitamin K. You can't expect to stay healthy for long if you're missing out on these, so use this type of laxative sparingly if at all.

Even a medicine that seems as innocuous as aspirin may have nutritional consequences. Although no one knows whether the interaction between aspirin and vitamin C has ever caused any significant problems, scientists think that the vitamin doesn't get into cells as well when there is aspirin around. The situation is complicated, though, and we don't know if taking more vitamin C will counteract this problem.

Aspirin may also reduce the levels of two other important nutrients, folic acid and iron. People who take aspirin regularly may need extra supplementation. On the other hand, a new theory of heart disease suggests that excess iron may be trouble. It has even been hypothesized that one way aspirin protects the heart is by keeping iron levels low. A blood test can be useful in telling if you are anemic.

DRUG	INTERACTION	NUTRIENT
<b>Acne Medicine</b> Accutane	Because <b>Accutane</b> is related to vitamin A, taking these two compounds together could increase toxicity. Avoid this combination.	<b>Vitamin A</b>
<b>Alcohol</b>	Alcohol has numerous effects on the body, including the digestive system. Some of these, such as changes in liver function and in the activity of the intestinal lining, could impact a wide variety of nutrients. One of the most devastating consequences of long-term alcohol abuse is the brain damage known as Wernicke-Korsakoff syndrome. Lack of the B-vitamin thiamin plays an important role in the development of this problem.	<b>Folic acid</b> <b>Thiamin</b>
<b>Aluminum-Based Antacids</b> Di-Gel Gelusil Maalox Mylanta Riopan, etc.	Absorption or utilization of vitamins B <sub>6</sub> , B <sub>12</sub> and C is affected by regular alcohol intake. In addition, drinkers may absorb too much iron and too little zinc, putting additional stress on the system. These nutritional problems occur when a person drinks alcohol too much or too often.	<b>Vitamin B<sub>6</sub></b> <b>Vitamin B<sub>12</sub></b> <b>Vitamin C</b> <b>Iron</b> <b>Zinc</b>
<b>Aluminum-Based Antacids</b> Di-Gel Gelusil Maalox Mylanta Riopan, etc.	The aluminum and magnesium in antacids can form a complex with phosphate and deplete the body. Calcium loss from bones is often a consequence. Anyone at risk of osteoporosis should probably be very cautious. Such antacids may inactivate thiamin. Don't take them at mealtime.	<b>Calcium</b> <b>Phosphate</b>  <b>Thiamin</b>
<b>Antibiotics</b> Bactrim Mandol Moxam Neomycin Septra and others	Broad-spectrum antibiotics can mess up the good intestinal bacteria that make vitamin K. In some people this could lead to unusual bleeding. Check with your physician and pharmacist to see whether vitamin K supplementation is a good idea.	<b>Vitamin K</b>
Quinolones Cipro Floxin Maxaquin Noroxin	These high-powered antibiotics may not work as well as expected if they are taken at the same time as certain minerals. This includes antacids as well as nutritional supplements. Check with your doctor and pharmacist, because this interaction could be serious.	<b>Calcium</b> <b>Iron</b> <b>Zinc</b>
Tetracyclines Achromycin Aureomycin Minocin Panmycin Terramycin Tetracycln, etc.	Calcium and other minerals can combine with tetracyclines so that the antibiotics are not absorbed into the body. Make sure you don't take any mineral supplements or mineral-containing antacids within 2 hours of a tetracycline pill. Long-term use of tetracycline may deplete these nutrients and require supplementation.	<b>Calcium</b> <b>Iron</b> <b>Magnesium</b>  <b>Riboflavin</b> <b>Vitamin C</b> <b>Zinc</b>
<b>Arthritis Medicines</b> Aspirin Anacin Ascriptin Bayer Bufferin Excedrin, etc.	Several studies suggest that aspirin may block vitamin C (ascorbic acid) from getting into cells. Questions remain about the importance of this interaction. Until more is known, it seems logical to increase daily consumption of vitamin C containing foods or even consider a supplement, though it is not clear that extra vitamin C will correct this imbalance. Folic acid levels are lower when people rely on large doses of aspirin. Regular users may need a folic acid supplement. Check with your physician for the right amount.	<b>Vitamin C</b>   <b>Folic Acid</b>

DRUG	INTERACTION	NUTRIENT
<b>Arthritis Medicines</b> Aspirin, cont'd. <b>Anacin</b> <b>Ascriptin</b> <b>Bayer</b> <b>Bufferin</b> <b>Excedrin</b> , etc.	<p>Small amounts of blood are regularly lost from the stomach when aspirin is taken. This can add up over time and deplete the body of iron. This may actually be beneficial for people at risk of heart disease. A new study suggests that excess iron increases the risk of heart attack. This may partially explain how aspirin protects the heart. If anemia results, however, iron supplementation may be necessary. A blood test is needed.</p>	<b>Iron</b>
<b>Indomethacin</b> <b>Indocin</b>	<p>Indomethacin irritates the stomach lining even more than aspirin, so the interaction with iron is similar.</p>	<b>Iron</b>
<b>Methotrexate</b> <b>Mexate</b> <b>Rheumatrex</b>	<p>Methotrexate affects the intestinal wall so that these nutrients are not absorbed as efficiently. Nutritional imbalances may result. Since methotrexate is being used more aggressively against arthritis, psoriasis and cancer, it is essential that patients discuss this issue with their physicians.</p>	<b>Folic Acid</b> <b>Vitamin B<sub>12</sub></b> <b>Beta-carotene</b>
<b>Penicillamine</b> <b>Cuprimine</b> <b>Depen</b>	<p>Penicillamine may not be as well absorbed if it is taken at the same time as iron or magnesium. Supplements often contain these minerals, so it may make sense to wait several hours before you take your multi-vitamin preparation.</p> <p>This medicine may also deplete the body of copper or zinc, causing a loss of the sense of taste. Ask about supplements.</p>	<b>Iron</b> <b>Magnesium</b>  <b>Copper</b> <b>Zinc</b>
<b>Beta-Carotene</b>	<p>As people learn more about the potential benefits of antioxidant vitamins, many are taking beta-carotene at levels much higher than those normally found in the vegetables in their diets. Regular doses of beta-carotene (from 15 to 60 mg daily) can lead, over a period of months, to lowered levels of vitamin E in the blood. Because vitamin E is itself an important antioxidant, it would probably be wise to add a supplement if you are taking beta-carotene.</p>	<b>Vitamin E</b>
<b>Birth Control Pills</b> <b>Demulen</b> <b>Norlestrin</b> <b>Ortho Novum</b> <b>Ovcon</b> <b>Ovral</b> <b>Tri-Norinyl</b> , etc.	<p>Women using combination oral contraceptives may need more of these vitamins. Both folic acid and B<sub>6</sub> levels may be low, and too little vitamin B<sub>6</sub> could be responsible for depression. Ask your doctor about a supplement.</p> <p>Vitamin C (1 gram or more) may increase blood levels of estrogen. Side effects may become more noticeable. This interaction is controversial and may not be significant.</p>	<b>Vitamin B<sub>6</sub></b> <b>Folic Acid</b> <b>Vitamin E</b>  <b>Vitamin C</b>
<b>Blood Pressure Medicines</b> <b>ACE Inhibitors</b> <b>Accupril</b> <b>Altace</b> <b>Capoten</b> <b>Lotensin</b> <b>Monopril</b> <b>Prinivil</b> <b>Vasotec</b> <b>Zestril</b>	<p>These popular blood pressure medications tend to maximize potassium levels. This is fine unless a person is getting extra potassium through a potassium supplement or a potassium-based salt substitute. Too much of this important mineral is just as bad as not enough. If you are taking one of these medicines, you should probably avoid extra potassium unless your doctor is supervising closely. Your physician should test your blood for potassium levels periodically.</p>	<b>Potassium</b>
<b>Hydralazine-containing</b> <b>Apresazide</b> <b>Apresoline</b> <b>Hydralazine</b> <b>Ser-Ap-Es</b> , etc.	<p>This medicine can deplete the body of vitamin B<sub>6</sub> through its effect on an essential enzyme. Reduced vitamin B<sub>6</sub> may result in depression or nerve damage (leading to numbness or tingling of hands or feet). Supplementation is advisable.</p>	<b>Vitamin B<sub>6</sub></b>

DRUG	INTERACTION	NUTRIENT
<b>Blood Pressure Medicines</b>	These strong diuretics (water pills) may cause the loss of important minerals from the body. Periodic blood tests are essential to see whether supplements are needed.	<b>Calcium Magnesium Potassium</b>
<b>Loop Diuretics</b> Edocrin Lasix <b>Thiazide Diuretics</b> Aldoril Diuril Hydrochlorothiazide <b>HydroDIURIL</b> Ser-Ap-Es, etc.	These diuretics promote urination. Minerals are often lost in the process. This could actually prove counter-productive, since both potassium and magnesium appear to help regulate blood pressure. Periodic blood checks to keep track of mineral levels are a good idea.	<b>Magnesium Potassium Zinc</b>
<b>Triamterene-containing</b> Dyazide Dyrenium Maxzide	Folic acid deficiency could become a problem unless a supplement is taken. These drugs conserve potassium. Taking a potassium supplement at the same time could result in an overload of this mineral.	<b>Folic Acid Potassium</b>
<b>Blood Thinners</b> Coumadin Panwarfin Warfarin	Very large amounts (5 grams or more) of vitamin C might perhaps interfere with the effectiveness of this medicine. This interaction is uncertain. Vitamin E itself acts as an anticoagulant, and the combination may thin the blood too much and lead to bruises or excessive bleeding. Vitamin K counteracts these medications and makes them less effective. Don't go overboard on foods high in this vitamin, such as beef liver, broccoli, brussels sprouts, cabbage or spinach. For any of these interactions, your doctor can check bleeding time with a test.	<b>Vitamin C Vitamin E Vitamin K</b>
<b>Cholesterol Medicines</b> Cholybar Colestid Questran	“Bile acid sequestrants” like Questran can interfere with the absorption of fats and fat-soluble vitamins. Some animal studies suggest that vitamin E and even iron absorption may also be adversely affected. Because of their impact on vitamin K, these drugs may cause complications with blood thinners. Frequent blood tests are advised.	<b>Vitamin A Vitamin B<sub>12</sub> Vitamin D Folic Acid Vitamin K</b>
<b>Colchicine</b> ColBenemid	Absorption of these nutrients may be impaired. Check with your physician about supplementation.	<b>Vitamin B<sub>12</sub> Beta-carotene Magnesium Potassium</b>
<b>Corticosteroids</b> Deltasone Medrol Prednisone, etc.	Cortisone-like drugs can deplete the body of vitamin D <sub>3</sub> and interfere with calcium absorption and metabolism. Long-term use may result in bone loss. Such medications may also lead to depletion of potassium and vitamins B <sub>6</sub> , B <sub>12</sub> or folic acid. Check with your doctor about a supplement.	<b>Calcium Vitamin D<sub>3</sub> Potassium Vitamin B<sub>6</sub> Vitamin B<sub>12</sub> Folic Acid</b>
<b>Epilepsy Drugs</b> Barbiturates Phenobarbital	Either folic acid or vitamin B <sub>6</sub> supplements can reduce blood levels of this anticonvulsant, potentially leading to seizures. If supplementation is needed it should be carefully monitored. Barbiturates like phenobarbital interfere with the normal metabolism of vitamin D, and as a consequence calcium may be lost from bones. Rickets or osteomalacia are a hazard. Check with your doctor about vitamin D supplements.	<b>Folic Acid Vitamin B<sub>6</sub> Vitamin D Calcium</b>

DRUG	INTERACTION	NUTRIENT
<b>Epilepsy Drugs</b> Dilantin	<p>Patients on Dilantin (phenytoin) may become deficient in folic acid or vitamin B<sub>6</sub>. Supplementation is very tricky, however, and must be directed by a knowledgeable physician. Too much folic acid (more than 2 mg/day) or vitamin B<sub>6</sub> can interfere with effectiveness so that the drug would fail to prevent seizures. At doses of 80 mg daily of vitamin B<sub>6</sub>, Dilantin is only 50 percent as effective. Periodic blood tests for anemia are needed.</p> <p>Dilantin interferes with the proper utilization of vitamin D, and thus with calcium. The consequence could be rickets in children or osteomalacia (weak bones) in adults. A supplement of 400 to 800 IU of vitamin D daily is appropriate.</p> <p>Blood levels of vitamin K may be reduced. A supplement of 1 to 5 mg daily may be advisable.</p>	<b>Folic Acid</b> <b>Vitamin B<sub>6</sub></b>  <b>Vitamin D</b> <b>Calcium</b>  <b>Vitamin K</b>
Mysoline	<p>Levels of vitamin K may be lower. The doctor might prescribe a supplement of 1 to 5 mg daily to overcome this.</p> <p>Like other barbiturates, Mysoline (primidone) alters the metabolism of vitamin D and can lead to the loss of calcium from bones. A vitamin D supplement (400 to 800 IU daily) may be necessary.</p>	<b>Vitamin K</b>  <b>Calcium</b> <b>Vitamin D</b>
<b>Etidronate</b> Didronel	<p>Minerals such as calcium, magnesium or iron react with this medicine to prevent its absorption if they are taken within 2 hours. However, the drug changes vitamin D metabolism, so adequate calcium and vitamin D intake must be maintained.</p>	<b>Calcium</b> <b>Iron</b> <b>Magnesium</b> <b>Vitamin D</b>
<b>Hormone Replacement Therapy</b> Estrace Estratab Menest Premarin, etc.	<p>Women using estrogen replacement therapy may need more of these vitamins. Both folic acid and B<sub>6</sub> levels may be low, and too little vitamin B<sub>6</sub> could be responsible for depression. Ask your doctor about a supplement.</p> <p>Vitamin C (1 gram or more) may increase blood levels of estrogen. Side effects may become more noticeable. This interaction is controversial and may not be significant.</p>	<b>Vitamin B<sub>6</sub></b> <b>Folic Acid</b> <b>Vitamin E</b>  <b>Vitamin C</b>
<b>Iron</b> Femiron Feosol Fer-In-Sol Mol-Iron, etc.	<p>Taking a calcium supplement at the same meal with an iron supplement or multivitamin containing iron can reduce the amount of iron absorbed. To minimize interference, take these pills at different times.</p>	<b>Calcium</b>
<b>Laxatives</b> Mineral Oil Agoral Mikinol Neo-Cultol, etc. Phenolphthalein Ex-Lax Feen-a-mint Modane, etc.	<p>Regular use of a mineral oil laxative interferes with proper absorption of the fat-soluble vitamins. A lack of vitamin D can affect calcium and phosphate, and bone loss may occur.</p> <p>Regular use of these laxatives may interfere with vitamin D and calcium metabolism, eventually weakening bones.</p>	<b>Vitamin A</b> <b>Vitamin D</b> <b>Vitamin E</b> <b>Vitamin K</b>  <b>Calcium</b> <b>Vitamin D</b>
<b>Major Tranquilizers</b> Chlorpromazine Thorazine Fluphenazine Permitil Prolixin and others	<p>The B vitamins, riboflavin and vitamin B<sub>12</sub> (cyanocobalamin), may become depleted. A supplement may be required to prevent deficiency. In one case, a high dose of vitamin C reduced the serum level of Prolixin, so caution is suggested.</p>	<b>Riboflavin</b> <b>Vitamin B<sub>12</sub></b> <b>Vitamin C</b>

DRUG	INTERACTION	NUTRIENT
<b>Levodopa</b> Dopar Larodopa	Vitamin B <sub>6</sub> can reduce the effectiveness of this anti-Parkinson's disease drug. Supplementation should be avoided.	<b>Vitamin B<sub>6</sub></b>
<b>Potassium Chloride</b> Kaon-Cl Klotrix K-Tab Micro-K Slow-K, etc.	Potassium supplements can interfere with the absorption of vitamin B <sub>12</sub> . Because these medications are often taken for many weeks or months, a deficiency of this crucial vitamin could develop. Research has shown that some older people show cognitive or neurological effects of inadequate vitamin B <sub>12</sub> even before their blood tests show a deficiency.	<b>Vitamin B<sub>12</sub></b>
<b>Sleeping Pills</b> Doriden	Long-term use of this sleeping pill can interfere with vitamin D metabolism, which in turn affects calcium balance. The result could be osteomalacia, or weakened bones. A vitamin D supplement might be appropriate.	<b>Vitamin D Calcium</b>
<b>Sulfasalazine</b> Azulfidine	This medicine for inflammatory bowel disease interferes with the proper absorption of folic acid. Talk to your doctor about a supplement. The recommended range is 0.4 to 1 mg.	<b>Folic Acid</b>
<b>Thyroid Hormone</b> Levothyroxine Levo-T Levothroid Synthroid	Iron supplements taken at the same time as thyroid replacement hormone can reduce its effectiveness, as judged by blood tests and clinical symptoms. Take these pills at different times.	<b>Iron</b>
<b>Tuberculosis Drugs</b> Isoniazid INH Laniazid Nydrazid Rifamate	Deficiencies of niacin and vitamin B <sub>6</sub> are possible, and may require supplementation. Do <i>not</i> take supplements without supervision, as too much vitamin B <sub>6</sub> might diminish the effectiveness of the drug. (Recommended doses range from 6 to 50 mg.) Drug-induced changes in vitamin D metabolism may also affect calcium and phosphate balance. Check with your doctor about a supplement.	<b>Niacin Vitamin B<sub>6</sub>  Vitamin D Calcium Phosphate</b>
P.A.S.	A vitamin B <sub>12</sub> deficiency is possible. Folic acid may also be a problem. Ask your doctor if supplements are advisable.	<b>Vitamin B<sub>12</sub> Folic Acid</b>
<b>Ulcer Medicines</b> Tagamet Zantac	These H <sub>2</sub> antagonists, and possibly the newer ones, Axid and Pepcid, can reduce the absorption of vitamin B <sub>12</sub> that is chemically bound to protein. The effect may depend upon dose and seems to disappear as soon as the drug is discontinued. Still, a supplement might be wise. Ask your doctor. A controversial theory suggests that reducing acid as effectively as these medications do could allow bacteria to survive in the stomach. These "bugs" may produce carcinogenic chemicals called nitrosamines that might increase the risk of stomach cancer. We suggest vitamin insurance: the antioxidants vitamin C and vitamin E may help protect the stomach lining. One authority recommends 500 mg vitamin C three or four times daily and 400 IU vitamin E per day.	<b>Vitamin B<sub>12</sub>  Vitamin C Vitamin E</b>
<b>Urinary Anti-infectives</b> Furadantin Furalan Macrofantin, etc.	Nitrofurantoin medications for urinary tract infections interfere with folic acid metabolism. Folic acid deficiencies are unusual, perhaps because the drugs are usually prescribed for less than two weeks. If you will need one long-term, ask your doctor about supplementation.	<b>Folic Acid</b>

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