

**Reference Guide** 

# INTERACTIONS DRUG & NATURAL HEALTH PRODUCTS







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### **OUR MISSION**

Our passion is **people**, **health** and **well-being**. We are committed to the health and wellness of our **customers**, our **communities** and our **planet**. We value sustainability, ethical resource management, and charitable-giving while upholding the **highest standards** for clean formulations, product quality, **evidence-based research** and support for our customers.

### YOUR HEALTH IS OUR PASSION

### Patients

- Earn their trust as a dispensary with strict standards for product quality and evidence-based research
- Support their health needs with expert staff
- Provide expert staff to answer their questions
- Offer a wide product selection

### Health Professionals

- Act as a link between our vendors and the professional community
- Provide an extension to their practice for patient care
- Support their practice with referrals and a wide product selection

### OUR COMMITMENT TO YOU

- Carrying only quality supplements which are:
  - research based
  - therapeutically proven
  - third party tested for label compliance
- Offering a wide selection of supplement brands
- Being happy to order special products
- Providing computerized prescription tracking
- Hiring caring professionally trained staff
- Providing free delivery and mailorder service
- Carrying a large selection of specialty products



Drug Class	Examples	NHPs that Increase or Decrease Drug Activity; Contraindications	Nutrients Depleted by Drug
Acid Inhibito	ors		
Antacids (OTC)	Aluminum hydroxide, magnesium hydroxide (Maalox), bismuth subsalicylate (Peptobismal), calcium carbonate	Betaine hydrochloride	Calcium, phosphorus, vitamin B12, iron, protein, zinc
H2 Antagonists	Cimetidine, ranitidine	Betaine hydrochloride	Calcium, folates, iron, vitamin B12, D, zinc
Proton Pump Inhibitors	Omeprazole, lansoprazole	St. John's Wort may increase side effect of photosensitivity, betaine hydrochloride	Vitamin B12, iron, protein, zinc
Antibiotics			
Amino- glycosides	Neomycin, gentamycin, tobramy	• Grapefruit juice may decrease drug effect.	Beta-carotene, calcium, magnesium, iron, potassium, sodium, vitamin A, K
Cepha- Iosporins	Cephalexin, cefiximi	• Grapefruit juice may decrease drug effect.	Vitamin K
Fluoro- quonones	Ciprofloxacin	<ul> <li>Grapefruit juice may decrease drug effect.</li> <li>Fennel may decrease drug effect.</li> <li>Minerals calcium, iron, and zinc may decrease absorption of drug; take at least 2 hrs apart.</li> </ul>	Vitamin K
Macrolides	Azithromycin, erythromycin	• Grapefruit juice may decrease drug effect.	Vitamin K
Penicillins	Amoxicillin, ampicillin, penicillin G	• Grapefruit juice may decrease drug effect.	Potassium
Sulfonamides	Co-trimoxazole, pentamidine	<ul> <li>Grapefruit juice may decrease drug effect.</li> <li>PABA may decrease drug effect.</li> </ul>	Folates, magnesium
Tetracyclines	Doxycyline, tetracycline	• Grapefruit juice may decrease drug effect.	Calcium, magnesium, iron
Anticonvulsa	ants		
	Phenytoin	<ul> <li>Folate decreased drug levels.</li> <li>Ginkgo may decrease drug effect.</li> </ul>	Biotin, calcium, folates, vitamin B1, B12, D, K
	Valproic acid	• High doses of Vitamin A may increase risk of birth defects when used in pregnant women.	L-carnitine, folates
	Carbamazepine	<ul> <li>Grapefruit juice may increase drug levels.</li> <li>Vitamin B3 as niacin may induce hypotension.</li> </ul>	Biotin, calcium, folates, vitamin D

NHPs that Increase or Drug **Nutrients Decrease Drug Activity; Examples Depleted by Drug** Class **Contraindications Cardiovascular Medications** ACE Catopril, enalapril, ramipril Should not be combined with potassium; Zinc Inhibitors may cause hyperkalemia. Antiplatelet/ Warfarin (Coumadin) Coumarin containing herbs may increase Heparin decreases activation Anti-coagulants of vitamin D. risk of bleeding: ginger, feverfew, dong quai, garlic, ginkgo, · Phosphatidylserine, phosphatidylethanolamine may increase risk of bleeding. • St. John's Wort may decrease drug levels. • Ginseng spp. may decrease drug effect. Vitamin E, vitamin K, high doses of vitamin C may increase risk of bleeding. Calcium supplements may lower drug Beta enolol, metropolol Coenzyme Q10 levels, decreasing drug effect. Blockers • Avoid use of peppermint oil, may decrease Nefedipine, veramipil, diltiazem Calcium None known Channel drug effect. Blockers Siberian ginseng may cause falsely Cardiac Digoxin Calcium, magnesium, elevated drug levels upon blood tests. Glycosides phosphorus, vitamin B1 • Licorice may cause low potassium and increase side effects of drug. Magnesium may decrease drug absorption, effect. Should be taken 2 hr away from the drug. St. John's Wort may decrease drug levels, effect. **Diuretics** Furosemide Calcium supplements may increase risk Loop: Calcium, magnesium, (Loop, Hydrochlorothiazide of hypercalcemia. potassium, sodium, vitamin Thiazide, Spironolactone, amiloride Ginseng-germanium combination may B1, B12, B6, C, zinc; Potassium block effect of drug. Thiazide: Coenzyme Q10, Sparing Licorice may decrease drug effect, magnesium, phosphorus, **Diuretics**) cause hyperkalemia, high blood pressure. potassium, sodium, zinc; Potassium Sparing: Calcium, folates, zinc Nitrites Nitroglycerin N-acetyl cysteine with drug may cause severe headaches. Statins (HMG-Atorvastatin, lovastatin, pravastatin None known Coenzyme Q10 **CoA Reductase** 

SIMPLE SUPPLEMENT TIPS

• Take multivitamins with food. Don't take them late in the evening as they can boost your energy.

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Inhibitors)

Drug	
Class	Examples

### NHPs that Increase or Decrease Drug Activity; Contraindications

### Nutrients Depleted by Drug

#### **Chemotherapy Drugs**

- Anticancer agents deplete antioxidants as part of their mechanism of action; repletion of these is controversial at present, since it is thought that it may decrease drug efficacy. A 2007 systematic review found, however, that there is a lack of evidence showing significant decreases in efficacy from antioxidant supplementation (glutathione, melatonin, vitamin A, an antioxidant mixture, vitamin C, N-acetylcysteine, vitamin E, or ellagic acid) during chemotherapy; instead there was a suggestion of increased survival time, tumor response, and less drug toxicity (Block).
- Administration of natural health products should be timed around the chemotherapy protocol. The timing depends on the individual pharmacokinetic characteristics of the drugs used. It is recommended that patients consult a naturopathic doctor to determine optimal schedule of dosing around chemotherapy protocol.
- Gastrointestinal side effects of chemotherapy may lead to generalized nutrient depletions. Additional specific depletions are listed below.

Alkylating agents (includes platinum based agents)	Carboplatin, cisplatin, cyclophosphamide, dacarbazine, streptozocin		L-carnitine, magnesium, potassium, vitamin E, zinc
Anti-neoplastic Antibiotics	Bleomycin, doxorubicin, mitomycin, mitoxantrone		Arginine, vitamin B2, K
Anti- metabolites	Floxuridine, 5-fluorouracil, gemcitabine, mercaptopurine, methotrexate		Choline, folate, vitamin B1, 2, 3
Natural Source Derivatives	Docetaxel, etoposide, paclitaxel, vinblastine, vincristine	St. John's Wort may decrease anticancer effect of etoposide.	
Biological Response Modifiers	Tamoxifen, erlotinib		Magnesium
Immunosuppr	essants		
Corti- costeroids	Betamethasone, budesonide, dexamethasone, hydrocortisone, prednisone	<ul> <li>Chromium may help control cortiosteroid induced diabetes.</li> <li>Echinacea may decrease the effect of drug</li> <li>Avoid use of licorice; may cause high blood pressure and edema.</li> </ul>	Calcium, vitamin D, folates, magnesium, potassium, selenium, vitamin C, zinc
Cyclosporin		<ul> <li>Echinacea may decrease the effect of drug</li> <li>St. John's Wort may decrease drug levels, effect.</li> </ul>	None documented
5-Amino- salicyclic Acid Derivatives	Mesalamine, sulfasalazi	• Echinacea may decrease the effect of drug	Folates
Methotrexate		• Folates may or may not be supplemented depending on the particular disease condition, since folate antagonism is part of the drug's mechanism of action. Caution advised.	Folates

SIMPLE SUPPLEMENT TIPS • Take Vitamin C to increase absorption of an iron supplement.



Drug Class	Examples	NHPs that Increase or Decrease Drug Activity; Contraindications	Nutrients Depleted by Drug
Non Steroida	I Anti-Inflammatory Drugs (NSA	IDs)	
NSAIDs	Acetominophen, aspirin, diclofenac ibuprofen	<ul> <li>Vitamin E may increase risk of bleeding with aspirin.</li> <li>High levels of vitamin C (&gt;3g) may increase levels and effect of acetominophen.</li> </ul>	Folates; Salicylates also deplete: Iron, potassium, sodium, and vitamin C Acetominophen: glutathione
Oral Contrace	eptives		
Oral Contraceptives	Combinations of estrogens and progestins or progestins alone	<ul> <li>Resveratrol may mimic estrogen action, avoid concurrent use of resveratrol and estrogens</li> <li>Licorice may exacerbate water retention and increase risk of high blood pressure.</li> <li>St. John's Wort may decrease efficacy.</li> </ul>	Folates, magnesium, tryptophan, vitamin B2, B3, B6, B12, C, zinc
Oral Hypogly	cemics		
Sulfonylureas	Glyburide	• Ginseng spp. may potentiate hypoglycemia.	Coenzyme Q10
Biguanides	Metformin	• Lipoic acid, Gymnema sylvestre, Momordica charantia	Coenzyme Q10, folates, vitamin B12
Thiazolidinedi- ones	Pioglitazone	None known	None documented
Psychiatric D	rugs		
Anti- psychotics	Respiridone, Haloperidol, Lithium	<ul> <li>Avoid sedating herbs such as kava, valerian, scutellaria, passiflora; may cause excessive sedation and drowsiness.</li> <li>Lithium: avoid use of diruetic herbs such as dandelion, burdock, goldenrod, horsetail, etc.</li> <li>Dehydration increases risk of toxicity.</li> </ul>	Halperidol: CoQ10 Lithium: Inositol General: DHEA, vitamin B2, Selenium
Monoamide Oxidase Inhibitors	Phenelzine, selegiline	<ul> <li>Avoid sedating herbs such as kava, valerian, scutellaria, passiflora; may cause excessive sedation and drowsiness.</li> <li>Tyramine containing foods should not consumed by persons on MAOIs.</li> </ul>	Vitamin B6
Selective Serotonin Reuptake Inhibitors	Citalopram, paroxetine, fluoxetine	• Avoid sedating herbs such as kava, valerian, scutellaria, passiflora, L-tryptophan, 5-HTP; may cause excessive sedation and drowsiness.	Melatonin, sodium

### SIMPLE SUPPLEMENT TIPS

• If you are taking antibiotics, take probiotics, ('acidophilus'), with foods, at least two hours after the antibiotic.

Drug Class	Examples	NHPs that Increase or Decrease Drug Activity; Contraindications	Nutrients Depleted by Drug
Tricylcic Anti- depressants	Amitriptyline, nortriptyline	<ul> <li>Avoid sedating herbs such as kava, valerian, scutellaria, passiflora; may cause excessive sedation and drowsiness.</li> </ul>	Vitamin B2, coenzyme Q10
Benzo- diazepines	Lorazepam	• Avoid sedating herbs such as kava, valerian, scutellaria, passiflora; may cause excessive sedation and drowsiness.	Melatonin
Miscellaneou	IS		
	Bromocriptine	• Vitex may increase the effect of the drug in decreasing prolactin levels.	None known
Anti-Gout Agents	Colchicine	None known	Vitamin B12, calcium, potassium, sodium, betacarotene
Anti-retrovirals	Idinavir	• St. John's Wort may decrease levels, effect	None known
Parkinson's Disease Agents	Levodopa	<ul> <li>Branched chain amino acids may temporarily decrease effect of drug.</li> <li>Iron decreases drug absorption; take 2 hrs apart.</li> <li>Vitamin B6 may decrease drug effect.</li> </ul>	Potassium, SAMe
	Isotretinoin (Accutane)	• Vitamin A may increase toxicity.	None known
Thyroid Hormone Replacement Therapy	L-thyroxine	<ul> <li>Calcium carbonate and/ or iron may decrease absorption of drug; take 2 hrs apart.</li> <li>Soy may decrease drug effect.</li> </ul>	Calcium, magnesium, iron, phosphate

#### References

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- Harkness R, Bratman S. Mosby's Handbook of Drug-Herb and Drug-Supplement Interactions. St. Louis: Mosby, 2003.
- Natural Standard, the Authority on Integrative Medicine. www.naturalstandard.com. Updated January 2010. Accessed 10 January 2010.
- Pelton R, LaValle J, Hawkins E, Krinsky D. Drug-Induced Nutrient Depletion Handbook, 2nd ed. Hudson: Lexi-Comp, 2001.

#### SIMPLE SUPPLEMENT TIPS • Avoid taking fatty acids with fatty meals.





## BEWARE OF THE SO CALLED 'KITCHEN SINK' APPROACH TO SUPPLEMENTS

**INTHE SUPPLEMENT MARKETPLACE**, there are an ever growing number of combination, or 'kitchen sink' supplements, offering bigger and allegedly, better combinations of ingredients. A surprising number of people, even those who are knowledgeable about their health, buy these supplements thinking that they are covering all the bases and getting good value in the process.

Unfortunately, in the vast majority of cases, this is simply just not true.

# Quantity is not quality, especially when it comes to your health

At Nature's Source we carry very few of these combination products. Here's why:

- They don't measure up to the product quality standards we have set at nature's source, in that many manufacturers of these products may not conduct objective third party testing.
- Many of these products use fillers, binders or tableting procedures that prevent proper absorption of the supplement's contents.
- A great number of these products are loaded with ingredients, but tend to ignore many of the issues surrounding dosage, ingredient compatibility, stability and mechanism of action, for the sake of being able to offer a large number of ingredients.

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#### Too many ingredients can diminish the end result

In the rush to impress you with their vast array of ingredients, many of these 'kitchen sink' supplements may offer ingredients that are complementary, but which have incompatible chemistry. This means that they simply can't deliver on the promise they make, because one ingredient may cancel out the efficacy of another.

A second risk is that ingredients may end up competing with each other, creating a net result of failure.

Another risk is that many of these multiingredient products don't contain enough of any one ingredient to really have any effect at all. This, of course, can pave the way for a serious health risk, especially if you are taking one of these combination

supplements as part of a treatment program for a specific ailment.

#### We have the supplements you need & the knowledge you will appreciate

At nature's source, you will find only supplements that have gone through the most rigorous approval processes, all verified by third party testing.

You will also find that our staff are professional and well informed about all the controversial issues regarding these 'kitchen sink' supplements. \*

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