



HEALTH

Nutrient-Drug Interactions and Food no. 9.361

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Quick Facts...

Medications need to be taken at different times relative to meals.

Drugs and medications can interact with nutrients in food.

Consult a physician when health problems persist.

During pregnancy and nursing always consult a physician or pharmacist before taking any medication. Drugs taken by the mother may affect the infant.

Take all medications only with water, unless otherwise advised.

Check with a doctor or pharmacist for the proper way and time to take medication.

It is a difficult and complex problem to accurately determine the effects of food and nutrients on a particular drug. There are many dramatic results or problems caused by food-drug, drug-drug and alcohol-food-drug interactions. The following table is designed to help the reader become more knowledgeable about drug interactions and their effect on food, a nutrient or another drug that may produce unexpected results or cause additional health problems.

Generic Drugs

Generic drugs often are substituted for brand-name counterparts. They usually are more economical than brand-name drugs. Possible exceptions might be enteric-coated aspirin.

Patients may have concerns about the quality, efficacy, potency or consistency of generic drugs. Generics are therapeutically equivalent to brands approved and rated by the Food and Drug Administration. Many are made by major brand-name companies.

Over-the-Counter (OTC) Drugs

Points to remember:

- OTC drugs usually are meant only to relieve symptoms, not cure a disease or illness.
- Improper use can make symptoms worse or conceal a serious condition that should be brought to a doctor's attention. Never take OTC drugs longer than recommended on the label. If symptoms persist or if new symptoms occur, see a doctor.
- Read the label carefully before taking an OTC product and every time an OTC product is bought. There may be important changes in indications, warnings or directions.
- People with allergies or chronic health problems should be especially careful to read the ingredient, warning and caution statements carefully. If there are any questions, consult a doctor or pharmacist.
- Check expiration dates from time to time. Destroy in the safest way possible any drugs that are outdated or that have deteriorated, such as discolored eyedrops or ointment, or vinegar-smelling aspirin.
- Keep all drugs and medications out of the reach of children.
- When pregnant or nursing a baby, check with a health professional before taking any drugs.

Aspirin vs. Acetaminophen vs. Ibuprofen

Aspirin, acetaminophen and ibuprofen all have analgesic (pain control) and antipyretic (fever control) properties. Only aspirin and ibuprofen also contain anti-inflammatory properties. Acetaminophen does not produce the stomach or intestinal irritation or allergic reactions that aspirin can. Gastrointestinal side effects observed with aspirin are greatly reduced with ibuprofen, although patients with aspirin hypersensitivity can have similar reactions.

To reduce stomach upset from ibuprofen, take it with food or an antacid. Avoid alcohol or aspirin with ibuprofen.

Naproxen sodium, which has analgesic, antipyretic and anti-inflammatory properties, is indicated for the same conditions as aspirin, ibuprofen and acetaminophen but should not be taken with them. Anyone who generally has three or more alcoholic drinks per day should consult a physician on when and how to take naproxen sodium and other pain relievers.

Table 1: Food and Drug Interactions.

		Use	Interactions/Guidelines	Examples ¹
ALLERGIES	Antihistamine	To relieve or prevent the symptoms of colds, hay fever and allergies.	FOOD: Take prescription on an empty stomach to increase its effectiveness. ALCOHOL: Avoid alcohol because it increases the sedative effects of the medications.	Diphenhydramine/BENADRYL Fexofenadine/ALLEGRA loratadine/CLARITIN Cetirizine/ZYRTEC
	Analgesic/Antipyretic	To treat mild to moderate pain and fever.	FOOD: For rapid relief, take on empty stomach. ALCOHOL: Avoid or limit the use of alcohol because chronic alcohol use can increase the risk of liver damage or stomach bleeding.	Acetaminophen/TYLENOL TEMPRA
	Non-Steroidal Anti-Inflammatory Drugs (NSAIDS)	To reduce, pain, fever and inflammation.	FOOD: Take with food or milk because medications can irritate the stomach. ALCOHOL: Avoid or limit the use of alcohol because chronic alcohol use can increase the risk of liver damage or stomach bleeding.	Aspirin/BAYER, ECOTRIN Ibuprofen/MOTRIN, ADVIL Naproxen/ANAPROX, ALEVE, NAPROSYN
	Corticosteroids	<ul style="list-style-type: none"> • To relieve inflamed areas of the body. • To reduce swelling and itching. • To help relieve allergies, rheumatoid arthritis, and other conditions. 	FOOD: Take with food or milk to decrease stomach upset.	Methylprednisolon/MEDROL Prednisone/DELTASONE Prednisolone/PEDIAPRED, PRELONE Cortisone acetate/CORTEF
ARTHRITIS and PAIN	Narcotic Analgesic	To provide relief for moderate to severe pain.	ALCOHOL: Avoid alcohol because it increases the sedative effects of the medication.	Codeine combined with acetaminophen/TYLENOL Morphine/ROXANOL, MS CONTIN
	Bronchodilators	To treat the symptoms of bronchial asthma, chronic bronchitis and emphysema.	FOOD: High-fat meals may increase the amount of theophylline in the body, while high-carbohydrate meals may decrease it. It is important to check with the pharmacist about which form you are taking because food can have different effects depending on the dose form. CAFFEINE: Avoid eating or drinking large amounts of foods and beverages that contain caffeine. ALCOHOL: Avoid alcohol because it can increase the risk of side effects such as nausea, vomiting, headache and irritability.	Theophylline/SLO-BID, THEO-DUR, UNIPHYL Albuterol/VENTOLIN, PROVENTIL, COMBIVENT Epinephrine/PRIMATENE MIST
	Diuretics	To help eliminate water, sodium and chloride from the body.	FOOD: Some diuretics cause loss of potassium, calcium and magnesium. Triamterene is known as a "potassium	Furosemide/LAXID Triamterene/hydrochlorothiazide DIAZIDE, MAXZIDE
CARDIO-VASCULAR DISORDERS				

	Use	Interactions/Guidelines	Examples ¹
		sparing" diuretic. When taking triamterene avoid eating large amounts of potassium-rich foods such as bananas, oranges and green leafy vegetables or salt substitutes.	Hydrochlorothiazide/ HYDRODIURIL Trimterene/DRYENIUM Bumetamide/BUMEX Metolazone/ZAROXOLYN
Beta Blockers	To decrease the nerve impulses to blood vessels.	ALCOHOL: Avoid drinking alcohol with propranolol/INDERAL because these drugs lower blood pressure too much.	Atenolol/TENORMIN Metoprolol/LOPRESSOR Propranolol/INDERAL Nadolol/CORGARD
Nitrates	To relax blood vessels and lower the demand for oxygen by the heart.	ALCOHOL: Avoid alcohol because it may add to the blood vessel-relaxing effect of nitrates and result in dangerously low blood pressure.	Isosorbide dinitrate/ISORDIL, SORBITATE Nitroglycerin/NITRO, NITRO-DUR, TRANSDERM-NITRO
Angiotension Converting Enzyme (ACE Inhibitors)	To relax blood vessels by preventing angiotension II, a vasoconstrictor, from being formed.	FOOD: Take one hour before or two hours after meals. May increase the amount of potassium in the body. Too much potassium can be harmful. Avoid eating large amounts of potassium-rich foods such as bananas, oranges and green leafy vegetables or salt substitutes.	Captopril/CAPOTEN Enalapril/VASOTEC Lisinopril/PRINIVIL, ZESTRIL Quinapril/ACCUPRIL Moexipril/UNIVASC
HMG-CoA Reductase Inhibitors	Known as "statins" • To lower cholesterol. • To reduce the production rate of LDL (bad) cholesterol.	FOOD: Lovastatin (mevacor) should be taken with the evening meal to enhance absorption. ALCOHOL: Avoid drinking large amounts of alcohol because it may increase the risk of liver damage.	Atorvastatin/LIPITOR Cerivastatin/BAYCOL Fluvastatin/LESCOL Lovastatin/MEVACOR Pravastatin/PRAVACHOL Simvastatin/ZOCOR
Anticoagulants	To prevent the formation of blood clots.	FOOD: Vitamin K produces blood-clotting substances and may reduce the effectiveness of anticoagulants. High doses of vitamin E (400 IU or more) may prolong clotting time and increase the risk of bleeding.	Warfrin/COUMADIN
INFECTIONS	Antibiotics and Antifungals	To treat infections caused by bacteria and fungi.	GENERAL GUIDELINES: Tell the doctor if you experience skin rashes or diarrhea. If you are using birth control, consult with your health care provider because some methods may not work when taken with antibiotics. Be sure to finish all of your medication even if you start feeling better. Take medication with plenty of water.
	Antibacterials/Penicillin	To treat infections caused by bacteria and fungi.	FOOD: Take on an empty stomach unless it upsets your stomach, then take with food.
	Quinolones	To treat infections caused by bacteria and fungi.	FOOD: Take on empty stomach one hour before or two hours after meals. If your stomach gets upset, take with food. CAFFEINE: Taking these medications with caffeine-containing products may increase caffeine levels, leading to excitability and nervousness.
	Macrolides	To treat infections caused by bacteria and fungi.	FOOD: Take on empty stomach one hour before or two hours after meals. If your stomach gets upset, take with food.
	Sulfonamides	To treat infections caused by bacteria and fungi.	FOOD: Take on empty stomach one hour before or two hours after meals. If your stomach gets upset, take with food.
	Tetracyclines	To treat infections caused by bacteria and fungi.	FOOD: Avoid taking tetracycline with dairy products, antacids, and vitamin supplements containing iron because they can interfere with the medication's effectiveness.
	Nitromidazole	To treat infections caused by bacteria and fungi.	ALCOHOL: Avoid drinking alcohol and taking medications that contain alcohol
			Penicillin V/VEETIDS Amoxicillin/TRIMOX, AMOXIL Ampicillin/PRINCIPEN, OMNIPEN Ciprofloxacin/CIPRO Levofloxacin/LEVAQUIN Ofloxacin/FLOXIN Trovafoxacin/TROVAN Azithromycin/ZITHROMAX Clarithromycin/BIAXIN ERYTHROMYCIN/E-MYCIN, ERY-TAB, ERYC erythromycin + sulfisoxazole/PEDIAZOLE Sulfamethoxazole + trimethoprim/BACTRIM, SEPTRA Tetracycline/ACHROMYCIN, SUMYCIN Doxycycline/VIBRMYCIN Minocycline/MINOCIN Metronidazole/FLAGYL

		Use	Interactions/Guidelines	Examples ¹
	Antifungals		while taking metronidazole and for at least three days after you finish the medication. FOOD: It is important to avoid taking these medications with dairy products. ALCOHOL: avoid drinking alcohol and taking medications that contain alcohol while taking ketoconazole and for at least three days after you finish the medication.	Fluconazole/DIFLUCAN Griseofulvin/GRIFULVIN Ketoconazole/NIZORAL Itraconazole/SPORANOX
MOOD DISORDERS	Monoamine Oxidase (MAO) Inhibitors	To treat depression, emotional and anxiety disorders.	FOOD: These medications have many dietary restrictions and people taking them need to follow the dietary guidelines and physician's instructions very carefully. A rapid, potentially fatal increase in blood pressure can occur if foods or alcoholic beverages containing tyramine are consumed while taking MAO inhibitors. ALCOHOL: do not drink beer, red wine, other alcoholic beverages, non-alcoholic and reduced alcohol beer and red-wine products.	Phenelzine/NARDIL Tranycypromine/PARNATE
	Anti-Anxiety Drugs	To treat depression, emotional and anxiety disorders.	CAFFEINE: may cause excitability, nervousness and hyperactivity and lessen the anti-anxiety effects of the drugs. ALCOHOL: may impair mental and motor performance.	Lorazepam/ATIVAN Diazepam/VALIUM Alprazolam/XANAX
	Antidepressant Drugs	To treat depression, emotional and anxiety disorders.	FOOD: these medications can be taken with or without food. ALCOHOL: although alcohol may not significantly interact with these drugs to affect mental or motor skills, people who are depressed should not drink alcohol	Paroxetine/PAXIL Sertraline/ZOLOFT Fluoxetine/PROZAC
STOMACH CONDITIONS	Histamine Blockers	To relieve pain, promote healing and prevent irritation from returning.	FOOD: these medications can be taken with or without food. CAFFEINE: caffeine products may irritate the stomach	Cimetidine/TAGAMET Famotidine/ PEPCID Ranitidine/ZANTAC Nizatidine/AXID

¹The generic name for each drug is stated first. Brand names are in all capital letters and represent only some examples of those medications.
References: Food and Drug Interactions, 1998, U.S. Food and Drug Administration, National Consumers League.

Table 2: Aspirin vs. Acetaminophen vs. Ibuprofen

	Aspirin	Acetaminophen	Ibuprofen
Classification	NSAID, ANALGESIC, ANTIPYRETIC, ANTIARTHRITIC	ANALGESIC, ANTIPYRETIC	NSAID, ANALGESIC, ANTIARTHRITIC
Use	<ul style="list-style-type: none"> • pain relief and fever reduction in adults-relieves mild itching • reduces swelling and inflammation • used to treat arthritis, many other conditions and injuries 	<ul style="list-style-type: none"> • mild pain relief • reduces fever 	<ul style="list-style-type: none"> • pain relief • reduces fever • reduces inflammation
Cautions	Caution is advised if you: <ul style="list-style-type: none"> • get stomach irritation when taking aspirin-are allergic to aspirin • are taking blood thinning medication • have a hang-over A person should not take aspirin if he/she has: ulcers, gout, asthma, hearing loss.	<ul style="list-style-type: none"> • High doses or regular, long-term use can cause liver damage, especially if used with alcohol. • Should not be used to treat fever over 103.1° F for more than three days. • Should not be used to treat fevers that keep coming back. • Should not be used on a regular basis by people who suffer from: anemia or liver or kidney disease. 	Caution is advised if you have: <ul style="list-style-type: none"> • asthma and nasal polyps • a stomach or intestinal disorder • a skin condition called “angioedema” • an allergic reaction to other anti-inflammatory medications • liver or kidney disease • a blood clotting disorder • heart failure • Not to be used with aspirin, alcohol or steroids.
Dietary Recommendations	<ul style="list-style-type: none"> • Insure adequate fluid intake/hydration • Increase foods high in vitamin C and folic acid with long-term, high dosage use • Avoid or limit garlic, ginger and Gingko 		<ul style="list-style-type: none"> • Take with meals or milk.
Remarks	Children and teenagers should not take aspirin because it is associated with a rare disorder called Reye's Syndrome in these age groups.	<ul style="list-style-type: none"> • Works well for people who can't take aspirin because of aspirin-related allergic reactions, stomach irritation, or ringing in the ears. • Safe for use by infants, children and teenagers. 	<ul style="list-style-type: none"> • Less irritating to the stomach than aspirin for some. • Does not cause ringing in the ears like aspirin. • Does not cause liver damage like acetaminophen.
Known Brands	Aspirin, Ascriptin, Bufferin, Ecotrin	Aspirin Free Anacin, Aspirin Free Excedrin, Tylenol, Panadol, Temptra,	Advil, Midol IB, Motrin

Pregnant women should consult a doctor prior to taking any over-the-counter medication. Other people, including persons with medical conditions, are advised to read product labels carefully and consult a pharmacist if they have any questions about proper use.

Reference: Audio Health Library Topic 2001, Aspirin vs. Acetaminophen vs. Ibuprofen. 1996. <http://www.yourhealth.com/ahl/2001.html>.

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