

The FOOD  
and DRUG  
INTERACTION  
GUIDE



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## About the Author

Brian L.G. Morgan was born in England and educated at Queen Elizabeth College, London University, where he obtained his Ph.D. in nutrition. He came to America in 1975 to take a fellowship at the Institute of Human Nutrition, Columbia University, College of Physicians and Surgeons, where he has remained ever since. At present Dr. Morgan holds a joint appointment at the Institute and the Columbia School of Dental and Oral Surgery, and is actively involved in nutrition research and teaching health professionals. He lives in Manhattan with his wife, author Roberta Morgan.

**FOLACIN-RICH FOODS**

This vitamin is needed for the manufacture of nucleic acids—RNA and DNA, the genetic material found in all cells—as well as for the normal metabolism of certain amino acids (food proteins). In addition, it is necessary for the replacement of worn-out red blood cells, and hence for the prevention of anemia.

inal tract if they are to be properly absorbed. ith regular milk, which is rich in fat, or some ent. Fat generally delays the emptying of the s down the movement of drugs into the small . absorption occurs. Therefore, it is recom- drug to work quickly, it should be taken on an

Serving Size	Fat (grams)
1 ounce	15
1 (10 ounce)	37
2 slices	8
3 ounces	16
3 ounces	13
3 ounces	27
1 cup	8
3 ounces	11
1 ounce	8
1 ounce	9
1 cup	10
1 cup	4
1 ounce	9
1 cup	8
3 ounces	10
1	6
1 cup	14
1 cup	23
3 ounces	31
1 cup	8
1 ounce	14
3 ounces	28
3 ounces	9
1 ounce	14
3 ounces	7
1 cup	22
3 ounces	9

Food	Serving Size	Folic acid (mcg)
Apple	1 medium	5-20
Beans, green	1 cup	20-50
Beef, lean	6 ounces	5-20
Bread	1 slice	5-20
Brewer's yeast	1 tablespoon	100-150
Broccoli	2 stalks	100-150
Carrot	1 medium	5-20
Cheese, hard	1 ounce	5-20
Corn	1 medium ear	5-20
Cucumber	1 small	20-50
Egg	1 large	20-50
Grapefruit	½ medium	5-20
Kidney	3 ounces	20-50
Liver	3 ounces	100-150
Milk	8 ounces	5-20
Mushrooms	3 large	5-20
Orange juice	6 ounces	100-150
Pork, lean	6 ounces	5-20
Potato	1 medium	5-20
Sesame seeds	1 tablespoon	5-20
Shellfish	6 ounces	20-50
Spinach	4 ounces	100-150
Squash	¾ cup	20-50
Strawberries	1 cup	20-50
Veal, lean	6 ounces	5-20
Yogurt	8 ounces	20-50

counteract the effects of the drug. Do not drink alcohol concurrently with this medication. Alcohol and drugs are broken down in the liver by the same mechanism; if there is a high level of alcohol present, less of the drug is broken down. Hence, higher levels of this anti-coagulant build up in the body and can be extremely dangerous.

## ZINC SULFATE

**DRUG FAMILY:** Mineral supplement

**BRAND NAMES:** ACE + Z; Besta; Eldercaps; Eldertonic; Glutofac; Hemocyte Plus; Mediplex; Vicon Forte; Vicon-C; Vicon-Plus; Vio-Bec Forte; Vi-Zac; Zinc-220; Zinckel-220

**HOW TO TAKE ZINC SULFATE:** With meals

**FOODS TO AVOID:** Milk or dairy products should not be consumed within 2 hours of consuming zinc sulfate

**POSSIBLE SIDE EFFECTS:** Copper deficiency, nausea, and diarrhea

**ACTION OF ZINC SULFATE:** This drug is used to treat people suffering from a zinc deficiency. It is also the drug of choice for treating the rare acrodermatitis enteropathica, a genetic disease that manifests itself after an infant has been weaned from breast milk. A child with this disease develops diarrhea and a severe rash that usually begins around the body's orifices. The child will not thrive, infections will occur, and, if the disease is not treated, the child will eventually die.

**HIGH-RISK GROUPS:** Children, heart patients, vegetarians

## NUTRITIONAL INTERACTIONS

**COPPER DEFICIENCY:** A copper deficiency could conceivably be precipitated by the use of zinc supplements. The symptoms of this deficiency are anemia, neurological disturbances, abnormalities of connective tissues, and bruising.

**Prevention and Treatment:** Your mineral status should be monitored carefully while you are taking this drug. If necessary, a copper supplement of 3 mg of elemental copper should be taken at 2 or 3 hours' distance from the administration of the zinc sulfate. However, since excess copper also lowers high-density lipoprotein cholesterol (HDL, the good cholesterol), the copper supple-

ments should also be carefully monitored; a reduction in HDL can increase the risk of heart disease.

**OTHER ADVICE:** Since absorption of zinc sulfate is reduced by milk or dairy products, it should not be taken with them.

Zinc supplements tend to be gastric irritants, and cause nausea and mild diarrhea in some people. To reduce the risk of these side effects, the supplements should be taken with meals.

Excess zinc tends to raise blood cholesterol levels; thus, people on long-term therapy should be carefully monitored since raised cholesterol levels increase the risk of heart disease.

**POSSIBLE SIDE EFFECTS:** Inability to concentrate; dizziness; drowsiness; and impaired coordination. In the case of tripeleppamine-containing drugs, an upset stomach can also occur.

**ACTION OF ANTIHISTAMINES:** These drugs prevent the secretion of histamine and are used in the treatment of allergies, nausea, and motion sickness, to relieve congestion, cough, and itching, and as a tranquilizer and local anesthetic. The drug is also the preferred treatment in seasonal allergies and is sometimes used in the treatment of asthma.

**HIGH-RISK GROUPS:** People with a history of abdominal distress

#### NUTRITIONAL INTERACTIONS

**ALKALINE URINE:** The action of this drug can be prolonged if your urine is alkaline, as the residue of the drug is excreted at a normal rate only if your urine is acidic. If the quantity of alkaline foods in your diet is high, your urine will lose its acidity, and the excretion of this drug will be slowed. A hazardous buildup could conceivably result. The symptoms of such a buildup or overdose are an inability to concentrate, dizziness, poor coordination, drowsiness, and a dry mouth.

Fruits, vegetables, and dairy products tend to be alkaline, and high-protein foods tend to be acidic.

**Prevention and Treatment:** Foods causing the production of alkaline urine, such as milk, buttermilk, cream, almonds, chestnuts, coconuts, all vegetables except corn and lentils, and all fruits except cranberries, prunes, and plums, can increase the potency of this drug by as much as two times.

further increasing the risk of adverse side effects.

Anatacids that neutralize the acid in the stomach will also neutralize the acid in the urine, making it alkaline. Therefore, avoid antacids when taking this drug.

**GASTROINTESTINAL DISTRESS:** In the case of tripeleppamine, gastric irritation may result from its use.

**Prevention and Treatment:** To minimize the gastric discomfort, these varieties should be taken with meals.

**OTHER ADVICE:** These drugs speed up the degradation of digitoxin, rendering it less effective if the two are taken together.

Antihistamines may bring about dizziness, an inability to concentrate, and reduced coordination, making it unwise to drive while using them. Alcohol exacerbates these effects and should never be combined with these drugs.

#### ASPARAGINASE

**DRUG FAMILY:** Anti-cancer

**BRAND NAMES:** Elspar

**HOW TO TAKE ASPARAGINASE:** Injection

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Loss of appetite

**ACTION OF ASPARAGINASE:** This drug is used in combination with other drugs to induce remission in children with Hodgkin's disease.

**HIGH-RISK GROUPS:** Children

#### NUTRITIONAL INTERACTIONS

**WEIGHT LOSS:** This drug is likely to cause anorexia (loss of appetite) and weight loss.

**Prevention and Treatment:** As this drug is usually used for periods of up to one month, special precautions are not usually taken. However, if weight loss is a problem, your doctor may decide intravenous feeding is necessary.

#### ASPIRIN

**DRUG FAMILY:** Anti-inflammatory

**BRAND NAMES:** A.P.C. with Codeine; Anacin Analgesic; Anacin; Arthritis Bayer; Arthritis Pain Formula; Arthritis Strength Bufferin; Ascriptin; Ascriptin with Codeine; Axotal; Bayer Aspirin; Buff-A Comp; Bufferin; Bufferin with Codeine; Cama Arthritis; Congespirin; Cosprin; Cosprin 650; Darvon with A.S.A.; Darvon-N with A.S.A.; Di-Gesic; Dihydrocodeine Compound; Easprin; Econtrin; Empirin with Codeine; Equagesic; Excedrin; 4-Way Cold; Fiorinal; Gemnisyn; Hyco-Pap; Mepro Compound; Methocarbamol with Aspirin; Midol; Norgesic and Norgesic Forte; Oxycodone Hydrochloride, Oxycodone Terephthalate & Aspirin; Percodan; Percodan-Demi; Propoxyphene Compound 65; Robaxial; SK-Oxycodone with Aspirin; SK-65 Compound; Supac; Synalgos-DC; Talwin Compound; Vanquish; Verin; Zorprin

**HOW TO TAKE ASPIRIN:** Regular aspirin should be taken with milk or meals. Buffered aspirin may be taken at any time with any nonalcoholic beverage.

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A good example of a drug that creates a primary absorption problem is mineral oil. A familiar laxative mineral oil causes the malabsorption of the fat-soluble vitamins—A, D, E, and K—by imposing a physical barrier between the vitamins and the wall of the intestine where the nutrients are ordinarily absorbed. Denied absorption through the intestine, the vitamins simply dissolve in the nonabsorbable mineral oil and, as captured nutrients, are passed through the intestines and out in the stool.

Most drug-nutrient interactions are somewhat more complex. An example is the antibiotic neomycin, which creates a primary absorption problem by damaging the wall of the intestine and, as a result, prevents the absorption of fat, protein, milk sugar, sodium, potassium, calcium, iron, and vitamin B<sub>12</sub>. If this drug is taken for two weeks or longer, deficiencies can result in any or even all of these nutrients.

An example of a drug that creates a secondary absorption problem is phenytoin, most commonly known by its brand name, Dilantin. It accelerates the rate at which the liver breaks down vitamin D, a vitamin upon which calcium depends for its absorption. If you are taking Dilantin, much of the vitamin D in your body will be used inefficiently. This can lead to two separate deficiencies—one of vitamin D, the other of calcium. In the absence of the efficient absorption of vitamin D, the body will liberate whatever calcium it needs from the bones, leading to a condition known as osteomalacia. A demineralization of the bones will occur, in some cases weakening them

to such a degree that they will become brittle and may even fracture.

All of these examples point to the crucial issue here: that your body is an operating system that will malfunction if it suffers the loss of an important nutrient.

There are other examples, as well. Some drugs cause the excretion of abnormally large amounts of minerals. A good example is the family of drugs known as diuretics, which are mainly prescribed for the treatment of hypertension. Diuretics will reduce the body's water retention, as well as its salt content. However, this can also reduce the amount of the mineral potassium, which is essential for the proper functioning of the kidneys, heart, and muscles, and the secretion of the stomach juices. Consequently, on depletion of the potassium stores in the body, the potential problems the chronic user of diuretics faces are irregular heart-beat, heart attack, and kidney failure. Potassium depletion can also sensitize a patient to a drug such as digitalis (prescribed for heart disease) and create the possibility of digitalis intoxication, leading to heart failure.

Other problems occur with the chronic use of antacids. Phosphate, which helps form teeth and bones, and is needed in the functioning of several B vitamins, is depleted in people who chronically use the antacids aluminum hydroxide and magnesium hydroxide. The dietary phosphate combines with these antacids to form aluminum and magnesium phosphate, compounds which are not absorbable and are passed out in the stool. In the event of a reduced supply of dietary phosphate, the body will, once again, turn to the bones to fulfill its mineral needs,

and osteomalacia (weak bones) can result.

The effectiveness of the vitamins and minerals we take in through our foods can be threatened by a wide variety of drugs that either increase their excretion or interfere with their metabolism. The following are a few examples: Anti-coagulants make vitamin K less effective; oral contraceptives increase the need for vitamin B<sub>6</sub>; nitrous oxide, an anesthetic, destroys vitamin B<sub>12</sub>.

## DRUG ABSORPTION

More of a drug is likely to be absorbed the longer it remains in your system. Since digesting a meal takes time, a drug taken with, say, a five-course dinner has more time to be dissolved by the gastric acid. The result is that when the drug is presented to the intestine, where most of the absorption takes place, it is in a form that can be readily absorbed.

While more of whatever drug we are taking is likely to be used by our bodies when we take it on a full stomach, there is a price to be paid: Certain foods taken with particular drugs will cause a slowed or, in some cases, impaired absorption of the drug from the intestine. For example, tetracycline, an antibiotic, binds to the calcium in milk and forms an insoluble substance that is not absorbed by the body. Further, since foods high in fat and protein are digested more slowly than others, there can be a delay in the emptying of the stomach, so that drugs consumed with a meal high in fat or protein are slower to arrive in the small intestine for absorption.

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## OTHER DRUG INTERACTION PROBLEMS

The opposite problem can also occur: Instead of being unable to metabolize a drug, your body can succeed in metabolizing it, but may have difficulty in getting rid of it. For example, if the often used anti-anxiety drug Valium is taken with alcohol, the alcohol will not inhibit the body's ability to use the drug, for it will still sedate you. But the body will not be able to rid itself of the drug as it normally does, and a toxic buildup of Valium can result.

A similar situation occurs with such drugs as the antibiotic quinine or the anti-protozoal agent quinacrine. Dosages of quinacrine are calculated with the expectation that the drug will be used by the body and then excreted. However, this drug and a number of others will not be passed out with the urine as expected if the urine is alkaline. So, people who eat a diet high in alkaline foods—milk, buttermilk, cream, and most fruits and vegetables—risk a considerable increase in the potency of the drug, and exaggerated side effects.

Nonnutrient food substances also play a role in drug breakdown. Substances called indoles (present in brussels sprouts and cabbage) and a substance called flavonoid (found in citrus fruits) will increase the breakdown of some drugs, as will the charcoal broiling of beef. Another factor in metabolism is intestinal bacteria, since they aid in the degradation or breakdown of drugs. Changes in the composition of the diet can alter the intestinal bacteria and therefore the effectiveness of the drug.

This is by no means a comprehensive list of the ways in which the drugs we take are able or unable to accomplish their desired result because of dietary factors. In the individual drug entries that follow, you will discover many more.

### WHEN FOODS AND DRUGS ARE INCOMPATIBLE

Severe adverse reactions to drugs can be caused by specific foods or alcoholic beverages. Some reactions, if left unchecked, can be life-threatening.

In 1961, a variety of side effects were noted in patients receiving drugs from the MAO-inhibitor drug family (monoamine-oxidase inhibitors). While the drugs effectively relieved severe depression, they also seemed to cause high blood pressure, headaches, palpitations, nausea, and vomiting. When the circumstances were studied more closely, it was determined that many of the patients ate a diet rich in foods containing a substance called tyramine.

Tyramine is found in many foods, but in especially high quantities in pickled herring, chicken livers, certain cheeses, and Chianti wine. Tyramine is now known to cause an alarming increase in blood pressure, but its effects are usually counteracted by the MAO enzymes in the body. However, in patients taking MAO-inhibitor drugs, these enzymes are inactivated.

Alcohol is also frequently a problem for proper drug utilization. For example, it is always rapidly absorbed and causes a decreased production of glucose by the liver,

tending to lower blood glucose (sugar) levels. A diabetic who takes a drug intended to encourage insulin production should not drink alcohol, because the pancreas will overproduce insulin and bring the blood glucose level down dramatically. Alcohol in combination with many other drugs has a great variety of different—and all too often dangerous—interactions.

Clearly, there are many interactions between foods and drugs—some to be avoided at all costs. It is the purpose of this book to help you become aware of the problems you may face when taking a given drug and to help you deal with those problems.

### WHO IS AT RISK?

Not everyone is subject to the same risk for a drug-induced nutrient deficiency. We all handle drugs and nutrients differently. However, the special nutritional requirements of the following groups make them particularly vulnerable to side effects: the elderly; women in general, but especially those who are pregnant, lactating, or have reached menopause; vegetarians; heavy drinkers; the 30 million undiagnosed hypertensives; those on a severe weight loss, low-protein diet; and the countless number of people on a low sodium (salt-free) diet. Heavy smokers also tend to have special nutritional requirements. They usually have lower levels of vitamins B<sub>6</sub> and B<sub>12</sub>, which may indicate an increased need for these nutrients. It has been estimated that they also need up to one-and-a-half times the vitamin C required by nonsmokers, meaning

that their daily requirements are 90 to 100 mg daily. Smoking also tends to deplete the body's calcium.

In other words, everyone—but particularly members of these special groups—should be aware of all the nutritional consequences involved with the drugs they are taking.

### HOW TO USE THIS BOOK

This book describes more than 300 generic drugs and their nutritional interactions. Organized alphabetically, the drugs (prescription and over-the-counter) are those most commonly used. The entry for each drug opens with general information—the drug family, the common brand names by which the drug is known, how to take the drug, foods to avoid, possible adverse side effects, the action of the drug, and the groups



## ACETAMINOPHEN

**DRUG FAMILY:** Analgesic

**BRAND NAMES:** Apap with Codeine; Acetaco; Acetaminophen Elixir; Acetaminophen with Codeine Phosphate; Algisin; Amacodone; Amaphen; Amaphen with Codeine; Anacin-3; Anatuss with Codeine; Anoquan; Apap 300 mg with Codeine; Apap with Codeine Elixir; Aspirin-Free Arthritis Pain Formula; Bancap; Bancap c Codeine; Bancap HC; Capital with Codeine; Children's Panadol; Chlorzone Forte; Chlorzoxazone with APAP; Codalan; Co-Gesic, Colrex; Compal; Com-trex; Congespirin; CoTylenol; Darvocet-N, Di-Gesic; Dristan Ultra Colds Formula; Dristan, Advanced Formula; Duradyne DHC; Empracet with Codeine Phosphate; Esgic; Espasmotex; Excedrin; Excedrin P.M.; Extra-Strength Datril; G-1; G-2; G-3; Gemnisyn; Hycodaphen; Hycomine; Hycopap; Korigesic; Maximum Strength Panadol; Midrin; Migralam; Oxycodone Hydrochloride and Acetaminophen; Pacaps; Parafon Forte; Percocet; Percogesic; Phenaphen w/Codeine; Phenaphen; Phenate; Phrenilin; Propoxyphene and Apap; Protid; Repan; SK-APAP with Codeine; SK-Oxycodone with Acetaminophen; SK-65 APAP; Sedapap-10; Sine-Aid; Singlet; Sinubid; Sinulin; Stopayne; Supac; T-Gesic; Talacen; Two-Dyne; Tylenol acetaminophen; Tylenol, Extra-Strength; Tylenol, Maximum-Strength; Tylenol, Regular Strength; Tylenol w/Codeine; Tylox Capsules; Vanquish; Vicodin; Wygesic

**HOW TO TAKE ACETAMINOPHEN:** At mealtimes or with milk

**FOODS TO AVOID:** Vitamin C supplements greater than 500 mg; alcoholic beverages

**POSSIBLE ADVERSE SIDE EFFECTS:** Diarrhea; sodium depletion; kidney damage

**ACTION OF ACETAMINOPHEN:** This analgesic is prescribed for the relief of mild to moderate pain, with or without fever. However, it does not have significant anti-inflammatory effects and is not effective for the treatment of rheumatic pain.

**HIGH-RISK GROUPS:** The elderly

### NUTRITIONAL INTERACTIONS

**GASTROINTESTINAL DISTURBANCES:** In rare instances, long-term abuse of acetaminophen can lead to kidney damage, which results in the inability of the body to conserve sodium. Further salt loss, through episodes of diarrhea, can bring on a condition called hyponatremia (abnormally low blood sodium levels). It leads to anorexia, nausea, vomiting, and muscle weakness. If the blood sodium levels drop extremely low, your senses may be impaired, and seizures may occur.

Very high doses of vitamin C (several grams per day) can prevent the body from excreting acetaminophen. In the habitual user, this can lead to a toxic buildup, and damage the kidneys and liver.

**Prevention and Treatment:** People taking this drug, especially older people whose kidney function may be declining, should be careful to follow the dosage instructions.

For iron to be absorbed from any vegetable source, it must first be converted to another form by the action of the hydrochloric acid produced in the stomach. Many elderly people secrete less hydrochloric acid than normal, so they absorb iron poorly even under normal circumstances. The diets of many Americans lack adequate quantities of this mineral for their normal needs. For example, 10 percent of American women suffer from an iron deficiency, and up to 30 percent have inadequate iron stores, giving them less to draw upon in times of shortage. Other people who are at significant risk for an iron deficiency are women who have had several pregnancies and those whose menstrual periods are heavy.

The shortage of iron in many diets is due not only to the selection of foods that are poor sources of iron, but also to the switch from cast-iron cookware to aluminum, stainless steel, and nonstick surfaces. Iron used to be leached from iron pots and pans by the acids in foods, and became available as dietary iron.

**Prevention and Treatment:** To counteract an iron deficiency, iron-rich foods should be included in your diet: liver, whole grain products, oysters, dried apricots, prunes, peaches, leafy green vegetables, and, occasionally, lean red meat. (See table of Iron-Rich Foods, page 299.)

Other foods and drugs have a considerable impact on the way your body absorbs (or does not absorb) iron. There are two kinds of iron in food sources: heme iron in meat and ionic iron in vegetables. Up to 30 percent of the iron from meat, fish, and poultry is absorbed, but less than 10 percent is absorbed from eggs, whole grains, nuts,

and dried beans. Only 10 percent of iron is absorbed from vegetable sources, with as little as 2 percent being absorbed from spinach. Antacids will interfere with iron absorption in vegetables, as will commercial black and pekoe tea, taken in substantial quantities, because of its tannin content. Coffee also seems to decrease iron absorption, but not to the same degree as tea. Vitamin C supplements or citrus fruit juices increase the absorption of iron from vegetable sources by two to three times if taken simultaneously.

If your diet is rich in high-fiber foods, you will have impaired iron absorption, because the fiber will bind with the iron and pass it out in the stool. This same action contributes to the poor absorption of iron from vegetable sources. Foods high in phosphorus (e.g. meat) interfere with iron absorption, which explains why only 30 percent of the iron in meat is captured. (However, meat and fish facilitate iron absorption from vegetables.) For that matter, any use of large quantities of mineral supplements, such as zinc, will impair iron absorption. Because iron can be leached from vegetables if they are cooked in large amounts of water, it is preferable to steam them.

Iron supplements should not be taken without a physician's recommendation, because an accumulation of too much iron can lead in extreme cases to such serious problems as anemia, malfunctioning of the pancreas and the heart, cirrhosis of the liver, a brown cast to the skin, and depression.

**KIDNEY STONES AND OTHER COMPLICATIONS:** Allopurinol could conceivably lead to the production of kidney stones. The chances of

this are increased by foods that cause acidic urine. When purine-rich foods are a part of the diet, they are normally excreted as uric acid, but this drug may cause an unusual buildup of uric acid in the kidneys, leading to the formation of uric acid crystals, a form of kidney stones. A difficulty in urinating and blood in the urine may signal the development of kidney stones.

**Prevention and Treatment:** To prevent the formation of kidney stones, it is advised you drink no fewer than 8 glasses or 5 to 6 pints of liquid every 24 hours, particularly at night when the urine becomes concentrated. To keep your urine alkaline or nonacidic, consume a diet rich in alkaline foods such as milk, cream, buttermilk, almonds, chestnuts, coconut, all vegetables except corn and lentils, and all fruits except cranberries, prunes, and plums. You should also cut down on foods that make the urine acidic, including meat, fish, poultry, eggs, cheese, peanut butter, bacon, Brazil nuts, filberts, peanuts, walnuts, bread, crackers, macaroni, spaghetti, noodles, cakes, and cookies.

**OTHER ADVICE:** Avoid tea, coffee, or cola beverages in large quantities because they are likely to reduce the effectiveness of allopurinol. Also avoid alcohol, especially beer, and simple sugars (see table of Simple and Complex Carbohydrates, page 305) because they can raise the blood uric-acid level and impair the drug's ability to manage chronic gout. Avoid herbal teas since they contain phenylbutazone, which raises blood uric-acid levels.

This drug causes gastrointestinal disturbances in many patients and is better tolerated if taken after meals.

If obese, the gout sufferer should also achieve ideal body weight by gradual weight reduction (1 to 2 pounds per week). All sufferers should decrease their animal fat intake and increase their complex carbohydrate intake.

## ALUMINUM ANTACIDS

**DRUG FAMILY:** Antacids

**BRAND NAMES:** [GENERIC/Brand] ALUMINUM HYDROXIDE/Camalox; Delcid; Di-Gel; Gaviscon; Gelusil-M; Gelusil-II; Maalox; Maalox Plus; Maalox TC; Nephrox; Tempo; WinGel; ALUMINUM HYDROXIDE GEL/ALternaGEL; Aludrox; Amphojel; Di-Gel; Gelusil; Mylanta; Mylanta-II; Simeco; ALUMINUM HYDROXIDE GEL, DRIED/Aludrox; Amphojel; Ascriptin; Ascriptin A/D; Gaviscon; Gaviscon-2; Mylanta, Mylanta-II, ALUMINUM HYDROXIDE PREPARATIONS/Ko-lantyl; Magnatril

**HOW TO TAKE ALUMINUM ANTACIDS:** On an empty stomach between meals and at bedtime, with a glass of water

**FOODS TO AVOID:** Large amounts of acidic foods such as fruit juice, coffee, tea, chocolate, and cola

**POSSIBLE ADVERSE SIDE EFFECTS:** Phosphate and calcium deficiencies, kidney stones, constipation and, rarely, deficiencies of vitamins A, C, D, B<sub>1</sub>, and folacin, magnesium, and iron

**ACTION OF ALUMINUM ANTACIDS:** These drugs are commonly prescribed to reduce stomach acid levels and to reduce blood phosphate levels for patients with kidney disease

**HIGH-RISK GROUPS:** The elderly, heavy drinkers, young women, smokers, teenagers, pregnant women, lactating women, vegetarians

### NUTRITIONAL INTERACTIONS

**PHOSPHATE AND CALCIUM DEFICIENCIES:** Prolonged use of antacids containing aluminum hydroxide is likely to cause phosphate and, to a lesser degree, calcium depletion from the body. The aluminum hydroxide in these drugs reacts with phosphate in your diet to form aluminum phosphate, which is passed out in the stool. On rare occasions, hypophosphatemia, or dangerously low blood phosphate levels, can also develop. It is difficult to diagnose, because it is indicated by confusion and a slow development of weakness, common symptoms of many metabolic disorders in the elderly.

To replace the lost phosphate, your body withdraws the mineral from the bones to maintain optimal blood phosphate levels. As phosphate cannot be withdrawn from the bones without removing calcium, there is also a loss of calcium, and the attendant risk, over a protracted period of time, of osteomalacia or osteoporosis.

Osteomalacia is a weakening of the bones that results from a uniform and steady calcium loss. Prominent symptoms are bone pain in the back, thighs, shoulder region, or ribs; difficulty in walking; and weakness in the muscles of the legs. The condition is reversible once calcium blood levels are raised.

Long-term calcium deficiencies can also lead to osteoporosis, an unexplained and rapid loss of calcium from the bones. Backache, loss of height, and periodontal disease

are often the first signs of the disease. Fractures of the vertebrae, hip, and wrist are also common.

If aluminum antacids are given to children, a condition known as rickets can result. Rickets causes the bones to become bent or malformed. Children under four years of age may also develop pigeon breast, bowlegs, a protruding abdomen (due to a weakness of stomach muscles), and poorly formed teeth that tend to decay.

Antacids may also lead to kidney stones. Therefore, people known to suffer from osteomalacia or osteoporosis, or who have a history of kidney stones, should not take these medications on a regular basis.

**Prevention and Treatment:** In order to guard against hypophosphatemia, plenty of phosphate-rich foods should be eaten, such as liver, nuts, beans, peas, whole grains, and refined cereals. (See table of Phosphorus-Rich Foods, page 302.)

The phosphate-rich foods in your diet should include foods containing magnesium, such as leafy green vegetables. No vitamin supplements are needed, provided a well-balanced diet based on the four food groups is followed. People with a poor diet will need a one-a-day vitamin supplement containing the Recommended Dietary Allowance.

**OTHER ADVICE:** Though much less likely, there can be other side effects of using these antacids. They can reduce the absorption of vitamins A, C, and D; magnesium; iron; thiamine; and folacin. They may also cause constipation, but an increased consumption of the bulk in leafy green vegetables can help relieve that problem.

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**AMPHETAMINES**

**DRUG FAMILY:** Appetite suppressant

**BRAND NAMES:** [GENERIC/Brand] AMPHETAMINE SULFATE/Obetrol-10; Obetrol-20; DEXTROAMPHETAMINE SULPHATE/Dexedrine; Obetrol-10; Obetrol-20

**HOW TO TAKE AMPHETAMINES:** With meals or milk

**FOODS TO AVOID:** Tyramine- and dopamine-rich foods such as aged cheeses, raisins, avocados, liver, bananas, eggplant, sour cream, alcoholic beverages, salami, meat tenderizers, chocolate, yeast, and soy sauce

**POSSIBLE ADVERSE SIDE EFFECTS:** Addiction; high blood pressure; nausea; diarrhea; vomiting, and stomachache

**ACTION OF AMPHETAMINES:** Amphetamines are prescribed as appetite suppressants for use in the treatment of obesity.

**HIGH-RISK GROUPS:** Hypertensives, heart patients

**NUTRITIONAL INTERACTIONS**

**AMPHETAMINE ADDICTION:** Like many anti-depressant drugs, amphetamines inhibit the action of monoamine oxidase (MAO) in the brain, which breaks down the chemical messengers (neurotransmitters) responsible for making one feel uplifted. If you are already being treated with an anti-depressant, the use of this drug is likely to result in serious side effects due to an excess of the uplifting chemical messengers. The flooding of the brain in this way with chemical mes-

sengers can permanently alter the brain's chemistry and lead to a long-term need for an excess of these substances to maintain a normal state of mind. In short, these drugs are addictive.

**Prevention and Treatment:** Amphetamines should not be taken habitually, because they are addicting; they should be used with caution, especially by patients taking other anti-depressants.

**TYRAMINE-RICH FOODS:** Tyramine, a food substance, is likely to cause an alarming increase in blood pressure when taken in significant quantities at the same time as amphetamines. The ingested tyramine is usually converted in the liver to an inactive form through the action of monoamine oxidase (MAO). However, drugs in the MAO-inhibitor class leave tyramine in its active form. As a result, the tyramine remains in the blood and can increase blood pressure to dangerous levels. In some people, migraine headaches also result.

**Prevention and Treatment:** Tyramine-containing foods must be restricted while you are being treated with amphetamines.

Tyramine is common in many foods, but it is found in the greatest amounts in high-protein foods that have undergone some decomposition, such as aged cheese. Tyramine is also found in chicken and beef livers, bananas, eggplant, sour cream, alcoholic beverages, salami, meat tenderizers, chocolate, yeast and soy sauce. (See table of Tyramine-Rich Foods, page 307.) Raisins and avocados should also be avoided, because they contain dopamine, which has the same effect as tyramine.

**WEIGHT-REDUCTION PROGRAMS:** Amphetamines are addictive and should be used only as a short-term aid to weight loss. A reasonable and moderate weight-reduction program should aim at a manageable 1 or 2 pound loss per week. An intake reduction of 500 calories per day, for a weekly total of 3,500 calories, will result in the loss of 1 pound per week regardless of your present weight. Two eggs and a milk shake, 1½ cups of tuna salad, 4 ounces of a roast, 3 frankfurters, 2 cups of ice cream, or 2 pieces of cheesecake all represent approximately 500 calories.

The Weight Watchers exercise and behavior modification program is among those that offer a sensible balance of proper nutrition, exercise, and support in making a dietary change.

**OTHER ADVICE:** The chronic and extensive use of amphetamines could conceivably result in the development of unwanted side effects, including such gastrointestinal disorders as nausea, diarrhea, vomiting, and stomachache, more good reasons not to use amphetamines. These effects can be limited by taking the drugs with meals or milk.

**AMPICILLIN**

**DRUG FAMILY:** Antibiotic

**BRAND NAMES:** Amcill; Ampicillin Trihydrate; Ampicillin-Probenecid; Omnipen; Omnipen-N; Principen; Principen with Probenecid; SK-Ampicillin; SK-Ampicillin-N; Polycillin; Polycillin-N; Polycillin-PRB

**HOW TO TAKE AMPICILLIN:** With water, on an empty stomach 1 hour before or 2 to 3 hours after eating

**FOODS TO AVOID:** Fruit juices and other acid-containing foods such as soda and wine

**POSSIBLE SIDE EFFECTS:** Diarrhea

**ACTION OF AMPICILLIN:** This broad-based antibiotic is prescribed primarily for urinary, respiratory, and gastrointestinal-tract infections. In children, it is also used to treat ear infections and meningitis.

**HIGH RISK GROUPS:** People with a history of abdominal distress

**NUTRITIONAL INTERACTIONS**

**GASTROINTESTINAL DISTRESS:** Ampicillin frequently causes diarrhea. If you experience this reaction, you should inform your doctor, and he will switch you to an alternative antibiotic such as amoxicillin.

**Prevention and Treatment:** This drug should be taken on an empty stomach 1 hour before or 2 to 3 hours after eating. In addition to reducing the likelihood of diarrhea, this will maximize the effectiveness of the drug, since its potency may be reduced by as much as 50 percent if it is taken with meals. Fruit juices inactivate the drug and should not be taken with it.

**ANABOLIC STEROIDS**

**DRUG FAMILY:** Sex hormones

**BRAND NAMES:** [GENERIC/Brand] ETHYLESTRENOL/Maxibolin; NANDROLONE DECA-NOATE/Deca-Durabolin; Kabolin; NANDRO-

LONE PHENPROPIONATE/Durabolin; OXANDROLONE/Anavar; OXYMETHOLONE/Anadrol-50; STANOZOLOL/Winstrol; TESTOLACTONE/Teslac

**HOW TO TAKE ANABOLIC STEROIDS:** In tablet form, just before or with meals

**FOODS TO AVOID:** Salty foods such as anchovies, dill pickles, sardines, green olives, canned soups and vegetables, TV dinners, soy sauce, processed cheeses, and salty snack foods such as potato chips and cold cuts

**POSSIBLE SIDE EFFECTS:** Edema and irregular heartbeat

**ACTION OF ANABOLIC STEROIDS:** These drugs are used mainly to stimulate muscle growth in a wide assortment of conditions, from recovery after an operation to recuperation from a long-term debilitating disease. They are also used to suppress lactation and to treat breast cancer.

**HIGH-RISK GROUPS:** Heart patients, kidney patients

**NUTRITIONAL INTERACTIONS**

**EDEMA:** These drugs can lead to water and salt retention, which will tend to cause swelling (called edema) in your legs, ankles, feet, and breasts, and around your eyes. An increase in sodium and water retention will also increase the volume of blood in the body, which places an added strain on the heart and tends to elevate blood pressure.

**Prevention and Treatment:** While taking these drugs, you should restrict your consumption of sodium to 2 grams, or 1 teaspoon, of salt per day. In particular, those foods listed in the table of Sodium-Rich

Foods (see page 306) should be avoided, or consumed in small quantities. You should add no salt at the table and no more than 1/2 teaspoon in cooking.

Many people are unaware of how much salt their diet contains. The average American, in fact, consumes some 15 pounds of salt a year. This amounts to 3 to 4 teaspoons per day. Even if you do not salt your food while preparing or eating it, you consume quantities of salt in such foods as anchovies, dill pickles, sardines, green olives, canned soups and vegetables, so-called TV dinners, soy sauce, processed cheeses, many snack foods, cold cuts, and catsup. Other sources of sodium such as monosodium glutamate should be avoided.

To sharpen your awareness of the sodium content of food products, read the list of ingredients that appears on the labels of all packaged foods. If sodium is one of the first ingredients on the label, it is present in significant quantities. If sodium is at the lower end of the list, then the food contains very little sodium.

**OTHER ADVICE:** Some 10 percent of patients taking anabolic steroids develop very high blood calcium levels, which can cause heart arrhythmias. To avoid the problem, drink at least 6 to 8 glasses of liquid every day while taking this drug.

**ANDROGENS**

**DRUG FAMILY:** Hormone

**BRAND NAMES:** [GENERIC/Brand] TESTOSTERONE/BayTestone-50; BayTestone-100; TESTOSTERONE ANANTHATE/Ditate-DS; Tes-

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LONE PHENPROPIONATE/Durabolin; OXANDROLONE/Anavar; OXYMETHOLONE/Androl-50; STANOZOLOL/Winstrol; TESTOLACTONE/Teslac

**HOW TO TAKE ANABOLIC STEROIDS:** In tablet form, just before or with meals

**FOODS TO AVOID:** Salty foods such as anchovies, dill pickles, sardines, green olives, canned soups and vegetables, TV dinners, soy sauce, processed cheeses, and salty snack foods such as potato chips and cold cuts

**POSSIBLE SIDE EFFECTS:** Edema and irregular heartbeat

**ACTION OF ANABOLIC STEROIDS:** These drugs are used mainly to stimulate muscle growth in a wide assortment of conditions, from recovery after an operation to recuperation from a long-term debilitating disease. They are also used to suppress lactation and to treat breast cancer.

**HIGH-RISK GROUPS:** Heart patients, kidney patients

**NUTRITIONAL INTERACTIONS**

**EDEMA:** These drugs can lead to water and salt retention, which will tend to cause swelling (called edema) in your legs, ankles, feet, and breasts, and around your eyes. An increase in sodium and water retention will also increase the volume of blood in the body, which places an added strain on the heart and tends to elevate blood pressure.

**Prevention and Treatment:** While taking these drugs, you should restrict your consumption of sodium to 2 grams, or 1 teaspoon, of salt per day. In particular, those foods listed in the table of Sodium-Rich

Foods (see page 306) should be avoided, or consumed in small quantities. You should add no salt at the table and no more than 1/2 teaspoon in cooking.

Many people are unaware of how much salt their diet contains. The average American, in fact, consumes some 15 pounds of salt a year. This amounts to 3 to 4 teaspoons per day. Even if you do not salt your food while preparing or eating it, you consume quantities of salt in such foods as anchovies, dill pickles, sardines, green olives, canned soups and vegetables, so-called TV dinners, soy sauce, processed cheeses, many snack foods, cold cuts, and catsup. Other sources of sodium such as monosodium glutamate should be avoided.

To sharpen your awareness of the sodium content of food products, read the list of ingredients that appears on the labels of all packaged foods. If sodium is one of the first ingredients on the label, it is present in significant quantities. If sodium is at the lower end of the list, then the food contains very little sodium.

**OTHER ADVICE:** Some 10 percent of patients taking anabolic steroids develop very high blood calcium levels, which can cause heart arrhythmias. To avoid the problem, drink at least 6 to 8 glasses of liquid every day while taking this drug.

**ANDROGENS**

**DRUG FAMILY:** Hormone

**BRAND NAMES:** [GENERIC/Brand] TESTOSTERONE/BayTestone-50; BayTestone-100; TESTOSTERONE ANANTHATE/Ditate-DS; Tes-

taval 90/4; TESTOSTERONE CYPIONATE/Depo-Testosterone: T-Cypionate 200; METHYLTESTOSTERONE/Android-5 Buccal; Android-10; Android-25; Estratest H.S.; Estratest; Metandren; Oreton Methyl; Premarin w/Methyltestosterone; Primotest Forte; Primotest; Testred; Virilon; FLUOXYMESTERONE/Android-F; Fluoxymesterone; Halotestin; DANAZOL/Danocrine

**HOW TO TAKE ANDROGENS:** Between meals

**FOODS TO AVOID:** Salty foods such as anchovies, dill pickles, sardines, green olives, canned soups and vegetables, TV dinners, soy sauce, processed cheeses, salty snack foods like potato chips and cold cuts

**POSSIBLE SIDE EFFECTS:** Edema

**ACTION OF ANDROGENS:** Androgen therapy is used primarily in androgen-deficient males for the development or maintenance of secondary sexual characteristics such as well-developed muscles and a full beard. Androgens are also used to accelerate growth in children, and to treat endometriosis and certain types of anemia.

**HIGH-RISK GROUPS:** Heart patients, kidney patients

**NUTRITIONAL INTERACTIONS**

**EDEMA:** These drugs can lead to water and salt retention, which will tend to cause swelling (called edema) in your legs, ankles, feet, and breasts, and around your eyes. An increase in sodium and water retention will also increase the volume of blood in the body, which places an added strain on the heart and tends to elevate blood pressure.

X-Prep; Herbal Laxative; HerbLax Laxative; Swiss Kriss Herbal Laxative

**HOW TO TAKE ANTHRAQUINONE CATHARTICS:** Before bedtime

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Potassium deficiency

**ACTION OF ANTHRAQUINONE CATHARTICS:** These drugs give a laxative effect in 6 to 8 hours. They act by increasing the action of the muscles lining the large intestine and so reduce the time required for food to pass through the intestinal tract. They also act partly by causing secretion of water into the large intestine, which increases the bulk of the stools.

**HIGH-RISK GROUPS:** Heart patients, the elderly

#### NUTRITIONAL INTERACTIONS

**POTASSIUM DEFICIENCY:** It is conceivable that frequent use of one of these drugs will lead to a potassium deficiency. These laxatives cause the excretion of body potassium into the digestive tract, from where it is excreted in the stool. Potassium regulates the amount of water in the cells of the body and is essential for the proper functioning of the kidneys and the heart muscle, and the secretion of stomach juices. The most alarming symptom of a potassium deficiency is an irregular heartbeat, which can lead to heart failure.

Low blood levels of potassium, called hypokalemia, are especially prevalent among elderly people, who often consume diets low in potassium and take laxatives daily. Common symptoms of potassium deficiency are

weakness, loss of appetite, nausea, vomiting, dryness of the mouth, increased thirst, listlessness, apprehension, and diffuse pain that comes and goes.

Diuretics, commonly prescribed for people with heart disease, decrease the level of body potassium, as do cortisone-containing drugs. Therefore, the risk of a deficiency is significantly increased if they are taken concurrently with this drug.

**Prevention and Treatment:** Potassium depletion can be avoided by including potassium-rich foods in your diet, such as tomato juice, lentils, dried apricots, asparagus, bananas, peanut butter, chicken, almonds, and milk. (See table of Potassium-Rich Foods, page 302.)

Potassium supplements should never be taken unless prescribed by a physician. They can cause anemia by interfering with the absorption of vitamin B<sub>12</sub>. Just a few grams can also drastically increase the risk of heart failure. If you experience difficulty in swallowing while taking potassium supplements, consult your physician immediately. If supplements are prescribed, be aware that the absorption of the supplements potassium iodide and potassium chloride is decreased by dairy products, and that both are gastric irritants and should be taken with meals.

Too much salt in your diet can also compromise your body's supply of potassium.

## ANTIHISTAMINES

**DRUG FAMILY:** Antihistamines

**BRAND NAMES:** [GENERIC/Brand] CARBINOXAMINE/Clistin; Brexin; Cardec DM; Ron-

dec; Rondec-DM; Rondec-TR; CHLORCYCLIZINE HYDROCHLORIDE/Perazil; CYCLIZINE/Marezine; DEXCHLORPHENIRAMINE/Polaramine Repetabs; DIPHENHYDRAMINE HYDROCHLORIDE/Allerdryl 50; Ambenyl; Benadryl; Benylin; Bromanyl; Compoz Nighttime Sleep-Aid; Dytuss; Miles Nervine Nighttime Sleep Aid; Nytol; Sleep-eze 3; Sleepinal; Somnex 2; DIPHENYLPYRALINE HYDROCHLORIDE/Hispril; HYDROXYZINE HYDROCHLORIDE/Atarax; Durrax; Marax; Neucalm 50; T.E.H.; T.E.P.; Theozine; Vistaril; METHDILAZINE/Tacaryl; PHENIRAMINE MALEATE/Citra Forte; Fiogestic; Poly-Histine-D; Ru-Tuss; S-T Forte; Triaminic; Tussagestic; Triaminicol; Ursinus Inlay-Tabs; PROMETHAZINE HYDROCHLORIDE/Compal; Dihydrocodeine Compound; Mepergan; Phenergan; Phenergan VC; Remsed; Stopayne; PROMETHAZINE/Dihydrocodeine; Promethazine DM; Promethazine w/Codeine; Promethazine VC; Promethazine VC w/Codeine; TRIMEPRAZINE TARTRATE/Temaryl; TRIPELENNAMINE HYDROCHLORIDE/PBZ HYDROCHLORIDE; PBZ-SR; TRIPELENNAMINE/PBZ; TRIPROLIDINE/Triafed; TRIPROLIDINE HYDROCHLORIDE/Actidil; Actifed; Actifed-C; Triafed-C; Trifed; Tripodrine

**HOW TO TAKE ANTIHISTAMINES:** These drugs can be taken at any time with a nonalcoholic beverage, except for tripeleNNamine antihistamines, which should be taken with meals.

**FOODS TO AVOID:** Large quantities of alkaline foods such as milk, buttermilk, cream, almonds, chestnuts, coconuts, all vegetables except corn and lentils, all fruits except cranberries, prunes, and plums; alcoholic beverages

d] CASCARA  
fluidextract;  
Peri-Colace;  
Plus; Mo-  
Senokot-S;

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**POSSIBLE SIDE EFFECTS:** Inability to concentrate; dizziness; drowsiness; and impaired coordination. In the case of tripeleppamine-containing drugs, an upset stomach can also occur.

**ACTION OF ANTIHISTAMINES:** These drugs prevent the secretion of histamine and are used in the treatment of allergies, nausea, and motion sickness, to relieve congestion, cough, and itching, and as a tranquilizer and local anesthetic. The drug is also the preferred treatment in seasonal allergies and is sometimes used in the treatment of asthma.

**HIGH-RISK GROUPS:** People with a history of abdominal distress

#### NUTRITIONAL INTERACTIONS

**ALKALINE URINE:** The action of this drug can be prolonged if your urine is alkaline, as the residue of the drug is excreted at a normal rate only if your urine is acidic. If the quantity of alkaline foods in your diet is high, your urine will lose its acidity, and the excretion of this drug will be slowed. A hazardous buildup could conceivably result. The symptoms of such a buildup or overdose are an inability to concentrate, dizziness, poor coordination, drowsiness, and a dry mouth.

Fruits, vegetables, and dairy products tend to be alkaline, and high-protein foods tend to be acidic.

**Prevention and Treatment:** Foods causing the production of alkaline urine, such as milk, buttermilk, cream, almonds, chestnuts, coconuts, all vegetables except corn and lentils, and all fruits except cranberries, prunes, and plums, can increase the potency of this drug by as much as two times,

further increasing the risk of adverse side effects.

Anatacids that neutralize the acid in the stomach will also neutralize the acid in the urine, making it alkaline. Therefore, avoid antacids when taking this drug.

**GASTROINTESTINAL DISTRESS:** In the case of tripeleppamine, gastric irritation may result from its use.

**Prevention and Treatment:** To minimize the gastric discomfort, these varieties should be taken with meals.

**OTHER ADVICE:** These drugs speed up the degradation of digitoxin, rendering it less effective if the two are taken together.

Antihistamines may bring about dizziness, an inability to concentrate, and reduced coordination, making it unwise to drive while using them. Alcohol exacerbates these effects and should never be combined with these drugs.

### ASPARAGINASE

**DRUG FAMILY:** Anti-cancer

**BRAND NAMES:** Elspar

**HOW TO TAKE ASPARAGINASE:** Injection

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Loss of appetite

**ACTION OF ASPARAGINASE:** This drug is used in combination with other drugs to induce remission in children with Hodgkin's disease.

**HIGH-RISK GROUPS:** Children

#### NUTRITIONAL INTERACTIONS

**WEIGHT LOSS:** This drug is likely to cause anorexia (loss of appetite) and weight loss.

**Prevention and Treatment:** As this drug is usually used for periods of up to one month, special precautions are not usually taken. However, if weight loss is a problem, your doctor may decide intravenous feeding is necessary.

### ASPIRIN

**DRUG FAMILY:** Anti-inflammatory

**BRAND NAMES:** A.P.C. with Codeine; Anacin Analgesic; Anacin; Arthritis Bayer; Arthritis Pain Formula; Arthritis Strength Bufferin; Ascriptin; Ascriptin with Codeine; Axotal; Bayer Aspirin; Buff-A Comp; Bufferin; Bufferin with Codeine; Cama Arthritis; Congespirin; Cosprin; Cosprin 650; Darvon with A.S.A.; Darvon-N with A.S.A.; Di-Gesic; Dihydrocodeine Compound; Easprin; Ectrin; Empirin with Codeine; Equagesic; Excedrin; 4-Way Cold; Fiorinal; Gemnisyn; Hyco-Pap; Mepro Compound; Methocarbamol with Aspirin; Midol; Norgesic and Norgesic Forte; Oxycodone Hydrochloride, Oxycodone Terephthalate & Aspirin; Percodan; Percodan-Demi; Propoxyphene Compound 65; Robaxial; SK-Oxycodone with Aspirin; SK-65 Compound; Supac; Synalgos-DC; Talwin Compound; Vanquish; Verin; Zorprin

**HOW TO TAKE ASPIRIN:** Regular aspirin should be taken with milk or meals. Buffered aspirin may be taken at any time with any nonalcoholic beverage.

#### FOODS TO AVOID

**POSSIBLE SIDE EFFECTS:** Frequent use may occur: i B<sub>1</sub>. On rare occasions may also

**ACTION OF ASPIRIN:** Active analgesic aspirin is common for headache, fever, cold, and discomfort. Aspirin to relieve and other medications.

The elderly advice to prevent Just as aspirin (cells) from clotting in the blood when you reduce the risk of other blood-clotting factors.

**HIGH-RISK GROUPS:** Contraceptive ing women, smokers, lact etarians

**NUTRITIONAL INTERACTIONS:** IRON DEFICIENCY 1 to 3 grams some 70 percent bleeding. On stools. This is an iron deficiency



**ATENOLOL**

**DRUG FAMILY:** Anti-hypertensive

**BRAND NAME:** Tenormin

**HOW TO TAKE ATENOLOL:** One hour before or 2 to 3 after meals, on an empty stomach with a nonalcoholic beverage

**FOODS TO AVOID:** Large amounts of tyramine- and dopamine-containing foods: aged cheeses, raisins, avocados, liver, bananas, eggplant, sour cream, alcoholic beverages, salami, meat tenderizers, chocolate, yeast, soy sauce, and others; licorice candy

**POSSIBLE SIDE EFFECTS:** On rare occasions: dizziness; fatigue; diarrhea and nausea

**ACTION OF ATENOLOL:** This drug is prescribed for the management of high blood pressure.

**HIGH-RISK GROUPS:** Anyone who takes this drug

**NUTRITIONAL INTERACTIONS**

**TYRAMINE-RICH FOODS** Foods that are high in tyramines, a food substance, elevate blood pressure when consumed in quantity. Consequently they are likely to make this drug less effective.

**Prevention and Treatment:** Tyramine-containing foods should be restricted while you are being treated with this drug. Tyramine is common in many foods, but it is found in the greatest amounts in high-protein foods that have undergone some decomposition, like aged cheese. Tyramine is also found in chicken and beef livers, bananas, eggplant, sour cream, alcoholic bev-

that it is readily oxidized (when exposed to the air during both food processing and storage). Copper and iron cooking utensils will speed up the oxidation; also, the longer the food is cooked and the higher the temperature, the greater the vitamin loss. Large amounts of water used in cooking will wash out the vitamin. Vitamin C is also destroyed when fruit or vegetables are cut or bruised.

Supplements can be taken, although, once again, the body tends to eliminate any surplus of the vitamin, so supplements of more than 100 mg a day are unnecessary. In fact, megadoses can cause nausea, abdominal cramps, and diarrhea, among other undesirable side effects. Supplements are especially important for oral contraceptive users and for smokers, who need one and a half times the Recommended Dietary Allowance.

**VITAMIN B<sub>1</sub> DEFICIENCY:** While taking aspirin regularly, it is conceivable that you will develop a deficiency of thiamin, as aspirin increases its excretion.

Vitamin B<sub>1</sub>, or thiamin as it is also known, can be destroyed by antacids consumed at mealtimes. Heart palpitations may result, along with mental confusion, moodiness, and tiredness. Other symptoms of a B<sub>1</sub> deficiency are difficulty in walking, weight loss, and water retention, especially at the ankles. Heavy consumers of alcohol tend to be deficient in this vitamin and therefore are at higher risk.

Older Americans are also frequently found to be marginally deficient in this vitamin. A severe deficiency in this age group can be the cause of symptoms resembling senility, which are reversible when the supply of B<sub>1</sub>

is replenished. This vitamin is also said to stimulate appetite.

**Prevention and Treatment:** To avoid a thiamin deficiency, significant food sources of the vitamin should be included in your diet, such as whole grain cereals, oatmeal, peas, lima beans, oysters, liver, pork (especially ham), beef, lamb, poultry, and eggs. (See table of Vitamin B<sub>1</sub>(Thiamin)-Rich Foods, page 309.)

The presence of baking soda in cooking will destroy both vitamins B<sub>1</sub> and B<sub>12</sub>, so it should be avoided when possible. High temperatures too are very destructive to B<sub>1</sub>. Blackberries, brussels sprouts, beets, red cabbage, and spinach contain the enzyme thiaminase, which inactivates the vitamin. Large quantities of these foods should not be consumed raw.

**VITAMIN K DEFICIENCY:** Although highly unlikely, a vitamin K deficiency may also develop. Since vitamin K helps the liver produce blood-clotting substances, a deficiency could result in hemorrhaging in the body.

**Prevention and Treatment:** To safeguard against such a deficiency, include some good sources of the vitamin in the diet, such as kale, spinach, cabbage, cauliflower, leafy green vegetables, liver (especially pork liver), and fish. (See table of Vitamin K-Rich Foods, page 315.)

**OTHER ADVICE:** People using aspirin on a regular basis should always prefer buffered aspirin. Regular aspirin should be taken with meals or milk to prevent gastric irritation and bleeding.

Fruits, vegetables tend to be alkaline. They tend to be rich in the production of alkalinity. Examples include buttermilk, coconuts, all fruits, and plums.

acid in the diet. The acid in the diet. Therefore, when taking this

uses of belladonna, digoxin, so you are taking

mouth sensitivity of fluids. Every day. One-half hour sorption and

id] ALPRAZOLAM/Libritabs; CLONAZEPAM/DIPOTASSIUM; DIAZEPAM/Valium; Oxalate

With meals. Beverages

it gain, diarrhea, stomach cramps

**ACTION OF BENZODIAZEPINES:** These drugs are sedatives and are used as anti-anxiety agents, anti-convulsants, muscle relaxants, and anesthetics, and in the treatment of insomnia.

**HIGH-RISK GROUPS:** Heavy drinkers, the elderly

#### NUTRITIONAL INTERACTIONS

**WEIGHT GAIN:** It is conceivable that you will find the use of one of the benzodiazepines will cause a significant increase in your appetite, which can lead to weight gain.

**Prevention and Treatment:** You must carefully watch your weight while taking these drugs. If you seem to be gaining weight, you should make a special effort to prevent yourself from eating more than usual.

If you have already gained weight, you should cut back on the carbohydrate component of your diet, remembering that a reasonable and moderate weight-reduction program should aim at a manageable loss of 1 to 2 pounds per week. An intake reduction of 500 calories per day, for a weekly total of 3,500 calories, will result in the loss of 1 pound per week regardless of your present weight. Two eggs and a milk shake, 1½ cups of tuna salad, 4 ounces of a roast, 3 frankfurters, 2 cups of ice cream, or 2 pieces of cheesecake all represent approximately 500 calories.

The Weight Watchers exercise and behavior modification program is among those that offer a sensible balance of proper nutrition, exercise, and support in making a dietary change. Remember that you need to cut down by 500 calories a day (or 3,500 calories a week) to lose 1 pound. You must

never attempt to lose more than 2 pounds a week, however.

**OTHER ADVICE:** Alcohol intensifies the effects of these drugs and increases the length of time during which they are effective, especially in the elderly. This can lead to varying degrees of light-headedness, lassitude, increased reaction time, poor coordination, poor mental functions, confusion, loss of memory, slurred speech, dry mouth, and a bitter taste. (The same symptoms are experienced if one takes one of these drugs to combat insomnia.) In short, while you are taking any of the benzodiazepines, you should not consume alcohol.

Diarrhea, nausea, vomiting, and stomach cramps are relatively common side effects. In order to prevent stomach cramps and related gastrointestinal complaints, you should take these drugs with meals.

#### BENZTROPINE MESYLATE

**DRUG FAMILY:** Anti-Parkinsonism

**BRAND NAME:** Cogentin

**HOW TO TAKE BENZTROPINE MESYLATE:** Best taken after meals

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Constipation

**ACTION OF BENZTROPINE MESYLATE:** This anti-Parkinsonism drug helps to control tremor.

**HIGH-RISK GROUPS:** The elderly

#### NUTRITIONAL INTERACTIONS

**CONSTIPATION:** The use of benztropine mesylate could conceivably cause constipation.

#### BORIC ACID

**DRUG FAMILY:** Local antiseptic

**BRAND NAMES:** Clear Eyes; Collyrium; Collyrium with Ephedrine; Murine Plus; Wy-anoids HC

**HOW TO TAKE BORIC ACID:** Applied externally

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Riboflavin (vitamin B<sub>2</sub>) deficiency

**ACTION OF BORIC ACID:** Boric acid inhibits bacterial growth and is used in rectal suppositories for hemorrhoids, in ophthalmic ointments, in vaginal deodorants, and in talcum powder.

**HIGH-RISK GROUPS:** Users of oral contraceptives

Among the meats, liver is the richest source, but all lean meats, as well as eggs, can provide some riboflavin. Riboflavin is light-sensitive; it can be destroyed by the ultraviolet rays of the sun or fluorescent lamps. For this reason, milk is seldom sold, and should not be stored, in transparent glass containers. Cardboard or plastic containers protect the riboflavin in the milk from ultraviolet rays.

## BROMPHENIRAMINE MALEATE

**DRUG FAMILY:** Antihistamine

**BRAND NAMES:** Bromfed-PD; Bromfed; Bromphen Compound; Bromphen DC; Dimetapp; Dura Tap-PD; E.N.T.; Poly-Histine-DX; Tamine S.R.

**HOW TO TAKE BROMPHENIRAMINE MALEATE:** With meals

**FOODS TO AVOID:** All alcoholic beverages; large amounts of alkaline foods such as milk, buttermilk, cream, almonds, chestnuts, coconuts, all vegetables except corn and lentils, and all fruits except cranberries, prunes, and plums

**POSSIBLE SIDE EFFECTS:** Loss of appetite, nausea, vomiting, stomach cramps, constipation, diarrhea, increased urination, dry mouth

**ACTION OF BROMPHENIRAMINE MALEATE:** This drug is used in the treatment of seasonal allergies and motion sickness.

**HIGH-RISK GROUPS:** Heavy drinkers

## NUTRITIONAL INTERACTIONS

**GASTROINTESTINAL DISTRESS:** One side effect of brompheniramine maleate that you might conceivably experience is gastrointestinal distress, which may include a loss of appetite, nausea, vomiting, stomach cramps, constipation, diarrhea, increased urination, and dryness of the mouth.

**Prevention and Treatment:** These drugs should be taken with meals to avoid the gastric symptoms. To prevent dehydration due to excess urination, at least 6 to 8 glasses of water or its equivalent in other non-alcoholic fluids should be consumed per day.

Body weight should also be monitored to avoid unwanted weight loss.

**ALKALINE URINE:** Because brompheniramine maleate is alkaline, it is excreted at a normal rate only if your urine is acidic. However, if the quantity of alkaline foods in your diet is high, your urine will lose its acidity, and the excretion of this drug will be slowed. A hazardous buildup could conceivably result, increasing the potency of a given dose of this drug, leading to drowsiness, loss of concentration, ringing in the ears, headache, nausea, and slightly distorted vision.

**Prevention and Treatment:** Fruits, vegetables, and dairy products tend to be alkaline, and high-protein foods tend to be acidic. Foods causing the production of alkaline urine include milk, buttermilk, cream, almonds, chestnuts, coconuts, all vegetables except corn and lentils, and all fruits except cranberries, prunes, and plums.

Antacids that neutralize the acid in the stomach will also neutralize the acid in the urine, causing it to turn alkaline. Therefore,

you should avoid antacids when taking this drug.

**ALCOHOL INTERACTION:** Alcohol heightens the danger of a loss of coordination. Dizziness, lassitude, fatigue, blurred vision, and double vision are likely to occur, as is an exacerbation of the gastric effects. Alcohol in any form should not be consumed concurrently with the drug.

## BUSULFAN

**DRUG FAMILY:** Anti-cancer

**BRAND NAME:** Myleran

**HOW TO TAKE BUSULFAN:** As directed by your physician

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Deficiencies of niacin, riboflavin, folic acid, and vitamin B<sub>6</sub>; poor appetite, nausea, and other gastrointestinal disturbances

**ACTION OF BUSULFAN:** This drug acts by preventing the tumor cells from dividing.

**HIGH-RISK GROUPS:** Anyone who uses this drug

## NUTRITIONAL INTERACTIONS

**NIACIN AND RIBOFLAVIN DEFICIENCIES:** Use of busulfan is likely to lead to some nutritional deficiencies, especially of Vitamin B<sub>6</sub>, niacin (vitamin B<sub>3</sub>), and riboflavin (vitamin B<sub>2</sub>).

The symptoms are most likely to be cheilosis, dry skin around the nose and lips and a cracking in the corners of the mouth, and glossitis, a smooth, sore tongue. Riboflavin

proximately one half of the folic acid you consume is absorbed by your body.

Normal cooking temperatures (110 to 120 degrees for 10 minutes) destroy 65 percent of your dietary folacin. Your daily diet, therefore, should include some raw vegetables and fruits. Cooking utensils made out of copper speed up folacin's destruction.

The recommended daily consumption of folacin is 400 mcg.

Cancer patients usually have poor appetites, and chemotherapy with its associated nausea tends to make the situation worse. Therefore, if you cannot eat a well-balanced diet while taking busulfan, or if the glossitis and cheilosis persist despite a good diet, you should take a supplement containing 5 mg riboflavin, 15 to 25 mg niacin, 5 mg vitamin B<sub>6</sub>, and .4 to .8 mg of folacin.

**OTHER ADVICE:** Busulfan can also cause gastrointestinal distress and weight loss.

## CAFFEINE

**DRUG FAMILY:** Stimulant

**BRAND NAMES:** A.P.C. with Codeine; Amaphen; Amaphen with Codeine; Anacin Analgesic; Anacin Maximum Strength Analgesic; Anquan; Buff-A Comp; Buff-A Comp No. 3; Cafergot; Cafergot P-B; Cafetrate-PB; Compal; Dexatrim 18 Hour; Digesic; Dihydrocodeine Compound; Efed II; Esgic; Excedrin Extra-Strength; Fiorinal; Fiorinal w/Codeine; G-1; Korigesic; Migralam; No Doz; Pacaps; Propoxyphene Compound 65; Repan; SK-65 Compound; Soma Compound; Soma Compound w/Codeine; Synalgos-DC; Two-Dyne; Vanquish

**HOW TO TAKE CAFFEINE:** Just after meals

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Iron deficiency

**ACTION OF CAFFEINE:** Caffeine constricts cerebral blood vessels and may contribute to relief of headaches caused by high blood pressure. It also elevates mood, reduces fatigue, and improves your intellectual performance.

**HIGH-RISK GROUPS:** Premenopausal women, especially those who menstruate heavily, the elderly, teenagers, children, vegetarians

### NUTRITIONAL INTERACTIONS

**IRON DEFICIENCY:** Caffeine impairs the absorption of iron in the diet. Particularly in the risk groups cited above, a deficiency could conceivably result. Iron is especially important to the oxygen-carrying cells of the blood and muscles, which consume two thirds of the iron your body requires. As a result, an iron shortage reduces the blood's oxygen-carrying capacity, and the upshot can be an anemia signaled by such symptoms as tiredness, general feelings of malaise, irritability, decreased attention span, pale complexion, rapid heart rhythm, headaches, loss of concentration, and breathlessness on exertion. A mild iron deficiency will also impair the functioning of your immune system.

In order for iron to be absorbed from any vegetable source, it must be converted to another form by the action of the hydrochloric acid produced in the stomach. Many elderly people secrete less hydrochloric acid than normal, so they absorb iron poorly under even normal circumstances. The diets of many Americans lack adequate quantities

of this mineral for their normal needs. For example, 10 percent of American women suffer from an iron deficiency, and up to 30 percent have inadequate iron stores. Other people who are at significant risk of an iron deficiency are women who have had several pregnancies and those whose menstrual periods are heavy.

The lack of sufficient iron in many diets is due not only to the choice of foods that are poor sources of iron, but also to the switch from cast-iron cookware to aluminum, stainless steel, and nonstick surfaces. Iron used to be leached from the surface of iron pots and pans, and became available as dietary iron.

**Prevention and Treatment:** To counteract an iron deficiency, iron-rich foods should be included in your diet: liver, whole grain products, oysters, dried apricots, prunes, peaches, leafy green vegetables, and lean red meats. (See table of Iron-Rich Foods, page 299.)

Remember that a variety of other foods and drugs has an impact on the way your body absorbs (or does not absorb) iron. There are two kinds of iron in food sources: heme iron in meat and ionic iron in vegetables. Up to 30 percent of the iron from meat, fish, and poultry is absorbed, but less than 10 percent is absorbed from eggs, whole grains, nuts, and dried beans. Only 10 percent of ionic iron is absorbed from vegetable sources, with as little as 2 percent being absorbed from spinach. Antacids will interfere with iron absorption in vegetables, as will commercial black and pekoe tea, taken in substantial quantities, because of its tannin content. Coffee also seems to decrease iron absorption, but not to the same degree

as tea. Vita juices increase vegetable sources taken simultaneously.

You will have to adjust your diet if you are taking fiber supplements. The fiber will not be absorbed in the stomach and contributes to the constipation from vegetable phosphorus (e.g., sorption, which is one of the iron in meat and fish and vegetables.) quantities of zinc, will iron can be l are cooked i preferable to

Iron supplement without a physician's cause an accident lead in extreme anemia and the brown cast t

## CALCIUM C

**DRUG FAMILY:**

**BRAND NAME:** Fosfree; Iron sion Prenatal Natacomp-FA Iron-V; Os-C Prenate 90; Z

**HOW TO TAKE CALCIUM CARBONATE:** For hyperacidity, it should be taken as needed. As a supplement, it should be taken between meals with water and at bedtime. One half of the daily dose should always be taken at bedtime.

**FOODS TO AVOID:** Fatty foods; people with hyperacidity should also avoid very acidic foods such as fruit juice, soda pop, and wine, and large amounts of foods and beverages rich in caffeine, such as tea, coffee, cola, and chocolate.

**POSSIBLE SIDE EFFECTS:** Deficiencies of phosphate, folacin, iron, and thiamin and, in rare instances, magnesium; constipation

**ACTION OF CALCIUM CARBONATE:** This drug is used as a therapy for stomach hyperacidity and as a preventive measure against the development and in the treatment of osteoporosis.

**HIGH-RISK GROUPS:** Heavy drinkers, the elderly, young women, lactating women, pregnant women, oral contraceptive users, vegetarians, teenagers

#### NUTRITIONAL INTERACTIONS

**PHOSPHATE AND OTHER NUTRIENT DEFICIENCIES:** Calcium carbonate decreases the absorption of magnesium in all users, but deficiencies are highly unlikely and extremely rare, the exception being with alcoholics. It also decreases the absorption of folacin and iron, and is instrumental in destroying thiamin. Consumption of too much calcium carbonate (more than 2 grams of calcium per day for prolonged periods) can lead to loss of appetite, nausea, vomiting, headache, and general feelings of weakness

owing to a phosphate deficiency. It can also lead to deposition of calcium in the cornea, resulting in impaired vision. The elderly, particularly those with kidney problems, are especially at risk.

**Prevention and Treatment:** To counteract the possibility of any difficulties due to low phosphate levels, your diet should contain liver, peas, beans, whole grain cereals, eggs, milk, green vegetables, fish and nuts (almonds and cashews, in particular) on a regular basis. (See table of Phosphorus-Rich Foods, page 302.)

Take a one-a-day vitamin containing the Recommended Dietary Allowances if you are using calcium carbonate on a regular basis.

**OTHER ADVICE:** Calcium carbonate is a potent drug. By increasing its dosage beyond recommended levels, you are more likely to increase your discomfort than to lessen it. Your stomach reacts to more of this drug by producing even more acid than before, with the result that the hyperacidity worsens.

It is conceivable that you will experience malnutrition as a result of excessive self-medication with antacids, as a result of malabsorption of nutrients. It should be emphasized that nutrient depletion from antacid use is gradual, and evidence of malnutrition does not make its appearance until nutrient stores are exhausted.

People taking antacids therapeutically should avoid large amounts of acidic foods, such as fruit juices and foods containing caffeine, that irritate the stomach wall.

This kind of antacid also leads to constipation in some individuals and, in rare instances, malabsorption of fat. The ap-

pearance of either constipation or greasy stools should provide you with the stimulus to switch to a different antacid.

#### CALCIUM FENOPROFEN

**DRUG FAMILY:** Anti-inflammatory

**BRAND NAME:** Nalfon

**HOW TO TAKE CALCIUM FENOPROFEN:** At least half an hour before a meal

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Gastrointestinal disturbances

**ACTION OF CALCIUM FENOPROFEN:** This anti-inflammatory drug is used as an anti-arthritis agent. It reduces joint swelling, pain, and the duration of morning stiffness.

**HIGH-RISK GROUPS:** People with a history of abdominal distress

#### NUTRITIONAL INTERACTIONS

**GASTROINTESTINAL DISTRESS:** Calcium fenoprofen can cause gastrointestinal disturbances.

**Prevention and Treatment:** The absorption and the effectiveness of the drug are impaired if it is taken with meals, so in order to prevent gastrointestinal discomfort you should take antacids with the drug. Calcium fenoprofen should always be taken at least half an hour before a meal.

#### CALCIUM SU

**DRUG FAMILY:** N

**BRAND NAMES:**

CARBONATE/Ca free; Iromin-C Prenatal F.A.; tacomp-FA; Na V; Os-Cal 250 Pramilet FA; separate entry CIUM GLUCON G; Mission Pre Mission Prena Calcet; Calph free; Iromin-C natal; Missio Prenatal H.P.; Cal 250; Os-C Plus; Os-Cal-C

**HOW TO TAKE C/** daily dose sho between meal:

**FOOD TO AVOID:**

**POSSIBLE SIDE I** sult in loss of aj thirst, and irri

**ACTION OF CALC** are used to su calcium, as a p you from osteo

**HIGH-RISK GROU** drug

**CALCIUM SUPPLEMENTS**

**DRUG FAMILY:** Mineral supplements

**BRAND NAMES:** [GENERIC/Brand] CALCIUM CARBONATE/Calcet; Cal-Sup; Camalox; Fosfree; Iromin-G; Mission Prenatal; Mission Prenatal F.A.; Mission Prenatal H.P.; Natatomp-FA; Natalins Rx; Natalins; Nu-Iron-V; Os-Cal 250; Os-Cal 500; Pramet FA; Pramilet FA; Prenate 90; Zenate (see also separate entry for Calcium Carbonate). CALCIUM GLUCONATE/Calcet; Fosfree; Iromin-G; Mission Prenatal; Mission Prenatal F.A.; Mission Prenatal H.P.; CALCIUM LACTATE/Calcet; Calphosan; Calphosan B-12; Fosfree; Iromin-G; Mevanin-C; Mission Prenatal; Mission Prenatal F.A.; Mission Prenatal H.P.; CALCIUM (OYSTER SHELL)/Os-Cal 250; Os-Cal 500; Os-Cal Forte; Os-Cal Plus; Os-Cal-Gesic

**HOW TO TAKE CALCIUM SUPPLEMENTS:** Half the daily dose should be taken at bedtime, half between meals.

**FOOD TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** An overdose can result in loss of appetite, headaches, excessive thirst, and irritability.

**ACTION OF CALCIUM COMPOUNDS:** These drugs are used to supplement dietary sources of calcium, as a preventive measure to protect you from osteoporosis.

**HIGH-RISK GROUPS:** Anyone who takes this drug

pearance of either constipation or greasy stools should provide you with the stimulus to switch to a different antacid.

**CALCIUM FENOPROFEN**

**DRUG FAMILY:** Anti-inflammatory

**BRAND NAME:** Nalfon

**HOW TO TAKE CALCIUM FENOPROFEN:** At least half an hour before a meal

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Gastrointestinal disturbances

**ACTION OF CALCIUM FENOPROFEN:** This anti-inflammatory drug is used as an anti-arthritis agent. It reduces joint swelling, pain, and the duration of morning stiffness.

**HIGH-RISK GROUPS:** People with a history of abdominal distress

**NUTRITIONAL INTERACTIONS**

**GASTROINTESTINAL DISTRESS:** Calcium fenopropfen can cause gastrointestinal disturbances.

**Prevention and Treatment:** The absorption and the effectiveness of the drug are impaired if it is taken with meals, so in order to prevent gastrointestinal discomfort you should take antacids with the drug. Calcium fenopropfen should always be taken at least half an hour before a meal.

owing to a phosphate deficiency. It can also lead to deposition of calcium in the cornea, resulting in impaired vision. The elderly, particularly those with kidney problems, are especially at risk.

**Prevention and Treatment:** To counteract the possibility of any difficulties due to low phosphate levels, your diet should contain liver, peas, beans, whole grain cereals, eggs, milk, green vegetables, fish and nuts (almonds and cashews, in particular) on a regular basis. (See table of Phosphorus-Rich Foods, page 302.)

Take a one-a-day vitamin containing the Recommended Dietary Allowances if you are using calcium carbonate on a regular basis.

**OTHER ADVICE:** Calcium carbonate is a potent drug. By increasing its dosage beyond recommended levels, you are more likely to increase your discomfort than to lessen it. Your stomach reacts to more of this drug by producing even more acid than before, with the result that the hyperacidity worsens.

It is conceivable that you will experience malnutrition as a result of excessive self-medication with antacids as a result of malabsorption of nutrients. It should be emphasized that nutrient depletion from antacid use is gradual, and evidence of malnutrition does not make its appearance until nutrient stores are exhausted.

People taking antacids therapeutically should avoid large amounts of acidic foods, such as fruit juices and foods containing caffeine, that irritate the stomach wall.

This kind of antacid also leads to constipation in some individuals and, in rare instances, malabsorption of fat. The ap-

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IT DEFICIEN- uses the ab- users, but ly and ex- ing with ab- sorption of ental in de- of too much 2 grams of periods) can t, vomiting, of weakness

**CHLORAMPHENICOL**

**DRUG FAMILY:** Antibiotic

**BRAND NAME:** Chloromycetin

**HOW TO TAKE CHLORAMPHENICOL:** With meals or milk

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Deficiencies of riboflavin, and vitamins B<sub>6</sub> and B<sub>12</sub>; occasionally, nausea, vomiting, and diarrhea

**ACTION OF CHLORAMPHENICOL:** This antibiotic is usually reserved for use against serious infections.

**HIGH-RISK GROUPS:** Infants, children, anyone who consumes alcohol, vegetarians, young women, users of oral contraceptives, teenagers, the elderly

**NUTRITIONAL INTERACTIONS**

**RIBOFLAVIN DEFICIENCY:** A deficiency in riboflavin is likely since this drug increases your requirements for riboflavin.

The symptoms of a deficiency of riboflavin (vitamin B<sub>2</sub>) most likely to appear are dermatitis around the nose and lips, cracking at the corners of the mouth, and a soreness in the lips, mouth, or tongue. Discomfort in eating and swallowing may result. The eyes may burn, itch, be more sensitive than usual to light, and tend to be bloodshot. However, be aware that any B vitamin deficiency can cause similar symptoms.

Riboflavin helps the body transform protein, fats, and carbohydrates into the energy needed to maintain body tissues and to pro-

sleeping time. By the same token, chloral hydrate decreases the rate of metabolism of alcohol and so prolongs its effects.

**Prevention and Treatment:** The drug should never be taken with alcohol.

**CHLORAMBUCIL**

**DRUG FAMILY:** Anti-leukemia

**BRAND NAME:** Leukeran

**HOW TO TAKE CHLORAMBUCIL:** With milk or meals

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Reduced appetite, minor gastrointestinal discomfort

**ACTION OF CHLORAMBUCIL:** This anti-cancer drug is used in the treatment of chronic, lymphocytic leukemia and in treating Hodgkin's disease. Chlorambucil is also the treatment of choice for primary macroglobulinemia.

**HIGH-RISK GROUPS:** Anyone who takes this drug

**NUTRITIONAL INTERACTIONS**

**GASTROINTESTINAL DISTRESS:** Chlorambucil reduces appetite and consequently food consumption in many who use it. It also causes minor gastrointestinal discomfort.

**Prevention and Treatment:** Food intake should be carefully monitored to prevent unwanted weight loss. To minimize the gastrointestinal side effects, this drug should always be taken with milk or food.

**HOW TO TAKE CHLORAL HYDRATE:** Immediately after meals with a full glass of a beverage

**FOODS TO AVOID:** Carbonated beverages, beans, peas, cabbage, and large amounts of salad vegetables and fruit; all alcoholic beverages

**POSSIBLE SIDE EFFECTS:** Stomachache, nausea, vomiting, flatulence, and decreased appetite

**ACTION OF CHLORAL HYDRATE:** This drug is prescribed as a sedative, an anti-anxiety agent, and often to combat insomnia.

**HIGH-RISK GROUPS:** Heavy drinkers

**NUTRITIONAL INTERACTIONS**

**GASTROINTESTINAL IRRITATION:** Chloral compounds are gastric irritants, and their consumption can lead to abdominal pain, nausea, occasional vomiting, and flatulence. Chloral hydrate is bad tasting. Consequently, this drug may decrease appetite and food intake.

**Prevention and Treatment:** This drug should be well diluted in water or milk to reduce its unpleasant gastric side effects. It should be taken after meals, when the stomach is full. In this way, the unpleasant taste will not reduce the appetite, and the drug will least upset the stomach. Foods that cause gas, such as carbonated beverages, beans, peas, vegetables in the cabbage family, bran in excessive amounts, salad vegetables, and fruit, should be limited to prevent flatulence.

**ALCOHOL INTERACTION:** Alcohol prolongs the activity of the drug, which will increase

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tect the body against common skin and eye disorders.

**Prevention and Treatment:** Good sources of riboflavin should be included in the diet. Milk usually contributes about 50 percent of our riboflavin intake, meat about 25 percent, and dark green leafy vegetables and enriched cereals and breads the rest. The need for riboflavin provides a major reason for including milk in some form in every day's meals; no other food that is commonly eaten can make such a substantial contribution to meeting our daily riboflavin needs. People who don't use milk products can substitute a generous serving of dark green leafy vegetables, because a cup of greens such as collards provides about the same amount of riboflavin as a cup of milk. (See table of vitamin B<sub>2</sub>(Riboflavin)-Rich Foods, page 310.)

Among the meats, liver is the richest source, but all lean meats, as well as eggs, can provide some riboflavin. Riboflavin is light-sensitive; it can be destroyed by the ultraviolet rays of the sun or fluorescent lamps. For this reason, milk is seldom sold, and should not be stored, in transparent glass containers. Cardboard or plastic containers protect the riboflavin in the milk from ultraviolet rays.

A 5 mg supplement of riboflavin should be taken daily by people on this drug. This is especially important in oral contraceptive users, who have a great need for this vitamin.

**VITAMIN B<sub>6</sub> DEFICIENCY:** A deficiency of this vitamin is also likely, since chloramphenicol increases your body's requirements for vitamin B<sub>6</sub>. Common symptoms of this defi-

ciency are a sore mouth and tongue, cracks in the lips and corners of the mouth, and patches of itching, scaling skin. A severe vitamin B<sub>6</sub> deficiency may cause depression and confusion.

Vitamin B<sub>6</sub> deficiencies are common among the elderly. Alcoholics, as well, often experience this deficiency, since alcohol interferes with the body's ability to use B<sub>6</sub>. In addition, smokers tend to have less than optimal body levels of this vitamin. It is estimated that one of every two Americans consumes less than 70 percent of the Recommended Dietary Allowance of B<sub>6</sub>.

**Prevention and Treatment:** To avoid a B<sub>6</sub> deficiency, you should consume a diet featuring food sources of vitamin B<sub>6</sub> such as liver (beef, calf, and pork), herring, salmon, walnuts, peanuts, wheat germ, carrots, peas, potatoes, grapes, bananas, and yeast. (See table of Vitamin B<sub>6</sub>(Pyridoxine)-Rich Foods, page 311.) While the vitamin is present in significant amounts in meats, fish, fruits, cereals, and vegetables, it is present to a lesser extent in milk and other dairy products.

Since vitamin B<sub>6</sub> is decomposed at high temperatures, modern food processing often diminishes dietary sources of the vitamin. Consequently, the more processed foods you eat, the more susceptible you will be to a deficiency of this vitamin. The same losses also occur in cooking: meat loses as much as 45 to 80 percent, vegetables 20 to 30 percent.

It has been observed that 15 to 20 percent of oral contraceptive users show direct evidence of vitamin B<sub>6</sub> deficiency. If you are among these people, you should take 5 mg of vitamin B<sub>6</sub> per day. Other people should take a 2 mg supplement as a preventive

measure. However, keep in mind that you can take too much vitamin B<sub>6</sub>; people taking over 1 gram per day have been reported to have developed nerve degeneration.

**VITAMIN B<sub>12</sub> DEFICIENCY:** As in the case of riboflavin and vitamin B<sub>6</sub>, chloramphenicol increases the body's need for vitamin B<sub>12</sub>. A deficiency of this vitamin is therefore possible, though the chances are somewhat less. Vitamin B<sub>12</sub> is needed for the normal development of red blood cells and for the healthy functioning of all cells, in particular those of the bone marrow, nervous system, and intestines.

The most common result of a B<sub>12</sub> deficiency is pernicious anemia, which is characterized by listlessness, fatigue (especially following such physical exertion as climbing a flight of stairs), numbness and tingling in the fingers and toes, palpitations, angina, light-headedness, and a pale complexion. A vitamin B<sub>12</sub> deficiency can also lead to an irreversible breakdown in the brain membranes, causing loss of coordination, confusion, memory loss, paranoia, apathy, tremors, and hallucinations. In extreme cases, degeneration of the spinal cord can also result.

Since vitamin B<sub>12</sub> can be obtained only from animal food sources, strict vegetarians are at particular risk here. Oral contraceptive users too have a greater chance of experiencing this deficiency, since they often have a poor vitamin B<sub>12</sub> status to begin with, as do many smokers. Heavy consumers of alcohol, as well, frequently lack B<sub>12</sub> because alcohol impairs the absorption of the vitamin. Patients with bacterial or parasitic in-

fections of the intestine are likely to have a deficiency. People who are anemic should be given iron supplements while taking chloramphenicol.

**Prevention** and treatment: Foods containing vitamin B<sub>12</sub> should be advised. On dairy foods, natural vitamin B<sub>12</sub> is available in table products. Vitamin B<sub>12</sub> is more available in animal products than in plant products. Vegetarians should take a B<sub>12</sub> supplement. Foods, page 310.

Vitamin B<sub>12</sub> deficiency is a serious condition. A diet rich in animal products, such as meat, fish, and eggs, provides the natural source of B<sub>12</sub>. A 3-ounce serving of liver provides 1 mcg of vitamin B<sub>12</sub>. A diet of 3000 calories should take 2 mcg of B<sub>12</sub> while you are on chloramphenicol.

People who are on oral contraceptive pills should be given B<sub>12</sub> supplements of 100 mcg daily. B<sub>12</sub> deficiency. However, a diet of 2000 calories should take 2 mcg of B<sub>12</sub> while you are on chloramphenicol.

The presence of B<sub>12</sub> in the diet will destroy the B<sub>12</sub> in the diet. B<sub>12</sub> is placed on the diet of milk and water of a bottle of some B<sub>12</sub>.



in the body. This causes a number of unpleasant symptoms. If alcohol is consumed after this drug is taken, severe headache, flushing, nausea, vomiting, hypertension, weakness, vertigo, blurred vision, and convulsions may occur. The reaction begins within 5 to 10 minutes of drinking the alcohol, and in sensitive people it may be caused by the intake of as little as a few sips.

The same reaction will occur when patients take such foods as wine vinegar, sauces containing wine, or desserts containing liquor. Alcohol may also cause the blood glucose level to drop below normal, leading to light-headedness and fatigue. Aspirin use with chlorpropamide further lowers blood glucose.

It is urged that you not take this drug with alcohol.

**GASTROINTESTINAL DISTRESS:** Chlorpropamide is likely to irritate your gastrointestinal tract, causing flatulence and loose stools or diarrhea. It is recommended that this drug be taken with milk or immediately after eating, to minimize gastric irritation.

**CHOLESTYRAMINE**

**DRUG FAMILY:** Cholesterol reducer

**BRAND NAME:** Questran

**HOW TO TAKE CHOLESTYRAMINE:** Before or during meals and at bedtime, mixed with pulpy fruit, such as applesauce, or liquids

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Deficiencies of vitamins D and A, and possibly vitamins K, E, and B<sub>12</sub>, and folic acid; constipation

**ACTION OF CHOLESTYRAMINE:** This drug is prescribed to lower blood cholesterol levels in patients with arteriosclerosis.

**HIGH-RISK GROUPS:** The elderly, vegetarians, smokers, anyone who consumes alcohol

**NUTRITIONAL INTERACTION**

**VITAMIN D DEFICIENCY:** By causing fat malabsorption and hence malabsorption of the fat-soluble vitamins A, D, E, and K, cholestyramine could cause vitamin deficiencies if used over a prolonged period of time.

Vitamin D is needed for the body to absorb calcium and phosphorus, to promote the development of strong teeth and bones. Whenever calcium blood levels are low, the body will liberate the calcium it needs from the bones, where it is stored. The result will be a condition called osteomalacia, in which the bones are weakened, in severe cases to the degree that they will fracture easily. Prominent symptoms are bone pain in the back, thighs, shoulder region, or ribs; difficulty in walking; and weakness in the muscles of the legs. Osteomalacia is reversible once calcium blood levels are raised.

An extended calcium deficiency can also lead to a condition called osteoporosis, one fairly common among postmenopausal women. In osteoporosis, the bones are weakened and made brittle by an unexplained and rapid loss of calcium. Unlike those of osteomalacia, the effects of osteoporosis are irreversible. The common symptoms are backache, a gradual loss of height, and periodontal disease. Fractures of the vertebrae, hip, and wrist occur, sometimes spontaneously.

**Prevention and Treatment:** To avoid a vitamin D deficiency while taking cholestyramine, you should take 400 to 800 IU of vitamin D per day as a supplement and include in your diet foods rich in vitamin D, such as fortified milk, butter, liver, egg yolks, salmon, tuna, and sardines. (See table of Vitamin D-Rich Foods, page 313.)

Vitamin D is initially formed in the skin on exposure to sunlight, and activated in the liver and kidneys. The production of vitamin D is dependent upon climatic conditions, air pollution, skin pigmentation (the darker the skin, the lower the production), the area of skin exposed, the duration of exposure to the sun, and the use of sun screens. Adults who are not often exposed to sunlight (e.g. those who are housebound or by custom heavily clothed), require dietary sources of vitamin D to prevent osteomalacia.

This vitamin is also indispensable to infants, children, and to pregnant or lactating women, whose requirements are high due to bone growth or skeletal mineral replacement. Supplementation for pregnant women is crucial, since vitamin D deficiencies can cause fetal abnormalities. However, no more than 800 IU of the vitamin should be taken by pregnant women, because excessive consumption can cause kidney damage. In non-pregnant adults, 2,000 IU of the vitamin should be taken if osteomalacia is indicated.

If your intake of vitamin D exceeds 4,000 IU per day, vitamin D poisoning can occur. The symptoms are loss of appetite, headache, excessive thirst, irritability, and kidney stones.

In all of these cases, foods rich in calcium

should be included in the diet, especially dairy products. (See table of Calcium-Rich Foods, page 289.) If these foods must be avoided because of an intolerance to lactose, the sugar found in dairy products (some 30 million Americans have such a problem digesting dairy products), a 1,200 to 1,500 mg daily supplement of calcium should be taken. (See Calcium Supplements entry, page 51.)

**VITAMIN A DEFICIENCY:** Cholestyramine could conceivably induce a deficiency of vitamin A. Among the symptoms of vitamin A deficiency are night blindness, rough skin, drying of the eyes, and infection of the mucous membrane (the inner linings of the body).

**Prevention and Treatment:** A small dosage of vitamin A, such as the 5,000 IUs found in a multivitamin tablet, should counteract this deficiency. Vitamin A is another of the fat-soluble vitamins, and it is stored in the liver. Fat-soluble vitamins do not have to be consumed everyday, but because they are stored, it is advisable not to take large doses (over 10,000 IU per day). Over extended periods, such doses can be toxic and can lead to diarrhea, nausea, hair loss, and extreme fatigue.

Vitamin A can be found in foods such as fish oils, liver, whole milk, whole milk products, egg yolks, fortified margarine, green vegetables (spinach), and yellow fruit (cantaloupe). (See table for Vitamin A-Rich Foods, page 308.) Unlike most vitamins, cooking or exposure to high temperatures will not easily destroy vitamin A, but long exposure to sunlight will. Therefore, you should keep milk stored in opaque containers and cover vegetables.

**VITAMIN E DEFICIENCY:** Though it is highly unlikely, it is possible that a vitamin E deficiency could result from long-term use of cholestyramine. Vitamin E deficiencies have no clearly observable symptoms, but in the event of a severe vitamin E deficiency, the blood cells wear out in a shorter period than normal, and this can result in anemia.

**Prevention and Treatment:** If cholestyramine is used frequently, a supplement of vitamin E is advised, approximately 2 to 2.5 mg daily. Note, however, the interaction of vitamins K and E described below.

**VITAMIN K DEFICIENCY:** People with abnormally low dietary intakes of vitamin K could conceivably experience a deficiency of this vitamin while taking cholestyramine. In that event the risk is of hemorrhage, since vitamin K is needed to promote blood clotting.

Normally vitamin K helps produce blood-clotting substances in the liver. Without sufficient levels of this vitamin in the diet, however, bleeding may take place in the gastrointestinal tract (causing black or blood-stained stools), in the urinary tract (causing blood in the urine), and in the uterus (causing blood loss at times other than the normal menstrual periods). Excessive blood loss may occur from an injury or surgery. Another sign of a deficiency of this vitamin is more frequent and more visible bruising than normal.

Many elderly people are at risk of a vitamin K deficiency because they have a problem of poor fat absorption, and vitamin K, a fat-soluble vitamin, must be accompanied by sufficient dietary fat to be properly absorbed. Finally, anyone who suffers

from a kidney disease or cancer, or who is under prolonged antibiotic therapy, may be at risk.

**Prevention and Treatment:** A vitamin K deficiency can be countered by a vitamin K supplement of 100 mcg per day, plus a diet that includes such foods as kale, spinach, cabbage, cauliflower, leafy green vegetables, liver (especially pork liver), and fish. (See table of Vitamin K-Rich Foods, page 315.)

Vitamin E supplements should not be taken when there is risk of a vitamin K shortage, because vitamin E impairs the absorption of K.

**VITAMIN B<sub>12</sub> DEFICIENCY:** It is conceivable that a vitamin B<sub>12</sub> deficiency will occur while you are taking cholestyramine. This vitamin is needed for the normal development of red blood cells and for the healthy functioning of all cells in the body, in particular those of the bone marrow and nervous system.

The most common result of a B<sub>12</sub> deficiency is pernicious anemia, which is characterized by listlessness, fatigue (especially following heavy physical exertion such as climbing a flight of stairs), numbness and tingling in the fingers and toes, palpitations, angina, light-headedness, and a pale complexion. A vitamin B<sub>12</sub> deficiency can also lead to an irreversible breakdown in the brain membranes, causing a loss of coordination, confusion, memory loss, paranoia, apathy, tremors, and hallucinations. In extreme cases, degeneration of the spinal cord can also result.

Since vitamin B<sub>12</sub> can be obtained only from animal food sources, strict vegetarians are at particular risk here. Oral contracep-

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avoided whenever possible. B<sub>12</sub> also breaks down at high temperatures, as when meat is placed on a hot griddle. The pasteurization of milk and the sterilization in boiling water of a bottle of milk also cause the loss of some B<sub>12</sub>.

**FOLIC ACID DEFICIENCY:** A folic acid or folacin deficiency is also conceivable while you are taking cholestyramine. Often the first sign of a folic acid or folacin deficiency is inflamed or bleeding gums. The symptoms that follow are a sore, smooth tongue; diarrhea; forgetfulness; apathy; irritability; anemia; and a reduced resistance to infection.

Although folacin is found in a variety of foods, folacin deficiency is still the most common vitamin deficiency in the United States. In adults, deficiencies are limited almost exclusively to the elderly and women, 30 percent of whom have intakes below the Recommended Dietary Allowance, and 5 to 7 percent of whom also have severe anemia. There are several factors that account for this bias, but among the most obvious are that oral contraceptive use decreases the absorption of folic acid and that constant dieting limits folacin intake. Alcohol interferes with the body's absorption and utilization of folic acid, as well.

Folic acid is crucial to the normal metabolism of proteins. Since folacin is also required for cell growth, a deficiency of this vitamin during pregnancy can lead to birth defects. Folacin is not stored by the body in any appreciable amounts, so an adequate supply must be consumed on a daily basis.

**Prevention and Treatment:** To counteract a deficiency in folic acid, your diet should contain liver, yeast, and leafy vegetables such

as spinach, kale, parsley, cauliflower, brussels sprouts, and broccoli. The fruits that are highest in folic acid are oranges and cantaloupes. To a lesser degree, folacin is found in almonds and lima beans, corn, parsnips, green peas, pumpkins, sweet potatoes, bran, peanuts, rye, and whole grain wheat. (See table of Folacin-Rich Foods, page 297.) Approximately one half of the folic acid you consume is absorbed by your body.

Normal cooking temperatures (110 to 120 degrees for 10 minutes) destroy as much as 65 percent of the folacin in your food. Your daily diet, therefore, should include some raw vegetables and fruits. Cooking utensils made out of copper speed up folacin's destruction.

The recommended daily consumption of folacin is 400 mcg. Lactating women should assume a daily need of 1,200 mcg. Pregnant women and oral contraceptive users should consume 800 mcg daily.

**CONSTIPATION AND OTHER SIDE EFFECTS:** Cholestyramine is likely to cause constipation, especially in elderly patients. Many people experiencing constipation will self-medicate with laxatives. As a consequence, they are more likely to experience the vitamin deficiencies described above (particularly vitamin D), because laxatives interfere with the body's ability to absorb vitamins and minerals.

The drug also has an unpleasant, chalky texture, and can cause nausea and abdominal discomfort.

**Prevention and Treatment:** Constipation is usually safely remedied by an increase in the bulk in the diet. This means increasing the servings of any of the following: dried

or fresh fruits (especially unpeeled apples or pears), salad vegetables, radishes, oatmeal, and whole grain foods (brown rice, whole wheat breads, and cereals). It is not necessary to purchase products that claim "extra fiber" has been added to them.

Persistent constipation may also be relieved by doubling the amount of fluid consumed each day. Bran, if used, should be added to the diet gradually, and fluid should be increased by at least ¾ cup per teaspoon of bran. (See table of Dietary Fiber-Rich Foods, page 293.)

The unpleasant, chalky texture of cholestyramine may be masked with pulpy fruit, such as applesauce, or liquids. Nausea and abdominal pains can be alleviated by taking the drug just before or during meals.

**OTHER ADVICE:** Cholestyramine binds to the following drugs, and it is likely that it will interfere with their absorption: digitalis, glycosides, phenobarbital, iron supplements, sodium warfarin, thyroid preparations, tetracycline, and thiazide diuretics. These drugs should be taken at least 1 hour before cholestyramine to prevent this from happening.

## CIMETIDINE

**DRUG FAMILY:** Histamine H<sub>2</sub> receptor antagonist

**BRAND NAME:** Tagamet

**HOW TO TAKE CIMETIDINE:** With food or milk

**FOODS TO AVOID:** Pepper, chili powder, cocoa, cola beverages, tea, caffeinated and decaffeinated coffee, and alcohol

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**HOW TO TAKE CLOFIBRATE:** Before or during meals and at bedtime

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Deficiencies of vitamin B<sub>12</sub> and iron; loss of appetite, nausea, diarrhea, and a decreased sense of taste

**ACTION OF CLOFIBRATE:** This drug reduces the blood levels of cholesterol and triglycerides.

**HIGH-RISK GROUPS:** The elderly, vegetarians, smokers, premenopausal women

### NUTRITIONAL INTERACTIONS

**VITAMIN B<sub>12</sub> DEFICIENCY:** Clofibrate may cause malabsorption of vitamin B<sub>12</sub>, and it is conceivable that you will develop a vitamin B<sub>12</sub> deficiency over a period of years. Vitamin B<sub>12</sub> is needed for the normal development of red blood cells and for the healthy functioning of all cells, in particular those of the bone marrow, nervous system, and intestines.

Pernicious anemia is the most common result of a B<sub>12</sub> deficiency. It is characterized by listlessness, fatigue (especially following such physical exertion as climbing a flight of stairs), a numbness and tingling in the fingers and toes, palpitations, angina, light-headedness, and a pale complexion. A vitamin B<sub>12</sub> deficiency can also lead to an irreversible breakdown in the brain membranes (called myelin), causing loss of coordination, confusion, memory loss, paranoia, apathy, tremors, and hallucinations. In extreme cases, degeneration of the spinal cord can also result.

Strict vegetarians are at particular risk of this deficiency, since vitamin B<sub>12</sub> can be obtained only from animal food sources. Oral

contraceptive users also have a greater chance of experiencing this deficiency since they often have a poor vitamin B<sub>12</sub> status to begin with, as do some smokers. Heavy consumers of alcohol, as well, frequently lack B<sub>12</sub> because alcohol impairs the absorption of the vitamin. Older people sometimes have a reduced ability to absorb the vitamin. This is because vitamin B<sub>12</sub> must be combined in the stomach with a substance known as intrinsic factor in order to be properly absorbed in the intestine. This substance is lacking in some elderly people. In any case, anyone who is likely to have a vitamin B<sub>12</sub> absorption problem should be alert for signs of pernicious anemia while taking this drug.

**Prevention and Treatment:** A balanced diet containing plenty of vitamin B<sub>12</sub> sources is advised. Only animal products, including dairy foods and fish and shellfish, contain the natural vitamin. However, some vegetable matter is supplemented with vitamin B<sub>12</sub>; many soy products, for example, are enriched with vitamin B<sub>12</sub> to safeguard vegetarians. (See table of Vitamin B<sub>12</sub>-Rich Foods, page 312.)

Vitamin B<sub>12</sub> is stored in the liver, so one meal that includes a B<sub>12</sub>-rich source such as calf's liver will normally fulfill your body's need for this vitamin for 2 to 3 weeks. (One 3-ounce serving of calf's liver contains 100 mcg of vitamin B<sub>12</sub>.) If none of these products figures prominently in your diet, you should take a 6 mcg supplement each day while on clofibrate.

People who use major amounts of vitamin C should be aware that vitamin C supplements of more than 500 mg per day can destroy B<sub>12</sub> and contribute to a B<sub>12</sub> deficiency. Anyone who eats red meat two times

a week has a three- to five-year supply of B<sub>12</sub> in his liver.

The presence of baking soda in cooking will destroy vitamin B<sub>12</sub> and should be avoided whenever possible. B<sub>12</sub> also degrades at high temperatures, as when meat is placed on a hot griddle or, in the case of liver, when it is boiled for 5 minutes. The pasteurization of milk and the sterilization in boiling water of a bottle of milk also cause the loss of some B<sub>12</sub>.

**IRON DEFICIENCY:** As was the case with vitamin B<sub>12</sub>, iron may conceivably become deficient in your system while you are taking clofibrate. Iron is crucial to the oxygen-carrying cells of the blood and muscles, since they use two thirds of the iron your body requires. Consequently, an iron shortage reduces the blood's oxygen-carrying capacity.

The result of an iron deficiency is anemia, signaled by such symptoms as tiredness, general feelings of malaise, irritability, decreased attention span, pale complexion, rapid heart rhythm, headaches, loss of concentration, and breathlessness on exertion. A mild iron deficiency will also impair the functioning of your immune system.

To be absorbed from any vegetable source, iron must be converted to another form by the action of the hydrochloric acid produced in the stomach. Many elderly people secrete less hydrochloric acid than normal, so they absorb iron poorly even under normal circumstances. The diets of many Americans lack adequate quantities of this mineral for their normal needs. For example, 10 percent of American women suffer from an iron deficiency, and up to 30 percent have inadequate iron stores. Other people who

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**HOW TO TAKE CODEINE:** At meals or with milk

**FOODS TO AVOID:** All alcoholic beverages

**POSSIBLE SIDE EFFECTS:** Constipation, nau-  
sea, vomiting

**ACTION OF CODEINE:** This analgesic is pre-  
scribed for the relief of mild to moderately  
severe pain and as a cough suppressant.

**HIGH-RISK GROUPS:** The elderly, anyone who  
consumes alcohol

### NUTRITIONAL INTERACTIONS

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**GASTROINTESTINAL DISCOMFORT:** Codeine  
could conceivably cause you to become con-  
stipated. This reaction is seen most often  
among elderly users of the drug. Codeine  
may also cause nausea and vomiting.

**Prevention and Treatment:** Constipation  
is usually safely remedied by an increase in  
the bulk in the diet. This means consuming  
larger servings of any of the following: dried  
or fresh fruits (especially unpeeled apples  
or pears), salad vegetables (especially un-  
peeled carrots), radishes, oatmeal, and whole  
grain foods (brown rice, whole wheat breads,  
and cereals). It is not necessary to purchase  
products that claim "extra fiber" has been  
added to them.

Persistent constipation may also be re-  
lieved by doubling the amount of fluid con-  
sumed each day. Bran, if used, should be  
added to the diet gradually, and fluid should  
be increased by at least  $\frac{3}{4}$  cup per tea-  
spoon of bran. (See table of Dietary Fiber-  
Rich Foods, page 293.)

Codeine should be taken with milk or  
meals, to reduce the likelihood of nausea or  
vomiting.

**SERIOUS RISKS:** Alcohol enhances the effects  
of codeine in suppressing the activity of the  
brain, and the combination can cause coma.  
The drug is also addictive and should be  
used with caution by patients also taking  
anti-depressants.

**Prevention and Treatment:** Alcohol should  
never be consumed concurrently with co-  
deine.

## COLCHICINE

**DRUG FAMILY:** Anti-gout

**BRAND NAMES:** ColBENEMID; Col-Probe-  
necid; Probenecid w/Colchicine

**HOW TO TAKE COLCHICINE:** Immediately after  
meals

**FOODS TO AVOID:** Coffee, tea, cola beverages,  
herbal teas, alcoholic beverages, dairy prod-  
ucts; large amounts of foods rich in purines,  
such as sweetbreads, anchovies, sardines,  
liver, kidney, and meat extracts

**POSSIBLE SIDE EFFECTS:** Malabsorption of all  
nutrients; diarrhea.

**ACTION OF COLCHICINE:** This strong, anti-in-  
flammatory drug is prescribed for patients  
with gout, where extreme pain is felt, and  
in some instances as a chemical agent in  
cancer therapy.

Colchicine helps the body excrete uric  
acid, which causes gout. Gout is an arthritis-  
type disease that occurs as a result of de-  
posits of uric acid crystals in the joints. It  
usually occurs in single joints, most often  
the big toe, in painful episodes that last only  
a few days but are likely to recur. Middle-

aged men are most often afflicted. This drug  
is not usually taken over long periods of  
time.

Your doctor is likely to recommend a spe-  
cial diet low in purine-rich foods in addition  
to prescribing this or another of the anti-  
gout medications. That diet is a crucial part  
of the treatment, because the purines in  
foods are broken down by your body to pro-  
duce uric acid. (See table of Purine-Rich  
Foods, page 303.)

**HIGH-RISK GROUPS:** Anyone who takes this  
drug

### NUTRITIONAL INTERACTION

**NUTRITIONAL DEFICIENCIES:** This drug de-  
stroys parts of the lining of the intestines,  
where the enzymes that digest your food  
are located. Consequences of this are likely  
to be the malabsorption of all nutrients and  
invariably diarrhea. Malabsorption of sug-  
ars, fats (and hence the fat-soluble vitamins  
A, D, E, and K), protein, iron, vitamin B<sub>12</sub>,  
and folacin usually result. The diarrhea will  
also lead to the loss of minerals, including  
calcium, magnesium, and potassium, and a  
lot of water will be lost from the body.

**Prevention and Treatment:** Since colchi-  
cine is taken for very short periods of time,  
no nutritional deficiencies should occur.  
However, while you are using the drug, you  
should safeguard your nutritional status by  
taking a one-a-day vitamin containing the  
recommended daily allowances for vitamins  
and iron. This is especially true of elderly  
people and vegetarians, since both groups  
often have a poor vitamin B<sub>12</sub> and iron sta-  
tus.

A low-fat, high-protein diet is recom-

**Prevention and Treatment:** Constipation is usually safely remedied by an increase in the bulk in the diet. This means consuming larger servings of any of the following: dried or fresh fruits, salad vegetables (especially unpeeled carrots), radishes, oatmeal, and whole grain foods (brown rice, whole wheat breads, and cereals). It is not necessary to purchase products that claim "extra fiber" has been added to them.

Persistent constipation may also be relieved by doubling the amount of fluid consumed each day. Bran, if used, should be added to the diet gradually, and fluid should be increased by at least  $\frac{3}{4}$  cup per teaspoon of bran. (See table of Dietary Fiber-Rich Foods, page 293.)

The unpleasant texture of colestipol may be made more palatable by taking it with pulpy fruit, such as applesauce, or a liquid. To minimize the nausea and abdominal problems, take the drug just before or during meals.

**OTHER ADVICE:** Colestipol is also likely to decrease the absorption and effectiveness of acidic compounds such as iron supplements, sodium warfarin, thyroid preparations, tetracycline, and thiazide diuretics. These medications should be taken at least one hour before the colestipol.

## CORTICOSTEROIDS

**DRUG FAMILY:** Anti-inflammatory

**BRAND NAMES:** [GENERIC/Brand] HYDROCORTISONE/Aeroseb-HC; Allersone; Alphaderm; Carmol HC; Cort-Dome; Cort-

enema; Corticaine; Cortisporin; Cortixin; Cortril; Dermacort; Derma-Sone; Eldecort; F-E-P; Hill Cortac; Hytone; Otic-HC; Otiobiotic Otic; Pedi-Cort V; Pricort; Pro-Cort; Proctocort; Pyocidin-Otic; Synacort; Terra-Cortril; Texacort; Vanoxide-HC; Vioform-Hydrocortisone; VöSol HC; Vytone; Anusol-HC; Coly-Mycin S Otic w/Neomycin & Hydrocortisone; Cortifoam; Derma Medicine; Epifoam; Hedol H-C; Hydrocortone Acetate; Komed HC; Mantadil; Ophthocort; Orabase HCA; Pramosome; Proctofoam-HC; Rectal Medicone-HC; Wyanooids HC; Barseb HC; Barseb Thera; A-hydroCort; Hydrocortisone Sodium Succinate; Solu-Cortef; Westcort; DEXAMETHASONE/Aeroseb-Dex; Decadron; Decaspray; Dexone; Hexadrol; SK-Dexamethasone; Dalalone D.P.; Dalalone I.L.; Dalalone L.A.; Decadron-LA; Dexasone; Neodecadron; Decadron Phosphate; Hexadrol Phosphate; METHYL-PREDNISOLONE/Medrol; DepMedalone "40"; DepMedalone "80"; Depo-Medrol; Medrol; Depo-Predate 40; Depo-Predate 80; Medrol Acetate; A-methaPred; Methylprednisolone Sodium Succinate; Solu-Medrol; PREDNISOLONE/Delta-Cortef; Metimyd; Predate 50; Metreton; Predate S; Hydextra-T.B.A.; Predate TBA; PREDNISONE/Deltasone; Liquid Pred; SK-Prednisone; Sterapred Uni-Pak.

**HOW TO TAKE CORTISONE DRUGS:** With meals or milk

**FOODS TO AVOID:** Fatty foods: large amounts of those rich in sodium, such as anchovies, green olives, dill pickles, sardines, canned soups and vegetables, TV dinners, processed cheeses, cold cuts

**POSSIBLE SIDE EFFECTS:** Edema; hyperglycemia; loss of body calcium and protein; deficiencies of potassium, zinc, and vitamins B<sub>6</sub> and C; increased risk of heart disease; dehydration; increased appetite

**ACTION OF CORTISONE DRUGS:** These anti-inflammatory agents are used in treating arthritis, many skin diseases, severe allergic conditions, insufficiency of the adrenal glands, collagen diseases, thyroiditis, and hypercalcemia associated with cancer.

**HIGH-RISK GROUPS:** Anyone who takes this drug by mouth or injection

### NUTRITIONAL INTERACTIONS

**EDEMA:** Corticosteroids tend to increase sodium and water retention, which can lead to a swelling (called edema) in your legs, ankles, feet, and breasts, and around your eyes. Water and sodium retention also increase the volume of blood, which can lead to high blood pressure.

High sodium retention can also cause some women to experience irritability, depression, and headaches, particularly prior to the onset of the menstrual period.

**Prevention and Treatment:** You should restrict your intake of dietary sodium, when you are taking corticosteroids, to no more than 2 to 3 grams per day, which is equivalent to 1 to 2 teaspoons of salt.

Most people are not aware of how much salt their diet contains. The average American consumes 15 pounds of salt annually, or 3 to 4 teaspoons a day. Do not salt your food at the table or add more than 1 teaspoon of salt during cooking. Foods rich in sodium, such as anchovies, green olives, dill pickles, sardines, canned soups and vege-

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enema; Corticaine; Cortisporin; Cortixin; Cortril; Dermacort; Derma-Sone; Eldecort; F-E-P; Hill Cortac; Hytone; Otic-HC; Otiobiotic Otic; Pedi-Cort V; Pricort; Pro-Cort; Proctocort; Pyocidin-Otic; Synacort; Terra-Cortril; Texacort; Vanoxide-HC; Vioform-Hydrocortisone; VōSol HC; Vytone; Anusol-HC; Coly-Mycin S Otic w/Neomycin & Hydrocortisone; Cortifoam; Derma Medicine; Epifoam; Hedol H-C; Hydrocortone Acetate; Komed HC; Mantadil; Ophthocort; Orabase HCA; Pramosone; Proctofoam-HC; Rectal Medicone-HC; Wyanooids HC; Barseb HC; Barseb Thera; A-hydroCort; Hydrocortisone Sodium Succinate; Solu-Cortef; Westcort; DEXAMETHASONE/Aeroseb-Dex; Decadron; Decaspray; Dexone; Hexadrol; SK-Dexamethasone; Dalalone D.P.; Dalalone I.L.; Dalalone L.A.; Decadron-LA; Dexasone; Neodecadron; Decadron Phosphate; Hexadrol Phosphate; METHYL-PREDNISOLONE/Medrol; DepMedalone "40"; DepMedalone "80"; Depo-Medrol; Medrol; Depo-Predate 40; Depo-Predate 80; Medrol Acetate; A-methaPred; Methylprednisolone Sodium Succinate; Solu-Medrol; PREDNISOLONE/Delta-Cortef; Metimyd; Predate 50; Metreton; Predate S; Hydextra-T.B.A.; Predate TBA; PREDNISONE/Deltasone; Liquid Pred; SK-Prednisone; Sterapred Uni-Pak.

**HOW TO TAKE CORTISONE DRUGS:** With meals or milk

**FOODS TO AVOID:** Fatty foods large amounts of those rich in sodium, such as anchovies, green olives, dill pickles, sardines, canned soups and vegetables, TV dinners, processed cheeses, cold cuts

**POSSIBLE SIDE EFFECTS:** Edema; hyperglycemia; loss of body calcium and protein; deficiencies of potassium, zinc, and vitamins B<sub>6</sub> and C; increased risk of heart disease; dehydration; increased appetite

**ACTION OF CORTISONE DRUGS:** These anti-inflammatory agents are used in treating arthritis, many skin diseases, severe allergic conditions, insufficiency of the adrenal glands, collagen diseases, thyroiditis, and hypercalcemia associated with cancer.

**HIGH-RISK GROUPS:** Anyone who takes this drug by mouth or injection

#### NUTRITIONAL INTERACTIONS

**EDEMA:** Corticosteroids tend to increase sodium and water retention, which can lead to a swelling (called edema) in your legs, ankles, feet, and breasts, and around your eyes. Water and sodium retention also increase the volume of blood, which can lead to high blood pressure.

High sodium retention can also cause some women to experience irritability, depression, and headaches, particularly prior to the onset of the menstrual period.

**Prevention and Treatment:** You should restrict your intake of dietary sodium, when you are taking corticosteroids, to no more than 2 to 3 grams per day, which is equivalent to 1 to 2 teaspoons of salt.

Most people are not aware of how much salt their diet contains. The average American consumes 15 pounds of salt annually, or 3 to 4 teaspoons a day. Do not salt your food at the table or add more than 1 teaspoon of salt during cooking. Foods rich in sodium, such as anchovies, green olives, dill pickles, sardines, canned soups and vege-

tables, so-called TV dinners, processed cheeses, cold cuts, many snack foods, soy sauce, and catsup, should be limited. (See table of Sodium-Rich Foods, page 306.) Salt comes into your diet through additives such as monosodium glutamate, which is widely used in the preparation of processed foods. Beware of foods in which sodium is placed high on the list of ingredients shown on the package. The higher it appears, the greater the amount of sodium present.

**DIABETES REACTION:** Corticosteroids can decrease your body's ability to absorb sugar, which can result in a diabeteslike state in susceptible individuals due to damage to the pancreas. Diabetes occurs when the pancreas fails to produce adequate amounts of insulin to clear the blood of excess glucose or sugar. A diet high in sugar increases the likelihood of a diabetic condition with this drug.

Symptoms of a glucose buildup in your blood are headaches, excessive hunger and thirst, and a need to urinate frequently.

**Prevention and Treatment:** Recent studies have demonstrated that a high-fiber diet may cause a slower and more sustained release of glucose from the gastrointestinal tract into the bloodstream, preventing the wide swings in blood sugar levels. If you are taking a corticosteroid, it is recommended that you remain physically active and exercise daily, because by this means the cells are made more susceptible to the insulin, and you absorb glucose more readily. Finally, a change in eating schedule from the standard three meals per day to five or six smaller meals will also help keep blood sugar levels within normal range.

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**CALCIUM LOSS:** Extended use of corticosteroids can create a loss of calcium, since these drugs decrease calcium absorption and increase losses from the bones. The decrease in absorption is due to an inability to produce active vitamin D, which is essential to calcium absorption. These drugs also decrease the absorption of the mineral phosphorus, which may further exacerbate the loss of body calcium.

Whenever calcium blood levels are low, the body will liberate the necessary amounts of calcium from the bones, where it is stored, weakening them. This condition is called osteomalacia. Prominent symptoms are pain in the bones of the thighs, back, shoulder region, or ribs; difficulty in walking; and weakness in the muscles of the legs. This disease affects millions of older Americans, but also many younger people. One out of every four postmenopausal women suffers from this problem; it has been estimated that the average woman over forty-five consumes only 450 mg of calcium per day, when the Recommended Dietary Allowance is 800 to 1,200. The condition is reversible once calcium blood levels are corrected.

After a number of years without correction, however, osteomalacia may lead to osteoporosis, another condition in which the bones are made weak and brittle. However, osteoporosis, an unexplained and rapid loss of calcium from the bones, is irreversible and uneven. The early signs of the disease are backache, a gradual loss of height, and periodontal disease. Often the first sign of the disorder is a fracture, usually of a vertebra, the hip, or a wrist.

If this drug is given to children, a condition known as rickets can occur. Again,

the effect is on the bones, which become bent or malformed. Children under four years of age may develop pigeon breast, bowlegs, a protruding abdomen due to a weakness of stomach muscles, and poorly formed teeth which tend to decay. (However, drugs that are known to induce rickets are rarely given to the very young.)

**PREVENTION AND TREATMENT:** While taking this drug, you should take 400 to 800 IU of vitamin D per day as a supplement to a diet of foods rich in vitamin D, such as cod-liver oil, fortified milk, butter, liver, egg yolks, salmon, tuna, and sardines. (See table of Vitamin D-Rich Foods, page 313.)

If demineralization of the bones is indicated, nonpregnant adults should take 2,000 IU per day of vitamin D.

A calcium depletion can be prevented by eating foods rich in calcium, particularly milk and dairy products, including yogurt and hard cheeses. (See table of Calcium-Rich Foods, page 289.) If dairy foods must be avoided because of an intolerance to lactose, the sugar found in dairy products, a 1,000 mg daily supplement of calcium should be taken. (See Calcium Supplements entry, page 51.) Since vitamin C assists calcium absorption, foods rich in that vitamin should also be consumed.

Foods that can decrease the absorption of calcium should be temporarily restricted, such as spinach, cocoa, chocolate, beet greens, and tea. A deficiency might arise also if the ratio of phosphorus to calcium in your diet is very high. The ideal ratio is essentially 1 to 1, as in dairy products; when the ratio is 15 or 20 to 1, as in meat, very little calcium is absorbed. Processed foods

are particularly bad in this respect, with carbonated beverages having perhaps the highest phosphorus content. High-fiber foods may contribute to a calcium deficiency, because fiber binds to calcium and passes it out in the stool.

Since there is little calcium in strict vegetarian diets (those that avoid dairy products as well as meat), vegetarians are at greater risk of a deficiency when taking corticosteroids. Those who use diuretics, or magnesium- or aluminum-based antacids, are also more prone to calcium deficiencies, because both impair calcium absorption.

To safeguard women against osteoporosis and osteomalacia, many experts believe that their calcium intake should be increased to 1,200 to 1,500 mg per day. Besides a change in dietary habits and the use of calcium supplements, it is recommended that you adopt an exercise regimen that will strengthen the bones by supporting the weight of the body. A regular walking or jogging program, for example, can help prevent the bone degeneration of the spine, hips, and legs. Note, however, that swimming, though good for the heart as an aerobic exercise, is not especially beneficial for bone buildup.

**PROTEIN LOSS:** Corticosteroids can also contribute to the breakdown of body protein, which may lead to a loss of muscle, muscle weakness, and slowed wound healing. Protein is also lost from the bones, which leads to their breakdown and consequent loss of bone calcium.

**Prevention and Treatment:** To avoid a temporary protein deficiency while you are taking this drug, you should eat a diet rich in protein, including such foods as fish, soy

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**PROTEIN LOSS:** Corticosteroids can also contribute to the breakdown of body protein, which may lead to a loss of muscle, muscle weakness, and slowed wound healing. Protein is also lost from the bones, which leads to their breakdown and consequent loss of bone calcium.

**Prevention and Treatment:** To avoid a temporary protein deficiency while you are taking this drug, you should eat a diet rich in protein, including such foods as fish, soy

products, beans, and peas. Protein, however, should not represent more than 20 percent of dietary calories, since more than this could accelerate bone loss. (See table of Protein-Rich Foods, page 304.)

**POTASSIUM DEFICIENCY:** Corticosteroids increase the rate of excretion of potassium, which is likely to lead to a deficiency of this important mineral. Potassium regulates the amount of water in the cells of the body, and is essential for the proper functioning of the kidneys and the heart muscle, and the secretion of stomach juices. The most alarming symptom of a potassium deficiency is an irregular heartbeat, which can lead to heart failure.

Low blood serum levels of potassium, called hypokalemia, are associated with laxative abuse, because many laxatives promote an increased loss of potassium in the gastrointestinal tract. This risk is especially high in elderly patients who consume diets not only low in potassium but also low in dietary fiber (which may, in fact, have played a part in the development of their constipation in the first place).

People who take the laxatives phenolphthalein, bisacodyl, and senna on a daily basis have been reported to have a much greater chance of experiencing serious hypokalemia. These people, and others with a potassium deficiency, may have such symptoms as weakness, loss of appetite, nausea, vomiting, dryness of the mouth, increased thirst, listlessness, apprehension, and diffuse pain that comes and goes.

**Prevention and Treatment:** Potassium depletion can be avoided by including such potassium-rich foods in your diet as tomato

juice, lentils, dried apricots, asparagus, bananas, peanut butter, chicken, almonds, and milk. (See table of Potassium-Rich Foods, page 302.)

Diuretics, commonly prescribed for people with heart disease, decrease the level of body potassium. Therefore, the risk of a deficiency is significantly greater if they are taken concurrently with this drug.

Potassium supplements should never be used unless prescribed by a physician. They can cause anemia by interfering with the absorption of vitamin B<sub>12</sub>. Just a few grams can also drastically increase the risk of heart failure. If you experience difficulty in swallowing while taking potassium supplements, consult your physician immediately. If supplements are prescribed, be aware that the absorption of the supplements potassium iodide and potassium chloride is decreased by dairy products, and that both are gastric irritants and should be taken with meals.

Too much salt in your diet can also compromise your body's supply of potassium, as can 1 to 3 ounces per day of natural licorice. Only imported licorice usually contains natural licorice.

**ZINC DEFICIENCY:** Since the excretion of zinc is increased by the corticosteroids, it is conceivable that you will experience a deficiency while taking a corticosteroid. A shortage of zinc in your system may result in impaired healing of wounds and ulcers, scaly dermatitis of the face and limbs, and anorexia associated with the loss of taste.

**Prevention and Treatment:** Patients using this drug should be sure to get the Recommended Dietary Allowance of zinc. An-

imal foods are good sources, with the richest being oysters, herring, milk, and egg yolks. Among plant foods, whole grains are richest in zinc, but it is not as well absorbed from them as from meat. Fiber and phytic acid in the cereal grains hinder its absorption. The recommended intake of 15 mg a day for adults is usually met easily by the diet of the average middle-class person, but deficiencies are more likely if animal protein is underemphasized. As a rule of thumb, two small servings of animal protein a day will provide sufficient zinc.

**VITAMIN B<sub>6</sub> DEFICIENCY:** These drugs speed up the reactions in the body that require vitamin B<sub>6</sub>, and consequently a deficiency of this vitamin is conceivable.

Common symptoms of this deficiency are a sore mouth and tongue, cracks in the lips and corners of the mouth, and patches of itching, scaling skin. A severe vitamin B<sub>6</sub> deficiency may cause depression and confusion.

Vitamin B<sub>6</sub> deficiencies are common among the elderly. Alcoholics, as well, often experience this deficiency, since alcohol interferes with the body's ability to use B<sub>6</sub>. It is estimated that one of every two Americans consumes less than 70 percent of the Recommended Dietary Allowance of B<sub>6</sub>.

**Prevention and Treatment:** To avoid a B<sub>6</sub> deficiency, you should consume a diet featuring such food sources of vitamin B<sub>6</sub> as liver (beef, calf, and pork), herring, salmon, walnuts, peanuts, wheat germ, carrots, peas, potatoes, grapes, bananas, and yeast. (See table of Vitamin B<sub>6</sub>-Rich Foods, page 311.) The vitamin is present in significant amounts in meats, fish, fruits, cereals, and vegeta-

bles, and to a lesser extent in milk and other dairy products.

Since vitamin B<sub>6</sub> is decomposed at high temperatures, modern food processing often diminishes dietary sources of the vitamin. Consequently, the more processed foods you eat, the more susceptible you will be to a deficiency of this vitamin. The same losses also occur in cooking: meat loses as much as 45 to 80 percent, vegetables 20 to 30 percent. As vitamin B<sub>6</sub> is light-sensitive, the amount of the vitamin in a container of milk left in the sunlight will gradually decrease.

It has been observed that 15 to 20 percent of oral contraceptive users show direct evidence of vitamin B<sub>6</sub> deficiency. If you are among these people, you should take a 5 mg supplement of vitamin B<sub>6</sub> per day. However, keep in mind that you can take too much vitamin B<sub>6</sub>; people taking over 500 mg per day have been reported to experience a toxic reaction.

**VITAMIN C DEFICIENCY:** Corticosteroid drugs cause an increase in the excretion of vitamin C, as well as an increase in the rate of various reactions in the body that use vitamin C. Consequently, while you are on corticosteroids, your system has an added need for the vitamin; thus, unless your intake keeps pace with your needs, a deficiency is conceivable.

With an adequate vitamin C intake, the body normally maintains a fixed pool of the vitamin, and rapidly excretes any excess in the urine. Ordinarily, 60 to 100 mg of vitamin C per day will fulfill the body's needs. However, with an inadequate intake, the reservoir becomes depleted at the rate of up to 3 percent per day, and even more

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**ACTION OF DOXORUBICIN HYDROCHLORIDE:** This potent drug is used against a wide range of human tumors.

**HIGH-RISK GROUPS:** Anyone who takes this drug

**NUTRITIONAL INTERACTIONS**

**RIBOFLAVIN DEFICIENCY:** Doxorubicin hydrochloride impairs the conversion of riboflavin to its active form; thus, the drug is likely to cause a riboflavin deficiency. This may lead to heart failure in severe cases.

The symptoms most likely to appear will be a dermatitis around the nose, cracks in the corners of the mouth, and a soreness or burning sensation in the lips, mouth, and tongue. Discomfort in eating and swallowing may result. The eyes may burn, itch, be more sensitive than usual to light, and tend to be bloodshot. However, be aware that any B vitamin deficiency can cause similar symptoms.

Riboflavin helps the body transform protein, fats, and carbohydrates into the energy needed to maintain body tissues and to protect the body against common skin and eye disorders.

**Prevention and Treatment:** Good sources of riboflavin should be included in the diet. Milk usually contributes about 50 percent of our riboflavin intake, meat about 25 percent, and dark green leafy vegetables and enriched cereals and breads the rest. The need for riboflavin provides a major reason for including milk in some form in every day's meals; no other food that is commonly eaten can make such a substantial contribution to meeting our daily riboflavin needs. People who don't use milk products can sub-

stitute a generous serving of dark green leafy vegetables, because a cup of greens such as collards provides about the same amount of riboflavin as a cup of milk. (See table of Vitamin B<sub>2</sub>(Riboflavin)-Rich Foods, page 310.)

Among the meats, liver is the richest source, but all lean meats, as well as eggs, can provide some riboflavin. Riboflavin is light-sensitive; it can be destroyed by the ultraviolet rays of the sun or fluorescent lamps. For this reason, milk is seldom sold, and should not be stored, in transparent glass containers. Cardboard or plastic containers protect the riboflavin in the milk from ultraviolet rays.

Note that riboflavin supplements in excess of the Recommended Dietary Allowance may make the drug less effective and should not be taken.

**ERYTHROMYCIN**

**DRUG FAMILY:** Antibiotic

**BRAND NAMES:** A/T/S; E.E.S.; E-Mycin, E-Mycin E; ERYC; EryDerm; EryPed; Ery-Tab; Erythrocin Lactobionate-I.V.; Erythrocin Piggyback; Erythrocin Stearate; Erythromycin Base; Erythromycin Estolate; Erythromycin Ethylsuccinate; Erythromycin Stearate; Ilosone; Ilotycin; Ilotycin Gluceptate; Pediamycin; Pediazole; Robimycin; SK-Erythromycin; Wyamycin E

**HOW TO TAKE ERYTHROMYCIN:** With water, on an empty stomach 1 hour before or 3 hours after meals

**FOODS TO AVOID:** Acidic beverages such as fruit juices, colas, sodas, and wine should

not be consumed within 1 hour of taking the drug

**POSSIBLE SIDE EFFECTS:** Deficiencies of folic acid; vitamins B<sub>6</sub>, B<sub>12</sub>, and K; calcium; and magnesium

**ACTION OF ERYTHROMYCIN:** This anti-bacterial agent is frequently prescribed for pneumonia, Legionnaire's disease, diphtheria, whooping cough, scarlet fever, syphilis, and gonorrhea, and to prevent the recurrences of rheumatic fever and a variety of other bacterial infections.

**HIGH-RISK GROUPS:** Oral contraceptive users, heavy drinkers, pregnant women, the elderly, vegetarians, children, smokers, teenagers, lactating women

**NUTRITIONAL INTERACTIONS**

**FOLIC ACID DEFICIENCY:** It is conceivable that while taking erythromycin you will develop a folic acid deficiency, since the drug impairs your body's ability to use this nutrient. Often, the first sign of a folic acid or folacin deficiency is inflamed and bleeding gums. The symptoms that follow are a sore, smooth tongue; diarrhea; forgetfulness; apathy; irritability; anemia; and a reduced resistance to infection. Despite the fact that folacin is found in a variety of foods, folacin deficiency is still the most common vitamin deficiency in the United States.

In adults, deficiencies are limited almost exclusively to the elderly and women, 30 percent of whom have intakes below the recommended daily allowance, and 5 to 7 percent of whom also have severe anemia. There are several factors that account for this bias, but one of the most obvious rea-

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cur, particularly if you are a heavy drinker, if you regularly use diuretics, or if you take oral contraceptives. It is unlikely that this will be a serious mineral deficiency, but foods rich in magnesium should be included in the diet, such as nuts (almonds and cashews are highest), meat, fish, milk, whole grains, and fresh greens, since cooking can wash away some magnesium. (See table of Magnesium-Rich Foods, page 300.)

## ESTROGENS AND PROGESTINS

**DRUG FAMILY:** Oral contraceptives

**BRAND NAMES:** [GENERIC/Brand] ETHYNODIOL DIACETATE/Demulen 1/35-21; Ovulin-21; MESTRANOL/Enovid, Enovid-E; Norinyl 1+50; Norinyl 1+80; Norinyl 2 mg.; Ortho-Novum 1/50; Ortho-Novum 1/80; Ovulen-21; Ovulen-28; NORETHINDRONE/Aygestin; Norlutate; Brevicon; Loestrin 1/20; Loestrin 1.5/30; Micronor; Modicon; Norinyl 1+35; Norinyl 1+50; Norinyl 1+80; Norinyl 2 mg; Norlestrin 21; Norlestrin 1/50; Norlestrin 2.5/50; Norlutin; Nor-Q.D.; Ortho-Novum 1/35; Ortho-Novum 1/50; Ortho-Novum 1/80; Ortho-Novum 10/11; Ortho-Novum 2 mg; Ovcon-35; Ovcon-50; NORGESTREL/Lo/Ovral; Ovral; Ovrette

**HOW TO TAKE ORAL CONTRACEPTIVES:** At approximately the same time every day

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Deficiencies of riboflavin, folic acid, and vitamins B<sub>6</sub>, B<sub>12</sub>, and C

**ACTION OF ORAL CONTRACEPTIVES:** These drugs, which are a combination of the hormones estrogen and progestin, prevent pregnancy by suppressing ovulation.

**HIGH-RISK GROUPS:** Anyone who takes these drugs.

### NUTRITIONAL INTERACTIONS

**RIBOFLAVIN DEFICIENCY:** Women who do not eat a balanced diet and therefore consume only very small amounts of riboflavin may suffer from a clinical deficiency. Estrogen stimulates many reactions in the body that require riboflavin, so riboflavin needs are increased. A woman with only a marginal intake of riboflavin to start with is likely to be pushed over the line into a deficiency state while taking oral contraceptives.

The symptoms most likely to appear will be a dermatitis around the lips and nostrils, a cracking in the corners of the mouth, and a sore tongue. Discomfort in eating and swallowing may result. The eyes may burn, itch, be more sensitive than usual to light, and tend to be bloodshot. However, be aware that any B vitamin deficiency can cause some of these same symptoms.

Riboflavin helps the body transform protein, fats, and carbohydrates into the energy needed to maintain body tissues and to protect the body against common skin and eye disorders.

**Prevention and Treatment:** Good sources of riboflavin should be included in the diet. About 50 percent of our riboflavin comes from milk, while meat contributes about 25 percent, and dark green leafy vegetables and enriched cereals and breads the rest. The need for riboflavin provides a major reason

for including milk in some form in every day's meals; no other food that is commonly eaten can make such a substantial contribution to meeting our daily riboflavin needs. People who don't use milk products can substitute a generous serving of dark green leafy vegetables, because a cup of greens such as collards provides about the same amount of riboflavin as a cup of milk. (See table of Vitamin B<sub>2</sub>(Riboflavin)-Rich Foods, page 310.)

Liver is the richest source of riboflavin among the meats, but all lean meats, as well as eggs, can provide some riboflavin. Riboflavin is light-sensitive; it can be destroyed by the ultraviolet rays of the sun or fluorescent lamps. For this reason, milk is seldom sold, and should not be stored, in transparent glass containers. Cardboard or plastic containers protect the riboflavin in the milk from ultraviolet rays.

**FOLIC ACID DEFICIENCY:** There is considerable evidence to show that people taking birth control pills have an increased need for folic acid. They appear not to absorb it as efficiently as nonusers, and because of the increased protein synthesis caused by estrogen, they need more than usual and are likely to develop a deficiency.

Many women in America normally consume too little folic acid in their diets, so this is a matter for real concern. Folic acid is required for the production of all new cells in the body. Hence, any area of the body where rapid cell replacement occurs can become sore if the diet contains inadequate amounts of the vitamin. The tongue becomes smooth and sore. The lining of the gastrointestinal

tract becomes inflamed, and the lining of the vagina may become irritated.

The earliest sign of folic acid deficiency is anemia. It causes irritability, fatigue, and a few worrisome symptoms. It is usually treated with folic acid pills, with good results. You should be on the lookout for folic acid deficiency if you are on the pill, or if you are a defici-

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**HIGH-RISK GROUPS:** Anyone who takes this drug

#### NUTRITIONAL INTERACTIONS

**VITAMIN B<sub>6</sub> DEFICIENCY:** Since ethionamide is an antagonist of vitamin B<sub>6</sub>, users of this drug are likely to experience a vitamin B<sub>6</sub> deficiency. Common symptoms of this deficiency are a sore mouth and tongue, cracks in the lips and corners of the mouth, and patches of itching, scaling skin. A severe vitamin B<sub>6</sub> deficiency may cause depression and confusion.

Vitamin B<sub>6</sub> deficiencies are common among the elderly and sometimes occur in smokers. Alcoholics, as well, often experience this deficiency, since alcohol interferes with the body's ability to use B<sub>6</sub>. It is estimated that one of every two Americans consumes less than 70 percent of the Recommended Dietary Allowance of B<sub>6</sub>.

**Prevention and Treatment:** To avoid a B<sub>6</sub> deficiency, you should consume a diet featuring such food sources of vitamin B<sub>6</sub> as liver (beef, calf, and pork), herring, salmon, walnuts, peanuts, wheat germ, carrots, peas, potatoes, grapes, bananas, and yeast. (See table of Vitamin B<sub>6</sub>(Pyridoxine)-Rich Foods, page 311.) The vitamin is present in significant amounts in meats, fish, fruits, cereals, and vegetables, and to a lesser extent in milk and other dairy products.

Since vitamin B<sub>6</sub> is decomposed at high temperatures, modern food processing often diminishes dietary sources of the vitamin. Consequently, the more processed foods you eat, the more susceptible you will be to a deficiency of this vitamin. The same losses also occur in cooking: meat loses as much

as 45 to 80 percent, vegetables 20 to 30 percent.

It has been observed that 15 to 20 percent of oral contraceptive users show direct evidence of vitamin B<sub>6</sub> deficiency. If you are among these people, you should take a supplement of 5 mg of vitamin B<sub>6</sub> per day. However, keep in mind that you can take too much vitamin B<sub>6</sub>; people taking over 500 mg have been reported to experience a toxic reaction.

**GASTROINTESTINAL DISTRESS:** Ethionamide also causes severe gastrointestinal disturbances, so it should always be taken with meals or milk.

### ETHYLENEDIAMINETETRAACETIC ACID (EDTA)

**DRUG FAMILY:** Chelating agents

**BRAND NAMES:** [GENERIC/Brand] CALCIUM DISODIUM EDETATE; Calcium Disodium Versenate

**HOW TO TAKE EDTA:** Usually injected

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Vitamin B<sub>6</sub> deficiency, and loss of body calcium, zinc, manganese, iron, and copper

**ACTION OF EDTA:** These compounds bind to metals in the body and carry them out via the urine. Used in the treatment of lead poisoning, the emergency treatment of hypercalcemia (abnormally high blood calcium levels, which can cause heart failure), and occasionally to treat the irregular heart rate accompanying an overdosage of digitalis.

**HIGH-RISK GROUPS:** The elderly, children, anyone who consumes alcohol, premenopausal women, smokers, teenagers

#### NUTRITIONAL INTERACTIONS

**CALCIUM DEFICIENCY:** Use of this drug leads to a decrease in the absorption of a variety of metals, including calcium, zinc, manganese, iron, and copper. However, as the normal course of treatment with EDTA is five days, mineral deficiencies should not develop.

**Prevention and Treatment:** Taking a mineral supplement containing the Recommended Dietary Allowances for these minerals both during the treatment and for a month afterward will prevent any deficiency. (See table of Recommended Dietary Allowances, page 317.)

**VITAMIN B<sub>6</sub> DEFICIENCY:** It is conceivable that while taking EDTA you will develop a deficiency of vitamin B<sub>6</sub>, since the drug causes dermatitis with lesions like those associated with a vitamin B<sub>6</sub> deficiency. Other symptoms of this deficiency are a sore mouth and tongue, cracks in the lips and corners of the mouth, and patches of itching, scaling skin. A severe vitamin B<sub>6</sub> deficiency may cause depression and confusion.

Vitamin B<sub>6</sub> deficiencies are often found in the elderly, and marginal deficiencies sometimes occur among smokers. Alcoholics, as well, often experience this deficiency, since alcohol interferes with the body's ability to use B<sub>6</sub>. It is estimated that one of every two Americans consumes less than 70 percent of the Recommended Dietary Allowance of B<sub>6</sub>.

**Prevention and Treatment:** To avoid a B<sub>6</sub> deficiency, you should consume a diet fea-

turing liver (liver, walnuts, potatoes, page 311) and vitamins B<sub>6</sub> and C. Moderate dietary decomposition of the mineral deficiency occur in 80 percent. Keep vitamin B<sub>6</sub> been reported in the literature. Supplemental vitamins B<sub>6</sub> and C show deficiency.

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**ACTION OF FENFLURAMINE HYDROCHLORIDE:** Fenfluramine is prescribed as an appetite suppressant for the treatment of obesity.

**HIGH-RISK GROUPS:** Hypertensives, heart patients

**NUTRITIONAL INTERACTIONS**

**FAT-SOLUBLE VITAMIN DEFICIENCY:** The most effective appetite suppressant, fenfluramine does not have the same side effects as other amphetamine-like compounds. It is a sedative rather than a central nervous system stimulant.

However, fenfluramine may impair your absorption of fats, which can in turn lead to greasy diarrhea and to the malabsorption of fat-soluble vitamins. Although unlikely, this could cause mild deficiencies in vitamins A, D, E, and K if the drug is used over a period of several months. Because of its addictive tendencies, fenfluramine should not be prescribed for long periods.

**Prevention and Treatment:** To avoid a fat-soluble vitamin deficiency, take a vitamin supplement containing the Recommended Dietary Allowance of these vitamins, and balance your diet with foods rich in vitamins A, D, E, and K. (See tables of Vitamin A-, D-, E-, and K-Rich Foods, pages 308, 313, 314, 315.)

**WEIGHT-REDUCTION PROGRAMS:** Fenfluramine is addictive and should be used only as a short-term aid to weight loss. A reasonable and moderate weight reduction program should aim at a manageable 1 or 2 pound loss per week. An intake reduction of 500 calories per day, for a weekly total of 3,500 calories, will result in the loss of 1 pound per week, regardless of your present

weight. Two eggs and a milk shake, 1½ cups of tuna salad, 4 ounces of a roast, 3 frankfurters, 2 cups of ice cream, or 2 pieces of cheesecake all represent approximately 500 calories.

The Weight Watchers exercise and behavior modification program is among those that offer a sensible balance of proper nutrition, exercise, and support in making a dietary change.

**OTHER ADVICE:** Use of this drug should be avoided when you are taking blood-pressure-lowering drugs, since fenfluramine lowers blood pressure as well, increasing the risk of extremely low blood pressure. The most likely symptom of this is dizziness when you stand up.

**FERROUS SUPPLEMENTS**

**DRUG FAMILY:** Mineral supplements

**BRAND NAMES:** [GENERIC/Brand] FERROUS FUMARATE/Cevi-Fer; Chromagen; Feostat; Ferancee; Ferancee-HP; Ferro-Sequels; Fetrin; Hemocyte; Hemocyte-F; Hemo-Vite; Iron-FA; Natalins Rx; Natalins; Poly-Vi-Flor 1.0 mg Vitamins w/ Iron & Fluoride; Pramilet FA; Prenate 90; Stuartinic; Trinsicon/Trinsicon M; Zenate; FERROUS GLUCONATE/Albafort; Fergon; Ferralet; Fosfree; Glytanic; I.L.X. B<sub>12</sub>; Iromin-G; Megadose; Mission Prenatal; Mission Prenatal F.A.; Mission Prenatal H.P.; Mission Pre-Surgical; FERROUS SULFATE/Dayalets plus Iron; Eldec; Feosol; Fermalox; Fero-Folic-500; Fero-Grad-500; Fero-Gradumet; Ferrous Sulfate; Heptuna Plus; Iberet; Iberet-500; Iberet-Folic-500; Irospan; Mevanin-C; Pramet FA

**HOW TO TAKE FERROUS COMPOUNDS:** At mealtimes with fruit juice

**FOODS TO AVOID:** Do not take the supplement at a meal containing whole grain foods, eggs, tea, or significant quantities of dairy products.

**POSSIBLE SIDE EFFECTS:** Gastrointestinal distress

**ACTION OF FERROUS COMPOUNDS:** These mineral supplements are used to treat iron deficiency anemia.

**HIGH-RISK GROUPS:** Anyone who takes this drug

**NUTRITIONAL INTERACTIONS**

**IRON ABSORPTION:** The absorption of iron supplements is decreased by antacids and by foods rich in phosphates and fiber, while vitamin C and foods rich in vitamin C such as citrus fruit juices enhance absorption.

**Prevention and Treatment:** You should not take iron supplements with antacids, but rather should take them at mealtimes, preferably with a vitamin C-rich fruit juice or with milk. Foods rich in phosphate (chocolate, cocoa, dried beans and peas, dried fruit, nuts, peanut butter, and whole grains) should not be taken at the same time as the iron supplement. Nor should you take iron supplements with foods rich in fiber, such as oatmeal and other whole grain cereals.

If you take a vitamin C supplement regularly, take it with the ferrous supplement.

**GASTROINTESTINAL DISTRESS:** Iron supplements are gastrointestinal irritants and can cause stomach discomfort, nausea, diarrhea, and constipation.

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**GLUTETHIMIDE****DRUG FAMILY:** Anti-anxiety**BRAND NAME:** Doriden**HOW TO TAKE GLUTETHIMIDE:** At meals**FOODS TO AVOID:** Sweet, sticky foods**POSSIBLE SIDE EFFECTS:** Vitamin D deficiency; dry mouth; constipation**ACTION OF GLUTETHIMIDE:** This drug decreases anxiety and tension. It can also provide protection against motion sickness, in part by inhibiting salivary secretion and intestinal motility.**HIGH-RISK GROUPS:** The elderly**NUTRITIONAL INTERACTIONS****VITAMIN D DEFICIENCY:** Glutethimide accelerates the rate at which the liver breaks down vitamin D, permitting it to be excreted before it is fully effective. This can lead to a vitamin D deficiency if glutethimide is used for extended periods.

Vitamin D is needed for the body to absorb calcium and phosphorus, to promote the development of strong teeth and bones. Whenever calcium blood levels are low, the body will liberate the calcium it needs from the bones, where it is stored. The result is osteomalacia, a condition in which the bones are weakened, in severe cases to the degree that they will fracture easily. Prominent symptoms are bone pain in the back, thighs, shoulder region, or ribs; difficulty in walking; and weakness in the muscles of the legs.

The condition is reversible once calcium blood levels are raised.

Long-term losses of calcium may also lead to osteoporosis, another condition where the bones are weakened and made brittle. Osteoporosis, an unexplained and sudden loss of calcium from the bones, is irreversible. The common symptoms are backache, a gradual loss of height, and periodontal disease. Fractures of the vertebrae, hip, and wrist occur, sometimes spontaneously.

**Prevention and Treatment:** To avoid a vitamin D deficiency while on this drug, you should take 400 to 800 IU of vitamin D per day as a supplement to a diet of foods rich in the vitamin, such as fortified milk, butter, liver, egg yolks, salmon, tuna, and sardines. (See table of Vitamin D-Rich Foods, page 313.)

Vitamin D is initially formed in the skin by exposure to sunlight and activated in the kidneys and liver. The production of vitamin D is dependent upon climatic conditions, air pollution, skin pigmentation (the darker the skin, the lower the production), the area of skin exposed, the duration of exposure to the sun, and the use of sun screens. Adults who are not often exposed to sunlight (e.g. those who are housebound or by custom heavily clothed), require dietary sources of vitamin D to prevent osteomalacia.

In adults, 2,000 IU of the vitamin should be taken if osteomalacia is indicated. If your intake of vitamin D exceeds 4,000 IU per day, vitamin D poisoning can occur. The symptoms are loss of appetite, headache, excessive thirst, irritability, and kidney stones.

If dairy products must be avoided because you have an intolerance to lactose (the

sugar present in dairy products), a 1,200 to 1,500 mg daily supplement of calcium should be taken. (See Calcium Supplements entry page 51.)

**OTHER PROBLEMS:** By decreasing salivary activity, glutethimide can make you more susceptible to dental cavities. As a result, you should avoid sweet, sticky foods, and strict attention should be paid to oral hygiene.

This drug should also be taken at meals to avoid stomach and intestinal distress.

Glutethimide can also cause constipation. Constipation is usually safely remedied by an increase in the bulk in the diet. This means consuming larger servings of any of the following: dried fruits, fresh fruits, salad vegetables, cooked vegetables, and whole grain foods (brown rice, whole wheat breads, and cereals). It is not necessary to purchase products that claim "extra fiber" has been added to them.

Persistent constipation may also be relieved by doubling the amount of fluid consumed each day. Wheat bran, if used, should be added to the diet gradually, and fluid should be increased by at least ¼ cup per teaspoon of bran. (See table of Dietary Fiber-Rich Foods, page 293.)

**GRISEOFULVIN****DRUG FAMILY:** Anti-fungal**BRAND NAMES:** Fulvicin P/G; Fulvicin P/G 165 & 330; Fulvicin-U/F; Grifulvin V; Grisactin; Gris-PEG**HOW TO TAKE GRISEOFULVIN:** At midday, with a meal that contains fatty foods such as meatsandwich  
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**FOODS TO AVOID:** Fatty and very sweet foods

**POSSIBLE SIDE EFFECTS:** Deficiencies in vitamins A, K, and B<sub>12</sub>; diarrhea, nausea, and vomiting

**ACTION OF KANAMYCIN:** This drug is prescribed to suppress the growth of intestinal bacteria prior to surgery. It is also used to treat severe infections caused by gram negative bacilli in children and as an adjunct to the treatment of hepatic coma, tuberculosis, and urinary-tract infections.

**HIGH-RISK GROUPS:** Vegetarians, the elderly, heavy drinkers, users of oral contraceptives, children, teenagers

**NUTRITIONAL INTERACTIONS**

**VITAMIN A DEFICIENCY:** When you are taking kanamycin, it may impair the absorption of fat and lead to the malabsorption of vitamins A and K.

Vitamins A and K are two of the fat-soluble vitamins that are stored in the fat in your body. Deficiencies can occur when kanamycin is used for several weeks by patients whose vitamin stores and dietary intake are marginal—a condition found in a large number of people in the United States, especially in relation to vitamin A.

**Prevention and Treatment:** Fat-soluble vitamins do not have to be consumed every day, because they are stored in the body, but it is advised not to take major doses of vitamin A (over 10,000 IU per day). An overdose can be toxic and can lead to diarrhea, nausea, hair loss, extreme fatigue, and menstrual irregularities. A small dose of vitamin A such as the 5,000 IU's found in a multivitamin should counteract a vitamin A deficiency.

**ISOXAZOLYL PENICILLINS**

**DRUG FAMILY:** Antibiotic

**BRAND NAMES:** [GENERIC/Brand] CLOXACILIN/Tegopen; DICLOXACILLIN/Dynapen; Pathocil; OXACILLIN/Prostaphlin

**HOW TO TAKE ISOXAZOLYL PENICILLINS:** On an empty stomach 1 hour before or 2 to 3 hours after eating, with water and never with acidic beverages such as fruit juices, sodas, or wine

**FOODS TO AVOID:** Fruit juices, sodas, and wine should not be drunk within 1 hour of taking the drug

**POSSIBLE SIDE EFFECTS:** Gastrointestinal disturbances

**ACTION OF ISOXAZOLYL PENICILLINS:** These antibiotics are used against bacterial infections of *Staphylococcus aureus* that are resistant to regular penicillin.

**HIGH-RISK GROUPS:** Anyone who takes this drug

**NUTRITIONAL INTERACTIONS**

**GENERAL ADVICE:** This drug is best absorbed on an empty stomach and should be taken 1 hour before or 2 to 3 hours after eating. However, it does sometimes cause gastrointestinal disturbances.

**KANAMYCIN**

**DRUG FAMILY:** Antibiotic

**BRAND NAME:** Kantrex

**HOW TO TAKE KANAMYCIN:** With meals

**FOODS TO AVOID:** Foods rich in saturated fat and cholesterol; more than 2 drinks of any alcoholic beverage per day

**POSSIBLE SIDE EFFECTS:** Hardening of the arteries; Vitamin A toxicity

**ACTION OF ISOTRETINOIN:** This drug is used in the treatment of severe cystic acne.

**HIGH-RISK GROUPS:** Heart patients, diabetics, anyone who consumes alcohol regularly, people with a family history of heart disease, people who are overweight

**NUTRITIONAL INTERACTIONS**

**HEART DISEASE:** Isotretinoin is likely to elevate plasma triglycerides and blood cholesterol levels, and to reduce HDL, or high density lipoproteins, which clean the arteries of cholesterol deposits. The reduction in HDL increases the risk of heart disease.

**Prevention and Treatment:** Animal fat should be limited in the diet. No more than 2 drinks of alcohol per day should be consumed, since it tends to raise triglyceride and cholesterol levels.

**VITAMIN A TOXICITY:** Isotretinoin is closely related to vitamin A, and patients on the drug are likely to exhibit signs of vitamin A toxicity: joint pain; dysmenorrhea; easily induced bleeding; loss of appetite; irritability; fatigue; restlessness; headache; nausea; muscle weakness; stomach pain; diarrhea; weight loss; dry; itching; peeling skin; rashes; dry; scaling lips; loss of hair; brittle nails.

**Prevention and Treatment:** Under no circumstances should any form of vitamin A supplement be taken concurrently with the drug.

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Half the vitamin K in humans comes from dietary sources: predominantly green leafy vegetables and to a lesser extent fruit, cereals, dairy products, and meat. The rest of the vitamin K in our bodies is synthesized by the bacteria in the intestines. The daily need for the vitamin is in the range of 70 to 140 mcg. Women who have had several pregnancies or whose menstrual periods are heavy are at high risk. Many of the elderly are at risk of a vitamin K deficiency because they have a problem of poor fat absorption, and vitamin K, a fat-soluble vitamin, must be accompanied by sufficient dietary fat to be properly absorbed.

**Prevention and Treatment:** A vitamin K deficiency can be countered by a vitamin K supplement of 100 mcg per day, and a diet that includes foods rich in the vitamin, such as kale, spinach, cabbage, cauliflower, leafy green vegetables, liver (especially pork liver), and fish. (See table of Vitamin K-Rich Foods, page 315.)

Vitamin E supplements should not be taken when at risk of a vitamin K shortage, because vitamin E impairs the absorption of K.

## PARALDEHYDE

**DRUG FAMILY:** Anti-alcoholism

**HOW TO TAKE PARALDEHYDE:** Immediately after meals with a strong-tasting beverage such as orange juice, tea, or milk

**FOODS TO AVOID:** Alcoholic beverages

**POSSIBLE SIDE EFFECTS:** Vitamin C deficiency; stomach cramps

**ACTION OF PARALDEHYDE:** This drug is prescribed in the treatment of withdrawal symptoms associated with abstinence, and as a tranquilizer.

**HIGH-RISK GROUPS:** Smokers, users of oral contraceptives, the elderly

### NUTRITIONAL INTERACTIONS

**VITAMIN C DEFICIENCY:** Paraldehyde increases the rate at which vitamin C is broken down in the body, making it far less effective and increasing the need for the vitamin. With an adequate vitamin C intake, the body normally maintains a fixed pool of the vitamin, and rapidly excretes any excess in the urine. Ordinarily, 60 to 100 mg of vitamin C per day will fulfill the body's needs, except perhaps in the case of smokers who may need a little more.

However, with an inadequate intake, this reservoir becomes depleted at the rate of up to 3 percent per day. Obvious symptoms of a vitamin C deficiency do not appear until the available vitamin C has been reduced to about one fifth of its optimal level, and this may take as much as two months to occur. The earliest signs of a deficiency are spongy or bleeding gums, slightly swollen wrists and ankles, and capillaries that break under the skin, producing pinpoint hemorrhages around hair follicles on the arms and legs.

Vitamin C is important to the function of your bodily systems in a number of ways. When your body is deficient in vitamin C, your white blood cells are less able to detect and destroy invading bacteria. On the other

hand, megadoses of the vitamin (over 2 grams daily) can also impair this ability. Vitamin C also helps your body guard itself against such pollutants as the known cancer-causing agents nitrites and nitrosamines, and protects vitamin A and E from degradation. In addition, it aids in iron absorption, speeds up wound healing, and strengthens blood vessels. Other well-known effects are that, in some people, vitamin C reduces the symptoms of a cold by one third and is important in preventing plaque formation on the teeth, which reduces the likelihood of gum disease and tooth decay.

**Prevention and Treatment:** Patients taking paraldehyde should be sure to get 100 mg per day of vitamin C. Vitamin C-rich foods include citrus fruits, broccoli, spinach, cabbage, and cantaloupe. (See table of Vitamin C-Rich Foods, page 313.) In preparing foods rich in vitamin C, you should keep in mind that it is readily oxidized (during both food processing and storage when exposed to the air). Copper and iron cooking utensils will speed up the oxidation, and the longer the food is cooked and the higher the temperature, the greater the vitamin loss. Large amounts of water used in cooking will wash out the vitamin. Bruising or cutting the fruit also decreases its vitamin C content.

Supplements can also be taken, although the body tends to eliminate any surplus of C, so large supplements of more than 100 mg a day are unnecessary. In fact, megadoses of the drug can cause nausea, abdominal cramps, and diarrhea, among other undesirable side effects.

**OTHER ADVICE:** Paraldehyde can irritate the stomach and cause cramps. It also has a dis-

B<sub>6</sub> deficiency in penicillamine users has been reported to cause anemia characterized by lethargy, inability to concentrate, breathlessness on exertion, a pale complexion, and inflammation of the eye, as well as more common symptoms of a B<sub>6</sub> deficiency such as a sore mouth and tongue, cracks in the lips and corners of the mouth, and patches of itching, scaling skin. A severe vitamin B<sub>6</sub> deficiency may cause depression and confusion.

Vitamin B<sub>6</sub> deficiencies are common among the elderly. Smokers also have lower than normal body levels of this vitamin, and alcoholics, as well, often experience this deficiency, since alcohol interferes with the body's ability to use B<sub>6</sub>. It is estimated that one of every two Americans consumes less than 70 percent of the Recommended Dietary Allowance of B<sub>6</sub>.

**Prevention and Treatment:** To avoid B<sub>6</sub> deficiency, you should consume a diet featuring such food sources of vitamin B<sub>6</sub> as liver (beef, calf, and pork), herring, salmon, walnuts, peanuts, wheat germ, carrots, peas, potatoes, grapes, bananas, and yeast. (See table of Vitamin B<sub>6</sub>(Pyridoxine)-Rich Foods, page 311.) The vitamin is present in significant amounts in meats, fish, fruits, cereals, and vegetables, and to a lesser extent in milk and other dairy products.

Since vitamin B<sub>6</sub> is decomposed at high temperatures, modern food processing often diminishes dietary sources of the vitamin. Consequently, the more processed foods you eat, the more susceptible you will be to a deficiency of this vitamin. The same losses also occur in cooking: meat loses as much as 45 to 80 percent, vegetables 20 to 30 percent.

If penicillamine is taken at high doses, 75 mg per day or more, a daily supplement of 100 mg of B<sub>6</sub> should be added to the patient's regimen. If it is being taken in lower doses, 25 to 50 mg of B<sub>6</sub> should be added. This quantity of vitamin B<sub>6</sub> cannot be obtained in the diet alone, so a supplement has to be taken.

It has been observed that 15 to 20 percent of oral contraceptive users show direct evidence of a vitamin B<sub>6</sub> deficiency. If you are among these people, you should take 50 mg of vitamin B<sub>6</sub> per day if you are on penicillamine for a short period, and 100 mg daily if you take the drug for longer than a week.

**ZINC DEFICIENCY:** In elderly patients, taking the drug for extended periods (usually for rheumatoid arthritis) can lead to zinc deficiency, which involves impaired healing of wounds, scaly dry skin on the face and limbs, and anorexia associated with loss of taste. Zinc deficiencies probably account for the drug impairing the sense of taste for sweet and salt, which often leads to a decreased appetite.

**Prevention and Treatment:** Foods rich in zinc such as red meats, whole wheat bread, and brown rice should be included in the diet. (See table of Zinc-Rich Foods, page 315.) To decrease the effect of the drug on appetite, take it 1 hour before or 3 hours after meals.

**OTHER ADVICE:** Many patients taking penicillamine experience stomachache, nausea, vomiting, blunting of taste, and diarrhea. All of these effects usually disappear when use of the drug is discontinued.

## PENICILLIN

**DRUG FAMILY:** Antibiotic

**BRAND NAMES:** [GENERIC/Brand] PENICILLIN (ORAL)/Cyclapen-W; Omnipen; Pathocil; Pentids; Pen.Vee K; Principen; Unipen; Veetids; Wymox; PENICILLIN (REPOSITORY)/Bicillin C-R; Bicillin C-R 900/300; Bicillin L-A; PENICILLIN V POTASSIUM/Betapen-VK; Penicillin V Potassium; Pen. Vee K; SK-Penicillin VK; V-Cillin K; Veetids

**HOW TO TAKE PENICILLIN:** On an empty stomach 1 hour before or 2 hours after meals with water

**FOODS TO AVOID:** The drug should never be taken with fruit juices, sodas, wine, or other acidic beverages

**POSSIBLE SIDE EFFECTS:** Deficiencies of vitamins K, B<sub>6</sub>, and B<sub>12</sub>, folic acid, and potassium

**ACTION OF PENICILLIN:** This familiar drug is the one most often chosen for a wide variety of bacterial infections, including respiratory problems, scarlet fever, erysipelas (acute inflammation of the skin and underlying tissues), pneumonia, pharyngitis, and Vincent's gingivitis (trench mouth).

**HIGH-RISK GROUPS:** The elderly, vegetarians, pregnant women, users of oral contraceptives, heavy drinkers, smokers, lactating women, children, teenagers

### NUTRITIONAL INTERACTIONS

**VITAMIN K DEFICIENCY:** Penicillin may decrease your vitamin K levels by killing the bacteria in the large intestine responsible

tion of potassium, which can lead to a potassium deficiency, particularly if you are taking thiazide diuretics or cortisone-containing drugs, since these also deplete body potassium. Potassium regulates the amount of water in the cells of the body and is essential for the proper functioning of the kidneys and the heart muscle, and the secretion of stomach juices. The most alarming symptom of a potassium deficiency is an irregular heartbeat, which can lead to a heart attack.

**Prevention and Treatment:** Potassium depletion can be avoided by including such potassium-rich foods in your diet as tomato juice, lentils, dried apricots, asparagus, bananas, peanut butter, chicken, almonds, and milk. (See table of Potassium-Rich Foods, page 302.)

Potassium supplements should never be taken unless prescribed by a physician. They can cause anemia by interfering with the absorption of vitamin B<sub>12</sub>. Just a few grams can also drastically increase the risk of heart failure. If you experience difficulty in swallowing while taking potassium supplements, consult your physician immediately. If supplements are prescribed, be aware that the absorption of the supplements potassium iodide and potassium chloride is decreased by dairy products, and that both are gastric irritants and should be taken with meals.

Too much salt in your diet can also compromise your body's supply of potassium, as can large amounts (1 to 3 ounces) of licorice candy made from natural extract. Imported licorice usually contains natural licorice extract, whereas domestic brands usually do not. Check the package.

**OTHER ADVICE:** Penicillin leaves an aftertaste that may decrease appetite. It should be taken between meals.

The absorption of penicillin is delayed when it is taken with food. It is also destroyed when consumed with fruit juice or with other acidic drinks and foods.

## PENICILLIN G

**DRUG FAMILY:** Antibiotic

**BRAND NAMES:** [GENERIC/Brand] BENZATHINE/Bicillin C-R; Bicillin C-R 900/300; Bicillin L-A; Permapen; PENICILLIN G POTASSIUM/Pentids; Pfizerpen; SK-Penicillin G; PENICILLIN G PROCAINE/Bicillin C-R; Bicillin C-R 900/300; Crysticillin 300 A.S. & Crysticillin 600 A.S.; Pfizerpen-AS; Wycillin; Wycillin & Probenecid; PENICILLIN G SODIUM

**HOW TO TAKE PENICILLIN G:** With water on an empty stomach 1 hour before or 2 to 3 hours after meals

**FOODS TO AVOID:** The drug should not be taken with acid-containing beverages like fruit juices, soft drinks, or wine. You should cut down on the amount of salty foods you consume.

**POSSIBLE SIDE EFFECTS:** Potassium deficiency; hypertension

**ACTION OF PENICILLIN G:** This anti-bacterial agent is the antibiotic of choice for a wide variety of infectious diseases, including peritonitis, middle-ear infections, pneumonia, arthritis, meningitis, endocarditis, diphtheria, anthrax, rat-bite fever, syphilis, pelvic

inflammatory disease, and numerous others.

**HIGH-RISK GROUPS:** Hypertensives, people taking diuretics

## NUTRITIONAL INTERACTIONS

**POTASSIUM DEFICIENCY:** While you are taking penicillin G, you could conceivably experience a potassium deficiency. Potassium regulates the amount of water in the cells of the body and is essential for the proper functioning of the kidneys and the heart muscle, and the secretion of stomach juices. People with a potassium deficiency may have such symptoms as weakness, a loss of appetite, nausea, vomiting, dryness of the mouth, increased thirst, listlessness, apprehension, and diffuse pain that comes and goes. The most alarming symptom of a potassium deficiency is an irregular heartbeat, which can lead to heart failure.

Low blood serum levels of potassium, called hypokalemia, are associated with laxative abuse, because many laxatives promote an increased loss of potassium in the gastrointestinal tract. This risk is especially high in elderly patients, who often consume diets low in potassium.

Proper potassium levels in your body can also be threatened if penicillin G is taken concurrently with cortisone-containing drugs. Diuretics, commonly prescribed for people with heart disease, also decrease the level of body potassium. Therefore, the risk of a deficiency is significantly increased if a diuretic is taken concurrently with this drug.

**Prevention and Treatment:** Potassium depletion can be avoided by including such

## POTASSIUM SUPPLEMENTS

**DRUG FAMILY:** Mineral supplements

**BRAND NAMES:** [GENERIC/Brand] POTASSIUM CHLORIDE/Infalyte; K-Lor; K-Lyte/Cl & K-Lyte/Cl 50; K-Tab; Kaochlor 10%; Kaochlor S-F 10%; Kaon Cl-10; Kaon-Cl; Kato; Kay Ciel; Klor-Con/25; Klor-Con; Klor-Con 20%; Klor 10%; Klorvess; Klorvess 10%; Klotrix; Kolyum; Micro-K; Potage; Potassium Chloride Concentrate; Rum-K; Slow-K; POTASSIUM GLUCONATE/Bi-K; Kaon; Kolyum; Twin-K; Twin-K-Cl; POTASSIUM IODIDE/Iodo-Niacin; Isuprel Hydrochloride Compound; Mudrane; Mudrane-2; Pediacof; Pima; Quadrinal; SSKI

**HOW TO TAKE POTASSIUM SUPPLEMENTS:** With food

**FOODS TO AVOID:** Dairy products must not be eaten within 2 hours of taking potassium chloride or potassium iodide

**POSSIBLE SIDE EFFECTS:** Vitamin B<sub>12</sub> deficiency; upset stomach

**ACTION OF POTASSIUM SUPPLEMENTS:** Most often, potassium supplements are prescribed for people who are taking diuretics that deplete body potassium.

**HIGH-RISK GROUPS:** Vegetarians, heavy drinkers, the elderly, users of oral contraceptives, smokers

### NUTRITIONAL INTERACTIONS

**POTASSIUM ABSORPTION:** The absorption of potassium chloride and potassium iodide compounds is decreased by dairy products.

**Prevention and Treatment:** Potassium iodide or potassium chloride must not be taken within 2 hours of eating dairy products.

**VITAMIN B<sub>12</sub> DEFICIENCY:** All potassium compounds impair the absorption of vitamin B<sub>12</sub>

and can cause a deficiency in the high-risk groups. Vitamin B<sub>12</sub> is needed for the normal development of red blood cells and for the healthy functioning of all cells, in particular those of the bone marrow, nervous system, and intestines.

The most common result of a B<sub>12</sub> deficiency is pernicious anemia, which is characterized by listlessness, fatigue (especially following such physical exertion as climbing a flight of stairs), numbness and tingling in the fingers and toes, palpitations, angina, light-headedness, and pale complexion. A vitamin B<sub>12</sub> deficiency can also lead to an irreversible breakdown of the brain membranes, causing loss of coordination, confusion, memory loss, paranoia, apathy, tremors, and hallucinations. In extreme cases, degeneration of the spinal cord can also result.

Since vitamin B<sub>12</sub> can be obtained only from animal food sources, strict vegetarians are at particular risk here. Oral contraceptive users too have a greater chance of experiencing this deficiency since they often have a poor vitamin B<sub>12</sub> status to begin with, as do smokers. Heavy consumers of alcohol, as well, frequently lack B<sub>12</sub> because alcohol impairs the absorption of the vitamin. Patients with bacterial or parasitic infections of the intestine also have difficulty in absorbing this vitamin, as do those who take excessive amounts of antacids at mealtimes

and many elderly people. In any case, anyone who is likely to have a vitamin B<sub>12</sub> absorption problem should be alert for signs of pernicious anemia while taking this drug.

**Prevention and Treatment:** A balanced diet containing plenty of vitamin B<sub>12</sub> sources is advised, and if insufficient quantities are included in the diet, a daily supplement of 6 mcg of the vitamin should be taken.

Only animal products, including dairy foods and fish and shellfish, contain natural vitamin B<sub>12</sub>. However, some vegetable foods are supplemented with vitamin B<sub>12</sub>; many soy products, for example, are enriched with B<sub>12</sub> to safeguard vegetarians. (See table of Vitamin B<sub>12</sub>-Rich Foods, page 312.)

Vitamin B<sub>12</sub> is stored in the liver, so one meal that includes a B<sub>12</sub>-rich source such as calf's liver will normally fulfill your body's need for this vitamin for 2 to 3 weeks. (One 3-ounce serving of calf's liver contains 100 mcg of vitamin B<sub>12</sub>.)

People who use major amounts of vitamin C should be aware that vitamin C supplements of more than 500 mg per day can damage B<sub>12</sub> and contribute to a B<sub>12</sub> deficiency. However, anyone who eats red meat two times a week has a three- to five-year supply of B<sub>12</sub> in his liver.

The presence of baking soda in cooking will destroy vitamin B<sub>12</sub> and should be avoided whenever possible. B<sub>12</sub> also degrades at high temperatures, as when meat is placed on a hot griddle. The pasteurization of milk and the sterilization in boiling water of a bottle of milk also cause the loss of some B<sub>12</sub>.

**GASTROINTESTINAL DISTRESS:** It is conceivable that you will experience some gastric

irritation while taking potassium supplements.

**Prevention:** Potassium supplements should be taken to minimize the effects of pernicious anemia. Users of potassium supplements should be aware that potassium supplements may cause gastrointestinal symptoms.

## PRIMIDONE

**DRUG FAMILY:** Anticonvulsants

**BRAND NAME:** Miltexin

**HOW TO TAKE PRIMIDONE:** With food, as directed by physician

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Drowsiness, weakness, loss of appetite, nausea, vomiting, constipation, dry mouth, blurred vision, dizziness, headache, tremors, skin rash, weight gain, depression, fatigue, loss of coordination, loss of reflexes, loss of muscle mass, loss of muscle strength, loss of muscle tone, loss of muscle bulk, loss of muscle power, loss of muscle endurance, loss of muscle flexibility, loss of muscle elasticity, loss of muscle resilience, loss of muscle tone, loss of muscle bulk, loss of muscle power, loss of muscle endurance, loss of muscle flexibility, loss of muscle elasticity, loss of muscle resilience

**ACTION OF PRIMIDONE:** Primidone is used to treat epilepsy and to relieve pain and inflammation.

**HIGH-RISK GROUPS:** Elderly, alcoholics, those taking oral contraceptives, women, teenagers

### NUTRITIONAL INTERACTIONS

**VITAMIN K DEFICIENCY:** Primidone is likely to lead to a deficiency of vitamin K. This deficiency may cause unusual ease of bruising.

Vitamin K is necessary for the production of blood-clotting factors in the liver. Without sufficient vitamin K in the diet, however, blood-clotting factors will not be produced in the liver.

## **SODIUM-BASED SALINE CATHARTICS**

**DRUG FAMILY:** Laxative

**BRAND NAMES:** [GENERIC/Brand] SODIUM PHOSPHATE/Fleet Enema; Fleet Phospho-Soda; Fleet Prep Kits; SODIUM SULFATE/GoLYTELY

**HOW TO TAKE SALINE CATHARTICS:** Ideally at bedtime, but they can be taken at other times provided it is not within 2 hours of a meal

**FOODS TO AVOID:** None

**POSSIBLE SIDE EFFECTS:** Hypertension in patients with kidney or heart disease; decreased absorption of potassium, protein, sugar, fat, and vitamin D

**ACTION OF SODIUM-BASED SALINE CATHARTICS:** These drugs act as laxatives by increasing the activity of the muscles lining the intestines, and so reducing the time required for food to pass through the intestinal tract. Saline cathartics, including sodium salts, act partly by drawing water into the colon to increase the bulk of the stools.

They also act by releasing cholecystokinin, a hormone, into the small intestine, which is responsible for causing bile to be secreted into the intestine. Because bile contains sodium, this further increases the amount of water in the colon and adds bulk to the stool. It also accelerates the rate at which the muscles in the intestine contract and shortens the time needed to push stools downward.

**HIGH-RISK GROUPS:** The elderly, hypertensives, heart patients

## **NUTRITIONAL INTERACTIONS**

**CARDIAC AND KIDNEY COMPLICATIONS:** Sodium-based saline cathartics should not be used by people with heart disease, since the sodium in these drugs is likely to cause the blood to increase in volume, thereby forcing the kidneys to excrete the excess of both the sodium and the water. Should the kidneys fail to excrete all of this sodium and water, as is common in the elderly, the heart must work harder to pump the extra fluid around the body, which leads to higher blood pressure, and possibly kidney or heart failure.

**Prevention and Treatment:** Most people are unaware of how much sodium their diet contains. The average American consumes 15 pounds of salt (sodium chloride) annually, or 3 to 4 teaspoons per day. Each teaspoon contains 2 grams of sodium. One third of our salt intake is found naturally in the foods we eat, one third is added in processing, and one third is added at the table.

If sodium-containing compounds are used frequently, a low-salt diet should be followed. This means that no salt should be added to your food at the table, but up to 1 teaspoon can be added per day during cooking. Obviously salty foods such as anchovies, snack chips, green olives, dill pickles, sauerkraut, sardines, canned soups and vegetables, TV dinners, processed cheeses, cold cuts, soy sauce, and catsup should be avoided. (See table of Sodium-Rich Foods, page 306.)

**NUTRITIONAL DEFICIENCIES:** All the saline cathartics cause decreases in the absorption of potassium, protein, glucose, fat, vitamin D, and calcium, no matter when they are taken,

though the effect is usually only a modest one. But this could be intensified if they are administered with or shortly after food.

**Prevention and Treatment:** None of the saline cathartics should be taken with meals or within 2 hours of a meal.

## **SODIUM BICARBONATE**

**DRUG FAMILY:** Antacids

**BRAND NAMES:** Alka-Seltzer; Citrocarbonate Antacid

**HOW TO TAKE SODIUM BICARBONATE:** Between meals and at bedtime

**FOODS TO AVOID:** Large amounts of acid-containing foods such as soft drinks, fruit juices, and wine; caffeine-containing foods such as coffee, tea, cola, and chocolate; milk and milk products

**POSSIBLE SIDE EFFECTS:** Hypertension; poor appetite, nausea, vomiting; headaches; feelings of weakness; impaired vision, poor absorption of most nutrients; kidney damage

**ACTION OF SODIUM BICARBONATE:** Used to reduce the acidity of the stomach.

**HIGH-RISK GROUPS:** Hypertensives, the elderly, young women

## **NUTRITIONAL INTERACTIONS**

**HYPERTENSION:** Because of the considerable amount of sodium contained in sodium bicarbonate (1,042 mg per dose), continuous use is likely, in susceptible individuals, to contribute to hypertension—a disease that may present no noticeable symptoms for years but which, if left untreated, can in-

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of oral contraceptives the chances are some-  
what higher. A shortage of zinc in your sys-  
tem may result in impaired healing of  
wounds and ulcers, scaly dermatitis of the  
face and limbs, and anorexia associated with  
the loss of taste.

**Prevention and Treatment:** Patients using  
tetracycline should be sure to get the Rec-  
ommended Dietary Allowance of zinc. An-  
imal foods are good sources, with the richest  
being oysters, herring, milk, and egg yolks.  
Among plant foods, whole grains are richest  
in zinc, but it is not as well absorbed from  
them as from meat. Fiber and phytic acid  
in the cereal grains hinder its absorption.  
The recommended intake of 15 mg per day  
for adults is usually met easily by the diet  
of the average middle-class person, but de-  
ficiencies are more likely if animal protein  
is underemphasized. As a rule of thumb,  
two small servings of animal protein a day  
will provide sufficient zinc. Supplements  
should not be necessary, provided good  
sources of the nutrients are included in the  
diet.

**VITAMIN B<sub>6</sub> DEFICIENCY:** Tetracycline inacti-  
vates vitamin B<sub>6</sub> and could conceivably cause  
a deficiency after a few days of use, partic-  
ularly in heavy drinkers and oral contracep-  
tive users. It is estimated that one of every  
two Americans consumes less than 70 per-  
cent of the Recommended Dietary Allow-  
ance of B<sub>6</sub>.

Common symptoms of this deficiency are  
a sore mouth and tongue, cracks in the lips  
and corners of the mouth, and patches of  
itching, scaling skin. A severe vitamin B<sub>6</sub>  
deficiency may cause depression and con-  
fusion.

**Prevention and Treatment:** To avoid a B<sub>6</sub>  
deficiency, you should consume a diet fea-  
turing food sources of the vitamin: liver  
(beef, calf, and pork), herring, salmon, wal-  
nuts, peanuts, wheat germ, carrots, peas,  
potatoes, grapes, bananas, and yeast. (See  
table of Vitamin B<sub>6</sub>(Pyridoxine)-Rich Foods,  
page 311.) The vitamin is present in signif-  
icant amounts in meats, fish, fruits, cereals,  
and vegetables, and to a lesser extent in milk  
and other dairy products.

Since vitamin B<sub>6</sub> is decomposed at high  
temperatures, modern food processing often  
diminishes the food content of this vitamin.  
Consequently, the more processed foods you  
eat, the more susceptible you will be to a  
deficiency of this vitamin. The same losses  
also occur in cooking: meat loses as much  
as 45 to 80 percent, vegetables 20 to 30  
percent.

Some 15 to 20 percent of oral contracep-  
tive users have been observed to have vi-  
tamin B<sub>6</sub> deficiencies. If you are among these  
people, you should take a 5 mg supplement  
of vitamin B<sub>6</sub> per day. Smokers tend to have  
lower body levels of this vitamin than non-  
smokers and should take a 5 mg supplement  
while on tetracycline. However, keep in  
mind that you can take too much vitamin  
B<sub>6</sub>; people taking over 1 gram per day have  
been reported to experience nerve degen-  
eration.

**OTHER ADVICE:** Antacids decrease the ab-  
sorption of tetracycline and should not be  
taken at the same time. Calcium-, magne-  
sium-, and aluminum-based antacids are  
particularly bad in this respect. If you ex-  
perience a severe gastric reaction to the  
drug, the antacid that may give you relief

is sodium bicarbonate. It still impairs the  
drug's absorption, but not to the same de-  
gree as the others do.

Minocin and the Vibramycins are not af-  
fected by antacid use.

People taking anti-coagulants are at risk  
of a vitamin K deficiency, and vegetarians  
could suffer from a vitamin B<sub>12</sub> deficiency.  
Therefore, elderly patients and vegetarians  
who consume only vegetable matter should  
take a 6 mcg supplement of vitamin B<sub>12</sub>.

Dairy products inactivate tetracycline and  
should not be consumed in abundance by  
people taking this drug.

Except for minocycline hydrochloride and  
doxycycline, which can be taken with or  
without meals, the tetracyclines should be  
taken on an empty stomach, 1 hour before  
or 2 hours after meals. The presence of food  
in the stomach, especially dairy products,  
significantly reduces the absorption of the  
drug, and makes it less effective. However,  
if a severe gastric reaction occurs with the  
drug, it should be taken with a nondairy  
meal.

## THEOPHYLLINE

**DRUG FAMILY:** Anti-asthmatic

**BRAND NAMES:** Accurbron; Aerolate; Aqua-  
phyllin; Bronkaid; Bronkodyl; Bronkolixir;  
Bronkotabs; Constant-T; Elixicon; Elixo-  
phyllin; Isuprel Hydrochloride; LABID;  
Lodrane; Marax; Mudrane GG; Primatene;  
Quibron; Respbid; Slo-bid; Slo-Phyllin; So-  
mophyllin-CRT; Somophyllin-T; Sustaire;  
Synophylate; Synophylate-GG; T.E.H.; T-  
E-P; Tedral; Theobid; Theoclear L.A.; Theo-

Dur; Theofedral; Theolair; Theo-24; Theon; Theo-Organidin; Theophyl; Theophyl-SR; Theophyl-225; Theospan-SR; Theostat 80; Theostat; Theovent; Theozine; Uniphyl

**HOW TO TAKE THEOPHYLLINE:** On an empty stomach, with a large glass of water, 1 hour before or 2 to 3 hours after meals; if severe gastrointestinal upsets occur on taking the drug, it should be taken with a meal rich in protein but low in carbohydrates.

**FOODS TO AVOID:** Large quantities of carbohydrate-rich foods and drinks, and caffeine-containing beverages and foods such as coffee, tea, cola, and chocolate; charcoal-broiled beef

**POSSIBLE SIDE EFFECTS:** Stomachache and vomiting; nervousness

**ACTION OF THEOPHYLLINE:** These drugs make it easier for lung patients to breathe. They are prescribed for the relief of symptoms of asthma, bronchitis, and emphysema.

**HIGH-RISK GROUPS:** Anyone who takes this drug

**NUTRITIONAL INTERACTIONS**

**GASTROINTESTINAL DISTRESS:** Theophylline is likely to cause gastrointestinal disturbances, such as stomach pain and vomiting. However, it is optimally absorbed if taken on an empty stomach with a large volume of water, rather than with food.

**Prevention and Treatment:** If gastrointestinal upsets occur, it is likely the discomfort can be reduced or eliminated by taking the drug after eating.

**POTENCY:** Carbohydrate-rich foods or drinks decrease its effectiveness, and so should not

be consumed at the same time as the theophylline is taken.

**Prevention and Treatment:** In order to minimize both the gastrointestinal effects and any reduction in potency, theophylline can be taken following a protein-rich meal.

**OTHER ADVICE:** Theophylline makes some people very nervous. In such individuals, large quantities of caffeine-containing beverages and foods could increase this side effect. Consequently, it is best to avoid large amounts of coffee, tea, cola, and chocolate.

Charcoal-broiled beef speeds up the rate of breakdown of theophylline and decreases its effectiveness; thus, it is advised that you do not eat it when taking the drug.

**THIAZIDES**

**DRUG FAMILY:** Diuretics

**BRAND NAMES:** [GENERIC/Brand] QUINETHAZONE/Hydromox; METOLAZONE/Diulo; Zaroxolyn; CHLORTHALIDONE/Hygroton; CHLOROTHIAZIDE/Diuril; HYDROCHLOROTHIAZIDE/Esidrix; HydroDIURIL; Oretic; HYDROFLUMETHIAZIDE/Saluron; BENDROFLUMETHIAZIDE/Naturetin; BENZTHIAZIDE/Exna; TRICHLORMETHIAZIDE/Metahydrin; Naqua; METHYLCLOTHIAZIDE/Enduron; POLYTHIAZIDE/Renese; CYCLOTHIAZIDE/Anhydron

**HOW TO TAKE THIAZIDES:** With meals or milk

**FOODS TO AVOID:** Large amounts of licorice candy made from natural extract; when consuming alcoholic beverages, you should be very careful to avoid reducing your blood pressure below normal.

**POSSIBLE SIDE EFFECTS:** Deficiencies of potassium, zinc, and magnesium; depletion of body calcium and sodium; reduced appetite, nausea, vomiting, diarrhea, indigestion; dizziness upon standing; gout; hyperglycemia

**ACTION OF THIAZIDES:** These drugs increase the excretion of water, and also of sodium, chloride, potassium, and bicarbonate.

**HIGH-RISK GROUPS:** The elderly; heavy drinkers, vegetarians

**NUTRITIONAL INTERACTIONS**

**POTASSIUM DEFICIENCY:** These drugs reduce the amount of water in the body, and also cause your body to excrete minerals and other substances as well. One likely side effect is a potassium deficiency. Potassium regulates the amount of water in the cells of the body and is essential for the proper functioning of the kidneys and the heart muscle, and the secretion of stomach juices. The most alarming symptom of a potassium deficiency is an irregular heartbeat, which can lead to heart failure.

Low blood serum levels of potassium, called hypokalemia, are associated with laxative abuse, because many laxatives reduce potassium absorption in the gastrointestinal tract. This risk is especially high in elderly patients, who often consume diets low in potassium.

People with a potassium deficiency may have such symptoms as weakness, loss of appetite, nausea, vomiting, dryness of the mouth, increased thirst, listlessness, apprehension, and diffuse pain that comes and goes.

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(abnormally high blood glucose levels) and can aggravate a preexisting diabetic condition.

**THIORIDAZINE AND THIORIDAZINE HYDROCHLORIDE**

**DRUG FAMILY:** Anti-psychotic, anti-depressant

**BRAND NAME:** Mellaril

**HOW TO TAKE THIORIDAZINE:** As directed by your physician

**FOODS TO AVOID:** All alcoholic beverages; large amounts of alkaline foods such as milk, buttermilk, cream, almonds, chestnuts, coconuts, all vegetables except corn and lentils, and all fruits except cranberries, prunes, and plums

**POSSIBLE SIDE EFFECTS:** Constipation, dry mouth, nausea, vomiting, diarrhea, and loss of appetite

**ACTION OF THIORIDAZINE:** This drug is used in the management of psychotic maladies (including agitation, anxiety, depressed mood, tension, insomnia, and fears in the elderly). It is also used in short-term treatments of moderate to marked depression. In children, its uses are in treating behavioral problems and—in short-term application—hyperactive children.

**HIGH-RISK GROUPS:** Anyone who takes this drug

**NUTRITIONAL INTERACTIONS**

**ALCOHOL INTERACTION:** The effect of thioridazine is likely to be enhanced by alcohol.

Central nervous system depression may be increased, in some cases with severe respiratory failure. Thioridazine can also enhance the effects of alcohol in inhibiting driving skills, with a consequent increase in the chance of motor accidents.

**Prevention and Treatment:** Alcohol should not be consumed concurrently with this drug.

**ALKALINE URINE:** Because thioridazine hydrochloride is alkaline, it is excreted at a normal rate only if your urine is acidic. However, if the quantity of alkaline foods in your diet is high, your urine will lose its acidity, and the excretion of this drug will be slowed. A hazardous buildup could conceivably result. The symptoms of such a buildup or overdose are drowsiness, involuntary movements, dryness of the mouth, low blood pressure (especially on standing), and skin rashes.

**Prevention and Treatment:** Fruits, vegetables, and dairy products tend to be alkaline, and high-protein foods tend to be acidic. Foods causing the production of alkaline urine include milk, buttermilk, cream, almonds, chestnuts, coconuts, all vegetables except corn and lentils, and all fruits except cranberries, prunes, and plums.

Antacids that neutralize the acid in the stomach will also neutralize the acid in the urine, causing it to turn alkaline. Therefore, you should avoid antacids when taking this drug.

**GASTROINTESTINAL DISTRESS:** This drug is likely to make you constipated and give you a dry mouth. It also causes nausea, vomiting, diarrhea, and change in appetite in some people.

**Prevention and Treatment:** If constipation is experienced, increase the bulk in your diet by consuming larger servings of foods rich in fiber, such as whole-grain cereal products, breads, and bran. (See table of Dietary Fiber-Rich Foods, page 293.)

If nausea, vomiting, diarrhea, and a change in appetite occur, you should report the symptoms to your doctor immediately. He will adjust the dosage or give you an alternative medication.

**THYROID HORMONES**

**DRUG FAMILY:** Hormone

**BRAND NAMES:** [GENERIC/Brand] THYROID/ Armour; Cytomel; Euthroid; Levothroid; Proloid; S-P-T; Synthroid; Thyroid Strong; Thyrolar; THYROGLOBULIN/Proloid; THYROXINE/Choloxin; Euthroid; Levothroid; Synthroid; Thyrolar; L-Thyroxine; THYROXINE SODIUM/Choloxin; Synthroid; TRIIODOTHYRONINE/Thyrolar; LIOTRIX/Euthroid; Thyrolar; SODIUM LIOTHYRONINE/Thyrolar; SODIUM LEVOTHYROXINE/Synthroid; Levothroid; Thyrolar

**HOW TO TAKE THYROID HORMONES:** Usually on getting up in the morning, before eating

**FOODS TO AVOID:** Large amounts of foods containing goitrogens, such as rutabagas, cabbage, spinach, cauliflower, kale, turnips, soybean products, carrots, brussels sprouts, peaches, and beans

**POSSIBLE SIDE EFFECTS:** None with correct dosage

**ACTION OF THYROID HORMONES:** These drugs are used in replacement therapy in people



counteract the effects of the drug. Do not drink alcohol concurrently with this medication. Alcohol and drugs are broken down in the the liver by the same mechanism; if there is a high level of alcohol present, less of the drug is broken down. Hence, higher levels of this anti-coagulant build up in the body and can be extremely dangerous.

## ZINC SULFATE

**DRUG FAMILY:** Mineral supplement

**BRAND NAMES:** ACE + Z; Besta; Eldercaps; Eldertonic; Glutofac; Hemocyte Plus; Mediplex; Vicon Forte; Vicon-C; Vicon-Plus; Vio-Bec Forte; Vi-Zac; Zinc-220; Zinckel-220

**HOW TO TAKE ZINC SULFATE:** With meals

**FOODS TO AVOID:** Milk or dairy products should not be consumed within 2 hours of consuming zinc sulfate

**POSSIBLE SIDE EFFECTS:** Copper deficiency, nausea, and diarrhea

**ACTION OF ZINC SULFATE:** This drug is used to treat people suffering from a zinc deficiency. It is also the drug of choice for treating the rare acrodermatitis enteropathica, a genetic disease that manifests itself after an infant has been weaned from breast milk. A child with this disease develops diarrhea and a severe rash that usually begins around the body's orifices. The child will not thrive, infections will occur, and, if the disease is not treated, the child will eventually die.

**HIGH-RISK GROUPS:** Children, heart patients, vegetarians

## NUTRITIONAL INTERACTIONS

**COPPER DEFICIENCY:** A copper deficiency could conceivably be precipitated by the use of zinc supplements. The symptoms of this deficiency are anemia, neurological disturbances, abnormalities of connective tissues, and bruising.

**Prevention and Treatment:** Your mineral status should be monitored carefully while you are taking this drug. If necessary, a copper supplement of 3 mg of elemental copper should be taken at 2 or 3 hours' distance from the administration of the zinc sulfate. However, since excess copper also lowers high-density lipoprotein cholesterol (HDL, the good cholesterol), the copper supple-

ments should also be carefully monitored; a reduction in HDL can increase the risk of heart disease.

**OTHER ADVICE:** Since absorption of zinc sulfate is reduced by milk or dairy products, it should not be taken with them.

Zinc supplements tend to be gastric irritants, and cause nausea and mild diarrhea in some people. To reduce the risk of these side effects, the supplements should be taken with meals.

Excess zinc tends to raise blood cholesterol levels; thus, people on long-term therapy should be carefully monitored since raised cholesterol levels increase the risk of heart disease.

# Appendix I: Food Tables

## ACIDIC FOODS

These foods produce acid when broken down in the body; this acid is excreted by the kidneys and contributes to the acidity of the urine. Acidic urine tends to increase the potency of drugs that are naturally acidic and decrease the potency of drugs that are naturally basic (alkaline). Although soft drinks, fruit juices, and wine are acidic foods, in that they contain acid which can irritate the stomach, they do not actually produce acid when broken down in the body and generally do not contribute to the acidity of urine.

Bacon	Fish
Brazil nuts	Lentils
Breads	Macaroni
Cakes	Meat
Cereals	Noodles
Cheese	Peanut Butter
Cookies	Peanuts
Corn	Plums
Crackers	Poultry
Cranberries	Prunes
Eggs	Spaghetti
Filberts	Walnuts

## ALKALINE FOODS

These foods produce alkali when broken down in the body; this alkali is excreted by the kidneys and contributes to the alkalinity of the urine. Alkaline

urine will tend to increase the potency (alkaline) and decrease the potency of drugs that are naturally acidic.

Almonds  
Buttermilk  
Chestnuts  
Coconuts  
Cream  
Fruits (all except cranberries)  
Milk  
Vegetables (all except corn)

## CALCIUM-RICH FOODS

Calcium is needed to build bones and teeth. Approximately 99 percent of the body's calcium is stored in the bones. They also form a reservoir of the mineral. The remaining 1 percent is used for cell membranes, keep cells in close association, and pass substances into and out of cells, and pass substances into and from the muscles. It is also needed for the activation of many enzymes.

Food	mg per 100g
Almonds	140
Amaranth	40
Brewer's yeast	140
Broccoli	20
Cheese, cottage	120
Cheese, sandwich	110
Collard greens	10
Custard	10
Dandelion greens	110
Ice cream	120
Kelp	110

urine will tend to increase the potency of drugs that are naturally basic (alkaline) and decrease the potency of drugs that are naturally acidic.

# Appendix I: Food Tables

## FOODS

down in the body; this acid is excreted in the acidity of the urine. Acidic urine tends to be naturally acidic and decrease the pH (alkaline). Although soft drinks, fruit and other foods that contain acid which can irritate the stomach produce acid when broken down in the body, they do not increase the acidity of urine.

- Fish
- Lentils
- Macaroni
- Meat
- Noodles
- Peanut Butter
- Peanuts
- Plums
- Poultry
- Prunes
- Spaghetti
- Walnuts

## FOODS

broken down in the body; this alkali is excreted in the alkalinity of the urine. Alkaline

- Almonds
- Buttermilk
- Chestnuts
- Coconuts
- Cream
- Fruits (all except cranberries, prunes, and plums)
- Milk
- Vegetables (all except corn and lentils)

## CALCIUM-RICH FOODS

Calcium is needed to build bones and teeth, and to maintain bone strength. Approximately 99 percent of the body's calcium is found in these structures. They also form a reservoir of the mineral to maintain blood calcium at a constant level. The remaining 1 percent of body calcium helps to maintain cell membranes, keep cells in close association with one another, transport substances into and out of cells, and pass messages around the nervous system as well as to and from the muscles. It is also necessary for normal blood clotting and the activation of many enzymes.

Food	Serving	Calcium (mg)
Almonds	1 cup	500
Amaranth	4 ounces	500
Brewer's yeast	14 tablespoons	500
Broccoli	2¼ cups	500
Cheese, cottage	12 ounces	500
Cheese, sandwich	1½ to 2 ounces	500
Collard greens	1 cup	500
Custard	1 cup	500
Dandelion greens	1¼ cups	500
Ice cream	1⅔ cups	500
Kelp	1½ ounces	500

it if they are to be properly absorbed. lar milk, which is rich in fat, or some generally delays the emptying of the the movement of drugs into the small tion occurs. Therefore, it is recom- work quickly, it should be taken on an

Serving Size	Fat (grams)
1 ounce	15
1 (10 ounce)	37
2 slices	8
3 ounces	16
3 ounces	13
3 ounces	27
1 cup	8
3 ounces	11
1 ounce	8
1 ounce	9
1 cup	10
1 cup	4
1 ounce	9
1 cup	8
3 ounces	10
1	6
1 cup	14
1 cup	23
3 ounces	31
1 cup	8
1 ounce	14
3 ounces	28
3 ounces	9
1 ounce	14
3 ounces	7
1 cup	22
3 ounces	9

## FOLACIN-RICH FOODS

This vitamin is needed for the manufacture of nucleic acids—RNA and DNA, the genetic material found in all cells—as well as for the normal metabolism of certain amino acids (food proteins). In addition, it is necessary for the replacement of worn-out red blood cells, and hence for the prevention of anemia.

Food	Serving Size	Folic acid (mcg)
Apple	1 medium	5-20
Beans, green	1 cup	20-50
Beef, lean	6 ounces	5-20
Bread	1 slice	5-20
Brewer's yeast	1 tablespoon	100-150
Broccoli	2 stalks	100-150
Carrot	1 medium	5-20
Cheese, hard	1 ounce	5-20
Corn	1 medium ear	5-20
Cucumber	1 small	20-50
Egg	1 large	20-50
Grapefruit	½ medium	5-20
Kidney	3 ounces	20-50
Liver	3 ounces	100-150
Milk	8 ounces	5-20
Mushrooms	3 large	5-20
Orange juice	6 ounces	100-150
Pork, lean	6 ounces	5-20
Potato	1 medium	5-20
Sesame seeds	1 tablespoon	5-20
Shellfish	6 ounces	20-50
Spinach	4 ounces	100-150
Squash	¾ cup	20-50
Strawberries	1 cup	20-50
Veal, lean	6 ounces	5-20
Yogurt	8 ounces	20-50

### GOITROGEN-RICH FOODS

Goitrogens are substances that prevent the thyroid gland from producing thyroid hormones, causing goiter (thyroid hormone deficiency) if eaten regularly in large quantities. Although these substances cannot be prevented from acting by iodine, a good supply of dietary iodine (see table of Iodine-Rich Foods) can offer some protection against goitrogen-induced goiter. Cooking goitrogen-rich foods also greatly reduces the likelihood of goiter.

- Brussels sprouts
- Cabbage
- Carrots
- Cassava (from which tapioca pudding is made)
- Cauliflower
- Kale
- Kelp, brown and green
- Peaches
- Pears
- Rutabagas
- Soybeans
- Spinach
- Turnips
- Mustard*
- Peanuts*

### IODINE-RICH FOODS

The thyroid gland needs iodine to enable it to produce thyroid hormone (thyroxine), which controls the rate at which the cells in the body work, as well as the rate of growth and the development of children.

Food	Serving Size	Iodine (mcg)
Baked goods	3 ounces	9
Cheese	2 ounces	8

### Food

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- Egg
- Kelp
- Meat
- Milk
- Salt, iodized
- Seafood
- Vegetables

### IRON-RICH

This mineral is an integral part of hemoglobin in the muscles, which carry oxygen, and is essential for enzymes and proteins.

### Food

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- Amaranth
- Apricots, dried
- Barley
- Beans, green
- Beans, cooked
- Beef, lean
- Berries
- Bologna
- Bread
- Brewer's yeast
- Broccoli
- Buckwheat
- Bulgur wheat, dry
- Carrots
- Chicken, all cuts
- Collards
- Corn grits
- Cream of Wheat
- Eggplant

Serving Size	Iron (mg)
Medium	2.0-4
Teaspoon	.3-.7
1 ounce	1.5-2
1 ounce	4.0-5
1 ounce	4.0-5
1 tablespoon	2.0-4
1 cup	.3-.7
1 cup	1.5-2
1 cup	.3-.7
1 tablespoon	.3-.7
1 cup	2.0-4
1 cup	.3-.7
Medium	.7-1.4
2 tablespoons	.7-1.4
1 cup	4.0-5
1 cup	.7-1.4
1 gallon	.3-.7
1 ounce	2.0-4
1/2 inch diam.	.7-1.4
1 cup	.7-1.4

## High Iron Foods

the manufacture of body proteins, and in the conduction of nerve

Serving Size	Magnesium (mg)
1 ounce	77
1 ounce	39
1 cup	154
1 ounce	140

Food	Serving Size	Magnesium (mg)
Brazil nuts	1 ounce	65
Cashews	1 ounce	76
Cereal, whole grain	1 ounce	38
Cheese	2 ounces	27
Chocolate	2 ounces	167
Hazelnuts	1 ounce	53
Lima beans, cooked	1 cup	91
Peanuts	1 ounce	50
Pecans	1 ounce	41
Pistachios	1 ounce	45
Shrimp, cooked	4 ounces	58
Soybean curd	3 ounces	95
Spinach, cooked	1 cup	113
Walnuts	1 ounce	37
Wheat germ	1 ounce	96

## Oxalate-Rich Foods

This substance, if taken in large enough quantities, can lead to the formation of kidney stones in susceptible people.

Beans, baked	Mustard greens
Beans, green	Okra
Beets	Parsley
Blueberries	Peppers, green
Celery	Raspberries
Chocolate	Soybean curd
Cocoa	Spinach
Collard greens	Squash, summer
Dandelion greens	Strawberries
Eggplant	Tangerines
Grapes	Tea
Kale	Watercress
Lemon peel	Wheat germ