



Dietary Supplements

Susan Nitzke

More than half of adults in the United States are taking some form of dietary supplement. Yet many people are confused about the potential benefits and possible drawbacks.

Are you wondering if taking a vitamin or mineral supplement would be a good idea as a type of nutritional “insurance?” Are you considering an herbal product to promote health?

If so, this booklet can guide you in:

- Deciding whether to take dietary supplements,
- Choosing which product to take, and
- Consulting your health care provider.

These guidelines are based on current publications of the American Dietetic Association and U.S. Food and Drug Administration (FDA); see back page for details. This information is not intended to substitute for medical advice, nor does it cover all issues. For your specific needs, check with a medical professional or registered dietitian.

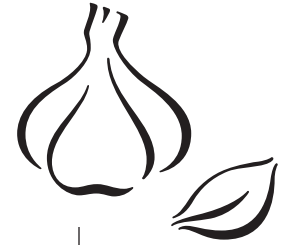
Who needs vitamins and minerals, or nutritional dietary supplements?

Most people can get all the nutrients they need from a balanced diet — the servings recommended from the five major food groups in the Food Guide Pyramid (see page 7). However, supplements can be important for persons who need to enhance their diets:

- People who do not or cannot eat a balanced diet.
- People who need more nutrients because of certain diseases, treatments or conditions.

Here are some examples:

- People with a condition known as **pernicious anemia** may need vitamin injections because they cannot absorb vitamin B₁₂ from food.
- A multivitamin containing folic acid could reduce the risk of women having babies affected by birth defects of the spinal cord or brain (neural tube defects).
- People who do not get enough calcium from dietary sources (mainly dairy products) may need to rely on calcium supplements.
- Iron supplements are beneficial for women who develop anemia due to menstrual blood loss.





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Dietary supplements checklist

If you answer yes to any of the following questions, try improving your diet by:

- Following Food Guide Pyramid recommendations (see page 7), and
- Talking to a doctor or registered dietitian about the possible need for dietary supplements and for advice on which form and dose is best for you.

Check ✓

1. Are you a woman who is pregnant, breastfeeding, or of child-bearing age?

- Yes No

Women who are pregnant or breastfeeding may need extra vitamins and minerals — especially if their diets do not include a variety of nutritious foods.

If you are child-bearing age, make sure your diet is well balanced, and ask your doctor about the benefits of taking folic acid supplements **before** you become pregnant. Good sources of **folic acid** include vegetables, fruits, whole grains and enriched breads and cereal products. Women who take folic acid supplements may **reduce by 40 to 80 percent** the risk of having a baby with a neural tube defect — *spina bifida* or another disorder of the brain and spinal cord.

If you are pregnant, carefully follow your doctor's recommendations regarding diet and supplements. Be especially cautious about using supplements that contain **vitamin A**. When you are pregnant or may soon become pregnant, high doses of vitamin A — more than 10,000 IU daily of pre-formed vitamin A (not from plant foods) — increase the risk of having a baby with certain birth defects.

Remember: The benefits of folic acid and the risks of vitamin A are greatest in the first few weeks of pregnancy.

2. Are you considering supplements for a growing child?

- Yes No

Children — especially infants — may need extra nutrients during periods of rapid growth. Ask your health care provider to help you decide whether your child needs a supplement. Children's multivitamins are usually more suitable than adult supplements.

However, be aware that young children are also more susceptible to toxicity from too much of a supplement. Each year, children die from accidental poisoning when they swallow a large number of supplement pills that contain iron.

3. Are you an older adult?

- Yes No

If you are over age 50, you may need more of certain nutrients — especially vitamin B₁₂, calcium and vitamin D. Up to 30 percent of older people may have difficulty in absorbing vitamin B₁₂ from food due to age-related decreases in certain types of stomach secretions that are necessary for absorbing this vitamin. Synthetic forms of B₁₂ are easiest for the body to absorb. Experts recommend that people over age 50:

- Consume foods fortified with vitamin B₁₂, such as many breakfast cereals, or
- Use vitamin B₁₂ supplements.

Many older women are at risk of developing **osteoporosis** — brittle bone disease. Some women are urged to take the following preventive measures:

- Increase calcium and vitamin D intake.
- Be physically active.
- Use hormone replacement therapy after menopause.

Your doctor may also prescribe other medicines to prevent osteoporosis.





4. Are you taking prescription or non-prescription medicines?

- Yes No

Certain medicines — antacids, antibiotics, anticonvulsants, antidepressants, diuretics and laxatives — have side effects that may interfere with your body’s ability to use some vitamins and minerals from food.

If you take several medicines, the risk of nutritional problems increases. Ask your doctor or pharmacist about possible side effects, and get advice on how to prevent drug-nutrient interactions.

5. Are you a strict vegetarian, or are you unable to eat a balanced diet?

- Yes No

Each food group has a unique combination of needed nutrients. People who avoid many of the foods in any of the Food Guide Pyramid food groups (see page 7) may need to take supplements. For example, people who don’t drink milk or eat yogurt or cheese may need supplements to meet recommendations for calcium and vitamin D.

If you do not eat any animal foods, your diet may be too low in vitamin B₁₂, vitamin D, calcium, iron, zinc and other nutrients. Strict vegetarian diets are healthiest if they include a variety of nutritious plant foods — especially nuts, beans and peas, vegetables, whole grains, and products fortified with vitamins and minerals.

People who are following dietary regimens for a disease — such as diabetes or food allergies — need specific medical advice on how to bring their nutrient intake into balance with their special needs.

People on strict low-calorie weight-loss diets may not be able to meet their nutrient needs.

6. Do you often have more than two alcoholic drinks in a day?

- Yes No

Heavy alcohol use can interfere with your body’s ability to use the vitamins and minerals in food, and can damage your liver and other organs. Vitamin and mineral deficiencies associated with chronic heavy alcohol use include vitamin A, thiamin (vitamin B₁), riboflavin (B₂), pyridoxine (B₆), vitamin C, vitamin D, niacin, folic acid, calcium, magnesium and zinc.

If you often have more than two alcoholic drinks a day, expert medical advice is recommended. Neither a balanced diet nor dietary supplements can prevent all the physical problems that excessive alcohol use causes.



How much should you take daily?

If you are concerned about the quality of your diet and your possible need for supplements, check with a registered dietitian or other health professional. If you decide to take a supplement on your own, it is generally advisable to choose a multivitamin that contains no more than 100 to 200 percent of the Daily Value as shown on product labels.

Sample multiple vitamin product label

Supplement Facts		
Serving Size 1 Tablet		
	Amount Per Serving	% Daily Value
Vitamin A (as retinyl acetate and 50% as beta-carotene)	5000 IU	100%
Vitamin C (as ascorbic acid)	60 mg	100%
Vitamin D (as cholecalciferol)	400 IU	100%
Vitamin E (as dl-alpha tocopheryl acetate)	30 IU	100%
Thiamin (as thiamin mononitrate)	1.5 mg	100%
Riboflavin	1.7 mg	100%
Niacin (as niacinamide)	20 mg	100%
Vitamin B ₆ (as pyridoxine hydrochloride)	2.0 mg	100%
Folate (as folic acid)	400 mcg	100%
Vitamin B ₁₂ (as cyanocobalamin)	6 mcg	100%
Biotin	30 mcg	10%
Pantothenic Acid (as calcium pantothenate)	10 mg	100%

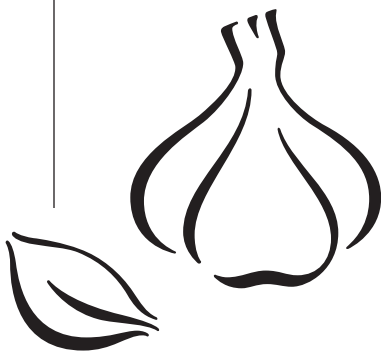


What if you take more than you need?

More is not always better — especially when it comes to vitamins and minerals. Taking more than you need is at the very least a waste of money.

In some cases, excess nutrients are simply dangerous. Large amounts of vitamin B₆ — more than 100 milligrams a day from supplements — can cause nerve damage, numbness and difficulty walking. An expert group has determined that people should not exceed 10,000 IU of vitamin A daily because higher levels can cause birth defects, bone abnormalities, and liver disease. Excessive niacin — more than 35 milligrams a day — can cause uncomfortable flushing feelings, as well as stomach pain and organ damage at higher levels.

Minerals are tricky, because taking too much of one mineral can interfere with your body's ability to absorb or use another mineral. For example, too much zinc can interfere with absorption of copper, which you need for healthy blood vessels. High doses of the mineral selenium — more than 400 micrograms per day — can damage rather than protect body tissues. Germanium is not an essential mineral, and supplementation with this substance has been associated with damage to the kidneys and possibly death.



Can dietary supplements make up for a poor diet?

Supplement pills **cannot completely** make up for poor eating habits. Supplements can give you some of the vitamins and minerals that food normally provides. But they do not have everything you need from food, such as protein, carbohydrates, fat, dietary fiber and several **phytochemicals** — plant components partly responsible for the protective (disease-preventive) effects of diets high in fruits and vegetables.

Do you need dietary supplements for stress?

The nutritional impact of acute emotional stress is **not** well understood. However, to the best of our scientific understanding, vitamin and mineral needs do not increase because of the mental stress that people experience as part of their daily lives. Exams, weddings, a crabby boss or unpaid bills may make you feel uneasy, but they have not been proven to affect most people's nutrient needs.

Some physical conditions such as severe burns increase the need for nutrients to repair or replace damaged tissue. This is the kind of physical "stress" that most strongly affects the body's nutrient needs.

Can you take vitamins for extra energy?

Vitamin supplements do **not** provide extra energy. Your body needs some vitamins to release energy from proteins, carbohydrates, fats and alcohol. But vitamins do not contain energy of their own.

A diet with a variety of foods provides all the vitamins your body needs to use energy (calories).

Never treat yourself with vitamins instead of seeking medical help for a disease. If you are feeling tired or run-down even though you eat well, vitamins are not likely to be the cause of or the cure for your condition. Ask your physician to help determine the cause and proper treatment.

The need for dietary supplements for highly trained athletes is controversial. For weekend athletes and most active adults, the best advice is to eat a balanced diet as represented by the Food Guide Pyramid (page 7), and to drink plenty of fluids before, during and after exercising.

Are modern foods depleted of vitamins and minerals?

Advertisers may tell you that soil depletion, fertilizers and pesticides have ruined the soil and the food grown there. Some minerals in plants do vary with soil condition. But in general, plants grown on poor soil will produce smaller amounts of food, not less nutritious food.

Some people are afraid that food processing causes food to be low in nutrients. Actually, losses due to commercial canning and freezing are minimal.

To preserve as many nutrients as possible, use these food preparation methods:

- Peel vegetables thinly, or cook in the skin.
- Cook with steam or a minimum amount of water.
- Do not overcook fruits and vegetables.
- Cut food into small pieces **after** cooking.
- Serve foods as soon as they are ready to eat.

What about natural dietary supplements and herbs?

Herbal products can be marketed without FDA review of their safety or effectiveness, although such requirements are in place for prescription medicines, food additives, and over-the-counter drugs. Quality regulations are being developed, but they are not in effect at this time (2000).

To protect yourself...

- Look for ingredients in products with the **U.S.P.** (U.S. Pharmacopoeia) notation.
- Remember that “natural” is not a guarantee of safety, and that any product that is potent enough to have a beneficial effect on the body may also be strong enough to increase your risk of unwanted side effects.
- Be aware that claims on supplement labels are not as tightly regulated as claims on food labels.
- Consider the manufacturer’s reputation — nationally known manufacturers are more likely to have tight controls and standards in place.
- Write to supplement manufacturers and inquire about the evidence of product safety and effectiveness.
- Read the findings of laboratory tests of supplements for quality, available at this Web site: <http://www.consumerlab.com>

Depending on the specific type being used, herbs can have beneficial, neutral or harmful effects on the body. The FDA warns that these herbal products may be dangerous to some people:

- Chaparral
- Comfrey
- Germanium
- Lobelia (Indian tobacco)
- Ma huang (ephedra)
- Slimming/dieter’s teas
- Willow bark
- Wormwood

If you are interested in taking an herbal supplement, it is a good idea to get advice from an expert who is not selling these products. Many substances have become popular although there is little or conflicting evidence about their benefits when used as dietary supplements.



www.consumerlab.com





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If someone tells you that a product such as bee pollen or colloidal minerals will change your life, ask questions. And remember that personal experiences are not proof of effectiveness. These reports are often affected by the person's hopes and expectations, or by normal variations as symptoms change with time.

Check out these Web sites

Scientific information is available over the Internet. But be especially cautious to avoid hucksters promoting certain products for their own personal profit.

The National Institutes of Health have an Office of Dietary Supplements with reliable information at:

<http://odp.od.nih.gov/ods>

The U.S. Food and Drug Administration (FDA) has information for the public in the *FDA Consumer* magazine and on its Web site at:

<http://vm.cfsan.fda.gov>

The American Dietetic Association and USDA Food and Nutrition Information Center have fact sheets on supplements and other topics of interest to consumers at:

<http://eatright.org>

<http://www.nal.usda.gov/fnic>

Should everyone take antioxidant supplements?

Some substances in food can help protect body tissues from damage when certain harmful molecules called "free radicals" are present. Termed **antioxidants**, these protective substances include beta-carotene (a precursor of vitamin A) and other carotenoids (such as lutein), vitamin C, vitamin E, selenium, and some phytochemicals (beneficial chemicals from plants such as flavonoids found primarily in fruits and vegetables).

If you decide to take antioxidant supplements, be aware that results of scientific studies so far have not shown consistent benefits. For example, taking relatively high doses of beta-carotene from supplements has been reported to increase the risk of lung cancer among heavy smokers.

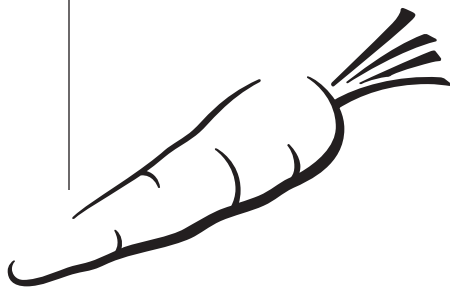
The bottom line: Supplements do not make up for a poor diet, lack of exercise, smoking or other health risk behaviors.

How can you balance your diet without dietary supplements?

Most healthy people can meet their nutrient needs by consuming a variety of foods and eating at least the minimum number of servings recommended from the Food Guide Pyramid.

For adults, this means eating at least:

- 2 servings of milk, yogurt and cheese
- 2 servings of meat, poultry, fish, eggs, dry beans and nuts
- 2 servings of fruits
- 3 servings of vegetables
- 6 servings of bread, cereal, rice, tortillas, pasta and other grains

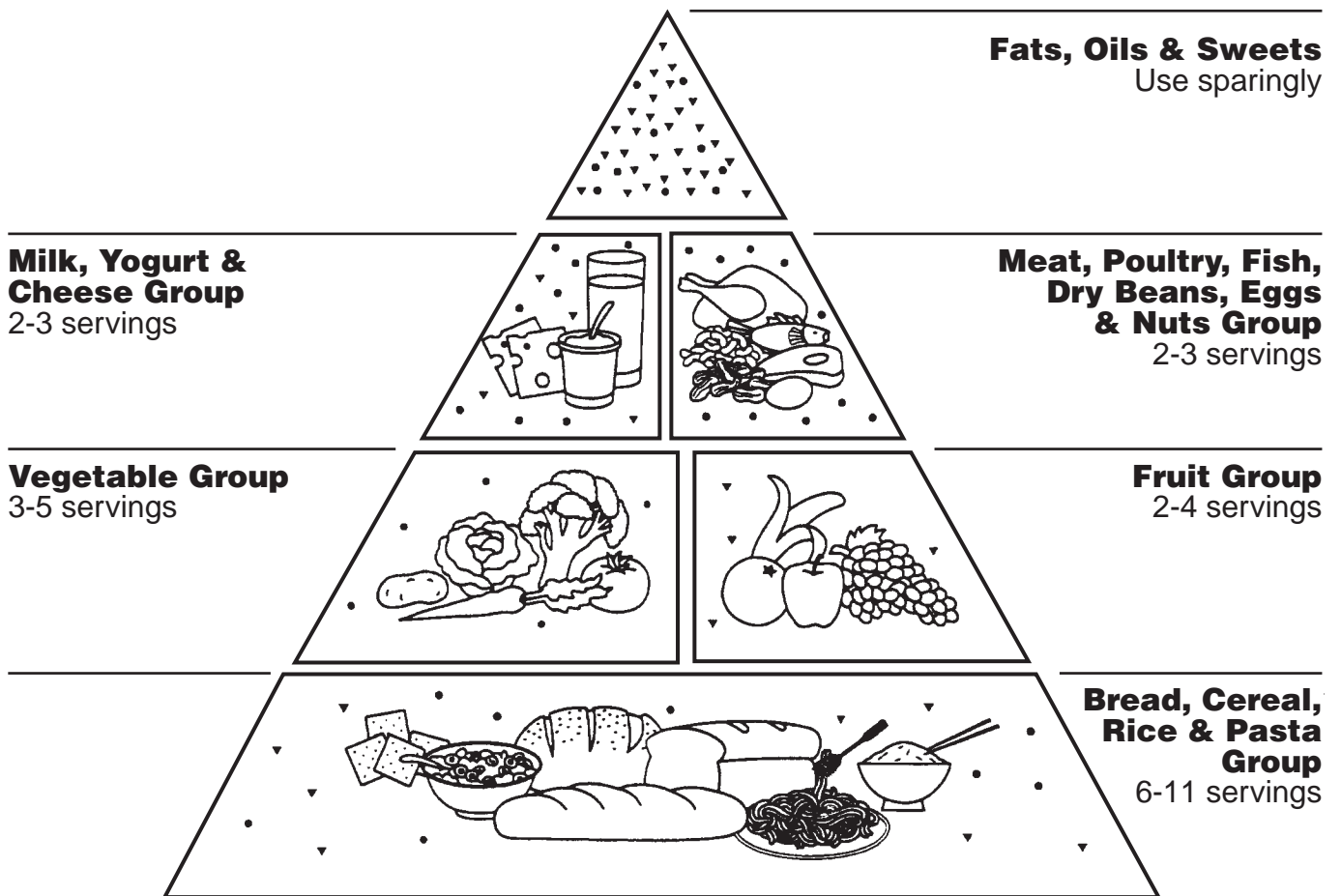


Food Guide Pyramid—A guide to daily food choices

Use the Food Guide Pyramid to eat well every day. Start with breads, cereals, rice and pasta. Add vegetables and fruits. Include food from the milk and meat groups. Go easy on fats, oils and sweets — the foods in the tip of the pyramid.

You can get the latest dietary guidelines from the U.S. Department of Agriculture Center for Nutrition Policy and Promotion Web site:

<http://www.usda.gov/cnpp>



Key
 ● Fat (naturally occurring and added)
 ▼ Sugars (added)
 These symbols show fat and added sugars in foods.

Source: Food Guide Pyramid, Home & Garden Bulletin 252, (Washington, DC: U.S. Department of Agriculture), 1992: <http://www.usda.gov/cnpp>



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Resources

Web sites for more information are listed throughout this booklet. If you do not have a computer, try your local library. Most libraries have a computer connected with the Internet.

Guidelines in this booklet are based on current publications of the American Dietetic Association and U.S. Food and Drug Administration (FDA):

American Dietetic Association, 1995. Position of the American Dietetic Association: Vitamin and Mineral Supplementation. Also *Journal of the American Dietetic Association* (1996; 96: 73-77):

<http://www.eatright.org/asupple.html>

Kurtzweil, Paula, 1999. *An FDA Guide to Dietary Supplements*. Also *FDA Consumer*, September-October 1998, revised January 1999:

<http://vm.cfsan.fda.gov/~dms/fdsupp.html>

U.S. Food and Drug Administration Office of Special Nutritionals, 1997; updated April 1999. *Overview of Dietary Supplements*:
<http://vm.cfsan.fda.gov/~dms/ds-oview.html>

For information on nutrition and health, contact a registered dietitian, or your county or area extension office.



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