



Being Vegetarian

Vegetarian eating has been around throughout recorded history, but in recent years, interest in this eating style has risen dramatically. In 2003, between 4 and 10% of adult Americans called themselves vegetarian – that compares to 4% in the 1960s.

To some, vegetarian eating is a way of eating, to others it is a lifestyle – and some just like the flavors and variety in vegetarian eating. For whatever reason you choose to eat vegetarian – whether it be an occurrence once a week or daily – What does eating vegetarian mean? Broadly, it means eating no meat, poultry, or fish. Plant sources of food – grains, legumes, nuts, vegetables, and fruits form the basis of the diet. Some vegetarians eat dairy products, some do not. Some eat eggs and others do not. There are some individuals who do not eat any animal products at all, including honey.

If you are vegetarian, you may describe yourself in one of these ways:

Lacto-ovo vegetarian – You eat a diet with eggs and dairy products, but no meat, fish, or poultry. Most vegetarians in the U.S. are lacto-ovo. The prefix “lacto” refers to milk and “ovo” refers to egg.

Lacto vegetarian – You avoid meat, fish, poultry, and eggs, but eat dairy products.

Vegan, or strict vegetarian – You eat NO animal products – no meat, dairy, eggs, poultry, fish, or any food containing those products. Vegans don’t eat refried beans canned with lard, baked goods made with eggs or milk, or margarine made with milk solids. Vegans do not eat honey.

Semi-vegetarian – Only occasionally do you eat meat, fish, or poultry.

People are vegetarian for a number of different reasons – many people follow a vegetarian lifestyle for health reasons. Others are concerned about the environment, have compassion for animals, or believe in nonviolence. Religious, spiritual, or ethical reasons make vegetarianism a lifestyle for some. Some just like the food.

Realize that a vegetarian lifestyle is not necessarily a healthful one – you must make it one by choosing to not smoke, exercising regularly, as well as eating healthfully. It is quite possible to eat a very high fat, low vitamin and mineral diet and still be a vegetarian. Eating healthfully and eating vegetarian requires some knowledge about nutrient needs. The following pages will help you understand what your body needs and how to fulfill those needs from a vegetarian lifestyle. The nutritional content of a vegetarian diet depends on overall food choices over several days. A well balanced vegetarian diet can provide many health benefits, such as a reduced risk of chronic diseases, including: obesity, coronary artery disease, hypertension, diabetes, and some types of cancer. Vegetarians also have lower rates of illness and death from a number of degenerative diseases.

NUTRIENTS IN A VEGETARIAN EATING STYLE

Can you get all the nutrients your body needs if you practice vegetarian eating? YES! If you choose your foods with care and thought - and eat enough calories - your body will get plenty of good nutrition. If you choose to be vegetarian you need to plan your diet to make sure it includes all of the essential nutrients. The wider the variety of foods you eat, the easier it will be to meet your nutritional requirements. Some essential dietary requirements could possibly be missing from a vegetarian diet if it isn’t carefully planned.

If you are a lacto-ovo vegetarian (see page 1), the nutrition issues you need to look at don’t differ much from those that non-vegetarians watch. You need to be cautious of consuming too much fat, saturated fat, cholesterol and too many calories as well. It would be smart of you to limit your consumption of salt and sugar. So long as you choose plenty of grains, vegetables and fruits, a typical lacto-ovo vegetarian diet can be high in fiber and low in total fat, saturated fat and cholesterol - and that’s the nutrition goal for everyone! In a vegetarian diet, as in a non-vegetarian diet, it is important to obtain appropriate amounts of macronutrients - protein, carbohydrate, fat, and fluid. It is also important to obtain adequate amounts of micronutrients - vitamins and minerals. Micronutrients to be especially aware of in a vegetarian diet include iron, calcium, vitamin D, and zinc.

If you are a vegan, there are some different nutrition issues. Without foods of animal origin, getting enough calories to maintain a healthy weight can be a challenge, especially for active, young adults. Nutrients that often come up short in a vegan diet are vitamin B12, vitamin D, calcium, zinc, and iron. Even so, planned wisely, a vegan diet can provide plenty of nutrients for overall good health.

- **Protein** – for most vegetarians, adequate protein is NOT an issue. Except for fruit, almost all foods of plant origin have some protein. Just because you don't eat beef, pork, fish, poultry, and perhaps eggs or dairy products (concentrated protein sources) does not mean that you can't get enough protein.
- You may have heard that you need to eat certain non-meat proteins at the same time to get enough "real" protein. We know now that if you eat a variety of plant proteins throughout the day, your body will find the needed building blocks and make complete protein. Soy is one plant protein that is already complete. Usually, as long as you eat enough calories in a vegetarian style in order to maintain a healthful weight, you get plenty of protein!
- **Vitamin B12** – Builds red blood cells and helps your body use fat and amino acids. For vegans, getting enough B12 can be difficult. Since B12 is widely available in animal products, including eggs and dairy products, only those of us who eat NO animal products need to be careful. Consider a vitamin supplement (containing only 100% of the RDA). Also, look for fortified cereals, soy milks, or veggie-burger patties. When you read the nutrition label to see how much B12 there is in a serving, know that cyanocobalamin is the form of B12 that is easiest for your body to use. Know that the B12 in seaweed, algae, spirulina, and fermented products like miso and tempeh is not the form that is easiest to use, so are not really good sources of B12. Nutritional yeast can be a source of B12, but bakers yeast is not grown in order to have B12. Read your labels!
- **Vitamin D** – Is a bone-builder. It helps to absorb phosphorus and calcium. Few foods contain vitamin D. In the US, we fortify many of our daily products with vitamin D. If you are not using dairy products or if you are not using vitamin-fortified cereals or soy milk, you may not be getting enough vitamin D. Sunshine provides vitamin D, but at our latitude, it may not be possible to get enough sun - we bundle up too much in winter and wisely use sunscreen in summer. A multivitamin or vitamin D supplement might be a good idea.
- **Calcium** – Builds bones, transfers nerve impulses, makes muscles contract, helps your blood clot, and your heart beat. Lacto-ovo vegetarians can get plenty of calcium from dairy products like cheese, milk, and yogurt. Vegans can get adequate calcium from plant products but it is a challenge! Studies suggest that vegetarians don't need as much calcium as non-vegetarians - but "as much" doesn't mean "not any." If you are using tofu as a calcium source, be sure it is "calcium set." Soy, itself, does not contain substantial calcium; it is a certain process of making the tofu that adds the calcium.
- **Iron** – Good food sources of iron include green leafy vegetables, peas and whole grains, enriched cereals and legumes. Combining these foods high in Vitamin C will help your body absorb the iron. Cooking foods in iron skillets can increase your iron intake. If you are pregnant, you will probably need an iron supplement.
- **Zinc** – Performs essential functions in the body, including the development of immune system cells. Zinc is needed for growth, repair of body cells and energy production. Without meat, poultry or seafood, it may be hard to get enough zinc. Milk, cheese, yogurt, and eggs all contain zinc - and so do other plant-origin foods, but not as much as the animal foods. Eat a variety of foods with zinc - whole grains, legumes, nuts and seeds. Be aware that when grains are refined, they lose zinc. Fiber and phytates in whole grains can bind zinc and make it less available to your body. Be careful with zinc supplements - stick to vitamin/mineral supplements with not more than 100% of the RDA.

BEAN BAG

Beans of all kinds are sold as dry, canned, frozen, and fresh. Each type has a distinctive appearance and flavor, varying cooking times, and somewhat different uses. A variety bag that includes several types of beans is an easy way to taste the flavors of many types of different beans.

On average, 1 pound of dry beans equals about 2¼ cups of dry beans, or 5 to 6 cups of cooked beans. The yield for lentils is less; for 2¼ cups dry lentils, figure about 3½ to 4 cups cooked. One can (15½ ounces) of drained canned beans or lentils equals about 1⅔ cups cooked. As an aside, rinsing canned beans reduces the sodium content.

Beans and Peas	Size and Color	Flavor	Simmering Time Hours*	Common Uses
Adzuki or azuki bean	Small, red, shiny	Slightly sweet	½ to 1	Salads, poultry stuffing, casseroles, soups
Black bean	Small, black, shiny	Slightly sweet	1½ to 2	Stew, soup, Brazilian feijoada, cuban rice and beans

Beans and Peas	Size and Color	Flavor	Simmering Time Hours*	Common Uses
Black-eyed pea or cowpea	Small, cream-colored, ovals with black spots	Vegetable-like, full-flavored	1 to 1½	Southern dishes with ham or rice, bean cakes, curries, Hoppin' John
Cannellini or white kidney bean	elongated, slender, creamy white	Mild	2	Soups, stews, salads, casseroles, Italian side dishes, pasta e fagioli
Chickpea, or garbanzo bean	Golden, hard, pea-shaped	Nutty	2¼ to 4	Casseroles, cooked with couscous, soups, stews hummus, caldo gallego
Fava or broad bean	Broad, large, oval, light brown	Nutty	1½ to 2	Stews, side dishes
Flageolet or green haricot bean	Small to medium, pale green	Nutty	1½ to 2	Mixed bean salads, vegetable side dishes
Great northern	Large, white	Mild	1 to 1½	Soups, casseroles, mixed bean dishes
Lentils **	yellow, green, or orange	Earthy	¾	Soup, pease pudding, dhal, curry dishes
Lima bean	Large or small, creamy white or pale green, kidney-shaped	Like chestnuts	1½	Casseroles, soups, salads, succotash
Mung bean	Small, olive green	Earthy	1	Soups, casseroles, purées, Asian and Indian dishes, "sprouted" for salads
Navy bean	Small, oval, white	Mild	1 to 1½	Boston baked beans
Pigeon pea	Small, round, slightly flat, beige, brown flecks	Mild	¾ to 1	Caribbean peas and rice
Pinto bean	Orange-pink, with rust-colored flecks, oval	Earthy, full-flavor	1 to 1½	Mexican rice and beans, refried beans, stew
Red kidney bean	Dark, red-brown, kidney-shaped	Full-flavored, "meaty"	1½ to 2	Stew, mixed bean salad, Cajun bean dishes, chili con carne
Soybean	Small, yellow or black	Full-flavored	3½ to 4	Side dish, soups, used to make tofu (bean curd), "sprouted" for salads

* Simmering time for dry beans

** Lentils don't require soaking, only shorter cooking times

DIETARY SOURCES OF IRON FOR VEGETARIANS

Iron is essential to all body cells. Iron functions primarily as a carrier of oxygen in the body both as a part of hemoglobin in the blood and of myoglobin in the muscles. Iron deficiency anemia occurs when there is not enough iron in the red blood cells. This is a common problem often caused by diets low in iron, pregnancy, or blood loss. The typical symptoms, lack of energy or tiredness, have many causes; diagnosis by a blood test confirms the presence of iron deficiency anemia.

If your blood iron level is low, your health care provider may refer you to a dietitian to discuss a dietary increase in iron-rich foods. They may also recommend a multivitamin pill or prescribe an iron supplement.

In addition to an iron supplement, which may be prescribed by your physician, it is also recommended to increase iron-rich foods in your diet. Although iron is found in a variety of different foods, its availability to the body varies significantly. This is determined by whether it is found in the form of HEME or NON-HEME iron.

HEME iron is found only in meat, fish and poultry and is absorbed much better than NON-HEME iron found primarily in fruits, vegetables, dried beans, nuts and grain products.

The following factors will increase the iron absorption from the NON-HEME foods:

- a HEME and NON-HEME food eaten together

- a NON-HEME food cooked in an iron pot, such as a cast iron skillet
- a good source of Vitamin C (ascorbic acid) i.e., oranges, grapefruits, tomatoes, broccoli, and strawberries, eaten with a NON-HEME food

The following factors will decrease the iron absorption:

- coffee, even decaffeinated, may decrease iron absorption up to 39%, and tea by 87%, when consumed with a meal
- excess consumption of high fiber foods or bran supplements
- large amounts of tea or coffee consumed with a meal (the polyphenols bind the iron)
- excess consumption of high fiber foods or bran supplements (the phytates in such foods inhibit absorption)
- high intake of calcium – take your calcium supplement at a different time from your iron supplement

The Recommended Dietary Allowance (RDA) for pre-menopausal women is 15 mg/day. The RDA for men and post-menopausal women is 10 mg/day.

The RDA for iron for non-vegetarian pre-menopausal women is 18mg/day. The RDA for non-vegetarian men and post-menopausal women is 8mg/day. Because of iron absorption issues in a healthful, high-fiber vegetarian diet, the RDA's for vegetarians is higher – 14mg/day for vegetarians men and 33mg/day for vegetarian women. The upper level of intake should not exceed 45mg/day.

NON-HEME IRON SOURCES

Food Source	Serving Size	Iron (mg)
almonds, raw	10-12 each	0.7
apricots, dried, med.-size	10 each	1.7
bagel	1 whole	1.5
baked beans, canned	½ cup	2.0
bread, white	2 slices	1.4
bread, whole wheat	2 slices	1.7
broccoli, cooked	½ cup	0.6
broccoli, raw	1 stalk	1.1
dates	10 each	1.6
kidney beans	½ cup	3.0
lima beans	½ cup	1.8
macaroni, enriched, cooked	1 cup	1.9
molasses, blackstrap	1 T	2.3
peas, frozen and prepared	½ cup	1.3
prune juice	½ cup	1.5
raisins, not packed	¼ cup	1.0
rice, brown, cooked	1 cup	1.0
rice, white enriched, cooked	1 cup	1.8
spaghetti, enriched, cooked	1 cup	1.6
spinach, cooked	½ cup	2.0

In addition, many breakfast cereals are iron-fortified. Check nutrition information on package label for specific iron content.

“VEGGING OUT” THE HEALTHFUL WAY!

Planned carefully, a vegetarian eating style can promote good health. For healthful vegetarian eating:

- Get enough calories to meet energy needs.
- Consume a variety of foods from the five food groups of the MyPyramid.

- Go easy on high-fat foods even if they do come from plant sources.
- For vegans, consume a reliable source of vitamin B12, such as fortified breakfast cereal or soy milk.

Vegetarian Way: Grains

The amount of grains you need to eat depends on your age, sex, and level of physical activity. Choose whole-grain products whenever you can – at least ½ of all the grains eaten should be whole grains. That includes whole wheat bread, breakfast cereal, and pasta; brown rice; and other whole grain products. Besides the complex carbohydrate and fiber they may provide, whole grains supply iron and zinc, too.

- **Make grain dishes the centerpiece of your menu**, perhaps tabouli, barley, rice pilaf, risotto, rice or noodle dishes, gnocchi, and polenta. Add interest to vegetarian meals with a greater variety of breads, including focaccia, bagels, tortillas, pita bread, chapatis, and naan. And try breads made with a variety of grains: oats, rye, and cornmeal, to name a few. *Tip:* Because of their processing method, some corn tortillas supply calcium. Check the label.
- **Add cooked grains to all kinds of foods.** For example, stuff vegetables (eggplant, bell peppers, cabbage, and zucchini) with cooked grain mixtures: rice, oats, and barley, among others. Blend cooked grains with shredded vegetables and perhaps tofu for vegetable patties or croquettes. Toss cooked grains (not just rice or noodles) with stir-fried vegetables. Add bulgur, barley, and other cooked grains to soups, stews, and chili.
- **Choose fortified breakfast cereals.** Read the Nutrition Facts panel on food labels for added nutrients, including iron, vitamin B12, and zinc.

Vegetarian Way: Vegetables

The amount of vegetables that you need to eat also depends on your age, sex, and level of physical activity. Any vegetable or 100% vegetable juice counts as a member of the vegetable group. Vegetables may be raw or cooked; fresh, frozen, canned, or dried/dehydrated; and may be whole, cut-up, or mashed.

- **For everyone – especially vegans – choose vegetables that are good sources of calcium:** dark green leafy vegetables (such as kale, mustard, collard, or turnip greens), bok choy, and broccoli. Dark green leafy vegetables also supply iron.
- **Choose vegetables that are high in vitamin C**, for example, broccoli, tomatoes, and green pepper. Vitamin C helps your body absorb iron in plant sources of food.
- **Plan meals with several different vegetables.** That way, you get the nutritional benefits of variety.

Vegetarian Way: Fruits

The amount of fruit you need to eat each day depends on age, sex, and level of physical activity. Any fruit or 100% fruit juice counts as part of the fruit group. Fruits may be fresh, canned, frozen, or dried, and may be whole, cut-up, or pureed.

Enjoy a variety of fruits, including a good food source of vitamin C, such as citrus fruits, melons, and berries.

- **To get enough fruit, serve it for dessert and snacks** - either as fresh, whole, or sliced fruit, or prepared in cobblers, as ice-cream toppers, or in thick, fruity shakes.
- **Look for calcium-fortified juice as an added source of calcium - especially for vegans.**

Vegetarian Way: Meat and Beans

All foods made from meat, poultry, fish, dry beans or peas, eggs, nuts, and seeds are considered part of this group. Dry beans and peas are part of this group as well as the vegetable group. These foods supply protein and iron, as meat, poultry and fish do for non-vegetarians. Except for eggs, meat alternates are low in total fat and saturated fat, and they have no cholesterol.

- **Make legumes a mealtime regular - eat them most days of the week.** Besides their contribution of protein, legumes are good sources of complex carbohydrates and fiber.
- **Learn to use soybean products - tofu, tempeh, textured soy protein, and soy milk in your food preparation.** Try them in stir-fry dishes, casseroles, lasagna, soups, and burger patties.
- **If you eat eggs, limit your intake to four yolks per week.** That way, you'll moderate your cholesterol intake, too. Make egg-based dishes lower in fat by substituting egg whites for some of the whole eggs. Examples of egg-based dishes include: quiche, omelet, frittata, scrambled eggs, French toast, egg salad, or egg foo yung.

- **Include nuts, nut butters (cashew butter, peanut butter), seeds, and seed spread (tahini, or sesame seed spread).** They, too, supply protein, but are fairly high in fat. So go easy.

Vegetarian Way: Dairy

For lacto-vegetarians, make sure to include milk, yogurt, or cheese in your daily diet. Choose lower fat and skim milk products for less fat.

- **As an alternative, choose calcium-fortified, soy-based milk, yogurt, and cheese.** Read the Nutrition Facts panel on food labels to determine the calcium content per serving. If soy-based products are not calcium fortified, they cannot count as a serving from this food group. Plan other foods with calcium in your daily diet if you don't consume dairy products.

Vegetarian Way: Oils

Most Americans consume enough oil in the foods they eat. A person's allowance for oils depends on age, sex, and level of physical activity. Go easy on high-fat foods, such as salad dressings, cooking oils, and spreads. Being derived from plants doesn't make them low in fat.

Vegetarian Way: Discretionary Calories

You need a certain number of calories to keep your body functioning and provide energy for physical activities. The discretionary calories allowance is based on estimated calorie needs by age/sex group. Physical activity increases calorie needs, so those who are more physically active need more total calories and have a larger discretionary calorie allowance. The discretionary calorie allowance is part of total estimated calorie needs, not in addition to calorie needs.

STOCKING THE VEGETARIAN KITCHEN

Your local supermarket sells all the foods you need for a healthful, vegetarian diet. Specialty food stores carry less common items (such as soy milk, textured soy protein, and wheat gluten). There, you also may find vegetarian convenience foods. No matter where you shop, plan ahead. Shop with a list. Read food labels to find foods with ingredients that match your needs.

For a vegetarian kitchen, stock up on some of these foods for your cupboard, refrigerator, or freezer.

Breads, cereals, rice, and pasta

- ready-to-eat, enriched, and whole-grain breakfast cereals
- quick-cooking whole-grain and enriched cereals, such as oatmeal and muesli
- whole-grain and enriched breads, bagels, rolls, and crackers, such as rye, whole-wheat, and mixed grain
- rice, such as brown, wild, white, and others
- pastas, such as macaroni, spaghetti, fettuccini, and couscous
- corn or flour tortillas
- popcorn
- wheat germ and bran
- other grains, such as barley, bulgur, and quinoa

Legumes and meat substitutes

- canned legumes, such as pintos, black beans, split peas, and garbanzos
- dried legumes
- vegetarian refried beans
- dried legume mixes, such as refried beans, falafel, and hummus (mashed chickpeas)
- tofu and tempeh
- soy-protein patties and sausages
- soy milk
- textured soy protein
- nut or seed spreads, such as peanut or almond butter, and tahini (sesame seed spread)
- nuts, such as pecans, almonds, walnuts, and cashews
- seeds, such as sesame, pumpkin, and sunflower seeds
- eggs or egg substitute (optional)

Fruits and vegetables

- plain frozen and canned vegetables
- fresh fruits and vegetables
- tomato sauce
- canned and frozen fruit and fruit juice

- frozen fruit juice concentrate
- dried fruits, such as raisins, prunes, and dried apricots

Dairy and non-dairy foods

- milk (dairy or nondairy)
- cheese (dairy or nondairy)
- yogurt (dairy or nondairy)

Combination foods

- vegetarian soups
- frozen vegetarian entrées, such as bean burritos
- canned vegetarian dishes, such as chili without meat

Fats and sugars

- vegetable oil, plain and flavor-infused
- margarine or butter (optional)
- salad dressing (perhaps made without eggs)
- vegetarian gravy and sauce mixes
- syrup, jam, jelly, and molasses
- sugar and other sweeteners

Condiments, seasonings, and other flavorings

- herbs and spices
- vinegar, plain and flavored
- sauces, such as chutney, salsa, soy sauce, teriyaki sauce
- canned vegetable broth and broth mix

VEGETARIAN RECIPES AND ADAPTING RECIPES TO MAKE THEM VEGETARIAN

Making vegetarian meals when time and money are short can be challenging! This booklet is designed to provide ideas for meals that are fast, low in cost, and high in nutrition; both for vegetarians who include milk and eggs in their diet, and for vegans - who do not include animal products.

Hints for fast meals

- Keep staples on hand that are quick to prepare such as canned beans, lentils, quick cooking grains, bread, low-fat cheese, tomato sauce, frozen vegetables, and fresh fruit.
- Make a large casserole or stew and freeze the leftovers in serving size portions. You can also freeze chopped onion or minced garlic: freeze on a cookie sheet and then place in a covered container. Be sure to label and date your frozen foods!
- Coordinate your meals. For a quick spaghetti meal, for example, you can cut vegetables for a salad and heat the spaghetti sauce (see recipes) while the spaghetti is cooking.
- Cooking hint for lentils: Bring to a boil before leaving in the morning. Remove from heat. Insulate pan with towels. After returning home in the evening finish cooking 5-10 minutes.
- Make extra sandwiches using a whole loaf of bread and freeze in the bread bag. Take out your lunch portion in the morning and it will be thawed by lunch time. Peanut butter, cheese, and bean spreads freeze especially well.

Quick meal combinations

- Cooked beans, seasoned; bread or rice; salad
- Salad greens; high protein toppings such as marinated beans, slivered cheese, peanuts or sunflower seeds; muffins
- Couscous or pasta, spaghetti sauce & tempeh, steamed green beans
- Sandwich: bean refrito spread, lettuce, and tomato; yogurt, banana
- Baked potato, cottage cheese and chives or other toppings, broccoli
- Filling soup (such as minestrone or lentil), raw vegetables, bread

Bag lunch stuffers

Pack the night before if you are a late riser and remember to have "easy to grab" foods available. It'll save you time in the long run!

- bagel
- breadsticks
- dried fruit
- fig bars
- fresh fruit
- GORP - a mixture of peanuts, raisins, pretzels, cereal
- juice
- leftovers
- low-fat cheese slices
- low-fat crackers
- low-fat yogurt
- nuts, sunflower seeds
- pasta salad
- pita bread
- raw vegetables
- sandwiches (see sandwich spread recipes)

About the recipes

The following recipes are intended to be used as a starting guide. Use your own creativity with herbs, spices, and ingredients. The recipes were analyzed for calories, protein, carbohydrate, and fat content (Cal, Pro, Carb, Fat). The abbreviations tsp. for level measuring teaspoon and T for level measuring tablespoon were used.

Refrito Spread - makes 10 servings

Saute together until peppers are soft:

- 1 bunch scallions or 1 big onion, chopped
- 1 T oil
- 1-2 cloves crushed garlic
- 1 tsp. chili powder
- ¼ chopped green pepper
- ½ tsp. salt (optional)

Add and mash with potato masher: 2 cups cooked or canned kidney, pinto or black beans, drained

Remove from heat and cool.

Option: Mash 2 cups of cooked beans and add one small can of green chilies and then heat for one minute.

Nutrition information per serving:

Cal	Pro	Carb	Fat
63	1.6	3g	9g

Peanut butter sandwich

Add to whole wheat bread spread with peanut butter:

<ul style="list-style-type: none">• chopped dates• sliced banana or apple• raisins	<ul style="list-style-type: none">• lettuce or pickle or sprouts• mashed tofu and honey
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Cheese spread - makes 8 – ¼-cup servings

Mix together: 1 cup grated mozzarella cheese and 1 cup low-fat cottage cheese

Optional additions: Finely chopped celery, green or red pepper, minced parsley, chives, basil, oregano, dill weed, paprika or mustard

Nutrition information per serving:

Cal	Pro	Carb	Fat
57	7g	1g	2.5g

Spaghetti with Tempeh Sauce - serves 6

Cook in a separate pot: 1 pound of spaghetti

Saute in a frying pan:

- 1 T oil
- 1 8 ounce package of tempeh, chopped
- ½ tsp. oregano
- 1 clove crushed garlic
- 1 finely chopped onion

Add: 8 ounces tomato sauce

Heat 5 more minutes and serve over cooked spaghetti.

Option: Substitute cooked lentils or chopped tofu for the tempeh

Nutrition information per serving:

Cal	Pro	Carb	Fat
393	18g	67g	7g

Tofu Mayonnaise - makes 16 - 1 T servings

- 1 cup tofu
- 2 tsp. lemon juice or cider vinegar
- 2 T olive oil
- ¼ tsp. salt
- 1 clove garlic, crushed
- 1 tsp. prepared mustard

Processor: Put all ingredients in processor and blend until smooth.

Blender: Put all ingredients in blender except tofu. Add tofu bit by bit, blending smooth with each addition.

Nutrition information per serving:

Cal	Pro	Carb	Fat
38	2.5g	1g	3g

Ramen Minestrone - serves 4

Bring to a boil:

- 2 cups water
- 8 ounces tomato sauce

Add:

- 2 cups chopped fresh or frozen vegetables
- 1 cup kidney beans
- 1 package ramen noodles, broken seasoning mix or 1 tsp. vegetable broth powder

Continue cooking for 3 minutes.

Option: Omit tomato sauce and beans; add 1½ cups chopped tofu or 2 beaten eggs

Nutrition information per serving:

Cal	Pro	Carb	Fat
149	8g	30g	1.3g

Curried Split Peas - serves 6

Soak 3-4 hours:

- 1 cup dried split peas, washed
- 2½ cups water

Add:

- 1 tsp. tumeric
- ½ tsp. red pepper
- 1 tsp. salt

Bring to a boil reduce heat and simmer 20-30 minutes until the peas are very soft. Add more water if needed. It will have the consistency of thick gravy.

Saute in a small frying pan:

- 2 T margarine
- 1 onion, sliced thinly
- 1 T curry powder
- ½ tsp. cumin
- ½ tsp. pepper

Fry until onions are browned. Add to cooked peas. Serve as a sauce to rice.

Nutrition information per serving:

Cal	Pro	Carb	Fat
133	8g	22g	2g

Burritos

Place:

- ¼ cup beans or refried beans (see refrito recipe)
- 2 T grated cheese in center of soft corn or flour tortilla

Roll up and heat in a 325° toaster oven or microwave 45 seconds. Top with: cucumber, green pepper, guacamole, lettuce, olives, salsa, and tomato

Nutrition information per serving:

Cal	Pro	Carb	Fat
219	10g	29g	7g

Vegetable Stir-Fry - serves 4

Saute together:

- 1 T oil
- 3 green onions, cut in 2-inch pieces
- 1 minced or crushed clove garlic
- 2 tsp. ginger

Add in order listed:

- 1 cup diagonally sliced carrots
- 1 cup chopped broccoli
- 1 cup zucchini slices
- 1 cup sliced fresh mushrooms
- 1 cup fresh bean sprouts

Stir fry until tender.

Add: ¼ cup peanuts

Sauce:

- 2 T soy or tamari sauce
- 2 T dry sherry
- 1 tsp. corn starch
- ½ tsp. honey
- 1 tsp. sesame oil

Add to vegetable mixture and heat for 1-2 minutes longer.

Serve with: 2 cups cooked brown rice

Nutrition information per serving:

Cal	Pro	Carb	Fat
284	10g	38g	11g

Spinach Lasagna - serves 8

Sauce:

Heat in a medium saucepan and saute for one minute:

- 1 T oil
- 2 cloves minced garlic
- 1 small onion

Add:

- 4 cups tomato sauce or puree
- 1 tsp oregano
- 1 tsp dried basil
- Black pepper to taste

Meanwhile, precook 12 ounces dry lasagna noodles according to package directions

In a bowl, mix:

- 2 cups low-fat cottage cheese
- 2 eggs
- 4 ounces part-skim mozzarella, shredded
- 1 10-ounce package frozen chopped spinach, thawed and drained
- 1 T parsley

To assemble, spread a thin layer of sauce on the bottom of a 9 X 13-inch baking pan. Arrange a third of the noodles along the bottom of the pan. Cover with ½ of the cottage cheese mixture and a third of the remaining sauce. Repeat with noodles, cottage cheese and sauce. Top with noodles and sauce. Sprinkle with 3 T parmesan cheese

Bake in a 375° oven for 25 minutes. Let it stand 10 minutes before serving.

Option: Use uncooked (dry) lasagna noodles and bake for 45-50 minutes.

Nutrition information per serving:

Cal	Pro	Carb	Fat
347	22g	49g	8g

Rice Salad - serves 6

In a saucepan combine:

- 2 cups rice
- 3½ cups water

Bring to a boil, reduce to a low simmer and cook 15 minutes. Transfer to a separate flat pan to let steam escape and cool.

Combine:

- 4 T olive oil
- 6 T lemon juice
- 1 tsp salt
- 1 clove garlic minced
- 1 T honey

Add cooled rice and stir until combined.

Add:

- 4 minced scallions
- ½ cup fresh or 2 T dried parsley
- ½ cup chopped pecans
- 2 cups seedless grapes or 1 cup raisins
- 2 cups cooked chick peas, drained and rinsed
- black pepper to taste

Cover tightly and chill well.

Nutrition information per serving:

Cal	Pro	Carb	Fat
405	8g	58g	17g

Bulgur Pilaf - serves 4

Saute in a skillet:

- 1 T oil
- 1 small onion, chopped
- 1 cup cracked wheat or bulgur

Stir over medium heat until onion is transparent and wheat is glazed.

Add:

- ½ tsp. salt
- 2 cups water or vegetable broth

Reduce heat to low, cover and cook 20 minutes or until water is absorbed. Serve with 1 cup cooked garbanzo beans

Nutrition information per serving:

Cal	Pro	Carb	Fat
249	7g	46g	5g

Polenta

Bring to a boil: 2½ cups water

Combine and add, stirring constantly:

- 1 cup water
- 1¼ cups cornmeal

Cook over medium heat, stirring frequently for about 5 minutes until thick and smooth.

Optional additions include: ricotta cheese, parmesan, fresh tomatoes, tomato sauce, and basil

Accompaniments may include: bean salad, marinated vegetables, tossed salad

Yogurt Fruit Dessert - 1 serving

Combine:

- ½ cup fresh fruit in season, or canned fruit, drained
- ½ cup low-fat vanilla yogurt

Top with: T toasted wheat germ

Nutrition information per serving:

Cal	Pro	Carb	Fat
216	8g	43g	2g

Peanut Butter Clusters - makes 12 servings

Mix together:

- 2 T honey
- ½ cup chunky peanut butter
- 1/3 cup raisins
- ½ cup dry milk powder

Stir in: ¼ cup crisp rice cereal

Form into 24 small balls.

Roll in: 1/3 cup crushed pretzel sticks

Nutrition information per serving:

Cal	Pro	Carb	Fat
92	4g	14g	2g

GLOSSARY

Bulgur is made from cooked, dried, and cracked wheat berries. It cooks in 15 minutes and can be used as a side dish in place of rice.

Couscous is wheat that has been steamed, dried, and refined - the wheat bran and germ have been removed. It cooks in 5 minutes and is good with vegetable stews or tomato sauce.

Tempeh is prepared from fermented soybeans, and is often prepared as a mixture of grain and soybeans. Because of the fermentation process, it may be a source of vitamin B12, a nutrient important in the vegan diet. Tempeh can often be found in natural food stores. Freshness is essential for good flavor.

Tofu, soybean curd, is quick to prepare and can be used in a variety of dishes. It is found in most grocery stores. It is high in calcium only if the coagulant used is calcium sulfate, so check the label. The fat in tofu is mostly unsaturated.

Soy milk has nearly the same amount of protein as cow's milk. Soy milk, however, unless fortified, is much lower in other nutrients that are found in cow's milk: calcium, phosphorus, vitamin B12, and riboflavin.

ADAPTING YOUR RECIPES

Looking for vegetarian recipes? Check the bookstore for many flavor-filled dishes from vegetarian cookbooks. Some magazines devote their pages to vegetarian-style eating. With a few changes, you also can adapt recipes in almost any cookbook or magazine for vegetarian-style meals - even if you choose to avoid eggs and dairy products.

A few recipe hints when you adjust recipes. . .

In casseroles, stews, soups, and chili, substitute cooked legumes for meat: perhaps kidney beans in chili or stew, or red lentils in spaghetti sauce or stuffed cabbage rolls, or refried beans in burritos, tacos, and enchiladas. For more cooking tips, refer to "A Word About Legumes..." on page 346.

Eggs offer functional qualities to recipes: for example, thickening, binding ingredients together, clarifying stock, coating breaded foods, and leavening. A leavener lightens the texture increases the volume of baked goods. Without eggs, the qualities of food often change. If you're a vegan or lacto-vegetarian, experiment with recipes by replacing one egg with one of these ingredients - but know that the results may differ:

- 1 mashed banana (in breads, muffins, or pancakes)
- 2 tablespoons of cornstarch or arrowroot
- ¼ cup tofu (Blend it with liquid ingredients until smooth; then add to dry ingredients.)
- vegetarian egg replacement (often sold in specialty stores)

In stir-fry dishes, use firm tofu, tempeh, cooked beans, nuts, and sesame seeds in place of meat, poultry, or seafood. Firm tofu and tempeh can even be cubed and skewered as kebobs for grilling. Try scrambled tofu for breakfast! **Hint:** To add more flavor, marinate tofu before adding it to dishes.

Prepare pasta sauces, pizza toppings, soups, stews, and other mixed dishes as you always do—but skip the meat and add more chopped vegetables. If you eat dairy products, sprinkle cheese on top to add additional protein and calcium.

Use soy-protein patties, bacon, and sausages on pizza, hot sandwiches, sloppy joes, and other dishes that typically call for meat. Textured soy protein, often sold in granular form, also may be used in casseroles, soups, stews, lasagna, chili, enchiladas, and other mixed dishes.

For vegans, you might use a soy margarine in place of butter. Be aware that cookies, pastries, and other baked goods may have a different texture, however. Remember: Lard is another fat of animal origin.

Enjoy thick, creamy shakes? If you're a lacto-vegetarian, enjoy the traditional recipe. If you're a vegan, blend fruit instead with soft tofu and soy milk or juice.

Again for vegans, try tofu, soy milk, soy cheese, and soy yogurt in recipes that call for dairy products. Crumbled tofu, for example, can take the place of ricotta cheese in lasagna. And in baked foods, 1 cup of soy milk plus 1 tablespoon of vinegar can be used in place of 1 cup of buttermilk.

NOW FOR EATING OUT

More and more traditional restaurants and cafeterias cater to "all-the-time" or "sometimes" vegetarians. Quick-service restaurants offer meatless salads that are big enough to enjoy as an entrée - as well as vegetarian deli sandwiches, pita pockets, pizzas, and tacos.

Whether you're a vegetarian - or simply enjoy an occasional vegetarian meal - consider these tips when you eat out:

- **Before you order, talk to your server about ingredients in the dish.** Feel comfortable about asking for vegetarian dishes - prepared without eggs or dairy products if that's your choice.
- **If the menu doesn't carry a vegetarian entrée, order a salad with vegetable soup and bread, or several vegetable appetizers.** A fruit plate - with or without cheese or yogurt - can make a very appealing entrée, too.
- **If you choose the salad bar, "toss" your salad with kidney beans, chickpeas, and a few sunflower seeds... as well as vegetables that have more vitamin C.** (Remember: Vitamin C helps your body absorb iron from plant sources of food.) If you're a lacto-ovo-vegetarian, you might spoon on some cottage cheese, shredded cheese, and chopped or sliced hard-cooked eggs. (Hint: Go easy on high-fat salad dressing or choose a low-fat dressing.)
- **Choose an ethnic restaurant that's likely to have vegetarian options.** You might try those with traditional menus that include vegetarian dishes. Perhaps try the cuisines of the Middle East, Greece, India, China, Mexico, and parts of Africa. (Tip for vegans: Ghee, used in many dishes from India, is melted, clarified butter.)
- **For airline meals, ask for a vegetarian meal when you book your flight.** If you need to, find out ahead if the meal is egg and dairy-free. For airlines that don't offer vegetarian meals, request a fruit plate or pack your own snacks.

VEGETARIAN DISHES IN THE GLOBAL KITCHEN

Delicious and nutritious - vegetarian dishes are typical fare in many parts of the world. As you flip the pages of ethnic cookbooks or glance through the menu of an ethnic restaurant, try to build your meal around dishes like these. They're typically made without meat, poultry, or fish - but check to be sure.

CARIBBEAN	<ul style="list-style-type: none"> • Callaloo: one-pot meal (stew) made with dark green leafy vegetables, a variety of other vegetables, peppers, and seasonings • Black-eyed Pea Patties: black-eyed peas mashed with eggs and seasonings, then quickly pan-fried in a small amount of oil
CHINA	<ul style="list-style-type: none"> • Vegetable Tofu Stir Fry: variety of thinly-sliced vegetables and cubed bean curd, stir-fried with soy sauce and perhaps vegetable broth • Egg Foo Yung: frittata-like dish, made by combining slightly-whipped eggs with sliced vegetables, then frying in a skillet until browned; also may be prepared with meat or poultry
FRANCE	<ul style="list-style-type: none"> • Vegetable Quiche: pie made with a custard of egg and cheese, mixed with chopped vegetables such as leeks, spinach, asparagus, and mushrooms • Ratatouille: soup or stew made of eggplant, tomatoes, onion, green pepper, and other vegetables. Enjoy with crusty French bread.
INDIA	<ul style="list-style-type: none"> • Dohkla: steamed cakes made of rice and beans • Vegetable Curry Dishes: combination of chopped vegetables and lentils, flavored with a curry mix
ITALY	<ul style="list-style-type: none"> • Pasta Primavera: cooked pasta tossed with steamed fresh vegetables, with or without Parmesan cheese • Vegetable Risotto: arborio rice, cooked in vegetable broth and combined with cooked vegetables and perhaps cooked beans or nuts, with or without grated cheese • Eggplant Parmesan: sliced eggplant, prepared by dipping it into a mixture of eggs and milk, coating it with bread crumbs and Parmesan cheese, and sautéing it. To serve, it's topped with tomato sauce • Pasta E Fagioli: pasta and white bean "stew," seasoned with herbs, usually prepared without meat
GREECE	<ul style="list-style-type: none"> • Tzatziki (Cucumber-Yogurt Salad): plain yogurt, mixed with shredded cucumber, garlic, and perhaps black olives, served with crusty bread • Vegetable-Stuffed Eggplant: eggplants hollowed and filled with chopped vegetables and cooked grain, and sometimes nuts • Spanakopita (Spinach Pie): pita made with a phyllo-dough crust, and filled with a mixture of spinach, feta cheese, and eggs

INDONESIA	<ul style="list-style-type: none"> • Gado-Gado: cooked vegetable salad with a peanut sauce, often seasoned with chiles
NATIVE AMERICAN (SOUTHWEST)	<ul style="list-style-type: none"> • Maricopa Bean Stew: stew made of corn, beans, and cholla buds
MEXICO	<ul style="list-style-type: none"> • Bean Burrito: vegetarian refried beans wrapped in a soft tortilla, with or without cheese topping • Chiles Rellenos: poblano peppers stuffed with cheese, dipped in an egg batter, and baked or fried (If they're fried, they're high in fat.) • Huevos Rancheros (Mexican Eggs): scrambled eggs, prepared with onion, and served with tomato salsa, vegetarian refried beans, and tortilla
MIDDLE EAST	<ul style="list-style-type: none"> • Falafel Sandwich: ground chickpea patties (fried), tucked in pita bread with lettuce shreds and chopped tomato, topped with tahini (sesame seed spread) • Tabouli: salad made with bulgur, tomatoes, parsley, mint or chives, lemon juice, and perhaps cooked white beans • Ful: brown bean casserole, made with tomatoes, lemons, parsley, and eggs
SPAIN	<ul style="list-style-type: none"> • Spanish Omlet (Tortilla a la espanola): egg omelet, made with potatoes, onions, and other vegetables
SWITZERLAND	<ul style="list-style-type: none"> • Cheese Fondue: cheese melted with wine and served with chunks of crusty bread • Raclette: cheese, "scraped" from a melted piece of hard cheese, then spread on a boiled potato or dark bread
EAST AFRICA	<ul style="list-style-type: none"> • Bean and Groundnut Stew (Kunde): stew made of black-eyed beans, peanuts (groundnuts), tomato, and onion - (A similar stew is made in West Africa, often without peanuts.) • Injera and Lentil Stew: flat bread served with cooked lentils. (This is an Ethiopian dish.)

VEGETARIAN RESOURCES

- The American Dietetic Association
- North American Vegetarian Society
- The Vegetarian Resource Group
- UIUC Dining Services
- United States Department of Agriculture
- The American Dietetic Association's Complete Food and Nutrition Guide, 1998
- Katzen, Mollie. (1988). Still Life With Menu. Berkeley, CA: Ten Speed Press.
- Robertson, Flinders, Ruppenthal. (1986). The New Laurel's Kitchen. Berkeley, CA: Ten Speed Press.
- Brody, Jane. (1985). Jane Brody's Good Food Book. New York, NY: Bantam Books.

Reference

The American Dietetic Association's Complete Food and Nutrition Guide, by Roberta Larson Duyff, MS, RD, CFCS; 1998.

NUTRITION CHECK-UP FOR VEGETARIANS

You've chosen to follow a vegetarian diet - perhaps with your own good health in mind. But are you making choices that help you achieve that goal? Take this 10-question survey as a quick check.

Do You Eat:

1. A wide variety of grain products (including whole-grains), legumes, nuts, vegetables, and fruits?
 - Yes
 - No
2. At least six servings of bread, rice, pasta, and other grain products daily?
 - Yes
 - No
3. At least four vegetable servings daily?
 - Yes
 - No

4. At least three fruit servings daily?
 Yes No
5. A vitamin C-rich food with meals whenever you can?
 Yes No
6. Enough calories to maintain a healthy weight?
 Yes No
7. Mostly nutrient-dense foods, and go easy on fats, oils, and sugars?
 Yes No
8. Two to three servings of legumes and other meat alternates each day?
 Yes No

Just for lacto- and locto-ovo-vegetarians: (If you're a vegan, skip ahead.)

9. Two to three servings of milk, yogurt, or cheese daily?
 Yes No
10. Eggs occasionally – no more than four yolks per week?
 Yes No

Just for vegans: (if you're lacto- or lacto-ovo-vegetarian, skip these two questions.)

9. Foods of plant origin that is high in calcium?
 Yes No
10. Foods that are fortified with vitamins B12 and D (or take a supplement that provides no more than 100% of their Daily Value)?
 Yes No

Now Score Yourself

Give yourself a point for every "yes."

If you scored a perfect "10," your food choices do promote your good health. They probably supply enough nutrients, and perhaps have other low-fat benefits.

If you said "no" to any item, begin making any necessary changes you need to eat healthy – the vegetarian way!

Web site

MyPyramid at: <http://www.mypyramid.gov>

To complete this packet, please refer to the following McKinley health education handouts.

- Calcium
- Dietary Sources of Iron

If you are a registered University of Illinois student and you have questions or concerns, or need to make an appointment, please call: **Dial-A-Nurse at 333-2700.**

If you are concerned about any difference in your treatment plan and the information in this handout, you are advised to contact your health care provider.

Visit the McKinley Health Center Web site at: <http://www.mckinley.uiuc.edu>



Calcium

Why We Need Calcium

You may know that calcium plays an important role in building healthy teeth and bones. What you may not know is that calcium is vital to every cell of the body for muscle function, nerve transmission, blood clotting and many other uses. When you don't get enough calcium in your diet, the calcium stored in your bones is "stolen" to supply the rest of your body. Hence, your bones suffer the consequences of a low-calcium diet and they become more susceptible to fractures.

Recommendations

The Dietary Reference Intakes (DRI's) for calcium vary by age and stage of life:

Age/Lifestage Group	New Calcium Goal (mg/day)
Birth - 6 months	210
6 months - 1 year	270
1 - 3 years old	500
4 - 8 years old	800
9 - 18 years old	1300
19 - 50 years old	1000
51 + years old	1200
Pregnant and/or lactating (18 years old and younger)	1300
Pregnant and/or lactating (19+ years old)	1000

Food & Nutrition Information Center, USDA National Agricultural Library web site. Accessed online June, 2010

Many good sources of calcium fit quite well into a healthy, low-fat diet. The following table includes some examples of low-fat sources of calcium from several food groups:

Group	Examples
Dairy	milk (skim or 1%), low-fat and fat-free yogurts, low-fat and fat-free cheeses
Meats/Beans	sardines/salmon with bones, calcium-set tofu
Fruits/Vegetables	collard greens, kale, cooked spinach, broccoli, calcium-fortified orange juice
Grains	pancakes, calcium-fortified breads and cereals, corn tortilla
Combination Foods	cheese pizza (made with reduced-fat cheese), soups prepared with skim milk
Non-food sources	calcium supplements

Calcium Supplements

It is not difficult to make low-fat food choices that are also good sources of calcium. Although food is the preferred source of calcium, a supplement may be necessary to help you meet your daily calcium needs. Avoid oyster shell, dolomite and bone meal supplements because they can contain significant amounts of lead and are absorbed less efficiently than calcium carbonate. Calcium carbonate, the most popular form, is chewable and is marketed by a number of companies. Calcium carbonate is best absorbed when taken with food.

Common brand names of calcium carbonate include Tums™, Rolaids™, Viactiv™, Caltrate™, Oscal™ and Titalac™. Other types of calcium supplements are calcium citrate and calcium gluconate. Calcium citrate is better absorbed in people who have reduced stomach acid. Most supplements provide 500 mg of calcium per serving – take no more than 500 mg of calcium at one time to maximize absorption. To avoid calcium toxicity, do not exceed 1500 mg of calcium per day.

Best Food Sources of Calcium

One way to increase the amount of calcium in your diet is to consume calcium-rich foods like low-fat milk, cheese, broccoli and others. Many foods are fortified with calcium and are readily available and affordable. Foods like orange juice, cereals and breakfast bars have calcium added to them, so it is easier than ever before to get the recommended level of calcium everyday.

Dairy Sources

Food	Serving Size	Calcium (mg)	%DV
Milk, skim	8 oz.	302	30%
Yogurt, low-fat fruit	8 oz.	350	35%
Yogurt, plain	8 oz.	450	45%
Yogurt, frozen	8 oz.	278	28%
Cheese, American	1 oz.	202	20%
Cheese, low-fat cottage	4 oz. (½ cup)	69	7%
Cheese, cream	1 oz.	30	3%
Cheese, cheddar	1 oz.	204	20%
Cheese, mozzarella	1 oz.	203	20%
Cheese, swiss	1 oz.	273	27%
Cheese, parmesan	¼ cup	250	25%
Cheese, colby/monterey jack	1 oz.	200	20%
Ice cream, low-fat	4 oz. (½ cup)	100	10%
Pudding	4 oz. (½ cup)	150	15%

Another easy and economical way to boost the calcium content of many meals is to add non-fat powdered dry milk to pudding, homemade cookies, bread or muffins, soups, gravy, casseroles and even a glass of milk. A single Tbsp. of non-fat powdered dry milk adds 52 mg of calcium, and 2-4 Tbsp. can be added to most recipes.

You may add:

- 3 Tbsp. to each cup of milk in pudding, cocoa, or custard
- 4 Tbsp. to each cup of hot cereal before cooking
- 2 Tbsp. sifted into each cup of flour

Non-Dairy Sources & Others

Food	Serving Size	Calcium (mg)	%DV
Broccoli, cooked	4 oz. (½ cup)	47	5%
Spinach, cooked*	4 oz. (½ cup)	122	12%
Greens, cooked	4 oz. (½ cup)	55	6%
Tofu, raw, firm - calcium - set	4 oz. (½ cup)	258	26%
Instant Oatmeal	1 package	150	15%
Pancakes, buttermilk	1	80	8%
Sardines	2	90	9%
Salmon, canned, with bones	3 oz.	203	20%
Taco with cheese	1 large	340	34%
Quiche with cheese	1/8 of 8-inch pie	115	12%
Macaroni and cheese, box	1 cup	100	10%
Pizza with cheese	1/8 of 12-inch pizza	115	12%
Breads and Cereals	1 slice or ½ cup	30	3%
Tortilla, corn	1 medium	45	5%
Tomato soup, prepared with milk	8 oz.	186	19%

DV = Daily Value. Daily value is used to compare nutrient levels in different foods. The value doesn't reflect individual need. The DV for calcium is 1,000 mg for adults and children aged 4 and older. Foods providing 20% of more of the DV are considered to be high sources of a nutrient, but foods providing lower percentages of the DV also contribute to a healthful diet.

* contains substances that tend to block calcium absorption

Fortified foods

Fortified foods are a great way to get dietary calcium. When looking for a calcium-fortified version of a product, look for words on the packaging like “**calcium-fortified**”, “**excellent source of calcium** (more than 200 mg of calcium)” or “**good source of calcium (110-190 mg/serving)**.”

Some examples of calcium fortified foods include: Total Cereal™, select varieties of Crystal Light™ drink, Honey Maid™ Graham Crackers, Cheez-It™ Juniors, Kellogg’s Fruit Loops™, Special K Plus™, Eggo Waffles™, Country Crock Spread™-tub only, select varieties of soy milks, select varieties of orange juice (Minute Maid™ & Tropicana™), select varieties of cranberry juices (OceanSpray™), some grapefruit juices (Ruby Red Grapefruit Juice™), and some apple juices, Wonder Bread™, and Hostess Mini-muffins™. Check packages for exact calcium content.

Suggestions

- Drink skim or 1% milk with meals or as a snack.
- Increase your intake of calcium-rich foods when under stress.
- Ask your doctor about your medications (some decrease calcium absorption).
- Don't smoke - it decreases calcium absorption.
- Exercise - it increases bone density (especially weight-bearing exercise).
- Use skim milk in soup and oatmeal instead of water.
- Limit caffeine intake; it can decrease calcium absorption.
- Add low-fat cheese to sandwiches, salads, casseroles, etc.
- Eat low-fat yogurt or cheese as a snack.
- Choose calcium-rich desserts, such as frozen yogurt.
- Avoid or limit alcohol - it can increase calcium loss.

References

Tussing, L. & K. Chapman-Novakofski. “Osteoporosis prevention education: Behavior theories and calcium intake.” *J Amer Dietetic Assoc* 105.1(2005): 92-97.

“Dietary Supplement Fact Sheet: Calcium” Office of Dietary Supplements. National Institutes of Health. 7 Oct 2009. <http://ods.od.nih.gov/factsheets/calcium.asp>

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Dietary Sources of Iron

Iron is essential to all body cells. Iron functions primarily as a carrier of oxygen in the body, both as a part of hemoglobin in the blood and of myoglobin in the muscles. Iron deficiency anemia occurs when there is not enough iron in the red blood cells. This is a common problem often caused by pregnancy, blood loss, and a diet low in iron or poor absorption of iron by the body. There are a variety of possible symptoms of iron deficiency including:

- lack of energy or tiredness
- extreme fatigue and feeling of weakness
- light headedness
- headache
- pale skin on the lining of the eyes, the inner mouth and the nails
- rapid and forceful heartbeat
- low blood pressure with position change from sitting to standing up
- finger nails that become thin, brittle and white – they may grow abnormally and get a spoon-shaped appearance
- tongue may become sore, smooth and reddened
- decrease in appetite
- shortness of breath during exercise
- brittle hair
- reduction in immunity and increased vulnerability to infection
- a strong desire to eat nonfoods such as ice, paint or dirt (a condition called Pica)
- disturbed sleep
- abdominal pain

Because the typical symptoms of iron deficiency have many causes, diagnosis by a blood test is needed to confirm the presence of iron deficiency anemia.

If your blood iron level is low, your health care provider may refer you to a dietitian to discuss dietary increase of iron-rich foods as well as a multivitamin pill or an iron supplement. Although iron is found in a variety of different foods and supplements, its availability to the body varies significantly. In general, iron is not readily absorbed by the body. Availability is partially determined by whether the iron is found in the form of HEME or NON-HEME iron.

HEME iron is found only in meat, fish and poultry and is absorbed much more easily than NON-HEME iron, which is found primarily in fruits, vegetables, dried beans, nuts and grain products.

The following factors will increase the iron absorption from non-heme foods:

- A good source of vitamin C (ascorbic acid) - i.e., oranges, grapefruits, tomatoes, broccoli and strawberries, eaten with a NON-HEME food
- A HEME and NON-HEME food eaten together
- A NON-HEME food cooked in an iron pot, such as a cast iron skillet

The following factors will decrease non-heme iron absorption:

- Large amounts of tea or coffee consumed with a meal (the polyphenols bind the iron).
- Excess consumption of high fiber foods or bran supplements (the phytates in such foods inhibit absorption).
- High intake of calcium - take your calcium supplement at a different time from your iron supplement.

The Recommended Dietary Allowance (RDA) for iron for non-vegetarian pre-menopausal women is 18 mg/day. The RDA for non-vegetarian men and post-menopausal women is 8 mg/day. Because of iron absorption issues in a healthful, high-fiber vegetarian diet, the RDAs for vegetarians are higher - 14 mg/day for vegetarian men and 33 mg/day for vegetarian women. Iron absorption should be twice for vegans who exclude all animal products. The upper level of intake should not exceed 45mg/day.

HEME Iron Sources

Food Source	Serving Size (oz.)	Iron (mg)
*Beef, chuck, lean	3.0	3.2
Beef, corned	3.5	1.9
Beef, eye of round, roasted	3.0	2.2
*Beef, flank	3.5	3.3
Beef, lean ground; 10% fat	3.0	3.9
Beef, liver	3.0	7.5
*Beef, round	3.5	3.1
Beef, tenderloin, roasted	3.0	3.0
Chicken, breast, roasted,	3.0	1.1
Chicken, leg, meat only, roasted	3.5	1.3
Chicken, liver	3.5	12.8
Chicken, thigh w/ bone	2.3	1.2

Food Source	Serving Size (oz.)	Iron (mg)
Clams, breaded, fried,	¾ cup	3.0
Cod, broiled	3.0	0.4
Flounder, baked	3.0	0.3
Oysters, breaded and fried	6 pieces	4.5
*Pork, lean ham	3.5	1.5
*Pork, loin chop	3.0	1.2
Salmon, pink canned	3.0	0.7
Shrimp, mixed species, cooked	4 large	0.7
Tuna, canned in water	3.0	0.8
Turkey, dark meat	3.5	2.3
Turkey, white meat	3.5	1.6
*Lean, trimmed of separable fat		

NON-HEME Iron Sources

Food Source	Serving Size	Iron (mg)
Almonds, raw, whole	10-12	0.7
Apricots, dried, med.-size	10	1.7
Bagel	1 whole	1.5
Baked beans, canned	½ cup	2.0
Black beans, boiled	1 cup	3.6
Black-eyed peas (cowpeas), boiled	1 cup	1.8
Bread, white, enriched	2 slices	1.8
Bread, whole wheat	2 slices	1.8
Broccoli, cooked	½ cup	0.6
Broccoli, raw	1 stalk	1.1
Dates	10 each	1.6
Grits, quick enriched white, cooked	1 cup	1.5
Kidney beans, boiled	1 cup	5.2
Lentils, boiled	1 cup	6.6
Lima beans, boiled	1 cup	4.5
Macaroni, enriched, cooked	1 cup	1.9

Food Source	Serving Size	Iron (mg)
Molasses, blackstrap	1 tbsp.	3.5
Navy beans, boiled	1 cup	4.5
Oatmeal, fortified instant, prepared	1 cup	10.0
Peas, frozen and prepared	½ cup	1.3
Pinto beans, boiled	1 cup	3.6
Prune juice	½ cup	1.5
Raisins, seedless packed	½ cup	1.5
Rice, brown, cooked	1 cup	1.0
Rice, white enriched, cooked	1 cup	1.8
Soybeans, boiled	1 cup	8.8
Spaghetti, enriched, cooked	1 cup	1.6
Spinach, cooked (boiled, drained)	½ cup	3.2
Spinach, canned, drained	½ cup	2.5
Spinach, frozen, boiled, drained	½ cup	1.9
Tofu, raw, firm	½ cup	3.4
Vitamin supplements	varies	varies

In addition, many breakfast cereals are iron-fortified. Check nutrition information on package label for specific iron content.

Reference:

"Dietary Supplement Fact Sheet: Iron." Office of Dietary Supplements. National Institutes of Health. <http://ods.od.nih.gov/factsheets/iron.asp> 08-24-07

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WHAT IS VITAMIN B12?

Vitamin B12, also known as cobalamin, is made by bacteria. Animals eat food containing these bacteria, and then the animals become sources of vitamin B12.

WHY DO YOU NEED VITAMIN B12?

- To form and maintain healthy red blood cells
- To form and maintain healthy nerve cells
- To make DNA, the genetic material in cells

WHAT HAPPENS IF YOU DON'T GET ENOUGH VITAMIN B12?

- Pernicious Anemia – a type of anemia characterized by large red blood cells. Symptoms include fatigue, breathlessness, listlessness, and poor resistance to infection.
- Nerve damage. Symptoms may include numbness and tingling in the hands and feet.
- In infants: delayed growth and development, movement disorders, anemia
- Other problems: constipation, loss of appetite, weight loss, depression, confusion, difficulty keeping balance, dementia, poor memory

Most deficiencies can occur because of a problem absorbing B12 in the intestine, though strict vegans (who consume no animal products) can also develop deficiencies over an extended period of time. Since the body stores some B12, it can take years for vegans to develop a deficiency.

HOW MUCH VITAMIN B12 DO YOU NEED?

Adults need to consume 2.4 micrograms (μg) of B12 per day. Pregnant women should get 2.6 μg , and lactating women should consume 2.8 μg . Consuming high amounts of B12 has not been shown to be harmful.

WHAT FOODS ARE GOOD SOURCES OF VITAMIN B12?

Animal products, especially fish and seafood, are good sources of B12. Foods such as milk, yogurt, and eggs can provide B12 for lacto-ovo vegetarians. Vegans can get B12 from fortified foods, nutritional yeast, and dietary supplements. Fortified foods are made with the B12-producing bacteria, not animal products.

It was once thought that tempeh, miso, and sea vegetables could provide B12. However, these foods do not contain the active forms of the vitamin. Instead, they contain inactive forms, which may actually interfere with B12 absorption and metabolism.

When looking at Nutrition Facts labels, you will see vitamin B12 expressed as a percent of Daily Value. Daily Values are helpful in deciding whether the food is a good source of the vitamin. Foods with 20% or more of the Daily Value for B12 are considered very good sources. Foods that provide 5% or less of the Daily Value are considered low sources.

Adults should include at least three good sources of vitamin B12 each day. It is best to include a variety of different fortified foods in your diet, rather than solely relying on one source. Examples of good B12 sources include:

- $\frac{1}{2}$ cup cow's milk
- $\frac{3}{4}$ cup yogurt
- 1 large egg
- 1 cup fortified soymilk (such as Silk™, 8th Continent™)
- 1 oz. fortified breakfast cereal (such as Total™, Nature's Path Optimum Power™, Kashi, Honey Frosted Oats™, Special K™, Cheerios™)
- 1-1/2 oz. fortified meat analog (such as Yves Meatless Barbeque "Beef" Skewers™, Worthington canned Vegeburger™, Worthington frozen Stakelets™)
- Nutritional yeast (such as Red Star Vegetarian Support Formula™)

HOW SHOULD I SELECT A SUPPLEMENT?

Nutritional yeasts and B12 pills are considered dietary supplements and are not regulated as strictly as food and drug products. Companies that make these supplements can change their formula at any time, and the product may or may not be a good source of B12. Use caution when selecting a supplement. Read labels carefully and only purchase reputable brands. Look for these seals on labels:



www.usp.org



www.consumerlab.com

These seals indicate that the product has passed voluntary testing for identity, strength, purity, and bioavailability. In other words, the product has been found to meet recognized quality standards (identity), contain the amount of ingredients it claims on the label (strength), is not contaminated (purity), and can be properly utilized by the body (bioavailability).

If you take large quantities of vitamin B12 at one time, you will absorb less of it. Therefore it is recommended to take either small quantities (5-10 μg) daily or 2000 μg once per week. Also, vitamin B12 is sensitive to light, so be sure to store supplements and nutritional yeast in cool, dark areas.

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