

Vegetarian Nutrition Guide



Whatever the reason you've decided to become a vegetarian, a diet without meat or fish can be healthy if structured in the right way. You want to make sure you get all your key nutrients and don't fall into any typical unhealthy vegetarian traps (such as too many highly processed junk foods). This guide will teach you about the nutrients you may need to pay special attention to while eating a vegetarian or vegan diet.

Nutrients to Focus On:



- ☑ Protein
- ☑ Iron
- ☑ Calcium
- ☑ Vitamin D
- ☑ Vitamin K2
- ☑ Vitamin B12
- ☑ Zinc
- ☑ Omega-3 Fatty Acids EPA/DHA

Many studies have shown that both vegetarians and vegans are prone to deficiencies in vitamin B12, calcium, iron, zinc, Omega-3 fatty acids EPA and DHA, and fat-soluble vitamins like D and K.

It's worth pointing out that there are genetic differences that affect the conversion of certain plant based nutrients into the active forms of those nutrients, and these differences may affect how long someone will be able to follow a vegetarian or vegan diet before they develop nutrient deficiencies. This explains why some people seem to do well for years on these diets, while others develop problems very quickly.

How much protein do you actually need?

The Recommended Dietary Allowance (RDA) for protein for all persons is 0.8 g/kg of body weight. However, vegetarians and vegans have a slightly higher protein need than meat eaters due to the types of proteins they will be consuming. Vegetarians and vegans should aim for about a 20% increase or **1.0g/kg body weight**.

While protein needs can vary greatly depending on activity level, goals, age, disease state, and other factors, this formula will give you an idea of your minimal protein needs.

1. Take your weight in pounds and divide it by 2.2 to find your weight in kilograms.
2. Now multiply your weight in kilograms by 1.0.

Plant Based Protein

Protein is essential for growth and maintenance of the body. Proteins are made of amino acids. Our body can make some amino acids, but others we must get from our food. These are called essential amino acids. Animal proteins contain all of the essential amino acids. Most plant foods do not contain all of the essential amino acids. But, by eating a variety of different plants, all of the essential amino acids can be obtained. Remember, variety is key!

A word about fake meat products. In addition to real, whole foods, there are many other processed vegetarian and vegan protein products on the market. These will vary in quality, but the majority are highly processed and nutrient void. Look for products made with whole foods (beans, lentils, nuts, seeds, etc.) or choose minimally processed plant based protein sources like in the tables that follow.

Vegetarian Protein Options

Food	Serving	Protein Content
Legumes (cooked)		
Lentils	½ cup	9 gm
Black Beans	½ cup	8 gm
Chickpeas	½ cup	8 gm
Pinto Beans	½ cup	8 gm
Green Peas	½ cup	5 gm
Soy Foods		
Soybeans, cooked	½ cup	15 gm
Tempeh*, cooked	3 oz	15 gm
Tofu*, regular	½ cup	10 gm
Soymilk*, unsweetened	1 cup	8 gm
Edamame, cooked	½ cup	7 gm
Vegetables		
Spinach, cooked	1 cup	6 gm
Broccoli	1 cup	5 gm
Collard Greens, cooked	1 cup	5 gm
Grains		
Steel Cut Oats, dry	¼ cup	7 gm
Wheat Berries, cooked	½ cup	6 gm
Amaranth, cooked	½ cup	5 gm
Quinoa, cooked	½ cup	4 gm

Food	Serving	Protein Content
Nuts and Seeds		
Hemp Seeds	1oz	10 gm
Pumpkin Seeds	1 oz	9 gm
Peanut Butter	2 Tbsp	8 gm
Sunflower Seeds	1 oz	6 gm
Pistachios	1 oz	6 gm
Almonds	1 oz	6 gm
Flaxseed	1 oz	5 gm
Walnuts	1 oz	4 gm
Chia seeds	1 oz	4 gm
Dairy and Eggs		
Plain Greek Yogurt*	7oz	20 gm
Cottage Cheese*	½ cup	12 gm
Milk	8 oz	8 gm
Mozzarella Cheese	1 oz	7 gm
Cheddar Cheese	1 oz	7 gm
Whole Egg	1 large	6 gm
*varies by brand		

Vegetarian Sources of Iron

Food	Serving	Iron Content
Fruits and Vegetables		
Spinach, cooked	½ cup	3.2 mg
Swiss Chard, cooked	½ cup	2.0 mg
Dried Apricots	5	1.7 mg
Dried Figs	½ cup	1.5 mg
Raisins	½ cup	1.4 mg
Grains		
Amaranth, dry	¼ cup	3.6 mg
Quinoa, dry	¼ cup	2.7 mg
Oatmeal, cooked	½ cup	1.0 mg
Soy Products and Legumes		
Tofu	½ cup	3.35 mg
Lentils, cooked	½ cup	3.3 mg
Garbanzo Beans, cooked	½ cup	2.4 mg
Tempeh, cooked	3 oz	1.5 mg
Nuts and Seeds		
Sesame Seeds	2 Tbsp	2.6 mg
Almonds	¼ cup	1.3 mg
Other		
Enriched Cereals	½ cup	8-16 mg
Molasses	2 Tbsp	3.8 mg

IRON

Iron is needed for healthy red blood cells and to transport oxygen around the body. Iron deficiency is most common in children, pregnant or menstruating women, vegetarians and vegans.

There are two types of iron found in food: heme and non-heme.

- Heme iron is found only in animal foods and is easily absorbed and utilized by the body.
- Non-heme iron is found in plant foods and isn't as easily absorbed. However, vitamin C can increase the absorption of non-heme iron.

Vitamin C Rich Foods

Bell Peppers	Broccoli	Brussels Sprouts	Oranges
Kiwi	Cauliflower	Strawberries	Tomatoes

How much do you need?

The RDAs for iron for vegetarians are **1.8 times higher** than for people who eat meat. Iron needs can also vary depending on other factors such as disease state, genetics and activity level. Ask your provider if you are concerned about your iron levels.

Recommended Dietary Allowances (RDA) for Iron

Age	Males	Females	Pregnancy	Lactation
14-18	11 mg	15 mg	27 mg	10 mg
19-50	8 mg	18 mg	27 mg	9 mg
51+	8 mg	8 mg		

Note: Coffee, tea and foods or supplements high in calcium can decrease the absorption of iron. Therefore, avoid consuming them with iron-rich meals.

CALCIUM

Calcium is needed for more than just bone health. Calcium is used by the body to help control muscle and nerve function, and to maintain our blood pH. There are many plant based sources of calcium that vegetarians and vegans can choose from. The goal is to try to get all your calcium needs from real food sources. If you are unable to do so, make sure to speak with your nutritionist about supplement options.

How much do you need?

Recommended Dietary Allowances (RDA) for Calcium		
Age	Males and Females	Pregnancy and Lactation
9-18	1,300 mg	1,300 mg
19-50	1,000 mg	1,200 mg
51+	1,200mg	

Vegetarian Sources of Calcium

Food	Serving	Calcium Content
Soy Products, Vegetables, Nuts and Seeds		
Tofu, firm, prepared with calcium sulfate*	½ cup	861 mg
Collard Greens, cooked	1 cup	357 mg
Edamame	½ cup	252 mg
Sesame Seeds	2 Tbsp	176 mg
Almonds	1oz	76 mg
Broccoli	1 cup	62 mg

Food	Serving	Calcium Content
Dairy and Dairy Alternatives		
Milk	1 cup	352 mg
Calcium Fortified Non-Dairy Milks (almond, coconut, hemp, soy, etc.)	1 cup	350-450 mg
Mozzarella Cheese	¼ cup	271 mg
Yogurt*	1 cup	200-400 mg
Other		
Fortified Cereals*	1 cup	400-1000 mg
Molasses	1 Tbsp	41 mg
* varies by brand		

A note about non-dairy milks and non-dairy cheeses:

Many people now prefer almond, rice, or coconut milk over soymilk. If these milks are fortified, they are a great source of calcium. The problem is that they aren't a great source of much else. They provide minimal protein and can also contain high amounts of sugar, so make sure to choose the unsweetened varieties.

Some "non-dairy" cheeses actually add casein (milk) proteins into the cheese, and it is common to find unhealthy vegetable oils, vegetable flours, and added flavorings in these cheeses. Most non-dairy cheeses are very highly processed. If you can find vegan cheeses that have been fermented and aged in the same way as animal milk cheeses, they are almost always your best option. Make sure to read the ingredients!

VITAMIN D

Vitamin D is essential for bone health and immune function, and it also plays a role in heart health, diabetes, cancer prevention and possibly autoimmune diseases.

Our bodies should be able to synthesize Vitamin D from sunlight; even just 10-15 minutes of mid-day sunlight per day may be enough in the summer. However, the skin makes little, if any, Vitamin D from the sun at latitudes above 37 degrees north or below 37 degrees south in the late fall through early spring. North Carolina is right on that border. Your skin tone can also impact how much Vitamin D you are able to produce, and age plays a role as well. Have your Vitamin D levels checked to determine if you need to supplement or not.

True food sources of Vitamin D are scarce. **Fatty fish like salmon and sardines are great food sources, as well as pasture-raised eggs.** There are also many Vitamin D fortified food sources, like **milks, non-dairy milks and fortified cereals.** Many people do have to take supplements to maintain healthy Vitamin D blood levels.



VITAMIN K2

This fat soluble vitamin is necessary for bone and heart health. Unlike Vitamin K1, which is abundant in leafy green vegetables, Vitamin K2 is mostly found in animal foods. Vegetarians can get K2 from grass fed milk products and pasture raised eggs. Natto, which is fermented soybeans, and certain fermented vegetables are typically the only vegan sources besides supplements. There isn't an RDA for Vitamin K2, but aiming for around **200mcg daily** may be sufficient. Your K2 needs depend on many factors, including the amount of Vitamin D you might be supplementing with. If you are concerned about your bone health, talk to your nutritionist for more details.

VITAMIN B12

Vitamin B12 is needed for the synthesis of DNA and red blood cells and is involved in the protection and function of our nervous system. Only animal products contain B12. If you are vegetarian, you can likely get adequate B12 from eggs and dairy products. If you are vegan, you will likely need to supplement with B12 and/or consume vegan food fortified with B12 like nutritional yeast and non-dairy milks. The RDA for B12 is **2.4mcg daily** for most (age 14 and up), **2.6mcg for pregnant women** and **2.8mcg for women who are breastfeeding**.

ZINC

Zinc is needed for maintaining a healthy immune system, mental alertness, wound healing, and proper growth in children. The RDA for zinc is **11mg for men** and **8mg for women**. Zinc can be tricky for vegetarians and vegans because the plant foods that contain zinc also contain compounds that inhibit zinc absorption, such as whole grains, legumes, nuts and seeds. Soaking and sprouting these foods can reduce the compounds that inhibit absorption.

OMEGA-3 FATTY ACIDS

These essential fatty acids play a role in heart health, brain function, eye health, overall inflammation in the body, and many other factors. They are **ESSENTIAL** for our bodies! The most useable forms for our body are **EPA** and **DHA**. These are the types found mostly in fatty fish (like salmon or sardines).

Plant based Omega-3 fatty acids, or ALA, aren't as efficient in the body as EPA or DHA. The body can convert some ALA to EPA, but at a very small percentage (at best, 10%). ALA is found in flax seeds, chia seeds, hemp seeds, walnuts, and many foods labeled "with Omega-3's".

Omega-3 Supplements

There are now EPA/DHA supplements from algal oil that are suitable for vegetarians and vegans or anyone that can't or doesn't want to eat fish.

There isn't an RDA for Omega-3 fatty acids, and the optimal amount depends on your health status and the amount of other types of fats you consume. A good goal to start with would be at least **500 mg of EPA/DHA per day**.

SUPPLEMENTS

If you decide you want to take supplements to ensure adequate intake of all nutrients, please consult your nutritionist or health care provider first. Supplements are not all equal. You will want to make sure you are taking a high quality supplement that has the nutrients in the right dosages and in an absorbable form.

How Do I Plan My Meals?

Animal based proteins naturally contain very little carbohydrates (unless you've added some in a marinade or breading). However, most plant-based proteins contain both carbohydrates **and** protein. This can get rather tricky when you're trying to plan healthy, well-balanced meals that meet your protein needs while not surpassing your carbohydrate limits for glucose management.

When planning meals, be careful to strike the right balance between macronutrients (i.e. carbs, protein and fat). If you're consuming a starchy protein like beans or lentils, reduce your portion of other starches like sweet potatoes or rice by half or eliminate the additional starch all together.

Use the following plates for guidance when planning your meals.

How to Build a Meal

Each Meal: Carbohydrate + Protein + Healthy Fat

1. Choose one or more non-starchy vegetables.

Asparagus, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, collard greens, green beans, kale, spinach, Swiss chard, zucchini, etc.

2. Choose a quality protein.

Lentils, split peas, beans (black, kidney, garbanzo, etc.)*

Organic, non-GMO whole soy foods: tempeh, tofu, edamame*

Grass-fed, organic dairy: plain Greek yogurt*, cottage cheese*, cheese

Pasture-raised eggs

Nuts, seeds and whole grains**

Clean protein powder

*starchy protein: contains carbohydrates and protein

**contain smaller amounts of protein

3. Choose a nutrient dense carbohydrate.

Whole intact grains (steel cut oats, quinoa, wheat berries, amaranth, teff, sorghum, spelt berries, millet, brown or wild rice, etc.)

Potatoes (sweet, purple, Yukon gold)

Winter squash

Lentils, split peas and beans

Whole fruit

Grass-fed, organic dairy

Parsnips, turnips

4. Choose a healthy fat.

Raw nuts and seeds

Avocado, avocado oil

Natural nut butters (no added sugar)

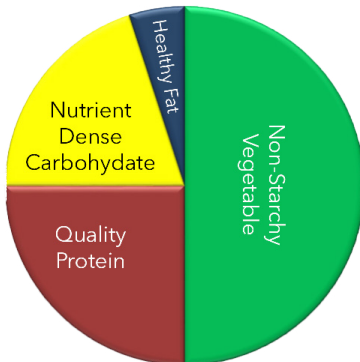
Olives, extra virgin olive oil

Grass-fed butter and ghee*

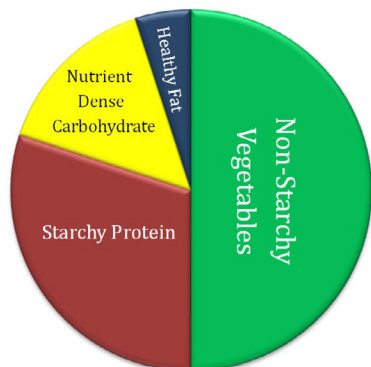
Organic virgin coconut oil*

*small amounts

5. Fill your plate.



OR



How Do I Plan My Snacks?

Snacks can be an integral part of a healthy, well-balanced diet. However, most snacks are loaded with sugar and processed carbs which can leave you feeling drained and craving more food. Instead, choose nutrient dense snacks following the guide below.

How to Build a Strategic Snack

Each Snack: Carbohydrate + Protein/Healthy Fat

1. Choose a nutrient dense carbohydrate.

Whole intact grains (steel cut oats, quinoa, brown rice, etc.)
Potatoes (sweet, purple, Yukon gold, etc.)
Air-popped popcorn
Whole fruit
Beans and lentils
Grass-fed, organic dairy
Non-starchy vegetables

2. Choose a quality protein/healthy fat.

Quality Protein:

Beans and lentils*
Cheese
Cottage cheese*
Clean protein powder
Hard-boiled egg
Hummus*
Organic, non-GMO edamame*
Plain Greek yogurt

Healthy Fat:

Avocado
Guacamole
Natural nut butter (no added sugar)
Olives
Raw nuts or seeds
Tahini

*starchy protein: contains carbohydrates and protein

3. Fill your plate.





NOTES