

# Vegetarian Diets for Pregnancy

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**P**regnancy means eating for two. But it helps to remember that one of you is very small. So while you will need more nutrition, your overall diet will not be dramatically different from your normal eating pattern.

Calorie needs increase only modestly during pregnancy. In the first trimester, no additional calories are needed at all. However, an extra 340 calories are needed per day in the second trimester, and an additional 452 calories are needed per day in the third trimester.<sup>1</sup> All pregnant women need to choose their meals wisely. It is important to eat foods that are rich in nutrients, but not high in fat or sugar, or excessive in calories.

A vegetarian diet, based on nutritious whole foods, is a healthful choice for any pregnant woman. Use the chart below to plan your meals.

<b>Whole Grains, Breads, Cereals</b> 9 or more servings Serving = 1 slice of bread, 1/2 bun or bagel, 1/2 cup cooked cereal, rice, or pasta, 3/4-1 cup ready-to-eat cereal
<b>Vegetables</b> 4 or more servings Serving = 1/2 cup cooked or 1 cup raw vegetables Choose at least one dark green vegetable daily
<b>Fruits</b> 4 or more servings Serving = 1/2 cup cooked, 1 cup raw, 1 piece of fruit, 3/4 cup fruit juice, 1/4 cup dried fruit
<b>Legumes, Soy Products, Nondairy Milks</b> 5-6 servings Serving = 1/2 cup cooked beans, tofu, or tempeh; 8 ounces fortified soymilk or other nondairy milk; 3 ounces meat analogue
<b>Nuts, Seeds, Wheat Germ</b> 1-2 servings Serving = 2 tablespoons nuts or seeds, 2 tablespoons nut butter, 2 tablespoons wheat germ
*Be sure to include a reliable source of vitamin B12, such as many prenatal vitamins or fortified nondairy milk or cereal.

## Nutrients

**T**o make certain that you are getting adequate nutrition, pay particular attention to the following nutrients.

**Calcium:** The Dietary Reference Intake (DRI) for calcium during pregnancy is the same as before pregnancy, 1000 mg/day for women ages 19-50,<sup>2</sup> due in part to increased maternal calcium absorption.

Just as it was before pregnancy, getting enough calcium on a vegetarian diet is easy. In fact, calcium absorption from plant foods is often superior to that of dairy products.<sup>3</sup> Good sources of calcium include tofu and soy beans, dark green leafy vegetables, bok choy, broccoli, beans, figs, sunflower seeds, tahini, almond butter, calcium-fortified nondairy milk, and calcium-fortified cereals and juices. If these foods are included in the diet every day, calcium needs are easily met.

**Essential fatty acids:** Alpha-linolenic acid (ALA) is an essential fatty acid and an important component of the diet. ALA converts in the body into omega-3 fatty acids (DHA and EPA).

The Institute of Medicine has set the adequate intake (AI) for ALA at 1.1 g/day for women ages 19-50 and 1.4 g/day during pregnancy.<sup>1</sup> ALA can be found in a number of vegetarian foods. Flaxseeds and flaxseed oil are the most concentrated sources; however, ALA is also found in canola and walnut oils, walnuts, and soybeans.

An important factor in essential fatty acid status for vegetarians is the ratio of omega-6 to omega-3 fatty acids. The World Health Organization recommends a ratio of 5:1 to 10:1 for proper conversion of ALA into DHA and EPA.<sup>4</sup> The lower the ratio of omega-6 to omega-3 fatty acids, the better the conversion. Omega-6 fatty acids are found in seeds, nuts, grains, legumes, and green leafy vegetables, as well as in high concentrations in certain vegetable oils (corn, soybean, safflower, cottonseed, sesame, and sunflower).

The fatty acid that is often discussed regarding vegetarian pregnancy is DHA. DHA has been shown to be lower in the plasma and umbilical cord of babies born to vegetarian mothers.<sup>5</sup> Since vegetarians don't consume any preformed DHA in the diet, they must convert it from ALA. It certainly is possible to meet omega-3 fatty acid needs on the vegetarian diet by consuming enough sources of ALA, balanced by not having too many omega-6 fatty acids. However, if a vegetarian woman is concerned about DHA, microalgae-based supplements are available, marketed under the name Neuromins.

**Folate:** Folate, or folic acid, is necessary to help prevent

neural tube defects and serves other functions as well. Folate is especially important in the first weeks of pregnancy, and it is therefore important that all women of childbearing age get adequate amounts daily. As its name (derived from the word “foliage”) implies, its natural source is leafy greens. Legumes are also rich in folate. Because diets can be erratic, it is prudent to take a multiple vitamin or other supplement that provides at least 400 µg/day. Many breakfast cereals and other grain products are now fortified with folate. During pregnancy, 600 µg/day of folate is needed.<sup>6</sup>

**Iron:** Iron needs increase during pregnancy to aid in the development of the fetus and placenta and to maintain increased maternal blood volume. The DRI for women ages 19-50 is 18 mg/day, increasing to 27 mg/day during pregnancy.<sup>7</sup> Iron needs may be greater for those on a vegetarian diet because of less efficient absorption of iron from nonanimal sources.<sup>8</sup> Iron supplements (or prenatal vitamins containing iron) are often prescribed for women on any kind of diet, as it is difficult for any woman to meet increased needs through diet alone.

Vegetarian women should include iron-rich plant foods daily, in addition to taking their prescribed vitamins or supplements. Iron supplements should not be taken at the same time as tea, coffee, or calcium supplements. Dairy products decrease iron absorption and should be avoided. Iron sources include whole and enriched grains, legumes, nuts, seeds, dark green vegetables, dried fruit, and blackstrap molasses. Including vitamin C-rich foods at meals can increase absorption of iron from these sources.

**Protein:** The DRI for women ages 19-50 is 46 g/day, increasing to 71 g/day during the second and third trimesters of pregnancy (25 grams more than pre-pregnancy needs).<sup>1</sup> This is a greater increase than previously recommended; however, it is still easy to meet these protein needs on a vegetarian diet. DRIs are intended to cover the needs for 97.5 percent of the population, so actual needs for most individuals may be slightly lower than this.

Protein sources on a vegetarian diet include whole grains, beans and legumes, soy products, vegetables, and nuts and seeds. A balanced vegetarian diet, providing adequate calories and including these foods, will likely meet protein needs.<sup>9</sup> The meal-planning chart above provides plenty of protein for pregnancy.

**Vitamin B12:** Vitamin B12 needs increase only slightly during pregnancy, increasing from 2.4 µg/day for women ages 19-50 to 2.6 µg/day during pregnancy.<sup>6</sup> Vitamin B12 is found in fortified foods, such as fortified cereals, meat substitutes, nondairy milk, and nutritional yeast. Be certain to check the labels to find out which foods are fortified. Seaweed and foods like tempeh are generally not good sources of vitamin B12. To be sure of getting adequate B12, it is prudent to take a prenatal vitamin containing vitamin B12 or to take a vitamin B12 supplement.

**Vitamin D:** Although vitamin D needs during pregnancy are the same as before pregnancy (5 µg per day),<sup>2</sup> it is important to both mother and baby to ensure adequate intake. Vitamin D is made in the body as the result of exposure to sunlight. For many people, 5 to 15 minutes per day of sun between the hours of 10 a.m. and 3 p.m. on the arms and legs or hands, face, and arms during the spring, the summer, and the fall is sufficient to meet vitamin D needs.<sup>10</sup>

This nutrient is poorly supplied in all diets unless people use foods that are fortified with it. Many brands of ready-to-eat cereals and nondairy milks are fortified with vitamin D. Pregnant women who don't regularly spend time in the sun, live in northern latitudes, or have darker skin will want to be sure to include fortified foods in their diet. Many prenatal vitamins contain adequate amounts of vitamin D as well.

**Zinc:** Zinc needs increase during pregnancy. The DRI for women ages 19-50 is 8 mg/day and increases to 11 mg/day during pregnancy.<sup>7</sup> Needs for women following a vegetarian diet may be higher, however, because of lower absorption of zinc on a plant-based diet.<sup>8</sup>

Zinc is often included in prenatal vitamins. In addition, zinc is found in legumes, nuts, whole grains, and cereals. Zinc absorption from plant-based sources can be increased by including sprouted grains, beans, or seeds and yeast-raised breads in the diet, soaking and cooking legumes, and combining zinc sources with acidic ingredients such as lemon juice or tomato sauce.

A note about dietary supplements: Your doctor may recommend a supplement to ensure you are meeting your vitamin/mineral needs. Most prenatal vitamins will be adequate to cover your needs. If you are interested in taking any additional dietary supplements, including herbal or botanical supplements, talk to your doctor. Many herbal supplements have not been adequately tested for safety in pregnancy.

SAMPLE MENU FOR PREGNANT WOMEN
<p><b>Breakfast</b></p> <ul style="list-style-type: none"> <li>• 1 cup ready-to-eat cereal topped with 1/4 cup raisins and 1 cup fortified soymilk</li> <li>• 2 slices whole-wheat toast with 2 tablespoons almond butter</li> <li>• 3/4 cup calcium-fortified fruit juice</li> </ul>
<p><b>Lunch</b></p> <ul style="list-style-type: none"> <li>• sandwich with 1/2 cup baked tofu, 2 slices whole-grain bread and lettuce</li> <li>• 2 cups tossed salad with herbs and lemon juice</li> <li>• 1 piece fruit</li> </ul>
<p><b>Dinner</b></p> <ul style="list-style-type: none"> <li>• 1 cup red beans and 1/2 cup rice</li> <li>• 1/2 cup cooked broccoli with nutritional yeast</li> <li>• 1 cup spinach salad</li> <li>• 1 cup fortified soymilk</li> </ul>
<p><b>Snacks</b></p> <ul style="list-style-type: none"> <li>• 2 tablespoons nuts • 1 cup mixed fruit</li> <li>• 4 whole-wheat crackers</li> </ul>
<p>*Be sure to include a reliable source of vitamin B12, such as many prenatal vitamins or fortified nondairy milk or cereal.</p>

GUIDELINES FOR GOOD HEALTH DURING PREGNANCY
<ul style="list-style-type: none"> <li>• Begin a healthful diet before you become pregnant. Your body stores of nutrients support the early growth and development of your baby.</li> </ul>
<ul style="list-style-type: none"> <li>• Maintain a steady rate of weight gain. Aim for about 2 to 4 pounds total during the first trimester and then about 1 pound per week during the second and third trimesters. If you were at a normal weight before you became pregnant, the recommended weight gain overall is 25 to 35 pounds. However, if you were underweight before pregnancy, you should gain 28 to 40 pounds, and if you were overweight, you should gain 15 to 25 pounds. Women carrying twins should gain 35 to 45 pounds.<sup>11</sup></li> </ul>
<ul style="list-style-type: none"> <li>• See your health care provider regularly.</li> </ul>
<ul style="list-style-type: none"> <li>• Do not consume alcohol or use tobacco products during pregnancy.</li> </ul>
<ul style="list-style-type: none"> <li>• If you choose to consume caffeinated beverages, limit caffeine intake to &lt;300 mg per day (the amount in about 3 cups of coffee).</li> </ul>
<ul style="list-style-type: none"> <li>• Exercise during pregnancy is often beneficial to both mother and baby. Talk to your doctor about an appropriate exercise plan for you.</li> </ul>
<ul style="list-style-type: none"> <li>• Limit empty calories found in highly processed foods and sweets. Make your calories count!</li> </ul>

## Menu Ideas

- Plan meals around nutritious whole grains, beans, fruits, and vegetables. Add sesame seeds, wheat germ, or nutritional yeast for flavor and nutrition.
- Cooked leafy green vegetables are a powerhouse of nutrition. Add them to soups and casseroles.
- Snack on dried fruits and nuts to boost your intake of iron and other important trace nutrients.

## References

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