

## Basic Needs in Pregnancy

During pregnancy, the body requires extra calories, protein, vitamins, and minerals in order to support the baby's growth and to allow for changes in the mother's body. Important considerations in pregnancy include calories, protein, DHA, vitamin B12, iron, calcium, vitamin D, zinc, iodine, and folate.

### CALORIES

Pregnant women, in general, need an additional 340 calories per day in the second trimester and 450 calories per day in the third trimester. The extra calories allow for the mother's body to change and the baby to grow. Calorie needs will vary according to your pre-pregnancy weight, how active you are, and the amount of weight which you need to gain. Adding nutritious snacks to your daily routine is one way to get extra calories. A sample meal plan for vegan pregnancy, which includes three snack ideas, can be found inside this brochure.

### PROTEIN

Protein recommendations in pregnancy call for an additional 25 grams per day of protein for a total of 71 grams of protein per day. Some examples of protein-rich foods are plain, enriched soy milk; tofu; tempeh; cooked beans; nuts and nut butters. Eating a wide variety of nutritious foods will help pregnant women get the additional protein they need.

### DHA

DHA is a type of fat that seems to be important in brain and eye development. Our bodies can make some DHA from alpha-linolenic acid, another fat found in flaxseed, flaxseed oil, canola oil, walnuts, and soybeans. DHA production from alpha-linolenic acid is limited so use of foods or supplements containing vegan DHA derived from microalgae is recommended in pregnancy. Foods fortified with vegan DHA include some soy milk and veggie burgers.

### VITAMIN B12

Vitamin B12 is used in the development of the infant's nerve system and requirements are increased during pregnancy. Some good sources of vitamin B12 are vitamin B12-fortified soy milks and meat analogs, some fortified ready-to-eat cereals, and Vegetarian Support Formula nutritional yeast. A little more than a tablespoon of Vegetarian Support Formula will provide the recommended amount of vitamin B12. This is a critical nutrient, so if your diet does not include these foods daily, use a vegetarian prenatal vitamin with vitamin B12.

### IRON

Iron is needed for increased maternal blood volume and to form the baby's blood. Anemia can be a problem during any pregnancy, regardless of your diet. All pregnant women need to eat foods rich in iron, such as green leafy vegetables, dried beans and legumes, tofu, and whole grains. Eating iron-rich foods with citrus fruits can increase iron absorption. An iron supplement may be necessary if you cannot get enough iron from your diet.

### CALCIUM/VITAMIN D

Calcium and vitamin D work together for bone and teeth health and development. Calcium absorption increases in pregnancy and may compensate for increased needs. Pregnant women should eat 8 or more servings of calcium-rich foods daily, including some green leafy vegetables, and calcium-fortified tofu, soy milk, and orange juice. Calcium supplements, on days your appetite is poor, are also an option. Vitamin D is found in fortified soy milk and fortified breakfast cereals.

### ZINC

Zinc is necessary for growth and development. The recommended intake for zinc increases during pregnancy. Good sources of zinc include peas, beans, fortified breakfast cereals, nuts and seeds, wheat germ, tofu, and tempeh.

### IODINE

Pregnant vegans should use iodized salt at the table or in cooking to insure adequate iodine intake. Slightly more than half a teaspoon of iodized salt meets iodine needs in pregnancy. Iodine is included in some prenatal supplements and if it is at 100% of the DV additional iodine is not needed.

### FOLATE

Folate is important even before you know you are pregnant, so all women of childbearing age should be getting at least 400µg (micrograms) from supplements or fortified foods per day. The need for folate increases in pregnancy, to 600µg per day. Dark leafy greens, whole grains, and orange juice are rich sources of folate. Vegan diets are often high in folate.

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# VEGAN NUTRITION in Pregnancy and Childhood

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THE VEGETARIAN RESOURCE GROUP

## Basic Needs During Breastfeeding

The best diet for breastfeeding is very similar to the diet recommended for pregnancy. Protein recommendations are the same, vitamin B12 recommendations are higher, and the recommendations for iron and calories are lower than during pregnancy. Vitamin D, calcium, iodine, and DHA continue to be important. It is a good idea to use a standard prenatal vitamin shortly before, during, and after pregnancy, along with eating a well-balanced diet.

## Basic Needs for Infants (0-1 year)

The ideal food for a vegan baby's first year of life is breast milk. Benefits to the breastfed baby include enhancement of the immune system, protection against infection, and reduced risk of allergies. Benefits to the mom include reduced risk of premenopausal breast cancer, release of stress-relieving hormones, and convenience. Breastfeeding may also help you lose weight, though you should not restrict calories when trying to establish milk supply. There may be other benefits we are not aware of yet.

### VITAMIN D

The most reliable way to get vitamin D is from fortified foods or supplements. Vitamin D is synthesized in our skin with sunlight exposure. This synthesis is greatly reduced by sunscreen use. Since sunscreen should be used with sunlight exposure, dietary or supplemental vitamin D is needed. To prevent vitamin D deficiency in breast-fed babies, the American Academy of Pediatrics recommends that breast-fed babies be given a 400 IU/day vitamin D supplement beginning during the first few days after birth. Infant formula supplies adequate amounts of vitamin D. Vitamin D deficiency leads to rickets (soft, improperly mineralized bones).

### IRON

The breastfed infant should be started on iron supplements or iron-fortified foods (like baby cereal) between 4 and 6 months. Formula fed babies will probably not need the supplement since infant formula contains iron. If you give iron supplements to your baby, ask your pediatrician for the correct dose.

### SOY FORMULA

There are several soy-based formulas available. Vegan families should choose these if breastfeeding is not an option. Some soy-based formulas may contain animal-derived fats, so check the ingredient label. Unfortunately, at the time of this writing, in the United States the food industry does not offer ANY soy-based formulas that do not include vitamin D derived from lanolin, which comes from sheep's wool. There are no other acceptable options for formula-fed vegan infants. Only consumer outcry is likely to change this situation.

It is important to note that soy milk, rice milk, and homemade formulas should not be used to replace breast milk or commercial infant formula during the first year. These foods do not contain the right amounts of nutrients for babies.



## INTRODUCING SOLID FOODS

Solid foods should be introduced around 6 months of age. Try to introduce one food at a time, waiting 2 to 3 days before trying another food, to see if the baby has a reaction to the food. If an allergic reaction occurs, the offending food is more easily identified.

A baby's first food can be any soft or puréed, single ingredient food. First foods could include infant cereals, well-mashed or puréed vegetables, fruits, or cooked dried beans. Commercial iron- and zinc-fortified infant cereals are good sources of these important nutrients. Carrots, peas, sweet potatoes, and green beans are examples of good first vegetables.

Good first fruits include well-mashed bananas, unsweetened applesauce, and puréed peaches or pears. Babies younger than 12 months should not be given juice. Older babies should have 4 ounces or less of 100% fruit juice per day.

Some good sources of protein include mashed, cooked dried beans; mashed tofu; and soy yogurt. Smooth nut and seed butters can be mixed into infant cereals and purées.

Some parents choose to use commercial baby foods. There are products made for vegetarian babies, but careful label reading is recommended. Many parents wish to make their own baby foods. These should be prepared without added sugar, salt, or spices. Foods should be well cooked, mashed or puréed, and handled under clean conditions.

Babies under age 2 need more calories and fat than at any other time in their lives. Fat is important in brain development. Some foods used to increase fat in the diet are mashed avocado, vegetable oil, and nut and seed butters mixed into other foods such as infant cereals and puréed vegetables or fruits.

If a breast-feeding mother is not using a reliable source of vitamin B12, the baby needs a vitamin B12 supplement.

## Feeding Vegan Children Toddlers through School-Age

Children, especially toddlers and preschoolers, often tend to eat less than most parents think they should. This is generally due to a developing sense of independence and a slow down in growth. All parents should schedule regular check-ups with their child's pediatrician, in order to monitor growth, development, and health. All parents need to make sure that what their child does eat, gives the child the nutrients he or she needs. The preschool years are an important time for developing healthy eating patterns, which can set the stage for a healthful adult diet.

### CALORIES AND FAT

Young children have small stomachs and eating a lot of high fiber foods may not give them enough calories. A diet rich in fresh fruits, vegetables, and whole grains is also usually high in fiber. The fiber content of a vegan child's diet can be reduced by offering him or her some refined grain products, limited amount of fruit juice, and peeled fruits and vegetables. Foods like avocado, nut and seed butters, dried fruits, and soy products can pack a lot of calories into small quantities, which is great for the growing child. To promote synthesis of DHA, an important fat, include sources of alpha linolenic acid like canola oil, flaxseed oil, and soy products in your child's diet.

### PROTEIN

A child will meet protein needs if a variety of plant foods are eaten and calorie intake is adequate. It is unnecessary to precisely plan and complement amino acids within each meal as was once thought, as long as children eat several meals and snacks a day. Variety is the key to a healthy diet. Sources of protein include legumes, grains, soy products, meat analogs, and nut butters.

### CALCIUM

Calcium is very important for growing bones and teeth. Good sources of calcium include calcium-fortified plant milks, calcium-fortified orange juice, tofu made with calcium, blackstrap molasses, vegetarian baked beans, and textured vegetable protein (TVP). Because of the small size of a child's stomach and the

amount needed, leafy greens are not a major source of calcium. However, the older child may be able to consume enough kale, collard greens, turnip, and mustard greens, along with other good sources of calcium, to meet needs.

### ZINC

There is little available information on the zinc content of diets of vegan children. Zinc sources include legumes, whole grain pasta, wheat germ, fortified cereals, tofu, nut butters, and miso.

### VITAMIN D

Dietary sources of vitamin D include vitamin D-fortified plant milks. Vitamin D supplements are needed for children who have limited dietary sources of vitamin D. Sun exposure traditionally has been recommended for vitamin D production. Current recommendations call for the use of sunscreen, which greatly reduces vitamin D production by the skin, so sun exposure should not be relied on for vitamin D adequacy. Remember that children need to wear sunscreen outdoors.

### VITAMIN B12

Vegan children should use foods fortified with vitamin B12 and/or vitamin B12 supplements. A variety of foods fortified with vitamin B12 are available, including some brands of soy milk, meat analogs, fortified nutritional yeast, and some breakfast cereals.

### IRON

Iron deficiency anemia is a common childhood nutritional problem, no matter what the diet. Good iron sources include whole or enriched grains and grain products, iron-fortified cereals, legumes, green leafy vegetables, and dried fruits. Vitamin C helps the body absorb iron, so offer citrus fruits with iron-rich foods.

### CHOKING RISKS

Toddlers and preschoolers are at increased risk of choking because they are still learning to chew and swallow, they may not have a full set of teeth yet, and they may not want to take the time to chew food carefully. To minimize choking risk, the following foods should be avoided or eaten only with supervision:

- Nuts, except when finely ground.
- Nut butters by the spoonful.
- Vegetarian hot dogs, unless sliced into tiny pieces the size of a pea.
- Cherry tomatoes, unless halved or quartered.
- Grapes, unless cut in half. Peeling may be needed for young toddlers.
- Raw cherries, unless pitted and sliced.
- Raw celery and whole raw carrots.
- Popcorn.
- Bagels with nut butter or hummus.

### MEAL PLANNING IDEAS

Popular foods with vegan children include:

- Pizza, without cheese, and topped with vegetables, tofu, or meat analogs.
- Pasta with marinara sauce.
- Oven-baked French fries.
- Soy yogurt.
- Macaroni and soy cheese.
- Milkshakes made with calcium-fortified soy milk and fruit.
- Peanut butter and jelly sandwiches.
- Fresh or dried fruit.
- Pancakes and waffles.
- Noodles with peanut butter sauce.
- Raw vegetables with dip.
- Muffins.
- Mashed potatoes.
- Veggie burgers.

### GENERAL TIPS

- Use an iron skillet when preparing acidic foods, such as tomato sauce. This helps "unlock" the iron.
- Be sure your non-dairy milk alternative is fortified with vitamins D and B12, as well as calcium.
- Good sources of zinc are peas, beans, brown rice, nuts, spinach, tofu, wheat germ, fortified breakfast cereals, and tempeh.
- Introduce one new food at a time to your baby in order to identify possible allergens.
- Do not restrict fat in your baby's diet before 2 years of age. Babies need fat for brain development. Some sources of fat are avocados, olive oil, and nut butters.
- Most foods, such as pancakes or muffins, can also be made vegan.

# Sample Meal Plan for Vegan Pregnancy

## BREAKFAST

1/2 cup oatmeal with maple syrup  
1 slice whole wheat toast with fruit spread  
1 cup fortified soymilk  
1/2 cup calcium-fortified orange juice

## MORNING SNACK

1/2 whole wheat bagel with margarine  
1 banana

## LUNCH

Veggie burger on whole wheat bun with mustard and ketchup  
1 cup steamed collard greens  
Medium apple  
1 cup fortified soymilk

## AFTERNOON SNACK

3/4 cup ready-to-eat cereal with  
1 cup blueberries  
1 cup fortified soymilk

## DINNER

3/4 cup tofu stir-fried with 1 cup vegetables  
1 cup brown rice  
Medium orange

## EVENING SNACK

Whole grain crackers with 2 TB peanut butter  
4 ounces apple juice

This sample meal plan provides approximately 2200 calories, 100 gm protein, 55 gm fat (22% of calories), and 336 gm carbohydrate. This sample meal plan meets recommendations for calcium, zinc, vitamin B12, folate, thiamin, riboflavin, and niacin. Supplemental iron and vitamin D may be needed.

# Feeding Schedule For Vegan Babies Ages 4-12 Months

	6-8 MOS*	7-10 MOS	10-12 MOS
<b>Milk</b>	Breast milk or soy formula.	Breast milk or soy formula.	Breast milk or soy formula.
<b>Cereal &amp; Bread</b>	Begin iron- and zinc-fortified baby cereal mixed with breast milk or formula. Begin other soft or puréed grains. Begin breads.	Baby cereal. Other breads and cereals.	Baby cereal until 18 months. A variety of breads, cereals, and pasta.
<b>Fruits &amp; Vegetables</b>	Begin mashed or puréed vegetables and fruits.	Mashed or puréed vegetables and fruits; pieces of soft/cooked vegetables and fruits.	Fruits and vegetables prepared at a consistency that is appropriate for the baby.
<b>Legumes &amp; Nut Butters</b>	Begin well-mashed or pureed cooked dried beans, mashed tofu. Smooth nut and seed butters can be mixed into infant cereal and purées.	Well-mashed or pureed cooked dried beans, mashed tofu, soy yogurt. Smooth nut and seed butters can be mixed into infant cereal and purees. Begin soft or mashed casseroles.	Well-cooked or mashed cooked dried beans; scrambled, mashed or cubed tofu; soy yogurt. Smooth nut and seed butters can be mixed into infant cereal and other foods. Soft or mashed casseroles.

\*Overlap of ages occurs because of varying rate of development.

# Diet Plans for Vegan Children Toddlers and Preschoolers (Ages 1-3)

FOOD GROUP	NUMBER OF SERVINGS
<b>Grains</b>	<b>6 or more servings.</b> A serving is 1/2 to 1 slice of bread; 1/4 to 1/2 cup cooked cereal, grain, or pasta; 1/2 to 1 cup ready-to-eat cereal.
<b>Legumes, Nuts, Seeds</b>	<b>2 or more servings.</b> A serving is 1/4 to 1/2 cup cooked beans, tofu, tempeh, or TVP; 1 ounce of meat analog; 1 to 2 TB nuts, seeds, or nut or seed butter.
<b>Fortified Soymilk, etc.</b>	<b>2 servings.</b> A serving is 1 cup fortified soymilk or pea protein milk, breast milk, or infant formula.
<b>Vegetables</b>	<b>2 or more servings.</b> A serving is 1/4 to 1/2 cup cooked, or 1/2 to 1 cup raw vegetables.
<b>Fruits</b>	<b>3 or more servings.</b> A serving is 1/4 to 1/2 cup canned fruit, 1/2 cup juice, or 1/2 medium fruit.
<b>Fats</b>	<b>3 to 4 servings.</b> A serving is 1 tsp. margarine or oil. (Use 1/2 tsp. flaxseed oil or 2 tsp. canola oil daily to supply omega-3 fatty acids.)

# Children (Ages 4-13)

FOOD GROUP	NUMBER OF SERVINGS
<b>Grains</b>	<b>8 or more for 4 to 8 yr olds; 10 or more for 9 to 13 yr olds.</b> A serving is 1 slice of bread; 1/2 cup cooked cereal, grain, or pasta; 3/4 cup ready-to-eat cereal.
<b>Protein Foods</b>	<b>5 or more for 4 to 8 yr olds; 6 or more for 9 to 13 yr olds.</b> A serving is 1/2 cup cooked beans, tofu*, tempeh, or TVP; 1 cup fortified soymilk* or fortified pea protein milk*; 1 ounce of meat analog; 1/4 cup nuts or seeds*; 2 TB nut or seed butter*.
<b>Vegetables</b>	<b>4 or more.</b> A serving is 1/2 cup cooked, or 1 cup raw vegetables*.
<b>Fruits</b>	<b>2 or more.</b> A serving is 1/2 cup canned fruit, 1/2 cup juice*, or 1 medium fruit.
<b>Fats</b>	<b>2 or more for 4 to 8 yr olds; 3 or more for 9 to 13 yr olds.</b> A serving is 1 tsp. of margarine or oil.
<b>Omega-3 Fats</b>	<b>1 per day.</b> A serving is 1 tsp. flaxseed oil, 1 TB of canola or soybean oil, 1 TB ground flaxseed, 1/4 cup walnuts.
<b>Starred Food Items</b>	<b>6 or more for 4 to 8 yr olds; 10 or more for 9 to 13 yr olds.</b> A serving is 1/2 cup calcium-set tofu; 1 cup calcium-fortified soymilk, orange juice, or soy yogurt; 1/4 cup almonds; 2 TB tahini or almond butter; 1 cup cooked or 2 cups raw broccoli, bok choy, collards, kale, or mustard greens.

## NOTES:

For the starred servings, these also count as servings from the other groups at the same time. They aren't additional. The items in the Starred Food Items listing are the foods you want since they are high in calcium. Serving sizes vary depending on the child's age.

The calorie content of the diet can be increased by greater amounts of nut butters, dried fruits, soy products, and other high calorie foods.

A regular source of vitamin B12 like Vegetarian Support Formula nutritional yeast, vitamin B12 fortified soymilk, vitamin B12 fortified breakfast cereal, vitamin B12 fortified meat analogs, or vitamin B12 supplements should be used.

Adequate exposure to sunlight, 20 to 30 minutes of summer sun on hands and face two to three times a week, is recommended to promote vitamin D synthesis. If sunlight exposure is limited, supplemental vitamin D should be used.

The information in this brochure was modified from Simply Vegan, 4th edition. The contents of this handout and other VRG publications are not intended to provide personal medical advice, which should be obtained from a qualified health professional.

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