

Nutrition SPOTLight

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Nutrition Before and During Pregnancy

We have all heard what it's *not*— pregnancy is NOT a time to “eat for two”- at least not calories for two. But pregnancy IS a time for attention to the diet; ideally, the healthy mother-to-be thinks about nutritional adequacy *before* becoming pregnant.

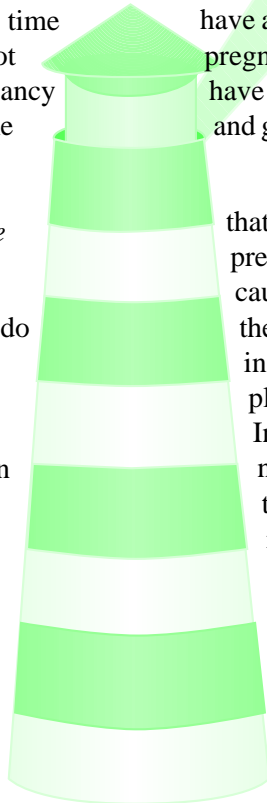
What should a woman do nutritionally before she becomes pregnant? Think ahead, according to the March of Dimes. A woman considering pregnancy should see her doctor or health care provider for a pre-pregnancy checkup. Before conception is a good time to adopt healthy behaviors, including optimal nutrition. One of these healthy behaviors should be the inclusion of 400 micrograms (ug) of folic acid in the diet each day. Other sound nutrition practices make sense in the time prior to pregnancy.

Before a woman becomes pregnant is the ideal time for her to take stock of her nutritional status. A diet pattern reflecting adequacy, balance, moderation and variety will serve as a strong nutritional foundation as a woman makes the

transition to a diet for pregnancy. To have a good diet during pregnancy, the mother must have good quantity of food and good quality food.

It is important to note that not every problem of pregnancy has a nutritional cause, but it is believed that there are numerous instances where nutrition plays a direct, critical role. In striving for optimal nutrition during pregnancy, the mother takes responsibility for factors within her control.

This issue of *Nutrition Spotlight* looks at nutrition and pregnancy and many factors included. “How many calories are needed?” “What do I do for morning sickness, especially when it lasts all day?” “What about foods or drinks to avoid during pregnancy?” “How do I need to eat to assure successful breastfeeding?” We examine the role of nutritional supplements in the diet of a mother-to-be. There are even recipes for nutritious, easy-to-prepare foods that highlight good health and great flavor.



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In upcoming Spotlight issues we will focus on nutrition through the life cycle— feeding infants and young children, older children and teens, nutrition for the young adult and nutrition needs of the older adult. Our intention is to provide concise, complete, current nutrition information for those who are asked the questions— those on the front line.

Concerns of Pregnancy - Choosing for Two

Some maternal dietary and lifestyle choices are not healthy for the baby. Nutrition Spotlight focuses on some of these choices of concern, and examines current health positions regarding these choices.

Alcohol—The research is clear: pregnancy and alcohol do not mix. As few as one or two alcoholic drinks a day have been associated with higher rates of miscarriage, low birth weight infants, birth defects and other complications of pregnancy. The Dietary Guidelines for Americans, 1990, stated the facts: “Major birth defects have been attributed to heavy drinking by the mother while pregnant. It is wise for women who are pregnant or trying to conceive not to drink alcoholic beverages.”

Drugs/medications—Medications and drugs - whether prescription or over-the-counter —often contain alcohol, caffeine or other substances that could be harmful to the unborn child. Ask your health care provider before taking any medication or supplement. Abuse of drugs can do serious harm to the developing fetus, and may cause the baby to be born addicted to drugs the mother used. Despite this fact, more than five percent of women giving birth in a recent year had used an illicit drug at some time during their pregnancy.

Caffeine—Although many studies have looked at the effects, there seems to be no clear-cut evidence on whether caffeine can cause problems during pregnancy. Caffeine is a stimulant and does cross the placenta into the baby’s system. Research supports limiting caffeine-containing beverages to approximately two cups per day.

Smoking—There is no debate here - smoking is harmful during pregnancy. Smoking is associated with low birth weight and may cause premature birth. Research has revealed that serious complications may result in both mother and baby if the mother smokes.

Sugar substitutes—Many foods and beverages are made with artificial sweeteners. Read labels carefully; saccharin is not recommended. Moderate use of the most common sweetener, aspartame, appears to be safe for mother and baby, unless the mother has the hereditary disease phenylketonuria (PKU).

Cravings—The desire for certain foods may increase during pregnancy. These cravings are real for approximately 2/3 of pregnant women; they are most common during the last two trimesters and could be related to hormonal changes. Cravings of non-food items such as clay, starch, ashes and ice is known as pica, and it can be dangerous for both mother and baby. Pica is rooted in folklore, as it was believed that eating these substances may decrease nausea, promote a healthy baby, or ease delivery. Folklore surrounding pregnancy may suggest that the mother-to-be instinctively knows what to eat, and that her cravings are her natural desire to consume the nutrients she needs. Research suggests that these cravings may be learned behaviors.

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The Pregnant Vegetarian

A well-planned vegetarian diet can support a healthy pregnancy. Specifically, when a meal plan includes adequate variety from the food groups of the Food Guide Pyramid and sufficient calories to support weight gain, the chances of a healthy outcome are excellent. Appropriate maternal weight gain during pregnancy is closely associated with the likelihood of having a healthy baby. Therefore, it is especially important for a pregnant teen or a woman having difficulty gaining weight to consume calorie-dense foods. These include energy-rich foods such as nuts, nut butters, dried fruits and bean spreads. It is also possible for a woman to increase her calorie intake by eating small, frequent meals throughout the day. A vegetarian will want to know best plant sources of key nutrients supporting pregnancy in order to assure that she and her fetus are getting optimal nutrition.

Protein - A pregnant vegetarian can meet her protein requirement by eating a variety of grains, beans and vegetables. This is easily achieved if she also consumes low-fat/non-fat dairy products (milk, yogurt, cheese).

Iron - Good non-meat sources of iron include: whole grains, enriched grains, leafy green vegetables, dried fruit, prune juice, dried legumes and tofu. A good source of vitamin C eaten along with iron-rich foods increases iron absorption. Because it is so critical for a pregnant woman to get enough iron, her health care provider will likely recommend an iron supplement.

Folic acid - Vegetarian diets are usually adequate in folic acid when they include foods such as fortified cereals, dark green leafy vegetables, orange juice, wheat germ and bran, whole grain and legumes.

Vitamin B₁₂ - needed for cell replication and nerve development. Iron is of vital concern to the strict vegetarian, because it is found only in food of animal origin. It is recommended that a pregnant vegetarian consume B₁₂-fortified foods including some cereals, soy milks, meat analogues, nutritional yeast, low or no fat dairy products and eggs.

Calcium - Good sources are fortified soy milk and cheese, tofu (processed with calcium salts), leafy green vegetables, broccoli, almond butter, tahini, fortified orange juice, figs, and low-fat milk, yogurt and cheese.

Vitamin D - necessary for calcium absorption and formation of fetal bones. Good sources of vitamin D fortified foods include some cereals, fortified soy milk and cow's milk. Direct exposure to sunlight allows us to make vitamin D in our bodies.

Zinc - required for tissue growth during pregnancy. A pregnant vegetarian must be careful to include zinc-rich foods in her diet. Phytates found in whole grains, as well as iron and calcium, interfere with zinc absorption. Good non-meat sources of zinc are whole grains, cereals, peas, dried beans, nuts, seeds, tofu, milk and hard cheeses.

All of these nutrients, with the exception of iron and folic acid, can be easily obtained through a well-planned vegetarian diet. However, the mother's physician may choose to recommend a multi-vitamin/mineral supplement to ensure the best possible outcome for mother and baby.

Meal Planning Guideline for the Pregnant Vegetarian

The following describe the minimum servings for pregnant vegetarians.

Food group	Serving size	#of Servings
Grains*	1 slice of bread; 1/2 cup of cooked cereal or pasta; 3/4 cup to one cup of dry cereal	7 or more
Legumes, nuts+	1/2 cup cooked beans; 1/2 cup tofu; 3 oz of meat analog; 2 T. nuts, seeds, or nut butter; 1 cup of fortified soy milk or cow's milk or yogurt	5 or more
Vegetables+	1/2 cup cooked or 1 cup raw vegetables	4 or more
Fruits+	1/2 cup canned fruit or juice; 1 medium fruit	4 or more

* Choose whole grain foods often. +Choose calcium-rich foods often.

Source: *Vegetarian Nutrition, Practice Group of the American Dietetic Association, 1996.*

Eating Well For a Healthy Baby and Mom

There is no more important time for a woman to look at what she eats than when she is expecting a baby. Pregnancy puts many nutritional demands on a woman's body. Extra nutrients are required to meet the needs of a rapidly growing baby, but also to keep mom healthy during pregnancy and after.

While the needs for many nutrients increase tremendously during this time, the calories a woman needs go up only slightly. This means that a woman must eat wisely and choose those foods that are nutrient-rich. For many women, an improvement in eating habits is necessary.

Eating healthfully while pregnant helps prevent:

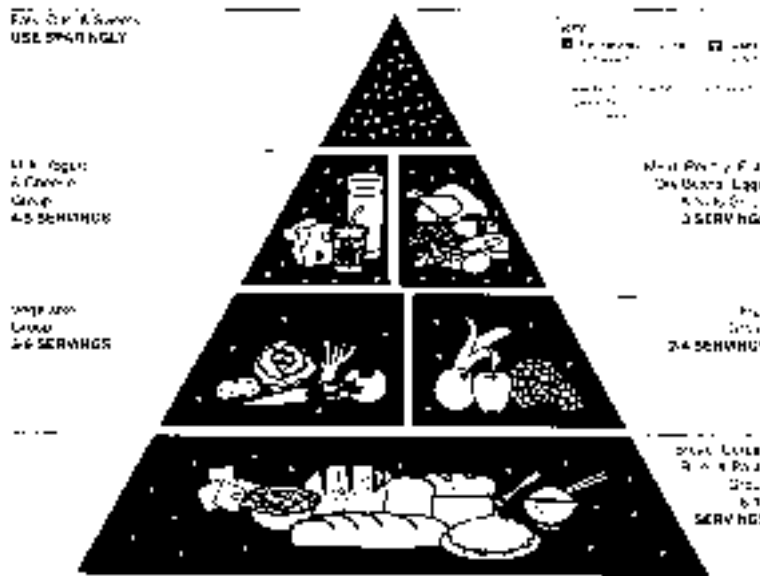
- pregnancy difficulties
- delivery problems
- birth defects
- low birth weight babies
- future health problems for mom or baby

Nutrients of Special Concern

Protein

Both the expectant mom's changing body and the developing

Modified Food Guide Pyramid for Pregnant Women A Guide to Daily Food Choices



baby need protein. The recommendation for most average-sized women is an extra 10 grams per day--for a total of 60 grams. This amount of protein can be found in 1 1/2 ounces of meat or 1 1/4 cups of milk. Since most Americans normally consume more protein than they require, most women don't need to increase protein-containing foods.

The best sources of protein include lean meats, poultry and fish which also provide needed iron, B vitamins and trace minerals. Other high-protein foods include dried beans, lentils, nuts, eggs, and cheese.

See the related article on page 3 for special needs of vegetarian moms.

Calcium

Calcium is needed for development of the baby's bones and teeth. If there is not enough calcium in the diet, the developing baby will take it from the mom's bones. A decrease in the amount of calcium in the mom's bones could put her at risk for developing osteoporosis (a weakening of the bone) later in life.

Many women do not get enough calcium, even when they are not pregnant. Calcium needs increase by 50% during pregnancy, to 1,200 mg per day. So calcium intake becomes a special concern during this time. If the expectant mom is under 25 years of age, the need is even more critical because her own bones are still developing.

Milk and dairy products, such as cheese and yogurt, are best sources of calcium. Green leafy vegetables, tofu and canned salmon with bones are other good sources. Orange juice that is fortified with calcium can provide significant amounts of calcium and is a good option for women who do not eat dairy products. If a woman only gets one serving of calcium-rich food per day, it is recommended that she receive a supplement.

Iron

Extra iron is needed by the mom because her blood volume increases during pregnancy. The baby is also storing enough iron to last for the first few months after birth. The amount needed in the maternal diet increases from 15 mg to 30 mg per day.

The best source of iron is red meat, but other good sources are poultry, fish, enriched and whole grain cereals, green leafy vegetables, legumes, eggs, and dried fruit. The iron in vegetables, fruits, cereals and eggs is not taken in by the body as effectively as the iron in meat. Eating these foods with meat or with foods high in vitamin C (such as orange juice) will help the body absorb more iron.

Many women enter pregnancy with low iron stores, so it may not be possible to get the needed iron in diet alone. It is recommended that an iron supplement of 30 mg per day be given to all pregnant women during the last six months of pregnancy.

Folic Acid

Folic acid plays an important role in cell development, so its need is more than doubled during pregnancy. A daily intake of 400 micrograms of folic acid is needed before pregnancy (see related story on page 1), but continues to be needed, especially in early pregnancy. This will help prevent spina bifida (when the spine doesn't close) and other nerve defects.

Deep green leafy vegetables, dried beans, lean meat, oranges and whole-grain or fortified breads and cereals are good sources of folic acid. Adequate amounts can be consumed if the pregnant mom eats a balanced diet including at least five servings of fruits and vegetables per day. Since many

women do not eat that amount, supplementation is often recommended. This is especially true for women who have already had a baby with spina bifida or who are unable to consume enough in the diet for any reason.

What about Water?

Nutrients are carried to body cells by water and waste products are carried away. This includes the nourishment that is passed to the baby through the placenta. At least 8 to 12 cups of fluid are needed per day and can be obtained from water, milk, fruits and vegetable juice, and soups.

Morning Sickness

Some pregnant women never suffer from morning sickness, but it is a common problem. Don't let the name fool you—it can occur at any time of day. The feelings of nausea may be relieved by eating low-fat, high-carbohydrate foods like dry toast, plain crackers or cereal.

In some cases when nausea is very severe, a woman may not even be able to think about food. Soft drinks, popsicles or hard candy may be acceptable and provide some needed fluid and calories.

To ease nausea, try:

- eating small meals several times per day rather than three large ones
- drink fluids between meals, not with meals
- avoid spicy, greasy and fried foods or anything that upsets your stomach
- eat dry toast, crackers or cereal before getting up in the morning and keep them with you to eat when your stomach is upset during the day.
- open a window or turn on a fan when you cook to get rid of food odors—better yet, have someone else cook for you

Indigestion

In the latter part of pregnancy, the growing baby may cause pressure on the stomach. This may lead to indigestion or “heart-burn”.

To ease indigestion:

- eat small meals as with morning sickness
- avoid fried, spicy and fatty foods
- walk around after eating
- wear loose clothing
- drink liquids between meals, not with meals
- drink plenty of water and avoid caffeine

Constipation

Constipation is a common problem during pregnancy, but laxatives should be avoided unless recommended by the doctor. Inappropriate diet, as well as iron supplements may contribute to the problem.

To help prevent constipation:

- drink lots of water, milk, and fruit juice
- eat high fiber foods like beans, fresh fruits and vegetables, whole grains and cereals
- eat prunes or drink prune juice
- walk everyday

Summary

Pregnancy is a time in a woman's life when she is particularly receptive to changing eating habits. Basic principles of good nutrition—balance, variety, and moderation—are encouraged during this time and as lifetime habits.



Nutrition for Breastfeeding

All human milk is relatively similar in concentration of macronutrients such as protein, carbohydrates and fat. The type of fat in breast milk depends on the type of fat in a nursing mother's diet. If she is a vegetarian, she will have more unsaturated fatty acids in her milk than if she is a meat eater. Her diet and vitamin stores in her body do affect the concentration of fat soluble vitamins and water soluble vitamins in her milk, but do not affect calcium, phosphorus, magnesium, sodium or potassium.

During lactation, requirements for calories, protein, zinc, and magnesium are greater than during pregnancy. Typically, a nursing mother may want to consume about 500 extra calories for the production of breast milk. Her body's fat stores provide an additional 100-150 calories a day for the first six months. She will want to consume at least 1800 kcal each day.

With fewer calories the quantity of her milk will be decreased, she may be fatigued, and her own body's stores of calcium, iron and zinc will decrease significantly. A mother who was underweight when she was pregnant will want to consume even more calories during the first six months of nursing.

Special circumstances require an adjustment in diet. For example, if a nursing mom is a strict vegetarian, she will want to take a vitamin B₁₂ supplement or at least make sure she eats B₁₂-fortified cereal or nutritional yeast to assure her baby is properly nourished. Sometimes a woman becomes pregnant while she is still nursing an infant. When that happens, her physician will probably advise her to take a prenatal vitamin. She will also need extra calories to support the growth of her fetus and baby— 300-800 kcal per day!

Although it is important for the nursing mom to eat a varied diet from the five groups of the Food Guide Pyramid, special attention should be paid to including foods that are good sources of some key nutrients. To make sure the mother's bones are not compromised in later years, she should include 3-4 servings/day of

calcium-rich foods such as low fat milk, yogurt, or cheese. Good sources of magnesium and zinc are also important to include. Magnesium can be found in legumes, nuts, whole grains and green vegetables. Nursing increases the need for zinc which can be found in foods of animal origin such as turkey, beef, pork and yogurt, but also in wheat germ, wheat bran and tofu. Vitamin B₁₂ is found in foods of animal origin such as fish, beef, egg, milk, fortified cereal or nutritional yeast. The recommended amount is 2.8ug, which is easily obtained in one serving of meat and one of milk. If a woman does not drink milk (one cup fortified milk provides 100 IU) or get sufficient sunlight to provide 200 IU vitamin D, her physician may suggest a supplement. It is especially important to obtain adequate folate (500ug) while she is nursing, especially if she is considering another pregnancy in the near future. Leafy

green vegetables, citrus fruits and legumes are good sources of folate. To assure nutritional adequacy, a nursing mother's physician may suggest a multi-vitamin/mineral supplement.

Because whatever the nursing mom consumes can be passed along to her child, moderation is particularly important when it comes to consumption of alcohol and caffeine. When a woman drinks a cup or two of coffee or soft drink/ day it has little effect on the nursing infant. More than that can cause the infant to be irritable and fussy. If a woman chooses to drink alcohol, it should be no more than one drink, preferably after she has finished nursing her baby. Alcohol in

her breast milk can cause an infant to sleep less soundly. More seriously, alertness and even brain development can be compromised in an infant exposed to excess alcohol.

Finally, it is important for the nursing mom to drink sufficient fluids— 8-12 cups/day or more, as thirst dictates, for the production of milk.

Source: Applications in Medical Nutrition Therapy. Frances Zeman and Denis Ney. 1998.



SPOT Featured LIGHT

Recipes

Need to have food ready first thing in the morning? Pre-mix this batter in the refrigerator and bake muffins before you go to bed. Add a glass of orange juice and you'll have a healthy start to the day.

Refrigerator Bran Muffins

- 6 cups all-bran cereal, divided
- 2 cups boiling water
- 2 cups sugar
- 1 cup vegetable shortening
- 4 eggs
- 1 quart buttermilk
- 5 teaspoons baking soda
- 5 cups all-purpose flour

1. In a large bowl, combine 2 cups all bran cereal and boiling water. Stir and set aside.
2. In a large mixing bowl, cream sugar and shortening. Add eggs, buttermilk, soda, 4 cups all-bran cereal.
3. Stir in flour and all-bran and water mixture. Batter will be thick.
4. This will make a gallon of batter and can be stored up to 4 weeks in a covered container in a 40 degree refrigerator.
5. To bake: Preheat oven to 350 degrees F. Fill greased muffin pans 2/3 full and bake for 18-20 minutes.

Optional ingredients: dates, raisins or dried cranberries can be added to the batter.

Note: This recipe makes about 90 muffins. It can easily be cut in half.

Nutrition Facts	
Serving Size 30g	
Servings Per Container 90	
Amount Per Serving 1	
Calories 80	Calories from Fat 25
% Daily Value *	
Total Fat 2.5g	4%
Saturated Fat 0.5g	3%
Cholesterol 0mg	0%
Sodium 90mg	4%
Total Carbohydrate 13g	4%
Dietary Fiber 2g	
Sugars 4g	
Protein 2g	
Vitamin A 2%	Vitamin C 4%
Calcium 8%	Iron 6%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs. If your calorie needs are much different, you adjust the amounts recommended for calories, fats, carbohydrate, and fiber.	
	Calories 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400 mg 2,400mg
Potassium	3,500mg 3,500mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

Split Pea Soup for Busy Mothers

Makes 10-12 cups

- 1 pound split peas
- 1 onion, diced
- 3 to 6 carrots, diced
- 2 to 3 stalks celery
- 1 bay leaf
- 1 clove garlic, minced
- 1/4 teaspoon thyme
- 8 to 10 cups water

Put all ingredients in a soup kettle, cover and simmer for 3 to 4 hours. Or cook in slow-cooker for 8 to 10 hours on low, 3 to 4 hours on high.

Optional ingredients: chicken stock, leftover chicken, diced ham or bacon. If you wish, add 6 oz. grated Swiss, Jack or cheddar cheese before serving.

Recipe source: Whole Foods for the Whole Family

Nutrition Facts	
Serving Size 174g	
Servings Per Container 10	
Amount Per Serving 1 cup	
Calories 150	Calories from Fat 5
% Daily Value *	
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 30mg	1%
Total Carbohydrate 29g	10%
Dietary Fiber 10g	
Sugars 4g	
Protein 10g	
Vitamin A 160%	Vitamin C 10%
Calcium 4%	Iron 10%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs. If your calorie needs are much different, you adjust the amounts recommended for calories, fats, carbohydrate, and fiber.	
	Calories 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400 mg 2,400mg
Potassium	3,500mg 3,500mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

Calendar

March Month	National Nutrition
March 6-10 Breakfast	National School Week
March 17	St. Patrick's Day
March 25 Take Day	National Bake and
April 7	World Health Day
April 23	Easter
April 29-30	March of Dimes 2000 WalkAmerica
May Month	National Barbecue
	National Egg Month National
Osteoporosis Prevention Month	National Strawberry Month



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