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G92-1088 Pregnancy and Lactation

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Pregnancy and Lactation

Nutrition information for the pregnant and lactating woman.

H. Darlene Martin, Extension Nutrition Specialist

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Eating the right foods during pregnancy is important for you and your unborn baby. Your developing baby depends on you to provide the quality and quantity of food needed for a healthy start in life. Your unborn baby depends totally on you for nourishment.

What is best for you to eat is also best for the baby. Eating a well-balanced diet each day is one of the best ways to make certain you and your baby are getting all the needed nutrients to support growth and development.

A well balanced diet is composed of a wide variety of foods chosen for their energy value and the nutrients they provide. A balanced and varied diet can supply you the protein, vitamins, and minerals needed to help form a healthy baby and to protect your own health as well (*Table I*).

Table I. Food guide for pregnant or lactating women.

Vegetables:

3 to 5 servings a day

One serving = 1/2 cup of cooked or chopped raw vegetables, or 1 cup of leafy raw vegetable such as lettuce or spinach. (Include at least two servings of dark green leafy, yellow or orange vegetable.)

Healthy eating tips for vegetables:

- Eat a fresh vegetable salad.
- Eat baked sweet potatoes - they contain lots of vitamin A.
- Drink cold tomato juice as a snack or with a meal.
- Steam or microwave broccoli and

	top with melted cheese.
<p>Fruits: 2 to 4 servings a day One serving = 1 medium whole fruit such as an apple or banana, 1/2 grapefruit, a melon wedge, 3/4 cup of juice, 1/2 cup of canned fruit, or 1/4 cup of dried fruit. (Include at least one citrus fruit or juice.)</p>	<p><i>Healthy eating tips for fruits:</i></p> <ul style="list-style-type: none"> • Eat fruits fresh, dried, or canned in their own juices. • Eat fruits for snacks or for desserts. • Drink fruit <i>juices</i> instead of soft drinks or fruit <i>flavored</i> drinks. • Slice a banana or other fruit into your cereal, cottage cheese or yogurt for breakfast. • Eat applesauce cold or hot.
<p>Bread, cereal, rice, and pasta 6 to 11 servings a day One serving = 1 slice of bread, 1/2 hamburger bun or English muffin, 3-4 small crackers or 2 large crackers, 1/2 cup of cooked cereal, rice, or pasta, or 1 ounce of ready-to-eat dry cereal.</p>	<p><i>Healthy eating tips for cereals and bread:</i></p> <ul style="list-style-type: none"> • Eat crackers with peanut butter or sliced cheese. • Carry crackers with you to have them as a snack. • Eat high fiber cereals. Use lots of low-fat milk on your cereal. • Try oatmeal and other hot cereals for breakfast. To sweeten cereal, use cinnamon and raisins instead of sugar. • Add macaroni, noodles or rice to casseroles. • Eat whole grain breads or muffins. • Eat breads made with fruits or vegetables.
<p>Milk and foods made from milk: 3 to 4 servings a day One serving = 1 cup of milk, 8 ounces of yogurt, 1 1/2 ounces of natural cheese, 2 ounces of processed cheese</p> <p>Note: The differences between whole, low-fat, and skim milk are the fat contents and the calories. Skim and low-fat milk are recommended in most instances.</p> <p>Whole milk = 150 calories Low-fat (2%) = 120 calories Low-fat (1%) = 100 calories Skim milk = 90 calories</p>	<p><i>Healthy tips for eating and drinking dairy products:</i></p> <ul style="list-style-type: none"> • Melt cheese on cooked vegetable. • Drink skim or low-fat milk plain or pour over cereal. • Pudding and custards made from skim or low-fat milk can be a tasty dessert. • Low-fat yogurt is a good choice for snacks and dessert. <p>Note: Milk and foods made from milk help build your baby's bones and teeth. These foods also have a lot of protein to help your baby's brain and body grow.</p>
<p>Meat and protein foods: 2 to 3 servings a day One ounce = One egg, 1/2 cup of cooked dry beans, 3</p>	<p><i>Healthy eating tips for protein foods:</i></p> <ul style="list-style-type: none"> • Bake or broil fish instead of frying.

ounces of tofu or 2 tablespoons of peanut butter are equivalent to one ounce of lean meat.

Total of 6 to 7 ounces cooked lean meat/poultry/fish/other protein sources daily.

- Roast or broil meat instead of frying.
- Bake, broil, or stew chicken.
- Peanut butter can be spread on crackers, celery, or apple slices.
- Beans are good sources of protein and fiber.

Calories and Nutrients

Foods can be grouped into categories according to the nutrients they contain. There is no single food that contains all of the needed nutrients in the amounts that we need. We must eat a variety of foods to obtain the balanced diet we require to maintain a healthy body. The Food and Nutrition Board of the National Academy of Sciences specifies certain increases in the Recommended Dietary Allowances (RDAs) for pregnant and lactating women (*Table II*). Ideally, pregnant and lactating women can meet most of these increased nutrient needs by eating a variety of nutritious foods.

Table II. Recommended Daily Dietary Allowances for Women (Revised 1989) From the Food and Nutrition Board of the National Academy of Sciences/National Research Council

Protein				Fat-Soluble Vitamins				Water-Soluble Vitamins				Minerals										
Wt. (years)	Ht. (lbs)	Prot. (in)	Prot. (g)	Vit. A (RE)	Vit. D (µg)	Vit. E (mg)	Vit. K (µg)	Vit. C (mg)	Thia-mine (mg)	Ribo-flavin (mg)	Nia-cin (mg)	Vit. B ₆ (mg)	Fol-ate (µg)	Vit. B ₁₂ (µg)	Cal-cium (mg)	Phos-phorus (mg)	Mag-nesium (mg)	Iron (mg)	Zinc (mg)	Io-dine (µg)	Sel-enium (µg)	
11-14	101	62	46	800	10	8	45	50	1.1	1.3	15	1.4	150	2.0	1200	1200	280	15	12	150	45	
15-18	120	64	44	800	10	8	55	60	1.1	1.3	15	1.5	180	2.0	1200	1200	300	15	12	150	50	
19-24	128	65	46	800	10	8	60	60	1.1	1.3	15	1.6	180	2.0	1200	1200	280	15	12	150	55	
25-50	138	64	46	800	5	8	65	60	1.1	1.3	15	1.6	180	2.0	800	800	280	15	12	150	55	
Pregnant			60	800	10	10	65	70	1.5	1.6	17	2.2	400	2.2	1200	1200	320	30	15	175	65	
LACTATING																						
1st 6 months			65	1300	10	12	65	95	1.6	1.8	20	2.1	280	2.6	1200	1200	355	15	19	200	75	

More Calories:

During the last six months of pregnancy you need about 300 extra calories each day to provide the weight gain recommended during pregnancy. Add a nutritious snack to your daily intake. Try low-fat cheese and crackers, an extra glass of low-fat milk and fresh fruit, or lean meat on whole grain bread.

Protein:

You need to increase your protein intake from about 45 grams per day to about 60 grams per day during pregnancy because protein is necessary for the growth of your baby. Foods that supply protein come from both animal and plant sources. Lean red meat, fish, poultry, low-fat milk and yogurt, or a combination of vegetable sources such as beans and rice or macaroni and cheese are good sources of protein. You need at least three servings each day to meet your increased protein needs.

Calcium:

Pregnant women have an increased requirement for calcium. The recommended intake for all pregnant women regardless of age is 1,200 mg. per day. The calcium requirement can be met by choosing four or

more servings of milk or foods made from milk such as cheese and yogurt. The developing baby needs calcium for developing bones and teeth. If there is not enough calcium in the mother's diet, the baby may draw calcium from the mother's bones. Low calcium intakes during pregnancy may result in decreased bone density in the mother.

The richest food sources for calcium are milk and milk products. If you cannot get your calcium from milk or milk products because you get nausea and/or diarrhea when you eat or drink dairy products, consult your health care professional. Many individuals have a genetic lactose intolerance. This means they cannot digest the kind of sugar found in milk. Commercial preparations are available that can be added to milk to change the milk sugar and make it digestible. Tablets for lactose intolerant individuals may also be taken before the intake of milk to ease the discomfort. Many times lactose intolerant individuals are able to eat milk products like cheese or yogurt. Cheese and yogurt have been fermented. The bacteria that make the milk into cheese and yogurt has changed the lactose into another form and can be eaten with no discomfort.

Occasionally, health care professionals recommend calcium supplements for their pregnant patients. If you do take calcium supplements, the Federal Drug Administration advises against taking calcium supplements that may contain lead such as bone meal and dolomite. Lead is harmful to both mother and fetus.

To make sure you are getting enough calcium add up the milligrams of calcium (*Table III*) in the foods you consume within a 24 hour period and compare it to the amount needed as indicated in *Table II*.

Table III. Calcium sources.		
Food	Serving size	Calcium (mg)
Nonfat milk	1 cup	302
1% milk	1 cup	300
Swiss cheese	1 oz	219
Part-skim mozzarella	1 oz	207
Cheddar cheese	1 oz	204
Yogurt	1 cup	274

Iron:

More iron is needed during pregnancy not only because of the baby's needs, but also because the mother's blood volume may be increased as much as 30 percent. The main effects of inadequate iron during pregnancy are iron deficiency anemia and the inability to fight off infections.

Iron in foods occurs in two forms: heme and nonheme. Heme iron (the most readily absorbed form) is found in meats, poultry, and fish. "Red" meats are higher in iron than "white" meats. The amount of iron you need during pregnancy is high and may not always be met through the usual American diet. Your health care professional may recommend that you supplement your diet with iron tablets of 30 to 60 milligrams. *Table IV* gives tips for including more iron in your diet.



Table IV. Tips for including more iron in your diet.

- Liver, beef, pork, chicken, and fish are rich in iron. Consuming even small amounts of meat, fish, or poultry that contain iron in the "heme" form will improve iron absorption from other sources.
- Eat stews and soups made with beans and meat. All kinds of beans contain iron.
- Limit your consumption of tea with meals, as the compounds in tea may reduce iron absorbed from food.
- Buy cereals with iron added, read the nutrition label.
- Eat plenty of vitamin C foods such as citrus fruits and juices, broccoli, bell peppers and tomatoes because vitamin C can boost the amount of iron you absorb.

Other vitamins and minerals:

Because of its importance in cell development, pregnant women need more than twice the amount of folate (folic acid or folacin). Women can get folate by eating liver; green leafy vegetables; fruits such as oranges, grapefruits; and strawberries.

Eating a balanced and varied diet adequate in calories and protein but low in concentrated sugars and limited fat content will usually supply the extra nutrients you need during pregnancy. If your physician does prescribe prenatal supplements, take them daily. The dosage should be at RDA levels. Excessive amounts or megadoses of vitamins and minerals can be dangerous and even toxic. Toxicity is unlikely if vitamins and minerals are obtained only from foods. Consult your health care professional before taking any medication, including vitamin and mineral supplements.

Weight Gain

In 1989, the National Academy of Sciences issued the current guidelines for weight gains during pregnancy.

Normal weight to height	25-35 pounds
Underweight	28 to 40 pounds
Overweight	15 to 25 pounds

If your dietary pattern is already adequate at the start of your pregnancy, you can simply increase your servings of nutritious foods to meet your new energy and nutrient needs. To gain the extra weight each week, you need to eat about 300 extra calories per day throughout your pregnancy. You can get the extra calories you need in many different combinations of foods such as extra glasses of low-fat milk or cheese and fruit. Dieting to lose weight during pregnancy is not recommended. Low weight gain during pregnancy can be dangerous for both you and your baby.

An appropriate weight gain is encouraged to decrease the risk of delivering a low-birth weight baby. Babies with low-birth weights (5 1/2 pounds or less) are at a greater risk for infant death and physical or mental retardation. Research has shown there is a definite relationship between the pregnant mother's weight gain and the baby's birth weight.

Discuss the amount and rate of weight gain with your health care provider. Generally, it is recommended to gain about a pound a week during the last six months of pregnancy. Rapid weight gain or loss may

indicate problems and should be checked by your health care professional.

Most of the extra weight you gain will be lost by the time your baby is three months old. Women who breast-feed usually lose weight more rapidly than those who do not breast-feed.

Be Prudent in What You Eat and Drink

Fat:

Choose low-fat foods that, when combined, provide less than 30% of the total calories from fat, less than 10% of calories from saturated fat, and less than 300 milligrams of cholesterol daily. It's your total diet over a period of two or three days that should meet these goals, not necessarily individual foods. Try to consume lowfat dairy products and eat less fried foods. Trim and discard the fat from meats.

Caffeine:

The Surgeon General of the United States advises pregnant women to avoid unnecessary caffeine consumption. Regular coffee, tea, chocolate, and cola drinks contain caffeine. As with all foods, apply the principle of moderation.

Alcohol:

Heavy alcohol consumption during pregnancy is associated with increased risk for fetal alcohol syndrome, including growth retardation, facial malformations, mental retardation, and central nervous system dysfunctions. This damage is permanent and will last throughout the child's lifetime. A safe amount of alcohol consumption during pregnancy has not been documented; the best precaution is not to drink at all during pregnancy and lactation.

Nausea in Early Pregnancy

During the first three months of pregnancy a woman may experience nausea and vomiting. *To ease the effects of nausea:*

- Keep meals small.
- Eat four or five small meals a day, instead of two or three big ones.
- Drink fluids between meals, but not with meals.
- Stay away from greasy, fried, or spicy foods or any food that upsets your stomach.
- Eat dry toast, crackers, pretzels, or dry cereal before you get out of bed in the morning.
- Keep crackers or pretzels with you to eat when your stomach feels upset.
- When you cook, open windows or use a fan to get rid of food odors. If possible have someone else cook for you.

Indigestion During Late Pregnancy

During the later part of pregnancy the enlarging uterus changes the position of the stomach. The added pressure on the stomach may cause a reflux of the stomach contents into the esophagus and create a problem commonly called heartburn. This feeling may be uncomfortable enough to lead to a reduction of food intake thus reducing the intake of important nutrients. *Try these suggestions to help reduce the burning feeling at the top of your stomach:*

- Eat four or five small meals a day, instead of two or three big ones.
- Bake or broil foods instead of frying.
- Try walking around after you eat.
- Wear looser clothing, especially when eating.
- Drink liquids after and between meals instead of with your meals.
- Eat less spicy and fatty foods.
- Eat and drink less items that contain caffeine such as soft drinks, coffee, tea, and chocolate. Drink more water instead.

Constipation During Pregnancy

Constipation is common in pregnancy. Do **NOT** use laxatives unless your health care professional prescribes them. Laxatives can hurt your baby. Eating inappropriately may lead to constipation. Also, iron supplementation may cause constipation. If your doctor has prescribed supplements and you think your constipation is due to the supplements, discuss this problem with your health care professional. *To help prevent constipation:*

- Drink lots of water, milk, soup, and fruit juice.
- Eat a leafy salad each day.
- Eat foods high in fiber like beans, fresh fruits, whole wheat bread, high fiber cereals like bran, raw vegetables, and salads. (Increase your fiber intake **gradually** to prevent excessive gas formation. Ask your health care professional for advice if discomfort is experienced.)
- If you consume foods high in fiber and minimize liquid intake, constipation will be an even greater problem.
- Try prunes or prune juice.
- Exercise lightly, like walking every day.
- Try brown rice and whole-wheat pasta.
- Choose foods that are less processed because they have more fiber. For example, an apple has more fiber than applesauce or apple juice.
- Look for fiber information on cereal boxes and choose cereals that have more fiber.

Lactation

No single correct answer exists to the question of whether breast or bottle feeding is better. You must make the best decision for you and your baby. You may want to read one of the many good books available on breast-feeding. Health care professionals are available to help you learn how to breast feed a newborn. breast-feeding educational materials and videos are available at your local Cooperative Extension office and Women Infant and Children (WIC) office.

For most babies, breast milk is nutritionally superior to commercial formula. Your breast milk is the only food your baby needs for the first months of life. The protein content in human breast milk is particularly suited to a baby's metabolism and the fat content is more easily absorbed and digested than the fats in cow's milk. Human breast milk may protect your baby against infections and allergies. Breast milk contains cells from your immune system and antibodies to combat diseases to which you have been exposed. Antibodies that your body develops after the baby is born are also passed on to the baby through your breast milk.

Unmodified cow's milk or diluted evaporated milk are nutritionally unsound for your baby because they are too low in iron and too high in minerals and protein. Always consult your health care professional before changing from breast milk or formulas or adding any mineral or vitamin supplement to your

baby's diet.

Check with your health care professional before taking any medicine. Drugs, including alcohol, can be transferred to your baby through your breast milk.

If you plan to breast-feed and leave your baby with a caregiver, you may want to introduce a bottle of expressed breast milk to your baby to practice nursing on at about three weeks of age. Without this practice, your baby may refuse a bottle when you are away. If you use expressed breast milk, you will maintain your milk supply. Use formula if you want to decrease your milk supply. A combination of breast and bottle feeding may be a reasonable option once breast-feeding is well established.

If you elect to breast-feed, you will not need to make drastic changes from the diet you followed while pregnant. Current dietary guidelines recommend a nursing mother consume 500 calories more than the level that would maintain her body weight if she were not nursing. This means you will need to consume about 200 more calories a day than when you were pregnant (see RDA *Table II*). Put off dieting until you have stopped breast-feeding. A calorie restricted diet of 1,000 to 1,500 calories a day may reduce milk production. Most of the extra weight gained during pregnancy will be lost by about three months postpartum (after the birth). Women who breast-feed usually lose weight more quickly because they expend about 600 more calories a day than those that don't breast-feed.

Ideally, you will have consumed nutritionally adequate foods throughout your pregnancy and will continue to eat nutritionally adequate foods while you are breast-feeding. Although lactation increases a woman's requirements for nearly all nutrients, these increased needs can be provided by a well-balanced diet. While you are breast-feeding, you will need more protein, calories, vitamin C, vitamin E, and folic acid. This can be accomplished by increasing lean meats, milk, vegetable oils, leafy green vegetables, and citrus fruits and their juices in your diet. Make sure you consume plenty of liquids. Water is the major nutrient in breast milk. It is recommended that you drink eight cups of liquids a day while breast-feeding. You may want to develop a routine of drinking a glass of milk, water, or juice each time you breast-feed.

A healthy woman who is consuming a balanced diet with adequate supplies of energy and protein foods should produce enough milk for her baby. How do you know if you are producing enough milk? Your baby's weight gain is the best indication of an adequate milk supply.

A Final Word

Because your unborn baby is totally dependent on you for nourishment, a nutritious well-balanced diet can be the most important factor in establishing the future health of you and your child. Take the challenge to monitor your eating habits early in your pregnancy. Increase your odds of having a healthy baby by increasing your intake of nutrient-dense foods throughout your pregnancy and lactation period.

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