

Florida Nutrition Training Guide

Prenatal & Postpartum Nutrition Module

Florida Department of Health
Bureau of WIC and Nutrition Services
Revised December 2003



Prenatal & Postpartum Nutrition Module

In accordance with Federal law and U.S. Department of Agriculture (USDA) policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability. To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Introduction

The **Prenatal & Postpartum Nutrition Module** is part of the **Nutrition Education Series** of the **Florida Nutrition Training Guide**.

The Prenatal & Postpartum Module consists of 3 components:

1. The module itself.
2. The workbook, to be completed by the staff member.
3. The evaluation materials for the supervising nutritionist.

Instructions

1. Read the **Knowledge Objectives** & the **Performance Objectives** (pages 5-6).
2. Follow along with this presentation.
3. Stop and complete the **Self-Checks** as they appear and immediately correct any mistakes.

Instructions (continued)

4. Complete the **Practical Activity** found in your **Workbook**.
5. Arrange for a convenient time to take the **Posttest**.

Glossary

Review the **Glossary** (pages 7-8) and become familiar with **all** of the terms.

Example:

Adolescent. A boy or girl who is in the period of physical & psychological development from the onset of puberty to maturity. An adolescent is also referred to as a teenager or teen. In this module, a pregnant adolescent is defined as a pregnant girl less than or equal to 17 years old.

Part 1: Prenatal Nutrition

The Importance of Nutrition During Pregnancy

Adequate nutrition during pregnancy is needed to maintain the tissues and nutrient stores of the mother and to allow for the normal growth and development of the fetus (the unborn infant).



Page 9 in Module

The Importance of Nutrition During Pregnancy (continued)

- Women who consume an inadequate diet during pregnancy demonstrate a greater percentage of complications and difficult deliveries including stillbirths, prematurity, and infants with birth defects.
- Low birth weight in infants is associated with an increased chance of illness and death during the period just before and after birth (the perinatal period).

The Importance of Nutrition During Pregnancy (continued)

- Nutrition care, although extremely important, is only one component of good prenatal care.
- Women should be encouraged to visit a health care provider as soon as they learn of their pregnancy. They should return for regular check-ups during the pregnancy to ensure that everything is progressing normally.

The Importance of Nutrition During Pregnancy (continued)

- Many complications of pregnancy that can result in illness or mortality of infants and mothers are preventable.
- Early detection of potential problems is more likely when the pregnant woman makes regular visits to her health care provider.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 1-3.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Nutrition Risks in Pregnancy

- Since adequate nutrition during pregnancy is so important, all pregnant women need a nutrition assessment, nutrition counseling, and follow-up. However, some women may need specialized nutrition counseling because of certain factors related to their health. These factors are called **nutrition risks**. Nutrition risks can affect a woman's nutrient needs and/or her dietary intake.

Nutrition Risks in Pregnancy

(continued)

- Adolescents (less than or equal to 17 years of age) who are pregnant are considered to be at nutrition risk.
- Use of cigarettes, alcohol, or drugs is also considered to be a nutrition risk.
- A pregnant woman with a nutrition risk has an increased chance of having a problem with normal fetal growth or development.

Nutrition Risks and Explanations

Low maternal weight gain or maternal weight loss during pregnancy

- A woman who has either gained too little weight or lost weight during pregnancy may not be getting the right amounts and kinds of foods necessary for her health and the health of the baby. Adequate and proper weight gain has been shown to be a very important factor related to the outcome of a woman's pregnancy.

Nutrition Risks and Explanations (continued)

High Maternal Weight Gain

- Excessive weight gain during pregnancy may be due to either overeating or edema (collection of fluid in the tissues). In some cases, edema can be a symptom of **pregnancy-induced hypertension**, a serious condition that requires medical intervention. On the other hand, excessive weight gain during pregnancy that is due to excessive fat accumulation may complicate delivery.

Nutrition Risks and Explanations (continued)

Prepregnancy Underweight (BMI less than 19.8)

- A woman who was underweight before her pregnancy may have had a diet inadequate in calories and nutrients and is considered to be at high risk. Good nutrition during her pregnancy is necessary for the growth of the fetus and the maintenance and replenishment of maternal body tissues. The underweight woman should plan to gain about 28 to 40 pounds during the entire pregnancy.

Nutrition Risks and Explanations (continued)

Prepregnancy Overweight (BMI of greater than or equal to 26.1)

- A woman who was overweight before her pregnancy is more likely to experience the following complications: hypertension and/or pregnancy-induced hypertension, gestational diabetes, cesarean section, and perinatal morbidity and mortality. An overweight woman should plan to gain about 15 to 25 pounds during her entire pregnancy.

Nutrition Risks and Explanations (continued)

Multifetal Gestation

- A woman who is pregnant with multiple fetuses (that is, more than one child) has an increased demand for calories and nutrients to meet the needs of each fetus. She is also at a greater risk for some of the complications of pregnancy, such as pregnancy-induced hypertension.

Nutrition Risks and Explanations (continued)

Clinical/Health/Medical Nutrition Risks

- Clinical, health, or medical problems that cause or contribute to an inability to obtain adequate nutrition for the growth and development of the fetus may place the mother and fetus at nutrition risk and/or medical risk. For example: asthma; cancer; celiac disease; central nervous system disorder; major dental problem; developmental delay/disability; diabetes; drug/nutrient interaction; eating disorder; allergy; gastrointestinal disorder; genetic or congenital disorder.

Nutrition Risks and Explanations (continued)

Nutrition Risks Related to History of Negative Pregnancy Outcome

- History of preterm birth.
- History of low birth weight baby.
- History of spontaneous abortion, fetal, or neonatal loss.
- History of infant weighing greater than or equal to 9 pounds at birth.
- History of infant born with a neural tube defect or diagnosed nutrition-related congenital or birth defect.

Nutrition Risks and Explanations (continued)

Age less than or equal to 17 years at last menstrual period

- An adolescent less than or equal to 17 years of age may not have finished growing. Her growth plus the growth of a developing fetus puts unusually high nutritional demands on her body.

Nutrition Risks and Explanations (continued)

High Parity and Young Age

- A pregnant woman who was less than 20 years old at the time of her last menstrual period and has had 3 or more previous pregnancies of at least 20 weeks duration, regardless of birth outcome is considered to have a high parity at a young age.

Nutrition Risks and Explanations (continued)

Closely Spaced Pregnancy-Conception Before 16 Months Postpartum

- A pregnant woman may be at nutrition risk when she has a closely spaced pregnancy, i.e., when she becomes pregnant and her last menstrual period is within 16 months from the termination of a previous pregnancy. It may take one full year to completely replenish nutrient stores which have been depleted during pregnancy.

Nutrition Risks and Explanations (continued)

Maternal Smoking, Alcohol Use, or Illegal Drug Use

- Maternal smoking, alcohol use, or illegal drug use are dangerous practices. Many drugs cross the placenta and harm the fetus. These substances can affect the mother by interfering with oxygen transport and increasing her blood pressure. Babies are at increased risk to be born with physical and neurological abnormalities; low birth weight, prematurity; and fetal/infant deaths.

Nutrition Risks and Explanations (continued)

Low Hematocrit/Hemoglobin Values and Elevated Blood Lead Levels

- **Hemoglobin and hematocrit** are measurements of red blood cells. Low hemoglobin or hematocrit measurements may be a sign of anemia and a reduced ability to meet the oxygen needs of the body. High risk hgb/hct: less than 10 gm/dl hemoglobin or less than 20% hematocrit.
- **Blood lead levels** of 10 $\mu\text{g}/\text{dl}$ or higher may be associated with a shorter gestation and reduced birth weight.

Nutrition Risks and Explanations (continued)

Dietary Nutrition Risks

- If a pregnant woman consumes a **vegan diet** or has a highly restrictive diet, **inappropriate eating habits**, or an **inadequate diet**, she may be risking her health and the health of her unborn baby. Adequate nutrition is necessary for her health and the health of her unborn baby.

Nutrition Risks and Explanations (continued)

Other Nutrition Risks

- There are a number of other nutrition risks which place a pregnant woman at increased risk of having health-related problems and/or not being able to obtain foods to maintain an adequate diet. These include lack of or infrequent prenatal visits; pregnant woman currently breastfeeding; homelessness; migrancy, victim of abuse; woman with limited ability to make feeding decisions and/or prepare food.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 4-6.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Prenatal Weight Gain

- Adequate weight gain is necessary for normal growth and development of the fetus.
- The primary concern is how much the baby will weigh at birth. Low birth weight (a birth weight of less than or equal to 5 pounds 8 ounces) has been associated with mental retardation, birth defects, growth and development problems, and cerebral palsy.

Prenatal Weight Gain (continued)

- There is no one weight gain that is right for every woman.
- The desired amount of weight gain is determined by what the woman weight **before** she became pregnant. This is called her **prepregnancy or pregravid weight**.
- Once a woman's prepregnancy weight is determined, then it is important to determine if her prepregnancy Body Mass Index (BMI) was within the **normal range, underweight range, overweight range, or obese range**.

Prepregnancy BMI Table (weight in pounds)

Height	Normal	Underweight	Overweight	Obese
58"	95-124	< 95	125-138	> 138
59"	98-128	< 98	129-143	> 143
60"	102-133	<102	134-148	> 148
61"	105-137	<105	138-153	> 153
62"	108-142	<108	143-158	> 158
63"	112-146	<112	147-163	> 163
64"	116-151	<116	152-169	> 169
65"	119-156	<119	157-174	> 174
66"	123-161	<123	162-179	> 179

Prepregnancy BMI Table (continued)

Height	Normal	Underweight	Overweight	Obese
67"	127-166	< 127	167-185	> 185
68"	130-171	< 130	172-190	> 190
69"	134-176	< 134	177-196	> 196
70"	138-181	< 138	182-202	> 202
71"	142-186	< 142	187-208	> 208
72"	146-191	< 146	192-213	> 213

Desirable Weight Gains for Prepregnancy BMI Range

Normal weight range 25 to 35 pounds

Underweight weight range 28 to 40 pounds

Overweight weight range 15 to 25 pounds

Obese 15 pounds

Multiple fetuses

Twins: 4 to 6 pounds in the first trimester and 1.5 pounds per week for the second and third trimesters for a total of 35 to 45 pounds.

Triplet pregnancies: overall weight gain around 50 pounds with a steady rate of gain of approximately 1.5 pounds per week throughout the pregnancy.

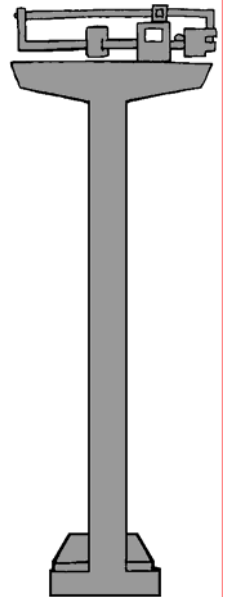
Desirable Weight Gains for Prepregnancy BMI Range

- Pregnancy is not the time to try to lose weight.
- Pregnant women should **never** go on a weight-reduction diet.

How Weight Gain is Distributed During Pregnancy

7 to 8 pounds	baby
3 to 4 pounds	placenta and amniotic fluid
2 to 3 pounds	increased size of uterus (womb)
8 to 10 pounds	increased blood and other body fluids
5 to 10 pounds	mother's stored fat

25 to 35 pounds = Total Pregnancy Weight Gain



Pattern of Prenatal Weight Gain

- All pregnant women should aim for a **steady rate** of weight gain

First trimester

Normal weight: weight gain of **3.5 pounds**

Underweight: weight gain of **5 pounds**

Overweight/obese: weight gain of **2 pounds**

Pattern of Prenatal Weight Gain (continued)

Second and Third Trimesters

Normal: weight gain of **1 pound per week**

Underweight: weight gain of **slightly more than 1 pound per week**

Overweight/obese: weight gain of **about 2/3 pound per week**

Prenatal Weight Gain Grid

- Stop now to examine the Prenatal Weight Gain Grid on pages 23 and 24 of the module. Review the instructions on side 2.
- By using this grid, the health care provider and other staff can monitor patterns of weight gain during pregnancy and will then be more prepared to offer appropriate counseling.
- The grid can be used as a teaching device for the client, to help illustrate appropriate rates and patterns of weight gain.

Pages 22-24 in Module

Pattern of Prenatal Weight Gain (continued)

- It is important that the weight gain continue throughout the entire pregnancy at a steady rate.
- A rapid and large change in the weight gain pattern may signal a problem and should be **immediately reported to the health care provider.**
- Remember: Adequate weight gain directly relates to pregnancy outcome in terms of infant birth weight.

Healthy Eating During Pregnancy

- During pregnancy, the need for most nutrients increases. This is because a woman must provide for her own nutrient needs plus those of her growing baby.
- There are increased requirements during pregnancy for **protein and carbohydrates** and many of the vitamins and minerals, especially **iron and folic acid (folate)**.
- Take a few minutes to examine Figure 4 on page 26 of the module.

Pages 25-26 in Module

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 7-11.**
- **Immediately check your answers against the Answer Key in your Workbook.**

A Guide to Daily Food Choices for Pregnant Women

Meat, Poultry, Fish, Dry Beans, Eggs, & Nuts
2 to 3 servings

Milk, Yogurt, & Cheese 3 to 4 servings

Fruit 3 to 4 servings

Vegetable 4 to 5 servings

Bread, Cereal, Rice & Pasta 9 to 11 servings

- Review Figure 6 on page 30 of the module and Figure 7 on page 32 of the module.

Pages 28-32 in Module

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 12-13.**
- **Immediately check your answers against the Answer Key in your Workbook.**

The Food Guide Pyramid, Pregnancy, and Calories

- For pregnant women, there is no ideal daily calorie intake.
- General guidelines include a **340-calorie-per-day** *increase* over the prepregnancy energy needs during the **second trimester of pregnancy** and about **450-calorie-per-day** *increase* over the prepregnancy energy needs during the **third trimester of pregnancy**.

The Food Guide Pyramid, Pregnancy and Calories (continued)

- It should be remembered that each person should be evaluated individually based on an individualized nutrition assessment conducted by a nutritionist.
- It is critical to remember that both the **quantity** and the **quality** of the foods eaten are important.

Adolescent Pregnancy

- An adolescent (less than or equal to 17 years of age at conception) may not yet have completed her own growth and development, so the increased nutrient demands of pregnancy may compromise her own nutritional status.
- Studies show an increased incidence in pregnancy-induced hypertension, anemia, infection, prematurity, low birth weight, and neonatal mortality for adolescents.

Adolescent Pregnancy (continued)

Counseling tips for the pregnant adolescent

- The two most important things the adolescent needs to do are to **eat well** and **gain an appropriate amount of weight** during pregnancy.
- Emphasize how to make healthy food choices when eating in fast food restaurants, selecting snacks, preparing breakfasts, or choosing quick-fix meals.

Adolescent Pregnancy (continued)

- Make messages simple and positive, focusing on foods rather than nutrients.
- Give “how to” information and less “why” information. Information and activities should focus on what to eat, how much and how often to eat, and how to prepare foods (especially fast and easy to prepare foods).

Individual Dietary Preferences and Concerns

- A person's income level, family and cultural background, religious beliefs about food, climate, geographic location, agricultural conditions, and philosophical attitudes toward food can all influence her eating habits.

Vegetarianism

Potential risks of vegetarian eating patterns before and during pregnancy:

- Low prepregnancy weight
- Iron-deficiency anemia
- Low gestational weight gain
- Compromised protein utilization
- Decreased mineral absorption
- Nutrient imbalances or deficiencies

Vitamin/Mineral Supplements

- Since the requirements for so many nutrients increase during pregnancy, pregnant women are usually advised to take a vitamin/mineral supplement each day.
- In particular, **iron** and **folic acid** need to be supplemented because their increased requirements during pregnancy are usually too great to be met through diet alone.

Vitamin/Mineral Supplements (continued)

- Iron increases because of the need to form new blood cells for both the fetal and the expanded maternal blood systems.
- Adequate amounts of folic acid in early pregnancy are also necessary to prevent neural tube defects in the baby.
- While it is important to take a daily vitamin/mineral supplement, prenatal clients should be advised that these supplements do not take the place of a nutritionally adequate diet.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 14-17.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Iron-deficiency Anemia During Pregnancy

- If an iron deficiency exists, then sufficient amounts of hemoglobin (a protein found in red blood cells) are **not** formed, and the final result is that **less** oxygen is carried to all parts of the body; this condition is called **iron-deficiency anemia**.
- A woman who is anemic may look pale, she may be tired, listless, and irritable; may experience increased infections, may report a poor appetite, and may have headaches and dizziness.

Iron-deficiency Anemia

During Pregnancy (continued)

- We can find out if there is enough red blood cells by doing a **Hemoglobin (Hgb)** or a **Hematocrit (Hct)**; these tests are done by a “finger stick.”
- **Hemoglobin test** measures the concentration of hemoglobin in a sample of whole blood.
- **Hematocrit test** measures the percentage of red blood cells in a sample of whole blood.

Iron-deficiency Anemia

During Pregnancy (continued)

- The recommended intake of iron **doubles** during pregnancy, therefore, a pregnant woman can easily become anemic.
- The iron in meat, poultry, or fish products is better absorbed by the body than the iron in plant products.
- To increase iron absorption from meals containing plant products is to eat foods that are good sources of vitamin C at the same meal, because vitamin C helps the body absorb iron.

Food Sources of Iron

Review Figure 8 on page 40 of the module.

- Meat, Poultry, Fish, Dry Beans, Eggs & Nuts Group (clams, beef liver, tofu, chicken liver, dry beans, etc.)
- Breads, Cereals, Rice & Pasta Group (iron-fortified cereals, wheat germ, enriched wheat bread)
- Fruit Group (prune juice, prunes, raisins, apple juice, strawberries)
- Vegetable Group (spinach, baked potato with skin, green peas, tomato or vegetable juice, beets, etc.)
- Other (blackstrap molasses)
- Milk, Yogurt, Cheese Group foods contain only a trace amount of iron

Salt Restriction and Use of Diuretics

- In the past, women were told to restrict their intake of sodium (as salt) and to take diuretics (drugs that increase water and sodium loss from the body) in an attempt to prevent the excessive water retention that sometimes occurs during late pregnancy.
- The condition of abnormal and excessive build-up of body water the hypertension (high blood pressure) which accompanies it during late pregnancy is known as **pregnancy-induced hypertension (PIH)**.

Salt Restriction (continued)

- It is now believed, however, that these practices of salt restriction and use of diuretics may be potentially dangerous because the need for sodium may actually increase slightly during pregnancy.
- Restricting sodium or using diuretics during pregnancy could possibly result in a sodium deficiency in the pregnant woman and these practices should be discouraged.

Physical Activity During Pregnancy

- Almost all women can and should be physically active during pregnancy.
- The pregnant woman should ask her health care provider about the level of exercise that is safe for her.
- Pregnant women should aim to do at least 30 minutes of a moderate activity (one that makes her breathe harder but does not overwork or overheat her) on most days of the week.

Physical Activity During Pregnancy (continued)

Regular, moderate physical activity during pregnancy may:

- Help the mother and baby to gain the proper amount of weight.
- Reduce the discomforts of pregnancy such as backaches, leg cramps, constipation, bloating, and swelling.
- Improve the woman's mood, energy level, and feelings about the way she looks.
- Strengthen muscles and improve blood flow.
- Improve sleep.
- Help the woman have an easier, shorter labor.
- Help the woman recover from delivery and return to a healthy weight faster.

Physical Activity During Pregnancy (continued)

There are certain physical activities that should not be done while pregnant:

- Avoid being active outside during hot weather.
- Avoid steam rooms, hot tubs, and saunas.
- Avoid physical activities, such as yoga poses that call for lying flat on the back after 20 weeks of pregnancy.

Physical Activity During Pregnancy (continued)

- Avoid contact sports such as football and boxing, and other activities that might cause injury such as horseback riding.
- Avoid activities that include jumping or changing directions quickly such as tennis or basketball. During pregnancy, joints loosen and a woman is more likely to hurt herself when doing these activities.

Physical Activity During Pregnancy (continued)

Tips to help a pregnant woman get physically active:

- Take walks with a friend or family member.
- Sign up for a prenatal yoga, water aerobics, or fitness class.
- Rent or buy an exercise video for pregnant women.
- Sign up for a session with a fitness trainer.
- Get up and move around at least once an hour.

Feeding the Baby

- This section is not complete without mentioning the topic of breastfeeding. While we have spent a lot of time discussing the diet of the prenatal woman, it is also very important to consider the feeding options for her soon-to-be-born baby.
- During the first 6 months of life, a baby's nutritional, immunological, and emotional needs can best be met with exclusive breastfeeding.

Prenatal Nutrition Guidelines

In summary, encourage the client to:

- Follow the Food Guide Pyramid.
- Gain weight in a gradual and steady manner.
- Take a prenatal vitamin-mineral supplement, which includes iron and folic acid.
- Avoid weight-reduction diets.
- Avoid the use of diuretics and avoid both an excessive or restrictive use of salt.
- Consider reasonable physical activities.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 18-23.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Part 2: Special Concerns During Pregnancy

Common Problems During Pregnancy

- **Heartburn** is a common problem which occurs during pregnancy, usually during the last months. Heartburn may occur because there is increased pressure on the stomach as the fetus grows. A pregnant woman should only use over-the-counter drugs when they are prescribed by her health care provider.

Heartburn (continued)

The following suggestions may help relieve heartburn if it should occur:

- Eat 5 or 6 small meals per day instead of 2 or 3 large meals.
- Limit fatty, greasy, and fried foods.
- Limit foods that may cause gas.
- Limit or avoid coffee and other caffeine-containing beverages.

Heartburn (continued)

- Avoid spicy foods.
- Wear clothes that are loose around the waist.
- Do not lie down right after eating. If you need to lie down, put a pillow behind your head and shoulders, or sit up for a while.
- Avoid bending over.
- Drink fluids between meals.

Constipation

- Constipation may occur during pregnancy due to the normal hormonal changes of pregnancy. Lack of exercise or too little fiber and/or fluids in the diet can also promote this condition. A pregnant woman should never use over-the-counter drugs to relieve constipation.

Constipation (continued)

The following suggestions may help relieve constipation:

- Eat more raw fruits and vegetables.
- Use whole grain cereals and breads.
- Participate in regular physical activity.
- Eat meals at regular times.

Morning Sickness or Nausea

- One of the most notorious problems during pregnancy is morning sickness or nausea.
- It often occurs during the early months of pregnancy and usually disappears after the third or fourth month.

Morning Sickness (continued)

**To help control morning sickness,
before going to bed:**

- Be sure to have plenty of fresh air where you sleep.
- Place some dry cereal or bread within reach of your bed.
- Before getting up in the morning, eat some of the dry cereal or bread.

Morning Sickness (continued)

When you get up:

- Get up slowly, take several minutes.
- Avoid sudden movements when getting out of bed.
- Eat some more dry cereal or bread a little while after you get up and before breakfast.
- If you wish to “cook” breakfast, have a window open to remove odors of the foods being cooked.

Nausea (continued)

Meals:

- Eat 5 or 6 small meals during the day rather than three large meals, because you are more likely to feel nauseated when your stomach is empty.
- Prepare easy foods that you can eat when you do not feel like cooking.
- Limit fluids or soups at mealtimes (but drink fluids between mealtimes).
- Sometime during the day you may find you can eat a regular meal. Be sure not to overeat at this time.

Nausea (continued)

Foods to avoid:

- Avoid fried foods and foods cooked with grease, oil, or fatty meats.
- Limit your intake of butter, margarine, gravy, bacon, salt pork, oils, mayonnaise, salad dressings, pie crusts, pastries.
- Avoid highly seasoned foods such as those cooked with garlic, onion, pepper, chili.
- Do not eat food that gives you gas.
- Avoid foods that make you feel sick. You can add them back when you feel better.

Nausea (continued)

Between meals:

- Drink small sips of liquids frequently between meals. Take milk, water, fruit juices, and soups *only* between meals.
- When you feel nauseated, drink a *small* amount of caffeine-free carbonated beverages or fruit juices.

Nausea (continued)

When you cook:

- Have windows open to get rid of the smell of cooking foods.
- Choose foods or cooking methods with reduced cooking time (microwave).
- Some women may experience severe nausea and vomiting that can lead to weight loss, dehydration and metabolic imbalances, known as **hyperemesis gravidarium**; these women should be closely monitored by their health care provider.

Eating Plan to Control Nausea

Before getting up: eat crackers, dry toast, or dry cereal.

Breakfast: cereal, lowfat milk, dry toast, boiled egg.

Snack: 30 minutes before/after breakfast; fruit juice or milk (2 sips at a time).

Lunch: cottage cheese or lean meat, bread, vegetable or fruit.

Snack: 30 minutes before or after lunch: milk, fruit juice, or soup-2 sips at a time.

Dinner: lean meat, fish, or poultry; potato, rice, or pasta; dark green or yellow vegetable; bread; dessert.

Before bed: 30 minutes before of after dinner: milk or other liquid-2 sips at a time.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 24-26.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Use of Drugs During Pregnancy

Caffeine

- Caffeine is a drug, and in many people it produces the side effects of nervousness, sleeping difficulties, and frequent urination.
- Caffeine is found predominantly in coffee, tea, cocoa, chocolate, and some soft drink beverages. It is also contained in some prescription drugs and several over-the-counter drugs (aspirin and many cold preparations).
- Pregnant women should restrict their caffeine intake to no more than 300 milligrams per day.

Use of Drugs During Pregnancy (continued)

Alcohol

- Drinking excessive amounts of alcohol during pregnancy can cause birth defects. One particularly serious alcohol-related defect is **Fetal Alcohol Syndrome (FAS)**; that can result in infants born with low birth weight, mental retardation, heart defects, cleft palate, and deformities of the face, arm, and leg.

Use of Drugs During Pregnancy (continued)

Alcohol (continued)

- Drinking alcohol is associated with an increased risk of spontaneous abortion; occasional “binge” drinking, especially during early pregnancy, is also unsafe for the developing fetus.
- Because there is **no** safe level of alcohol that a pregnant woman can drink and at the same time be certain she is not harming the fetus, alcohol should be avoided during pregnancy. (This includes **early** pregnancy, which is before most women even know they are pregnant).

Use of Drugs During Pregnancy (continued)

Smoking

- Smoking during pregnancy is associated with adverse outcomes, including low birth weight, preterm delivery (delivery before 37 weeks gestation), intrauterine growth retardation, and infant deaths, as well as negative consequences for child health and development.
- Low birth weight babies (less than 5½ pounds at birth) are at increased risk of serious health problems during the newborn period, including chronic disabilities (such as cerebral palsy, mental retardation, and learning problems) and even death.

Use of Drugs During Pregnancy (continued)

Other Problems Associated with Smoking During Pregnancy

- A higher risk of **Sudden Infant Death Syndrome (SIDS)** exists for babies of women who smoke compared with babies of women who don't smoke.
- Babies born to women who smoke are more susceptible to respiratory infections for the first year after birth (pneumonia, bronchitis, asthma, recurrent colds, and ear infections).

Use of Drugs During Pregnancy (continued)

Drugs: Prescription, Over-the Counter, and Illegal

- Many common drugs--both prescription and over-the-counter, that are usually harmless, can harm an unborn baby. Illegal drugs or “street” drugs as well as very high doses of vitamins, are also dangerous to the growing fetus. A pregnant woman should only take those medications approved by her health care provider for use during pregnancy.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 27-29.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Listeriosis and Pregnancy

- Food contamination by harmful bacteria can cause serious illness:
- Listeriosis can be particularly harmful for pregnant women and their unborn babies.
- Foodborne illness caused by *Listeria* in pregnant women can result in premature delivery, miscarriage, fetal death, and severe illness or death of a newborn infant from infection.

Listeriosis (continued)

- *Listeria* is a type of bacteria found everywhere in soil and ground water and on plants. Animals and people can carry *Listeria* in their bodies without becoming sick. Despite being so widespread, most infections in humans result from eating contaminated foods.
- Hormonal changes during pregnancy have an effect on the pregnant woman's immune system that lead her to an increased susceptibility to listeriosis.

Listeriosis (continued)

- According to CDC, pregnant women are about 20 times more likely than other healthy adults to get listeriosis. In fact, about one-third of listeriosis cases happen during pregnancy.
- Listeriosis can be transmitted to the fetus through the placenta even if the pregnant woman is not showing signs of illness. This can lead to premature delivery, miscarriage, stillbirth, or serious health problems for the newborn.
- The symptoms of listeriosis can take a few days or even weeks to appear and include flu-like symptoms with the sudden onset of fever, chills, muscle aches, and sometimes diarrhea or upset stomach.

Listeriosis (continued)

Advice for pregnant women:

- **Do not eat** hot dogs, luncheon meats, or deli meats unless they are reheated until steaming hot.
- **Do not eat** unpasteurized cheeses. Hard cheeses, semi-soft cheeses, and soft cheeses such as feta, bleu, or camembert may be eaten as long as they are made with pasteurized milk and stored properly.
- **Do not eat** refrigerated pate or meat spreads. Canned or shelf-stable pate and meat spreads can be eaten.
- **Do not eat** refrigerated, smoked seafood unless it is an ingredient in a cooked dish such as a casserole.

Listeriosis (continued)

Advice for pregnant women (continued):

- Use all perishable items that are precooked or ready-to-eat as soon as possible.
- Clean the refrigerator regularly.
- Use a refrigerator thermometer to make sure that the refrigerator always stays at 40° F or below.

Basic Food Safety Guidelines

1. **Clean:** wash hands and surfaces often.
2. **Separate:** don't allow cross-contamination between raw and cooked foods.
3. **Cook:** cook to proper temperatures and use a food thermometer.
4. **Chill:** refrigerate or freeze promptly.

The Risks of Mercury in Fish

- Nearly all fish contain trace (very small) amounts of methylmercury, which are not harmful to humans. However, long-lived, larger fish that feed on other fish accumulate the highest levels of methylmercury and pose the greatest risk to people who eat them regularly.

The Risks of Mercury in Fish

(continued)

Pregnant women and women of child bearing age who may become pregnant can protect their unborn children by not eating these large fish that can contain high levels of methylmercury:

- Shark
- Swordfish
- King Mackerel
- Tilefish (also known as Golden Snapper or White Snapper)

The Risks of Mercury in Fish

(continued)

- High levels of methylmercury can harm an unborn child's developing nervous system.
- It is prudent for nursing mothers and young children (under 10 years of age), as well as pregnant women and women during the childbearing years to **not** eat these fish.
- Women and children can safely enjoy eating a variety of other fish as long as they eat **no more than 12 ounces per week of cooked fish.**

The Risks of Mercury in Fish

(continued)

What About Fish Caught in Local Florida Waters?

- There can be a risk of contamination from mercury in fresh waters from either natural or industrial causes that would make the fish unsafe to eat.
- In Florida, women and young children (under 10 years of age) should limit their consumption of **Largemouth Bass, Bowfin, and Gar** to one serving per month.

The Risks of Mercury in Fish

(continued)

- In some water bodies in Florida these three species of fish should not be consumed . Other types of fish caught in Florida may also need to be limited or avoided, depending on where the fish was caught. For specific information regarding fish caught in Florida waters and to view the **Florida Fish Consumption Advisories** brochure, go to the following website: www.doh.state.fl.us/Environment/hsee/fishconsumptionadvisories/index.html.
- See Figure 11 on page 56 of the module for a map of Florida Fish “No Consumption” Advisories.

HIV/AIDS

- **AIDS** the **A**cquired **I**mmune **D**eficiency **S**ndrome, is a very serious illness that weakens the body's ability to fight infections. AIDS is caused by a virus call **HIV**, the **H**uman **I**mmunodeficiency **V**irus. A person can be infected with HIV for many years without experiencing any of the AIDS symptoms, yet, at the same time, is capable of infecting others with the virus.

HIV/AIDS (continued)

- HIV-infected pregnant women need regular prenatal care along with treatment for their HIV infection and to prevent transmission of the virus to the infant.
- For women with AIDS, nutritional status is compromised because of the frequent infections associated with the disease; such as coughing, labored breathing, vomiting, and chronic diarrhea cause a woman's nutritional status to deteriorate; eating and swallowing are often painful because of oral and gastrointestinal lesions.

HIV/AIDS (continued)

- For HIV-infected women, antiretroviral medications may affect appetite and reduce their nutrition intake.
- Nutrition support may maximize the body's ability to fight infection and possibly delay further AIDS-related complications.
- Current research shows that good nutritional status may actually delay the onset of symptoms and retard disease progression in HIV-infected women.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 30-34.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Part 3: Postpartum Nutrition

Nutrient Needs of Postpartum Women

- Just as adequate nutrition is important during pregnancy, it is also important during the postpartum period. The postpartum period is that period of time *after* childbirth extending to several months after delivery.
- Consuming a healthy diet during this time is needed to rebuild the nutrient stores that were depleted during pregnancy.

Nutrient Needs of Postpartum Women (continued)

- Replenishing the body's nutrient stores is important for the health status of the mother.
- Equally important, though, is the fact that a mother's nutritional status *before* she becomes pregnant again can affect the outcome of *future* pregnancies.

Nutrient Needs of Postpartum Women (continued)

The Food Guide Pyramid

- The number of servings, from each of the Food Guide Pyramid food groups, that are appropriate for the postpartum, non-breastfeeding woman depends on the number of calories needed by the woman. Calorie needs are related to a person's age, size, and activity level. Almost everyone should consume at least the lowest number of servings in the ranges.

Nutrient Needs of Postpartum Women (continued)

Most teenage girls and active women need about 2,200 calories per day; which includes the following:

- 2 to 3 servings from the Meat, Poultry, Fish, Dry Beans, Eggs, & Nuts Group
- 3 to 4 servings from the Milk, Yogurt, & Cheese Group
- 3 servings from the Fruit Group
- 4 servings from the Vegetable Group
- 9 servings from the Bread, Cereal, Rice, & Pasta Group

- See Figure 12 on page 60 of the module.

Pages 59-60 in Module

Nutrient Needs of Postpartum Women (continued)

Iron

- Iron is an important mineral that helps to carry oxygen through the body.
- The importance of iron needs to be emphasized during the postpartum period because iron-deficiency anemia is a widespread public health concern, especially among women of childbearing age.
- One challenge is that women require more iron than men due to monthly blood loss during menstruation; also women lose a significant amount of blood during childbirth, depleting their stores; women should be encouraged to eat a well-balanced diet with iron-rich foods.

Nutrient Needs of Postpartum Women (continued)

Calcium

- Calcium needs are highest during the teenage years, however, calcium intake needs to be emphasized for women of all ages because it's such an important nutrient for bone health, and because women generally don't get enough calcium in their diets.
- If there's a long history of poor calcium intake combined with other risk factors, **osteoporosis** can develop.

Nutrient Needs of Postpartum Women (continued)

Calcium (continued)

The best way to prevent osteoporosis is to:

1. get enough calcium during the teenage years when the bones are growing, and
 2. reduce calcium loss during the adult years by eating a calcium-rich diet, exercising, not smoking, and not abusing alcohol.
- Calcium recommendations are currently 1,000 milligrams per day for **all** women over age 18.

Nutrient Needs of Postpartum Women (continued)

Folic Acid

Folic acid (folate) is an important B vitamin for the following women:

- Those who are capable of becoming pregnant.
- Those who are planning to become pregnant; or
- Those who are pregnant--especially during the early months of pregnancy.

Nutrient Needs of Postpartum Women (continued)

Folic Acid (continued)

- Folic acid is important because an adequate intake of it around the time of conception can significantly reduce a woman's risk for having a baby with a **neural tube defect (NTD)**.
- An adequate intake of folic acid **before** pregnancy is important, because NTDs occur early in pregnancy.

Nutrient Needs of Postpartum Women (continued)

Folic Acid (continued)

- The Dietary Reference Intake (DRIs) recommend that all women capable of becoming pregnant consume 400 micrograms (abbreviated mcg or μg) of synthetic **folic acid** from fortified foods and/or supplements *in addition to* intake of food folate from a varied diet in order to decrease the risk of NTDs.

Nutrient Needs of Postpartum Women (continued)

Good Sources of Folic Acid

- Ready-to-eat breakfast cereals
- Enriched bread and cereal grain products
- Whole-grain breads and wheat germ
- Citrus and other fruits and their juices
- Green leafy and other vegetables
- Cooked dry beans, peas, or lentils
- Cooked liver and giblets
- Nuts and seeds

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 35-38.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Weight Trends and Issues for Postpartum Women

- More than 40 percent of non-pregnant women in the U.S. between the ages of 15 and 49 are overweight or obese. Many overweight women claim that having children has a lot to do with the extra pounds, and surveys and studies support the idea that having children increases a woman's risk of gaining excess weight.
- Research shows that *most* postpartum women return to a weight that's within 2 to 4 pounds of their prepregnancy weight, so why are so many women overweight/obese?

Weight Trends and Issues for Postpartum Women (continued)

- Not everyone loses the extra weight.
- Many adolescent and women are overweight or obese before their first pregnancy.
- For some women, having a number of pregnancies throughout the childbearing years may contribute to significant weight increases over time.
- Many women gain weight after the first year postpartum.
- Age-related weight gain is also a factor.

Weight Trends and Issues for Postpartum Women (continued)

Risks for overweight or obese women:

- Being obese increases a woman's risk of infertility be as much as 70 percent.
- Overweight or obese women who do become pregnant tend to have more complications.
- Research suggests that infants born to overweight or obese women have a slightly increased incidence of birth defects, including neural tube defects.

Weight Trends and Issues for Postpartum Women (continued)

Risks for underweight women:

- Increase risk of osteoporosis, menstrual irregularity, and infertility.
- Underweight women who become pregnant have a greater chance of delivering a low birth weight baby.

Factors Affecting Postpartum Weight Change

- Researchers do agree that excess weight gain during pregnancy is one of the main reasons postpartum women retain extra weight. Also, weighing too much before pregnancy and not losing the extra weight within the first 6 months postpartum seem to be fairly strong predictors of weight retention.

Weight Trends and Issues for Postpartum Women (continued)

Typical Weight Loss During the Early Postpartum Period

- Starting at delivery, a woman immediately loses an average of 10 to 13 pounds. This takes into account the infant, the placenta, the amniotic fluid, and blood loss.
- Next, major fluid shifts and tissue changes occur; for example, the uterus shrinks from 2½ pounds immediately after delivery, to a mere 2 ounces at 6 weeks postpartum. So these changes during the first 6 to 8 weeks postpartum lead to an additional 7 to 11 pounds of weight loss, on average.

Weight Trends and Issues for Postpartum Women (continued)

- Then, in the following months, a typical postpartum woman will continue to steadily lose weight, with the greatest weight loss occurring in the first 3 to 4 months postpartum.
- Typically, around 6 months postpartum, her body weight is more stable and, hopefully, she's close to her prepregnancy weight.
- The BMI is a helpful assessment tool for determining a new mother's current weight status. See Figure 13 on page 67 of the module for information on determining weight classification for non-pregnant women.

Weight Trends and Issues for Postpartum Women (continued)

Managing Weight with a Healthy Attitude

- A woman's body image and her attitudes toward food, eating, and activity can greatly affect her health, her health habits, and her postpartum weight.

Practical tips include:

- Put away the bathroom scale.
- Don't count every calorie.
- Quit "dieting."
- Listen to their appetite.
- Recognize stress.
- Nourish the senses as well as the body.

Weight Trends and Issues for Postpartum Women (continued)

Physical Activity

- Physical activity can improve aerobic fitness, flexibility, and muscle toning, which are important benefits for all postpartum women, including those who don't need to lose weight.
- For some basic guidelines for exercise and physical activity during the postpartum period, see page 69 of the module.

Postpartum Nutrition Guidelines

Encourage the client to:

- Follow the Food Guide Pyramid.
- The client should be instructed to give particular attention to consuming adequate amounts of iron, folic acid, and calcium.
- Once you've established a weight range goal for the postpartum woman, it's important to put it in perspective for her, keeping the focus on overall health and healthy lifestyle habits.
- Consider reasonable physical activities, but only after the woman discusses her physical activity plans with her health care provider.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 39-43.**
- **Immediately check your answers against the Answer Key in your Workbook.**

Part 4: Other Postpartum Issues

Postpartum Depression

- Feelings of anxiety or depression after delivery can affect a woman's appetite, intake, and overall health, in addition to her child's health and well-being.
- About 50 to 75 percent of new mothers experience the “**postpartum blues.**”

Postpartum Depression (continued)

Symptoms of “postpartum blues” include:

- Mood swings
- Crying easily and for no reason
- Irritability
- Restlessness
- Difficulty sleeping
- Difficulty eating
- Uncertainty about caring for a new baby

Postpartum Depression (continued)

- **Postpartum depression (non-psychotic)** is more severe than the postpartum blues and it occurs in about 10 to 20 percent of postpartum women. It generally happens within 6 months postpartum, usually starting 2 to 3 weeks after delivery.
- **Postpartum psychosis** is a rare, but very severe form, of postpartum depression which occurs in 1 to 3 cases for every 1,000 births. Compared to women with the non-psychotic form, women with the psychotic form who have thoughts of harming their infants are more likely to act on them.

Postpartum Depression (continued)

Symptoms of postpartum depression (non-psychotic) include:

- Severe sadness or emptiness.
- Withdrawal from family, friends or pleasurable activities.
- Constant fatigue and trouble sleeping.
- Overeating or loss of appetite.
- A strong feeling of failure or inadequacy.
- Intense concern and worry about the baby, or lack of interest in the baby.
- Thoughts about suicide, and/or fears of harming the baby.

Postpartum Depression (continued)

Predictors of Depression

- Studies point to a number of predictors for postpartum depression, including prenatal depression, poor self-esteem, child care stress, stressful life events, lack of social support, history of previous depression, infant temperament, being single, low socioeconomic status, and unplanned or unwanted pregnancy.

Treatment

- Treatment of postpartum depression often involves a combination of medical, psychological, and social interventions. Women who have symptoms of depression should be referred to their health care provider.

Difficult Outcomes of Pregnancy and Birth

- Difficult outcome of pregnancy and birth include: miscarriages; fetal death (stillbirth); neonatal death; or Sudden Infant Death Syndrome (SIDS).
- Sometimes listening to the mother is the best a counselor can do. It's important for a staff member to avoid comparing the mother's grief with anything he/she has experienced , since this takes the focus off the mother and puts it elsewhere. Staff should avoid saying things like "I know how you feel."

Gestational Diabetes

- Gestational diabetes mellitus (GDM) is a type of diabetes, or high blood sugar, that some women develop during pregnancy. The condition goes away after the baby is born, but GDM is still an important issue even after it's gone. That's because women with a history of GDM are at higher risk of experiencing GDM again during future pregnancies, plus they have a much higher risk of developing **type 2 diabetes**, which can occur at anytime.

Gestational Diabetes (continued)

Some ways a woman can lower the risk of developing diabetes in the future:

- Know the risk factor for GDM and type 2 diabetes.
- Reach and maintain a healthy weight.
- Eat healthfully and become physically active.
- Have blood sugar checks routinely.
- Know the symptoms of type 2 diabetes.

Teenage Mothers

- Teens are a special group of clients that require some specific knowledge and counseling skills.

Here are some tips:

- Greet and call teens by their names each time you see them.
- Create an attitude of acceptance.
- If possible, counsel the teen individually.

Teenage Mothers (continued)

- Ask what type of support she has from family, friends, etc.
- Allow the teen choices when possible.
- If the client indicates she is depressed, refer her to a health care provider.
- Focus on positive changes that teens can make rather than a long list of things they can't do or eat.

Self-Check

- **Go to the Workbook for the Prenatal & Postpartum Nutrition Module and complete Self-Check Questions 44-47.**
- **Immediately check your answers against the Answer Key in your Workbook.**
- **Arrange for the Posttest with your supervising nutritionist.**