

Level II:

WIC Certification Program



Prenatal & Postpartum Module

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Knowledge and Practice Objectives

At the completion of this module the learner will be able to:

1. State two reasons why adequate nutrition during pregnancy is important.
2. State the major criteria used in assessing the nutritional status of prenatal participants.
3. List at least three nutrition risk factors for pregnant women and state why these factors affect nutritional needs and status.
4. Recognize all nutrition risk factors for pregnant women
5. State why pre-pregnancy BMI is important in determining a woman's recommended weight gain range pre-pregnancy.
6. State the recommended range of weight gain and the recommended pattern of weight gain during pregnancy for underweight, normal weight, overweight, and obese women.
7. Demonstrate the correct use of the Prenatal Weight Gain Chart to assess weight gain during pregnancy.
8. State current recommendations regarding vitamin/mineral supplementation, salt restriction, and use of diuretics during pregnancy.
9. Use the Eating Guide for Pregnant Women when making dietary recommendations to prenatal participants to enhance their nutrient intake.
10. State counseling recommendations for the common problems of pregnancy: nausea, heartburn, and constipation.
11. List common nutrition concerns for the pregnant adolescent.
12. State counseling recommendations for excessive weight gain and weight loss in pregnancy.
13. State recommendations regarding the use of caffeine, alcohol, drugs, and cigarettes during pregnancy.
14. State the dietary recommendations indicated for iron-deficiency anemia.
15. State one reason why adequate nutrition during the postpartum period for non-breastfeeding women is important.

Introduction

From the day she hears, “You’re pregnant,” until the day the baby is born, the pregnant woman is on an adventure that will determine how healthy her baby will be at birth and will impact the baby’s life forever. The smell of food may make her sick, yet she needs to eat well to have a good pregnancy outcome. She must reconsider drinking wine or beer or smoking cigarettes. She needs to decide how she will feed her new baby. Finding a doctor and arranging for medical care may be a big problem that must be handled.

Even with all of the changes and decisions to be made, pregnancy is an exciting time in the life of a woman. She is often the center of attention because of the pregnancy and may receive special attention from her partner, friends, and the soon-to-be grandparents. She can dream of what the future will bring her child. There is so much to look forward to!

Because of the excitement and the desire to do “the best for the baby,” the nine months of pregnancy is also a time when a woman is especially interested in learning. She will want information about what and how much foods to eat, how much to exercise, how to manage nausea, vomiting, or heartburn, and how to feed her baby.

As a WIC staff person, you are in an important position to help pregnant women improve their eating habits, to take care of themselves, and nurture the growing fetus. You can:

- Determine if the woman has a nutritional need based on her height, weight, hematocrit/hemoglobin and her dietary intake;
- Identify food habits and concerns that the woman may have;
- Offer nutrition information that supports good eating habits;
- Help the woman set nutrition and health goals;
- Make referrals to other needed services;
- Issue food instruments (WIC checks) for supplemental foods; and
- Document the nutrition education given and plan for future education.

This module will give you the information, tools, and procedures you need to help pregnant women have healthy, successful pregnancies.

Words to Know:

Pregnancy: The state in which the mother is carrying the embryo/fetus, from conception to birth.

Prenatal: During pregnancy.

Section I: The Importance of Nutrition and Prenatal Care

Care

The Importance of Nutrition

Adequate nutrition before conception as well as during pregnancy influences the outcome of the pregnancy and can prevent birth defects of the brain and spine.

Adequate nutrition during pregnancy is needed to maintain the tissues and nutrient stores of the mother and to allow for normal growth and development of the fetus. Women who consume an inadequate diet during pregnancy have a greater chance of complications and difficult deliveries including stillbirths, prematurity, and infants with birth defects.

A woman who eats poorly during pregnancy may not gain enough or may gain too much weight. When a woman does not gain the appropriate amount of weight during pregnancy, the chance that her infant will be low birth weight (less than 5½ pounds at birth) or high birth weight (greater than 9 pounds at birth) increases. Low birth weight infants are more likely to become ill and die during the period just before and after birth (the perinatal period). Low birth weight infants may also suffer long-term health problems, including obesity and developmental disabilities. A mother of a high birth weight infant has a higher chance of Cesarean delivery and the infant is more likely to be obese as a child and later in life.

Adequate prenatal nutrition is vital to ensure a healthy baby and a healthy mother who can breastfeed her child, if she so chooses.



Did you know?

Breastfeeding is well recognized as the best feeding method! Breast milk is nutritionally complete, promoting optimal growth and development, and protecting against many infant and childhood illnesses. Moms also benefit – breastfeeding lowers a woman’s risk for certain cancers and bone fractures later in life and helps her return to her pre-pregnancy weight.

The prenatal period is the best time to help a woman learn about the many benefits of breastfeeding, as well as “how to” breastfeed. Because breastfeeding is so important to a mother’s and infant’s health WIC regulations require staff to provide breastfeeding education at each prenatal visit and in the early postpartum period.

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The Importance of Prenatal Care

It is important to point out that nutrition care, although extremely important, is only one component of good prenatal care. The quality, quantity, and timing of prenatal care influence pregnancy outcome. WIC staff should encourage participants to visit a primary care provider, an obstetrician, a nurse midwife, or a prenatal clinic as soon as they learn of their pregnancy. They should return for regular checkups during their pregnancy to ensure that everything is progressing normally. Many complications of pregnancy that 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 medical personnel. In addition, the doctor or nurse can answer questions and suggest pamphlets, videos, or books on topics of interest to mothers. Lack of prenatal care is closely associated with teenage pregnancy, low income, and substance abuse.

Women who choose not to have prenatal care when it is available make this decision for many reasons. Some of these reasons are:

- Fearing that the cost of prenatal care may be too high. They may not be able to afford even the reduced cost prenatal programs.
- Not wanting to bother with the complicated application process necessary to get on Medicaid.
- Not trusting doctors or not feeling prenatal care is necessary. Perhaps they had previous pregnancies without prenatal care and had healthy children.
- Not wanting to confront their health issues (e.g., pregnancy, substance use).

Your Role

One of the questions asked during the Nutrition Interview is: *Have you been to the doctor yet? Did your care begin after the 13th week?* For women who are not receiving prenatal care, try to identify the reasons they have not begun prenatal care. You may need to reassure them that public health facilities can provide them with high-quality care at very reasonable prices throughout the entire period of their pregnancies. Inform them that adequate prenatal care has been shown to result in better outcomes of pregnancy – fewer complications for the mother and her baby, fewer low weight births, and lower neonatal death rates. Any time and effort spent on having a healthy pregnancy will pay off after the baby is born. Healthy babies require less time away from work and leisure activities.

By asking and answering the Nutrition Interview questions in Compass you have assessed if adequate prenatal care has been received to determine if a risk factor for inadequate prenatal care should be risked.

Nutrition Risk Factor 334 (Low Risk): Inadequate Prenatal Care

Defined as: when a woman begins prenatal care after 13 weeks of pregnancy

Words to Know:

Stillbirth: The birth of a dead child.

Prematurity: Birth occurring before 37 weeks gestation.

Perinatal: Pertaining to the period around childbirth beginning at 20 weeks of gestation to the end of the neonatal period (28 days after birth).

Low birth weight (LBW): A birth weight less than 5½ pounds (2500 grams).

Primary Care Provider: A physician, usually family practice, pediatrician, internist, or obstetrician, who provides a broad range of routine medical services and refers patients to specialists, hospitals, and other providers as necessary.

Prenatal Growth and Development

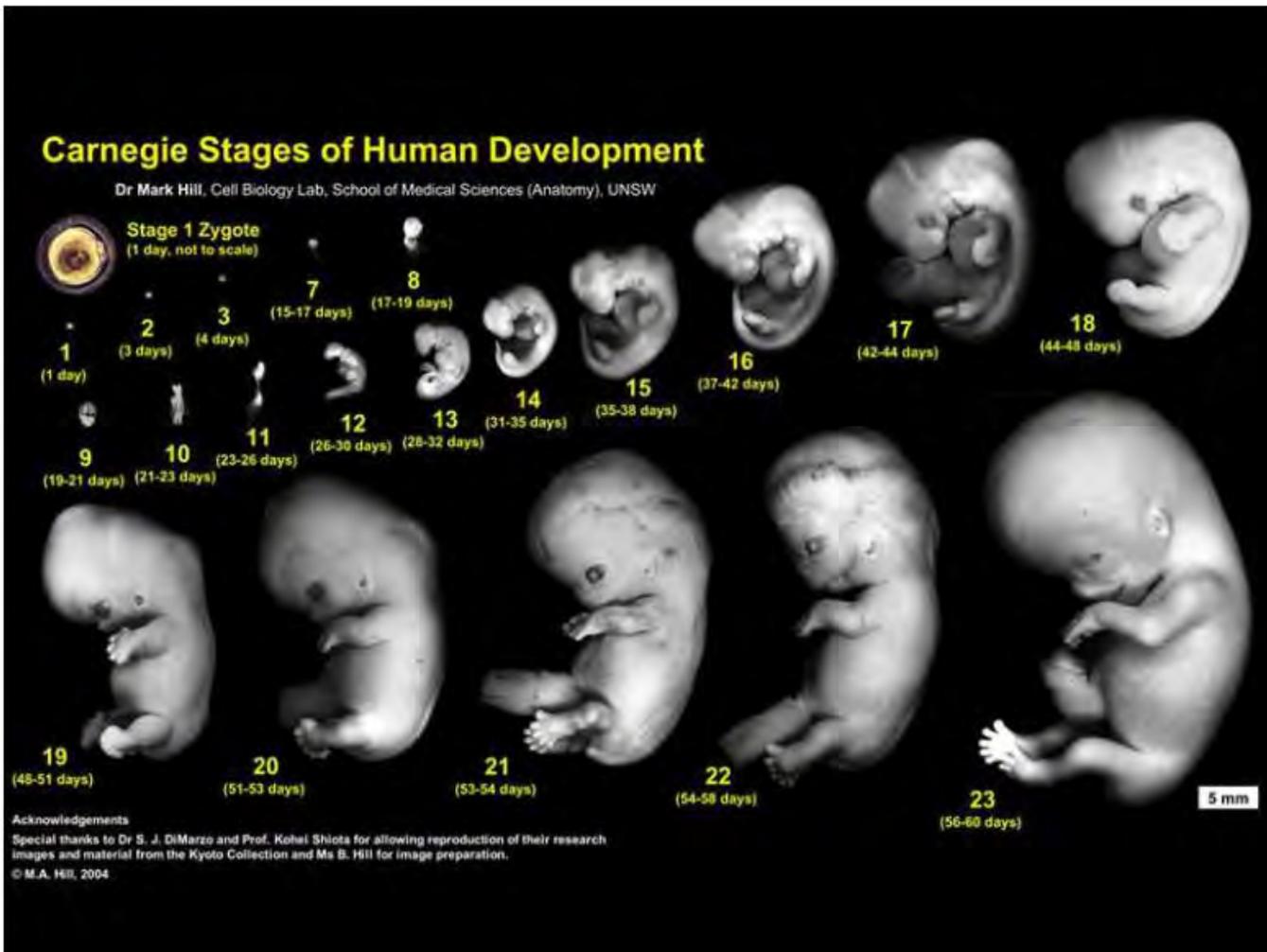
A full-term baby develops in 40 weeks or nine months. The nine months of pregnancy are divided into three trimesters of three months each. On the next few pages you will learn what happens to both the mother and the newborn baby during the three trimesters.

The First Trimester (conception through 13 weeks)

Pregnancy begins with conception, when an egg is fertilized by a sperm. The fertilized egg moves to the uterus where it grows for the next nine months. The fertilized egg divides into many cells almost immediately. The fertilized egg is called an embryo for the first eight weeks of life. After eight weeks the developing embryo is called a fetus.

The first trimester is the most critical phase of development. Exposure to drugs, alcohol, viruses, chemicals, radiation, and inadequate folic acid can lead to birth defects.

During the first trimester, a mother's body changes to help her baby grow. The placenta develops to carry nutrients and oxygen to the fetus and carry carbon dioxide and other wastes away from it. The amniotic sac fills with fluid to cushion the developing baby. The mother's uterus and its supporting muscles increase greatly in size, strength, and flexibility. Her breasts grow and change in preparation for breastfeeding. Also, her blood volume increases by 50 percent to carry the extra nutrients and waste products.



The Embryo/Fetus

By the end of the first month the embryo is one-fifth of an inch long. The brain, eyes, spinal cord, liver, arms, legs, and pancreas have begun to develop. The heart is already beating.

The first trimester is the most critical phase of human development because so many parts of the body are forming. Anything that interferes with development at this time could cause birth defects or could even kill the embryo. Sadly, many women do not even realize they are pregnant at this point.

During this time, exposure to drugs, alcohol, viruses, chemicals, radiation, and inadequate folic acid can lead to birth defects.

By the end of the first trimester, the fetus is about 2½ to 3 inches long and weighs about one-half ounce. The urinary and circulatory systems are functioning and other organs of the body continue to develop. The sex organs are developed, but it is difficult to tell if the baby is a boy or a girl.

The Pregnant Woman

During the first month of this trimester, many women don't know they are pregnant. Yet this is the most critical period in the fetus' development. A woman will often continue to drink, smoke, or take medications that might harm her baby, because she doesn't know she is pregnant.

After a missed menstrual period, the woman may be fairly certain she is pregnant. Even before that she may feel nauseated or sleepier than usual. She may need to urinate more often and notice that her breasts are tingly and tender. She may also have heartburn, indigestion, constipation, nausea, or vomiting. These symptoms may continue through the first trimester.

The Second Trimester (14th week through 26 weeks)

The Fetus

The fetus keeps growing and developing during the second trimester. During the fourth month, the fetus grows to about four inches and is able to suck and swallow. Fingers and toes are becoming recognizable.

Trimesters: The length of the pregnancy generally determined in terms of weeks:

0-13 weeks = first trimester

14-26 weeks = second trimester

27-40+ weeks = third trimester

Placenta: The organ which connects the fetus to the mother and carries nutrients to the fetus, and removes its wastes. It is completely formed by the 12th week of gestation.

Gestation: The state of pregnancy. The period of carrying the developing embryo/fetus from fertilization to birth. This period of time is usually 40 weeks. If a woman is "at 20 weeks gestation," this means that she is 20 weeks along in her pregnancy.

Gestational age: The age of the embryo/fetus since gestation. Computed from the first day of the last menstrual period to any time up to birth.

Vernix: A waxy white protective substance covering the skin of the fetus.

During the fifth month the fetus grows another 4 to 6 inches and is actively moving and kicking strongly enough to be felt by the mother. Hair is growing on the head, and eyebrows and lashes are beginning to grow. Vernix covers the fetus.

By the end of the sixth month the fetus is developed enough to have a chance of survival if born prematurely although the lungs are still immature. The fetus weighs about one and three-quarters pounds and is about 13 inches long. The eyes are able to open and finger and toe prints can be seen.

The Pregnant Woman

During the second trimester, women usually do not need to urinate as often and have less nausea and vomiting. But they still may feel tired and have constipation. Their heartburn and indigestion can get worse as the fetus grows larger. Their breasts no longer feel tender, but they have definitely gotten bigger.

Words to Know:

Conception: Occurs when the egg is fertilized by the sperm.

Embryo: The stage of development of the unborn baby from conception up to the end of the 8th week of gestation.

Fetus: The state of development of the unborn baby from the beginning of the 9th week of birth.



The Third Trimester (27th week through 40th week)

The Fetus

The fetus quickly gains weight during the last trimester. An average fetus is about seven and a half pounds and about 20 inches long at birth. The fetus moves around and is very active during the 7th and 8th months, but has little room to move during the final month. The brain continues to develop and the baby can see and hear.



The New Mother

During the third trimester most women feel less tired. They have many things to think about and prepare for such as infant clothes, a place for the baby to sleep, a car seat, etc. The woman may have more heartburn and indigestion as the baby gets bigger. Pressure of the growing fetus on the bladder may bring on the return of frequent urination. Leg cramps and swelling are also common during the final trimester.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

The following begins a series of Self-Checks that occur throughout this module. As you come to each Self-Check, complete it right away. The answers are located at the end of the Self-Check.

1. Name at least two reasons why adequate nutrition during pregnancy is important.

True or False?

2. ____ Low birth weight in infants is desirable because it results in an easier delivery.
3. ____ Women are risked as having inadequate prenatal care if they begin visiting their provider late in their first trimester of pregnancy.

ALSE

1. Any two of the following answers are correct:
 - a. To maintain mother's body tissues and nutrient stores.
 - b. To decrease the chance of complications and difficult deliveries, including prematurity, stillbirths, birth defects.
 - c. To decrease the chance of nervous system disorders and impaired mental development in the newborn.
 - d. To decrease the chances of having low birth weight infants.
 - e. To allow for the normal growth and development of the fetus.
2. False. Low birth weight in infants is associated with an increased chance of illness and death during the perinatal period.
3. False. While early prenatal care is very important, risk factor #334 is only assigned if a woman has not started her prenatal care by the second trimester (4th month of pregnancy or later).

Section II: Anthropometric Indicators of Nutritional Needs

The first step to evaluate a woman's nutritional need is anthropometric assessment. Anthropometric assessment is the process of learning whether the woman's pre-pregnancy (pregravid) weight was low, normal, overweight, or obese, and whether she is gaining enough weight in her current pregnancy. Her pre-pregnancy weight and her weight gain during pregnancy can both be indicators of her nutritional need and affect the outcome of her pregnancy. For example, low weight gain may mean that the woman is not eating enough to balance the energy she is using. WIC staff members have a unique opportunity to provide nutrition education and counseling to improve pregnancy outcomes.

WIC staff must make an extra effort to be accurate with height and weight measurements because this is the information used for assessing a woman's health. The Screening Module provides the correct techniques for taking accurate heights and weights.

Weight Gain - How Much is Just Right?

Weight gain during pregnancy has a tremendous effect on the outcome of the pregnancy. Appropriate weight gain is necessary for normal growth and development of the fetus.

Babies whose mothers *do not gain enough* weight are likely to grow poorly in the uterus and be born prematurely or small for gestational age. Low birth weight (a birth weight of less than 5½ pounds) has been associated with mental retardation, birth defects, growth and development problems, including increased chances of overweight and obesity. Babies whose mothers *gain too much* weight may have high birth weights, Caesarean section deliveries, and birth trauma. Women who gain too much weight during pregnancy may have gestational diabetes, difficulties with delivery, and high blood pressure. Also, it can be difficult to lose the weight after the baby is born.

Appropriate weight gain during pregnancy increases the likelihood that a woman will deliver a full-term, healthy baby.

Words to Know:

Pregravid: Before pregnancy; preconceptual.

Pregravid weight: Weight before a woman became pregnant.

BMI: The commonly accepted index for assessing a person's body fat.

Prepregnancy BMI Value: A calculation based on a woman's pre-pregnant height and weight that is used to determine her recommended weight gain range for a specific pregnancy.

How much weight should a woman gain during pregnancy? This recommendation depends on many things such as her age, pre-pregnancy weight status, or if she is having multiple births, to name a few.

Weight Gain Distribution During Pregnancy

You may be wondering why a woman needs to gain 25-35 pounds to make a 7½ pound baby. Some of this weight is necessary to nourish the growing fetus. You can see from the following breakdown the baby accounts for only a portion of the total weight gain.

Components of Prenatal Weight Gain	
1½ to 3 pounds	breasts
1½ to 2 pounds	placenta
2 to 4 pounds	uterus (womb)
8½ to 9 pounds	increased blood and fluids
7½ pounds	baby
4 to 8 pounds	mother’s fat stores (needed to supply energy for labor, delivery, and the production of milk after birth)

Recommendations for Weight Gain

During a pregnant woman’s certification visit, the WIC staff members advise her on how much weight she should gain during this pregnancy. WIC staff members determine how much weight should be gained by knowing the pre-pregnancy BMI.

1. Determine the pre-pregnancy Body Mass Index (BMI) value:

This BMI value is a calculation using a woman’s pre-pregnant weight and height. BMI correlates with total body fat and is considered to be a good screening tool to indicate maternal nutrition status. The Compass computer system determines the pre-pregnancy BMI using the pre-pregnancy weight entered in the Pregnancy panel and the height entered in the Anthropometric panel. Accurate determination of the pre-pregnancy weight is important in determining the pre-pregnant BMI and will be discussed later.

2. Identify the weight category:

After the pre-pregnant weight and height have been entered into the Compass computer system, the BMI will be displayed on the Prenatal Weight Gain Chart and on the Pregnancy panel. Weight categories used for determining appropriate prenatal weight gain are defined by the following BMI values:

- Underweight:.....BMI <18.5
- Normal:.....BMI >18.5-24.9
- Overweight:BMI 25 – 29.0
- Obese:.....BMI ≥30.0

Here is an example: A 5'4" (64") woman with a pre-pregnancy weight of 160 pounds has an estimated BMI of about 27.5. Her BMI value falls into the "overweight" weight category.

3. Determine the recommended target weight gain range:

Target weight gain recommendations during pregnancy are expressed in the table below:

Prepregnancy BMI value		Target weight gain range
Underweight	<18.5	28 - 40 pounds
Normal	18.5- 24.9	25 - 35 pounds
Overweight	25- 29.0	15 - 25 pounds
Obese	≥30.0	11-20 pounds

In addition to looking at pre-pregnancy weight categories to recommend a normal weight gain, other factors must be considered:

- Women who smoke during pregnancy tend to gain less weight in pregnancy and may give birth to infants with growth retardation. A weight gain at the higher end of her range may help reduce this risk.
- Weight gain for multi-fetal pregnancies is obviously higher. Women pregnant with twins are encouraged to gain 35-45 pounds and at a rate of weight gain of 1.5 pounds/week for normal weight women during the second half of pregnancy. Women pregnant with triplets are recommended to target weight gain to 50 pounds.
- It is acceptable for short women (under 62") to gain weight at the lower end of each range.

Assessing Weight Gain During Pregnancy

In addition to estimating how much weight a woman should gain, we need to evaluate her weight gain during pregnancy. Weight gain should be slow and steady.

Women generally gain between 2-4 pounds in their first trimester. For women in their second and third trimesters, weight gain recommendations are as follows:

- Underweight women are encouraged to gain about .5 kg/week or about 4½ pounds per month;
- Normal and overweight women are encouraged to gain about .4 kg/ week or about 3½ pounds per month; obese women are encouraged to gain about .3 kg/week or about 2½ pounds per month

The Prenatal Weight Gain Chart

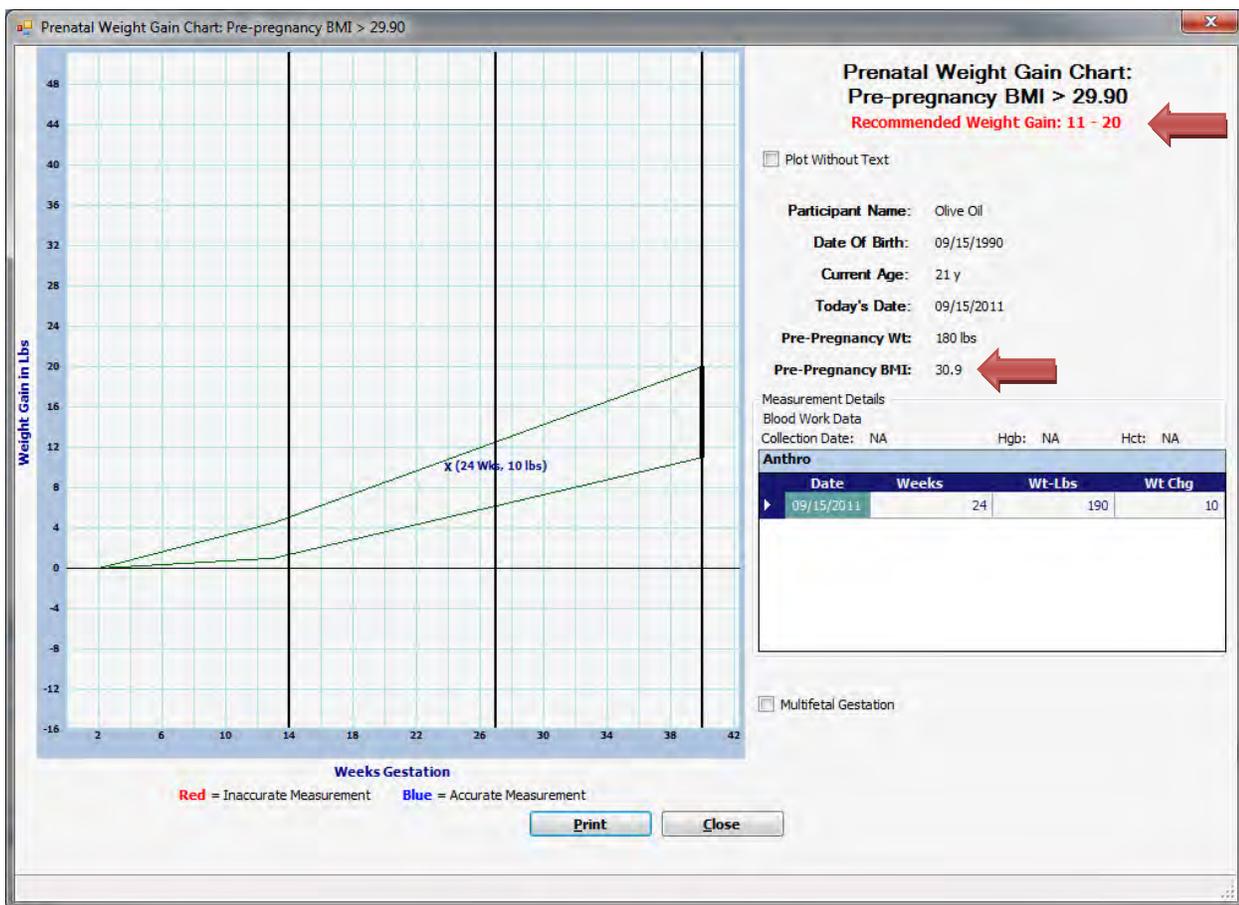
The Prenatal Weight Gain Chart in Compass is a graph that enables WIC staff to track a woman's weight gain throughout her pregnancy. It provides a pictorial view of her weight gain where she can see how her weight gain compares to the weight gain recommended rate of her weight category. Remember, the recommended total weight gain range is based on a woman's pre-pregnancy weight category.

Section II: Anthropometric Indicators of Nutritional Needs

The weight gain ranges are depicted on the charts two upward sloping lines. The upper-most line represents the upper end of the target weight gain range and the lower line represents the lower end of the target weight gain range.

Women are recommended to gain weight at a steady rate between the two lines. These charts are useful for providing a picture of the pregnancy weight gain. They make it easier to detect inappropriate changes in weight over time. Let's take a closer look at these charts and how you would use them to assess a woman's weight gain.

Example: The chart below illustrates a woman with a pre-pregnancy BMI of 30.9. Her BMI value falls into the "obese" weight category. Her recommended target weight gain range is indicated in red. The weight gain range is depicted on the chart using two green sloping lines.



Procedure for Determining Pre-Pregnancy Weight

Instructions when pre-pregnancy weight is known.

1. Enter the woman's pre-pregnancy weight and EDD (estimated date of delivery) or last menstrual period on the Pregnancy panel in Compass. Enter the height in inches or centimeters on the Anthropometric panel, pre-pregnancy BMI will be visible on the Pregnancy panel and the Weight Gain Chart on the Anthropometric panel. The appropriate weight gain range will also be in the Weight Gain Chart.
2. New weights will be entered at each subsequent visit on the Anthropometric panel. If the woman's EDD changes that will be entered by editing the Pregnancy panel.
3. Compass will plot each weight on the Prenatal Weight Gain Chart. You will be able to track and assess a woman's weight gain.

Instructions when pre-pregnancy weight is NOT known.

At the first visit :

1. Estimate the woman's pre-pregnancy status (underweight, normal, overweight, or obese,) by considering her current height and weight. The Anthropometric panel will indicate the current BMI after the current weight and height are entered and you click 'SAVE'.
2. Determine the week of gestation at the time of the current weight by moving to the Pregnancy panel and entering the Expected Date of Delivery and tabbing through last menstrual period field. Use the Prenatal Weight Gain Chart on page 85 of this module to assist you in determining the pre-pregnancy weight.
3. Place a dot on the grid where the line representing the week of gestation crosses the lower line of the weight gain range estimated to be appropriate for the woman. (For example, if the woman's pre-pregnancy BMI is considered obese, you would place a dot on the dotted and dashed line that corresponds with that weight gain.)
4. Subtract the number of pounds represented by the line at the dot from the current weight to determine an estimated pre-pregnancy weight. Record this estimated pre-pregnancy weight on the Pregnancy panel. Indicate this is an estimated pre-pregnancy weight gain on the Participant Care Plan.

At subsequent visits:

- A new weight will be entered at each subsequent visit on the Anthropometric panel.
- Compare the change in weight between measurements and the total amount gained with the gain expected for the woman's estimated pre-pregnancy weight status (normal, underweight, overweight, obese).
- Consider the results of this assessment with the results of dietary and clinical (physical/medical) assessments to determine appropriate recommendations.

A Word about Unknown Pre-pregnancy Weights

When a woman states that she does not know her pre-pregnancy weight, ask questions that might help you determine an approximate weight. Sometimes women have trouble remembering what they weighed before pregnancy or they may have purposefully never weighed themselves. Some questions you might ask are:

- Did the doctor or clinic staff weigh you when you found out you were pregnant? What was that weight?
- Do you think you gained any weight between the time you became pregnant and when you first got weighed?
- Has your dress or pants size changed since you got pregnant?

What Prenatal Weight Gain Charts Can Tell Us

Evaluating one plotted weight

Weight plotted at one point tells us how a woman's weight has changed since she became pregnant.

Some women are not sure about their pre-pregnancy weights. They may not have weighed themselves recently, or they may remember weights from several years, or several pregnancies ago. They may also tell you weights lower than their true weights if they are embarrassed.

If the pre-pregnancy weight is inaccurate, then we cannot accurately assess weight gained at the first time a pregnancy weight is plotted. However, we will have a starting point to compare and assess future measurements during the pregnancy.

Evaluating several plotted weights

Several measurements plotted at different weeks of pregnancy give more reliable information to help determine the pattern of weight gain and if the woman is gaining a healthy amount of weight. To most accurately compare weight change, WIC staff must weigh prenatal participants at least once every trimester.

Some participants will offer their weight from an earlier doctor's visit to save time. Because of the variation in scales, it is best that the participant be weighed again on the WIC clinic scale.

Unexpected weight changes

A weight gain between the two lines is recommended. Most weight gain occurs in the second and third trimester. For all pregnant women, weight gain should be slow and steady. This means that for the pregnant woman who is gaining at a rate slightly above her recommended weight gain, we recommend slow, steady weight gain. At no point do we recommend a

woman stop gaining weight and try to maintain her weight throughout the remainder of her pregnancy.

Usually rapid weight changes are a red flag for a concern. Reasons for unexpected changes may include errors in measuring or recording the weight, differences in clothing, severe nausea and/or vomiting, gaining extra body fluid, eating too much or too little, and when a woman is expecting twins or triplets.

If the woman has an abnormal weight change, first weigh her again to make sure she was weighed accurately. If there is a sudden increase or decrease, refer the woman to her prenatal care provider for follow up. You can assess her diet to learn if she is eating more or less than her usual diet.

Identification of Anthropometric Indicators of Nutritional Need

Now you can use accurate heights and weights, BMI, and the Prenatal Weight Gain Charts to determine if WIC participants have anthropometric indicators of nutritional risk. Remember: any one of these indicators make pregnant women eligible for WIC and will also identify the type of education and counseling the woman should receive (normal protocols or high-risk counseling).

Underweight Women

Nutrition Risk Factor 101(Low Risk): Underweight

Defined as: a woman whose pre-pregnancy BMI is less than 18.5

For example: *Ellen Trovato is a pregnant woman who is 64 inches tall and weighed 103 pounds before she became pregnant. Her BMI is 17.8. She would therefore be considered underweight.*

Underweight pregnant women have twice the chance of delivering a low birth weight infant or growth impaired infant. These infants tend to have more health problems after birth. An underweight woman is also more likely to have complications during the pregnancy and delivery. These complications include higher likelihood of pre-birth hemorrhage, premature rupture of membranes necessary for pregnancy, anemia, endometriosis (inflammation of the uterus lining), and Cesarean delivery.

Underweight women may have eaten poor diets over a period of time. They may continue to eat poorly during pregnancy, resulting in an inadequate intake of calories and nutrients. Underweight women may continue to eat poor diets after delivery and have anemia.

Your Role

Follow the normal prenatal nutrition protocols (which will be discussed in Part VII) and then try to determine the potential cause of her low weight status. Potential causes might include concerns about body image, poor appetite, availability of food, feelings about food, excessive activity, and health problems. Review the dietary assessment. Some questions might be:

- How do you feel about gaining weight?
- Do you need help in getting enough food to eat?
- How is your appetite?

Then find solutions. You may help them by providing a list of places the participant can go to get some food (e.g., food pantries) or perhaps refer them to a place that can provide assistance in the area they need.

Overweight Women

Nutrition Risk Factor 111 (Low Risk): Overweight

Defined as: a woman whose pre-pregnancy BMI is greater than 25

For example: *Janelle Meirs is a pregnant woman who is 64 inches tall. Before she became pregnant she weighed 165 pounds. Her BMI is 27.6, so she is considered overweight.*

An overweight woman is more likely to have complications during pregnancy and delivery. These complications include conditions such as diabetes, high blood pressure, premature delivery, birth defects, birth of a very large infant, and blood clot difficulties. The heavier a pregnant woman is, the more chance she may develop some of these problems. Maternal overweight and obesity prior to pregnancy is strongly linked to increased risk of obesity in the child. The importance of weight gain must also be stressed to the overweight women. The recommendation is to gain 15-25 pounds for overweight women. Excessive weight gain puts the mother and infant at future risks. Pregnancy is not a time to lose weight – even obese women are encouraged to gain the recommended 11-20 pounds. Overweight and obese women may not necessarily have adequate nutrient stores since the quality of the diet may not have been adequate.

Your Role

Follow the normal prenatal nutrition protocols and then gather information about the participant's beliefs about nutrition during pregnancy. A healthy diet and appropriate physical activity is especially important for these women since dieting or weight reduction is NOT advised during pregnancy. Emphasize food choices of high nutritional quality, limiting unnecessary high-calorie foods. Ask questions about the food availability and resources, eating behaviors, feelings about weight gain, and review dietary assessment. Collect information on lifestyle.

Inadequate Weight Gain

Nutrition Risk Factor 131 (High Risk): Low Maternal Weight Gain

Defined as: weight gain that falls below the appropriate curve on the weight gain chart. If the plot is below the bottom line, the '131 – Low Maternal Weight Gain' box is checked on the Anthropometric panel to assign this risk factor.

Nutrition Risk factor 132 (High Risk): Maternal Weight Loss During Pregnancy

Defined as: any weight loss below the pre-pregnancy weight in the first trimester or a weight loss of 2 pounds or more in the 2nd to 3rd trimester. Compass will assign this risk factor based on the weights entered in the Anthropometric panel.

Women who do not gain adequate weight during pregnancy tend to give birth to infants with smaller than average birth weights and with fetal growth restriction. Lower birth weight and fetal growth restriction are indicators of poor health for an infant which can have lasting effects throughout the infant's entire life.

Any time a woman has a loss of two or more pounds in her 2nd or 3rd trimester, she should be risked with maternal weight loss. This applies even if the woman is above her recommended weight gain curve. This risk factor may be assigned at the initial certification of a pregnant woman who is not gaining weight, but it is more likely to be added as a mid-certification risk factor at subsequent visits during pregnancy.

The supplemental foods and nutrition education provided by WIC should improve maternal weight status and infant outcomes. These are high-risk factors and she must be referred to the WIC dietitian or nurse for high-risk counseling.

Your Role

Collect information addressing food resources, food and drink intake, and lifestyle behaviors. Ask if she thinks her weight gain is a problem. Also ask her why she thinks she is losing weight. If she seems reluctant to gain weight, remind her how beneficial her weight gain is to the health of her baby. If you need help remembering why weight gain is important, please refer to the chapter *Weight Gain-How Much is Enough* to explain why weight gain is crucial to the normal process of pregnancy.

Depending on the issues, you may need to provide information on any of the factors that can contribute to poor weight gain. State pamphlets address such problems as nausea, vomiting, poor appetite, not having enough money to buy food, poor absorption of nutrients by the body, infections, emotional stress, eating disorders, and substance abuse.

The woman with poor weight gain may simply need advice on what to eat in order to gain weight. Show her how to properly eat by focusing on healthy eating habits and choosing a variety of foods from the different food groups. Also, rather than trying to completely change her diet, recommend that she try to increase her intake of snacks throughout the day. Some nutritious snack foods that are also high in calories include nuts, peanut butter, milk shakes, whole milk, cheese made with whole milk, yogurt (flavored), pizza, and cheeseburgers. Adding powdered milk or shredded cheese to meals during preparation will also increase the caloric content of the meals.

High Maternal Weight Gain

Nutrition Risk factor 133 (High Risk): High Maternal Weight Gain

Defined as: any weight gain which falls above the appropriate curve on the Prenatal Weight Gain Chart. If the plot falls above the top line, the '133 - High Maternal Weight Gain' box is checked on the Anthropometric panel to assign this risk factor.

Gaining too much weight during pregnancy is an indicator of nutritional risk. Women who have high weight gain during pregnancy often give birth to high birth weight infants. If the infant is too large there is significant risk of injury to the woman and infant during delivery. Too much weight gain during pregnancy and high birth weight of the infant increases risk of obesity during childhood and later in life. High maternal weight gain is associated with other complications of pregnancy including high blood pressure, gestational diabetes, preeclampsia, and eclampsia. Women who gain extra weight in pregnancy also have extra weight to lose after delivery. If extra weight is not lost after delivery, a woman may enter a subsequent pregnancy overweight.

This risk factor applies to all pregnant women regardless of their weight category (low, normal, overweight, obese). It does not apply to multi-fetal pregnancies (twins, triplets, etc.).

Your Role

Follow the normal protocol for pregnancy first. Excessive weight gain may be caused by eating too many calories for the amount of activity the person engages in. However, excessive weight gain during pregnancy may result from edema or fluid retention associated with preeclampsia. Identifying the cause of excessive weight gain may be difficult, but it is necessary for determining whether medical or dietary management is needed. Rapid weight gain is a high-risk condition. This woman should be seen by the WIC high-risk counselor as soon as possible.

Refer to the WIC High Risk Counselor for high risk counseling within 30 days.

Summary

The Prenatal Weight Gain Chart serves as a visual aid for WIC staff throughout a participant's entire pregnancy. Staff can easily see on the chart patterns of weight gain during pregnancy and can be better prepared to offer appropriate education and counseling. The chart may serve as a teaching device for the participant to help explain weight recommendations.

A pregnant woman who is not gaining enough weight or gaining weight too rapidly should be referred to the WIC RD/RN, because adequate weight gain directly relates to pregnancy outcomes.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1.
 - a. What is the recommended range for weight gain for a normal weight woman during pregnancy?

 - b. What is the recommended range for weight gain for an underweight woman during pregnancy?

 - c. What is the recommended range for weight gain for an overweight woman during pregnancy?

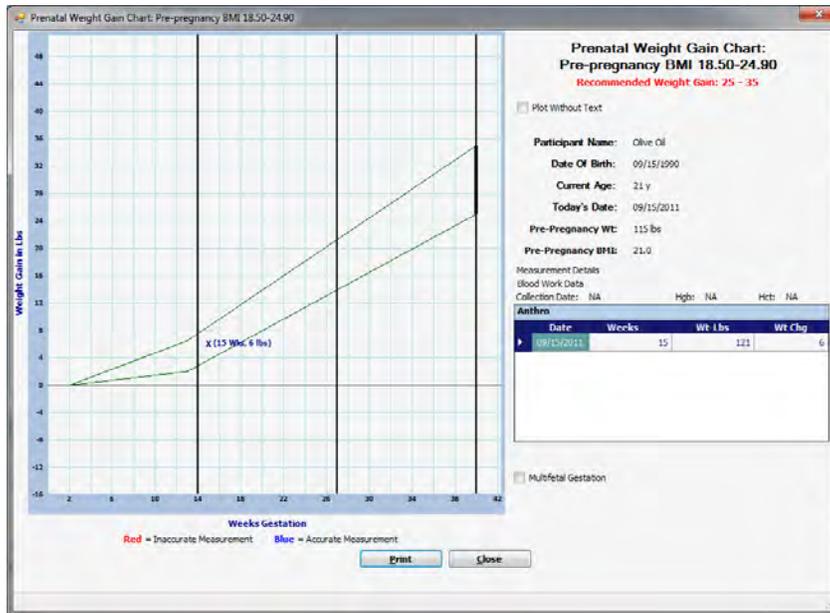
 - d. What is the recommended range for weight gain for an obese woman during pregnancy?

True or False?

2. ___ Pregnancy is an excellent time for an overweight woman to lose weight and she should be encouraged not to gain any weight during her pregnancy.
3. ___ It is important to know a woman's pre-pregnant BMI before determining how much weight she should gain during her pregnancy.
4. Write 2 questions you could ask a pregnant woman who doesn't know her pre-pregnant weight that would help you estimate her pre-pregnant weight:

Section II: Anthropometric Indicators of Nutritional Needs

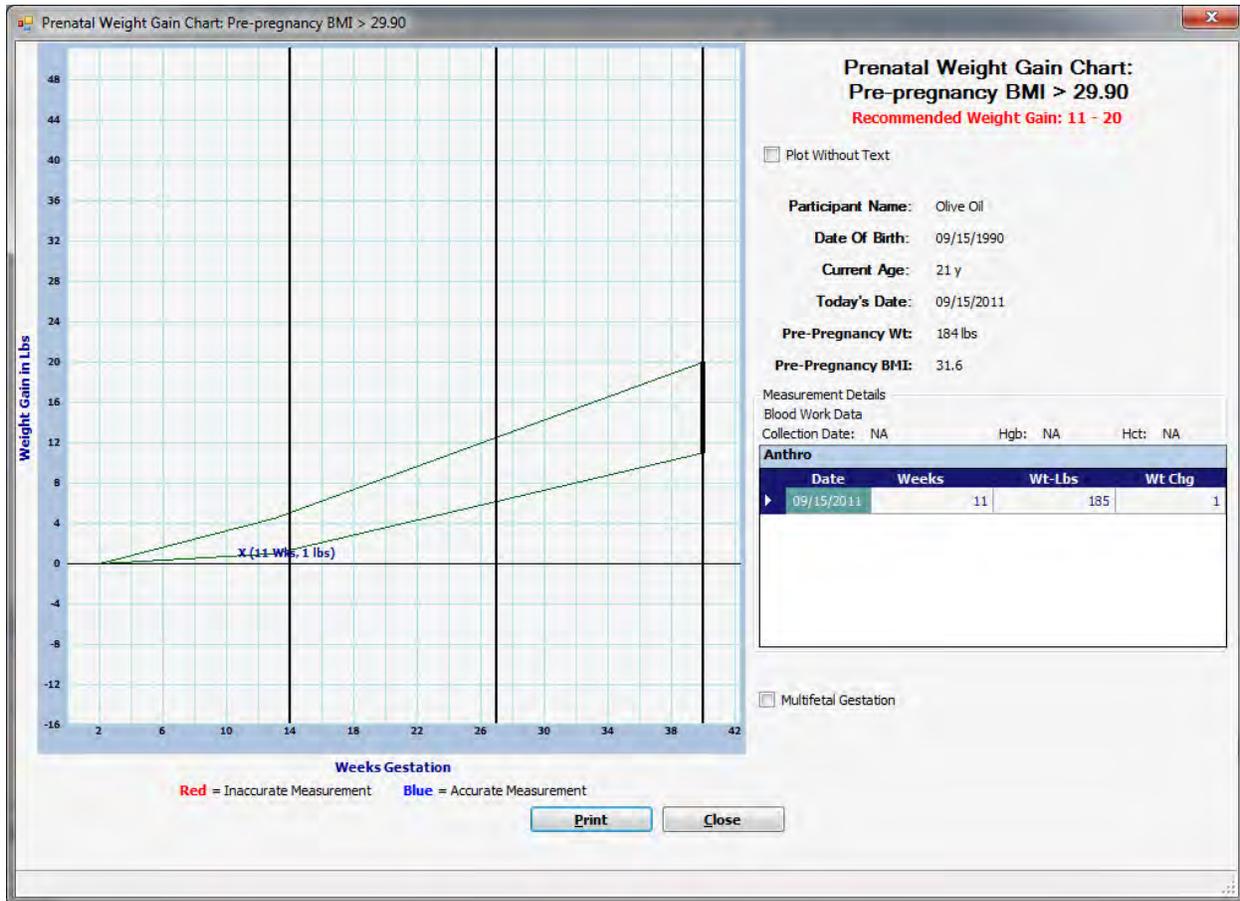
5. Olive Oil comes to your clinic for her first visit today, June 1, (any year). She is 14 weeks pregnant and was 21 years old at conception. Her due date is March 15 (any year). She is 5'2" and weighs 121 pounds at this visit of 14 weeks gestation. She reports that her pre-pregnancy weight was 115 pounds which gave her a pre-pregnant BMI of 21.



- a. Circle which NRF(s) applies to her:
- 101- underweight pre-pregnancy
 - 111- overweight pre-pregnancy
 - 131- low maternal weight gain
 - 133- high maternal weight gain
 - None apply

Section II: Anthropometric Indicators of Nutritional Needs

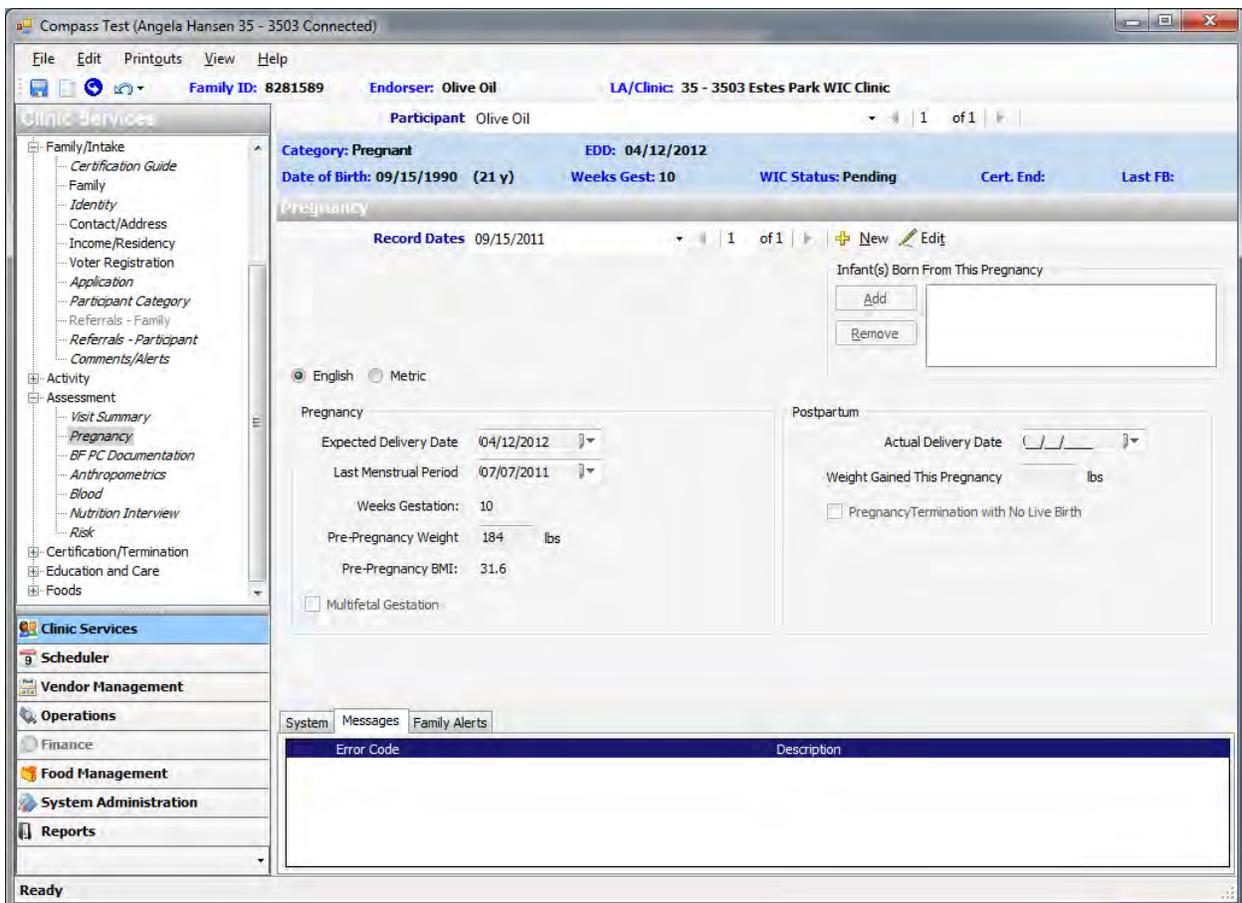
6. Olive Oil arrives at your clinic and reports that she is 11 weeks pregnant and her due date is August 15th. This is the first time she is being seen in the clinic. After measuring and weighing her, you determine she is 5'4" and she weighs 185 pounds at this visit. When asked about her pre-pregnancy weight, she says she has no idea what she weighed before her pregnancy. She tells you she doesn't think she has gained much weight because she still fits into the clothes she wore before becoming pregnant.



- What do you record as her pre-pregnancy weight?
- What range of total weight gain do you recommend for her?
- Circle which NRF(s) applies to her:
 - 101- underweight pre-pregnancy
 - 111- overweight pre-pregnancy
 - 131- low maternal weight gain
 - 133- high maternal weight gain
 - None apply

ANSWERS

1. a. 25-35 pounds
b. 28-40 pounds
c. 15-25 pounds
d. 15 pounds
2. c
3. False. No one should attempt weight loss or maintenance during pregnancy. An overweight woman should gain between 15-25 pounds during pregnancy.
4. False. Large and rapid shifts in weight during the last trimester may mean trouble. Weight gain should be slow and steady.
5. No growth risk factors apply. Olive Oil is a normal BMI and her weight gain is within the expected weight gain range.
6. You would record 184 as the pre-pregnancy weight. This would place Olive Oil at a normal weight gain for her BMI using today's weight of 185. Olive Oil is considered obese because her pre-pregnant BMI is >30, NRF 111. Because Suzy is obese her weight gain recommendation is 11-20 lb.



Section III: Dietary Indicators of Nutritional Need

Nutritional Needs of Pregnancy

While a pregnant woman does not have to eat for two, she does have to eat more calories and certain nutrients than a non-pregnant woman.

Every pregnant woman can make sure that her baby gets the best possible start by eating a balanced diet that includes a variety of food from the different food groups. The **Nutrition Guide for Pregnant Women** (page 89) is a sensible, easy-to-follow guide that encourages women to choose the right amount of foods. The guide includes recommendations about portion sizes and amounts for pregnant women. These guidelines are available to help WIC staff educate the pregnant woman about her diet. For more individualized recommendations, women can visit www.choosemyplate.gov. In general, the Nutrition Guide for Pregnant Women emphasizes:

- Whole grains
- A variety of fruits and vegetables
- Low fat or fat free milk
- Lean protein

Refer to the WIC Basic Nutrition Module for a more detailed explanation.

Nutrition Risk Factor 401 (Low Risk): Failure to Meet Dietary Guidelines for Americans

Participants who meet the eligibility requirements of income, category and residency may be presumed to be at nutritional risk based on failure to meet Dietary Guidelines for Americans. For this criterion, failure to meet Dietary Guidelines is defined as consuming fewer than the recommended number of servings from one or more of the basic food groups (grains, fruits, vegetables, milk products and meat or beans) based on an individual's estimated energy needs.

Note: This risk factor may only be assigned to the individual when a complete nutrition assessment has been performed and when no other risks (subjective or objective) are identified.

Calories

Extra dietary energy is required to meet the increased growth needs of pregnancy. A pregnant woman with a normal pre-gravid weight needs an extra 300 calories each day to meet the special needs of the fetus and the changes in her body. It is important that this increase in calories come from nutrient-dense foods. 300 calories is not a great deal of extra food. A peanut butter sandwich on whole grain bread and an orange or a 12-ounce can of soda and ten slices of French fried potatoes will supply about 300 calories. The sandwich and orange are far superior because along with their 300 calories, they provide far more nutrients (hence are nutrient-dense).

A woman who was underweight before she became pregnant will need to increase her calories about 300 per day to gain the amount of weight needed to assure a healthy pregnancy.

A woman pregnant with twins will need even more calories. Women who are physically active during pregnancy are likely to have energy requirements higher than those of sedentary women.

Other women become less active in pregnancy, choosing to sit rather than stand more often. Studies show these behaviors can be energy-saving, which is why some women may end up gaining more weight than they expected.

Too many calories consumed and not enough energy expended can lead to excess weight gain.

Why are calories so important? Calories provide energy for the body to function. If the extra energy needs are not met, the body uses protein to provide the needed energy. The main function of protein is supposed to be for tissue building (skin, muscles, etc.), not for energy. Tissue building is a critical need of the developing fetus and for changes in the pregnant woman's body. Additional calories allow protein to be available for tissue building and growth.

Protein

As the pregnancy begins, protein is needed to build all the tissues that will support the fetus. This includes the placenta, amniotic fluid, the breast, uterus, and the extra amount of blood that will be needed. Protein is also essential for the growth and development of the fetus. The increased need for protein can be met by adding one additional serving of protein-rich food to the daily meals. Inadequate protein in the woman's diet alone can lead to a low birth weight infant.

Many protein-rich foods also contain other essential nutrients such as iron, vitamin B6, and zinc. Both animals and some plants provide excellent sources of protein. Animal sources of protein such as whole-fat milk and red meats can provide excessive fat if eaten regularly. For normal and overweight women who are gaining adequate weight, encourage consumption of lean animal products, lowfat and nonfat dairy products, and vegetable proteins (such as beans).

Water

The need for water during pregnancy is as important as during the non-pregnant state. Water weight makes up about 2/3 of the weight gained during pregnancy. The body uses water from both food and beverages. The recommendation is to "drink to thirst." In other words, a pregnant woman should drink whenever she feels thirsty.

Most women have some edema or swelling or puffiness in the ankles and feet during the last months of pregnancy. Pregnant women should never use diuretics or "water pills" because these can cause a dangerous imbalance in the sodium and potassium levels in the baby. Edema will be discussed later in this module.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1. What easy-to-follow guide does WIC use to teach pregnant woman about their nutritional needs during pregnancy?

True or False?

2. ___Some women may put on more weight than they expected during pregnancy because they become less active.

3. ___Water should be restricted in pregnancy when a woman has edema.

ANSWERS

1. The Eating Guide for Pregnant Women

2. True

3. False. There is no reason to restrict water during pregnancy.

Nutrition Risk Factor 427D (Low Risk): Inadequate vitamin/mineral supplementation recognized as essential by national public health policy

Consumption of less than 27 mg of iron as a supplement daily. Consumption of less than 150 mcg of supplemental iodine per day. Consumption of less than 400 mcg of folic acid from fortified foods and/or supplements daily by a non-pregnant woman.

Iron Needs During Pregnancy

Of all the minerals needed in greater amounts during pregnancy, iron is the one that is almost impossible to get enough of from the diet alone. The need for iron during pregnancy is very high. Even though a pregnant woman's body conserves iron by not menstruating and absorbing iron at three times its normal rate, she still needs additional iron.

Iron Deficiency During Pregnancy

Let's focus on what happens when there is not enough iron in the body. Iron is needed to form hemoglobin, a protein found in red blood cells. Hemoglobin assists in carrying oxygen to the body cells and carbon dioxide back to the lungs. Hemoglobin combined with oxygen gives blood its red color. If an iron deficiency exists, then sufficient amounts of hemoglobin 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. It is characterized by the production of smaller, light-colored red blood cells. A woman who is anemic can look pale; she may complain of fatigue, listlessness, and irritability. She may also report that her appetite has dropped and that she has head-aches and dizziness.

We can determine if there is enough hemoglobin in the blood by doing either a hematocrit or hemoglobin level test. A hematocrit test measures the amount of red blood cells in the blood after centrifugation. A low hematocrit or low hemoglobin level can indicate an iron deficiency.

In our discussion of weight gain during pregnancy, we mentioned that several pounds are due to an increase of blood volume and other fluids. Because a woman's blood volume increases dramatically throughout pregnancy, her hemoglobin may actually drop during the second and third trimesters. Her red blood cells are essentially diluted. This drop is normal. However, extra iron is required during pregnancy to form new red blood cells which are needed to carry oxygen to and carbon dioxide from the baby's tissues and to provide an extra supply of blood to compensate for the losses at delivery.

Anemia during pregnancy is associated with the delivery of low birth weight infants and an increased risk of infant mortality. Anemia late in pregnancy is a predictor of pre-term delivery. Many women begin pregnancy without enough iron stores to meet the needs of pregnancy. For these reasons, a daily supplement of 27 mg of ferrous iron is recommended during pregnancy.

This supplement should be prescribed by the doctor or other primary care provider and is usually contained in the prenatal vitamin/mineral supplement.

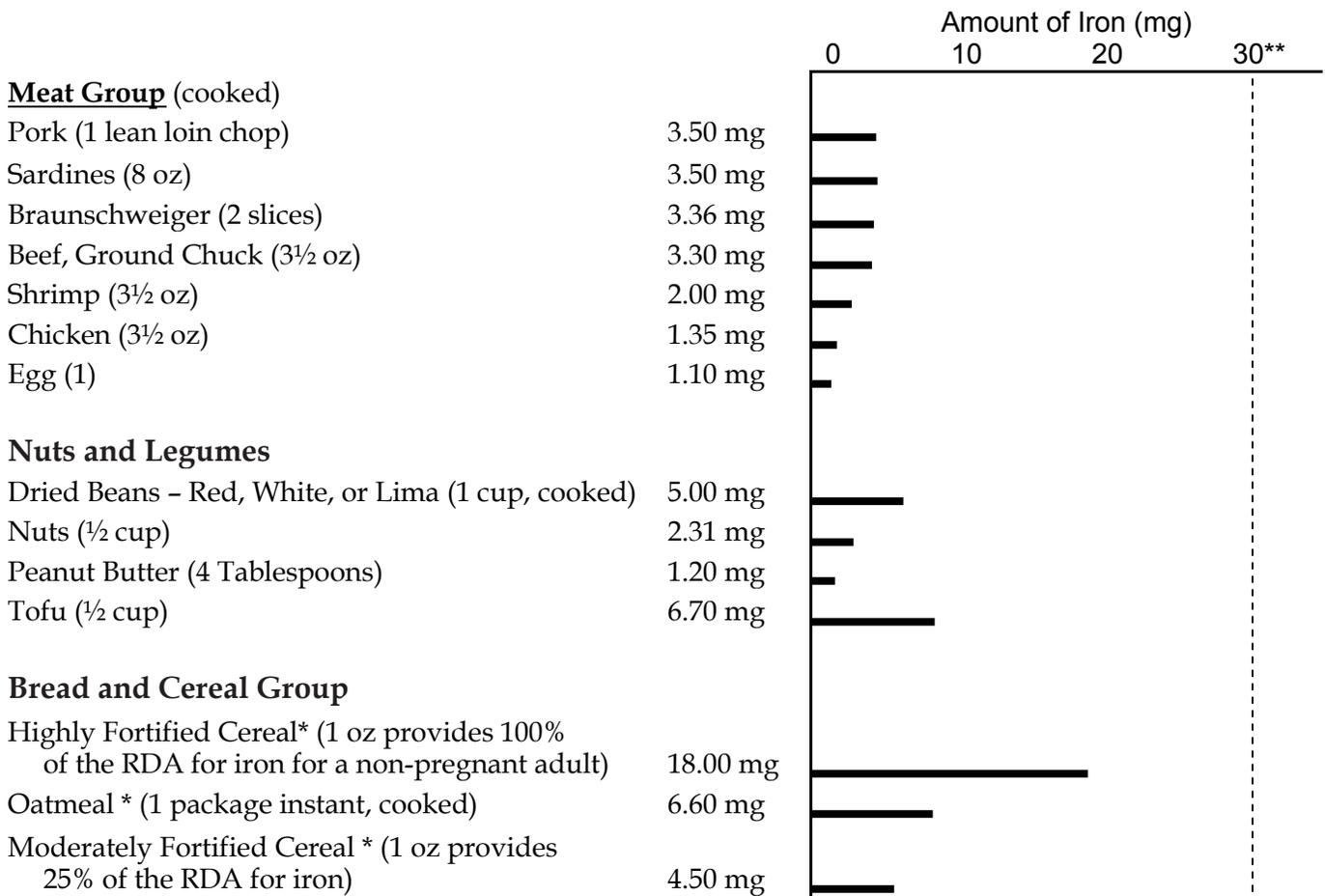
Iron Content in Foods

The following is a list of foods and their iron content. The black bars indicate the milligrams of iron in each food. Note that some foods contain much more iron than others, and that milk is a very poor source of iron. Most of the iron in animal products (heme-iron) is better absorbed by the body than the iron in plant products (non-heme iron). Even though some plant foods may contain more iron than animal foods, the absorption may be much less.

One way to increase the body's absorption of iron from meals containing vegetables and grains is to eat them with a meat or a vitamin C-rich food at the same meal. Thus, it is important to get enough vitamin C each day. Foods high in vitamin C include oranges and orange juice, grapefruit and grapefruit juice, strawberries, cantaloupe, and broccoli. Another way to slightly increase the amount of iron in a person's diet is to cook with an iron skillet. However, taking vitamin C-rich foods with iron supplements does not enhance iron absorption.

Some substances in foods inhibit the absorption of iron including tannins (in tea), phytates (in bran), oxalic acid (in spinach), and calcium. Again, by eating meat or vitamin C at the same meal, you can help limit the effect of these inhibitors.

Meeting the Daily Mark for Iron



Wheat Germ (5 Tablespoons)	2.50 mg	
Enriched Bread (1 slice)	0.77 mg	
Fruit and Vegetable Group		
Prunes (dried, 10)	2.08 mg	
Spinach (½ cup, cooked)	2.00 mg	
Mustard Greens (½ cup)	1.80 mg	
Peas (½ cup, cooked)	1.50 mg	
Cooked Prunes (½ cup)	1.18 mg	
Raisins (⅓ cup)	1.04 mg	
Watermelon (4" x 4" wedge)	1.00 mg	
Collard Greens (½ cup)	0.60 mg	
Milk Group		
	trace	
Other		
Molasses, Blackstrap (2 Tablespoons)	6.40 mg	

*Iron fortification is different for each cereal. READ THE LABEL to find out the amount of iron contained in a box of cereal. For a cereal to be approved by the WIC Program, it must contain a minimum of 28 mg of iron per 100 g of dry cereal. This is equivalent to 8 mg of iron per 1 oz serving of cereal. **The Recommended Daily Allowance (RDA) of iron for a pregnant woman is 30 mg/day.

Your Role

Because a pregnant woman can easily become anemic, it is important to encourage her to eat high-iron foods, as well as take her prenatal vitamin supplement which contains iron. To improve the absorption of iron, it is best to recommend supplements be taken an hour before, or two hours after, a meal with juice or water (not milk, tea, or coffee). If the participant reports that she is nauseated, tell her iron supplements are best tolerated when taken at bedtime.

A history of poor dietary intake of iron, heavy blood loss, or frequent pregnancies is often indicators of iron deficiency. Women with low hematocrit or hemoglobin values should receive education on the recommendations for iron supplementation and dietary sources of iron. They should be referred to their health care provider if they are not receiving iron in either a prenatal vitamin/mineral supplement or an individual iron supplement.

Iodine Needs During Pregnancy

Iodine is an essential element that enables the thyroid gland to produce thyroid hormones. During pregnancy and lactation the iodine requirement is sharply elevated. The RDA for iodine during pregnancy is 220 mcg (micrograms) and 290 mcg during lactation. When a woman with iodine deficiency becomes pregnant, she risks miscarriage, stillbirth and mental retardation in her baby. Even what's considered a mild iodine deficiency can hamper the growth of children's brains, reduce their IQ, and cause learning disabilities. Children with iodine deficiency and its resulting hypothyroidism can suffer from stunted growth, with

mental retardation and problems in movement, speech or hearing. Worldwide, iodine deficiency actually affects some 50 million children. Taking too much iodine has side effects as well. It is not recommended to take more than the recommended amount of iodine.

While iodine deficiency was not common in the U.S., it is again on the rise here as well. Nutrition studies from the early 1970s found that just 2.6% of US citizens had iodine deficiency. Studies conducted between 1988 -1994 found that 11.7% were iodine deficient. Of particular concern is the fact that the percentage of iodine-deficient pregnant women has increased from 1% in 1974 to 7% in 1994. Maternal iodine deficiency is particularly dangerous to a developing fetus. The researchers do not have a cause for the drop in levels, though it is suspected that reduced salt in the diet, plus a reduction in the use of iodine as a food ingredient, may be responsible. This trend, however, may necessitate concerted efforts to increase iodine levels in people at risk of deficiency even in the U.S.

The iodine content of foods is dependent on the amount of iodine in the soil. Seafood contains iodine from seawater. Dairy is also a good source of iodine in the US because iodine is added to cattle feed. Because the iodine content of foods is dependent on many factors, the content may vary. The values of iodine in the foods listed below are approximate.

Food	Serving	Iodine (mcg)
Iodized Salt	1 gram (1/4 tsp = 1.5 gm)	77
Cod	3 oz	99
Shrimp	3 oz	35
Tuna, canned in oil	3 oz (1/2 can)	17
Cow's Milk	1 cup	56
Potato with peel, baked	1 medium	60
Seaweed	1/4 oz dried	Variable, may be greater than 4,500 mcg

Your Role

In 2010 iodine was included to the WIC Nutrition Risk Factors as a recommended supplement for pregnant and breastfeeding women. The specific risk added to the Nutrition Risk Factor 427d is **“consumption of less than 150 mcg of supplemental iodine per day by pregnant women.”**

The American Thyroid Association recommends that women receive prenatal vitamins containing 150 mcg of iodine daily during pregnancy and lactation. The iodine content of prenatal vitamins in the United States is not mandated, thus not all prenatal vitamins contain iodine. Pregnant and breastfeeding women should be advised to review the iodine content of their vitamins and discuss the adequacy of the iodine with their health care provider. During

a WIC appointment, if the client does not know the iodine content of her prenatal vitamins, advise the client to discuss the adequacy of the iodine content of her prenatal vitamins with her provider. The client should only be assigned the Nutrition Risk Factor 427D if it is known that the client's prenatal vitamin does not contain iodine.

Folic Acid Needs of Women

Folic Acid, or folate, is a B vitamin that is necessary for normal cell growth and healthy blood. Folic acid also prevents up to 50% of neural tube birth defects (NTD), such as spina bifida. Any woman who does not get enough folate has a greater chance of having a baby with NDT.

The neural tube forms within the first month of development. By days 22 and 23 of the pregnancy, usually before the woman knows she is pregnant, the neural tube has formed and closed. Once this process is completed, there is no way to correct it.

Neural Tube Defects (NTDs) and Folic Acid: Questions & Answers

Q: What are NTDs?

A: Serious birth defects that affect the brain and spinal cord.

Q: Who is at risk for having a baby with NTDs?

A: Any woman of childbearing age.

Q: What causes NTDs?

A: Researchers are not exactly sure, however, inadequate nutrition (especially folate), poverty, diabetes, obesity, drugs, and alcohol use have been linked.

Folate-rich Foods

8 oz orange juice	75 mcg
1 cup dark leafy greens	100 mcg
8 strawberries	100 mcg
½ cup cooked (dried) beans	100 mcg
1 cup Multi-grain Cheerios (enriched)	400 mcg

Are there any health risks associated with folate supplements? Folate is safe, but it is recommended that total daily intake from supplements be limited to less than 1,000 micrograms

Folic Acid is now part of the U.S. fortification program and is included in bread, pasta, rice, breakfast cereals and other grain products labeled as "enriched." However, it is very difficult to get enough folate by diet alone. The Institute of Medicine, a prestigious panel of medical experts, issued a recommendation in 1998 stating that all women of child-bearing age should consume 400 micrograms of synthetic folic acid daily and eat a healthy, varied diet. The recommended level is increased to 600 mcg during pregnancy.

It is important to remember that folic acid will not prevent 100% of the NTDs, but it can prevent many of them. Women with a history of having a baby with an NTD are at greater risk for another and should consider taking 4,000 mcg, or ten times the usual amount. Foods naturally rich in folate include green, leafy vegetables, such as collards, spinach and romaine lettuce; fruits such as oranges, strawberries, and kiwi; orange juice; and dried beans and peas.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1. What two nutrients are necessary for healthy blood and need to be supplemented during pregnancy?

- a. _____
- b. _____

2. Describe some of the symptoms of a woman who has iron-deficiency anemia.

3. Fill in each blank with the correct word:

- a. A low _____ level can indicate iron deficiency.
- b. Vitamin _____ helps the body absorb iron.

4. List 5 iron-rich foods:

5. When is it most important that a woman has an adequate intake of folic acid to prevent neural tube defects?

True or False:

6. ____ If a woman does not know if her prenatal vitamins contain iodine, she should check because not all prenatal vitamins contain iodine.

ANSWERS

1. Iron and Folic Acid
2. A woman who is anemic can look pale; she may be tired, listless, irritable; she may report headaches, dizziness, and a drop in appetite.
3.
 - a. hemoglobin or hematocrit
 - b. C
4. Look at the chart on page 28 for those foods which are high in iron.
5. Within the first month of pregnancy (and preconceptually)
6. True. Women should check the iodine levels in their prenatal vitamins because not all prenatal vitamins contain iodine.

Calcium Needs During Pregnancy

Calcium is important for everyone, but especially for the pregnant woman and her baby. Calcium is needed for strong bones and teeth, blood clotting, and enzyme activity. It is also essential for the nerves, heart, and muscles to develop and work properly.

The fetus is totally dependent on the mother for calcium needs. Fortunately, during pregnancy a woman can efficiently absorb calcium from the foods she eats.

The calcium recommendations for pregnancy are 1,000 mg/day for women 19 years and older, and 1,300 mg/day for women less than 18 years. One cup of milk (whole, 2%, 1%, or fat-free) has about 300 mg of calcium. Refer to the table below for a list of calcium containing foods.

Approximate Calcium Content of Various Foods

Food	Serving Size	Calcium (mg)
Total ® cereal	¾ cup	1000
Calcium-fortified orange juice	8 oz	350
Low fat yogurt	1 cup	300
Cheddar cheese	1.5 oz	300
Fat free milk	1 cup	300
Fortified soy milk	1 cup	299
Canned sardines with bones	3 oz	265
Firm tofu, set with calcium salts	1 cup	200
Calcium-fortified bread	1 slice	200
Blackstrap molasses	1 Tbsp	170
Pudding, made with milk	½ cup	150
Spinach, cooked	½ cup	120
Turnip greens, cooked	½ cup	100
Almonds	¼ cup	90
Sesame seeds	1 Tbsp	90
Ice cream	½ cup	85
Low fat cottage cheese (1% milk fat)	½ cup	80
Parmesan cheese	1 Tbsp	70
Pinto beans, cooked	½ cup	50
Okra, cooked	½ cup	50
Corn tortillas, made with lime-processed corn	2 tortillas	40
Broccoli, cooked	½ cup	35

*Actual calcium varies among brands, especially for tofu, yogurt, and other processed foods. Read the labels to determine calcium levels in various brands. Source: USDA Nutrient Database for Standard Reference.

For a few women it is not always easy to meet the recommended daily requirements from dairy products. Some women do not like milk. It is necessary, then, not only to stress the importance of calcium, but also to offer food choices other than regular milk that will help meet calcium needs. Chocolate milk and milk shakes are acceptable alternatives for many women who do not like the taste of milk. Adding cheese or powdered milk to casseroles, meat loaves, mashed potatoes, and baked foods during preparation may also help satisfy calcium requirements.

Lactose Intolerance

Lactose intolerance is a type of food intolerance – it’s not an allergy. People should talk to their doctor about their symptoms rather than self-diagnosing the condition.

Woman with lactose intolerance may limit their intake of milk because their body cannot digest the main sugar (lactose) in milk. Depending on the degree of lactose intolerance, people may be able to eat a variety of lactose-containing foods. Some of the symptoms of lactose intolerance include gas, bloating, and diarrhea. Here are some tips to increase tolerance:

- Offer small servings of lactose-containing foods versus large servings.
- Eat dairy products with other foods instead of on an empty stomach.
- Eat active-culture foods (such as yogurt). The “friendly” bacteria in the cultures help break down lactose.
- Use enzyme tablets and lactose-reduced milks. These are available and can greatly increase tolerance. (The WIC Program provides lactose-reduced food packages).
- Heated milk may be easier to digest than cold milk.
- Aged or hard cheeses are lower in lactose.

There are other foods that contain calcium and don’t contain lactose such as greens, baked beans, canned fish with bones, and calcium-fortified foods (e.g., orange juice and soy milk).

The following chart on calcium equivalents illustrates the various food sources of calcium and the portion sizes to be eaten in order to receive roughly the same amount of calcium that is contained in one cup of milk.

Vitamin/Mineral Supplements

During Pregnancy

What about taking vitamins during pregnancy? The Institute of Medicine concludes that routine supplementation of any nutrient, except iron, is unnecessary. A carefully chosen diet of whole grains, fruits, vegetables, protein sources, and dairy products or other calcium sources can provide adequate nutrition during pregnancy without supplementation. However, because many individuals on WIC consume diets inadequate in vitamins and minerals, prenatal multivitamin-mineral supplementation may be needed as an addition to a healthy diet.

Calcium Equivalent to One Cup (8 oz) of Milk (~300 mg)	
Milk and Milk Products:	Serving Size:
Milk (whole, 2%, 1%, fat-free, buttermilk)	1 cup
Yogurt	1 cup
Cheese	1½ oz natural or 2 oz processed
Powdered milk	½ cup
Evaporated milk	½ cup
Cottage cheese	1½ cups
Cream soup	2 cups
Pudding or custard	1 cup
Ice cream	1½ cups
Other Food Sources:	Serving Size:
Soy milk, calcium-fortified	1 cup
Tofu processed with calcium salt	2½" cube
Broccoli, cooked	3 cups
Dried beans, cooked	3 cups
Almonds	1 cup
Sardines	3 oz
Blackstrap molasses	2 Tbsp
Corn tortillas processed with lime	7 medium

Iron needs to be supplemented because the increased requirement during pregnancy is too great to be met by diet alone. For more information on iron, refer back to the section “Iron Needs During Pregnancy.”

Nutrient Supplementation in Special Circumstances

For pregnant women who consume a balanced diet, iron is the only routinely supplemented nutrient. However, for pregnant women who do not consume an adequate diet on a regular basis and those at high risk such as women carrying more than one fetus, heavy smokers, and substance abusers, a daily multivitamin/mineral preparation is recommended starting the second trimester. The supplement should contain the following nutrients (typically contained in prenatal supplements):

Iron:	27 mg	B₆:	2 mg
Zinc:	15 mg	Folate:	.3 mg
Copper:	2 mg	Vitamin C:	50 mg
Calcium:	250 mg	Vitamin D:	5 micrograms (200 IU)
Iodine:	150 mcg		

Other Considerations:

- Complete vegetarians (pregnant women who consume no animal products):
 - Vitamin D: 10 micrograms (400 IU) and
 - Vitamin B₁₂: 2.0 micrograms daily
- Women <25 years of age with calcium intake <600 mg
 - 600 mg calcium daily

Anemic Women

When anemic women are given therapeutic levels of iron (>30 mg/day), supplementation with 15 mg of zinc and 2 mg of copper is recommended because the iron may interfere with the absorption and utilization of those necessary trace elements.

Excessive Intake of Dietary Supplements, Vitamins or Minerals, as an Indicator of Nutritional Risk

Most nutrient toxicities occur through excessive supplementation of particular nutrients, such as Vitamin A, B-6 and niacin, iron and selenium. Large doses of vitamin A may cause birth defects. Besides nutrient toxicities, nutrient-nutrient and drug-nutrient interactions may adversely affect health.

There are times when women, in an effort to do the best they can for their health and the health of their unborn child, may take additional dietary supplements such as vitamins, minerals, or botanical (including herbal) remedies or teas. Yet certain dietary supplements can be toxic to the mother and/or her fetus when taken in excess amounts. Toxic or unsafe levels of vitamins and minerals vary greatly from as little as a couple of times the Recommended Dietary Allowance (RDA) to many times the RDA.

For many vitamins and minerals there is inadequate research to determine toxic amounts. Many herbal and botanical remedies have cultural implications and are related to beliefs. The

incidence of herbal use in pregnancy ranges from 7-55% with Echinacea and ginger being the most common. Some botanical (including herbal) teas may be safe; however others have undesirable effects during pregnancy. Herbal supplements such as blue cohosh and pennyroyal stimulate uterine contractions, which may increase the risk of miscarriage or premature labor. The March of Dimes and the American Academy of Pediatrics recommend cautious use of teas because of the lack of safety testing in pregnant women.

In general, it is safest to stay close to the RDA when taking daily supplements. Additionally, dietary supplements do not take the place of a nutritionally adequate diet. Food provides the full variety of nutrients as well as fiber and other healthful substances.

Your Role

During the nutrition interview, ask if the woman is taking a daily prenatal vitamin as well as any other vitamins and minerals. If the woman replies “yes” to the other vitamins and minerals, ask questions to learn if she is taking a potentially excessive amount of a vitamin or mineral. For instance:

- Why are you taking this supplement?
- Who recommended that you take it?
- Have you spoken with your prenatal provider about taking it?
- How often do you take it?
- How many do you take at once?

Intake of additional daily supplements that is not recommended by a physician should be discouraged. Some reasons to discourage this are that safe upper limits for many vitamins and minerals are not yet known, and dietary supplements are not regulated by the Food and Drug Administration and, therefore, their safety for use in pregnancy has most likely not been well researched. Almost nothing is known about the long-term metabolic effects of consuming these substances. Advertising claims made for many supplements are not proven by scientific research.

Recommend to the woman that she stop taking the supplement until she discusses it with her prenatal provider at her next visit.

Nutrition Risk Factor 427A (Low Risk): Consuming dietary supplements with potentially harmful consequences

Examples of dietary supplements which when ingested in excess of recommended dosages may be toxic or have harmful consequences:

- Single or multiple vitamins
- Mineral supplements
- Herbal or botanical supplements/remedies/teas

Individual Dietary Preferences and Concerns

Many factors play a role in shaping a person’s food habits, and these factors must be considered if dietary counseling is to be realistic and appropriate for a participant. WIC staff

must make every effort to be knowledgeable about the ethnic food habits as well as the individual preferences and practices of the WIC participants they serve. It is important to identify the participant's favorite foods, and to offer her ways to incorporate these foods into a balanced diet.

A person's income level, cultural background, religious beliefs about food, climate, and philosophical attitudes toward food may influence his or her eating habits. Recognize that a woman's food habits during pregnancy may reflect information that has been transferred along generations. For example, among Mexican-American women, certain food may be eaten to modify a complication of pregnancy while other foods are avoided during pregnancy. Some women avoid milk because they believe milk will make their infant grow large and be difficult to deliver.

Participants with lower incomes require special attention since a nutritionally adequate diet is difficult to obtain when there is not enough money to purchase the necessary foods. Efforts should be made to provide education and information on topics such as budgeting, shopping, and meal planning. For example, the pamphlet "Save Money by Shopping Smart," available in English and Spanish from the Colorado WIC Program can be used or contact your local extension agency for other materials. Refer low income participants to other food programs such as Food Stamps and community food banks.

Restrictive Diets

Pregnant women consuming highly restrictive diets are at greater risk for nutrient deficiencies. Restricted intake during pregnancy may lead to inadequate prenatal weight gain, increased risk of birth defects, suboptimal fetal development leading to chronic health problems for the unborn infant. Examples of nutrients associated with negative health outcomes are:

- Low iron intake and maternal anemia, increased risk of preterm birth or low infant birth weight
- Low folic acid and neural tube defects

Some participants may be vegetarians with religious and/or personal philosophical beliefs about food.

Nutrients & food sources to focus on for vegetarians:

- Protein: beans, nuts, nut butters, peas, soy products (tofu, tempeh, veggie burgers). Milk products and eggs are also good sources for the some vegetarians
- Iron: iron-fortified breakfast cereals, spinach, kidney beans, black-eyed peas, lentils, whole wheat breads, peas, and some dried fruits (dried apricots, prunes, raisins)
- Calcium: fortified breakfast cereals, soy products (tofu, soy-based beverages), calcium-fortified orange juice and some dark green leafy vegetables (collard greens, turnip greens, bok choy, mustard greens). Milk products are excellent sources of calcium for some vegetarians
- Zinc: beans, zinc-fortified breakfast cereals, wheat germ, and pumpkin seeds. Milk products are a zinc source for the lacto vegetarians.

- Vitamin B12: milk products, eggs and vitamin B12 fortified foods such as breakfast cereal, soy based beverages (i.e., soy milk) and veggie burgers.

The vegan diet, which excludes all animal products, can be used successfully in pregnancy, but demands close assessment, counseling, and surveillance to ensure nutrient adequacy. Unless a vegan has a good understanding of a healthy vegan diet, several nutrients are of concern. Vegetarian diets are often high in fiber and vegan diets are often very low in fat, making it potentially difficult for the woman to meet the caloric needs of pregnancy.

With the epidemic of obesity, treatment by gastric bypass surgery has increased more than 600% in the last 10 years and has created nutritional deficiencies. Gastrointestinal surgery promotes weight loss by restricting food intake and, in some operations, interrupting the digestive process causing malabsorption of nutrients. Examples of gastrointestinal surgery are gastric banding, Roux-en-y gastric bypass and Biliopancreatic diversion.

Your Role

Collect information, eliciting the participant's perspective of her diet. Assess the participant's diet by doing a thorough nutrition assessment. A 24-hour diet recall can also be used to assess the woman's diet. Respond to her perspective without criticism. Keep in mind that, generally, the more restrictive the diet, the greater the nutritional risk. Summarize what the participant is doing right and suggest areas for improvement. Provide reasons why changes may be beneficial to the infant and mother. Build a bridge between the participant and the WIC Program perspectives. Provide the participant with a handout that reinforces information discussed.

Nutrition Risk Factor 427B (Low Risk): Consuming a diet very low in calories and/or essential nutrients; or impaired caloric intake or absorption of essential nutrients following bariatric surgery

Definition includes:

- Strict vegan diet
- Low-carbohydrate, high-protein diet
- Macrobiotic diet
- Any other diet restricting calories and/or essential nutrients

SELF-CHECK; PRACTICE YOUR KNOWLEDGE

1. List two recommendations you might make to a woman who states she doesn't like the taste of milk.

2. List three recommendations you might make to a woman who has lactose intolerance.

3. Name at least three factors which can influence an individual's eating habits and preferences.

True or False?

4. ___ If a pregnant woman takes a vitamin/mineral supplement, it is not important that she eats a well-balanced diet.

ANSWERS

1. Try adding:flavoring to milk (chocolate, strawberry) powdered milk to casseroles and other foods
2. Offer small servings of lactose-containing foods.
Eat dairy products with other foods.
Active-culture foods (such as yogurt) help break down lactose.
Enzyme tablets and lactose-reduced milks are available and can greatly increase tolerance.
(The WIC Program provides lactose-reduced food packages.)
Heated milk may be easier to digest than cold milk.
Aged cheeses are lower in lactose.
3. Any 3 of the following factors: income level, cultural background, religious beliefs, climate, philosophical attitudes about food.
4. False. Vitamin/mineral supplements cannot take the place of a nutritionally adequate diet.

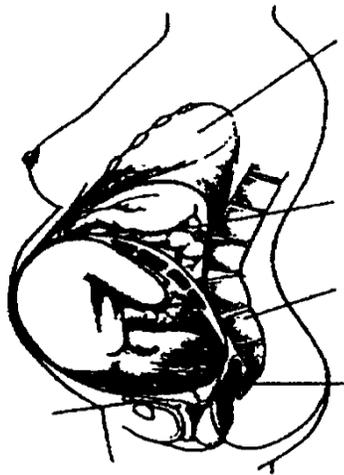
Section IV: Special Concerns During Pregnancy

Now that you've reviewed the three trimesters of pregnancy and the nutrients needed to support both the mother and fetus during this special time, let's look at some of the typical concerns that many pregnant women have during their pregnancy. Nausea and vomiting, heartburn and indigestion, and constipation are all common concerns. Other areas of concern during pregnancy are oral health and avoiding listeria bacteria .

Morning Sickness or Nausea

One of the most notorious problems during pregnancy is nausea and vomiting, or morning sickness. It often occurs during the early months of pregnancy and usually disappears after the first trimester. The following pages contain some counseling suggestions to share that may be helpful to women suffering from morning sickness or nausea. Morning sickness does not always occur in the morning; many women experience nausea only in the evening or throughout the entire day. Nausea can be caused by strong odors and flavors, and particular foods. Some foods that often cause nausea include fried, fatty, or spicy foods and drinks with caffeine like coffee and tea. Some odors that often cause nausea are cigarette smoke, gasoline, perfumes, and many cooking odors.

Some women vomit during pregnancy. The vomiting can be so severe and happen so often that the pregnant woman may become dehydrated or lose weight. If severe enough, this condition is called hyperemesis gravidarum. It requires medical attention and is a nutrition risk factor.



Crowded bladder may cause frequent and/or urgent urination.

Crowded lungs may cause shortness of breath.

Crowded intestines may cause bloated feeling, heartburn, and feeling of nausea

Crowded spine may cause backache and fatigue.

Crowded rectum may cause constipation.

Nutrition Risk Factor 301 (High Risk): Hyperemesis Gravidarum

Defined as: severe nausea and vomiting to the extent that the pregnant woman becomes dehydrated and acidotic as diagnosed by a physician and self-reported by the participant.

Your Role

For women with nausea, you can make these suggestions:

- Before going to bed - Be sure to have fresh air in the room. Place some dry, ready-to-eat cereal, crackers, or dry bread (e.g., toast) within reach of the bed.
- Before getting up in the morning - Eat some of the dry bread or cereal. A little jelly on the bread may make it taste better, but do not use butter or margarine.
- When getting up - Get up very slowly, take several minutes. Avoid sudden movements when getting out of bed.
- For meals - Eat several small meals a day instead of three large ones. Women are more likely to feel nauseated when their stomach is empty.
 - Sometime during the day try to eat a regular meal, but do not overeat.
 - Eat slowly and try to eat while relaxed.
 - The smell or taste of fresh lemon can sometimes help with nausea.
 - Open a window while you cook to get rid of the odor of cooking foods.
- Foods to avoid - Fats and greasy foods tend to upset the stomach. For this reason, avoid fried foods and foods cooked with grease, oils, or fatty meats. Minimize the following foods: butter, margarine, gravy, bacon, salt pork, oils, mayonnaise, salad dressings, pie crusts, pastries. Strong-smelling foods, such as cooked food, can increase nausea. Try preparing cold foods such as sandwiches or cereal. Highly-seasoned foods such as those cooked with garlic, onion, pepper, chili, and other spices may increase nausea. Eat foods that are lightly-seasoned.

Refer to the WIC High Risk Counselor for high risk counseling within 30 days.

Counseling Focus

While it's true that pregnancy benefits by better eating habits, eating well with frequent vomiting can be more harmful overall. So help the participant learn how to cope with the nausea. When feeling nauseated, she should ask herself:

What food or beverage would ease this nausea? Something salty, sour, bitter, tart, sweet, crunchy/lumpy, soft/smooth, mushy, hard, fruity, wet, dry, bland, spicy, aromatic, hot, cold, thin, or thick?

Interestingly, some new food ideas may occur to her. These ideas may consist of a novel food or one that falls into the "junk" food category. At this point in time, "junk food" can contribute needed calories and she can resume a healthier diet when she feels better. Many times nausea can be kept to a minimum when she is able to eat the food almost at the moment she decides she wants that food.

Heartburn

Heartburn happens when the acidic digestive juices in the stomach back up and cause a burning feeling in the chest and throat. This usually happens during meals. It is common during the second and third trimesters. It is called heartburn because if it is felt near the heart, but it has nothing to do with the heart.

One cause of heartburn is the pressure on the stomach by the growing uterus and fetus. Another cause of heartburn is that the hormones of pregnancy relax the top part of the stomach so that the stomach contents flow back into the esophagus.

Over-the-counter drugs (such as antacid tablets) should not be used unless prescribed by a doctor. Instead, offer the following suggestions to a pregnant woman that may help relieve her heartburn:

- Eat 5 or 6 small meals per day.
- Limit fatty and fried foods.
- Limit or avoid coffee if it triggers heartburn.
- Avoid spicy foods.
- Wear clothes that are loose around the waist.
- Do not lie down when heartburn occurs because this can make it worse – instead walk after eating, or at least remain seated for awhile. Avoid eating close to bedtime.

Constipation

Constipation may occur during pregnancy due to the normal hormonal changes of pregnancy, which makes the food move more slowly through the intestines. Lack of exercise or too little fiber or fluids in the diet can also promote this condition. Sometimes women who receive supplements with higher amounts of iron complain of constipation. Never encourage the use of over-the-counter drugs, e.g., laxatives, to relieve constipation. Instead offer the following suggestions which may help relieve constipation.

- Eat more fruits and vegetables, including the skins. Also try dried fruits or prune juice.
- Choose whole grain cereals and breads.
- Participate in light exercise regularly; daily if possible.
- Eat meals at regular times.
- Drink more liquids. Liquids include water, milk, fruit juice, and soup. Select these liquids rather than pop or other low nutrient-dense fluids.

Fluid Retention and Swelling

Almost 80 percent of all pregnant women have swollen ankles and feet some time during the third trimester. The swelling is called edema.

As the fetus grows, it puts pressure on the blood vessels that lead to the mother's legs. This causes the fluid from the blood to move into the surrounding tissues. This extra fluid flows to the lowest part of the body and collects in the ankles and the feet.

This may cause a woman to gain extra weight. It is not caused by eating too much food or calories.

In the past women were often told to restrict their intake of sodium (as salt) and to take diuretics (drugs that increase water and sodium loss from the body) to reduce the fluid retention and swelling. We know now the harm of this advice. Pregnant women actually have a slightly increased need for sodium because of the expanded blood volume.

Sodium is a mineral that is required by the body and must be supplied in the diet. Restricting sodium or using diuretics during pregnancy could result in a sodium deficiency in the pregnant woman. These practices should, therefore, be discouraged. Sodium restriction is no longer recommended except in cases involving other physical problems.

Excessive sodium use, however, is not acceptable for anyone, including the pregnant woman. A diet of primarily natural foods can be safely salted "to taste." Advise the participant with a diet containing large amounts of sodium that these foods should be used in moderation. Some foods with a high sodium content include potato chips, corn chips, canned soups, salad dressings, salted nuts, ham, luncheon meats, and bacon.

To help with the discomfort of swelling, recommend that women put their feet up throughout the day and wear comfortable shoes and loose-fitting clothes.

Swelling or edema in other parts of the body, such as the eyelids, could be a sign of a more serious problem called Pregnancy-Induced Hypertension (PIH). Women with PIH need immediate medical attention.

Pregnancy-induced Hyper-tension (PIH):

A condition characterized by acute elevation of blood pressure, edema, and proteinuria. Sometimes occurs in the latter half of pregnancy.

Nutrition Risk Factor 345 (High Risk): Hypertension and Prehypertension

Chronic or pregnancy induced. Refer to the WIC High Risk Counselor for high risk counseling within 30 days.

Oral Health

Oral disease can negatively affect the outcome of a pregnancy. Women who have periodontal disease are more likely to give birth prematurely or to a low birth weight infant.

Your role in WIC is to encourage the pregnant woman to:

- Brush teeth twice a day.
- Eat a balanced diet.
- Stop smoking.
- Have regular dental check-ups.

Nutrition Risk Factor 381 (Low Risk): Oral Health Conditions

Assigned for a woman when chronic dental or oral problems are present, such as:

- Severe tooth decay, periodontal disease, tooth loss, and/or ineffectively replaced teeth which impair the ability to ingest food in adequate quantity or quality
- Gingivitis of pregnancy

Food Safety

Pregnant women are especially at risk for food-borne illness due to a weakened immune system. This is natural and important in order for the unborn child to thrive within the mother's body, however a weakened immune system makes the pregnant woman more susceptible to food borne illnesses. In addition, the unborn infant is also at high risk because of their immature immune system. Women can become infected with bacteria, viruses, and parasites from eating contaminated foods. The symptoms are usually vomiting, diarrhea, and abdominal pain, but neurological and "non-specific" symptoms may occur as well. Food borne illness during pregnancy can cause miscarriage, premature delivery, health problems and even death for both the mother and unborn child.

Types of food borne risks:

Listeria

Listeria is a bacteria that can be transmitted to the unborn child through the placenta even if the mother is not showing signs of illness. Listeria is found in foods such as soft cheeses and unpasteurized milk products. It is also found in undercooked poultry (like chicken), hot dogs, and sandwich meats. It can result in miscarriage, life-threatening blood infections, meningitis or even death of the newborn infant.

Toxoplasma

Toxoplasma is a parasite found in undercooked meat unwashed fruits and vegetables, cat-litter boxes or outdoor places where cat feces can be found. It can cause blindness, mental retardation, and hearing loss in babies. Some children can develop brain or eye problems years after birth.

Methylmercury

Methylmercury is a metal found in certain fish and shellfish such as sword fish, tilefish, king mackerel, shark, oysters, clams, mussels and scallops. In addition, albacore "white" tuna also has some methylmercury. Exposure to methylmercury can harm the unborn child's developing nervous system.

Nutrition Risk Factor 427E (Low Risk): Pregnant women ingesting foods that could be contaminated with pathogenic microorganisms

Definition includes:

- Raw fish or shellfish, including oysters, clams, mussels and scallops
- Refrigerated smoked seafood, unless it is an ingredient in a cooked dish, such as a casserole.
- Raw or undercooked meat or poultry
- Hot dogs, luncheon meats (cold cuts), fermented and dry sausage and other deli-style meat or poultry products unless reheated until steaming hot.
- Refrigerated pate or meat spreads.
- Unpasteurized milk or foods containing unpasteurized milk.
- Soft cheese such as feta, Brie, Camembert, blue-veined cheeses and Mexican style cheese such as queso blanco, queso fresco or Panela unless labeled with pasteurized milk.
- Raw or undercooked eggs or foods containing raw or lightly cooked eggs including certain salad dressing, cookie and cake batters, sauces and beverages such as unpasteurized eggnog.
- Raw sprouts (alfalfa, clover and radish)
- Unpasteurized fruit or vegetable juice.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1. Increasing exercise and consuming more liquids, whole grains, fruits, and vegetables would be appropriate suggestions for a person with which of the following conditions: (circle the correct answers)

- a. Nausea
- b. Constipation
- c. Heartburn

2. List at least three suggestions to relieve nausea during pregnancy.

True or False?

- 3. ____ A pregnant woman who suffers from heartburn should take antacid tablets from the drugstore without consulting her doctor first.
- 4. ____ A pregnant woman who suffers from constipation should use a laxative like Ex-Lax.

5. ____ Salt should be restricted for pregnant women who appear to be retaining water.
6. ____ A pregnant woman with gum disease has an increased risk of having a premature baby.
7. ____ A pregnant woman's weakened immune system makes her more susceptible to food borne illness.

ANSWERS

1. b
2. Refer to suggestions under Morning Sickness, Heartburn, and Constipation for a complete listing. Suggestions include small meals rather than large ones, limiting fatty foods, avoiding spicy foods, and regular meal times.
3. False. A pregnant woman should not take any over-the-counter medications unless advised by her doctor.
4. False
5. False. Salt should not be restricted because pregnancy increases the need for sodium, although excessive sodium use should not be condoned.
6. True
7. True

Substances that Affect the Pregnant Woman and Fetus

Other concerns of pregnancy that are not necessarily common to all women are described below.

Pica: Craving Non-Food Items

Sometimes pregnant women eat things that are not food, such as clay, laundry starch, or dirt. This is called pica; it is the craving for and eating of non-food items. Other non-food items which pregnant women may eat are ashes, charcoal, coffee grounds, paint chips, and Play-Doh. Excessive ice consumption is also included as pica. Ice is a food substance that is occasionally eaten by many individuals. However, pica is a condition for the person who consumes several trays of ice cubes daily.

The cause of pica is not known, but it has been related to certain nutritional deficiencies (especially zinc and iron) as well as culture, physiological changes in the body such as pregnancy and mental states. Many women feel that their babies will not be normal unless they eat clay or dirt, just as their mothers and grandmothers believed.

What's wrong with eating these things? Pica can lead to lead poisoning (when paint chips are eaten), anemia, poor nutrition (because the non-food item takes the place of nutritious food from the diet), stomach and intestinal blockage, and parasitic infections. Consumption of substances such as mothballs or paint chips can lead to toxic conditions that could result in death.

Your Role

Discuss reasons why pica is a risk during pregnancy and help the participant to decide on some healthy changes she can make to avoid pica. These may include making sure she takes her prenatal vitamin prescribed by her health care provider and choosing healthy snacks to substitute for the non-food items. Encourage her to talk with her health care provider about the items she is eating.

Nutrition Risk Factor 427C (Low Risk): Compulsively ingesting non-food items (pica)

Definition includes:

- Ashes
- Baking Soda
- Burnt matches
- Carpet fibers
- Chalk
- Cigarettes
- Clay
- Dust
- Large quantities of ice and/or freezer frost
- Paint chips
- Soil
- Starch (laundry or cornstarch)

Caffeine

Caffeine is a drug, and in many people it produces the side-effects of nervousness, difficulty in sleeping, 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; e.g., some aspirin tablets and many cold preparations contain 360 mg of caffeine per tablet.

Studies of the safety of caffeine have been inconclusive. Some studies have shown large doses of caffeine cause birth defects in animals; however, there is no convincing evidence that it is associated with birth defects in humans. At this point caffeine consumption is not used as a nutrition risk factor for pregnant women on the WIC Program. It appears that small amounts of caffeine (no more than 3 six-ounce cups of coffee per day [<300 mg]) are probably safe for the growing fetus. Since we do not know for sure if caffeine is safe for the pregnant woman, it is best to recommend that caffeine-containing products be limited during pregnancy. Use the chart below to help you identify how many milligrams of caffeine are contained in the foods and drinks listed. Note the serving size of each entry.

Caffeine Content of Selected Beverages & Foods

Coffee (5 oz cup)	
Brewed	95 mg
Instant	65 mg
Tea (5 oz cup)	
Brewed.....	40 mg
Instant	30 mg
Iced (12 oz)	70 mg
Cocoa (5 oz cup).....	4 mg
Chocolate Milk (8 oz)	5 mg
Soft Drinks	
Cola (12 oz)	45 mg
Milk chocolate (1 oz)	6 mg
Source: FDA, Food Additive Chemistry Evaluation Branch	

Alcohol

Nutrition Risk Factor 372A (High Risk): Use of Alcohol, any current use of Alcohol

Alcohol is the second most widely used drug in the United States. It is easy to get and is so socially acceptable that most people don't consider it a drug. Alcohol contains ethanol, which decreases nerve and brain activity. For a pregnant woman and her fetus, this can have serious consequences because it causes further slowing of body functions already affected by the hormonal changes of pregnancy.

The hormone progesterone relaxes the muscles and tissues of the digestive and circulatory system. If alcohol further relaxes these systems, the fetus will not receive adequate amounts of food and oxygen. Alcohol enters the fetal blood stream in the same concentration as the mother's blood. Because the fetus is so much smaller than the mother, alcohol has a much greater effect on the fetus compared to the mother.

Even small amounts of alcohol consumed during a pregnancy can increase the risks of miscarriage, vaginal bleeding, early separation of the placenta from the uterus, and preterm labor.

Alcohol is the leading cause of mental retardation in our country today. A woman who drinks excessive amounts of alcohol during her pregnancy can have a baby with **Fetal Alcohol**

Syndrome (FAS). These babies often have low birth weights, mental retardation, heart defects, cleft palate, and face, arm, and leg deformities. The FAS child has difficulty learning.

Drinking moderate amounts of alcohol is also associated with an increased risk of physical and mental deficits in the new-born. Occasional “binge” drinking, especially in early pregnancy, is also unsafe for the developing fetus.

There is no safe level of alcohol that a pregnant woman can drink without harming the fetus. Warnings about the possible effects of alcohol are printed on every alcohol container and bottle. Pregnant women should be informed that it is dangerous to drink while pregnant.

Studies show the more alcoholic beverages a woman drinks, the greater the risk to her baby. Heavy drinkers may develop nutritional deficiencies and more serious diseases, like cirrhosis of the liver, certain cancers, and heart disease.

Fetal Alcohol Syndrome: A syndrome related to alcohol use during pregnancy and characterized by prenatal and postnatal growth retardation, distinct facial anomalies, and mental deficiency.

Your Role

All women who currently report using alcohol while pregnant must receive counseling from the WIC High Risk Counselor within 24 hours. If necessary, provide an informal referral to resources available in your community. Additionally, for more information on counseling and referring women who use alcohol, refer to the Colorado WIC Procedure Manual, Section XV, Outreach/Coordination/Referral/Targeting. Occasional drinkers should be advised to stop drinking alcohol. Quitting at any time during pregnancy is beneficial.

Do not advise pregnant women who are heavy drinkers to stop on their own. This step should be taken only under the super-vision of a physician or skilled alcohol treatment specialist. Educate on the effects of alcohol and make a referral to a resource for help.

Nutrition Risk Factor 371 (Low Risk): Use of Cigarettes

Defined as: any current daily smoking of cigarettes

Tobacco smoke contains nearly 4,000 chemicals, including 60 cancer-causing poisons. Approximately 10 percent of Colorado women report smoking during the last three months of pregnancy. Pregnant women who smoke increase their chance of having a low birth weight baby by up to 39 percent. Low birth weight is directly associated with stillbirths and newborn deaths. Smoking even one low-nicotine cigarette a day greatly increases the chance of having a low birth weight baby.

The primary goal of weight gain during pregnancy is to deliver a healthy weight baby. Smoking makes this goal harder to achieve. Why? When inhaling smoke, toxic substances such as carbon monoxide compete with oxygen; nicotine causes blood vessels to constrict

which decreases the nutrient supply to the fetus. Also, smoking decreases appetite thus affecting weight gain. Smoking during pregnancy is the leading cause of premature births.

Fortunately, pregnancy and the period before and after it provide a special window of opportunity when pregnant women have a unique motivation to quit smoking. WIC staff members have an enormous chance to improve the health of mothers and their babies by helping pregnant smokers quit by asking them about their use of tobacco, advising them to stop, offering support, and referring them to smoking cessation resources.

Ask your participant about her smoking status during the Nutrition Interview. Congratulate those who have quit and encourage continued abstinence.

Advise her in a clear, strong and personalized manner about the risks of smoking (greater chance of having a low birth weight baby and/or a premature baby to name two) and the benefits of quitting for herself and her fetus (see below). In the recent past, women were encouraged to cut back if they couldn't quit. The recommendation now is an all or nothing approach. The most current information suggests that smoking even one cigarette a day may harm the fetus.

Some of the benefits of quitting to share with her are:

- Your baby will get more oxygen, even after just 1 day of not smoking.
- Your baby's lungs will work better.
- There is less risk that your baby will be born too early.
- There is a better chance that your baby will come home from the hospital with you.
- You will be less likely to develop heart disease, stroke, lung cancer, chronic lung disease or other smoking-related diseases.
- You will have more energy and can breathe more easily.
- You will have more money that you can spend on other things.
- Your clothes, hair and home will smell better.
- Your food will taste better.
- You will feel good about what you have done for yourself and your baby.
- You will have more money that you can spend on other things.
- Your clothes, hair and home will smell better.
- Your food will taste better.
- You will feel good about what you have done for yourself and your baby.

Because the WIC visit has limited time, your role is to advise her to stop, and to offer her information and refer her to smoking cessation resources (see following in box). If the participant brings up reasons why she finds quitting difficult you can offer some of the suggestions below to help her overcome those challenges.

Challenge	Coping Strategies
Negative Moods	<ul style="list-style-type: none"> • Participate in physical activity like walking • Try deep breathing • Talk to a friend • Write in a journal • Remind yourself that you are a non-smoker
Being around other smokers	<ul style="list-style-type: none"> • Spend more time with friends who don't smoke • Ask others not to smoke around you • Establish a "smoke-free" zone in the house or car • Walk away from smokers when you feel like smoking
Triggers	<ul style="list-style-type: none"> • Identify and anticipate situations that prompt cravings, such as social gatherings • Being on the phone • Waking up from sleep or stressful situations. • Change your routine • Immediately brush your teeth • Take a walk after meals and after waking • Engage in distracting activities: take a walk, knit, garden, read, listen to music.
Time Pressures	<ul style="list-style-type: none"> • Change your behavior or lifestyle to reduce stress • Use physical activity like walking
General	<p>Any smoking (even a single puff) increases the likelihood of a full relapse. Withdrawal symptoms, including negative moods, urges to smoke, and difficulty concentrating, are normal and will only last a few weeks at most. Most people try to quit several times before they are successful. A "slip" is not a failure; learn from it and try again.</p>

If she is ready to quit, encourage her to set a date, tell family and friends, remove tobacco products from the home, and contact the Colorado Quitline (see Smoking Cessation Resources box below).

Prenatal Smoking Cessation Resources

Colorado Quitline: www.coquitline.org

The Colorado Quitline is a FREE online service available to Colorado residents 15 years of age and over. The Quitline offers a support team of coaches, special tools, researched based information, and a community of others trying to become tobacco free. Expert tobacco cessation coaches can talk to tobacco users about overcoming common barriers. In addition a free telephone service is offered so that the tobacco user can speak to a coach in person. The telephone number for the Quitline is 1-800-QUIT-NOW (784-8669).

Tobacco Free Colorado: <http://www.tobaccofreeco.org/>

This is a site that the Colorado Department of Public Health and Environment created that contains a variety of tobacco cessation websites that promote evidence-based cessation services and support. This site is geared towards the tobacco user and links to a number of local and national resource sites, including www.coquitline.org.

Additional Sources of Information

- CDC – Office on Smoking and Health: Cessation
http://www.cdc.gov/tobacco/data_statistics/fact_sheets/cessation/quitting/index.htm
- American Lung Association: How to Quit
<http://www.lungusa.org/stop-smoking/how-to-quit/>
- US Surgeon General 2010 Report: How Tobacco Causes Disease (fact sheet)
<http://www.surgeongeneral.gov/library/tobaccosmoke/index.html>
- American Cancer Society: Smoking Cost Calculator
<http://www.cancer.org/healthy/toolsandcalculators/calculators/app/cigarette-calculator>
- Raise Smoke Free Kids
<http://www.raisesmokefreekids.com>
- WIC Smoking Cessation materials: Use Colorado WIC Nutrition Education Materials Order Form.
- Additional smoking cessation resources are available at
<http://www.cohealthresources.org>

Postpartum Maintenance

Encourage mothers to stay quit. Up to 35% of women who stop smoking during pregnancy remain nonsmokers. The great news is that if they abstain from smoking tobacco their baby will get fewer chest colds, coughs, ear infections, have few asthma and wheezing problems, be at lower risk for SIDS, breathe better, grow better, and be less likely to become a cigarette smokers themselves.

Secondhand Smoke

Secondhand smoke is a combination of the smoke in the air from a burning cigarette and the smoke exhaled by a person that is smoking. Secondhand smoke causes substantial health risks for exposed pregnant woman including upper respiratory infections, periodontal disease, increased severity of asthma and wheezing, and an increased risk for lung cancer and cardiovascular diseases. The risks for an infant being born to a mother exposed to secondhand smoke include lower birth weight, decreased lung function, and sudden infant death

syndrome (SIDS). To lessen the negative health effects from secondhand smoke, all smokers should be asked to restrict smoking to outside the home.

Nutrition Risk Factor 904 (Low Risk): Environmental Smoke Exposure

Defined as: exposure to smoke from tobacco products inside the home

Drugs (Prescription, Over-the-Counter, “Street”)

A woman who uses drugs during pregnancy puts herself and her fetus at a terrible risk. Many common drugs – both prescription and over-the-counter – that are usually harmless can poison an unborn baby. Even mega doses of vitamins are dangerous to the growing fetus. Fetal toxicity with maternal overdose of five essential nutrients, vitamin A, vitamin D, vitamin C, vitamin B₆, and iodine have been documented. Only medications approved by a physician for use during pregnancy should be taken.

Drugs are especially toxic to the fetus during the first half of pregnancy. During this time, organs and tissues (such as arms, heart, brain, kidneys) are being formed and are, therefore, more susceptible to malformation. In addition, this is also the time when the woman may not realize she is pregnant. In the second half of pregnancy, drugs may negatively affect the growth of the infant.

Street drugs (e.g., crack, cocaine, marijuana, speed, etc.) can be especially dangerous. They can cause addiction of the fetus, and severe withdrawal discomfort of the infant after birth. Infants born to addicted mothers are at greater risk for low birth weight, hepatitis, intrauterine growth retardation, and infant death.

Crack/Cocaine

The use of crack, which is a highly potent, purified form of cocaine, is becoming more and more common. Heavy cocaine use is associated with higher rates of miscarriage, premature labor, intrauterine growth retardation, and congenital anomalies. Individuals who are addicted crack users appear extremely underweight and nervous, and frequently complain of headaches and insomnia.

Your Role

Warn all pregnant women of the possible dangers of drug and alcohol use. Share information about resources available in your community. *WIC staff must document in the WIC records that women are told about the dangers of using drugs.* Drug or alcohol users must be referred to the WIC High Risk Counselor within 24 hours. Heavy substance abusers may require referral to a community substance abuse program.

Nutrition Risk Factor 372B (High Risk): Use of Illegal Drugs

Defined as any current illegal drug use

Since nutritional deficiencies may be present with substance users, it is important to provide diet counseling to improve food intakes.

Stopping alcohol and/or drug use at any time, even late in pregnancy, can decrease harm to the developing fetus.

Summary

All pregnant women on WIC must be provided accurate and understandable information about the dangers of alcohol and drug use. Participants who report using alcohol and/or drugs must be informed that stopping the use of these substances increases the chances for a normal delivery and a healthy baby.

Lead

Lead poisoning is a public health problem that is entirely preventable. It is most common in children, but can occur in adults as well. In pregnant women, lead crosses the placenta and can have a detrimental effect on a developing fetus. Lead poisoning is defined as a blood lead concentration of > 10 micrograms/deciliter. Symptoms of lead poisoning are often mild or nonexistent, but the effects on learning and behavior can be significant.

The main sources of lead exposure in our environment are from residual deposits (such as in soil dust, old paint, and plaster) of preceding decades, certain occupations which involve lead, and imported containers used for serving or storing food or beverages which have lead as a component. Women who are at greater risks for lead poisoning are those who live in older homes, have pica (are eating lead-containing substances), and/or women who use lead-containing imported containers for food storage or preparation.

Adequate intake of calories and nutrients, specifically calcium, iron, and vitamin C, decreases the absorption of lead in adults.

Your Role

Occasionally a pregnant WIC participant will share with you that she is craving and eating clay. In this situation, she may benefit from referrals to her health care provider for lead testing as well as information on how to reduce her exposure to lead. WIC staff can reinforce healthy eating habits to promote adequate intake of calories and nutrients which may help decrease the body's absorption of lead.

Nutrition Risk Factor 211 (Low Risk): Elevated Blood Lead Levels

Defined as: a blood lead level of greater than or equal to 10 mcg/deciliter within the past 12 months

Section V: Clinical Indicators of Nutritional Need

Pregnant women can have physical or medical conditions which increase their risk of poor health and poor birth outcomes. These conditions include:

- Pregnancy at a young age
- Closely-spaced pregnancies
- Multi-fetal gestation
- Breastfeeding pregnant woman
- Medical problems such as gestational diabetes, HIV
- Past pregnancy problems

Pregnancy at a Young Age

The adolescent period represents a time of extremely rapid growth and development accompanied by an increased need for energy and nutrients. If an adequate diet is not consumed during the adolescent years, the body will not have the required building materials with which to reach its full potential for growth and development.

The timing and rate at which children develop into adults is quite variable. For most adolescents, it is estimated that the median age of menarche is about 12½ years. A pregnant adolescent who is within two years after menarche may still be in a period of growth and will have increased energy and nutrient needs as compared to an adolescent who has completed her growth.

Studies suggest that pregnancy at a young age is associated with an increased incidence of anemia, infection, prematurity, high blood pressure, placental problems, and delivery of low birth weight infants. The younger the mother, the greater the risks. Young pregnant women are least likely of all age groups to get early and regular prenatal care, and are more likely to smoke while pregnant.

There may also be social risk factors associated with pregnancy at a young age such as not accepting the pregnancy, body image, unfinished education, and living in an unstable family environment. Poverty, rather than maternal age could be an important factor in pregnancy complications. These social factors can negatively influence her nutritional status.

Word to Know:

Menarche: The initiation of female's first menstrual period.

Nutrition Risk Factor 331A (Low Risk): Pregnancy at a young age

Defined as: less than 16 years at the time of conception

Nutrition Risk Factor 331B (Low Risk): Pregnancy at a young age

Defined as: 16 or 17 years at the time of conception

Nutrition Risk Factor 333 (Low Risk): High parity and young age

Defined as : women under age 20 at date of conception who have had 3 or more previous pregnancies of at least 20 weeks duration, regardless of birth outcome

Multiparity increases the risk of delivering a low birth weight infant for women under age 20. Multiparity has little effect for women age 20-34 years and decreases for women over age 35.

Nutritional Requirements

The needs for calcium are increased for the woman pregnant at a young age. The Dietary Reference Intake is 1300 mg calcium daily for pregnant and lactating women aged 18 years and younger. (For women aged over 18 years the requirement for calcium is 1000 mg.) Low calcium intakes of young women are well documented.

The average intake for calcium for girls aged between 12-19 years is about 800 mg, putting them at risk especially during pregnancy for not being able to support the development of bone mass. Young pregnant women can meet their calcium needs by having at least 4 cups of milk a day. For alternatives to milk, please see the Nutrition Guide for Pregnant Women (inserted at the end of this module).

Energy requirements are generally greater for young pregnant women than their non-pregnant peers. The current recommendation for the pregnant woman is to increase her daily average intake by 300 calories during the second and third trimesters. For the younger woman, the energy intake maybe even higher and in most cases young women should not consume below 2000 calories a day during pregnancy. Because energy needs vary, the best way to determine an adequate intake is to observe satisfactory weight gain.

Eating Behaviors of Young Women

Young women tend to be motivated in their food choices not by nutritional or health concerns but by factors of availability, sociability, and status. Put simply, they eat what is available, tastes good, and is what their friends like to eat. In addition, lack of nutrition information, failure to understand the effect of present dietary habits on future health status, busy school and social schedules may leave young women with inadequate time and motivation to prepare or eat the most nutritious foods.

Something to Consider:

Alternatives to Conventional Breakfast Foods . . . tortilla w/ melted cheese, peanut butter and jelly sandwich, hard-cooked egg, packet of nuts and raisins, granola or cereal bars and fruit, graham crackers w/ peanut butter, yogurt w/ nuts and raisins added, dry cereal

Common eating behaviors to investigate and counsel on that apply to many young women include meal skipping, frequent snacking on foods high in fat or sugar, and low in nutritional value, being too busy to eat so relying on convenience and fast foods, and concerns about weight.

Meal skipping, particularly breakfast is a common practice that is often begun in adolescence. Studies show that skipping breakfast can decrease the total amount of needed calories and nutrients to support a healthy pregnancy. Lack of time, wanting to sleep more, and lack of appetite are common reasons to skip breakfast and for the pregnant woman nausea, fatigue, and other pregnancy-related complaints may contribute to it. WIC staff can inform her that she is more likely to have more energy all day if she consumes breakfast. Offer breakfast ideas that may fit into her lifestyle, such as less conventional breakfast foods (sandwiches or leftovers that are easy to prepare) and tips for coping with nausea.

Snacking is actually a good practice for the growing young woman, especially if she is pregnant. It is important that snacks contribute nutrients to build a healthy baby. Obviously high-fat, high-sugar, low-nutrient-dense snacks will contribute mostly toward weight gain and will not complement the diet with the needed nutrients. Encourage healthier snack choices such as fruit, whole wheat crackers, carrot or other raw vegetable sticks, pretzels, nuts, yogurt, cheese sticks, and juice. Most of these can easily fit into a backpack or purse.

On average, young women visit fast food restaurants twice a week. The service is quick, it is socially acceptable and a place to meet friends, the food doesn't cost much and they may even work there. Depending on the choices a person makes, fast food meals can be high in fat and calories and low in fiber. Offer ideas to improve the food choices (e.g., choose milk or juice, salads, grilled foods, baked potatoes, or smaller size hamburgers). Recommend splitting large servings with a friend, such as French fries. Offer ideas rather than trying to convince her not to eat at fast food restaurants. Bringing a piece of fruit or raw vegetables from home can help to "round out" the fast food meal.

It is important to discuss and reinforce the positive aspects of the diet and address only those that may be harmful or compromise the nutritional quality of the diet or growing baby.

A young woman's weight concerns can surface by noticing an unbalanced or unusual food pattern through dialogue that reveals a concern about weight gained. Special attention should be given to the woman regarding the reasons for weight gain, the components of weight gain, and if there appears to be continued concern, she may need additional support to deal with the weight gain.

Eating Disorders

Concerns about weight and food intake often appear for the first time during adolescence. Preoccupation with weight, early dieting and exercise may trigger eating disorders such as anorexia nervosa and bulimia. While specific causes of eating disorders remain a mystery, clinicians believe that sociocultural, neurochemical, and psychological factors are all contributing factors. "Normal" adolescent dieting can be the start of an eating disorder when intensified by adolescent turmoil, low self and body concept, and poor identify of self. Poor pregnancy outcomes are associated with eating disorders. Potential risks associated with eating disorders in the prepregnancy period, during gestation, and after delivery, include: low prepregnancy weight; inadequate gestational weight gain, excessive weight gain (binge eating); decreased nutrient stores; and decreased bone density.

Anorexia Nervosa

Anorexia nervosa is typified by self-starvation, extreme weight loss, preoccupation with food, an extreme fear of weight gain, and may include a rigid exercise routine. Anorexia nervosa can be life threatening. It can cause delays in puberty, development, and heart and kidney problems. In adolescence it can contribute to decreases in bone mass and increase the risk of fractures. The young woman with anorexia nervosa strives for perfection and control over her life and associates gaining weight with being out of control. Part of the recovery from the disease is gaining an understanding of growth as a normal physical process.

Bulimia

Bulimia, like anorexia, involves a preoccupation with food and body weight. However, bulimia manifests itself in secretive binge-eating episodes followed by self-induced vomiting or other forms of purging. The disease usually occurs in later adolescence after a series of unsuccessful weight loss attempts. Individuals with bulimia usually appear to be near normal weight and are very difficult to identify. Because of repeated vomiting, bulimia is associated with fluid and electrolyte imbalances, eroded tooth enamel, and damaged esophagus.

Treatment of eating disorders requires a multidisciplinary approach with nutrition falling under intervention and education. WIC's role is to help identify the possibility of eating disorders and make appropriate referrals for the participant to seek help in their community.

Your Role

Working with pregnant teens is a challenge! There is so much a pregnant teen may need to learn—the importance of eating nutritious food, gaining an appropriate amount of weight, avoiding harmful substances, and taking care of herself.

How you present this information to the pregnant teen can make a difference in how successful you are in getting through to her. It is important to try to talk with the teen alone, without the influence from her mother, etc. If this is not possible on the first visit, try it the second visit.

Avoid lecturing and giving too many instructions. Provide information and alternatives. Avoid using the word “should” because it is a guilt word that some teens associate with parents.

Take a neutral stand. Be aware of your own biases and don't push your own values.

Be positive. By highlighting the positive, the negative will diminish. Thank the teen for coming in and keeping appointments.

Closely-Spaced Pregnancies

A woman who has an expected delivery date less than two years from the date her previous pregnancy ended has an indicator of nutritional need based on “pregnancy interval.” This is known as short interconceptual period.

A woman who has been pregnant several times in a short period of time is more likely to have poor physical and nutritional status. There is a greater chance of having a poor pregnancy outcome and health problems for the mother.

Pregnancy stresses a woman’s nutritional stores. She needs enough time between pregnancies to “rebuild” these stores.

Nutrition Risk Factor 332 (Low Risk): Closely Spaced Pregnancies

Defined as: conception before 16 months postpartum

Your Role

Follow normal pregnancy protocols discussed in Part VII. Use the short interconceptual period to reinforce to the woman the importance of adequate nutritional and prenatal care.

Multi-Fetal Gestation

Women carrying more than one fetus have a greater chance of having problems in pregnancy. A multiple pregnancy imposes increased nutritional needs due to greater fetal weight and the expansion of plasma blood volume. The mother’s heart rate, breathing, kidney and liver functions are affected. Multi-fetal pregnancies are associated with low birth weight, fetal growth restriction, placental and cord abnormalities, preeclampsia, anemia, shorter gestation, and an increased risk of infant mortality.

Nutrition Risk Factor 335 (Low-Risk): Multi-fetal Gestation

Defined as: a pregnant woman carrying more than one fetus

Your Role

In addition to normal pregnancy protocols, these women may need education and counseling to ensure they get enough calories and nutrients for themselves and their fetuses, and that they gain enough weight.

Remember: A weight gain of 1.5 pounds/week for normal-weight women during the second half of a twin pregnancy is suggested, and that a normal weight gain is 35-45 total pounds. Because current weight gain recommendations for multi-fetal gestations are provisional, Low Maternal Weight Gain and High Maternal Weight Gain Nutrition Risk Factors are not assigned to women with multi-fetal gestations.

Breastfeeding During Pregnancy

Breastfeeding during pregnancy can influence a woman's ability to meet the nutrient demands for her growing fetus and her nursing child. The hormones of pregnancy can also dramatically decrease a woman's milk supply, creating a situation where the breastfeeding infant will not get enough milk. Additionally, oxytocin (the hormone released during breastfeeding) can cause premature contractions which could lead to a premature birth. When a woman breastfeeds during pregnancy, she needs breastfeeding evaluation and special nutrition counseling.

Nutrition Risk Factor 338 (Low Risk): Breastfeeding Pregnant Woman Breastfeeding Pregnant Woman

Defined as: a pregnant woman currently breastfeeding another child

Your Role

Discuss with the woman her feelings about breastfeeding while pregnant. This will help you to determine why she has decided to continue to breastfeed. Consider the child's age. Perhaps she is nursing a child out of habit. If the mother prefers to wean an older child, recommend the mother identify when the child requests to nurse and try to substitute another favorite activity for nursing. If the mother decides to continue breastfeeding because she feels that breastfeeding meets a real need, encourage the woman to talk to her health care provider as there could be some medical consequences, such as uterine bleeding or pain, premature delivery, and continued weight loss during pregnancy. If no medical contraindications exist, a well-nourished mother should be able to provide for the nutritional needs of the nursing child (over one year of age) and the unborn infant. It may be necessary for the mother to consume extra calories of nutrient-dense foods to ensure adequate weight gain. Let the mother know that children often wean themselves from breastfeeding during pregnancy.

Medical Conditions

There is a long list of medical conditions that are considered nutrition risk factors on the WIC Program. All of these medical conditions must have been diagnosed by a healthcare provider (M.D, physician's assistant, nurse practitioner, etc.) however the diagnosis can be self-reported (WIC does not need to see a written diagnosis). The following is a general list of these conditions. A more specific list to select which specific conditions are included is found in the Colorado WIC Program Manual.

- Nutrient Deficiency Diseases
- Gastrointestinal Disorders
- Diabetes Mellitus
- Thyroid Disorders
- Hypertension and Prehypertension (chronic or pregnancy-induced)
- Fetal Growth Restriction
- Infectious Diseases (excluding RSV)
- Food Allergies
- Celiac Disease
- Lactose Intolerance
- Eating Disorders
- Major Surgery or Burns (excluding C-section)
- Lupus Erythematosus
- Renal Disease
- Cancer or Cancer Treatment
- Central Nervous System Disorders
- Genetic or Congenital Disorders
- Hypoglycemia
- Inborn Errors of Metabolism
- Cardiorespiratory Diseases
- Heart Disease
- Cystic Fibrosis
- Asthma (requiring daily medication)
- Depression
- Developmental Delays, Sensory or Motor Delays
- Interfering with the Ability to Eat
- Oral Health Conditions

Your Role

Individuals with these medical conditions can develop nutritional deficiencies. Deficiencies may result from a variety of reasons such as vomiting, chronic diarrhea, malnutrition, infections, poor absorption, and altered metabolism. The WIC Program provides key nutrients through foods and education that may help restore nutritional status and promote rehabilitation when nutrient losses are present. As with all nutrition risk factors, WIC staff members assess dietary intake and growth or weight gain. WIC staff should provide education on eating a balanced diet and reinforce good eating habits. Staff can work with the participant to identify the best food package to meet the identified nutritional needs, such as lactose-reduced food packages or special formula packages.

At the initial certification and recertification visit these medical conditions are all high risk and require a referral to the WIC High Risk Counselor. The WIC High Risk Counselor will provide more in-depth assessment and counseling. They will develop a care plan which may have the participant follow up with them at the subsequent visit, or they may decide that the

participant be followed by the paraprofessional staff. Staff should also make referrals to community resources and health care providers when appropriate.

Nutrition Risk Factor 352 (High Risk): Infectious Diseases

Defined as: a disease caused by growth of pathogenic microorganisms in the body severe enough to affect nutritional status, such as HIV/AIDS. Refer to the WIC High Risk Counselor for high risk counseling within 30 days

AIDS, which stands for Acquired Immune Deficiency Syndrome, is a very serious illness that weakens the body's ability to fight infections. AIDS is caused by a virus called HIV, the Human Immunodeficiency Virus. AIDS is the third leading cause of death among 25-44 year old women, and seventh leading cause of death among 1-4 year old children in the United States. Most women become infected with HIV through heterosexual activity.

As the incidence of infection increases among women of child-bearing age, increasing numbers of children are exposed perinatally to HIV. The virus can be transmitted from an HIV-positive pregnant woman to her child in utero, during delivery, or through breast milk. Pregnant women who are HIV-positive are advised not to breastfeed.

Current medical treatments have been proven effective in significantly reducing the risk of mother-to-unborn baby HIV transmission. Without treatment for HIV infection, a pregnant woman has about a one out of four (25%) chance of passing the virus onto her baby. However, with the use of the drug AZT during pregnancy and a Cesarean delivery, the risk of HIV transmission is reduced to about one in fifty (2%).

Pregnant women who are HIV-infected need routine prenatal care, but may also have special needs to be addressed. Nutritional status is compromised in AIDS because of the frequent infections associated with the disease. Symptoms such as coughing, labored breathing, vomiting, and chronic diarrhea cause nutritional status to deteriorate; eating and swallowing are often very painful because of oral and gastrointestinal lesions.

Although not curative, nutritional support may maximize the body's ability to fight infection and possibly delay the onset of symptoms in women infected with HIV.

A person can be infected with HIV for many years without experiencing any AIDS symptoms, yet she is capable of infecting others. As the infection progresses, however, she usually begins to experience some of the symptoms of HIV disease, which include swollen glands, "night sweats," and persistent diarrhea. Most HIV-infected people eventually develop AIDS. At this point, their body's immune system is so weakened that they become susceptible to certain infections or rare diseases which are potentially life-threatening.

Your Role

USDA requires that WIC staff inform each pregnant woman that she know her HIV status. Each clinic should have a list of places to refer women for HIV testing, treatment, and counseling.

Refer all HIV-infected women who are not under treatment to a health care provider. Additionally, because HIV is a high-risk condition, refer HIV-positive women to the WIC RD/RN to evaluate their nutritional status and provide appropriate counseling.

Treat women with infectious diseases such as HIV and hepatitis just as you would non-infected participants. HIV cannot be spread through casual contact in the WIC clinic. When collecting hemoglobin or hematocrit, use the same universal precautions (i.e., medical gloves, etc.) that are used for other participants. See your clinic supervisor if you are unaware of the methods used in universal precautions.

Universal Precautions: Limits occupational exposure to blood and other potentially infectious materials. The Level 1 Screening Module reviews Universal Precautions.

Gestational Diabetes

Nutrition Risk Factor 302 (High Risk): Gestational Diabetes

Defined as: any degree of glucose/carbohydrate intolerance with onset or first recognition during pregnancy as diagnosed by a physician and self reported by the applicant/participant.

Diabetes Mellitus is a metabolic disease characterized by inappropriate hyperglycemia resulting from defects in insulin secretion, insulin action or both. A participant with Diabetes Mellitus would be assigned the Medical Condition **Nutrition Risk Factor 343** and is high risk.

Gestational Diabetes is a form of diabetes that appears during pregnancy. It usually begins about midway through the pregnancy. It is noted by an excess of glucose (a sugar that provides energy to the body) in the blood. In a normal pregnancy the body makes additional insulin (a hormone) to carry the body's glucose in the body's cells so that it can be used. Sometimes even this extra insulin is not enough, and the woman develops gestational diabetes. Most women with gestational diabetes have no symptoms. Women with gestational diabetes have a greater risk of delivering a baby that is very large and may have metabolic complications. Diet and physical activity are very important for the treatment of gestational diabetes. The better a woman controls her diabetes the more likely she is to have a healthy baby without complications.

Women are typically screened for gestational diabetes between the 24th and 28th week of pregnancy. Once gestational diabetes is diagnosed many women control their blood sugar with diet alone. Those who cannot control their blood sugar levels through diet alone require insulin injections or oral medications.

Once the baby is delivered, most women's blood sugar will return to normal. Women with gestational diabetes are at increased risk of developing diabetes mellitus later in life. It is important they understand the value of maintaining a normal weight from now on.

Your Role

Follow normal prenatal nutrition protocols. Refer this woman to the High Risk Counselor for high-risk counseling within 30 days of nutrition risk factor assignment. The High Risk Counselor will reinforce the treatment prescribed by the diabetes specialist.

Note: A woman with gestational diabetes in a current pregnancy, and who had gestational diabetes in a previous pregnancy, would be risked for both risk factors (NRF 302 and 303).

Complications of Previous Pregnancy

A medical problem in a past pregnancy may indicate additional nutritional need. These problems include gestational diabetes, preeclampsia, preterm delivery, delivery of a low birth weight infant or large for gestational age infant fetal death, or delivery of an infant with neural tube defect or cleft palate or lip.

Women with a history of these problems have a greater chance of the problems recurring in their current pregnancy.

Nutrition Risk Factors Complications of Previous Pregnancy

Presence of any of the following conditions during the last pregnancy.

Nutrition Risk Factor:

- 303** history of gestational diabetes
- 311** history of preterm delivery (infant born \leq 37weeks/0 days gestation)
- 312** delivery of low birth weight infant (5½ pounds or less)
- 321** fetal death (\geq 20 weeks gestation) or neonatal death (with 0-28 days of life)
- 337** history of birth of a large for gestational age infant
- 339** delivery of an infant with neural tube defect or cleft palate or lip
- 304** Preeclampsia

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1. List two reasons why a pregnant teen is at higher nutritional risk than older women.

2. Put a check next to the factors below which present nutritional risks for pregnancy.

- a. ___ Mother is normal weight prior to conception.
- b. ___ Inadequate prenatal weight gain
- c. ___ Medical conditions, such as iron-deficiency anemia and gestational diabetes
- d. ___ Mother is pregnant with more than one fetus
- e. ___ Mother is 45 years old
- f. ___ Mother is underweight prior to conception
- g. ___ Mother is 16 years old

True or False?

3. ___ Certain health conditions are considered to be nutritional risks. These nutritional risks affect a woman's nutritional needs and/or her food habits. Women with these risks need special consideration for nutrition counseling.

4. ___ Using drugs, alcohol, or cigarettes during pregnancy is okay because the mother's body can filter out harmful substances so they do not reach the fetus.

ANSWERS

1. Any two of the following reasons: they may not have yet completed their own growth; poor eating habits; influence of social risk factors.

2. The following factors should be checked: b, c, d, f, g,

3. True

4. False

Section VI: Social Indicators of Nutritional Need

Some pregnant women are at nutritional risk based upon their living accommodations and/or their ability to take care of themselves. Situations where the WIC Program identifies the woman as being at nutritional risk include homelessness, migrancy, or recent placement in foster care. Generally in situations where shelter is temporary, a woman is less able to ensure that she has access to adequate nutritious food, food storage, and cooking facilities.

Nutrition Risk Factor 801 (Low Risk): Homelessness

Defined as: a woman who lacks a fixed and regular night time residence or who is in temporary living situation as defined below.

A homeless individual is defined as a woman or child who lacks a fixed and regular nighttime residence; or whose primary nighttime residence is: a supervised publicly or privately operated shelter (including a welfare hotel, a congregate shelter, or a shelter for victims of domestic violence) designated to provide temporary living accommodations; an institution that provides a temporary residence for individuals intended to be institutionalized; a temporary accommodation in the residence of another individual not exceeding 365 days; or a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings.

Nutrition Risk Factor 802 (Low Risk): Migrancy

Defined as: a woman whose principal employment is agriculture or seasons within the last 24 months

Migrancy is defined as a woman whose family's principal employment is in agriculture on a seasonal basis, who has been so employed within the last 24 months, and who establishes, for the purposes of such employment, a temporary abode.

Nutrition Risk Factor 901 (Low Risk): Recipient of Abuse

Defined as: battering within the past 6 months as self reported, or as documented by a social worker, health care provider or on other appropriate documents, or as reported through consultations with a social worker, health care provider or other appropriate personnel.

"Battering" generally refers to violent physical assaults on women. Battering during pregnancy is associated with increased risks of low birth weight, pre-term delivery, and chorioamnionitis, as well as poor nutrition and health behaviors. Battered women are more likely to have a low maternal weight gain, be anemic, consume an unhealthy diet, and abuse drugs, alcohol, and cigarettes.

Nutrition Risk Factor 902 (Low Risk): Foster Care

Defined as: entering the foster care system during the previous 6 months or moving from one foster care home to another during the previous 6 months

Limited Abilities

Nutrition Risk Factor 902 (Low Risk): Women with Limited Ability to Make Feeding Decisions and/or Prepare Food

Additionally, there are women with limited ability to make feeding decisions and/or prepare food. Examples may include individuals who are:

- mentally disabled/delayed and/or have a mental illness such as clinical depression (diagnosed by a physician or licensed psychologist);
- physically disabled to a degree which restricts or limits food preparation abilities;
- currently using or having a history of abusing alcohol or other drugs.*

*Regarding the use of alcohol – a woman who drinks should not be assigned this risk factor unless the use of alcohol interferes with her ability to select and prepare food.

Your Role

Follow the normal pregnancy protocols to identify nutritional needs. Discuss with the woman ways the WIC Program can assist her in meeting her nutritional needs.

Work with the woman to select a food package that will fit her ability to store and prepare food.

For women who are homeless or migrants, find out if they are aware of local resources in the community. These families can often benefit from more than just WIC foods and education. You can help by giving families information about agencies that help families with these challenges.

Occasionally a pregnant woman on the WIC Program will be in foster care. Sometimes a pregnant teen lives with a foster parent. Foster children have a high frequency of mental and physical problems that are often the result of abuse and neglect happening before foster care. They are often more likely to have inadequate nutrition. WIC staff can provide a baseline nutritional assessment of the participant and provide nutrition education, as well as make referrals to resources to support the foster parent and participant's ability to have a healthy pregnancy.

Women who have limited ability to make feeding decisions and/or prepare food are at risk for neglecting their own nutritional needs. Certain physical handicaps, such as blindness, paraplegia, or mental illness, may limit her ability to prepare foods. WIC staff can provide education, referrals, and coordinate services to help the woman receive the assistance she needs to have a healthy pregnancy.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1. Name two reasons why being homeless or a migrant would put a pregnant woman at nutritional risk.

ANSWERS

1. Difficulty storing foods (fresh or frozen) would limit types of foods purchased.
Limited access to cooking facilities.

Section VII: WIC Prenatal Protocols

Now that you have some background information on the importance of adequate nutrition and weight gain during pregnancy, let's review the Protocols for Normal Pregnancy.

These protocols are steps for assessing the anthropometric and nutritional status of the pregnant woman and for counseling on the top one or two priorities.

Normal Pregnancy Protocols

1. Assessment at Certification Visit

- Perform a thorough nutrition assessment covering the following areas:
 - Growth- determine if pre-pregnancy weight is underweight, normal, overweight, or obese, by entering the correct pre-pregnancy weight on the Pregnancy panel and the correct height on the Anthropometric panel.
 - Iron Status – check hemoglobin
 - Medical History – medical condition, health concerns, allergies or disabilities. Assess during the Nutrition Interview.
 - Nutrition practices – typical eating and drinking habits.
 - Lifestyle – physical activity, substance abuse, smoking or exposure to secondhand smoke
 - Personal Factors –culture, family structure, education, living, work situations and income
- Assign Nutrition Risk Factors (NRFs) during the Assessment on the appropriate panels in the Compass computer system.

2. Counseling Points

- Review the Rights and Responsibilities.
- Review the assigned Nutrition Risk Factors.
- Encourage:
 - A good prenatal diet based on healthy eating habits and choosing a variety of foods from the different food groups.
 - Appropriate weight gain
 - Normal weight (BMI of 18.5 to 24.9) – 25-35 pounds
 - Underweight (BMI <18.5) – 28-40 pounds
 - Overweight (BMI of 25 to 29.9) – 15-25 pounds
 - Obese (BMI \geq 30.0) –11-20pounds
 - For twins – 35-45 pounds and a rate of weight gain of 1.5 pounds/week for normal weight women during the second half of pregnancy
 - For short women (under 62”) encourage gain at the lower end of each range
 - Use of prenatal vitamin/mineral supplements to include 27 mg of iron and 400 micrograms of folic acid. Encourage a diet rich in folate as a complement to the supplement.
 - Prenatal care from a physician or clinic.
 - Ample fluids.

- Advise all pregnant, postpartum, and breastfeeding women on the importance of knowing their HIV status.
 - Provide information regarding the risks of transmitting HIV from mother to baby during pregnancy and delivery and the importance of getting early medical treatment to reduce the risk to their baby.
 - Provide referral information for local HIV testing, education, and counseling services.
 - Inform all women that HIV-positive mothers should not breastfeed.
 - Discourage and warn of the possible dangers of:
 - Use of alcohol, drugs, cigarettes.
 - Use of medicines, including over-the-counter medications, unless prescribed by a physician who knows of the pregnancy.
 - Exposure to secondhand tobacco smoke which can result in a smaller, less healthy baby.
 - Ask participant what she has heard about breastfeeding
 - **If participant seems interested in breastfeeding**, address any concerns or barriers to breast-feeding she may have. Dispel any myths. Determine her sources of support for breastfeeding. Discuss nipple evaluation and refer to prenatal provider if appropriate.
 - **If participant seems undecided about breastfeeding**, address any concerns or barriers to breastfeeding she may have. Dispel any myths. Discuss the advantages of breastfeeding. Determine her sources of support for breastfeeding. Discuss nipple evaluation and refer to prenatal provider if appropriate.
 - **If participant says she wants to bottle-feed**, ask her how she came to that decision. Address concerns, barriers, myths. Discuss advantages of breastfeeding. Determine sources of support. If participant is possibly interested in breastfeeding, discuss nipple evaluation and refer to prenatal provider if appropriate.
3. Behavior Change Goal
- Assess the participant's interests and consider the Stage of Change model. Interactively set 1-2 goal(s) with the participant and help identify any anticipated barriers to achieving the goal.
4. Referral
- Schedule with High Risk Counselor within 24 hours or within one month, as needed, for high-risk nutrition risk factors
 - Prenatal care (if not receiving)
 - Family Planning Services as appropriate
 - Other community services as needed, such as Medicaid, La Leche League, child birth classes, Food Stamps, or Social Services
 - Drug or alcohol abuse treatment programs, as appropriate
5. Documentation
- Document referrals made, pamphlets provided, client comments/follow up on goals and referrals, assessment/counseling/plan, and behavior change goals set.

6. Follow Up at Next Visit

- Low-Risk Participants
 - At a minimum, check and plot weight at least one time each trimester. Optimally, weights should be taken at each WIC visit.
 - If the woman is not receiving prenatal care, check weight and repeat hemoglobin if it was previously low.
 - Review behavior change goal from previous visit. Praise participant for any attempted change.
 - Advise to continue eating a good prenatal diet.
 - If participant plans to breastfeed, discuss the following topics:
 - Prenatal breast preparation.
 - How to breastfeed.
 - Positioning and latch-on
 - Frequency of breastfeeding
 - Length of feedings
- If participant is undecided about breastfeeding:
 - Ask if she has thought anymore about breastfeeding.
 - Determine barriers and address them.
 - Dispel myths.
 - Review advantages.
 - If participant is willing to hear more about breastfeeding, discuss the following topics:
 - Prenatal breast preparation
 - How to breastfeed
 - Positioning and latch-on
 - Frequency of feedings
 - Length of feedings
- For the participant who plans to bottle-feed:
 - Ask her what she's heard about breastfeeding and dispel myths.
 - If she states that she will definitely bottle feed, support her decision.
 - If she appears open to the possibility of breastfeeding, or is interested in hearing more about it, discuss the following topics:
 - Prenatal breast preparation.
 - How to breastfeed
 - Positioning and latch-on
 - Length of feedings
- Refer to Family Planning in third trimester.
- Follow up on referrals as appropriate.
- High-Risk Participants
 - High Risk Counselor must provide counseling following the High and Moderate Risk Nutrition Management Protocols.
 - Participant newly identified as high risk must be scheduled with the High Risk Counselor within 24 hours or within one month of high-risk determination depending on the risk factor.
 -

7. Follow Up at Subsequent Visits

- For the participant who plans to breastfeed, or is interested in learning more about it, discuss one of the following breastfeeding-related topics at every subsequent WIC visit:
 - What the participant can do while in the hospital.
 - Positioning and latch-on (brief review)
 - What she can expect the first few weeks.
 - Clothing for nursing.
 - How to avoid common problems:
 - sore nipples
 - engorgement
 - Participant's sources of postpartum support.
 - Mention food package for exclusively breast feeding women.
- Participant newly identified as high risk must be scheduled with the RD/RN within on month of high-risk determination.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1. Without looking at the prenatal protocols just listed, see how many counseling points you can list for a certification visit.

2. What are four topics around breastfeeding that you can cover during prenatal follow-up visits?

ANSWERS

1 & 2.

If you were unable to name at least 4 protocols, take some time to review the text before proceeding.

Section VIII: Postpartum Nutrition and General Guidelines

Postpartum: The “Fourth” Trimester

The postpartum period is a time of dramatic emotional and physical change for women, yet it is most often treated as an after-thought in nutrition and health care. So much time is spent talking about the baby and preparing for delivery, that we often forget the new mom’s needs.

Word to Know:

Postpartum: That period of time occurring after childbirth up to 6 months after delivery.

Just as adequate nutrition and a healthy lifestyle is important during pregnancy, it is also important during the postpartum period. A good diet is important to rebuild the nutrient stores that were depleted during pregnancy. A healthy lifestyle after the birth of the child may improve the outcome of the next pregnancy and the health of the next child.

This section will review six healthy tips for new moms. It reviews the nutrient needs of the non-breastfeeding, postpartum woman. Although breastfeeding is the optimal way to feed an infant, some women may be unable to or may not choose to breastfeed. Refer to the [Breastfeeding Module/ Resource Manual](#) for the nutrient needs of the postpartum breastfeeding woman.

The postpartum period continues to be a special time for the mother and it is important to convey this message to her. The new mother will be experiencing many physical and emotional changes. Some of these changes may be linked to her nutritional status and diet. It is very important to stress the positive effects of good nutrition during this postpartum period.

Replenishing the body’s nutrient stores is important for the health status of the mother. The Health Questionnaire, along with a thorough nutrition assessment of growth, iron status, medical history, nutrition practices, lifestyle and personal factors will help you identify the factors that indicate a postpartum woman may be at nutritional risk. Many of the same nutrition risk factors of pregnancy will apply to the postpartum woman. Some of these include:

- Young age
- Underweight postpartum
- Overweight postpartum
- Anemia
- Elevated blood lead
- Closely-spaced pregnancies
- Complication during the most recent pregnancy
- Using drugs and/or alcohol
- Following highly-restrictive diets
- Specific medical conditions
- Inadequate diet

- A multi-fetal pregnancy during the most recent pregnancy
- Pica
- And any of the social indicators of nutritional risk

There are two risk factors unique to the postpartum woman:

- High maternal weight gain during the most recent pregnancy
- A different definition for risk with the use of alcohol.

These will be reviewed in this section of the module.

Equally important at this time is the fact that a mother's nutritional status after a pregnancy can affect the outcome of future pregnancies. So it is critical that the mother practice healthy nutrition habits even after the postpartum period since the benefits of her maintaining a good nutritional state are extended to her future pregnancies. **For example, it is recommended that all women of childbearing age take a multivitamin with folic acid daily, in addition to eating a healthy diet that includes foods rich in folic acid to help prevent neural tube defects.**

Nutrition Risk Factor 427D (Low Risk): Inadequate vitamin/mineral supplementation recognized as essential by national public health policy

Defined as: consumption of less than 400mcg of folic acid from fortified foods and/or supplements daily by non-pregnant women

A Word About Pre-Diabetes

Nutrition Risk Factor 363 (High Risk) Pre-Diabetes

Defined as: an impaired fasting glucose (IFG) and /or impaired glucose tolerance (IGT), as diagnosed by a physician and self reported by the applicant/participant

Pre-diabetes is a condition that occurs when a person's blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. More than 50 million people in the United States over the age of 20 years have pre-diabetes. People with pre-diabetes may experience some adverse effects of diabetes such as heart disease, kidney disease, and eye disease. The good news is that people with pre-diabetes can successfully prevent or delay the onset of type 2 diabetes through lifestyle changes.

Pre-diabetes is diagnosed using either the Fasting Plasma Glucose (FPG) test or the Oral Glucose Tolerance Test (OGTT). A person with pre-diabetes has a FPG level between 100 and 125 mg/dl or a 2-hour glucose level between 140 and 199 mg/dl. Either the FPG or the OGTT test may be used to identify pre-diabetes with equal accuracy. Doctors may refer to pre-diabetes as Impaired Glucose Tolerance or Impaired Fasting Glucose depending on which test they use. During pregnancy, Impaired Fasting Glucose and Impaired Glucose Tolerance are diagnosed as Gestational Diabetes.

Lifestyle changes which include exercise and mild weight loss can decrease the chance that a person with pre-diabetes will develop Type 2 diabetes by up to 60%. For some, early

intervention can return elevated blood sugar levels to the normal range. WIC staff can play an important role by encouraging physical activity, healthy eating and breastfeeding to help postpartum women return to their pre-pregnancy weight after pregnancy. The WIC food package, emphasizing whole grains, fruits and vegetables, and low fat dairy products, further assists families in reducing their risk of diabetes.

A few points to keep in mind when risking for Pre-Diabetes versus Gestational Diabetes are:

- Pre-diabetes is assigned to breastfeeding and non-breastfeeding postpartum women only
- Participants may self-report the medical diagnosis of pre-diabetes.
- Impaired Fasting Glucose and Impaired Glucose Tolerance are other names for pre-diabetes and, if identified, are used to assign pre-diabetes to breastfeeding and non-breastfeeding postpartum women.
- During pregnancy, Impaired Fasting Glucose and Impaired Glucose Tolerance are diagnosed as *gestational diabetes* (NRF 302).
- Women risked with Gestational Diabetes during pregnancy should not automatically be assigned Pre-Diabetes after delivery. They must have a diagnosis from their medical provider –or– self report the medical diagnosis in order to be risked as Pre-Diabetes.
- Breastfeeding and non-breastfeeding postpartum women who were diagnosed with Gestational Diabetes during pregnancy should be assigned Gestational Diabetes (303) as a “Complications of Previous Pregnancy” risk.

Pregnancy Weight Gain

During the first six weeks of the postpartum period, the woman’s weight is not a good indicator of whether the woman is truly overweight or not. She will still be retaining extra body fluids produced during pregnancy that helped to form the extra blood volume needed to nourish the baby. If a woman gained an adequate amount of weight during pregnancy, her postpartum weight will probably be more than her pre-pregnancy weight. Besides the maternal fluids just mentioned, she will most likely be carrying some extra fat. A review of studies found that the average postpartum weight retention (gained during pregnancy and not lost during the postpartum period) is about one kilogram (2.2 pounds) for each live birth (although there is a widespread weight gain range). This may help explain why the number of live births a woman has can influence her long-term body weight by retaining a small amount of weight with each pregnancy.

Nutrition Risk Factor 133 (Low Risk): High Maternal Weight Gain

Defined as: total gestational weight gain during most recent singleton pregnancy of:

- Greater than 40 pounds for underweight women
- Greater than 35 pounds for normal weight women
- Greater than 25 pounds for overweight women
- Greater than 20 pounds for obese women

Higher weight gains during pregnancy are associated with greater postpartum weight retention. The added health risks of being overweight or obese include heart disease, diabetes, gallbladder disease, sleep apnea, osteoarthritis, several reproductive cancers, infertility, and miscarriages. It can cause complications with future pregnancies. For these reasons, high

maternal weight gain is a risk factor on the WIC Program. WIC staff members have an opportunity to offer sound nutritional advice on diet and to encourage moderate and appropriate physical activity.

Most women want to get back to their pre-pregnancy weight as soon as possible. Not realizing the importance of replenishing their nutrient stores during this postpartum period, many will go on “crash” diets or adopt inadequate eating patterns. Because of this, postpartum women should be counseled soon after delivery (or even before) about weight loss, the need to eat a balanced diet, and how they can sensibly achieve a desirable weight when it is appropriate.

Another good reason not to restrict calories severely during the postpartum period is because, generally, new mothers are already tired from the demands of a newborn baby. Going on a weight reduction diet puts even more demands on the mother’s body.

Some weight loss may occur naturally during the weeks just following delivery. This is fine as long as the weight loss does not exceed ½ to 1 pound per week and the woman is eating a well-balanced, nutritious diet. She should be counseled on careful, slow weight loss while eating a variety of foods from the food groups.

Your Role

Other suggestions that you may use when assisting a woman with weight loss include:

- Cut down on high-calorie foods such as cookies, cakes, candies, chips, and soda pop.
- Reduce fat intake by using:
 - Little or no fat when cooking. Bake, broil, or steam.
 - Lean meats, fish, poultry.
 - Vegetable proteins such as dried beans and peas.
 - Nonfat, reduced-fat, and/or lowfat dairy products.

Increase consumption of fresh fruits and raw vegetables and whole grains.

- Increase physical activity and exercise.
- Consider a weight loss support group.
- Avoid fad diets or quick weight loss programs.
- Avoid liquid diets or supplements.
- Seek a professional for severe problems. Consult an RD for losing weight.

Losing Weight with High-Protein Diets

There are several diets that promote weight loss by restricting carbohydrates and consuming unlimited fat and protein. Weight loss from these diets is initially due to rapid water loss. People are at risk for ketosis, which can cause slight nausea, light-headedness, and fatigue. It may also worsen existing medical problems, such as gout and kidney disease. Pregnant women should avoid the diet because chronic ketosis in the mother could negatively affect the fetus.

There is no scientific evidence to suggest that these diets have any advantages over the more conventional diets for weight reduction. There is no magic panacea to weight loss; a calorie is still basically a calorie, and there must be a long-term deficit between calories eaten and calories burned if weight loss is to be maintained.

Teen Postpartum Weight Loss

Adolescents in the postpartum period should receive special attention regarding the weight loss issue. It may be more difficult to convince this age group to maintain a good diet during the postpartum period. They still may be very unhappy with their weight 3-6 months after delivery, even though their new weight may be a result of their own normal growth and maturation that occurred during their pregnancy, and not due to the actual pregnancy itself.

It may help the teenager accept and understand her new weight if you take the time to thoroughly assess her prior and current weight status by looking at her prepregnancy weight, the total amount of weight she gained during pregnancy, and her current BMI.

Encourage normal eating, active living, self-respect, and an appreciation for differences in body size.

Use of Alcohol

Postpartum women who choose to drink alcohol put themselves and their baby's health at risk, particularly if they are drinking heavily. Alcohol may impair people's judgment which can lead to accidents or injuries. Alcohol may become a substitute for nutritious food. Excess alcohol consumption depletes the body of nutrients, destroys brain cells, and can increase a person's risk for diseases of the liver and pancreas and certain cancers.

Your Role

For women who drink alcohol, encourage moderation (such as one drink per day).

Offer information and referrals to all women who drink alcohol. Remind all women who are capable of becoming pregnant that consuming alcohol can put a fetus at risk for birth defects. Unfortunately the harmful effects to a fetus often occur before a woman even knows she is pregnant.

Women Who Miscarry

A woman who miscarried or underwent a therapeutic abortion is eligible to receive WIC services up to six months after termination of the pregnancy. When providing WIC services to these women staff may use the pamphlet called *Coping with the Loss of Your Baby*.

Healthy Tips for New Moms

There are six “Healthy Tips” or educational messages that WIC staff can reinforce to the postpartum woman. Let’s examine each tip in more detail.

Healthy Tip #1: *Eat Right*

Help mothers choose nutritionally adequate diets. Review healthy eating habits and choosing a variety of foods from the food groups to help women plan meals. The Nutrition Guide for Postpartum Women (shown on page 87) is a sensible, easy-to-follow guide that encourages women to choose the right amount of foods. The guide includes recommendations about portion sizes and amounts for postpartum women. For more individualized recommendations, women can visit <http://www.choosemyplate.gov>.

In general, the Eating Guide for Postpartum Women emphasizes:

- Whole grains
- Eating a variety of fruits and vegetables
- Low fat or fat free milk
- Lean protein

Refer to the WIC Basic Nutrition Module for a more detailed explanation.

Healthy Tip #2: *Eat Foods Rich in Folate Every Day*

As discussed previously, folate is a B vitamin that can help prevent birth defects of the brain and spinal cord called neural tube defects (NTDs) when taken before pregnancy. Since NTDs originate in the first month of pregnancy before many women know they are pregnant, it is important that the woman have enough folate in her system before pregnancy. One way to ensure that women have an adequate intake of folate in addition to a healthy diet is to take a multivitamin with folic acid daily.

* Note: If a postpartum woman is not consuming 400mcg of folic acid then risk factor code 427D must be assigned. See risk factor explanation on page 27.

Healthy Tip #3: *Be Active*

Exercise is important for everyone. Encourage women to ask their health care provider first to find out when they can begin exercising. Usually a light, reasonable exercise regime, such as walking, can be suggested. Encourage the mom to take walks with the baby.

Once exercise is approved by the health care provider, recommend that the mom try to exercise 3 to 4 times a week, starting at 10 minutes and working up to 20 to 30 minutes each time. A regular routine of exercise is very important to regaining body tone, encouraging weight loss, and improving a new mother's overall spirits.

Healthy Tip #4: *See a Health Care Provider*

Encourage the postpartum mother to visit her prenatal provider about 6 weeks after delivery. This is an opportunity for the provider to evaluate the woman's recovery as well as discuss birth control methods. Also, if the new mother is feeling sad or angry after the birth of her baby, she can talk with her provider about her feelings. The provider can evaluate her for more serious conditions, such as postpartum depression, and offer resources to help her with the adjustments of having a new baby.

Healthy Tip #5: *Make Time for Being a New Mom*

Once the baby arrives, often the attention is switched from the mom to caring for the new baby. Encourage the postpartum mom to take time for herself each day to help her to be a good mother and decrease stress. Some suggestions to offer include:

- Take a walk
- Take a warm bath
- Talk to a friend or relative
- Read a magazine or book

Postpartum Pamphlets:

- Focus on You: Healthy Tips for New Moms
- Folate: Before, During, and After Pregnancy
- Getting to a Health Weight After Pregnancy
- Coping with the Loss of Your Baby

Since the new mother is probably tired with her routine dramatically altered, encourage her to fix meals that require little preparation time or, better yet, to enlist the assistance of other adults in the household.

Healthy Tip #6: *Stay Smoke-Free and avoid exposure to secondhand smoke*

Praise women who quit smoking during pregnancy. To stop smoking is one of the best things they can do for themselves and their baby. Unfortunately, many women who quit smoking during pregnancy start again after delivery. One way to help new mothers stay quit is to talk with them about other ways to deal with the stress of being a new parent. Offer resources in the community to help the new mom stay smoke-free.

Secondhand smoke is also a health risk for both moms and babies. It can cause breathing difficulties and is associated with higher rates of Sudden Infant Death Syndrome (SIDS), asthma, and increased incidence of respiratory and middle ear infections. One of the best ways to reduce exposure to secondhand smoke, is to ask those who smoke to only do so outside the house (or car).

Normal Postpartum Protocols

Just as with pregnancy, the WIC Program has protocols for providing care to the postpartum woman. These protocols guide you through the assessment process and educational points of a certification visit. Let's review the protocols for normal postpartum nutrition education and counseling.

1. Assessment at Certification Visit

- Perform a thorough nutrition assessment covering the following areas:
 - Growth- check postpartum weight
 - Iron Status - check hemoglobin
 - Medical History - medical condition, health concerns, allergies or disabilities. Assess using the Nutrition Interview.
 - Nutrition Practices - typical eating and drinking habits.
 - Lifestyle - physical activity, substance abuse and exposure to secondhand smoke
 - Personal Factors - culture, family structure, education, living, work situations and income
- Assign subjective Nutrition Risk Factors (NRFs)

2. Counseling Points

- Review the Participant Rights and Responsibilities
- Review Nutrition Interview
- Encourage:
 - A good postpartum diet based on healthy eating habits and choosing a variety of foods from the different food groups.
 - Ample fluids.
 - Rest, relaxation, and exercise.
 - Postpartum check with physician or clinic.
- Discourage exposure of mom and infant to secondhand tobacco smoke which can cause breathing difficulties and more respiratory and ear infections.
- Discuss woman's weight loss plans, if any. For the first three months postpartum, weight loss should not be greater than ½ to 1 pound per week. This time is needed for replenishment of body stores. Significant caloric restriction or rapid weight loss should be discouraged until after this period of rebuilding body stores.
- Advise on the importance of knowing one's HIV status and make referral for testing.

3. Behavior Change Goal Setting

- Assess the participant's interests and consider the Stage of Change model. Interactively set 1-2 goal(s) with the participant and help identify any anticipated barriers to achieving the goal.

4. Referral

- Schedule with High Risk Counselor within one month, as needed, for high-risk NRFs.
- Refer to other community services as needed, such as Family Planning, Medicaid, parenting classes, Food Stamps, Social Services, drug or alcohol abuse treatment programs, as appropriate.

5. Documentation

- Document referrals made, pamphlets provided, client comments/follow up on goals and referrals, assessment/counseling/plan, and behavior change goals set.

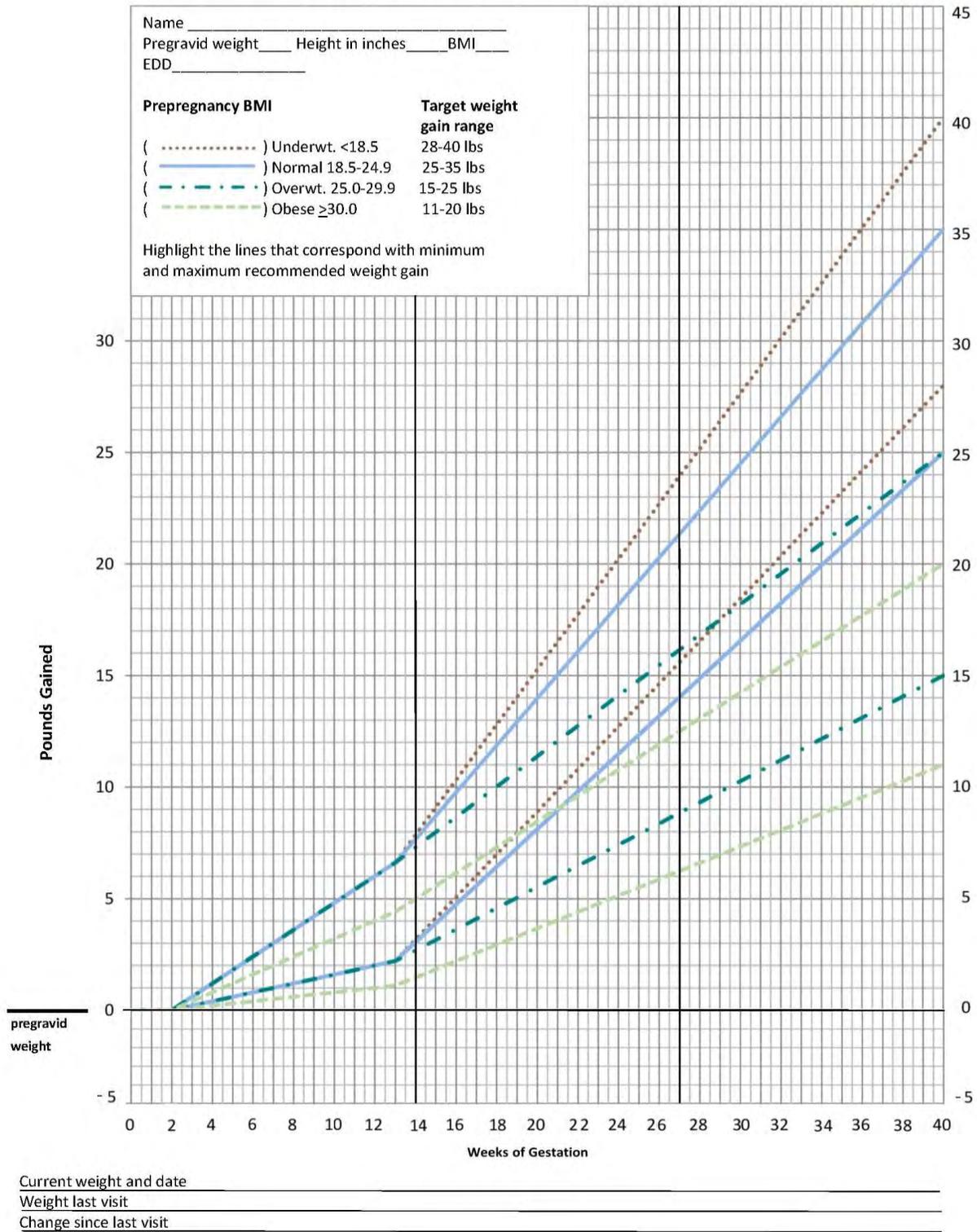
6. Follow Up at Next Visit

- Low-Risk Participants
 - Review behavior change goal from previous visit. Praise participant for any attempted change. Advise to continue following good postpartum diet.
 - Review woman's current weight and goals for weight loss as appropriate.
 - Follow up on referrals as appropriate.

7. High-Risk Participants

- High Risk Counselor must provide counseling
- Participants newly identified as high risk must be scheduled with the High Risk Counselor within one month of high risk determination.

PRENATAL WEIGHT GAIN CHART



NRF #49 Inadequate Weight Gain: Any time during pregnancy when weight plots below the bottom line / below the recommended weight gain range; or

- Any weight loss below pregravid weight during the 1st trimester, or
- Any weight loss of 2 pounds or more in the 2nd or 3rd trimesters (14-40 weeks gestation).

NRF #76 High Maternal Weight Gain: Any time during pregnancy when weight plots above the top line / above the recommended weight gain range.

Total gestational weight gain ranges with twin pregnancy**

Category:	Total Weight Gain (pounds):
Underweight	recommendations currently not available
Normal	37-54
Overweight	31-50
Obese	25-42

**provisional recommendations

BMI Table for Determining Weight Classification for Women *				
Height (Inches)	Underweight BMI <18.5	Normal Weight BMI 18.5-24.9	Overweight BMI 25.0-29.9	Obese BMI ≥ 30.0
58"	<89 lbs	89-118 lbs	119-142 lbs	>142 lbs
59"	<92 lbs	92-123 lbs	124-147 lbs	>147 lbs
60"	<95 lbs	95-127 lbs	128-152 lbs	>152 lbs
61"	<98 lbs	98-131 lbs	132-157 lbs	>157 lbs
62"	<101 lbs	101-135 lbs	136-163 lbs	>163 lbs
63"	<105 lbs	105-140 lbs	141-168 lbs	>168 lbs
64"	<108 lbs	108-144 lbs	145-173 lbs	>173 lbs
65"	<111 lbs	111-149 lbs	150-179 lbs	>179 lbs
66"	<115 lbs	115-154 lbs	155-185 lbs	>185 lbs
67"	<118 lbs	118-158 lbs	159-190 lbs	>190 lbs
68"	<122 lbs	122-163 lbs	164-196 lbs	>196 lbs
69"	<125 lbs	125-168 lbs	169-202 lbs	>202 lbs
70"	<129 lbs	129-173 lbs	174-208 lbs	>208 lbs
71"	<133 lbs	133-178 lbs	179-214 lbs	>214 lbs
72"	<137 lbs	137-183 lbs	184-220 lbs	>220 lbs

* Adapted from the Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults. National Heart, Lung and Blood Institute (NHLBI), National Institutes of Health (NIH). NIH Publication No. 98-4083.

Nutrition Guide for Postpartum Women

After you have a baby, you have special nutritional needs. Aim to eat these amounts from each food group every day.

Food Group	Amount per day	What counts as 1 cup or 1 ounce:	Examples
 VEGETABLE	2½ – 3 cups	<i>What counts as 1 cup:</i> 1 cup raw, cooked, or canned 1 cup vegetable juice 2 cups raw leafy vegetables	Vary your veggies <i>Dark Green:</i> Broccoli, brussels sprouts, leaf lettuce, spinach <i>Orange:</i> Carrots, sweet potatoes, pumpkin, squash (acorn or butternut) <i>Starchy:</i> Potatoes, yams, and corn <i>Other:</i> Eggplant, tomatoes, peppers, mushrooms, onions, cauliflower, cabbage, green beans, zucchini Nutrition Tip: Eat dark green and orange vegetables every day. Try fresh, frozen, or canned vegetables.
 FRUIT	2 cups	<i>What counts as 1 cup:</i> 1 small piece or ½ large piece 1 cup cut fruit 1 cup 100% fruit juice ½ cup dried fruit	Focus on fruits Oranges, grapefruit, citrus juices, melons, berries Apples, bananas, pears, plums, grapes, pineapple, peaches, apricots, applesauce, 100% juice, raisins, other dried fruit Nutrition Tip: Eat a variety of fruits by choosing different colors.
 MILK	3 cups	<i>What counts as 1 cup:</i> 1 cup milk or yogurt 1½ oz cheese or 2 oz processed cheese (such as American) 2 cups cottage cheese	Get your calcium-rich foods Milk, yogurt, cheese, cottage cheese Milk-based soups, pudding, ice milk, frozen yogurt Nutrition Tip: Go fat-free (skim) or low-fat (1%) when you choose milk, yogurt, and cheese.
 GRAIN	6 ounces	<i>What counts as 1 ounce:</i> 1 slice bread or 6" tortilla 1 cup ready-to-eat cereal ½ cup cooked pasta, rice, or cereal 5 to 7 crackers	Make half your grains whole 100% whole grain breads, cereals, crackers, and pasta Rice, noodles, tortillas, oatmeal, bagels, English muffins, popcorn Nutrition Tip: Just because bread is brown does not mean it is whole grain. Look for the words "whole-wheat" or "whole grain" before the first ingredient or "100% whole" wheat or grain on the label.
 MEAT	5½ ounces	<i>What counts as 1 ounce:</i> 1 oz meat, poultry, or fish ¼ cup cooked beans or peas 1 egg 1 tablespoon peanut butter or ½ oz nuts	Go lean with protein Lean beef, pork, chicken, or turkey Fish including canned salmon and tuna (limit canned tuna to 6oz/week) Split peas, pinto beans, black beans, kidney beans, lentils, other beans Eggs, peanut butter, nuts, seeds Nutrition Tip: Choose low-fat or lean protein, such as chicken, turkey, fish, and cooked beans.

Tips:

- ✓ Eat a variety of foods from each group every day!
- ✓ Eating a variety of healthful foods after delivery replaces the nutrients given to the baby during pregnancy.
- ✓ Make sure you eat breakfast, lunch, and dinner. Don't skip meals, and you may also need to eat between meals.
- ✓ Trust your appetite. Eat when you feel hungry and stop when you're satisfied.
- ✓ Challenge yourself to eat 5 cups of fruits and vegetables every day. Drink some juice, eat salads, eat cooked or raw vegetables with meals, and snack on fruit.
- ✓ Drink milk with your meals. Also eat foods made from milk, like cheese, yogurt, and cottage cheese.
- ✓ Drink water regularly! Fluids are important for recovery after delivery
- ✓ If you were taking prenatal vitamins when you were pregnant, continue to take them!

Focus on Folate

Folate is a B vitamin that is essential in forming a baby's brain and spinal cord, before a woman may know she is pregnant. It may also lower your risk for heart disease, and is an important nutrient in a balanced diet. Whether you are planning to have another baby or not, it is a good idea to include folate in your diet.

Try one of these foods:

- Fortified breakfast cereals
- Enriched rice, pasta, and bread
- Cooked dry beans, peas, and lentils
- Sunflower seeds, peanuts, and peanut butter
- Dark green leafy vegetables such as spinach or leaf lettuce
- Orange or pineapple juice

Snack Ideas for Busy Moms

Snacks are an important part of a healthy diet. Snacking on nutritious foods can help you keep your energy high, and add nutrients to your day that were not eaten at mealtimes.

Try these healthy snack ideas:

- Try a bowl of whole grain cereal with low fat milk
- A cup of yogurt with cut up fruit or a handful of dry cereal
- Blend milk or yogurt with cut fruit and ice for a fruit smoothie
- A handful of nuts, such as walnuts, almonds, or pistachios
- Whole grain crackers with cheese or sliced avocado
- A granola bar and a glass of milk
- Cut vegetables with low fat ranch dressing or dip
- Toast and peanut butter
- A tortilla with melted cheese
- Sliced apple topped with cheese or peanut butter
- Whole grain crackers and a glass of juice
- A piece of fruit, hard boiled eggs, or a glass of milk

Be Active Everyday!

Exercise is important for you after you have your baby, but talk to your doctor before starting an exercise or weight loss program. When your doctor says it's okay, start slowly by doing activities such as walking with your baby or taking the stairs. Find an activity you enjoy and that fits into your daily schedule.

Nutrition Guide for Pregnant Women

Each food group is important, and together they give calories, vitamins, and minerals to you and your growing baby. In your first trimester, eat amounts near the lower end of the range, and increase as your pregnancy proceeds.

Food Group	Amount per day	What counts as 1 cup or 1 ounce	Examples
 VEGETABLE	2½ – 3 cups	<i>What counts as 1 cup:</i> 1 cup raw, cooked, or canned 1 cup vegetable juice 2 cups raw leafy vegetables	Vary your veggies <i>Dark Green:</i> Broccoli, brussels sprouts, leaf lettuce, spinach <i>Orange:</i> Carrots, sweet potatoes, pumpkin, squash (acorn or butternut) <i>Starchy:</i> Potatoes, yams, and corn <i>Other:</i> Eggplant, tomatoes, peppers, mushrooms, onions, cauliflower, cabbage, greens beans, zucchini Nutrition Tip: Eat dark green and orange vegetables every day. Try fresh, frozen, or canned vegetables.
 FRUIT	2 cups	<i>What counts as 1 cup:</i> 1 small or ½ large piece 1 cup cut fruit 1 cup 100% fruit juice ½ cup dried fruit	Focus on fruits Oranges, grapefruit, citrus juices, melons, berries Apples, bananas, pears, plums, grapes, pineapple, peaches, apricots, applesauce, 100% juice, raisins, other dried fruit Nutrition Tip: Eat a variety of fruits by choosing different colors.
 MILK	3 cups	<i>What counts as 1 cup:</i> 1 cup milk* or yogurt 1½ oz cheese* or 2 oz processed cheese (such as American) 2 cups cottage cheese	Get your calcium-rich foods Milk, yogurt, cheese, cottage cheese Milk-based soups, pudding, ice milk, frozen yogurt Nutrition Tip: Go fat-free (skim) or low-fat (1%) when you choose milk, yogurt, and cheese. Pregnant teenagers should have 4 cups of milk products daily.
 GRAIN	6 – 8 ounces	<i>What counts as 1 ounce:</i> 1 slice bread or 6" tortilla 1 cup ready-to-eat cereal ½ cup cooked pasta, rice, or cereal 5 to 7 crackers	Make half your grains whole 100% whole grain breads, cereals, crackers, and pasta Rice, noodles, tortillas, oatmeal, bagels, English muffins, popcorn Nutrition Tip: Just because bread is brown does not mean that it is whole grain. Look for the words "whole-wheat" or "whole grain" before the first ingredient or "100% whole" wheat or grain on the label.
 MEAT	5½ – 6½ ounces	<i>What counts as 1 ounce:</i> 1 oz meat, poultry, or fish** ¼ cup cooked beans or peas 1 egg 1 tablespoon peanut butter or ½ oz nuts	Go lean with protein Lean beef, pork, chicken, or turkey Fish including canned salmon and tuna (limit canned tuna to 6oz/week) Split peas, pinto beans, black beans, kidney beans, lentils, other beans Eggs, peanut butter, nuts, seeds Nutrition Tip: Choose low-fat or lean protein, such as chicken, turkey, fish, and cooked beans.

*Avoid unpasteurized milk or cheeses, such as feta, Brie, Camembert, blue-veined cheeses, queso blanco, queso fresco, or Panela.

**Avoid hot dogs or luncheon meats unless they are heated to steaming hot. Do not eat refrigerated meat spreads or refrigerated smoked seafood.

Tips:

- ✓ Eat a variety of foods from each group every day!
- ✓ Make sure you eat breakfast, lunch, and dinner. Don't skip meals, and you may also need to eat between meals.
- ✓ Challenge yourself to eat 5 cups of fruits and vegetables daily. Drink juice, eat salads, eat cooked or raw vegetables with meals, and snack on fruit.
- ✓ Drink milk with your meals. Also eat foods made from milk, like cheese, yogurt, and cottage cheese.
- ✓ You need extra fluids when you are pregnant, so drink water regularly!

Food Safety

Pregnant women are at higher risk for foodborne illness. Women can become infected with bacteria, viruses, and parasites from eating certain foods. The symptoms are usually nausea/vomiting, diarrhea, stomach ache, headache, fever, and chills. If you have any of these symptoms, see your doctor right away!

Foods to Avoid:

- Cold hot dogs, deli meats, and lunch meats *unless* they have been reheated to steaming
- Undercooked meat and poultry (such as chicken)
- Raw or undercooked seafood
- Refrigerated smoked fish
- Deli salads (cold salads)
- Raw sprouts
- Soft cheeses (goat, Brie, Camembert, blue-veined, queso blanco, queso fresco, or Panela)
- Raw or undercooked eggs
- Raw or unpasteurized milk and milk products
- Unpasteurized juice (such as fresh squeezed or chilled juice)

Snack Ideas

Snacks are an important part of a healthy diet. Snacking on nutritious foods can help you keep your energy high, and add nutrients to your day that were not eaten at mealtimes.

Try these healthy snack ideas:

- A glass of milk or a cup of yogurt with a piece of fruit
- Cut apple or carrot sticks with peanut butter
- Cut vegetables with low fat dressing or dip
- Whole grain crackers with cheese
- Graham crackers with peanut butter
- Peanut butter sandwich with a piece of fruit
- Tortilla with melted cheese
- A bowl of whole grain cereal with low fat milk
- Hard boiled eggs or a glass of milk

Dining Out

We dine out because it is quick and easy, but you can eat out and eat well, too. It is important to make healthful choices! Plan ahead and choose wisely.

When dining out:

<i>Try these foods</i>	<i>Instead of these foods</i>
Salad	Fried foods
Baked potato	French fries
Fruit juice or milk	Soda, punch, or fruit beverage
A piece of fruit or side salad	Potato chips or cheese twists
Cheese sandwich or small hamburger	Hot dog
Taco or bean burrito	Bratwurst, sausage, or large sandwich
Fruit or fruit salad	Cake, pie, or other baked goods
Yogurt or pudding	Ice cream or candy

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SELF-CHECK: PRACTICE YOUR KNOWLEDGE

1. Why is it important for non-breastfeeding, postpartum women to consume an adequate diet?

2. Name the 6 healthy tips to reinforce with postpartum women.

- _____
- _____
- _____
- _____
- _____
- _____

True or False?

3. ___ During the postpartum period, a woman should consume 400mcg of folic acid from fortified foods and/or supplements daily.

4. ___ After the initial postpartum period of rebuilding body stores and after breastfeeding has been discontinued, a woman should then be encouraged to lose weight if it's necessary.

ANSWERS

1. To replenish the body's nutrient stores that were depleted during pregnancy.

2.

- 1 Eat right,
- 2 Eat foods rich in folate every day;
- 3 Be active;
- 4 See a Health Care Provider;
- 5 Make time for being a new mom;
- 6 Stay Smoke-free and avoid exposure to secondhand smoke.

3. True

4. True

Training Activity

Once you have completed this module, please take the Prenatal & Postpartum Module on-line post- test. For access instructions please visit the Colorado WIC website. **Best of Luck!**