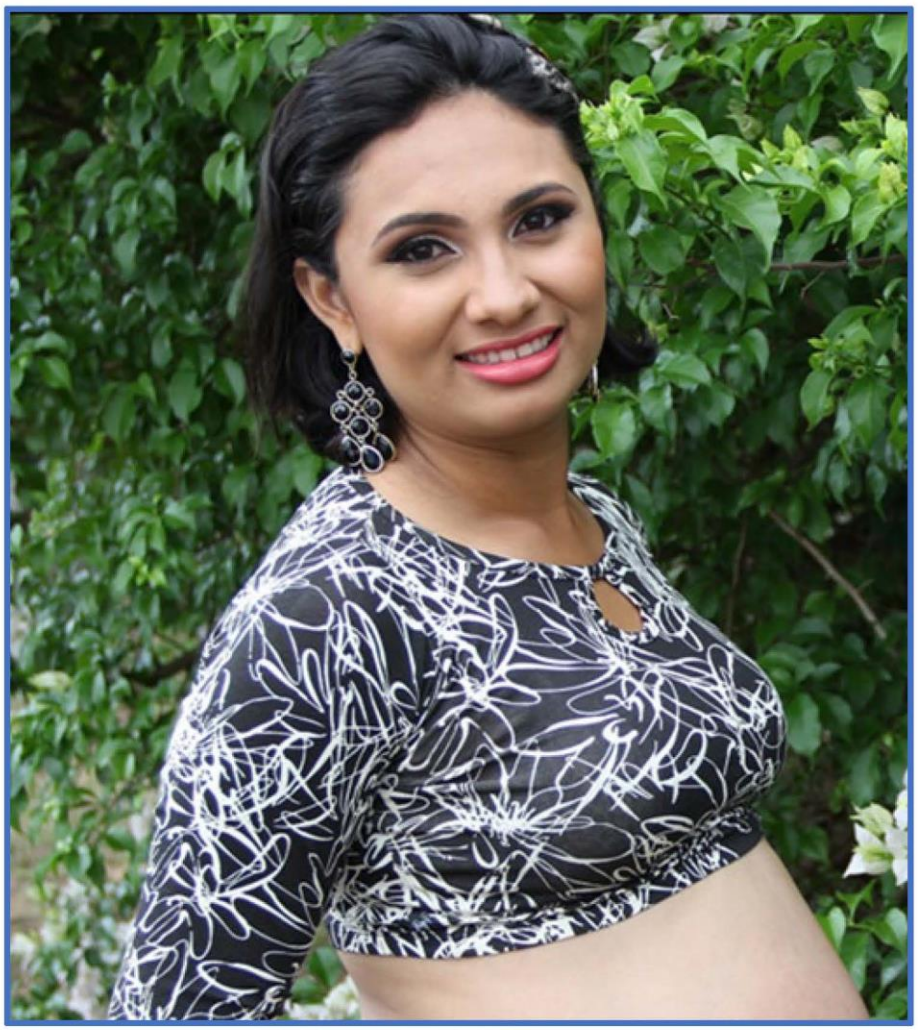
Nutrition Education Staff Training

Prenatal/Postpartum Nutrition Module



Michigan WIC Program

www.Michigan.gov/WIC

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Developed by the Texas Division of Public Health Nutrition and Education. Bureau of Nutrition Services.
Texas Department of Health. Adapted by the Colorado WIC Program.
2019. Revised March 2020, December 2020, August 2021.

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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 clients.

3. List at least three nutrition risks for pregnant women and state why these affect nutritional needs and status.

4. Recognize the nutrition risks 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 Grid 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 *Tips for Pregnant Moms* when making dietary recommendations to prenatal clients to enhance their nutrient intake.

10. State recommendations for the common problems of pregnancy: nausea, heartburn, and constipation.

11. List common nutrition concerns for the pregnant adolescent.

12. State recommendations for excessive weight gain and weight loss in pregnancy.

13. State recommendations regarding the use of caffeine, alcohol, drugs, and tobacco during pregnancy.

14. State the dietary recommendations indicated for iron-deficiency anemia.

15. State one or more reasons 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 a journey that will help 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. She will need to find a doctor and attend regular prenatal check-ups, which might be challenging.

Even with all 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, take care of themselves, and nurture their growing baby. You can:

- Determine if she has a nutritional need based on her height, weight, hemoglobin, and her dietary intake.
- Identify food habits and concerns that she may have.
- Offer nutrition information that supports healthy eating habits.
- Offer to help her set nutrition and health goals.
- Make referrals to other needed services.
- Issue food benefits 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.

Low Birth Weight: Baby weighs less than or equal to 5 pounds 8 ounces (2500 grams) at birth.

High Birth Weight: Baby weighs 9 pounds or more at birth.

Section I: The Importance of Nutrition and Prenatal Care

The Importance of Nutrition

Good nutrition before pregnancy and during pregnancy is important and can even decrease the risk of certain types of birth defects.

Good 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 baby. Women who consume an inadequate diet during pregnancy have a greater chance of complications and difficult deliveries including stillbirths, prematurity, and babies born 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, it increases the chance that her baby will be low birth weight or high birth weight. Low birth weight babies are more likely than normal birth weight babies to become ill and die during the period just before and after birth (the **perinatal period**). They may also suffer long-term health problems, including obesity and developmental disabilities. A mother of a high birth weight baby has a higher chance of Cesarean delivery (C-section) and the baby is more likely to be obese as a child and later in life.

Did you know?
Breastfeeding is 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.

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 provide breastfeeding education at each prenatal visit and in the early postpartum period.

The Importance of Prenatal Care

It is important to point out that nutrition, although extremely beneficial, is only one part of good prenatal care. The quality, quantity, and timing of prenatal care also impacts pregnancy outcome. You can encourage clients to visit a health 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 (death) of babies and mothers are preventable. Women who do not receive early and adequate prenatal care are more likely to deliver premature, growth retarded, or low birth weight infants. Early detection of potential problems is more likely when the pregnant woman gets regular prenatal checkups. Teenage pregnancy, low income, and substance abuse is closely associated with inadequate prenatal care.

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

- Fear that the cost of prenatal care may be too high. 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

Questions asked during the pregnancy nutrition session include, "*How is your pregnancy care going? How are your visits with your health care provider going?*" If she is not receiving prenatal care, try to identify the reasons she has not begun prenatal care using sensitivity and concern. Ask if she is interested in your help. If so, suggest that she probably qualifies for Medicaid and provide information on how to apply. If she needs a referral to a health care provider (HCP), but doesn't know where to start, offer to provide a list of HCP's in the area.

Some pregnant women are not aware that regular prenatal care has been shown to result in better pregnancy outcomes:

- Fewer complications for the mother and her baby.
- Fewer low weight births, and
- Lower neonatal death rates.

You can suggest that her time and effort spent on having a healthy pregnancy will pay off with a healthier baby. Healthy babies require less time away from work and other activities.

Determine if adequate prenatal care has been received or if she is at risk for inadequate prenatal care. Ask questions such as, *"How is prenatal care going with your health care provider? How long ago was your first visit with your health care provider?*

334.01 Lack of or Inadequate Prenatal Care, any of the following:

- Prenatal care beginning after the first trimester (after 13 weeks)

Weeks of gestation	Number of prenatal visits
14-21	0 or unknown
22-29	1 or less
30-31	2 or less
32-33	3 or less
34 or more	4 or less

Words to Know

Stillbirth: Pregnancy loss after 20 weeks of gestation.

Miscarriage: Pregnancy loss within the first 20 weeks of gestation.

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).

Health 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 sperm fertilize an egg. The fertilized egg moves to the uterus where it grows for the next nine months. The fertilized egg is called an embryo for the first eight

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.

weeks of life. After eight weeks, the developing embryo is called a fetus.

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. Unfortunately, many women do not even realize they are pregnant at this point.

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 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 can suck and swallow. Fingers and toes are becoming recognizable.

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.

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 can 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. She still may feel tired and have constipation. Their heartburn and indigestion can get worse as the fetus grows larger. Their breasts may no longer feel tender, but they have gotten bigger.

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 Pregnant Mother

During the third trimester, most women feel less tired. They have many things to think about and prepare for such as baby 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 two reasons why good nutrition is important during pregnancy.

   _____

   _____

True or False? (T or F)

2. ____ Low birth weight in babies is desirable because it results in an easier delivery.

3. ____ Women are at risk as having inadequate prenatal care if they begin visiting their provider late in their first trimester of pregnancy.

ANSWERS

1. Any the following answers are correct:
   1. To maintain mother's nutrient stores.
   2. To decrease the chance of complications and difficult deliveries, including prematurity, stillbirths, birth defects.
   3. To decrease the chance of nervous system disorders and impaired mental development in the newborn.
   4. To decrease the chances of having low birth weight babies.
   5. To allow for the normal growth and development of the fetus.

2. False. Low birth weight in babies is associated with an increased chance of illness and death during the perinatal period.

3. False. While early prenatal care is very important, the risk code, Lack of or Inadequate Prenatal Care, is only assigned if a woman has not started her prenatal care by the second trimester (after 13 weeks of pregnancy).

Section II: Anthropometric Indicators of Nutrition Risk

The first step in evaluating a woman's nutritional status is anthropometric assessment. Anthropometric assessment is the process of determining 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 can affect the outcome of her pregnancy. For example, low weight gain during pregnancy may mean that the woman is not eating enough to balance the energy she is using. You have a unique opportunity to provide nutrition education and counseling to improve pregnancy outcomes.

Be accurate with height and weight measurements because this is the information used for assessing a woman's health. The *Michigan WIC Anthropometric Measurement Procedures* emphasize 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 5 pounds 8 ounces) 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* may have high birth weights, are more likely to be delivered by Cesarean section, and are at greater risk of 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 chance 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.

Pre-pregnancy 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 is based on the woman's pre-pregnancy BMI value and if she is pregnant with more than one baby.

Weight Gain Distribution during Pregnancy

You may be wondering why a normal weight 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, you will have the opportunity to discuss healthy weight gain during pregnancy based on her pre-pregnancy BMI.

The proper use and interpretation of the Prenatal Weight Gain Grid requires using the following instructions:

1. Obtain and record the pregravid weight on Grid after the question in blue on the Anthropometric screen. This is the weight just before conception. If the pregravid weight is unknown, check the "Unknown" box. Click "Save".
2. Measure the height (without shoes) and record in the appropriate column on the Anthropometric Grid.
3. Weigh with normal indoor clothing and without shoes and record in the appropriate column on the Anthropometric Grid.
4. MI-WIC calculates the weeks of gestation based on the Expected Date of Delivery (EDD) entered on the Certification Action screen. A gestational wheel tool can be used to help calculate weeks gestation. It can be obtained from pharmaceutical companies or the American College of Nurse-Midwives. To update the EDD, call the DuJour line or 3 Sigma.
5. Use the pregravid weight as the baseline for the women's present prenatal weight.
6. At each prenatal visit, record the weight gained or lost. MI-WIC plots each weight to establish a pattern that can be compared with the shaded weigh gain curve for the client's prenatal BMI weight gain category.

   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	25.0 – 29.9
Obese	≥ 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.

The recommended target weight gain ranges are:

Pre-pregnancy BMI value		Target weight gain range
Underweight	<18.5	28 – 40 pounds
Normal	18.5– 24.9	25 – 35 pounds
Overweight	25.0 – 29.9	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:

- Weight gain for multi-fetal pregnancies is 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 women of short stature (under 62 inches) 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 rate of 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 4½ pounds per month;
- Normal and overweight women are encouraged to gain about 3½ pounds per month; obese women are encouraged to gain about 2½ pounds per month.

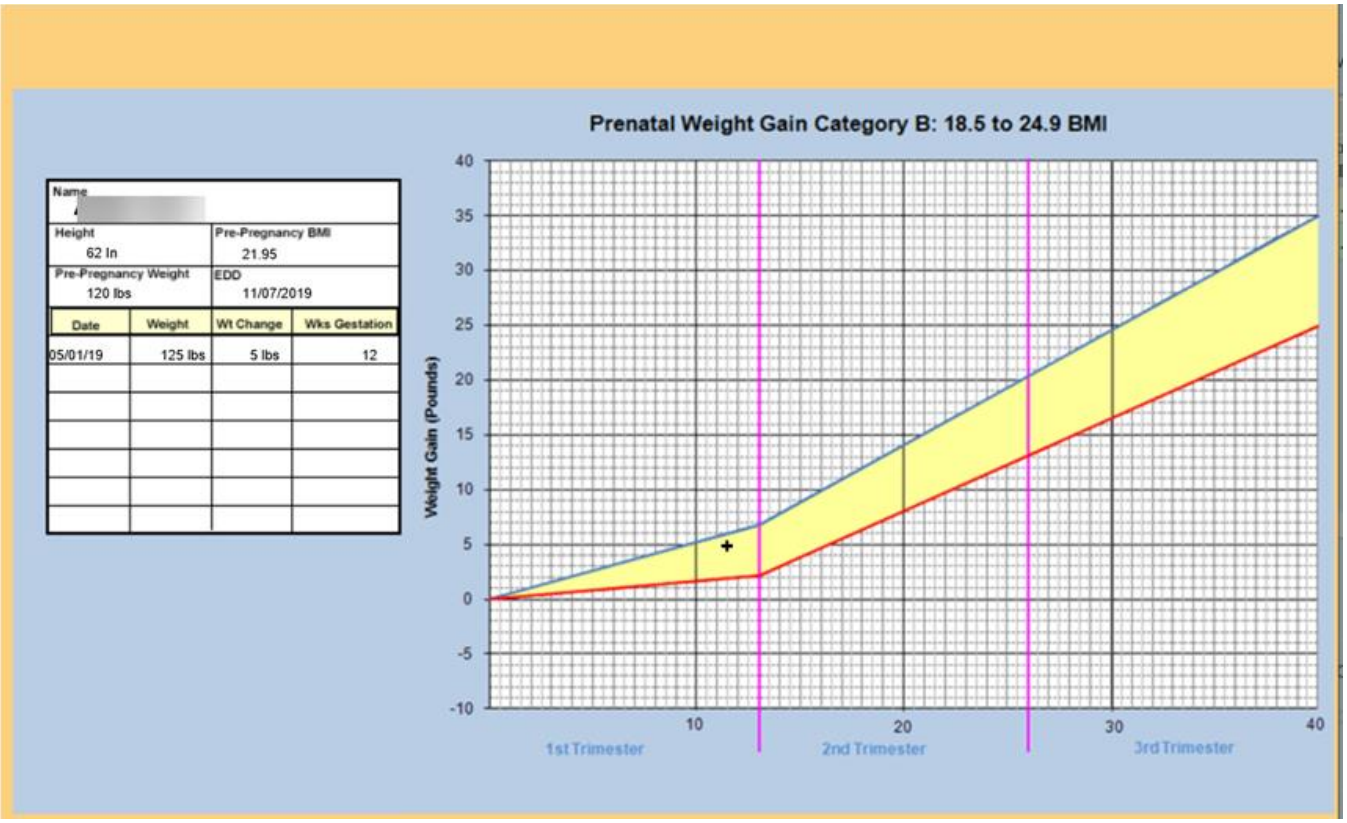
The Prenatal Weight Gain Grid

The Prenatal Weight Gain Grid in MI-WIC is a graph that allows you 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.

The weight gain ranges on the charts are the 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 21.95. Her BMI value falls into the "normal" weight category. Her recommended target weight gain range is shown in yellow.



Procedure for Determining Pre-Pregnancy Weight

At the first visit, if pre-pregnancy weight is known:

1. Enter the woman's reported pre-pregnancy weight and EDD (estimated date of delivery) or date of her last menstrual period on the Anthropometric Data Entry screen in MI-WIC. If the pregravid weight is unknown, check the "Unknown" box. Enter the height in inches (or centimeters) on the Anthropometric Grid. The pre-pregnancy BMI will be visible on the Prenatal Weight Gain Grid on the Certification Action screen.
2. New weights will be entered at each subsequent visit on the Anthropometric grid. If the woman's EDD changes, update the EDD. Do not create a new pregnancy record.
3. MI-WIC will plot each weight on the Prenatal Weight Gain Grid. You will be able to track and assess a woman's weight gain.

At the first visit, if the pre-pregnancy weight is not known:

1. 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:
   - *What was your weight before you were pregnant?*
   - *How much weight do you think have you gained since you became pregnant?*

- *How have your clothes felt (more tight or loose) since you got pregnant?*

2. Estimate the woman's pre-pregnancy status (underweight, normal, overweight, or obese,) by considering her current height and weight. The Anthropometric Data Entry screen will indicate the current BMI after the current weight and height.
3. Determine the week of gestation at the time of the current weight by moving to the Certification Action screen and entering the Expected Date of Delivery and tabbing through last menstrual field.

What Prenatal Weight Gain Grids Tell Us

Evaluating one plotted weight

Weight plotted at one point tells us how a woman's weight has changed since she became pregnant. If the pre-pregnancy weight is inaccurate, 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 recorded 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, weigh prenatal clients at least once every trimester.

Some clients may report their weight from an earlier doctor's visit to save time. Because of the variation in scales, it is recommended that the client still be weighed again using the WIC clinic scale.

Unexpected weight changes

For all pregnant women, slow and steady weight gain between the two lines on the Prenatal Weight Gain Grid is recommended. Most weight gain occurs in the second and third trimester. If a woman is gaining more than the recommended amount, we do not recommend a woman stop gaining weight but rather encourage slow and steady weight gain throughout the remainder of her pregnancy.

Rapid weight changes are a red flag for a concern. Reasons for unexpected changes may include errors in measuring or recording weights, 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 a woman's weight increases or decrease significantly, first weigh her again to make sure she was weighed accurately. If the weight change recorded was accurate, refer the woman to her health care provider for follow up and determine whether she needs to be referred to a Registered Dietitian. You can assess her diet to learn if she is eating more or less than her usual diet.

Identification of Anthropometric Indicators of Nutritional Risk

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

101.01 Underweight

- A woman whose pre-pregnancy BMI is less than 18.5.

Note: Use the MI-WIC System Prenatal Weight Gain Grid.

Example: Ellen, a pregnant woman, is 64 inches tall and weighed 103 pounds before she became pregnant and her BMI is 17.8. Based on her BMI, Ellen is underweight.

Underweight pregnant women are more likely to deliver a baby who is low birth weight, retarded fetal growth, and perinatal mortality. These babies 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 an increased risk of pre-birth hemorrhage, premature rupture of membranes necessary for pregnancy, anemia, endometriosis (inflammation of the uterus lining), and cesarean delivery.

An underweight woman may have had a poor diet prior to her pregnancy. During the pregnancy, if she continues to eat poorly this may result in an inadequate intake of calories and nutrients. After delivery, if she continues to eat poorly, she may become anemic.

Your Role

Try to determine the potential cause of her low weight status which may include concerns about body image, poor appetite, availability of food, feelings about food, excessive activity, and health problems.
Consider that the pregnant woman may not be aware of the health consequences of inadequate weight gain during pregnancy. Some discussion questions to consider are:

- How do you feel about gaining weight during your pregnancy?
- How are meals and snacks going? Do you have issues with eating meals or having enough food to eat?

If you are able determine the cause of her low weight status offer to discuss ways to gain weight for a healthy pregnancy.

The goal in prenatal nutrition counseling is to achieve recommended weight gain by emphasizing food choices of high nutritional quality; and for the underweight woman, by encouraging increased consumption and/or the inclusion of some calorically dense foods.

For example, if access to enough food is limited because of a lack of money, provide information on SNAP (food stamps) if she doesn't already have and information on food banks/pantries.

111.01 Overweight

- A woman whose pre-pregnancy BMI is greater than 25.

Note: Use the BMI Table for Determining Weight Classification for Pregnant Women found at Risk 101. Also use the MI-WIC System Prenatal Weight Gain Grid.

Example: Janelle, a pregnant woman, is 64 inches tall and weighed 165 pounds before she became pregnant. 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 gestational diabetes, preeclampsia, pregnancy-induced hypertensive disorders, as well as postpartum anemia, cesarean delivery, premature delivery, birth defects, birth of a very large baby, and blood clot difficulties. The heavier a pregnant woman is, the greater the chance she may develop some of these problems.

Maternal overweight and obesity prior to pregnancy is strongly linked to an increased risk of obesity in the child. Pregnancy is not a time to lose weight. It is recommended that women who are overweight gain 15 - 25 pounds and women who are obese gain 11 – 20 pounds. Excessive weight gain during pregnancy puts the mother and the baby at future risks.

Overweight and obese women may not necessarily have adequate nutrient stores since the quality of the diet may not have been adequate.

One goal of prenatal nutritional counseling is to achieve recommended weight gain during pregnancy. For the overweight woman, emphasis should be on selecting food choices of high nutritional quality and avoiding calorie-rich foods, thereby minimizing further risks associated with increased overweight and obesity.

Your Role

Pregnant women may have certain beliefs about nutrition during pregnancy. Offer to discuss topics such as having a healthy eating pattern and appropriate physical activity. You may consider asking about her lifestyle and activity level, food availability and resources, eating behaviors, and feelings about gaining weight during pregnancy. As part of your discussion, offer to help her to find ways to eat nutrient-rich foods and limit unnecessary high-calorie foods.

Inadequate Weight Gain

131.01+ Low Maternal Weight Gain

Note: Clients determined to be high risk (+) must be offered a nutrition counseling appointment with a Registered Dietitian.

- Weight gain is below the shaded area for any woman on MI-WIC Prenatal Weight gain Grid.
- Singleton pregnancy, second and third trimesters:
    - Category A (underweight) pregnant woman gaining less than 4 pounds per month.
    - Category B (normal weight) pregnant woman gaining less than 3.2 pounds per month.
    - Category C (overweight) pregnant woman gaining less than 2 pounds per month.
    - Category D (obese) pregnant woman gaining less than 1.6 pounds per month.

Note: Use the Pregnant Woman's Health and Diet Questions & MI-WIC Weight Gain Grid.

Weight gain and risk assessment should include evaluation of weight gain pattern with 2 or more repeated measures whenever possible. See Risk Code 335, Multi-fetal for information on more than one fetus.

133.01 High Maternal Weight Gain, *any of the following*:

- Pregnant woman (singleton pregnancy): all trimesters, all weight groups.
    - Weight gain of 7 or more pounds per month.

Gaining too much weight during pregnancy is an indicator of nutritional risk. Women who have high weight gain during pregnancy are at increased risk for cesarean delivery and delivering large for gestational age infants that can secondarily lead to complications during labor and delivery. If the baby is too large, there is significant risk of injury to the woman and baby during delivery. High maternal weight gain and high birth weight of the baby increases risk of childhood obesity.

High maternal weight gain is associated with other complications of pregnancy including 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.

Your Role

Excessive weight gain may be caused by eating too many calories for the physical 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 nutritional interventions are needed.

Summary

The Prenatal Weight Gain Grid serves as a visual aid for you throughout a client's entire pregnancy. The Prenatal Weight Gain Grid allows you to see the pattern of weight gain and therefore better prepares you to offer appropriate education and counseling. The chart may serve as a teaching tool for the client to help explain weight recommendations.

A pregnant woman who is not gaining enough weight or gaining weight too rapidly is not high risk but could be referred to the Registered Dietitian 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? (T or F)

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

    a. Which risk codes should be assigned to Olive Oil?
        - ☐ 111.01– overweight pre-pregnancy
        - ☐ 131.01+– low maternal weight gain
        - ☐ 133.01– high maternal weight gain
        - ☐ None apply

5. Olive Oil arrives at your clinic and reports that she is 11 weeks pregnant and her due date is August 15. 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.

    a. What do you record as her pre-pregnancy weight?
    b. What range of total weight gain do you recommend for her?
    c. Which risk codes would you assign? (Mark all that apply)
        - ☐ 101.01– Pre-Pregnancy Underweight
        - ☐ 111.01– Pre-Pregnancy Overweight
        - ☐ 131.01+– Low Maternal Weight Gain
        - ☐ 133.01– High Maternal Weight Gain
        - ☐ None apply

1. a. 25-35 pounds
   b. 28-40 pounds
   c. 15-25 pounds
   d. 11-20 pounds

2. False. No one should attempt weight loss or maintenance during pregnancy. An overweight woman should gain between 15-25 pounds during pregnancy.

3. True.

5. No risk codes 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 one pound weight gain using today's weight of 185. Olive Oil is considered obese because her pre-pregnant BMI is >30, risk code 111.01. Because Olive Oil is obese, her weight gain recommendation is 11-20 lb.

Section III: Dietary Indicators of Nutrition Risk

Nutritional Needs of Pregnancy

While a pregnant woman does not have to eat for two, she does require 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. ***Tips for Pregnant Moms*** (page 93-94) is an easy-to-follow guide that encourages women to choose the right amounts of foods. It includes recommendations about portion sizes and amounts for pregnant women. These guidelines are available to help you educate the pregnant woman about appropriate eating patterns. For more individualized recommendations, women can visit www.choosemyplate.gov . ***Tips for Pregnant Moms*** emphasizes:

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

Calories

Calories provide energy for the body to function. Extra energy is required to meet the increased growth needs of pregnancy. 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.

A pregnant woman with a normal pre-gravid weight needs an extra 300 calories each day and it is important that this increase in calories come from nutrient-dense foods. A peanut butter sandwich on whole grain bread and a small orange will supply about 300 calories and many nutrients. On the other hand, a 12-ounce can of soda and ten slices of French-fried potatoes will supply about 300 calories but be less nutritious.

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. Women who are pregnant with twins or are physically active during pregnancy will need even more calories. Women who become less active in pregnancy may end up gaining more weight than they expected.

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 eating patterns can lead to a low birth weight baby.

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 too much fat if eaten regularly. For normal and overweight women who are gaining adequate weight, encourage consumption of lean animal products, low fat and nonfat dairy products, and vegetable proteins (such as beans).

Water

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.

During the last few months of pregnancy, some women may have edema (swelling or puffiness) in the ankles and feet. Pregnant women should never restrict water or use diuretics "water pills" to try to decrease edema. Diuretics 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 can you use to teach pregnant woman about their nutritional needs during pregnancy?

True or False? (T or F)

2. ____ Some women may gain more weight than they expect during pregnancy because they become less active.

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

ANSWERS

1. *Tips for Pregnant Moms*
2. True
3. False**.** There is no reason to restrict water during pregnancy.

Iron & Iodine Needs during Pregnancy

427.04 Vitamin/Mineral Supplementation

- Client not routinely taking a dietary supplement recognized as essential by national public health policy makers because diet alone cannot meet nutrient requirements.
- Examples include but are not limited to:
    - Pregnant women taking less than 27 mg of supplemental iron daily.
    - Pregnant and lactating women consuming less than 150 micrograms of supplemental iodine per day.

Iron

Of all the minerals needed in greater amounts during pregnancy, the need for iron during pregnancy is very high and is almost impossible to get enough of from the foods alone. 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 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, insufficient amounts of hemoglobin are formed resulting in less oxygen carried throughout 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, slowness, and irritability. She may also report that her appetite has dropped and that she has headaches and dizziness.

We can determine if there is enough hemoglobin in the blood by doing either a hemoglobin or hematocrit level test. Some health care providers may perform a hematocrit test instead of a hemoglobin test. A low hemoglobin or hematocrit level can indicate an iron deficiency.

In our discussion of weight gain during pregnancy, we mentioned that several pounds are due to an increase in blood volume and other fluids. Because a woman's blood volume increases dramatically throughout pregnancy, her hemoglobin may 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.

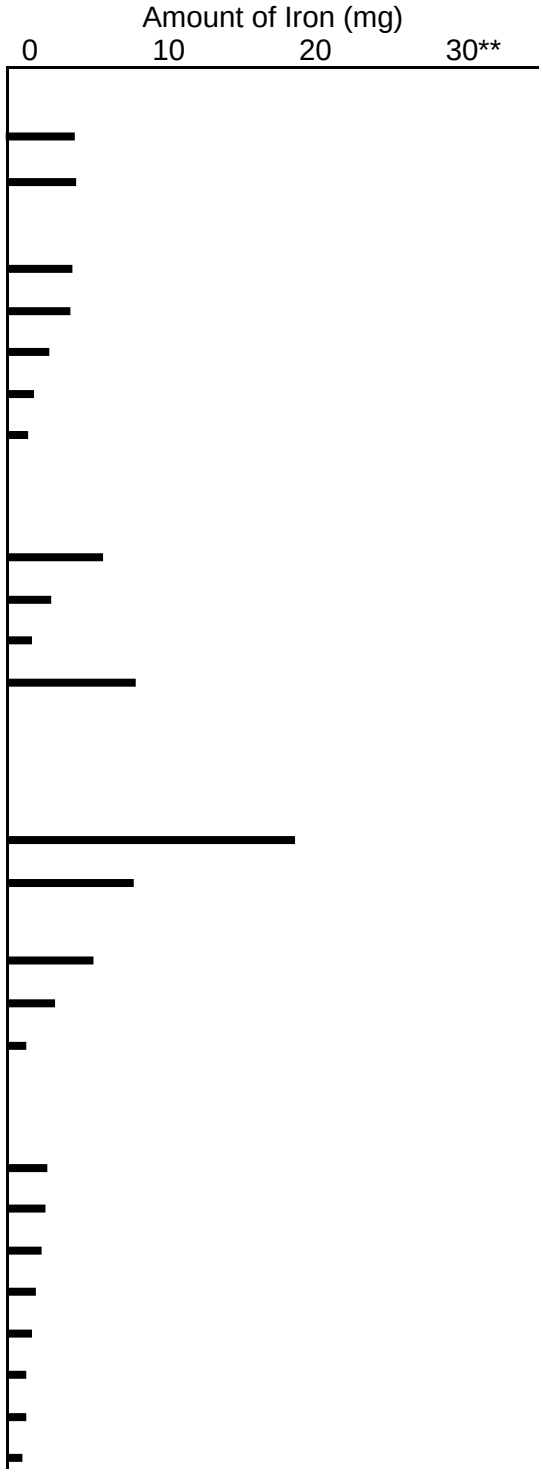
Anemia during pregnancy is associated with the delivery of low birth weight babies and an increased risk of infant mortality (death). Anemia late in pregnancy is a predictor of pre-term delivery. Many women begin pregnancy without enough iron stores to meet the needs of pregnancy. For these reasons, 27 mg of iron per day is recommended during pregnancy, which most prenatal vitamins contain.

If a woman is diagnosed with anemia, her health care provider may prescribe an iron supplement in addition to her daily prenatal vitamin.

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. The body better absorbs iron in animal products (**heme-iron**) 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.

Meeting the Daily Mark for Iron



Meat Group (cooked)	
Pork (1 lean loin chop)	3.50 mg
Sardines (8 oz)	3.50 mg
Braunschweiger (2 slices)	3.36 mg
Beef, Ground Chuck (3½ oz)	3.30 mg
Shrimp (3½ oz)	2.00 mg
Chicken (3½ oz)	1.35 mg
Egg (1)	1.10 mg
Nuts and Legumes	
Dried Beans – Red, White, or Lima (1 cup, cooked)	5.00 mg
Nuts (½ cup)	2.31 mg
Peanut Butter (4 Tablespoons)	1.20 mg
Tofu (½ cup)	6.70 mg
Bread and Cereal Group	
Highly Fortified Cereal* (1 oz provides 100% of the RDA for iron for a non-pregnant adult)	18.00 mg
Oatmeal * (1 package instant, cooked)	6.60 mg
Moderately Fortified Cereal * (1 oz provides 25% of the RDA for iron)	4.50 mg
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 determine 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.

One way to increase the body's absorption of iron is to eat a high iron food such as meat with 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.

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

Your Role

Because a pregnant woman can easily become anemic, it is important that she eat high-iron foods, as well as take her prenatal vitamin supplement, which contains iron. To improve the absorption of iron, supplements be taken an hour before, or two hours after, a meal with juice containing vitamin C or water (not milk, tea, or coffee). If the client tells you that she is nauseated, consider suggesting to her that taking iron supplements at bedtime may be better tolerated.

A history of poor intake of iron, heavy blood loss, or frequent pregnancies is often indicators of iron deficiency. Women with low hemoglobin or hematocrit or values would benefit from education on the recommendations for iron supplementation and sources of iron in foods. Refer the client 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. The American Thyroid Association recommends that women receive prenatal vitamins containing 150 micrograms of iodine daily during pregnancy and lactation. Taking too much iodine has side effects as well. It is not recommended to take more than the recommended amount of iodine.

Severe iodine deficiency may have cause cretinism and adversely affect cognitive development in children. 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, adverse cognitive development and

problems in movement, speech or hearing. Worldwide, iodine deficiency affects some 50 million children.

While iodine deficiency was not common in the U.S., it is again on the rise here as well. Since the 1970s, according to the 2001-2002 National Health and Nutrition Examination Surveys (NHANES), there has been a decrease of approximately 50% in adult urinary iodine values. For women of child-bearing age, the median urinary iodine value decreased from 294 to 128 micrograms per liter. Researchers do not have a cause for the drop of 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.

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	¼ oz dried	Variable, may be greater than 4,500 mcg

Your Role

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 review the iodine content of their prenatal 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, suggest that the client discuss the adequacy of the iodine content of her prenatal vitamins with her health care provider. If the client knows her prenatal vitamin does not contain iodine, risk code 427.04 can be assigned.

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 many neural tube birth defects (NTD), such as spina bifida and

anencephaly. Any woman who does not get enough folate has a greater chance of having a baby with NTDs.

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

What are NTDs?

- Serious birth defects that affect the brain and spinal cord.

Who is at risk for having a baby with NTDs?

- Any woman of childbearing age.

What causes NTDs?

- 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 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 childbearing 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 know 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 five iron-rich foods:

   _____
   _____
   _____
   _____
   _____

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

6. True or False? (T or F)

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

1. Iron and Folic Acid

2. A woman who is anemic can look pale; she may be tired, listless, and irritable; she may report headaches, dizziness, and a drop in appetite.

3.
    a. hemoglobin or hematocrit
    b. Vitamin C

4. Look at the chart on pages 25-26 for foods high in iron.

5. Before and within the first month of pregnancy.

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 18 years and younger. 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 health care provider about their symptoms rather than self-diagnosing the condition.

Woman with lactose intolerance may limit their intake of milk because their body cannot adequately digest lactose, the main sugar 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. Depending on the degree of lactose intolerance, some clients may be able to do the following:

- 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, such as orange juice and soy beverage. 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.

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	⅓ 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 beverage, 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

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. 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.
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 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	**B_6:**	2 mg
Zinc:	15 mg	**Folate:**	0.3 mg
Copper:	2 mg	**Vitamin C:**	50 mg
Calcium:	250 mg	**Vitamin D:**	5 micrograms (200 IU)
Iodine:	150 mcg		

Other Considerations: Vegetarian Diets

Research shows that vegetarian diets can be nutritionally adequate during pregnancy. Depending on the type of vegetarian meal pattern a woman follows, she might need to adjust her eating habits. Special nutrient considerations for vegetarians may include:

- Calcium: Sources of calcium include dairy products, fortified non-dairy milks (such as soy), calcium fortified orange juice, seafood with bones, leafy green vegetables, dried beans or peas, and tofu.
- Vitamin D: Adequate amounts of vitamin D can be obtained through exposure to the sun and in fortified milk, eggs, fish or a supplement as prescribed by their health care providers.
- Vitamin B12: Vitamin B12 is found in animal products only. Vitamin B12 must be obtained from regular use of vitamin B12-fortified foods, such as fortified soy and rice beverages, some breakfast cereals, meat substitutes or a daily vitamin B12 supplement.
- Iron: Sources of iron include enriched grain products (cereal, pasta, rice), eggs, leafy green vegetables, sweet potatoes, dried beans and peas, raisins, prunes, and peanuts.

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

427.01 Inappropriate or Excessive Intake of Dietary Supplements

- Routinely taking inappropriate or excessive amounts of any dietary supplements not prescribed by a physician with potentially harmful consequences, including but not limited to ingestion of unprescribed or excessive or toxic:
    - Herbal remedies or botanical supplements/remedies/teas
    - Mineral supplements
    - Multi or simple vitamins

Most nutrient toxicities occur through excessive supplementation. Ones of concern are vitamin A, B-6, niacin, iron and selenium. Large doses of vitamin A may be teratogenic (cause birth defects). Because of this risk, the Institute of Medicine recommends avoiding preformed vitamin A supplementation during the first trimester of pregnancy. Besides nutrient toxicities, nutrient-nutrient and drug-nutrient interactions may adversely affect health.

There are times when women, to do the best they can for their health and the health of their unborn baby, may take additional supplements such as vitamins, minerals, botanical (including herbal) remedies or teas. Yet certain supplements can be toxic both to the mother and/or her unborn baby 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 penny royal 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, 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

Approach women with sensitivity and concern when discussing vitamin and mineral/supplement use as they may not be aware of the potential consequences of inappropriate vitamin and mineral use.

During the nutrition assessment, determine if the woman is taking a daily prenatal vitamin as well as any other vitamins and minerals. If the woman tells you that she is, determine if she is taking a potentially excessive amount of a vitamin or mineral.

Consider asking the following questions to begin your discussion:

- What types of vitamins and minerals are you taking?
- Was your prenatal supplement prescribed?
- What is the iron content of your prenatal gummy supplement?
- What vitamins and minerals are important for your pregnancy?
- What does your health care provider say about your supplement use?
- What would you like to discuss about the supplement you are taking?

Consider discussing the related topics such as 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.

Suggest to the woman that she stop taking the supplement until she discusses it with her health care provider at her next visit.

Individual Dietary Preferences and Concerns

Many factors play a role in shaping a person's food habits, and these factors must be considered if nutrition counseling is to be effective for a client. Make every effort to be knowledgeable about the ethnic food habits as well as the individual preferences and practices of the individual WIC clients you serve. It is important to identify favorite foods and offer ways to incorporate these foods into a balanced eating pattern.

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 Hispanic 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 baby grow large and be difficult to deliver.

Clients with lower incomes require special attention since a nutritionally adequate eating pattern is difficult to obtain when there is not enough money to purchase the needed foods. Efforts should be made to provide education and information on topics such as budgeting, shopping, and meal planning. Refer low-income clients to other food programs such as SNAP (food stamps) and community food banks.

Restrictive Diets

427.02+ Highly Restrictive Diets, any of the following:

Note: Clients determined to be high risk (+) must be offered a nutrition counseling appointment with a Registered Dietitian.

- Diet very low in calories including impaired absorption following bariatric surgery.
- Severely limited intake of important food sources of nutrients (e.g. fruit and nut diet)
- High risk eating pattern.

Vegan Diets, all the following:

- Consuming only foods of plant origin
- No animal products (no meat, poultry, fish, eggs, milk, cheese or other dairy products)
- Avoidance of food made with animal product ingredients.

Background

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 baby. 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 clients may be vegetarians with religious and/or personal 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 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 beverages and veggie burgers.

The vegan diet, which excludes all animal products, can be used successfully in pregnancy. A thorough nutrition assessment is important to ensure adequate nutrition. Unless a vegan has a good understanding of a healthy vegan diet, several nutrients are of concern, including riboflavin, iron, zinc, vitamin B12, vitamin D, calcium, and selenium.

The pregnant adolescent who consumes a vegan diet is at even greater risk due to her higher nutritional needs. Severe vitamin B12 deficiency resulting in neurological damage has been reported in infants of vegetarian mothers.

Your Role

During your nutrition assessment ask questions to obtain the pregnant woman's viewpoint about her eating patterns and restrictions. Keep in mind that, generally, the more restrictive the diet, the greater the nutritional risk. Acknowledge the client's successes and how she is eating for the health of herself and her baby. Ask the client if she is interested in discussing ways to improve her eating patterns to benefit both baby and mother. If interested, explain appropriate ways to improve her eating patterns and not highly restrict nutrients. Offer the client information about appropriate eating patterns to reinforce your conversation.

401.01 Failure to Meet *Dietary Guidelines for Americans*

The definition was revised to reflect he Institute of Medicine (IOM) recommendation for a presumed dietary risk for women and children 2 years of age and older.

Note: This criterion applies only to women and children older than 2 years of age due to the fact that the Dietary Guidelines do not include recommendations for infants and young children birth to 2 years.
This criterion may only be assigned after a complete assessment has been performed to assess for risk (including #425.01 – 425.09, Inappropriate Nutrition Practices for Children and no other risk is identified.

Background

Women and children two years of age and older who meet the income, categorical, and residency eligibility requirements may be presumed to be at nutrition risk for failure to meet Dietary Guidelines for Americans. Based on an individual's estimated energy needs, the failure to meet Dietary Guidelines risk criterion is defined as consuming fewer than the recommended number of servings from one or more of the basic food groups (gains, fruits, vegetables, milk products, and meat or beans).

Nearly all U.S. women and children usually consume fewer than the recommended number of servings specified by the Food Guide and would be a dietary risk based on the criterion *failure to meet Dietary Guidelines*.

Through client centered counseling, WIC staff can:

- Guide the client in choosing healthy foods and age-appropriate physical activities as recommended in the Dietary Guidelines.
- Reinforce positive lifestyle behaviors that lead to positive health outcomes.
- Discuss nutrition-related topics of interest to the shopping, meal preparation, feeding relationships, and family meals.
- Refer clients, as appropriate, to the Supplemental Nutrition Assistance Program (SNAP), community food banks and other available nutrition assistance programs.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

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

2. List three statements you might make when discussing lactose intolerance with a woman.
   _____
   _____
   _____

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

True or False? (T or F)

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

ANSWERS

1. How can I help you improve your intake of milk? If interested, offer suggestions of ways to increase the consumption or improve the flavor and taste of milk, e.g. adding flavorings such as chocolate, strawberry powder, adding powdered milk to casseroles and other foods.
2. How do you feel about consuming small servings of lactose-containing foods?
   How can I help you learn to include dairy products in appropriate amounts?
   If interested, offer suggestions for trying:

   - Dairy foods with enzyme tablets
   - Lactose reduced milks
   - Active-culture foods (such as yogurt) help break down lactose.
   - Heated milk may be easier to digest than cold milk.
   - Aged cheeses which are lower in lactose.
3. Any 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.

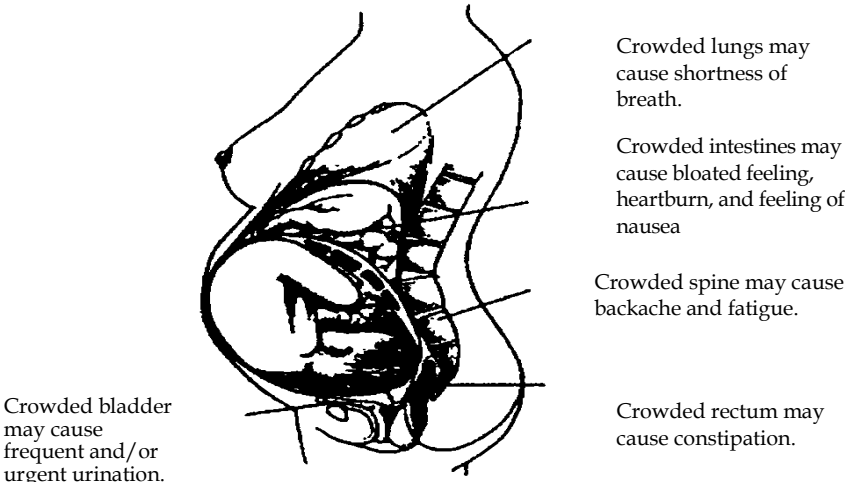
Section IV: Special Concerns During Pregnancy

Let's look at some of the concerns that many women experience 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 the bacteria, listeria.

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 resolves after the first trimester.

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 like cigarette smoke, gasoline, perfumes, and many cooking odors. Certain foods can cause nausea as well. Fried, high fat, and spicy foods and drinks with caffeine like coffee and tea are common offenders.

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.



301.01+ Hyperemesis Gravidarum

Note: Clients determined to be high risk (+) must be offered a nutrition counseling appointment with a Registered Dietitian.

Hyperemesis Gravidarum (HG) is defined as severe and persistent nausea and vomiting during pregnancy which may cause more than 5% weight loss and fluid and electrolyte imbalances. This nutrition risk is based on a chronic condition, not single episodes. HG is a clinical diagnosis made after other causes of nausea and vomiting have been excluded.

Presence of condition diagnosed, documented, or reported by a physician or someone working under a physician's orders, or as self-reported by applicant/client/caregiver.

Your Role

Nausea and vomiting are common early in gestation with 50-80% or more of pregnant women experiencing some vomiting. However, pregnant women diagnosed with HG are at risk of weight loss, dehydration, ketonuria, and electrolyte imbalances such as hypokalemia. HG affects approximately 0.3-3.0% of pregnancies and may lead to adverse fetal consequences and hospitalization in some cases. HG is the second most common reason for hospitalization for pregnant women, with preterm labor being the most common.

WIC nutrition staff can provide the following nutrition services to women experiencing nausea and vomiting:

- Offer the client receiving nutrition counseling with a Registered Dietitian within 30 days.
- Refer to a health care provider for appropriate monitoring and treatments as necessary.
- Provide education on how to recognize symptoms of dehydration such as: Increased thirst, dry mouth, low urine output or urine that is darker in color than normal.
- Offer suggestions to help with nausea such as:
  - Avoid foods and smells that seem to trigger nausea (e.g., fried or greasy foods, spicy foods, foods of a certain texture).
  - Eat crackers or dry cereal before getting out of bed to curb nausea in the morning.
  - Avoid large fluid intakes in the morning. Drink liquids between meals instead of with meals.
  - Choose foods carefully. Select foods that are high in carbohydrates or protein, low in fat, and easy to digest. Salty foods are sometimes helpful, as are foods that contain ginger — such as ginger lollipops. Avoid greasy, spicy and fatty foods. Consume foods that settle the stomach and calm the nausea.
  - Eat several small meals throughout the day instead of three large meals. Meals should contain more carbohydrate than fat and acid. Protein-rich meals also

decrease symptoms. Lighter snacks, including nuts, dairy products, and beans, are recommended.
    - Take prenatal supplement at night or before bedtime.
- Review weight gain goal and weight gain pattern. If weight loss is a problem, discuss nutrient and calorie-dense food choices and refer to the health care provider.
- Encourage women to take prenatal vitamins if considering becoming pregnant again. Studies indicate that taking prenatal vitamins a month before conception may help alleviate the symptoms of HG during pregnancy.

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 health care provider. You can suggest that she talk to her health care provider if heartburn is severe.
Ask open ended questions and offer to discuss ways to support and determine changes to her food choices and eating patterns which may relieve her heartburn, such as:

- Eat 5 or 6 small meals per day.
- Limit fatty and fried foods.
- Limit or avoid coffee if it triggers heartburn.
- Avoid spicy foods.
- Drink fluids between meals/snacks.
- 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 a while. 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 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.

Approach the pregnant woman with sensitivity about her issues with constipation. Consider asking her about how she has addressed the constipation or if she is interested in discussing ways to help relieve constipation.
Suggestions to relieve constipation include:

- 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 edema with swollen ankles and feet often during the third trimester.

As the baby 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 (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 this advice can be harmful to mother and baby. Pregnant women 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. Eating primarily natural foods can be safely salted "to taste." Clients eating large amounts of sodium should use moderation. Foods high in sodium include potato chips, corn chips, canned soups, salad dressings, salted nuts, ham, luncheon meats (cold cuts), and bacon.

To help with the discomfort of swelling, you can suggest 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 Hypertension (PIH)
A condition characterized by acute elevation of blood pressure, edema, and proteinuria. Sometimes occurs in the latter half of pregnancy.

345+ Hypertension

345.01+ Pregnancy-induced

345.02+ Hypertension, Chronic & Prehypertension (includes chronic, prehypertension)

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Presence of hypertension as diagnosed by a physician or self-reported documented by physician or health care worker and including chronic or pregnancy-induced hypertension.
- Presence or hypertension – Blood pressure readings between 130/80 to 139/89 mmHg.

Background

Hypertension, commonly referred to as high blood pressure, is defined as persistently high arterial blood pressure with systolic blood pressure above 140 mm Hg or diastolic blood pressure above 90 mm Hg. People with high blood pressure can be asymptomatic for years. Untreated hypertension leads to many degenerative diseases, including congestive heart failure, end-stage renal disease, and peripheral vascular disease.

There is a large segment of the population that falls under the classification of prehypertension, with blood pressure readings between 130/80 to 139/89 mm Hg. People with prehypertension are twice as likely to develop hypertension.

There is no cure for hypertension; however lifestyle modifications can prevent high blood pressure and are critical in the management of hypertension and prehypertension.
Risks for hypertension include:

- Age (increases with age)
- Race/ethnicity (occurs more often and earlier in African Americans)
- Overweight or obesity
- Unhealthy nutrient consumption and lifestyle habits (e.g., high sodium intake, excessive alcohol consumption, low potassium intake, physical inactivity, and smoking)
- Family history
- Chronic stress

Management of hypertension includes lifestyle modifications and medication. In prehypertensive individuals, implementing lifestyle changes can prevent or delay the onset of hypertension (3, 5). In hypertensive individuals, dietary intervention is not only effective in reducing blood pressure but also in delaying drug treatment (6).

Lifestyle changes to manage hypertension and prehypertension include:

- Consuming a diet consistent with the Dietary Guidelines for Americans or following the

DASH (Dietary Approaches to Stop Hypertension) eating plan, if recommended by a physician
- Limiting dietary sodium
- Engaging in regular physical activity
- Achieving and maintaining a healthy weight
- Smoking cessation

The WIC Program provides fruits, vegetables, low fat milk and cheese, which are important components of the DASH eating plan. WIC nutritionists provide nutrition education and counseling to reduce sodium intakes, achieve/maintain proper weight status, promote physical activity, and make referrals to smoking cessation programs, which are the lifestyle interventions critical to the management of hypertension/prehypertension.

- **Pregnant Women**: Hypertension is the most common medical complication of pregnancy, occurring in 7% of all pregnancies. Hypertension during pregnancy may lead to low birth weight, fetal growth restriction, and premature delivery, as well as maternal, fetal, and neonatal morbidity. Hypertensive disorders of pregnancy are categorized as:

- **Chronic Hypertension**: Hypertension that was present before pregnancy. It increases perinatal mortality and morbidity through an increased risk of SGA (small for gestational age) infants. Women with chronic hypertension are at risk for complications of pregnancy such as preeclampsia. There is a 25% risk of superimposed preeclampsia and an increased risk for preterm delivery, fetal growth restriction, congestive heart failure and renal failure.
- **Preeclampsia**: A pregnancy-specific syndrome observed after the 20th week of pregnancy with elevated blood pressure accompanied by significant proteinuria.

- **Eclampsia**: The occurrence of seizures in a woman with preeclampsia that cannot be attributed to other causes.

- **Preeclampsia superimposed upon chronic hypertension**: Preeclampsia occurring in a woman with chronic hypertension. It is the major leading factor of maternal and infant mortality and morbidity.

- **Gestational Hypertension**: Blood pressure elevation detected for the first time at mid-pregnancy without proteinuria. It presents minimal risks to mother and baby when it does not progress to preeclampsia.

The term "pregnancy-induced hypertension" includes gestational hypertension, preeclampsia and eclampsia.

The following conditions are associated with an increased incidence of pregnancy-induced hypertension:
- Inadequate diet.
- Nutritional deficiencies, including low protein, essential fatty acid, or magnesium intake.

- Inadequate calcium intake in early pregnancy.
- Obesity
- Primigravidity
- Age (pregnancy before age 20 or after age 40)
- Multi-fetal gestation
- Genetic disease factors
- Familial predisposition

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 baby.

Pregnant woman can improve or maintain good oral health by doing the following:

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

381.01 Dental Problems

- Diagnosed dental problem or adequate documentation by CPA.
- 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

Background

Maternal periodontal disease and dental caries may impact pregnancy outcome, and the offspring's risk of developing early and severe dental caries. Maternal periodontal disease, a chronic infection of the gingiva (gums) and supporting tooth structures, has been associated with preterm birth, low birthweight and development of preeclampsia. Periodontal disease and caries may also increase the women's risk of atherosclerosis, rheumatoid arthritis and diabetes.

Oral health problems are highly prevalent in women of childbearing age, particularly among low-income women and members of racial and ethnic minority groups. Socioeconomic factors, lack of resources to pay for care, barriers to access care, lack of public understanding of the importance of oral health and effective self-care practices all represent underlying reasons cited for observed inadequacies in oral health.

It is helpful for pregnant women to see a dentist during their pregnancy, particularly during the second trimester, when oral health problems are more likely to arise. Dental tissue changes and hormonal changes can lead to oral health problems during pregnancy. You can remind pregnant women to request not to be put completely lying down in a dental chair, particularly during in their third trimester.

Food Safety

Pregnant women are especially at risk for food-borne illness due to a weakened immune system. This is natural and important 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 baby 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 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 baby.

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 baby's developing nervous system.

427.05 Consuming Potential Unsafe Food

Examples of potentially harmful foods:

- 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 pâté 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 as made with pasteurized milk
- Raw or undercooked eggs or foods containing raw a lightly cooked eggs including homemade salad dressings such as mayonnaise, hollandaise sauce, and Caesar dressing; cookie and cake batters, sauces and beverages such as unpasteurized eggnog
- Raw sprouts (alfalfa, clover and radish)
- Unpasteurized fruit or vegetable juice, such as unpasteurized apple cider from a cider mill

Advice about Eating Fish: What Pregnant Women & Parents Should Know

The Food and Drug Administration and the Environment Protection Agency have issued advice regarding eating fish**.** Fish are a high-quality protein source, and lower mercury fish are a good choice for everyone. This advice is helpful for women who are pregnant, might become pregnant or are breastfeeding, and for young children, but everyone can follow this advice.

Use the brochure below to offer guidance to women about which fish to eat each week. Eating a variety of fish is better. Some guidelines to emphasize:

- You can eat 2 servings a week of fish low in mercury: salmon, shrimp, pollock, sardines, tilapia, perch, anchovies, or crab.
- You can eat 1 serving a week of fish with more mercury: cod, snapper, mahi mahi, and tuna (canned light).
- You should not eat shark, tilefish, swordfish, and king mackerel.
- One serving is 6-8 ounces of fish (about the size of an adult's hand).

Safe Fish for You
and your family

Fish and shellfish can be part of a healthy diet.

Fish have protein, and some have heart-healthy omega-3 fats.

Omega-3s are good for healthy brain development in babies and children.

Breastfed babies can get omega-3s from breastmilk.

Some fish have mercury in them. Too much mercury is bad for your health.

Women who *are* or *may become* pregnant, breastfeeding moms and young children should eat fish that are low in mercury.

Find fish low in mercury on the back!

Choose *one* of the following options each week.

*These fish are lower in mercury. You can eat up to **2 MI Servings a week** of fish from this list.*

Eat These 2 Times per Week	Salmon*+	Tilapia
	Shrimp	Perch*
	Pollack	Anchovies+
	Sardines+	Crab

-or-

*These fish have more mercury. You can eat up to **1 MI Serving a week** of fish from this list.*

Eat These 1 Time per Week	Cod	Mahi Mahi
	Snapper	Tuna (canned light)

Do NOT Eat	Shark	Swordfish
	Tilefish	King Mackerel

*If you eat fish from Michigan lakes or rivers, use the Michigan Department of Community Health's *Eat Safe Fish Guide*.
+High in heart-healthy omega-3s.

What is a MI Serving?

For adults: One *MI Serving* is 6-8 ounces of fish (about the size of an adult's hand).

For children: One *MI Serving* is 2-4 ounces of fish (about the size of an adult's palm).

For more information or to get an *Eat Safe Fish Guide,* visit www.michigan.gov/eatsafefish, or call 1-800-648-6942.

USDA is an equal opportunity provider and employer.

Michigan Department of Community Health MDCH Rick Snyder, Governor Nick Lyon, Director

eat safe fish

MICHIGAN WIC Women Infants & Children

Great Lakes RESTORATION

02/2015

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

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

   a. Nausea

   b. Constipation

   c. Heartburn

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

True or False? (T or F)

3. ____ A pregnant woman who suffers from heartburn should take antacid tablets from the drugstore without consulting her health care provider 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 health care provider.
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

Below are other concerns of pregnancy that are not common to all women.

427.03 Ingestion of Non-Food Items – Pica.

- Compulsive ingestion of non-food substances over a sustained period, such as:
    - Ashes
    - Baking Soda
    - Carpet fibers
    - Cigarettes or cigarette butts
    - Chalk
    - Clay or dirt
    - Dust
    - Coffee grounds
    - Foam Rubber
    - Ice (excessive intake which replaces an adequate diet)
    - Paint chips
    - Soil
    - Starch (laundry, cornstarch)
    - Wood

Background

Pica, the compulsive ingestion of non-food substances over a sustained period, is linked to lead poisoning and exposure to other toxicants, anemia, excess calories or displacement of nutrients, gastric and small bowel obstruction, as well as, parasitic infection. It may also contribute to nutrient deficiencies by either inhibiting absorption or displacing nutrient dense foods in the diet.

Poor pregnancy outcomes associated with pica-induced lead poisoning, include lower maternal hemoglobin level at delivery and a smaller head circumference in the infant. Maternal transfer of lead via breastfeeding has been documented in infants and results in a neuro-developmental insult depending on the blood lead level and the compounded exposure for the infant during pregnancy and breastfeeding.

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 chalk. 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. Some 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), stomach and intestinal blockage, and parasitic infections. Consumption of substances such as mothball or paint chips can lead to toxic conditions that could result in death.

Your Role

Consider that some women may not know about pica and potential dangers related to consumption of non-food items. Ask permission to discuss the client's issues and offer to help her to decide on some healthy changes she can make to address her cravings or consumption of non-food items. Consider telling the client that it is not uncommon (e.g. "You are not alone.") for pregnant women to crave or eat non-food items during pregnancy. Offer suggestions for reducing the cravings or consumption of non-food items, such as:

- Taking her prenatal vitamin prescribed by her health care provider.
- Choosing healthy snacks to substitute for the non-food items.
- Talking with her health care provider about the items she is eating.

372.01 Alcohol and Substance Use

Pregnant woman:

- Any alcohol use.
- Any illegal substance use and/or abuse of prescription medications.
- Any marijuana use in any form.

Background

Substance use and misuse during pregnancy and postpartum may have physical and mental health consequences ranging from mild to serious. The use of alcohol, marijuana, illegal drugs and misuse of prescription drugs can threaten both maternal and fetal health. Misuses of prescription drugs include using medications as follows: for nonmedical reasons, prescribed for someone else, more often than the prescribed frequency, in larger-than-prescribed doses, and/or over a longer time than prescribed.

Substance use is known to lead to vitamin and mineral deficiencies that threaten physical and mental health, damage vital organs and the nervous system, and decrease immunity. Malnutrition occurs when the substance replaces other dietary nutrients or as a result from improper nutrient metabolism, absorption, utilization, or excretion even though the diet may be adequate. Harmful lifestyles are often associated with addiction, such as poor eating patterns, lack of exercise, and changes in sleep patterns. These compounding factors result in an increased risk of long-term health problems, including metabolic syndrome, diabetes, hypertension, weight problems, and eating disorders. People with substance addiction may suffer from calorie and protein malnutrition.

Substance use can impact the family and parenting in several ways, and may be linked with poor parenting practices, child neglect, and abuse due to:

- Impairments (both physical and mental) caused by alcohol or other drugs.
- Domestic violence, which may be a result of substance use.
- Expenditure of often limited resources on purchasing alcohol or other drugs.
- Frequent arrests, incarceration, and court dates.
- Time spent seeking out, manufacturing or using alcohol or other drugs.
- Estrangement from primary family and related support.

While substance use has long been a public health concern, there is growing recognition that the United States is facing an epidemic due to an increase in opioid misuse, use disorders, and overdose, and that disparities exist between men and women with regard to both prescription opioid and heroin use.

Predictors of substance use among women of child-bearing age include:

- Early Substance Use – Tobacco or marijuana use at an early age (12- 18 years of age) is a risk factor for continued use as an adult.
- Pre-pregnancy Substance Use – Alcohol and drug use prior to pregnancy is a predictor of continued use during pregnancy.
- Trauma – Substance use is increased among women who:
    - Were raised by parents who abused substances.
    - Have experienced physical and/or sexual abuse.
    - Have experienced intimate partner violence.
- Mental Health – Women with a diagnosis of substance use or chemical dependency may have one or more psychiatric disorders.

Alcohol and Substance Use during Pregnancy

Maternal substance use during and after pregnancy can have a long-term impact on both the mother and her child and can impact many areas of life such as:

- Obstetrical and Prenatal Complications - Substance use (and withdrawal from them) during pregnancy may cause constriction of uterine blood vessels leading to insufficient blood flow to the placenta, separation of the placenta from the uterus, maternal hypertension, maternal hemorrhage, and/or premature labor. These complications may in turn increase risk of fetal loss, premature birth and still birth.
- Personal Health and Safety – Substance use is associated with increased likelihood of death by illness, accident or suicide; intimate partner violence; sexually transmitted diseases and unintended pregnancy.
- Societal Impacts - Substance use is associated with an unstable family structure, separation and divorce, and potential for involvement of Child Protective Services (CPS). The Child Abuse Prevention and Treatment Act [42 U.S.C. § 5106a(b)] requires States to have policies and procedures in place to notify CPS agencies of substance-exposed newborns and to establish a plan of safe care for newborns identified as being

affected by illegal substance abuse or having withdrawal symptoms resulting from prenatal drug exposure. For more information about State-specific requirements please see: https://www.childwelfare.gov/topics/systemwide/laws-policies/state/.

- Impact on Children - Children who are exposed to alcohol and other substances prior to birth can experience long-term cognitive, behavioral, social and emotional developmental consequences.

Nutritional needs during pregnancy are 10 to 30 percent greater than normal. Alcohol can disrupt body functions by causing nutrient deficiencies of vitamins and minerals. Alcohol inhibits fat absorption and thereby impairs absorption of vitamins A, E, and D which are normally absorbed along with dietary fats. Deficiencies of minerals such as calcium, magnesium, iron, and zinc are common in people who misuse alcohol, although alcohol itself does not seem to affect the absorption of these minerals.
There is no safe consumption of alcohol during pregnancy. Exposure to alcohol in utero can damage the developing fetus at any stage and is the leading preventable cause of birth defects and intellectual and neurodevelopmental disabilities. Not only can nutritional deficiencies of a mother who misuses alcohol adversely affect the nutrition of the fetus, but alcohol itself can also restrict nutrient flow to the fetus. These prenatal factors can result in the infant being born with a Fetal Alcohol Spectrum Disorder (FASD). Fetal Alcohol Syndrome (FAS) is the most severe type of FASD. Fetal Alcohol Syndrome can affect children in different ways. A child with FAS might have abnormal facial features, growth and central nervous system problems as well as problems with learning, memory, attention span, communication, vision, or hearing. (See risk 382 - *Fetal Alcohol Syndrome* for more information.)

Marijuana is the illicit drug used most frequently by women of child-bearing age. There is no known safe amount of marijuana use during pregnancy. Marijuana contains tetrahydrocannabinol (THC), which is the chemical in marijuana that makes one feel "high". Marijuana may be ingested in the form of marijuana edibles (cookies, brownies, candy, etc.) or inhaled when smoked. When inhaled, the smoke goes into the lungs and immediately passes through the membranes and enters the bloodstream. THC can pass from the mother to the unborn child through the placenta if marijuana is ingested or inhaled during pregnancy. Children who are exposed to THC prior to birth can experience decreased academic ability, cognitive function and ability to remain attentive. Although some states have legalized marijuana for a variety of medical conditions upon a doctor's recommendation, as well as for recreational use, marijuana has been shown to have negative effects on brain development. Therefore, it is recommended that pregnant and breastfeeding women not use marijuana.

Opiates and synthetic narcotics (e.g., heroin, oxycodone, Vicodin, Norco, Percocet, Morphine, Dilaudid) have serious health risks associated with their use including endocarditis; coma or sudden death from overdose; risk of HIV; and, if injected, viral hepatitis and other infections (2). A mother's use of these substances during pregnancy can lead to neonatal abstinence syndrome (NAS), which is a series of withdrawal symptoms experienced by an infant after

birth due to intrauterine exposure to substances. Prenatal exposure to opioids increases the risk of low birth weight, stillbirth and sudden infant death syndrome.

Alcohol and How it Effects Pregnancy

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 mom, 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 newborn. Occasional "binge" drinking, especially in early pregnancy, is also unsafe for the developing fetus.

There is no safe level of alcohol 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 (FAS): 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 pregnant women must be provided information on the dangers of drugs and other harmful substances. When discussing alcohol and substance use share information about resources available in your community. If necessary, provide an informal referral to resources available in the community.
Suggestions for discussion topics for the pregnant woman are:

- Educate on the effects of alcohol.
- Occasional drinkers should stop drinking alcohol.
- Heavy drinkers should not stop on their own, but under the supervision of a skilled alcohol treatment specialist or health care provider.

A woman who uses illegal 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 harm 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 B_6, and iodine has been documented. Only medications approved by a health care provider 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, and kidneys) are being formed and are 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 baby.

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

What about Marijuana?

Marijuana use during pregnancy may harm the baby and may make it more difficult for the child to pay attention and learn as they grow. There is no known safe amount of marijuana use during pregnancy.

Some hospitals test babies after birth for drugs. If a baby tests positive for marijuana at birth, child protective services must be notified.

Your Role

Information on the dangers of drugs and other harmful substances must be provided to all pregnant women. Share information about resources available in your community. *You need to document in the client record after telling women told about the dangers of using drugs*. Heavy substance abusers may require referral to a community substance abuse program.

Since nutritional deficiencies may be present with substance users, it is important to provide diet counseling to improve food intakes. Stopping 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 substance use. Clients who report using alcohol and/or substance must be informed that stopping the use of these substances increases the chances for a normal delivery and a healthy baby.

371.01 Maternal Smoking

- Any daily smoking of tobacco products such as cigarettes, pipes, or cigars.

Background

Research has shown that smoking during pregnancy causes health problems and other adverse consequences for the mother, the unborn fetus and the newborn infant such as: pregnancy complications, premature birth, low birth weight, stillbirth, infant death, and risk for Sudden Infant Death Syndrome (SIDS).
Women who smoke are at risk for chronic and degenerative diseases such as: cancer, cardiovascular disease and chronic obstructive pulmonary disease. They are also at risk for other physiological effects such as loss of bone density.
Maternal smoking exposes the infant to nicotine and other compounds, including cyanide and carbon monoxide, in-utero and via breast milk. In-utero exposure to maternal smoking is associated with reduced lung function among infants.
Because smoking increases oxidative stress and metabolic turnover of vitamin C, the requirement for this vitamin is higher for women who smoke. Pregnant women expressing a desire to quit smoking may benefit from counseling and referral to smoking cessation programs.

Your Role

The primary goal pregnancy is to deliver a healthy weight baby and smoking makes this goal harder to achieve. When inhaling smoke, toxic substances such as carbon monoxide compete with of 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 provides an opportunity for pregnant women to quit smoking because they are highly motivated. You can have an enormous chance to improve the health of mothers and their babies by helping pregnant smokers quit. You can offer support and refer them to smoking cessation resources.

Celebrate with those who have quit and encourage continued abstinence. If the client has a desire to quit smoking, offer support and to discuss the following:

- Share with her that while quitting is hard, cutting out tobacco is one of the best ways to keep her baby healthy.
- The benefits of quitting during a pregnancy include:
    - Increasing the flow of oxygen to the baby.
    - Cutting the risk of premature birth and low birth weight.
    - Decreasing the chance of sudden infant death syndrome (SIDS) after birth.

In the recent past, women were encouraged to cut back if they couldn't quit. The most current information suggests that smoking even one cigarette a day may harm the fetus.

Your role is to offer her information about stopping and refer her to smoking cessation resources. If the client 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	• 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	• 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	• 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	• Change your behavior or lifestyle to reduce stress. • Use physical activity like walking.
General	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.

If she is ready to quit, encourage her to set a date, tell family and friends, remove tobacco products from the home, and to contact the Quitline.

Prenatal Smoking Cessation Resources

The Michigan Tobacco Quitline offers free telephone coaching to help quit smoking. Callers without insurance may qualify for free nicotine patches by calling 1-800-QUIT-NOW (1-800-784-8669).
Free or low cost resources for quit smoking can be found at
https://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2973_53244-219403--,00.html

Additional Resources:

- 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

Postpartum Maintenance

You can encourage mothers to remain nonsmokers. 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 be less likely to get chest colds, coughs, ear infections, and asthma. Their baby is at a lower risk for SIDS, will breathe easier, grow better, and be less likely to become cigarette smokers.

904.01 Exposure to Environmental Tobacco Smoke

Environmental tobacco smoke (ETS) exposure is define (for WIC eligibility purposes) as exposure to smoke from tobacco products inside the home. (Also known as passive, secondhand or involuntary smoke.)

Background

ETS is a mixture of the smoke given off by a burning cigarette, pipe, or cigar (sidestream smoke), and the smoke exhaled by smokers (mainstream smoke). ETS is a mixture of about 85% sidestream and 15% mainstream smoke and made up of over 4,000 chemicals, including Polycyclic Aromatic Hydrocarbons (PAHs) and carbon monoxide. Sidestream smoke has a different chemical make-up than main-stream smoke. Sidestream smoke contains higher levels of virtually all carcinogens, compared to mainstream smoke.

ETS is qualitatively like mainstream smoke inhaled by the smoker. The 1986 Surgeon General's report: *The Health Consequences of Involuntary Smoking. A Report of the Surgeon General* concluded that ETS has a toxic and carcinogenic potential like that of the mainstream smoke. The more recent 2006 Surgeon General's report, *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General,* reaffirms and strengthens the findings of the 1986 report, and expands the list of diseases and adverse health effects caused by ETS.

ETS is a known human carcinogen. Women who are exposed to ETS are at risk for lung cancer and cardiovascular diseases. Prenatal or postnatal ETS exposure is related to numerous adverse health outcomes among infants and children, including sudden infant death syndrome (SIDS), upper respiratory infections, periodontal disease, increased severity of asthma/wheezing, metabolic syndrome, decreased cognitive function, lower birth weight and smaller head circumference. Infants born to women exposed to ETS during pregnancy have a small decrease in birth weight and a slightly increased risk of intrauterine growth retardation compared to infants of unexposed women.

Studies suggest that the health effects of ETS exposure at a young age could last into adulthood. These include cancer, specifically lung cancer, and cardiovascular diseases. There is strong evidence that ETS exposure to the fetus and/or infant results in permanent lung damage.

ETS exposure increases inflammation and oxidative stress. Inflammation is associated with asthma, cardiovascular diseases, cancer, chronic obstructive pulmonary disease, and metabolic syndrome. PAHs are the major class of compounds that contribute to the ETS-related adverse health outcomes.

Oxidative stress is a general term used to describe the steady state of oxidative damage caused by highly reactive molecules known as free radicals. The free radicals can be generated both during the normal metabolic process and from ETS and other environmental pollutants.

When free radicals are not neutralized by antioxidants, they can cause oxidative damage to the cells. Fruits and vegetables are the major food sources of antioxidants that may protect the lung from oxidative stress. The Institute of Medicine (IOM) reports that an increased turnover in vitamin C has been observed in nonsmokers who are regularly exposed to tobacco smoke and the increased turnover results in lowered vitamin C pools in the body.

The WIC food package supplements the client's intake of vitamin C with juice and cash value benefits for fresh fruits and vegetables. In addition, those who participate in Project FRESH during the summer months can purchase more fresh fruits and vegetables. You can encourage clients to increase fruit and vegetable consumption, and to promote a healthy lifestyle, including reducing ETS exposure. Clients expressing a desire to quit smoking should be offered referrals to other health and social services, such as smoking cessation programs.

211.01+ Elevated Blood Lead Levels

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Venous blood lead level at or above 5 micrograms per deciliter within the past 12 months.

Background

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 ≥ 5 micrograms per 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. 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 client 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. You can offer to discuss the importance of having healthy eating habits to promote adequate intake of calories and nutrients and to help decrease the body's absorption of lead.

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.

Small amounts of caffeine consumption are not a nutrition risk 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 if caffeine is safe for the pregnant woman, it is best that caffeine-containing products be limited during pregnancy.

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

Use the chart to help you identify how many milligrams of caffeine are contained in the foods and drinks listed. Note the serving size of each entry.

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

True or False? (T or F)

1.____ During pregnancy, a safe level of alcohol intake is not more than one drink per day.

2.____ Pregnant women should only take medication which has been approved by their health care provider.

3. A woman who smokes during pregnancy increases her chances of delivering a _____ than normal baby.
   a. Smaller
   b. Larger

4. Place an "X" by the following substances if they are considered nutrition risks for a pregnant woman.

___Pica ___Alcohol ___Caffeine __Cocaine ___Marijuana ___Tobacco

ANSWERS

1. False. No level of alcohol during pregnancy is considered safe.

2. True

3. a. Smaller

4. X_ Pica X Alcohol X Cocaine
   ___Caffeine X Tobacco X Marijuana

Section V: Clinical Indicators of Nutrition Risk

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
- History of pregnancy complications

Word to Know

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

331.01 Pregnancy at a Young Age, ***any of the following*****:**

- Conception at or less than 17 years of age
- Pregnant woman: current pregnancy

Background

The adolescent period represents a time of extremely rapid growth and development accompanied by an increased need for energy and nutrients. If an adequate eating pattern 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 babies. 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.

333.01 High Parity and Young Age

- Under age 20 at date of conception and has had 3 or more previous pregnancies of at least 20 weeks duration, regardless of birth outcome.
- Pregnant woman: current pregnancy.

Background

Multiparity increases the risk of delivering a low birth weight baby 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 (at the end of this training 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 typical 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, and dry cereal.

Common eating behaviors 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. You 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 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, 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.

A woman's weight or body image concerns can surface when discussing eating patterns that seem unbalanced or unusual. She may have some difficulty explaining her eating habits and want to avoid symptoms characteristic of an eating disorder. You can discuss her issues to the point that she feels supported. Be sensitive and reassuring if she chooses not to disclose her eating habits or avoid the topic.

Eating Disorders

358+ Eating Disorders
358.01+ Bulimia
358.02+ Anorexia

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Diagnosed eating disorders or evidence of such disorders documented by CPA.
- Eating disorders (anorexia nervosa and bulimia) are characterized by a disturbed sense of body image and morbid fear or becoming fat.
- Symptoms are manifested by abnormal eating patterns and including, but not limited to:
    - Self-induced vomiting
    - Purgative abuse
    - Alternating period of starvation
    - Use of drugs such as appetite suppressants, thyroid preparations or diuretics.
    - Self-induced marked weight loss.

Background

Concerns about weight and food intake can occur at any age but are of special concern 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" dieting can be the start of an eating disorder when intensified by 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 pre-pregnancy period, during gestation, and after delivery, include low pre-pregnancy weight; inadequate gestational weight gain, excessive weight gain (binge eating); decreased nutrient stores; and decreased bone density.

Anorexia nervosa and bulimia are serious eating disorders that affect women in the childbearing years. These disorders result in general malnutrition and may cause life-threatening fluid and electrolyte imbalances. Women with eating disorders may begin pregnancy in a poor nutritional state. They are at risk of developing chemical and nutritional imbalances, deficiencies, or weight gain abnormalities during pregnancy if aberrant eating behaviors are not controlled. These eating disorders can seriously complicate any pregnancy since the nutritional status of the pregnant woman is an important factor in perinatal outcome. Maternal undernutrition is associated with increased perinatal mortality and an increased risk of congenital malformation.

Regression in postpartum women is a serious concern for breastfeeding and non-breastfeeding postpartum women who are extremely preoccupied with rapid weight loss after delivery.

Anorexia Nervosa

Anorexia nervosa is characterized 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. A 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.

Binge Eating Disorder (BED)

Binge eating disorder involves recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

- Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is larger than what most people would eat in a similar period of time under similar circumstances.
- A sense of lack of control of eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).

The binge-eating episodes are associated with three (or more) of the following:

- Eating much more rapidly than normal.
- Eating until feeling uncomfortably full.
- Eating large amounts of food when not feeling physically hungry.
- Eating alone because of feeling embarrassed by how much one is eating.
- Feeling disgusted with oneself, depressed, or very guilty afterward.

Marked distress regarding binge eating is present. The binge eating occurs, on average, at least once a week for 3 months. The binge eating is not associated with the recurrent use of inappropriate compensatory behavior as in bulimia nervosa and does not occur exclusively during bulimia nervosa or anorexia nervosa.

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 client to seek help in their community.

Your Role

A pregnant woman may need to learn many things—the importance of eating nutritious food, gaining an appropriate amount of weight, avoiding harmful substances, and taking care of herself.

You can be a supportive and understanding resource for her by providing valuable nutrition and health information. Focus on positive accomplishments, like coming to WIC for services and for keeping appointments.

Medical Conditions

Some medical conditions are considered nutrition risks in the WIC Program. These medical conditions must have been diagnosed by a health care provider however the diagnosis can be self-reported by the client. Some medical conditions listed include:

- 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 risks, you will assess dietary intake and growth or weight gain. You will provide education on eating balanced meals and snacks and reinforce good eating habits. You will assist the client 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 visits, high risk medical conditions require a referral to a Registered Dietitian within 30 days. The Registered Dietitian will provide a more in-depth assessment and counseling. They will develop a care plan with the client which will have the client follow up with them at a subsequent visit. They may decide that the client be followed by the CPA. You will also make referrals to community resources and health care providers when appropriate.

302.01+ Gestational Diabetes

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Diagnosed presence of either insulin dependent or diet-controlled glucose or carbohydrate intolerance (gestational diabetes). Condition first occurs or is recognized during pregnancy, is usually temporary and may be controlled with diet or medication (insulin).
- Self-reported diagnosis should lead to more in-depth questions to validate or involve referral to a medical professional.

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

A woman with gestational diabetes in a current pregnancy, and who had gestational diabetes in a previous pregnancy, would be assigned both risk codes 302.01+ Gestational Diabetes and 303.01 History of Gestational Diabetes.

343.01+ Diabetes Mellitus

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Diagnosed presence of diabetes mellitus.

Background

Diabetes mellitus may be described as a chronic, systemic disease characterized by abnormalities in the metabolism of carbohydrates, proteins, fats, and insulin, and abnormalities in the structure and function of blood vessels and nerves.

The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and

failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels and includes type 1 diabetes mellitus, type 2 diabetes mellitus, and Maturity Onset Diabetes of the Young (MODY). MODY is a series of familial disorders characterized by early onset and mild hyperglycemia. Specific genetic defects have been identified on chromosomes 7, 12, and 20 (2). MODY is often diagnosed before the age of 25 years. It is caused by dominantly inherited defect of insulin secretion. Persons with MODY are often non-obese and without metabolic syndrome.

The two major classifications of diabetes are type 1 diabetes (beta-cell destruction, usually leading to absolute insulin deficiency); and type 2 diabetes (ranging from predominantly insulin resistance with relative insulin deficiency to a predominantly insulin secretory defect with insulin resistance).

Long-term complications of diabetes include retinopathy with potential loss of vision, nephropathy leading to renal failure; peripheral neuropathy with risk of foot ulcers, amputations, and Charcot joints; and, autonomic neuropathy causing gastrointestinal, genitourinary, cardiovascular symptoms and sexual dysfunction. Patients with diabetes have an increased incidence of atherosclerotic cardiovascular, peripheral arterial and cerebrovascular diseases. Hypertension and abnormalities of lipoprotein metabolism are often found in people with diabetes.

WIC nutrition services can reinforce and support the medical and dietary therapies (such as Medical Nutrition Therapy) that clients with diabetes receive from their health care providers.

352a+ Infectious Diseases – Acute

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Disease which is characterized by a single or repeated episode of relatively rapid onset and short duration.
- Diagnosed infectious disease that must be present now or within the past 6 months.
- Disease caused by growth of pathogenic micro-organisms in the body severe enough to affect nutritional status.
- Includes, but not limited to:
    - 352.01+ Meningitis
    - 352.02+ Parasitic infections
    - 352.09+ Hepatitis A, Hepatitis E
    - 352.06+ Bronchitis (3 episodes in las 6 month)
    - 352.08+ Pneumonia
    - 352.11+ Listeriosis
- Excludes frequent colds, ear infections.

A disease which is characterized by a single or repeated episode of relatively rapid onset and short duration. Infectious diseases come from bacteria, viruses, parasites, or fungi and spread

directly or indirectly from person to person. Infectious diseases may also be zoonotic, which are transmitted from animals to humans, or vector-borne, which are transmitted from mosquitoes, ticks, and fleas to humans. These diseases and/or conditions include, but are not limited to: Hepatitis A, Hepatitis E, Meningitis (Bacterial/Viral), Parasitic Infections, Listeriosis, Pneumonia, and Bronchitis (3 episodes in last 6 months).

The infectious disease must be present within the past six months, and diagnosed, documented, or reported by a physician or someone working under a physician's orders, or as self-reported by applicant/client/caregiver.

Background

Both chronic and acute infectious diseases can lead to: 1) poor appetite, 2) low nutrient absorption, 3) accelerated nutrient utilization, and/or 4) rapid nutrient loss, depending on the individual's nutritional state before becoming infected and the individual's diet during the improvement period (3). The following information pertains to some of the more prevalent and/or serious acute infectious diseases.

Viral Hepatitis

Hepatitis is inflammation of the liver. It is most often caused by viruses, but can also be caused by excessive alcohol consumption, toxins, and medicines such as acetaminophen, as well as other medical conditions linked to liver inflammation (4). Viral hepatitis is caused by a series of viruses labeled A, B, C, D, and E – with A, B, and C being the most common forms in the United States. Viral hepatitis A and E are the only forms that are acute and do not become chronic, whereas B, C, and D can both be acute and chronic in nature.

Regardless of the type of hepatitis, infected individuals with signs of the infection will typically experience anorexia, nausea, vomiting, diarrhea, jaundice, epigastria pain, tiredness, and weakness, all of which affect one's diet and health.

In addition, darker urine and pale stools may be present in infected individuals. It is important to note that viral hepatitis is the leading cause of liver cancer and the most frequent need for liver transplants in the United States.

Hepatitis A

Hepatitis A is an acute infection caused by exposure to the Hepatitis A virus. It is transmitted through the fecal-oral route, with transmission most commonly spread through close contact with an infected household member or sexual partner.
The Hepatitis A virus can survive for months outside of the body, therefore proper hygiene and food safety are important preventative measures. However, the most effective method of preventing infection is through vaccination, which has reduced the incidence of Hepatitis A by 95% since its introduction.

Hepatitis E

Hepatitis E is an acute infection caused by exposure to the Hepatitis E virus. It is transmitted through the fecal-oral route, most commonly through ingestion of contaminated drinking water. However recent cases have been linked to uncooked/undercooked meat and shellfish, indicating the potential for foodborne exposure.

Hepatitis E symptoms typically resolve on their own, and there is currently no therapeutic treatment or approved vaccine for the disease. Supportive therapy should be offered, and hospitalization recommended for severe cases. The predominant forms of prevention are good sanitation and only relying on clean drinking water when in areas at high risk for infection. Pregnant women are especially at risk when infected with Hepatitis E. While in general most people will recover completely and the death rate among confirmed cases is about 1%, the mortality rate can reach 10- 30% for women in their third trimester.

Meningitis

Characterized by an inflammation of the protective membranes known as the meninges, meningitis is typically caused by an infection of the fluid surrounding the brain and the spinal cord. Most commonly meningitis is caused by a bacterial or viral infection, but it can also result as a response to physical injury, cancer, or certain drugs. Due to the severity of meningitis and resulting treatment differing depending on the cause, it is important to correctly diagnose the agent responsible for the disease.

Bacterial Meningitis

While most people with meningitis typically recover, bacterial meningitis is typically severe and can result in serious complications, including brain damage, hearing loss, or learning disabilities. The leading causes of
bacterial meningitis in the United States include *Haemophilus influenzae, Streptococcus pnemoniae, Listeria monocytogenes,* and *Neisseria meningitidis*. The causes of meningitis vary by age group. In adults, including pregnant women, it is most commonly caused by Streptococcus pneumoniae, Neisseria meningitidis, and Listeria monocytogenes.

Pregnant women infected with any of the bacteria responsible for causing meningitis can pass the bacteria to their baby, putting them at increased risk of developing meningitis.
Meningitis symptoms are characterized by a sudden onset of fever, headache, and stiff neck. Other symptoms are also often present, including nausea, vomiting, sensitivity to light, and confusion. Diagnosis must be confirmed through laboratory testing of the blood or cerebrospinal fluid. Bacterial meningitis is effectively treated with antibiotics, though it is important to begin treatment as early as possible.
The most effective method of preventing meningitis is vaccination. There are currently vaccines available for three types of meningitis causing bacteria - *Neisseria meningitidis* (meningococcus), *Streptococcus pneumoniae* (pneumococcus), and *Haemophilus influenzae* type b (Hib). Additionally, for individuals in close contact with those with the disease, antibiotics may be recommended as a preventative measure. The risk of meningitis resulting from Listeria can be prevented by properly preparing and refrigerating food as well as avoiding

certain foods. Women diagnosed with group B strep are also given antibiotics during labor to prevent transmission to their newborn.

Viral Meningitis

Viral meningitis is the most common type of meningitis and is often less severe than bacterial caused cases. In the United States it is most commonly caused by non-polio enteroviruses, as well as others including the mumps, herpes, measles, influenza, and arboviruses. While few people infected with these viruses develop meningitis, the risk is especially high from summer to fall.

Transmission of a virus that can lead to meningitis may occur due to close contact with a person who has viral meningitis, however it is unlikely meningitis will develop. Typically, viral meningitis resolves without treatment in 7-10 days. However, those with meningitis caused by the herpes virus or influenza may benefit from antiviral medication. While there are no vaccines available for the non-polio enteroviruses that can cause meningitis, the following steps can be taken to reduce the risk of infection:

- Washing hands often with soap and water, especially after changing diapers, using the toilet, or coughing or blowing your nose.
- Avoiding face touching with unwashed hands.
- Avoiding close contact with infected persons.
- Cleaning and disinfecting frequently touched household surfaces.

Listeriosis

Listeriosis is a serious infection caused by the bacteria *Listeria monocytogenes*. It is most commonly transmitted through contaminated food; however, it is also naturally present in the soil, water, and animals, including poultry and cattle. Listeria is especially dangerous due to its ability to grow in cold temperatures, unlike many other pathogens. Common food sources include ready-to-eat deli meats and hot dogs, unpasteurized milk and dairy products, raw sprouts and others. Symptoms include fever, stiff neck, confusion, weakness, vomiting, and diarrhea.

Pregnant women and newborns are at exceptionally high risk for listeriosis, with pregnant women 10-20 times as likely as the general population to become infected. It can lead to miscarriage, stillbirth, or lifelong health issues for the child. Additionally, those with weakened immune systems are also at heightened risk. Listeriosis is treated with antibiotics and for severe cases referral to a medical facility may be necessary. The best methods of prevention are associated with proper food safety, handling, and storage. Additionally, raw milk and raw dairy products should be avoided. There is currently no vaccine available.

Pneumonia

Pneumonia is an infection of the lungs that can cause mild to severe illness. It can be caused by viruses, bacteria, and fungi. In the United States the most common causes of viral and bacterial pneumonia are respiratory syncytial virus (RSV) and Streptococcus pneumonia (pneumococcus), respectively, however Human Parainfluenza Viruses are the leading cause of pneumonia in infants and children. Symptoms include fever, muscle aches, fatigue,

enlarged lymph nodes in the neck, chest pain, sore throat, coughing, shortness of breath, and rapid breathing.

Pneumonia contracted during pregnancy has been associated with increased morbidity and mortality when compared with non-pregnant women. It can lead to negative outcomes including low birth weight, increased risk of pre-term birth, and serious complications for the mother including respiratory failure.

Treatment includes administering antimicrobial and antiviral drugs depending on the pathogen responsible for the infection. Vaccination is an effective way to prevent pneumonia, with several vaccinations available for both bacteria and viruses including pneumococcal, *Haemophilus influenzae type b (Hib*), pertussis (whooping cough), varicella (chickenpox), measles, and influenza vaccines. Good hygiene is also another effective method of prevention, including regular handwashing and disinfecting frequently touched surfaces.

Bronchitis

Acute bronchitis is diagnosed by a healthcare provider based on the signs and symptoms present in the patient. It is a condition that occurs when the airways in the lungs swell and produce mucus, resulting in a cough. Bronchitis typically occurs after a chest cold and is usually caused by a virus, with the most common being: Respiratory syncytial virus (RSV), Adenovirus, Influenza viruses, and parainfluenza. Symptoms include but are not limited to coughing that produces mucus; soreness in the chest; fatigue; headache; body aches; fever; and sore throat. Most symptoms of acute bronchitis resolve on their own after two weeks, but the cough may last up to eight weeks in some cases. In severe cases, such as a fever above 100.4 degrees Fahrenheit, patients should seek assistance from a health care provider.

Since bronchitis is almost never caused by bacteria, antibiotics are not needed or recommended. The best course of action is to provide symptom relief through rest, over-the-counter medicines, and other self-care methods. Bronchitis may be prevented by avoiding smoking, practicing good hygiene, and remaining current on all immunizations.

Parasitic Infections

Parasites are organisms that live on or in a host organism and survive by getting their food at the detriment of the host. Pregnant women and children are most at risk from certain types of parasites including *Toxoplasma gondii* – found in uncooked meat; *Giardia intestinalis*; *Cryptosporidium;* lice; and pinworms. Toxoplasmosis, caused by *Toxoplasma gondii*, is the leading cause of death attributed to foodborne illness in the United States. To reduce the risk of parasitic infection, prevention includes good food safety and general good hygiene. Additionally, environmental risk can be reduced by wearing gloves when coming into contact with soil.

Most healthy people will recover from parasites without treatment. However, for pregnant women, newborns, and infants with toxoplasmosis, treatment can be administered as a combination of drugs such as pyrimethamine and sulfadiazine, plus folinic acid (27). This treatment will reduce the parasitic burden but will not eliminate it completely as parasites can

remain in tissues, which makes it hard for the medication to reach them. Lice and other dermal parasites can be treated with topical drugs, such as medicated shampoo.

Implications for WIC Nutrition Services

WIC can improve the management of acute infectious diseases through WIC foods, nutrition education, counseling, and referrals to community resources.

352b+ Infectious Diseases – Chronic

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Presence of diagnosed infectious disease
- Conditions likely lasting a lifetime and require long-term management of symptoms.
- Disease caused by growth of pathogenic micro-organisms in the body severe enough to affect nutritional status.
- Includes, but not limited to:
    - 352.04+ HIV (Human Immunodeficiency Virus infection)
    - 352.05+ AIDS (Acquired Immunodeficiency Syndrome)
    - 352.07+ Tuberculosis
    - 352.10+ Hepatitis B, Hepatitis C, Hepatitis D
- EXCLUDES frequent colds, ear infections.

Background

Conditions likely lasting a lifetime and require long-term management of symptoms. Infectious diseases come from bacteria, viruses, parasites, or fungi and spread directly or indirectly, from person to person. Infectious diseases may also be zoonotic, which are transmitted from animals to humans, or vector-borne, which are transmitted from mosquitoes, ticks, and fleas to humans. These diseases and/or conditions include, but are not limited to: HIV, AIDS, Hepatitis B, Hepatitis C, and Hepatitis D.

Both chronic and acute infectious diseases can lead to 1) poor appetite, 2) low nutrient absorption, 3) accelerated nutrient utilization, and/or 4) rapid nutrient loss, depending on the individual's nutritional state before becoming infected and the individual's diet during the improvement period.

The Human Immunodeficiency Virus (HIV) is a chronic virus that reduces an individual's ability to fight off infections and diseases. HIV is transmitted only through blood, semen, preseminal fluid, rectal fluids, vaginal fluids, and breast milk from an HIV-infected person. HIV can lead to Acquired Immunodeficiency Syndrome (AIDS) if left untreated. Individuals who are aware of their HIV status and are undergoing antiretroviral therapy (ART) to stop the replication of the virus, can typically live decades – while those unaware of their status or are not on ART, can usually remain in this stage about ten years before progressing to AIDS.

Being tested is the only way individuals know they are infected with HIV. Many people infected with the virus display no symptoms for as long as ten years or more. The Centers for Disease Control and Prevention (CDC) currently estimates that 1 in 6 people in the United States infected with HIV do not know they have the virus and therefore recommends that everyone between the ages of 13-64 get tested at least once as part of a regular health screening. The CDC recommends that all pregnant women be tested early in their pregnancy, via an "opt-out" testing measure – which is when pregnant women are told that an HIV test will be included in the standard group of prenatal tests and that they may decline the test. Unless the HIV test is specifically declined, they will be tested for the virus.

An early diagnosis in pregnant women can reduce the transmission of HIV in babies, if the expectant mother:

- Receives Active Antiretroviral Therapy (ART) during pregnancy, labor, and delivery.
- Delivers the baby by Cesarean or C-section.
- Avoids breastfeeding.

There is a greater chance of transmission if the HIV positive, expectant mother does none of the prevention measures listed above.

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.

WIC can impact the spread of HIV/AIDS by making referring clients for early and late gestation testing, given that some populations served by WIC are most at risk for contracting HIV.

Your Role

USDA requires WIC staff 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. (Each clinic should have a list of places to refer women for HIV testing, treatment, and counseling.)
- Refer HIV-infected women who are not under treatment to a health care provider.
- Educate mothers with HIV/AIDS to avoid breastfeeding.
- Refer mothers with HIV/AIDS to the Registered Dietitian within 30 days to evaluate their nutritional status and provide appropriate counseling.

Treat all women with infectious diseases just as you would non-infected clients. HIV cannot be spread through casual contact in the WIC clinic. When collecting hemoglobin, use the same universal precautions* (i.e., medical gloves, etc.) that are used for other clients.

Universal Precautions

Limits occupational exposure to blood and other potentially infectious materials. To learn more about Universal Precautions visit:

- https://www.aftermath.com/content/universal-precautions-bloodborne-pathogens/

To learn more about HIV and AIDS visit:

- http://www.womenshealth.gov/hiv-aids/

353.01+ Food Allergies

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Diagnosed adverse immune response to a food or a hypersensitivity that causes adverse immunologic reaction.

  Note: This applies when the diagnosed food intolerances or allergies require major dietary modification to provide optimal nutrition.

Background

Food allergy reactions occur when the body's immune system responds to a harmless food as if it were a threat. The most common types of food allergies involve immunoglobin #(Ig#)-mediated responses. The immune system forms Ig# against offending food(s) and causes abnormal reactions. Ig# is a distinct class of antibodies that mediates an immediate allergic reaction. When food allergens enter the body, Ig# antibodies bind to them and release chemicals that cause various symptoms.

Food Allergies vs. Intolerances

Food intolerances are classified differently from food allergies based on the pathophysiological mechanism of the reactions. Unlike food allergies, food intolerances do not involve the immune system. Food intolerances are adverse reactions to food caused either by the properties of the food itself, such as a toxin, or the characteristics of the individual, such as a metabolic disorder. Food intolerances are often misdiagnosed food allergies because the symptoms are often similar. Cause of food intolerances may include food poisoning, histamine toxicity, food additives such as monosodium glutamate (MSG), or sulfites. The most common food intolerance is lactose intolerance.

Food Allergens

Although reactions can occur from the ingestion of any food, a small number of foods are responsible for most food-induced allergic reactions. The foods that most often cause allergic reactions include:

- Cow's milk
- Eggs
- Peanuts
- Tree nuts (walnuts, almonds, cashews, hazelnuts, pecans, brazil nuts)
- Fish
- Crustacean shellfish (e.g., shrimp, crayfish, lobster, and crab)
- Wheat
- Soy

Reactions can occur within minutes or up to 4 hours after ingestion and include symptoms such as hives, angioedema, wheezing, cough, nausea, vomiting, hypotension and anaphylaxis.

Your Role

You can assist women with food allergies in making changes that improve quality of life and promotes nutritional well-being while avoiding offending foods. You can encourage exclusive breastfeeding, tailor food packages to substitute or remove offending food, education clients on maintain adequate nutrition intake while avoid offending foods, monitor weight status, and educate clients about reading food labels and identifying offending foods and ingredients. Clients can also be encouraged to maintain communications with their health care provider.

361+ Depression

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Presence of clinical depression diagnosed by physician, psychologist, certified social worker or advanced practice registered nurse, or as reported or documented by a physician or someone working under physician's orders.

Background

According the National Institute of Mental Health (NIMH), nearly 10 percent of the U.S. population ages 18 and older suffers from depression each year, with 6.7 percent suffering from major depressive disorders. Depression occurs twice as frequently in women as in men. Depression has a variety of symptoms, but the most common are deep feelings of sadness or a market loss of interest in pleasure or activities. Other symptoms of depression include appetite changes resulting in unintended weight losses or gains, insomnia or oversleeping, loss of energy or increased fatigue, restlessness or irritability, feeling of worthlessness or inappropriate guilt and difficulty thinking, concentrating or making decisions.

Depression is common during pregnancy. Between 14 and 23 percent of pregnant women will experience depressive symptoms. Depression risk tends to be highest during the last trimester of pregnancy. Women who experience depression during pregnancy are found to less likely to seek prenatal care. They may also suffer from episodes of nausea and/or vomiting or initiate and/or increase the use of drugs, alcohol and nicotine. Pregnant women with depression may be at risk for preeclampsia, preterm delivery or delivery of low birth weight infants and have higher perinatal mortality rates.

Your Role

Appetite changes are a distinguishing feature of depression and the combination of nutrition education and access to nutritious foods may lesson the effects of these change. You can make medical referrals and offer social support services to help WIC mothers with diagnosed depression by minimizing the isolation many experience.

Other Clinical, Health, or Medical Conditions

332.01 Short Interpregnancy Interval, ***any of the following:***

- Conception before 18 months postpartum
- Pregnant woman: current pregnancy
- Breastfeeding woman: most recent pregnancy
- Non-lactating woman: most recent pregnancy

Adverse maternal and infant health outcomes have been associated with short interpregnancy intervals (IPIs). An interval less than 18 months has been associated with increased risk for adverse outcomes. An interval of 18 – 24 months has been associated with the lowest relative risk. Pregnancy stresses a woman's nutritional stores. She needs enough time between pregnancies to "rebuild" these stores.

Background

Outcomes associated with short IPI have included maternal complications such as uterine rupture in women attempting a vaginal birth after a previous cesarean delivery (also referred to as VBAC); and perinatal and neonatal complications such as preterm birth, low birth weight, small for gestational age, birth defects, and autism.

Your Role

Initiations of healthcare referrals for family planning, early prenatal care, and folic acid supplementation have the potential to improve health outcomes for women, infants, and children. Given that half of all pregnancies nationwide are unintended, WIC can help to reduce the risk of adverse pregnancy outcomes by:

- Encouraging postpartum women and their partner to meet with their healthcare provider to discuss developing a reproductive plan and birth spacing, as appropriate. http://www.cdc.gov/preconception/documents/rlphealthproviders.pdf
- Encouraging folic acid supplementation. http://www.cdc.gov/features/folicacidbenefits/

- Encouraging healthful eating patterns consistent with the Dietary Guidelines for Americans. http://www.cnpp.usda.gov/DietaryGuidelines

Your Role

The interconceptual period is an opportune time to encourage women about the importance of adequate nutritional and prenatal care.

335.01 Multi-fetal Gestation, ***any of the following:***

- Pregnant woman: more than 1 fetus in current pregnancy
- Breastfeeding woman: more than 1 fetus, most recent pregnancy
- Non-lactating woman: more than 1 fetus, most recent pregnancy.

Note:

- Steady weight gain of 1.5 pounds per week, during 2nd and 3rd trimesters is linked with lowest risk.
- Provisional risk guidelines for overall weight gain for twin pregnancy are:
    - Category B (normal weight) 37-54 pounds total
    - Category C (overweight) 31-50 pounds total
    - Category D (obese) 25-42 pounds total
    - Triplets 50 pounds total, regardless of initial weight
    - 4 or more – no provisional guidelines are available

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 (death).

Multi-fetal gestations are associated with low birth weight, fetal growth restriction, placental and cord abnormalities, preeclampsia, anemia, shorter gestation and an increased risk of infant mortality. Twin births account for 16% of all low birth weight infants. The risk of pregnancy complications is greater in women carrying twins and increases markedly as the number of fetuses increases (1, 2).

For twin gestations, the 2009 IOM recommendations provide provisional guidelines: normal weight women should gain
37-54 pounds; overweight women, 31-50 pounds; and obese women, 25-42 pounds (3). There was insufficient information for the IOM committee to develop even provisional guidelines for underweight women with multiple fetuses. A consistent rate of weight gain is advisable. A gain of 1.5 pounds per week during the second and third trimesters has been associated with a reduced risk of preterm and low-birth weight delivery in twin pregnancy (2). In triplet pregnancies the overall gain should be around 50 pounds with a steady rate of gain of approximately 1.5 pounds per week throughout the pregnancy (2). Education by the WIC nutritionist should address a steady rate of weight gain that is higher than for singleton

pregnancies.

Pregnant or breastfeeding women with twins have greater requirements for all nutrients than women with only one infant. Postpartum, non-breastfeeding women delivering twins are at greater nutritional risk than similar women delivering only one infant. All three groups of women would benefit greatly from the nutritional supplementation provided by the WIC Program.

Your Role

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.

Because current weight gain recommendations for multi-fetal gestations are provisional, Low Maternal Weight Gain and High Maternal Weight Gain risk codes are not assigned to women with multi-fetal gestations.

338.01 Pregnant Woman Currently Breastfeeding

- Breastfeeding woman now pregnant

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 baby 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.

Your Role

You can discuss with the woman her feelings about breastfeeding while pregnant. This will help you to determine why she has decided to continue to breastfeed. 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 baby. 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.

Complications of Previous Pregnancy

A medical problem in a past pregnancy may indicate additional nutritional need. These problems include gestational diabetes, preeclampsia, and preterm delivery, delivery of a low birth weight baby or large for gestational age baby, fetal death, or delivery of a baby 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 Risks - Complications of Previous Pregnancy:

303.01 History of Diagnosed Gestational Diabetes
304.01 History of Preeclampsia
310.01+ History of Preterm Delivery (currently pregnant)
310.02 History of Early Term Delivery (currently pregnant)
311.01 History of Preterm Delivery (currently postpartum)
311.02 History of Early Term Delivery (currently postpartum)
312.01+ History of Low Birth Weight (currently pregnant)
313.01 History of Low Birth Weight (currently postpartum)
321.01 History of Spontaneous Abortion, Fetal or Neonatal Loss
337.01 History of Birth of a Large-for-Gestational Age Infant
339.01+ History of Birth with Nutrition-Related Congenital or Birth Defect

360.01+ Asthma, persistent (moderate or severe) requiring daily medication

Asthma is a chronic inflammatory disorder of the airways, wich can cause recurrent episodes of wheezing, breathlessness, chest tightness, and coughing of variable severity. Persistent asthma requires daily use of medication, preferably inhaled anti-inflammatory agents. Severe forms of asthma may require long-term use of oral corticosteroids which can result in decreased birthweight of the infant in pregnancy. Untreated asthma in pregnant women is associated with poor birth outcomes such as low birth weight, prematurity and cerebral palsy.

WIC can help by providing food high in calcium and vitamin D, in educating clients to consume appropriate foods and to reduce environmental triggers, and in supporting and encouraging compliance with the therapeutic regimen prescribed by their health care provider.

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 statements 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? (T or F)

3. ____ Certain medical conditions are considered 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 baby.

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 risks should be checked: b, c, d, f, g,

3. True

4. False

Section VI: Social Indicators of Nutrition Risk

Some pregnant women are at nutrition 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.

801.01 Homelessness, ***any of the following:***

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

Background

Homeless individuals comprise a very vulnerable population with many special needs. WIC Program regulations specify homelessness as a predisposing nutrition risk condition. Today's homeless population contains a sizeable number of women and children – over one-third of the total homeless population in the U.S. Studies show forty-three percent of today's homeless are families, and an increasing number of the "new homeless" include economically displaced individuals who have lost their jobs, exhausted their resources, and recently entered the ranks of the homeless and consider their condition to be temporary.

802.01 – Migrant

- Categorically eligible woman who are member of families which contain at least one individual whose 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.

901.01 Recipient of Abuse

- Battering within the past 6 months as self-reported, or as documented by a social worker, health care provider or another appropriate document. "Battering" refers to violent physical assaults on women.

Background

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.

903.01 Foster Care

- Entering the foster care system during the previous 6 months
- Moving from one foster care home to another foster care home during the previous 6 months.

902.01 Women with Limited Ability to Make Feeding Decisions and/or Prepare Food

- Women whose primary caregiver is assessed to have a limited ability to make appropriate feeding decisions and/or prepare food. Examples include, but are not limited to, a woman with the following:
    - Documentation or self-report of misuse of alcohol, use of illegal substances, use of marijuana, or misuse of prescription medications.
    - Mental illness, including clinical depression diagnosed, documented, or reported by a physician or psychologist or someone working under a physician's orders, or as self-reported by applicant/client/caregiver.
    - Intellectual disability diagnosed, documented, or reported by a physician or psychologist or someone working under a physician's orders, or as self-reported by applicant/client/caregiver.
    - Physical disability to a degree which impairs ability to feed infant/child or limits food preparation abilities.

Background

A pregnant or postpartum woman's ability to choose and prepare suitable foods for herself is vital for her own nutritional status and wellbeing. A variety of circumstances can impair a woman's ability to make diet-related decisions or prepare food and thus have been identified as possible nutritional risks for pregnant and postpartum women.

Substance Use

Substance use can impair a woman's ability to choose and prepare suitable foods for herself. People with substance use disorders tend to have impaired decision-making, which can extend to diet-related choices. Substance use can result in difficulty in controlling emotions and anger; a chaotic, unpredictable home environment; and incarceration – all of which can negatively impact ability to choose and prepare foods.

For additional information, please refer to Risk 372.01 – *Alcohol and Substance Use*.

Mental Illness

Mental illness refers to a wide range of mental health conditions-disorders that affect your mood, thinking and behavior. Examples of mental illness include depression, anxiety disorders, schizophrenia, eating disorders and addictive behaviors.

Mental illness can be debilitating to pregnant and postpartum women in a variety of ways, which include impairing the ability to choose and prepare suitable foods. People with bipolar disorder or schizophrenia are more likely to report only eating once a day, eating alone, and having difficulty with preparing food. Individuals with a mental illness also may experience cognitive challenges, which can limit learning and retention of information about nutrition and food preparation. In addition, those with a mental illness may also have limited resources (due to not being able to work) for purchasing foods.

Intellectual Disability

Intellectual disability is a disability characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills. Having an intellectual disability, such as Down syndrome, may make it difficult or even impossible for women to choose, prepare, or serve themselves foods and beverages. As a result, some women with intellectual disabilities are at risk for developing diseases associated with obesity, inactivity, and poor nutrition and may have very little choice in deciding their dietary intake since it may be determined by a caregiver.

Physical Disability

Some physical disabilities may limit a woman's ability to feed herself or prepare suitable foods for herself. This risk should be assigned if a woman's physical disability restricts or limits her ability to prepare foods for herself or to feed herself.

17 Years of Age and Younger

In 2015, about 230,000 infants were born to teenage mothers; this is a birthrate of about 22 per 1,000 teenage women. Teenage mothers may face several challenges as they raise infants and children, including their ability to interact in a responsive manner.

Implications for WIC Nutrition Services

WIC provides support to women and to infants/children of caregivers with limited ability to make appropriate feeding decisions/prepare food by offering counseling on nutrition, breastfeeding, and infant/child feeding. WIC also provides nutritious foods for women and caregivers to give their infants/children, as well as referrals to support clients' needs. WIC staff can assist clients by:

- Providing individualized nutrition education in an easy-to-understand format that is appropriate for the learning level of the client. Most education materials should be written for a 5th to 7th grade reading level. Be sensitive to the unique learning needs and style of the client, which may mean using food models, posters, and handouts.

- Providing referrals to those with substance misuse for professional treatment, referring to community resources for alcohol and substance use support groups, and providing breastfeeding promotion and support to women enrolled in supervised medication-assisted treatment programs.
- Encouraging client with mental illnesses, intellectual disabilities, and physical disabilities to follow health care provider's plan of care. Coordinate with health care providers as needed.
- Providing individualized food packages, tailored to meet the needs of clients.

Your Role

Approach women with sensitivity when discussing how WIC can assist in meeting her nutritional needs. Offer ways to select a food package that will fit her ability to store and prepare food.

For women who are homeless or migrants, ask about the client's awareness of local resources in the community. These families can often benefit from more than just WIC foods and education. You can use this opportunity to provide information to families about other agencies that can help them 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.

You can provide a nutritional assessment of the client, nutrition education, as well as make referrals to resources to support the foster parent and client'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 limitations, such as blindness, paraplegia, or mental illness, may limit her ability to prepare foods. You can assist the client by offering education and referrals. You can also 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.

   _____

   _____

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

Section VII: Postpartum Nutrition and General Guidelines

Postpartum: The "Fourth" Trimester

> **Word to Know**
>
> **Postpartum:** The period of time occurring after childbirth up to 6 months after delivery.

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.

Just as adequate nutrition and a healthy lifestyle are important during pregnancy, it is also important during the postpartum period. A healthy eating pattern 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 a baby, some women may be unable to or may not choose to breastfeed.

The postpartum period continues to be a special time for the mother. The new mother will be experiencing many physical and emotional changes. Some of these changes may be linked to her nutritional status. This is an opportunity for you to discuss 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. A nutrition assessment which includes growth, iron status, medical history, nutrition practices, lifestyle and personal factors will help you identify if a postpartum woman is at nutritional risk. Many of the same nutrition risks of pregnancy will apply to the postpartum woman. Some of these include:

- Young age
- Postpartum underweight
- Postpartum overweight
- Low hematocrit/low hemoglobin
- Elevated blood lead levels
- Short interpregnancy interval
- Complication during the most recent pregnancy
- Using drugs and/or alcohol
- Highly restrictive diets
- Specific medical conditions
- Inadequate diet
- A multi-fetal pregnancy during the most recent pregnancy
- And any of the social indicators of nutritional risk

There are two risks unique to the postpartum woman:

1. High maternal weight gain during the most recent pregnancy
2. High risk drinking or binge drinking of alcohol.

Equally important is the fact that a mother's nutritional status after a pregnancy can affect the outcome of future pregnancies. 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.

427.04 Vitamin/Mineral Supplementation

- Client not routinely taking a dietary supplement recognized as essential by national public health policy makers because diet alone cannot meet nutrient requirements.
- Example include but are not limited to:
    - Non-pregnant women consuming less than 400 mcg of folic acid (synthetic) from fortified foods and/or supplements daily.

Background

Non-pregnant women of childbearing age who do not consume adequate amounts of folic acid are at greater risk for functional folate deficiency, which has been proven to cause neural tube defects (NTDs), such as spina bifida and anencephaly.

Folic acid consumed from fortified foods and/or a vitamin supplement in addition to folate found naturally in food reduces this risk. The terms "folic acid" and "folate" are used interchangeably, yet they have different meanings. Folic acid is the synthetic form used in vitamin supplements and fortified foods. Folate occurs naturally and is found in foods, such as dark green leafy vegetables, strawberries, and orange juice.

Studies show that consuming 400 mcg of folic acid daily interconceptionally can prevent 50 percent of neural tube defects. Because NTDs develop early in pregnancy (between the 17th and 30th day) and many pregnancies are not planned, it is important to have adequate intakes before pregnancy and throughout the childbearing years. NTDs often occur before women know they are pregnant. It is recommended that all women capable of becoming pregnant consume a multivitamin containing 400 mcg of folic acid daily. It is important that breastfeeding and non-breastfeeding women participating in the WIC Program know about folic acid and foods that contain folate to encourage preconceptional preventive practices.

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.

133.01 High Maternal Weight Gain, ***any of the following*****:**

Breastfeeding or non-lactating woman (most recent pregnancy only)

- Gestational weight gain exceeding upper limit of the Institute of Medicine's recommended range based on Body Mass Index (BMI) as follows:

Prepregnancy Weight Groups	Definition	Cut-off Value
Category A (underweight)	BMI <18.5	more than 40 pounds
Category B (normal weight)	BMI 18.5 to 24.9	more than 35 pounds
Category C (overweight)	BMI 25.0 to 29.9	more than 25 pounds
Category D (obese)	BMI > 30.0	more than 20 pounds

Note: Use the Pregnant Woman's Health and Diet Questions & MI-WIC Weight Gain Grid.

Weight gain and risk assessment should include evaluation of weight gain pattern with 2 or more repeated measures whenever possible. See Risk Code 335, Multi-fetal for information on more than one fetus. Use the BMI Table for Determining Weight Classification for Non-Pregnant women found at Risk Code 102.

Background

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. You have an opportunity to offer sound nutritional education and counseling on healthy eating patterns 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 reason not to restrict calories severely during the postpartum period is because new mothers may be 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 it 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:

- Reduce the amount of high-calorie foods such as cookies, cakes, candies, chips, pop and sports drinks.
- Avoid using substances such as marijuana and tobacco in any form.
- Avoid a highly restricted diet.
- Reduce fat intake by using:
  - Little or no fat when cooking. Bake, broil, or steam.
  - Lean meats, fish, and poultry.
  - Vegetable proteins such as dried beans and peas.
  - Nonfat, reduced fat, and/or low-fat dairy products.

Increase consumption of fresh fruits and 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.
- Consult a Registered Dietitian 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 solution 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 pre-pregnancy weight, the total amount of weight she gained during pregnancy, and her current BMI.

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

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. All women who are capable of becoming pregnant that consume 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. She should be encouraged to replenish body stores with a nutritious diet and a prenatal multivitamin and mineral supplement containing adequate amounts of folic acid, iron, and calcium.

361+ Depression

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

Presence of clinical depression diagnosed by physician, psychologist, certified social worker or advanced practice registered nurse, or as reported or documented by a physician or someone working under physician's orders.

Postpartum Depression and Related Mood Disorders

Postpartum depression in new mothers can range from approximately 12 to 25 percent, to up to 35 percent or more in some high-risk groups. Studies have found that reproductive hormones have an indirect relationship on depression because of the influence on stress hormones, immune markers or sleep quality. High risk groups include women of low income, younger age, low education level and histories of stressful life events or traumatic experiences.

Postpartum depression is distinguished from "baby blues" - a common reaction follow delivery – both by its duration and the debilitating effects of the indifference the mother has about herself and her children. "Baby blues" are characterized by mild depressive symptoms, tearfulness (often for no discernible reason), anxiety, irritableness, mood fluctuations, increased sensitivity and fatigue. The "blues" typically peak four to five days after delivery, may last hours to days and resolve by the 10th postnatal day.

363.01+ Pre-Diabetes

Note: Clients determined to be high risk (+) must be offered nutrition counseling appointment with a Registered Dietitian.

- Diagnosed Impaired Fasting Glucose (IFG) [Fasting plasma glucose of 100-125 mg/dL.] OR Impaired Glucose Tolerance (IGT) [Plasma glucose of levels of 140-199 mg/dL after a 2-hour glucose tolerance test.]
- Client self-reported diagnosis should be validated by referral to a medical professional.
- Client at high risk for cardiovascular disease and Type 2 diabetes.
- Risk reduced by WIC foods high in fiber and low in fat like whole grains, fruits and vegetables and low-fat dairy products.

Background

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. You 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.

Healthy Tips for New Moms

There are six "Healthy Tips" or educational messages that you can reinforce to the postpartum woman. Let's examine each tip in more detail.

Healthy Tip #1: ***Eat Right***

You can help mothers choose nutritionally adequate diets by encouraging them to practice healthy eating habits and choose a variety of foods from the food groups. ***Tips for Breastfeeding Moms*** (pages 99-100) and ***Healthy Mom*** (pages 101-104) are easy-to-follow guidelines that encourage 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 ***Tips for Breastfeeding Women*** and ***Healthy Mom*** emphasize:

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

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.

Healthy Tip #3: ***Be Active***

Physical activity is important for everyone. Encourage women to ask their health care provider first to find out when they can begin regular physical activity. Usually a light, reasonable activity regime, such as walking, can be suggested.

Once regular physical activity is approved by the health care provider, suggest that the mom try to be physically active 3 to 4 times a week, starting at 10 minutes and working up to 20 to 30 minutes each time. A regular routine of physical activity is very important to regaining body tone, encouraging weight loss, and improving a new mother's mental status.

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

Encourage the postpartum mother to visit her prenatal provider after delivery. This is an opportunity for the provider to evaluate the woman's recovery. 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

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, 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).

SELF-CHECK: PRACTICE YOUR KNOWLEDGE

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

   _____
   _____
   _____

2. Name the 6 healthy tips for postpartum women.

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

True or False? (T or F)

3. ___ During the postpartum period, a woman should consume 400 mcg 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 return to pre-pregnancy weight.

ANSWERS

1. To replenish the body's nutrient stores that were depleted during pregnancy.
2.
   - Eat right,
   - Eat foods rich in folate every day;
   - Be active;
   - See a Health Care Provider;
   - Make time for being a new mom;
   - 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 Post-Test.

USDA
United States Department of Agriculture

Tips for Pregnant Moms

Making healthy food choices along with regular physical activity will help fuel your baby's growth and keep you healthy during pregnancy.

Find Your Healthy Eating Style

Choose a variety of foods and beverages to build your own healthy eating style. Include foods from all food groups: fruits, vegetables, grains, dairy, and protein foods.

The amount and types of food you eat is an important part of a healthy eating style. Before you eat, think about what and how much food goes on your plate or in your cup, bowl, or glass.

Making Healthy Food Choices

- Make half your plate fruits and vegetables. Choose fresh, frozen, canned, dried, and 100% juice. Include dark-green, red, and orange vegetables; beans and peas; and starchy vegetables.
- Make at least half your grains whole grains. Try oatmeal, popcorn, whole-grain bread, and brown rice.
- Move to low-fat or fat-free milk, yogurt, or cheese. Fortified soy beverages also count.
- Vary your protein routine. Choose seafood, lean meats and poultry, eggs, beans and peas, soy products, and unsalted nuts and seeds.
- Use the Nutrition Facts label and ingredients list to limit items higher in sodium, saturated fat, and added sugars. Drink water instead of sugary drinks. Choose vegetable oils instead of butter.
- Enriched grains, beans, peas, oranges, spinach, or other dark-green leafy vegetables can help you get the folate-rich food you need.

Visit Your Doctor Regularly

Doctors Recommend:

- Pregnant women and women who may be pregnant need to avoid alcohol and smoking. Ask for advice about caffeine, dietary supplements, and drug use.
- In addition to eating a healthy diet, take a prenatal vitamin and mineral supplement containing folic acid.
- Feed your baby only human milk (also known as breast milk) for the first 6 months.

How Much Weight Should I Gain?

- **The right weight gain** depends on your weight when you became pregnant. If your weight was in the healthy range, you should gain between 25 and 35 pounds. If you were overweight or underweight before becoming pregnant, the advice is different.
- **Gain weight gradually.** For most women, this means gaining a total of 1 to 4 pounds during the first 3 months. Gain 2 to 4 pounds each month from the 4th to 9th month.

Daily Food Checklist

The Checklist shows slightly more amounts of food during the 2nd and 3rd trimesters because you have changing nutritional needs. This is a general checklist. You may need more or less amounts of food.*

Food Group	1st Trimester	2nd and 3rd Trimesters	What counts as 1 cup or 1 ounce?
*Eat this amount from each group daily.**			
Fruits	2 cups	2 cups	1 cup fruit or 100% juice ½ cup dried fruit
Vegetables	2½ cups	3 cups	1 cup raw or cooked vegetables or 100% juice 2 cups raw leafy vegetables
Grains	6 ounces	8 ounces	1 slice bread 1 ounce ready-to-eat cereal ½ cup cooked pasta, rice, or cereal
Protein Foods	5½ ounces	6½ ounces	1 ounce lean meat, poultry, or seafood ¼ cup cooked beans ½ ounce nuts or 1 Tbsp peanut butter 1 egg
Dairy	3 cups	3 cups	1 cup milk 8 ounces yogurt 1½ ounces natural cheese 2 ounces processed cheese

**If you are not gaining weight or gaining too slowly, you may need to eat a little more from each food group.*
If you are gaining weight too fast, you may need to cut back by decreasing the amount or change the types of food you are eating.

Get a Daily Food Checklist for Moms designed just for you.
Go to ChooseMyPlate.gov/Checklist.

Seafood

Seafood is part of a healthy diet. Omega-3 fats in seafood can have important health benefits for you and your developing baby. Salmon, sardines, and trout are some choices higher in omega-3 fats and lower in contaminants such as mercury.

- Eat at least 8 and up to 12 ounces of a variety of seafood each week from choices that are lower in mercury.
- Eat all types of tuna, but limit white (albacore) tuna to 6 ounces each week.
- Do not eat tilefish, shark, swordfish, and king mackerel since they are highest in mercury.

Being Physically Active

Unless your doctor advises you not to be physically active, include 2½ hours each week of physical activity such as brisk walking, dancing, gardening, or swimming. The activity can be done for at least 10 minutes at a time, and preferably spread throughout the week. Avoid activities with a high risk of falling or injury.

Learn about other nutrition assistance programs:
http://www.benefits.gov/

Based on the *Dietary Guidelines for Americans* and
http://www.fns.usda.gov/wic/guidance

Food and Nutrition Service
FNS-457
Revised December 2016
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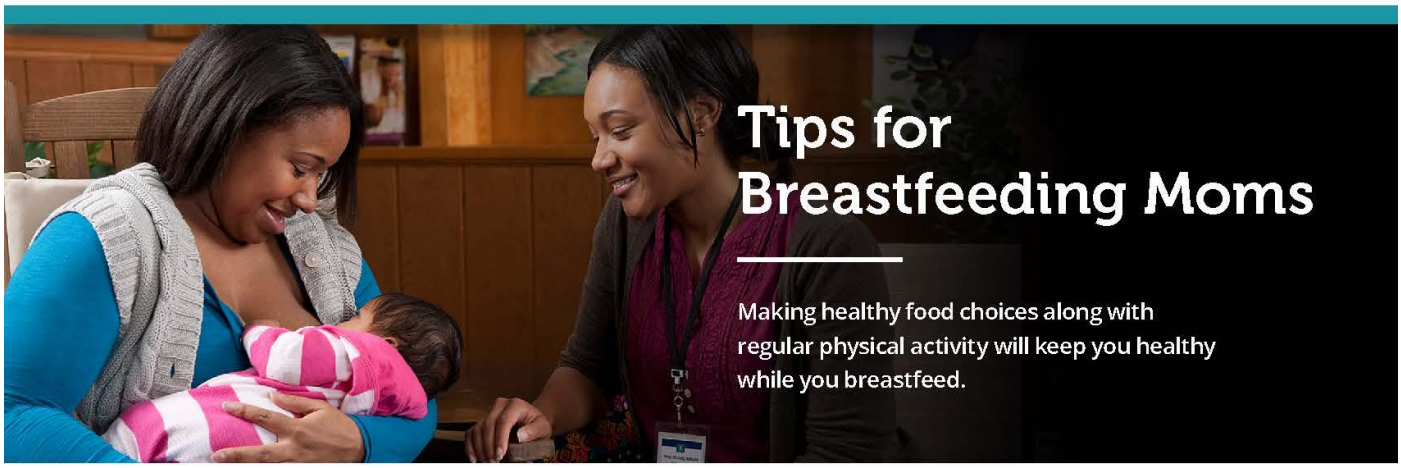

Tips for Breastfeeding Moms

Making healthy food choices along with regular physical activity will keep you healthy while you breastfeed.

Find Your Healthy Eating Style

Choose a variety of foods and beverages to build your own healthy eating style. Include foods from all food groups: fruits, vegetables, grains, dairy, and protein foods.

The amount and types of food you eat is an important part of a healthy eating style. Before you eat, think about what and how much food goes on your plate or in your cup, bowl, or glass.

Making Healthy Food Choices

- Make half your plate fruits and vegetables. Choose fresh, frozen, canned, dried, and 100% juice. Include dark-green, red, and orange vegetables; beans and peas; and starchy vegetables.
- Make at least half your grains whole grains. Try oatmeal, popcorn, whole-grain bread, and brown rice.
- Move to low-fat or fat-free milk, yogurt, or cheese. Fortified soy beverages also count.
- Vary your protein routine. Choose seafood, lean meats and poultry, eggs, beans and peas, soy products, and unsalted nuts and seeds.
- Use the Nutrition Facts label and ingredients list to limit items higher in sodium, saturated fat, and added sugars. Drink water instead of sugary drinks. Choose vegetable oils instead of butter.

Doctors Recommend:

Your Baby's First Food

- Doctors recommend feeding only human milk (commonly referred to as breast milk) for the first 6 months. Continue breastfeeding in addition to solid foods until your baby is at least 1 year old.
- Breastfeeding helps form a special bond with your baby.
- Human milk helps protect your baby from illness.
- Breastfeeding is also good for you. It may help lower your risk for type 2 diabetes, and breast and ovarian cancers.

What About...?

- Talk with your doctor before taking any medicine (both over-the-counter and prescriptions), herbal or dietary supplements, or drinking alcohol or caffeine.
- Keep your baby away from smoke. Don't let anyone smoke around your baby.

Daily Food Checklist

The Checklist shows different amounts of food depending on how much of your baby's diet is human milk. Moms who feed only human milk to their baby need slightly more food. This is a general checklist. You may need more or less amounts of food.*

Food Group	Breastfeeding only	Breastfeeding plus formula	What counts as 1 cup or 1 ounce?
*Eat this amount from each group daily.**			
Fruits	2 cups	2 cups	1 cup fruit or 100% juice ½ cup dried fruit
Vegetables	3 cups	2½ cups	1 cup raw or cooked vegetables or 100% juice 2 cups raw leafy vegetables
Grains	8 ounces	6 ounces	1 slice bread 1 ounce ready-to-eat cereal ½ cup cooked pasta, rice, or cereal
Protein Foods	6½ ounces	5½ ounces	1 ounce lean meat, poultry, or seafood ¼ cup cooked beans ½ ounce nuts or 1 Tbsp peanut butter 1 egg
Dairy	3 cups	3 cups	1 cup milk 8 ounces yogurt 1½ ounces natural cheese 2 ounces processed cheese

**If you are not losing weight you gained in pregnancy, you may need to cut back on the amount or change the types of food you are eating.*

Get a Daily Food Checklist for Moms designed just for you.
Go to ChooseMyPlate.gov/Checklist.

Being Physically Active

Unless your doctor advises you not to be physically active, include 2½ hours each week of physical activity such as brisk walking, dancing, or swimming. The activity can be done for at least 10 minutes at a time, and preferably spread throughout the week.

Beverages

Your need for fluids increases while you are breastfeeding. You may notice that you are thirstier than usual. Drink enough water to quench your thirst. Drink other beverages such as low-fat milk or 100% juice as part of your Daily Food Checklist.

Seafood

Seafood is part of a healthy diet. Omega-3 fats in seafood can have important health benefits for you and your baby. Salmon, sardines, and trout are some choices higher in omega-3 fats and lower in contaminants such as mercury.

- Eat at least 8 and up to 12 ounces of a variety of seafood each week from choices that are lower in mercury.
- Eat all types of tuna, but limit white (albacore) tuna to 6 ounces each week.
- Do not eat tilefish, shark, swordfish, and king mackerel since they are highest in mercury.

Learn about other nutrition assistance programs:
http://www.benefits. gov/

Based on the *Dietary Guidelines for Americans* and
http://www.fns.usda.gov/wic/guidance

Food and Nutrition Service
FNS-458
Revised December 2016
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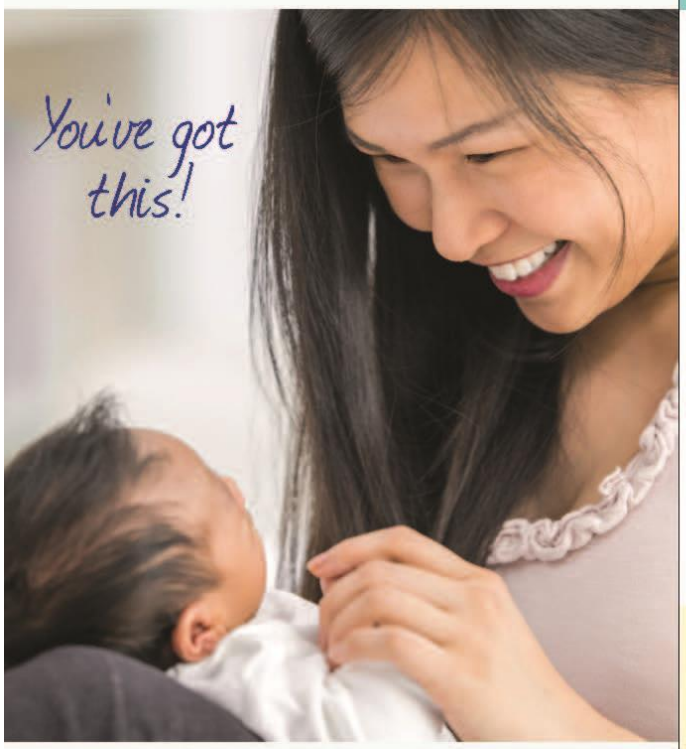
HEALTHY MOM



CONGRATULATIONS ON YOUR NEW BABY

WIC MICHIGAN

BABY BLUES

PAY ATTENTION TO YOUR MOODS. Many new moms get the blues, and may cry, feel sad, and have mood swings. You may feel this way too. If the feelings get stronger, or last longer than 2 weeks, you may have postpartum depression. Postpartum depression is a medical condition that can be treated. Untreated depression is hard on you, your baby, and your family. The sooner you get help, the faster you will feel better.

Talk to your doctor or call 1-800-944-4PPD (1-800-944-4773).

Remember you are not alone. There are a lot of moms just like you with the same struggles and demands.

Enjoy your new baby, but take care of you, too!

It's very important you make time for yourself. Everybody wants to help with the new baby so let them. Let family and friends shop, cook, clean and change diapers.

Give yourself time to recover from your pregnancy!

YOUR BODY HEALS BEST WHEN YOU

EAT WELL

Eating regular meals helps you heal faster and have more energy. Each of the 5 food groups offers different things you need. Try to eat from each of these food groups every day.

GRAINS - Choose whole grains!

at least 6 servings

- 1 slice bread or 6-inch tortilla
- 1/2 bagel or whole wheat bun
- 1/2 cup cooked cereal, rice, or noodles
- 1 cup cold cereal

At least half the grains you eat should be whole grains, like oatmeal, brown rice, corn or whole wheat tortillas, or bread. Whole grains can help reduce constipation and manage your weight.

VEGETABLES - Vary your veggies!

at least 2 1/2 servings

- 1 cup raw or cooked vegetables
- 1 cup vegetable or tomato soup
- 2 cup fresh salad greens

Eat many kinds and colors. Dark green or orange vegetables are rich in vitamin A. Enjoy them every day to keep your eyes and skin healthy and protect against infections.

FRUITS - Eat a variety!

at least 2 servings

- 1 cup fruit
- 1 medium to large apple, orange, or peach

Have a vitamin C fruit every day, like oranges, berries, or melons. Vitamin C helps absorb more iron from other foods, providing you with more energy and strength after delivery.

PROTEIN - Go lean!

at least 5 1/2 servings

- 1/4 cup meat, chicken, turkey, or fish
- 1 egg
- 1/4 cup beans or tofu
- 1 tablespoon peanut butter
- 2 tablespoons nuts

Meat, chicken, turkey, fish, and beans provide iron to keep your blood strong. Beans and lentils are very low in fat.

DAIRY - Choose low-fat options!

at least 3 servings

- 8 ounces nonfat or 1% milk
- 1 cup lowfat yogurt
- 1-2 slices lowfat cheese

Dairy foods offer calcium and potassium to build strong bones and teeth, and lower blood pressure.

If it is hard to drink milk, get ideas from WIC.

FATS, OILS, & SWEETS

Add a little healthy fat, like olive or canola oil, avocados, nuts, and seeds. While they may help keep your cholesterol low, they are high in calories - just 5 or 6 teaspoons a day is enough.

QUICK AND EASY

HEALTHY MEALS OR SNACKS

- Scrambled egg, lowfat cheese and salsa wrapped in a whole wheat tortilla with an orange on the side.
- Turkey and avocado on whole wheat bread with carrot sticks, an apple and an oatmeal raisin cookie.
- WIC approved cereal with lowfat milk, topped with strawberries or sliced bananas.
- Whole wheat spaghetti with meat sauce and a mixed green salad with tomatoes.
- Whole wheat crackers with peanut butter.
- Lowfat vanilla yogurt topped with granola, strawberries and blueberries.

You can get many of these foods with your WIC benefits.

Choose healthy beverages to drink with these meals and snacks. Water is always the best choice. Another healthy choice is lowfat milk.

NUTRIENTS FOR YOUR BODY

CALCIUM is important for bone health both during and after pregnancy. Find calcium in milk or soy milk, yogurt, cheese, and dark leafy green vegetables.

IRON supplementation may be necessary after pregnancy. Find iron in lean meats, cooked beans, dark leafy green vegetables, and bread or cereal.

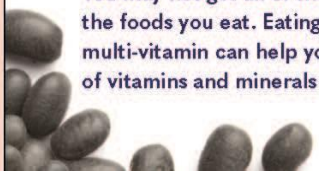
FOLIC ACID is important for all women of child-bearing age. Find folic acid in cereals, dark leafy vegetables, dried beans, and citrus fruits. Ask your doctor if you should take or continue taking a prenatal vitamin.

It is recommended to get at least 400 mcg of folic acid every day.

VITAMIN C helps with wound healing and decreases risk of infection after pregnancy. Find Vitamin C in citrus fruits and juices, broccoli, tomatoes, and bell peppers.

FIBER helps relieve constipation during and after pregnancy. Find fiber in fresh fruits and vegetables, whole grains, beans, nuts, and hot or cold cereal.

You may not get all of the nutrients you need through the foods you eat. Eating fortified cereal or taking a multi-vitamin can help you get the recommended amount of vitamins and minerals your body needs.



BE ACTIVE WHENEVER YOU CAN

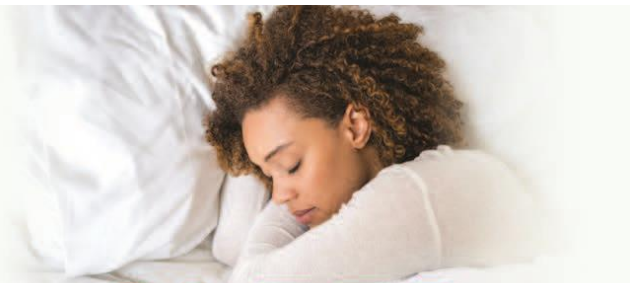
Walking is a great way to get and stay fit. Start with a 5 to 10 minute walk. After one week, walk a little longer or farther. Get the whole family to take a walk. Set a goal that works for you!

Here are other easy ways to move your body:

- March in place when you watch TV or talk on the phone.
- Take the stairs instead of the elevator.
- Park the car farther away from the entrance.
- Dance to your favorite music alone or with your kids.
- Try something new, like yoga.

Being active helps with constipation and is a stress reliever too.

Take it easy, at first. Your body needs to heal. Ask your health care provider for activity ideas and how much activity is right for you.



SLEEP IS IMPORTANT

Try to sleep while your baby sleeps safely in their own crib. Even if you can't sleep, lie down and rest. A few minutes of rest several times a day adds up!

Tobacco, alcohol and other drugs are harmful to you and your baby.

GET HELP TO QUIT

- Talk with your doctor.
- Call the Substance Abuse and Mental Health Services Administration Helpline at 1-800-662-HELP (1-800-662-4357).
- Call the Michigan Tobacco Quit Line at 1-800-QUIT-NOW (1-800-784-8669).

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www.michigan.gov/wic

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MDHHS-Pub-1255