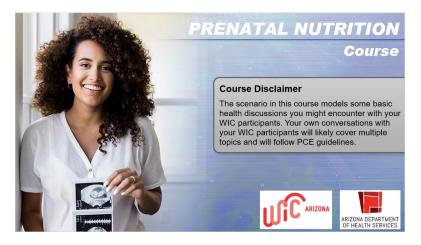
# **ADHS: Prenatal Nutrition**

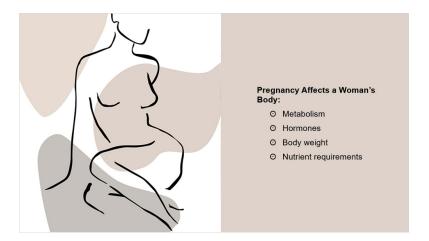
# 1. Module 1 - Prenatal Care and Physical Activity

### 1.1 Welcome



Notes:

### 1.2 Introduction



### Notes:

Welcome to prenatal nutrition. Please complete the prenatal nutrition guidebook that accompanies this course as you move through each module.

Pregnancy affects a woman's body in many ways. Her metabolism, hormones, body weight, and nutrient requirements all change.

Click the next button to begin.

### 1.3 Prenatal Care



### Notes:

It's important that women speak with a healthcare provider, such as an obstetrician (also known as an OB), as soon as they believe they may be pregnant. OBs are doctors who specialize in pregnancy and childbirth.

Women who get regular prenatal care are more likely to have healthy babies and fewer complications during labor and recovery than women who don't get prenatal care.

# 1.4 Physical Activity



#### Notes:

Many women worry that they can't get enough physical activity during pregnancy. The good news is that most pregnant women can participate in physical activities, even if they weren't physically active before pregnancy. However, it's important that they talk to their healthcare provider before they start participating in physical activities. There are lots of different kinds of physical activity that can be safe during pregnancy, such as walking, jogging, dancing, strength training, and modified yoga & Pilates. However, pregnant women should avoid activities like contact sports, hot yoga, hot Pilates, as well as activities where there is an increased risk of falling such as cycling, gymnastics, and skiing.

# 2. Module 2: Healthy Eating and Supplements

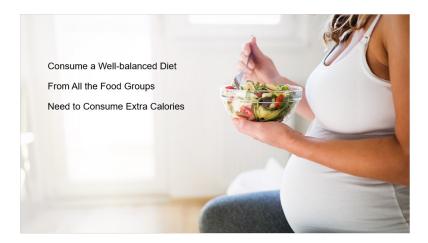
## 2.1 Healthy Eating and Supplements



### Notes:

Welcome to Module 2. In this module, we'll focus on healthy eating and supplements during pregnancy.

## 2.2 Healthy Eating



### Notes:

The ChooseMyPlate recommendations during pregnancy are very similar to the general ChooseMyPlate recommendations.

Pregnant women should consume a healthy, well-balanced diet that contains a variety of foods from all the food groups: fruits, vegetables, whole grains, protein, and dairy. They also need to consume extra calories in order to gain an appropriate amount of weight during pregnancy.

## 2.3 Nutritional Supplements



#### Notes:

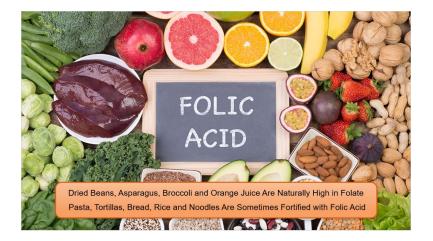
Pregnant women also need additional nutrients, which is why prenatal vitamins are so important.

Pregnant women should consume prenatal vitamins during pregnancy as directed by their doctor. Prenatal vitamins are specifically designed to meet nutrient needs during pregnancy.

Some women mistakenly believe that taking additional prenatal vitamins, or taking additional specific nutrients such as vitamin A, or Vitamin D, can offer additional benefits, which is rarely true. On the other hand, taking too many vitamins can actually be toxic.

For more information on healthy eating in pregnancy click on the Healthy Eating button.

## 2.4 Important Nutrients (Folic Acid)



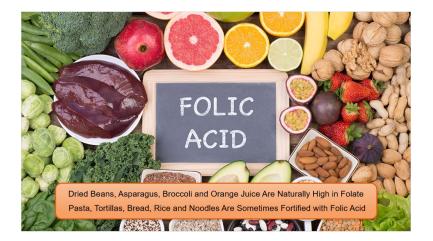
#### Notes:

Folic acid is the synthetic, more absorbable version of folate. Folic acid helps prevent neural tube defects like spina bifida, which is a condition characterized by the incomplete development of a baby's spinal cord.

It's especially important for women who may become pregnant to supplement 400 mcg of folic acid daily. Otherwise, neural tube defects will often occur before they even realize they're pregnant. Pregnant women should also supplement 600 mcg of folic acid daily, which is the amount commonly found in prenatal vitamins.

Also, foods such as dried beans, asparagus, broccoli and orange juice are naturally high in folate and foods such as pasta, tortillas, bread, rice and noodles are sometimes fortified with folic acid.

# **Micronutrients Chart (Slide Layer)**



## 2.5 Important Nutrients (Iron)



### Notes:

Iron is attached to a protein in your blood called hemoglobin, which transfers oxygen throughout your body. Blood volume increases 50 percent during pregnancy.

Therefore, pregnant women require 50% more iron consumption. The recommended intake for non-pregnant women is 18 mg per day, and 27 mg per day for pregnant women. Most prenatal vitamins contain 27 mg of iron.

### 2.6 Iron Deficiency Anemia



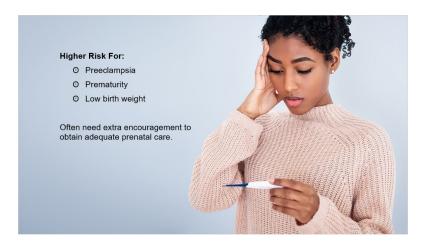
#### Notes:

Iron deficiency anemia develops when the body's iron stores are too low. Without enough iron, the body isn't able to make adequate amounts of healthy red blood cells.

Individuals with iron deficiency anemia often have symptoms such as muscle weakness, lethargy, headaches, and dizziness. Anemia developed during pregnancy is also associated with miscarriage, low birth weight, and prematurity.

Iron deficiency anemia can usually be resolved by consuming iron-containing foods such as meat, eggs, nuts, seeds, beans, lentils, and green leafy vegetables, and by consuming additional iron supplements at the direction of a doctor. Consuming foods high in iron along with foods high in vitamin C, such as citrus fruits, bell peppers, strawberries, and tomatoes, also helps to increase iron absorption.

# 2.7 Teenage Pregnancy



#### Notes:

Pregnant teenagers have all of the same nutrient requirements compared to non-teenage pregnancies, but also require some additional nutrients since they are still growing. For example, non-teenage pregnant women require 1000mg of calcium per day, whereas pregnant teenagers require 1300mg per day. Pregnant teenagers also require additional magnesium, phosphorus, and zinc as well.

Pregnant teenagers are at higher risk for preeclampsia, and their babies are at higher risk for prematurity and low birth weight. Pregnant teens also often need extra encouragement to obtain adequate prenatal care, breastfeed, and get additional support services.

# 3. Module 3: Weight Gain, Food Safety, and Fluid Needs

# 3.1 Weight Gain, Food Safety, and Fluid Needs



#### Notes:

Welcome to Module 3. In this module we'll review weight gain recommendations, food safety, and fluid needs during pregnancy

### 3.2 Pregnancy Weight Gain



#### Notes:

Women who gain the recommended amount of weight during pregnancy are more likely to have uncomplicated pregnancies and deliveries.

Here's a chart of weight-gain recommendations based on pre pregnancy weight. As we can see, underweight women should try to gain 28-40 lbs during pregnancy. Normal-weight women should try to gain 25-35 lbs. Overweight women should try to gain 15-25 lbs, and obese women should aim for 11-20 lbs of weight gain during pregnancy. Most women only gain between 2-5 lbs of weight during the first trimester, but weight gain will usually accelerate in the 2nd and 3rd trimesters.

Although some women believe that they need to "eat for two," in reality, 350 - 450 additional calories per day is enough for adequate weight gain during the second and third trimesters.

# 3.3 Pregnancy with Multiples



### Notes:

Pregnant women with more than one fetus, also known as a "multiple" pregnancy, have a greater risk of complications for themselves as well as their babies.

Women with multiples (such as twins, triplets, etc.), are more likely to get preeclampsia, iron deficiency anemia, develop kidney problems, and require caesarean deliveries.

Their babies are also more likely to be born premature, have low birth weights, and have congenital abnormalities such as cerebral palsy.

However, many of these women still have a perfectly healthy pregnancy and babies by following their doctor's prenatal-care recommendations.

### 3.4 Pregnancy with Multiples Weight Gain Recommendations



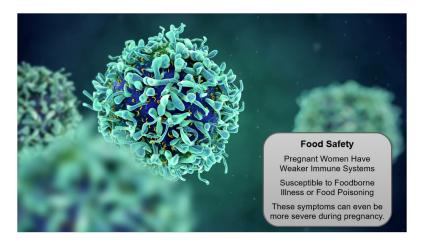
#### Notes:

The weight recommendations for a "multiple" pregnancy are a little different.

For twins, the recommended amount of weight gain for women who were normal weight before pregnancy is 37 - 54 pounds. Women expecting twins who were overweight before pregnancy should aim to gain 31 - 50 pounds and women who were obese before pregnancy should aim to gain 25 - 42 pounds. Currently there are not any weight gain recommendations for underweight women expecting twins.

There are currently no specific recommendations for women expecting triplets, but the general recommendation is to gain around 50 pounds during pregnancy. Currently there are no defined recommendations for women expecting four or more babies during their pregnancy.

### 3.5 Food Safety



#### Notes:

Pregnant women have weaker immune systems that make them more susceptible to foodborne illnesses, also known as food poisoning. Food poisoning, (caused by the bacteria, viruses, and parasites that can be present in foods) typically results in diarrhea and vomiting. These symptoms can even be more severe during pregnancy and even have negative consequences for the fetus.

Listeriosis is one of the most common types of foodborne illness that can be especially harmful to pregnant women is listeriosis. Listeriosis is caused by eating foods such as unpasteurized or raw soft cheeses, deli meats, and hot dogs since they are more likely to be contaminated with a type of bacteria called listeria.

Pregnant women can still eat soft cheeses like brie, camembert, blue-veined, feta or Mexican style cheeses like queso blanco or queso fresco as long as they have been made from pasteurized milk.

Deli meats and hot dogs may also be eaten as long as they're heated until steaming first.

Pregnant women should also avoid any raw or undercooked eggs, meat, poultry, fish, or shellfish.

If you'd like more information on food safety, you can visit foodsafety.gov.

### 3.6 Mercury in Fish



#### Notes:

Seafood can be an excellent source of protein, vitamins, and minerals. Some types of seafood such as tuna, mackerel, salmon, oysters, sardines, and anchovies also contain Omega-3 fatty acids, which can be beneficial in promoting fetal brain development.

However, women that consume too much mercury, which can be naturally present in seafood, increase the risk of interfering with normal fetal brain and nervous system development.

The good news is that many fish have low levels of mercury.

The FDA actually recommends that pregnant women consume 8 to 12 ounces of very low-mercury seafood per week, such as catfish, cod, salmon, sardines, and shrimp, or 6 ounces of low mercury seafood such as albacore tuna, halibut, and mahi mahi per week. They also recommend avoiding large predatory fish like shark, swordfish, king mackerel, and tilefish due to high mercury levels.

For more information about eating fish during pregnancy, click the View Website button.

# 3.7 Beverages



#### Notes:

Drinking extra fluids, especially water, while pregnant is important to reduce constipation, increase blood volume, create amniotic fluid which surrounds the fetus, and to get rid of the waste produced by the fetus.

Most pregnant women can meet their fluid needs by letting thirst be their guide, but if they spend a lot of time outdoors or exercising, it's important they consume plenty of extra fluids to prevent dehydration.

## 4. Module 4: Harmful Substances

### 4.1 Harmful Substances



#### Notes:

Welcome to Module 4. In this module we'll review the following potentially harmful substances that are sometimes ingested during pregnancy: caffeine, alcohol, tobacco products, marijuana, illegal drugs, medications, and herbal substances.

### 4.2 Caffeine



### Notes:

Caffeine passes through the placenta, so in order to reduce risks of low birth weight and miscarriage, most experts recommended that pregnant women limit caffeine intake to no more than 200mg per day which is equivalent to about 2 cups of coffee, 7 cups of tea, or about 4 to 6, 12oz cans of soda, depending on the brand. Chocolate, cocoa powder, and some over-the-counter and prescription drugs may also contain caffeine.

### 4.3 Alcohol



### Notes:

Since researchers don't know if there's a minimum amount of alcohol that can be safely consumed during pregnancy, experts recommend that women not drink any alcohol during pregnancy.

Drinking alcohol during pregnancy is linked to Fetal Alcohol Spectrum Disorders (FASDs) - which are a group of conditions that can affect physical, behavioral, and psychological development. FASDs can be completely avoided by not drinking during pregnancy.

## 4.4 Smoking/Environmental Exposure to Smoke



#### Notes:

Smoking while pregnant has been linked to low birth weight, premature births and miscarriages.

Ingesting secondhand smoke from lit tobacco products, may also harm the fetus. Since there is no research indicating a safe amount of tobacco that can be safely ingested during pregnancy, it's recommended that pregnant women quit or limit tobacco product use and exposure to secondhand smoke as much as possible.

Arizona has a smoking cessation helpline called Ashline. Participants or family members can visit ashline.org or call 1-800-55-66-222 to speak with a smoking cessation specialist who can offer a wide variety of tools to help quit.

## 4.5 Marijuana

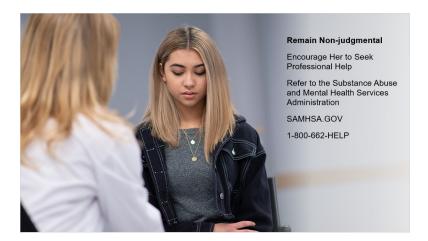


#### Notes:

According to the National Survey on Drug Use and Health, about 1 in 20 women report using marijuana during pregnancy. However, research indicates that there may be serious complications resulting from marijuana use during pregnancy including an increased risk of low birth weight, developmental delays, and learning disabilities among affected children.

Therefore, it is recommended that women not use marijuana during pregnancy.

### 4.6 Illegal Drugs



#### Notes:

Illegal drug use during pregnancy is a very serious situation, as some drugs can increase the risk of miscarriage, stillbirth, and neonatal abstinence syndrome.

Although it may seem logical to explain these potential risks to pregnant women, doing so could actually make them feel guilty, and people with drug problems will often use more rather than less drugs when they feel guilty.

Therefore, if a pregnant woman ever divulges that she's using illegal drugs during her pregnancy, the best thing you can do is to remain non-judgmental and encourage her to seek professional help. You can refer these participants to the Substance Abuse and Mental Health Services Administration at samhsa.gov or call their national helpline at 1800-662-HELP to get referrals to resources in their area.

## 4.7 Medications



#### Notes:

There are some medications that pregnant women need to take for their health, but some medications, even over-the-counter drugs, can be dangerous for fetal development.

Therefore, it's recommended that pregnant women speak with their doctor before taking any medications or over-the-counter drugs.

## 4.8 Herbal Supplements



### Notes:

Many cultures have all-natural home remedies for common pregnancy discomforts like nausea, constipation, and heartburn, but some herbal products can have side-effects just like medications.

There are even certain herbal medications like blue cohosh, juniper, pennyroyal, and sage that can also increase the chance of premature labor or miscarriage. It's recommended that pregnant women speak with their doctor before taking any herbal supplements.

# 5. Module 5: Common Pregnancy Discomforts

# **5.1 Common Pregnancy Discomforts**



#### Notes:

Welcome to Module 5. In this module we'll review the following common pregnancy discomforts: nausea and vomiting, constipation, leg cramps, and edema.

### 5.2 Common Discomforts - Nausea and Vomiting



#### Notes:

Nausea and vomiting are some of the most common discomforts during pregnancy. Although symptoms usually end after the first trimester, sometimes they can last throughout pregnancy.

It's important to note that nausea and vomiting aren't usually harmful to women or their babies unless the woman develops a medical condition called hyperemesis gravidarum, which is characterized by severe nausea, vomiting, and weight loss.

Whenever a woman complains of severe nausea and/or vomiting, recommend that she speak with her doctor as soon as possible.

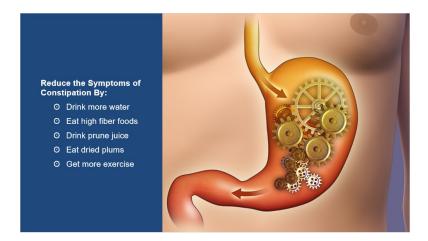
For general nausea and vomiting, one of the most effective things that women can do to reduce their symptoms is to avoid foods that have strong flavors and odors that trigger their nausea, such as cooking fish and meat.

Many women experiencing nausea also prefer to eat bland foods such as bread, crackers, and cereals.

When it comes to beverages, many women do better with cold beverages such as ice water, and cold carbonated drinks, compared to hot beverages like hot coffee or tea.

Keep in mind that every woman is different, so they'll need to do a bit of trial and error to figure out what foods and beverages work best for them. Once their symptoms subside, they can begin adding foods and beverages back into their diet.

# 5.3 Common Discomforts - Constipation



#### Notes:

Many pregnant women also have constipation, which is characterized by infrequent bowel movements with hard, dry stools. It commonly occurs during pregnancy, as hormone changes slow the movement of food through the intestines.

Some recommendations to reduce the symptoms of constipation are to drink more water, eat foods high in fiber such as fruits, vegetables, and whole grains, drink prune juice, eat dried plums, and get plenty of exercise. Once again, it's recommended that women consult their doctor if they are not able to control their constipation with these tips.

## 5.4 Common Discomforts - Leg Cramps



#### Notes:

No one knows for sure what causes leg cramps during pregnancy, but some doctors believe that it may be due to low calcium or changes in how pregnant women process calcium.

Leg cramps are more common during the night, and usually go away within a few minutes. However, women might need to call their doctor if they ever have leg cramps that don't go away, result in leg swelling, tenderness, redness or warmth, or if they have trouble walking afterwards.

### 5.5 Common Discomforts - Edema



#### Notes:

Some edema, characterized by swelling of the face, hands, feet, and ankles is common, especially during the second and third trimesters of pregnancy. This swelling is the result of the additional blood and fluid that is produced by the body during pregnancy.

If women ever get edema, they can try things like resting with their feet elevated, wearing comfortable shoes and supportive tights, resting in a pool, using cold compresses on swollen areas, drinking plenty of water, and minimizing salt intake.

They should call their doctor immediately if they ever experience sudden swelling of their hands and face, as this could be a sign of preeclampsia. We will talk about this condition shortly.

# 6. Module 6: Common Pregnancy Medical Problems

# 6.1 Common Pregnancy Medical Problems



### Notes:

Welcome to Module 6. In this module we'll review the following common pregnancy medical problems: diabetes, high blood pressure, gum disease, taxoplasmosis, lead poisoning, PICA, depression during pregnancy, and domestic violence.

### 6.2 Diabetes Introduction

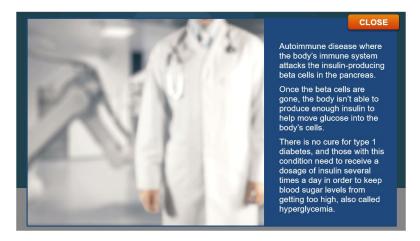


#### Notes:

Gestational diabetes is a specific type of diabetes that only affects pregnant women. However, before we discuss gestational diabetes, let's discuss Type 1 and Type 2 diabetes to help give us a better understanding of how gestational diabetes is different.

Click on the three types of diabetes to learn more.

# Type 1 (Slide Layer)

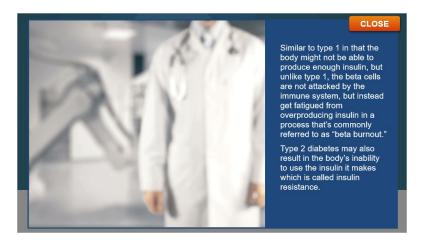


Autoimmune disease where the body's immune system attacks the insulin-producing beta cells in the pancreas.

Once the beta cells are gone, the body isn't able to produce enough insulin to help move glucose into the body's cells.

There is no cure for type 1 diabetes, and those with this condition need to receive a dosage of insulin several times a day in order to keep blood sugar levels from getting too high, also called hyperglycemia.

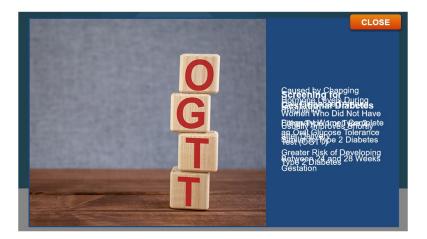
Type 2 (Slide Layer)



Similar to type 1 in that the body might not be able to produce enough insulin, but unlike type 1, the beta cells are not attacked by the immune system, but instead get fatigued from overproducing insulin in a process that's commonly referred to as "beta burnout."

Type 2 diabetes may also result in the body's inability to use the insulin it makes which is called insulin resistance.

### Gestational (Slide Layer)

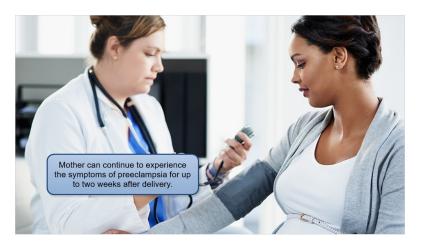


Gestational diabetes is only diagnosed among women who did not have either type 1 or type 2 diabetes before becoming pregnant. It's similar to Type 2 diabetes in that the body doesn't produce enough insulin and/or isn't able to use the insulin it makes.

Gestational diabetes is believed to be caused by changing hormone levels during pregnancy, but usually improves shortly after delivery. However, women diagnosed with gestational diabetes are at greater risk of developing type 2 diabetes in the future.

To screen for gestational diabetes, doctors will usually have pregnant women complete an oral glucose tolerance test (OGTT) between 24 and 28 weeks gestation. This test involves having women drink a sugar mixture, and then periodically testing their blood sugar at one, two, and three hours after consumption. Doctors develop a treatment plan for women that are diagnosed with gestational diabetes, which will commonly include dietary changes, exercise, and sometimes medication.

# 6.4 High Blood Pressure and Preeclampsia



#### Notes:

Blood pressure is the amount of force applied against the arteries as the heart pumps blood. If a woman doesn't have problems with high blood pressure, but then develops it during pregnancy it can be a sign of preeclampsia.

Other signs of preeclampsia include excess protein in the urine, headaches, and changes in vision. If not treated, it can lead to a more serious condition called eclampsia that can result in seizures, coma or even death.

Sometimes doctors prescribe medication, or recommend bed rest to help control preeclampsia, but the most effective treatment is to deliver the baby.

Also, sometimes the mother can continue to experience the symptoms of preeclampsia for up to two weeks after delivery.

### 6.5 Gum Disease

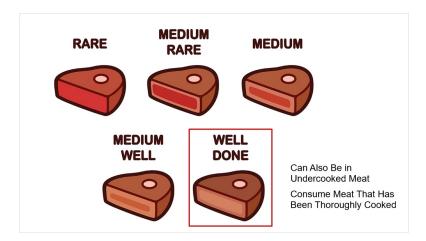


#### Notes:

Approximately 40% of women develop a bacterial infection called gum disease during pregnancy, which is associated with low birth weight and premature births.

In order to prevent gum disease, experts recommend that pregnant women maintain their dental health by brushing their teeth at least twice a day, flossing at least once a day, and getting professional dental cleanings at least every 6 months.

### 6.6 Toxoplasmosis



#### Notes:

Toxoplasmosis is a bacterial infection that can be passed from a pregnant mother to her baby, which can cause blindness and mental disability in the child.

It results from consumption of a parasite called toxoplasma which is most often found in soiled cat litter, sandboxes, and garden soil. If ingested, the symptoms for the woman include fever and swollen glands in the neck.

To avoid it, experts recommend that whenever possible, pregnant women have someone else discard cat feces, but to wear gloves and thoroughly wash their hands with soap and water if they need to discard cat feces themselves.

The toxoplasma parasite can also be in undercooked meat, so it's also important that pregnant women only consume meat that has been thoroughly cooked.

# 6.7 Lead Poisoning



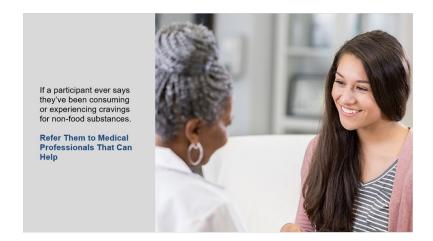
#### Notes:

Lead-poisoning during pregnancy is associated with miscarriage, small for gestational age, and fetal brain damage. Lead exposure can come from lead-based paint, soil, some types of ceramic dinnerware, and crystal.

Women should avoid all possible sources of lead during their pregnancy. They can also reduce lead poisoning by consuming diets high in iron and vitamin C, so that even if they are exposed to lead, it isn't as readily absorbed.

If a woman believes that she has been exposed to lead, she should request that her doctor perform a blood test.

### **6.8 PICA**



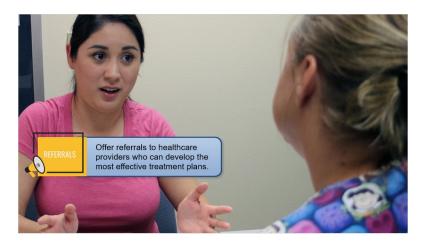
#### Notes:

Pica is an eating disorder that involves eating non-food substances such as dirt, chalk, clay, and paint chips. Experts still aren't sure exactly what causes Pica, but what is clear is that it's associated with nutrient deficiencies, such as iron. However, experts aren't sure if those with pica eat non-food substances in an effort to get more nutrients, or if by eating non-food substances, nutrient deficiencies are caused by the displacement of normal nutrient-containing foods.

Many experts believe that it's more common during pregnancy, but it's difficult to know for sure since this condition often goes unreported as many women are too embarrassed to discuss it with their healthcare providers.

Pica will often resolve on its own within months, or sometimes it's resolved by supplementing with the deficient nutrient. However, pica will sometimes persist for extended periods of time, especially if it's linked with other mental health disorders. If a participant ever says that they've been consuming or experiencing cravings for non-food substances, it's important to remain non-judgmental and focus on referring them to medical professionals that can help.

### 6.9 Depression During Pregnancy



#### Notes:

Depression during pregnancy is a serious medical condition that affects approximately 7% of women. Some of the clinical signs and symptoms of depression during pregnancy are persistent feelings of sadness and the loss of interest in participating in activities.

Women are more likely to experience depression during pregnancy if they also have anxiety, life stress, poor social support, a history of depression, an unintended pregnancy, or intimate partner violence.

Those who experience depression during pregnancy are more likely to have poor nutrition habits, attend fewer medical visits, harm themselves, not practice self-care, and use tobacco, alcohol, and illegal drugs.

Depression during pregnancy also increases the likelihood of premature birth, low birth weight, small for gestational age, and developmental disorders for their newborns.

At WIC, we ask all women two questions to help us determine risk for depression:

- 1. How often do you feel down, depressed, or hopeless?
- 2.How often do you have little interest or pleasure in doing things?

There is evidence that suggests that by asking these screening questions alone, we can have positive benefits for a mother experiencing depressive signs and symptoms.

However, if a woman indicates that she may be depressed, or has a history of depression, the best thing that you can do is offer referrals to healthcare providers who

can develop the most effective treatment plans.

### 6.10 Domestic Violence



#### Notes:

Unfortunately, many women experience physical abuse from a partner or ex-partner. Because a large amount of violence goes unreported, it's assumed that domestic violence is also a common risk among pregnant women.

If a woman ever divulges to you that she has been, or is currently a victim of domestic violence, it's important to recognize that these are often very sensitive situations.

Begin by letting her know that she can trust you to be discreet, and that you will do everything you can to help her. In emergency situations, it's best for women to call 911, or their local law enforcement agency. Another useful resource you can offer is the national domestic violence hotline which is 1-800-799-SAFE, as well as their website, thehotline.org. You may also speak with your supervisor regarding other local resources for assisting victims of domestic violence.

## 6.12 Nutrition Wrap Up



#### Notes:

We covered a lot of ground in this course! We've discussed prenatal care, exercise, healthy eating, supplementation, food safety, common pregnancy discomforts, as well as some medical risks during pregnancy, such as diabetes, high blood pressure, pica, and depression. Please speak with your trainer or supervisor if you have any questions or concerns.

If you haven't already done so, please complete the prenatal nutrition guidebook that accompanies this course, and be sure to check out the resources tab for additional learning opportunities.

Click the 'Continue' to complete the course.



# **Prenatal Nutrition Resource Links**

**Nutrition Risk Manual** 

https://azdhs.gov/documents/prevention/azwic/manuals/nutrition-risk-manual.pdf

Foodsafety.gov Website

https://www.foodsafety.gov/

FDA: Eating Fish During Pregnancy

https://www.fda.gov/media/102331/download

Substance Abuse and Mental Health Services Administration <a href="https://www.samhsa.gov/">https://www.samhsa.gov/</a>