



EPISODE 20 - MNT for Pregnancy

Transcript

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A patient was admitted to the hospital. She was 14 years old and was 24 weeks pregnant. She was admitted with contractions and signs of pre-term labor. After reviewing her chart, I realized she had only gained 3 pounds during her pregnancy so far. I spoke with her to get a diet recall and a deeper understanding into her weight gain - well, really lack of weight gain - she shared that she was too scared to gain weight and get fat. She also didn't want everyone to know she was pregnant because she was so young. And she didn't want to lose friends. Being accepted by her peers was really important to her. She was the popular girl in school and was scared she wouldn't be accepted anymore if people saw her stomach growing and all the weight she was putting on. So that was a big red flag. Her diet recall was also concerning. She ate like so many other teenagers - flaming hot Cheetos, gatorade and skipped breakfast and lunch except for the snacks she'd buy at the local 7-Eleven that was near her school. The doctors were concerned her baby wasn't growing and there were signs of IUGR which means Intrauterine Growth Restriction.

I spent time with her reviewing recommended ways to eat and asked her how she can overcome the barriers and fears she has about gaining weight during this pregnancy. She became tearful. She had a lot of emotions she was working through and knew what she should be doing but expressed that she was a child herself and just wanted to be a kid. She used to be on a sports team at school and with her growing belly, she was limited in what she could do. Everything in her life had changed. Fortunately, she had family support so she wasn't alone. She was close to her mom but often got frustrated with her mom because she didn't like being told what to do and told me she got "hormonal" a lot.

The reality is this. I wasn't gonna be able to make a major impact in the short amount of time I had to see her in the hospital - and I spent a long time with her considering the situation. She needed consistent outpatient support.

She eventually had her baby prematurely at 27 weeks. The baby was born with IUGR and experienced several of the typical challenges and complications that happen when a baby is born prematurely.

So much happens during the last month of pregnancy.

[Music and Intro]

Hey there. Today's episode is about pregnancy. A lot happens during pregnancy which you're gonna learn in this episode.

Before we get started, I wanted to give a HUGE shout-out to Amanda Kennedy who just passed the RD Exam. Amanda was a Diet Technician and was so excited to swap out her NDTR credentials for those hard earned RD credentials. Yes Amanda. She worked so incredibly hard to achieve this major milestone. I'm so honored she came into my world so I could be a small part of her journey. Welcome to the RD community Amanda. You did it! If you want a shout-out on the RD Exam Made Easy Podcast, connect with me on Instagram @jananichollrd and send me a message. I'll give you a shout-out and tag you when you pass your exam. You deserve to be celebrated too.

Ok. So let's get started with pregnancy. So much happens during the short 9 months of pregnancy. Although, it doesn't always feel so short when you're in the thick of it. And ideally, optimal nutrition in pregnancy begins pre-pregnancy. For so many people, getting pregnant isn't easy so there's a lot of planning and preparing and trying to conceive. In those cases, there's often preparation happening such as starting on a prenatal vitamin and eating a healthy, well-balanced diet that's rich in folate - if that's not already a part of their lifestyle. In many cases however, there isn't planning so that's when changes should be done as soon as pregnancy is known. Prenatal care is so important to ensure both the mom and the baby are healthy and that the pregnancy is progressing as it should. If you need a refresher on hormones, check out Episode 3 which is about lactation and human milk. I go over hormones in that episode which touches on the role of hormones during pregnancy. Reminder that progesterone is important in early pregnancy to support the pregnancy and develop the placenta. Once the placenta is developed, it takes over. Low levels of progesterone in early pregnancy increase the risk of miscarriage. I have a friend who had several miscarriages due to low progesterone levels in her early pregnancies. She needed the help from supplemental progesterone in her early pregnancies in order to prevent miscarriages. The placenta maintain progesterone levels. When the placenta is delivered, the progesterone levels drop which is important for the next stage which is lactation. The 3 months after delivery is often called the 4th trimester. The body continues to go through a lot of changes in those 3 months after delivery while also establishing a good milk supply for the baby. So that's a quick summary and reminder about hormones. So let's talk about the general guidelines and recommendations regarding weight gain during pregnancy which is regularly assessed during prenatal visits. The recommendations for weight gain are largely based on the pre-pregnancy weight.

If the pre-pregnancy BMI is normal - normal being a BMI of 18.5 to 24.9 - the recommended weight gain is 25-35 lbs.

If the BMI however is underweight which is a BMI of less than 18.5, the recommended weight gain during pregnancy is higher at 28-40 lbs.

For those with a BMI of 25-29.9, the recommended weight gain is 15-25 lbs. and for females with obesity before pregnancy or at the time of conception which is defined as a BMI greater than or equal to 30, the recommended weight gain should be 11-20 lbs.

So those are the general recommendations for weight gain. It's important to remember that too much weight gain is also not ideal. Complications can arise from excessive weight gain. Gestational diabetes is one of the risks which doesn't just impact the mom. It affects the growing fetus too. I've seen a lot of very large babies born to mom's with poorly controlled gestational diabetes. The babies have multiple complications so finding that sweet spot for weight gain is a good thing.

The general pattern for weight gain during pregnancy is 2-4 pounds weight gain in the first trimester. The first trimester is the first 3 months of pregnancy. I've sometimes seen the recommended weight gain being 2-5 pounds in the first trimester. So 2-4 or 2-5 pounds is basically the ballpark recommended weight gain for the first trimester. After that, gaining 1 pound per week is recommended. You can do the calculations if you wish. A full term pregnancy is 40 weeks. Actually, full term is 37-42 weeks but lets use 40 weeks since that's what's used to identify the due date. In the first 12 weeks, the recommended weight gain is 2-4 pounds. Let's go with 3 pounds because it's the middle of the road. 40 weeks minus 12 weeks for the first trimester is 28 remaining weeks. If the mom gains 1 pound per week, that comes to 28 pounds. 28 pounds plus 3 pounds in the first trimester equals 31 pounds. If the pre-pregnancy BMI was within the normal range, the recommended weight gain is 25-35 pounds so that's right in the middle and it meets the recommended weight gain. Like I mentioned, full term is 37-42 weeks but technically, due dates are based on 40 weeks. If the mom doesn't go into labor by 42 weeks, it's considered post-term and labor will typically be induced. For pregnancies that end before 37 weeks, it's considered pre-term.

Prenatal care and regular visits are important to track the progress of the pregnancy. I've mentioned this before but Malnutrition is a big topic and something we want to prevent in all patients. Pregnancy is no different in fact it's really important to catch because malnutrition can result in both complications in the mother and in the infant. For women who were underweight or had a normal BMI before pregnancy, a lack of weight gain

throughout the pregnancy is associated with fetal growth restriction particularly lack of weight gain in the second trimester. This can affect the newborns birthweight, length, and head circumference.

In the opening case study, I shared a story about a teenager who was pregnant and ended up having a premature baby. That third trimester is such an important time because a lot happens in that last trimester. The organs continue to develop and mature in the last trimester - the lungs, brain, kidneys, and bones. This is when the mom might start to feel uncomfortable with all the extra weight and abdominal heaviness. A lot of the weight gain is fluid and adipose tissue needed to support the pregnancy. According to the World Health Organization, the average birth weight is between 5 lbs. 8 oz and 8 lbs. 13 oz with the average male baby a birth weighing 7 lbs. 6 oz and the average female baby weighing 7 lbs. 2 oz. If a pregnant woman gains 35 pounds in her pregnancy, the rest of the weight she gained is extra fluid such as increased blood volume, amniotic fluid, the placenta which supports the pregnancy as well as adipose tissue. During pregnancy, there should be changes in breast size in preparation for breastfeeding. This is something we ask as Lactation Consultants especially if a woman is struggling to produce enough milk. Changes in breast tissue during pregnancy is a good sign.

Going back to Adolescents. Pregnancy is particularly challenging since they're still young and growing themselves. So during pregnancy, the mom's growth needs to be supported and encouraged as well as the growing fetus. Something to keep in mind. This is true for pediatrics in general too. Maintaining growth while managing various conditions is key. It's just an added layer.

So we've talked about the recommended weight gain. Let's move on to specific nutrients to focus on during pregnancy.

The macronutrients are really important which are carbohydrates, protein, and lipids and all provide energy. On average, most pregnant women need an additional 340 kcal in the second trimester and an additional 450 calories daily in the third trimester to support a healthy pregnancy with appropriate weight gain. Suggestions such as adding a few snacks that are well-balanced, meaning they have a protein, fat, and complex carbohydrates will meet their calorie needs as well as provide a variety of micronutrients which we'll talk about in a minute.

Protein needs increase in pregnancy too. The recommended amount of protein during pregnancy is 1.1 gm/kg/day or an additional 25 gm of protein above the DRI for non-pregnant females. In the western world, especially in the United States, most people consume more than the DRI for protein which is 0.8 gm/kg/day. This is why it's important to assess what someone is eating to see if they really need additional food in order to meet their

protein needs. Some may already be consuming the recommended amount of protein. This is why we individualize our assessments and take the time to really get to know the patients we see and do a thorough diet history. This is why dietitians are so important! Job security my friend.

Ok and the last of the macronutrients, lipids or fatty acids, can't be ignored particularly DHA or docosahexaenoic acid because studies show it not only supports fetal growth but also promotes cognitive development. The brain is mostly made up of fat. By having a diet that's rich in omega-3 and omega-6 fatty acids, it helps the brain grow and supports the fetuses cognitive development.

So those are the macronutrients which provide calories. The micronutrients are equally important so let's go over a few of them.

One of the big and important micronutrients that comes to mind as being really important for pregnant women is folic acid because...

A folate deficiency can cause spina bifida. Remember that folate is a B vitamin. Spina bifida is a neural tube defect where there's incomplete closure of the spinal cord and the bones around the spinal cord. So basically the spinal cord is exposed. It varies in severity. In mild cases, the infant has mild symptoms or sometimes even no symptoms. Or it can be severe which could result in paralysis. The critical period when adequate folic acid is particularly needed is early on in the pregnancy sometimes before a woman even knows she's pregnant. So folic acid is really important and for women who are planning and trying to get pregnancy, taking a prenatal vitamin and consuming adequate folic acid from food sources is recommended. 400 mcg is the recommended amount of supplemented folic acid. Foods that are rich in folate are ready-to-eat breakfast cereals, as well as other grains such as rice and bread. Spinach, lentils and orange juice are other examples of foods that are naturally rich in folic acid. Super important nutrient.

Iron intake is also a micronutrient that needs to be monitored during pregnancy. The RDA for iron is nearly doubled in pregnancy. Screening for anemia is usually part of prenatal monitoring. Anemia is a concern because it interferes with the transport of oxygen throughout the body and to the placenta and growing fetus. Sometimes, supplementation may be needed. But at the very least, emphasizing foods that are rich in iron and making sure foods high in vitamin C to increase absorption is an ideal intervention. If iron intake is increased and the mom is still anemic, supplementation will likely be required. It can be harder on the stomach and some moms complain of constipation which is tough because even without iron supplementation, constipation is a more common complication during pregnancy.

Emphasizing a high fiber diet and lots of water to drink can help. Also, encouraging exercise - if there's no exercise restrictions - keeps things moving. Even a walk can help reduce constipation.

Zinc is another nutrient that's needed in pregnancy. Deficiency can cause congenital malformations along with possible oral clefts such as cleft palates and there can be impaired fetal growth. Deficiency can also cause miscarriage. In the United States, zinc deficiency is not as common. It's found in red meat, seafood, whole grains and fortified cereals. For people who follow a more restrictive diet such as a vegan diet, there may be need for supplementation.

Generally speaking, if the mom consumes a well-balanced diet with all the food groups and eats a variety of foods, they should meet the recommended intake of these nutrients. Remember, micronutrients are exactly that. They're needed in micro amounts. They aren't needed in massive quantities. If 3 well-balanced meals are consumed plus well-balanced snacks, most of the nutrients should be consumed in adequate amounts. Having said that, prenatal monitoring is important because deficiencies can be detrimental. And the amount of supplementation will be approached case by case because each body responds differently.

Just like all the great nutrients that need to be added, there are some things that should be avoided in pregnancy. Alcohol is one of them. The recommendation really is to avoid alcohol during pregnancy because it goes through the placenta and reaches the growing fetus. Alcohol consumption during pregnancy can cause fetal alcohol syndrome or FAS. It can also impair cognitive development. So, it's best to avoid drinking it during pregnancy.

As with most things, you can have too much of a good thing. Excessive intake of Vitamin A and has been showing to have adverse effects and can harm the growing fetus. If Vitamin A is consumed in excessive amounts or supplementation exceeds 10,000 IU daily, it can cause spontaneous abortion or other birth defects.

Mercury is also a concern during pregnancy as it's toxic to the developing fetus by damaging the brain and nervous system. Seafood is the biggest concern. Some food sources that are high in mercury are shark, king mackerel, and swordfish. Also, raw fish must be avoided during pregnancy. So for sushi lovers, this is always the biggest challenge. I've had so many expecting mothers tell me they can't wait to go out for sushi once they have their baby.

So there you have it. Let's do a quick recap. The recommended weight gain during pregnancy is based on pre-pregnancy BMI. For underweight BMI, the recommended weight gain is 28-40 pounds. For normal BMI, the recommended weight gain is 25-35 pounds. For overweight pre-pregnancy BMI, the recommended weight gain is

15-25 pounds and for pre-pregnancy BMI of 30 and above which is considered obesity, the recommended weight gain in pregnancy is 11-20 pounds.

In the second trimester, an extra 340 calories is needed to support the pregnancy and in the third trimester, it increases to 450 calories. This may decrease if the pre-pregnancy BMI was 30 or above depending on the stage of pregnancy and how much weight has been gained by the 2nd and 3rd trimester. Protein needs during pregnancy are 1.1 gm/kg or an additional 25 gm of protein from the DRI. The DRI for protein is 0.8 gm/kg using IBW if the BMI is 30 or above. Emphasizing omega 3 and omega 6 fatty acids help with brain and cognitive development since the brain is mostly composed of lipid. Also, the micronutrients are really important for supporting pregnancy. You learned about the role of folate or folic acid, iron and zinc during pregnancy. And lastly, you learned that alcohol, foods containing mercury such as some seafoods and high doses of Vitamin A should be avoided in pregnancy due to the adverse effects on the growing fetus.

Going back to our opening case study. Pregnant teenagers are considered high risk. They're still growing themselves and need a lot of support. Making sure the weight gain is monitored as well as monitoring the diet can help identify any gaps in nutrition that could pose a risk to the growing fetus.

Prenatal care is really critical. Dietitians have a big role in prenatal care and in supporting mom's during this exciting but sometimes overwhelming time in their life. We're so lucky as dietitians to have such an impactful role. People look to us as the nutrition experts to guide their nutrition choices. What an amazing opportunity. Thanks so much for listening. If you know an RD2Be who'll soon take the RD exam or maybe you know an RD who could use a prenatal nutrition refresher, please share this episode with them.

Stay on top of your study game. There's no limits to achieving the success you so deeply desire. Until next time.

[Music and Outro]