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Nutrition: Fertility, Pregnancy, and Breastfeeding - Part 2

Iron is, of course, a very important nutrient for conception and healthy pregnancy. It's important to avoid iron deficiency, and that's much more common globally, but iron overload can also be an issue, and iron supplementation without any regard for pre-existing iron levels during pregnancy has been shown to be harmful. Iron supplementation can reduce mineral absorption and cause GI symptoms like constipation. It's very important to know that a normal hemoglobin concentration in pregnancy at 28 weeks is 10 to 14 grams per deciliter. Many clinicians will look at that and diagnose anemia because the normal reference range for hemoglobin is higher, it's above 12, but it's not abnormal for a woman to have hemoglobin as low as 10 grams per deciliter at that stage in pregnancy. So, I see this all the time, women are given iron supplements because their hemoglobin drops to 10 or 11 at 28 weeks, without any testing for iron levels. I think that's a really bad idea, and if you're aware that the range for hemoglobin drops at that point in pregnancy, you can avoid that, and you can also avoid unnecessary supplementation by actually testing iron levels instead of just looking at hemoglobin. Consider using iron-rich foods like liver and shellfish like oysters and clams, which are very rich in iron, instead of supplements to avoid some of the potential issues with iron supplementation as well.

B12 deficiency can also contribute to anemia and low hemoglobin levels, and that's important to understand as well. It works together with folate, protects against developmental problems in babies. B12 deficiency has been associated with both male and female infertility; it causes low sperm counts and low motility in men. Most commercial supplements contain synthetic cyanocobalamin instead of methylcobalamin or adenisol or hydroxocobalamin, which may be more bioavailable forms. Cyanocobalamin in some studies is poorly absorbed, and for those reasons, the more active forms of vitamin B12 may be advantageous.

Omega-3 fats, especially EPA and DHA, are particularly important for nutrition for conception and pregnancy. It's required for a healthy brain development in the baby, concentrates in the gray matter and eyes of the baby, it protects the brain from oxidative stress. I recommend about 12 to 16 ounces of cold-water fatty fish, especially things like salmon and sardines, which would provide about 300 milligrams of DHA daily, and avoiding high-mercury species of fish like swordfish, shark, tilefish, and king mackerel, especially during pregnancy.

Iodine is the next nutrient. Studies have shown an increased risk of mental retardation and even cretinism in babies of mothers with iodine deficiency. This can be a potential issue in women that are on a Paleo type of diet that are avoiding iodized salt and not eating sea vegetables or dairy products, which are the primary sources of iodine in the diet. Pregnancy and breastfeeding women need about 220 to 290 micrograms a day, so eating sea vegetables, using kelp flakes in place of salt, fish head soup is a great source of iodine, and pasture-raised dairy products can be a good source of iodine as well.

Biotin is important during pregnancy. Deficiency is relatively rare in women eating an omnivorous diet, but ensure that your patients are eating enough egg yolks and not just egg whites, and definitely not raw egg whites, which can induce biotin deficiency. Glycine is another important nutrient; it helps to balance methionine intake in a diet that's rich in muscle meats. High methionine intake increases the need for B vitamins like folate, choline, and B12, which we've seen are all really important for fertility, so glycine can help balance that out as well.

It's of course important to avoid highly processed and refined foods when you're trying to conceive or get pregnant or breastfeeding. These are foods that are energy-dense and nutrient-poor. They contain artificial ingredients that have effects that are largely unknown at this point, and they contribute to an inflammatory gut microbiota and adversely affect even the developing baby's gut microbiota at birth.

Entraining circadian rhythm is crucial for fertility. Some evidence suggests that circadian disruption may affect fertility in both women and men. Shift work is linked to reduced fertility and higher risk of miscarriage, and sleep needs to be a priority prior to conception. Light exposure is the biggest driver of circadian rhythms and should be optimized, and you can refer to the specific presentation on sleep and circadian disruption for more tips on that.

Let's talk a little more about calorie needs during pregnancy. There's the phrase "eating for two," which I'm sure you've heard. Weight gain is important during pregnancy, a certain amount of weight gain, but normal-weight women don't need an extreme amount of extra food. Overweight women may need very few extra calories, actually, in order to have a healthy pregnancy. Note that energy needs are different in each trimester. No increase is needed at all during the first trimester. During the second trimester, about 200 to 300 calories daily for normal-weight women would be needed, and then during the third trimester, about 400 to 500 calories in addition above baseline needs would be required. If they were twins, then you would need an additional 300 calories per day at that third trimester period. Women who, as I said, are overweight would need less than that, and women who are underweight may need more. Following your patient's weight gain across pregnancy is the best indicator of whether they're getting adequate calories.

Common health issues that women experience during pregnancy include nausea and morning sickness; about 80 percent of pregnant women will experience morning sickness. Some potential remedies that you can try for this include fresh ginger and ginger tea; herbal teas like lemon balm, peppermint, and fennel; increasing vitamin B6 intake or supplementing with B6 at a dose of 25 to 50 milligrams per day; getting adequate fluid intake, aiming for about six to eight ounces of water per hour; adding lemon or other citrus to water; eating multiple small meals per day; taking prenatal supplements with food instead of on an empty stomach; patient can try acupuncture or acupressure, which can be really helpful for nausea, and they can wear pressure-point bands around the wrists, around an acupuncture point called pericardium 6 or P6, which is about two to three inches up from the wrist on the palm side of the arm between the prominent tendons there.

Fluid and electrolyte replacement is essential, and some women, despite all of these efforts, may require anti-nausea medication if it's very severe.

Anemia is common during pregnancies, so if … particularly in vegetarians and vegans, if the woman's not getting enough of the B12 and folate and iron, that can lead to fatigue and malaise. Increasing intake of iron and B12 and folate-rich foods like organ meats and shellfish can help address that, and consider supplementing as well until symptoms improve and hemoglobin is in the 10 to 14 grams per deciliter range, if they're in that 28-week period or later.

Gestational diabetes is another condition that can develop during pregnancy. This is characterized by very high blood sugar and significant insulin resistance. Slight insulin resistance is actually normal during pregnancy, and this ensures adequate delivery of glucose and other nutrients to the baby before the mother—that's the evolutionary imperative at work. Gestational diabetes increases the risk of developing type 2 diabetes after pregnancy, and it also increases the risk of metabolic syndrome in the offspring. Women who had insulin resistance prior to becoming pregnant are more likely to develop gestational diabetes. Up to 14 percent of pregnant women will develop it; it's typically diagnosed with an oral glucose tolerance test, or OGTT. Other screening options include looking at fasting blood sugar at first trimester, A1c level, and home blood sugar monitoring with a glucometer, although glucometers are not as accurate as the other methods that I just described. Many women who are on very low-carb diets will fail an OGTT. That's something to be aware of; because their carbohydrate tolerance has lessened, they're adapted to burning fat and eating fat, and if they all of a sudden drink 75 grams of a test sugar, highly absorbable test sugar, you'll see a big spike in their blood sugar, which would suggest gestational diabetes, but that's not actually the case, so a lot of clinicians will recommend that a woman consume at least 150 grams of carbohydrate a day for at least a week, preferably two weeks, before their OGTT, and that can help prevent false positive test results.

High blood sugar during pregnancy increases the risk of birth defects, macrosomia, which is large, heavy birth weight, shoulder dystocia during delivery, life-threatening hypoglycemia at birth, jaundice, and future metabolic syndrome. Kids who were born to mothers with high blood sugar have six times higher risk of developing metabolic syndrome than kids born to normal blood sugar mothers. The typical gestational diabetes diet recommendation in the conventional setting is a high-carb diet, which really does not make much sense at all, but most women with gestational diabetes would benefit from carbohydrate intake of less than 20 percent of calories, maybe if they're eating only Paleo type of carbohydrates, somewhere between 15 and 25 percent is probably going to be fine, because these carbohydrates won't have the same impact on blood sugar that the highly processed and refined carbs will have. Carbohydrates should be consumed in combination with fats and proteins. Women with gestational diabetes should avoid large servings of carbohydrates all at once; they should exercise regularly to maintain insulin sensitivity, and moderate exercise can be done safely right up until birth.