A pregnant woman in a white lab coat is shown from the chest down, holding a tablet. The tablet screen displays a fetal ultrasound image. The background is a soft, out-of-focus image of the woman's face and hair. The entire scene is framed by a thin brown border. Two horizontal brown bars are positioned above and below the central white text area.

*Your Ultimate
Guide to*

**Nutrition &
Prenatal Care**

What's Inside

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Recipes

Eating a balanced diet is important before pregnancy because nutrient-dense foods will help meet the woman's needs as well as lay down stores essential for the development of the growing baby.

Once a woman becomes pregnant, needs change rapidly to meet the demands of the growing baby. Establishing good habits pre-pregnancy will help support a healthy pregnancy.

Nutrition influences the development of all body systems including the nervous system (brain, spinal cord), immune system, and physiological processes like metabolism.

Before pregnancy during the prenatal period, a high-quality diet with adequate macronutrients (carbohydrates, protein, fat) and micronutrients (vitamins, minerals) is critical.



Protein

10-25%
[calories from protein]

- Protein is a macronutrient, meaning it is a nutrient we need in larger quantities relative to other nutrients
- Protein is a building block in our bodies for muscles, skin, blood, and other cells. Proteins also make up other body chemicals like enzymes and hormones that are important for normal body functioning.
- Animal foods with protein include chicken, fish, meat, eggs, and dairy products including yogurt.
- Plant foods with protein include beans, soybeans, nuts, and seeds.

food sources



fish & seafood



eggs



chicken



beans & legumes

Protein

- Eating a variety of foods with protein provides more nutrients. Protein is also important because it helps keep us full
- Women interested in following a vegetarian or vegan diet in the prenatal period or during pregnancy should speak to a doctor or registered dietitian to make sure the diet is balanced and contains essential vitamins and minerals.

high-protein snacks



yogurt



hemp hearts



hard-boiled eggs



edamame



protein-rich smoothie



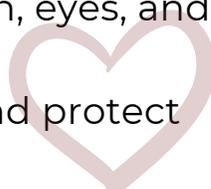
cottage cheese



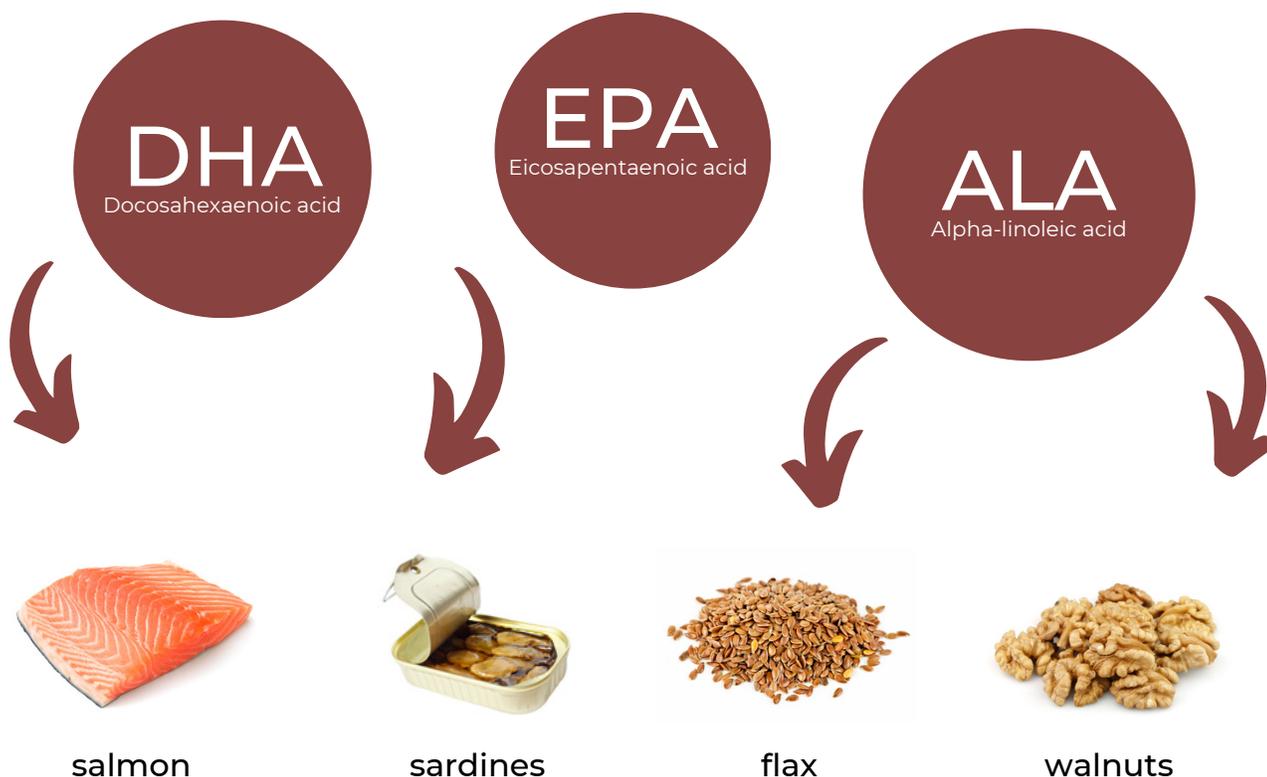
peanut butter

Omega-3 Fatty Acids

- Omega-3 fatty acids are unsaturated fats, specifically polyunsaturated fats that are required for maintaining health.
- They are called essential fatty acids because our bodies cannot make them, so we need to get them through food.
- Omega-3s are building blocks in cell membranes and are particularly important for the health of the brain, eyes, and heart.
- Omega-3s may help regulate blood pressure and protect against heart disease



3 Types of Omega-3 Fatty Acids



Folate/Folic Acid

What's the difference between folate and folic acid?

Folate is a water-soluble B-vitamin.

Folic acid is the synthetic form of folate that is found in supplements because it is more bioavailable to the body, meaning that the body can absorb it better than folate found in whole foods.

Fast Facts

- Folate is required for making DNA, the genetic material of cells, so it plays an important role in cell division.
- Folate is found in legumes like lentils, green leafy vegetables, and oranges.
- Some foods are fortified with folic acid, or have folic acid added to the food even though it does not occur naturally. These foods include cereals and some grains.



lentils



leafy greens



oranges

did you know?

folate plays a crucial role in fetal development early in pregnancy when many women do not realize they are pregnant!

Iron

- Iron is a component of hemoglobin, which transports oxygen to body cells. Iron is also a component of proteins and enzymes required for body functioning.
- Iron in animal foods is more bioavailable and can be absorbed more easily than iron in plant foods.

food sources



meat



cereal



kale

To improve absorption
of iron in plant foods,
add vitamin C!



18mg

RDA for women of
childbearing age.

Iron

Iron deficiency affects over 30% of pregnant women in developed countries and up to 50% of pregnant women worldwide.

- There are many reasons why iron plays an important role in the prenatal diet.
 - During pregnancy, there is an increased demand for iron.
 - It is unlikely that mother and growing baby will meet iron needs during pregnancy if the mother does not have adequate iron stores during the prenatal period. In this case, it is unlikely that food alone will provide adequate iron during late pregnancy.
 - For full-term babies born with adequate iron stores, they can maintain iron status for six months after birth. If the mother is deficient during the prenatal period and pregnancy, the growing baby is likely affected by the mother's iron status.
- For mothers, iron deficiency during pregnancy is associated with decreased immune function as well as a future increased risk of cardiovascular disease.
- For babies, iron deficiency is associated with an increased risk for preterm birth, low birth weight, and abnormal development and cognitive function.
- For pregnant women, the RDA for iron is 27 mg per day.
 - Iron supplements may cause constipation in some people, so it is important to discuss iron in your diet with your healthcare professional before taking a supplement

Calcium & Vitamin D

Calcium

- Calcium plays a crucial role in maintaining bone health as well as muscle and nerve function. It's important in the prenatal diet because of its role in the development of a growing baby's teeth and bones, heart, nervous system, and muscle.
- For women of childbearing age, the RDA for calcium is between 1,000 and 1,300 mg per day depending on age



milk and milk alternatives



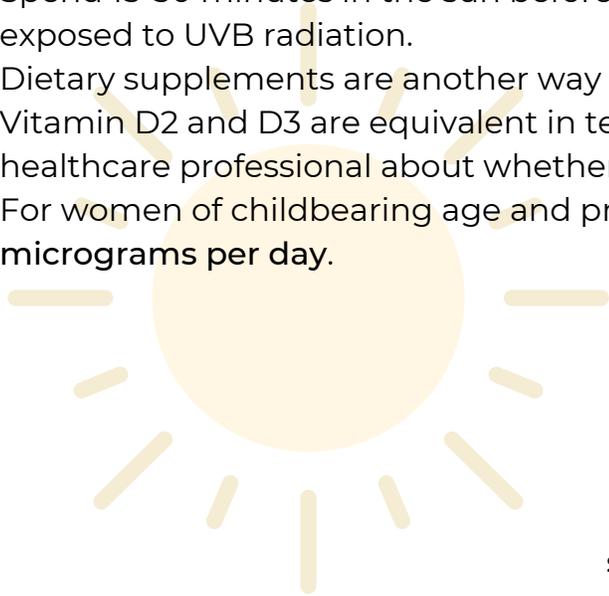
greens



fortified orange juice

Vitamin D

- The body needs vitamin D to absorb calcium.
- Spend 15-30 minutes in the sun before applying sunscreen to be adequately exposed to UVB radiation.
- Dietary supplements are another way to reach vitamin D needs. Both Vitamin D2 and D3 are equivalent in terms of effectiveness. Talk to your healthcare professional about whether a supplement is right for you.
- For women of childbearing age and pregnant women, the RDA is 15 micrograms per day.



supplement



sardines

food source

Calcium: prenatal diet

- Calcium intake is related to birth weight, risk of preterm labor and blood pressure.
- Inadequate calcium intake during pregnancy can affect both the mother and growing baby. A mother not consuming enough calcium is at higher risk for hypertension and osteopenia, a weakening of the bones, as well as muscle conditions. Her baby may be at a higher risk for delayed growth, low birthweight, and poor bone mineralization.
- For pregnant women, the RDA for calcium is between 1,000 and 1,300 mg per day depending on age.
- The need for calcium is particularly important during the third trimester when bone mineralization occurs at the most rapid pace.
- Increased calcium needs can usually be met by diet alone, though supplementation is recommended for some who do not consume many dairy foods.

Foods to Limit or Avoid

Listeria, a bacterium found in soil, water, and some animals, causes listeriosis, a foodborne illness that can be harmful and potentially fatal.

- Pregnant women are more at risk to get listeriosis than the general population and some women do not exhibit any symptoms.
- If the infection reaches a growing baby, listeriosis can cause miscarriage, stillbirth, preterm labor, or blood and brain infections that may cause long-term health problems in a baby.
- To prevent listeriosis, avoid eating unpasteurized milk, cheese, and other unpasteurized dairy products. Avoid refrigerated pâté and meat spreads, refrigerated smoked seafood, and unwashed fruits and vegetables.
- To prevent listeriosis, ensure that hot dogs and luncheon meats are cooked until steaming hot just before serving.

Follow food safety guidelines

Wash your hands
frequently

Rinse all produce
under running
water

Keep raw food and
cooked food
separate during
food preparation
and serving

Foods to Limit or Avoid

Overall, a prenatal diet should be centered on high-quality foods.

- Nutrient-dense foods include vegetables, fruits, lean proteins, whole grains, nuts, legumes, seeds, and low-fat dairy products. These foods offer a lot of nutrition including healthy fats.
- Tea and coffee may also be part of a prenatal diet. It is recommended to consume under 200 milligrams of caffeine per day during pregnancy. The amount of caffeine in a beverage will depend on the type of beverage.
- Foods high in added sugars, refined grains, and saturated fats should be limited in a prenatal diet. Examples include: candy, soda, energy drinks, snack foods, butter, red meat, and full-fat dairy.
- Excess calories from foods without many nutrients can contribute to weight gain because calorie intake is the main determinant of weight.
- Achieving a healthy weight pre-pregnancy is important because pregnancy weight gain targets are set based on prenatal weight.

Prenatal Weight

Achieving a healthy weight in the prenatal period, as determined by your doctor, will help support pregnancy weight gain.

- Weight gain during pregnancy is a predictor of pregnancy complications; excess caloric intake during pregnancy is associated with miscarriage and diabetes.
- Weight gain during pregnancy is also a determinant of the child's future health risks including obesity risk.
- Calorie requirements only increase once the second trimester begins. Calorie needs vary depending on many factors including activity level and pre-pregnancy Body Mass Index (BMI).
- Physical activity, sleep, and stress management also play a role in weight.
- Practicing healthy lifestyle habits prior to pregnancy will help achieve a healthy pregnancy weight gain.
- See our handout for more information on healthy pregnancy weight gain

Can I eat fish?

Fish is a great source of protein and many species of fish have omega-3s that are important for fetal development. However, some species of fish are high in mercury, a toxin that is harmful to both the mother and growing baby.

- In the prenatal diet, eat **2-3 servings of fish per week**. Best choices include salmon, sardines, scallops, shrimp, tilapia, canned light tuna, cod, haddock, and hake.
- If choosing a fish higher in mercury, eat one serving each week. These fish include albacore tuna, yellowfin tuna, and halibut.
- Avoid fish with the highest mercury levels including swordfish, tilefish, and bigeye tuna.
- Check the FDA website for more resources.



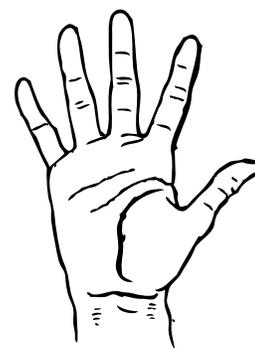
Avoid



1x/week



2-3x/week



One serving of fish is about the size of the palm of your hand.

Sample Menu

Breakfast

- Whole grain toast with avocado and sauteed spinach with hard-boiled eggs.

Lunch

- Mixed beans & herbs with a salad topped with chicken breast and a vinaigrette with olive oil

Dinner

- Salmon on top of lentils and brown rice with lemony green beans

Snacks

- Edamame, fruit, almond butter with carrot sticks or other veggies, and chia pudding made with yogurt and fruit

Drinks

- Choose water, seltzer, and unsweetened tea to maintain hydration



Recipes

Orange Ginger Overnight Oats

Prep Time: 15 minutes

Total Time: 8 hours

Yield: 2 servings

Ingredients

- 1/2 cup plain Greek yogurt
- 1 cup rolled oats
- 1 cup almond milk
- 2 Tbs chia seeds
- 1 Tbs maple syrup
- 1 orange, zested
- 1/2 tsp ginger, grated
- 1/4 tsp cardamom
- 1 Tbs pumpkin seeds
- 1 orange, sliced

Instructions

Prep

1. Zest orange for 1 tablespoon of zest.
2. Grate ginger.

Make

1. In a glass jar, mix yogurt, oats, milk, chia seeds, maple syrup, orange zest, ginger, and cardamom. Add the top to the jar and shake.
2. Leave in the refrigerator for 4 hours or overnight.
3. Top with pumpkin seeds and orange slices or other fruit.

Salmon Carrot Salad with Capers

Prep Time: 15 minutes

Total Time: 30 minutes

Yield: 4 servings

Ingredients

- 2 (6 oz.) cans canned salmon, boneless and skinless
- 2 Tbs mayonnaise
- 2 Tbs capers, drained
- 4 carrots, peeled and shredded
- 4 cup arugula, packed
- 1 lemon, cut into wedge
- salt & pepper to taste

Instructions

Prep

1. Drain salmon and capers.
2. Shred carrots.

Make

1. Add salmon to bowl and break apart. Stir in mayonnaise.
2. Mix in capers and carrots. Season with salt and pepper.
3. Serve over arugula with some lemon juice.

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learning more?

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