

Nurturing Fertility: How Nutrition Can Set the Stage for Conception

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Taking care of your nutrition before you conceive can lay the foundation for a healthy pregnancy. It is best to make healthy changes to your diet at least three months to a year before you plan to get pregnant (American Pregnancy Association, 2021). The health of both parents contributes to fertility, the safety of the pregnancy, and the development of the baby. Someone who doesn't get enough nutrients in their regular diet may be able to conceive, but it could hinder the growth and development of the baby. By having a balanced diet rich in essential nutrients and maintaining a healthy lifestyle, you can have a better chance of a successful conception and a healthy start for your little one (Stephenson et al, 2018). This article highlights key nutrition recommendations for women who are in the preconception stage of life, thinking about becoming pregnant.

What Does a Balanced Diet Look Like?

A good starting point is to add nutrient-dense foods to your meals. Nutrient-dense foods are foods that are high in nutrients and lower in calories. Choosing these foods can help you maintain a healthy weight, provide sustained energy, and support your overall well-being. Nutrient-dense foods are found in a variety of foods within all food groups. Examples of nutrient dense foods include whole grains, fruits, vegetables, lean meat, nuts and seeds, beans, and foods containing healthy fats. The larger variety you have in your diet, the more nutrients you will consume on a daily basis. Incorporating these foods into your meals and snacks can help you on your journey to conception and provide essential nutrients during pregnancy.

Whole Grains and Fiber

Whole grains support your health and fertility because they are rich in complex carbohydrates and provide key nutrients for preconception like folate, iron, zinc, and magnesium (see Table 1 for descriptions). Whole grains can also help to balance blood sugar levels in healthy individuals (Marventano et al, 2017). It is recommended to fill $\frac{1}{4}$ of your plate with whole grains per meal (MyPlate, 2020). You can get more whole grains in your diet by eating brown rice, oatmeal, buckwheat, quinoa, or using whole wheat flour.

Women who are trying to conceive can benefit from eating more fiber. Fiber is an important nutrient that helps to manage your digestive health. Examples of foods that are great sources of fiber are whole grains, fruits, vegetables, and beans.

Fruits, Veggies, and Antioxidants

As you aim for a balanced diet, it is recommended to fill half of your plate with fruits and vegetables (MyPlate, 2020). Think of this part of your plate like a rainbow - the more colors, the better! Consuming red, orange, yellow, green, blue, purple, white, and brown fruits and veggies will help you get a variety of important prenatal nutrients in your diet (Refer to Table 1).

Antioxidants in fruits and vegetables like vitamins A, C, E, and Coenzyme Q10 are special compounds that protect your reproductive cells from damage caused by oxidative stress. In women, antioxidants play an important role in developing egg cells, supporting the growth of the uterine lining, and regulating hormone levels (Vašková et al, 2023). In men, antioxidants contribute to sperm quality including shape, motility, and sperm count (Ferramosca & Zara, 2022). Antioxidants are found in fruits, vegetables, nuts, seeds, and whole grains. If you are looking for a boost of Coenzyme Q10, salmon, organ meats, eggs, nuts, and seeds, are good sources of this antioxidant.

Protein

Protein is an important nutrient during the preconception stage because plant and animal proteins make up the 20 amino acids used to maintain a healthy body and pregnancy. Amino acids help with placental growth, fetal development, and play an important role in the interactions between mother and embryo (Gao, 2020). It is good to vary your choices of protein by including a rotation of chicken, beef, fish, lentils, and beans in your meals.

Protein needs depend on several factors like age, weight, height, sex, and activity level, but it is generally recommended to have your protein foods take up a little less than $\frac{1}{4}$ of your plate (MyPlate, 2020). A good estimation of how much protein you should eat is 0.35 grams of protein per pound of your body weight. Just remember that your protein needs may increase once you are pregnant!

This tool can help you determine your needs for each food group. <https://www.myplate.gov/myplate-plan>

Micronutrient	Description of Importance <i>*RDI is the Recommended Dietary Intake for each day*</i>	Food Sources
Folate	Folate helps prevent birth defects associated with the development of the baby's brain like anencephaly and spina bifida. The <i>RDI</i> for women is 400 mcg of folic acid each day before conception (CDC, 2024).	Eggs, whole grains, dark leafy greens, beans, bananas, oranges, strawberries, nuts
Iron	Iron is important for healthy blood, oxygen transport, thyroid function,	Heme: fish, red meat, poultry

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	<p>placental development, and fetus development. Iron also combats anemia, a condition linked to low red blood cell count which can contribute to infertility (Mayo Clinic, 2018).</p> <p><i>The RDI for women 19-50 years old is 18 mg and for men 19+ it is 8 mg (NIH, 2023).</i></p>	<p>Nonheme: whole grains, spinach, broccoli, legumes, nuts, seeds</p>
Iodine	<p>Iodine is needed for thyroid function, ovulation, metabolism, weight management, and fetal brain development.</p> <p><i>The RDI for both women and men is 150 mcg (NIH, 2022).</i></p>	<p>Seafood, chicken, eggs, milk, cheese, yogurt, green leafy vegetables</p>
Zinc	<p>Zinc plays a role in DNA synthesis, cell division, early fetal development, egg production, and sperm production (Dean et al, 2014).</p> <p><i>The RDI for women is 8 mg, and for men it is 11 mg (NIH, 2022).</i></p>	<p>Seafood, beef, whole grains, cheese, milk, eggs, pumpkin seeds</p>
Vitamin A	<p>Vitamin A is important for the development of a healthy embryo after conception and sperm production (Bastos Maia et al, 2019).</p> <p><i>The RDI for women is 700 mcg RAE, and for men it is 900 mcg RAE (NIH, 2022).</i></p>	<p>Salmon, beef liver, eggs, dairy products, green leafy vegetables, orange and yellow vegetables (sweet potatoes, carrots)</p>
Vitamin C & Vitamin E	<p>Vitamins C and E help protect eggs and sperm cells from oxidative damage (Zhou et al, 2022).</p> <p><i>The RDI for Vitamin C for women is 75 mg, and for men it is 90 mg (NIH, 2021).</i></p> <p><i>The RDI for Vitamin E for both women and men 14+ is 15 mg (NIH, 2021).</i></p>	<p>Vitamin C: citrus fruits, kiwi, strawberries, red peppers, broccoli</p> <p>Vitamin E: avocados, spinach, nuts, seeds</p>
Omega-3 Fatty Acids	<p>Omega-3 fatty acids supports sperm production, shape, motility, and function and also supports fetal brain development (Ferramosca & Zara, 2022), (FDA, 2022).</p>	<p>Salmon, tuna, green leafy vegetables, walnuts, chia seeds, flaxseed</p>

Micronutrient	Description of Importance <i>*RDI is the Recommended Dietary Intake for each day*</i>	Food Sources
	<i>The RDI for women is 1.1 g and 1.6 g for men (NIH, 2023).</i>	
Magnesium	<p>Magnesium is involved in the production and function of sperm quality (Skoracka et al, 2020). Getting enough magnesium before and during pregnancy reduces the risk of premature labor (Deeksha et al, 2023). It also helps the embryo attach to the womb.</p> <p><i>The RDI for women 19-30 years old is 310 mg, and for men 19-30 years old it is 400 mg. The RDI for women 31-50 years old is 320 mg, and for men 31-50 years old it is 420 mg (NIH, 2016).</i></p>	Whole grains, leafy vegetables, legumes, bananas, avocados, dark chocolate, nuts, seeds
Calcium	<p>Calcium is necessary for sperm production, sperm motility, and aids in the process of fertilization (Beigi Harchegani et al, 2019). In women, calcium affects blood vessels, muscle contraction, nerve conduction, hormone secretion, and fetal skeletal development (Skoracka et al, 2021).</p> <p><i>The RDI for women and men 19-50 years old is 1,000 mg (NIH, 2022).</i></p>	<p>Dairy: milk, cheese, yogurt</p> <p>Non-dairy: Leafy greens, fortified juice, tofu, kiwi, blackberries, nuts, seeds</p>

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Author

Abigail Ferry, Utah State University Extension Intern

Reviewers

Jenna Dyckman, MS, RDN, Extension Assistant Professor; Cindy Jenkins, MS, Extension Assistant Professor