

FERTILITY FACT SHEET

Fertility Enhancing Diet

Ensuring that you have a proper diet and take appropriate supplements can improve your fertility. While there is no single, ideal diet for everyone trying to improve their fertility, numerous studies indicate that a healthy, balanced diet can increase the chances for healthy ovulation, improved egg and sperm quality, prevention of recurrent miscarriage and a healthy pregnancy. The goal of a healthy diet is to bring the body back into balance for optimal functioning.

Your clinical team may make individual recommendations specific to your unique fertility concerns. Please feel free to discuss any diet or supplement concerns with your physician or case manager.

To increase fertility and improve egg and sperm quality, a balanced macrobiotic diet rich in nutrients is recommended. This diet consists mostly of fresh organic vegetables and fruit, fibrous whole grains, complex carbohydrates, healthy protein and fats, and low-sugar foods. Supplementing your diet with essential vitamins and minerals will also strengthen your reproductive health.

Foods to Include and Why

Organic Fruits & Vegetables: Fruits and vegetables supply the body with essential minerals, vitamins, enzymes, antioxidants, and water. Choose organically grown fruits and vegetables, free of harmful pesticides and chemicals. Choose a wide variety of colors to get as many different nutrients as needed.

- Best fruits are red and purple berries, citrus, figs, grapes, melon, pears, pineapples, apples, pomegranate, and apricots.
- Best vegetables are asparagus, beans, beets, broccoli, brussels sprouts, cabbage, cauliflower, celery, corn, cucumber, fennel, garlic, greens/lettuce, leeks, okra, onions, parsnips, peas, radishes, rutabagas, sprouted seeds, squashes, sweet basil, sweet potatoes, thyme, turnips, watercress and yams.

Fibrous Whole Grains and Complex Carbohydrates: Foods that contain the entire kernel or grain are beneficial to your health by supporting your immune system and keeping blood sugar balanced. They contain more protein and fiber and sustain energy longer.



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- Grains include millet, quinoa, spelt, brown rice, buckwheat, amaranth, kasha/buckwheat, oatmeal, barley, whole rye, and cornmeal. Best to maximize non-gluten grains for overall health. Also, the more fiber you eat, the better.
- Other high fiber foods include broccoli, celery, apples, dark leafy greens, peas and beans, red and purple berries, garlic, parsley, fennel, cabbage, cauliflower, nuts and seeds, carrots, rhubarb, and sage.

Protein: Consume equal amounts of protein to carbohydrates in each meal to balance sugar and insulin levels and sustain energy. Strive for mostly plant-based sources of protein and limit animal-based sources of proteins.

- Beans are a great vegetarian protein and include varieties like black, white, pinto, navy, garbanzo, lima, adzuki, lentils, etc.
- Nuts and Seeds, including walnuts, almonds, brazil nuts, cashews, pumpkin seeds, chia seeds, sesame seeds, sunflower seeds, flax seeds, etc. are also a great plant sourced protein. Organic fish that is wild caught, not farm raised or with added coloring, and comes from clean water sources free from pesticides and chemicals. The most beneficial fish species are those that contain higher amounts of omega-3 fatty acid, which help boost the immune system and aid hormonal balance. These include salmon, herring, mackerel, sardines, trout, and tuna. Note: limit your tuna intake, as it is higher in harmful mercury levels than other fish.
- Organic beef, bison, chicken, turkey, duck and pork, always free of growth hormones, antibiotics, or added nitrates, is recommended in limited amounts.
- Organic eggs, free of hormones and antibiotics, are high in protein and nutritious.
- Soy products (soybeans, tofu, soy protein powder, soy sauce, miso, tempeh, etc.) can increase estrogen production. *Check with your doctor to determine whether or not soy is recommended for your condition.

Healthy Fats: Choose mostly monounsaturated oils that strike a balance between heavy saturated fats that clog arteries and polyunsaturated vegetable oils that are low fat but can cause an immune-damaging synthetic fat.



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- Cold-pressed, unrefined extra virgin olive oil and sesame oil are best. Other good oils include oleic sunflower, oleic safflower, avocado, almond, apricot kernel, coconut, and canola. Fresh flax oil is especially helpful in regulating insulin levels.
- Other healthy fats include avocados, whole eggs, fish rich in omega-3 fatty acids, nuts and seeds, and cheese.

Low Glycemic (Low Sugar) Foods: Eat complex carbs and low-sugar foods that break down slowly in the body. These foods will keep blood sugar and insulin levels steady and sustain energy longer.

- Low sugar foods include: dark leafy greens and veggies like kale, broccoli, carrots, asparagus; organic lean meats and fish; whole grain breads and complex carbs; beans and lentils; humus; low sugar fruits like grapefruit and apples; and nuts and seeds.
- Choose foods made with natural sweeteners, which are less processed than refined white or brown sugar and create fewer fluctuations in blood sugar. In moderation, use sugar alternatives: stevia, agave nectar, xylitol, barley malt, organic/raw unprocessed honey, blackstrap molasses, maple sugar, coconut palm sugar, or brown rice syrup. Cinnamon also helps reduce blood sugar levels.

Dairy Products (limited): Dairy products, like milk, cheese, yogurts, and butter should be limited. Aim for organic, unsweetened and low-fat varieties, free of any growth hormones or antibiotics.

- When eating yogurts, opt for plain, unflavored or unsweetened varieties, and flavor with fresh berries. Avoid the commercially sweetened or flavored yogurts that only contain excess sugar and other additives.
- Other non-dairy alternatives include products made from almond milk, rice milk, cashew milk, and soymilk. (check with your provider regarding soy products)
- Opt for other calcium rich foods like sesame seeds, seaweed, almonds, quinoa, and dark leafy green vegetables.

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Foods to Avoid and Why

Refined Sugar: Highly processed and refined white or brown sugar breaks down rapidly in the body and causes a dramatic spike, and then drop in blood sugar and insulin levels.

- Eliminate as much sugar in your diet as possible. When needed, consume limited amounts of natural sweeteners in place of refined, processed sugar. These include stevia, agave nectar, xylitol, barley malt, organic/raw unprocessed honey, blackstrap molasses, maple sugar, coconut palm sugar, or brown rice syrup.

Refined or Simple Carbohydrates: Highly processed, simple carbohydrates break down rapidly in the body and cause a dramatic spike, and then drop in blood sugar and insulin levels.

- Avoid refined carbohydrates like cakes, cookies, white breads/buns/pizza crusts, white rice, white pasta, potatoes, pretzels, sugary breakfast cereals, dried fruits or sugary fruits like raisins and watermelon, crackers, pancakes/waffles, plain bagels, or any highly processed food.

Alcohol: All alcoholic beverages contain high amounts of sugar and some also contain high amounts of carbohydrates. Alcohol causes a major insulin spike and crash, disturbs sleep patterns, and negatively impacts hormone levels in the body.

- Avoid all alcoholic drinks, especially sugary mixed drinks, cocktails, beer, hard cider, and wine (white wine varieties in particular). If you must have a drink, choose red wine. Having a glass or two in a week is likely not to be harmful while trying to conceive. Alcohol should be stopped once pregnancy is established.

Caffeine:

- Reduce all caffeinated drinks, including coffee, tea, sodas, and sports drinks. Many also contain high levels of added sugar, which will spike insulin levels. Instead, opt for decaffeinated, sugar-free, herbal and green teas. Please do not take more than 200 mg of caffeine a day (~1-2 8 oz. cups of regular drip coffee.)



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Sodas, Pasteurized Fruit Juices, Sweetened Beverages: These beverages all contain high amounts of added sugars and artificial ingredients, which spike insulin levels.

- Avoid all sugary drinks and sodas, including sodas, pasteurized fruit juices, sweetened teas or coffees, Gatorade or sports drinks, etc. Instead, opt for healthy, sugar-free drinks like carbonated flavored waters, coconut water, low-fat milks (dairy and non-dairy varieties), herbal and green teas, or tomato juice.

Fertility Enhancing Supplements

Take a daily dose of essential vitamins and minerals to supplement your diet, improve your egg or sperm quality, and increase your overall fertility. Many daily prenatal vitamins will contain most of those below. **Those highlighted are considered crucial.**

Egg Health

- **Prenatal Vitamin:** Everyone who wants to become pregnant should take a daily prenatal vitamin. We do not recommend a specific brand.
- **Vitamin D:** Your body needs vitamin D for better calcium absorption and immune system function, and overall hormonal balance. Foods high in vitamin D include eggs, fatty fish like salmon and sardines, dairy products and cod liver oil. Also, natural sunlight is an excellent source of vitamin D, but always wear sunscreen to filter out harmful UVA and UVB rays that damage skin.
 - **A normal dosage to start is 2000 IU a day.** Your doctor will inform you if you should take a higher dose.
- **Coenzyme Q10 (CoQ10):** This antioxidant is made in the human body and is needed for basic cell function. It has been shown in studies to increase sperm motility and help protect cells from free radical damage, which may impact egg health as well. Food sources include seafood and organ meats, and oils from sesame and rapeseed.
 - **A normal dosage is 200 mg three times a day.**



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- **Vitamin C:** Vitamin C can improve hormone levels pre and post ovulation and may provide luteal phase support. Vitamin C can also improve sperm quality and motility. Food sources include fruits and vegetables like red peppers, broccoli, cranberries, cabbage, potatoes, tomatoes, and citrus fruits.
 - **A normal dosage is 1000 mg a day.**
- **Folic Acid:** This vitamin is important in cellular division as well as preventing a multitude of pregnancy complications and birth defects. Food sources include dark leafy green vegetables, various beans like black, navy, pinto, and garbanzo, and natural orange foods like oranges, cantaloupe, yams and sweet potatoes.
 - **A normal dosage is 400 – 800 mcg a day.**
- **Iron:** This vitamin helps regulate ovulation and egg health. It is also essential for pregnancy and your future baby. Food sources include lentils, spinach, tofu, sesame seeds, various beans like kidney, navy and garbanzo, raw pumpkin seeds, beef, and molasses.
 - **A normal dosage is 30 mg per day.**
- **Essential Fatty Acids:** Omega-3 fats can increase fertility by regulating hormones, increasing cervical mucous, promoting ovulation and increasing blood flow to the reproductive system. They also help boost the immune system. Food sources include salmon, herring, mackerel, shellfish, sardines, walnuts, flax seeds, and chia seeds.
 - **A normal dosage is 500-1000 mg of fish oil a day.** Make sure to look at the label to make sure you are receiving 500-1000 mg of the specific oil a day to help determine how many pills to take daily.
- **Micronized DHEA:** Used to improve egg quality and quantity and potentially to increase IVF success rates. Watch for side effects of oily skin and excessive shedding of head hair. Discontinue after 6 months of use.
 - **A normal dosage is 25 mg three times a day. Your doctor will let you know if this is appropriate for you.**
- **Vitamin B6:** This vitamin helps regulate hormones and blood sugars, as well as helps alleviate symptoms associated with PMS and morning sickness. Food sources include tuna, bananas, turkey, liver, salmon, cod, spinach, bell peppers, collard and mustard greens, garlic, cauliflower, celery, cabbage, asparagus, broccoli, kale, etc.

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- **Vitamin B12:** This vitamin can improve sperm quality and production, boost endometrial lining, and help regulate ovulation. Food sources include seafood and shellfish, beef, lamb, cheese, and eggs.
- **Selenium:** This antioxidant helps protect eggs and sperm from free radicals, which can cause chromosomal damage. It also helps in the creation of sperm. Food sources include fish, shellfish, liver, cremini mushrooms, and turkey.
- **Zinc:** Zinc works with enzymes in the body to keep everything functioning properly, including cell division and balanced hormone levels. Zinc also helps increase sperm levels and sperm quality.. Food sources include red meat, oysters, liver, sesame seeds, pumpkin seeds, yogurt, turkey, shrimp, and peas.
- **Wheatgrass:** Wheatgrass is full of antioxidants, vitamins and minerals. It can help detoxify the liver, strengthen blood, regulate hormones, reduce inflammation, and boost the immune system. Wheatgrass is best consumed in a liquid form as a juice, but powder and capsules are also effective. (check with your provider to make sure this is appropriate for you)
 - **Wheatgrass should be discontinued once pregnant as it may contain bacteria due to its raw nature.**

Sperm Health

Sperm, like eggs, are affected by diet and supplements. Antioxidants play an especially important role as well, specifically Vitamin C and Fatty Acids.

- **Ejaculations:** It is recommended to have frequent ejaculations around the time of your partner's ovulation. Please do not go more than 3-4 days between ejaculations during that time. For most men, ejaculations can be 1-2 days apart and still be effective. Keeping the sperm "moving" allows for less storage time outside the testes where oxidative stress can lower sperm quality.
 - **Your care team will also give personalized instructions depending upon the treatment type and semen analysis results.**
- **Essential Fatty Acids:** Omega-3 fats can increase fertility by regulating hormones, increasing cervical mucous, promoting ovulation and increasing blood flow to the reproductive system. They also help boost the immune system. Food sources include salmon, herring, mackerel, shellfish, sardines, walnuts, flax seeds, and chia seeds.



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- **A normal dosage is 500-1000 mg of fish oil a day.** Make sure to look at the label to make sure you are receiving 500-1000 mg of the specific oil a day to help determine how many pills to take daily.
- **Vitamin C:** Vitamin C can improve hormone levels pre and post ovulation and may provide luteal phase support. Vitamin C can also improve sperm quality and motility. Food sources include fruits and vegetables like red peppers, broccoli, cranberries, cabbage, potatoes, tomatoes, and citrus fruits.
 - **A normal dosage is 1000 mg a day.**
- **Vitamin D:** Your body needs vitamin D for better calcium absorption and immune system function, and overall hormonal balance. Foods high in vitamin D include eggs, fatty fish like salmon and sardines, dairy products and cod liver oil. Also, natural sunlight is an excellent source of vitamin D, but always wear sunscreen to filter out harmful UVA and UVB rays that damage skin.
 - **A normal dosage to start is 2000 IU a day.** Your doctor will inform you if you should take a higher dose.
- **Vitamin B6:** This vitamin helps regulate hormones and blood sugars, as well as helps alleviate symptoms associated with PMS and morning sickness. Food sources include tuna, bananas, turkey, liver, salmon, cod, spinach, bell peppers, collard and mustard greens, garlic, cauliflower, celery, cabbage, asparagus, broccoli, kale, etc.
- **Vitamin B12:** This vitamin can improve sperm quality and production, boost endometrial lining, and help regulate ovulation. Food sources include seafood and shellfish, beef, lamb, cheese, and eggs.
- **Selenium:** This antioxidant helps protect eggs and sperm from free radicals, which can cause chromosomal damage. It also helps in the creation of sperm. Food sources include fish, shellfish, liver, cremini mushrooms, and turkey.
- **Zinc:** Zinc works with enzymes in the body to keep everything functioning properly, including cell division and balanced hormone levels. Zinc also helps increase sperm levels and sperm quality. Food sources include red meat, oysters, liver, sesame seeds, pumpkin seeds, yogurt, turkey, shrimp, and peas.
- **Wheatgrass:** Wheatgrass is full of antioxidants, vitamins and minerals. It can help detoxify the liver, strengthen blood, regulate hormones, reduce inflammation, and boost the immune system. Wheatgrass is best consumed in a liquid form as a juice, but powder and capsules are also effective. (check with your provider to make sure this is appropriate for you)

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Additional Supplements: There is evidence that nutrition and supplements affect fertility and this field of research is always changing. There are many other supplements that are available. Reproductive Science Center of the Bay Area focuses on those supplements that have strong evidence behind them. We have listed below other supplements below for both egg and sperm health that may help but we do not strongly recommend given lack of strong data.

Egg Health

- Melatonin 3mg at bedtime
- Myoinositol 2g BID
- L'Arginine 1000mg BID
- Vitamin E 400mg
- Pycnogenol 100mg

Sperm Health

- CoQ10 200mg BID
- L Carnitine 500
- Folic acid 400mcg

Fertility & Reproductive Health Diet and Foods at a Glance

A balanced macrobiotic diet rich in nutrients is recommended, consisting mostly of fresh organic vegetables and fruit, fibrous whole grains, complex carbs, healthy protein and fats, and low-sugar foods. Supplementing your diet with essential vitamins and minerals will also strengthen your reproductive health.

Include:

- *Organic Fruits:* red and purple berries, citrus, figs, grapes, melon, pears, pineapples, apples, pomegranates, and apricots.
- *Organic Vegetables:* asparagus, beans, beets, broccoli, brussels sprouts, cabbage, cauliflower, celery, corn, cucumber, fennel, garlic, greens/lettuce, leeks, okra, onions, parsnips, peas, radishes, rutabagas, sprouted seeds, squashes, sweet basil, sweet potatoes, thyme, turnips, watercress and yams.



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- *Fibrous Whole Grains and Complex Carbohydrates:* grains include millet, quinoa, spelt, brown rice, buckwheat, amaranth, kasha/buckwheat, oatmeal, barley, whole rye, gluten free whole grain or sprouted breads. Other fiber rich foods include broccoli, celery, apples, dark leafy greens, peas and beans, red and purple berries, garlic, parsley, fennel, cabbage, cauliflower, nuts and seeds, carrots, rhubarb, and sage. Best to consume gluten free grains like quinoa, millet, and buckwheat.
- *Protein (mostly plant-based instead of animal-based):* beans, nuts and seeds, organic fish and meats, organic eggs, soy (check with your provider first).
- *Healthy Fats:* cold-pressed, unrefined extra virgin olive oil and sesame oil are best. Other good oils include oleic sunflower, oleic safflower, avocado, almond, apricot kernel, coconut, and canola. Fresh flax oil is especially helpful in regulating insulin levels. Also consume avocados, whole eggs, fish rich in omega-3 fatty acids, nuts and seeds, and cheese.
- *Low Glycemic (Low Sugar) Foods:* dark leafy greens and veggies like kale, broccoli, carrots, asparagus; organic lean meats and fish; whole grain breads and complex carbs; beans and lentils; humus; low sugar fruits like grapefruit and apples; and nuts and seeds.
- *Natural Sweeteners (limitedly):* stevia, agave nectar, xylitol, barley malt, organic/raw unprocessed honey, blackstrap molasses, maple sugar, coconut palm sugar, or brown rice syrup. Cinnamon also helps reduce blood sugar levels.
- *Dairy Products (limitedly):* organic, unsweetened, and low-fat dairy products like milk, cheese, yogurt, butter, and non-dairy alternatives made from almond milk, rice milk, cashew milk, and soy milk.
- *Vitamins and Minerals:* vitamin B6, B12, C, D, E, CoQ10, Folic Acid, Iron, Selenium, Zinc, Omega-3, Maca, and Wheatgrass. (Consult your provider for exact amounts needed or whether you need these supplements)

Avoid/Limit:

- *Refined Sugars:* processed and refined white or brown sugars are worst.
- *Refined or Simple Carbohydrates:* cakes, cookies, white breads/buns/pizza crusts, white rice, white pasta, potatoes, pretzels, sugary breakfast cereals, dried fruits or sugary fruits like raisins and watermelon, crackers, pancakes/waffles, plain bagels, or any highly processed food.
- *Avoid gluten grains:* wheat, spelt, teff, and other gluten grains.
- *Alcohol:* sugary mixed drinks, cocktails, beer, hard cider, and wine (white wine varieties in particular).
- *Caffeine:* coffee, tea, sodas, and sports drinks.
- *Sodas, Fruit Juices, Sweetened Beverages:* sodas, fruit juices, sweetened teas or coffees, Gatorade or sports drinks, etc.