Nutrients, Vitamins, and Minerals—Daily Recommendations[1]

Key: N = nonpregnant, P = pregnant, L = lactating (breastfeeding)
g = grams, mg = milligrams, mcg = micrograms; 1 g = 1000 mg, 1 mg = 1000 mcg

Nutrient	Important functions	Major sources	Comments
Calories, calorie sources, and fluids			
Calories N: 2,200 P: 2,400 (First trimester) P: 2,600 (Second trimester) P: 2,800 (Third trimester) L: 2,700	• Provide energy for tissue building, increased metabolic requirements.	Carbohydrates, fats, proteins.	Calorie requirements vary depending on your prepregnancy weight, size, stage of pregnancy, and activity level. For customized guidelines, see http://www.choosemyplate.gov.
Carbohydrates N: 155 g or more P: 200 g or more L: 240 g or more	• Energy source. • Fiber helps minimize constipation, maintain blood sugar levels.	Complex: whole grains, legumes, starchy vegetables, citrus fruits. Simple: refined grains, fruits, milk products, sugars.	Of your carbohydrates, at least 30 g should be dietary fiber.
Fat Maximum total fat: 85 g (Max saturated fat: 28g)	• Energy source • Essential for brain growth and cognitive function. • Aids with absorption of vitamins A, D, E, K.	Best: Flaxseed oil, fish. Next best: Oils—olive, coconut, safflower, corn, sunflower. Soybeans, nuts, seeds. Minimize: dairy fats, eggs, fat from meats. Avoid: hydrogenated oil, shortening, lard.	Essential fatty acids (omega-3s) can lower risk of preterm labor and depression, and can possibly lead to shorter labor, less gestational hypertension, and benefits for the growing baby. Some experts recommend supplements of 650 mg/day of omega-3s, of which 300 mg is DHA.[2] (Other sources of omega-3s: flaxseeds, flaxseed oil, fish, canola oil.) Minimize consumption of omega 6-fatty acids (corn and cottonseed oil).
Protein N: ~50 g (.66 g of protein per kg you weigh) P: 70–80 g (.88 g/kg) L: ~80 g (1.05 g/kg)	• Major structural component of all cells; builds and repairs tissues. • Helps build blood, amniotic fluid, and placenta. • Helps form antibodies.	Meat, fish, poultry, soy, eggs, milk, cheese, dried beans and peas, peanut butter, nuts, whole grains.	Fetal requirements increase by about ⅓ in late pregnancy during the baby's growth period.
Water and other liquids N: 72 oz (9 cups) P: 80 oz (10 cups) L: 100 oz (12+ cups)	• Carry nutrients to cells and carry waste products away for mother and baby. • Provide fluid for increased blood, tissue, and amniotic fluid volume. • Aid digestion, prevent constipation, excessive swelling. • Prevent dehydration, which can lead to premature labor.	Water, juices, milk. Foods that are high in liquids: soup, Jell-O, fruit.	Water is best. Juice and soda contain a lot of sugar, and should be drunk in moderation. Caffeine-containing coffee, sodas, and teas should be limited or avoided.
Minerals			
Calcium N/P/L: <18 yrs: 1,300 mg 19–50 yrs: 1,000 mg	• Helps build bones and teeth. • Proper levels assist with transmission of nerve impulses and muscle contractions. • Important in blood clotting. • Some evidence suggests that inadequate calcium is associated with hypertension in pregnancy.	Yogurt, cheese, milk, canned fish with bones, greens (collard, kale, bok choy, chard, spinach, other greens) tofu (with calcium sulfate), sesame seeds, almonds, fortified juice and milk substitutes.	Prenatal vitamins often have little or no calcium, so if you're not getting calcium in your diet, you may need a calcium supplement as well. Calcium carbonate is best.
Phosphorus N/P/L: <18 yrs: 1,250 mg 19–50 yrs: 700 mg	• Helps build bones and teeth. • Maintains healthy blood pH levels (acid-base balance).	Milk, cheese, lean meats, peas.	Calcium and phosphorus exist in a constant ratio in the blood. Excess phosphorus limits the use of calcium.

Nutrient	Important functions	Major sources	Comments
Iron N: 15–18 mg P: 27 mg P (last 6 weeks): 30 mg L: 9–10 mg	• Helps to ensure red blood cell quantity and quality. • Carries oxygen to baby and to every cell in your body. • Deficiency (anemia) can lead to fatigue, preterm delivery, low birth weight.	Liver, red meats, egg yolks, poultry, fish, raisins and prunes, enriched breads and cereals, leafy vegetables, milk, legumes.	Needed to provide adequate iron stores for baby. Vitamin C enhances absorption of iron. If taking iron supplements, you may want to also take supplements of 15 mg zinc, and 2 mg copper, as iron blocks absorption of these.
Zinc N: 8 mg P: 11–12 mg L: 12–13 mg	• Component of insulin. • Important in growth of skeleton and nervous system. • Deficiency associated with labor complications and preterm delivery.	Meat, liver, eggs, seafood (especially oysters).	Deficiency has been associated with poor fetal growth and development.
Sodium N/P/L: 1,500—2,300 mg	• Sodium maintains the fluid balance in the body.	Naturally occurring in foods. Some prepared foods have excessive amounts.	If you eat a lot of prepared foods, check the labels to make sure you don't overload on sodium.
Iodine N: 150 mcg P: 220 mcg L: 290 mcg	• Important in thyroid function, and for the baby's developing brain and nervous system.	Seafood, iodized salt.	Deficiency may cause goiter in mother and developmental disorders in infants.
Magnesium N/L: <18 yrs: 360 mg 19–50 yrs: 310-320 mg P: <18 yrs: 400 mg 19–50 yrs: 350-360 mg	• Helps with cell energy and protein metabolism. • Enzyme activator. • Helps tissue and nerve growth and function; development of healthy bones and teeth.	Green leafy vegetables, meat, nuts, soy, seeds, brown rice, wheat germ, and oatmeal.	Most is stored in bones. Deficiency may cause neuromuscular dysfunction. Supplements may help treat nighttime leg cramps.
Potassium N/P: 4,700 mg/day L: 5,100	• Maintains fluid volume of cells. • Aids healthy function of heart, kidney, muscles, nerves, and digestive system. • May help reduce risk of osteoporosis.	Leafy greens, fruit from vines, root vegetables (carrots, parsnips, turnips), bananas, dairy, meat.	Potassium appears to affect the levels of other minerals, such as calcium and sodium.
Fat-soluble vitamins			
Vitamin A N: 700 mcg P: 770 mcg (2,500 IU) L: 1,300 mcg Max safe level: 3,000 mcg	• Helps growth and development of bones, teeth, gums, vision. • Maintains skin and mucous membranes. • Helps protect against infection.	Liver, fish oils, dairy products, eggs, orange vegetables (pumpkins, yams, sweet potato, squash, carrots), dark green vegetables.	Excessive amounts (over 3,000 mcg/10,000 IU) can lead to birth defects.
Vitamin D N/P/L: 5 mcg (equal to 200 IU) If you have dark skin and/or minimal sun exposure, you need a higher dose.	• Aids absorption of calcium and phosphorus from the blood. • Needed for mineralization of bones and teeth. • Deficiency can cause rickets—bone softening and fetal malformations. • Deficiency associated with low birth weight.	Sunlight (vitamin D is made by the body with exposure to sunlight on skin —at least 10–15 minutes of direct sunlight to hands, face, or arms 3 times a week), fortified milk (contains about 100 IU per cup), fish liver oils, fatty fish, egg yolks.	To get 600 IU of vitamin D daily, many women need to take supplements. Supplements with vitamin D_3 are more effective than D_2 and better for most women. Vegans may choose D_2, because D_3 is derived from an animal source. Some research indicates that up to 4000 IU per day may be beneficial in pregnancy.[3] Taking vitamin D in pregnancy may also reduce severity of labor pain.
Vitamin E N/P: 15 mg L: 19 mg	• Needed for tissue growth and for the developing nervous system. • Protects cell wall integrity.	Vegetable oils, whole grains, meat, eggs, milk, nuts, seeds.	Enhances absorption of vitamin A. It is an antioxidant.
Vitamin K N/P/L: <18 yrs: 75 mcg 19–50 yrs: 90 mcg	• Essential for blood clotting.	Leafy green vegetables.	Produced in the body by intestinal flora.
Water-soluble vitamins			
Folic acid (folate) N: 400 mcg P: 600 mcg L: 500 mcg	• Helps to form blood cells and the DNA and RNA inside all cells. • Needed for metabolism of amino acids and protein synthesis. • May help prevent stroke, colon, and breast cancer.	Fortified cereals, breads and pastas and naturally occurs in legumes, green leafy vegetables, citrus fruit, whole wheat bread.	Supplements recommended for all women of childbearing age. Low folate can cause anemia, preterm delivery, and neural tube defects (1 in 3,000 pregnancies).

Nutrient	Important functions	Major sources	Comments
Thiamin (B_1) N: 1.0–1.1 mg P/L: 1.4 mg	• Helps convert food to energy. • Plays a role in initiating nerve impulses. • Helps maintain healthy blood sugar.	Whole grains, fortified grain products (breads, cereals), pork, organ meats, seeds, nuts.	
Riboflavin (B_2) N: 1.0–1.1 mg P: 1.4 mg L: 1.6 mg	• Essential for energy and metabolism of protein, fat, and carbohydrates.	Organ meats, milk products, whole and fortified grains.	
Niacin (B_3) N: 14 mg P: 18 mg L: 17 mg	• Helps release energy from carbohydrates. • Needed for protein metabolism. • Aids production of lipids, hormones, and red blood cells.	Meats, peanuts, fortified cereals, whole grains, beans, peas.	
Vitamin B_6 (Pyridoxine) N: 1.2–1.5 mg P: 1.9 mg L: 2.0 mg Max: 100 mg	• Important in amino acid metabolism and protein synthesis. • Important in production of serotonin, other neurotransmitters. • Deficiency can lead to depression, neurological disorders. • Improves immunity.	Chicken, fish, organ meats, pork, eggs, whole grains, wheat germ, soybeans, walnuts, legumes, cabbage, beets, oranges.	May help reduce nausea in early pregnancy.[4] (Research trials have used 3 doses per day, with each dose being 10–25 mg.)
Vitamin B_{12} (Cobalamin) N: 2.4 mcg P: 2.6 mcg L: 2.8 mcg	• Essential in protein metabolism and tissue synthesis. • Important in formation of red blood cells. • Maintains nerve fibers. • Necessary for activation of folic acid.	Animal products: organ meats, milk products, clams, oysters, eggs. Fortified soymilks, tofu, and cereal.	Deficiency leads to anemia and central nervous system damage. All vegans should take a B_{12} supplement. B_{12} may help relieve depression.
Pantothenic acid N: 5 mg P: 6 mg L: 7 mg	• Helps convert food into energy. • Aids production of lipids, hormones, and neurotransmitters.	Meats, potatoes, oats, tomatoes, organ meats, broccoli.	
Biotin N: 25–30 mcg P: 30 mcg L: 35 mcg	• Aids energy metabolism. • Synthesizes and breaks down fatty acids.	Liver, egg yolks, soybeans, yeast.	
Vitamin C N: 65–75 mg P: 80–85 mg L: 115-120 mg Smokers: add 35 mg	• Helps tissue formation. • Is "cement" substance in connective and vascular tissue, strengthens blood vessels. • Promotes iron absorption. • Aids in healing wounds, resisting infection, maintaining healthy tissues.	Citrus fruits, berries, melons, tropical fruits. Veggies: tomatoes, peppers, broccoli, brussel sprouts, cabbage, cauliflower, watercress, potatoes.	Megadoses of vitamin C have not been proven effective in reducing incidence of colds, though supplements may reduce duration or severity of cold.

Endnotes

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