



*Studies have shown that improper nutrition could lead a child to have challenges with: IQ, school achievements, behavior, and cognitive function. Inadequate nutrition can also lead to disease and mortality risks in adulthood.*

## Cognitive Development

Cognitive development is the development of intellectual functions

## Cognitive Functions

Cognitive functions include attention, memory, planning, developing strategies, and problem-solving.

*Depriving your brain of good-quality foods (eating processed foods) can lead to inflammation, contribute to brain tissue injury, and influence mental health.*

## Parent and Caregiver Roles:

**As a parent or caregiver, encourage your children to try and eat a variety of nutritious foods.**

## Sample Menu

**Breakfast:** Low-Fat Plain Yogurt with Fresh Strawberries + Whole Grain Toast

**Snack:** Whole Grain Quesadilla with Cheddar Cheese and Spinach

**Lunch:** Beef Broccoli over Whole Grain Noodles + Cantaloupe + Milk

**Dinner:** Baked Cod topped with Tomatoes and White Bean over Brown Rice + Papaya + Milk

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# NUTRITION & COGNITION



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# Nutrients

Here are a few nutrients that play a role in the way the brain functions:

## Iron

Iron is essential for normal brain development and for the iron-dependent enzymes involved in neurotransmitter synthesis. Deficiency in a fetus or infant can damage brain development. Deficiency in a developed brain can hinder one's attention, concentration, and intellectual performance. Sources: Red Meat, Fish, Poultry, Legumes, Dark Green Leafy Vegetables, Whole Grains, Nuts, Tofu, Seafood

## Iodine

Iodine is critical for the synthesis of thyroid hormones, which are needed for the development of the central nervous system. Deficiency can lead to goiters, cognitive impairment, and growth and development abnormalities. Sources: Iodized Salt, Seaweed, Dairy Products, Seafood: Cod, Shrimp, Tuna

## Zinc

Zinc has an important role in signaling neurotransmitters. Deficiency of zinc can cause congenital malformations in fetuses and attention, learning, and memory deficits in developed brains. Sources: Red Meat, Pork, Poultry, Legumes, Whole Grains, Dairy Products

## Vitamin B1 (Thiamin)

Vitamin B1 is used in reactions in the brain that metabolize carbohydrates, fats, and amino acids. Deficiency of Vitamin B1 is rare, but can lead to Beriberi. This can be seen in patients that have gastrointestinal conditions that impair vitamin absorption. Sources: Pork, Legumes, Sunflower Seeds, Enriched Grains

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*Adequate nutrition is important for brain development and maintenance*

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## Vitamin C

Vitamin C has an antioxidant function in the brain cells, which is important during the rapid brain development during fetal and early infancy. Deficiency of Vitamin C intake can lead to scurvy and oxidative damage to lipid proteins in the brain. Sources: Papaya, Cantaloupe, Broccoli, Orange Juice, Brussel Sprouts, Green Peppers, Strawberries, Grapefruit Juice

## Vitamin D

Vitamin D is influential for the development, growth, and survival of neurons. Sources: Dairy, Sunlight, Eggs, Beef, Fortified Foods: Milk, Orange Juice, Cereals, Dairy Products

## Vitamin E

Vitamin E helps to prevent lipid oxidation to protect nerve cell membranes. Deficiency can cause neurological symptoms such as impaired balance and injury to sensory nerves. Sources: Plant Oils (Canola, Olive, Sunflower), Legumes, Whole Grains