

## **Nutrients for brain health**

**CHOLINE:** This biochemical is the pre-cursor for acetylcholine, one of the four major neurotransmitters of the brain. Choline is also converted to vasopressin in the brain, which is known to increase memory, attention and learning abilities.

**PHENYLALANINE AND TYROSINE:** These two essential amino acids are derived from hydrolyzed vegetable proteins and are essential in the production of norepinephrine, one of the four neurotransmitters of the brain. Norepinephrine is said to be the brain's adrenaline and is concerned with memory, learning and basic body survival. Phenylalanine and Tyrosine are essential for the general health and functioning of the Hypothalamus of the brain.

**VALINE, LUCINE AND ISOLUCINE:** These amino acids enhance the transport of neurotransmitters across the endothelial cell linings of brain capillaries and the Hypothalamus.

**ANTIOXIDANTS:** The antioxidants are Thiamine, Pantothenic Acid, Vitamin E, C, Zinc and Selenium. These nutrients combine with "free radicals" and act as "free radical scavengers" to protect the nerve receptors in the brain from oxidative damage. A free radical is an atom or molecule with an unpaired electron, which are the main source of damage that can cause abnormal mental behavior.

**THIAMINE:** Thiamine is an antioxidant that is also a donor ingredient in the manufacture of Choline to Vasopressin in the brain.

**RIBOFLAVIN:** Riboflavin (B2) is an important vitamin component that acts as a catalyst for the metabolism and synthesis of many of the

vitamin, mineral and co-enzyme factors in the body. Riboflavin acts to inhibit the oxidation of essential amino acid to keto acids.

**NIACIN:** Niacin (B1) is essential to proper brain metabolism. It improves mental attitude and is essential for the normal functioning of nerve tissue. Niacin also acts as a natural antihistamine throughout the brain and the body as well.

**PANTOTHENIC ACID:** Pantothenic acid (B5) is the transfer agent for Choline to acetylcholine, which aids in proper neurotransmitter activity in the brain. Pantothenic acid is also known as the **anti-stress vitamin** because it detoxifies brain tissue, relieves physical and emotional stress and plays very important role in the secretion of hormones.

**PYROXIDINE:** Pyroxidine (B6) is combined with vitamin C to form the enzyme that converts Phenylalanine and Tyrosine to Norepinephrine and is required for the assimilation of Zinc. Pyroxidine is essential to healthy brain function.

**COBALAMIN:** Cobalamin (B12) is used for the myelination of nerve fibers. It stimulates RNA synthesis in brain tissues. In general Cobalamin is responsible for proper nerve growth and brain cell health.

**FOLIC ACID:** Folic acid is used in the choline synthesis as a direct co-enzyme exchanger.

**CALCIUM:** Calcium is used by the terminal end membranes of nerve fibers in the Hypothalamus of the brain. Calcium is required to

initiate the stimulus for neurotransmitter release.

**MANGANESE:** Manganese is found with Zinc to prevent memory loss and is an excellent nutrient for brain tissue.

**ZINC:** Zinc is found to restore and increase short term memory and attention span.

**SELENIUM:** Selenium is synergistic with Vitamin E and the synthesis of amino acids in the brain.

**VITAMIN E:** Vitamin E is the most effective chain-breaking, fat soluble antioxidant in biological membranes, where it contributes to membrane stability. It protects critical brain tissue against damage from oxygen free radicals.

**VITAMIN C:** The best characterized function of the vitamin C is in the synthesis of collagen connective tissue protein, essential in overall body maintenance. Vitamin C also plays an important antioxidant role in the synthesis of neurotransmitters and proper brain hormone production.

**PABA:** (Para Amino Benzoic Acid) assists healthy bacteria in producing folic acid. It also helps the bones to form red blood cells which carry oxygen to sensitive brain tissue and to all parts of the body.

**ADRENAL TISSUE:** Adrenal tissue will aid in the bodies response system to stress. Adrenal tissue may help to restore dopamine activity, one of the vital hormones of the Hypothalamus.

