

What are Kryptopyrroles?

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Nutrient deficiencies are common in chronic illness. Pyroluria is a specific condition that creates reversible nutrient deficiencies. About 10% of the general population has difficulty synthesizing hemoglobin. As a result, kryptopyrroles in the urine, or more specifically hydroxy-hemopyrrolin-2-one (HPL), is a biochemical marker identified in urine. HPLs are metabolic waste, and which bind to vitamin B6, zinc, biotin, manganese and arachidonic acid thereby creating deficiencies in the body.

First discovered by an orthomolecular psychiatrist in the 1950's, pyroluria (also called kryptopyrroluria or hemopyrrollactamuria) is seen in 40-70% of schizophrenia; 50% in autism, 30% in ADHD, 40-80% in alcoholism, and 80% in Lyme disease.

Let's take a look at these nutrient deficiencies more closely. Vitamin B6 is essential for brain and immune system functioning. Vitamin B6 is used to treat anxiety, depression, musculoskeletal conditions and macular degeneration. Food containing B6 are: poultry, dairy, fish, legumes and wheat germ. Zinc is required for proper immune function, vision, detoxification by the liver, fertility, digestion, the musculoskeletal system, healthy skin and nails. It is used to treat acne, macular degeneration, digestive conditions and immune disorders. You may find zinc in shellfish, meat, cheese and poultry. One common sign of a zinc deficiency is white spots on nails. Biotin is required for digestion, the nervous system, energy production in the mitochondria, metabolism, and healthy skin and nails. It is used in the treatment of diabetes and neuropathy, and can be found in eggs, nuts, brewer's yeast, whole grains and legumes. Manganese is a mineral and antioxidant used by the nervous system, musculoskeletal system, metabolism. Good sources of manganese are: whole grains, nuts and seeds. Manganese is used in the treatment of osteoporosis, arthritis, diabetes and epilepsy. Arachidonic acid, which is required for proper muscle and nervous system function, is an omega-6 fatty acid found in meat and eggs. Gamma-linolenic acid (GLA) is a specific omega-6 fatty acid which is found in plants like evening primrose oil or borage oil. GLA is converted into arachidonic acid in the body.

Deficiencies of vitamin B6, zinc, biotin, manganese and arachidonic acid may lead to a lowered immune system functioning as well as a plethora of compromised systems, as mentioned in detail above. In turn, someone with pyroluria may be more vulnerable to chronic disease that continues without resolution despite treatment. When these nutrients are repleted, various medical conditions may be improved or even resolve. Kryptopyrrole, or HPL, testing is done through a 24-hour urine collection.