Uric Acid Encyclopedia Article

Uric Acid

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Uric Acid

Uric acid is a nitrogen-containing end product of the metabolic processing of purines and physiological oxidation (chemical oxidation if bodily biochemical processes). Uric acid is produced principally in the Gastrointestinal tract during the **digestion** of many foods.

In birds uric acid is discharged as guano and in fish uric acid is converted into urea and then expelled in urine. In humans, a low level of uric acid is a normal component of **blood** and is excreted in the urine. An elevated level of uric acid is often associated with high blood pressure and/or elevated cholesterol levels.

Blood levels of uric acid are elevated in individuals suffering gout—a condition triggered by deposits of uric acid crystals in tissues surrounding **joints**. Gout is usually exacerbated (worsened) by diet's rich in protein--the nitrogen-rich precursor for uric acid.

Uric acid is a weak organic acid that has a low solubility in bodily fluids. Excessive levels of uric acid in the blood (uriaciduria) may lead to the formation of insoluble salts (urates) that are commonly referred to as stones if found in the urinary tract. Uric acid deposits in the kidney impair proper renal function and may eventually lead to kidney failure. Uric acid deposits may also form in tissues and joints.

The enzyme uricase catalyses the biochemical pathway that converts uric acid to allantonin. A hereditary disorder known as Lesch-Nyhan syndrome results in chronic elevation of uric acid levels.

Biomedical research has established that low levels of uric acid are also often found in individuals suffering multiple sclerosis where normal levels of uric acid may be required to inhibit or eliminate biochemical agents (e.g., peroxynitrite) that may be responsible for the production of **brain** lesions. It is interesting to note that conditions where uric acid is excessive (gout) and multiple sclerosis are seemingly exclusive of one another--individuals do not suffer both conditions. There is ongoing research indicating that uric acid may play a role in protecting neural **tissue**.