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## PREGNENOLONE

### Some functions of pregnenolone include:

- Precursor of many other hormones
- Improves mood and memory
- Fights the effects of fatigue and stress
- Protects against coronary artery disease
- Essential to full brain function
- Improves heart health
- Protects against Alzheimer's disease
- Aids in skin rejuvenation
- Relieves arthritis pain
- Boosts immune system
- Assists in alleviating stress.....

Pregnenolone is a steroid precursor produced in the human adrenal gland and in the human brain. It is sometimes called the "brain steroid," since the brain contains higher concentrations than other organs or the blood. It is produced in the desired amounts only if a person's body has adequate amounts of cholesterol, vitamin A, thyroid hormone, and enzymes. If these levels are insufficient, a low supply of pregnenolone will result.

In a healthy person, the conversion of cholesterol to pregnenolone occurs inside the mitochondria. Once produced, pregnenolone leaves the mitochondria, and does not inhibit its own synthesis. In fact, both progesterone and pregnenolone stimulate their own synthesis, therefore additional doses do not suppress the body's ability to synthesize them. In the cell's cytoplasm, enzymes convert pregnenolone into either progesterone or DHEA, depending on the type of cell and the present need. These are then the precursors for the more specialized steroid hormones, including cortisol, aldosterone, estrogen, and testosterone.

An article in the *Proceedings of the National Academy of Sciences* (Nov. 6, 1995). describes pregnenolone as "the most potent memory enhancer yet found."

Some people find pregnenolone improves energy levels, vision, clarity of thinking, and wellbeing, perhaps also sexual enjoyment. Some women report lessening of hot flushes or premenstrual symptoms.

Pregnenolone levels are similar in both males and females. Studies have shown that at birth, the values are very high, at about 109 µg/dl of blood. During the first day of life levels may drop to 86 µg/dl of blood, and decrease to a mean value of 53 µg/dl during the first month, 11 µg/dl between four and six months, and 3.7 µg/dl between seven and twelve months. At two years pregnenolone levels are quite low, remaining so



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throughout the ninth year. This is followed by a progressive rise until adulthood, when adults are found to have pregnenolone levels that are three to four times higher than those found during the first decade of life. Brain concentrations peak at around age thirty and later decrease to 5% of that value, thereby increasing the need for supplemental pregnenolone as we age.

### **Fatigue & Pregnenolone**

In the mid 1940s, several studies indicated that a daily dose of 50 mg of pregnenolone reduced fatigue and stress among factory workers, airline pilots and other subjects (Pincus) Today, there are millions of people who suffer from stress and fatigue who may find relief with pregnenolone.

### **Arthritis & Pregnenolone**

One health condition is rheumatoid arthritis. Since it is a precursor to the production of cortisol in the body pregnenolone was used as early as the 1940s as a treatment for rheumatoid arthritis. In daily doses ranging from 50 mg to 700 mg, pregnenolone was found to be effective for this condition and to be much safer than the corticoids, salicylates and other drugs used as treatments at the time. Daily doses of pregnenolone above 200 mg appeared to be most effective. (Davidson)

### **Memory Enhancement & Pregnenolone**

Pregnenolone has been found to play an important role in the acquisition of knowledge and the long term memory of learned behavior. (DeWied 1976, 1977). In a study with rats by Flood et al. (1995), pregnenolone was found to enhance memory at doses far lower than doses required of other steroids or steroid precursors, including DHEA.

Pregnenolone blocks the inhibitory amino acids glycine and gamma-aminobutyric acid (GABA), as well as non-NMDA glutamate. As a result, pregnenolone helps to regulate the balance between excitation and inhibition, a major dynamic in the CNS.

### **Nerve Regeneration & Pregnenolone**

Administration of either pregnenolone or progesterone in mice also promoted myelin formation during nerve regeneration. (Koenig) (The myelin sheath is a membrane that protects or insulates various parts of the nerve cell, preventing short-circuiting or loss of neural transmission.) This suggests a possible role for supplemental pregnenolone in conditions involving demyelination, such as multiple sclerosis.

### **Repair of Enzymes & Pregnenolone**

Pregnenolone appears to have the ability to repair enzyme activity. A Russian study demonstrated that adding pregnenolone to a mitochondrial suspension increased the activity of the enzyme that converts cholesterol into pregnenolone.

### **Anti-Inflammatory Effects & Pregnenolone**

Scientists have found that pregnenolone also has anti-inflammatory effects. When it was administered



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immediately after spinal cord injury, it reduced histopathological changes, spared tissue, and aided the restoration of motor function.

Pregnenolone was used in the late 1940's to treat rheumatoid arthritis but fell into disuse when cortisone was discovered. Unfortunately, the toxic effects of cortisone are many and severe, classically involving daytime euphoria, insomnia, hot flushes at night, osteoporosis, and adrenal atrophy or shrinking. In contrast, pregnenolone was never found to have adverse side effects, and can be used to withdraw from cortisone therapy over a one-month period. This can be accomplished without the development of "Addison" disease symptoms, which can sometimes result from adrenal atrophy, because of pregnenolone's normalising effects on the adrenal gland.

### **Diabetes & Pregnenolone**

Pregnenolone therapy is recommended for all diabetics past the age of 40, and is sometimes appropriate for younger patients, including the juvenile diabetic. Pregnenolone was shown to rejuvenate the beta cells of the pancreas in diabetic animals and could be very helpful in humans as well.