Pregnenolone CRT™

designs for health®

Neurological and hormonal support

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Pregnenolone is a hormone precursor normally manufactured from cholesterol in a variety of different tissues, such as the brain, retina, myelin sheaths, adrenal glands, liver, skin, thymus, and testes or ovaries. Pregnenolone can be converted into numerous other hormones in the body as needed, such as DHEA, progesterone, estrogen, testosterone, cortisol and aldosterone.

Pregnenolone itself has a stimulatory action on brain function and exerts numerous other effects through the many different hormones it converts into. Typical pregnenolone supplements, which are encapsulated powders, are absorbed like any other fat-soluble substance, first into the lymphatic circulation and then to the liver before they are delivered to the blood circulation.

Unique Effective Delivery

Pregnenolone CRT™ is provided through a proprietary controlled release technology (CRT). Controlled release technology, which was developed for pharmaceutical delivery, is also known as steady-state or zero-order release, allowing for a very slow 10-12 hour continuous release of pregnenolone into the body in a very uniform manner. This helps to eliminate the spikes and surges found in other pregnenolone delivery systems. This technology is designed to deliver measurable amounts of an ingredient to the body at a prescribed rate in a therapeutic window for an extended period of time, ideally allowing for convenient once-daily dosing, a feature particularly critical in hormone precursor therapy. An example of the therapeutic window helps explain this. When an immediate release product is taken, an ingredient may have a burst or spike effect and exceed the body's ability to absorb the entire amount, in some cases causing unwanted side effects. As the dosing period lapses, too little of the ingredient may remain, falling below the minimum level deemed necessary to maintain therapeutic value. An effective controlled delivery product is designed to release the ideal amount of the ingredient to maintain a steady state in the body over an extended period of time, allowing for optimal absorption.

Possible causes of suboptimal synthesis of pregnenolone in the body may include the following:

- Aging: the average daily production of pregnenolone is around 15mg in a young adult; by the age of 75, pregnenolone production may be only 60% of that at age 30
- Hypothyroidism
- Cholesterol lowering therapy, such as statin drugs
- Lifestyle factors, e.g., malnutrition, malabsorption, excessive exercise, vegetarian diets, sleep deprivation
- Corticosteroid treatment (such as cortisone)

Pregnenolone deficiency can be assessed partially from measuring circulating pregnenolone sulfate or as salivary pregnenolone, but this may not accurately reflect potential deficiencies at the intracellular level.

Brain Function

Pregnenolone is also considered to be a neurosteroid because it is synthesized locally by the brain cells. It also crosses the blood-brain barrier, so pregnenolone from general circulation can be taken up by the brain cells when necessary. Supplementation with pregnenolone in animals and humans has shown improvements in memory or cognition and it increased mental performance under stressful conditions.[18] These effects are believed to be due to the following mechanisms:

- Improved release of the neurotransmitter acetylcholine, which may also have an application for alleviating symptoms of Alzheimer's disease[4,12]
- Stimulation of new brain connections (improved neurogenesis or neuroplasticity)[1]
- Excitatory effect due to affinity for two types of brain receptors:
  - Activates NMDA receptors
  - Occupies the GABA receptor sites, thus reducing the inhibitory effects of GABA or GABAergic drugs. GABA activity is known to increase with aging, so pregnenolone supplementation may compensate for age-related increases in neuronal inhibition.

The local conversion of pregnenolone to estrogens inside the brain is believed to have a neuroprotective effect.[1] Significant amounts of pregnenolone have been found in the myelin sheaths of sciatic nerves, which suggest a role in nerve health.[11]

Patients with depression or social phobia have been found to have significantly lower levels of blood and cerebrospinal fluid pregnenolone than healthy subjects.[6,13]

Autoimmune Disease: Patients with various types of autoimmune conditions, such as rheumatoid arthritis, lupus, and scleroderma, were found in many studies to have significantly lower blood levels of pregnenolone, DHEA, androgens and cortisol, and even lower with cortisone therapy.[15] A number of studies from the 1950s showed that supplementation for over a month with 30-600mg/day of pregnenolone given orally or via intramuscular injection alleviated autoimmune symptoms.[14,17] Unfortunately, owing to the popularity of corticosteroid therapy, no studies have been conducted since then regarding pregnenolone for this purpose.

Skin Health: Studies with topical pregnenolone have shown improved skin hydration. It is conceivable that oral pregnenolone would have a similar effect since the skin tissue is very active in processing steroid hormones.[16]

Menstrual Migraines: Since these are associated with low progesterone levels, pregnenolone supplementation may help indirectly by improving progesterone levels, which are often low in women.[19]

Supplement Facts

Serving Size 1 tablet

Amount Per Serving		% Daily Value
Sodium	5 mg	<1%
Lecithin (from soy)	100 mg	*
Pregnenolone	30 mg	*

*Daily Value not established.

Other Ingredients: Microcrystalline cellulose, hydroxypropyl methylcellulose, pectin, sodium carbonate, silicon dioxide, stearates (vegetable source), hydroxypropyl cellulose, calcium silicate.

Dosage: Due to its stimulatory effect, pregnenolone should be administered mostly during the first part of the day in order to best mimic its normal circadian production rhythm and because its excitatory action may interfere with sleep. For brain function stimulation and the correction of pregnenolone deficiency: 30-100mg/day. For autoimmune disease: 200-500mg/day orally or via intramuscular injection, with close monitoring by a health care practitioner.

Who Should Not Take Pregnenolone: Due to its many possible hormone metabolites, pregnenolone is not recommended during pregnancy, lactation or hormone-sensitive cancers (breast, prostate, adrenal, etc.). It is not recommended for patients with epilepsy or a history of seizures or meningioma (non-cancerous brain tumor). Pregnenolone reduces the effectiveness of any drug that stimulates the GABA receptors, such as benzodiazepines. It may also negate the effect of supplementation with GABA. Supplementation with pregnenolone should be monitored by a health care practitioner for baseline and subsequent levels of pregnenolone, testosterone, DHT, estradiol, estrone, progesterone, aldosterone and cortisol at any age for males and females due to the wide range of biochemical individuality in pregnenolone metabolism.

How to Take:

- As a dietary supplement, take one tablet per day with a meal, or as directed by a health care practitioner.

References

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