Tides of Life
an international women's holistic health resource group

PREGNENOLONE, A FRUIT OF CHOLESTEROL

Mother of Progesterone & D.H.E.A.

The following information comes from Dr. Ray Peat, who has done pioneering research on the anti-aging steroids, pregnenolone, progesterone and DHEA (Dehydroepiandrosterone). I have included excerpts from his writings plus the results of interviews. Research references are provided when available, but in many cases, I could only describe the group of researchers who did the experiment. My purpose for this article is not to start a riot but to illustrate why I think it's dangerous to artificially inhibit cholesterol formation in your body with drugs and synthetic foods.

Dr. Peat accidentally discovered the effects of pregnenolone when he took some vitamin E containing a residue of pregnenolone that was left over from an experiment in solubility. Peat had been suffering from a variety of complaints, including "**inflammation of the arteries, dental abscesses, asthma, migraines, and colitis**." When he took the vitamin E containing some pregnenolone in the vitamin E, he crawled out of his sick bed, took a pinch of pure pregnenolone and felt immediately better. All of his symptoms gradually disappeared and in ten weeks, his appearance changed. Many aging characteristics, such as sagging skin, "chicken neck," bags under the eyes, etc. receded.

These changes were dramatically reported in a passport photo, taken one year before pregnenolone and another one taken 10 weeks after pregnenolone therapy was initiated. I regret that the original photos are not available for inclusion here. When I saw this photo, presented in one of his newsletters, I fell off my chair, dashed to the phone and called Dr. Peat. The results of many interviews are summarized below.

Pregnenolone is a steroid precursor (starter material). It is made in the body from the bad-rap guy, cholesterol. Naturally, to get pregnenolone, we need adequate amounts of cholesterol plus other nutrients, including vitamin A, thyroid hormone and enzymes. If any of these are inadequate, you will have a less than desired supply of pregnenolone.

In a healthy person, the conversion of cholesterol to pregnenolone occurs inside the mitochondria, nicknamed the lungs of the cell because of their role in cell respiration. Once produced, pregnenolone leaves the mitochondria, so it cannot inhibit its own synthesis. In fact, both progesterone and pregnenolone stimulate their own synthesis so that if you take them, the body's ability to synthesize them is not suppressed. **Sometimes short-term therapy restores the body's ability to produce adequate amounts**, although Peat says that this is not as clearly established with pregnenolone as in the case of progesterone.

On the other hand, synthetic progesterone has an inhibiting effect on in-vivo synthesis plus many other toxic side effects not observed with natural progesterone.

In the cytoplasm, enzymes convert pregnenolone into either progesterone or DHEA, depending on the tissue and the need. **Peat calls pregnenolone, progesterone and DHEA "brain steroids" since the brain contains higher concentrations of them than other organs or the blood.** Because the brain concentration decreases from its peak value at around age thirty to 5% of peak value at 90, the need for supplemental pregnenolone may increase as we age. In fact, the older and/or sicker you are, the more likely you are to feel an effect from pregnenolone.

Progesterone and DHEA are the precursors for more specialized steroid hormones, including cortisol, aldosterone, estrogen and testosterone. **Taking progesterone will not increase the level of these hormones. In fact, progesterone opposes their toxic effects**. Peat says that "the formation of these hormones is tightly regulated, so that taking the precursor of one will correct a deficiency . . . but will not create an excess." However in young men, taking excess progesterone can decrease testosterone production and lead to decreased libido, so pregnenolone is preferred over progesterone for young males. The inhibitory effect on testosterone has not been observed in older men, especially those who are ill.

Because pregnenolone converts to progesterone and DHEA, its effects will parallel those of the latter hormones. It is more beneficial to take pregnenolone for certain conditions and progesterone for others but, in general, there is an overlap in their effects.

Peat says that whereas progesterone is strong medicine, just like thyroid or insulin, **pregnenolone is an anti-aging food supplement such as a vitamin.** Because of this, pregnenolone does not act as dramatically in a crisis, such as a seizure, as does progesterone.

PREGNENOLONE:

REPAIR OF ENZYMES: Pregnenolone apparently has the ability to repair enzyme activity. For example, in a Russian research study, adding pregnenolone to a mitochondrial suspension increased the enzyme activity. Which enzyme The enzyme which converts cholesterol into pregnenolone (one in the P-450 system). Other enzymes in the P-450 system vital to certain detoxification processes are also stabilized by pregnenolone.

Peat says, "…steroids, including cholesterol, have an anti-toxic effect. The cytochrome P-450 family of enzymes is an important factor in our resistance to toxins. Moderate amounts of cortisol promote this system, but larger amounts degrade it. Pregnenolone doesn't affect the rate of synthesis of these enzymes, but it stabilizes them against the normal proteolytic enzymes, increasing their activity. I believe this stabilizing action is a general feature of these steroids…"

MEMORY REPAIR: In a short article in The Sacramento Bee (Tuesday, March 3, 1992) I read that Pregnenolone may help restore impaired memory, according to neurobiologist

Eugene Roberts of the City of Hope Medical Center in Los Angeles, and his colleague, biologist James F. Morely, of the St. Louis VA Medical Center. These researchers tested pregnenolone and other steroids on mice. They found that **pregnenolone is several hundred times more potent than any other memory enhancer that has been tested before is**. Their report, in the *Proceedings of National Academy of Sciences (March 1992),* says that **pregnenolone was used in the late 1940's to treat rheumatoid arthritis, and quite successfully, but fell into disuse when cortisone was discovered. But, Roberts adds, pregnenolone was never found to have adverse side effects whereas the toxic effects of cortisone are many and severe.**

PROTECTION FROM CORTISONE TOXICITY*:* The classic effects of toxic levels of cortisol include daytime euphoria, insomnia plus hot flashes at night, osteoporosis, brain aging, atrophy of the skin plus other signs of premature aging and adrenal atrophy (shrinking). Two injections of cortisone can destroy the beta cells of diabetes in people as well.

Peat reports that **pregnenolone can be used to withdraw from cortisone therapy** over a one month period without developing "Addison's" disease symptoms (from adrenal atrophy), because of its normalizing effects on the adrenal gland. **In female patients, progesterone therapy may also be indicated.**

Reduced exophthalmia in Graves' disease patients: In the 1950's pregnenolone was tested on patients with exophthalmis (bulging eyes) from Graves' disease. It was reported that their eyes quickly receded to a more normal position in their sockets. Peat gave pregnenolone to a desperate woman with seriously bulging eyes. The next day she phoned him and said her eyes were completely normal.

PROGESTERONE:

Progesterone opposes all of the toxic effects of estrogen and cortisol. We maintained some of the toxic effects of cortisol. Estrogen's toxic effects were described in detail in the June 1991 Earthletter. It's cardiotoxic effects were described in Part II of "Heart Disease and the Cholesterol Fairy Tale." In addition, unopposed estrogen promotes osteoporosis, increased menstrual bleeding in females, tumor formation including fibroids and cancer, increased fat deposition, causes edema and triples the rate of gallbladder disease in women on HRT. Progesterone has some other very interesting healing benefits, according to Peat:

Control of seizures: Progesterone will stop all cyclic seizures, related to menses and due to excess estrogen relative to progesterone. This topic has been reported by Goodman and Gillman. Estrogen lowers the threshold for both chemically and electrically-induced seizures. Progesterone will also stop (not cure) other seizures, regardless of the causes.

Case history from Peat's files: A 52-year old lady came to Peat totally disabled following the onset of cyclic seizures at age 35. Although her estrogen level was 'normal,' it was unopposed by progesterone. Instead of ten-to-one ratio of progesterone, hers was one-to-one. Her doctor diagnosed her permanently mentally and physically disabled. She could not

travel alone because she forgot where she was. Her fingers looked like sausages from arthritis and she could not bend them. Peat had her dip her 'sausage fingers' into an olive oil solution containing progesterone. In 3-4 days, her progesterone to estrogen ratio became five-to-one. She walked alone, grinning down the street to Peat's office bending her fingers, which no longer looked like sausages!

Opposes the effects of progesterone deficiency following tubal ligation and vasectomy: In a hormone survey of females who had nervous or emotional problems following tubal ligation and males who had emotional problems and impotence following vasectomy, all had normal hormone levels except for decreased progesterone. Taking progesterone for only a week cured both females and males. How is this so? According to Peat, tubal ligation (or the IUD) sends a signal to the ovaries to stop making progesterone. Vasectomy sends the same signal to the testicles. Thus, vasectomy mimics the IUD.

DHEA – Dehydroepiandrosterone

Thirty years ago, endrocrinologists at John Hopkins University discovered that the adrenal glands manufacture large amounts of DHEA from pregnenolone starting at birth. DHEA manufacture peaks during an individual's mid-twenties and thereafter decreases with age.

In the *San Diego Union* (Friday, February 12,1989), a summary of several interesting reports on DHEA research appeared. For example, it was discovered that DHEA levels were consistently lower than normal in women with breast cancer. A breed of mice genetically prone to obesity lost weight with prolonged use of DHEA and they returned to their normally rotund physiques when DHEA therapy was withdrawn. In another breed of mice genetically disposed to breast cancer, DHEA therapy not only prevented breast cancer but the mice appeared younger and thinner!

Many other researchers have reported an anti-aging effect from DHEA. For example, in the *New England Journal of Medicine* (December 1986), researchers reported findings that suggested DHEA had anti-aging or 'survival' properties. Levels of 242 San Diego men, aged 50-79, were followed. Levels of those who died during the study were only one-third that of the living study members.

Peat provided the following information on the effects of DHEA:

- **Libido:** Men who had low libidos because of decreased testosterone, DHEA boosted libido almost as well as testosterone.
- **Arthritis:** Topical DHEA as well as topical progesterone can stop the pain of arthritis and other inflammatory conditions. Even in 84-year-olds.
- **Osteoporosis:** Dr. John Lee documented six years of research which showed the reversal of osteoporosis with progesterone. The same effect may be attributed to DHEA.
- **Diabetes:** In a study in which rabbits were poisoned with alloxan (which destroys the beta cells of the pancreas), DHEA cured their diabetes. The rabbits in the study developed normal beta cells in the pancreas.

Peat ate some DHEA, not much, only several milligrams daily. He noted the following:

- A mole fell off! Other patients had the same results.
- Wisdom teeth impacted 20 years prior rotated into position.
- Peat grew 1.5 inches at the age of 46. His weight stayed the same but his waist size decreased. In several months he lost his middle appearance because he got taller.
- Topical DHEA on his gray hair caused its original color to return!