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THE HORMONE ESTRADIOL AND WHAT ADVANTAGES IT HAS OVER TESTOSTERONE

Introduction: Estradiol is an estrogenic steroid hormone produced in the ovaries, placenta, adrenal cortex, peripheral tissues, and testes in men. It plays an important role in the correct formation and functioning of the sexual system. Estradiol is responsible for the development of the female genital organs and secondary sexual characteristics and affects the menstrual cycle and pregnancy. It is considered the main sex hormone in women and is present in small amounts in men. It is one of the main estrogens in non-pregnant women. It is produced mainly in the ovaries, as well as additionally in the adrenal glands in women and in the testes and adrenal glands in men. Estradiol is the lowest at the beginning of the menstrual cycle, and its rise to the highest mark is precisely due to the release of the egg from the ovary (ovulation). Normal estradiol levels allow proper ovulation, egg fertilization and pregnancy, as well as healthy bone structure and normal cholesterol. The hormone forms primary and secondary female sex traits. The primary organs are the genitals. Secondary: fat deposition mainly on the buttocks, legs and arms, female facial features, high voice. In addition, in men and women, estradiol is responsible for bone mineralization, libido, skin quality, cholesterol ratio. These are the first positive differences from testosterone. That is, it is extremely stupid to believe that if you reduce estradiol in 0 on analyzes, then you cannot get a good response of testosterone in men, most likely your bones will be fragile, terrible mood, atherosclerosis, rapid aging and no libido will appear. Women have the same with testosterone. If you reduce it to 0 and leave only estradiol, then the condition will be, to put it mildly, bad, which is in health according to the emotional background.

Relevance: What role does growth hormone play? As you know, it in a sense rejuvenates the body and contributes to the rapid healing of wounds. Estradiol increases the secretion of this hormone with a sufficient amount in the human body. Perhaps, including for this reason, estradiol is associated with improved skin and bone strengthening, as is known from hundreds of studies on this hormone.

Estradiol, like testosterone, is a sex hormone that naturally changes a person's sexual behavior. Based on studies comparing the behavior and concentration of hormones in the blood, we can say with confidence that this is so. There is a lot of data that during the ovulation period, when estradiol is in the upper limits of the reference, the girl seems more beautiful and attractive. I want to note an important fact that the differences in estradiol in ovulation and in the lutein phase can be several times. In men, hormones are relatively stable. To make it clearer, imagine that at the beginning of the month your testosterone is like an elderly one, about 7 nmol, and after a couple of weeks you turn, as you feel, into a person with super abilities with 42 nmol of testosterone! Increased motivation and desire for drive, but then there is a decline and hormonal profile. And this happens every month for up to 50 years. And these are average data, and in some girls estradiol can change 10 times in a month. Well, from the outside, high estradiol increases a woman's attractiveness, but what happens to her sexual desires is logical that sex drive also increases. There is again a lot of data, and it is during ovulation that more brutal men like. During ovulation, there is also a higher chance of getting pregnant. And you can observe flirty behavior, flirting from a woman. The gait changes markedly. Yes, when estradiol in a woman is maximum, she walks slower and sexier, and does it unconsciously. This is exactly the likely behavior. In science, you can rarely find black and white data. Someone will change their gait, someone will

not, but on average rather yes.

Let's analyze how estradiol affects male sexual function?

In general, elevated estradiol often leads to erectile dysfunction (ED) and worsens the spermogram. And reduced to reduced libido and delays in ejaculation (DE), a man simply becomes less interested in sex, but with the technical part more or less normal, sometimes this happens with increased estradiol. Estradiol to testosterone ratio. If testosterone is even 10 times higher than normal, but estradiol even 1.5 times higher or lower, then this will still worsen well-being and health than at average values of both.

In the brain, estrogen receptors are found in those sites involved in sexual behavior; one of the most mysterious mechanisms of neuroendocrinology operates in such a way that when estrogen enters these areas of the brain, we have erotic fantasies (taken from Sapolski's book "The Psychology of Stress"). I hope I was able to argue that without estradiol, male sexual behavior is simply impossible, let alone women.

Neuroscience is somewhat similar to programming, only the code has already been written, and we only study which command turns memory on or off, which blocks increase motivation, under what conditions or operators all this works, etc. Probably not in vain people who study these processes for application in practice, to optimize their own code. So what does estradiol do to the brain?

Serotonin. Hormones like Testosterone, PH and Gonadoliberin cause the brain to create more dopamine, the main neurotransmitter of motivation? So, apparently, Estradiol is doing something similar to Serotonin. Receptors for estradiol in the brain and for serotonin are located on approximately the same neurons.

Estradiol increases the expression of tryptophan hydroxylase and the serotonin transporter, thereby increasing the synthesis of serotonin in the brain. Therefore, if a woman has a lack of estrogens, then serotonin may not be enough. And serotonin is exactly the neurotransmitter that does not allow you to fall into depression. In contrast, elevated estradiol levels make a person overly emotional, empathic and with mood swings, especially in men. If you are a man and began to notice that more often than usual watch sentimental films, tears come up and write to your ex - take a blood test at least for testosterone and estradiol, the latter will surely be above normal. Estradiol also works with 5HT-2A serotonin receptors, and this, by the way, is the main target of psychedelics. Therefore, a person with high estradiol, from the point of view of biochemistry, as if under psychedelics, as well as a person with high testosterone a priori pumps more dopamine and turns out a little under psychostimulants. Moderate sports and a normal percentage of fat increase testosterone in men and estradiol in women, which means sports provoke the production of potent substances!

Intelligence. It is known that the male and female brains work in the same way. It would be more accurate to say that gender differences are present in almost all parts of the brain. They're not too big, but they are. For example, a corpus callosum that binds 2 hemispheres of the brain slightly larger in women. This topic was periodically refuted, but it is the latest data that still show the differences. The callous body seems to bind the brain together and make it work together. In contrast, in studies in rats for spatial memory, when they needed to find a way out of the maze, females performed reliably worse at this task. Therefore, there are definitely differences between the sexes, somewhere a little better, somewhere worse. Current research is finding more and more evidence of hormonal effects on cognitive function. Increased testosterone rather subtracts, but gives a conditional kick to the butt. High estradiol, but within the framework of the norm is more useful for intelligence, reflection, memory, empathy, reassessment of situations, and to a lesser extent for decisiveness.

An interesting study was on 15-year-old girls. They were shown positive, negative and neutral pictures, an example of a negative one was some kind of spider on the shoulder. So scientists asked the participants to rethink the picture, suppress the negative. And the main thing

is to believe it! For a minute - this is the point work of the cerebral cortex. It turned out that those who succeeded easier - the dorsolateral prefrontal cortex worked better and had a direct connection with the level of estradiol in the blood. This may be a false correlation, but given that estradiol accurately changes behavior and partially nootrope based on the effects on the brain, it is not surprising that it can seem to activate some areas of the cortex and help thinking.

Conclusion:

1. Estradiol, in my opinion, is the smartest hormone, among its other effects on the sexual sphere, bone density, skin quality or cholesterol.

2. It boosts serotonin synthesis and improves brain function.

3. For women, usually the best condition of the body with estradiol above the middle of the norm. In principle, the situation, as with testosterone in men. In any case, low estradiol in almost everything will lose to higher in the framework of the norm. Of course, if there are no some oncologies, when estradiol should be reduced.

4. For men, the optimal estradiol level is in the region of 60-130 pmol/l (16-35 ng/l). And different sentimental effects will arise rather at 140 + pmol/L.

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