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**BASIC HORMONE GUIDE FOR WOMEN**

**What are hormones?**

They are chemical messengers produced by different glands in the body. The endocrine system is the hormonal system. So if you have hormonal abnormalities , you would see an ENDOCRINOLOGIST.

* The Pituitary gland which is considered the “Master gland” of the human body – controls almost all of the other glands in our body that are downstream from it. It is responsible for sending out hormones that stimulate other glands like thyroid, ovaries , testicles , and adrenal glands , so they produce their own hormones.
* FSH( Follicle stimulating hormone ) gets an ovarian egg ready to ovaluate
* LH ( Luteinizing hormone ) triggers ovaluation and development of the corpus luteum ( the lining of the uterus which can help support a baby or give you a period ) . LH is very important in the making of Progesterone.
* ACTH ( adrenocorticotropic hormone) and TSH ( thyroid stimulating hormone) signal the adrenal glands ( the glands on top of your kidneys) and thyroid gland (which is in front of your neck ) . The adrenal glands are responsible for producing hormones that enable us to respond to stress, maintain blood pressure and to extent to take over the ovaries once a woman goes into menopause. The adrenal glands make CORTISOL, DHEA and EPINEPHRINE/NOREPINEPHRINE and Aldosterone.

Cortisol ( the stress hormone) while levels up to 1.0 are considered normal, symptoms of high cortisol may be experienced at levels greater than 0.8 in some people. A higher night cortisol suggests some sort of adrenal stressor . Acute effects of high cortisol are usually associated with agitation -irribility , anxiety and sleep disturbance.

DHEA: When low shows low adrenal reserves. Low DHEA is often associated with low Testosterone. ( DHEA( anti aging hormone) is a testosterone and Estrogen precursor . Some symptoms of androgen deficiency can be :fatigue, depression, vaginal dryness, low libido , loss of muscle mass , bone loss and memory loses .Consider DHEA therapy if cortisol is within normal ranges.

Aldosterone: governs blood pressure. These levels are often tested when someone has unusually high blood pressure for no apparent reason .

* The thyroid gland produces hormones that regulate our mood period and metabolism. TSH that is made in the pituitary gland stimulate the thyroid gland. Two of the thyroid hormones that are produced is inactive T4 and T3. T3 is the ACTIVE thyroid hormones that our cells need. The inactive T4 needs to be converted to T3 . New studies are finding that the mean and median values of TSH should actually be 1.0- 1.5. TSH levels greater than 3.0 are now considered abnormal ( [www.aace.com](http://www.aace.com) ) Some experts believe that TSH should be kept below 2.0 for optimal health. Signs of hypothyroidism: fatigue, decreased stamina, depression, rheumatoid pain, sleep disturbance, cold extremities or feeling cold, brittle nails, dry coarse hair, hair loss, infertility, low libido , puffy eyes and face and decreased sweating, menorrhagia and/or constipation.
* SHBG: is a relative index of overall exposure to all forms of estrogens. As Estrogen levels increase, there is a proportional increase in hepatic production of SHBG. Thyroid hormone and insulin also play a role in regulating hepatic SHBG syntheses. Thyroid hormones synergize with estrogen to increase SHBG production, while insulin, in excess decreases SHBG. Therefore, in individuals with thyroid deficiency and insulin resistance, the SHBG is low.
* The Pineal gland, produces melatonin which is helps us have a normal sleep cycle.
* The pancreas secretes insulin. Insulin balances our blood sugar and storing fat in the body when we have enough energy.
* The ovaries, main source of production for estrogen, progesterone and testosterone prior to menopause .
  + Estradiol : Is one of the three types of Estrogen . Estradiol is the most important and abundant Estrogen during a woman’s reproductive years. Estradiol falls at menopause.
  + Testosterone: When increased in women, it could be due to endogenous production by ovaries or adrenal glands, androgen supplementation ( Testosterone, DHEA or exposure to someone who is using topical testosterone . Chronic androgen excess can manifest with loss of hair to scalp, increased facial/body hair, oily skin /hair and acne.

**What are possible symptoms of hormonal imbalances ?**

* MOOD SWINGS
* MUSCLE SIZE DECREASE
* NAILS( BREAKING OR WEAK)
* NERVOUS
* NIGHT SWEATS
* NUMBNESS TO FEET AND/OR HANDS
* PANIAC ATTACKS
* THINNING SKIN
* SLEEP DISTURBANCE
* STRESS
* SUGAR CRAVINGS
* DECREASED SWEATING
* SWELLING OR PUFFY EYES/FACE
* TEARFUL
* ELEVATED TRIGLYCERIDES
* INCREASED URINARY URGE
* UTERINE FIBROIDS
* VAGINAL DRYNESS
* WATER RETENTION
* WEIGHT GAIN TO HIPS
* WEIGHT GAIN TO WAIST

THE MENSTRUAL CYCLE :

Follicular phase starts on DAY 1 ( the first day you see blood from your period) . There is drop of estrogen and progesterone , which is what causes the body to shed the endometrial lining of the uterus. On DAY 2-3, FSH begins to rise so that the ovaries know that it is time to produce Estrogen.

On Day 8, Estrogen is high.

On Day 9 – 10, Testosterone is rising which elevates your libido.

On Day 12- 14 , the ovaries increase the estrogen production. Estrogen spikes, which stimulates the pituitary gland to release LH. This LH surge triggers ovulation and then egg is released. This is why it is the best time to have sex if you are trying to get pregnant or the best time to afford sex if you do not want to get pregnant. The ruptured follicle is left behind after ovaluation, which is called the Corpus Luteum, which we already know releases progesterone and estrogen to prepare the body for possible pregnancy. YOU MUST OVALUTE TO PRODUCE PROGESTERONE.

The luteal phase starts around day 15 through 28 ( depending on the length of your cycle) . Progesterone is the dominant hormone during this phase but there is still some estrogen around . The progesterone peaks about 5-7 after ovulation. This is why that is the best time to test progesterone levels . The hormones eventually drop if you are not pregnant and starts the menstrual cycle all over again.