Vasopressin

Testosterone

Thyroid

Melatonin

Aldosterone

Estrogen & Progesterone

Growth Hormone

Calcitonin

MSH

"Look after your hormones, they will look after you!"

IGF-1

Parathormone

DHEA & Androstenedione

Insulin

Cortisol & Glucocorticoids

Pregnenolone

Oxytocin

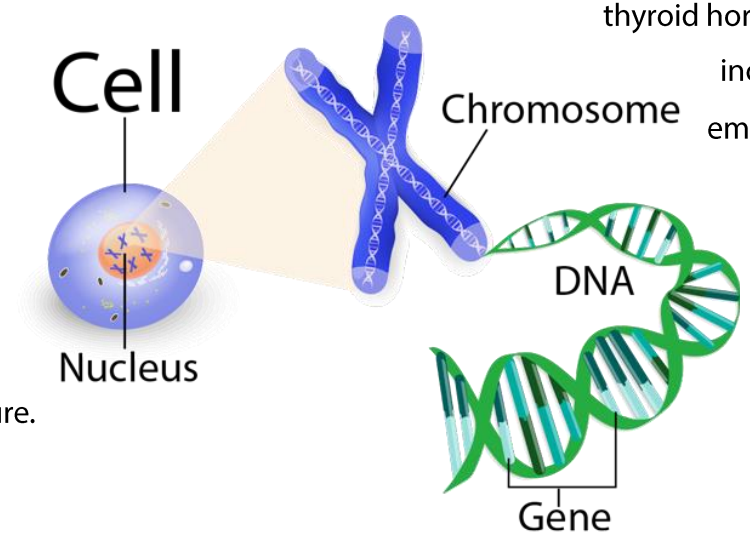
WHAT HORMONES MEAN TO YOU?

The body contains more than one hundred different types of hormones, and they pour into your bloodstream at the rate of thousands of billions units per day. Hormones regulate your heartbeat and your breathing. Hormones make men "men" and women "women". Hormones put you to sleep at night and wake you up in the morning. They control your blood pressure. They build bone, maintain muscle tone, and lubricate joints. Hormones govern growth. They make the body produce energy and heat. Hormones burn fat. Hormones govern the menstrual cycle and allow pregnancy (and birth) to occur. They fight stress, prevent fatigue, calm anxiety, and relieve depression. Hormones make and keep memories. Hormones maintain the correct level of sugar in the blood and tissues. They resist allergic reactions and infections. They soothe pain. Hormones control your sex drive, virility, and fertility. They stimulate your brain and your immune system.

Hormones are crucial to every single function of the human body.
No one can live without them.

WHAT HORMONES
MEAN TO YOU?

Hormones are made in the endocrine glands, then flow into the bloodstream and are carried to every part of the body to produce their varied effects. Hormones direct and coordinate the body's cells to ensure their proper functioning. From the blood they penetrate deeply into the cells, usually acting on the genes in the nucleus, unlocking a portion of the genetic code, accessing the information the cells need to do their jobs, including making hormones. Some, like the thyroid hormones, act on practically every cell of the body. Others act in a more focused manner, on just one or two organs, like aldosterone, which works in your kidneys to retain water and salt in your body, thereby maintaining blood pressure.



With hormonal deficiencies, the cells won't – can't – function as well. Total absence brings total disorganization. To take just one example, the complete absence of thyroid hormones would turn a human being into an unconscious organism, incapable of forming the simplest thought or feeling the most basic emotion. In a sense, we wouldn't even be human without hormones.

Hormone, "*to set life in motion*"

WHAT HORMONES MEAN TO YOU?

Brain: pregnenolone, DHEA, ACTH, etc.

Pituitary gland :
- **anterior:** growth hormone, ACTH, TSH, etc. ;
- **posterior:** vasopressin

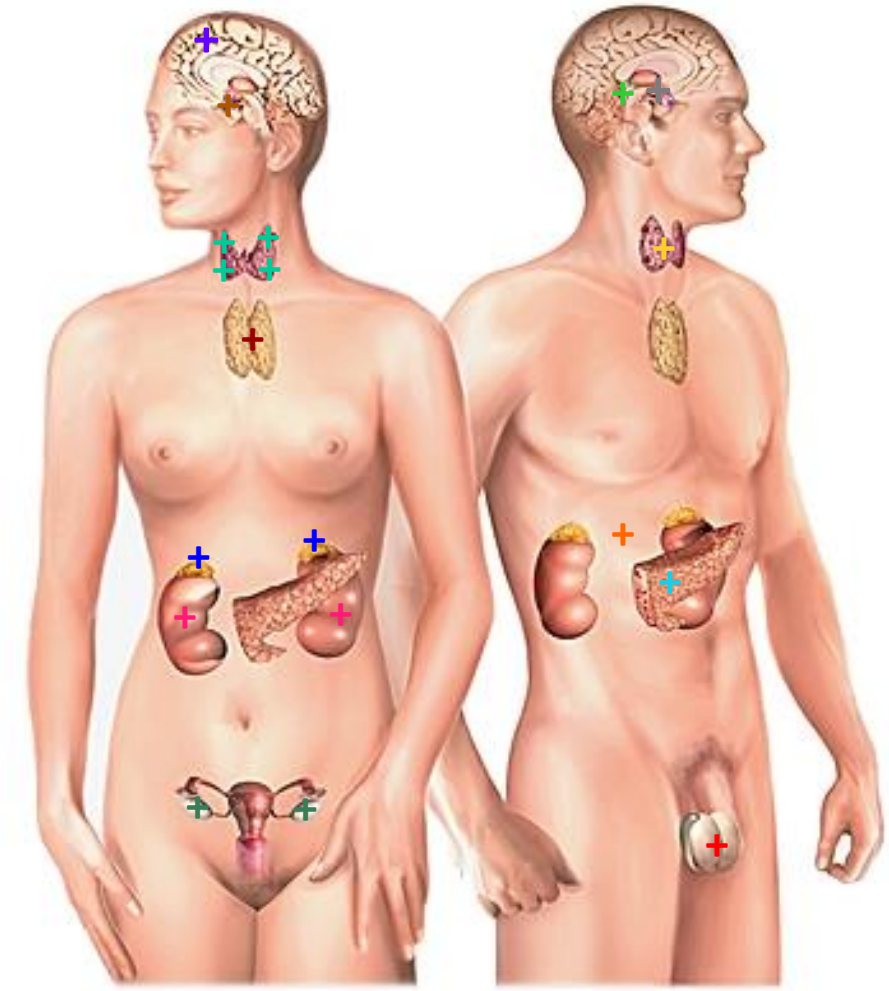
Parathyroid glands: parathormone

Thymus: thymosins

Adrenal glands: DHEA, cortisol, aldosterone, pregnenolone

Kidneys: EPO (erythropoietin); convert thyroid hormone T4 into the active T3

Ovaries (female): estrogens and progesterone; some androgens



Hypothalamus: vasopressin and oxytocin

Pineal gland: melatonin and epitalon

Thyroid gland: thyroid hormones, calcitonin

Liver : somatomedin C; converts thyroid hormone T4 into the active T3

Pancreas: insulin

Testicles (male): testosterone and dihydrotestosterone

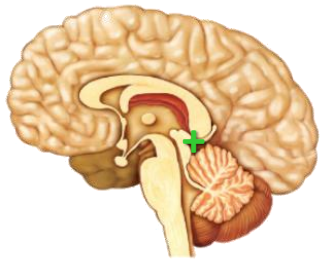
WHAT HORMONES
DO FOR YOU?

Melatonin induces sleep. It shortens the time to fall asleep, but has little to no effect on the deep sleep and rapid eye movement phases. It does induce at night a profound relaxation of muscles and nerves, which makes the sleep better. Melatonin acts as an antispasmodic for the intestinal tract, relaxing it when it is contracted and tense. It protects against free radicals by its antioxidant property, possibly slowing down the aging process and the appearance of various age-related diseases.

Melatonin helps in setting the pace of circadian rhythms such as the sleep-wake, temperature and hormone cycles. Its action on circadian rhythms is less powerful than that of sunlight and activity, but nevertheless significant enough to explain the beneficial effects of melatonin supplements against jetlag. Melatonin can increase the serum levels of growth hormone, and also of thyroid hormone T3. Furthermore, it calms down excessive cortisol activity.

Last but not least, melatonin may help pregnancy by boosting female hormone production, a paradoxical effect, as it tends to suppress female hormone production in the non-pregnant state.

WANTED!



Name: Melatonin

Origin: Pineal Gland

Daily production: 30-100 µg

Features: the highest levels of melatonin are observed at night and are due to an intensive production by the pineal gland during sleep. Its lowest levels are found during the day: one third to one sixth of night-time levels. They are mainly due to melatonin secretion by the intestinal tract.

Signs of Melatonin Deficiency

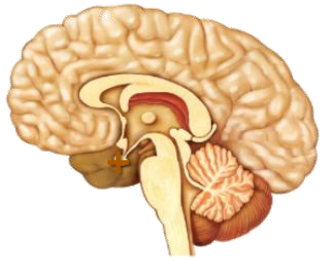
Agitation, restless leg syndrome at night, tense muscles, premature aging in adults, etc.

WHAT HORMONES
DO FOR YOU?

Growth Hormone (GH) is a major hormone with predominant roles. First, GH is a major anabolic hormone that powerfully builds the body and is responsible for a great part of the growth that takes place during childhood and puberty. GH increases the size and volume of the brain, skin, hair, muscles, bones and internal organs. Without growth hormones, we would be all dwarfs! In adults, growth hormones substantially help to maintain the appropriate volume and tone of the skin, muscle and bone. A decrease in growth hormone production causes an acceleration of the aging process: our skin, muscle and tissues begin to atrophy and sag, wrinkles and fat begin to replace our once smooth skin and muscles.

Second, GH increases the function, repair and health of muscles, heart, lungs, liver, kidneys, joints, nerves and the brain. GH's mental and emotional impact is substantial because GH stimulates the parasympathetic nerves, which contain many mood-calming neurons. Thanks to this effect many patients on GH treatment report feeling calmer, experiencing feelings of inner peace and a clear increase in the overall quality of life and ability to concentrate and cope with stress. Via these mechanisms, GH may relieve depression, anxiety and nervousness.

WANTED!



Name: Growth Hormone

Origin: Pituitary Gland

Daily production: 350 µg

Features: by far, the highest GH levels in the blood are found during the first three to four hours of sleep at night. During the day, no detectable blood GH levels are found in men, except three to five small bursts of GH. In contrast, women generally have a low but detectable and relatively constant baseline of GH level throughout the day.

Signs of GH Deficiency

Short stature, sparse thin hair, droopy eyelids, thin fingers, obesity, sagging cheeks, etc.

WHAT HORMONES

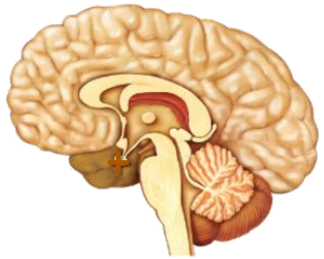
DO FOR YOU?

Melanocyte-stimulating hormone (MSH) is a peptide hormone that is derived from a bigger molecule called proopiomelanocortin. Proopiomelanocortin is a precursor molecule made in the pituitary gland that splits into alpha-, beta- and gamma-melanocyte-stimulating hormone, ACTH and beta endorphins. Alpha-melanocyte-stimulating hormone is the most abundant MSH hormone in our blood and the most active MSH for skin pigmentation. MSH deficiency is often found in patients with deficiencies in other proopiomelanocortin-derived molecules such as ACTH (ACTH deficiency causes adrenal cortex deficiency) or beta endorphin (beta-endorphin deficits increase pain sensitivity and lower mood), or in individuals whose protein intake is deficient (causing the depletion of amino acids necessary to produce peptides such as MSH).

MSH has many major beneficial actions:

+ MSH protects the skin against sunburn and melanoma
+ MSH may protect hair against graying
+ MSH reduces appetite
+ MSH reduces inflation
+ Etc.

WANTED!



Name: Melanocyte-stimulating hormone

Origin: Pituitary Gland

Daily production: 50 µg

Features: The levels of MSH decrease with age. In human, serum levels have been found to be significantly lower in healthy elderly patients compared to young adults. In rats, MSH has been shown to decline in brain tissues, but not in the serum.

Signs of MSH Deficiency

Low(er) sexual arousal, low(er) skin sensitivity to sexual caress, prone to weight gain, flat hair, white skin, etc.

WHAT HORMONES
DO FOR YOU?

Oxytocin has many roles.

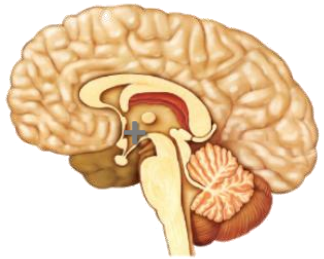
Psychosocial effects:

+ Oxytocin stimulates sociability, friendliness and deeper bonds between people more than any other hormone.
+ It may improve the mood, making people smile more in the presence of others.
+ Oxytocin reduces anxiety, especially for social encounters.

Physical effects:

+ Oxytocin can prevent ischemia by dilating the diameter of arteries, including the coronary arteries of the heart.
+ By the same vasodilatory effect, oxytocin can lower the blood pressure.
+ Oxytocin may speed up wound healing, possibly by increasing blood supply to the wound thanks to its vasodilatory effects.
+ Oxytocin increases pleasure at orgasm.
+ Oxytocin may relax muscles and reduce pain, beneficial effects that may be of considerable help to patients with fibromyalgia.
+ Etc.

WANTED!



Name: Oxytocin

Origin: Hypothalamus

Daily production: 1-2 IU

Features: Factors that increase oxytocin levels are physical contact, hugging, massage, noise, reading, singing physical activity, sexual contacts, cohabitation and eating.

Signs of Oxytocin Deficiency

Paleness, no or poor emotional manifestations, excess pain sensitivity, excessively (emotionally) detached from others, irritability, etc.

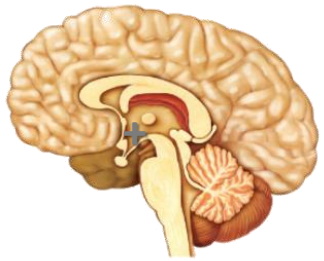
WHAT HORMONES DO FOR YOU?

Vasopressin's major role is to keep water in the body. Two thirds of the human body is made of water and vasopressin is the most potent hormone to keep water inside the body. To achieve this, vasopressin blocks water excretion in the kidneys in a different way than aldosterone does. Aldosterone keeps water in the body indirectly through sodium retention, which attracts water by osmotic forces), while vasopressin makes the kidneys directly retain water, without retaining sodium.

In case of bleeding (hemorrhages), vasopressin also helps to keep blood inside the capillaries and blood vessels, preventing any excessive blood loss, a property that is life-saving in surgery and physical trauma.

Finally, vasopressin improves memory and in particular learning. People with vasopressin deficiency are forgetful.

WANTED!



Name: Vasopressin

Origin: Hypothalamus

Daily production: 100-150 µg

Features: vasopressin production is increased during physical activity, in stress situations, with high-protein diets and decreases with age. The excretion of vasopressin decreases with age, while target cells become less responsive for vasopressin.

Signs of Vasopressin Deficiency

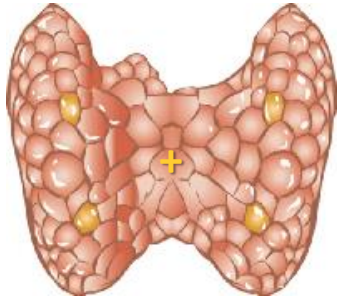
Exaggerated thirst, urgent need to quickly run to the bathroom after drinking, difficult learning at school, etc.

WHAT HORMONES
DO FOR YOU?

Thyroid hormones (thyroxine (T4) and triiodothyronine (T3)) increase blood flow, heart rate, heat production, metabolism, energy production and consumption, speed of thinking, intestinal motility, thirst, urination, HDL (good) cholesterol, immune defenses against various infections and cancer, and many other functions.

Also, thyroid hormones beneficially decrease total and LDL (bad) cholesterol, diastolic blood pressure, the amount of "myxedema" , the edema consisting of mucous waste products outside the cells that are typical of thyroid deficiency, and accelerate the elimination of old defective enzymes and other waste products inside the cells.

WANTED!



Name: Thyroid Hormones

Origin: Thyroid Gland

Daily production:

- T4: 80-100 µg
- T3: 20 µg

Features: Eating high calorie diets, fruits and vegetables can increase thyroid activity. Eating sugar does too, although transitorily, an effect that perhaps explains why certain people like eating sugar.

Signs of Thyroid Deficiency

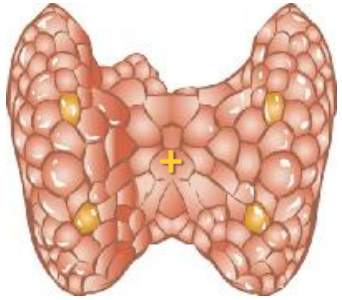
Obesity, prone to an ear, nose, and/or throat infection, morning fatigue, intolerance to cold, easily shivers, etc.

WHAT HORMONES

DO FOR YOU?

Calcitonin, the hormone made by the C-cells of the thyroid gland, helps prevent osteoporosis. It reduces bone resorption by inhibiting the bone-resorbing osteoclasts and increases bone density.

WANTED!



Name: Calcitonin

Origin: Thyroid Gland

Daily production: unknown

Features: Eating plenty of protein and taking calcium supplements greatly improves the anabolic effects of calcitonin on the bone. Likewise, malnutrition deprives calcitonin of essential building material to exert its anabolic bone effects and should therefore be avoided.

Signs of Calcitonin Deficiency

Thyroid gland atrophy at palpation, slow appearance, increased pain sensitivity (especially for back pain), etc.

WHAT HORMONES

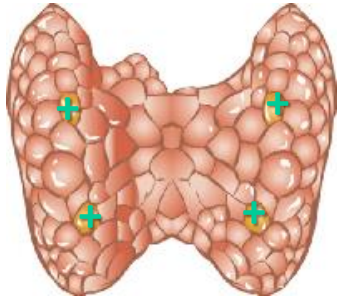
DO FOR YOU?

Parathormone's major role is to maintain constant calcium levels in the blood. As soon as the calcium level decreases in the serum, the level of parathormone increases in the serum to correct the situation. When the serum calcium level increases, the level of parathormone decreases to permit the calcium level to gradually lower and normalize.

By keeping the calcium levels constant in the blood, parathormone exerts two major roles:

1. It keeps nerves and muscles (including cardiac muscles) relaxed and well-functioning.
2. It helps prevent or reverse osteoporosis.

WANTED!



Name: Parathormone

Origin: Parathyroid Glands

Daily production: 20 -60 µg*

Features: The consumption of food rich in calcium such as fruits, vegetables and seafood, usually increases calcium intake and absorption and thereby boosts the anabolic action of parathormone on the bone. Most food helps as almost all of them have calcium.

Signs of Parathormone Deficiency

Dorsalgia, soft, painful bones, proneness to spontaneous or pathological fractures, fibromyalgia, spasmophilia, etc.

**Estimated*

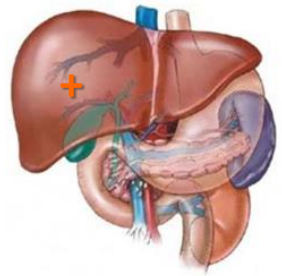
WHAT HORMONES
DO FOR YOU?

Insulin-like-growth-factor 1 or **IGF-1**, also called **somatomedin C**, belongs to a class of growth-promoting hormones that are sensitive to the action of growth hormones. IGF-1 or somatomedin C is the major one and its production is strongly influenced by growth hormones. In the blood, slightly more than two thirds of IGF-1 circulates bound to a plasma protein called IGFBP-3 (insulin-like growth factor-binding protein). Another IGF's include IGF-2 (somatomedin A).

IGF-1 is a major anabolic hormone that builds the body. It provides volume and size to bones, muscles, internal organs, skin and nails. IGF-1 is responsible for a great part of growth, not only during childhood and puberty, but also before birth. In the uterus, the presence of IGF-1 is essential for proper growth of the fetus, in contrast with growth hormones, which is not in utero necessary for prenatal growth.

IGF-1 may also improve and even reverse a (great) part of the atrophy and sagging profile of the body, as well as the wrinkles, thinning of skin and excess fat that appears with age. It maintains people in good health, and improves or may even repair the function of muscles and inner organs such as the heart, lungs, liver, kidneys, joints, nerves and brain. It may provide greater benefits than growth hormones on the mind and emotions such as greater inner peace, self-assurance and self-confidence, leadership, capacity to solve problems and confront stressful conditions.

WANTED!



Name: IGF-1

Origin: Liver

Daily production: 500 -1000 µg

Features: The serum level of IGF-1 is relatively stable and does not show the great variations in concentration as growth hormones. Women have on average a 20% lower level of IGF-1 than men. Men have higher levels of IGF-1 thanks to their 20 times higher level of testosterone which boosts the secretion of GH, the main stimulant of IGF-1 production.

Signs of IGF-1 Deficiency

Dwarf (prenatal and childhood), bowed back, atrophy of the hands and feet, fat, droopy abdomen, nails with longitudinal lines, etc.

WHAT HORMONES
DO FOR YOU?

Cortisol keeps us alive thanks to three essential and powerful properties. It increases both blood sugar (and thus energy levels) and blood pressure, and neutralizes inflammation. The beneficial effects of cortisol such as mood enhancements, dynamism, work capacity, stress resistance, stimulation of the immune defenses, antirheumatic action, anti-pain action and many others, rely on these fundamental functions. Another action of cortisol is to calm down any excessive activity of the sympathetic nervous system that produces adrenaline, the stimulating neurotransmitter. This explains why a person lacking cortisol often has high levels of adrenaline. As they miss the energy and mood calming action brought by cortisol, they tend to compensate by making more adrenaline, regularly exploding in emotional outbursts.

WANTED!

Name: Cortisol

Origin: Adrenal glands

Daily production:

+ **Women:** 15-25 mg
+ **Men:** 25-35 mg

Features: Appropriate stimulators of cortisol secretion during the day are activity, standing, stress, emotions, and bright sunlight, especially in the morning. At night, melatonin and growth hormones are mainly secreted and reduce cortisol levels, thereby helping individuals to sleep better.

Signs of Cortisol Deficiency

Thinner body, confusion, poor resistance to stress, irritability, feeling of being a victim, fatigue, negativism, etc.

WHAT HORMONES
DO FOR YOU?

Most actions of **DHEA** are achieved after conversion into more potent hormones such as male and female sex hormones, including **androstenedione**. These conversions take place mainly inside target cells and not in the blood.

Many of the effects of DHEA and androstenedione are similar. DHEA's main actions are through conversion into more potent hormones. Through these other hormones DHEA expresses typical male and female hormone activities, as well as enhances the immune system. One of the ways it reinforces immunity is by converting into the very immune-enhancing androstenediol and androstenetriol.

Also, DHEA appears to have actions of its own, probably through DHEA receptors in target cells, in particular endothelium cells of blood vessels and immune cells as suggested in several studies. It is believed that DHEA boosts the immune system and protects blood vessels against atherosclerosis partially by binding to these receptors.

WANTED!

Name: DHEA

Origin: Adrenal glands

Daily production:

+ **Women:** 20 mg*
+ **Men:** 30 mg*

Features: Intense emotional stress may increase DHEA by increased secretion of ACTH (which increases secretion of all adrenal cortex hormones). Food high in protein or saturated fat increase DHEA production; sugar, sweets and cereals rich in fiber reduces DHEA levels.

Signs of DHEA Deficiency

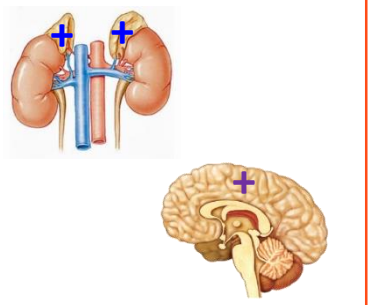
Hairy, dry eyes, poor muscle development, etc.

**Under sedentary conditions*

WHAT HORMONES
DO FOR YOU?

In addition to its role in hormone production, **pregnenolone** functions as a neurotransmitter in the nervous system, particularly in the area of the brain responsible for memory. Pregnenolone has been shown to improve memory in animal experiments, and there is anecdotal evidence of this in humans. About 50% of patients, who take more than 50mg per day of pregnenolone, report satisfying improvement in memory. In fact, among anti-aging experts, memory loss has become the most frequent indication for pregnenolone treatments. Moreover, pregnenolone helps repair traumatic nerve lesions as reported in animal experiments, even in some cases improving paralysis. In humans, antirheumatic effects of pregnenolone were observed at high doses (500mg a day) in a study done more than 50 years ago. The effect of pregnenolone is stronger in rheumatic patients who were young, had mild joint pain and only moderate disability.

WANTED!



Name: Pregnenolone

Origin: Adrenal glands & Brain

Daily production: 5-10 mg*

Features: Pregnenolone is produced by the adrenal glands and the brain. In the brain tissues, concentrations of pregnenolone are very high, several times greater than in the blood. Pregnenolone secretion may be increased by eating meat, poultry, butter, and other sources of protein and saturated fat.

Signs of Pregnenolone Deficiency

Poor memory, moderate fatigue, dry skin, low libido, deficient muscle mass, vaginal dryness, anger and anxiety peaks, etc.

**Estimated*

WHAT HORMONES

DO FOR YOU?

Aldosterone's major role is to keep water in the body and the blood pressure up during the day. To achieve this, aldosterone makes the kidneys retain sodium, and thus water by osmosis, thereby filling the blood vessels and tissues up with more fluid. At the same time, aldosterone makes the kidneys secrete a supplementary amount of potassium, the antagonistic ion to sodium, to increase further sodium's water-retaining action.

WANTED!

Name: Aldosterone

Origin: Adrenal glands

Daily production: 150 µg

Features: Aldosterone production is increased with physical activity, by standing up, stress, low salt intake, increased salt losses (caused by sweating or a diuretic), high protein and saturated fat diets. The excretion of aldosterone in the 24-hour urine during a normally salted diet declines by about 20% in elderly persons, aged 70-80, compared to young adults.

Signs of Aldosterone Deficiency

Childhood: exaggerated thirst, need to quickly run to the bathroom after drinking, dizziness, absent-mindedness, distraction at school, etc.

WHAT HORMONES
DO FOR YOU?

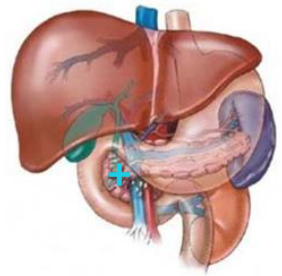
Insulin has three major roles:

1. Energy supply to the body's cells: insulin makes glucose, the major energy nutrient for the cells, penetrate inside the cells. Glucose cannot penetrate into the cells without insulin. Deprived of insulin, a patient's cells lack glucose, the potent energy nutrient, and the level of glucose in the blood or glycaemia increases to very high levels, forming a glue that slows down the passage of nutrients and oxygen to the cells, causing diabetes mellitus type 1 or insulin-dependent diabetes. When cells are totally deprived of sugar, the patient falls into a coma and dies after several days with their blood full of sugar. By bringing the sugar inside the cells, insulin quickly reduces the levels of glucose in the serum in the first minutes after its secretion.

2. Maintenance and development of muscles and other lean tissue: insulin is one of the most powerful anabolic hormones, equal in efficacy to growth hormones. One of the major mechanisms of its anabolic action is an increase in intestinal absorption of amino acids and other nutrients necessary for muscle development.

3. Maintenance and development of fat: insulin tends to increase fat mass, contrary to the growth hormones, which reduces the fat. Depending on a person's body weight, insulin will favor muscle development upon fat mass development or the opposite.

WANTED!



Name: Insulin

Origin: Pancreas

Daily production: 50 to 100 IU*

Features: Insulin levels increase in the serum with meals and in particular after the ingestion of carbohydrate-rich foods. The half-life of insulin in the serum is approximately ten minutes, a time which is longer than the time necessary to transport glucose inside the cells. The persistence of higher insulin levels in the blood, after ingestion of sugar-rich foods, produces hypoglycemia.

Signs of Insulin Deficiency (Type 1 Diabetes)

Dehydration, sleepiness, gangrene and poor wound healing, emaciated face, hypertrophy, etc.

**in normal healthy adults depending on the size of a person and the type of meal he consumes.*

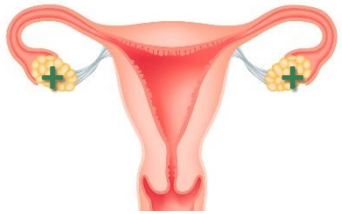
WHAT HORMONES DO FOR YOU?

Estrogen and **progesterone**'s antagonistic roles:

While estrogens make the body retain fluid and cause swelling (especially of the breasts and abdomen), progesterone acts as a diuretic. It blocks excessive swelling in two ways: firstly, by reducing the amount of estrogen receptors in the body (especially in the breasts and uterus), and secondly, by blocking the receptors for a major water retaining hormones, namely aldosterone.

While estrogens may increase menstrual blood loss by stimulating the proliferation of uterine endometrium, progesterone stops endometrial proliferation, limiting menstrual blood loss. Estrogens also stimulate the sympathetic nervous system and in this way increase alertness, but if uncontrolled and unopposed by progesterone they can make a woman very nervous. On the other hand, progesterone calms down the emotions and mood by stimulating the parasympathetic nervous system.

WANTED!



Name: Estrogen

Origin: Ovaries

Daily production: Estradiol: 60-200 µg*

Features: Intensive prolonged physical activity, such as sexual intercourse and long-distance running, use up the sex sex hormones and may thereby reduce the levels of the female hormone. Intense emotional stress can inhibit the secretion of estrogens and progesterone.

Signs of Estrogen Deficiency

Breast ptosis, irregular menstrual cycles, lowered fertility, hot flushes with excessive night sweats, hypo- or amenorrhea, etc.

**in young (18-30 years old), healthy women , depending on the phase of the menstrual cycle.*

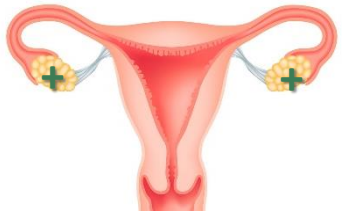
WHAT HORMONES DO FOR YOU?

Estrogen and **progesterone** have complementary effects:

+ Estrogens, estradiol in particular, "feminize" the body. They shape the female body, enlarge breasts and pelvis, redden the skin (by increasing blood supply to the skin), cause proliferation of the endometrium in the uterus and thus make menstruation possible. The quick drop of the level of estrogen at the end of the menstrual cycle causes the period to start. Also, estradiol is responsible for vaginal lubrication, a healthy libido, the female voice, and initiating ovulation. Estriol's effects are more limited; its main known role is to thicken and humidify the mucous membranes of the vagina, bladder and eyes, making them resistant to infection, but it has very little effect on the endometrium of the uterus.

+ Progesterone role is to prepare the uterus for implantation of a fertilized egg cell. It plays an essential role in pregnancy. One of the most important roles is the transformation of the proliferative endometrium of the first (follicular) phase of the menstrual cycle into a secretory one during the second (luteal) phase where the serum progesterone level is high. The changing of the phases prepares the uterus for implantation of a fertilized egg cell. Progesterone also closes the uterine cervix during the luteal phase and pregnancy, so that the fertilized egg cell and later fetus remain inside the uterus for the time of the pregnancy.

WANTED!



Name: Progesterone

Origin: Ovaries

Daily production: 1 to 2 mg*

Features: Eating foods high in protein or saturated fat increases estrogen and progesterone production, but eating sugar, and fiber (e.g., cereals rich in fiber, whole grain breads, bran flakes) can reduce female sex hormone levels.

Signs of Progesterone Deficiency

Breast cysts, ovarian cysts, uterine fibroids, premenstrual tension with breast tenderness and swollen breasts, etc.

**in the 1st half of the menstrual cycle where it is almost entirely produced by the adrenal glands and 20-40 milligrams per day in the 2nd half of the menstrual cycle.*

WHAT HORMONES DO FOR YOU?

In men, **progesterone** has not been as thoroughly studied as in women. Possible roles are:

1. Progesterone holds the serum level of estradiol low and may thereby minimize the risk or severity of myocardial infarction, benign prostate hyperplasia, and possibly prostate cancer favored by estradiol excess. Progesterone also keeps dihydrotestosterone (DHT) at a lower level, possibly preventing or attenuating male pattern baldness, favored by DHT excess.
2. Progesterone serves as substrate for the production of important hormones: adrenal hormones such as cortisol and cortisone, and androgens such as androstenedione and testosterone (but not DHEA). Therefore, progesterone deficiency is often accompanied by deficiencies in cortisol and androgens.
3. Progesterone partially blocks aldosterone receptors and therefore may prevent excessive fluid retention and possible high blood pressure caused by high levels of aldosterone production.
4. Progesterone calms down nerves and muscles thanks to its conversion in the body to the sleep-inducing and relaxing metabolites, pregnanolone and allo-pregnanolone. This is especially helpful for men who are tense or anxious.
5. Progesterone stimulates spermatozoid motility and may be important for male fertility.

WANTED!

Name: Progesterone

Origin: Adrenal glands

Daily production: 1.5 - 3 mg*

Features: One key way to increase progesterone production is to eat a diet rich in protein and cholesterol which is a precursor to progesterone synthesis.

Signs* of Progesterone Deficiency (Men)

Anxiety, lack of inner peace, reduced urine flow, enlarged breasts (gynecomastia), hard and enlarged prostate, etc.

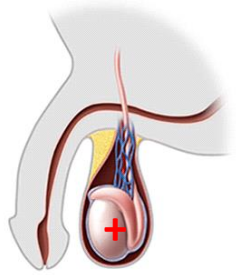
**Suggestive signs and complaints*

WHAT HORMONES
DO FOR YOU?

Testosterone (men) performs many roles, some of which are listed below:

1. It safeguards the cardiovascular system: testosterone makes the heart beat stronger, widens the lumen of the coronary arteries, increasing the blood supply to the heart; it reduces serum cholesterol and minimizes atherosclerosis; testosterone reduces high blood pressure by vasodilatation and makes blood more fluid by increasing the fibrinolytic activity of the blood, the capacity to oppose a blood clot formation and dissolve blood clots.
2. It protects against obesity and diabetes and decreases the severity and incidence of these diseases by reducing fat mass and increasing lean muscle mass, and by increasing the efficacy of insulin to make glucose penetrate into the brain, the muscles, the heart and other lean tissue targets.
3. It develops and maintains reproductive health: penis (size, sexual potency), prostate, body hair, testicles (blood supply, sperm count, fertility).
4. It supports the brain and nerves by increasing the blood supply and the number of connections between neurons.
5. It sustains the bones (density and strength), the muscles (mass and strength) and skin (blood supply, sebum secretion).

WANTED!



Name: Testosterone

Origin: Testicles

Daily production: 7 mg

Features: Intense physical activity such as frequent sexual intercourse, long-distance running, and other strenuous activities, "burns" greater amounts of testosterone and can thereby deeply deplete androgen levels. Intense emotional stress blocks the release of LH, and thus testosterone secretion as LH is the main endogenous stimulator of this production.

Signs of Testosterone Deficiency

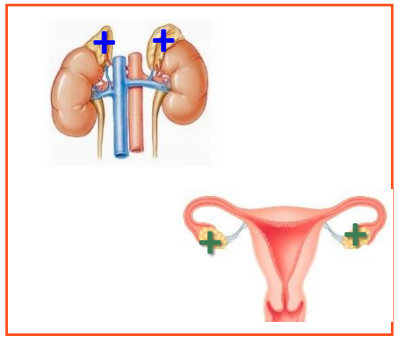
Abdominal obesity, aging appearance, persistent fatigue that increases with physical activity, hot flushes, etc.

WHAT HORMONES DO FOR YOU?

Testosterone performs the following important roles in women:

1. Improvement of mood and assertiveness, reduction of depression and anxiety.
2. Improvement of bone density, muscle size and strength, and skin sebum secretion.
3. Enhancement of sex drive and sexual sensitivity, including orgasm.
4. Maintenance of the female genital system: nipples, labia majora (vulva lips) and in particular the clitoris (size, sensitivity), female body hair pattern.
5. Possible protection against atherosclerosis. In two studies higher levels of testosterone in women (DHEA and androstenedione also) were found to be significantly associated with thinner intima media of the carotid arteries, which lowers the risk of atherosclerosis.

WANTED!



Name: Testosterone

Origin: Adrenal glands, Ovaries, DHEA & androstenedione

Daily production: 350 µg*

Features: Intense physical activity make the body consume high amounts of testosterone, thereby depleting androgen levels. Moreover, intense emotional stress inhibits the release of LH, and thus testosterone secretion. Foods high in protein or saturated fat increase testosterone production.

Signs of Testosterone Deficiency (Women)

Depression the whole day long, excessive anxiety, fears, hysterical reactions, decreased libido, etc.

** in young healthy women*

WHAT CAN WE

DO FOR YOU?

If you have or know anyone victim of a suspected hormonal deficiency/excess, please, contact Dr. Hertoghe's team:

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www.hertoghemedicalschool.eu/