

From Hypothyroidism to Menopause: Ending The Confusion

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What is a hormone?

- Cholesterol – source of all the hormones.
- Hormones play many roles in health and maintenance of body
 - a) Metabolism of carbohydrates, fats, minerals, proteins, water
 - b) Regulate DNA and RNA production
 - c) Regulate body’s response to stress, kidney function, blood sugar balance, menstruation and sexual function
- As we age hormone production in body declines.

Hormonal imbalances

- Hormonal imbalances compromise not only physical health but also psychological health.
- Our body compensates for imbalances by overproducing key hormones and by converting sex hormones to stress hormones.

Several causes of hormonal imbalance:

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| <ul style="list-style-type: none"> • Nutritional deficiencies • Lack of exercise • Exposure to toxins • STRESS! • Physiological endocrine disorders • Sleep disorders | <ul style="list-style-type: none"> • Exposure to EMF • Lack of sunlight • Hypothyroidism • Insulin resistance • OTC and prescription medications |
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ENDOCRINE SYSTEM

- The endocrine system regulates the body's major continuous and prolonged processes
 - a) Reproduction
 - b) Growth and development
 - c) Cellular metabolism and energy
 - d) Blood balance of nutrients
 - e) Electrolytes and water
 - f) Mobilization of body defenses against stressors

Endocrine system is made up of eight different glands located throughout the body:

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| <ul style="list-style-type: none"> • Hypothalamus • Pineal gland • Pituitary gland • Thyroid gland | <ul style="list-style-type: none"> • Parathyroid • Adrenal glands • Pancreas • Gonads (Ovary / Testis) |
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THYROID

- The thyroid is a gland situated on the front of the neck, just below the skin
- Acts as body's metabolic thermostat controlling body temperature, energy use, and in children the body's growth rate.
- Has 4 hormones, but main hormones released are T3 and T4.
- Formation and secretion of T3 and T4 regulated by TSH (Thyrotropin secreting hormone).

ADRENAL

- Adrenal glands located on top of both kidneys.
- An adrenal gland is made of two parts: the outer region is called the adrenal cortex and the inner region is called the adrenal medulla. The adrenal cortex, the outer portion of the adrenal gland, secretes hormones that have an effect on the body's metabolism, on chemicals in the blood, and on certain body characteristics. The adrenal medulla, the inner part of the adrenal gland, is not essential to life, but helps a person in coping with physical and emotional stress.

Cortisol Functions:

Cortisol is a steroid hormone made in the adrenal glands. Cortisol secretion increases in response to any stress in the body, whether physical (such as illness, trauma, surgery or temperature extremes) or psychological pressures, (such as relationship problems, unemployment, etc.).

- Vasoconstriction – regulation of blood pressure
- Stimulates liver to convert amino acids to glucose in liver
- Counteracts inflammation and allergies
- Modulates immune function
- Maintains resistance to stress (physical overload, temperature extremes, emotional traumas)
- Cortisol has a direct impact on the sex hormones estrogen, progesterone, and DHEA

OVARIES

Estrogen

- Estrogen – three types:
 - a) Estrone (10%) – produced from estradiol.
 - b) Estradiol (80%) – produced directly in the ovaries.
 - c) Estriol (10%) – produced in large amounts during pregnancy and helps to prevent breast cancer.
- Peak is days 1-14 of the women's menstrual cycle

Functions of Estrogen:

- a) Helps as anti-aging agent
- b) Helps to slow down bone loss, thus helping to prevent osteoporosis
- c) Improves skin tone
- d) Reduces vaginal dryness

What can affect estrogen levels:

- a) Birth control pills
- b) Diets high in sugars and refined starches
- c) Soy products are also estrogenic

- d) Mercury, plastics, carcinogenic pesticides, herbicides, insecticides (all called xenoestrogens) contribute to estrogen imbalance.
- e) Liver damage from toxins, alcohol and thus, increase in estrogen. Those with chronic constipation interferes with body's ability to eliminate estrogen properly. Estrogen builds up in the colon and can be reabsorbed by the body.
- f) Estrogen can also be synthesized from fat tissue.

Signs of estrogen excess:

- a) Salt and fluid retention
- b) Blood clotting
- c) Development of fibroids/tumors and endometriosis.

Signs of estrogen deficiency

- a) Hot flashes
- b) Night sweats
- c) Dry eyes
- d) Vaginal dryness
- e) Sagging breasts and loss of breast fullness
- f) Mental foginess
- g) Depression
- h) Changes in mood
- i) Decreased sense of sensuality and sexuality

Ways to keep estrogen in balance

- a) Diet: balanced healthy diet.
- b) Keep thyroid function optimal
- c) Use natural progesterone
- d) Herbs

Progesterone

- The first hormone that starts to decrease as women age is progesterone as women approach menopause.

Functions:

- Prepares uterus for fertilized egg.
- Helps with thyroid function
- Acts as a precursor to most steroid functions (except those of estrogen and testosterone).
- Taken at night, can promote restful sleep and restore normal sleep patterns.
- Acts as a natural diuretic
- Helps use fat for energy
- Is a natural anti-depressant
- Normalizes blood clotting
- Helps with bone health
- Promotes healthy skin through its moisturizing effect
- Helps prevent fibrocystic breast disease. Protects against cancer of the breast, ovaries and uterus.

Progesterone:

- Peak is days 14-24 and then drops. This sudden drop in progesterone causes uterus to shed its lining if pregnancy has not occurred.

- The lower the ratio of progesterone to estrogen, the higher the risk of health problems, especially during menses.
- Progesterone deficiency can occur even in the teens.

Other facts about progesterone

- Has unique ability to change its structural form to become other hormones, allowing it to be converted and utilized by the body to the point of depletion.
- One of progesterone's capability is to convert to the adrenal stress hormone called cortisol.
- Primary problem with progesterone is not dosage but metabolic clearance.

Testosterone

Functions:

- It is an anti-aging hormone. Known as an anabolic hormone
- Not just for defining sexual characteristics or for sex drive.
- Helps to regulate basic metabolism
- Stimulate RBC production
- Hinder excessive production of free radicals
- Facilitates protein synthesis and the building of body tissues

Facts:

- Made in testicles in men and to a small extent made in the ovaries in women and also made in the adrenals.
- With age, blood levels testosterone slowly decrease.

High levels testosterone associated with:

- Balding (due to conversion of testosterone to DHT)
- Overly aggressive behavior
- Thick blood.

Nutritional factors affecting testosterone levels:

- High levels of fat, low fiber intake
- Processed foods, red meats
- Preservatives, refined sugar
- Excessive consumption of alcohol
- Smoking
- Stress!!! Over a long period of time, can cause testosterone to be converted to the stress hormone DHEA and in some cases converted to estrogen.

Other factors affecting testosterone levels:

- Xenoestrogens (primarily pesticides – DDT, PCB's, dioxin).
- Heavy metals

CONDITIONS

Hypothyroidism

- Hypothyroidism often goes undiagnosed. According American Association of Clinical Endocrinologists at least 6 million Americans suffer from hypothyroidism

Causes of Hypothyroidism:

- Hashimoto's Disease or Thyroiditis (one of the most common forms of hypothyroidism, an auto-immune disease of the thyroid gland)
- Hypothyroidism caused by a sluggish thyroid gland or thyroid gland inflammation
- Hypothyroidism caused by surgery or medication (e.g. prednisone, birth control pills)
- Environment – pollution, radiation, fluoride in water and toothpaste, mercury from silver amalgam dental fillings, cigarette smoke, chlorinated compounds
- Diet:
 - a) Genetically engineered hormones in meat, dairy products, poultry, eggs – blocks release of thyroid hormones.
 - b) Excess iodine – it is a powerful thyroid inhibitor
 - c) Raw cruciferous vegetables (cabbage, broccoli, cauliflower) contain thyroid inhibitors. Lightly steaming them neutralizes it
 - d) Liver – contains thyroid inhibitors
- Stress – hormones released by stress are adrenaline and cortisol. They interfere with the body's ability to make active thyroid hormones.
- Dietary excesses or insufficiencies
- Chronic infection

Symptoms of hypothyroidismClassic Symptoms:

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| • Sluggishness | • Constipation |
| • Fatigue | • Dry skin |
| • Cold extremities | • Hair loss |
| • Lowered basal temperature | • Depression |
| • Menstrual problems, including scanty periods. | |

Other signs of hypothyroidism:

- Cravings for sweets, weight gain, allergies, heart palpitations, insomnia, poor memory, foggy thinking, headaches, nervousness, inability to concentrate, recurrent infections and glucose intolerance.

Treatments:

- Conventionally treated by synthetic thyroid hormones, e.g. Levothyroxine.
- Natural thyroid hormone extracted from cows, which contains both T4 and T3 thyroid hormones.
- Diet

Adrenal Fatigue

- The adrenals are usually first in the order of endocrine function breakdown, followed by the insulin-producing portion of the pancreas, thyroid, ovaries, parathyroid, pineal, pituitary and finally, the hypothalamus. The thymus gland, which produces immune defense cells, is also affected in the endocrine breakdown process.

Effects of stress on our hormones:

- When we get stressed, regardless of the source our adrenal glands are designed to secrete the hormone cortisol.

Things that are interpreted by the body as kinds of stress

- a) Danger
 - b) Personal relationships
 - c) Work environment
 - d) Poor nutrition – eating disorders,
 - e) Drug use
 - f) Reliance on stimulants e.g. coffee
 - g) Dieting
- The basic task of your adrenal glands is to rush all your body's resources into "fight or flight".
 - Instead of being chased by Sabre Tooth tigers, we are being chased by STRESS with no let up! Most of the time, our response to stress ends without a literal "fight" or some form of physical activity, as our ancestors would have engaged in.
 - Over a period of time, if chronic stress continues, the body adapts to adrenal hyper-stimulation, continuing in a perpetual fight-or-flight mode. This is called maladaptation, a process in which endocrine system organs begin to break down. This process eventually reaches the point where the adrenals become exhausted and cortisol levels drop.
 - Adrenal dysfunction may be a factor in many related conditions, including fibromyalgia, hypothyroidism, chronic fatigue syndrome, arthritis, premature menopause and others. It may also produce a host of other unpleasant symptoms, from acne to hair loss.
 - Patients' most common symptoms are fatigue, insomnia, weight gain, and depression.

Other symptoms include:

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| • Low body temperature | • Tendency towards inflammation | • Dizziness that occurs upon standing |
| • Weakness | • Moments of confusion | • Poor resistance to infections |
| • Unexplained hair loss | • Indigestion | • Low blood pressure |
| • Nervousness | • Poor memory | • Insomnia |
| • Difficulty building muscle | • Feelings of frustration | • PMS |
| • Irritability | • Alternating diarrhea and constipation | • Craving for sweets |
| • Mental depression | • Osteoporosis | • Dry and thin skin |
| • Difficulty gaining weight | • Lightheadedness | • Headaches |
| • Apprehension | • Palpitations [heart fluttering] | • Scanty perspiration |
| • Hypoglycemia | | • Alcohol intolerance |
| • Inability to concentrate | | |
| • Excessive hunger | | |
- Sustained high cortisol destroys healthy muscle and bone; slows down healing and normal cell replacement; impairs digestion, metabolism and mental function; interferes with healthy endocrine function; and weakens your immune system.

Menopause

- The period before menopause is called perimenopause. This can last up to ten years and is the gradual change to full menopause. A woman entering perimenopause may even bleed seasonally, stopping her periods in the fall and resuming them in the spring
- Women are considered menopausal if they have not had a menstrual period for one year.

Symptoms of menopause:

- 1) Irregular periods are a hallmark of perimenopause.
- 2) Fatigue, occasional heavy flow, spotting, early hot flashes, emotional changes, poor sleep patterns, urinary incontinence, mood swings, dental problems, vaginal changes, variations in libido, headaches, joint pain and digestive disturbances can all be a part of this transition.
- 3) Menopause symptoms can range from mild hot spells at night to constant dripping sweats all day and night.
- 4) Some women spot for a few months others bleed heavily for years.
- 5) These symptoms are caused by hormonal imbalances and changes, not necessarily due to estrogen loss.

TREATMENTS:

- If progesterone levels are quite low, due to perimenopause or other factors, simply adding some bio-identical progesterone, on days 14-28 of the cycle, will begin to balance things out.
- May also need to add estrogen in crème, depending on patient's history and her progesterone to estradiol ratio.

Andropause (Men)

If you feel any of the symptoms below, you may be going through andropause

Difficulty Passing Urine

Impotence / erectile problems

Prostate problems

Mood swings / Depression

Fatigue

Foggy thinking / Memory loss

Lack of interest in Sex

Erectile Dysfunction

Urinary problems

Panic / Weeping

Low Sperm Count

Breast Enlargement

Bone loss (Osteoporosis)

Insomnia

Common to many men

- Andropause is a hormone imbalance due to the lack or absence of testosterone which is the male hormone.
- All Male Hormones gradually decline with passing years

Symptoms of Estrogen Dominance / low testosterone (Andropause)

- Enlarged Prostate, Urinary Problems, Low Sex Drive, Impotence, Diabetes, Allergies, Depression, Fatigue, Foggy thinking, increased risk of stroke, infertility, rapid increase in weight and Osteoporosis to name a few.
- If the body has a proper balance of Testosterone to Estrogen, many of these symptoms can be alleviated.

Weight Gain – possibilities

Hypothyroidism – Thyroid hormone deficiency can decrease metabolism of food, causing appetite loss and modest weight gain.

Essential Fatty Acid Deficiency – Essential fatty acids, such as in flaxseed oil, are good fats that are needed by the body to make hormones and maintain the body's metabolic rate. A deficiency may cause cravings, particularly for fatty foods. The first signs of deficiency are often dandruff, dry hair and dry, scaly skin. Deficiency is also associated with arthritis, eczema, heart disease, diabetes and premenstrual syndrome.

Food Sensitivity - Hormone replacement therapy and oral contraceptives containing estrogen can cause fluid retention and increased appetite.

Medications

Kidney, Heart or Liver Disease - Disease in these organs can cause fluid retention, which appears as general puffiness all over the body, especially the eyes and ankles.

Emotional Eating – Many people respond to stress or depression by eating excessively.

Blood Sugar Imbalance – Eating simple, refined carbohydrates can cause rapid fluctuations in blood sugar levels.

Organ enlargement – such as from an ovarian cyst, and obstruction of lymph fluid.

DIAGNOSTICS

Diagnosis:

Blood test, urinary or salivary test

- Baseline test results are also needed to order hormonal crèmes.
- The best type of stress and sex hormone testing is known as a circadian test, which is performed every four hours over a 24-hour period. With women, this can be extended through an entire menstrual cycle with collections made every few days.
- Sampling is easily accomplished at home, in which you obtain a saliva sample every four hours for 24 hours by chewing on a salivette (a small dacron roll). The results will show specific hormonal changes that occur every four hours.
- Salivary testing is the best test method because saliva contains free fractions of stress and sex hormones versus the total bound forms of hormones done in serum testing.
- The Hormonal Panel from Sabre Sciences evaluates fluctuations of the salivary hormone levels of estrogen (estradiol), progesterone, testosterone, cortisol, DHEA and electrolytes (potassium, chloride, sodium) for both men and women over a 24-hour period.

TREATMENTS

- Detox! Both the liver and GI systems involved normal processing of excess levels of hormones.

Steps to Restore Hormonal Health

- Have a full physical to rule out disease or other factors.
- Support the endocrine system and allow it time to repair.

- Support immune function, thereby reducing stress on the endocrine system.
- Make dietary and nutritional changes. Support proper digestive function
- Get exercise, establishing your level of capacity and personal training objectives.
- To relieve stress, try meditation, hypnotherapy, visualization, Hatha Yoga, Tai Chi or QiGong.
- Emotional health – It's important to emphasize the role of emotional factors.
- Relax by walking in nature, swimming, pursuing creative activities, changing routines

Diet

- A study at the University of Colorado studied the dietary intake of women who suffered PMS regularly. They were put on a healthy diet and supplements to help with their PMS versus women put on hormones.

Adrenal Hormones

The first treatment consideration is that stress must be addressed so that sex hormones will no longer be converted for stress purposes. Until the adrenal hormones are balanced, supplementation with the sex hormones estrogen and progesterone is of little value because they will easily be converted to stress hormones.

Pregnenolone

- It is not a steroid hormone but is a precursor to all other hormones.
- Made by both the adrenal glands and brain cells
- Is used to help with cortisol levels.

Function

- Acts as brain power hormone in that it enhances memory, improves concentration, reduces mental fatigue, and generally keeps brain functioning at peak capacity
- Shows many of the benefits of Cortisol: it reduces allergic reactions, lessens arthritic inflammation and produces a relaxing effect without any of the negative side effects of Cortisol.
- Improves mood, and has a mild anti-depressant effect
- Improves energy levels by protecting our energy producing mitochondria from toxins, which would otherwise damage the mitochondria
- Acts as a detoxicant – enhances the activity of detoxifying enzymes, which help our cells (especially the liver and brain) to detoxify various poisons, whether environmental, or our own metabolically produced toxins

DHEA

- Most abundant hormone found in the bloodstream and is sometimes referred to as the “mother of all hormones” because it is the building block for many other essential hormones.
- When adrenal glands are chronically stressed, production of DHEA is greatly reduced.
- DHEA can also convert to estrogen and/or testosterone
- DHEA decreases with age
- DHEA is a much talked about hormone these days because of its importance in maintaining youthfulness; a healthy DHEA level is considered an indicator of longevity.
- Functions
 - a) Important regulator of thyroid and pituitary glands
 - b) DHEA supplementation found to enhance thyroid function

- c) Stimulates production of GH
 - d) Building block for estrogen and progesterone
 - e) Decreases cholesterol
 - f) Boosts immunity
 - g) Increases sensitivity of cells to insulin
 - h) DHEA is a good stress barometer – when stress levels go up, DHEA levels go down.
- What organs produce DHEA
 - a) Adrenal glands
 - b) Gonads (ovaries, testes) when adrenals are overworked.
 - Symptoms of DHEA deficiency
 - a) Poor memory
 - b) Poor resistance to noise
 - c) Anxiety
 - d) Decreased libido
 - e) Decreased axillary and pubic hair
 - f) Dry skin and eyes or hair
 - Side effects too much DHEA – symptoms resolve when reduce dose or end treatment.
 - a) Acne
 - b) Oily skin
 - c) Facial hair growth (in women)
 - d) Irritability
 - e) Insomnia
 - f) Fatigue
 - g) Breast enlargement (in men)

Natural versus synthetic:

- Bio-identical hormones are made in a laboratory usually from the components of yams to match exactly the formula that your body produces and has been used to. In contrast, synthetic hormones are designed by drug companies and are foreign to the human body, unique in ways so they can be patented. Drug companies can't patent a bio-identical hormone.
- Synthetic hormones:
 - a) Increase likelihood of developing breast cancer
 - b) Many other side effects of premarin, e.g weight gain, depression, fibroids, loss of libido, osteoporosis, etc. To counteract act side effects, progestins (synthetic progesterone) is used. But this also causes numerous side effects (water retention, breast tenderness, skin problems, insomnia,, liver problems, increased risk of birth defects.
- Bio-identical hormones (natural hormones) are the exact replica of those that exist in the body. They are safer, far less side-effects than their synthetic counterparts.

Transdermal versus oral:

- Applying a hormone crème (e.g. progesterone) to the skin allows it to be absorbed into fat layers under the skin, where it can be taken up by the blood as needed. If taken in capsule form, it is more difficult for the body to regulate the amount of hormone entering the blood.

- NOTE: poorly formulated topical progesterone can build up in the fat cells and cause abnormally high levels of progesterone.
- A high quality crème will deliver 95% or more to the bloodstream compared to oral progesterone that only delivers 5% of what is taken. Thus, a transdermal dose of 10-80mg progesterone is equivalent of 95-760mg taken orally.
- A transdermal hormonal cream works best. It is easily applied and delivered, bypassing the digestive system or liver.
- Most of the available hormonal creams claim to be transdermal, but are actually topical. A big problem with topical creams is that most of them use an inexpensive oil cosmetic base. They are absorbed into fat cells, and months after discontinuance they can still be found in body tissues.
- There is a transdermal cream delivery system is pulsatile, meaning that only a small, measurable quantity of hormone is released at one time. This not only allows for easy calculation of the amount that will be in the blood but also comes closest to matching the body's own cyclic hormone rhythm.
- By evaluating hormonal changes over a 24-hour period, a pattern can be determined and a treatment protocol designed. An effective plan involving natural hormones, nutritional support and various stress-relief therapies can be successfully implemented to reestablish the proper menstrual dynamics, hormonal balance and well-being.

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