

Estrogen 101

Description

Estrogen is a hormone that plays various roles in the body. In females, it helps develop and maintain both the reproductive system and female characteristics. Estrogen contributes to cognitive health, bone health, the function of the cardiovascular system, and other essential bodily processes. Most of us know it for its role alongside progesterone in female sexual and reproductive health. Both female and male bodies have it, but females create more of it. It is the dominant hormone during the pre-ovulation phases of the female menstrual cycle. Progesterone is dominant post ovulation and is a calming, cooling, grounding, “yin” balancing hormone. In order for progesterone to balance estrogen and prevent “estrogen dominance,” we need to ovulate regularly.

There are 3 types of estrogen: estrone, estradiol, and estriol. The ovaries make most of the estrogen in your body. The adrenal glands and fat cells also make small amounts of estrogen.

Estrogen's Metabolic Impact

(courtesy Dr. Jaime Seeman)

Pancreas | Improves fasting insulin and improves glucose stimulated insulin secretion

Liver | Modulates gluconeogenesis (creation of new blood sugar) & Improves liver insulin response and reduces liver insulin degradation

Adipose Tissue | Improves insulin sensitivity and reduces Oxidative Stress

Skeletal Muscle | Improves insulin stimulated glucose absorption

Cardiac Muscle | Mitigates insulin resistance stimulated glucose absorption and improves cardiac function

Endothelium | Improves nitric oxide production and increases vasodilation response

Brain | Neuroprotective, especially to aging brain | Important for development, cognition, memory, body temperature, feeding, and sexual behaviors

Bones | Inhibits bone resorption and remodeling

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Estrogen & Organ Function

Ovaries: Estrogen helps stimulate the growth of the egg follicle.

Vagina: In the vagina, estrogen maintains the thickness of the vaginal wall and promotes lubrication.

Uterus: Estrogen enhances and maintains the mucous membrane that lines the uterus. It also regulates the flow and thickness of uterine mucus secretions.

Breasts: The body uses estrogen in the formation of breast tissue. This hormone also helps stop the flow of milk after weaning.

Estrogen Deficiency

This is a state where estrogen is too low or too low relative to progesterone. It is associated with an array of common but not normal health concerns.

Estrogen Deficiency Concerns & Symptoms

Fatigue	Depression	Hot flashes	Night Sweats	Vaginal Dryness
Low Libido	Joint Pain	Brain Fog	Migraines	Pain during sex
Infertility	Dry Skin.	Osteoporosis	Heart Attacks.	Weight gain

Estrogen Deficiency Causes

Hypothalamic/Hypogonadal Menopause	Removal of Ovaries	Thyroid Dysfunction
Ovarian Insufficiency	Anorexia	Birth Control
Vegetarian Diet	Head Trauma	High Fiber Diet
	Microbiome Dysbiosis	SIBO

Estrogen Dominance

Estrogen dominance is a condition of increased estrogen levels relative to progesterone in the body. Estrogen dominance may be the result of overproduction of estrogen by the body, changes in estrogen metabolism and excretion, or an imbalance in the estrogen to progesterone ratio.

Causes

- **Medications:** Antibiotics, birth control, and phenothiazines, a group of medicines used for treating mental or emotional disorders can increase estrogen levels in the body and drive estrogen dominance.
- **Food:** The growth hormones injected into the poultry birds and raised animals can affect estrogen levels as well as foods consuming soy as soy is estrogenic meaning it mimics estrogen in the body and can lead to or exacerbate estrogen dominance.
- **Water:** The water we drink may consist of harmful and unwanted chemicals that are known to produce endocrine disrupting compounds that can rise up the estrogen levels in the body.
- **Body fat:** Excess body weight/fat can lead to estrogen dominance. These fat tissues store estrogen in the bloodstream, which increases their levels to cause adverse health issues. Fat tissue can synthesize estrogen from other hormones.
- **Perfume, fragrances, and other personal care products:** Most cosmetic and personal care products have xenoestrogens that mimic estrogen and create an imbalance in the body. Some of the common xenoestrogens are parabens, phthalates, and benzophenones. Perfumes also have certain harmful chemicals that act as hidden endocrine disruptors.
- **Microbiome imbalance:** When the gut microbiome goes out of balance, the digestion slows down, which in turn slows down the elimination of the estrogen circulating in the digestive tract. This causes the estrogen to reabsorb into the bloodstream and increase its level.
- **Stress:** When we are stressed, the pregnenolone hormone which produces progesterone starts making the stress hormone like cortisol. This causes the progesterone level to drop and estrogen level to rise.
- **Hormone replacement therapy:** These medications contain synthetic estrogens, which increase the level of estrogen in the body.
- **Use of plastics and exposure to heavy metals:** The estrogen-mimicking properties found in plastics and heavy metal can disrupt the endocrine system and increase the production of estrogen. Plastics contain xenoestrogen that absorbs into the food causing major health consequences. Our environment is polluted with heavy metals such as cadmium, lead, and mercury that cause the estrogen level to rise due to its estrogen-mimicking properties.

Estrogen Dominance

Estrogen Dominance Symptoms

Fibrocystic Breasts	Mood Swings	Breast Swelling
Breast Tenderness	Irregular Periods	Headaches (premenstrual)
Hair Loss	Thyroid Dysfunction.	Low Thyroid
Slow Metabolism	Fatigue	Trouble Sleeping
Brain Fog	Memory Loss	Infertility
Ovarian Cysts	Allergies	Overweight
Autoimmune Disorders	Facial Hair	

Nutritional Considerations for PCOS & Estrogen Dominance

A high fat, moderate protein, low carbohydrate diet can be extremely beneficial for estrogen dominance and to restore normal and appropriate levels of hormonal balance, especially in women. Following a ketogenic diet can also be very therapeutic and beneficial. Many women find significant improvements and reversal of symptoms with this way of eating. Regardless of your choice of dietary pattern to follow, it is vitally important to eliminate the consumption of processed and refined foods and focus on real, whole, single ingredient foods. The ultra-processed, chemically laden, high carb foods are wrecking havoc on your health and your immune system. The best way to heal your body from a hormone imbalance is to clean up your diet and heal your gut. AND get plenty of sunshine early in the day with no sunglasses and no sunscreen, lift heavy things, reduce your stress, breathe deeply, and move your body daily.

Additional considerations are the removal of soy and all soy-based products from the diet as well as the removal of conventional dairy and gluten containing grains. We will work on an optimal plan for you based on your history, goals, and other health concerns. The ultimate goal is to have you feeling your absolute best with the least restrictive diet possible!