

# Estrogen

## GENERAL DESCRIPTION

Estrogen is the general term used for the several types of estrogen made by the ovaries, and to a lesser degree, the testicles. Estrogens are steroids. The three major estrogens are:

- Estrone, E1—5-10%. Considered a “strong” estrogen because of its ability to cause cell proliferation.
- Estradiol, E2—5-10%. Considered the “strongest” estrogen because of its ability to cause cell proliferation.
- Estriol, E3—80-90%. Considered a “weak” estrogen because it does not cause cell proliferation. However, estriol appears to balance the cell proliferating effects of estrone and estradiol, conferring protection against their cancer-causing ability.\*

## KNOWN FUNCTIONS OF ESTROGEN

1. Confers female secondary sex characteristics.
2. Promotes cell proliferation, especially of the uterine lining and breast tissue.
3. Is part of the hormone signaling sequence that stimulates the maturation of the egg-containing follicle in the ovary.
4. Slows bone loss.
5. Stimulates brain function.
6. Plays a role in cognition, memory, emotions, mood, stamina, ambition, pain perception and sleep.
7. Increases body fat, especially in hips, abdomen, and thighs.
8. Creates progesterone receptors.
9. Estrogen’s emergence at puberty stops the growth of long bones in both females and males.
10. Increases production of type III collagen which helps skin heal faster and remain soft and pliable.
11. Promotes hydration of body tissues (E3 or estriol)
12. Increases HDLs, lowers LDLs and total cholesterol.
13. Helps maintain the endothelial lining of blood vessels.
14. Increases vasodilation (via nitric oxide)
15. Inhibits vascular intimal and muscle proliferation (involved in atherosclerosis)
16. Helps prevent inappropriate cholesterol deposition.
17. There are still many functions of estrogen that we don’t know.

## SYMPTOMS OF ESTROGEN DEFICIENCY

- Hot flashes
- Night sweats insomnia
- Mood swings
- Mental fogginess, poor memory
- Dry eyes, nose, sinuses
- Vaginal dryness, dry skin
- Vaginal wall thinness, vaginal dysplasia
- Vaginal and/or bladder infections
- Incontinence, urethral irritations, urinary frequency
- Headaches, migraines
- Decreased sexual response
- Loss of ambition or drive

- Depression
- Lack of stamina
- Decreased breast size
- Wrinkling of skin
- Osteoporosis
- Loss of subcutaneous fat
- Increased risk of cardiovascular disease

### **SYMPTOMS OF ESTROGEN EXCESS**

- Heavy bleeding (PMS)
- Clotting, cramping
- Water retention, bloating
- Breast tenderness, lumpiness, cystic breast, enlarged breasts
- Weight gain
- Headaches, migraines
- Emotional hypersensitivity
- Depression, irritability, anxiety, anger, agitation
- Decreased sexual response
- Thyroid dysfunction (resembling hypothyroidism)
- Cold hands instability
- Insomnia
- Gall bladder dysfunction (coagulated bile)

### **DEFICIENCIES CAUSED BY ESTROGEN EXCESS**

- ✓ Zinc
- ✓ Magnesium
- ✓ B complex vitamins

### **OTHER PROBLEMS THAT MAY DEVELOP WITH ESTROGEN EXCESS**

- Irregular periods
- Auto immune disorders
- PCOS
- Ovarian cysts
- Cervical dysplasia
- Uterine fibroids
- Infertility
- Copper excess (toxicity)
- Breast cancer
- Endometrial cancer
- Uterine cancer

### **SUPPLEMENTATION WITH ESTROGEN**

- ✓ Bioidentical tri-estrogens or bi-estrogens are available, both prescriptions (through compounding pharmacies) and non-prescription (through a health care professional)

- ✓ Bioidentical estrogen is made from natural plant sterols which are compounded into hormones that are exact replicas of human estrogen (or progesterone, testosterone, or any steroid hormone).
- ✓ The most desirable ways to supplement estrogen is sublingual or transdermal.
- ✓ The least desirable way to supplement estrogen is orally. The liver de-activates 50-90% of hormones given orally. Therefore, larger doses must be given and the liver is “overworked” and stressed.

**NOTE:** *Estrogen only functions correctly when it is in the right proportion with progesterone, its primary partner and synergist. In a cycling woman, these proportions change throughout the cycle. In menopausal women, the proportion of progesterone to estrogen remains fairly constant.*