



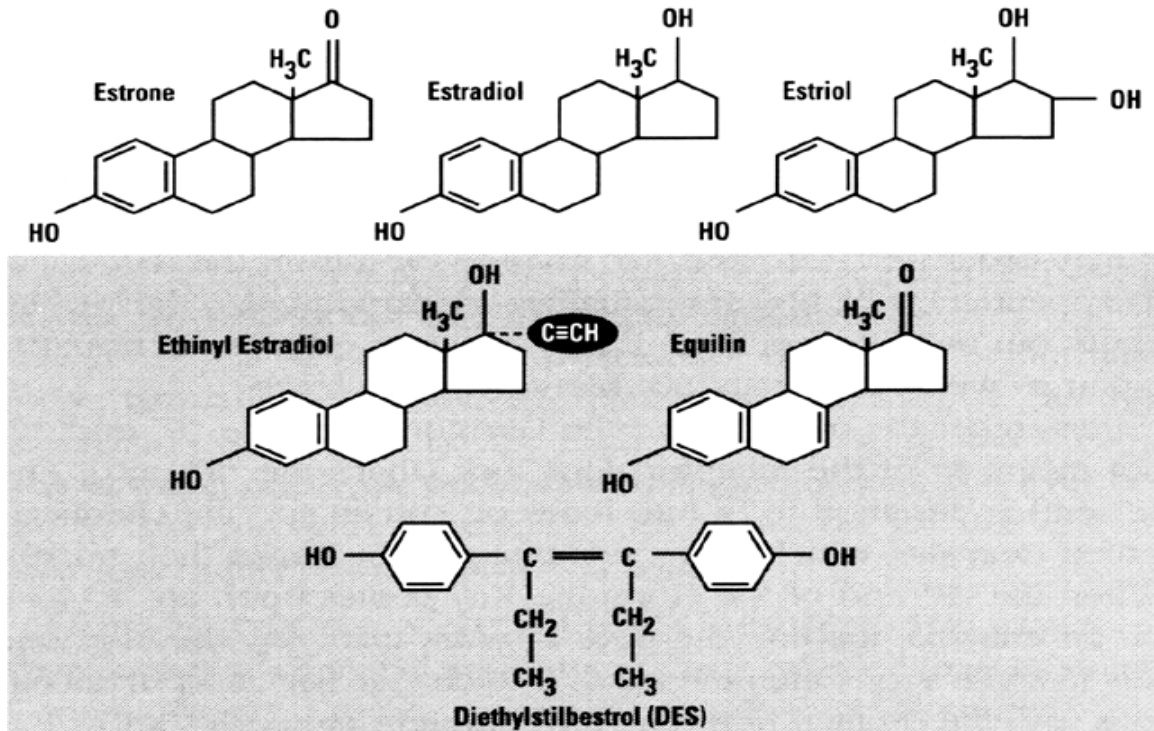
## **Bio-Identical Hormone Replacement Information Guide**

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## What are Bio-Identical Hormones?

The term “bio-identical” refers to hormones that have the same chemical structure as hormones that are produced by the human body. The key to natural or bio-identical hormones versus “synthetic” non-bio-identical hormones is the molecular structure of the hormones. Bio-identical hormones have the same exact molecular structure as those made in the human body. In order to achieve the same function and replicate the same responses as our body’s hormones, the chemical structure of the replacement hormone should exactly match that of the human body and be administered in a manner that imitates the body’s natural ratios and mechanisms.

Figure 1.1: Illustrates the differences between chemical structures of human hormones; Estrone, Estradiol, and Estriol and that of synthetic hormones; Ethinyl Estradiol, Equilin, and Diethylstilbestrol (DES).



For a long time researchers have held to the fact that there are significant differences between hormones that are natural to humans (bio-identical) and synthetic (non-bio-identical) including horse preparations. The chemical structure differences of animal or synthetic hormones may be responsible for side effects when non-bio-identical hormones are used. The term “bio-identical” does not refer to the source of the hormone, but rather indicates that the chemical structure of the replacement hormone is identical to that of the hormone naturally found in the human body. Bio-identical hormones can be chemically processed from precursors found in yams or soy plants, yet they are identical to the hormones produced by the human body, hence the term “bio-identical” or “natural plant-derived hormone”. Natural or bio-identical hormones are able to follow our body’s normal metabolic pathways so that essential active metabolites are formed in response to bio-identical hormone replacement therapy.

### **What are the benefits of bio-identical hormone replacement?**

- Alleviates the symptoms caused by the natural decrease in hormone production in the body experienced during peri-menopause and menopause (hot flashes, night sweats, depression & mood swings, vaginal dryness, sleep disturbances, and loss of muscle strength)
- Helps re-establish a hormonal balance within the body
- Provides protective benefits of naturally occurring hormones (prevent and slow progression of osteoporosis, improves lipid profile, and causes less unwanted side effects than synthetic hormones)

### **What types of bio-identical hormones are available?**

When using hormone replacement, three types of hormones are typically prescribed for bio-identical hormone replacement (BHRT) therapy. These include estrogens, progesterone, and androgens. The precise components of each woman’s therapy, needs to be determined after physical examination, medical history, and laboratory testing are considered. In addition close monitoring is essential to ensure that appropriate dosage adjustments are made.

### **Estrogens:**

- Estrone (E1) Estradiol (E2) Estriol (E3) are often prescribed in combination to re-establish a normal physiological balance
- Relieve menopausal symptoms, including vaginal thinning and dryness
- May increase HDL “GOOD” cholesterol and decrease LDL “BAD” cholesterol
- Help decrease blood pressure and reduce plaque formation on the arterial walls (facilitates vasodilatation, and inhibits response of blood vessels to development of atherosclerosis)
- May improve mood, energy levels, and sleep patterns
- May improve memory and cognitive function

### **Progesterone:**

- Commonly prescribed to peri-menopausal women to counteract “estrogen dominance”
- Alone or combined with estrogen, may improve bone mineral density
- Helps minimize risk of endometrial cancer in women who are receiving estrogen
- May enhance the beneficial effects of estrogen on lipid and cholesterol profiles

### **Androgens:**

- Helps enhance libido and energy levels
- Provides cardiovascular protection (lower cholesterol)
- Helps increase muscle mass
- Enhances bone building (increases calcium retention)

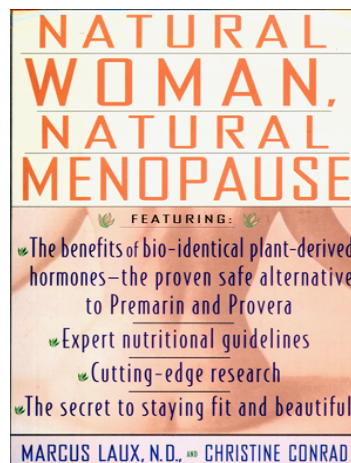
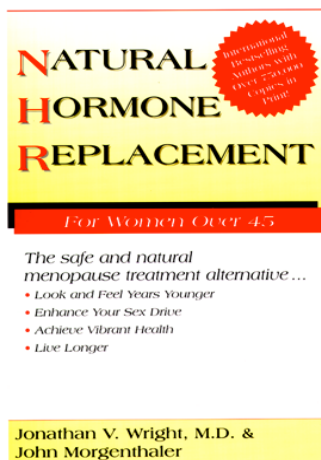
### **Who shouldn't use Bio-Identical hormone Replacement?**

- Confirmed history of cardiovascular events; coronary heart disease (CHD), heart attack (MI), angina, coronary bypass, and stroke
- Confirmed history of thromboembolic events such as deep vein thrombosis (DVT), and pulmonary embolism
- Women with a previous diagnosis or history of breast cancer or endometrial cancer
- Women who currently smoke should also avoid using bio-identical hormone therapy

## Disclosure:

This website is only for educational purposes, if there is any doubt about a health condition that may exist, this material is not intended to replace professional advice, please consult a physician before starting any new medication therapies.

## Recommended Reading on Bio-identical Hormone Replacement:



## References:

1. Markowitz D. A Comprehensive Review of the Safety and Efficacy of Bioidentical Hormones for Management of Menopause and Related Health Risks. *Alt. Med. Review* 2006; 11:208-223.
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