

#### What is a hormone?

A hormone is a chemical messenger that carries a signal from one cell to another. A hormone is produced by one tissue and carried through the bloodstream to another tissue to cause physiological activity, such as growth or metabolism.

## What is bioidentical hormone therapy?

Bioidentical hormone therapy works with your body's natural processes unlike counterfeit hormones which are foreign to your body. A bioidentical hormone is a compound with the exact molecular structure as a hormone produced by the human body. Unlike synthetic hormones, bioidentical hormone therapy fits perfectly into the hormone receptors found in the cells of the body and produce natural, biological results without undesirable side effects.

#### **Bioidentical Progesterone**

#### Medroxyprogesterone

The hormones used in bioidentical hormone therapy are formulated from plants and made identical to the estrogens, progesterone, cortisol and testosterone produced in the human body. Natural, bioidentical hormones are derived from a plant molecule called diosgenin found in soybeans and wild yams. After diosgenin is extracted from these plants, it is converted into bioidentical progesterone in the laboratory. In turn, progesterone can be converted by a chemist into the three human estrogen hormones: estradiol, estrone, and estriol. Because natural progesterone, the estrogens, cortisol and testosterone are biologically identical in structure to the hormones produced by the body,

your cells respond to bioidentical hormone replacement therapy in exactly the same way that they respond to the hormones produced by your own body.

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## What are synthetic or counterfeit hormones?

Unlike hormones used in bioidentical hormone therapy, synthetic or counterfeit hormones are drugs that are not identical to the hormones produced by the human body. Since a hormone's molecular structure determines its role in the body, the smallest of changes to its molecular structure can completely change the physiologic effect. These synthetic hormones do not fit perfectly into the receptor sites in your body's cells. That is why these drugs can never restore optimal health.

In fact, a wealth of research conducted over the past several decades clearly shows that, far from being age-defying wonder drugs, synthetic female hormones such as Premarin®, Provera®, and Prempro® may cause serious disease. Major studies, such as the Women's Health Initiative in the United States and the Million Women Study in Great Britain, have documented that these drugs increase the risk of life-threatening ailments such as breast cancer, heart attack, stroke, pulmonary embolism, and Alzheimer's disease.

In contrast, bioidentical hormone therapy works with your body's natural processes, rather than against them.

#### What are the dangers of using synthetic hormones?

Synthetic hormones are manufactured by drug companies. Unlike bioidentical hormone therapy, these drugs are not identical to the hormones that are present naturally in the human body. In fact, in order to be patented, these drugs cannot be identical to your body's own hormones or to any other molecule that exists in nature. They must be chemically unique. Women who take these artificial hormones pay the price, not just with their pocketbooks, but also with their health and well-being.

Because counterfeit hormones are not identical to the hormones produced by your body, they do not fit perfectly into the receptor sites in your body's cells. That is why these drugs can never restore optimal health. In fact, research shows that these drugs, such as Premarin® , Provera® , and Prempro® may cause serious disease.

The common side effects caused by drug company counterfeit female hormones are:

- Fluid retention
- Weight gain
- Decreased cellular assimilation of thyroid
- Headaches
- Decreased mental sharpness
- Breast swelling and tenderness
- Breast cancer



#### Does bioidentical hormone therapy cause cancer?

Counterfeit hormones have been shown to cause cancer. The term "hormone" should not be allowed to describe these synthetic chemicals which do not match the structure of your body's own natural hormones. The Women's Health Initiative Study showed that counterfeit hormones sold by drug companies resulted in an increased risk of breast cancer. If you are considering such counterfeit hormones as Prempro® , Premarin® , or Provera® , it is imperative that you read about the findings of the Women's Health Initiative.

In 1993, The Women's Health Initiative began enrolling postmenopausal women for a nationwide, long-term study of the benefits and risks of conventional hormone replacement therapy using Prempro®, a combination of Premarin® and Provera®. The study was scheduled to last 8 1/2 years, however it was ended abruptly due to the increased risk of breast cancer in women using Prempro®, which is not a bioidentical hormone.

Premarin® and Provera® also increase your risk for heart disease. The Women's Health Initiative was halted 3 years early because women using Prempro® had an increased risk of breast cancer, heart disease, stroke, and pulmonary embolism compared to women who were given a placebo.

It is important to note that Prempro® which was used in the Women's Health Initiative study, is a counterfeit hormone and not a bioidentical hormone, and does not match the molecular structure of your body's own natural progesterone and estrogen hormones. Because form defines function and counterfeit hormones do not match your natural hormones' structure, they do not function in your body the way that your natural hormones do. This is what creates health problems and why you should not take counterfeit hormones. This is the difference between bioidentical hormones and artificial hormone mimics such as Prempro® . Bioidentical hormones are created to be identical to the molecular structure of your body's own progesterone and estrogen hormonesand because their structure is the same, they function in your body the same way as natural progesterone.

People who say that bioidentical hormone therapy causes cancer are usually misconstruing the results of the Women's Health Initiatives' finding about counterfeit hormones. On the contrary, findings from the 1981 John Hopkin's study showed that women with low levels of progesterone had an 80% greater incidence of breast cancer than those with adequate levels of progesterone. Women in the *low progesterone* group also had a tenfold increase in all malignant cancers. In summary, adequate levels of natural progesterone actually may protect you from cancer. In contrast to the side effects of counterfeit hormones, bioidentical hormone therapy has side *benefits*.

#### What is the function of hormones in our body?

A hormone is a chemical substance produced by the body that controls and regulates the activity of certain cells or organs. Hormones are essential to life. Hormones play important roles throughout the body, in the heart, brain, muscles, bones and other major organs and tissues. They control our metabolism, immune system, reproduction, growth and development, digestion and moods. Hormones also interact with the hormones produced by other

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glands. Because this is such a delicate process, it is important that hormones remain balanced in order to keep your body functioning at its peak.

### Why should I supplement my hormones using bioidentical hormone therapy?

Symptoms of hormonal imbalance can happen at any time during your life. First of all, as we age, our hormones decline. Quite simply, the aging process is the result of declining hormone levels. Levels of most hormones peak in our twenties and begin a slow, inexorable decline thereafter.

Women, for instance, can become estrogen dominant during the following phases of their life:

- Puberty
- After childbirth
- When taking birth control pills
- During midlife
- When placed on counterfeit estrogen hormones prior to or after menopause

There are also many hormone disruptors in our environment. Chemicals (such as pesticides, dioxins, DDTs, and PCBs, to name a few) and heavy metals can cause hormonal imbalance. These hormone disruptors can bind to the same receptor sites that our hormones bind to, disrupting or blocking the function of our hormones, and therefore causing the symptoms of hormonal imbalance.

Petrochemicals are referred to as xenoestrogens because they mimic the effects of estrogen hormones in our bodies and interfere with normal hormone function. Petrochemicals pervade the environment and contaminate the water, air, soil, and animal and plant life. These petrochemicals are used in thousands of manufactured goods. They are found in the plastic bottles from which we drink, the chemicals used in dry cleaning, the lotions and sprays we use for personal hygiene, and the pesticides sprayed on the foods we eat, to name just a few examples.

This is a disaster for men, for not only do xenoestrogens disrupt the production of testosterone, they also antagonize the effects of testosterone in the body. Xenoestrogens are linked to the dramatic decline in the average sperm count in Western societies since the 1950s as well as to the rise in testicular cancer over the same time period. It will be years before we have the complete story on the effects of these unnatural, toxic chemicals on male fertility, health and well-being.

Because of the chemical assault that our bodies receive from our environment on a daily basis, bioidentical hormone therapy is all the more important as we age during modern times.

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What solutions do conventional physicians recommend for women? Why do they typically recommend the synthetic hormones, instead of the bioidentical hormone therapy?

Women today who are experiencing symptoms of hormonal imbalance or deficiency are given few options by conventional physicians and most of them do not include bioidentical hormone therapy. Some physicians continue to prescribe synthetic hormones, despite their known dangers, insisting that the benefits outweigh the risks. Others have begun to prescribe antidepressants as the alternative to counterfeit hormones, as if mind-altering drugs are the solution to declining hormone levels. Still others have given up on the treatment of female hormone problems altogether and tell patients that they simply must learn to live with their symptoms.

Unfortunately, the major drug companies have no interest in bioidentical hormone therapy because these hormones cannot be patented. Because drug companies are not interested in producing and marketing bioidentical hormones, most doctors have not been trained in their use and are unaware of the benefits of this type of therapy. Remember, physicians receive most of their continuing education at seminars and conferences sponsored by drug companies. In addition to treating our patients successfully, our continuing mission is to continue educating the medical

communicator about the benefits of bioidentical hormone therapy.