

Bio Identical Hormone Replacement Therapy

Bio-Identical hormone replacement therapy has been practiced in the United States since the 1980's. However, dating back to the 11th century in China, doctors implemented this therapy. Writings discuss how in mediaeval times, doctors would collect the urine of young men and women, then precipitate the urine and make it into pills and give it to emperors and empresses' to optimize their health. Reports describe how those taking the preparations looked younger than their ages.

A bio-identical hormone is a hormone that is biochemically identical to the human hormone naturally made in the body by the endocrine glands. Most people don't know that there are three dominant estrogens in the human body: estradiol, estrone, and estriol. All three of these types of estrogen can be synthesized from plants in the laboratory. Typical plants used in this process are the Mexican yam and the soybean. With soybeans a compound called beta-sitosterol is extracted and through a number of enzymatic reactions the lab can make either estradiol, estrone, Estriol, progesterone, DHEA, and even testosterone. The end product is called natural because it is biochemically identical to the corresponding human hormone. The same thing is done with Mexican wild yam. A compound called diosgenin is extracted and a similar process takes this compound and makes it into a bio-identical human hormone. The key point here is that natural hormones or just like the ones found in naturally and in your body. Bio-identical hormones and natural hormones are essentially the same thing.

Bio-identical hormone replacement therapy (BHRT) encompasses the following hormones: Estradiol, Estriol, Estrone, Progesterone, Testosterone, DHEA, thyroid and adrenal hormones. Bio-identical hormone therapy is not HRT (hormone replacement therapy). HRT refers to the general replacement of hormones and is typically NOT bio-identical either in dose or substance. When I talk about HRT, I am referring to the conventional products and practices that include products like Vivelle, Prometrium, EstraTest, Premarin, Prem Pro, birth control pills, etc. Some of these HRT products do contain bio-identical hormones (Vivelle, Prometrium), however, the doses are higher than we use in BHRT and they provide only one of the bio-identical hormones, providing an imbalanced approach.

Symptoms of hormone deficiency can include any of the following for men and women:

- Irritability
- Fatigue and low stamina
- Low libido
- Vaginal dryness
- Erectile dysfunction
- Wrinkling skin
- Memory loss and mental fog
- Depression and anxiety
- Heart palpitations
- Breast tenderness
- Acne and changes in hair

- More fat mass and less muscle mass
- PMS, post-partum depression
- Recurrent UTI's and incontinence

Estrogen, as I stated is comprised of three dominant types in the body; estrone (E1), estradiol (E2) and estriol (E3). Customized and compounded formulations of bio-identical estrogen replacement therapy may include all three of these estrogens. These preparations are made by compounding pharmacy. Natural estrogens are biochemically identical to human estrogen. Non-bioidentical estrogens are either made from pregnant mare's urine (horse estrogen) or are synthesized in a lab to have estrogen like activity.

Estrogen has numerous physiological effects in women. Estrogen is what gives a woman her characteristic low hairline and a full head of hair. Estrogen keeps a woman's skin looking young and wrinkle free. Women have estrogen receptors in their brains and improved mental function is one of the first things many menopausal women notice when they start estrogen replacement therapy. Other beneficial effects of estrogen in women over 50 include: improved vaginal lubrication, improve bone density, heart disease prevention, less depression, improved memory and better temperature control.

Unopposed estrogen therapy may increase the risk of breast cancer and uterine cancer. Any woman who is taking estrogen (whether natural or synthetic) should be on progesterone. This helps prevent breast and uterine cancer. A lot of women have been told that you only need progesterone if you have a uterus. This just doesn't make any sense. There are receptors for progesterone throughout the body. Hormones all have a purpose and they need to be in balance.

All sex hormones are synthesized from cholesterol. Progesterone is converted from cholesterol directly and then goes on to make cortisol. Progesterone is secreted by the ovary mostly during the second half of the menstrual cycle (day 14- on). Men also make progesterone in the testes and the adrenal glands.

The abrupt drop and progesterone at the end of each menstrual cycle is the main factor that determines the beginning of a woman's menses. If a woman has a fertilized egg present then this drop in progesterone does not occur. The fertilized egg implants about seven days later. Progesterone prepares the lining of the uterus for embryo implantation. Interestingly, when a woman does become pregnant, the progesterone levels rise very slowly and do not peak until after the 12th week of pregnancy. Low progesterone is one of the most common reasons for inability to sustain a pregnancy in the first 12 weeks. If a peri-menopausal woman comes in with a significant history of miscarriages in her child bearing years, progesterone deficiency symptoms are usually the first ones to present strongly.

Progesterone has many other functions in the body; it helps control water balance, opposes the action of estrogen, it helps with thyroid function, blood sugar regulation, affects breast growth, skeletal growth and even weight regulation. Bio-identical progesterone has diuretic actions where synthetic progesterone makes women retain water.

Progestins are synthetic, space-alien molecules that have progesterone-like activity. They are not progesterone. Progestins can cause side effects such as irritability, bloating, swelling, depression, and mood swings. More serious side effects have also been reported such as, high blood pressure, increased risk of blood clots, and even cancer. The WHI study (and many

others) has shown us all how dangerous the space-alien progestin molecules can be to the human body. Bio-identical progesterone is much safer.

Yes, contrary to the FDA, women also have testosterone naturally in their bodies! It is produced in much smaller amounts than in men. 90% of the testosterone a woman makes comes from her ovaries and 10% comes from her adrenal glands.

Testosterone works very differently in the bodies of men and women, but it may play a very important role in the overall health and well-being of both sexes. Often called the "hormone of desire" because of its potentially powerful effect on libido, testosterone helps build strong muscles, bones, and ligaments, can increase energy and will often help depression.

Men with low testosterone often suffer from anxiety, erectile dysfunction, fatigue, weight gain which is comprised of fat tissue and depression. Matter of fact, fat actually causes a decrease in testosterone, so it becomes a vicious cycle in men who have low testosterone and are overweight.

Low levels of testosterone in women are associated with fatigue, irritability, depression, aches and pain in the joints, thin and dry skin, osteoporosis, weight loss, and the loss of muscular development. Low libido in women can be related to either testosterone deficiency or an estrogen deficiency or both. Because testosterone is an abusable substance, it is tightly controlled by the FDA. For this reason, we do check blood serum levels of free and total testosterone in men and women in order to evaluate if they 'qualify' for testosterone replacement therapy. The dose in women is generally one-tenth that used in men.

BHRT is administered in many ways. We utilize the creativity and expertise of compounding pharmacies to make the preparations that we want for our patients. Topical creams, gels or ointments, trans-vaginal suppositories or creams, sublingual troches or strips and subcutaneous pellet implants. Notice that the injectable testosterone is not in this list. Although I do like this product, the testosterone cypionate injectable testosterone that most men and some women like to use is NOT bio-identical.

Topical preparations are my preference for nearly all men and women. This is the most bio-identical way to administer the hormones. As Dr. Wright has been known to say, "if God wanted us to take hormones orally, he would have put the ovaries in the digestive tract"! When substances are taken orally, they are metabolized through the liver first. What comes out of that metabolism BEFORE going to the important cells in the body; are numerous metabolites. When a hormone cream is applied topically, the FIRST place that molecule goes is to the target cellular tissue, and then to the liver to be cleared from the system. Therefore, these two routes of administration are VERY different.

Sublingual troches are very popular, but there are concerns about long term use of these products. The reason for the concern is that although this product is supposedly very well absorbed under the tongue, inevitably, a woman will swallow spit while it is under the tongue and then significant amounts of that hormone will actually go through the liver to be metabolized. This is of concern enough that many pharmacists are actually recommending that patients on the sublingual troches are to spit out the remainder of the product after 4 minutes if it is not all absorbed. Any woman, who wants to be on BHRT long term, will not be doing so on Sublingual troches in my practice.

Trans-vaginal applications of BHRT are gaining in popularity. They are well absorbed and cannot be shared with others in the house when using them. This is a huge benefit when there are children and pets in the house and the woman of the house is on BHRT topically. Always be very careful with this.

Bio-identical hormone pellets may be placed under the skin with a small incision. Some patients prefer pellets because they last for four to six months and there are no messy creams, gels or shots needed. Hormone pellet therapy is also the best way to maintain consistent hormone levels in your body. They dissolve very slowly over time releasing a consistent amount of hormone each day. This is the best way to achieve full body saturation of hormones, similar to what your body could provide when it was making hormones on its own.

Hormone pellet therapy may improve mood, cognition, bone mass, appearance of the skin, reduce hair loss and improve sexual desire and function. Pellet therapy is only able to provide either estrogen alone, testosterone alone or estrogen with testosterone to be implanted under the skin. This provides a consistent release of hormone over many months. Progesterone is never put into a pellet because it has a large molecular structure and cannot be absorbed well as a pellet. Progesterone may be given for those female patients who are using pellets and have a uterus or not.

Only testosterone is used in men. Many pellets may be placed at once lasting for up to six months. This is a great long-term solution for men who find they must stay on bio-identical testosterone replacement therapy. We utilize blood tests to monitor patients and to help us determine what dosage to start with.

Pellet therapy is not for everyone. Many clinics that provide pellet therapy are doing it for financial reasons rather than what is best for the patient. The very best candidates for pellet hormone therapy are:

- men who need long term testosterone therapy
- women who do **not** have a uterus who want bio-identical hormone replacement therapy
- men and women who do not have anterior pituitary function and need to replace all hormones
- Many other people are candidates for pellet hormone replacement therapy and a comprehensive evaluation by our doctors can help you make this decision.

Ultimately, BHRT is an art and every practitioner has their own style and practice around the BHRT. As a naturopathic doctor, I believe in using the lowest effective dose to elicit resolution of symptoms or optimize health, without any side effects. It may take up to 3 months to get the dosing right for a given patient on the BHRT. Also, as women move through their 4th decade, hormone levels are falling so much from year to year, that hormone dosage changes are bound to occur. For the low risk patient, I believe that people can use BHRT for as long as they are willing to do so.

Make an appointment by calling our office at 303-884-7557