

*Georgia Hormones, P.C.*  
*Robert P. Goldman, MD*  
3400-A Old Milton Pkwy, Suite 360, Alpharetta GA 30005 770-475-0077  
[www.GeorgiaHormones.com](http://www.GeorgiaHormones.com)  
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# **NON-BIOIDENTICAL SYNTHETIC HORMONES**

## **Non-bioidentical Preparations:**

Most of the other menopausal products are made of synthetic, non-bioidentical hormones. The first question one might raise is “**Why would drug manufacturers create synthetic hormones instead copies of the real hormones?**” There are several answers.

**Reason 1. At one time, there was no way to get real bioidentical hormones.**

### **Premarin:**

In the late 1940s, it was not yet technically feasible to synthesize hormones identical to the natural ones. Estrogen, Progesterone and Testosterone were simply not available to give to patients. The Ayrest Company developed the process of extracting estrogens from the urine of pregnant horses. It was a brilliant idea. These are the sulfate and glucuronide estrogens that the liver produces in the process of excreting estrogen. The liver turns fat-soluble estrogen into water-soluble molecules to facilitate excretion by the liver into the bile and by the kidneys into the urine. Humans make these chemicals also but for the purpose of excretion. **Even if they were made from the urine of pregnant humans, the body is trying to get rid of these compounds. Premarin was certainly better than nothing for a woman with hot flashes, but now that we have the real, bioidentical estrogens available, why are we still using these waste products?**

There are two major problems with Premarin. Levels **cannot be accurately measured**. It is a combination of many different chemicals and most of them are not measured by standard lab tests. The main bioidentical component of Premarin is Estrone. It is thought that high Estrone levels are **more carcinogenic** than Estradiol or Estriol.

Many women are put off by the idea of catheterized, stabled, pregnant horses as the source of their hormones. Now that science can synthesize virtually all the hormones from soy and other plant estrogen sources, plant source estrogens are more appealing. Menest, Cenestin and Enjuvia are synthetics made similar to Premarin. **They have the same disadvantages as Premarin but without bothering any horses.**

### **Provera:**

In a situation similar to Premarin, in the 1950s, there was no way to get Progesterone in quantities sufficient to use to treat patients. Provera was synthesized. It was water-soluble, absorbed well orally, and more powerful

that real Progesterone. It was found to also suppress endometrial cancer, as real Progesterone does. Unfortunately, even in the 1960s, it was found to cause breast cancer in beagle dogs.

In the WHI, the Woman's Health Initiative Study of 2002, the **Provera caused most of the problems that caused that study to shut down.** The women in the Premarin only portion of that study actually had a lower rate of breast cancer than the placebo group. **It must have been the Provera in the Premarin/Provera part of the study that caused the extra breast cancers. Amazingly, virtually everyone that appeared in the news media blamed the extra breast cancers on the estrogens.**

Provera also negates the beneficial effects that estrogen has on cholesterol and heart disease. This is one of the reasons that women who have had hysterectomies are not given Provera. They don't need to protect their uterus because it has been removed. Most of the other effects of Provera are bad.

## **Reason 2. Stronger, better absorbed hormones were needed.**

Natural progesterone and estrogen are fat soluble and not well absorbed by mouth. The modern bioidentical hormones are processed into microscopic droplets to facilitate absorption. But still, natural Estradiol and Progesterone do not suppress pituitary output of FSH and LH sufficiently to shut down the function of the ovaries. **To make a birth control pill, you needed something stronger.** The synthetic hormones ethinyl estradiol and norethindrone solved the problem. They are well absorbed orally and they are so strong that hardly any is needed. The birth control pills are tiny. **They are cheap to make and sell for a lot of money.**

## **Reason 3. To make money, your drug has to be patented.**

Most of the medications below are patented. Bioidentical hormones are body parts. They cannot be patented. Even if not patented, new dosages and forms of medication have to be specifically proved to the FDA of their efficacy before they can be marketed. **Without a patent, it doesn't make economic sense to try to get approval for a non-patentable bioidentical hormone. It is FDA approved to have them made in a compounding pharmacy by order of a physician for use by one specific patient.**

## **Here are some of the non-bioidentical hormone products currently available in pharmacies.**

Virtually none of these products can be measured by commercial laboratories. Even if they could be measured, what would one consider to be "normal" levels?

### **Estrogens:**

- Premarin is a conjugated estrogen product. It is an extract of the estrogen excretion products found in the urine of pregnant horses.
- Ogen estropipate – a unique synthetic estrogen. Not found in nature. Not commonly used.
- Menest Esterified estrogens, a synthetically made estrogen similar in structure to Premarin and in the same doses.
- Cenestin, conjugated synthetic estrogens. Also similar to Premarin.
- Enjuvia similar to Cenestin

## Progestins

- Provera medroxyprogesterone acetate, a synthetic progestin. Does not exist in nature.
- Cytrin a generic brand of Provera.
- Aygestin norethindrone acetate 5mg. Contains as much norethindrone as is usually contained in five birth control pills.

## Estrogen/Progestin Combinations:

- Activella, estradiol/norethindrone 1/0.5 Birth control pill progestin but with bioidentical Estradiol instead of synthetic ethinyl estradiol. A full mg of estradiol with progestin at half the strength of the usual oral contraceptive.
- Femhrt, ethinyl estradiol/norethindrone acetate, 2.5/0.5 Both parts are from birth control pills. Fully synthetic. Low dose birth control pill estrogen with half strength progestin.

## Estrogen/Testosterone Combination:

- Estratest esterified estrogens/methyltestosterone 1.25/2.5 The highest dose of Premarin like estrogens combined with a synthetic testosterone. Methyltestosterone is long lasting in the blood because it is difficult for the body to metabolize. **Neither component can be measured by standard laboratory tests. Neither part is bioidentical.**