



WHAT IS PROGESTERONE?

Like estrogen, which gets much more public attention, progesterone is a female sex hormone. Women produce it in the ovaries and adrenal glands, and during pregnancy in the placenta. With all the talk about estrogen, progesterone is sometimes left behind as the forgotten female hormone.

WHAT ARE HORMONES AND HOW DO THEY WORK?

Hormones are our bodies' chemical messengers. They travel through the bloodstream to trigger certain activities or changes in the body. Hormones work by binding to specialized areas of cells known as receptor sites. There they initiate a chain of events in specific cells or organs. For example, progesterone has been known to initiate a calming effect in the brain, reducing anxiety.

WHAT DOES PROGESTERONE DO?

During the reproductive years, progesterone prepares the uterine lining (or womb) for pregnancy. Each month, progesterone levels rise following ovulation. Unless you become pregnant, the progesterone levels drop and trigger a monthly menstrual period. Progesterone can also play an important role in balancing out the effects of estrogen and other hormones. If you have too much estrogen and not enough progesterone, your body may be thrown out of balance. During menopause hormone imbalance can lead to symptoms such as hot flashes, night sweats, insomnia, vaginal dryness, irritability, or decreased sex drive. During the reproductive years, hormone imbalance may cause premenstrual complaints such as water retention, breast tenderness, migraines or mood swings.

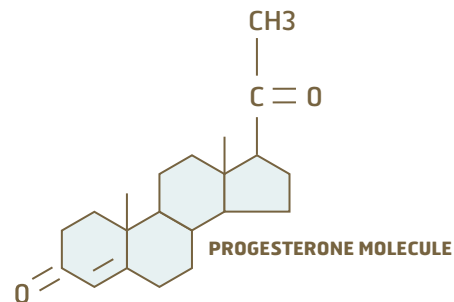
WHAT IS "NATURAL" OR "BIO-IDENTICAL" PROGESTERONE?

Progesterone is a hormone produced in the body. The term "natural" or "bio-identical" progesterone refers to progesterone that is identical to the progesterone that the human body produces. Natural or bio-identical progesterone is formulated from a substance found in Mexican wild yams and other plants. These similar plant hormones are further modified in a laboratory to become identical in chemical structure to the human progesterone produced in a woman's ovaries.

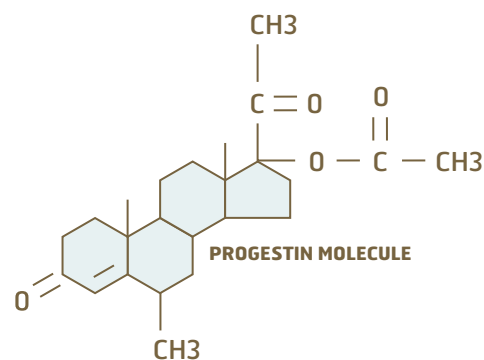
IS PROGESTIN THE SAME THING AS PROGESTERONE?

No. Although these terms are often used interchangeably, they **do not** mean the same thing. *Progesterone* refers to the hormone produced in the body, or produced from a plant source but still chemically identical to human progesterone. In contrast, *progestin* is a hormone that is synthetically produced and may differ in structure to progesterone. You may also have heard of *progestogens*. This is a general term that applies to the category of both natural and synthetic hormones that act like progesterone in the uterus. See the difference in the molecular structure depicted below.

HERE'S WHAT THE "NATURAL" PROGESTERONE HORMONE LOOKS LIKE:



HERE'S WHAT THE ALTERED MOLECULAR STRUCTURE OF A PROGESTOGEN LOOKS LIKE:



Women in balance

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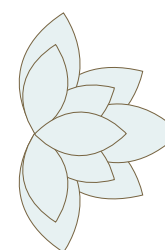
UNDERSTANDING PROGESTERONE



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ARE PROGESTERONE AND PRODUCTS THAT CONTAIN WILD YAM EXTRACT THE SAME THING?

No. Wild yam is an herbal extract. Whether found in a capsule or cream, wild yam extract the herb, **does not** convert into progesterone in the body. Products that contain progesterone should be labeled as containing USP Progesterone.

HOW DO SYNTHETIC PROGESTINS COMPARE WITH BIO-IDENTICAL PROGESTERONE?

Synthetic progestins do not always act the same in the body as natural progesterone. Synthetic progestins are broken down in the liver into a variety of metabolites, and while some of these bind to progesterone receptors and thus may mimic some of bio-identical progesterone's effects, others can bind to various types of steroid receptors throughout the body, causing side effects! For example, while natural progesterone promotes and sustains pregnancy, synthetic progestins **cannot be** used during pregnancy due to the potential risk to the fetus because of their wider range of hormonal effects. Also, clinical trials comparing bio-identical progesterone with synthetic progestins are showing a significantly better safety profile for the bio-identical progesterone group; in one large trial (PEPI), the bio-identical progesterone group had a healthier blood lipid profile².

WHAT HAPPENS TO PROGESTERONE DURING MENOPAUSE?

As you approach menopause, progesterone is the first hormone to decrease, followed by fluctuating estrogen levels. This phase, called perimenopause, may start as early as your late thirties or early forties and last as long as ten years. Your periods may become more irregular. You may not ovulate some months, and thus not produce any progesterone. This may disrupt the estrogen/progesterone balance, causing a variety of symptoms such as bloating, breast tenderness, night sweats, anxiety, insomnia, headaches, and irritability.

After menopause, your ovaries cease to produce progesterone, but the body will continue to produce up to 40% of the levels of estrogen you had before menopause. Of course, the level of production depends on the individual. Since progesterone affects numerous aspects of your health besides pregnancy

How can a hormone connected with pregnancy also affect my mood after menopause?

You have progesterone receptor sites in many parts of your body besides the uterus. Thus progesterone, or a lack of progesterone, may affect other aspects of your health, too, such as fat metabolism, sleeping patterns, thyroid activity, mood, sex drive, water metabolism, and bone health.

and menstrual periods, you may experience other symptoms. For example, progesterone has a calming effect on the nervous system, thus a lower level of the hormone may contribute to increased night sweats, anxiety, insomnia, irritability or mood swings.

HOW CAN PROGESTERONE CREAM HELP ADDRESS THE HORMONAL IMBALANCES OF MENOPAUSE?

Progesterone cream is easily absorbed into the blood stream through the skin. Progesterone cream may help support progesterone levels and CAN alleviate some menopausal discomforts. Clinical studies have shown that bio-identical progesterone cream effectively reduces hot flashes³.

IS PROGESTERONE SAFE?

Progesterone has been used in a number of clinical applications since 1940. Its early use was to assist women with infertility. Progesterone has NOT been linked to increased cancer risk. In fact, a large study conducted in France to look at the risk of breast cancer with hormone replacement therapy found that using bio-identical progesterone did not cause any increase in breast cancer, whereas use of synthetic progestins did result in a statistically significant increase in breast cancer risk⁴. It is important to note that progesterone is often confused with **progestins**, which have been linked to increased cancer risk as evidenced in the Women's Health Initiative as well

as in this large French study. As with all hormones, they should be considered carefully with the assistance of your physician or other health care provider.

IS PROGESTERONE RIGHT FOR ME?

"Natural" or "bio-identical" progesterone can be found in a variety of forms: creams, gels, suppositories, pills, or patches – and can come in a range of doses. We recommend that you work with your health care provider to find out if you need to supplement your hormones with progesterone. Then if warranted, work with them to ensure you get the right physiological, individual dose for you. Progesterone can be prescribed by your physician, or progesterone cream can be purchased at natural products stores or online. However, not all progesterone creams are created equal. If you are purchasing them at a local store, look for a product that contains USP progesterone and is supported by clinical studies.

Many women find relief from the use of progesterone cream. One research study found that using a cream makes it easier for women to adjust their use to meet their needs as well as allowing them to use a more efficient, lower dose than with pills, while benefiting from a similar therapeutic effect⁵. However, only you, in partnership with a health care professional, can decide what works for you. Be an informed consumer.

WHAT DOES USP PROGESTERONE MEAN?

The **United States Pharmacopoeia** is a compendium of drugs published every year by the United States Pharmacopoeial Convention. Stating USP before the ingredient, in this case USP Progesterone, means that it is a known substance and matches quality specifications published in this compendium.

Couldn't I simply get more progesterone by eating wild yams?

No. Our bodies do not have the ability to convert substances in the wild yam to progesterone. It must be done in a laboratory.

HOW DO I TALK TO MY HEALTH CARE PROVIDER ABOUT NATURAL PROGESTERONE?

Discuss the range of options and choices with your health care provider for menopause or other women's health concerns. Discuss the information in this brochure with them.

WHERE CAN I GET MORE INFORMATION ABOUT PROGESTERONE AND MENOPAUSE?

Women in Balance is a national, non-profit association of women, doctors, health care professionals, and national organizations dedicated to helping women achieve optimal health, wellness and hormone balance. Please visit our website for more information, resources and research and to sign up for the free newsletter at:

www.womeninbalance.org

Every woman will experience changes in her health during her lifetime. Good health, wellness, and hormone balance is the foundation for everything women do – from work to taking care of their families to enjoying life.

REFERENCES

1 Stanczyk FZ. All progestins are not created equal. *Steroids* 2003; 68:879-90.

2 Writing Group for the PEPI Trial. Effects of estrogen or estrogen/progestin regimens on heart disease risk factors in postmenopausal women. The postmenopausal estrogen/progestin interventions (PEPI) trial. *JAMA* 1995; 273(3):199-208.

3 Leonetti HB, Longo S, Anasti JN. Transdermal progesterone cream for vasomotor symptoms and postmenopausal bone loss. *Obstet Gynecol* 1999; 94(2):225-8.

4 Fournier A, Berrino F, Riboli E, Avenel V, Clavel-Chapelon F. Breast cancer risk in relation to different types of hormone replacement therapy in the E3N-EPIC cohort. *Int J Cancer* 2005; 114(3):448-54.

5 Leonetti HB, Landes J, Steinberg D, Anasti JN. Topical progesterone cream as an alternative progestin in hormone therapy. *Altern Ther Health Med* 2005; 11(6):36-38.