

## Hormones and HIV <sup>[1]</sup>

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## Hormone Basics

Hormones are chemicals in your body that are carried in your blood stream and send messages between different organs. They are formed in glands and organs, and they control all sorts of processes in the body. Hormones have an effect on your growth, metabolism (your body's chemical processes), sex drive, and ability to have children.

## Hormones and HIV

Studies have shown that HIV can affect the body's ability to make hormones and keep healthy hormone levels. There are many types of hormones. The hormones that seem to be particularly affected by HIV are the following:

- Estrogen and progesterone: female sex hormones that are made in the ovaries
- Testosterone: male sex hormone found in small amounts in women's bodies. Testosterone is made in the adrenal glands (located just above the kidneys) and in the ovaries.
- DHEA (Dehydroepiandrosterone): steroid hormone that may be connected with immune function and energy. DHEA is made in the adrenal glands and sex hormones are made from it.

Estrogen, progesterone, testosterone, and DHEA levels naturally get lower as you age. Changes in one of these hormones can affect the levels of the others.

Some drugs that are used to treat HIV-related conditions can also affect hormone levels. These include:

- Cytovene (ganciclovir)
- Megace (megestrol acetate)
- Nizoral (ketoconazole)

Experts believe that hormones, especially growth hormone, are also connected to wasting and [lipodystrophy](#) [2], a group of fat-related body changes that appear in some people living with HIV (HIV+). However, more research is needed in this area.

The antiretroviral drugs used to treat HIV can sometimes reduce the effectiveness of hormones, including birth control pills containing estrogen and progesterone. For more information, see our fact sheet on [Birth Control](#) [3].

## Problems Caused by Irregular Hormone Levels

Changes in your hormone levels can affect many of your body's functions. Some of the symptoms that are caused by hormone level changes include:

- Abnormal menstrual cycles, possibly including early menopause for women living with HIV
- Weight loss
- Headaches
- Mood swings
- [Depression](#) [4]
- Sleep problems
- Fatigue (extreme tiredness)
- [Decreased bone density](#) [5]
- Vaginal dryness
- Decreased sexual desire
- Difficulty getting pregnant

If you are experiencing any of these symptoms, it is important that you see your health care provider, who can check your hormone levels and address any problems.

Vaginal dryness can be mistaken for a [yeast infection](#) [6]. It is important to keep track of your cycles and report anything unusual to your health care provider so that you can find the cause of your symptoms. For more information about menstrual problems and HIV, see our fact sheet on [Menstrual Changes](#) [7].

## Hormone Replacement Therapy (HRT)

Women who have low estrogen levels may choose to replace the estrogen in order to regulate menstrual periods and help relieve pre-menstrual syndrome (PMS). However, the most common reason to replace estrogen is to relieve the symptoms of [menopause](#) [8].

Care must be taken in replacing estrogen. Taking estrogen without progesterone increases the risk of uterine cancer. If a woman's uterus (womb) has been removed, she can take estrogen by itself. This is called estrogen replacement therapy or ERT.

Women who still have a uterus usually take a combination of estrogen and progesterone. This is called hormone replacement therapy (HRT).

Although HRT used to be regularly recommended to relieve menopausal symptoms and reduce bone loss, long-term use of HRT is now questionable. Research has shown that HRT can increase women's risk for breast cancer, heart disease, and stroke. HRT may be appropriate for a short time to relieve menopausal symptoms that do not respond to other therapies. Estrogen and progesterone are available in patches, creams, and vaginal rings; these may be an alternative to the pill form of HRT and may not carry the same risks.

To figure out if HRT is right for you, speak with your health care provider about all the risks and benefits. When deciding about HRT, it is important to tell your provider about any prescription medications, street drugs, over-the-counter medications, alternative therapies, or other treatments you are taking.

## Alternative Treatments

There are other therapies available to treat menopausal symptoms. However, these may also have unwanted side effects [9] or interact [10] with HIV drugs. In addition, some may not have adequate scientific evidence demonstrating their effectiveness. **If you choose alternative therapies [11] it is best to consult a skilled practitioner and let your regular health care provider know exactly what you are doing.**

Other treatments may include:

- Traditional Chinese Medicine (e.g., acupuncture, Chinese herbs)
- Eating foods that contain plant-based estrogens (also called phytoestrogens; e.g., soy, flax seeds)
- Herbal or botanical supplements (e.g., black cohosh, red clover, dong quai, kava, ginseng)
- Antidepressant drugs and/or counseling
- Prescription drugs to prevent bone loss (e.g., Fosamax, Actonel, or Boniva)
- Mindfulness training

## Testosterone

Shortages of testosterone can result in fatigue, sexual problems, depression, and muscle loss. Many women who take testosterone or anabolic steroids report improved energy, sex drive, mood, and better quality of life. Anabolic steroids are drugs with very similar effects as testosterone. They have also been shown to increase lean muscle mass and add weight.

Speak to your health care provider about possible side effects from testosterone use. Women may experience facial hair growth, deepening of their voice, or clitoral enlargement.

Testosterone is available in many forms; patches, gels, and creams may be preferred to injections and tablets because they decrease the likelihood of side effects listed above.

Testosterone is not recommended for women who are pregnant [12] or who wish to become pregnant [13].

## Human Growth Hormone

Women suffering from weight loss (wasting) or lipodystrophy [2] may consider treatment with

human growth hormone (HGH, Serostim). HGH has been shown to increase lean muscle mass and may reduce fat changes associated with lipodystrophy. Unfortunately, HGH does not seem to correct facial wasting. Because of its high cost and potential side effects (e.g., high cholesterol, muscle and joint pain, swelling due to fluid retention), HGH is not for everyone.

## Taking Care of Yourself

Discuss any symptoms you are experiencing with your health care provider. If a hormone imbalance is found to be the cause, you can explore treatment options. Also make sure to discuss [drug interactions](#) [10] and long-term side effects of hormone use.

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## Additional Resources

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- [37] <http://www.mayoclinic.org/diseases-conditions/menopause/in-depth/hormone-therapy/art-20046372>
- [38] <http://www.womenshealth.gov/menopause/symptom-relief-treatment/menopausal-hormone-therapy.html>
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- [40] <https://www.consumerhealthdigest.com/menopause-center/soy-and-menopause.html>