Hormones and HIV

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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 control all sorts of processes in the body. Hormones affect your growth, metabolism (your body's chemical processes), sex drive, and ability to have biological 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:

- 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. However, more research is needed about this.

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. 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].

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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 questioned. 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, talk with your health care provider about all risks and benefits. Make sure your provider knows about any prescription medications, street drugs, over-the-counter medications, alternative therapies, or other treatments you are taking before you decide whether to take HRT.

Alternative Treatments

There are other therapies for treating menopausal symptoms. However, these may also have unwanted side effects [9] or interact [10] with HIV drugs. In addition, some may not have enough 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 to 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. In women, it may cause hair to grow on their face, their voice to become deeper or their clitoris to become larger. Testosterone is available in many forms; patches, gels, and creams may be preferred to injections and tablets because they decrease the likelihood of the side effects listed above. Testosterone is not recommended for women who are pregnant [12] or who wish to become pregnant [13].

Human Growth Hormone

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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.

**Gender-Affirming Hormone Therapy**

People of transgender experience [14] are more likely to seek gender-affirming hormone therapy than any other medical treatment for aligning their physical body with their gender identity. There are no medical recommendations against trans people living with HIV taking HIV drugs together with hormone therapy.

While more research is needed on gender-affirming hormone therapy and HIV treatment (and there is even less information about these issues for trans men), available data show that most HIV drugs are safe to take with estrogens. There are two HIV drugs that should not be taken with estrogens: amprenavir (Agenerase) and unboosted fosamprenavir (Lexiva).

Studies have shown that providing hormone therapy alongside HIV care can help trans people enter and stay in HIV care, take their HIV drugs on time, and maintain lower viral loads. Unfortunately, however, few providers know much about transgender health care and gender-affirming therapies. This may lead trans women to access feminizing hormones through underground and unregulated channels. Hormones bought on the internet, from veterinary suppliers or other channels may not be safe. Without a prescribed amount, trans women may also give themselves incorrect doses (often too much).

**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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- lipodystrophy HIV [31]
- wasting HIV [32]
Additional Resources

Select the links below for additional material related to hormones.

- Hormone Changes (CATIE) [34]
- FAQ: The Menopause Years (ACOG) [35]
- Hormone Therapy: Is It Right for You? (Mayo Clinic) [36]
- The Importance of Gender-Affirming Care (Positively Aware) [37]
- Menopause Treatment (womenshealth.gov) [38]
- Hell in a Hot Flash? (Positively Aware) [39]
- Transgender Women, Hormonal Therapy and HIV Treatment (Journal of the International AIDS Society) [40]
- Soy for Menopause: A Natural Menopausal Remedy (Consumer Health Digest) [41]

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