

### Common Hormone Conditions

Interactions between the five hormones of the female panel (see right) are fundamental to health, which means hormone imbalance may negatively impact well-being. The following are some examples of how hormone imbalance can affect health:

#### Weight Gain

High levels of the stress hormone, cortisol can cause unstable blood sugars and may increase sugar cravings. High estrogen levels may interfere with thyroid gland function and result in weight gain. High levels of testosterone and/or DHEAs may be associated with polycystic ovarian syndrome, a condition that makes it difficult to lose weight.

#### Depression / Difficulty Coping / Irritability

Our laboratory data show that 2/3 of women who self-report depression or difficulty coping and 7/10 who report irritability have at least one hormone that is out of range. While there is no guarantee that restoring hormone balance will lessen these mood symptoms, many women experience some relief from mood disorders when hormone balance is restored.

#### Sleep disturbances

High or low levels of cortisol may affect sleep, as may low levels of estradiol. For some postmenopausal women, difficulty sleeping is directly related to hot flashes and night sweats, which are often signs of hormone imbalance. Once hormone imbalances are addressed, sleep issues may resolve.

#### Hot Flashes

Having too little estrogen can be associated with hot flashes, but so can supplementing with too much estrogen. Maintaining the right amount of estrogen is one factor in controlling hot flashes.

#### Bone Loss

Testosterone and estradiol help build bone, while high cortisol tends to break down bone. High cortisol not only accelerates bone loss, but also interferes with the bone-building action of testosterone.

#### Breast Cancer

A common pattern of hormone imbalance shows up in women with breast cancer: above range estradiol, below range progesterone, above range evening cortisol and out of range DHEAs.

### Why Test Hormones in Saliva?

- Saliva hormone testing is excellent at uncovering hormone imbalance.
- Saliva measures hormone that *actually* made it into tissue, because hormones pass through saliva gland tissue before getting into saliva.
- Blood measures hormones that *might eventually* get to tissue.
- Saliva collection is painless and easy to do at home. Blood collection requires a trip to the laboratory, and some hormones cannot be tested in blood (e.g. estriol).
- The stress of a needle puncture for blood collection tends to raise cortisol levels. Saliva collection is not known to raise cortisol levels.

#### Estrogens

*estradiol, estrone, estriol*

- receptors found throughout the body including: heart, brain, breast, bone, bladder, blood vessels.
- estradiol is the strongest estrogen, followed by estrone. Estriol is the weakest.
- responsible for female sex characteristics and play an important role in the menstrual cycle.
- needed to build up the lining of the uterus (endometrium).

#### Progesterone

- is needed to balance the effects of estrogens and keep the endometrium from getting too thick.
- is highest shortly after ovulation because it is released by the corpus luteum, which only forms after ovulation.

#### Cortisol

- is the major stress hormone released by the adrenal glands.
- high or low cortisol levels may be an indication of poor adrenal function.

#### DHEAs

- is a storage form of the adrenal hormone DHEA, used to make estrogens and testosterone
- after menopause, estrogen and testosterone are made primarily from DHEA released by the adrenal glands.

#### Testosterone

- helps maintain muscle mass and bone, improves sense of well-being and sex drive.

## Restoring Female Hormone Balance

### Estrogens

*Low estrogen* can be corrected by supplementing with estrogen, however nutritional supplements may also help improve symptoms. For example, boron may help boost estrogen production, while plant estrogens and progesterone may provide relief from symptoms of low estrogen.

*High estrogen* occurs either from making/retaining too much estrogen or supplementing with too much. Women who carry weight around their midsection often have high estrogen levels because fat cells have an enzyme that makes estrogen from adrenal hormones. Thus, weight loss often reduces estrogen levels. When estrogen levels are high, it is important to make sure there is enough progesterone to balance its effects. Supplementing with too much estrogen can make estrogen receptors less responsive to estrogen, leading to estrogen deficiency symptoms.

### Progesterone

*Low progesterone* is often addressed by supplementing with natural progesterone, which is generally very safe and effective. The herb chasteberry may also help normalize progesterone levels. Sometimes low progesterone accompanies low thyroid hormone levels, therefore lab tests for thyroid function may be recommended.

*High progesterone* is almost always a consequence of over-supplementation. Prolonged supplementation of high doses of progesterone may cause progesterone receptors to become less sensitive, which could result in symptoms of low progesterone. Too much progesterone also sometimes leads to increased testosterone levels and symptoms of testosterone excess. A dose reduction or different progesterone type (cream instead of capsule) may be required.

### Cortisol

*Low cortisol* in the morning strongly suggests adrenal issues, which may require further testing or interventions by your healthcare professional.

*High cortisol* levels are associated with numerous symptoms and conditions including: bone loss, high blood pressure, insulin resistance and diabetes, weight gain, memory impairment and immune system suppression. High cortisol levels also interfere with the action of other hormones. Consequently, when cortisol levels are high, the first step in restoring hormone balance is often to lower cortisol levels. Your healthcare professional may recommend lifestyle changes as well as supplements to help address high cortisol levels.

### DHEAs

*Low DHEAs* does not have well-defined signs and symptoms, although low DHEAs is often associated with chronic illness. Some women may benefit from supplementing with DHEA to bring saliva hormone levels within range.

*High DHEAs* is associated with polycystic ovarian syndrome and insulin resistance. Thus, it may be necessary to undergo further testing, or to receive treatment for these conditions. High levels also occur when too much DHEA is given, in which case your healthcare professional will likely recommend reducing the dose.

### Testosterone

*Low testosterone* symptoms can sometimes be resolved by adding progesterone or correcting adrenal issues. However, it is also sometimes necessary to supplement with testosterone.

*High testosterone* is associated with polycystic ovarian syndrome and insulin resistance. Thus, it may be necessary to undergo further testing, or to receive treatment for these conditions.

The book **"You've Hit Menopause: Now What?"** has more detailed information on hormone balance. Visit [www.rmalab.com](http://www.rmalab.com) to find out more about this book and how you can get a free copy.

## Why Test?

*Good health has a lot to do with maintaining balance: the right balance of work and play, the right balance of nutrients in the diet, and the right balance of hormones.*

*Hormone imbalance may be a result of illness, or may produce symptoms and biochemical changes that contribute to illness.*

*Rocky Mountain Analytical is committed to offering laboratory tests that identify hormone imbalances and other conditions - so they can be corrected before disease develops!*

## About Us

*Rocky Mountain Analytical was founded in 2002 with a mission to offer tests that focus on early identification and prevention of disease.*

*Rocky Mountain Analytical is an accredited medical laboratory located in Calgary, Alberta. Accreditation means tests performed by Rocky Mountain Analytical are regularly reviewed for quality, accuracy and reproducibility by the College of Physicians & Surgeons of Alberta.*

*Ask your healthcare professional whether a test is right for you.*

Information is for educational purposes only. It is not meant as medical advice and any treatment decisions should be made with the knowledge or consent of your healthcare professional.



**Rocky Mountain Analytical**  
*Changing lives, one test at a time*

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