



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

DUTCH®

Dried Urine Test for Comprehensive Hormones

Information for Patients

The Dried Urine Test for Comprehensive Hormones (DUTCH®) measures levels of hormones and their metabolites (what hormones are broken down into) from urine collected at four specific times in a day. If a hormone group is like a *family*, then cortisol, estradiol, progesterone and testosterone are like the *parents* since they are the “heads” of their respective families. The hormone metabolites are like *children* because they are formed from the parent. Combining data on the parent hormone with information about its metabolites gives a fairly complete picture of hormone function. Or, put a different way: DUTCH shows how the whole hormone family works together for most of a day, whereas serum and saliva tests only check on the parents once a day.

Hormone Related Conditions

DUTCH helps identify hormone imbalances that may contribute to certain health conditions. Measuring hormone metabolites in urine can show how a hormone family works together in a way that standard serum or saliva tests cannot. Ordering a DUTCH may help identify hormone imbalances that contribute to the following conditions:

Weight Gain

Over time, the stress hormone cortisol can stimulate appetite. As a result, people under prolonged stress often gain weight. However, research shows that high levels of cortisol parent hormone are *not* associated with obesity and overweight whereas cortisol metabolites *are*. Thus, measuring levels of cortisol metabolites may be key to gaining a full understanding of weight gain related to over-production of cortisol.

Fatigue

Many studies have shown that diminished production of cortisol can lead to symptoms of fatigue. However, low cortisol levels in serum or saliva are not necessarily an indication that overall cortisol production is low. Measuring cortisol metabolites in urine provides valuable information on overall cortisol production that cannot be obtained through serum or saliva, because it reports both the parent hormone and metabolite levels.

Depression or Irritability

Hormone imbalances have been linked to mood disturbances in both men and women. In men, low testosterone and/or abnormal cortisol may contribute to depression and irritability. In women, excess estrogen relative to progesterone may result in irritability or anxiety, while an excess of progesterone may contribute to depression. Testing with DUTCH shows how the whole hormone family functions for a day, and it also allows healthcare professionals to more accurately assess whether hormone imbalance is affecting moods.

Why Use the DUTCH® ?

- Parent hormones can be measured in saliva, serum, urine and hair, but hormone metabolites are measured almost exclusively in urine. Measuring the parent hormone and its metabolites via DUTCH provides a more complete view into hormone family function than a single measurement of a parent hormone.
- The advantage of DUTCH over a 24-hour urine collection hormone profile is two-fold:
 - Collection is simple: urine is collected at different times on a filter paper strip
 - The collection of several distinct samples allows the laboratory to report cortisol levels throughout the day. The reported levels are compared to a normal cortisol rhythm and total cortisol production can be assessed.

Androgen

Testosterone, androstenedione, DHT, and DHEA are essential for male characteristics and are also important for bone, muscle, energy and libido in both men and women.

Estrogens

Estrone (E1), estradiol (E2) and estriol (E3) are essential for female characteristics and important to bone, brain and heart health.

Cortisol

Cortisol is released from the adrenal glands. The cortisol family is important in helping manage inflammation, immune function, blood glucose, energy and metabolism.

Progesterone

Progesterone is important in the menstrual cycle as a balance to estradiol and is also essential to maintaining pregnancy. Progesterone also has effects on brain, bone and heart.

Melatonin

Melatonin is a hormone secreted by the pineal gland of the brain that helps regulate the sleep-wake cycle.

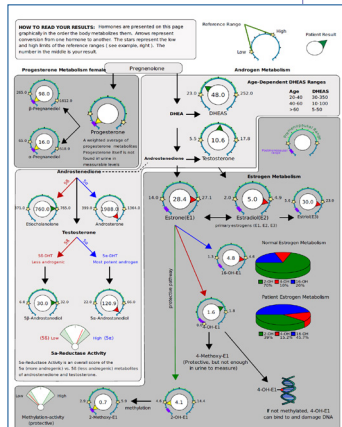
Test Results

The DUTCH® provides useful information on how your body breaks down *parent* hormones into metabolites that are excreted in urine.

Progesterone Metabolism: Progesterone helps balance the effects of estrogens. Since very little *parent* progesterone hormone is present in urine, measurement of its metabolites is used to estimate progesterone present in circulation.

Estrogen Metabolism: Specific estrogen metabolites have been associated with breast cancer risk while others are considered protective. Progesterone and certain nutritional supplements may be used to adjust the pattern of estrogen metabolites.

Androgen Metabolites: Testosterone and DHEA are the most common androgen hormones, and the way they are broken down greatly influences symptoms. It is possible to have normal levels of testosterone and have symptoms of androgen excess if elimination pathways favour the more potent androgen metabolites.



Why Test?

Good health has a lot to do with maintaining balance: the right balance of work and play, the right balance of hormones and the right kinds of foods.

DUTCH® may help uncover hormone imbalances that contribute to symptoms.

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

Lifestyle Changes

Lifestyle modifications may be recommended to improve your hormone metabolism.

- increased consumption of fibre improves estrogen elimination.
- regular exercise is important for hormone metabolism.
- eating cruciferous vegetables (e.g. broccoli, kale) may improve hormone metabolism.
- adequate sleep is essential for all hormone related issues.

Your healthcare professional can guide you in making the right modifications for your hormone needs.

Supplements

Nutritional supplements are often recommended as a means to restore hormone balance and aid hormone metabolism. Possible supplements include:

- plant-based estrogens, also called phytoestrogens
- boron, which helps increase estrogens and testosterone in women.
- estrogen metabolism modifiers (e.g. DIM to promote 2-hydroxyestrone pathway over the 4-hydroxyestrone pathway for estrogen metabolism).
- 5-alpha reductase inhibitors (e.g. gamma-linolenic acid, zinc, saw palmetto).
- adaptogenic herbs to support glucocorticoid production by the adrenal glands.

Your healthcare professional will recommend a program that suits your hormone needs and health goals.

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.



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This material is provided for information purposes only. It is not meant as medical advice. Please discuss any health issues with your healthcare provider. Any treatment decisions should be made with the knowledge and consent of your healthcare provider.