

Hormones

What they are and why they're important

It seems like everyone is talking about hormones these days. What exactly are hormones? What role do they play in our bodies? And why is there so much controversy surrounding them?

What are Hormones?

Hormones, in their most basic sense, are chemical messengers. Hormones are released from specific organs or glands in the body and travel through the blood stream to send messages to other cells. All of the cells in our bodies have specific **hormone receptors**. The hormones fit into the receptor like a lock fits into a key. Once the receptor is activated by binding a hormone, different activities take place inside the cell. Sometimes the message is to store or use up molecules for energy, sometimes the chemical message is to turn on or off certain **enzymes**, and sometimes the message is to start or stop expressing certain genes from our DNA. The message that the cell receives depends upon the hormone, the receptor and the type of cell on which the receptor is located.

Why are Hormones so important?

There are three major hormones in our bodies; Insulin, Adrenaline and Cortisol. They are considered major because if they were to disappear we would not be able to survive for more than a few hours to days. Loss of the minor hormones, on the other hand, would not cause our immediate demise but will cause us to feel pretty lousy and may contribute to disease which could rob us of good health and longevity. Some of these hormones are thyroid, estrogen (actually a family of hormones including estradiol, estriol and estrone), progesterone, testosterone, growth hormone, and DHEA. Each hormone, both major and minor, plays a role in the delicate balance of our **metabolism**.

In simple terms our metabolism is how we build or use our body. When we eat, sleep, or meditate our metabolism is in an **anabolic** (or building) state. When we are anabolic, our bodies are regenerating – building new proteins, muscle fibers, blood cells, skin cells, etc. When we exercise, work, or think we turn our metabolism into a **catabolic** (or using) state. When we are catabolic we are using up the protein, energy and bio-chemicals in our bodies in order to change our external environment in some way. If we do not maintain an appropriate balance between the anabolic and catabolic states (i.e. not getting adequate nutrition or rest), or if we are missing a hormone or have low levels of a hormone, our metabolism becomes imbalanced. Over time, an imbalanced metabolism leads us to feel poorly and can contribute to chronic disease.

Why is there so much controversy surrounding Hormones?

While the medical community is in agreement regarding the importance of hormones for balance of our metabolism, there is ongoing debate about how best to repair a metabolism that is not functioning optimally. Of course, the major hormones need to be replaced to maintain life and most will agree that thyroid hormone should be replaced (although there is debate as to how low the thyroid hormones need to be before therapy is initiated). There is, however, considerable debate regarding replacement of estrogen, progesterone and testosterone. Some in the medical field feel strongly that these hormones should be replaced only sparingly, if at all, and others believe strongly that replacing ovarian hormones is necessary to maintain normal metabolism and prevent the development of diseases associated with aging. With the medical community so divided, how is an individual to decide what is best for her?

Medical studies regarding hormone replacement therapy have created more questions than they have answered, likely because there is no single answer which is right for everyone. Hormones are powerful agents. Estrogen receptors are present in almost every cell in the human body. Our understanding of the effects of hormones is incomplete and therefore questions regarding the pros and cons of replacing certain hormones cannot be fully addressed. Whether or not the ovarian hormones should be replaced is a complicated question with different answers for different women. To fully address this issue a woman should take the opportunity to educate herself as much as possible about the pros and cons of hormone replacement therapy and talk to a provider knowledgeable about hormones regarding the risks and benefits in her particular situation.

Maintaining Hormonal Balance

Whether or not an individual opts to replace hormones associated with declining ovarian function, there are steps which can be taken to best maintain the balance of the major hormones and therefore minimize the impact of waning ovarian hormones on metabolism. These steps include *adequate* and *appropriate* nutrition, *adequate* sleep and stress management, *appropriate* exercise and minimizing (if not eliminating) exposure to caffeine, tobacco, alcohol and other toxins. The definition of “adequate” and “appropriate” varies from person to person. A discussion with your health care provider can help you define personal program to achieve proper hormonal and metabolic balance.