

## *Module 9, Lesson 1 Handout:*

### **Hormones in Males**

We always think of testosterone when we think about male hormones, but we need to consider estrogen and progesterone too. These three hormones are all present in males, just in different amounts than in females. Here's a breakdown of the role these hormones play in men's health.

#### **Estrogen**

##### **The Basics**

In men, estrogen is produced in the testes and adrenal glands. Both estrone and estradiol are present in males, though in much smaller amounts compared to females. Estrogen plays a role in the male reproductive system by influencing erectile function, sperm count and sex drive.

##### **Imbalances**

Adult men need small amounts of estrogen to keep things in balance. When estrogen levels are too low in men, this can lead to symptoms including reduced sex drive and sperm count, exhaustion, hair loss, reduced muscle and bone mass. Conditions that may lead to low estrogen include genetic and autoimmune disorders, tumors, nutrient deficiencies, or kidney or liver conditions.

High estrogen levels may be due to genetics, stress, weight gain and obesity. This is one reason why obesity and low sperm count are linked: fat cells produce estrogen, and excess estrogen can lead to low sperm count. Other symptoms of high estrogen in men are infertility, erectile dysfunction, and excessive breast tissue growth.

#### **Progesterone**

##### **The Basics**

In men, progesterone is made in the testes. It plays a role in testosterone and sperm production, and has also been shown to have an effect on the central nervous system, immune system, cardiovascular system, kidney function, adipose tissue, behavior, respiratory system and sleep.

##### **Imbalances**

Low progesterone in men is linked to decreased sex drive, erectile dysfunction, hair loss, weight gain, depression, fatigue, male breast development, muscle and bone loss and prostate cancer. High

progesterone levels in men cause an increase in estrogen production, which can lead to symptoms of high estrogen (discussed above). High progesterone is also linked to heart disease.

## **Testosterone**

### **The Basics**

Testosterone is the main male sex hormone. It plays a role in sex drive, bone mass, fat distribution, muscle mass, mood, and the production of red blood cells and sperm. It influences body composition by promoting muscle growth and suppressing fat increases. During puberty, it's in charge of developing the penis and testes, and causes other physical changes like the deepening of the voice and facial hair growth. Testosterone is released from the testes, and it's release is regulated by signals sent from the brain to the pituitary gland.

### **Imbalances**

Despite what you may hear, having too much testosterone isn't a common problem. It's typically seen in athletes and people using illegal steroids. Signs and symptoms of high testosterone include low sperm counts, shrinking of the testicles, impotence, trouble urinating, heart damage, high blood pressure and cholesterol, liver disease, edema, acne, weight gain, increased muscle mass, mood swings and insomnia.

On the other hand, low testosterone or testosterone deficiency can lead to reduced body hair, loss of muscle mass, low sex drive, male breast development, hot flashes, reduced sperm count and infertility. Adolescent boys with too little testosterone are at risk of not experiencing normal masculinization. Testosterone deficient men may also store more fat. On average, obese men have 30% lower testosterone levels than those who are normal-weight. More than 70% of morbidly obese men suffer from male hypogonadism, or testosterone deficiency, which is a fancy way of saying abnormally low levels of testosterone. The good news is that male hypogonadism may reverse with weight loss. Research finds that decreasing body weight increases testosterone in overweight and obese. It's not unusual to have clients who are taking testosterone for their sex drive or a whole host of other medical issues, and a positive side effect usually is an increase in muscle mass and weight loss.

Low testosterone can be treated with testosterone replacement therapy, which is prescribed and managed under the care of a doctor. Evidence for testosterone boosters, such as ashwagandha, D-aspartic acid and fenugreek seed extract, is inconsistent and these supplements are not regulated. Natural ways to boost testosterone include strength training, eating vitamin D-rich foods, eating zinc-rich foods, getting restful sleep and managing stress.

## Recommendations for Balancing Hormones

Though many of the recommendations discussed for females also apply here (ditching BPA, choosing natural cleaning and hygiene products, eating organic foods, upholding all pillars of a Nutritious Life), there are a few factors you'll want to consider specifically for a male client. Depending on the specific client and his individual goals, tailor the plan to meet his needs.

- Say goodbye to soda and sugary drinks. A study published in *Reproductive Biology & Endocrinology* found that drinking sugar sweetened beverages is significantly associated with low serum testosterone. If sodas and sugary drinks are a staple in a guy's diet, suggest replacements such as seltzer or water with a squeeze of lemon.
- Start eating more home cooked meals. A 2018 study published in *Nutrients* linked eating out and low intake of homemade foods to low levels of testosterone. The study also found eating higher amounts of bread and pastries, dairy products and desserts was linked to low testosterone levels too.
- Amp up the greens. That same study in *Nutrients* found low consumption of dark green vegetables was linked to low testosterone levels. Recommend leafy greens like spinach, collards, chard and kale.
- Go big on garlic. A study in *The Journal of Nutrition* linked garlic to higher levels of testosterone. Use garlic to flavor vegetables and in marinades for protein.
- Be mindful of soy. There's tons of info out there claiming eating soy will have a feminizing effect on men, but the research isn't solid. A big review paper out of University of Geneva Medical School found even though there has been some research indicating that soy may affect male hormones and fertility, there just isn't enough clear evidence to say that's for sure the case. Just like with females, there's no need to encourage a client to eat soy if he isn't already consuming it, but including some organic fermented soy a few times a week likely won't throw hormones out of whack. Avoid all forms of overly processed soy found in packaged foods like protein bars and some alternative meat products.
- Cut back on alcohol. Research has shown heavy drinking can lower levels of testosterone, while on the flip side, light drinking has been shown to actually increase levels of testosterone. For most men, aiming for 1 or 2 drinks per day is a realistic goal.