THE COMPLETE GUIDE TO

Men's Hormone Health

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You may not have heard of bioidentical hormones before now, or you may be confused about the differences between "natural" bioidentical hormones and "synthetic" non-bioidentical hormones, such as Premarin and Prempro.

At Dr. Randolph's Ageless & Wellness Medical Center, we do our best to cut through the confusion and provide you with information you need to make the best decisions for your optimal health.

What Are the "Sex Hormones"?

Most people know that the sex hormones (estrogen, progesterone, and testosterone) play important roles in human reproduction. What you may not know is that they also help regulate many other functions in the body - from sleep patterns, to your moods and memory, bone growth, muscle strength, and much more.

To understand the many negative effects of an unbalanced hormone ratio – the most common of which is the condition estrogen dominance, where there is too much estrogen relative to progesterone – it is important to first review the actions of these hormones inside the body. Their actions are complex, and you should know the basics.

Testosterone

Testosterone is the best-known of a group of sex hormones called "androgens".

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Men produce 4 to 7 milligrams of testosterone daily, ten to forty times the amount that women produce!

In men, testosterone is produced in the testes and adrenal glands, while in women, it is produced in the ovaries and adrenal glands. Men and women both reach their peak of testosterone levels in their 20s, and thereafter levels drop approximately one percent a year.

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DHEA

Dehydroepiandrosterone (DHEA) is another important androgen produced by the adrenal glands. After being secreted by the adrenal glands, DHEA circulates in the bloodstream as DHEA-sulfate (DHEAS) and is converted, as needed, into other hormones.

This is called a "precursor" hormone, and DHEA is a precursor for testosterone (as well as other hormones). It is very unusual for anyone under the age of 35 or 40 to have low DHEA levels. As we age, however, the body's production of DHEA declines, affecting the normal balance of hormones throughout our bodies. Stress can also impact the production as DHEA, causing an early or excess decline in this important precursor hormone.

What Are the "Sex Hormones"? Cont.

Estrogen

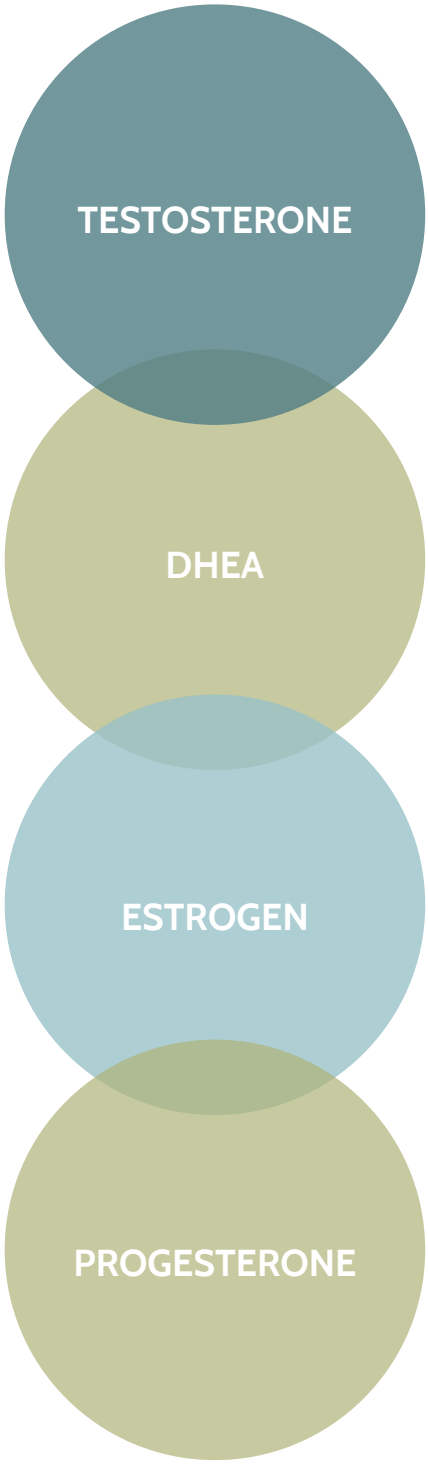
The word "estrogen" is really shorthand for a group of several different but related hormones that perform similar functions within the body: Estrone (E1), Estradiol (E2), and Estriol (E3).

Although typically thought of as the "female" hormone, estrogen also plays a role for men in supporting healthy cholesterol, brain function, and bone health. In women, estrogen is produced in the ovaries, adrenal glands, and fat tissues. Men produce estrogen in the testes through a process involving an enzyme called aromatase that transforms testosterone into Estradiol (E2).

Progesterone

Progesterone promotes regular sleep patterns, prevents bloating, maintains the libido (sex drive), fosters a calming effect on the body, stimulates bone building, and in women, thickens the uterine lining to promote survival of a fertilized egg.

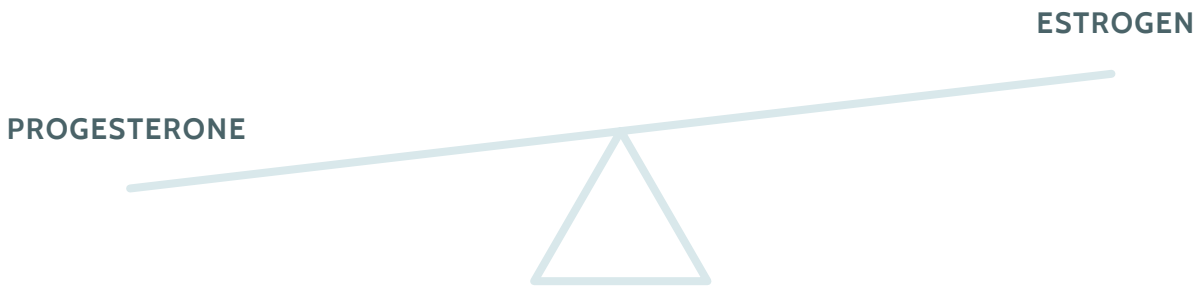
Although progesterone was discovered in 1933, our understanding of its crucial role in the hormone story continues to unfold through current research. Many common hormone problems, such as weight gain, fatigue, and irritability, are actually related to progesterone.



How do Hormones Work?

Throughout your lifetime, your hormones have your body on "autopilot". They act as chemical messengers communicating to all the tissues in your body, including your brain, bones, heart, and more.

When hormone production is optimal and levels are balanced, you feel great, have plenty of energy, easily maintain a healthy weight, desire and enjoy sex, and handle stress well. From your late teens to early 30s, a man's ratio of sex hormones is usually optimal.



The "Seesaw Effect"

As men age, both testosterone and progesterone levels decline together. When your progesterone gets low, negative symptoms can arise, such as poor sleep, fatigue, anxiety, weight gain, and lethargy. Since estrogen and progesterone are two hormones that work together in a "seesaw" effect, the result of low progesterone is a condition called "estrogen dominance".

When the progesterone side of the seesaw gets "stuck" on the ground, the estrogen side is "elevated", relatively speaking. It's not necessarily that your estrogen level is high — it's that your progesterone level is so low that estrogen effectively "dominates". Although more commonly thought of as a woman's hormone imbalance, men can develop estrogen dominance as well.

Factors That Impact Your Hormones Cont.

Stress, Hormones & Health Risks

Everyone has heard that 'stress kills', but what role do hormones play? The process is complex, but in brief, stress – especially stress that is chronic and goes on for more than three months – triggers changes in the strength and output of the adrenal glands.

Short-term stress signals the adrenal glands to produce more of the hormone adrenaline to sustain us in an accident or emergency. The surge also signals fat cells to quickly release energy. But when we are under constant stress, the adrenal glands flood the body with extra cortisol to meet the extended demand. Over time, the adrenal glands may become exhausted, causing disruption of cortisol production and the immune systems it supports. Cortisol levels that are too high or too low are red flags that you are "stressed out", and probably burning the candle at both ends.

If you feel wired and tired at the same time, can't get to sleep at night and can't get up in the morning, use coffee and sweets to keep going — but keep falling behind — your adrenals may be out of balance.

Of course there is always "good stress": the weddings, birthdays and major milestones that make up the spice of life However, when stress becomes "distress" the body goes into overdrive: pumping out cortisol until the pump wears out.

Other hormone imbalances may crop up, allergies and insomnia may get worse, you get impatient and irritable, and every cough and flu bug seems to settle in you. Another hormonal pitfall of high cortisol is weight gain, especially fat deposits around the abdominal area. Excess fat cells trigger increased estrogen production.

Weight Gain

When your estrogen and progesterone are not properly balanced due to age or other hormonal influences, you are predisposed at a cellular level to gain weight. For women, weight gain tends to occur around the waist, hips, buttocks, and thighs, and for men, weight settles in the belly (the classic "spare tire").

Weight-loss research proves that because of shifting hormone production, the average person will add one to two pounds around his or her mid-section each year between the ages of thirty-five and fifty-five without ever changing their eating or exercise habits. That means that even when you are doing your best to eat well and exercise frequently, you may still be fighting a losing battle if you have an underlying hormone imbalance! And when you don't eat as healthfully or exercise as often as you should, it is only natural that age-related changes will cause additional weight gain.

To add insult to injury, fat cells actually produce estrogen, thereby worsening a preexisting estrogen dominant condition! Estrogen dominance also causes an increase in thyroid-binding globulin, resulting in a condition of hypothyroidism. Because a primary function of the thyroid is to run the body's metabolism, hypothyroidism causes your body's metabolism to slow down.

The result: more weight gain and a vicious cycle of ever-increasing estrogen dominance.

Nutritional Deficiencies

The Standard American Diet (SAD), also known as the "Western pattern diet", is notoriously

Factors That Impact Your Hormones

deficient in nutrients. The "sad" fact is that typical Americans are not getting all the nutrients they need from the foods they eat.

Today, the average person eats three times the amount of cheese as someone in the 1970s and as much as 22 teaspoons of sugar a day! We eat double the recommended amount of salt—mostly from processed foods.

One easy solution is simply to increase the amounts of fruits and vegetables you eat. However, the industrialization of our food supply means that even when we make healthy choices, we get less nutrition than our ancestors did. Many modern foods contain significantly fewer nutrients than they did a century ago.

Why? Studies have shown that fertilizers, pesticides, and other techniques applied in the pursuit of higher crop yields have led to diluted protein, vitamins, and minerals in many food crops.

Research has linked nutrient deficiencies to a variety of health concerns and conditions—and your diet directly affects your hormone balance! Even when you do your best to eat well, you may still need to counteract the effects of processed foods and boost your hormone balance by including vitamin supplementation to your daily regimen.

Environmental Estrogens (Xenohormones)

Simply living in an industrialized nation puts us all at risk for hormone imbalances. Living in the United States, we are exposed to literally dozens of chemicals throughout our daily lives.

Environmental Estrogens (Xenohormones)

When you think of "chemicals", you probably imagine a bubbling chemistry set, or spraying your yard to eliminate weeds or pests. Unfortunately, the effects of chemicals exposure are much more pervasive than that! Environmental estrogens, also called "xenoestrogens", or more generally, "xenohormones", can be found in:

- Dry cleaning chemicals
- Plastics
- Meat and dairy products from animals injected with antibiotics or hormones
- Drinking water
- Cosmetics and personal care products
- Pesticides, herbicides, and industrial chemicals

The trouble is, synthetic chemicals are in everything- from the materials in your mattress to the paint on the walls and the fibers in your carpet. A common concern is "off-gassing", or low-level fumes, from materials such as furniture glues and paint on your walls.

All of these readily-available materials are tested, of course, and are permitted to be sold because the levels of chemicals in each product are considered low enough to be safe — but what about the overall effect of all these "tiny" amounts of chemical exposure?

Many studies are now showing that cumulative effects are the real concern: there are few, if any, studies on the combined effects of common household chemical exposure on our bodies over time, and every person is exposed to different combinations.

To support better hormone balance, you can better inform yourself about xenohormones and make some of the following lifestyle changes:

- Start with avoiding plastics as much as possible, for example: use glass or stainless steel water bottles, and don't heat food in plastic containers in the microwave.
- Check labels on cleaning products and cosmetics to avoid parabens, phthalates (artificial fragrances), and sulfates.
- Reduce chemical use in your home and yard with organic plant-based sprays.
- Drink filtered water, and choose organic fruits and vegetables when possible to reduce pesticide exposure. Little choices can add up!

Where Do Hormones Go Wrong?

Andropause

Men are by no means immune to the downturn of hormone levels with age. In fact, the most potent force underlying mental and physical energy in men, the testosterone drive, starts to decline in a man's mid-forties, or even earlier, depending on lifestyle and stress levels.

But unlike the 'roller coaster' effect in menopausal women, male symptoms come on more gradually - and most men aren't sure what's hit them! But "male menopause" is very real and it has a name: andropause (from the Greek, "andro" for male and "pausis" for stop). The gradual decline of the hormone androgens, testosterone, and DHEA, is the key to changes in male health and vitality.

While many medical experts acknowledge andropause as an age-related condition, the general public and too many physicians still do not recognize the term or see it as a natural challenge of aging.

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In his prime, 95% of male testosterone is made by the testicles in response to signals from the brain. Over the years, the signal gets weaker, and aging testes are less likely to respond. The hormonal downturn typically begins in the late 30s/early 40s, and by his 70s, a man's testosterone levels may have dropped by one-third to one-half.

If levels of the hormone estrogen are too high relative to lowering testosterone levels, more serious health concerns can sometimes emerge, such as increased risk for prostate problems and/or cancer, cardiovascular disease, loss of bone density, a rise in cholesterol, and urinary dysfunction.

Male bodies need estrogen in smaller amounts to regulate brain and sexual functions in particular. During andropause, "estrogen dominance" can overtake waning testosterone levels, complicating symptoms and raising the risk of prostate cancer.

Fatigue & Low Energy

The first thing a man usually notices as his hormone levels taper off is a subtle downward shift in strength and energy. He may lose enthusiasm for the things he used to enjoy, the challenge of work, competition, and sexual activity. Fatigue may set in more quickly, especially after exercise.

If your youthful energy has faded to a distant memory, chances are hormones are involved! Optimal levels of the male androgens, testosterone, and DHEA help provide the virility, stamina, and drive in men. When they decline in middle age (typically beginning around age 40), metabolic changes occur that can sap energy and strength.

If progesterone and testosterone levels fall low enough to create an imbalance called estrogen dominance, restful sleep patterns may begin to suffer. Inadequate sleep obviously contributes to fatigue. Stress, too, may play a role. Chronic stress especially (ongoing stress that lasts three months or more) negatively affects hormone production, contributing to imbalances that derail metabolic processes designed to promote energy and vitality.

Where Do Hormones Go Wrong? Cont.

Aging doesn't have to equate with exhaustion! As other symptoms kick in, hormone testing can be used to help detect and correct existing and/or hidden hormone imbalances.

Bioidentical hormone therapy offers a safe, effective way to supplement depleted male hormone supplies. Quality nutritional supplements and lifestyle changes that include a hormone-healthy diet, regular exercise, and stress management offer additional support as your body recovers hormonal equilibrium.

Weight Gain & Strength Loss

It is not unusual for former athletes to lose their gusto and gain a gut as they get older. Testosterone plays a key role in body composition and fat cell metabolism. When testosterone levels begin to drop, men lose lean muscle mass and add on the pounds, particularly around the abdomen. The change in body composition has more impact than just "a spare tire".

Multiple studies show that men with low testosterone are at increased risk of osteoporosis and fractures.

Multiple studies show that men with low testosterone are at increased risk of osteoporosis and fractures. Lower testosterone levels are also associated with a loss of muscle mass and strength.

A 2006 report in the Archives of Internal Medicine found that men aged 65 to 99 with lower testosterone levels were more likely to fall, and to fall multiple times more than their counterparts with higher testosterone levels.

Depression & Mental Acuity

While physical changes are obvious, testosterone's influence on emotional stability and cognition are subtle yet insidious. A 2008 study of approximately four thousand older men in Australia found that those with depression had significantly lower testosterone levels.

In addition, several studies have shown that declining testosterone levels adversely affect memory and problem-solving. When questioned about day-to-day life, many men report a loss of enthusiasm for simple joys, including family and hobbies. Others find it difficult to fully concentrate on tasks at work or at home.

When combined with decreased libido and/or sexual performance issues, it is not uncommon for men to begin to question their manhood and identity in mid-life. When a man comes into our practice complaining of fatigue, "feeling low", and a decreased sex drive, we see red flags waving. This man is in andropause and needs restored hormone balance to feel like himself again.

Estrogen Dominance

Age-related progesterone and testosterone decline in men can precipitate a hormone imbalance called "estrogen dominance".

In the male body, progesterone and testosterone help rein in the negative effects of excesses of estrogen that can trigger abnormal cell growth. As a man ages, if levels of these balancing hormones become too low to offset the negative effects of high circulating estrogen, health risks can arise.

Problems can include prostate enlargement, raising risks for cancer, as well as cardiovascular disease, bone density loss, high cholesterol, and urinary and prostate disease. Men can take the

Where Do Hormones Go Wrong? Cont.

proper steps to reverse estrogen dominance and lower their risks through bioidentical hormone replacement and lifestyle changes that encourage healthy hormone balance.

Tips for rebalancing naturally:

- If supplementing, request bioidentical hormones only.
- Test and monitor your hormone levels to make sure the hormone is working for your body in the right amounts.
- Avoid testosterone robbers like caffeine, alcohol, and cigarettes.
- Reduce weight – fat cells lower available testosterone by converting it to estrogen.
- Take up strength training to boost muscle mass and testosterone levels.
- Counteract daily stress with daily exercise.
- Choose hormone-free foods and products to avoid “xenoestrogens” and other hormone-disrupting chemicals, like pthalates.
- Take a daily multi-vitamin/mineral that includes zinc, which inhibits the aromatase enzyme in fat cells from turning testosterone into estrogen.
- Hit the sack before midnight.
- Make time to de-stress and do the things you enjoy!

What You Need to Know about Hormone Therapy

Bioidentical Hormone Replacement Therapy

Bioidentical hormones are derived from a plant molecule called "diosgenin" that is found in wild yam and soy and then synthesized in a laboratory to be identical to naturally produced hormones.

The lab process ensures that these hormones have the exact molecular structure and duplicate the exact same function as the hormones made by your body. When you use bioidentical hormones, the cells of your body recognize them as familiar and know how to put them to best use.

Bioidentical hormones are safe because, like your own hormones, they fit perfectly into the hormone receptor "locks" of the cells in the body where they do their work. Because they have a 100 percent relative binding affinity (RBA) for your internal hormone receptor sites, they do not trigger side effects.

Just as the key to your car fits perfectly into the ignition and sparks the engine when turned, bioidentical hormones fit into your body's hormone receptor locks and spark exactly the same response as the hormones produced in your ovaries, testes, adrenal glands, or hypothalamus. Medical research has proven that when BHRT is used to re-establish the body's optimum hormone levels, positive effects happen at a cellular level.

Which bioidentical hormones you need, and how much, will depend on your individual body chemistry or physiology. The objective of BHRT is to replace or rebalance hormones that are deficient or in excess in order to restore optimum hormone balance.

How Hormone Therapy Can Help You

Men are becoming more aware of the importance of hormone balance, not only from the media, but in the transformation they see in their spouses or partners who use it. Our practice used to consist almost exclusively of female patients. Now, one in three of our patients is male – many of them recommended by their spouses or partners!

The National Institutes of Health (NIH) hasfunded human trials that should confirm and extend the medical community's understanding about the role of androgens and the opportunities for supplementation in healthy aging men.

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The first step towards restoring male hormone balance is to diagnose deficiencies and excesses through blood work analysis. The findings provide a personal hormone profile that matches test results with reported symptoms to guide individualized hormone therapy.

Clinical studies have shown that gradually restoring deficient testosterone and DHEA levels with bioidentical hormones can generally reverse many men's age-related complaints.

Furthermore, if a man has excess estrogen levels, treatment should include a bioidentical progesterone in physiologic doses tailored to need. The added progesterone serves to eliminate "estrogen dominance", thereby decreasing a man's risk for urinary and prostate problems.

Help is Available

How do you know what type of supplementation you need for natural symptom relief?

Dr. Randolph has created specific guidelines to help you determine your individual supplementation needs, depending on your age, menstrual history, symptoms, and hormone test results.

All hormonal supplements offered by Dr. Randolph are bioidentical formulations that duplicate the natural physiology of hormones in the body. Recommended supplements are based on specific criteria, including: age range, life cycle, associated hormone level shifts, resulting type of imbalance/ medical condition, and common symptoms. Ingredients as listed are derived from natural and/or plant-based substances.

Meet Dr. Randolph

Dr. Randolph is widely acknowledged as one of our nation's leading medical pioneers in the fields of hormone health and optimal aging medicine.

A graduate of Louisiana State University School of Medicine, Dr. Randolph is triple board-certified: in Age Management Medicine by The Age Management Medicine Foundation, by the American Board of Integrative Holistic Medicine, and by the American College of Obstetrics and Gynecology. Dr. Randolph's distinctive expertise also derives from his training as a licensed compounding pharmacist specializing in pharmacognosy (plant-based medicines).