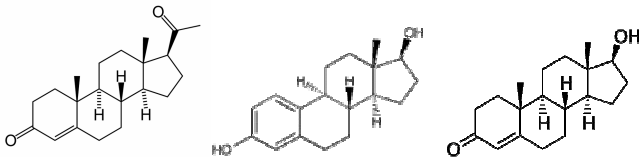
THE HORMONE HANDBOOK



A basic, no frills look at your hormones

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Dr. West Conner's

THE HORMONE HANDBOOK

A basic, no frills look at your hormones

From the Author...

Thank you for taking the time to read through this handbook and learning some basics about your hormones.

As I see it, people from my generation, Generation X as we are called, are positioned to make tremendous strides in changing the healthcare model. No longer should patients be treated based on "numbers" using blood tests developed in the 1970s.

How much has technology changed in the last thirty to forty years? Why hasn't medicine? Sure things change as new medications are pushed through and rushed into the market. Science finds new ways of covering up symptoms they call diseases.

You are not a disease. You are not a condition. You are a unique individual who should be treated individually and given proper medical care based on you, the individual.

Myself, and a few colleagues, plan on changing the current system one patient at a time.

- giving more individualized care
- personal attention
- non-traditional "office" hours
- treating the patient, not the numbers
- more access through technology

Traditional hormone balancing involved giving women a standard dose of processed horse urine, Premarin. Then, in an attempt to keep her cycle, added the chemical medroxyprogesterone. This combination seemed to work by decreasing her hot flashes and night sweats.

Unfortunately, it also greatly increased her risk of cancer and heart disease.

With bio-identical hormone balancing, there are no chemicals. Our bodies, for one reason or another, are not making enough hormone to keep us in balance. Hormones matching exactly what our bodies normally produce are simply added to what we are currently making...no more, no less. This is balance.

Giving hormones in a transdermal cream is the best way for us to administer these hormones.

Oral hormones are destroyed by the liver causing stress on the organ and creating possibly harmful metabolites.

Injecting pellets can produce unwanted side effects due to overdosing. If the dose is too high, it cannot be changed for months.

A troche delivers medication through the mucus layer of the mouth via a lozenge. This method is erratic because the patient is producing and swallowing saliva, altering the dosing.

Along with hormones, we cannot forget our thyroid and adrenal glands. It is also important to optimize their performance as we rely on them for energy. Diet, exercise, and digestion also play an important role in how our body performs.

When a person comes to me with issues related to hormone imbalances, we discuss the different paths one can take to correct the problem. I prefer to first "stop the bleeding" and balance the hormones using bio-identical hormone cream. This is the best method since we can adjust the dose on a regular basis if needed.

Once the "bleeding" has stopped, we train the body to produce those hormones naturally. Giving thyroid hormone to help that energy system is the first step. We then move to the adrenal glands.

The adrenal glands should be producing the sex hormones when the ovaries have stopped due to menopause. Unfortunately, many of us are in what is called, adrenal fatigue. Our adrenal glands have been overworks for too long and simply cannot keep up with their responsibilities.

Once the adrenals have been fixed through lifestyle changes and some supplements, the natural hormonal system can begin to work again. Working with the individual, we slowly reduce the hormone dose as the body begins to work they we it is intended to work.

The thyroid is also coaxed into producing the right amount of thyroid hormone.

In no time at all, you feel like your old self again...

- excess body fat just seems to melt away
- your energy has returned
- falling asleep with ease and waking refreshed
- your 20-something libido is back
- brain fogginess has disappeared
- your skin is plump and refreshed

Please visit MedicineCoach.com for more information on hormone balancing.

- Dr. West Conner

Introduction

The joys of middle age; financial security, plenty of leisure time, the kids are out of the house, young grandchildren to enjoy, waning energy, moodiness, bloating, low libido, wrinkly skin, and hot flashes.

Wait a minute, what's happening to me?

Am I the only one who feels this way?

My friends joke about the hot flashes, no interest in the bedroom, and the bloating but I'm not laughing. What is a woman to do?

As women age, the consistency of menstrual cycles become erratic. Bleeding that was once regular, has become heavier, then lighter, then absent, then spotting with no rhyme or reason as to which type of month the next will be. It is these unpredictable cycles that lead to the highs and lows of estrogen and progesterone.

Natural bio-identical hormone replacement has only come into popularity in the last dozen or so years. Prior to that, women were told to use the synthetic hormones to relieve their menopausal symptoms. Suzanne Sumers brought the subject to light with her books, *Ageless* and *The Sexy Years*. Because of the gaining popularity, several years ago I began studying and learning about this "new" approach to therapy. Coincidently, while investigating these hormones, the frequency of questions from patients about the therapy increased.

In these last dozen or so years; many doctors, with the help of pharmacists, have been prescribing these hormones to tens of thousands of women, as well as men. The hormones can enter the body through the skin, oral

capsules, implantable pellets, or sublingual delivery systems. The dosages are individualized to meet the needs of the individual patient. Men and women all over the world have taken and continue to take these bio-identical hormones with great success and virtually no drawbacks.

The Woman's Health Initiative Study

In 2002, one arm of the Woman's Health Initiative, or WHI, study was abruptly stopped because of side effects. The study was testing the efficacy of combining synthetic estrogen and synthetic progesterone (*Prempro*) versus nothing. The synthetic hormones increased the risk of breast cancer, heart disease, blood clots, and stroke. The study was stopped after just five years, three years early, because the risks of synthetic hormone replacement were too great.

The study looked at 16,000 women and determined that after five years of taking synthetic hormones, there was a 29% increased risk of breast cancer, 26% increased risk of heart disease, and 41% increased chance of stroke. In August 2003, the British medical journal, *The Lancet*, published a study involving approximately 1 million women. The researchers concluded that in the United Kingdom, in ten years, synthetic hormone use has caused 20,000 extra breast cancers.

Those of us studying bio-identical hormone could have predicted that outcome. Because of this, both patients and physicians have been inundated with conflicting information regarding hormone replacement. Many physicians are avoiding hormone replacement altogether because of the new findings. This, after years of prescribing these medications, confused even the most experienced of doctors. Patients began looking into

alternatives.

The synthetics increase breast cancer risk because of "unchecked" estrogen in the breast tissue. You have to balance estrogen with progesterone. Taking synthetics will also give you a better chance of blood clots due to metabolism in the liver. When the liver has to filter out these synthetics, it produces chemical metabolites that cause blood clots. These blood clots can increase your risk of a blood clot in the brain, also known as a stroke.

The goal of most physicians is to optimize their patients' health while alleviating annoying symptoms that occur with hormonal changes. With the stoppage of the WHI, many physicians were left scratching their heads. They knew the hormones relieved their patients' symptoms but, in the long term, did not optimize health. Also, there are no long term, large clinical trials to test the effectiveness of bio-identical hormones versus the synthetics.

Looking for clinical trials to show the effectiveness or ineffectiveness of bio-identical hormones proves difficult. Large, clinical studies are generally funded by big drug companies. They are trying to prove that their patented medication out performs other therapy. Since "Big Pharma" cannot profit from the sale of these hormones, they are not going to pay for a study.

As I See It

Drug companies have plenty of money to study medication. If they are confident that their synthetic product is superior to the naturally occurring bio-identical hormone, why don't they test them side-by-side in a long term study? The answer is, because they would lose. If you can't win, don't fight.

Some government agencies and colleges have performed studies but many results are inconclusive. This is partly due to the expertise required for proper individualized dosing. If you do not properly dose each individual according to their unique need, the results will not be optimal.

These hormones are the exact chemical structure found inside our bodies. There is a constant on-going long term clinical trial called life. We, as humans, have had these hormones in our body since, well, since we were humans. By simply replacing what our body can no longer produce or supplementing our lowered output is certainly a reasonable goal. Don't we have enough sense to realize that we are not drugging ourselves but simply restoring our natural hormone levels?

Bio-identical hormone replacement has been sometimes regarded as a way to slow down or stop the aging process. This is untrue as the goal of BHRT is not to bring a 60-year old woman's hormones to that of an 18-year old. The goal is to optimize the function of the body without causing harm in the form of overdosing the patient. How many 60-year olds would like to return to the menstrual cycle and fertility of an 18-year old anyway? Nature does not want us having children at 60 years old.

Statistics show that nearly 50% of woman who begin synthetic hormone replacement stop within one year. They stop because of side effects like weight gain, spotting, moodiness, and breast tenderness. When woman are given the option of trying different strength and different drug delivery systems of synthetic hormone replacement, the compliance increases significantly. With the bio-identical hormones, the dose is based on the individual woman, not of a widely accepted "normal"

range. The one year continuation rate with bio-identical hormones is reported to be over 90%.

This form of therapy works. It has absolutely no side effects; none, never had, never will. The only unwanted effects are from under-dosing or over-dosing.

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GETTING TO KNOW YOUR HORMONES

Before we go any further, it is important to know the hormones that are currently flowing through your body. Both men and women should have a balanced level of the big three; progesterone, estrogen, and testosterone. These, along with dehydroepiandrosterone (DHEA) make up the majority of the hormones we'll be discussing here.

In short, progesterone regulates the other hormones and preserves pregnancy. Estrogen makes a woman a woman, giving her wider hips, softer skin, breasts, and a higher-pitched voice. Testosterone makes a man a man, giving him a larger frame, body hair, and deeper voice. DHEA is converted into these hormones. As we age, DHEA levels drop, therefore, our other hormone levels drop.

Later, we will go into further explanation of each of these essential hormones.

What are bio-identical hormones?

Bio-identical hormones have the same, exact chemical structure as those found inside the human body. Bio-identical hormones will provide for you the exact same physiological response and action as those hormones manufactured in your own body. What the practitioner is attempting to do when administering bio-identical hormones is to bring you up to normal levels. This will achieve the same physiologic response that would normally happen if your own body were producing the estrogen, progesterone, and testosterone.

These hormones should be administered in a similar manner in which your body excretes them. This provides a more natural and balanced approach. By doing this, we are attempting to duplicate what your body has done for years by itself. You have been running along on cruise control for forty plus years with your hormones directing the show. Now, something has happened and your body wants its hormones back where they are supposed to be.

Although theoretically impossible to reproduce exactly how our bodies send out the hormones, we do our best to replicate it. Your body will shoot out a small burst of hormones about every two hours, or 12 times a day. This gives an average level as well as high and low levels. Symptoms of hormone imbalance vary but the most common complaint from the menopausal woman is the hot flash.

What happens in a hot flash

It is reported that up to 75% of women go through the "experience" of hot flashes during menopause. A hot flash occurs when blood vessels in the upper torso area open more widely than normal. These blood vessels are

generally located towards the surface of the skin and the opening brings more blood to the area. This increase in blood causes the heat and redness in the upper chest, neck, and face region.

Almost immediately, perspiration arrives and you become a soaking mess. Shortly after, the hot flash is over and you become a shivering wreck because of the cooling effect of the sweat. Fortunately, this annoyance only lasts a few minutes but you know the next one is on the way.

Of course, there is never a convenient time for this phenomena. They seem to occur while sleeping, at an important meeting, during a speech, or at a job interview. It would be nice if there was a way of controlling these.

Hot flashes are caused by a drop in estrogen and a rise in follicle stimulating hormone.

The time before a burst of hormones is when the hot flashes occur. The estrogen level goes below a critical threshold causing the unpleasant effects. As soon as the hormones are released again, the hot flash is over. Without any treatment, hot flashes slowly decrease and eventually go away on their own. This process can take up to three years after your last menses.

Are bio-identical hormones "natural?"

Yes, and no. To the general public, the term "natural" means coming from nature. The precursors to the bio-identical hormones are found in Mexican Yam or soy plants. These precursors, called diosgenin, cannot be readily used by the body in the same form in which they are found in nature. So, yes the basic chemical structure is natural, as in found in nature. This chemical structure must then be brought into a laboratory and altered to

create the *exact same* chemical found in our bodies. So, no the exact chemical produced is not natural, as in found in nature.

Well, then is Premarin natural? Yes, and no. Premarin comes from the urine of pregnant horses. The last time I checked, urine was natural. The urine is then brought into a laboratory, the estrogens are concentrated, and then pressed into a tablet. So, yes the basic chemical structure is natural. Now, this estrogen from horses is natural to horses, not to humans. To the human body, they are foreign, and therefore not natural.

The term "natural" is more appropriately referred to the system that is using the natural product, not where it came from. In other words, the body "sees" these chemicals as natural because they are the exact same structure as the ones it has produced since before your were born. They are not synthetic as far as your body is concerned. The base could have originated anywhere. If could have begun in a tomato, a mouse, a tree, in ocean algae, it doesn't matter where it started, it matters where it ends up.

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WHAT ARE PHYTOESTROGENS?

Phytoestrogens are very weak estrogen-like compounds. In fact, they are as much as 10,000 times weaker than your own natural estrogen. They can be found in various substances, over-the-counter products, and herbal supplements. What needs to be clear is that phytoestrogens are not hormones. They mimic, and very poorly at that, what estrogen does in the body.

There are three basic types of phytoestrogens; isoflavanoes, lignans, and coumestans. Isoflavones are the most popular and the most potent of the three types. Isoflavones can be found in legumes such as soy, chickpeas, red clover, lentils, and beans. Lignans are found in flaxseed, lentils, whole grains, beans, fruits, and vegetables. Coumestans are found in red clover, sunflower seeds, and sprouts.

It also takes a long time for the phytoestrogens to build up in the body in order to have any effect. The exact time for this action varies from person to person and is dose dependent. There has not been much in the way of clinical research on the subject of phytoestrogens, especially when it comes to long term effects.

Some scientists are discovering that, depending on where the phytoestrogen is located within the body, it can act as either an estrogen or antiestrogen. Studies have shown that soy acts as either an estrogen or antiestrogen. If you

have a normal estrogen level and eat soy products, the phytoestrogens will counteract the actions or your own estrogen, causing an antiestrogen effect. It does this by attaching to the cell and blocking the normal estrogen hormone from attaching. This causes less estrogen affects. If your estrogen level is low and you eat soy foods, the phytoestrogens act like a weak estrogen. Crazy huh?

I've been asked many times about the subject of cancer with the phytoestrogens. The thinking is that if the synthetic estrogens cause cells to grow uncontrolled, will these weak estrogens cause cancer like the synthetic estrogens are known to cause. We aren't sure.

We know that the phytoestrogens in soy cause uncontrolled cell growth in breast tissue. This means that they can cause cancer. But the actual, real life, results show that women who eat a large amount of soy have lower amounts of breast cancer. Another study concluded that soy lowered your risk of breast cancer if you were premenopausal but not if you are postmenopausal. Other studies concerning endometrial cancer have come to similar conflicting results. While some show and increase in cancer, some show a protective effect.

Some women have begun taking the phytoestrogns before any menopausal symptoms have appeared. By doing this, they may prolong the beginning of the symptoms for a short period of time. This, so far, has not been fully proven nor is the therapy very effective. Remember, by taking these phytoestrogens, a woman may block the actions of her own hormones. This is explained by the phytoestrogens blocking the hormones at the receptor site. To put that in English for now, the doorway is being blocked by something you do not want to come inside.

A word of warning…
If you have a history of breast cancer, or a family history of breast cancer, I would recommend you avoid using phytoestrogens. If you include some of the phytoestrogen foods in your diet occasionally, there shouldn't be a problem. But avoid the supplements containing isoflavanoes, lignans, or coumestans.

3

IS THERE A DIFFERENCE BETWEEN COMMERCIALLY AVAILABLE AND BIO-IDENTICAL HORMONES?

Yes, a big difference. The big drug manufacturers are now using the term "natural" to describe some of their products. This is in response to the large number of patients who are asking their doctors for natural alternatives to the synthetic hormones. Remember, Premarin can be considered natural because it is derived from natural horse urine. The chemical is natural but it is not a natural substance to the human body. The structure is different and therefore our bodies see it as a synthetic, foreign chemical.

The synthetic, commercially available, patented medicines are chemically different than those found in the human body.

Prescription, synthetic drugs are not the same chemical structure, and do not perform the same functions as the hormones produced by the human body. These drugs only mimic some the activity of our hormones. When you take them, the response from the body is similar, but not exactly the same.

One of the main issues surrounding the bio-identical hormone movement is money; yes, money. The

pharmaceutical drug manufacturers cannot patent a naturally occurring chemical. Therefore, they cannot make any money from the sales. The only way they can profit from hormone therapy is to alter the chemical structure and patent the new structure. Technically, they can patent how a natural chemical is manufactured and a unique drug delivery system. In other words, a company can protect it's intellectual knowledge in extracting a natural product from its source, but not the actual product. They can place this natural product in a patch or capsule, develop some unique technology for the drug to enter your body, and patent the delivery system. But they cannot make money from something that is not unique and not manufactured in a laboratory.

For example, you can get natural, bio-identical estradiol in the form of a prescription patch. The medication is not patentable, but getting the medication through your skin by way of a matrix delivery system is patentable. So the drug company took a natural product and impregnated a drug delivery system. They are protected by the patch's drug delivery system.

Many in the medical community use the term HRT, or hormone replacement therapy, without properly defining the meaning. By using a synthetic product, like Premarin, the patient is substituting natural estrogen with a drug. This drug simply mimics some of the actions of estrogen, it does not replace it. The patient is not replacing estrogen with estrogen, she is substitution estrogen with drug. This definition of the term HRT has led to confusion amongst the medical community.

Let's use a little common sense. A hormone's job is to get to a cell and fit into it's unique receptor site. This fitting is like a lock and key, or two pieces of a puzzle. The

hormone molecule fits perfectly into a receptor site located on the cell wall.

By studying chemicals that are structurally similar from our own hormones, we learn that the foreign chemicals act differently at the receptor site. Sometimes they act like our own hormones, sometimes they have no effect, and sometimes they block the receptor so no other hormone can enter. These are not natural to our body.

The pharmaceutical companies know this and try to formulate a chemical that is similar to our own. It doesn't matter how close they get, the effects at the receptor site are different from the exact chemical structure of our own hormones. Remember, they cannot patent a naturally occurring substance.

This same definition holds true when a patient uses the synthetic medroxyprogesterone. This is a chemically altered form of the hormone progesterone. It acts similar to progesterone but it is not progesterone. Medroxyprogesterone is a chemical drug developed in a laboratory and patented so the drug manufacturers can turn a profit. To make maters worse, medroxyprogesterone will substitute progesterone in the uterus only. Throughout the rest of the body, the chemical causes the exact opposite effect that naturally occurring progesterone causes.

Medroxyprogesterone has been shown to increase cholesterol levels, increase liver enzymes, cause the body to become glucose tolerant, decrease the body's insulin utilization, cause fluid retention, increase the chances of heart disease, increase the chances of stroke, and blocks the heart-protective effects of estrogen. Continuing with medroxyprogesterone, it has been known to cause insomnia, depression, nervousness, anxiety, bone loss, and

has been linked to certain seizures. Medroxyprogesterone is contraindicated in pregnancy and increases your risk of certain cancers.

Reading the previous paragraph may scare you away from any hormones whatsoever. I can assure you that the side effects listed here do not happen to everyone taking medroxyprogesterone. With any prescription drugs, there are risks and benefits. If you are currently taking medroxyprogesterone, talk with your doctor about changing over to the bio-identical progesterone.

Natural progesterone is a much better option for women. Many of the benefits are "covered up" by the big drug companies because they cannot patent the chemical and profit from sales. Bio-identical progesterone may lower LDL and increase HDL, it does not affect liver enzymes, it assists the body in using glucose for energy, releases insulin, decreases blood pressure by acting as a diuretic, protects the heart, improves sleep quality, has a natural calming effect and it being used to prevent certain seizures. Natural progesterone has been used successfully to treat preeclampsia, a condition where a pregnant woman's blood pressure is dangerously elevated. Studies have shown the hormone to be successful in treating cerebral hemorrhage and reduce postpartum depression.

In one study, women who switched from medroxyprogesterone to natural progesterone showed a 80% increase in overall satisfaction, 50% improvement in hot flashes, 42% reduction in depression, 47% reduction in anxiety, and progesterone was better at controlling their breakthrough bleeding.

After it's all said and done; replacing, or supplementing, your body's own progesterone with natural, bio-identical progesterone is the smart choice.

Progesterone causes your body to react in the exact same way your body would react if the progesterone were produced inside your body. There are no side effects, there never have been side effects, and there never will be side effects. The only effects with bio-identical hormone are under-dosing effects and over-dosing effects.

Before you begin therapy, the symptoms you feel are under-dosing effects. By bringing your levels up to where they are supposed to be, those effects will disappear almost instantly.

4

ESTROGENS

Estrogen defines women. When you hear the word estrogen, the human female comes to mind. Estrogens have been shown to be responsible for over 400 different functions in the body. Estrogen is responsible for the growth, development, maintenance, and function of the female sex organs. They protect against bone loss and heart disease. Estrogen regulates other hormone and helps certain cells grow and multiply in the body.

Conventional medicine assumes that once a woman goes through menopause, she is estrogen deficient. The doctor will then prescribe a synthetic estrogen to ease the menopausal symptoms. It is absolutely untrue to assume that a post-menopausal woman is estrogen deficient. Over two-thirds of women have adequate estrogen levels after menopause.

Females (and males) have three estrogens that run through the body. These are estrone (E1), estradiol (E2), and estriol (E3). Both men and women convert testosterone into estrogen in their stored fat.

If you have a higher level of body fat, you are producing more estrogen than someone with a low level of body fat.

We'll begin our estrogen discussion with estrone; also known as E1. E1 is the main estrogen in post-menopausal women. The ratio of estrone to estradiol and estiol is at its highest after a woman has gone through menopause. The

body converts estradiol to estrone and also produces E1 in fat cells, in the liver, and in the skin. It is less than half as active as estradiol.

Estradiol, known as E2, is the main estrogen hormone in the female body. E2 is produced in the ovaries and is highest during a woman's fertile years and drops at menopause. Estradiol is also be made by converting testosterone.

Estriol, E3, is a very weak estrogen. In fact, estradiol is about 80 times as powerful as estriol. E3 is highest during pregnancy and is made from the conversion of estrone. Studies are showing that E3 has a breast cancer protective effect by regulating the actions of estrone and estradiol. Estriol cannot be converted into the other two, more powerful, estrogens, E1 and E2. Therefore, if you take estriol, your body cannot convert that into estradiol or estrone.

Estrogen dominance

Estrogen dominance occurs when the estrogen hormones are out of balance with the other hormones. This can occur because your body is producing too much estrogen, throwing the balance off, or your body is not producing enough progesterone and testosterone, again throwing the balance off.

The term "estrogen dominance" was first used by John R. Lee, M.D. in his book *Natural Progesterone-The Multiple Roles of a Remarkable Hormone.*

This most often naturally occurs during peri-menopause. It can also be caused by giving too much estrogen, being exposed to excessive xenoestrogens, a problem with your body's elimination of estrogen, or not enough

progesterone to regulate and balance the estrogens. Estrogen dominant symptoms can even occur if you have low estrogen but not enough progesterone to balance its effects.

Xenoestrogens, in case you are wondering, are estrogen-like chemicals that are found virtually everywhere in our current society. They get into the body and act like estrogen, but are not estrogen.

The short list of estrogen dominance symptoms include:

- Depression
- A craving for sweets
- Breast tenderness
- Fatigue
- Mood swings
- Fluid retention
- Headaches
- Decreased libido
- Weight gain
- Poor sleep
- Heavy menstruation
- Irregular menstruation
- Panic attacks

I know, I can hear your thoughts, 'I have those.' Don't be alarmed. With the fluctuation of hormones in the peri-menopausal and menopausal woman, you can get brief episodes of estrogen dominance. This does not necessarily mean you are totally estrogen dominant. It means at certain times, you have too much estrogen and are feeling the over-dosing effects.

Benefits of bio-identical estrogen supplementation

Let's just make this simple and say that the proper amount of estrogen is good for you. But if I left it at that, you'd feel disappointed.

First and foremost, estrogen relieves many of the symptoms of menopause. This is why women come to me every day; menopausal symptoms. The proper level of estrogens in the body lowers your risk of heart disease and improves your cholesterol. Studies show that LDL or the "bad" cholesterol is lowered 10-20% and the HDL or "good" cholesterol is increased 10-20% with a return to proper estrogen levels. It is interesting to note that the same cholesterol effects are seen with the conventional, synthetic estrogens. Estrogens also lower blood pressure by decreasing the amount of calcium inside the cells of your blood vessels. This causes them to relax and allows blood to flow more easily.

Estrogens prevent osteoporosis by reducing the amount of bone loss. The hormone maintains or improves memory function by increasing certain brain chemicals like serotonin, norepinephrine, and dopamine and promotes the growth of nerve connections in the brain. Estrogens act as antioxidants in the central nervous system and allow the brain to use glucose for energy more easily.

Estrogen is crucial in keeping healthy looking skin, mouth, and eyes. It helps regulate the amount of water in the skin, builds collagen, increases skin thickness, and improves skin firmness and elasticity. The regulation of water content smoothes out those fine wrinkles that begin around age 45.

It also prevents vaginal atrophy by increasing the number of blood vessels. This in turn thickens the lining of the vagina, decreases vaginal discharge, and increases

elasticity and moisture. This lining of the vagina has the highest number of estrogen receptors in the body.

Hormones do not belong in your stomach

When you take a pill, that medication is carried to your liver where it is processed and changed to increase it's usability in the body. This process is known as the first-pass effect. When developing oral medications, manufacturers must consider not only what the liver does to the medication but what the medication does to the liver. Synthetic estrogens like Premarin are swallowed in a tablet and must go through this first-pass metabolism.

The liver destroys approximately 85%-98% of oral estrogen before it has the chance to enter the bloodstream and do its job. Many assume that since only 2% to 15% is usable, only 2% to 15% is absorbed through the stomach. This is not true. The estrogen is fully absorbed but the liver only allows between 2% and 15% to return to the bloodstream. The remaining 85% to 98% is altered into estrogen metabolites before returning to the bloodstream.

The effect that these metabolites have on the body is not fully understood.

When our bodies secrete hormones, they go directly into the blood stream. When applying a bio-identical hormone cream, the hormones are going directly into the blood stream. They then flow to the heart and are pumped throughout the entire body; just like the ones we product naturally.

Taking a pill to supplement your hormones bombards the liver with a highly concentrated dose. On average, a 35-year old woman will produce 0.1mg to 0.2mg of estradiol per day, total. The most popular dose of the conjugated

estrogen drug, Premarin is .625mg in one dose. So the woman is receiving approximately three to six times the total daily production in one concentrated dose. When this dose hits the liver, it alters it's production of vital substances. More clotting factors are released, C-reactive protein increases, sex-hormone binding globulin is changed, your thyroid globulin is altered, and many other adjustments in liver function are observed.

When using transdermal estrogens, there are no effects on the liver. The transdermal estrogen does not adversely effect the cardiovascular system, does not promote clotting factors, and decreases triglycerides. These effects have all been proven in clinical trials.

5

THE POWER OF PROGESTERONE

Starting around the age of 35, a woman's hormone levels begin to fluctuate. Beginning at this age and continuing through age 40 is the steepest decline in progesterone. This creates an estrogen dominant situation. When a woman is having mood swings, depression, irregular periods, hot flashes, weight gain, sleep disturbance, heavy menstrual flow, and loss of libido, it's time to balance out the progesterone. Of course a saliva test is required to determine just how much progesterone is needed.

Some in the medical field use the terms progesterone and progestin interchangeably. Because of this, a portion of the population believes that taking hormone replacement therapy in the form of natural progesterone will have the same negative side effects that the synthetic progestins are infamous for.

Many doctors have been taught that progesterone affects only the uterus and if the woman has had a hysterectomy, there is no need for progesterone. It's not their fault, the drug companies have been telling them that for years. Drug companies cannot patent progesterone and therefore cannot make money from it. So they changed the structure to *medroxy*progesterone, patented it, and turned a profit. *Medroxy*progesterone, a progestin, affects only the uterus and has a harmful affect on the body, unlike progesterone.

The synthetic *medroxy*progesterone can actually block the action of progesterone in the body. So, if you are taking *medroxy*progesterone, your own progesterone that your body is producing may not be working. Drugs and hormones are "captured" by cells at receptor sites. Your receptor sites for progesterone are being taken up by *medroxy*progesterone; your own hormones cannot work.

Also, by blocking these receptor sites, your risk of cancer goes up. And there are side effects with synthetic *medroxy*progesterone like acne, fluid retention, headache, breast tenderness, depression, blood clots, insomnia, anxiety, and more.

For natural progesterone, the side effects include …none.

That's right, I've said it before and I'll say it again; with bio-identical hormones, there are no side effects. There are only under-dosing effects and over-dosing effects. Before you get supplemental bio-identical hormones, you are experiencing under dosing effects.

The progesterone in a woman's body is produced by the corpus luteum of the ovary during ovulation as well as by the adrenal glands. It is also manufactured in the body from cholesterol. Cholesterol is converted to pregnenolone, which is then converted to progesterone. Progesterone can then be made into the other hormones our bodies use like estrogen and testosterone.

Progesterone affects the entire body. There are these receptor sites all throughout your body waiting for progesterone to come floating by. Your body also uses progesterone to make other hormones. For example, your adrenal glands take progesterone and change it to adrenaline and noradrenaline. These give us our "flight or

fight" reactions. Thousands of years ago when we were chased by a tiger, adrenalin kicked in and gave us that short, tremendous boost of energy to get away.

From progesterone, your body also creates your other sex hormones; testosterone, estrone, estradiol, and estriol. Your body also forms hormones that regulate blood pressure, inflammation, and glucose metabolism from progesterone. In the synthetic, *medroxy*progesterone, there is no such conversion. The chemistry cannot and does not happen.

One thing that has to be considered when discussing these conversions; some people do not convert at a proper rate. In other words, some people's bodies can make plenty of estrogen from progesterone, while others cannot. So a woman who is experiencing estrogen deficiency symptoms may get no relief at all from supplemental progesterone. Her body may lack the required amount of specific enzymes needed to convert the progesterone over.

Some doctors simply give their patients a prescription for bio-identical progesterone with the understanding that her body will produce the required sex hormones when needed. That is not the answer. The answer is to balance the progesterone with the estrogen and testosterone. What if you are enzyme deficient? You then return to the doctor with the same symptoms and are given a higher dose with the same result. After a couple months, the patient gives up now believing that this bio-identical stuff doesn't work.

So what does progesterone actually do?

Estrogens in the body cause the uterus to grow. Progesterone counteracts this growth, "telling" the cells what to do. Without it, you have an overgrowth of cells, possibly leading to cancer. It also works on the nucleus,

or "brain," of the cell. Progesterone maintains the proper balance of estrogen receptors on the nucleus of the cell and moderates the metabolism of estrogen. When the female egg is fertilized, progesterone prepares the uterus for implantation and the breasts for lactation.

Progesterone is a natural diuretic that maintains the proper amount of water in the body. Without enough progesterone, a woman will not urinate out enough water and feel bloated. It acts as a mild antidepressant by regulating certain chemicals in the brain. Progesterone boosts the cells that produce new bone, therefore increasing bone density. The hormone signals to breast cells to grow, reproduce, and die at the proper speed. This regulation protects the breasts against cancer. It is also vital in signaling your body to use fat as an energy source.

Your circulatory system relies heavily of progesterone for proper function. We already know the estrogens protect the heart and blood vessels. Progesterone increases this effect. When there is an injury with bleeding, progesterone allows for normal blood clotting. It also lowers LDL cholesterol and increases HDL cholesterol. Progesterone regulates the thyroid, decreases uterine cramping, and increases libido.

I call progesterone the regulator.

Envision this hormone sitting in the background, telling everyone else what to do. She's kind of like the boss. If one of the other hormones cannot do what they are supposed to do, she can change herself and perform many functions. She also helps and guides the other hormones, moderating the entire system and making sure you are functioning properly. Like a business without a boss, without progesterone, there is chaos.

Another way to envision progesterone is to think of an old balance scale. On one side, you have estrogen, on the other, testosterone. Progesterone is the balance in the middle.

Why do you like the progesterone cream and not a pill?

When you take a pill, the medicine has to go through your liver. Your liver acts as a filter to remove potentially dangerous substances before they go into your blood. Some medications pass right through, unharmed in their full dose while some never make it out. Between 2% and 15% of the progesterone you swallow makes it into your bloodstream. That means 85% to 98% of your dose is filtered out and removed by the liver.

So, if you need an additional 20mg of progesterone in your body, you would have to take between 135mg and 1000mg of oral progesterone to get the proper amount. No one can determine what the proper oral dose should be.

This filtering is called the first pass effect and is taxing to the liver. Your liver has enough to do, leave it alone, let it do its job. It also creates metabolites as byproducts that the body must remove.

The creams use a lower dose and go right into your blood stream. They bypass the liver, letting it do its job. The creams do not create unwanted byproducts of the filtration process and will not interact with anything you eat or drink. Progesterone, by its very nature, is a fat loving molecule. This means when you put it on your skin, it naturally wants to be with fat. Progesterone readily moves through your skin and into the layer of fat between the skin and muscle. As blood flows around the fat cells, it

picks up the active progesterone and delivers it to the body. Bio-identical hormone creams are the only way to go.

6

ESTROGEN-PROGESTERONE COMBO

These two go hand in hand. By giving estrogen without progesterone, you will most likely lead to estrogen dominant symptoms. By giving only progesterone, you could end up with several different effects, including estrogen dominance. The different effects depend on the individual woman and how her body is uniquely set up. It's the story of the conversion of progesterone into different hormones. If your body is lacking in certain enzymes, all the progesterone in the world is not going to help.

You shouldn't use estrogen without progesterone. These two need each other to balance your body. At the cell level, these two actually counteract each other. Believe it or not, this is what we want. Progesterone "tells" the cell to grab some estrogen. But estrogen "tells" the cell to block estrogen. So, too much progesterone causes your cells to grab too much estrogen. There is not enough estrogen to stop this uptake and you get estrogen dominant symptoms. It seems illogical to give estrogen to counteract estrogen dominant symptoms but this is what needs to be done in this scenario. It has to do with balance, not your body's level of hormones.

Once the supplemental estrogen counteracts the high progesterone, all is normal again. But what if there is too much estrogen? Too much and your cells grow too rapidly. There is not enough progesterone to slow the process down. This can lead to cancer if unchecked by

progesterone. You may also get, of course, estrogen dominance.

When the female body is given natural progesterone, she will convert a portion to estradiol, an estrogen. Therefore, using progesterone along with estrogen in a cream, allows for a lower dose of estrogen. In general, if a woman is taking synthetic progestin and switching to natural progesterone, the rule of thumb is to reduce her dose of estrogen by 50%.

As a point of interest, breast cancer cells hoard large amount of estrone inside the tumor cells. The estrone is then converted into estradiol and used to further grow more unregulated cancer cells. Progesterone blocks this conversion of estrone to estradiol inside tumor cells limiting their growth rate.

You recommend using my estrogen/progesterone cream twice a day, why?

When I formulate a cream with progesterone, the directions will be to apply a certain amount of cream twice a day. With only estrogen or testosterone, the directions are once a day. When measuring the amount of hormones that enter the body by way of creams, progesterone shows a gradual rise for about three hours. The level then steadies for six to eight hours and then begins to decline. After fifteen hours, the levels have dropped to only 10% of the steady level. At the twelve hour mark, there is still enough progesterone present to show a beneficial effect, but just barely. Adding progesterone at this time keeps the progesterone level stable because as the previous dose is dropping, the current dose is rising.

7

TESTOSTERONE

Yes ladies, you have testosterone. Before menopause, the female body produces about 0.3mg of testosterone a day. When a woman gets in her middle thirties, the testosterone level begins to drop. It is a slow decline but a decline none the less. The decline in levels is gradual but the symptoms begin abruptly.

The lowering of the testosterone throws off the balance of the other hormones.

Two of the main functions of testosterone are libido and sexual response. Coincidently, when testosterone is given to women, the first noticeable effects are libido and sleep quality. The improvement of sleep usually occurs after just one day of testosterone supplementation. Libido returns, as long as all hormones as balanced, after a couple weeks.

The benefits of testosterone to women are varied. This hormone increases muscle tone and strength, increases lean body weight percentage, increases bone density, improves memory, and gives an overall sense of well-being. Along with improving the quality of life, testosterone also protects the heart by relaxing blood vessels. It increases the body's response to insulin and maintains the healthy glow in the skin and hair.

Too much testosterone is not good, especially for women. Testosterone can have you turning into a teenage boy before your eyes. The skin gets oily, acne appears, hair

begins to grow on your chin and upper lip, and the telltale signs of the teenage libido appear. While the libido effects are nice, you will not feel very "pretty" with acne and a beard.

When physicians carelessly give too much testosterone, the female patient will soon complain of these unwanted symptoms. If the hormones are given using an implantable pellet, medications to counteract the overdosing must be given. Hair depilating cream, acne medications, and testosterone blockers are prescribed for these patients.

When using a hormone cream, simply adjust the dose downward beginning immediately. By using a cream, the amount of any hormone can be adjusted quickly.

As a side note, once the testosterone level is lowered, the overdosing effects will disappear at the same rate they appeared. So if you noticed the effects over the course of two weeks, the effects will go away after two weeks. This is, of course, only if you are using a cream and reducing the dose.

8

DHEA

DHEA, or dehydroepiandrosterone, is one of the precursors to both testosterone and the estrogens. It is the most abundant steroid in the human body and is produced mainly in the adrenal glands. Beginning around age seven, our DHEA begins to rise and peaks between the ages or 25 to 30. At this point, DHEA levels fall at about 2% a year.

Theoretically, by taking DHEA, your body will produce the required hormones and naturally balance your body… theoretically. This is not the case. Converting one hormone to another requires enzymes, cofactors, and other substances. What if you are deficient in one of these enzymes?

In practicing bio-identical supplementation, I have found only a small percentage of people feel a benefit from DHEA. This is not to say you shouldn't supplement with it.

That being said, DHEA is beneficial for reasons other than balancing hormones. Scientifically, the supplementation of DHEA has been shown to increase muscle strength, improve sleep, decrease joint stiffness, increase the body's use of insulin, activate the immune system, naturally lower stress, improved memory, and increase the quality of life.

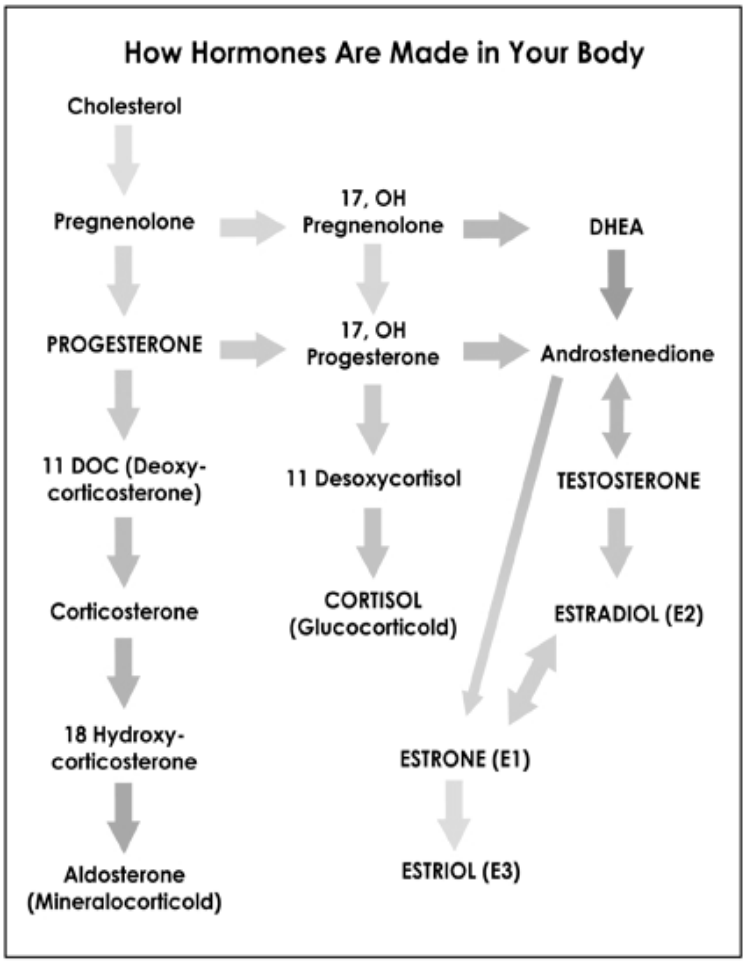
Studies have shown that a reducing your calorie intake may prolong your life. They also show that those involved in the reduced calorie study had higher levels of DHEA. Could the elevation in DHEA be the reason for the extended longevity? Further studies are ongoing to determine the DHEA/longevity link.

My feelings on DHEA

I don't thing too highly of it for balancing hormones. Many people tell me they take it and love it. More power too you, don't stop if you like it. I just feel that if you are trying to balance your hormones, let's balance your hormones. Why take something five steps away from what you are trying to fix? To me, that's like painting your wall by slopping a bunch of paint near the ceiling and letting it run down, hopefully covering the entire wall. Paint the wall the way it is supposed to be painted. Balance your hormones by supplementing the hormones you are lacking with bio-identical hormones at the correct dose for you.

Too much DHEA in women and cause excess testosterone while too much DHEA in men can cause excess estrogen. This high dosing is to be avoided. For men, 25-50mg a day and woman should take no more than 15mg a day.

Remember, DHEA can be converted to both testosterone and estrogen.



This simplified diagram shows how your hormones are made in the body. Notice how everything starts with cholesterol? Your body also uses cholesterol to repair itself from injury. Since daily repair is necessary for survival, your body will use cholesterol for repair first. Anything left over will go towards making your hormones. When lowering cholesterol with medication, you will automatically lower your hormone levels.

9

MODIFICATION WITHOUT SUPPLEMENTATION

Several women have asked me what can be done, without the help of supplementation, to balance and regulate their hormones. The simple answer is diet and exercise.

When you eat a diet high in simple carbohydrates, you increase your stress hormones. This causes your body to respond poorly to insulin, leading to insulin resistance. This resistance leads to estrogen dominance. The answer here is to eat a balanced diet of complex carbohydrates, lean protein, and "good-for-you" fats.

Diet is important. Not the restricted calorie "I'm trying to lose weight" diet, but a nutrient rich balanced eating plan. Get with a nutritionist to develop a sound eating plan tailored to your needs. The benefits vastly outweigh the sacrifice you have to make to eat well.

I have developed an eating plan that has worked very successfully for me as well as several of my coaching clients. I've named it the "511 Diet." The 511 Diet is simple, everyone can follow it, it's socially acceptable and best of all, you can eat whatever you want; just not whenever you want. The basic idea is eating well for five straight days, fasting the sixth day, and eating whatever you want, in whatever amounts you want, on the seventh day.

I personally have followed this plan for years with

excellent results. If, for instance, there is a dinner outing during the week or some engagement where I cannot eat a sensible meal, I do the best I can with the food presented to me. It is perfectly OK to enjoy yourself on occasion during the five day stretch.

Did you know that you can buy over-the-counter bio-identical progesterone cream without a prescription? You can. Certain states have different laws regarding the strength but bio-identical progesterone is available without a prescription. The trick is finding the correct dose for you and determining if using just progesterone is right for you.

If you are having estrogen dominant symptoms, you could be deficient in progesterone. This is a relatively inexpensive way to determine is supplementing with progesterone cream is going to help with your symptoms.

You can usually find bio-identical progesterone cream in your local pharmacy or health food store. Be sure to read the label carefully to make sure it says "progesterone USP" on the label. You will also need to check the concentration or strength. This is where is gets a little confusing.

The amount of progesterone in the cream can be written two different ways: either by an amount per volume or percentage. The amount per volume will be written something like 25mg/ml. This means for every one milliliter (ml) of cream, there are 25 milligrams (mg) of progesterone.

It can also be written in the form of a concentration, such as 2.5% progesterone. This means that for every 100 grams of cream, there is 2.5 grams of progesterone. We need to convert this to milligrams ($1/1000^{th}$ of a gram).

So, 2.5% is the same as saying 25 milligrams per gram. And to make it just this much more fun, a milliliter equals a gram. Confusing huh?

This chart should help you determine the strength or concentration of your cream.

Amount per gram (or milliliter)	Concentration
10mg	1%
20mg	2%

To start your experiment, you have to know if you are still cycling or not.

If you are not cycling regularly, use 10mg of progesterone twice a day, no matter what recommendations are on the label. Use 10mg in the morning and 10mg before bed spaced about twelve hours apart. Give the progesterone a few days to give you the full effect. If you like the way you feel, continue this dose. If you feel a little bit better but still are just not "you," up the dose to 15mg twice a day and wait a couple weeks.

The first over dosing effect with progesterone is going to be breast tenderness. If your breasts become sore, this is a sign that the dose of progesterone is too high and you should lower it. Since you are stepping up by just a few milligrams at a time, you should be able to determine a correct dose for you.

If you are currently cycling, you should only use progesterone during the last two weeks of your cycle. The first day of your period is considered day one. Begin progesterone on day 14 or your cycle and stop on day 28 or when your period starts, whichever comes first. As with women who are no longer cycling, begin your dose with 10mg twice a day and follow the same procedure

except you will use the same dose through one complete cycle. The sudden stoppage of progesterone on day 28 is telling your body to begin your period, and start back at day one.

As a side note, many women who are no longer cycling and continue to use progesterone on a daily bases find in beneficial to have a couple "drug holiday" days every month. This means they do not use the progesterone for the last two or three days in each calendar month. Scientifically, this gives the receptor sites time to "freshen-up" for lack or a better term. After just a couple days, she begins the same dose again.

Some women who chose not to take these "drug holidays" tend to need a progressively higher dose of progesterone to keep their symptoms at bay. This is because the receptor sites on her cells become saturated and must grow new receptor sites to keep up with the increasing dose. If you are finding that you have to continually increase your dose, try stopping for a couple days and see if that helps you.

As mentioned before, there are a number of xenoestrogens in our environment. It is virtually impossible to avoid them with our current lifestyle. Xenoestrogens are man-made products that have been introduced into our environment beginning about 70 years ago but their impact has only been studied since 1991. They act as estrogens but do not have the beneficial effects of estrogen. They also accumulate in the body and, over time, can cause symptoms of estrogen dominance.

Supplementation with over the counter products is becoming more and more popular. Below is a list of over the counter supplements that women are taking to try and combat the effects of menopause:

Soy is the most popular phytoestrogen. Studies show that eating 20-60 grams of soy daily or taking 35-120 milligrams of the soy extract daily modestly decrease the number and intensity of hot flashes. Before you go rushing out to buy your soy, proceed with caution. When you eat soy, substances in them called lignins bind to zinc and magnesium, preventing their absorption. So, if there is any amount of these vitamins in your meal containing soy, you will not get the benefit. A zinc deficiency has been linked to prostate disease and low levels of magnesium can cause muscle cramping.

Soy contains an enzyme that blocks protein absorption and trypsin. A low level of trypsin, an enzyme, can cause low thyroid function and slowed growth in children. Another unwelcomed substance in soy is hemagglutinin. Hemagglutinin lowers the red blood cell's ability to carry oxygen throughout the body.

If you want to eat soy as a food, limit it to three times a week. This gives your body a chance to remove those unwanted substances and repair itself. For supplementation, if it works for you, all the better. Try to take soy supplements only during that time in your cycle when you feel they relieve your symptoms.

Black cohosh is very popular and is used to treat menopause symptoms. Scientists are not exactly sure how the compound works. Sometimes it acts like estrogen in some places in the body but not in others. Black cohosh does not bind to the estrogen receptors on the cell but may block serotonin in the brain. It has been difficult to study black cohosh because the chemicals found in black cohosh differ depending on where the plant was grown, the type of fertilizer if any, the soil, amount of water, and other variables. I say try it if you want and give black cohosh at

least a month to be effective. If it doesn't work for you, stop taking it.

Red clover contains compounds similar to those in soy. Studies show it does not reduce hot flashes.

Dong quai is more popular in the Chinese culture than here in the United States. Current recommendations say do not take dong quai. Not only is it ineffective in treating hot flashes, it contains substances that are known to cause cancer. Don't use it.

Flaxseed is a good source of omega-3 fatty acids, alpha-linolenic acid, and fiber but not a good choice for hot flashes. Early studies show a mild effect but hardly worth the effort.

Chasteberry is a substance that has been suggested can be used for hot flashes. It has a slight effect of certain brain chemicals and may be helpful for PMS but not menopause. This one is not necessary to take.

I have been asked about DHEA for menopause and do not recommend it, there are better options.

Other supplements that claim to relieve estrogen symptoms are evening primrose oil, wild yam, and vitamin E. None of these are effective for this purpose, don't waste your money.

An employee of a health food store told me that taking an over-the-counter supplement called diosgenin can replace my natural hormones. Is this true?

Diosgenin is the substance that is extracted from the Mexican yam or soybeans to make bio-identical hormones. It has a similar structure to our own hormones but still must be altered in a laboratory to make human progesterone. From the progesterone, the lab can make estrogen and testosterone. This altering of diosgenin happens in a laboratory, not in the human body. Our body does not have the ability to change the diosgenin into progesterone. Taking a supplement containing diosgenin will only help the person selling you the product. Do not use it.

10

SALIVA TEST

Testing hormones in the blood or serum is not an accurate way to determine your levels. Decades of blood tests have only led to more and more confusion with regard to true hormone levels. Testing the blood gives a total hormone level, not the level of active hormone. A large percentage of the hormones in your blood are protein-bound and therefore inactive. Only the small fraction that are not bound to proteins are "allowed" to leave the blood stream through the capillaries and enter the cells. These are the free hormones. The free hormones eventually return to the liver where they are attached to proteins and excreted in the urine. Why measure something that doesn't work in the first place?

When the free hormones flow into the capillaries of the saliva glands, they easily move into saliva. The protein bound hormones cannot leave the blood until they are ready to be removed from the body. Saliva tests only the active hormone, the amount that is actually producing changes inside cells.

A blood test is taken at your doctor's office during your appointment. The body produces a small surge of hormones about 12 times a day, or about every 2 hours. Depending on the time your blood is taken, you could be at the high end or the low end of this surge. The morning saliva test proves more accurate because the specimen is being taken at roughly the same time according to your

personal "clock." You are instructed to begin testing about 15 minutes after you wake up in the morning.

Also, a saliva test can be taken at home, at your convenience. There is no appointment, no driving to the doctor's office, no needles. It is painless, easy and accurate. The hormones found in the saliva are very stable and can be stored at room temperature for a week without changing the accuracy of the test results. Saliva testing is also much less expensive than a traditional blood test.

11

PROPER DOSING

The general feeling amongst those who specialize in bio-identical hormones is to restore hormones to their normal levels. There is no proper dose, recommended dose, or most popular dose. Each woman gets the amount needed to bring her levels back to her normal.

Hormones should only be used if needed. A saliva test can measure need in an objective manner while symptoms measure the need in a subjective manner. I've had many patients who have a certain hormone measured within the "normal range." Their symptoms, however, reflect a symptom that indicates they are low. Supplementing with bio-identical hormones, even though that patient was initially in the normal range, alleviated the symptoms.

When giving hormones to a patient, only bio-identical hormones should be used. This seems like common sense but traditional doctor have been giving women chemicals that are not found in the human body for decades. Drug companies, the ones who "educate" doctors on medication, can reap a profit from altering the chemical structure of the hormones and patenting them. No one can profit excessively from a naturally occurring, bio-identical, hormone.

When dosing hormones, it is essential to create a balance. The issue here is – What is the proper level to balance the hormones? This level varies from person to person. Also, an excess of one hormone will "push" the other hormones

down to a lower level. Frequently assessing both symptoms and saliva hormone levels are a necessity when properly balancing hormones.

If the woman is still having regular menstrual periods, her hormones levels will vary based on her cycle. A good practitioner will supplement her current fluctuating hormones with bio-identical hormones and regulate her body. While it is feasible to stop a woman's cycle, this is neither healthy nor natural.

The postmenopausal woman does not necessarily need or want to begin her monthly cycles again. Her hormones remain relatively steady on a daily basis and therefore do not need to be adjusted based on a monthly cycle. Once her levels are brought back to normal, the over dosing and under dosing effects of the hormones alleviate.

12

THE CORRECT WAY TO PRACTICE

There are different ways to get bio-identical hormones into the body. They can be taken orally and swallowed, absorbed through the cheek, applied vaginally, used as a topical cream, or implanted in the body. Of all the ways to administer the hormones, topical cream is the way I get the hormones into the body.

The reason I like creams so much is the variability I have with dosing. It is called the practice of medicine for a reason. There is no one single dose that is correct for everyone. Each woman I dose is different from the next. You are different than your neighbor, your mother, and your sister.

So, I begin each patient with a short consultation about bio-identical hormones. They are then given a saliva test kit to take home and submit a saliva sample to the lab. When the results are in, we discuss the test and together come up with a plan of action. I use the saliva test as a baseline only, a place to start. From then on, month by month, she is dosed primarily on how she feels. Generally, as long as the patient is happy, hormones levels are checked once or twice a year.

Remember, it is the practice of medicine. Each hormone has a normal range that the majority of people fall into. The first month, your hormones are adjusted to be in the middle of the ranges. But you, being you, may not feel right in the middle of all the ranges. We don't know

where you are. This is when the dose is adjusted based on how you FEEL.

If a woman is low in progesterone and low in testosterone, I will be her best friend in exactly two days. That's because on the second night, she will have the most restful sleep she can remember. See, low progesterone and low testosterone are responsible for those restless nights and "I just don't feel like I slept well" mornings. When the levels are back to her normal levels, she can sleep.

This is where individual dosing comes into play. Your estrogen, progesterone, and testosterone need to be balanced for YOU in order for YOU to feel good. YOU are different from everyone else.

So, after the first month, the patient will come back to me and we will discuss how the treatment went for the last thirty days. She explains to me what is happening, how she feels, and anything else that is going on with her body. Based on the discussion, I adjust the dose for the next month. These monthly conversations happen until she walks in with a big smile, as happy as can be, and feeling like her old self again.

I'm not going to tell you this process is simple, it's not. If the patient and I discuss the options and her hormone levels are no longer fluctuating, three months is generally how long it takes to get the proper dosing. Three months if she was not taking any synthetic estrogens prior to beginning the bio-identicals.

If a patient wants to stop taking the synthetic medications and move to a more natural, bio-identical approach to hormone supplementation; the process takes longer. I tell my patients to expect a difficult six months. It is going to

take about six months for the synthetic estrogen to leave her body and the bio-identicals to take control.

When a woman takes the synthetic estrogens, like Premarin, she is bombarded with dozens of estrogen compounds that her body does not use. These estrogens block the receptor sites on the cells where estrone, estradiol, and estriol need to be. When that cell dies and a new cell is born, a process called up-regulation occurs. This means the new cell has more receptor sites on it because it wants that good estrogen. This process continues with each new cell until there are enough receptor sites to accommodate the estrogens you cannot use and the estrogens you can use. Technically, there is a "balance" here of blocked receptors and usable receptors. The problem is, you are altering your cells and their function.

When converting to the bio-identicals, the patient has a larger role in deciding on the therapy. Either way, this is going to be a difficult six months. Those cells must die off and regenerate new cells with a process called down-regulation. The new cells have less receptor site because less estrogen is being introduced into the body to fill the receptor sites.

Giving a high dose of estrogens will cause estrogen dominant symptoms because those receptor sites are no longer being filled with the synthetic estrogens. The cells were not responding to the synthetics even though they were filling the holes, sort of speak. So, the estradiol and estrone in the cream are now filling those receptor sites causing those estrogen dominant symptoms like depression, breast tenderness, fatigue, mood swings, bloating, headaches, and poor sleep. The good news is the symptoms will lessen over time because of the down-

regulation. As the cells down-regulate, we lower the dose to keep pace. It takes about six months, but it works.

Giving a low dose causes estrogen deficiency symptoms. These include a rapid pulse rate, bloating, constant fatigue, hot flashes, foggy thinking, and headaches. The opposite reasoning goes for giving a low dose. A low dose will cause a faster down-regulation but the under dosing effect will be harsher than the over dosing effect seen with giving a high dose. There are a high number of receptor sites that want to be filled with the estrogens but we are not giving it to them. So the next generation of cells will have far fewer receptor sites. This process, if we're lucky, takes about four months.

It is the patient's choice as far as which therapy path she will take: either about six months of estrogen dominance symptoms or about four months of harsh estrogen deficiency symptoms.

In practice, only about half the women who try to convert over finish the conversion. This is unfortunate. The symptoms are just too harsh for them and they cannot complete the conversion. These are the women I feel the most sympathy for. For two, three, sometimes four months they have endured the effects of synthetic estrogen "withdrawal" and give up just before they are about to break through and feel better than they have in years. If you are taking the synthetics, be warned. The journey is a difficult one, but worth it in the end.

An exception to this rule is when there are children in the house that may be exposed to the cream. If you rub cream on your arm and hug your children, the cream will transfer from your arms to their body. Obviously, this is not a good situation. Also, creams applied at night, before bed, may transfer to your bed linens where they can be picked

up by someone laying in the same bed. So what's the answer?

I advise my patients with children to apply their creams to the inner thighs. This sometimes involves using their hands to spread the cream, but not necessarily. I dispense my patient's hormone cream in a topical applicator that can be used to spread the cream without touching it. Also, if just a small amount of cream is being used, apply to the upper inner thigh of one leg and rub your inner thighs together spreading the cream into a thin layer.

There are a couple of rules I use for my hormone replacement therapy patients. First, I only give supplementation to those who need it. A doctor wouldn't give you diabetes medication if you were not a diabetic. You would not be put on medication to lower your blood pressure if you did not have hypertension. There is generally no reason to supplement someone's hormones unless he or she is deficient. Many doctors simply write a prescription for synthetic hormone replacement for women based on their symptoms without ever testing their hormone levels. How is one standard dose correct for everyone when this area of medicine is so individualized?

Also, when supplementing, give the correct dosages for the individual. In other words, treat the patient, not the numbers. Once a baseline is established and we know where to start, adjust based on how the patient feels. What is normal for one is not normal for another.

And finally, use bio-identical hormones and get the patients off that poison we call synthetics. Our bodies want the exact chemical that it normally produces, not something foreign to it. The cells react properly only to the exact chemical structure we produce in our bodies.

The hormone creams are absorbed through the skin and enter the bloodstream through the capillaries. You want to put the cream where there are a high number of capillaries and a relatively consistent percentage of fat. This includes the face, neck, upper chest, or inner forearms. I prefer the inner forearms because you can apply the cream from the dispenser directly onto one inner forearm. You then rub your forearms together to spread a thin layer. When the hands touch the cream, a small amount stays on the hands rather than staying on the area it is supposed to be on to get absorbed. Some say the cream is absorbed through the hands but I disagree. I feel the skin on your hands is too tough from every day callous buildup. The skin is too thick to get adequate absorption.

DOSING

I prefer to use a compounded estrogen called Bi-est, a combination of 80% estriol and 20% estradiol. Through the years, this combination has given my patients the most benefit. In experimenting with other percentages, this 80:20 combo seems to be the best. Like I've said before, you shouldn't give estrogen without progesterone. I also, virtually every time, add testosterone into the cream.

The only time I give any hormone also is for PMS. A woman who has regular menstrual cycles and experiences difficult PMS symptoms receives progesterone in the form of a cream. The general starting dose is 10mg applied twice a day. I prefer progesterone twice a day since its effects generally last about twelve hours. This eliminates overdosing on progesterone to retain the benefits over the course of an entire day. The cream is applied on days 14 through 28 of her cycle, where day one is the first day of menstruation. If the symptoms continue, we can increase the dose to a max of 50mg daily.

If she begins her period before day 28, simply stop the cream and this begins day one. On day 28, she should stop the progesterone cream and her period should start in a day or two.

The general guidelines for peri-menopausal and menopausal women are fairly broad. Bi-est dosing can begin with as little as 0.1mg per day to as much as 1mg per day. This, of course, depends upon the results of the saliva test. Obviously, a low saliva estrogen requires higher supplemental estrogen, and vice versa. Progesterone dose usually begins at 20mg per day and rarely goes above 50mg per day. If the woman is peri-menopausal and feels she wants to have a period, we can cycle the progesterone in hopes of replicating the hormone cycle. Sometimes it works, sometimes it doesn't.

Testosterone is the kicker. Interestingly, most women are excited about the testosterone element. Again, I let the women decide if they want to go aggressive or not. If they have absolutely no libido and very little energy, we can boost those with a higher dose of testosterone. Too high and she will experience weight gain, oily skin, and acne. Too low and she will continue the same feelings. This balance of hormones is where we want to be. To be honest, most women prefer a slightly higher level of testosterone due to the affect it has on their mood. They say that they are willing to put up with oily skin and a pimple every now and then in exchange for how the testosterone makes them FEEL. Remember, I go by how you feel. Most women begin with 0.25mg a day with a high of 1.5mg a day.

HORMONAL RHYTHM

Another way of dosing is what I call hormonal rhythm dosing. This dosing schedule mimics a woman's cycle

that occurs during her life before entering menopause. Hormones fluctuate during her cycle causing changes inside the body in preparation for pregnancy. What happens if we supplement with varying levels of hormones, giving the proper amount to cause those changes again?

Some women prefer this rhythmic cycling to continue. Again, what my patients want, my patients can usually have. This is a more difficult dosing schedule and must be followed strictly. It involves using separate creams containing different kinds of hormones that are cycled during a 28-day cycle.

The general dosing is to begin on day one of the cycle with low dose Bi-est 80/20 cream. Every two days, the dose is slightly increased until day 13, then the dose is cut 25% for day 14, and another 25% on day 15. That dose is maintained until day 20 then slowly reduced every two days until the original starting dose, then the cycle begins again. The progesterone dose begins low and in maintained until day 14. The dose is raised daily for the next 7 days, then lowered at the same rate until the initial starting dose is reached on day 28.

Needless to say, the patient must be heavily involved in this process. It involves paying strict attention to your body. Like other therapies, it will take about three months to get the doses correct. If the patient is currently taking synthetic hormones, she can expect the process to take about six months.

Generally, I don't like to supplement testosterone with my hormonal rhythm method. Testosterone tends to slightly lower estrogen. It is difficult to get levels correct with this schedule and throwing testosterone in the mix seems to upset this balance. In practice, I have not had a patient yet

be successful adding testosterone to this regimen. It is just too difficult, I feel, for patients to keep track of one more hormone.

Of course, if the patient has had a hysterectomy, I don't recommend this therapy. A consistent dose of hormones is best for her.

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SYMPTOMS CHECKLIST

Below are the lists of symptoms caused by an excess or deficiency in hormones. The lists are certainly not complete since an excess of one hormone can throw off your other hormones. The same holds true if you have a deficiency in one or more of your hormones. Remember, everything must be in balance according to your own body.

Estrogen Excess

Fatigue
Weight gain
Bloating
Breast swelling and tenderness
Nervousness/Irritability
Heavy menstrual cycles
Mood swings
Accelerate aging
Coldness in extremities
Dry eyes
Allergy symptoms
Low libido
Hair loss

Estrogen Deficiency

Hot flashes
Depression
Headaches
Night sweats
Dry skin
Poor sleep
Low libido
Foggy thinking
Vaginal dryness

Progesterone Excess

Tiredness
Bloating
Breast swelling
Intensify the affects of estrogen deficiency

Progesterone Deficiency

Weight gain
Headaches
Low libido
Mood swings
Intensify the affects of estrogen excess

Testosterone Excess

Oily skin
Irritability
Insomnia
Acne
Clitoral enlargement
Facial hair growth

Testosterone Deficiency

Fatigue
Decreased libido
Lack of motivation
Foggy thinking
Muscle weakness
Vaginal dryness

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THE WILEY PROTOCOL

The Wiley Protocol is a patented dosing schedule that mimics the natural hormone production of a 20 year old woman. The doses of the hormones used, estradiol and progesterone, are varied to mimic the woman's natural cycle.

By the third month of treatment, the patient must have her estradiol, FSH, and progesterone levels checked on the 12th day of her cycle. On day 21, she must get estradiol and progesterone levels. These levels are required to determine proper individual dosing. If dosing is changed, a three month follow-up with lab testing is required again.

T.S. Wiley is a medical author and researcher who developed this approach to therapy. She teamed with a doctor, philosopher, and scientist to show that women have accelerated their aging process through lifestyle. More information can be found on her website at ww.thewileyprotocol.com.

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PRE-MENSTRUAL SYNDROME

Prior to going through menopause, pre-menstrual syndrome, PMS, is the most common hormone related complaint of women. Some women begin experiencing PMS in their teens, some in their twenties, but mostly, PMS symptoms begin when a woman is in her mid-thirties. As the years and cycles progress, the symptoms become worse and worse. Just about any woman can tell you the signs of PMS but the most common are bloating, breast tenderness, headache, cramping, irritability, and mood swings. PMS officially occurs two weeks before menstruation and may continue for several days into menstruation.

Researchers have a difficult time pinpointing the exact cause of PMS. This is because every woman's hormone level tolerance is different. The level of hormones that cause one woman to experience extreme PMS, cause her neighbor to feel nothing.

Most, if not all, PMS symptoms are linked to estrogen dominance. The simple answer to relieve many of the symptoms is progesterone. Just the right amount of progesterone to offset the high level of estrogen works wonders. But, of course, simple does not always work. Stress plays a major role because stress releases cortisol. Cortisol blocks the effects of progesterone. So, just because you have a normal level of progesterone does not mean the progesterone is working effectively. The extra progesterone is needed to overcome this blocking by the

cortisol. The more stress the woman is feeling, the more cortisol is released, the more progesterone is needed to overcome the blockade.

Too much progesterone can make the PMS worse. By looking at the symptoms of excess progesterone, you'll see that they mimic those of excess estrogen. Many woman who ask their doctor about progesterone and PMS are given progesterone cream and told to use more if they are experiencing a particularly difficult month. They have PMS; apply too much cream; the symptoms get predictably worse, so they apply more cream, the symptoms get even worse, so they apply more cream…you get the picture. It becomes a never ending cycle until she finally gives up in frustration, believing that the progesterone cream does not work.

Some doctors prescribe oral contraceptives to "help regulate" a woman's cycle. While the medication in birth control pills is effective in preventing pregnancy, it only does a modest job at reducing PMS symptoms. Most birth control pills work by giving a high amount of estrogen at a steady level, followed by a sudden stoppage and a high level of progesterone. This sudden starting and stopping produces menstruation at a predictable time every month. But if she is particularly sensitive to that level of estrogen, using the pill for PMS does nothing.

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OSTEOPOROSIS

One of the most pressing issues today is the prevalence of osteoporosis. There are several different approaches to battling this thinning of the bone and, yes, hormones play a major role. Researchers began their investigation with estrogen because bone loss accelerates at menopause when estrogen levels plummet. Scientists discovered that estrogen replacement at menopause greatly slowed the progression of bone loss. Unfortunately, the effects of estrogen on bone loss only work for about five years. After that, the rate of loss, about 1.5% per year, continues even with estrogen replacement.

Several years ago a new drug class called the bisphosphonates arrived on the scene. This class of drug, with brand names like Fosamax, Actonel, and Boniva, slows bone loss and accelerates bone building. It sounds promising but the bone that is not absorbed by the body is not nearly as strong after about three or four years. So, as new bone is laid down on top of old bone, the bone actually becomes weaker and less flexible, but more dense.

A low level of one of our major hormones, progesterone, causes a decrease in new bone formation in women. Doctors who have been studying bio-identical hormones for years have discovered that the proper level of progesterone increases bone density and bone mass. After three years of progesterone therapy, patients averaged a 29% increase in bone density.

Perhaps the most important factor in bone formation is vitamins and minerals. A balance of calcium, magnesium, vitamin B6, and Vitamin D is critical. We need vitamin D to absorb calcium from our diet. The calcium relies on magnesium to be absorbed into the bone. Magnesium needs vitamin B5 in order to "push" the calcium into your bones. Just like your hormones, these vitamins and minerals must be present in order for your body to do it's natural process of bone building.

This section cannot be complete without expressing the need for exercise. Lack of exercise, especially weight training, is one of the leading causes of osteoporosis. As a minimum, 30 minutes of active exercise, three times a week. If you have been diagnosed with osteoporosis, you should add weight training and progesterone to your regimen. Weight training is essential at this point in your life. You do not need to go to a gym either. You can use soup cans, milk jugs, or books for resistance.

There are a number of ways to prevent osteoporosis before it is too late. First of all, cut out the Coke, Pepsi, Sprite, or any drink that contains phosphorus or phosphoric acid. When you consume these chemicals, your body pulls calcium off the bone and uses it to neutralize your blood. Phosphoric acid is, obviously, acidic. Your body needs to neutralize that acid before it gets into the blood. To neutralize acid, the body uses calcium. Where is there an abundance of calcium? In the bones.

Substances in alcohol, coffee, and cigarette smoke bind calcium in the digestive tract. When bound, calcium cannot move through the intestines and into the blood, it passes right through you. Prescription diuretics, like hydrochlorothiaze and furosemide, remove excess fluid from the body. Along with the fluid, minerals like

calcium, magnesium, and potassium are removed. If you are taking a diuretic to control blood pressure, be sure you are getting adequate amounts of vitamin D, calcium, magnesium, and potassium.

Getting a bone density test can be beneficial in assessing your risk for osteoporosis. I would recommend your first test at age 45. Every six months, check your height. If you "shrink," get another bone density test since getting shorter is a sure sign that you are losing bone in your spine. I also recommend a test every three to four years minimum just to be sure.

You may be developing osteoporosis if you have some of the following symptoms; loss of height, low back pain, leg or foot cramps, or gum disease or loose teeth.

You increase your risk of osteoporosis if you are a woman, smoke, don't exercise, are white, are thin, are short, use antacids, drink large amounts of coffee, drink alcohol regularly, have a low calcium intake, or have a hyperthyroid.

Having strong bones doesn't necessarily mean you will not get a fracture. Diamonds are very hard, yet will break under enough pressure because they are not flexible. A tree branch must be strong and flexible, this is what we are looking for in our bones. Your bones must be able to slightly flex and bend when subjected to stress. Properly balancing your hormones will keep your bones strong and flexible.

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JUST FOR MEN

The latest "buzz" for men is called andropause, the fall in testosterone that men experience similar to the way women experience menopause. Did you know that the average 55-year old man has MORE estrogen that the average 55-year old woman? That's right, men at that age have more estrogen than women. As aging continues, estrogen levels rise in men as testosterone levels fall.

As the estrogen begins to take over, the signs become clear; breast enlargement and an overgrowth of prostate cells. The male prostate has similar cellular characteristics to the female uterus. Therefore, the prostate has an affinity for estrogen. The estrogen causes the prostate to enlarge and possibly cause prostate cancer.

A high testosterone level does not effect the prostate. If high testosterone caused prostate enlargement, wouldn't there be a bunch of eighteen year old boys with prostate cancer? That is when the testosterone level is at its highest.

The signs of andropause begin more slowly than menopause and the symptoms progress at a gradual rate. The long tem consequences though, are just as severe. As testosterone drops, there is a predictable increase in the incidents of heart attacks, dementia, osteoporosis, anemia, diabetes, cancer, and Alzheimer's disease. Men who regularly exercise notice a loss of performance as well as increased stiffness in the muscles and joints. Many men

see their drive and motivation in regard to their career plummet. They get tired more easily; depression, mood swings, and general irritability are seen.

For many men, the sexual side effects are most troubling. His libido decreases along with the willingness to have sex. His fantasies about sex diminish. His erections are not as rigid as before and orgasms are not as intense.

Testosterone begins its decline in the early thirties and will be reduced by ½ by the time the man reaches 75 years of age.

Testosterone supplementation to restore youthful levels is an effective way of preventing prostate cancer. Again, the balance of estrogen, progesterone, and testosterone is the important factor. The proper dosage for men is far less than what is traditionally given. Many men have egos and want more testosterone. They feel more will only exaggerate its beneficial effects.

The exact dose varies but men generally need about five milligrams topically per day to restore proper levels. I've seen doctors prescribe 500 milligrams per day! If there is one thing I've learned, doctors are NEVER wrong. I must try to explain this dosing to the patient, but, men have egos and want this testosterone. Generally, at this 500 milligram dose, the man will gain 10 to 20 pounds the first month. His skin will be excessively oily; acne will appear on his face, back, and chest. Body hair growth will accelerate and he will become noticeably hairier.

On the inside, much worse is going on. The excess testosterone is being converted into estrogen in an attempt to balance out the hormones. This estrogen has an affinity for breast tissue and the prostate. Also, the body is changing the excess testosterone to dihydrotestosterone, or

DHT. DHT is what scientists believe causes hair loss and contributes to prostate enlargement.

So, you gentlemen who think you are going to be more manly by taking an excess amount of testosterone are doing the exact opposite. Your breasts will begin to grow, your testicles will shrink, your prostate will enlarge, and you will lose the hair on your head while the hair on your body will increase.

Here's a way to increase your testosterone naturally without supplementing with testosterone. It still involves getting a prescription from the doctor for a pretty expensive medication. You can take a drug called an aromatase inhibitor like anastrazole, exemestane, or letrozole. These drugs block the conversion of testosterone to estrogen.

Remember, our bodies can make estrogen from testosterone. Since our body wants to be in balance, it wants to make estrogen from testosterone but you are taking a drug to block this conversion. So, your body makes more testosterone in an attempt to overcome this blockage. The end result is more testosterone. I've read studies where a man's testosterone has increased over 100% after a short period of time taking an aromatase inhibitor.

So what should the testosterone level be? A saliva test is the only true and effective way to test hormone levels. According to established ranges, the male level of saliva testosterone should be between 350-1030 ng/dl. In my own practice, I have begun treatment on men with a level of 800 because they were symptomatic. Remember, medicine is supposed to treat the patient, not the number. When the testosterone levels of these patients are just

slightly increased, the balance is returned and the fatigue, aches and pains, and loss of libido all quickly subside.

I have also treated men with levels far below 100 with a heavier, more aggressive dose. Within a couple weeks, based on their subjective symptoms, the dose was too high. A repeated saliva test revealed a level of under 500, well within the "normal range." Although "normal," this level was not their own, personal balanced level. Tapering off the dose with some minor adjustments and these guys were feeling young and spry in no time.

So, just because the established normal range is reached does not indicate a normal level for that particular male. Older, less active men generally require a lower testosterone level while the 40-something with an active lifestyle will require a little more. As with female bio-identical supplementation, it is an individual dosing that is most important.

Through practice, the active male's saliva testosterone level should hover around 1000 ng/dl. The vast majority of my patients are in their fifties and maintain this level of saliva testosterone.

When the testosterone level is too high, or the man is insistent upon a higher dose, the hormone will convert to dihydrotestosterone and estrogen. The body uses this conversion as a checks and balances system to assure balance. To combat this conversion, medicinal drugs can be used. Compounds such as topical chrysin, zinc, and topical progesterone will help decrease this aromatization of testosterone. For those interested, the chrysin dose is 250mg orally daily and the progesterone dose is 5mg in a transdermal cream twice a day.

Additional aromatase inhibitor drugs like anastrozole, exemestane, or letrozole are used to stop the conversion. These prescription medications control estrogen levels very well.

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CONCLUSION

To get your body into hormone balance, there are three rules the health practitioner should follow:

- use bio-identical hormones, not synthetic chemicals
- use hormones only if needed
- use hormones in the proper doses

Whether you are unhappy with your current hormone balancing or have never had your hormones properly balanced, you can quickly be on your way to feeling better.

Hormone balancing is just one aspect of the whole person. In order to fully appreciate what a competent health practitioner can do for you, all three of your "energy systems" must be in balance. Along with your hormones; your thyroid gland and your adrenal glands must work at optimal levels in order for you to get the full effect of total body balance.

Every seemingly small step you take to improve your eating habits, your exercise routine, your sleep schedule, your stress level, and your mental attitude will make it easier to achieve balance.