

What You Need To Know About



HORMONE TESTING

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INTRODUCTION



Not knowing all the information in this publication is not your fault. You're not a doctor, not a pharmacist, a lab director, or a cosmetic and hormone test manufacturer.

You don't compound HRT products or own a pharmacy that does. You don't perform hormone testing or own a laboratory that does. You don't formulate and manufacture creams

that contain hormones or own a company that does. Nor do you develop and manufacture hormone tests, or own a company that does. And yes, there can be a few exceptions to these statements but for the most part this is why you don't know what I'm about to tell you.

I know all the things because; I know how compounding pharmacies make HRT creams, I owned a hormone testing laboratory, I formulated and manufacture creams containing hormones, and I develop and manufacture hormone tests. I've also been consulting women and men for 20 years and have helped 1,000's of them bring their hormone levels back into balance.

Which is why I know all the problems that occur with each step of each process in doing all these things. I also understand what effect these problems have on the efforts of doctors to administer, and you to obtain and use HRT, even if you and doctor don't.

Having been through hormone hell myself and almost losing the love of my life over it, I never want anyone to suffer from a lack of a few chemicals that can so easily be replaced. But getting involved in the Hormone Replacement Therapy industry can be a nightmare in and of itself so I've written this, and other publications, to help you avoid the pitfalls of the industry so you get great results and have a happy life.

Sindi Holmlund - researcher, writer, herbalist, chemical free health and beauty products formulator and manufacturer, and developer and manufacturer of real, home hormone tests.

HORMONE TESTING

Since hormones slowly decline from puberty (18-20 years of age) until around age 50-60, it's safe to say that not every woman needs the exact same amount of HRT. So if that's the case, how do you and your doctor know how much *you* need? By testing your *current* hormone levels of course. The problem with this is that there is no existing test that can accurately do that, and here's why.



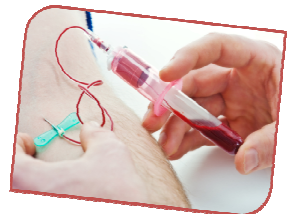
There are four different types of, so called, hormone tests, and every one of them have flaws that keep them from being accurate. I'll explain each test and the problems with them so you don't spend your time and money buying any of them, *even if your doctor tells you to, because your doctor doesn't know what I'm about to tell you either.*

THE FOUR TESTING METHODS

Blood - Hormones are secreted into the blood stream and travel through it to the cells of tissues that will use them called 'target tissue', *supposedly*, in two forms... 'bound' and 'free'. I say *supposedly* because the 'bound' part is true, but the 'free' part is not.

When the ovaries release estrogen, progesterone and testosterone, within minutes, 95-97% of those hormones bind (this is the part that's called 'bound') to two different proteins in the blood stream and are sent to the liver to be converted into other hormones. That *supposedly* leaves 3-5% (this is the part that's called 'free') floating around in the blood stream. And it's that 3-5% of *supposedly* 'free' hormone that doctors *think* is being tested when they send a blood sample to the lab...but it's not!

In reality, within minutes of release from the ovaries, that 3-5% of the hormones left in the blood stream binds to **red blood cells**, is transported to the target tissues and is not *available* for testing.



When the 95-97% of the hormone binds to the two proteins, it binds loosely to one of them, can come loose and *momentarily* be free in the blood.

But, it will quickly bind to protein or a red blood cell. It's only that nanosecond's worth of time after the hormone has dropped off the protein that it can be captured in a blood draw, and it's that minuscule amount of hormone that is being tested by a blood test.

Another problem is that hormones are 'pulsed' into the blood stream. During puberty they're being pulsed *many* times per day, but at the end of puberty that pulsing begins to slow down, and becomes less and less frequent with each passing year. By the time you're 45 your ovaries are about 70% less active than at the end of puberty and only pulse a few times a day. So to even *try* and get an accurate measurement of any hormones in the blood, you would need to have your blood drawn a millisecond after a pulse. That way you could catch the hormone before all of it was hooked onto red blood cells or proteins and transported out of the blood stream.

It's for these reasons that there's basically no hormone in the blood stream to test, which makes trying to test your actual hormone levels with a blood sample a *really* bad idea.

Urine - Urine testing is not used to test your hormone levels, it's use to detect hormone 'metabolites'.

After your body uses hormones they're broken down into tiny pieces called metabolites and excreted through the bile, urine and fecal material. There are two paths those metabolites can take when being broken down for disposal and one of those paths can lead to the development of cancer.



Urine testing is used to determine how much, if any, of your hormone metabolites are going down that cancerous path. This data is very useful because if too much is going down the cancerous path, steps can be taken to correct it.

Urine testing cannot tell you your hormone levels, so don't be fooled into thinking it can.

Saliva - It's been discovered that the actual 'free' form of hormones can easily move from the tissues that use them into your saliva. Which makes saliva the *perfect* medium to test hormone levels in, plus, it's noninvasive. But the two current ways saliva testing is being done have some major problems as well.



Although saliva testing is the best way to test hormones, it's gotten a bad reputation among doctors, and that's because of the *types* of tests that are being used to test it. These types of test use saliva samples that are contaminated with bacteria from the mouth (which reads in the test), and contain large amounts of degraded hormones.

Most labs have you send your saliva sample unfrozen and some give you an ice pack to put in the box which melts in a few hours. But your sample takes 2-5 days to reach the lab. During that time the bacteria in the sample is *rapidly* growing. The higher the temperature the faster the bacteria grows, and shipping trucks can reach over 120°F in the summer. The more bacteria in the sample the more of it and the less of the hormone will read in the test. Which mean you will have no idea how much of the result is bacteria and how much is hormone.



Labs understand that there is bacteria in the sample so they 'adjust' the results by a *percentage* to try and allow for it. There is no 'standard' for this percentage so each lab determines what their percentage will be. One lab may take off 5%, another 10%, another 15% another 20%. But that won't work because all the samples have different *amounts* of bacteria, so how can labs take the same percentage off the results of *all* the samples?

Another problem is that hormones are made of lipids (fat) and there's a fat digesting enzyme in saliva that will digest the hormones in the sample. 60% of the hormones are digested within the first 30 minutes of taking the sample, and that digestion continues all the way to the lab. The more hormones that are digested, the less can be detected by the test.

So with the high bacteria count and severe degradation of the hormone, there's little left in the sample when it reaches the lab, which makes this type of testing pretty useless too.



Hair - it is 'claimed' that testing the 'mineral' content of your hair can tell you your hormone levels. The 'theory' is that your body needs different minerals to manufacture the different hormones, and if you're low on those minerals you will not be able to make those hormones.

Most people are *severally* deficient in major *and* trace minerals, yet they still manage to make plenty of the hormones their body needs. That's because hormones do not contain major or trace minerals. For instance the chemical formula for **Progesterone** is $C_{21}H_{30}O_2$. That means, 21 carbon molecules, 30 hydrogen molecules and 2 oxygen molecules. **Estradiol** is $C_{18}H_{24}O_2$, 18 carbon, 24 hydrogen and 2 oxygen. **Testosterone** is $C_{19}H_{28}O_2$, 19 carbon, 28 hydrogen, and 2 oxygen. Hormones are all made of the same molecules, just in different amounts. There's no zinc, magnesium, copper, phosphorus calcium, potassium, sodium, manganese, iron, etc., in *any* of them. If mineral deficiencies prevented us from making hormones, we would be dead, there would be no reproduction and the human race would never have survived. *WHO COMES UP WITH THIS STUFF?*

BUT WAIT, THERE'S MORE!

The results - How does a lab determine your hormone levels? By testing lots of women and taking an average of *their* levels. Some are using HRT and some are not. Each lab creates their own sets of ranges and because they do, test results can vary wildly from lab to lab. One lab may just take averages of women from different age groups like, 15-25, 26-35, 36-45, 46-55, 56-65. Another lab may average women from other age groups like; 20-35, 36-50, 51-65, etc.

Some labs create their ranges from age groups that include symptoms and situations. For instance, if you're 45, skipping periods, having hot flashes, and not using HRT your results would be compared with an 'average' of hundreds to thousands of other woman your age with the same symptoms and circumstances.

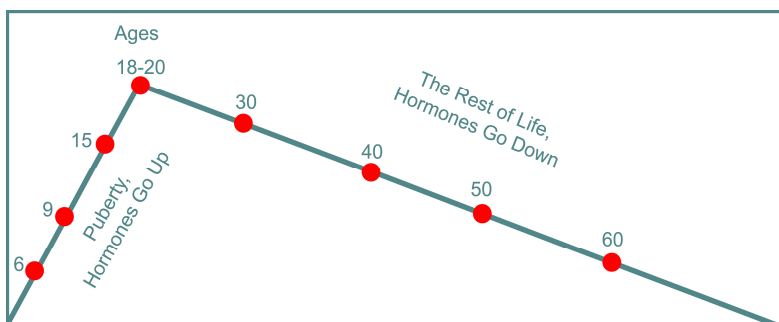
There are a few problems with these ways of creating ranges.

1. Like I've said, you're born with a finite number of eggs in your ovaries and it's those eggs that determine your hormone levels, and those levels decline in direct proportion to the depletion of

your egg supply. So as your egg supply declines so do your hormone levels.

Pregnancy *temporarily* halts the decline of your egg supply for as long as you're pregnant and breastfeeding. That means that a 40 year old woman, with 4 children, whom she breastfed for 6 months each, would have the hormone levels of about a 33 year old woman with no children. If you're 40 and have had no children, your levels will be very different from 40 year old women *with* children, and should not be compared to them, or anyone else who has had children. If a range contains women with differing numbers of children, who have breastfed for differing amounts of time, or not at all, that range will vary wildly.

2. If your results are compared to women older and younger than you it will not give you an accurate picture of *your* hormone levels because *their* levels are different than *yours*. Remember the Lifetime Hormone Cycle chart below and how hormones start declining when puberty ends? That means that someone even 1 year younger or older than you have different hormone levels from you. How are you supposed to know what *your* levels are if they're being compared to younger and older women? This makes no sense, yet it's done every day.



3. If your hormone levels are compared to women exactly the same as you, what you're going to find out is your 'existing' hormone levels, and many labs will report them as 'normal' to your doctor. That's because at 45 your hormones are about 50-60% depleted, and so are the hormones of all the other women that age, and that is normal...*for that age*. What good is finding out that your hormones are normal for your age? You don't need to pay a lab good money to find that out. You want to know how much HRT it will take to bring your levels back to what they were at the end of puberty so you can feel good again.

There are 3 reasons to test your hormones levels, 1.) to see what your levels are *before* your start HRT, 2.) after you've been using HRT for a few months, to make sure you're not too high or too low. 3.) troubleshooting.

The second reason presents another problem. Some lab ranges are gotten from women who are *not* using HRT. Therefore if you *are* and your test results are compared to women who aren't, *your* hormones are going to look like they're in the stratosphere. Then your doctor will *freak you out* and tell you need to *stop* or *greatly reduce* what you're doing before you end up with cancer. This will cause a problem because if you've found the right doses of bio-identical HRT that make you feel great and you follow your doctors advice you will be back to being miserable.

Then there are the labs that *do* compare women using HRT to others using it. Some have 2 categories of HRT users; those using non bio-identical, synthetic hormones, and those using bio-identical. Some lump them both into one range. Using this type of range is fine for synthetic hormones but it is very wrong for comparing women using bio-identical HRT to.

I was told by one of the largest labs in the country that they have tested millions of samples and their ranges are made up of "what they see", and that sounds logical unless you understand the exact differences between synthetic and bio-identical HRT and how they're prescribed.

WHERE DO THE DOSES COME FROM?

The Women's Health Initiative was started by the U.S. National Institute of Health in 1991 and consisted of three clinical trials and one observational study. The Initiative was to look at major health issues causing disease and death in postmenopausal women. In particular, cardiovascular disease, cancer, and osteoporosis. This study was funded with tax dollars, consisted of over 160,000 postmenopausal women aged 50–79, and lasted for over 15 years. It was one of the largest studies of its kind with a cost of over 625 million dollars.



Premarin (made from horse urine) and Provera (synthetic progestins, non bio-identical progesterone),

Prim/Pro for short, was used in one part of the study but was stopped in July 2002 (after 13 years) when researchers found that the women taking it had an increased risk for stroke, heart attack, breast cancer and blood clots.

It was estimated that pharmaceutical companies would make 37 billion dollars from the sales of estrogen-plus-progestin when the study was over. But, once the disastrous results were publicized for months by every national media outlet in the U.S., doctors and their patients back paddled from Prim/Pro as fast as they could. Doctors were afraid to prescribe it and women were afraid to take it. Many women stopped but found that they had horrendous hot flashes once it was out of their system. So they went back to their doctor and asked for it again.

Many doctors complied but wrote the prescriptions at *much* lower doses, just enough to stop the hot flashes, and told their patients to use it only until their hot flashes stopped, because that's what the majority of women in the U.S. think menopause is all about...hot flashes.

All the study's that have been done showing that estrogen causes cancer were done with non bio-identical hormones like Premarin and Provera *both* of which have been *proven* to cause cancer. The molecular configuration of non bio-identical estradiol is so highly active and carries such a huge risk of cancer that it's prescribed in extremely minute amounts of .3 mg - 1.25 mg per dose, just enough to stop hot flashes.

There's a thought process where people think "this is the same as that" and in many cases it's not true. It's certainly not with non bio-identical HRT and bio-identical HRT, they both act *VERY* differently in the body. Doctors basically understand that the molecular structures of these types of hormones are different, but they don't really understand how each works so they prescribe bio-identical HRT the same way they do the synthetic molecules.

Bio-identical hormones are the *exact same molecular structure* as the hormones that your body makes, or used to make, and are no where *near* as strong and active as the deadly non bio-identical kind. That's why the dose can be much higher when doing *actual* HRT.

Hormone Replacement Therapy is not about stopping and preventing hot flashes, which are only *one* of over 115 symptoms of hormone decline. Hot flashes don't actually perform any function that's vital to your health, they're just your body's way of telling you your hormones are way to low, and they're REALLY annoying, especially when you're trying to sleep.

It's all the *other* symptoms that tell you something is very wrong that you and your doctor should be focusing on. The symptoms of your eyes, skin, joints, bones, brain, organs, immune system, nervous system etc. deteriorating...your body aging (dying).

Real HRT is about staving off the ravages of aging. What most practitioners and women don't understand is that, "**our hormones don't decline because we age, we age because our hormones decline**". So the lower they go the faster you age and the systems of your body start falling apart.

Progesterone, estrogens and testosterone do over 400 things in the female body and using them in the minute amounts they're being prescribed in is not healthy. Plus, by the time a woman starts having hot flashes her hormones have been declining for MANY years and significant damage has already been done.

Most doctors don't understand this and prescribe bio-identical HRT in the same minute amounts, or slightly above, as non bio-identical HRT. Then when the women using it are tested the lab 'sees' what they're being 'prescribed', what they're 'using', and make their ranges out of these results. When the results of a woman using enough bio-identical HRT to allow her body to function properly, are compared to women in those 'low' ranges, her hormones levels look sky high.

There is only one range that your hormone levels should be compared to and that's women ages 18-20, when their levels were at their *peak*! This is where your hormones should stay for the rest of your life if you want to prevent or greatly reduce the problems and aging associated with low hormone levels. If you compare your hormones to women in this range you can see what you're *missing* and replace it, or if you're already using HRT you can see if your levels are too high or too low.

Women should start monitoring their hormone levels around 18 years of age and start HRT as soon as a decline in them is detected, and that replacement needs to be done for the rest of a woman's life, not just until her hot flashes stop.

TOO MUCH OR TOO LITTLE?

Instead of using faulty hormone test methods there is a no brainer way to tell if you're using too much or too little estradiol, and that's by your period (if you're still having them) and your breasts if you're not or have no uterus.

Your body was designed to build-up your uterine lining each month and shed it if you're not pregnant, and that process takes a certain amount of estradiol to occur. During puberty, when your hormone levels were perfect, you were shedding the lining every month. As your eggs supply declined and your estradiol level fell, your uterine lining became thinner and thinner with less blood build-up. Which is why your periods became lighter, you began skipping them or they just stopped altogether.

When you've gotten your estradiol level back to it's post puberty level you will start having regular, normal periods again. You can tell when you've used too much because you'll have very heavy, clotty, periods and tender or sore breasts.

I was told by a doctor that one of his patient's test results were so high that they were over the limit that the body *naturally* produces, but she was skipping periods, when she did have them they were very light, and her breasts were never tender, (inaccurate testing).

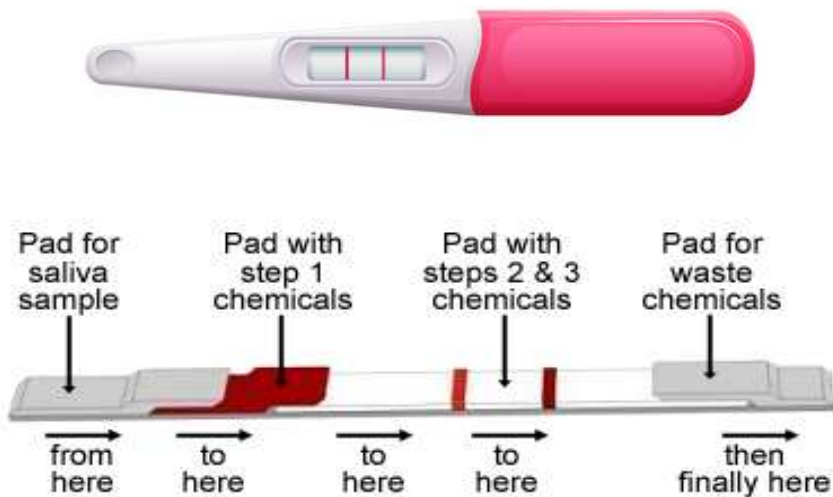
The reason he thought that was because whatever text book he got those normal ranges from used the same faulty blood and saliva tests I've described to get *those* ranges and the ones in the text book are also incorrect. We won't know what hormone levels in infants, teens and adults really are until we solve all the problems in the testing and create new, accurate ranges.

Another thing the HRT industry doesn't take into consideration is, estrogen = blood, it builds the uterine lining. When doctors prescribe such minute amounts of estrogen it builds a *small* amount of uterine lining each day, but not enough to shed as a period. This is how uterine cancer can develop. If you start using estradiol again you'll start to build uterine tissue again, and if you don't shed it on a regular basis (at least every 3 months) you put your self at risk of uterine cancer.

HRT prescriptions - Your doctor will write your HRT prescription based upon your hormone test results, and all the things that your doctor doesn't know about the test results will carry over to that prescription. If you've had a blood test your hormone levels will show what's called a 'false low'. It will look like your hormones are lower than they really are. If you've had a saliva test, they will show a 'false high'. It will look like your hormones are higher than they really are. Therefore your prescription will not actually match your hormonal situation.

HOW TO SOLVE ALL THE PROBLEMS WITH HORMONE TESTING

There is a way to accurately test hormone levels and it solves *all* the problems with *all* current testing methods. It's called a Lateral (sideways) Flow test. It's the type of test women buy in a store to see if they're pregnant. The first picture below is the case for the pads that perform this type of test, the second are the pads and how the test works.



Sample is pulled laterally (sideways) from one spongy pad to the next, which moves it through the different chemicals in each step of the test.

HOW THIS TYPE OF TEST SOLVES ALL THE PROBLEMS

It works with saliva - Lateral Flow testing is noninvasive because it doesn't require a blood draw, it works with saliva, where the free form of your hormones can be found. You can do this test in your own home or your doctors office.

Hormone degradation - Your saliva sample is taken from your mouth, filtered, and put straight onto the sample pad. There is no time for the enzymes in your saliva to digest your hormones.

Bacteria - The first sponge in the test, where the sample goes, has a top layer that is a filter. It stops bacteria, blood cells and food particles from entering the layers below. Therefore, only the part of your saliva containing your hormones will enter the test.

Time - Hormone testing done in a lab is time consuming because, if you do it with blood you have to make an appointment with your doctor, go there to have the blood drawn, your sample has to be sent through the post to the lab, it takes a day or more to be tested, then the results have to be sent to the doctor, then, if you're lucky your doctor will tell you your results over the phone and call in your prescription, if not you'll have to make another appointment.

If you use saliva (and are not going through a doctor,) you can take the sample at home, send it off yourself, and have the results sent directly to you. It saves a lot of time and money but you still have to wait a while for the test results.

A lateral flow test can be done at home and you can read the results within minutes. **NO WAITING!**

Another great thing about this type of testing is that it can be sent anywhere in the world. Since the chemicals used in the test are stable at any temperature it doesn't matter *where* you live.

The problem is that at this time there is no Lateral Flow hormone test on the market, ***BUT THERE SOON WILL BE!***



My company is in the final stages of development of the first Lateral Flow hormone test to be brought to market. You will be able to read the results of our patent pending Lateral Flow test with a color chart that will be included in each test kit. So within about 15 minutes, you will have done the most accurate hormone test on the market!

WHAT ABOUT THE RANGES?

We have thought of everything. The ranges will be made from an average of women from 18-20 years of age. These women will be at the end of puberty, when their hormone are at the peak of perfection.

With HRT you're trying to get your hormone levels back up to your post puberty levels when they were at their peak. So if you use this range you will be able to find out everything you need to know.

When women who are not yet using HRT are compared to that range they'll see that their levels are too low. When women who *are* using HRT are compared to it they'll be able to see if they're using too much or too little.

Lateral Flow is the *perfect* way to test hormones and we will let you know when the tests are ready.

