DUTCH Captures More Information in One Simple Test

One of the biggest problems is that some hormones fluctuate throughout the day. Cortisol, for example, rises as soon as you get out of bed and then declines as the day wears on.

If your diurnal pattern is dysfunctional, meaning you're low in the morning and high at night, you have a serious problem. But a 24-hour urine test cannot show you this.

That's really the advantage of a saliva test, which is done several times over the course of a day. By taking multiple samples throughout the day, you can get a more accurate measure of your cortisol pattern. The drawback is the collection method, which can be time consuming and tedious.

The DUTCH test, on the other hand, captures all of that information and more in one simple test. Simply urinate on the filter paper on the collection device and let it dry.

Those test strips are then used to give you a complete hormone panel, including metabolites, (which can't be measured in blood or saliva), effectively replacing multiple testing methods.

"We take an aggregate of those samples and get a correlation to a 24-hour collection for the hormones that don't have that circadian rhythm, where we just want to know, 'How much do you make?' Oestrogen, progesterone, and testosterone; those types of hormones.
What you get is this uniquely comprehensive look at the hormones, their metabolites, and the cortisol picture as it changes throughout the day to give you all of that information," Mark explains.

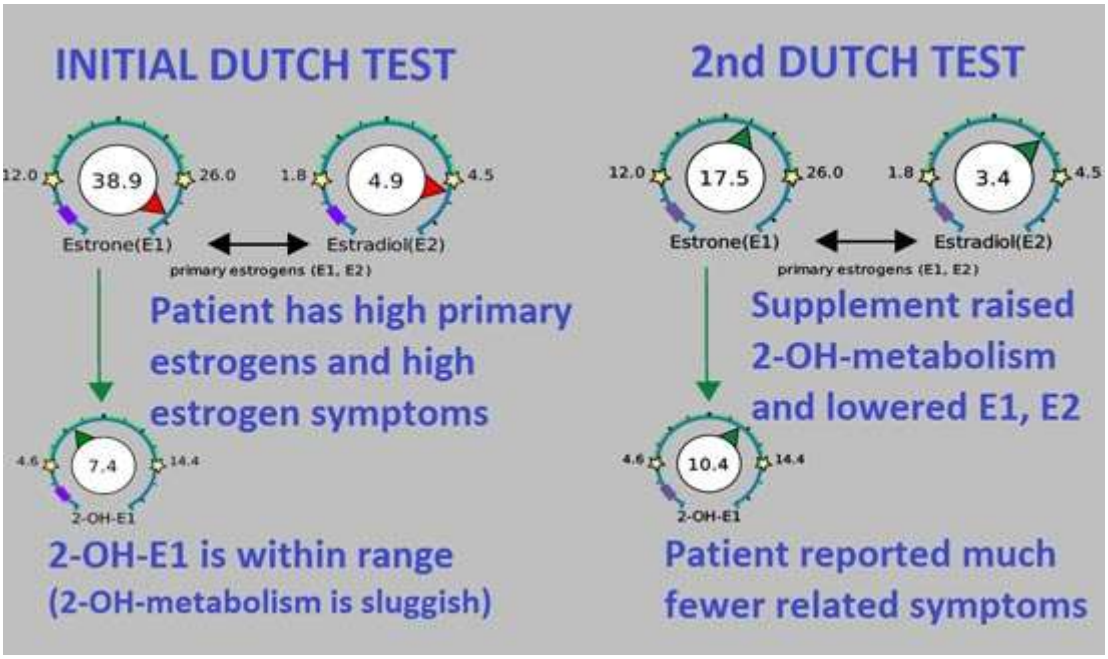
Limitations of Standard Hormone Tests

Blood testing is the most common, and it's a good test for reproductive hormones like oestrogen, progesterone, and testosterone, as there's no major diurnal variation in these hormones (testosterone does have a slight drop throughout the day). The drawback is that it will not show you the metabolites of those hormones.

The blood test also falls short when testing adrenal hormones like cortisol, as it can only show you *total* cortisol. Using saliva or DUTCH, you can check the *free* cortisol, which is a better marker. However, the saliva still won't show you the metabolites of cortisol. DUTCH, on the other hand, does both.
The advantage of the urine test is being able to measure both parent hormones and metabolites. In the example below, the female patient complained of oestrogen dominant symptoms, so we might expect oestrogen and their metabolites in her urine to be elevated.

As we look at the entire family of oestrogen s, we see a more complex picture. Looking at 2-OH-E1 (a downstream metabolite) we see that it is not high – a picture of sluggish oestrogen clearance.

"In the particular case I'm thinking of, we were able to give her some supplements to speed up that specific enzyme that clears oestrogen," Mark says. *"Her oestrogen levels ... come down as the clearance speeds up like it's supposed to.*
But that's information we only knew because we were able to look at all these metabolites, the whole family of oestrogen s, and say, OK, we can get a more precise picture of what's going on. You're getting added information on the reproductive hormones."
In the follow-up test, you can see the increase in 2-OH-metabolism (other oestrogen metabolites are not shown for simplicity). The most potent oestrogen (E1, E2) were decreased by this increased metabolism. The problem, in this case, was predominantly a metabolism problem (not too much oestrogen production).



Why Metabolites Are Important

Metabolites can help you understand what the underlying pathology is. For example, one of the primary metabolites of testosterone is dihydrotestosterone (DHT), which is believed to be one of the primary risk factors for prostate cancer.

You want high levels of natural testosterone, but you don't want to have too much conversion to DHT, so you don't have excessive amounts of that metabolite. A blood, urine, or saliva test can tell you if you're making too much testosterone. But if those levels are normal, yet you're still experiencing symptoms of high testosterone, such as polycystic ovarian syndrome, it suggests testosterone is being metabolized into DHT, resulting in androgenic facial hair, thinning scalp hair, and acne.
To evaluate where the testosterone is going, you need to check the metabolites. Moreover, if metabolites are *not* the problem, you won't end up treating a problem you do not have. If it *is* part of the problem causing these symptoms, then there are natural ways to intercede.

Patient Case No. 1: Depression From Sluggish Clearance of Cortisol

To help you better understand the testing process, Mark shares a few specific cases to illustrate the advantages of the DUTCH system.

"Let's take a particular example of someone who struggled with depression, and anxiety. We tested her cortisol. What do we find? Her results are high. We say, 'AHA! We've got something here.' The free cortisol is elevated. We know there's more depression in people who have elevated free cortisol, so we draw this conclusion and we say, 'You are 'making too much cortisol.'' But then we look downstream at those metabolites, we notice they're actually low.
We say, 'Hold on, what's going on here is you have high free cortisol but the reason for that may be largely because you have sluggish clearance of this cortisol. You make it but you're not getting rid of it.' The liver's not processing it properly to get rid of that cortisol, so the free cortisol is high.
But it's not because your adrenal glands are pumping out lots of cortisol. In fact, they're not pumping out that much cortisol at all. That specific pattern can happen when your thyroid is low. For a patient like that, as she deals with her thyroid issue there's going to be a response on the cortisol side.
What we can do incorrectly is we can go chase that high cortisol and give people phosphatidylserine and all of these things to lower the adrenal output of cortisol. But that's not her issue. Her issue is more nuanced and complex. When we look at all three dimensions of the cortisol, we get a fuller understanding."

Patient Case No. 2: Inflammation Blocking DHEA Sulfation

Another example would be low Dehydroepiandrosterone (DHEA). What if you also have an inflammatory condition? DHEA is made by your adrenal gland, which turns into DHEA sulphate (DHEAS) through a sulphating process (DHEAS is the more common lab test). Sulphation is inhibited by inflammation. If you have low DHEAS, you may have normal DHEA but the inflammation is blocking that, or you may not make enough DHEA. How can you tell which scenario is at play?

"In the urine test, you can look at these other DHEA metabolites (that are even more abundant than DHEAS) that well reflect the amount of DHEA you're making. Now we get the fuller picture where we say, 'AHA, you've got inflammation. It's blocking that sulphation, but you're actually making decent amounts of DHEA.'
Then we move on and see that inflammation also promotes oestrogen production from androgens because it upregulates aromatase (which converts androgens to oestrogen s). We can see that picture. But then are you clearing that oestrogen? We can take a step further and look at that.
Inflammation is also going to play into the cortisol, in how it's metabolized. Again you need the metabolites of cortisol to look at that. This whole picture really starts to emerge when you get this more nuanced, complex, and more comprehensive look at all of the hormones — the androgens and their metabolites, the oestrogen and their metabolites, as well as cortisol — to try to make better decisions and go in the right direction."

How to Evaluate Adrenal Fatigue

Evaluating adrenal fatigue has been a notoriously confusing issue. For a long time it's been assumed that when people have low cortisol, they're suffering from adrenal fatigue, but this is not usually the case. Research is beginning to show that in many situations, what's really going on has to do with your brain signalling and the stress response, and not so much adrenal gland function.

So are your adrenals really fatigued? Or is something else going on? To define adrenal fatigue, we really need to look at the bigger picture of hypothalamic-pituitary-adrenal axis (HPA axis) dysfunction. The question is, is it really an adrenal issue or is it dysfunction within the whole system?

"What goes on in the brain as it signals the adrenal glands? One of the things we found is that if I take a person who has low free cortisol, what we've thought historically is that this is 'Stage 3 adrenal fatigue.' But that really is a misnomer. What we find is that at its most basic level, when you look at the metabolites of cortisol (which is a better marker for overall cortisol production), about half of the patients with low free cortisol are making more than average amounts of cortisol.
They may be processing it more quickly. As in obesity, you get these huge productions of cortisol (metabolites), but when you only focus on the free cortisol, you can call someone 'stage 3 adrenal fatigue' who is literally making more cortisol than 90, 95, or 99 percent of the population in some situations (because obesity results in more cortisol production, but not more free cortisol). So it's a more complex situation than that."

Considerations for Menstruating Women Using the DUTCH Test

The timing of a hormone test can make a big difference. The samples for the DUTCH test are collected four times throughout the day. If you're a woman, you need to be mindful of your menstruation cycle. There's only a

few days in a month when a menstruating woman can take the test if she's looking at female hormones. Typically, you'll want to collect your sample between days 19 and 22 after the first day of your period.

"You just have to pick one of those days, collect your samples, and then you're good. But it's worth the wait or whatever effort it takes to do that, because then you get to see and ask the question, 'Am I making sufficient progesterone? Do I have too much oestrogen? Not enough oestrogen?' That's the window that we want to ask that question in," Mark says.
"If your only question is, 'How's my cortisol production?' then you can test any day. You can test those four times, and you can get a really detailed look at how those hormones are doing."
Speaking of hormones, I opened with the comment that the DUTCH test is a useful strategy if you're going to use bioidentical hormones. But in many cases, bioidentical hormones are inappropriate. There may be simpler strategies to normalize the abnormal patterns found under the DUTCH testing system. So it could also be used to ascertain whether bioidentical hormones are the ideal response in the first place.

On the topic of hormone replacement, I think it's important to reemphasize that if you're going to use hormones, they should be bioidentical and natural. They should not be applied under the tongue but intradermally (topically through the skin), or transmucosally (rectal or vaginal application). This way you bypass the liver metabolites, which is a profoundly useful strategy.

How to Monitor Bioidentical Hormones

Once you're on bioidentical hormones, you need to monitor them on a regular basis, and this too can be a rather complex affair. While transmucosal application is ideal, there's no easy way to determine peak absorption. In one study, two women receiving vaginal hormones (in this case testosterone) showed wildly fluctuating peaks.

One peaked at eight hours; the other at two to three hours. By the eighth hour, she was at baseline. So if you were to test her at eight hours, you might think she needed more hormones.
"Here's where urine testing enters," Mark says. *"We're going to collect over time. That's an improvement. But then you still have this issue of, 'If I put testosterone in an area where my sample's coming from, and the amount of hormone in that supplement is literally a million times higher than what's in a biological sample, I could contaminate it.'*
We spent months trying to come up with a creative solution to this, and we did. We said, 'Look, I don't test testosterone in urine.' In urine, it's in a different form. It's what we call a conjugate: testosterone glucuronide or testosterone sulphate. If it's there as just testosterone, it's not supposed to be there. That would be a contamination.

We created a special method that would remove and separate these different types of hormones to give you an average over time (because urine is better for that), and a non-contaminated sample to give us a better option to monitor the hormones ..."

Testing Matrix

It's important to realize that the lab testing questions change depending on your method of application and testing. On the Precision Analytical website, they have an interactive Testing Matrix you can download that can be quite helpful for this.

Simply select your particular scenario of interest, and it will guide you through the pros and cons and any special considerations you need to take into account. The matrix also contains embedded links to their video tutorials, which walk you through each section of your test report.

"We've got a whole series of tutorials that can help you figure out, either as a provider, how to make sense of it, or as a patient to figure out, 'Where's my dysfunction, so that I can target a provider specifically who has experience in adrenal dysfunction or female issues as it relates to oestrogen or progesterone?'"

For a tour of the DUTCH report from Mark, watch this video. The DUTCH test really outperforms all of the other methods when it comes to telling the story about what your hormones are doing, and this will allow you to figure out what areas you should be focusing on in terms of taking corrective action. Any relatively literate patient can take this report, read it, and understand it which hormones may be "off."

And you also get free tutorials on how to interpret your results. It really is a great and powerful tool for understanding what's going on with your hormones. You will need to work with a healthcare provider for some of the more complex cases and of course when treatment is needed. Precision Analytical also has a network of providers across the globe that can assist with the whole process of balancing hormones.

More Information

Whole is Well

The DUTCH hormone test can be ordered on their website for patients from most countries or ordered on my website at a promotional price. While you can order it yourself, it's strongly recommended you work with a qualified and experienced healthcare provider when trying to address hormonal issues, due to the sheer complexity.
The DUTCH Complete test, which sells for $399, or for €340 on my website, is a complete hormone panel, including oestrogen, androgens, metabolites, melatonin, cortisol, and more. I only recommend it because I believe it's the best one out there.

For insurance reimbursement, you'd have to order it through your healthcare provider and get an insurance receipt from Precision Analytical for the test. You can then try to submit it to your insurance company for reimbursement (reimbursement is usually about 65 percent). In some cases you may receive at least a portion of the cost back.

If you order the test through my online shop, once you receive your test report, I will go through it with you during 30-45 minutes and explain the results to you and make any necessary recommendations for necessary treatment, follow up etc.

If you have any questions, please contact me.