

HPA-D: DUTCH Test I - Part 1

Hey, everybody. In this presentation, we're going to begin our discussion about how to use the DUTCH test to assess HPA axis function. There's a lot of material to cover here, so this is going to be part 1, and next week, we'll cover part 2.

dutch
Dried Urine Test for Comprehensive Hormones

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MARK'S BLOG

dutch
Dried Urine Test for Comprehensive Hormones

Now A Single Test Gives You the Full Picture!
Simply. Better. Testing.

Easy Collection

- Free Cortisol Pattern
- Overnight Melatonin
- Androgen Metabolites
- Basic Hormones
- Estrogen Metabolites
- Cortisol Metabolites

Simply

DUTCH Sample Collection is easier!

- No blood draw
- No 24 hour urine collection
- No spitting into tubes
- 4 simple dried urine samples
- Collect conveniently at home

Better

Reports to help you understand!

- Helpful interpretive comments
- Comments for Doctors and Patients
- Graphical interpretation of results
- [See a Sample Report here](#)
- Educational videos to assist with interpretation

Testing

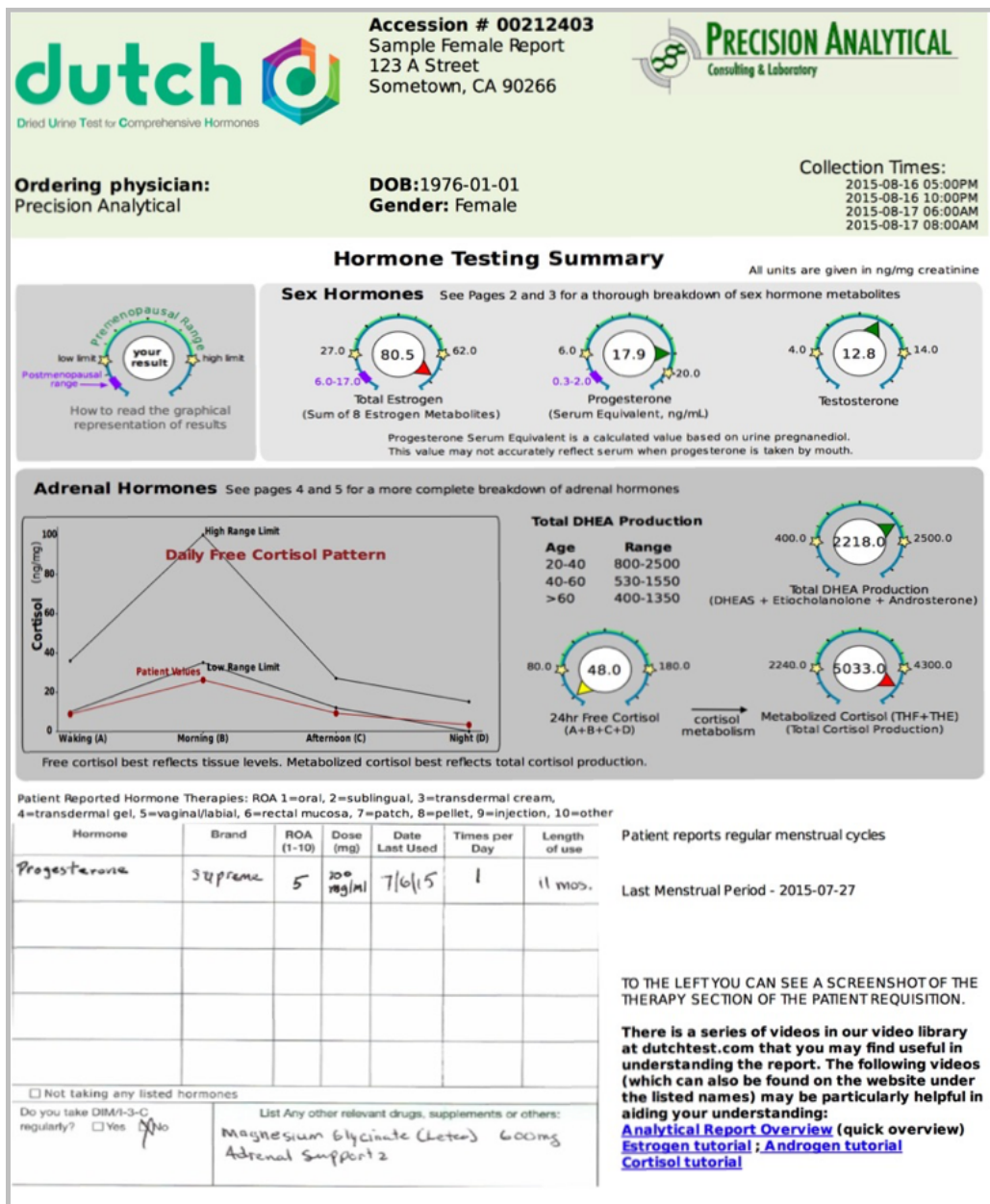
DUTCH Testing is more comprehensive!

- Metabolism of Cortisol
- Metabolism of Progesterone, Testosterone and Estrogen
- Diurnal pattern of free Cortisol
- Accurate and precise testing methods (LC-MS/MS GC-MS/MS)

In the last section on diagnosis, I talked about the pros and cons of the various HPA axis methods of assessment. I made an argument that the DUTCH test is currently the best available option, especially if you combine it with the saliva cortisol awakening response test, or CAR. DUTCH is offered by a lab called Precision Analytical, which is CLIA certified, and it is run by a small team of scientists with a combined experience of over 50 years in performing lab tests and developing novel testing methods. It was started by Mark Newman, who directed salivary hormone testing at

ZRT Labs for over six years, and he was a senior scientist in charge of urine testing at US BioTek Labs prior to that.

In that experience that Mark gained through understanding the strengths and weaknesses of serum, saliva, and urine, he developed the DUTCH test as a means of bridging the gap between those existing methods.



Precision Analytical offers a few different test panels. Their most thorough panel is called the DUTCH Comprehensive. It covers free cortisol and free cortisone, cortisol metabolites, DHEA, androgens like etiocholanolone and androsterone, melatonin, and then sex hormones like

progesterone, estrogen, estrogen metabolites, testosterone, and 5 α -DHT. This is the panel that I order in my practice, but we are not covering sex hormones in ADAPT Level One, so you may want to order a different panel.

Precision offers another panel called the advanced adrenal panel, which provides the information on the adrenal hormones only: free cortisol, cortisone, cortisol metabolites, and DHEA sulfate. If you're not yet familiar with how to use sex hormones in diagnosis and treatment, the adrenal panel may be your best option. However, there are two disadvantages to that panel compared with the Comprehensive. Number one, it doesn't offer melatonin or androsterone/etiocholanolone. Melatonin is helpful when you're assessing the HPA axis, and androsterone and etiocholanolone combined with DHEA sulfate provide a better overall assessment of DHEA levels, as we talked about in the last presentation.

Melatonin can be added onto the adrenal panel, but etiocholanolone and androsterone can't be currently, and I think that when you add melatonin on to the adrenal panel, it becomes almost the same price as ordering the full Comprehensive panel anyway. So, even if you're unfamiliar with sex hormones, you may want to order the Comprehensive test, and I will be covering sex hormones in a future training program. Precision Analytical has a lot of good educational material available for free on its website, and they also have clinical consultants who are very helpful and would be willing to talk with you and help educate you about using their tests to assess sex hormones.

HOW TO COLLECT

1. Complete all information on each collection device.
2. Saturate the filter paper by urinating directly on it OR use a clean cup and dip the filter paper.
3. Leave the sample open to dry for at least 24 hours.
4. Once dry; Close the paper samples and return in the provided envelope with the completed requisition form (required) and the payment card (if needed).
 - Postage is required for shipment, and you may use an express shipping option if you wish to see faster results.
 - Results will be returned to your provider 5-10 days after they are received by the lab.



So, here's a little bit more info on how this test works. These are the instructions that are given to patients here on this slide.

Precision sends them a kit, which is very compact because it's just strips of filter paper in an envelope. This makes it easy for them to send this across the country and even to different

countries. Patients are instructed to urinate on the strips four times a day, matching the timing of diurnal saliva test collection. The strips are then allowed to dry, and the patient puts them back in the envelope and sends them to the lab.

Dried urine is a lot more convenient than 24-hour urine, obviously. A 24-hour urine requires the patient to collect all of his urine in a 24-hour period in a big jug and send that back. It's a lot easier to just send a little envelope with some paper strips, and it's easier than saliva in some ways because the patient doesn't have to sit there trying to gather enough saliva to spit into the tube.

As with any test, there are some considerations for proper collection that you need to be aware of. I've listed some of these in the table on the slide.

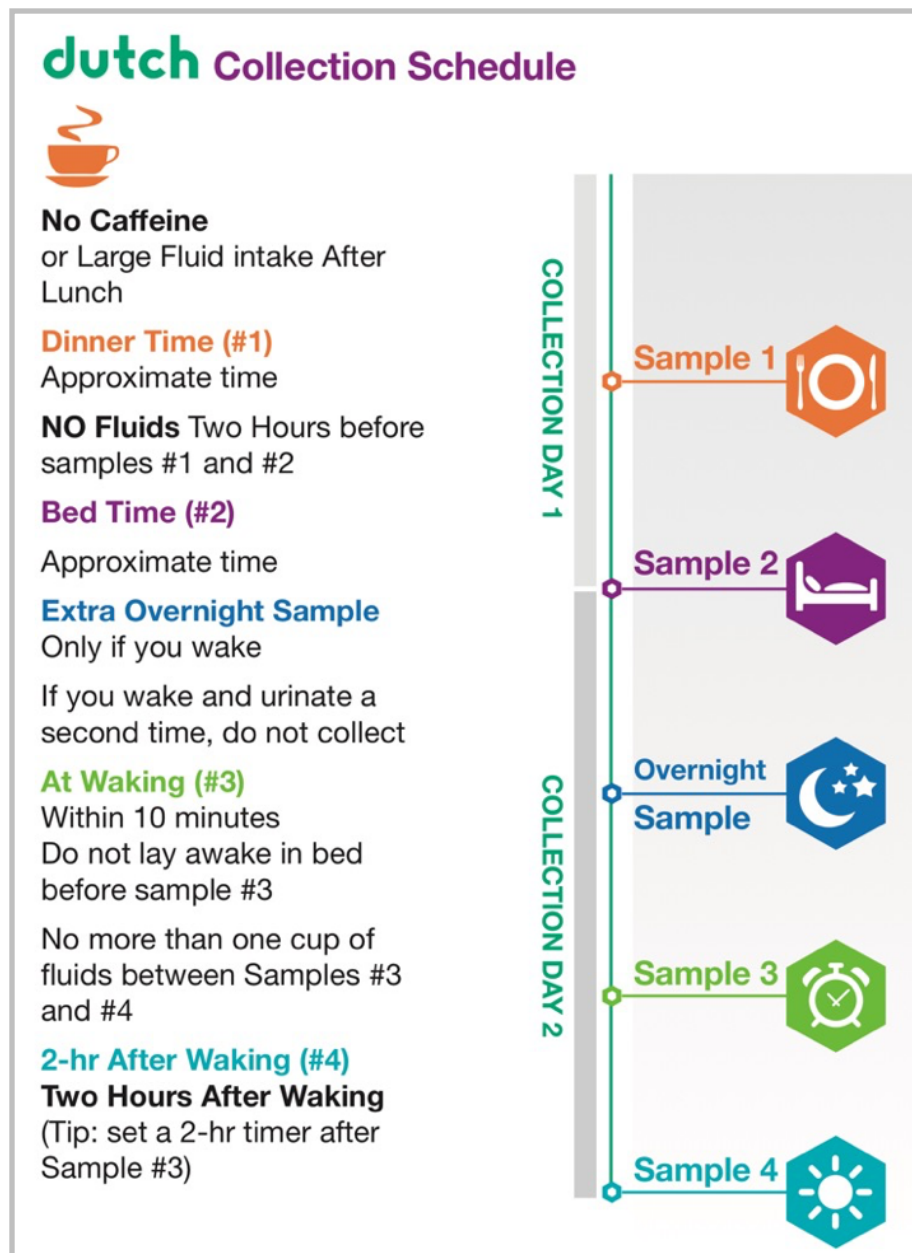
Timing of DUTCH testing		
	Timing (Adrenal only)	Timing (Comprehensive)
Male	Doesn't matter	Doesn't matter
Female (normal cycle)	Doesn't matter	Between days 19-22
Female (longer cycle)	Doesn't matter	Add # of days beyond 28 day cycle
Female (shorter cycle)	Doesn't matter	Subtract # of days less than 28 day cycle
Female (no cycle)	Doesn't matter	Watch irregular cycle collection video

As far as what day the sample is taken, for males, timing doesn't really matter. For females, if they're only doing the adrenal test, it doesn't matter either. It can be done on any day during the month. If doing a comprehensive hormone test, and the woman is still menstruating, then you would have them begin their collection between days 19 to 22, roughly, of a 28-day menstrual cycle. For longer cycles, add the number of days that your patient usually goes beyond 28 days, and then subtract in a similar manner if your patient's cycles are shorter. So, for example, collect between days 17 and 20 for a 26-day cycle. If cycles are irregular, or the patient has amenorrhea, direct them to watch the irregular cycle collection video in the video library at dutchtest.com for suggestions on collection, but the basic idea is to aim for the time in the cycle where progesterone levels are the highest and estrogen levels are relatively high, which would be midway through the

luteal phase in cycling women. They can take their basal body temperature to determine when they're ovulating and then sample six to seven days after that.

A more foolproof way is to measure luteinizing hormone, LH levels, with an ovulation predictor kit that can be purchased from a drugstore, and when LH shoots up, that indicates ovulation, and then they would just count six to seven days after that.

For a woman who has gone through menopause, the timing of the collection doesn't matter, which is similar to men in that regard.



Testing should be done on a day that is average in terms of stress levels. If they work during the week, they should do the testing on a weekday, not the weekend, and it should not be an unusually mellow day, and it should not be an unusually stressful day. Patients should avoid caffeine the day that they take the test, and they should not exercise vigorously right before or during the test.

Collection takes place over two days. The first sample should be around dinnertime with no fluids two hours before samples #1 and #2. The second sample should be right at bedtime. Then, the third sample can be collected during the night if the patient happens to wake up to urinate, but don't ask them to wake up to take a third sample. Sample three, or four if they took one during the night, is collected within 10 minutes of waking. Have them get out of bed, open the windows, and get a little light on their retinas so that you can get that cortisol-awakening response going. Then sample four is two hours after waking, with no more than one cup of fluids between samples three and four. DUTCH provides this very handy, clear instruction graphic here that I put on this slide for your patients in the kit.

<p>Hormone Schedule</p> <p>If you are taking hormones</p> <p>Skip all oral hormones except progesterone the day of the test and skip pregnenolone for two days.</p> <p>Collection Day 1</p> <p>Take morning hormones as usual.</p> <p>There is no need to skip any hormone creams/gels while taking this test.</p> <p>Hormones taken at night and oral progesterone as usual, should be taken after sample #2.</p> <p>Collection Day 2</p> <p>Take your morning hormones and meds AFTER sample #4.</p> <p>DO NOT TAKE morning hormones before Sample #3 or #4 unless instructed to.</p>	<p>Extra Hormone Instructions</p> <p>If you take glucocorticoids (Prednisones, Dexamethasone, ect.) check with your provider.</p> <p>For patches, pellets and injections - collect midway between doses.</p> <p>If you take sublingual hormones (absorbed in the mouth under the tongue) OR if you take oral hydrocortisone (cortisol), visit DutchTest.com for video instructions.</p>
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If they're taking hormones, they need to follow the instructions in the test kit carefully. I've put those instructions that are also in the Precision kit that the patient receives here on this slide.

As you can see, there are a couple of things to be aware of. They should skip all oral hormones except progesterone on the day of the test and skip pregnenolone if they're taking it for two days. On collection day one, they would take their other morning hormones as usual. No need to skip any hormone creams or gels while taking that test. Hormones taken at night and oral progesterone as usual should be taken after sample #2, but then on collection day two, they would take their

morning hormones and meds after sample #4. They wouldn't take any morning hormones before sample #3 or sample #4.

If they take glucocorticoids, that is definitely going to affect the results, so you have a couple of different options there. If you want to see where their hormones are with the glucocorticoid use, you can have them take that, and that is what the test results will show. If you want to see what their hormones are doing without those, and they can manage without taking them for a couple of days, then it might be best to stop them a couple of days ahead of time, then do the test, and then they can resume if they need to after they've taken the test.

If they take sublingual hormones that are absorbed in the mouth under the tongue, or if they take oral hydrocortisone, there is a video at dutchtest.com that you can direct them to for test instructions.

As you can see here, Precision does a very good job of providing instructions in the kit to the patients. We rarely get questions from patients about this test because they do such a good job of explaining it, and they have great educational videos on their website.

Just a special note on melatonin. Patients are instructed to advise you if they're taking melatonin. What you should know is that if they are taking melatonin, the melatonin results on this test won't be valid. Waking urine 6-hydroxymelatonin sulfate is a great representation of the night's production of melatonin. It tells you how much you make during the night, which is a key piece of info for poor sleepers, but it can't be used to monitor melatonin therapy. Only a small percentage of oral or sublingual melatonin crosses the blood-brain barrier. The rest is metabolized and comes out in the urine, so you'll see very high levels of 6-hydroxymelatonin sulfate in the urine when someone is taking it. There are a couple different options here as well. You could just tell the patient to keep taking the melatonin if it's helping them to sleep and just know that the melatonin levels you see on the test results won't be accurate, or you could tell them to skip melatonin for one to two nights in order to get an accurate test reading. This really depends on the patient. If they're dependent on melatonin for sleep and skipping it leads to poor sleep, that will mess up cortisol results, and I think cortisol results are more important and more actionable than melatonin, so in that case, it really wouldn't make sense to advise the patient to stop taking his melatonin. I would rather have accurate results for cortisol and inaccurate results for melatonin than the other way around.