

## **PATIENT GUIDE TO 24-HOUR URINE COLLECTIONS**


24-hour urine collections (UFC's) are used to measure various hormone levels. In this case, you have been asked to provide a sample to measure the amount of cortisol that your body is producing in a 24-hour time frame. Cortisol is a hormone produced by the adrenal glands in cases of "fight or flight" and other stressful situations. In patients with Cushing's syndrome, the body produces this hormone in excess. Some people have many physical symptoms, while others have very few. Dr. Friedman uses biochemical tests, such as the urine collection, to diagnose Cushing's syndrome.

### **What is episodic Cushing's disease and why is it important for testing?**

While most Endocrinologists think that Cushing's disease needs to be severe and present on all tests, Dr. Friedman was one of the first Endocrinologists to recognize that most patients with Cushing's are episodic in that they have some high cortisol values mixed in with normal ones. He prefers the term "episodic" or "periodic" over "cyclic" which implies regular patterns of high and low cortisol. He published an article entitled "High Prevalence of Normal Tests Assessing Hypercortisolism in Subjects with Mild and Episodic Cushing's Syndrome Suggests that the Paradigm for Diagnosis and Exclusion of Cushing's Syndrome Requires Multiple Testing" published in *Hormone and Metabolic Research* in 2010 found that 65 of the 66 patients with Cushing's syndrome had at least one normal test of cortisol status and most patients had several normal tests. Therefore, to diagnose Cushing's disease if you are episodic, you need to do multiple tests when high. 24-hour urinary cortisol testing needs to be done on multiple occasions and complements late-night salivary cortisol testing.

### **HOW TO COLLECT THE SAMPLE (both LabCorp and Quest)**

1. Start your 24-hour urine test by waking early in the morning, 8AM is a good time.
2. Begin by voiding when you wake up. Do **not** collect this sample in your UFC jug. Make sure you collect your urine in a jug that has markings on the side that allows the lab to record your 24 hr urine volume.
3. You can use the same jug for both UFC and 24-hour urine 17-hydrosteroids with the jug containing the preservative boric acid. If the lab insists on separate jugs for both tests, ask the technician to talk to their supervisor.
4. Collect all urine from this point on and keep refrigerated in the UFC jug.
5. Your last void collected in the jug should be exactly 24 hours from your start time, which includes the first morning urination of the following day. Put the collection start time and end time on the upper right corner. Make sure these times are 24 hr apart.
6. Label the jug in the space provided with your name, date, and time collected. Do not put time collected other than 24 hrs, it only confuses the laboratory.
7. If you cannot send your UFC in to be processed in the next few days, it is recommended that you freeze the sample.
8. Put the 24-hr urine volume on the requisition on the upper right portion, where it says 24 hr urine volume. When you go to the pick up station, make sure they note the 24-hr volume in their system. If they don't know how to do that, have them ask their supervisor. Keep a record of it for yourself.
9. Always complete the information in the upper right corner, including last name and first name, DOB, gender, insurance information, collection date and start and stop time.

A	B	C	D	E	F	G	H	I
				Patient Name: Diagnosis: E24.9 DOB:            Coll. Start Date: Coll. Start Time:    Coll. Stop Time: Insurance: Patient Phone #: Patient Address: Gender: Fasting:				
LABORATORY CORPORATION OF AMERICA Dr. Theodore Friedman- LCA ACCT #04249070 1731 E. 120 Street, Ste 3088 Los Angeles, Ca 90059 310-335-0327 www.labcorp.com 800-222-7566 <b>Attn PSC's: Please enter in the lab corp system &amp; forward to the nearest labcorp location.</b>				Patient record volume here PSC must record urine volume in the computer PSC must note that this is a 24 hr collection				
1500171	11-desoxycortisol- Serum Frozen			1500477	Thyroid Stimulating Hormone- Serum Frozen			

## STORAGE INSTRUCTIONS

While it is best to refrigerate your UFC sample for the entire 24-hour period, if you must take the jug with you for a few hours, this should not harm the sample. As soon as you can, however, return the sample to the refrigerator or cooler. You will want your UFC to be received at the lab as soon as possible, as cortisol can break down in urine. If you cannot send your UFC in to be processed immediately, you can refrigerate it for a day or two. If you cannot bring it into the laboratory for more than two days, it is recommended that you freeze the sample.

Throughout the country, there are drop points for both Quest and LabCorp (please call or look on their websites them to verify locations). The sample can stay viable for a few days, but if it will take longer than that to reach the lab, we suggest you contact the laboratory and they will instruct you on the best way to send your sample. Sometimes this is as simple as freezing your sample beforehand, or shipping it on dry ice. Either way, they are very knowledgeable on exactly what has to happen. LabCorp customer service can be reached at: (800) 859-7001 and Quest at (818) 737-6000. If you would like information on specimen pick-ups and couriers, customer service will take those calls also.

To access their website directly, please find them online at: <http://www.labcorp.com> or <http://www.questdiagnostics.com>

## 17-HYDROXYSTEROIDS (17-OHS)

Dr. Friedman measures 24-hour urine 17-hydrosteroids in addition to UFCs. This is an older test that measures cortisol metabolites and is sometimes positive in patients with mild Cushing's syndrome, when the UFC is normal. Therefore, the test can be quite useful. Both Quest and LabCorp report both the 17-OHS/day and the 17-OHS/Cr. Dr. Friedman only uses the 17-OHS/day, the 17-OHS/Cr do not count as a high. Both LabCorp and Quest do run the 17-OHS by sending it out to ARUP with an ARUP test code of 0070490. The pickup station (especially Quest) may erroneously tell you that they no longer run the test, **this is incorrect** and ask them to talk to their supervisor or customer service (not Dr. Friedman's office). The test code at Quest is 0070490 and at LabCorp is 806730. The range for 17-hydrosteroids at both labs is 4-14 mg/day.

## HOW LONG WILL IT TAKE FOR ME TO SEE MY RESULTS?

UFC and 17-OHS tests take approximately 2 weeks to be processed at the lab. You can get the results on the Quest or LabCorp portals. Dr. Friedman recommends that you collect the number of 24 hr urines and salivary cortisols that Dr. Friedman recommended and then make an appointment for Dr. Friedman to review all your results and other tests, such as your pituitary MRI that have been done since your last appointment. The full picture is very important.

If the tests are inconclusive, more blood work, urine samples and salivary samples may be necessary. If you have episodic or periodic Cushing's syndrome, it is often challenging to determine what days are "good" "test" days, especially when you, the patient, is used to feeling pretty crummy most of the time. The urine testing process, particularly in episodic patients, can be time consuming and frustrating. The following are some tips when trying to decipher your "highs" and "lows".

### **AMI HIGH?**

Every patient is unique in how their bodies respond to fluctuations in cortisol. A "high" period has some telltale signs for most patients. However, in some cases, what patients have labeled as their "high" is really their "low" phase. Patients describe the following issues as things they tend to experience in a "high" phase:

- Wired at night
- Weight gain
- Acne
- Anxiety increase/mood swings/irritability
- Euphoria/more energy than usual
- Very few aches and pains
- Tasks seem easier
- Insomnia/inability to stay or fall asleep.
- Energy levels that "perk up" after sunset.
- "Speed talking" – mind is going faster than your brain can process the thoughts to speak them.
- Water weight gain – edema
- High blood pressure
- High blood sugar if having diabetes
- Although Dr. Friedman uses continuous glucose monitors (CGMs) for his patients with diabetes, he hasn't found them to be that helpful to determine highs and they aren't covered by insurance for those without diabetes. Instead, you can get Stelo or Lingo that are over the counter and look for a high glucose at night.

### **AMI LOW?**

- Nausea
- Weight loss
- Depression
- Lethargy
- Extreme fatigue
- Muscle/joint pain

When you first start testing, we ask that you test during both phases (high and low). Please jot down a brief note for each day you test indicating how you felt the time frame that you tested in. In this way, if we notice that you tend to get a high test result during a time when you feel a particular way, we can ask you to repeat your testing during those times only. Please keep in mind that these are general guidelines. If you have noticed overlapping symptoms between the "high" and "low" list, do not worry. It will take time to discover your cycle.