



# ADRENOCORTEX SALIVA TEST

## Description & Education

### Dr. Donna F. Smith

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## 3 PHASES OF ADRENAL DYSFUNCTION/DISEASE

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There are three phases the adrenals go through as it moves from optimal health (Phase I) toward adrenal dysfunction (Phase II and III) and then I call Phase IV - Adrenal Disease. They are:

1. Phase I – Alarm
2. Phase II – Resistance
3. Phase III – Exhaustion

And then

4. Phase IV – Adrenal Disease

Now, I will define each phase, show you what this phase looks like with respect to the Cortisol and DHEA levels on your Adrenal Hormone Lab Report, and list a few of the symptoms that surface when in each phase.

### Phase I / Alarm

The first Phase is called the “Alarm” Phase when some mental, emotional and/or physical event triggers the “fight or flight” adrenal response. In this phase, you experience short-term stress and your body recovers normally.

### Phase II / Resistance

The second Phase is called the “Resistance” Phase and occurs from prolonged mental, emotional and/or physical Stress that in time can be identified by abnormal levels of Cortisol, DHEA and/or the Cortisol/DHEA ratio on a saliva, urine or blood Adrenal Hormone tests.

Because blood is not a cellular test, I prefer testing saliva for all hormone testing.

**Adrenal Hormone Levels in Phase II**, the Resistance Phase, are indicated by high Cortisol levels with a Low DHEA level.

**Symptoms of the Resistance Phase II** include Irritable, Fatigue, Cravings, Sleepless, Muscle Tension and low Basal Temperature, to name a few.



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### Phase III / Exhaustion

The third and last phase of Adrenal Dysfunction is called the “Exhaustion” Phase and occurs from being in a prolonged Phase II Resistance Phase.

**Adrenal Hormone Levels in Phase III**, the Exhaustion Phase, are indicated by high Cortisol and DHEA levels at the same time.

**Symptoms of the Exhaustion Phase III** include Fatigue, Moods, Memory Loss, and Sleeplessness.

### Phase IV / Adrenal Disease

Prolonged Adrenal Exhaustion in time leads to Adrenal Diseases, such as Addison’s Disease and Cushing’s Disease.



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## ADRENAL DISEASES

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### Addison's Disease

The primary type is known as Addison's disease, which is sometimes called, Adrenal Insufficiency, and occurs when the adrenal glands are chronically low in producing cortisol and aldosterone. Aldosterone occurs when the pituitary gland doesn't make enough of the hormone ACTH.

When the body is under stress (e.g. fighting an infection), this deficiency of cortisol can result in a life-threatening Addisonian crisis characterized by low blood pressure.

Symptoms tend to be non-specific and include fatigue, nausea, dizziness upon standing and darkening of the skin. This darkening is most visible on scars; skin folds; pressure points such as the elbows, knees, knuckles, and toes, as well as lips; and mucous membranes such as the lining of the cheek.

Long-lasting fatigue is a common symptom of adrenal insufficiency.

A shortage of adrenal hormones sufficiency disrupts several normal functions in the body, leading to hypoglycemia, hyponatremia, hypotension, muscle cramps, skin hyperpigmentation and other features of autoimmune Addison disease. Rarely is Addison's disease not caused by an autoimmune reaction.

Some cancers can cause Addison's disease; the most common are lung, breast, stomach, or colon cancer; melanoma; and lymphoma.

Note: Surviving any cancer requires restoring Phase I – Alarm and maintaining adrenal hormone sufficiency, because it takes a lot of energy to do so. At another Progress Reporting consultation, we will cover the steps to preventing cancer and what to do if you currently have cancer.

### Cushing's Disease

What's the difference between Addison's disease and Cushing's syndrome? Addison's disease happens when your body doesn't have enough cortisol and aldosterone, whereas Cushing's syndrome happens when your body has too much cortisol (hypercortisolism).



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## CORTISOL – 4 TESTS

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### Cortisol – 7 AM to 9 AM

Your Cortisol Level during this time frame identifies **Peak Adrenal Function**. In other words, if you have had sufficient nutrients during the day and sufficient sleep to heal (repair), regenerate new healthy cells, and produce sufficient hormones, you will awaken with sufficient Cortisol for daily Adrenal Function.

### Cortisol – 11 AM to 1 PM

Your Cortisol Level during this time frame identifies **Adaptive Adrenal Function**. Optimal test levels indicate sufficient Cortisol has been produced to help you “adapt” to any “fight or flight” stressful event, real or imagined.

Adapt means your biochemical processes were able to increase the right adrenal hormone, in the right amount, at the right time to biologically handle the level of stress you are in, and then recover normally (i.e., healthfully).

However, an abnormal level of Cortisol during this time frame means the above is not happening, and the more severe (high or low) the Cortisol level is and the longer your body experiences abnormal Cortisol levels the faster you move through Phase I to Phase II to Phase III towards Adrenal Exhaustion and then to Adrenal Disease.

### Cortisol – 3 PM to 5 PM

Your Cortisol Level during this time frame identifies how well your adrenals are controlling your blood sugar levels. Not only does the body require optimal and sufficient production of insulin, balanced Glucose levels, and mineral sufficiency in the minerals that transport insulin and Glucose, but also sufficient Cortisol is required to assist in these processes for blood sugar balance.

### Cortisol – 10 PM to 12 AM

Your Cortisol Level during this time frame identifies whether you have optimal adrenal function for baseline Circadian activity.

A Circadian Rhythm, or Circadian Cycle, is a natural, internal process that regulates the sleep–wake cycle and repeats roughly every 24 hours. It can refer to any process that originates within an organism and responds to the environment.



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It is the natural cycle of physical, mental, and behavior changes that the body goes through in a 24-hour cycle. Circadian rhythms are mostly affected by light and darkness and are controlled by a small area in the middle of the brain. Circadian rhythms have an important purpose: they prepare your body for expected changes in the environment and, for example, the time for activity, time for sleep, and times to eat.

#### **You can improve your Circadian Rhythm by:**

1. Keeping a regular (in bed by 9:30 p.m.) sleep schedule and waking at the same time every morning, having received the right amount of sleep according to your age.
2. Spending at least 30 minutes outdoors during daylight hours to reduce depression, increase alertness and improve mood.

When your Cortisol level during this time frame is out of balance, your Circadian Rhythm is imbalanced, and you may have symptoms such as extreme daytime sleepiness, decreased alertness, and problems with memory and decision-making.

## Cortisol Flatline

Cortisol Flatline is when all four timed specimen samples are straight or almost straight along the bottom of the chart.

In these cases, it requires both adrenal glandulars and adaptogens. However, which is required first depends upon whether your adrenals need a real jump start or need more help in responding to your 'fight or flight' phases.



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## DHEA

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### DHEA – 7 AM to 9 AM

**Dehydroepiandrosterone (DHEA)** is a hormone that your body naturally produces in the adrenal gland. DHEA helps produce other hormones, including testosterone and estrogen. Natural DHEA levels peak in early adulthood and then slowly fall as you age.

Optimal levels of DHEA also help you have ideal macro-nutrient metabolism, including efficient glycemic control.

**Glycemic control** is a delicate balancing act. The body has to maintain normal blood glucose levels and at the same time, avoid hyper- and hypoglycemia. However, normal blood glucose levels also require maintaining optimal anion gap levels and avoiding metabolic acidosis.

- **The anion gap level in your blood testing** indicates whether your electrolytes are out of balance or if your blood is too acidic or not acidic enough. Too much acid in the blood is called metabolic acidosis. Too little acid in your blood is called metabolic alkalosis.
- **Causes of metabolic acidosis** can include a buildup of body toxins, kidney failure, and ingestion of certain drugs or toxins, such as methanol or large doses of aspirin. Symptoms include nausea, vomiting, fast breathing, and lethargy.

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## DHEA / CORTISOL RATIO

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The **DHEA to Cortisol Ratio** indicates the relative balance of adrenal output of androgens and cortisol released in response to ACTH. **Adrenocorticotropic Hormone (ACTH)** (aka Corticotropin) is a hormone made in the pituitary gland that acts on the outer part of the adrenal gland to control its release of corticosteroid hormones. Stress stimulates a greater production of ACTH.

Optimal levels of the DHEA to Cortisol Ratios indicate you have a balanced function of **Hypothalamic-Pituitary-Adrenal axis**. The Hypothalamic-Pituitary-Adrenal Axis is a complex system of neuroendocrine pathways and feedback loops that function to maintain **physiological homeostasis**.



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## ABOUT DR. SMITH

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**Dr. Donna Smith** has a Ph.D. in Clinical Nutrition, is a Doctor of Naturopathy (N.D.), a Board Certified Clinical Nutritionist (C.C.N.), Certified Dietitian-Nutritionist (C.D.N.), and a Canadian Chartered Herbalist (C.H.).

Dr. Smith is also a Free Lance Nutritional Health Writer and has written over 100 articles for Internet and traditional magazines and newspapers, such as **The Villager**, a South Denver, Colorado, publication and the **American Chiropractic Magazine, the largest chiropractic magazine in the United States**. You may also request a list of her best-selling e-books on a variety of topics.

Public speaking engagements include NBC and ABC local networks, and clubs, hospitals, universities, corporations and scientific conferences, on a variety of nutrition and health-related topics, such as, the national groups of scientists and biochemists at the **American Society of Clinical Laboratory Science (ASCLS), International and American Associations of Clinical Nutritionists (IAACN), Stephen F. Austin University, Midwestern State University**, Optimist Clubs, Toastmasters, Business and Professional Women's Club, Women Entrepreneurs, Worksite Wellness, American Heart Association, Parkinson's Group, and St Gobain Corporation, to name a few.

Dr. Smith owns **Advanced Clinical Nutrition (est. 1981)** in Wichita Falls, Texas, where she provides a **Clinical Nutrition Analysis or Interpretation of Laboratory Tests (blood, urine, saliva, stool, and hair)** to identify Clinical and Sub-Clinical Nutritional Deficiencies and Excesses, Toxicity, Biochemical Imbalances, and Organ, Gland and Body System Dysfunctions, which are the stages the body progresses through first in the development of degenerative diseases. Correcting each of these preliminary stages is the key to reversing the disease process, restoring health, and preventing future disease.

From her Clinical Nutrition Analysis findings of these scientific Laboratory Reports, Dr. Smith designs and dispenses therapeutic, whole food supplements, available through nutritional health care providers, and provides a Therapeutic Dietary Plan, which is a list of foods selected for their specific food chemistry effect on the individual's biochemistry as identified in their test results.

Dr. Smith's Clinical Nutrition Services are also provided to **Healthcare and Fitness Providers**, who want to offer clinical nutrition services to their patients/clients, yet do not have the time or training to do so.

**Clinical Nutrition Testing, Therapy, and Personalized Dietary and Lifestyle Education Services** are provided by mail, e-mail, and telephone consultations. A.C.N. clients save money as there are no gas expenses to/from appointments, money required for babysitters, time away from home and/or





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having to be away from the workplace to receive nutritional services. Lab Kits are mailed to the clients' homes, where they collect their specimen samples and then mail them directly to our Labs.

Dr. Smith has successfully assisted every client who has contacted her in how to improve their health, no matter what their health challenge, such as; but not limited to, increasing energy, balancing hormones, improving mental and emotional function, strengthening the nervous system, muscles, joints, and immune system, restoring over-all organ/gland and body system function (including the hair system to restore its grow hair and in some cases even restoring natural color), managing weight, preventing/reversing disease processes and enhancing life and/or sports performance.

Dr. Smith's clientele resides in 37 U.S. States and seven international countries.

**For more information, to order** a Clinical Nutrition Analysis of the Laboratory Reports from testing your biochemistry (blood, urine, hair, saliva and stool), including genetic testing, Bone Resorption and Telomere Length Testing, and to contact Dr. Smith, call (940) 761-4045.

Meanwhile, please browse her website at [www.AdvancedClinicalNutrition.com](http://www.AdvancedClinicalNutrition.com) and while there subscribe to Dr. Smith's FREE Newsletter and read Free Articles by Dr. Smith. You may also connect and/or follow her on [www.linkedin.com/in/drdonnafsmith](http://www.linkedin.com/in/drdonnafsmith) and [www.Facebook.com/DonnaFSmithPhD](http://www.Facebook.com/DonnaFSmithPhD). Though she is more active on LinkedIn; than other social media formats.

## DISCLAIMER

Information is provided for nutritional education purposes only and not for the diagnosis or treatment of any medical condition, disorder or disease. Present laws indicate that the author must advise you to seek medical attention for your disease, if you have one. Choosing to do so, or not, is your constitutional right and you are ultimately the only person who is responsible for any decisions, risks or actions you take regarding the care of your mind and body.

This author's intention is to provide health care education from a nutritional biochemical and bioenergetic perspectives so you are equipped to make an informed decision regarding your health care. It is also the author's intention to help you understand the importance of Clinical Nutrition Testing and Therapy, which is foundational to identifying the nutrients the body requires to heal its cells and tissue and thereby, the organs, glands and body systems within all living beings, both human and animal. Because Public Health Education in the United States, is still focused on medical (drugs/surgery), not health (non-medical) education some of the information in this document may be new to you. ***The health of your cells determines the health of your body.***