Understanding Your Test Results

Your **Hormone Evaluation** is a comprehensive interpretation of your hormone levels in correlation with reported symptoms, hormone usage (if applicable) and menstrual history in women. Test results have been individually reviewed and contain descriptive comments added by licensed physicians on staff. ZRT Laboratory recommends that your test report be discussed with your health care provider.

NOTE: With follow-up testing, the **Hormone Evaluation History** will show previous and most recent test results in dated columns to allow before and after comparisons and tracking of progress (if applicable).

The Hormone Evaluation consists of three detailed pages. For ease of interpretation, follow these directions with test report in hand.

Page 1 lists the hormone tests performed and classifies results as **In Range** or **Out of Range**. It also includes **Current Hormone Therapies** and **Adrenal Function Graph** (if applicable).

Page 2 illustrates (in bar graph form) patient-reported **Symptoms** grouped according to associated **Category** of hormone imbalance (*not applicable if symptoms are not reported*).

Page 3 provides individualized **Comments** - the customized interpretation which correlates lab results, symptoms and hormone usage (if applicable).

We recommend following your physician's guidance to correct and monitor hormone imbalances identified through testing. Many different medical disciplines are familiar with Saliva and Blood Spot testing and may use natural therapies to restore hormone balance. You may want to interview practitioners to verify that training, experience and level of expertise meet your specific needs. **The following is a resource list of professional health related associations that offer provider referrals** by city, zip code, area code, state, province and/or specialty. Most can be accessed on the web and/or by toll free dialing.

ACAM (American College for Advancement in Medicine) Phone: 800-532-3688 Website: www.acam.org
AANP (American Assoc. of Naturopathic Physicians) Phone: 866-538-2267 Website: www.naturopathic.org
AOA (American Osteopathic Association) Phone: 800-621-1773 Website: www.aoa-net.org
ACA (American Chiropractic Association) Phone: 703-276-8800 Website: www.acatoday.com
AHHA (American Holistic Health Association) Phone: 714-779-6152 Website: www.ahha.org
AAOM (American Association of Oriental Medicine) Phone: 866-455-7999 Website: www.aaom.org
A4M (American Academy of Anti-Aging Medicine) Website: www.worldhealth.net
IACP (International Academy of Compounding Pharmacists) Phone: 800-927-4227 ext. 300 Website: www.iacprx.org
Referrals to a compounding pharmacist skilled in the use of natural hormones.
PCCA (Professional Compounding Centers of America) Phone: 888-454-3459 Website: www.pccarx.com
Referrals to a compounding pharmacist skilled in the use of natural hormones.

HORMONE EVALUATION — PAGE ONE

- In the left hand column under the heading **Hormone Test** each of the hormones tested is listed.
- Test results for each hormone can be found in the column heading **In Range** or **Out of Range**. Follow each result straight across to the far right hand column for the normal/expected **Range** of each hormone. If results are in the out of range column **L** indicates low, **H** indicates high. If results are in range an **Ok** indicates normal.
- The **Ratio: Pg/E2** on the third line of the report applies to women. This ratio, if either high (**H**) or low (**L**), is a significant indicator of imbalance between estrogen and progesterone levels. A low ratio, in particular, is associated with many of the symptoms common to perimenopause and menopause.
- If you tested **Adrenal Function** (Cortisol in four collections: morning, noon, evening, night), the graph mapping cortisol levels appears in the bottom right hand corner of the page. The solid graph line is *your* cortisol rhythm as reflected by your lab results. If the solid line is within the green area of the graph, this represents the ideal cortisol range. If the solid line is within the yellow area, this indicates cortisol levels that are borderline-normal or approaching imbalance. If the solid line is within the outer pink area, this indicates that cortisol levels are out of range, suggesting adrenal insufficiency/exhaustion. Note: Follow-up adrenal function tests are listed by date and illustrate previous result(s) with a dashed line and most recent result as a solid line.

ZRT Laboratory

Hormone Evaluation
3.01.0020

1815 NW 169th Pl. Ste. 5050
Beaverton, OR 97006

Phone: 503-466-2445 Email: info@salivatest.com
Fax: 503-466-1636 Web: http://www.salivatest.com

Evaluation Number: **2004 02 10 900**
Date Samples Arrived: **02/10/2004**
Date Closed: **02/16/2004**
Client Phone:
Date/Time Samples Collected: **02/05/2004 07:00 am**
11:30 am
06:00 pm
11:30 pm

Getuwell Clinic
1234 Any Street
Anytown, OR 00000

Mary Anywho

Gender: **Female** Age: **58**
Menopausal Status: **Hysterectomy (ovaries removed)**

Ref Num:
*Client ID: **1076209244**

Hormone Test	In Range	Out of Range	Units	Range
Estradiol	3.0		pg/ml	1.5-10 (optimal 1.5-3) Estrogen Replacement
Progesterone	25		pg/ml	25-100 Postmenopausal
Ratio: Pg/E2		8 L		50 - 200 Optimal, 200 - 1000 Progesterone Therapy
Testosterone		15 L	pg/ml	20-50
DHEAS		2.8 L	ng/ml	3-10
Cortisol Morning		12.0 H	ng/ml	3-8
Cortisol Noon		5.0 H	ng/ml	2-4
Cortisol Evening		3.5 H	ng/ml	1-2
Cortisol Night		2.0 H	ng/ml	0.5-1.5

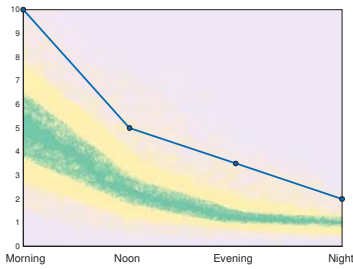
Ranges (for tests with multiple ranges available)

Estradiol: 1.0-1.5 Post-menopausal, 1.0-5.0 Pre-menopausal (optimal 1.5-3), 1.5-10 (optimal 1.5-3) Estrogen Replacement, 1.0-5.0 Synthetic Estrogen (Birth control pill)
Progesterone: 25-100 Postmenopausal, 25-100 Pre-menopausal-follicular (b), 100-600 Pre-menopausal-luteal (b), 100-1000 Oral micronized progesterone, 500-3000 Topical, Sublingual, Troche, 10-70 Synthetic progestins (HRT, Birth control pill)
(a) Salivary estradiol should be within 1.5 - 10 pg/ml range for oral, patch and topical (creams/gels) estrogen replacement therapies (ERT).
(b) Follicular represents the first half (days 1-14) and luteal represents the second half (days 15-28) of a 28-day menstrual cycle.

Ranges for progesterone are based on 12-24 hour post supplementation with 100-200 mg oral or 10-30 mg topical progesterone.
Note: For topical supplementation with all steroid hormones (Estradiol, estriol, estrone, progesterone, testosterone, etc.) salivary levels generally are expected to be 10-50 times higher than equivalent oral dosing.

Current Hormone Therapies:
0.625 mg oral Conjugated Estrogens (Premarin)(24 hrs Last used)

Adrenal Function (Cortisol ng/ml)

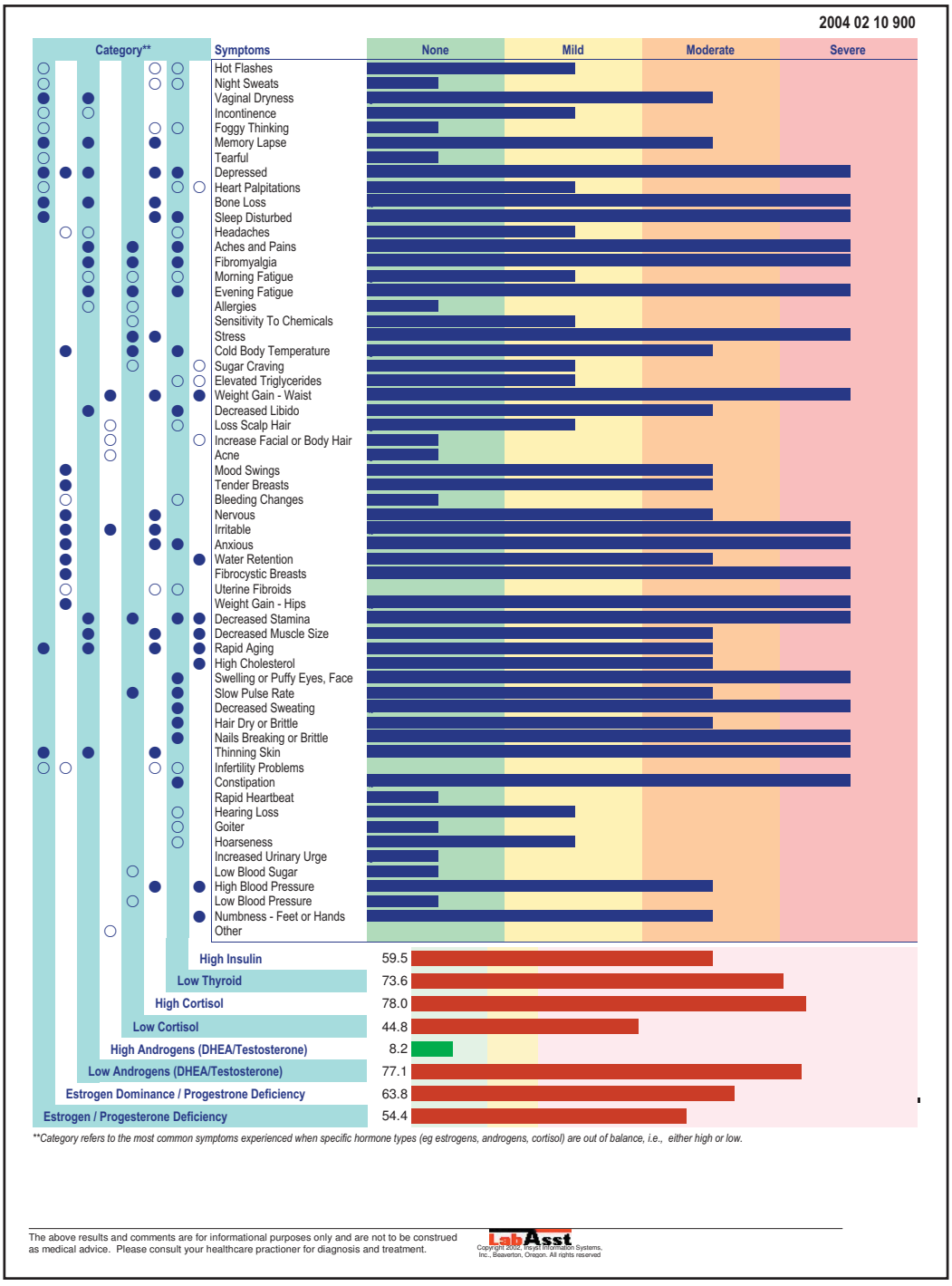


David T. Zava, Ph.D.
Laboratory Director

Date: 02/16/2004
CLIA Lic # 38D0960950

The above results and comments are for informational purposes only and are not to be construed as medical advice. Please consult your healthcare practioner for diagnosis and treatment.

- Symptoms commonly associated with specific hormonal imbalances are listed under the heading **Symptoms**.
- The dark blue bars of the graph represent **Symptoms** reported by the patient as either mild, moderate or severe.
- The circles to the left of the listed symptoms also indicate intensity (mild, moderate, severe) as reported by the patient, e.g. clear circles indicate mild symptoms; solid circles indicate either moderate or severe symptoms.
- To find the **Category** of hormone imbalance your symptoms fall into, follow the solid circles down the column to the hormone imbalance specified at the bottom of the page: e.g. circles for both *decreased libido* and *decreased stamina* lead down the column to **Low Androgens** (some symptoms fall into multiple categories: e.g. decreased stamina has circles in four columns, leading to High Insulin, Low Thyroid, Low Cortisol and Low Androgens).
- In addition, the bar graph directly beneath the main symptom chart is a summation of symptoms weighted by degree of severity of associated hormone imbalance: **GREEN** = not problematic, **YELLOW** = mildly problematic, **RED** = very problematic.
- At the left of each of the color-coded bars is a weighting of symptoms by percentage with 100% representing the worst case scenario for each condition: 0-15 = not problematic; 15-25 = mildly problematic; > 25 = very problematic.
  Note: With repeat testing, progress with physician-guided treatment can be tracked by comparative changes in this chart.



***Category refers to the most common symptoms experienced when specific hormone types (eg estrogens, androgens, cortisol) are out of balance, i.e., either high or low.*

- The **Comments** are an interpretation of tested hormone levels in relation to intensity of self-reported symptoms (mild, moderate, severe), menstrual history in women and hormone supplementation at the time of testing. The self-reported symptoms do not influence hormone lab results but are included in the individualized comments as they relate back to lab results.
- In the event that cortisol levels (high or low) differ on the bar graph of your test report than on page one, this is indicative of the weighted value of self-reported symptoms.

Please refer to the glossary below for definitions of terms. For further information we offer access to a 24-hour hormone hotline. This is an audio-library with a growing list of topics on every aspect of hormone balance, saliva and blood spot testing. You can access the hotline by phone: 503-466-9166 or by visiting our website: **www.salivatest.com** and clicking on the streaming audio Hotline link. The FAQ's on our website also include recommended reading resources and answer a range of questions pertaining to hormone issues, sample collection, testing and other important topics of interest.

GLOSSARY OF TERMS

ADRENAL IMBALANCE/LOW ADRENAL RESERVE - this occurs when the adrenals no longer produce enough hormone to meet bodily demand and is a result of prolonged stress (emotional, viral, physical). Adrenal support includes adequate rest, exercise, nutrition and supplementation with physician guidance.

ANDROGENS (testosterone, DHEA) - anabolic hormones that build and maintain skin, bone, and muscle. DHEA, the principal androgen in both men and women, is linked to energy, immune function, mood and mental function. Testosterone is necessary to maintain muscle mass, bone density, skin elasticity, sex drive and cardiovascular health in both sexes.

ANDROGEN DOMINANCE - excessive androgens produced endogenously (within the body) or with supplementation can lead to symptoms of acne, increased facial/body hair, and loss of scalp hair.

ANDROPAUSE (male menopause) - this occurs as male hormones, testosterone and DHEA, wane with age.

ANOVULATION/ANOVULATORY - suspension or cessation of ovulation.

AROMATASE - an enzyme found predominately in fat tissue that converts androgens to estrogens.

BIOAVAILABLE - the unbound (free) fraction of a hormone that has left the bloodstream to enter target tissues in the body such as the salivary glands; this unbound fraction is present and measurable in saliva.

BIOIDENTICAL - hormones derived from natural plant compounds (e.g. soy) and synthesized to be the exact structure and have the same function of hormones produced naturally within the body.

CORPUS LUTEUM - formed from the ruptured ovarian follicle that released the egg; it produces progesterone.

CORTISOL - produced by the adrenal glands; it regulates the stress response, glucose metabolism and immune function. Cortisol has a catabolic (breaking down) action on tissue when levels are too high or out of balance.

DHEA (Dehydroepiandrosterone) - produced primarily by the adrenal glands, it converts to androgens, like testosterone, and estrogens. Its actions influence energy, stamina, mental outlook and immune function.

DOWNREGULATION OF RECEPTOR SITES - a negative feedback cycle that results in loss of cellular receptor sites (e.g., sites where hormones bind to the cell) and tissue desensitization due to excess hormone levels.

ENDOGENOUS - naturally-occurring or originating within the body.

ESTROGENS - a family of hormones (estradiol, estrone, estriol) that are necessary for maintaining the health of the reproductive tissues, breasts, bones, skin, and the brain.

ESTROGEN DOMINANCE - an excess of estrogen in the absence of adequate levels of progesterone. It can result from estrogen replacement therapy, hysterectomy, birth control pills and/or a decline in ovarian progesterone production. The constellation of symptoms ranges from breast tenderness and bloating, to mood swings and depression. Excess estrogens are a risk factor for the development of breast cancer.

FIBROCYSTIC BREASTS - tender, painful, swollen breasts; a sign of estrogen dominance.

FOLLICULAR PHASE - the first half of the menstrual cycle when estrogens build up to trigger ovulation.

FOLLICLE STIMULATING HORMONE (FSH) - pituitary hormone involved in triggering ovulation; elevated levels may mark the onset of menopause or andropause.

FREE TESTOSTERONE INDEX - ratio between SHBG/Testosterone: indicates bioavailable, free testosterone.

FREE TRIIODOTHYRONINE (fT3) - the active form of thyroid hormone. Normal levels keep the body functioning properly and are crucial for maintenance of physical and mental health.

FREE THYROXINE (fT4) - the main (inactive) thyroid hormone. A well-regulated process causes thyroxine to generate the much more potent thyroid hormone T3 (Triiodothyronine).

GOITER - enlargement of the thyroid gland; often visible as a swelling in the neck.

HYPOADRENIA - low adrenal function.

HYPOTHYROIDISM - low thyroid function, associated with cold body temperature (feeling cold all the time), weight gain, inability to lose weight, thinning hair, low libido and depression. Women are at greatest risk, developing thyroid problems seven times more often than men, particularly during years prior to menopause.

HYSTERECTOMY - surgical removal of the uterus which often includes the ovaries (oophorectomy). The resulting depletion of hormones propels women into "surgical menopause" overnight.

INSULIN-LIKE GROWTH FACTOR (IGF-1 or Somatomedin C) - the most reliable indicator of human growth hormone levels. Low levels indicate Adult Growth Hormone Deficiency associated with premature aging, decreased muscle and bone mass, slowing cognitive ability, low libido and overall reduced quality of life.

INSULIN RESISTANCE - a term used to describe the failure of the tissues to respond (resistance) to insulin and absorb glucose for energy production. Associated with high triglycerides, polycystic ovaries and excess androgens. Insulin resistance leads to increased risk of cardiovascular disease, diabetes and cancer.

LUTEINIZING HORMONE (LH) - pituitary hormone that signals the ovaries to release an egg and to make progesterone; in men it signals the testes to produce testosterone.

LUTEAL PHASE - the latter half of the menstrual cycle when progesterone production is at its peak.

LUTEAL INSUFFICIENCY - failure of the corpus luteum to produce adequate amounts of progesterone; often caused by anovulation.

MENOPAUSE/POSTMENOPAUSE - the end of menstrual cycles; cessation of menses for 12 consecutive months.

OSTEOPOROSIS - bone loss influenced by low estrogen, progesterone, androgens, and/or high cortisol.

OSTEOBLASTS - bone building cells.

OSTEOCLASTS - bone destroying/resorbing cells.

OVARIAN STROMA - the inner ovarian layer that can manufacture excess testosterone.

PERIMENOPAUSE - the 5-10 years approaching menopause when hormones fluctuate causing erratic ovulation and noticeable shifts in physical and mental well-being.

PHYTOESTROGENS - plant compounds (e.g. soy, black cohosh) with mild estrogen-like activity; are used as natural alternatives to relieve menopausal symptoms.

POLYCYSTIC OVARIES - undeveloped follicles within the ovary; seen in women with high estrogen and low progesterone levels, and/or high androgen levels. The presence of cysts on the ovary is not uncommon and occurs in 10-20% of women.

PROGESTERONE/ESTRADIOL (pg/e2) RATIO - indicates fundamental balance or imbalance between these two hormones.

PROGESTINS - synthetic hormones structurally similar to progesterone (e.g. Provera) but not naturally occurring in the body; suppress normal ovarian production of progesterone and may have negative side effects.

PROGESTERONE - a hormone produced by the ovaries after ovulation and in lesser amounts by the adrenal glands. A precursor to most of the steroid hormones, it has many vital functions, from maintaining pregnancy to regulating menstrual cycles; has calming and diuretic properties, and enhances the beneficial effects of estrogens while preventing problems linked to estrogen excess. Progesterone facilitates balance of other steroid hormones.

PROSTATE SPECIFIC ANTIGEN (PSA) - a protein produced by the prostate gland; high PSA is an important indicator of prostate enlargement. A normal PSA reading is prerequisite for initiating testosterone therapy in men.

RECEPTOR SITES - molecules on the surface of the cell which allow specific hormones to pass into the cell (via a lock and key effect) to perform their function.

SEX HORMONE BINDING GLOBULIN (SHBG) - a protein that binds to testosterone in the bloodstream, limiting the amount of free testosterone available to the tissues of the body. It is increased with age and excess estrogens.

SOMATOMEDIN C - (see Insulin-Like Growth Factor)

TESTOSTERONE - an anabolic hormone that builds and maintains bone and muscle mass, skin elasticity, sex drive and cardiovascular health in both sexes.

THYROID - gland that produces hormones that regulate metabolism; imbalances lead to weight gain, cold body temperature, depression, hair loss, etc.

THYROID PEROXIDASE ANTIBODIES (TPO) - elevated with Hashimoto's (autoimmune) thyroiditis; associated with polycystic ovaries in women.

THYROID STIMULATING HORMONE (TSH) - pituitary hormone; signals the thyroid to produce T4 (Thyroxine) which converts to active T3 (Triiodothyronine).

TISSUE DESENSITIZATION - the inability of cells to utilize (take up) hormones.

VASOMOTOR SYMPTOMS - hot flashes/night sweats commonly begin in perimenopause; stem from hormone fluctuations which impact centers in the brain that regulate capillary dilation and perspiration.