TEST REPORT

8605 SW Creekside Place
Beaverton, OR 97008
Phone: 503-466-2445 Fax: 503-466-1636

ZRT LABORATORY

 # 2018 11 09 001 Se

Ordering Provider:
Jane Getuwell, MD

Samples Received
11/09/2018

Report Date
11/10/2018

Samples Collected
Serum - 11/07/18 09:45

Patient Name: Female Serum Profile II
Patient Phone Number: 555 555 5555

Gender	Last Menses	Height	Waist
Female	10/11/2018	5 ft 10 in	32 in
DOB	**Menses Status**	**Weight**	**BMI**
4/24/1972 (45 yrs)	Pre-Menopausal - Irregular	170 lb	24.4

TEST NAME	RESULTS | 11/07/17	RANGE
Serum Steroids/Peptides		
Estradiol	125	43-180 pg/mL Premeno-luteal or ERT
Progesterone	5.4	3.3-22.5 ng/mL Premeno-luteal or PgRT
Ratio: Pg/E2	43 L	Pg/E2 (optimal 100-500)
Testosterone	22	20-45 ng/dL Postmenopausal
DHEAS	25 L	40-290 µg/dL
Cortisol	8.9	8.5-19.8 µg/dL (morning), 3.3-8.5 (eve/night)
SHBG	70	15-120 nmol/L
Serum Thyroids		
Free T4	0.9	0.7-2.5 ng/dL
Free T3	2.5	2.4-4.2 pg/mL
TSH	3.5 H	0.5-3.0 µU/mL
TPOab	12	<70 IU/mL

<dL = Less than the detectable limit of the lab. N/A = Not applicable; 1 or more values used in this calculation is less than the detectable limit. H = High. L = Low.

Therapies

None

CLIA Lic # 38D0960950
11/20/2018 7:57:48 AM

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

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Laboratory Director

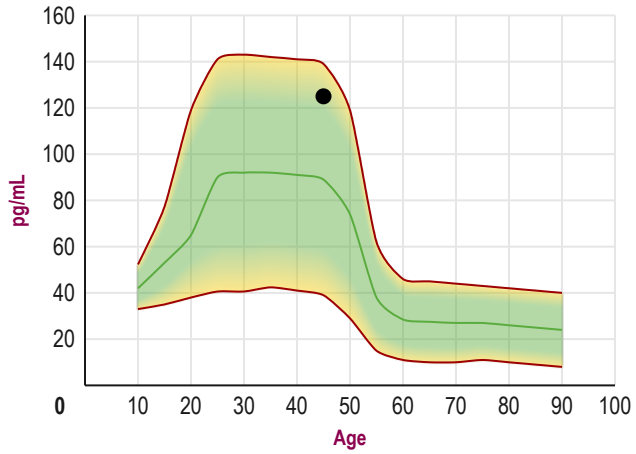
Alison McAllister, ND.
(Ordering Provider unless otherwise specified on page 1)

Graphs

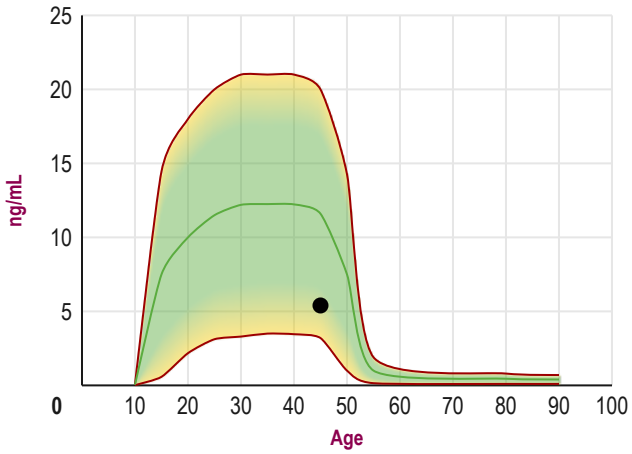
Disclaimer: Graphs below represent averages for healthy individuals not using hormones. Supplementation ranges may be higher. Please see supplementation ranges and lab comments if results are higher or lower than expected.

Average ▼▲ Off Graph

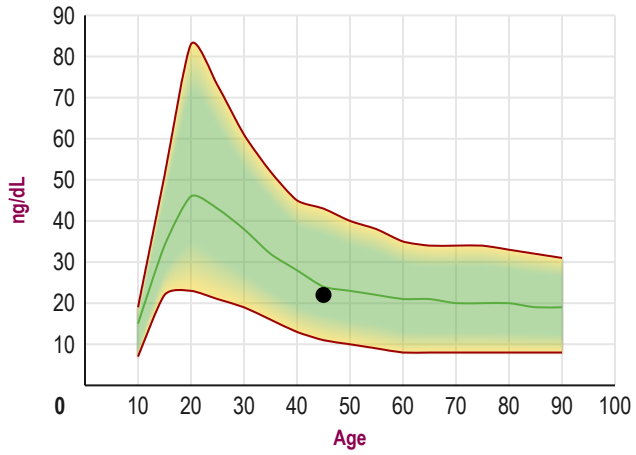
Serum Estradiol



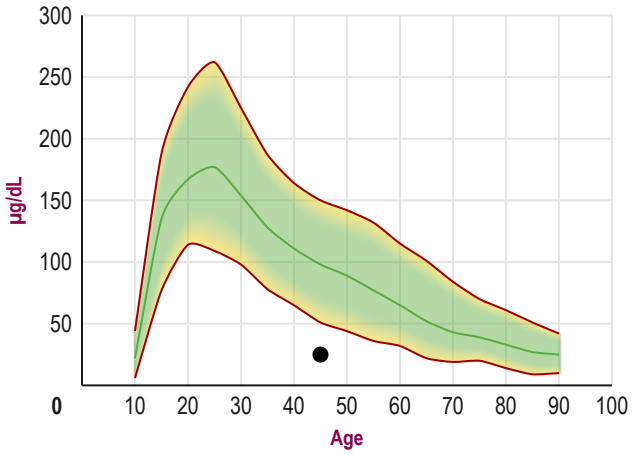
Serum Progesterone



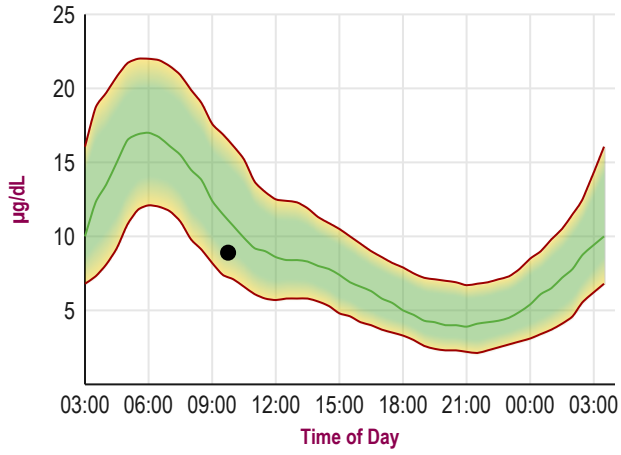
Serum Testosterone



Serum DHEAS



Serum Cortisol



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Disclaimer: Symptom Categories below show percent of symptoms self-reported by the patient compared to total available symptoms for each category. For detailed information on category breakdowns, go to www.zrtlab.com/patient-symptoms.

SYMPTOM CATEGORIES	RESULTS | 11/07/17
Estrogen / Progesterone Deficiency	42%
Estrogen Dominance / Progesterone Deficiency	39%
Low Androgens (DHEA/Testosterone)	64%
High Androgens (DHEA/Testosterone)	29%
Low Cortisol	59%
High Cortisol	46%
Hypometabolism	52%
Metabolic Syndrome	18%

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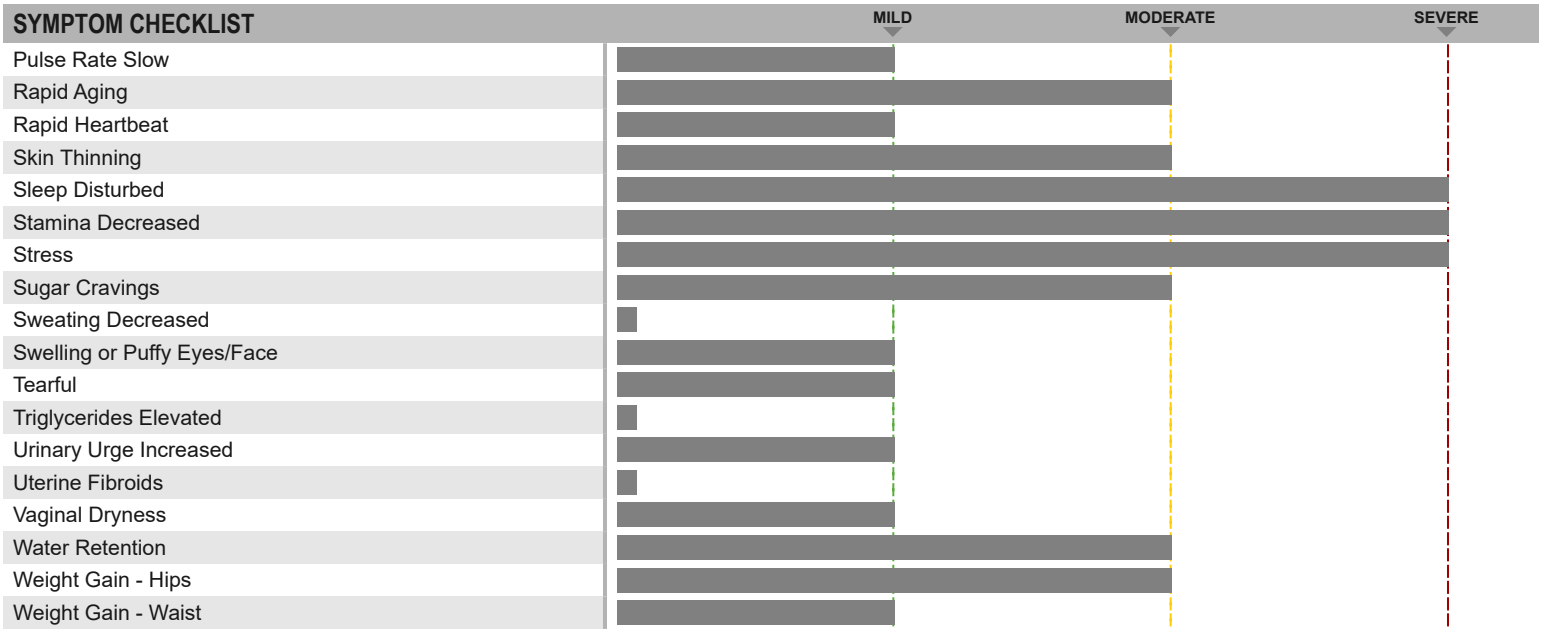

Lab Comments

STEROIDS AND STEROID BINDING PROTEINS

Estradiol (serum) is within high-normal observed range for a premenopausal woman approaching menopause. Estradiol levels higher and lower than reference ranges are common in women approaching menopause (perimenopause-age usually ranging from 45-55) when levels fluctuate erratically from high to low in the absence of adequate progesterone. Rapid day to day fluctuations in estrogens precipitate symptoms of both estrogen dominance (tender and fibrocystic breasts, water retention, irritability, etc.) and estrogen deficiency (hot flashes and night sweats, sleep disturbances) during this transition period. Although estradiol is within range for luteal phase of the menstrual cycle in this individual, it is not well balanced with progesterone (low progesterone/estradiol ratio). When estradiol is within mid to high expected range for luteal phase it should be well balanced with progesterone (ideal Pg/E2 ratio is 100-200 when estradiol is within mid-luteal range). Consider means to lower the estrogen burden (exercise, diet, herbal supplements, natural progesterone) to help create a better progesterone/estradiol balance and suppress symptoms.

Progesterone (serum) is within expected low end of the range for a premenopausal woman during mid-luteal phase of the menstrual cycle. Progesterone should be well balanced with estradiol (optimal Pg/E2 ratio 100-500, when estradiol is within mid-physiological range). A low Pg/E2 ratio, when E2 is within mid-normal to high luteal range, is usually associated with symptoms of estrogen dominance. If symptoms of estrogen-progesterone imbalance are problematic, consider balancing the estrogen with natural progesterone therapy.

Testosterone (serum) is within the low-normal reference range. Low testosterone is often associated with symptoms of low androgens (e.g., low libido, incontinence, vaginal dryness, fatigue, memory lapses, depression, and bone loss). Testosterone is an anabolic hormone essential for creating energy, maintaining optimal brain function (memory), regulating the immune system, and building and maintaining the integrity of structural tissues such as skin, muscles, and bone. If low testosterone symptoms are problematic, consider androgen replacement therapy (e.g. testosterone and/or DHEA). Testosterone therapy will raise only testosterone, whereas, DHEA supplementation can raise both DHEA(S) and testosterone levels 50-100 % from baseline in women (Morales et al. 1994. Clin Endocrinol Metab. 78: 1360-67). When testosterone and DHEA (S) are both low supplementation with DHEA alone may be a more conservative approach to increasing both hormones to physiological levels.

SHBG is within normal range. The level of SHBG is reflective of exposure to all forms of estrogens (endogenous estrogens, synthetic estrogens used in contraceptives and hormone replacement, xeno-estrogens such as BPA, phytoestrogens such as genistein in soy). As the estrogen levels increase in the bloodstream there is a proportional increase in hepatic production of SHBG. This is amplified by thyroid hormone and suppressed by insulin and cortisol. SHBG is an estrogen- and androgen-binding glycoprotein produced in and released by the liver into the bloodstream. SHBG binds to DHT > testosterone > estradiol, helps increase their half-life in the bloodstream, and limits their bioavailability to target tissues. SHBG binds to estradiol with about a 5-fold lower affinity than to testosterone; thus, an increase in SHBG results in proportionately less bioavailable testosterone than estradiol. Thus, a high SHBG will suppress the actions of androgens more than estrogens.

DHEAS (serum) is lower than reference range for a premenopausal woman. DHEA(S) levels drop steadily about 10-fold from peak levels in young adults to low levels in old age (see age-related graph for healthy individuals). DHEAS lower than the expected age-adjusted range is common in individuals with excessive chronic stressors and those with insulin resistance/metabolic syndrome. Low DHEA(S) is commonly

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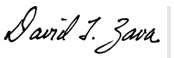
associated with low testosterone (DHEA is a testosterone precursor) and symptoms of androgen deficiency (fatigue, depression, vaginal dryness, low libido, loss of muscle mass, bone loss, memory lapses). DHEAS, acting as a neurotransmitter in the CNS, enhances mood (feeling of well-being). DHEA(S), in concert with cortisol plays an important role in immunomodulatory response. If symptoms of low androgens are problematic, particularly if testosterone also is low to low-normal range, consider DHEA therapy. DHEA therapy increases both DHEA(S) and testosterone (Morales et al. 1994. Clin Endocrinol Metab. 78: 1360-67).

Cortisol (serum) is within expected reference range. Serum cortisol represents the total cortisol in the circulation and is not always reflective of the bioavailable fraction (portion of cortisol that dissociates from cortisol binding proteins in the bloodstream and enters tissues throughout the body), which is more easily determined by saliva testing. When cortisol is lower or higher than range and symptoms of low or high cortisol are problematic consider testing 4x diurnal salivary cortisol as this is more representative of the bioavailable fraction of cortisol in the bloodstream.

THYROID HORMONES

Serum Free T4 and free T3 are within low-normal ranges, whereas TSH is slightly above range. These results are consistent with hypothyroidism. Consider thyroid replacement therapy, especially if symptoms of thyroid deficiency are problematic.

Serum TPOab is low, indicating that Hashimoto's thyroiditis is unlikely.



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