TEST REPORT

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ZRT LABORATORY

 # D2024 01 01 213 B

Ordering Provider:
Getuwell

Samples Received
04/01/2024

Report Date
04/17/2024

Samples Collected
Blood Spot - 03/27/24 09:15

Patient Name: Female Blood Profile II
Patient Phone Number:

Gender	Last Menses	Height	Waist
Female	Unspecified	5 ft 2 in	33 in
DOB	**Menses Status**	**Weight**	**BMI**
1/1/1971 (53 yrs)	Postmenopausal	120 lb	21.9

TEST NAME	RESULTS | 03/27/24	RANGE
Blood Spot Steroids & Other Analytes (LC-MS/MS)		
Estradiol	108	32-472 pg/mL topical, SL, troche, vaginal, patch ERT
Estriol	1155	75-2600 pg/mL Topical, SL, troche, vaginal ERT
Estrone	<15	<15-50 pg/mL Topical, SL, troche, vaginal, patch ERT
Progesterone	1.2	0.5-4.3 ng/mL Oral (100-300mg)
Ratio: Pg/E2	11 L	Pg/E2 (bloodspot-optimal 100-500)
Testosterone	95	29-224 ng/dL Pre/PostMenopausal TRT
DHEAS	207	17-207 µg/dL
Cortisol	22.6 H	9.1-19.6 µg/dL (morning), 3.3-8.9 (eve/night)
Blood Spot		
SHBG	112	15-120 nmol/L
Blood Spot Thyroids		
TSH	4.0 H	0.5-3.0 µU/mL
Free T3	3.7	2.4-4.2 pg/mL
Free T4	1.5	0.7-2.5 ng/dL
TPOab	9	0-150 IU/mL (70-150 borderline)

<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

2mg topical Biestrogen (80/20 E3 + E2) (compounded) (1 Hours Last Used);22.5mg oral Progesterone (compounded) (11 Hours Last Used);2mg topical Testosterone (compounded) (1 Hours Last Used);5mg oral DHEA (OTC) (1 Days Last Used);175mcg oral Vitamin D3 (OTC) (1 Days Last Used)

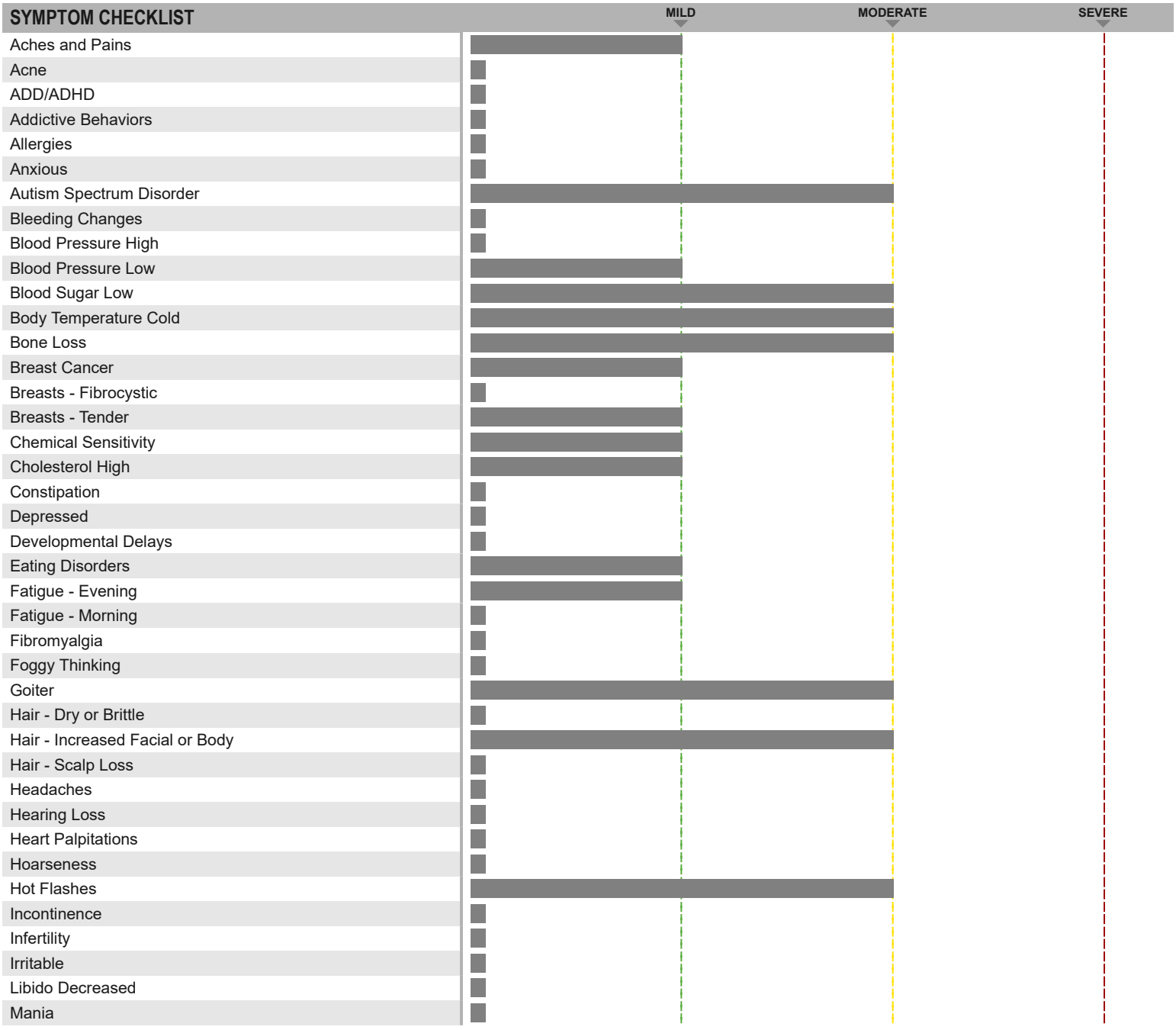
The above results and comments are for informational purposes only and are not to be construed as medical advice. Please consult your healthcare practitioner for diagnosis and treatment.

David T. Zava, Ph.D.
Laboratory Director

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

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 | 03/27/24
Estrogen / Progesterone Deficiency	30%
Estrogen Dominance / Progesterone Deficiency	29%
Low Androgens (DHEA/Testosterone)	30%
High Androgens (DHEA/Testosterone)	25%
Low Cortisol	22%
High Cortisol	24%
Hypometabolism	15%
Metabolic Syndrome	7%



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Lab Comments

Estradiol (blood spot) is within mid-normal range following topical ERT. If symptoms/signs of estrogen imbalance are problematic, consider progesterone replacement therapy or dosage adjustment of progesterone if already used. Estradiol should be well balanced with progesterone to prevent symptoms of estrogen imbalance (ideal progesterone/estradiol ratio 100-500 when estradiol is within mid-normal range).

Progesterone (blood spot) is within range for oral progesterone therapy. Oral progesterone results in a rapid increase (30 min-1 hr) and peak in blood progesterone followed by a precipitous decrease to near baseline within 8-24 hr. Peak levels of progesterone are usually within the luteal range or higher for a short time interval but drop rapidly as progesterone is metabolized and removed from the bloodstream and enters target tissues. Clinical research has shown that oral progesterone in the 100-300 mg range is adequate to counter the growth-promoting actions of physiological levels of estradiol from endogenous production or exogenous estrogen therapy. With oral progesterone delivery blood spot collection should be performed at 8-12 hr following supplementation as the lower range is based on the shorter time course. The progesterone/estradiol ratio is expected to be much lower with oral progesterone therapy when progesterone is tested relative to estradiol, at the 8-12 hr time interval. Symptoms of estrogen/progesterone imbalance are minimal indicating that the progesterone deliverry and dosing is appropriate.

Testosterone (blood spot) is within expected reference range with testosterone therapy. Physiological doses of testosterone in the 0.3-0.5 mg range, delivered through the skin (topical)or mucosa (vaginal, troche/suglingual), usually result in blood spot testosterone levels in the physiological range of a young premenopausal woman at 12-24 hr post supplementation (ZRT database). Higher dosing, or a shorter time course from last use to sample collection (< 12 hr), will often result in a testosterone level higher than physiological range observed in healthy premenopausal woman, but within the expected, and higher, reference range. When applied to the skin (topical, patch) or mucosa (sublingual, troche, vaginal), testosterone levels usually peak at about 1-6 hr and may reach levels 5-10 times higher than range at this time interval. With physiological dosing, levels are usually within range at 12-24 hr. Excessive and prolonged exposure to levels of testosterone exceeding the physiological range are more likely to lead to high androgen symptoms such as loss of scalp hair, increased facial/body hair, acne, oily skin, agitation-irritability, sleep disturbances, and more weight gain in the waist. These high-androgen side effects are usually less pronounced when co-supplementing with estrogens or progesterone as both are weak anti-androgens. Estrogens and cortisol down-regulate androgen receptors and tissue response to testosterone and progesterone competitively inhibit the enzyme, 5-alpha-reductase, that converts testosterone to the more potent androgen, dihydrotestosterone (DHT). Individual differences in sensitivity to testosterone are also dependent on differences in tissue levels of androgen receptors and 5-alpha-reductase, which converts testosterone to the more potent androgen, dihydrotestosterone (DHT). If side effects of androgen excess are problematic with current dosing, consider dosage reduction. If symptoms of both androgen

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deficiency and excess are problematic with testosterone therapy this is usually caused by symptom profiles with overlapping hormonal imbalances (e.g. high estradiol, high progesterone, low or high cortisol, and low thyroid).

SHBG (Sex Hormone Binding Globulin) is within the high-normal range, consistent with estrogen supplementation. SHBG is a protein produced by the liver and released into the bloodstream in response to inceasing levels of estrogens. While SHBG is a relative index of the overall exposure of the liver to any form of estrogens (endogenous, pharmaceutical-ERT, xeno-estrogens-pollutants), other hormones such as insulin, thyroid, androgens, and glucocorticoids affect the livers ability to synthesize SHBG in response to estrogens. Thyroid hormone increases SHBG, while high insulin (insulin resistance), high androgens, and high glucocorticoids (cortisol) lower SHBG. These hormones that lower SHBG increase the bioavailability of estradiol and the likelihood of estrogen dominance symptoms.

DHEAS (blood spot) is within high-normal range. DHEAS is highest during the late teens to early twenties and then declines progressively with age to the lower levels of the range in healthy men and women. DHEAS is expected to be within the lower range in older individuals. Higher DHEAS levels in individuals older than 40 is usually associated with DHEA supplementation, but is not uncommon in well trained atheletes. High DHEAS can be associated with symptoms of androgen excess (e.g. loss of scalp hair, increased facial/body hair, acne).

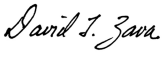
Morning cortisol (blood spot) is high; however, this individual has indicated use of estrogen replacement therapy that increases circulating levels of cortisol binding globulin (CBG). This protein binds tenaciously to cortisol, increasing its half-life but also significantly decreasing its bioavailability to target tissues. Therefore, a higher total cortisol may be associated with normal free or bioavailable levels of cortisol. CBG is elevated in pregnant women who have high circulating levels of estrogens; it is also elevated in women on estrogen therapy or contraceptives. Salivary cortisol represents that fraction of cortisol not bound to CBG or other blood binding proteins, and therefore is considered a more accurate representation of the cortisol available to target tissues. If symptoms of adrenal imbalance are problematic consider testing cortisol in saliva 4x throughout the day to determine if levels remain high. If salivary cortisol levels drop following the morning sample this suggests low adrenal reserve and need for adrenal support. If levels remain high, consider means to lower cortisol (e.g. stress reduction, phosphatidyl serine, androgen or thyroid therapy if levels of these hormones are low-both lower cortisol).

Free T4 is within normal range and symptoms of thyroid deficiency are minimal.

Free T3 is within normal range and symptoms of thyroid deficiency are minimal.

TSH is high. Although most laboratories have a TSH range of 0.35-5.50, new studies are finding that the mean and median values are 1.0-1.5mU/l . TSH levels >3.0 are now considered abnormal due to changes by the endocrinology association - see www.aace.com for more information. Some experts believe that TSH should be kept below 2.0 for optimal health. Elevated TSH is often associated with symptoms of hypothyrodism, which include fatigue, decreased stamina, depression, rheumatic pain, sleep disturbances, cold extremities or feeling cold, reduced body temperature, brittle nails, dry coarse hair, hair loss, infertility, low libido, puffy eyes and face, decreased sweating, menorrhagia, and/or constipation. Periodic TSH monitoring is recommended if clinical symptoms of thyroid deficiency persist. T3 results may help guide treatment decisions. Thyroid therapy may be worthwhile considering if T4 and/or T3 are low and symptoms of thyroid deficiency are problematic.

Thyroid peroxidase (TPO) antibodies are low indicating that Hashimoto's autoimmune thyroiditis is unlikely.



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