DEMO DEMO

Name: DEMO DEMO
Date of Birth: 11-11-1986
Biological Sex: Female
Age: 39
Height: 72 inches
Weight: 123 lbs
Fasting:

Telephone: 000-000-0000
Street Address:
Email:

FINAL REPORT

Accession ID: 2693861177

Provider Information

Practice Name: DEMO CLIENT, MD
Provider Name: DEMO CLIENT, MD
Phlebotomist: 0

Telephone: 000-000-0000
Address: 3521 Leonard Ct, Santa Clara, CA 95054

Specimen Information

Sample Type	Collection Time	Received Time	Report	Final Report Date
Urine 1st Morning	2026-04-23 07:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Urine 2nd Morning	2026-04-23 09:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Urine Evening	2026-04-23 19:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Urine Night	2026-04-23 22:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Saliva Waking	2026-04-23 07:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Saliva Evening	2026-04-23 19:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Saliva Night	2026-04-23 22:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Saliva Waking +30	2026-04-23 07:30 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Saliva Waking +60	2026-04-23 08:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)
Saliva Insomnia	2026-04-24 00:00 (PDT)	2026-04-24 13:36 (PDT)	Hormone Zoomer - P2	2026-05-01 06:00 (PDT)

SAMPLE

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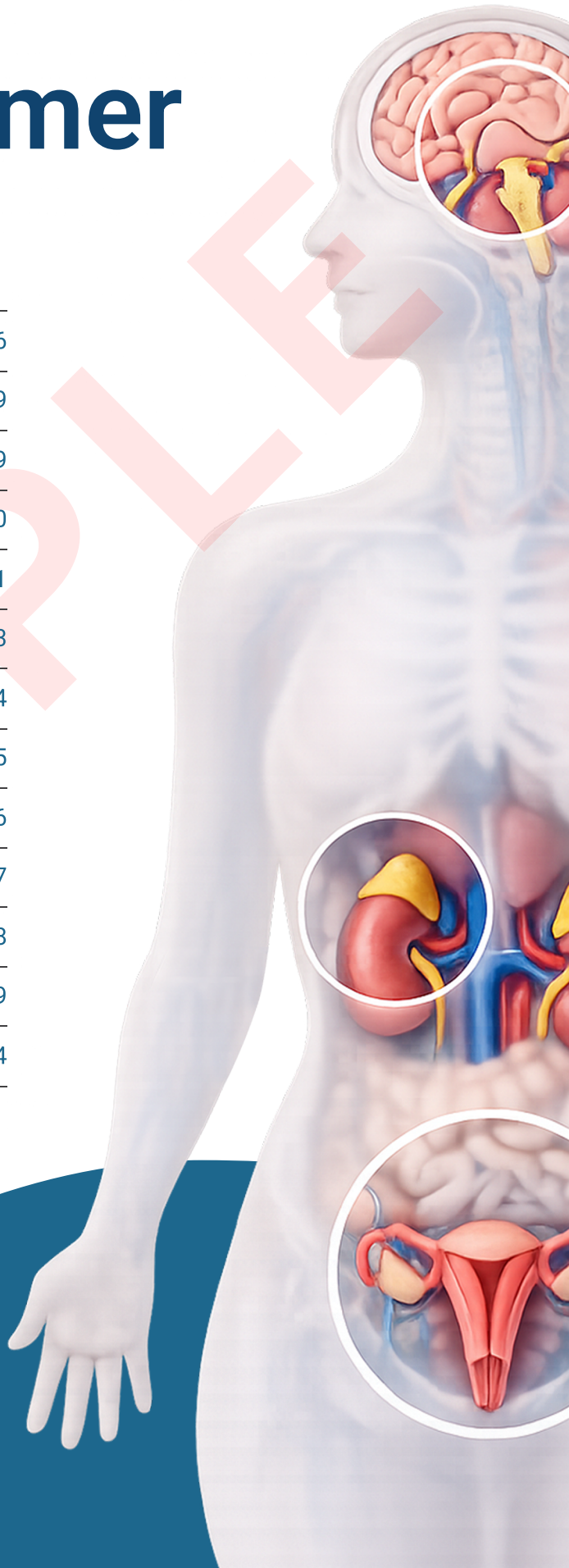
TNP Test not performed
R&L Refer to risks and limitations at the end of report
Notes Refer to Lab notes at the end of the table

VibrantWellness

Hormone Zoomer

Your Hormone Health Report

Cortisol Awakening Response	Pg 6
Adrenal Hormones	Pg 9
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Diurnal Cortisone	Pg 10
Diurnal Melatonin	Pg 11
Estrogen	Pg 13
Progesterone	Pg 14
Testosterone	Pg 15
Hormone Ratios	Pg 16
Oxidative Stress	Pg 17
Creatinine	Pg 18
Endocrine Disruptors	Pg 19
Bone Health	Pg 24



SAMPLE

Hormone Zoomer

INTRODUCTION

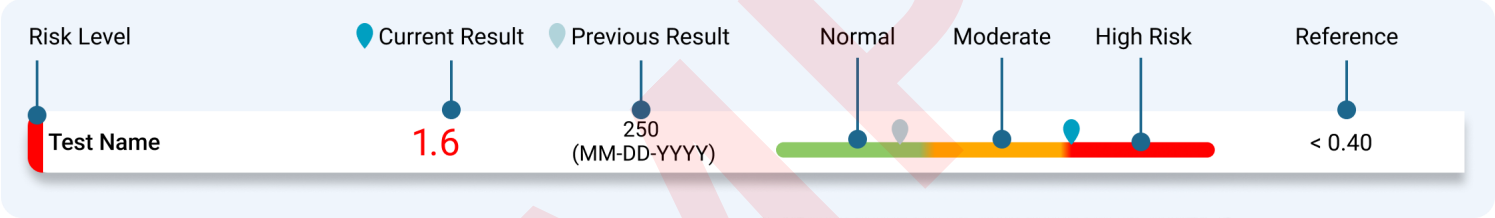
Vibrant Wellness is pleased to present Hormone Zoomer testing to support healthy lifestyle choices in consultation with your healthcare provider. The Hormone Zoomer evaluates biomarkers across multiple endocrine-related categories, including Cortisol Awakening Response, Diurnal Cortisol, Cortisone, and Melatonin, Adrenal Hormones, Estrogen, Progesterone, Testosterone, Hormone Ratios, Endocrine Disruptors, Bone Health, and Oxidative Stress. Results are intended to be interpreted by healthcare providers to guide personalized wellness strategies informed by insights into endocrine system balance.

Methodology

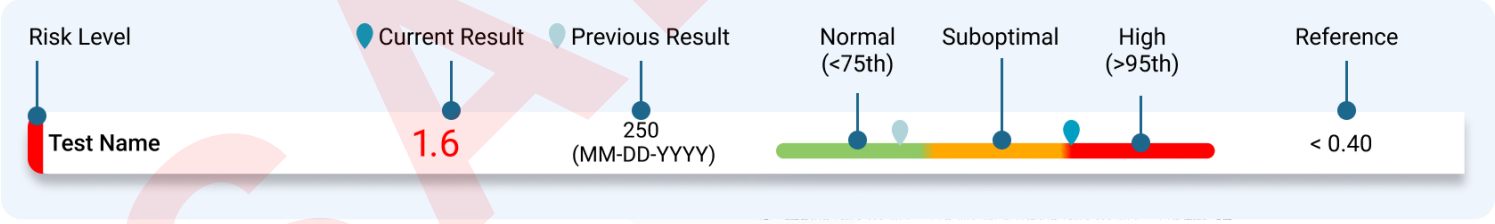
The Hormone Zoomer Panel uses liquid chromatography tandem mass spectrometry methodology (LC-MS/MS) for quantitative detection of cortisol and cortisone metabolites in urine and saliva samples, and melatonin, endocrine disruptors, bone health, creatinine, and oxidative stress markers in urine sample and gas chromatography tandem mass spectrometry (GC-MS/MS) for quantitative detection of estrogens, progesterone and androgen metabolites in urine samples.

Interpretation of Report

The report begins with the list of all adrenal hormones and illustrations, followed by the sex hormones along with corresponding illustrations. The hormones section is followed by endocrine disruptors and bone health metabolites. Reference ranges for each analyte have been established using a cohort of gender and menstrual phase matched 1000 apparently healthy adults over 18 years of age, and pediatric reference ranges are not available. Additionally, the previous value (if available) is also indicated to help check for improvements every time the test is ordered. For hormones section and bone health metabolites, classification of Red indicates a result that is outside the reference range and the classification of Green denotes a result that is within the reference range. The reference metric is listed to the right of the reference range. The previous and current result are listed to the left of the reference range. (result example illustration below)



The level of the endocrine disruptors is shown with three shades of color – Green, Yellow and Red. The result in green corresponds to 0th to 75th percentile indicates mild exposure to the respective toxin. The result in yellow corresponds to 75th to 95th percentile indicates moderate exposure to the respective toxin whereas the result in red corresponding to greater than 95th percentile indicates high exposure to the respective toxin. The reference metric is listed to the right of the reference range. The previous and current result are listed to the left of the reference range. (result example illustration below)



Please note: It is important that you discuss any modifications to your diet, exercise, drug and/or nutritional supplementation with your healthcare provider before making any changes. The Vibrant America Clinical Support team can only provide basic and generalized interpretation of hormone biomarkers and pathways. It is the Vibrant ordering provider's responsibility to provide comprehensive interpretation and individualized treatment recommendations for hormone lab test results.

Regulatory Disclaimer: This test was performed by Vibrant America Clinical Laboratory at 3521 Leonard Ct, Santa Clara, CA 95054 (CLIA No. 05D2078809, CAP No. 8970308). This test was developed, and its performance characteristics determined, by Vibrant America Clinical Laboratory. This test has not been cleared or approved by the U.S. Food and Drug Administration (FDA).

Hormone Zoomer - Summary

Questionnaire Data

BACKGROUND

Date of Birth	1986-11-11	Reproductive health status	Premenopausal, Luteal		
Biological sex	Female	Regular menstral cycles	YES		
Last menstrual period	2026-04-05	Had a hysterectomy	NO		

BONE HEALTH AND TOXIN EXPOSURE

Bone density scan	NO	If yes, scan result	N/A		
Experienced any fractures	YES	Exposed to toxic chemicals	Unsure		

SYMPTOM HISTORY

Hot flashes/night sweats	None	Sleep disturbances	Moderate	Loss of muscle mass	None
Mood swings/irritability	Mild	Joint pain	Mild	Difficulty concentrating	N/A
Fatigue	Moderate	Loss of libido	Mild	Urinary problems	None
Vaginal dryness	None				

MEDICAL BACKGROUND

MEDICAL HISTORY		COMORBIDITIES		FAMILY HISTORY	
Breast cancer	NO	Cardiovascular disease	NO	Cancer	NO
Ovarian cancer	NO	Liver disease	NO	Breast cancer	NO
Endometrial (uterine) cancer	NO	Hypertension	NO	Cardiovascular disease	NO
Stomach cancer	NO	Gallbladder complications	NO	Cerebrovascular disease	NO
Pancreatic cancer	NO	Thyroid conditions	NO	SLE or Autoimmune	NO
Colon or rectal cancer	NO	Obesity	NO	Venous thrombus embolism	NO
Any cancer not listed above	Infertility	Type 2 diabetes	NO	Thyroid disease	YES
		Blood clots or venous thromboembolism	NO	Hypertension	YES
		Other	N/A	Other	N/A

TREATMENT CONSIDERATIONS

Hormone treatment preference	Unsure	Sensitive skin (Affects certain forms of HRT)	NO	Peanut Allergy (Affects certain forms of HRT)	NO
Undergoing HRT and/or taking any medications	NO	If yes, please list and provide necessary details:			N/A

ADDITIONAL INFORMATION

N/A

SAMPLE

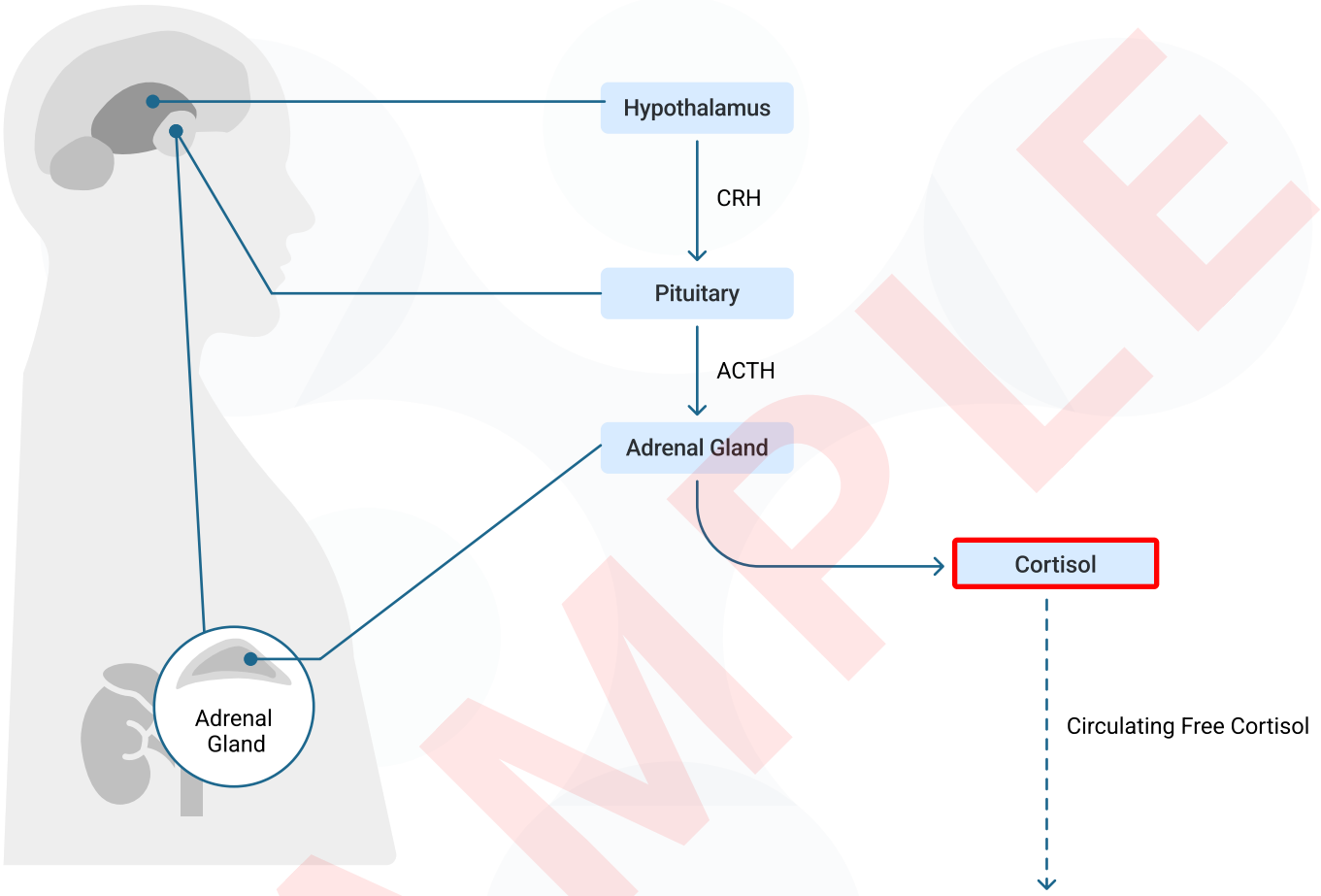
Hormone Zoomer - Summary

Cortisol Awakening Response - Saliva

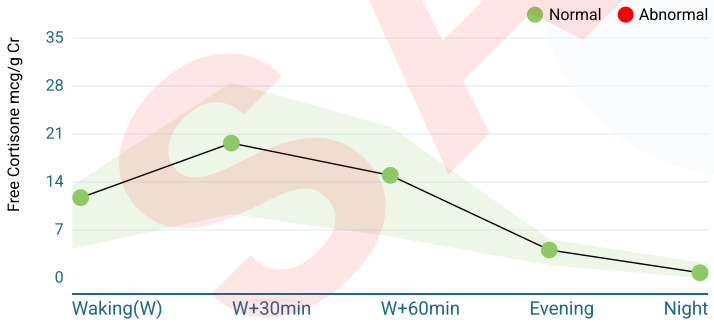
Moderate High / Low

STRESS

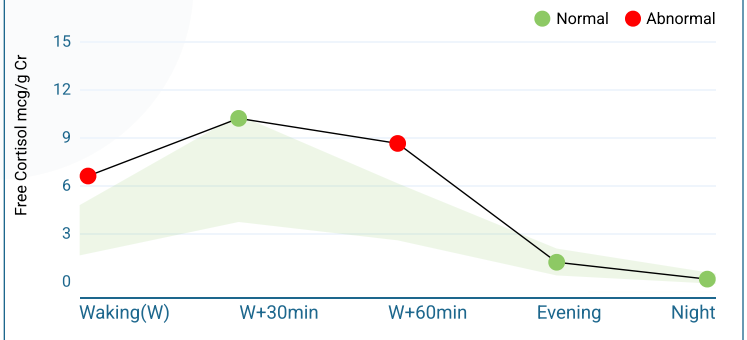
Stress (or inflammation) causes the brain to release ACTH, which stimulates the adrenal glands to make hormones



SALIVA FREE CORTISONE PATTERN



SALIVA FREE CORTISOL PATTERN



34.0 - 65.0
56.01
Total cortisone levels

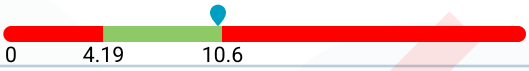
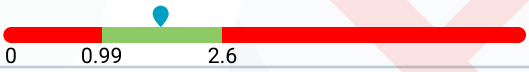
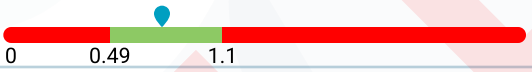
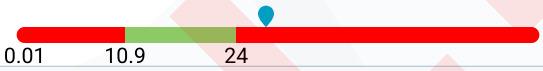
Cortisone and Cortisol interconvert (11β-HSD)

11.0 - 24.0
28.77
Total cortisol levels

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Hormone Zoomer - Summary

Cortisol Awakening Response

Cortisol	Current	Previous	Result	Reference
Saliva Cortisol – Waking (M) (ng/mL)	6.94			2.2-5.2
Saliva Cortisol – W+30 min. (ng/ml)	10.39			4.2-10.6
Saliva Cortisol – W +60 min. (ng/mL)	8.89			3.1-6.5
Saliva Cortisol – Evening (ng/ml)	1.78			1.0-2.6
Saliva Cortisol – Night (ng/ml)	0.77			0.5-1.1
Saliva Cortisol Total (ng/mL)	28.77			11.0-24.0

COMMENTS

Saliva Cortisol – Waking (M): Cortisol, a stress hormone produced by the adrenal glands, peaks during the day and declines at night. It plays a key role in regulating stress responses, blood sugar, blood pressure, metabolism, and immune defense. Most cortisol in the blood is bound to carrier proteins, while salivary cortisol reflects bioavailable (free) cortisol. In healthy adults, W+30 min salivary cortisol is normally 18–32 nmol/L, representing peak HPA axis responsiveness as part of the cortisol awakening response. Levels consistently above ~40–55 nmol/L may indicate excessive adrenal activation, often linked to acute or chronic psychological stress, anxiety disorders, or adrenal hyperactivity. While a pronounced rise can confirm good HPA responsiveness, persistently excessive peaks may be associated with metabolic strain and cardiovascular risk. In premenopausal women, high W+30 min salivary cortisol levels may heighten stress, impair digestion, and exacerbate hormonal imbalances such as PCOS. Elevated cortisol levels can also indicate Cushing's syndrome, characterized by high blood pressure, elevated blood sugar, obesity, purple abdominal streaks, muscle wasting, acne, and osteoporosis. Factors such as depression, alcoholism, malnutrition, panic disorders, pregnancy, night shift work, and certain medications can also influence cortisol levels.

Saliva Cortisol – W +60 min.: Cortisol, a stress hormone produced by the adrenal glands, peaks during the day and declines at night. It plays a key role in regulating stress responses, blood sugar, blood pressure, metabolism, and immune defense. Most cortisol in the blood is bound to carrier proteins, while salivary cortisol reflects bioavailable (free) cortisol. In healthy adults, cortisol levels at W+60 min should be slightly lower than the W+30 min peak. Levels that remain elevated above ~15.6 nmol/L may indicate ongoing HPA axis activation or delayed cortisol clearance, often due to sustained psychological stress or physiological strain. While mild persistence of high cortisol at this stage can be normal in acute stress, chronic elevations may be associated with anxiety disorders, metabolic dysregulation, or early Cushingoid tendencies. In premenopausal women, high W+60 min salivary cortisol levels may heighten stress, impair digestion, and exacerbate hormonal imbalances such as PCOS. Elevated cortisol levels can also indicate Cushing's syndrome, characterized by high blood pressure, elevated blood sugar, obesity, purple abdominal streaks, muscle wasting, acne, and osteoporosis. Factors such as depression, alcoholism, malnutrition, panic disorders, pregnancy, night shift work, and certain medications can also influence cortisol levels.

Saliva Cortisol Total: Total salivary cortisol represents the integrated free cortisol exposure throughout the day, reflecting HPA axis activity. In premenopausal women, a total salivary cortisol above the typical reference range (~50–60 nmol/L for a full day, depending on assay) may indicate chronic HPA axis hyperactivity. Elevated total cortisol can arise from prolonged psychological stress, Cushing's syndrome, exogenous corticosteroid use, or metabolic disturbances. In premenopausal women, persistently high cortisol may contribute to insulin resistance, weight gain (especially central adiposity), dyslipidemia, hypertension, menstrual irregularities, and impaired immune function. The combination of ongoing stress and hormonal fluctuations in the menstrual cycle can influence cortisol dynamics, making monitoring of total daily cortisol particularly relevant for detecting early dysregulation in premenopausal women.

SUPPLEMENT SUGGESTIONS

Polyphenol-rich dark chocolate(25 g/day): Polyphenol-rich chocolate reduces total daily cortisol by enhancing antioxidant defenses and lowering oxidative stress. It modulates the HPA axis, thereby attenuating stress-induced cortisol secretion. This regulation restores circadian cortisol balance, decreasing overall daily exposure.

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Cortisol Awakening Response

SUPPORTIVE SUPPLEMENT SUGGESTIONS (ENHANCES SPECIFIC ASSOCIATED FUNCTIONS WITHOUT INFLUENCING MARKERS DIRECTLY)

Galactooligosaccharides(5.5 g/day): Galactooligosaccharides (GOS) modulate the gut microbiota, promoting the growth of beneficial bacteria such as Bifidobacterium and Lactobacillus. These microbes enhance gut barrier integrity and stimulate the production of short-chain fatty acids, which influence the gut–brain axis and reduce hypothalamic–pituitary–adrenal (HPA) axis reactivity. As a result, the waking cortisol response is decreased through lowered stress signaling and improved neuroendocrine regulation.

Polyphenol-rich dark chocolate(25 g/day): Polyphenol-rich chocolate inhibits 11β-HSD1, the enzyme that converts cortisone to active cortisol. This reduces regeneration of cortisol, lowering salivary cortisol levels. As a result, the cortisol:cortisone ratio decreases, supporting balanced circadian cortisol patterns.

LIFESTYLE SUGGESTIONS

Cortisol: Yoga (60 min/day), Meditation (30 - 50 min/day)

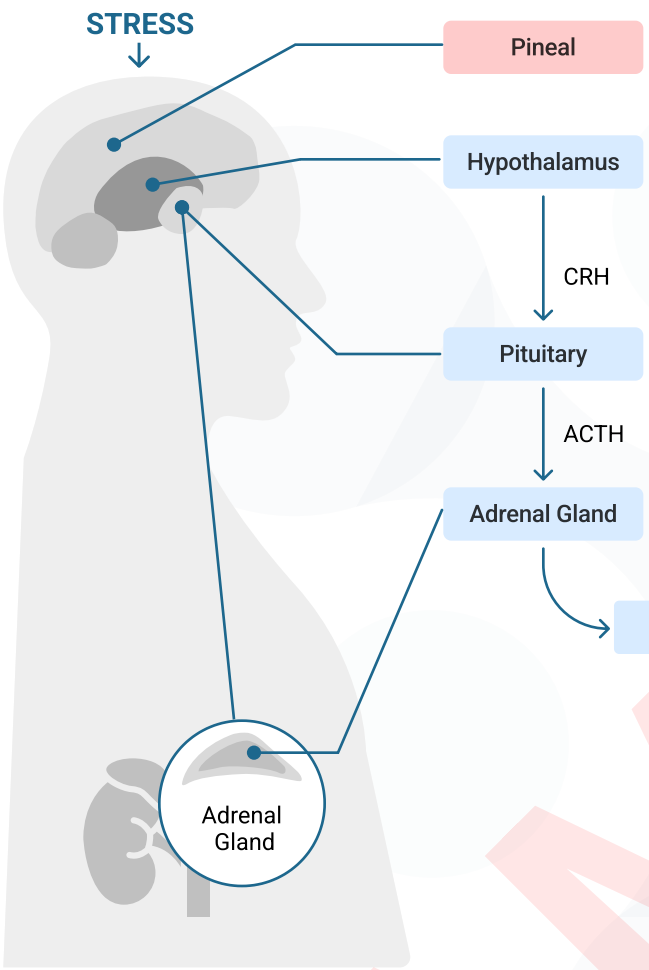
Cortisone	Current	Previous	Result	Reference
Saliva Cortisone – Waking (M) (ng/mL)	12.61		0.01 5.49 14.3	5.5-14.3
Saliva Cortisone – W+30 min. (ng/ml)	20.23		0 10.2 28.7	10.3-28.7
Saliva Cortisone – W +60 min. (ng/mL)	15.73		0.01 7.19 22.5	7.2-22.5
Saliva Cortisone – Evening (ng/ml)	5.31		0 3.19 6.8	3.2-6.8
Saliva Cortisone – Night (ng/ml)	2.13		0 1.29 3.4	1.3-3.4
Saliva Cortisone Total (ng/mL)	56.01		0.01 33.9 65	34.0-65.0

SAMPLE

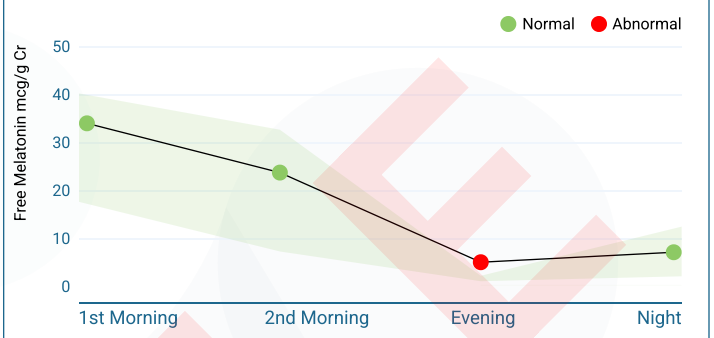
Hormone Zoomer - Summary

Adrenal Hormones

Moderate High / Low



URINARY DIURNAL MELATONIN MT6S



Total DHEA

500 - 2000

1327.8

Cortisol → Metabolized Cortisol (THF+THE)

611.54 - 1846.88

1335.33

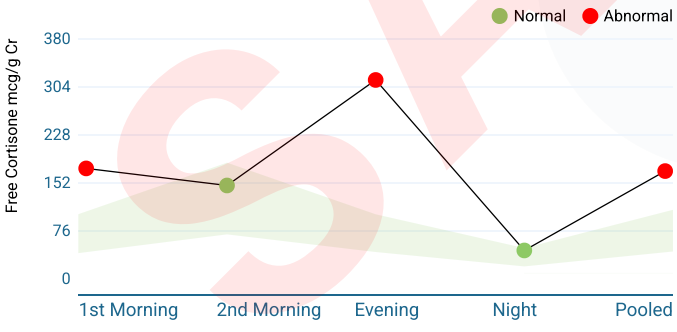
Cortisol/Cortisone

11β-HSD index measures the activity level of the 11β-HSD enzyme which maintains balance between active cortisol and inactive cortisone. Increased cortisol levels has been associated with conditions like metabolic syndrome and insulin resistance.

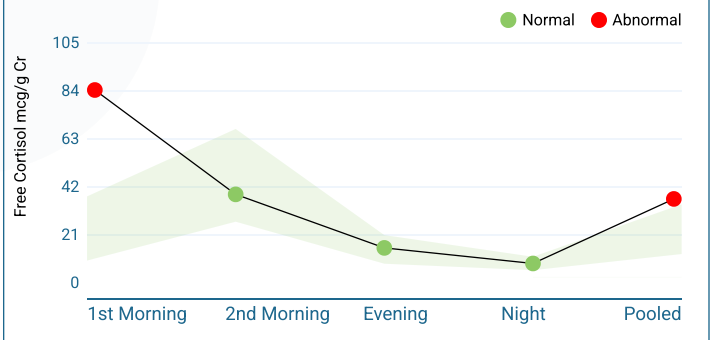
0.48 - 0.59

0.81

URINARY FREE DIURNAL CORTISONE



URINARY FREE DIURNAL CORTISOL



23.11 - 50.33

36.44

Total cortisone levels

Cortisone and Cortisol interconvert (11β-HSD)

11.18 - 29.63

29.5

Total cortisol levels

SAMPLE

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Patient Name: DEMO DEMO
Date of Birth: 11-11-1986 Accession ID: 2693861177
Service Date: 2026-04-23 07:00 (PDT)

Hormone Zoomer - Summary

Adrenal Hormones

Test Name	Current	Previous	Result	Reference
b-Tetrahydrocortisol (b-THF) (mcg/g)	284.53		0 200 500	200.65-500.78
a-Tetrahydrocortisol (a-THF) (mcg/g)	13.61		0 10.1 67.1	10.11-67.15
b-Tetrahydrocortisone (b-THE) (mcg/g)	1037.19		0 400 1278	400.78-1278.95
Deoxycorticosterone (mcg/g)	1.49		0 0.3 2.01	0.31-2.01
Corticosterone (mcg/g)	6.82		0 2.17 9.47	2.18-9.47
DHEA (mcg/g)	122.92		0 16.1 138	16.11-138.06
DHEA-S (mcg/g)	19.50		0 5.21 31.7	5.22-31.78
Metabolized Cortisol (THF+THE) (mcg/g)	1335.33		0 611 1846	611.54-1846.88
Total Cortisol (mcg/g)	29.50		0 11.1 29.6	11.18-29.63
Total Cortisone (mcg/g)	36.44		0 23.1 50.3	23.11-50.33

Diurnal Cortisol

Test Name	Current	Previous	Result	Reference
Free Cortisol (1st Morning) (mcg/g)	83.82		0 7.49 36.2	7.5-36.2
Free Cortisol (2nd Morning) (mcg/g)	37.12		0 24.8 66.4	24.9-66.4
Free Cortisol (Evening) (mcg/g)	13.17		0 6.09 18.9	6.1-18.9
Free Cortisol (Night) (mcg/g)	6.20		0 3.19 9.2	3.2-9.2
Free Cortisol (pooled) (mcg/g)	35.08		0 10.4 32.6	10.43-32.68

COMMENTS

Free Cortisol (1st Morning): Cortisol, widely known as the body's stress hormone is produced in the adrenal glands. Its levels are generally seen to peak in the morning and then decline throughout the day, reaching the lowest at night. Cortisol is seen to interact with every organ in the body and it is involved in various processes such as stress responses, regulation of blood sugar, blood pressure maintenance, regulation of metabolism, and immune responses. Cortisol levels are seen to increase in conditions of stress; however, if the levels remain high for too long then it can give rise to clinical implications. Testing cortisol levels help in assessing how well the pituitary and adrenal glands are functioning. Assessing morning cortisol levels helps evaluate the adrenal glands' ability to produce sufficient cortisol for daily activities and stress management. In premenopausal women, high morning cortisol levels may exacerbate anxiety, disrupt ovulation, and contribute to weight gain. Elevated cortisol levels may also indicate Cushing syndrome, characterized by high blood pressure, high blood sugar, obesity, purple abdominal streaks, muscle wasting, acne, and osteoporosis. Factors such as depression, alcoholism, malnutrition, panic disorders, pregnancy, night shifts, and certain medications can also affect cortisol levels.

SAMPLE

Hormone Zoomer - Summary

Diurnal Cortisol

COMMENTS

Free Cortisol (pooled): Cortisol, widely known as the body's stress hormone is produced in the adrenal glands. Its levels are generally seen to peak in the morning and then decline throughout the day, reaching the lowest at night. Cortisol is seen to interact with every organ in the body and it is involved in various processes such as stress responses, regulation of blood sugar, blood pressure maintenance, regulation of metabolism, and immune responses. Testing cortisol levels help in assessing how well the pituitary and adrenal glands are functioning. High levels of cortisol can be due to Cushing syndrom (a disease that causes the overproduction of stress hormones by the adrenal glands). Symptoms associated with this condition include high blood pressure, high blood sugar, obesity, purple streaks on the abdomen, muscle wasting, acne, and osteoporosis. Additionally, factors such as depression, alcoholism, malnutrition, panic disorder, pregnancy, working night shift, and medications can alter cortisol levels.

SUPPLEMENT SUGGESTIONS

Magnesium(350 mg/day): Magnesium supplements decrease cortisol by regulating the hypothalamic-pituitary-adrenal (HPA) axis, which controls stress response. Magnesium acts as a cofactor for enzymes involved in neurotransmitter synthesis, promoting GABA activity, and reducing excessive neuronal firing, which helps lower cortisol production. Additionally, magnesium enhances sleep quality, further reducing cortisol levels.

Vitamin C(1500 mg/day): Vitamin C supplementation decreases cortisol levels by reducing the secretion of cortisol in response to stress. It supports the adrenal glands, which produce cortisol, thereby improving their function and reducing excessive cortisol release. Additionally, vitamin C acts as an antioxidant, mitigating oxidative stress that can stimulate cortisol production.

Ashwagandha(600 mg/day): Ashwagandha or its root extract decreases cortisol by inhibiting the activity of the hypothalamic-pituitary-adrenal (HPA) axis, leading to reduced adrenal cortisol production. It enhances the resilience of the body to stress, promoting homeostasis and lowering cortisol levels. Additionally, ashwagandha's bioactive compounds modulate neurotransmitter activity, further aiding in stress reduction.

Tangeretin(200 mg/day): Tangeretin, a polymethoxylated flavone found in citrus peels, decreases cortisol levels by inhibiting the enzyme 11β-hydroxysteroid dehydrogenase type 1 (11β-HSD1), which converts inactive cortisone to active cortisol. This inhibition reduces the overall production of cortisol within tissues. Additionally, tangeretin's antioxidant properties may mitigate stress-induced cortisol secretion, further lowering cortisol levels in the body.

Diurnal Cortisone

Test Name	Current	Previous	Result	Reference
Free Cortisone (1st Morning) (mcg/g)	169.89		0 32.6 95.8	32.7-95.8
Free Cortisone (2nd Morning) (mcg/g)	142.26		0 63.0 179	63.1-179.2
Free Cortisone (Evening) (mcg/g)	313.13		0 34.4 95.6	34.5-95.6
Free Cortisone (Night) (mcg/g)	37.05		0 11.1 40.9	11.2-40.9
Free Cortisone (pooled) (mcg/g)	165.58		0 35.3 102	35.38-102.88

COMMENTS

Free Cortisone (1st Morning): Cortisone, the inactive form of cortisol, is converted from cortisol by the kidneys, colon, and salivary glands. Similar to cortisol, cortisone levels peak in the morning, gradually decline throughout the day, and reach their lowest point at night, aligning with the body's diurnal rhythm. Cortisone, derived from cortisol converted in the kidneys before excretion, serves as a superior marker for cortisol levels and a secondary, confirmatory indicator of cortisol fluctuations. Morning cortisone levels, typically at their highest, help evaluate adrenal activity and cortisol-to-cortisone conversion, providing insights into stress response and adrenal function. In premenopausal women, elevated morning cortisone levels may exacerbate anxiety, menstrual irregularities, and metabolic issues. Furthermore, high cortisone levels, along with elevated cortisol, are observed in patients with Cushing's syndrome, a condition caused by the overproduction of stress hormones by the adrenal glands.

SAMPLE

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Diurnal Cortisone

COMMENTS

Free Cortisone (Evening): Cortisone, the inactive form of cortisol, is converted from cortisol by the kidneys, colon, and salivary glands. Similar to cortisol, cortisone levels peak in the morning, gradually decline throughout the day, and reach their lowest point at night, aligning with the body's diurnal rhythm. Cortisone, derived from cortisol converted in the kidneys before excretion, serves as a superior marker for cortisol levels and a secondary, confirmatory indicator of cortisol fluctuations. Cortisone levels should naturally decline in the evening, supporting the body's preparation for rest. Evening measurements can help assess whether the diurnal rhythm of cortisone follows the expected pattern. Persistent elevation may indicate stress, HPA axis dysregulation, or other adrenal imbalances. In premenopausal women, elevated evening cortisone levels may cause irritability, disrupted ovulation, and difficulty preparing for sleep. Additionally, high cortisone levels, along with elevated cortisol, are observed in patients with Cushing's syndrome, a condition caused by the overproduction of stress hormones by the adrenal glands.

Free Cortisone (pooled): Cortisone is the inactive metabolite of cortisol, produced by the adrenal glands. The kidneys, colon, and salivary glands can convert cortisol to cortisone (active to inactive). Free cortisone essentially reflects the free cortisol that enters the kidneys, where it is then converted to cortisone locally before excretion. Thus, free cortisone serves as a secondary, confirmatory marker for assessing changes in free cortisol levels. Additionally, cortisone can help confirm the diurnal pattern of cortisol. The levels of cortisol and cortisone can indicate the efficiency of the kidneys in deactivating cortisol. As cortisone is used as a confirmatory marker for cortisol changes in the body, high cortisone levels must be considered along with cortisol levels to determine the underlying condition. High levels of cortisone along with high levels of cortisol are observed in patients suffering from Cushing's syndrome, a disease that causes the overproduction of stress hormones by the adrenal glands. Symptoms associated with this condition include high blood pressure, high blood sugar, obesity, purple streaks on the abdomen, muscle wasting, acne, and osteoporosis.

SUPPORTIVE SUPPLEMENT SUGGESTIONS (ENHANCES SPECIFIC ASSOCIATED FUNCTIONS WITHOUT INFLUENCING MARKERS DIRECTLY)

Grape fruit juice(): Grapefruit juice supplements inhibit the enzyme 11β-hydroxysteroid dehydrogenase type 2 (11β-HSD2) by interfering with its metabolic activity. This might inhibit the metabolism of cortisol. Consequently, higher cortisol levels persist, impacting metabolic and inflammatory processes.

Diurnal Melatonin

Test Name	Current	Previous	Result	Reference
Melatonin (1st Morning) (mcg/g)	33.94		0 17.4 40.2	17.5-40.2
Melatonin (2nd Morning) (mcg/g)	23.62		0 7.09 32.6	7.1-32.6
Melatonin (Evening) (mcg/g)	4.84		0 0.86 2	0.87-2.0
Melatonin (Night) (mcg/g)	6.93		0 1.89 12.3	1.9-12.3

COMMENTS

Melatonin (Evening): Melatonin is a hormone secreted by the pineal gland in response to darkness, earning it the nickname hormone of darkness. It induces sleep and regulates the circadian rhythm (the 24-hour internal clock). In addition to its role in sleep regulation, melatonin influences hormone function by modulating the hypothalamic-pituitary-gonadal axis, affecting reproductive hormones and supporting circadian rhythm alignment. Melatonin levels are typically lowest in the morning, with nearly 80% of its synthesis occurring at night. Production begins to rise in the evening, signaling the body to prepare for sleep. Assessing evening levels helps determine whether this increase aligns with the natural circadian rhythm. Delayed or insufficient evening melatonin production may indicate sleep disorders, excessive light exposure, or stress-related disruptions. Conversely, elevated evening melatonin levels may lead to excessive drowsiness and reduced evening productivity.

SUPPLEMENT SUGGESTIONS

Caffeine(200 mg/day): Caffeine is metabolized in the liver by cytochrome P450 (CYP)1A2, which also metabolizes melatonin. By competing for the same enzyme, caffeine reduces melatonin breakdown, leading to higher nighttime melatonin levels. This interaction was confirmed in a study where participants showed a 32% increase in melatonin after caffeine ingestion compared to placebo.

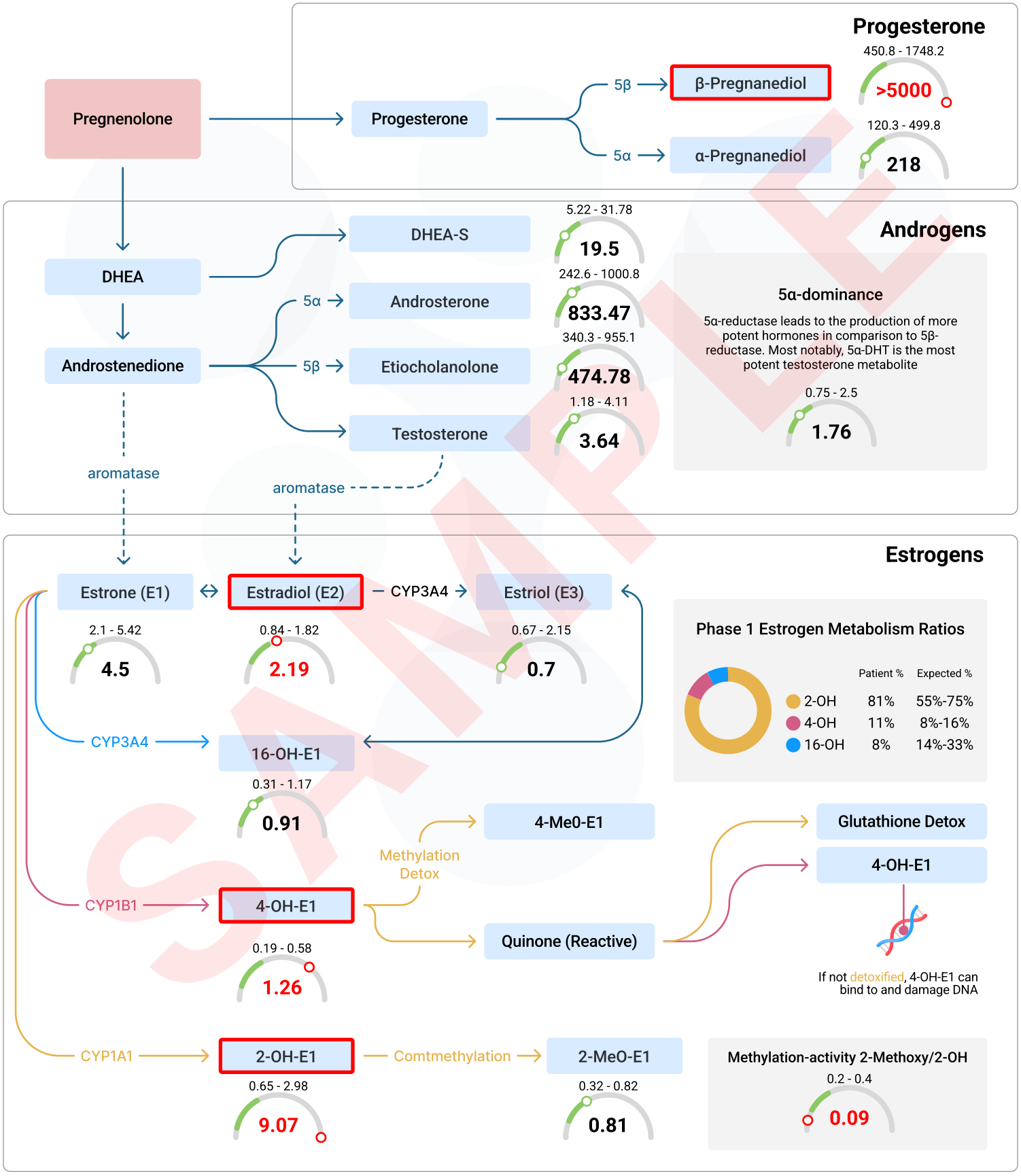
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Patient Name: DEMO DEMO
Date of Birth: 11-11-1986 Accession ID: 2693861177
Service Date: 2026-04-23 07:00 (PDT)

Hormone Zoomer - Summary

Sex Hormone - Urine

Moderate High / Low



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Hormone Zoomer - Summary

Estrogen

Test Name	Current	Previous	Result	Reference
Estradiol (E2) (mcg/g)	2.19		0 0.83 1.82	0.84-1.82
Estrone (E1) (mcg/g)	4.50		0 2.09 5.42	2.1-5.42
Estriol (E3) (mcg/g)	0.70		0 0.66 2.15	0.67-2.15
Total Estrogen (mcg/g)	20.83		0 1.72 7.54	1.73-7.54
2-OH Estradiol (mcg/g)	0.38		0 0.19 0.8	0.2-0.8
2-OH Estrone (mcg/g)	9.07		0 0.64 2.98	0.65-2.98
4-OH Estradiol (mcg/g)	0.63		0 0.1 0.22	0.11-0.22
4-OH Estrone (mcg/g)	1.26		0 0.18 0.58	0.19-0.58
16a-OH Estrone (mcg/g)	0.91		0 0.3 1.17	0.31-1.17
2-MeO Estradiol (mcg/g)	0.34		0 0.01 0.09	0.02-0.09
2-MeO Estrone (mcg/g)	0.81		0 0.31 0.82	0.32-0.82
4-MeO Estradiol (mcg/g)	0.03		0 0.05	≤0.05
4-MeO Estrone (mcg/g)	0.02		0 0.05	≤0.05

COMMENTS

Estradiol (E2): Estradiol (E2) is the primary form of estrogen, the major female sex hormone. It is involved in the regulation of the menstrual cycle in females. E2 is responsible for the development of female secondary sexual characteristics. It is also involved in maintaining bone mineral density and cardiovascular health. E2 levels range from 30-400 pg/mL in premenopausal women depending on the menstrual cycle. The levels are usually high during the preovulatory phase and low during menstruation. In premenopausal women, estradiol is needed to promote ovulation, prepare the uterine lining for pregnancy, regulate the menstrual cycle, reduce the risk of osteoporosis, and cardiovascular diseases. Elevated levels of E2 (estrogen dominance) in premenopausal women can occur due to polycystic ovary syndrome, obesity, diabetes, dysbiosis, steroid medications, excessive alcohol consumption, and over-aromatization of testosterone. Additionally, high levels of E2 could also be indicative of a tumor of the ovary, testes, or adrenal glands. High levels of estradiol can also lead to endometrial hyperplasia and breast cancer.

Total Estrogen: Estrogen is the primary female sex hormone. It is responsible for the development and regulation of the female reproductive system and female secondary sexual characteristics. There are three major endogenous estrogens that have estrogenic hormonal activity: estrone, estradiol, and estriol. Apart from its involvement in female reproductive processes, estrogen is also crucial for various functions such as maintenance of bone health, regulation of body temperature, protection against atherosclerosis, and cognitive functions. In women, elevated levels of estrogen can be linked to acne, constipation, loss of sex drive, and depression. Under severe conditions, it can be associated with uterine and breast cancer. Elevated levels of estrogen (estrogen dominance) in premenopausal women can occur due to polycystic ovary syndrome, obesity, diabetes, dysbiosis, steroid medications, excessive alcohol consumption, and over-aromatization of testosterone. Additionally, high levels of E2 could also be indicative of a tumor of the ovary, testes, or adrenal glands. High levels of estradiol can also lead to endometrial hyperplasia and breast cancer.

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Hormone Zoomer - Summary

Estrogen

COMMENTS

2-OH Estrone: 2-Hydroxyestrone (2-OHE1) is an endogenous, naturally occurring catechol estrogen and a major metabolite of estrone. 2-OHE1 is called "good estrogen" as it does not stimulate cancer growth. Estrogen is metabolized (primarily by the liver) down three-phase I pathways. The 2-OH pathway is considered the safest due to the anti-cancer properties of 2-OH metabolites while the other two pathways can be genotoxic (promoting DNA or chromosomal damage). 2-OHE1 is a metabolite marker of estrone and estradiol. Additionally, the ratio of 2-OHE1 to 16α-hydroxyestrone (16-OH-E1) is an efficient biomarker of breast cancer. High levels of 2-OHE1 are generally considered beneficial, however, when considered with a low 2-Methoxy-E1, it may indicate poor methylation activity. Additionally, increased levels of 2-OHE1 and 16-OH-E1 correlate with high total estrogen load in the body.

4-OH Estradiol: 4-hydroxyestradiol or 4-OH E2 is a metabolite of estradiol formed by the hydroxylation of estradiol by cytochrome P450 enzymes. Studies state that the conversion of estradiol to 4-OH E2 is toxic as 4-OH E2 is seen to have tumorigenic effects. 4-OH E2 can bind to DNA and cause damage, leading to mutations that are associated with increased breast cancer risk. Human breast cancer tissue produces much higher levels of 4-OH E2 compared to normal breast tissue.

4-OH Estrone: The production of 4-OH Estrone (4-OH-E1) occurs via a minor pathway of estrogen metabolism. This pathway is genotoxic (promoting DNA or chromosomal damage) as its metabolites can create reactive products that damage DNA. Estrone can be converted to 4-OH-E1 which can further be methylated to form 4-MeE1. 4-OH-E1 properly methylated to 4-MeE1 it is relatively benign as 4-MeE1 is easily eliminated. However, improper methylation can lead to the build-up of 4-OH-E1 which results in the formation of 3,4-quinones which are carcinogenic. Thus, 4-OH-E1 is referred to as the "bad" estrogen. Breast cancer tissues produces much higher levels of 4-OH-E1 than 2-Hydroxyestrone (2-OHE1), while normal breast tissue produces approximately equal amounts of the two metabolites. Women having uterine fibroids may have increased levels of 4-OH-E1 accompanied with heavy menstrual cycles. Additionally, patients deficient in methionine and folic acid may also have high levels of 4-OH-E1.

2-MeO Estradiol: 2-Methoxyestradiol (2-MeOE2) is a vital metabolite of 17β estradiol, produced by the enzyme catechol-O-methyltransferase (COMT). It possess antiangiogenic properties, which help reduce the formation of new blood vessels—key in limiting cancer cell growth. It interferes with microtubule formation, promotes apoptosis, and inhibits angiogenesis which helps to reduce cancer risk. During pregnancy, 2-MeOE2 levels steadily rise, peaking in the third trimester, where it supports placental health. It also reduces the risk of endometriosis and preeclampsia. High levels are beneficial as it improves reproductive health and reduces the risk of cancer and endometriosis in premenopausal women.

SUPPLEMENT SUGGESTIONS

Wheat bran(20 g/day): Wheat bran increases dietary fiber intake, which binds estrogens and enhances their excretion through the feces. This process reduces the enterohepatic recirculation of estrogens, leading to lower serum estradiol levels. Consequently, decreased serum estrone can also reduce urinary estradiol excretion.

Vitamin D(600 IU/day): Vitamin D supplements can lower estradiol levels by promoting the expression of enzymes that convert estradiol to its less active metabolites. This process is mediated through the regulation of estrogen metabolism and the modulation of estrogen receptor activity. Consequently, increased vitamin D levels can result in reduced estradiol concentrations in the body.

Soy isoflavones(30 mg/day): Soy isoflavones decrease total estrogen through competitive inhibition, binding to estrogen receptors, and blocking endogenous estrogens. They also regulate enzyme activity by inhibiting aromatase, which converts androgens to estrogens. Additionally, increases estrogen metabolism and excretion through the liver and gut.

Soy(30 mg/day): Soy supplements help reduce 4-OH estrone levels primarily through their content of isoflavones, which act as phytoestrogens. These compounds compete with endogenous estrogens for receptor binding, thereby decreasing the formation of 4-OH estrone. Additionally, soy isoflavones may enhance the activity of liver enzymes involved in estrogen metabolism, promoting the excretion of estrogen metabolites.

Progesterone

Test Name	Current	Previous	Result	Reference
Allopregnanolone (mcg/g)	1.04		0 2.56 19.8	2.57-19.88
3αDihydroprogesterone (mcg/g)	0.76		0 0.71 2.5	0.72-2.5
20αDihydroprogesterone (mcg/g)	4.58		0 4.1 12.6	4.11-12.68

SAMPLE

Hormone Zoomer - Summary

Progesterone

Test Name	Current	Previous	Result	Reference
b-Pregnanediol (mcg/g)	>5000		0 450 1748	450.8-1748.2
a-Pregnanediol (mcg/g)	218.00		0 120 499	120.3-499.8

COMMENTS

Allopregnanolone: Allopregnanolone, a key metabolite of progesterone, plays a critical role as a neuroactive steroid, directly impacting brain function and emotional well-being. Known for its antidepressant and anxiolytic properties, it enhances the action of the neurotransmitter GABA, promoting relaxation, stress reduction, and improved mood. Low levels of allopregnanolone in premenopausal women are linked to mental health conditions such as major depression, anxiety disorders, premenstrual dysphoric disorder, and even impulsive aggression. By testing for allopregnanolone, you can gain critical insights into hormone-related mood disorders, supporting more personalized and effective interventions for mental health and emotional balance.

b-Pregnanediol: b-Pregnanediol is a metabolite of progesterone and it is excreted in the urine. Progesterone is a hormone involved in the female menstrual cycle, pregnancy (supports gestation), and embryogenesis of humans. Pregnanediol levels increase after ovulation and when the placenta releases the hormone. Very little progesterone is found in urine, thus, b-pregnanediol is typically used as a surrogate marker because it is the most abundant metabolite. High levels of b-pregnanediol in premenopausal women could be due to progesterone supplementation, polycystic ovary syndrome (PCOS), or stress.

SUPPORTIVE SUPPLEMENT SUGGESTIONS (ENHANCES SPECIFIC ASSOCIATED FUNCTIONS WITHOUT INFLUENCING MARKERS DIRECTLY)

Folate (400 mcg/day): Folate supplementation supports methylation pathways critical for neurotransmitter synthesis, and its deficiency is linked to low mood and cognitive dysfunction. Supplementation may alleviate symptoms of mood disorders by enhancing serotonin, dopamine, and norepinephrine production.

Vitamin B12(2.4 mcg/day): Vitamin B12 supplementation aids in the synthesis of monoamine neurotransmitters and the maintenance of myelin integrity. Its supplementation has been associated with mood stabilization and reduced symptoms of depression and anxiety.

Vitamin D3(15 mcg/day): Vitamin D supplementation is associated with decreased depressive symptoms and anxiety, especially in individuals with deficiency. It plays a regulatory role in neuroinflammation, neuroplasticity, and serotonergic signaling.

Vitamin C(75 mg/day): Vitamin C supplementation restores antioxidant defenses, reduces oxidative stress, and improves overall mood. Its neuroprotective effects may help reduce anxiety and depressive symptoms by lowering neuroinflammatory markers.

Omega-3 fatty acids(950 mg/day): Omega-3 polyunsaturated fatty acids (PUFAs), particularly EPA and DHA, support neuronal membrane fluidity and reduce neuroinflammation. Supplementation has shown benefits in improving depressive symptoms and emotional regulation.

Probiotics(10 billion CFU/day): Probiotic supplementation helps modulate the gut-brain axis, reduce systemic inflammation, and improve neurotransmitter balance. This can translate into better stress resilience and improvements in anxiety and depressive symptoms commonly seen in mood disorders.

Vitamin D(600 IU/day): Vitamin D supplements can lower progesterone levels by modulating the expression of enzymes involved in steroidogenesis. Specifically, Vitamin D may influence the activity of cytochrome P450 enzymes, which are crucial in the synthesis and metabolism of progesterone. This alteration in enzyme function can lead to decreased progesterone production.

Testosterone

Test Name	Current	Previous	Result	Reference
Testosterone (T) (mcg/g)	3.64		0 1.17 4.11	1.18-4.11
Epi-Testosterone (Epi-T) (mcg/g)	3.79		0 1.94 4.61	1.95-4.61
Androstenedione (mcg/g)	7.67		0 3.14 15.4	3.15-15.44
Androsterone (mcg/g)	833.47		0 242 1000	242.6-1000.8

SAMPLE

Hormone Zoomer - Summary

Testosterone

Test Name	Current	Previous	Result	Reference
Etiocholanolone (mcg/g)	474.78		0 340 955	340.3-955.1
5a-DHT (mcg/g)	0.54		0 0.31 1.55	0.32-1.55
5a,3a-Androstanediol (mcg/g)	14.31		0 2.93 14.5	2.94-14.59
5b-Androstanediol (mcg/g)	10.64		0 4.14 15.6	4.15-15.66

Hormone Ratios

Test Name	Current	Previous	Result	Reference
E3/(E1+E2) Ratio	0.11		0 0.3	≤0.3
2-OH (E1 + E2)/16a-OH E1	10.39		0 1.49 6	1.5-6.0
2-OH E1 /4-OH E1	7.2		0 2.4 8.7	2.5-8.7
2-MeO E1/2-OH E1	0.09		0 0.19 0.4	0.2-0.4
4-MeO E1/4-OH E1	0.02		0 0.03 0.15	0.04-0.15
4-MeO E2/4-OH E2	0.04		0 0.12 0.33	0.13-0.33
T/Epi-T	0.96		0 0.39 3	0.4-3.0
b-Pregnanediol/E2	2886.96		0 536 960	536.67-960.55
Cortisol/Cortisone (mcg/g)	0.81		0 0.47 0.59	0.48-0.59

COMMENTS

2-OH (E1 + E2)/16a-OH E1: 2-hydroxyestrone (2OHE1)/16α-hydroxyestrone (16a-OHE1) or 2-OH (E1+E2)/16α-OHE1 ratio is used to understand estrogen metabolism and assess breast cancer risk. are the two main estrogen metabolites. The 2-hydroxylation pathway is considered to be a safe pathway as it is less estrogenic (produces metabolites with low activity compared to the different forms of estrogen and reduced ability to bind to receptors). However, the 16-hydroxylation pathway is more estrogenic and is linked to an increased risk of breast cancer. The ratio of 2OHE1:16a-OHE1 represents the relative dominance of one pathway over the other. The ratio is of clinical significance in pre and peri-menopausal women. A higher 2-OH (E1 + E2)/16a-OH E1 ratio may be associated with reduced risk of breast cancer.

2-MeO E1/2-OH E1: 2-Hydroxyestrone (2-OH E1) and 2-methoxyestrone (2-MeOE1) are estrone (E1) metabolites and their ratio is used to assess breast cancer risk. 2-OHE1 is a naturally occurring catechol estrogen and a major metabolite of estrone while 2-methoxyestrone (2-MeO E1) is a metabolite of estrone that is formed from 2-OH E1. Methylation of 2-OH E1 by an enzyme (COMT enzyme) is beneficial as it gives rise to inert and harmless catechol estrogens. This prevents them from further oxidizing to more dangerous estrogen quinones that can form adducts with DNA, causing mutations leading to increased risk of cancers. Thus, a lower 2-MeO E1/2-OH E1 ratio is related to a higher risk of breast cancer.

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Hormone Ratios

COMMENTS

4-MeO E1/4-OH E1: 4-hydroxyestrone (4-OH-E1) and 4-methoxyestrone (4-MeO1) are estrone metabolites and their ratio is used to assess the risk of breast cancer. 4OHE1 is reactive and can be carcinogenic in nature. 4MeOE1 is formed from 4OHE1 by the action of an enzyme (COMT). Methylation of 4-OH-E1 via the COMT enzyme is beneficial as this renders it inert and prevents it from oxidizing further to a more harmful estrogen quinone that can form an adduct with DNA, causing mutations leading to increased cancer risk. A lower 4-MeO E1/4-OH E1 ratio is related to a higher risk of breast cancer.

4-MeO E2/4-OH E2: 4-hydroxyestradiol (4-OH-E2) and 4-methoxyestradiol (4-MeO1) are estradiol metabolites and their ratio is used to assess the risk of breast cancer. 4OHE2 is reactive and can be carcinogenic in nature. 4MeOE2 is formed from 4OHE2 by the action of an enzyme (COMT). Methylation of 4-OH-E2 via the COMT enzyme is beneficial as this renders it inert and prevents it from oxidizing further to a more harmful estrogen quinone that can form an adduct with DNA, causing mutations leading to increased cancer risk. A lower 4-MeO E2/4-OH E2 ratio is related to a higher risk of breast cancer.

b-Pregnanediol/E2: b-Pregnanediol is a metabolite of the steroid, progesterone, which is important for fertility and menstruation. Estradiol (E2) is one of the major sex steroids of the three estrogens present in the female reproductive system. The b-Pregnanediol/E2 ratio reflects the balance between progesterone metabolites and estrogen levels. A high b-Pregnanediol/E2 ratio suggests that E2 levels are low which can lead luteal phase defect. This can result in fertility issues like maintaining pregnancy. A high ratio is also indicative of hormonal imbalances. This ratio is used to assess ovulatory function. A high b-Pregnanediol with low E2 may indicate successful ovulation, however, adequate supplementation of estrogen is needed to maintain pregnancy.

Cortisol/Cortisone: The body's stress hormone, cortisol, is produced by the adrenal glands. Only a small percentage of circulating cortisol is biologically active (free), while the majority of cortisol is inactive (due to the binding of cortisol to protein). Cortisone, a metabolite of cortisol, possess as an additional variable that assists in the diagnosis of various adrenal disorders, including abnormalities of 11-beta-hydroxy steroid dehydrogenase (11-beta HSD), the enzyme that converts cortisol to cortisone. A deficiency in this enzyme can result in increased levels of cortisol. The cortisol/cortisone ratio is a marker of cortisol metabolism and it also used to undertsand efficiency of the conversion of cortisol to cortisone by the 11-beta HSD enzyme.Patients with Cushing's syndrome, chronic stress, or 11-beta HSD deficiency generally have an elevated urinary cortisol/cortisone ratio.

SUPPLEMENT SUGGESTIONS

Vitamin D(600 IU/day): Vitamin D supplements decrease cortisol/cortisone levels by modulating the hypothalamic-pituitary-adrenal (HPA) axis, leading to reduced adrenal gland secretion of these hormones. This regulation involves vitamin D receptor (VDR) activation, which influences gene expression associated with cortisol production. Additionally, vitamin D's anti-inflammatory properties can indirectly lower cortisol levels by reducing systemic inflammation.

SUPPORTIVE SUPPLEMENT SUGGESTIONS (ENHANCES SPECIFIC ASSOCIATED FUNCTIONS WITHOUT INFLUENCING MARKERS DIRECTLY)

Soy(40 mg/day): Soy supplements contain phytoestrogens like genistein, which compete with estrone for estrogen receptors, reducing estrone's effects. These compounds also influence estrogen metabolism, leading to lower circulating estrone levels. The combined impact helps to modulate estrogenic activity in the body.

Wheat bran(10 g/day): Wheat bran increases dietary fiber intake, which binds estrogens and enhances their excretion through the feces. This process reduces the enterohepatic recirculation of estrogens, leading to lower serum estrone levels. Consequently, decreased serum estrone can also reduce urinary estrone excretion.

Pyridoxal 5'-phosphate(30 mg/kg/day): Pyridoxal 5'-phosphate, the active form of vitamin B6, decreases breast cancer by modulating gene expression and inhibiting angiogenesis, thus reducing tumor growth. It also enhances the immune response against cancer cells and induces apoptosis.

Vitamin D(600 IU/day): Vitamin D supplements can lower progesterone levels by modulating the expression of enzymes involved in steroidogenesis. Specifically, Vitamin D may influence the activity of cytochrome P450 enzymes, which are crucial in the synthesis and metabolism of progesterone. This alteration in enzyme function can lead to decreased progesterone production.

Oxidative Stress

Test Name	Current	Previous	Result	Reference
8-hydroxy-2'-deoxyguanosine (8-OHdG) (mcg/g)	10.75		0 — 4.77	≤4.77

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Oxidative Stress

COMMENTS

8-hydroxy-2'-deoxyguanosine (8-OHdG): Oxidative stress, resulting from an imbalance between reactive oxygen species (ROS) and antioxidants, is known to contribute to the pathogenesis of various conditions. During oxidative stress, ROS attack cellular biomolecules such as lipids, nucleic acids, and proteins. Specifically, 8-hydroxy-2-deoxyguanosine (8-OHdG) is generated when ROS induce oxidative damage to the guanine base in DNA, making it a recognized biomarker of oxidative DNA damage. Studies have shown that 8-OHdG is associated with estrogen metabolites, such as 4-hydroxyestrone and 16α-hydroxyestrone, which generate ROS during their metabolism. Elevated levels of these carcinogenic metabolites can exacerbate oxidative stress, leading to increased 8-OHdG levels. Furthermore, elevated estrogen carcinogenic metabolites, along with 8-OHdG, may indicate impaired detoxification of pro-oxidant estrogen metabolites. As oxidative stress increases with age and in conditions such as cancer, evaluating 8-OHdG alongside estrogen metabolites can provide valuable insights into hormonal imbalances and the risk of related cancers.

SUPPLEMENT SUGGESTIONS

Selenium (55 mcg/day): Selenium supplements decrease 8-Hydroxyguanine by supporting the activity of selenoproteins, such as glutathione peroxidase, which reduce oxidative stress and limit DNA damage, including 8-Hydroxyguanine formation.

Creatinine

Test Name	Current	Previous	Result	Reference
Creatinine (1st Morning) (mg/ml)	0.88		0 0.24 2.16	0.25-2.16
Creatinine (2nd Morning) (mg/ml)	0.87		0 0.24 2.16	0.25-2.16
Creatinine (Evening) (mg/ml)	0.86		0 0.24 2.16	0.25-2.16
Creatinine (Night) (mg/ml)	1.39		0 0.24 2.16	0.25-2.16

SAMPLE

Hormone Zoomer - Summary

Endocrine Disruptors

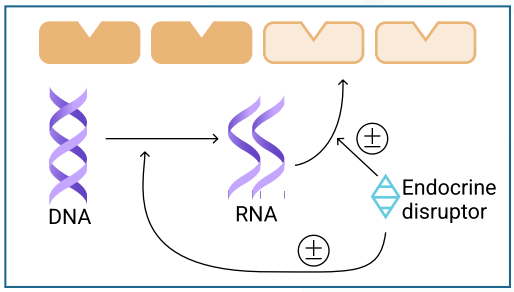
Test Name	Current	Previous	Result (75th: 2.12, 95th: 5.09)	Reference
Bisphenol A (BPA)^ (ug/g)	16.68			≤5.09

BPA is an organic synthetic compound used as a starting material for the synthesis of plastics and epoxy resins. BPA-based plastic is clear and tough, and is made into plastic bottles including water bottles, sports equipment, CDs, and DVDs. Epoxy resins containing BPA are used to line water pipes, as coatings on the inside of many food and beverage cans and in making thermal paper such as that used in sales receipts. BPA is an endocrine disruptor and causes fertility problems as well as impotence in males. BPA binds to estrogen and androgen receptors and can disrupt their signalling. They also regulate DNA methylation and gene expression, and interacts with transcription factors. Accumulation of BPA in the body can affect hormonal function, potentially leading to endocrine disorders and other diseases, which necessitates its elimination to minimize this risk.

HORMONE AFFECTED

Estrogen, T4, T3, TSH

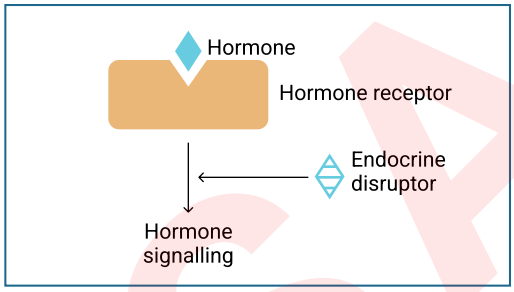
Modifies Receptor Expression



Mechanism

Hormone receptors play a crucial role in how hormones affect the body, and the number of these receptors can influence hormone signaling. Endocrine-disrupting chemicals (EDCs) can interfere with this system by changing the levels of hormone receptors, how they are taken up by cells, and their breakdown, which can ultimately disrupt hormonal signaling; BPA can change the expression of thyroid hormone receptors, leading to abnormal signaling of hormones like T4 and T3. Additionally, thyroid hormones (THs) can influence androgen receptors (ARs), affecting the levels of hormones such as testosterone and dihydrotestosterone. Animal studies show that BPA also alters receptors for other hormones like estrogen, vasopressin, and oxytocin, impacting brain function. Furthermore, BPA has been found to reduce the breakdown of estrogen receptor β (Erβ) in lab studies, potentially causing imbalanced hormonal responses.

Blocks hormone signaling



Mechanism

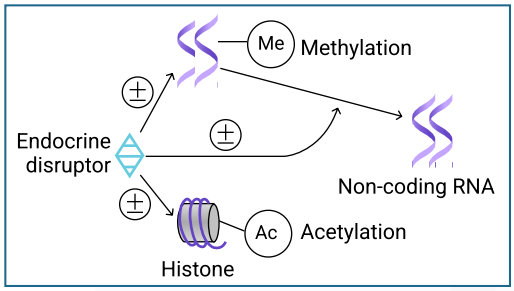
Hormones communicate with cells by binding to specific receptors, triggering a series of responses inside the cell. Endocrine-disrupting chemicals (EDCs) can interfere with these hormone signals and the reactions that follow. They affect different receptors, including those that respond to neurotransmitters and hormones; for instance, BPA disrupts calcium signaling triggered by low glucose levels in animal studies (ionotropic receptors). A key player in this process is the steroid receptor coactivator 1 (SRC1), which helps hormones attach to their receptors. BPA promotes the interaction of SRC1 with estrogen receptors (ERα and ERβ) and the thyroid-hormone receptor β (SRC1 is essential for boosting the binding of hormones to these receptors). Research has shown that BPA increases the amount of SRC1 in animal studies and cell lines, including breast cancer cells. Additionally, BPA has been identified as an antagonist of thyroid hormone action, inhibiting T3 binding to its receptor and thus disrupting its signaling pathway. Additionally, BPA affects the androgen receptor's ability to bind testosterone and dihydrotestosterone, potentially altering their biological effects. This interference can lead to reduced efficacy of hormonal actions mediated by these receptors.

SAMPLE

Hormone Zoomer - Summary

Endocrine Disruptors

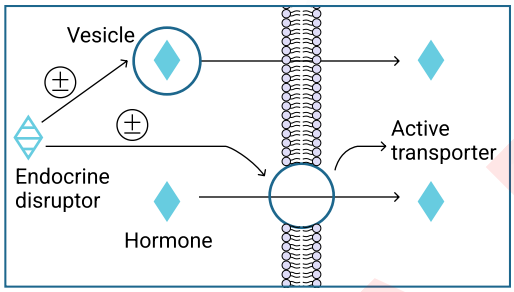
Epigenetic modification of hormone producing cells



Mechanism

Hormones influence development by changing how genes are expressed through processes like DNA modifications, which include adding chemical tags to DNA (DNA methylation), changing the structure of proteins that help package DNA (histone modifications), and regulating non-coding RNA activity. Endocrine disrupting chemicals (EDCs) can interfere with these hormone functions by either blocking hormones from making these changes or by causing alterations in the epigenetic processes that affect hormone action, such as changing how hormone receptors work or disrupting gene transcription. EDCs can also influence non-coding RNA expression; Bisphenol A (BPA) can change microRNA levels in Sertoli cells, placental cells, and breast cancer cell lines. BPA exposure has been shown to induce the production of HOX antisense intergenic RNA (HOTAIR) in human breast cancer cells. The endocrine receptor-binding area of HOTAIR is modified when exposed to BPA, resulting in specific changes to histone proteins (like trimethylation of lysine 4 on histone 3, known as H3K4), which happens due to the action of particular enzymes. Furthermore, exposure to BPA during development can increase the trimethylation of genes, leading to long-lasting effects on gene expression. BPA exposure has been shown to alter microRNA levels that regulate genes responsive to thyroid hormones. This disruption can lead to long-lasting changes in how thyroid hormones exert their effects on target tissues.

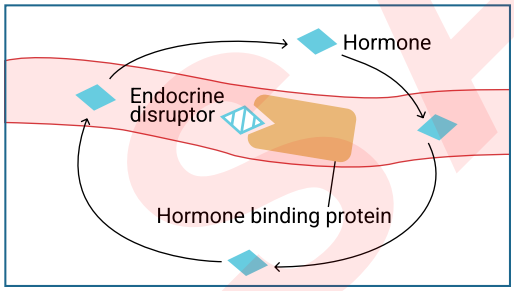
Hormone transport



Mechanism

Steroid hormones, like estrogen and androgens, can easily move across cell membranes due to their lipophilic nature. Other hormones like thyroid hormones are selectively transported in and out of the cell. Both the free and selective movement of hormones in and out of the cells are disrupted by endocrine-disrupting chemicals or EDCs; EDCs like BPA can disrupt the transport of T4 and T3 into cells by interfering with specific membrane transporters. This disruption affects the availability of these hormones at the cellular level and can lead to altered metabolic functions. BPA also disrupts the transport of calcium into pancreatic β-cells in animal models which reduces insulin secretion.

Affects hormone distribution & levels in circulation



Mechanism

Hormones are constantly circulating in the blood at low concentrations. They are either free (not bound to any protein) or bound to serum binding proteins. Endocrine disrupting chemicals or EDCs interfere with distribution and circulating of hormones by displacing the hormones from serum binding proteins thereby affecting their bioavailability and delivery to tissues; Studies have shown that BPA exposure can reduce circulating levels of testosterone and dihydrotestosterone in both humans and animal models. Additionally, BPA has been linked to changes in circulating levels of thyroid hormones due to its interference with binding proteins that transport these hormones in the bloodstream

SUPPLEMENT SUGGESTIONS

Green Tea(2 cups/day): The polyphenols in green tea, particularly epigallocatechin gallate (EGCG), exhibit antioxidant properties that scavenge reactive oxygen species (ROS) and reduce oxidative stress caused by BPA, thus protecting cellular integrity.

SAMPLE

Endocrine Disruptors

SUPPLEMENT SUGGESTIONS

Soy-rich Diet(25 g/day): Isoflavones found in soy, such as genistein, can modulate estrogenic activity and reduce BPA's endocrine-disrupting effects by competing with BPA for binding sites on estrogen receptors, mitigating its toxic impact on hormonal balance.

Grape Juice (Gb)(150 ml/day): Red grape juice contains resveratrol and other polyphenols that counteract BPA-induced apoptosis and oxidative stress by modulating apoptotic pathways and enhancing mitochondrial function, thereby promoting cell survival.

KRG (Korean Red Ginseng)(1 g/day): KRG is known to enhance antioxidant defenses and reduce inflammation through its ginsenosides, which can mitigate oxidative stress and protect against BPA-induced cellular damage in various tissues.

Ginseng(1 g/day): Ginseng extracts possess adaptogenic properties that help stabilize cellular responses to stressors like BPA by enhancing antioxidant enzyme activity and reducing inflammation, thereby protecting cells from oxidative damage.

Resveratrol (RSV)(100 mg/day): Resveratrol has been shown to exert protective effects against BPA toxicity by activating sirtuins, which play a role in cellular stress resistance and mitochondrial function, effectively reducing oxidative damage.

Luteolin(100 mg/day): This flavonoid exhibits strong antioxidant properties that can scavenge ROS generated by BPA exposure, thereby reducing oxidative stress and inflammation in affected tissues.

Lycopene(6 mg/day): Lycopene acts as an antioxidant that can inhibit lipid peroxidation and protect against BPA-induced cellular damage by neutralizing free radicals and modulating inflammatory responses.

AS IV (Astragalus Saponin IV)(100 mg/day): AS IV has been shown to mitigate BPA toxicity through its ability to enhance antioxidant enzyme activities and reduce inflammation, thus supporting cellular health under oxidative stress conditions.

Genistein(40 mg/day): As a phytoestrogen, genistein can compete with BPA for estrogen receptors, reducing the endocrine-disrupting effects of BPA while also providing antioxidant benefits that protect against oxidative stress.

Curcumin(500 mg/day): Curcumin exhibits potent anti-inflammatory and antioxidant properties that can counteract the harmful effects of BPA by reducing oxidative stress and modulating signaling pathways involved in inflammation.

Centella asiatica (600 mg/day): Centella asiatica enhances wound healing and skin health by promoting collagen synthesis and angiogenesis, primarily through its active compounds like asiaticoside, which stimulate fibroblast proliferation and improve blood circulation.

Vitamin D3(600 IU/day): Vitamin D3 supports calcium absorption and bone health while modulating immune function. It also plays a role in reducing inflammation and may improve mood and cognitive function through its effects on neurotransmitter synthesis.

SAMPLE

Hormone Zoomer - Summary

Endocrine Disruptors

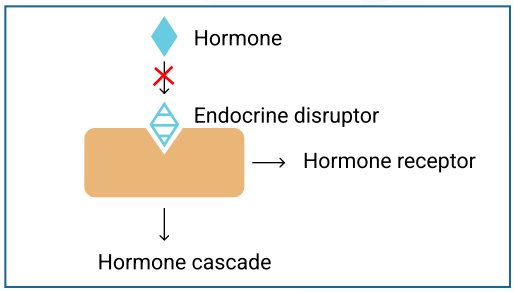
Test Name	Current	Previous	Result (75th: 1.65, 95th: 7.6)	Reference
Glyphosate (ug/g)	2.09			≤7.6

Glyphosate is a broad-spectrum systemic herbicide and crop desiccant. It is used to kill weeds, especially annual broadleaf weeds and grasses that compete with crops. Glyphosate interferes with the shikimate pathway, which exists in plants and microorganisms but not in the genomes of mammals, including humans. Exposure by breathing in spray mist from products containing glyphosate may cause irritation in the nose and throat, nausea, and vomiting. Studies report that glyphosate does not induce sensitization and shows no mutagenic, carcinogenic, or teratogenic activity. Hence, glyphosphate exhibits very low toxicity. However, recent studies have shown that glyphosate alters the levels of reporductive and thyroid hormones. Hence, it is essential to adopt relevant measures to remove this toxin from the body upon exposure.

HORMONE AFFECTED

Estrogen, Progesterone, T4

Agonist (mimics hormone function)



Mechanism

Hormone agonists mimic natural hormones by acting like them; they bind to hormone receptors and trigger similar biological responses. Endocrine-disrupting chemicals (EDCs) act as these mimics, potentially causing harmful effects; Studies indicate that glyphosate can disrupt the hypothalamic-pituitary-thyroid (HPT) axis, leading to increased serum levels of T4 while altering the expression of key regulatory genes involved in thyroid hormone synthesis. This disruption may mimic the effects of natural thyroid hormones, potentially leading to altered metabolic processes. Additionally, glyphosate may affect androgen signaling by interacting with androgen receptors, thereby mimicking the actions of testosterone. In vitro studies show that glyphosate can also activate estrogen receptors such as ERα. However, it does so without directly binding to these receptors, and the precise mechanism remains unclear.

SUPPLEMENT SUGGESTIONS

Vitamin E(22 IU/day): Vitamin E through its antioxidant properties protect cells from oxidative damage by neutralizing ROS generated during toxin exposure. It also enhances the activity of other antioxidants and improves hormonal balance, thereby mitigating reproductive and cellular dysfunction caused by endocrine disruptors.

Vitamin C(75 mg/day): Vitamin C mitigates glyphosate-induced toxicity by acting as a potent antioxidant, scavenging reactive oxygen species (ROS) and reducing oxidative stress in affected tissues. It also enhances the activity of detoxifying enzymes, promoting the elimination of glyphosate from the body. Additionally, vitamin C helps restore cellular health by maintaining redox balance and supporting immune function.

SAMPLE

Hormone Zoomer - Summary

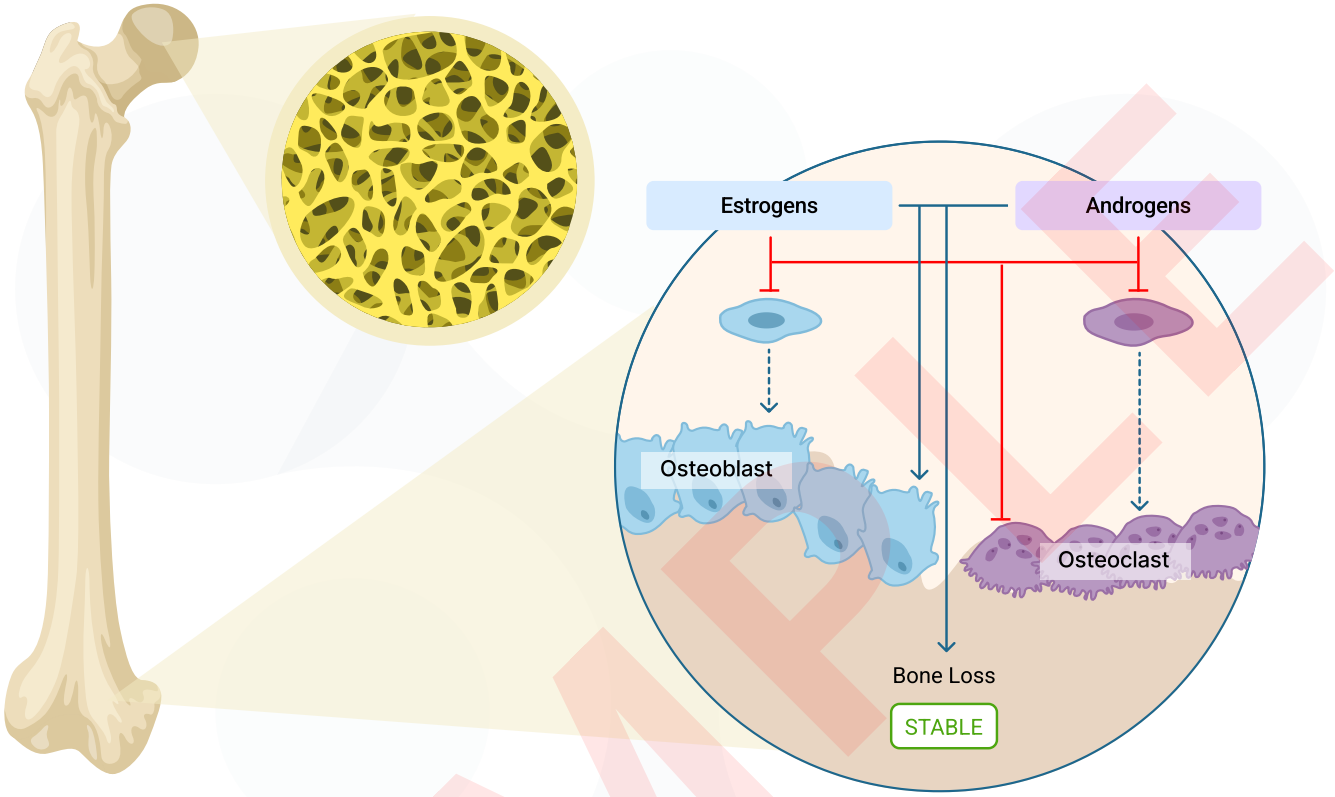
Endocrine Disruptors

Test Name	Current	Previous	Result (75th / 95th)	Reference
Perchlorate (PERC)^ (ug/g)	1.81		4.89 / 10.7	≤10.7
Atrazine ^ (ug/g)	0.02		0.02 / 0.05	≤0.05
Mono-ethyl phthalate (MEtP)^ (ug/g)	2.82		94.2 / 541	≤541
Mono-2-ethylhexyl phthalate (MEHP)^ (ug/g)	0.89		2.73 / 8.47	≤8.47
Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)^ (ug/g)	1.32		14.1 / 37.7	≤37.7
Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)^ (ug/g)	4.73		8.99 / 23.4	≤23.4
Methylparaben^ (ug/g)	1.25		180 / 653	≤653
Propylparaben^ (ug/g)	0.36		36.7 / 222	≤222
Butylparaben^ (ug/g)	0.14		0.25 / 4.39	≤4.39
Ethylparaben ^ (ug/g)	0.17		5.41 / 99.3	≤99.3
Triclosan (TCS)^ (ug/g)	19.18		29.9 / 358	≤358

SAMPLE

Hormone Zoomer - Summary

Bone Health



Test Name	Current	Previous	Reference	Test Name	Current	Previous	Reference
Deoxypyridinoline (DPD) (nmol/mmol)	4.04			Pyridinoline (PYD) (nmol/mmol)	22.75		

SAMPLE

Suggestions

Cortisol

SUPPLEMENTS

Polyphenol-rich dark chocolate 25 g/day

Polyphenol-rich chocolate reduces total daily cortisol by enhancing antioxidant defenses and lowering oxidative stress. It modulates the HPA axis, thereby attenuating stress-induced cortisol secretion. This regulation restores circadian cortisol balance, decreasing overall daily exposure.

Galactooligosaccharides 5.5 g/day

Galactooligosaccharides (GOS) modulate the gut microbiota, promoting the growth of beneficial bacteria such as Bifidobacterium and Lactobacillus. These microbes enhance gut barrier integrity and stimulate the production of short-chain fatty acids, which influence the gut–brain axis and reduce hypothalamic–pituitary–adrenal (HPA) axis reactivity. As a result, the waking cortisol response is decreased through lowered stress signaling and improved neuroendocrine regulation.

Polyphenol-rich dark chocolate 25 g/day

Polyphenol-rich chocolate inhibits 11β-HSD1, the enzyme that converts cortisone to active cortisol. This reduces regeneration of cortisol, lowering salivary cortisol levels. As a result, the cortisol:cortisone ratio decreases, supporting balanced circadian cortisol patterns.

Diurnal Cortisol

SUPPLEMENTS

Magnesium 350 mg/day

Magnesium supplements decrease cortisol by regulating the hypothalamic-pituitary-adrenal (HPA) axis, which controls stress response. Magnesium acts as a cofactor for enzymes involved in neurotransmitter synthesis, promoting GABA activity, and reducing excessive neuronal firing, which helps lower cortisol production. Additionally, magnesium enhances sleep quality, further reducing cortisol levels.

Vitamin C 1500 mg/day

Vitamin C supplementation decreases cortisol levels by reducing the secretion of cortisol in response to stress. It supports the adrenal glands, which produce cortisol, thereby improving their function and reducing excessive cortisol release. Additionally, vitamin C acts as an antioxidant, mitigating oxidative stress that can stimulate cortisol production.

Ashwagandha 600 mg/day

Ashwagandha or its root extract decreases cortisol by inhibiting the activity of the hypothalamic-pituitary-adrenal (HPA) axis, leading to reduced adrenal cortisol production. It enhances the resilience of the body to stress, promoting homeostasis and lowering cortisol levels. Additionally, ashwagandha's bioactive compounds modulate neurotransmitter activity, further aiding in stress reduction.

Tangeretin 200 mg/day

Tangeretin, a polymethoxylated flavone found in citrus peels, decreases cortisol levels by inhibiting the enzyme 11β-hydroxysteroid dehydrogenase type 1 (11β-HSD1), which converts inactive cortisone to active cortisol. This inhibition reduces the overall production of cortisol within tissues. Additionally, tangeretin's antioxidant properties may mitigate stress-induced cortisol secretion, further lowering cortisol levels in the body.

Diurnal Cortisone

SUPPLEMENTS

Grape fruit juice

Grapefruit juice supplements inhibit the enzyme 11β-hydroxysteroid dehydrogenase type 2 (11β-HSD2) by interfering with its metabolic activity. This might inhibit the metabolism of cortisol. Consequently, higher cortisol levels persist, impacting metabolic and inflammatory processes.

SAMPLE

Hormone Zoomer - Summary

Suggestions

Diurnal Melatonin

SUPPLEMENTS

Caffeine 200 mg/day

Caffeine is metabolized in the liver by cytochrome P450 (CYP)1A2, which also metabolizes melatonin. By competing for the same enzyme, caffeine reduces melatonin breakdown, leading to higher nighttime melatonin levels. This interaction was confirmed in a study where participants showed a 32% increase in melatonin after caffeine ingestion compared to placebo.

Estrogen

SUPPLEMENTS

Wheat bran 20 g/day

Wheat bran increases dietary fiber intake, which binds estrogens and enhances their excretion through the feces. This process reduces the enterohepatic recirculation of estrogens, leading to lower serum estradiol levels. Consequently, decreased serum estrone can also reduce urinary estradiol excretion.

Vitamin D 600 IU/day

Vitamin D supplements can lower estradiol levels by promoting the expression of enzymes that convert estradiol to its less active metabolites. This process is mediated through the regulation of estrogen metabolism and the modulation of estrogen receptor activity. Consequently, increased vitamin D levels can result in reduced estradiol concentrations in the body.

Soy isoflavones 30 mg/day

Soy isoflavones decrease total estrogen through competitive inhibition, binding to estrogen receptors, and blocking endogenous estrogens. They also regulate enzyme activity by inhibiting aromatase, which converts androgens to estrogens. Additionally, increases estrogen metabolism and excretion through the liver and gut.

Soy 30 mg/day

Soy supplements help reduce 4-OH estrone levels primarily through their content of isoflavones, which act as phytoestrogens. These compounds compete with endogenous estrogens for receptor binding, thereby decreasing the formation of 4-OH estrone. Additionally, soy isoflavones may enhance the activity of liver enzymes involved in estrogen metabolism, promoting the excretion of estrogen metabolites.

Progesterone

SUPPLEMENTS

Folate 400 mcg/day

Folate supplementation supports methylation pathways critical for neurotransmitter synthesis, and its deficiency is linked to low mood and cognitive dysfunction. Supplementation may alleviate symptoms of mood disorders by enhancing serotonin, dopamine, and norepinephrine production.

Vitamin B12 2.4 mcg/day

Vitamin B12 supplementation aids in the synthesis of monoamine neurotransmitters and the maintenance of myelin integrity. Its supplementation has been associated with mood stabilization and reduced symptoms of depression and anxiety.

Vitamin D3 15 mcg/day

Vitamin D supplementation is associated with decreased depressive symptoms and anxiety, especially in individuals with deficiency. It plays a regulatory role in neuroinflammation, neuroplasticity, and serotonergic signaling.

Vitamin C 75 mg/day

Vitamin C supplementation restores antioxidant defenses, reduces oxidative stress, and improves overall mood. Its neuroprotective effects may help reduce anxiety and depressive symptoms by lowering neuroinflammatory markers.

Omega-3 fatty acids 950 mg/day

Omega-3 polyunsaturated fatty acids (PUFAs), particularly EPA and DHA, support neuronal membrane fluidity and reduce neuroinflammation. Supplementation has shown benefits in improving depressive symptoms and emotional regulation.

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Hormone Zoomer - Summary

Suggestions

Progesterone

SUPPLEMENTS

Probiotics 10 billion CFU/day

Probiotic supplementation helps modulate the gut-brain axis, reduce systemic inflammation, and improve neurotransmitter balance. This can translate into better stress resilience and improvements in anxiety and depressive symptoms commonly seen in mood disorders.

Vitamin D 600 IU/day

Vitamin D supplements can lower progesterone levels by modulating the expression of enzymes involved in steroidogenesis. Specifically, Vitamin D may influence the activity of cytochrome P450 enzymes, which are crucial in the synthesis and metabolism of progesterone. This alteration in enzyme function can lead to decreased progesterone production.

Hormone Ratios

SUPPLEMENTS

Vitamin D 600 IU/day

Vitamin D supplements decrease cortisol/cortisone levels by modulating the hypothalamic-pituitary-adrenal (HPA) axis, leading to reduced adrenal gland secretion of these hormones. This regulation involves vitamin D receptor (VDR) activation, which influences gene expression associated with cortisol production. Additionally, vitamin D's anti-inflammatory properties can indirectly lower cortisol levels by reducing systemic inflammation.

Soy 40 mg/day

Soy supplements contain phytoestrogens like genistein, which compete with estrone for estrogen receptors, reducing estrone's effects. These compounds also influence estrogen metabolism, leading to lower circulating estrone levels. The combined impact helps to modulate estrogenic activity in the body.

Wheat bran 10 g/day

Wheat bran increases dietary fiber intake, which binds estrogens and enhances their excretion through the feces. This process reduces the enterohepatic recirculation of estrogens, leading to lower serum estrone levels. Consequently, decreased serum estrone can also reduce urinary estrone excretion.

Pyridoxal 5'-phosphate 30 mg/kg/day

Pyridoxal 5'-phosphate, the active form of vitamin B6, decreases breast cancer by modulating gene expression and inhibiting angiogenesis, thus reducing tumor growth. It also enhances the immune response against cancer cells and induces apoptosis.

Vitamin D 600 IU/day

Vitamin D supplements can lower progesterone levels by modulating the expression of enzymes involved in steroidogenesis. Specifically, Vitamin D may influence the activity of cytochrome P450 enzymes, which are crucial in the synthesis and metabolism of progesterone. This alteration in enzyme function can lead to decreased progesterone production.

Oxidative Stress

SUPPLEMENTS

Selenium 55 mcg/day

Selenium supplements decrease 8-Hydroxyguanine by supporting the activity of selenoproteins, such as glutathione peroxidase, which reduce oxidative stress and limit DNA damage, including 8-Hydroxyguanine formation.

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Hormone Zoomer - Summary

Suggestions

Endocrine Disruptors

SUPPLEMENTS

Vitamin E 22 IU/day

Vitamin E through its antioxidant properties protect cells from oxidative damage by neutralizing ROS generated during toxin exposure. It also enhances the activity of other antioxidants and improves hormonal balance, thereby mitigating reproductive and cellular dysfunction caused by endocrine disruptors.

Vitamin C 75 mg/day

Vitamin C mitigates glyphosate-induced toxicity by acting as a potent antioxidant, scavenging reactive oxygen species (ROS) and reducing oxidative stress in affected tissues. It also enhances the activity of detoxifying enzymes, promoting the elimination of glyphosate from the body. Additionally, vitamin C helps restore cellular health by maintaining redox balance and supporting immune function.

Green Tea 2 cups/day

The polyphenols in green tea, particularly epigallocatechin gallate (EGCG), exhibit antioxidant properties that scavenge reactive oxygen species (ROS) and reduce oxidative stress caused by BPA, thus protecting cellular integrity.

Soy-rich Diet 25 g/day

Isoflavones found in soy, such as genistein, can modulate estrogenic activity and reduce BPA's endocrine-disrupting effects by competing with BPA for binding sites on estrogen receptors, mitigating its toxic impact on hormonal balance.

Grape Juice (Gb) 150 ml/day

Red grape juice contains resveratrol and other polyphenols that counteract BPA-induced apoptosis and oxidative stress by modulating apoptotic pathways and enhancing mitochondrial function, thereby promoting cell survival.

KRG (Korean Red Ginseng) 1 g/day

KRG is known to enhance antioxidant defenses and reduce inflammation through its ginsenosides, which can mitigate oxidative stress and protect against BPA-induced cellular damage in various tissues.

Ginseng 1 g/day

Ginseng extracts possess adaptogenic properties that help stabilize cellular responses to stressors like BPA by enhancing antioxidant enzyme activity and reducing inflammation, thereby protecting cells from oxidative damage.

Resveratrol (RSV) 100 mg/day

Resveratrol has been shown to exert protective effects against BPA toxicity by activating sirtuins, which play a role in cellular stress resistance and mitochondrial function, effectively reducing oxidative damage.

Luteolin 100 mg/day

This flavonoid exhibits strong antioxidant properties that can scavenge ROS generated by BPA exposure, thereby reducing oxidative stress and inflammation in affected tissues.

Lycopene 6 mg/day

Lycopene acts as an antioxidant that can inhibit lipid peroxidation and protect against BPA-induced cellular damage by neutralizing free radicals and modulating inflammatory responses.

AS IV (Astragalus Saponin IV) 100 mg/day

AS IV has been shown to mitigate BPA toxicity through its ability to enhance antioxidant enzyme activities and reduce inflammation, thus supporting cellular health under oxidative stress conditions.

Genistein 40 mg/day

As a phytoestrogen, genistein can compete with BPA for estrogen receptors, reducing the endocrine-disrupting effects of BPA while also providing antioxidant benefits that protect against oxidative stress.

Curcumin 500 mg/day

Curcumin exhibits potent anti-inflammatory and antioxidant properties that can counteract the harmful effects of BPA by reducing oxidative stress and modulating signaling pathways involved in inflammation.

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Suggestions

Endocrine Disruptors

SUPPLEMENTS

Centella asiatica 600 mg/day

Centella asiatica enhances wound healing and skin health by promoting collagen synthesis and angiogenesis, primarily through its active compounds like asiaticoside, which stimulate fibroblast proliferation and improve blood circulation.

Vitamin D3 600 IU/day

Vitamin D3 supports calcium absorption and bone health while modulating immune function. It also plays a role in reducing inflammation and may improve mood and cognitive function through its effects on neurotransmitter synthesis.

SAMPLE

Hormone Zoomer - All Markers

Cortisol Awakening Response

Cortisol	Current	Previous	Result	Reference
Saliva Cortisol – Waking (M) (ng/mL)	6.94		0.01 2.19 5.2	2.2-5.2
Saliva Cortisol – W +60 min. (ng/mL)	8.89		0.01 3.09 6.5	3.1-6.5
Saliva Cortisol – Evening (ng/ml)	1.78		0 0.99 2.6	1.0-2.6
Saliva Cortisol – Night (ng/ml)	0.77		0 0.49 1.1	0.5-1.1
Saliva Cortisol Total (ng/mL)	28.77		0.01 10.9 24	11.0-24.0
Saliva Cortisol – W+30 min. (ng/ml)	10.39		0 4.19 10.6	4.2-10.6

Cortisone	Current	Previous	Result	Reference
Saliva Cortisone – Waking (M) (ng/mL)	12.61		0.01 5.49 14.3	5.5-14.3
Saliva Cortisone – W +60 min. (ng/mL)	15.73		0.01 7.19 22.5	7.2-22.5
Saliva Cortisone – Evening (ng/ml)	5.31		0 3.19 6.8	3.2-6.8
Saliva Cortisone – Night (ng/ml)	2.13		0 1.29 3.4	1.3-3.4
Saliva Cortisone Total (ng/mL)	56.01		0.01 33.9 65	34.0-65.0
Saliva Cortisone – W+30 min. (ng/ml)	20.23		0 10.2 28.7	10.3-28.7

Hormone Zoomer

Adrenal Hormones	Current	Previous	Result	Reference
b-Tetrahydrocortisol (b-THF) (mcg/g)	284.53		0 200 500	200.65-500.78
a-Tetrahydrocortisol (a-THF) (mcg/g)	13.61		0 10.1 67.1	10.11-67.15
b-Tetrahydrocortisone (b-THE) (mcg/g)	1037.19		0 400 1278	400.78-1278.95
Deoxycorticosterone (mcg/g)	1.49		0 0.3 2.01	0.31-2.01
Corticosterone (mcg/g)	6.82		0 2.17 9.47	2.18-9.47
DHEA (mcg/g)	122.92		0 16.1 138	16.11-138.06
DHEA-S (mcg/g)	19.50		0 5.21 31.7	5.22-31.78
Metabolized Cortisol (THF+THE) (mcg/g)	1335.33		0 611 1846	611.54-1846.88

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Patient Name: DEMO DEMO
Date of Birth: 11-11-1986 Accession ID: 2693861177
Service Date: 2026-04-23 07:00 (PDT)

Hormone Zoomer - All Markers

Hormone Zoomer

Adrenal Hormones	Current	Previous	Result	Reference
Total Cortisol (mcg/g)	29.50		0 11.1 29.6	11.18-29.63
Total Cortisone (mcg/g)	36.44		0 23.1 50.3	23.11-50.33
Bone Health	**Current**	**Previous**	**Result**	**Reference**
Deoxypyridinoline (DPD) (nmol/mmol)	4.04		0 2.59 8.7	2.6-8.7
Pyridinoline (PYD) (nmol/mmol)	22.75		0 20 40	20-40
Creatinine	**Current**	**Previous**	**Result**	**Reference**
Creatinine (1st Morning) (mg/ml)	0.88		0 0.24 2.16	0.25-2.16
Creatinine (2nd Morning) (mg/ml)	0.87		0 0.24 2.16	0.25-2.16
Creatinine (Evening) (mg/ml)	0.86		0 0.24 2.16	0.25-2.16
Creatinine (Night) (mg/ml)	1.39		0 0.24 2.16	0.25-2.16
Diurnal Cortisol	**Current**	**Previous**	**Result**	**Reference**
Free Cortisol (1st Morning) (mcg/g)	83.82		0 7.49 36.2	7.5-36.2
Free Cortisol (2nd Morning) (mcg/g)	37.12		0 24.8 66.4	24.9-66.4
Free Cortisol (Evening) (mcg/g)	13.17		0 6.09 18.9	6.1-18.9
Free Cortisol (Night) (mcg/g)	6.20		0 3.19 9.2	3.2-9.2
Free Cortisol (pooled) (mcg/g)	35.08		0 10.4 32.6	10.43-32.68
Diurnal Cortisone	**Current**	**Previous**	**Result**	**Reference**
Free Cortisone (1st Morning) (mcg/g)	169.89		0 32.6 95.8	32.7-95.8
Free Cortisone (2nd Morning) (mcg/g)	142.26		0 63.0 179	63.1-179.2
Free Cortisone (Evening) (mcg/g)	313.13		0 34.4 95.6	34.5-95.6
Free Cortisone (Night) (mcg/g)	37.05		0 11.1 40.9	11.2-40.9
Free Cortisone (pooled) (mcg/g)	165.58		0 35.3 102	35.38-102.88

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Service Date: 2026-04-23 07:00 (PDT)

Hormone Zoomer - All Markers

Hormone Zoomer

Diurnal Melatonin	Current	Previous	Result	Reference
Melatonin (1st Morning) (mcg/g)	33.94		0 17.4 40.2	17.5-40.2
Melatonin (2nd Morning) (mcg/g)	23.62		0 7.09 32.6	7.1-32.6
Melatonin (Evening) (mcg/g)	4.84		0 0.86 2	0.87-2.0
Melatonin (Night) (mcg/g)	6.93		0 1.89 12.3	1.9-12.3

Endocrine Disruptors	Current	Previous	Result	Reference
Bisphenol A (BPA)^ (ug/g)	16.68		0 2.12 5.09	≤5.09
Glyphosate (ug/g)	2.09		0 1.65 7.6	≤7.6
Perchlorate (PERC)^ (ug/g)	1.81		0 4.89 10.7	≤10.7
Atrazine ^ (ug/g)	0.02		0 0.02 0.05	≤0.05
Mono-ethyl phthalate (MEtP)^ (ug/g)	2.82		0 94.2 541	≤541
Mono-2-ethylhexyl phthalate (MEHP)^ (ug/g)	0.89		0 2.73 8.47	≤8.47
Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)^ (ug/g)	1.32		0 14.1 37.7	≤37.7
Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)^ (ug/g)	4.73		0 8.99 23.4	≤23.4
Methylparaben^ (ug/g)	1.25		0 180 653	≤653
Propylparaben^ (ug/g)	0.36		0 36.7 222	≤222
Butylparaben^ (ug/g)	0.14		0 0.25 4.39	≤4.39
Ethylparaben ^ (ug/g)	0.17		0 5.41 99.3	≤99.3
Triclosan (TCS)^ (ug/g)	19.18		0 29.9 358	≤358

Estrogen	Current	Previous	Result	Reference
Estradiol (E2) (mcg/g)	2.19		0 0.83 1.82	0.84-1.82
Estrone (E1) (mcg/g)	4.50		0 2.09 5.42	2.1-5.42
Estriol (E3) (mcg/g)	0.70		0 0.66 2.15	0.67-2.15
Total Estrogen (mcg/g)	20.83		0 1.72 7.54	1.73-7.54

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Estrogen	Current	Previous	Result	Reference
2-OH Estradiol (mcg/g)	0.38		0 0.19 0.8	0.2-0.8
2-OH Estrone (mcg/g)	9.07		0 0.64 2.98	0.65-2.98
4-OH Estradiol (mcg/g)	0.63		0 0.1 0.22	0.11-0.22
4-OH Estrone (mcg/g)	1.26		0 0.18 0.58	0.19-0.58
16a-OH Estrone (mcg/g)	0.91		0 0.3 1.17	0.31-1.17
2-MeO Estradiol (mcg/g)	0.34		0 0.01 0.09	0.02-0.09
2-MeO Estrone (mcg/g)	0.81		0 0.31 0.82	0.32-0.82
4-MeO Estradiol (mcg/g)	0.03		0 0.05	≤0.05
4-MeO Estrone (mcg/g)	0.02		0 0.05	≤0.05

Hormone Ratios	Current	Previous	Result	Reference
E3/(E1+E2) Ratio	0.11		0 0.3	≤0.3
2-OH (E1 + E2)/16a-OH E1	10.39		0 1.49 6	1.5-6.0
2-OH E1 /4-OH E1	7.2		0 2.4 8.7	2.5-8.7
2-MeO E1/2-OH E1	0.09		0 0.19 0.4	0.2-0.4
4-MeO E1/4-OH E1	0.02		0 0.03 0.15	0.04-0.15
4-MeO E2/4-OH E2	0.04		0 0.12 0.33	0.13-0.33
T/Epi-T	0.96		0 0.39 3	0.4-3.0
b-Pregnanediol/E2	2886.96		0 536 960	536.67-960.55
Cortisol/Cortisone (mcg/g)	0.81		0 0.47 0.59	0.48-0.59

Oxidative Stress	Current	Previous	Result	Reference
8-hydroxy-2'-deoxyguanosine (8-OHdG) (mcg/g)	10.75		0 4.77	≤4.77

Progesterone	Current	Previous	Result	Reference
Allopregnanolone (mcg/g)	1.04		0 2.56 19.8	2.57-19.88

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Progesterone	Current	Previous	Result	Reference
3αDihydroprogesterone (mcg/g)	0.76		0 0.71 2.5	0.72-2.5
20αDihydroprogesterone (mcg/g)	4.58		0 4.1 12.6	4.11-12.68
b-Pregnanediol (mcg/g)	>5000		0 450 1748	450.8-1748.2
a-Pregnanediol (mcg/g)	218.00		0 120 499	120.3-499.8

Testosterone	Current	Previous	Result	Reference
Testosterone (T) (mcg/g)	3.64		0 1.17 4.11	1.18-4.11
Epi-Testosterone (Epi-T) (mcg/g)	3.79		0 1.94 4.61	1.95-4.61
Androstenedione (mcg/g)	7.67		0 3.14 15.4	3.15-15.44
Androsterone (mcg/g)	833.47		0 242 1000	242.6-1000.8
Etiocholanolone (mcg/g)	474.78		0 340 955	340.3-955.1
5a-DHT (mcg/g)	0.54		0 0.31 1.55	0.32-1.55
5a,3a-Androstanediol (mcg/g)	14.31		0 2.93 14.5	2.94-14.59
5b-Androstanediol (mcg/g)	10.64		0 4.14 15.6	4.15-15.66

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Risk and Limitations

Test results reflect biological and analytical findings at the time of specimen collection and may vary between individuals. Reference ranges for most of laboratory-developed tests (LDT) were established using a healthy adult population and may not be representative of other specific populations (e.g. pediatric, pregnant, individuals with chronic conditions or from all ethnic backgrounds). They do not provide absolute levels at which the symptoms may occur and hence clinical correlation by the provider is recommended.

Results may be affected by pre-analytical variables related to specimen collection, handling, transport, storage, and inherent biological variability. Specimens including urine, saliva, stool, and blood-based samples (serum, plasma, EDTA whole blood, TES, and dried blood spots) may be impacted by improper collection technique, contamination, insufficient sample volume, delayed shipment or processing, temperature excursions, or improper storage conditions. Additional factors such as hemolysis; anticoagulant effects; clotting, centrifugation, or mixing parameters; incomplete mixing with transport media; and variability in dried blood spot application or saturation may further affect analyte stability or result accuracy. Specimen-specific factors, including urine dilution or concentration, variability in saliva composition or flow rate, and intermittent microbial shedding in stool, may also contribute to result variability. These factors may impact result accuracy and, in some cases, lead to a Test Not Performed (TNP). When clinically appropriate, repeat testing may be recommended; however, repeat testing may still fail to produce a reportable result if the underlying limitations persist.

All laboratory testing methodologies are subject to inherent analytical limitations related to instrument performance, assay design, methodological variability, and the specifications of FDA-approved and laboratory-developed analytes included in a test panel. As with all clinical laboratory testing, there is a small possibility of incorrect results due to technical errors, sample misidentification, contamination, rare genetic variants, or software-related issues.

Genetic testing is helpful in analyzing risks to various diseases. However, it is important to note that genetic risk determinants are neither necessary nor sufficient for the development of disease. Environmental and lifestyle risk factors could also affect the risk of disease development. Genetic risk does not indicate how common a health condition or variant is within the population; a risk-associated variant may be common or uncommon. Interpretation of genetic results should consider individual health context, as population-based reference frameworks may not fully represent all age groups, ethnic backgrounds, or health profiles. Genetic testing evaluates only the genotypes indicated and does not assess other genetic abnormalities found elsewhere in the genome. Different laboratories may test different variants when evaluating genetic risk for a given condition; therefore, genetic risk results may not be directly comparable between laboratories.

Some individuals may experience anxiety related to their genetic test results. Vibrant encourages any concerned individual to consult with a qualified healthcare professional prior to sample collection for a genetic test. Users of the test are encouraged to discuss their test results with a genetic counselor, board-certified clinical molecular geneticist, or equivalent health care professional. In some cases, the identification of risk-associated genetic variants may prompt discussion with a healthcare provider about additional testing or follow-up.

The reported analytes, SNPs, and associated informational content are informed by scientific knowledge at the time of reporting, including peer-reviewed scientific publications, publicly available research, and guidance from recognized scientific and public health organizations. Interpretive content may be updated as scientific knowledge continues to evolve. The informational content included in this report is derived from publicly available scientific literature and is provided for educational and informational purposes only. This content does not replace medical advice from a qualified healthcare professional. Any wellness, nutritional, or dietary recommendations, diagnoses of medical conditions, or treatment decisions based on these results are made at the discretion and responsibility of the ordering healthcare professional.

Vibrant does not diagnose, treat, or cure medical conditions and does not replace the care of a licensed medical practitioner or counselor, nor does Vibrant recommend self-diagnosis or self-medication. Depending on the nature of testing, individuals who receive moderate- or high-risk results may be advised to pursue confirmatory testing and appropriate medical follow-up. Vibrant assumes no liability for any loss, injury, or damages arising from the procurement, compilation, interpretation, delivery, or reporting of information contained in this report, nor from any decisions made or actions taken based on these results.

The supplement recommendations and dosage guidelines provided are intended for general informational purposes only and should not replace professional medical advice; final dosage decisions must be made in consultation with your healthcare provider. Vibrant disclaims any liability for adverse effects, outcomes, or consequences arising from the use of these suggestions.

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