## **DEMO DEMO**

Name: DEMO DEMO Date of Birth: 05-06-1974 Biological Sex: Female

Age: 51

Height: 66 inches Weight: 140 lbs

Fasting:

Telephone: 000-000-0000

Street Address:

Email:

**FINAL REPORT** 

Accession ID: 2468906223

Practice Name: DEMO CLIENT, MD

Provider Name: DEMO CLIENT, MD

Phlebotomist: 0

Telephone: 000-000-0000 Address: 3521 Leonard Ct, Santa

Clara, CA 95054

### **Report Information**

**Provider Information** 

Current Result Previous Result

In Control Moderate Risk

### **Specimen Information**

| Sample Type       | Collection Time        | Received Time                        | Report                 | Final Report Date      |
|-------------------|------------------------|--------------------------------------|------------------------|------------------------|
| Saliva Waking     | 2024-03-21 01:00 (PDT) | 2024-03-22 15:42 (PDT)               | Salivary Hormones - P2 | 2024-12-18 16:13 (PDT) |
| Saliva Waking +30 | 2024-03-21 01:00 (PDT) | 2024-03-22 15:42 (PDT)               | Salivary Hormones - P2 | 2024-12-18 16:13 (PDT) |
| Saliva Waking +60 | 2024-03-21 01:00 (PDT) | 2024-03-2 <mark>2 15:42</mark> (PDT) | Salivary Hormones - P2 | 2024-12-18 16:13 (PDT) |
| Saliva Evening    | 2024-03-21 01:00 (PDT) | 2024-03-22 15:42 (PDT)               | Salivary Hormones - P2 | 2024-12-18 16:13 (PDT) |
| Saliva Night      | 2024-03-21 01:00 (PDT) | 2024-03-22 1 <mark>5:42</mark> (PDT) | Salivary Hormones - P2 | 2024-12-18 16:13 (PDT) |
| Saliva Insomnia   | 2024-03-21 01:00 (PDT) | 2024-03-22 15:42 (PDT)               | Salivary Hormones - P2 | 2024-12-18 16:13 (PDT) |









Date of Birth: 05-06-1974 Accession ID: 2468906223

Service Date: 2024-03-21 01:00 (PDT)

# **Salivary Hormones**

#### INTRODUCTION

Vibrant Wellness is pleased to present to you 'Salivary Hormones', to help you make healthy lifestyle, dietary and treatment choices in consultation with your healthcare provider. It is intended to be used as a tool to encourage a general state of health and well-being. The Vibrant Salivary Hormones is a test to measure salivary hormones including salivary steroids, cortisol, and cortisone. The panel is designed to give a complete picture of an individual's levels of hormones in saliva.

### Methodology:

The Vibrant Salivary Hormones panel uses tandem mass spectrometry methodology (LC-MS/MS) for quantitative detection of the hormones in saliva samples.

### **Interpretation of Report:**

The summary report contains a graphical representation of salivary cortisol and cortisone based on sample collected at four time points within a day and includes a list of salivary hormones that are outside the reference range. Reference ranges have been established based on a cohort of 200 relatively healthy saliva samples. This is followed by a complete list of all saliva hormones tested with quantitative results to enable a full overview along with the corresponding reference ranges. The 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. Additionally, the previous value (if available) is also indicated to help check for improvements every time the test is ordered.

The Vibrant Wellness platform provides tools for you to track and analyze your general wellness profile. Testing for the Salivary Hormones panel is performed by Vibrant America, a CLIA certified lab CLIA#:05D2078809. Vibrant Wellness provides and makes available this report and any related services pursuant to the Terms of Use Agreement (the "Terms") on its website at www.vibrant-wellness.com. By accessing, browsing, or otherwise using the report or website or any services, you acknowledge that you have read, understood, and agree to be bound by these terms. If you do not agree to these terms, you shall not access, browse, or use the report or website. The statements in this report have not been evaluated by the Food and Drug Administration and are only meant to be lifestyle choices for potential risk mitigation. Please consult your healthcare provider for medication, treatment, diet, exercise, or lifestyle management as appropriate. This product is not intended to diagnose, treat, or cure any disease or condition.

#### Please note

It is important that you discuss any modifications to your diet, exercise, and 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.



Date of Birth: 05-06-1974 Accession ID: 2468906223

Service Date: 2024-03-21 01:00 (PDT)

# **Salivary Hormones** - Summary

| 2021 00 21 01:00 (12                         | ·          |                                                    |          |                                                  |                |
|----------------------------------------------|------------|----------------------------------------------------|----------|--------------------------------------------------|----------------|
| Questionnaire Data                           |            |                                                    |          |                                                  |                |
| BACKGROUND                                   |            |                                                    |          |                                                  |                |
| Date of Birth                                | 1967-06-06 | Reproductive health status                         |          |                                                  | Postmenopausal |
| Biological sex                               | Female     | Regular menstral cycles                            | NO       |                                                  |                |
| Last menstrual period                        | N/A        | Had a hysterectomy                                 | NO       |                                                  |                |
| BONE HEALTH AND TOXIN EXPOSU                 | IRE        |                                                    |          |                                                  |                |
| Bone density scan                            | YES        | If yes, scan result                                |          |                                                  | Osteoporosis   |
| Experienced any fractures                    | NO         | Exposed to toxic chemicals                         | No       |                                                  |                |
| SYMPTOM HISTORY                              |            |                                                    |          |                                                  |                |
| Hot flashes/night sweats                     | None       | Sleep disturbances                                 | None     | Loss of muscle mass                              | Moderate       |
| Mood swings/irritability                     | None       | Joint pain                                         | Moderate | Difficulty concentrating                         | None           |
| Fatigue                                      | Severe     | Loss of libido                                     | None     | Urinary problems                                 | None           |
| Vaginal dryness                              | None       |                                                    |          |                                                  |                |
| MEDICAL BACKGROUND                           |            |                                                    |          |                                                  |                |
| MEDICAL HISTORY                              |            | COMORBIDITIES                                      |          | FAMILY HISTORY                                   |                |
| Breast cancer                                | NO         | Cardiovascu <mark>lar disease</mark>               | YES      | Cancer                                           | NO             |
| Ovarian cancer                               | NO         | Liver disease                                      | NO       | Breast cancer                                    | YES            |
| Endometrial (uterine) cancer                 | NO         | Hypertension                                       | NO       | Cardiovascular disease                           | NO             |
| Stomach cancer                               | NO         | Gallbladder complications                          | NO       | Cerebrovascular disease                          | NO             |
| Pancreatic cancer                            | NO         | Th <mark>yroid cond</mark> itions                  | NO       | SLE or Autoimmune                                | NO             |
| Colon or rectal cancer                       | NO         | Obesity                                            | YES      | Venous thrombus embolism                         | NO             |
| Any cancer not listed above                  | N/A        | Type 2 diabetes                                    | NO       | Thyroid disease                                  | YES            |
|                                              |            | Blood clots or venous                              | YES      | Hypertension                                     | NO             |
|                                              |            | thromboembolism                                    | NI/A     | Other                                            | N/A            |
|                                              |            | Other                                              | N/A      |                                                  |                |
| TREATMENT CONSIDERATIONS                     |            |                                                    |          |                                                  |                |
| Hormone treatment preference                 | Hrt        | Sensitive skin<br>(Affects certain forms of HRT)   | NO       | Peanut Allergy<br>(Affects certain forms of HRT) | YES            |
| Undergoing HRT and/or taking any medications | NO         | If yes, please list and provide necessary details: |          |                                                  | N/A            |



Test Note 3

Date of Birth: 05-06-1974 Accession ID: 2468906223

Service Date: 2024-03-21 01:00 (PDT)

# Salivary Hormones - Summary

#### **Questionnaire Data** HORMONE/MEDICATION USE HORMONE TYPE **BRAND DELIVERY** DOSAGE DATE TIME TIMES/DAY HOW LONG USED Estrogen/progesterone Bezwecken Sublingual 5 Drops 2025-08-08 N/A Mild 2 Years **ADDITIONAL INFORMATION**



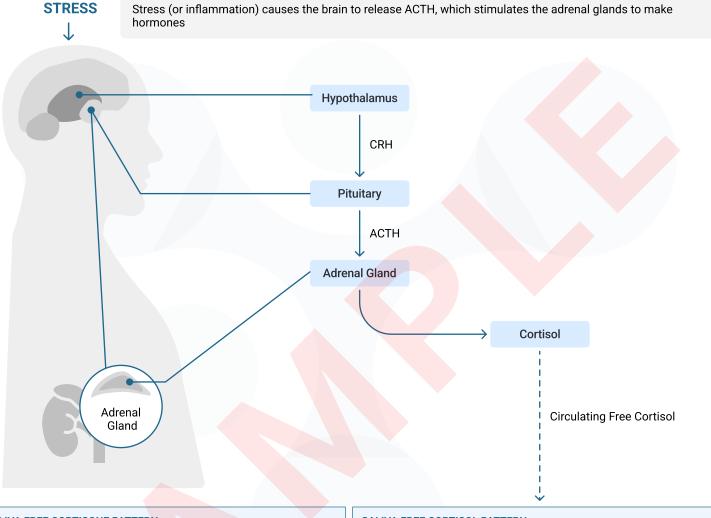
Date of Birth: 05-06-1974 Accession ID: 2468906223

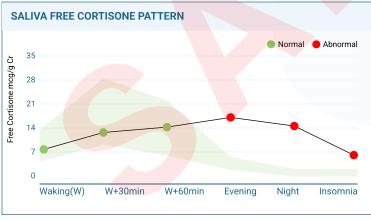
Service Date: 2024-03-21 01:00 (PDT)

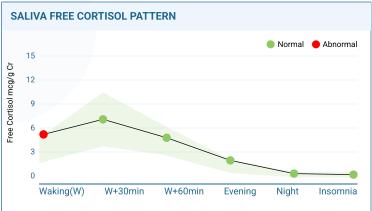
# Salivary Hormones - Summary

### **Cortisol Awakening Response - Saliva**











Date of Birth: 05-06-1974 Accession ID: 2468906223

Service Date: 2024-03-21 01:00 (PDT)

## Salivary Hormones - Summary

| Cortisol Awakening Response             |         |          |      |      |        |           |
|-----------------------------------------|---------|----------|------|------|--------|-----------|
| Cortisol                                | Current | Previous |      |      | Result | Reference |
| Saliva Cortisol – Waking (M)<br>(ng/mL) | 5.60    | (        | 0.01 | 2.19 | 5.2    | 2.2-5.2   |
| Saliva Cortisol – W+30 min.<br>(ng/mL)  | 7.40    | (        | 0.01 | 4.19 | 10.6   | 4.2-10.6  |
| Saliva Cortisol – W +60 min.<br>(ng/mL) | 5.20    | (        | 0.01 | 3.09 | 6.5    | 3.1-6.5   |
| Saliva Cortisol – Evening (ng/ml)       | 2.50    |          | 0    | 0.99 | 2.6    | 1.0-2.6   |
| Saliva Cortisol – Night (ng/ml)         | 0.92    |          | 0    | 0.49 | 1.1    | 0.5-1.1   |
| Saliva Cortisol - Insomnia<br>(ng/mL)   | 0.80    |          | 0.01 | 0.49 | 1.1    | 0.5-1.1   |
| Saliva Cortisol Total (ng/mL)           | 13.00   | (        | 0.01 | 10.9 | 24     | 11.0-24.0 |

#### COMMENTS

Saliva Cortisol - Waking (M): Cortisol, a stress hormone synthesized by the adrenal glands, peaks during the day and declines at night. It plays a crucial role in regulating the body's response to stress, as well as blood sugar levels, blood pressure, metabolism, and immune function. Most cortisol in the blood is bound to carrier proteins, whereas salivary cortisol reflects the bioavailable (free) cortisol accessible to target tissues. In healthy adults, salivary cortisol measured 30 minutes after waking typically rises by 38-75% from the waking value, reaching about 18–32 nmol/L (0.65–1.16 μg/dL). Values significantly below this expected rise—or a total concentration under ~8-10 nmol/L—may indicate a blunted cortisol awakening response (CAR), suggestive of adrenal insufficiency, chronic stressinduced HPA axis suppression, or other hormonal imbalances affecting diurnal rhythm. Premenopausal women generally have lower cortisol levels than postmenopausal women due to optimal levels of estrogen and progesterone. A helps determine whether the decline follows the expected diurnal pattern or if abnormalities, such as sustained elevations, indicate chronic stress or adrenal hyperactivity. In premenopausal women, low waking+30min morning cortisol levels may contribute to midday fatigue, poor focus, and menstrual irregularities. Low cortisol levels are also associated with Addison's disease, which is characterized by symptoms such as weight loss, fatigue, low blood pressure, and skin darkening. Other potential causes of low cortisol include hypopituitarism, depression, alcoholism, malnutrition, panic disorders, pregnancy, and certain medications. 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.

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

Vitamin B6(1.3 mg/day): Vitamin B6 serves as a cofactor in neurotransmitter synthesis, enhancing serotonin and dopamine production, which modulate hypothalamic-pituitary-adrenal (HPA) axis activity. This can promote greater adrenocorticotropic hormone (ACTH) release upon waking. The resulting stimulation of adrenal cortex function leads to increased cortisol secretion during the Cortisol Awakening Response.

Folate (400 mcg/day): Folate supports one-carbon metabolism, enhancing methylation reactions essential for neurotransmitter and hormone regulation. Adequate folate optimizes hypothalamic-pituitary-adrenal (HPA) axis responsiveness, facilitating corticotropin-releasing hormone and ACTH secretion. This improved HPA signaling can elevate morning cortisol output, reflected in higher salivary cortisol levels.



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## Salivary Hormones - Summary

### **Cortisol Awakening Response**

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

**Melatonin(5 mg/day):** Melatonin taken at night can realign circadian rhythms, strengthening the natural early-morning activation of the hypothalamic-pituitary-adrenal (HPA) axis. This synchronization enhances corticotropin-releasing hormone (CRH) signaling before waking. The resulting increase in adrenocorticotropic hormone (ACTH) stimulates the adrenal cortex, elevating waking cortisol levels.

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 min/day)

| Cortisone                                | Current | Previous | Result         | Reference |
|------------------------------------------|---------|----------|----------------|-----------|
| Saliva Cortisone – Waking (M)<br>(ng/mL) | 8.90    |          | 0.01 5.49 14.3 | 5.5-14.3  |
| Saliva Cortisone – W+30 min.<br>(ng/mL)  | 13.60   |          | 0.01 10.2 28.7 | 10.3-28.7 |
| Saliva Cortisone – W +60 min.<br>(ng/mL) | 15.10   |          | 0.01 7.19 22.5 | 7.2-22.5  |
| Saliva Cortisone – Evening<br>(ng/ml)    | 17.80   |          | 0 3.19 6.8     | 3.2-6.8   |
| Saliva Cortisone – Night (ng/ml)         | 15.40   |          | 0 1.29 3.4     | 1.3-3.4   |
| Saliva Cortisone – Insomnia<br>(ng/mL)   | 7.30    |          | 0.01 1.29 3.4  | 1.3-3.4   |
| Saliva Cortisone Total (ng/mL)           | 78.10   |          | 0.01 33.9 65   | 34.0-65.0 |

#### **COMMENTS**

Saliva 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. While most steroid hormones in the blood are bound to carrier proteins, salivary hormones reflect bioavailable (free and unbound) steroids. 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, low evening cortisone levels may result in chronic fatigue and a reduced ability to recover from daily stress. Additionally, low cortisone and cortisol levels can indicate Addison's disease, a condition in which the adrenal glands underproduce steroid hormones. 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. While most steroid hormones in the blood are bound to carrier proteins, salivary hormones reflect bioavailable (free and unbound) steroids. Free cortisone, derived from free 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.



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## Salivary Hormones - Summary

### **Cortisol Awakening Response**

#### **COMMENTS**

Saliva Cortisone – Night: Cortisone, the inactive metabolite of cortisol, is a hormone produced by the adrenal glands that regulates stress response, metabolism, and immune function. Salivary cortisone reflects the bioavailable fraction accessible to target tissues and typically declines at night, following the body's circadian rhythm. Measuring salivary cortisone at night can help assess adrenal function and HPA axis regulation. In premenopausal women, night-time salivary cortisone levels below approximately 0.5 nmol/L may indicate insufficient adrenal output or disruption of the circadian rhythm. Cortisone, the inactive metabolite of cortisol, reflects bioavailable hormone levels and helps assess adrenal function and circadian regulation. In premenopausal women, night-time salivary cortisone levels above approximately 18 nmol/L may indicate chronic stress, hyperactivity of the HPA axis, or disruption of normal circadian decline.

Saliva Cortisone Total: Cortisone, the inactive metabolite of cortisol, reflects bioavailable cortisol turnover and adrenal output. In premenopausal women, total salivary cortisone levels below approximately 120 nmol/L may indicate adrenal insufficiency, HPA axis suppression, or chronic fatigue states. Cortisone, as the inactive metabolite of cortisol, provides insight into overall adrenal function and cumulative stress hormone exposure. In premenopausal women, total salivary cortisone levels above approximately 350 nmol/L may indicate chronic stress, HPA axis overactivity, or altered cortisone metabolism.

Salivar Cortisone – Insomnia: Salivary cortisol and cortisone are non-invasive biomarkers that reflect hypothalamic-pituitary-adrenal (HPA) axis activity. In individuals with insomnia, alterations in these hormones are commonly observed, as sleep disturbances disrupt circadian rhythm and stress regulation. Cortisol, the primary stress hormone, typically peaks in the morning and declines throughout the day, while cortisone represents its inactive metabolite. Deviations in their salivary levels—whether below the lower limit or above the upper limit—indicate dysregulation of HPA axis function, contributing to impaired sleep quality, heightened arousal, and increased risk of metabolic and cardiovascular complications. In premenopausal women lower levels suggests reduced cortisone output, possibly reflecting impaired cortisol—cortisone conversion or adrenal insufficiency—like patterns. Salivary cortisol and cortisone are non-invasive biomarkers that reflect hypothalamic-pituitary-adrenal (HPA) axis activity. In individuals with insomnia, alterations in these hormones are commonly observed, as sleep disturbances disrupt circadian rhythm and stress regulation. Cortisol, the primary stress hormone, typically peaks in the morning and declines throughout the day, while cortisone represents its inactive metabolite. Deviations in their salivary levels—whether below the lower limit or above the upper limit—indicate dysregulation of HPA axis function, contributing to impaired sleep quality, heightened arousal, and increased risk of metabolic and cardiovascular complications. In premenopausal women upper levels indicates heightened cortisone response, often linked to hyperactivation of the HPA axis, exaggerated cortisol metabolism, and poor sleep quality.

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

**Polyphenol-rich dark chocolate(25 g/day):** Polyphenol-rich chocolate lowers the cortisol:cortisone ratio by suppressing 11β-HSD1 activity. Reduced 11β-HSD1 activity limits cortisol regeneration, leading to less conversion back from cortisone. As a result, cortisone levels rise relative to cortisol, decreasing the overall ratio.

Liquorice(50 mg/day): Liquorice decreases salivary cortisone through glycyrrhetinic acid, its active metabolite. Glycyrrhetinic acid inhibits 11β-hydroxysteroid dehydrogenase type 2 (11β-HSD2), which normally converts cortisol to cortisone. This inhibition leads to reduced cortisone levels and a relative increase in cortisol. The shift in cortisol:cortisone ratio reflects suppressed cortisone regeneration due to enzyme blockade.

**Melatonin(5 mg/day):** Melatonin supports circadian regulation and promotes restorative sleep by modulating elevated nocturnal cortisone levels. Supplementation helps normalize HPA axis signaling, reducing hyperarousal and stress-related insomnia. By aligning the body's internal clock, melatonin improves sleep onset, continuity, and overall sleep quality.

#### LIFESTYLE SUGGESTIONS

Cortisone: Yoga (60 min/day), Meditation (30 min/day)

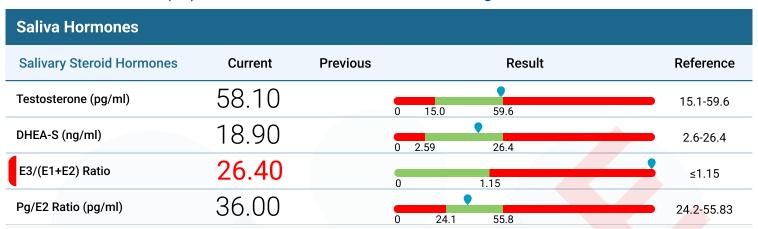
| Saliva Hormones           |         |          |            |            |
|---------------------------|---------|----------|------------|------------|
| Salivary Steroid Hormones | Current | Previous | Result     | Reference  |
| Estradiol (E2) (pg/ml)    | 15.20   |          | 0 0.49 1.8 | 0.5-1.8    |
| Estrone (E1) (pg/ml)      | 42.70   |          | 0 1.49 4.7 | 1.5-4.7    |
| Estriol (E3) (pg/ml)      | 7.60    |          | 0 7.5      | ≤7.5       |
| Progesterone (Pg) (pg/ml) | 36.00   |          | 0 12.0 100 | 12.1-100.5 |



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## Salivary Hormones - Summary



#### **COMMENTS**

Estradiol (E2): Estradiol (E2) is one of the main forms of estrogen. It is involved in the regulation of the menstrual cycle in females. E2 is responsible for the development of female secondary sexual characteristics such as the breasts, widening of the hips, etc. It also has important effects in many other tissues including bone, fat, skin, liver, and the brain. Majority of E2 in the blood is bound by carrier proteins. Salivary E2 gives the amount of bioavailable E2 (free and unbound E2) that is available to target tissues. Elevated levels of E2 in premenopausal women can be due to polycystic ovary syndrome, obesity, diabetes, dysbiosis, steroid medications, excessive alcohol consumption, and over-aromatization from testosterone. Additionally, high levels of E2 could also be indicative of a tumor of the ovary, testes, or adrenal glands. Assessing salivary E2 levels provides a snapshot of the active hormone levels at a given point in time, which aids in understanding E2 availability for biological activity in the body.

Estrone (E1): Estrone (E1) is one of the three estrogen hormones and is also considered to be a weak estrogen. E1, as well as the other estrogens, are synthesized from cholesterol and secreted mainly from the gonads, though E1 can also be formed from adipose tissue and adrenal glands. E1 can be converted into estradiol and serves mainly as a precursor or metabolic intermediate of estradiol. Majority of E1 in the blood is bound by carrier proteins. Salivary E1 gives the amount of bioavailable E1 (free and unbound E1) that is available to target tissues. Elevated levels of E1 in premenopausal women can be due to polycystic ovary syndrome, obesity, diabetes, dysbiosis, steroid medications, excessive alcohol consumption, and over-aromatization from testosterone. Additionally, high levels of E1 can also arise from cirrhosis or due to a tumor of the ovaries, adrenal glands, or testicles. High levels of salivary estrone in premenopausal women results in symptoms like menstrual irregularities, mood changes, pain or tenderness of breasts, bloating, and weight gain. Assessing salivary E1 levels provides a snapshot of the active hormone levels at a given point in time, which aids in understanding E1 availability for biological activity in the body.

Estriol (E3): Estriol (E3) is a weak estrogen and a minor female sex hormone. Majority of E3 in the blood is bound by carrier proteins. Salivary E3 gives the amount of bioavailable E3 (free, unbound E3) that is available to target tissues. In addition to its role as a natural hormone, E3 is used as a medication, for instance in menopausal hormone therapy. E3 levels are usually low in premenopausal women who aren't pregnant. However, during pregnancy, high levels of E3 are synthetized by the placenta. Elevated levels of E3 in the saliva of premenopausal women could also be due to environmental factors, hormonal fluctuations, hormonal treatments, or tumors. High levels of salivary E3 results in menstrual irregularities, mood swings, vaginal discomfort, and fatigue. Assessing salivary E3 levels provides a snapshot of the active hormone levels at a given point in time, which aids in understanding E3 availability for biological activity in the body.

E3/(E1+E2) Ratio: Estrone (E1), estradiol (E2), and estriol (E3) are the three main forms of estrogen. E2 is mainly produced during the premenopausal stage, E1 during the postmenopausal stage, and E3 during pregnancy. Salivary estrogen gives the amount of bioavailable estrogen (free, unbound estrogen) that is available to target tissues. The E3/(E1+E2) ratio is known as the 'estrogen quotient' or EQ and is used to assess breast cancer risk. E3 is considered as a 'safe' form of estrogen as it cannot be converted to any harmful metabolites, unlike E1 and E2. Hence, a high salivary E3/(E1+E2) ratio is associated with reduced risk of breast cancer.

#### SUPPLEMENT SUGGESTIONS

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(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.

#### LIFESTYLE SUGGESTIONS

Salivary Steroid Hormones: Yoga (60 min/day), Meditation (30 - 50 min/day)



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Service Date: 2024-03-21 01:00 (PDT)

# **Salivary Hormones**

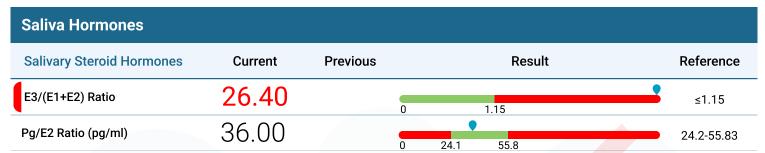
| ervice Date: 2024-03-21 01:00 (PD1)      |         |          |                |            |
|------------------------------------------|---------|----------|----------------|------------|
| Cortisol Awakening Respo                 | nse     |          |                |            |
| Cortisol                                 | Current | Previous | Result         | Reference  |
| Saliva Cortisol – Waking (M)<br>(ng/mL)  | 5.60    |          | 0.01 2.19 5.2  | 2.2-5.2    |
| Saliva Cortisol – W +60 min.<br>(ng/mL)  | 5.20    |          | 0.01 3.09 6.5  | 3.1-6.5    |
| Saliva Cortisol - Evening (ng/ml)        | 2.50    |          | 0 0.99 2.6     | 1.0-2.6    |
| Saliva Cortisol - Night (ng/ml)          | 0.92    |          | 0 0.49 1.1     | 0.5-1.1    |
| Saliva Cortisol Total (ng/mL)            | 13.00   |          | 0.01 10.9 24   | 11.0-24.0  |
| Saliva Cortisol – Insomnia<br>(ng/mL)    | 0.80    |          | 0.01 0.49 1.1  | 0.5-1.1    |
| Saliva Cortisol – W+30 min.<br>(ng/mL)   | 7.40    |          | 0.01 4.19 10.6 | 4.2-10.6   |
| Cortisone                                | Current | Previous | Result         | Reference  |
| Saliva Cortisone – Waking (M)<br>(ng/mL) | 8.90    |          | 0.01 5.49 14.3 | 5.5-14.3   |
| Saliva Cortisone – W +60 min.<br>(ng/mL) | 15.10   |          | 0.01 7.19 22.5 | 7.2-22.5   |
| Saliva Cortisone – Evening<br>(ng/ml)    | 17.80   |          | 0 3.19 6.8     | 3.2-6.8    |
| Saliva Cortisone – Night (ng/ml)         | 15.40   |          | 0 1.29 3.4     | 1.3-3.4    |
| Saliva Cortisone Total (ng/mL)           | 78.10   |          | 0.01 33.9 65   | 34.0-65.0  |
| Saliva Cortisone – Insomnia<br>(ng/mL)   | 7.30    |          | 0.01 1.29 3.4  | 1.3-3.4    |
| Saliva Cortisone – W+30 min.<br>(ng/mL)  | 13.60   |          | 0.01 10.2 28.7 | 10.3-28.7  |
| Saliva Hormones                          |         |          |                |            |
| Salivary Steroid Hormones                | Current | Previous | Result         | Reference  |
| Estradiol (E2) (pg/ml)                   | 15.20   |          | 0 0.49 1.8     | 0.5-1.8    |
| Estrone (E1) (pg/ml)                     | 42.70   |          | 0 1.49 4.7     | 1.5-4.7    |
| Estriol (E3) (pg/ml)                     | 7.60    |          | 0 7.5          | ≤7.5       |
| Progesterone (Pg) (pg/ml)                | 36.00   |          | 0 12.0 100     | 12.1-100.5 |
| Testosterone (pg/ml)                     | 58.10   |          | 0 15.0 59.6    | 15.1-59.6  |
| DHEA-S (ng/ml)                           | 18.90   |          | 0 2.59 26.4    | 2.6-26.4   |



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# **Salivary Hormones**

#### **Risk and Limitations**

This test has been developed and its performance characteristics determined and validated by Vibrant America LLC., a CLIA certified lab. These assays have not been cleared or approved by the U.S. Food and Drug Administration. Vibrant Wellness provides additional contextual information on these tests and provides the report in more descriptive fashion.

Salivary hormones panel does not demonstrate absolute positive and negative predictive values for any condition. Its clinical utility has not been fully established. Clinical history and current symptoms of the individual must be considered by the healthcare provider prior to any interventions. Test results should be used as one component of a healthcare provider's clinical assessment.

Salivary hormones panel testing is performed at Vibrant America, a CLIA certified laboratory. Vibrant America has effective procedures in place to protect against technical and operational problems. However, such problems may still occur. Examples include failure to obtain the result for a specific test due to circumstances beyond Vibrant's control. Vibrant may re-test a sample to obtain these results but upon retesting the results may still not be obtained. As with all medical laboratory testing, there is a small chance that the laboratory could report incorrect results. A tested individual may wish to pursue further testing to verify any results.

The information in this report is intended for educational purposes only. While every attempt has been made to provide current and accurate information, neither the author nor the publisher can be held accountable for any errors or omissions. Tested individuals may find their experience is not consistent with Vibrant's selected peer reviewed scientific research findings of relative improvement for study groups. The science in this area is still developing and many personal health factors affect diet and health. Since subjects in the scientific studies referenced in this report may have had personal health and other factors different from those of tested individuals, results from these studies may not be representative of the results experienced by tested individuals. Further, some recommendations may or may not be attainable, depending on the tested individual's physical ability or other personal health factors. A limitation of this testing is that many of these scientific studies may have been performed in selected populations only. The interpretations and recommendations are done in the context of these studies, but the results may or may not be relevant to tested individuals of different or mixed ethnicities.

Vibrant Wellness makes no claims as to the diagnostic or therapeutic use of its tests or other informational materials. Vibrant Wellness reports and other information do not constitute medical advice and are not a substitute for professional medical advice. Please consult your healthcare practitioner for questions regarding test results, or before beginning any course of medication, supplementation, or dietary changes.

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.



