

**Accession # 01093514**

Female Sample Report
123 A Street
Sometown, SC 90266

DOB: 1976-01-01

Age: 49

Sex: Female

Last Menstrual Period:

2025-05-26

Collection Times:

2025-06-13 04:00AM (S1)
2025-06-13 04:30AM (S2)
2025-06-13 05:00AM (S3)
2025-06-12 03:00PM (S4)
2025-06-12 08:00PM (S5)

Ordering Provider:

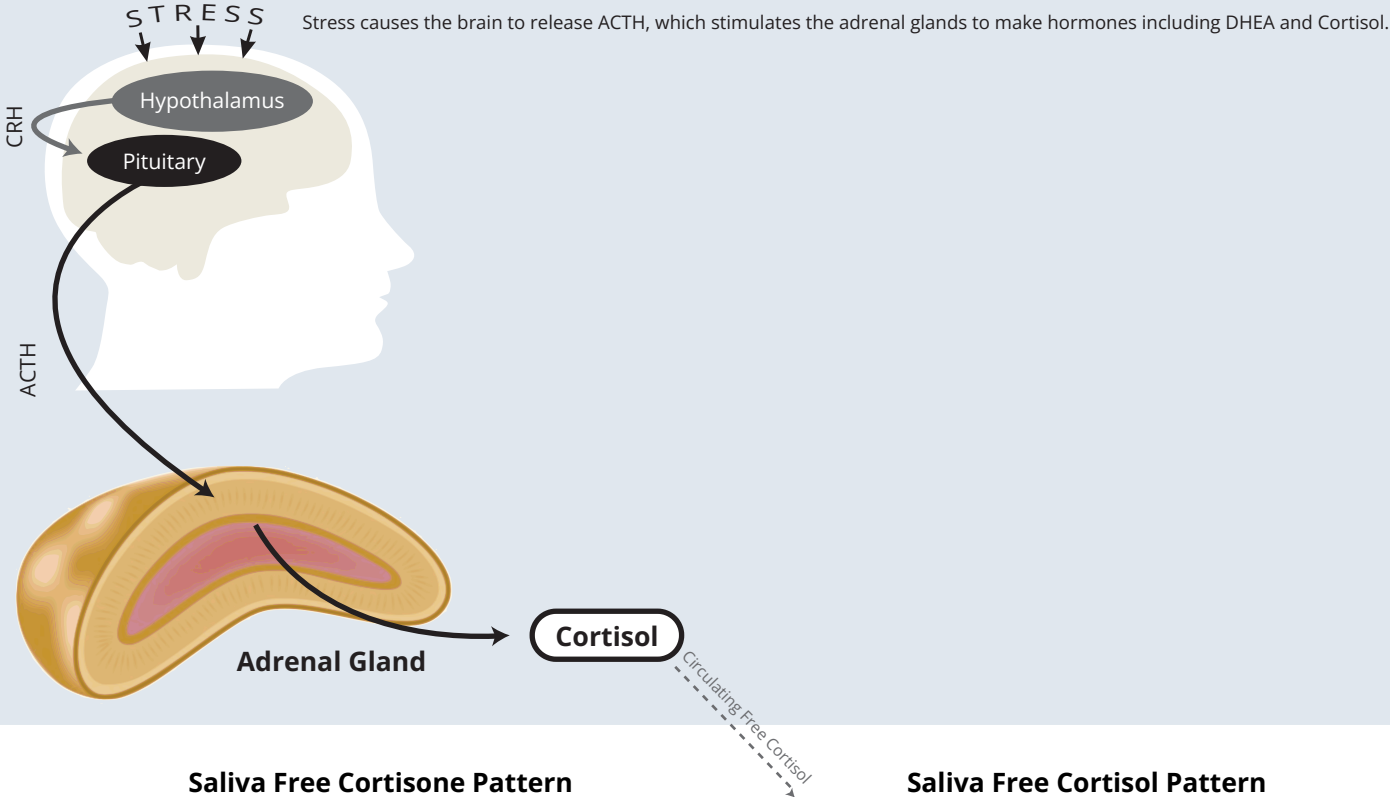
Test Provider MD

Cortisol Awakening Response

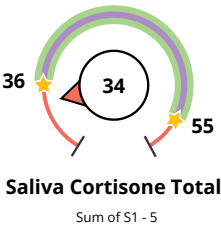
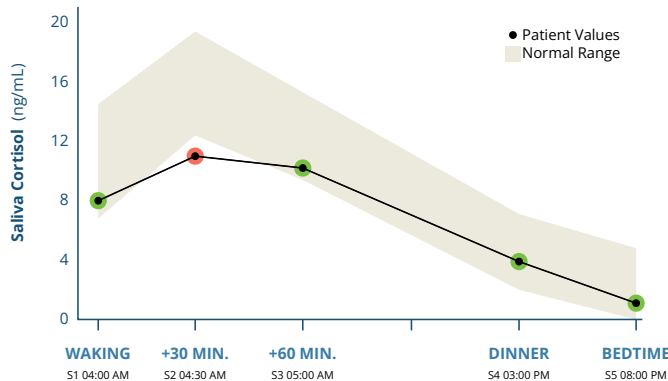
TEST		RESULT	UNITS	NORMAL RANGE
Free Cortisol and Cortisone (Saliva)				
Cortisol Awakening Response (CAR)	Below range	0.60	ng/mL	1.5 - 4
Cortisol (S1) - Waking	Low end of range	1.80	ng/mL	1.6 - 4.6
Cortisol (S2) - +30 Min.	Below range	2.40	ng/mL	3.7 - 8.2
Cortisol (S3) - +60 Min.	Below range	2.20	ng/mL	2.3 - 5.3
Cortisol (S4) - Dinner	Low end of range	0.42	ng/mL	0.4 - 1.5
Cortisol (S5) - Bedtime	Within range	0.20	ng/mL	0 - 0.9
Cortisone (S1) - Waking	Low end of range	8.00	ng/mL	6.8 - 14.5
Cortisone (S2) - +30 Min.	Below range	11.00	ng/mL	12.4 - 19.4
Cortisone (S3) - +60 Min.	Low end of range	10.20	ng/mL	9.4 - 15.3
Cortisone (S4) - Dinner	Within range	3.90	ng/mL	2 - 7.1
Cortisone (S5) - Bedtime	Within range	1.10	ng/mL	0 - 4.8
Saliva Cortisol Total (S1 - 5)	Below range	7.02	ng/mL	9.6 - 19.3
Saliva Cortisone Total (S1 - 5)	Below range	34.20	ng/mL	36 - 55

CORTISOL AWAKENING RESPONSE

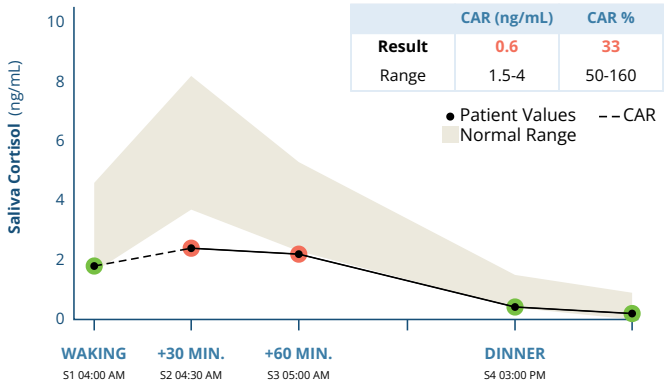
● Optimal Luteal Range ● Postmenopausal Range ● Out of Range ★ Edge of Range



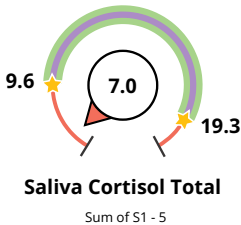
Saliva Free Cortisone Pattern



Saliva Free Cortisol Pattern



	CAR (ng/mL)	CAR %
Result	0.6	33
Range	1.5-4	50-160



Cortisol and Cortisone interconvert (11b-HSD)

Cortisol-related Patient or Sample Comments:

#1. Assess the daily free cortisol pattern including the CAR

- One or more points on the Saliva Free Cortisol Pattern are out of the optimal range. Note the time of day and whether out-of-range results are low or high at each point.
- The CAR is **33%**, which is below the optimal range. A low CAR may indicate chronic stress or sleep issues. Review the morning sample times carefully. The first two samples of the day are used to calculate the CAR and should be taken immediately after waking and 30 minutes after waking

#2. Assess the daily total (sum of S1-S5) of free cortisol in circulation

- The Saliva Cortisol Total (the sum of the 5 points on the Saliva Free Cortisol Pattern) is **7.0ng/mg**, which is below the optimal range. This indicates low overall cortisol levels. Review the Saliva Free Cortisol Pattern and CAR results carefully. The 30-minute point is usually the highest cortisol point of the day. If the CAR and the 30 minute point are low, this may lower the Saliva Cortisol Total.

ADRENAL

#1. Assess if cortisone (inactive) adds more insight to the free cortisol assessment

- Cortisol is the active adrenal glucocorticoid, while cortisone is an inactive "storage" form. In the saliva gland, a significant amount of cortisol is converted to cortisone before excretion into the saliva. Therefore, salivary cortisone should be considered a reflection or "shadow" of systemic cortisol. The degree to which this happens in an individual may vary. If free cortisone is significantly higher than free cortisol it may indicate free cortisol levels were higher in circulation (serum) than the salivary free cortisol levels may imply. If free cortisone is lower than free cortisol this may indicate free cortisol levels were not as high in circulation (serum) as salivary free cortisol imply.

#2. Assess if there is a whole-body preference for (inactive) cortisone or (active) cortisol

- The Systemic Preference slider reflects the balance between cortisol (THF) and cortisone (THE) metabolites and is influenced by systemic cortisol needs. As these metabolites are processed through the liver, the body may shift to cortisol (THF) in response to acute stressors (e.g., immune activation or infection), or toward cortisone (THE) with chronic stress (e.g., long-term inflammation or illness). Review the patient's result to determine if they are out of range.

A rightward shift (toward cortisol) paired with elevated free cortisol, may contribute to elevated tissue cortisol. If paired with low free cortisol, it may be helping preserve active cortisol in the systemic tissues.

A leftward shift (toward cortisone) paired with elevated free cortisol may be protective, helping reduce tissue exposure. If paired with low free cortisol it may worsen low cortisol symptoms by inactivating available cortisol.

Reference Range Percentiles

Reference ranges are developed by testing thousands of healthy individuals, while excluding results from outliers or those on impactful medications. A percentile approach is applied, as is done with most labs. Classic reference ranges use the 95th percentile as the upper end of range and the 5th percentile as the lower end of range. Our DUTCH ranges uses the percentiles found in the table below. We feel these ranges reflect the more optimal range sought in functional medicine practices. The table below shows the percentiles used for the reference range of each analyte on the DUTCH report:

Female Reference Ranges (Updated 05.20.2025)									
	Low%	High%	Low	High		Low%	High%	Low	High
b-Pregnanediol	20%	90%	600	2000	Saliva Cortisol Waking (W)	20%	90%	1.6	4.6
a-Pregnanediol	20%	90%	200	740	Saliva Cortisol (W+30 min.)	20%	90%	3.7	8.2
Estrone (E1)	20%	80%	12	26	Saliva Cortisol (W+60 min.)	20%	90%	2.3	5.3
Estradiol (E2)	20%	80%	1.8	4.5	Saliva Cortisol (Afternoon)	20%	90%	0.4	1.5
Estriol (E3)	20%	80%	5	18	Saliva Cortisol (Night)	0	95%	0	0.9
2-OH-E1	20%	80%	5.1	13.1	Saliva Cortisol (2-3 am)	0	90%	0	0.9
4-OH-E1	0	80%	0	1.8	Saliva Cortisone Waking (W)	20%	90%	6.8	14.5
16-OH-E1	20%	80%	0.7	2.6	Saliva Cortisone (W+30 min.)	20%	90%	12.4	19.4
2-Methoxy-E1	20%	80%	2.5	6.5	Saliva Cortisone (W+60 min.)	20%	90%	9.4	15.3
2-OH-E2	0	80%	0	3.1	Saliva Cortisone Afternoon	20%	90%	2	7.1
4-OH-E2	0	80%	0	0.52	Saliva Cortisone Night	0	95%	0	4.8
2-16-ratio	20%	80%	2.69	11.83	Saliva Cortisone (2-3 am)	0	95%	0	4.8
2-4-ratio	20%	80%	5.4	12.62	Cortisol Clearance Rate (CCR)	20%	80%	45	95
2Me-2OH-ratio	20%	80%	0.39	0.67	Melatonin (6-OHMS)	20%	90%	10	85
DHEA-S	20%	90%	20	750	8-OHdG	0	90%	0	5.2
Androsterone	20%	80%	200	1650	Methylmalonate	0	90%	0	2.5
Etiocholanolone	20%	80%	200	1000	Xanthurenate	0	90%	0.12	1.2
Testosterone	20%	80%	2.3	14	Kynurenate	0	90%	0.8	4.5
5a-DHT	0	80%	0	6.6	b-Hydroxyisovalerate	0	90%	0	12.5
5a-Androstanediol	20%	80%	6	30	Pyroglutamate	10%	90%	28	58
5b-Androstanediol	20%	80%	12	75	Indican	0	90%	0	100
Epi-Testosterone	20%	80%	2.3	14	Homovanillate	10%	95%	3	11
a-THF	20%	90%	75	370	Vanilmandelate	10%	95%	2.2	5.5
b-THF	20%	90%	1050	2500	Quinolinate	0	90%	0	9.6
b-THE	20%	90%	1550	3800	Calculated Values				
% = population percentile: Example - a high limit of 90% means results higher than 90% of the women tested for the reference range will be designated as "high."					Total DHEA Production	20%	80%	500	3000
					Total Estrogens	20%	80%	35	70
					Metabolized Cortisol	20%	90%	2750	6500
					Saliva Cortisol Total	20%	90%	9.6	19.3
					Saliva Cortisone Total	20%	90%	36	55