
Lab Dept: Chemistry

Test Name: ANDROSTENEDIONE

General Information

Lab Order Codes: ANST

Synonyms: N/A

CPT Codes: 82157 - Androstenedione

Test Includes: Androstenedione level reported in ng/dL.

Logistics

Test Indications: Diagnosis and differential diagnosis of hyper-androgenism (in conjunction with measurements of other sex-steroids). An initial workup in adults might also include total and bioavailable testosterone measurements. Depending on results, this may be supplemented with measurements of sex hormone-binding globulin and other androgenic steroids (eg, DHEA-S).

Diagnosis of congenital adrenal hyperplasia (CAH), in conjunction with measurement of other androgenic precursors, particularly, 17-alpha-hydroxyprogesterone, 17-alpha-hydroxypregnenolone, DHEA-S and cortisol.

Monitoring CAH treatment, in conjunction with testosterone, 17-Hydroxyprogesterone, Serum, DHEA-S and DHEA.

Diagnosis of premature adrenarche, in conjunction with gonadotropins (FSH, LH) and other adrenal gonadal sex-steroids and their precursors (testosterone total and bioavailable, testosterone total and free, Estradiol, DHEAS, DHEA, Sex hormone binding globulin, 17-Hydroxyprogesterone).

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Clinic Laboratories (Mayo test: ANST)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 2 - 5 days, testing performed Monday - Friday

Special Instructions: N/A

Specimen

Specimen Type: Blood

Container: Red NO GEL

Draw Volume: 1.8 mL (Minimum: 0.75 mL) blood

Processed Volume: 0.6 mL (Minimum: 0.25 mL) serum.

Collection: Routine blood collection

Special Processing: Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship refrigerated in plastic vial. Forward promptly.

Specimen stable refrigerated (preferred) or frozen for 28 days, ambient for 7 days.

Patient Preparation: N/A

Sample Rejection: Gross hemolysis; gross lipemia; specimen collected in serum gel tube; mislabeled or unlabeled specimens

Interpretive

Reference Range:

Premature Infants

26-28 weeks, day 4		92 - 282 ng/dL		
31-35 weeks, day 4		80 - 446 ng/dL		
Full-Term Infants				
1 - 7 days		20 - 290 ng/dL		
1 month – 1 year		<69 ng/dL		
Tanner Stages:				
Tanner Stage	Male		Female	
	Age (years)	Range (ng/dL)	Age (years)	Range (ng/dL)
1	< 9.8	<51	< 9.2	<51
2	9.8 – 14.5	31 - 65	9.2 – 13.7	42 - 100
3	10.7 – 15.4	50 - 100	10.0 – 14.4	80 - 190
4	11.8 – 16.2	48 - 140	10.7 – 15.6	77 - 225
5	12.8 – 17.3	65 - 210	11.8 – 18.6	80 - 240
Adults				
Males		40 - 150 ng/dL		
Females (entire cycle)		30 - 200 ng/dL		

Critical Values:

N/A

Limitations:

Any condition that can result in partial or complete adrenal or gonadal failure may result in low androstenedione levels, diminishing the diagnostic usefulness of the test in these settings.

Androstenedione and, to a lesser degree, dehydroepiandrosterone (DHEA-S) supplements can result in elevations of serum androstenedione level. With large androstenedione doses of 300 to 400 mg/day, serum androstenedione levels are almost double in some patients. Testosterone levels and, particularly in men, estrone and estradiol levels, may also increase, but to a much lesser degree.

Although compared with DHEA-S, less information has been published with regard to the effects of hormones and drugs on androstenedione levels. In particular, agents that induce hepatic enzymes, drugs that affect lipid metabolism, and other steroid hormones are likely to affect androstenedione levels, more commonly resulting toward lower levels. Whether any of these secondary changes are of clinical significance and how they should be related to the established normal reference ranges is unknown. In most cases, the drug-induced changes are not large enough to cause diagnostic confusion.

Methodology:

Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)

References:

[Mayo Clinic Laboratories](#) (July 2023)

Updates:

4/17/2012: Updated reference ranges.

4/26/2017: Collection container update.

8/23/2021: Moved from ESL to Mayo.

3/3/2023: Test temporarily down, lab will reorder alternate, added note in Test Includes section.

7/10/2023: Test resumed. Added specimen stability.