

ANDROSTENEDIONE, SERUM
#500051

NOTE: The testing and reporting is equivalent to Rochester test Androstenedione, Serum #9709.

USEFUL FOR:

- Diagnosis and differential diagnosis of hyperandrogenism (in conjunction with measurements of other sex-steroids). An initial workup in adults might also include total and bioavailable testosterone (#80065 "Testosterone, Total and Bioavailable, Serum") measurements. Depending on results, this may be supplemented with measurements of sex hormone-binding globulin (#200065 "Sex Hormone Binding Globulin [SHBG], Serum") and other androgenic steroids (eg, dehydroepiandrosterone sulfate [DHEA-S]).
- Diagnosis of congenital adrenal hyperplasia (CAH), in conjunction with measurement of other androgenic precursors, particularly, 17-alpha-hydroxyprogesterone (OHPG) (#500050 "17-Hydroxyprogesterone, Serum"), 17 alpha-hydroxypregnenolone, DHEA-S (#200260 "Dehydroepiandrosterone Sulfate [DHEA-S], Serum"), and cortisol (#500052 "Cortisol, Serum").
- Monitoring CAH treatment, in conjunction with testosterone (#500405 "Testosterone, Total, Serum"), OHPG, DHEA-S (#200260, "Dehydroepiandrosterone Sulfate [DHEA-S], Serum"), and DHEA (#81405 "Dehydroepiandrosterone [DHEA], Serum").
- Diagnosis of premature adrenarche, in conjunction with gonadotropins (#200055 "Follicle-Stimulating Hormone [FSH], Serum"; #200057 "Luteinizing Hormone [LH], Serum") and other adrenal and gonadal sex-steroids and their precursors (#80065 "Testosterone, Total and Bioavailable, Serum" or #8508 "Testosterone, Total and Free, Serum"; #81816 "Estradiol, Enhanced, Serum"; #200260 "Dehydroepiandrosterone Sulfate [DHEA-S], Serum"; #81405 "Dehydroepiandrosterone [DHEA], Serum"; #200065 "Sex Hormone Binding Globulin [SHBG], Serum"; #500050 "17-Hydroxyprogesterone, Serum").

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

REFERENCE VALUES:**PEDIATRICS***

Premature infants 26-28 weeks, day 4: 92-282 ng/dL
Premature infants 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

Males*		
Tanner Stages	Age (Years)	Reference Range (ng/dL)
Stage I (prepubertal)	<9.8	<51
Stage II	9.8-14.5	31-65
Stage III	10.7-15.4	50-100
Stage IV	11.8-16.2	48-140
Stage V	12.8-17.3	65-210
Females*		
Tanner Stages	Age (Years)	Reference Range (ng/dL)
Stage I (prepubertal)	<9.2	<51
Stage II	9.2-13.7	42-100
Stage III	10.0-14.4	80-190
Stage IV	10.7-15.6	77-225
Stage V	11.8-18.6	80-240
*Source: Androstenedione. In Pediatric Reference Ranges. 4th edition. Edited by SJ Soldin, C Brugnara, EC Wong. Washington, DC, AACCC Press, 2003, pp 32-34		
ADULTS Males: 40-150 ng/dL Females: 30-200 ng/dL		

SPECIMEN REQUIREMENTS:

Container/Tube: Plain, red-top tube(s)

Specimen Volume: 0.6 mL of serum

CAUTIONS:

- 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 sulfate (DHEA-S) supplements can result in elevations of serum androstenedione level. With large androstenedione doses of 300 mg/day to 400 mg/day, serum androstenedione levels can 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, it is likely that many drugs and hormones can result in changes in 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 in lowered 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.

LIST FEE: \$224.40

CPT CODE: 82157

ANALYTIC TIME: 1 day

DAY(S) SET UP: Mon-Fri, 1st Shift

QUESTIONS: Contact your Mayo Medical Laboratories' Regional Manager
Mary Erath, Mayo Medical Laboratories' Technologist Support
Telephone: 800-533-1710