

Reporting Title: CAH 21-Hydroxylase Profile
Performing Location: Rochester

Ordering Guidance:
This profile provides the simultaneous determination of 17-hydroxyprogesterone, androstenedione, and cortisol. These steroids can also be ordered individually: OHPG / 17-Hydroxyprogesterone, Serum; ANST / Androstenedione, Serum; and CIMP / Cortisol, Mass Spectrometry, Serum.

Specimen Requirements:
Collection Container/Tube: Red top (serum gel/SST are **not acceptable**)
Specimen Volume: 0.6 mL
Submission Container/Tube: Plastic vial
Collection Instructions:

- 1. Morning (8 a.m.) and afternoon (4 p.m.) specimens are preferred.
- 2. Include time of collection.
- 3. Centrifuge and aliquot serum into a plastic vial.

Additional Information: If multiple specimens are collected, send separate order for each specimen.

Forms:
If not ordering electronically, complete, print, and send a [Biochemical Genetics Test Request](#) (T798) with the specimen.

| Specimen Type | Temperature | Time | Special Container |
|---------------|--------------------------|---------|-------------------|
| Serum Red | Refrigerated (preferred) | 14 days | |
| | Frozen | 28 days | |
| | Ambient | 7 days | |

Ask at Order Entry (AOE) Questions:

| Test ID | Question ID | Description | Type | Reportable |
|---------|-------------|----------------------------------|------------|------------|
| CORTI | COLT1 | Collection Time in Military Time | Plain Text | Yes |

Result Codes:

| Result ID | Reporting Name | Type | Unit | LOINC® |
|-----------|---------------------------|---------|--------|--------|
| 30041 | Androstenedione, S | Numeric | ng/dL | 1854-9 |
| 30042 | 17-Hydroxyprogesterone, S | Numeric | ng/dL | 1668-3 |
| 30040 | Cortisol, S | Numeric | mcg/dL | 2143-6 |
| 30070 | AM Cortisol | Numeric | mcg/dL | 9813-7 |
| 30071 | PM Cortisol | Numeric | mcg/dL | 9812-9 |

LOINC® and CPT codes are provided by the performing laboratory.

Supplemental Report:

No

Components:

| Test Id | Reporting Name | CPT Units | CPT Code | Always Performed | Available Separately |
|---------|---------------------------|-----------|----------|------------------|----------------------|
| CORTI | Cortisol, S | 1 | 82533 | Yes | Yes, (order CINP) |
| ANDRO | Androstenedione, S | 1 | 82157 | Yes | Yes, (order ANST) |
| H17 | 17-Hydroxyprogesterone, S | 1 | 83498 | Yes | Yes, (order OHPG) |

CPT Code Information:

82157
82533
83498

Reference Values:

CORTISOL

5-25 mcg/dL (a.m.)
2-14 mcg/dL (p.m.)

Pediatric reference ranges are the same as adults, as confirmed by peer-reviewed literature.

Petersen KE. ACTH in normal children and children with pituitary and adrenal diseases. I. Measurement in plasma by radioimmunoassay-basal values. Acta Paediatr Scand. 1981;70(3):341-345

ANDROSTENEDIONE

PEDIATRICS*

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

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 |

*Soldin SJ, Brugnara C, Wong EC. Androstenedione. In: Pediatric Reference Ranges. 4th ed. AACC Press; 2003:32-34

ADULTS

Males: 40-150 ng/dL

Females: 30-200 ng/dL

17-HYDROXYPROGESTERONE

Children

Preterm infants: Preterm infants may exceed 630 ng/dL, however, it is uncommon to see levels reach 1,000 ng/dL.

Term infants

0-28 days: <630 ng/dL

Levels fall from newborn (<630 ng/dL) to prepubertal gradually within 6 months.

Prepubertal males: <110 ng/dL

Prepubertal females: <100 ng/dL

Adults

Males: <220 ng/dL

Females

Follicular: <80 ng/dL

Luteal: <285 ng/dL

Postmenopausal: <51 ng/dL

Note: For pregnancy reference ranges, see: Soldin OP, Guo T, Weiderpass E, Tractenberg RE, Hilakivi-Clarke L, Soldin SJ. Steroid hormone levels in pregnancy and 1 year postpartum using isotope dilution tandem mass spectrometry. Fertil Steril. 2005;84(3):701-710