

Andropause – Diagnosis and Laboratory Values

Andropause is a condition of hormonal imbalance, and may be related to declining levels of testosterone, elevated levels of estrogens, or a mixture of both. Proper diagnosis and screening will facilitate effective therapy.

Diagnosis:

1. Patient History and Physical
 - a. Include a questionnaire on symptoms (PCCA Male Hormone Screening Form (PCCA Fax Document #94123) or ADAM questionnaire) with particular emphasis on libido and sexual function.
 - b. Physical symptoms to note: presence of decreased body hair (esp. legs and chest), obesity, gynecomastia, decreased muscle mass and osteoporosis.
2. Laboratory Value
 - a. Essential labs to order include total and free testosterone and estradiol. These values should be measured in the morning.

Testosterone Serum Levels:

Lab Value	Units	Alt. Units	Comments
Total Testosterone	300-1000 ng/dL	10.4-41.6 nmol/L	Optimal Range: 600-750 ng/dL
Free Testosterone	47-244 pg/mL	190-660 pmol/L	Also expressed as a percent: 1.5-3.2% of total testosterone
Test, Bioavailable	130.5-681.7 ng/dL	3-12 nmol/L	Also expressed as 84-402 ng/dL
Note: pg/mL = ng/L	Thus, pg/mL = ng/dL x 10		Example: 47-244 pg/mL = 4.7-24.4 ng/dL

Testosterone and Estrogen Saliva Levels:

Lab Value	Units	Alt. Units	Comments
Free Testosterone	40-200 pg/mL		With topical use, range is likely higher (500-2500 pg/mL)
Estradiol	0.76-2.18 pg/mL	2.8-8.0 pmol/L	Optimal Range: 0.76-1.63 pg/mL, 2.8-6.0 pmol/L

Estradiol (E2) and Estrone Serum Levels:

Lab Value	Units	Alt. Units	Comments
Estradiol	0-50 pg/mL	0-5 ng/dL	Optimal Range: 20-30 pg/mL (2-3 ng/mL)
Estrone	<65 pg/mL		Range: 10-65 pg/mL

- b. If testosterone is low, LH and FSH, PRL and Zinc levels may be useful.
NOTE: LH is more specific for testosterone secretion but FSH may be more cost effective.
 - c. Optional supplementary lab values: DHEA, estrone, SHBG, DHT and abnormal prolactin, examine the presence of a tumor.
 - d. Bloodwork: PSA, Hct/Hgb, lipid panel
3. Monitoring Patients
- a. Patient symptoms and response to treatment
 - b. PSA levels at 3, 6, 12 months
 - c. Testosterone and estradiol levels
 - d. Lipid profile
 - e. Hct

Other Important Values:

Lab Value	Units	Alt. Units	Comments
SBHG	13-71 nmol/L	0.5-1.5 mcg/dL	Mean is 0.9 mcg/dL
DHEA	2-9 ng/dL	7-31 nmol/L	Older men are usually deficient.
DHEA(S)	500-2500 mcg/dL	1.3-6.8 μ /mol/L	
DHT	20-50 ng/dL		
Prolactin	7-18 ng/mL		
LH	1.3-13 IU/L		
FSH	0.9-15 IU/L		
Zinc	75-291 mcg/dL		
PSA	<4 ng/mL		
Hct	<52 SI Units		
Progesterone	<1.0 ng/mL	<3.18 nmol/L	