Test Definition: EEST

Estradiol, Serum

Reporting Title: Estradiol, Mass Spectrometry, S
Performing Location: Mayo Clinic Laboratories - Rochester Superior Drive

Specimen Requirements:

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Red top (SST/serum gel tubes are **not acceptable**)
Submission Container/Tube: Plastic vial
Specimen Volume: 1.2 mL
Collection Instructions: Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial.
Additional Information: For more information see Steroid Pathways.

Forms:

If not ordering electronically, complete, print, and send a General Request (T239) with the specimen.

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

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
81816	Estradiol, Mass Spectrometry, S	Numeric	pg/mL	2243-4

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

Supplemental Report:

No

CPT Code Information:

82670

Reference Values:

CHILDREN*

1 to14 days: Estradiol levels in newborns are very elevated at birth but will fall to prepubertal levels within a few days.

Males

Tanner stages#	Mean age	Reference range
Stage I (>14 days and prepubertal)	7.1 years	Undetectable-13 pg/mL
Stage II	12.1 years	Undetectable-16 pg/mL
Stage III	13.6 years	Undetectable-26 pg/mL
Stage IV	15.1 years	Undetectable-38 pg/mL
Stage V	18 years	10-40 pg/mL

#Puberty onset (transition from Tanner stage I to Tanner stage II) occurs for boys at a median age of 11.5 (+/- 2) years.

For boys, there is no proven relationship between puberty onset and body weight or ethnic origin. Progression through Tanner stages is variable. Tanner stage V (adult) should be reached by age 18.

Females

Tanner stages#	Mean age	Reference range
Stage I (>14 days and prepubertal)	7.1 years	Undetectable-20 pg/mL
Stage II	10.5 years	Undetectable-24 pg/mL
Stage III	11.6 years	Undetectable-60 pg/mL
Stage IV	12.3 years	15-85 pg/mL
Stage V	14.5 years	15-350 pg/mL**

#Puberty onset (transition from Tanner stage I to Tanner stage II) occurs for girls at a median age of 10.5 (+/- 2) years. There is evidence that it may occur up to 1 year earlier in obese girls and in African American girls. Progression through Tanner stages is variable. Tanner stage V (adult) should be reached by age 18.

*The reference ranges for children are based on the published literature(1,2), cross-correlation of our assay with assays used to generate the literature data, and on our data for young adults.

ADULTS
Males: 10-40 pg/mL
Females
Premenopausal: 15-350 pg/mL**
Postmenopausal: <10 pg/mL
**E2 levels vary widely through the menstrual cycle.
Conversion factor
E2: pg/mL x 3.676=pmol/L (molecular weight=272)

For International System of Units (SI) conversion of Reference Values, see
https://www.mayocliniclabs.com/order-tests/si-unit-conversion.html