
Lab Dept: Chemistry

Test Name: ESTRONE

General Information

Lab Order Codes: STRN

Synonyms: E1

CPT Codes: 82679 - Estrone

Test Includes: Estrone level reported in pg/mL.

Logistics

Test Indications: As part of the diagnosis and workup of precocious and delayed puberty in females and, to a lesser degree, male. As part of the diagnosis and workup of suspected disorders of sex steroid metabolism (eg, aromatase deficiency and 17 alpha-hydroxylase deficiency.) As an adjunct to clinical assessment of postmenopausal women, and, to a lesser degree, older men. Monitoring low-dose female hormone replacement therapy in postmenopausal women. Monitoring antiestrogen therapy (eg, aromatase inhibitor therapy.)

Lab Testing Sections: Chemistry – Sendouts

Referred to: Mayo Clinic Laboratories (Mayo Test: E1)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 2 - 2 days, test set up Monday - Saturday

Special Instructions: N/A

Specimen

Specimen Type: Blood

Container: Red NO GEL

Draw Volume: 3.6 mL (Minimum: 2.4 mL) blood

Processed Volume:	1.2 mL (Minimum: 0.8 mL) serum
Collection:	Routine venipuncture
Special Processing:	Lab Staff: Centrifuge specimen; remove serum aliquot within 2 hours of draw. Place aliquot into a screw-capped round bottom plastic vial. Store and ship specimen refrigerated. Forward promptly.
Patient Preparation:	None
Sample Rejection:	Mislabeled or unlabeled specimens; drawn in SST tube

Interpretive

Reference Range:

Children:

1-14 days: Estrone levels in newborns are very elevated at birth but will fall to prepubertal levels within a few days.

Note: The reference ranges for children are based on the published literature, cross-correlation of Mayo's assay with assays used to generate the literature data and on our data for young adults.

Puberty:				
	Male		Female	
Tanner Stage	Mean Age (years)*	Estrone (pg/mL)	Mean Age (years)**	Estrone (pg/mL)**
1	7.1	Undetectable-16	7.1	Undetectable - 29
2	11.5	Undetectable - 22	10.5	10 - 33
3	13.6	10 - 25	11.6	15 – 43
4	15.1	10 - 46	12.3	16 – 77
5	18	10 - 60	14.5	17 – 200
<p>*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 not 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.</p>				
<p>** 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.</p>				
Adults:				
Male:		10 – 60 pg/mL		
Female		Premenopausal: 17 – 200 pg/mL		
		Postmenopausal: 7 - 40 pg/mL		
Conversion: E1 in pg/mL x 3.704 = pmol/L				

Critical Values: N/A

Limitations: N/A

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

References:

[Mayo Clinic Laboratory](#) September 2021

Updates:

3/8/2010: Reference range units changed from ng/dL to pg/mL. Ranges have been adjusted by a factor of 10. Method previously listed as RIA.

11/13/2017: Collection container update, Female ref range update.

9/13/2021: Moved from ESL to Mayo.