Test Definition: ESTF

Estrogens, Estrone (E1) and Estradiol (E2), Fractionated, Serum

Reporting Title: Estrogens, E1+E2, fractionated, S
Performing Location: Mayo Clinic Laboratories - Rochester Superior Drive

Specimen Requirements:

Supplies: Sarstedt Aliquot Tube 5 mL (T914)
Collection Container/Tube: Red top (Serum gel/SST is **not** acceptable)
Submission Container/Tube: Plastic vial
Specimen Volume: 1.2 mL
Collection Instructions: Within 2 hours of collection, centrifuge and aliquot serum in plastic vial.

Forms:

If not ordering electronically, complete, print, and send General Test 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®
81418	Estrone, S	Numeric	pg/mL	2258-2
81816	Estradiol, Mass Spectrometry, S	Numeric	pg/mL	2243-4

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
E1	Estrone, S	1	82679	Yes	Yes
EEST	Estradiol, Mass Spectrometry, S	1	82670	Yes	Yes

CPT Code Information:

82671-Estrogens, fractionated
82670-Estradiol (If appropriate)
82679-Estrone (If appropriate)

Reference Values:

ESTRONE (E1)

CHILDREN*

1 to14 days: Estrone 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-16 pg/mL
Stage II	11.5 years	Undetectable-22 pg/mL
Stage III	13.6 years	10-25 pg/mL
Stage IV	15.1 years	10-46 pg/mL
Stage V	18 years	10-60 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-29 pg/mL
Stage II	10.5 years	10-33 pg/mL
Stage III	11.6 years	15-43 pg/mL
Stage IV	12.3 years	16-77 pg/mL
Stage V	14.5 years	17-200 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: 10-60 pg/mL

Females

Premenopausal: 17-200 pg/mL

Postmenopausal: 7-40 pg/mL

Conversion factor

E1: pg/mL x 3.704=pmol/L (molecular weight=270)

ESTRADIOL (E2)

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 for Reference Values, see
https://www.mayocliniclabs.com/order-tests/si-unit-conversion.html