# Test Definition: ESTF

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

**Reporting Title:** Estrogens, E1+E2, fractionated, S
**Performing Location:** Rochester

## Specimen Requirements:

Container/Tube:
Preferred: Red top
Acceptable: Serum gel
Specimen Volume: 1.2 mL
Collection Instructions: Serum must be separated from gel within 24 hours of draw.

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

## Result Codes:

| Result ID | Reporting Name | Type | Unit | LOINC® |
|---|---|---|---|---|
| 81418 | Estrone, S<br>**Also used by tests: E1** | Numeric | pg/mL | 2258-2 |
| 81816 | Estradiol, S<br>**Also used by tests: EEST** | Numeric | pg/mL | 2243-4 |

## Components:

| Test ID | Reporting Name | CPT Units | CPT Code | Always Performed | Orderable Separately |
|---|---|---|---|---|---|
| E1 | Estrone, S | 1 | 82679 | Yes | Yes |
| EEST | Estradiol, S | 1 | 82670 | Yes | Yes |

## Reference Values:

ESTRONE (E1)
CHILDREN*
1-14 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*
1-14 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)