

Reporting Title: IGF-1 LC/MS, IGFBP-3 Growth Panel
Performing Location: Mayo Clinic Laboratories - Rochester Superior Drive

Necessary Information:
Indicate patient's age and sex.

Specimen Requirements:
Collection Container/Tube:
Preferred: Red top
Acceptable: Serum gel
Submission Container/Tube: 2 Plastic vials
Specimen Volume: 1 mL
Collection Instructions:
1. Centrifuge within 1 hour of collection.
2. Aliquot into 2 plastic vials in equal portions.

Specimen Type	Temperature	Time	Special Container
Serum	Frozen	14 days	

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
IGFB3	IGFBP-3, S	Numeric	mcg/mL	2483-6
62750	IGF-1, LC/MS, S	Numeric	ng/mL	2484-4
35781	Z-score	Numeric	SD	73561-3

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
IGFMS	IGF-1, LC/MS, S	1	84305	Yes	Yes
IGFB3	IGFBP-3, S	1	83520	Yes	Yes

CPT Code Information:
83520
84305

Reference Values:**INSULIN-LIKE GROWTH FACTOR 1****Males:**

- 0-11 months: 18-156 ng/mL
- 1 year: 14-203 ng/mL
- 2 years: 16-222 ng/mL
- 3 years: 22-229 ng/mL
- 4 years: 30-236 ng/mL
- 5 years: 39-250 ng/mL
- 6 years: 47-275 ng/mL
- 7 years: 54-312 ng/mL
- 8 years: 61-356 ng/mL
- 9 years: 67-405 ng/mL
- 10 years: 73-456 ng/mL
- 11 years: 79-506 ng/mL
- 12 years: 84-551 ng/mL
- 13 years: 90-589 ng/mL
- 14 years: 95-618 ng/mL
- 15 years: 99-633 ng/mL
- 16 years: 104-633 ng/mL
- 17 years: 107-615 ng/mL
- 18-22 years: 91-442 ng/mL
- 23-25 years: 66-346 ng/mL
- 26-30 years: 60-329 ng/mL
- 31-35 years: 54-310 ng/mL
- 36-40 years: 48-292 ng/mL
- 41-45 years: 44-275 ng/mL
- 46-50 years: 40-259 ng/mL
- 51-55 years: 37-245 ng/mL
- 56-60 years: 34-232 ng/mL
- 61-65 years: 33-220 ng/mL
- 66-70 years: 32-209 ng/mL
- 71-75 years: 32-200 ng/mL
- 76-80 years: 33-192 ng/mL
- 81-85 years: 33-185 ng/mL
- 86-90 years: 33-179 ng/mL
- > or=91 years: 32-173 ng/mL

Females:

- 0-11 months: 14-192 ng/mL
- 1 year: 23-243 ng/mL
- 2 years: 28-256 ng/mL
- 3 years: 31-249 ng/mL

Test Definition: IGFGP

Insulin-Like Growth Factor 1 and Insulin-Like
Growth Factor-Binding Protein 3 Growth
Panel, Serum

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- 4 years: 33-237 ng/mL
 - 5 years: 36-234 ng/mL
 - 6 years: 39-246 ng/mL
 - 7 years: 44-279 ng/mL
 - 8 years: 51-334 ng/mL
 - 9 years: 61-408 ng/mL
 - 10 years: 73-495 ng/mL
 - 11 years: 88-585 ng/mL
 - 12 years: 104-665 ng/mL
 - 13 years: 120-719 ng/mL
 - 14 years: 136-729 ng/mL
 - 15 years: 147-691 ng/mL
 - 16 years: 153-611 ng/mL
 - 17 years: 149-509 ng/mL
 - 18-22 years: 85-370 ng/mL
 - 23-25 years: 73-320 ng/mL
 - 26-30 years: 66-303 ng/mL
 - 31-35 years: 59-279 ng/mL
 - 36-40 years: 54-258 ng/mL
 - 41-45 years: 49-240 ng/mL
 - 46-50 years: 44-227 ng/mL
 - 51-55 years: 40-217 ng/mL
 - 56-60 years: 37-208 ng/mL
 - 61-65 years: 35-201 ng/mL
 - 66-70 years: 34-194 ng/mL
 - 71-75 years: 34-187 ng/mL
 - 76-80 years: 34-182 ng/mL
 - 81-85 years: 34-177 ng/mL
 - 86-90 years: 33-175 ng/mL
 - > or =91 years: 25-179 ng/mL

Tanner Stage reference ranges:

Males

- Stage I: 81-255 ng/mL
- Stage II: 106-432 ng/mL
- Stage III: 245-511 ng/mL
- Stage IV: 223-578 ng/mL
- Stage V: 227-518 ng/mL

Females

- Stage I: 86-323 ng/mL
- Stage II: 118-451 ng/mL
- Stage III: 258-529 ng/mL

Stage IV: 224-586 ng/mL

Stage V: 188-512 ng/mL

Tanner Stage reference source: Bindlingmaier M, Friedrich N, Emeny RT, et al. Reference intervals for insulin-like growth factor-1 (igf-i) from birth to senescence: results from a multicenter study using a new automated chemiluminescence IGF-I immunoassay conforming to recent international recommendations. J Clin Endocrinol Metab. 2014;99(5):1712-1721

Note: Puberty onset (transition from Tanner stage I to Tanner stage II) occurs for boys at a median age of 11.5 (+/-2) years and 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. For boys, there is no definite proven relationship between puberty onset and body weight or ethnic origin. Progression through Tanner stages is variable. Tanner stage V (young adult) should be reached by age 18.

INSULIN-LIKE GROWTH FACTOR-BINDING PROTEIN 3

1-7 days: < or =0.7 mcg/mL

8-14 days: 0.5-1.4 mcg/mL

15 days-11 months: Unavailable

1 year: 0.7-3.6 mcg/mL

2 years: 0.8-3.9 mcg/mL

3 years: 0.9-4.3 mcg/mL

4 years: 1.0-4.7 mcg/mL

5 years: 1.1-5.2 mcg/mL

6 years: 1.3-5.6 mcg/mL

7 years: 1.4-6.1 mcg/mL

8 years: 1.6-6.5 mcg/mL

9 years: 1.8-7.1 mcg/mL

10 years: 2.1-7.7 mcg/mL

11 years: 2.4-8.4 mcg/mL

12 years: 2.7-8.9 mcg/mL

13 years: 3.1-9.5 mcg/mL

14 years: 3.3-10 mcg/mL

15 years: 3.5-10 mcg/mL

16 years: 3.4-9.5 mcg/mL

17 years: 3.2-8.7 mcg/mL

18 years: 3.1-7.9 mcg/mL

19 years: 2.9-7.3 mcg/mL

20 years: 2.9-7.2 mcg/mL

21-25 years: 3.4-7.8 mcg/mL

26-30 years: 3.5-7.6 mcg/mL

31-35 years: 3.5-7.0 mcg/mL

36-40 years: 3.4-6.7 mcg/mL

41-45 years: 3.3-6.6 mcg/mL

Test Definition: IGFGP

Insulin-Like Growth Factor 1 and Insulin-Like
Growth Factor-Binding Protein 3 Growth
Panel, Serum

46-50 years: 3.3-6.7 mcg/mL
51-55 years: 3.4-6.8 mcg/mL
56-60 years: 3.4-6.9 mcg/mL
61-65 years: 3.2-6.6 mcg/mL
66-70 years: 3.0-6.2 mcg/mL
71-75 years: 2.8-5.7 mcg/mL
76-80 years: 2.5-5.1 mcg/mL
81-85 years: 2.2-4.5 mcg/mL

Tanner Stages:

Males

Stage I: 1.4-5.2 mcg/mL
Stage II: 2.3-6.3 mcg/mL
Stage III: 3.1-8.9 mcg/mL
Stage IV: 3.7-8.7 mcg/mL
Stage V: 2.6-8.6 mcg/mL

Females

Stage I: 1.2-6.4 mcg/mL
Stage II: 2.8-6.9 mcg/mL
Stage III: 3.9-9.4mcg/mL
Stage IV: 3.3-8.1 mcg/mL
Stage V: 2.7-9.1 mcg/mL

Note: Puberty onset, ie, the transition from Tanner stage 1 (prepubertal) to Tanner stage 2 (early pubertal), occurs for girls at a median age of 10.5 (+/-2) years and for boys at a median age of 11.5 (+/-2) years. There is evidence that it may occur up to 1 year earlier in obese girls and in African American girls. By contrast, for boys there is no definite proven relationship between puberty onset and body weight or ethnic origin. Progression through Tanner stages is variable. Tanner stage 5 (young adult) should be reached by age 18.