MAYO
Mayo Medical Laboratories
1-800-533-1710

**NEW TEST ANNOUNCEMENT**
**NOTIFICATION DATE:** January 22, 2013
**EFFECTIVE DATE:** January 31, 2013

# INSULIN-LIKE GROWTH FACTOR 1, SERUM
## Test ID: IGF1I

**NOTE:** This test is replacing the IGF1, Insulin-Like Growth Factor 1, Serum, which will become obsolete on January 31, 2013.

**USEFUL FOR:**
- Diagnosing growth disorders
- Diagnosing adult growth hormone deficiency
- Monitoring of recombinant human growth hormone treatment
- Diagnosis and follow-up of acromegaly and gigantism.

**METHODOLOGY:** Chemiluminescence

**REFERENCE VALUES:**

Males:

| Age | ng/mL | 0.1 Percentile (ng/mL) |
|---|---|---|
| 0-11 months | 15-150 | 3 |
| 1 year | 18-179 | 4 |
| 2 years | 22-204 | 5 |
| 3 years | 25-224 | 6 |
| 4 years | 28-241 | 8 |
| 5 years | 32-259 | 9 |
| 6 years | 36-281 | 11 |
| 7 years | 42-311 | 13 |
| 8 years | 49-351 | 16 |
| 9 years | 58-401 | 19 |
| 10 years | 70-458 | 24 |
| 11 years | 82-516 | 29 |
| 12 years | 93-567 | 35 |
| 13 years | 103-603 | 41 |
| 14 years | 111-620 | 46 |
| 15 years | 115-618 | 50 |
| 16 years | 115-598 | 52 |
| 17 years | 113-566 | 54 |
| 18 years | 109-527 | |
| 19 years | 104-484 | |
| 20 years | 98-443 | |
| 21-25 years | 83-344 | |
| 26-30 years | 75-275 | |
| 31-35 years | 71-241 | |
| 36-40 years | 69-226 | |
| 41-45 years | 64-210 | |
| 46-50 years | 59-201 | |
| 51-55 years | 56-201 | |
| 56-60 years | 51-194 | |
| 61-65 years | 47-191 | |

Females:

| Age | ng/mL | 0.1 Percentile (ng/mL) |
|---|---|---|
| 0-11 months | 18-146 | 5 |
| 1 year | 20-159 | 6 |
| 2 years | 23-177 | 7 |
| 3 years | 27-198 | 8 |
| 4 years | 32-223 | 10 |
| 5 years | 36-246 | 12 |
| 6 years | 41-269 | 15 |
| 7 years | 48-299 | 17 |
| 8 years | 56-339 | 21 |
| 9 years | 68-396 | 26 |
| 10 years | 83-465 | 32 |
| 11 years | 99-537 | 40 |
| 12 years | 115-598 | 48 |
| 13 years | 126-637 | 56 |
| 14 years | 133-647 | 62 |
| 15 years | 134-631 | 65 |
| 16 years | 130-595 | 66 |
| 17 years | 123-546 | 64 |
| 18 years | 114-493 | |
| 19 years | 105-441 | |
| 20 years | 97-398 | |
| 21-25 years | 84-323 | |
| 26-30 years | 77-271 | |
| 31-35 years | 73-244 | |
| 36-40 years | 68-225 | |
| 41-45 years | 62-205 | |
| 46-50 years | 56-194 | |
| 51-55 years | 53-191 | |
| 56-60 years | 45-173 | |
| 61-65 years | 41-168 | |

Males: Continued

| Age | ng/mL | 0.1 Percentile (ng/mL) |
|---|---|---|
| 66-70 years | 46-195 | |
| 71-75 years | 42-187 | |
| 76-80 years | 39-184 | |
| 80-85 years | 37-182 | |
| 85-90 years | 35-182 | |

Females: Continued

| Age | ng/mL | 0.1 Percentile (ng/mL) |
|---|---|---|
| 66-70 years | 39-168 | |
| 71-75 years | 36-166 | |
| 76-80 years | 35-168 | |
| 80-85 years | 35-179 | |
| 85-90 years | 33-179 | |

Reference values have not been established for patients that are > 90 years of age.

IGF-1 reference values according to Tanner stages I-V.

Males
-Stage I: 83-255 ng/mL
-Stage II: 114-440 ng/mL
-Stage III: 236-516 ng/mL
-Stage IV: 218-580 ng/mL
-Stage V: 229-522 ng/mL

Females
-Stage I: 90-324 ng/mL
-Stage II: 104-456 ng/mL
-Stage III: 249-519 ng/mL
-Stage IV: 238-574 ng/mL
-Stage V: 187-509 ng/mL

**Note:** Puberty onset, i.e. the transition from Tanner stage 1 (pre-pubertal) 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.

## SPECIMEN REQUIREMENTS:

**Collection Container/Tube:**
**Preferred:** Red Top
**Acceptable:** Serum gel
**Submission Container/Tube:** Plastic vial
**Specimen Volume:** 0.5 mL
**Collection Instructions:** Spin down promptly.
**Additional Information:** Indicate patient's age and sex.

## SPECIMEN STABILITY INFORMATION:

| Specimen Type | Temperature | Time |
|---|---|---|
| Serum | Frozen | 14 days |

## CAUTIONS:

- Insulin-like growth factor 1 (IGF-1) and insulin-like growth factor binding protein 3 (IGFBP-3) reference ranges are highly age dependent and results must always be interpreted within the context of the patient's age.
- Discrepant IGF-1 and IGFBP-3 results can sometimes occur due to liver and kidney disease; however, this is uncommon and such results should alert laboratories and physicians to the possible occurrence of a pre-analytical or analytical error.
- Currently, IGF-1 or IGFBP-3 IGF-1 cannot be reliably used as risk indicators or prognostic markers in breast, colon, prostate, or lung cancer.

- IGF-1 assays exhibit significant variability among platforms and manufacturers. Direct comparison of results obtained by different assays is problematic. If IGF-1 and IGFBP-3 are being used for serial monitoring, re-baselining of patients is preferred if assays are changed.
- Heterophile antibodies in human serum can react with the immunoglobulins included in the assay components causing interference with immunoassays. Specimens from patients with autoimmune diseases or from individuals routinely exposed to animals or animal serum products can demonstrate this type of interference, potentially causing an anomalous result. The assay reagents have been formulated to minimize the risk of such interference; however, rare interactions can occur. For diagnostic purposes, the results obtained from this assay should always be used in combination with the clinical examination, patient medical history, and other findings.

**CPT CODE:** 84305

**DAY(S) SET UP:** Monday through Friday; 5 a.m.-12a.m., Saturday; 6 a.m.-6 p.m.

**ANALYTIC TIME:** Same day/1 day

QUESTIONS: Contact your Mayo Medical Laboratories' Regional Manager or
Greg Renkly, MML Laboratory Technologist Resource Coordinator
Telephone: 800-533-1710