Program | Notification - Standard
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Medication | Human Growth Hormone: Somatropin (Genotropin®, Humatrope®, Norditropin®, NordiFlex®, Nutropin®, Nutropin AQ®, Nutropin AQ NuSpin™, Omnitrope®, Saizen®, Tev-Tropin®, Zorbtive®, and Serostim®) Growth Stimulating Products: Mecasermin (Increlex®)

*Product is excluded for lines of business with therapeutic equivalent exclusions

Date Approved | 4/2008

**Background**
Somatropin is indicated for the treatment of growth hormone deficiency, short stature associated with Turner syndrome or Noonan syndrome, short-stature homeobox (SHOX) gene deficiency, growth failure due to Prader-Willi syndrome, short stature in children born small for gestational age, growth failure in children with chronic renal insufficiency up to the time of transplant, short bowel syndrome in patients receiving specialized nutritional support, and HIV-associated wasting. Somatropin is also indicated for replacement of endogenous growth hormone in adults with confirmed growth hormone deficiency.

Mecasermin is indicated for the treatment of growth failure in children with severe primary insulin-like growth factor-1 (IGF-1) deficiency or with growth hormone gene deletion who have developed neutralizing antibodies to growth hormone.

**Coverage Information**
Coverage for somatropin (Genotropin, Humatrope, Norditropin, NordiFlex, Nutropin, Nutropin AQ, Nutropin AQ NuSpin, Omnitrope, Protropin, Saizen, and Tev-Tropin) and mecasermin (Increlex) will be provided for members who meet the following criteria:

| Pediatric Growth Hormone Deficiency (including children who have undergone brain radiation) |
| [If patient is a Transition Phase Adolescent or Adult who had childhood onset GH deficiency, utilize criteria for Transition Phase Adolescent or Adult GH Deficiency] |
| Patient is an infant less than 4 months old or has hypoglycemia associated with pituitary disease. |

**OR**

Patient has one of the following: 1) Patient’s height is below the 3rd percentile on growth charts for their age and gender related height (i.e., height is more than 1.5 standard deviations from the midparental height or more than 2 SD below population mean) 2) Patient’s growth velocity is subnormal (i.e., more than 2 standard deviations from mean) for age 3) Patient has delayed skeletal
maturation of more than 2 standard deviations below mean for age and gender (e.g., delayed more than 2 years compared with chronological age) AND

Patient is 15 years of age or older and patient has not attained projected height or patient is less than 15 years of age AND

Patient has either:

1) undergone at least two provocative stimulation tests involving arginine, clonidine, glucagon, insulin, levodopa, or growth hormone releasing hormone and both GH values are < 10 mcg/L

or

2) Patient is less than 1 year of age

*If the patient meets all required clinical criteria, initial approval is 12 months.*

**Renewals after criteria have been met:** Coverage will be continued if the patient has grown at least 2.5 cm/year over the previous year and patient has not attained expected adult height.

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**Growth Failure in Children Small for Gestational Age (SGA)**

Based on the 0-36 month growth chart, a failure of catch up in the first 24 months of life demonstrated, (i.e. the patient’s birth weight and birth length were and patient’s height remains more than 2 standard deviations below mean normal values)

AND

The patient is 15 years of age or older and patient has not attained projected height or the patient is less than 15 years of age.

*If the patient meets all required clinical criteria, initial approval is 12 months.*

**Renewals:** Coverage will be continued if the patient has grown at least 2.5 cm/year over the previous year and has not attained expected adult height.

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**Growth Failure due to Chronic Renal Insufficiency**

Patient has one of the following: 1) Patient’s growth velocity is subnormal (i.e., more than 2 standard deviations from mean) for age 2) Patient has delayed skeletal maturation of more than 2 standard deviations below mean for age and gender (e.g., delayed more than 2 years compared with chronological age) AND

The patient is 15 years of age or older and patient has not attained projected height or the patient is less than 15 years of age.

*If the patient meets all required clinical criteria, initial approval is 12 months.*
Renewals: Coverage will be continued if the patient has grown at least 2.5 cm/year over the previous year and has not attained expected adult height.

Turner Syndrome
Pediatric growth failure due to Turner syndrome (Gonadal Dysgenesis)

AND

The patient is 15 years of age or older and patient has not attained projected height or the patient is less than 15 years of age

AND

The patient’s height is more than 2 standard deviations below the mean.

*If the patient meets all required clinical criteria, initial approval is 12 months.*

Renewals: Coverage will be continued if the patient has grown at least 2.5 cm/year over the previous year and has not attained projected adult height.

Noonan Syndrome
Pediatric growth failure due to Noonan syndrome

AND

The patient is 15 years of age or older and patient has not attained projected height or the patient is less than 15 years of age

AND

The patient’s height is more than 2 standard deviations below the mean.

AND

The patient’s growth velocity (HV) is subnormal (< 1 standard deviation) during previous 12 months.

*If the patient meets all required clinical criteria, initial approval is 12 months.*

Renewals: Coverage will be continued if the patient has grown at least 2.5 cm/year over the previous year and has not attained projected adult height.

Short-Stature Homeobox (SHOX) Gene Deficiency
Pediatric growth failure due to short-stature homeobox (SHOX) gene deficiency as confirmed by genetic testing

AND

The patient is 15 years of age or older and patient has not attained projected height or the patient is less than 15 years of age
### Prader-Willi Syndrome

- Patient has a diagnosis of Prader-Willi syndrome

*If the patient meets all required clinical criteria, initial approval is 12 months.*

**Renewals:** Coverage will be continued if treatment has resulted in an increase in lean body mass or decrease in fat mass.

### Adult Growth Hormone Deficiency

The patient has growth hormone deficiency, as a result of childhood onset growth hormone deficiency or adult-onset growth hormone deficiency resulting from hypothalamic-pituitary disease from organic or known causes (e.g. damage from surgery, cranial irradiation, head trauma, or subarachnoid hemorrhage) AND

The patient has undergone a growth hormone stimulation test (either the insulin tolerance test (ITT), arginine & GHRH (GHRH+ARG), glucagon, or arginine (ARG)) to confirm adult growth hormone deficiency and the peak GH value is:

- **ITT** $\leq 5 \, \mu g/L$
- **GHRH+ARG**
  - $\leq 11 \, \mu g/L$ if body mass index (BMI) $<25 \, kg/m^2$
  - $\leq 8 \, \mu g/L$ if BMI $\geq 25$ and $<30 \, kg/m^2$
  - $\leq 4 \, \mu g/L$ if BMI $\geq 30 \, kg/m^2$
- **Glucagon** $\leq 3 \, \mu g/L$
- **ARG** $\leq 0.4 \, \mu g/L$

**OR**

The patient has a documented deficiency of 3 or more other anterior pituitary hormones (prolactin, ACTH, TSH, FSH/LH) and low IGF-1 (below the age- and sex-appropriate reference range)

*If the patient meets all required clinical criteria, initial approval is 12 months.*

**Renewals:** Treatment with growth hormone resulted in clinical benefit [e.g.,
Increase in total lean body mass, exercise capacity or IGF-1 and (insulin like growth factor binding protein-3) IGFBP-3 levels

**Transition Phase Adolescent Patients**

Patient has attained expected adult height  
AND
Adult growth hormone dosing will be utilized  
AND
Patient has discontinued growth hormone therapy for at least 1 month  
AND
Patient has either:

1) Patient is at high risk of growth hormone deficiency due to growth hormone deficiency in childhood from embryopathic/congenital defects or genetic mutations, irreversible structural hypothalamic-pituitary disease, or panhypopituitarism or a deficiency of 3 or more other anterior pituitary hormones (ACTH, TSH, prolactin, FSH/LH) and has a low serum IGF-1 level (below the age- and sex-appropriate reference range)

OR

2) Patient is at high risk of growth hormone deficiency (as described in condition 1) but does not have a low serum IGF-1 level, or patient is at low risk of severe growth hormone deficiency (e.g. due to isolated and/or idiopathic growth hormone deficiency)

and

The patient has undergone a growth hormone stimulation test (accepted tests are ITT, GHRH+ARG, ARG, and glucagon) and the peak GH value is:

- ITT ≤5 μg/L
- GHRH+ARG
  - ≤11 μg/L if BMI<25 kg/m²
  - ≤8 μg/L if BMI ≥25 and < 30 kg/m²
  - ≤4 μg/L if BMI ≥30 kg/ m²
- Glucagon ≤3 μg/L
- ARG ≤0.4 μg/L

**Serostim**

The patient’s diagnosis HIV-associated wasting syndrome/cachexia  
AND
The patient > 18 years of age

AND

The patient has not had weight loss as a result of other underlying treatable conditions (e.g., depression, mycobacterium avium complex, chronic infectious diarrhea, or malignancy with the exception of Kaposi’s sarcoma limited to skin or mucous membranes)

AND

The patient has either:

1) unintentionally lost > 10% of body weight over the last 12 months
   OR
2) unintentionally lost > 7.5% of body weight over the last 6 months
   OR
3) lost 5% body cell mass (BCM) within 6 months
   OR
4) In men: BCM is < 35% of total body weight and BMI is <27 kg/m²
   OR
5) In women: BCM is < 23% of total body weight and BMI is < 27 kg/m²
   OR
6) BMI is < 20 kg/m²

AND

Anti-retroviral therapy has been optimized to decrease the viral load

AND

Patient is not currently receiving treatment with Serostim

If the patient meets all required clinical criteria, initial approval is 6 months.

Renewals: Treatment with Serostim is providing clinical benefit (e.g., stabilization of the patient’s weight or promoting weight gain)

Zorbtive

The patient’s diagnosis Short Bowel Syndrome

AND

Patient is currently not receiving treatment with Zorbtive

If the patient meets all required clinical criteria, initial approval is 1 month.

Renewals: Treatment with Zorbtive is providing clinical benefit (e.g., reduced need for intravenous parenteral nutrition, weight stabilization or gain)
Increlex

The patient 15 years of age or older and confirmation has been made that epiphyseal closure has not occurred or the patient is less than 15 years of age

AND

The patient will not be treated with concurrent growth hormone therapy

AND

The patient has either:
1) Severe primary IGF-1 deficiency and meets all the criteria:
   • The patient’s height standard deviation score ≤ -3.0
     
     AND

   • The patient’s basal IGF-1 standard deviation score ≤ -3.0
     OR

   • The patient’s basal IGF-1 lab value severely depressed by Tanner Stage reference range for that child’s Tanner Stage
     
     AND

   • The patient has normal or elevated growth hormone levels

OR

2) The patient has a diagnosis of growth hormone gene deletion and has developed neutralizing antibodies to growth hormone

*If the patient meets all required clinical criteria, initial approval is 12 months*

Essential versus Nonessential Use

The Patient Protection and Affordable Care Act (PPACA) of 2010 includes a mandate that prohibits annual dollar maximum limits for “essential” benefits. A strict definition of “essential” was not provided in PPACA or in federal health care regulations published as of the date this program was revised. UnitedHealthcare defines an “essential” use of growth hormone as therapy to treat a deficiency as part of chronic disease management. Other uses such as replacement therapy in a disorder where a deficiency is not noted are considered “nonessential.”

This information applies to groups with benefit caps in place for growth hormone therapy. If the diagnosis is considered an essential use of the medication, the cap will not apply. For these cases, an override for the cap amount will be entered at the same time the authorization (if criteria met) is entered for the medication. If the diagnosis is a nonessential use of the medication, then only the authorization for the medication will be entered.
### Diagnosis

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### References:


