blue of california

Growth Hormone Products

Applies To:
Genotropin® (somatropin) subcutaneous injection
Humatrope® (somatropin) subcutaneous injection
Ngenlya® (somatrogon-ghla) subcutaneous injection
Norditropin® (somatropin) subcutaneous injection
Nutropin and Nutropin AQ NuSpin® (somatropin) subcutaneous injection
Omnitrope® (somatropin) subcutaneous injection
Saizen® (somatropin) subcutaneous injection
Skytrofa® (lonapegsomatropin-tcgd) subcutaneous injection
Sogroya® (somapacitan-beco) subcutaneous injection
Zomacton® (somatropin) subcutaneous injection

For all indications:

- ***For non-preferred short-acting HGH agents (e.g. Humatrope, Saizen, Genotropin, Norditropin, Zomacton):*** Contraindication or intolerance to Nutropin AQ **AND** Omnitrope not expected with the requested non-preferred HGH agent
- ***For Skytrofa (long-acting HGH):*** Contraindication or intolerance to Nutropin AQ **OR** Omnitrope not expected with the requested preferred long-acting HGH agent
- ***For Ngenla, Sogroya (long-acting HGH):*** Contraindication or intolerance to Skytrofa **AND** either Nutropin AQ or Omnitrope not expected with the requested preferred long-acting HGH agent

Diagnoses Considered for Coverage:
In Adults:

- Growth Hormone Deficiency (GHD)

In Pediatrics:

- Growth Hormone Deficiency (GHD)
- Child with growth failure associated with chronic renal insufficiency
- Prader-Willi Syndrome
- Noonan Syndrome
- Small for Gestational Age (SGA)
- Turner Syndrome
- SHOX gene deficiency

Coverage Criteria:

ADULTS: Growth Hormone Deficiency (GHD):

Initial Authorization

1. Being prescribed by an Endocrinologist, **AND**
2. Patient has low IGF-1 (<0 SDS), **AND**
3. Dose does not exceed FDA label maximum, **AND**
4. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product, **AND**
5. Patient has had any of the following indications:
    a. There is evidence of GHD indicated by a condition in Table 1, AND for patients with pituitary glands, Patient has demonstrated GHD as categorized by at least 1 of these levels on a growth hormone stimulation test:
        i. ITT Peak GH ≤ 5.0 ug/L, or
        ii. Macimorelin Peak GH ≤ 2.8 ug/L, or
        iii. Glucagon Stimulation Test (GST) level,

    OR

    b. There is evidence of GHD indicated by one of the following conditions in Table 1, AND Patient has ≥ 3 documented pituitary hormone deficiencies (ACTH, prolactin, LH, FSH, or TSH)

Table 1:

History of hypothalamic-pituitary tumors, surgery, cranial irradiation, empty sella, pituitary apoplexy, traumatic brain injury, subarachnoid hemorrhage, autoimmune hypophysitis, Rathke's cleft cyst, skull base lesions, pituitary adenoma, craniopharyngioma, meningioma, glioma/astrocytoma, neoplastic sellar and parasellar lesions, chordoma, hamartoma, lymphoma, metastases, sports-related head trauma, blast injury, infiltrative/granulomatous disease, Langerhans cell histiocytosis, autoimmune hypophysitis (primary, secondary), sarcoidosis, tuberculosis, amyloidosis, Sheehan's syndrome, ischemic stroke, snake bite, hydrocephalus, Known hypothalamic pituitary congenital defect, known hypothalamic pituitary genetic defect, defects affecting the hypothalamic-pituitary axes or hypothalamic-pituitary structural brain defects, transcription factor defects [PIT-1, PROP-1, LHX3/4, HESX-1, PITX-2], GHRH receptor gene defects, GH-gene defects, GH-receptor/post-receptor defects, associated with brain structural defects, single central incisor, cleft lip/palate, perinatal insults)

Coverage duration: 1 year

Reauthorization

1. Patient is responding to HGH therapy, **AND**
2. Dose does not exceed FDA label maximum

Coverage duration: 1 year

ADULTS: Growth hormone deficiency (GHD), continuing from childhood:

Initial Authorization

1. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product, **AND**
2. Prescribed by an endocrinologist, **AND**
3. Documented diagnosis of childhood GHD continuing into adulthood, **AND**
4. Either of the following:
    a. Patient has been previously treated with growth hormone during childhood, AND one of the following:
        i. Physician attestation that longitudinal growth is NOT complete with childhood GHD (idiopathic short stature not covered because patient does not have GHD), OR
        ii. Physician attestation that longitudinal growth is complete with childhood GHD with a low serum IGF-1 (<0 SDS), AND for patients with pituitary gland only: Patient has demonstrated GHD as categorized by at least 1 of these levels on a growth hormone stimulation test:
            1. ITT Peak GH ≤ 5.0 ug/L, or
            2. Macimorelin Peak GH ≤ 2.8 ug/L, or
            3. Glucagon Stimulation Test (GST)

    OR

    b. Patient has not been treated with growth hormone during childhood, AND all of the following:
        i. Low serum IGF-1 (<0 SDS), **AND**
        ii. One of the following:
            1. Patient has suspected hypothalamic GHD (Presence of organic hypothalamic-pituitary disease, craniopharyngioma, pituitary hypoplasia, ectopic posterior pituitary, previous cranial

irradiation), and for patients with pituitary gland only: Patient has demonstrated GHD as categorized by at least 1 of these levels on a growth hormone stimulation test:

a. ITT Peak GH ≤ 5.0 ug/L, or
b. Macimorelin Peak GH ≤ 2.8 ug/L, or
c. Glucagon Stimulation Test (GST), level OR

2. Patient has a condition in Table 3 and one of the following:
    a. Patient has > 3 PHD (pituitary hormone deficiencies)
    b. For patients with pituitary gland only: Patient has demonstrated GHD as categorized by at least 1 of these levels on a growth hormone stimulation test:
        i. ITT Peak GH ≤ 5.0 ug/L, or
        ii. Macimorelin Peak GH ≤ 2.8 ug/L, or
        iii. Glucagon Stimulation Test (GST)

Table 3:
Congenital defect, genetic defect, or organic defect (transcription factor defects [PIT-1, PROP-1, LHX3/4, HESX-1, PITX-2], GHRH receptor gene defects, GH-gene defects, GH-receptor/post- receptor defects, associated with brain structural defects, single central incisor, cleft lip/palate, perinatal insults, brain tumors [craniopharyngioma, germinomas], skull base lesions, pituitary adenoma, Rathke's cleft cyst, meningioma, glioma/astrocytoma, neoplastic sellar and parasellar lesions, chordoma, hamartoma, lymphoma, metastases, traumatic brain injury, sports-related head trauma, blast injury, infiltrative/granulomatous disease, Langerhans cell histiocytosis, autoimmune hypophysitis [primary, secondary], sarcoidosis, tuberculosis, amyloidosis, surgery to the sella, suprasellar, and parasellar region, cranial irradiation, apoplexy, Sheehan's syndrome, subarachnoid hemorrhage, ischemic stroke, snake bite, defects affecting the hypothalamic- pituitary axes or hypothalamic pituitary structural brain defects, agenesis of corpus callosum, optic nerve hypoplasia, empty sella syndrome, encephalocele, hydrocephalus, arachnoid cyst, midline facial defects such as single central incisor, cleft lip and cleft palate

Coverage duration: 1 year

Reauthorization

1. Patient is responding to HGH therapy, **AND**
2. Dose does not exceed FDA label maximum

Coverage duration: 1 year

PEDIATRICS: For diagnosis of growth hormone deficiency (GHD) with known pituitary disease:

Initial Authorization
1. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product, **AND** 2. Prescribed by a pediatric endocrinologist, **AND** 3. One of the of the following: a. Child has hypothalamic pituitary abnormality (such as major congenital malformation (ectopic posterior pituitary and pituitary hypoplasia with abnormal stalk), tumor, or irradiation) with slowing growth velocity, and one of the following: i. Patient has at least one other pituitary hormone deficiency (ACTH, prolactin, LH, FSH, or TSH), **OR** ii. For patients with pituitary gland only: Failure of one standard growth hormone provocative test (e.g., clonidine, arginine, glucagon) done within 1 year prior to starting growth hormone therapy, OR b. Patient is a newborn and one of the following: i. Patient has congenital pituitary abnormality (ectopic posterior pituitary and pituitary hypoplasia with abnormal stalk), or ii. Patient has at least 1 pituitary hormone deficiency and hypoglycemia with a serum GH concentration <5 ug/L OR c. Patient has a document causal genetic mutation or specific or specific pituitary/hypothalamic structural defect (not ectopic posterior pituitary) OR d. Patient has more than 3 pituitary hormone deficiencies (ACTH, prolactin, LH, FSH, or TSH). **Coverage duration:** 1 year
Reauthorization
1. Patient has been compliant with no side effects, **AND** 2. Patient has a growth velocity of at least 3 cm/year while on growth hormone, **AND** 3. Dose does not exceed FDA label maximum

Coverage duration: 1 year

PEDIATRICS: For diagnosis of growth hormone deficiency (GHD) WITHOUT known pituitary disease:

Initial Authorization
1. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product, **AND** 2. Prescribed by a pediatric endocrinologist, **AND** 3. Patient's height must be 2 or more standard deviations below the mean (less than the 3rd percentile) for age and sex, **AND** 4. Patient's height velocity is less than 10th percentile of normal for age and sex, tracked over at least one year prior to growth hormone therapy, **AND** 5. Dose does not exceed FDA label maximum, **AND** 6. Patient has failed at least two standard GH provocative tests (e.g., clonidine, arginine, glucagon) defined as a peak < 10 ng/mL done within 1 year prior to initiating GH therapy, with peak value assessed using more than one point in time (e.g. 0, 30, 60, 90, 120 minutes). **Coverage duration:** 1 year
Reauthorization
1. Patient has been compliant with no side effects, **AND** 2. Patient has a growth velocity of at least 3 cm/year while on growth hormone, **AND** 3. Dose does not exceed FDA label maximum **Coverage duration:** 1 year

Chronic renal insufficiency leading to growth failure:

Initial Authorization
1. GFR is <50ml/min , **AND** 2. Dose does not exceed FDA label maximum, **AND** 3. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product. **Coverage duration:** 1 year

Reauthorization
1. Dose does not exceed FDA label maximum, **and** 2. Patient has not had a kidney transplant in the past year. **Coverage duration:** 1 year

Short stature or growth failure in children with short stature homeobox-containing gene (SHOX) deficiency:

Initial Authorization
1. Prescribed by a Pediatric Endocrinologist, **AND** 2. Dose does not exceed FDA label maximum, **AND** 3. Documentation of SHOX gene deficiency, **AND** 4. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product. **Coverage duration:** 1 year **Covered doses:** • Nutropin®: up to 0.35 mg/kg/wk

Reauthorization
1. Patient has been compliant with no side effects, **AND** 2. Patient has a growth velocity of at least 3 cm/year while on growth hormone, **AND** 3. Dose does not exceed FDA label maximum **Coverage duration:** 1 year

Small for Gestational Age (SGA):

Initial Authorization
1. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product, **AND** 2. Prescribed by a Pediatric Endocrinologist, **AND** 3. Patient's height at birth or birth weight must be 2 or more standard deviation (less than the 3rd percentile) below the mean for gestational age, **AND** 4. Patient's height must be 2 or more standard deviation below the mean (less than the 3rd percentile) at age 2 (boys: 80-81 cm; girls: 79-80 cm)

Coverage duration: 1 year

Reauthorization

1. Patient has been compliant with no side effects, **AND**
2. Patient has a growth velocity of at least 3 cm/year while on growth hormone, **AND**
3. Dose does not exceed FDA label maximum

Coverage duration: 1 year

Turner Syndrome, Prader-Willi Syndrome, and Noonan Syndrome:

Initial Authorization

1. Prescribed by a Pediatric Endocrinologist, **AND**
2. Dose does not exceed FDA label maximum, **AND**
3. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin that is not also expected with the requested non-preferred product.

Coverage duration: 1 year

Reauthorization

1. Patient has been compliant with no side effects, **AND**
2. Patient has a growth velocity of at least 3 cm/year while on growth hormone, **AND**
3. Dose does not exceed FDA label maximum

Coverage duration: 1 year

Additional Information:

HEIGHT VELOCITY CHART

Tenth percentile of height velocity for boys age 2-17			
Age (years)	**Height velocity (cm/y) 10th percentile**	**Age (years)**	**Height velocity (cm/y) 10th percentile**
2.0	6.7	10.0	4.2
2.5	6.4	10.5	4.2
3.0	6.1	11.0	4.2
3.5	5.8	11.5	4.2
4.0	5.7	12.0	4.7
4.5	5.5	12.5	5.5
5.0	5.3	13.0	7.3
5.5	5.1	13.5	8.0
6.0	5.0	14.0	7.2
6.5	4.9	14.5	5.1

7.0	4.7	15.0	3.5
7.5	4.6	15.5	2.2
8.0	4.5	16.0	1.2
8.5	4.4	16.5	0.5
9.0	4.4	17.0	0.1
9.5	4.3		
Tenth percentile of height velocity for girls age 2-14 1/2			
Age (years)	**Height velocity (cm/y) 10th percentile**	**Age (years)**	**Height velocity (cm/y) 10th percentile**
2.0	7.1	8.5	4.7
2.5	6.7	9.0	4.8
3.0	6.3	9.5	4.9
3.5	6.0	10.0	5.0
4.0	5.8	10.5	4.6
4.5	5.4	11.0	6.4
5.0	5.2	11.5	6.9
5.5	5.0	12.0	6.3
6.0	5.0	12.5	4.6
6.5	4.9	13.0	3.0
7.0	4.8	13.5	1.7
7.5	4.8	14.0	0.8
8.0	4.7	14.5	0.1

1. The following associations define SGA as height or weight less than -2SD (< 3rd percentile):
   - The American Association of Clinical Endocrinologists Medical guidelines for growth hormone use in adults and children– 2003 Update (http://www.aace.com/pub/pdf/guidelines/hgh.pdf)
   - The International Small for Gestational Age Advisory Board Consensus Development Conference Statement: Management of Short Children Born Small for Gestational Age, April 24–October 1, 2001 (http://pediatrics.aappublications.org/cgi/content/full/111/6/1253#R15)
2. The AACE recommends children be evaluated for treatment with GH for the diagnosis of SGA if height or weight remains < 3rd percentile at age 2 or older.

References:

1. Genotropin [Prescribing Information]. Pfizer Inc.: New York, NY. 2019.
2. Humatrope [Prescribing Information]. Eli Lilly and Company: Indianapolis, IN. 2019.
3. Ngenyla [Prescribing Information]. Pfizer Inc.: New York, New York. 2023
4. Norditropin [Prescribing Information]. Novo Nordisk Inc.: Plainsboro, NJ. 2018.
5. Nutropin [Prescribing Information]. Genetech, Inc.: South San Francisco, CA. 2016
6. Omnitrope [Prescribing Information]. Sandoz Inc.: Princeton, NJ. 2016.
7. Saizen [Prescribing Information]. EMD Serono Inc.: Rockland, MA. 2017.
8. Skytrofa [Prescribing Information]. Ascendis Pharma Endocrinology, Inc.: Princeton, New Jersey. 2022.
9. Sogroya [Prescribing Information]. Novo Nordisk Inc.: Plainsboro, New Jersey. 2023.
10. Zomacton [Prescribing Information]. Ferring Pharmaceuticals Inc.: Parsippany, NJ. 2018.
11. Grimberg A, DiVall SA, Polychronakos C, et al. Guidelines for growth hormone and insulin-like growth factor-I treatment in children and adolescents: growth hormone deficiency, idiopathic short stature, and primary insulin-like growth factor-I deficiency. Horm Res Paediatr 2016;86:361-97.
12. Yuen, K. C., Biller, B. M., Radovick, S., Carmichael, J. D., Jasim, S., Pantalone, K. M., & Hoffman, A. R. (2019). American Association of Clinical Endocrinologists and American College of Endocrinology guidelines for management of growth hormone deficiency in adults and patients transitioning from

pediatric to adult care. Endocrine Practice, 25(11), 1191-1232.
13. American Association of Clinical Endocrinologists medical guidelines for clinical practice for growth hormone use in adults and children—2003 update. Endocr Pract 2003;9(1).
14. Consensus guidelines for the diagnosis and treatment of growth hormone (GH) deficiency in childhood and adolescence: summary statement of the GH Research Society. GH Research Society. J Clin Endocrinol Metab. 2000 Nov;85(11):3990-3.

Effective Date: 02/28/2024