Growth Hormone (GH) in Adults Somatropin (Humatrope®, NutropinAQ®, Genotropin®, Norditropin®, Saizen®, Omnitrope®, Zomacton®)	Place of Service Self-Administration – *may be covered under the pharmacy benefit* HCPCS: J2941 per 1 mg NDCs: (For preferred NutropinAQ) 50242-0043-14 10mg/2ml 50242-0073-01 20mg/2ml 50242-0074-01 10mg/2ml pen 50242-0075-01 5mg/2ml pen 50242-0076-01 20mg/2ml pen

Condition(s) listed in policy (*see criteria for details*)

- Adult GHD with or without pituitary disease
- Childhood GHD continuing into adulthood

AHFS therapeutic class: Pituitary

Mechanism of action: Somatropin (rDNA origin), a recombinant polypeptide hormone, possesses primary structural identity to that of human growth hormone.

(1) Special Instructions and pertinent Information

If member has a Prescription Benefit, please refer cases to Pharmacy Services for prior authorization.

If covered under the Medical Benefit, please submit clinical information for prior authorization review via fax. **Please include medical rationale why medication cannot be home self-administered.**

NutropinAQ® is the preferred drug.

(2) Prior Authorization/Medical Review is required for the following condition(s)

All requests for Growth Hormone for Adults must receive authorization prior to drug administration or claim payment.

Adult growth hormone deficiency (GHD) with or without known pituitary disease

1. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin AQ that is not also expected with the requested non-preferred product, **AND**
2. Prescribed by an endocrinologist, **AND**
3. Low serum IGF-1 (<0 SDS), **AND**
4. One of the following:
    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)

Covered Doses

Nutropin AQ®:

Non-weight-based: Starting dose of approximately 0.2 mg/day (range 0.15-0.3 mg/day) increased gradually every 1-2 months by increments of approximately 0.1-0.2 mg/day

Weight-based: Initiate at no more than 0.006 mg/kg/day; the dose may be increased up to a maximum of 0.025 mg/kg/day in patients ≤ 35 years old or 0.0125 mg/kg day in patients >35 years old.

Coverage Period

Initial: 1 year

Reauthorization: Yearly if patient had a response.

ICD-10:

E23.0, E23.1, E89.3

Childhood growth hormone deficiency (GHD) continuing into adulthood

1. Use of non-preferred growth hormone therapy requires a contraindication or intolerance to Nutropin AQ that is not also expected, **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) [ACTH, PRL, LH, FSH, or TSH], or
                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

Covered Doses
Nutropin AQ®:
Non-weight-based: Starting dose of approximately 0.2 mg/day (range 0.15-0.3 mg/day) increased gradually every 1-2 months by increments of approximately 0.1-0.2 mg/day

Weight-based: Initiate at no more than 0.006 mg/kg/day; the dose may be increased up to a maximum of 0.025 mg/kg/day in patients ≤ 35 years old or 0.0125 mg/kg day in patients >35 years old.

Coverage Period
Initial: 1 year
Reauthorization: Yearly if no side effects, patient compliance, and patient response.

ICD-10:
E23.0, E23.1, E89.3

(3) The following condition(s) DO NOT require Prior Authorization/Preservice

All requests for Growth Hormone for Adults must receive authorization prior to drug administration or claim payment.

(4) This Medication is NOT medically necessary for the following condition(s)

Blue Shield's research indicates there is inadequate clinical evidence to support off-label use of this drug for the following conditions (Health and Safety Code 1367.21):

- Athletic performance enhancement
- Anti-aging factor
- Burn injuries
- Cardiomyopathy
- Chronic catabolic states
- Constitutional delay in growth and development
- Crohn's disease
- Cystic fibrosis
- Growth retardation due to down syndrome or juvenile idiopathic arthritis
- Hand-Schuller Christian disease
- Hyperinsulinism
- Hypophospahtemic rickets
- Idiopathic short stature
- Idiopathic GHD with no history of GHD in childhood
- Infertility
- Kwashiorkor
- Malnutrition
- Muscular dystrophy
- Obesity
- Osteoporosis
- Osteogenesis imperfecta
- Skeletal dysplasias
- "Somatopause" in older adults
- Spina bifida

Coverage for a Non-FDA approved indication, requires that criteria outlined in Health and Safety Code § 1367.21, including objective evidence of efficacy and safety are met for the proposed indication.

Please refer to the Provider Manual and User Guide for more information.

(5) Additional Information

How supplied:

Humatrope:

- 5 mg vial and 5-mL vial of Diluent for Humatrope
- 6 mg (gold), 12 mg (teal) and 24 mg (purple) cartridge, and prefilled syringe of Diluent for Humatrope

Nutropin AQ:

- Pen cartridge cartons contain one single pen cartridge containing 2 mL
  1. 10 mg pen= 10 mg/2 ml
  2. 20mg pen= 20 mg/2 ml

- NuSpin™ injection device
    1. 5 mg/2 ml, 10 mg/2 ml, 20 mg/2 ml

Genotropin:

- lyophilized powder in a two-chamber color-coded cartridge: 5.8 mg (green tip) and 12 mg (purple tip) (with preservative)
- Genotropin Miniquick Growth Hormone Delivery Device containing a two-chamber cartridge (without preservative): 0.2 mg, 0.4 mg, 0.6 mg, 0.8 mg, 1.0 mg, 1.2 mg, 1.4 mg, 1.6 mg, 1.8 mg, and 2.0mg

Norditropin:

- 5 mg/1.5 ml Solution for Injection Prefilled Pen
- 10 mg/1.5 ml Solution for Injection Prefilled Pen
- 15 mg/1.5 ml Solution for Injection Prefilled Pen
- 30 mg/3 ml Solution for Injection Prefilled Pen

Omnitrope:

- 5 mg/1.5 ml cartridge
- 10 mg/1.5 ml cartridge
- 5.8 mg vial

Saizen:

- 5 mg and 8.8 mg vials.
- Saizen click easy and Saizenprep 8.8 mg/1.51 ml cartridges

Zomacton: [somatropin (rDNA origin)] for injection is supplied as 5 mg and 10 mg of lyophilized, sterile somatropin per vial:

- Zomacton 5 mg carton (NDC 55566-1801-1) contains one vial of Zomacton (5 mg per vial) and one vial of diluent [5 mL of bacteriostatic 0.9% sodium chloride for injection, USP (benzyl alcohol preserved)], and is supplied in single cartons
- Zomacton 10 mg carton (NDC 55566-1901-1) contains one vial of Zomacton (10 mg per vial), one syringe of diluent [1 mL of bacteriostatic water for injection with 0.33% metacresol as preservative] and a 25G reconstitution needle, and is supplied in single cartons.
- Zomacton 10 mg carton (NDC 55566-1902-1) contains one vial of Zomacton (10 mg per vial), one syringe of diluent [1 mL of bacteriostatic water for injection with 0.33% metacresol as preservative], 1 vial adapter, and is supplied in single cartons.

(6) References

- AHFS®. Available by subscription at http://www.lexi.com
- DrugDex®. Available by subscription at http://www.micromedexsolutions.com
- Genotropin [Prescribing Information]. Pfizer Inc.: New York, NY. 2016.
- Humatrope [Prescribing Information]. Eli Lilly and Company: Indianapolis, IN. 2016.
- Norditropin [Prescribing Information]. Novo Nordisk Inc.: Plainsboro, NJ. 2018.
- Nutropin AQ [Prescribing Information]. Genentech: South San Francisco, CA. 2016.
- Omnitrope [Prescribing Information]. Sandoz Inc.: Princeton, NJ. 2014.
- Saizen [Prescribing Information]. EMD Serono Inc.: Rockland, MA. 2017.
- Zomacton [Prescribing Information]. Ferring Pharmaceuticals Inc.: Parsippany, NJ. 2018.

1. American Association of Clinical Endocrinologists medical guidelines for clinical practice for growth hormone use in growth hormone-deficient adults and transition patients – 2009 update. Endocr Pract 2009;15(suppl 2).

(7) Policy Update

Date of last review: 2Q2022

Date of next review: 2Q2023

Changes from previous policy version:

- No clinical change to policy following routine annual review.

BSC Drug Coverage Criteria to Determine Medical Necessity
Reviewed by P&T Committee