Growth Hormone (somatropin)
Genotropin®, Humatrope®, Norditropin®, Nutropin®/AQ, Omnitrope®, Saizen®, Serostim®, Zomacton®, Zorbtive®

Effective: 9/1/15

<table>
<thead>
<tr>
<th>Clinical documentation and prior authorization required</th>
<th>Type of review – case management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not covered</td>
<td>Type of review – clinical review</td>
</tr>
<tr>
<td></td>
<td>Fax: 617-673-0988</td>
</tr>
<tr>
<td>Pharmacy (RX) or medical (MED) benefit</td>
<td>RX Department to review</td>
</tr>
<tr>
<td></td>
<td>RxUM</td>
</tr>
</tbody>
</table>

OVERVIEW
FDA-APPROVED INDICATIONS
Endogenous human growth hormone (HGH) is a product of the pituitary gland within the endocrine system. This system produces hormones that are secreted into the blood or lymph and circulated through the body. The hormones released by these glands can have a particular effect on a specific tissue or organ or they can initiate a more general effect manifested through the body. The body’s regulation of the release of these hormones through the endocrine system is important for maintaining a proper hormonal balance.

Growth hormone has been shown to increase growth by stimulating the production of insulin-like growth factor I (IGF-I), which facilitated cartilage production and its subsequent development into bone, as well as other related proteins. Recombinant human growth hormone is used to increase the growth rate in children with documented growth retardation due to deficiency of growth hormone, to reverse small stature in cases for which growth hormone stimulation has been found beneficial (Hayes Report, October 1996: pg. 1–2). A pediatric endocrinologist must oversee the treatment. Monitoring frequency is recommended at the following intervals upon initiation of therapy: 3 months, 6 months, then annually thereafter. Treatment consists of SC or IM self-administered injections 6 or 7 times a week (except for Nutropin Depot which consists of injections once or twice a month). Initial training of Members in the administration of growth hormone is usually performed in the endocrinologist office.

HGH is produced throughout a person’s lifetime. It promotes growth in children and is important in adult metabolism. A deficiency of HGH in adults can cause alterations in body composition, affect lipid and bone metabolism, reduce strength and work capacity and impair psychological wellbeing. Adults can become growth hormone deficient (GHD) in a variety of ways, but most often the cause is a pituitary or parasellar tumor or as a result of the treatment of these tumors.

HIV wasting syndrome is defined as unintentional and progressive weight loss (cachexia) often accompanied by weakness, fever, nutritional deficiencies and diarrhea. The wasting can be caused by opportunistic infections that interfere with the gut’s ability to absorb nutrients, altered metabolism of nutrients or by inadequate food intake due to nausea and vomiting. The syndrome reduces the quality of life, exacerbates the illness and increases the risk of death for people with HIV. (Therapies that have been tried to reverse the weight loss in HIV-infected persons include appetite stimulants, anabolic agents, cytokine inhibitors and hormones.) The goal of therapy is to increase the person’s body weight and promote an increase in lean body mass (muscle).

Somatropin and Somatrem are synthetic forms of human growth hormone that are produced by using recombinant DNA (rDNA) technology. Somatropin (i.e., Norditropin®, Norditropin Nordiflex®, Norditropin FlexPro®, Nutropin®, Nutropin AQ®, Genotropin®, Humatrope®, Saizen®, Omnitrope®, Zomacton®) is used in GH deficient adults to maintain body composition and metabolism. Serostim® can help to reduce the signs and symptoms of AIDS wasting syndrome and was granted orphan drug status (7-year marketing exclusivity for this indication) from the FDA in 1996 for the treatment of HIV wasting.

PHARMACY COVERAGE GUIDELINES
Tufts Health Plan – Network Health may authorize coverage of recombinant human growth hormone (GH) (Norditropin, Norditropin FlexPro, and Norditropin Nordiflex) for members when all the following criteria for a particular regimen are met and limitations do not apply:

1. Pediatric Growth Hormone Deficiency (GHD) Initiation of Therapy (6 month initial authorization):

   1. Pharmacy Medical Necessity Guidelines: Growth Hormone (somatropin)
      Genotropin®, Humatrope®, Norditropin®, Nutropin®/AQ,
      Omnitrope®, Saizen®, Serostim®, Zomacton®, Zorbtive®
a. Member must be evaluated and therapy must be prescribed and monitored by a pediatric endocrinologist or pediatric nephrologist AND
b. Member must not have attained epiphyseal closure as determined by X-ray AND
c. Member must have failed to respond to at least TWO standard GH stimulation tests (with insulin, levodopa, arginine, propranolol, clonidine, or glucagon), defined as a peak measured GH level of less than 10ng/ml after stimulation no more than 6 months apart AND
d. Height at initiation of therapy must be > 2 standard deviations below normal mean for age and gender or below the 3rd percentile for age and gender OR

2. Member must have one of the following diagnoses:
   - Chronic Renal Insufficiency prior to transplantation
   - Turner Syndrome
   - Prader-Willi Syndrome
   - Small for Gestational Age defined as all of the following:
     • Child born SGA defined as birth weight or length 2 or more standard deviations below the mean for gestational age (including infants born with intrauterine growth restriction or Russell-Silver Syndrome resulting in SGA): AND
     • Child does not show catch up growth before 2 years of age, defined as height 2 or more standard deviations below the mean for age and gender; and
     • Other causes for short stature such as growth inhibiting medication, endocrine disorders and emotional deprivation or syndromes have been ruled out.
   - Noonan Syndrome
   - Mutation of Short-Stature Homeobox (SHOX) gene AND
   - Height at initiation of therapy must be > 2 standard deviations below normal mean for age and gender.

3. Continuation of Therapy Prior to Completion of Linear Growth (1-year authorization):
   - Documentation of the following is required:
     • Medical history as it relates to growth, including any test results and growth chart.
     • Continuing care plan.
     • At least a doubling of the annualized pre-treatment growth rate after the first 6 months of therapy then an increase in growth of at least 3cm per year thereafter.
     
     **Note:** Approval is for a maximum of 1 year and must be reviewed annually except for Members with pituitary damage (e.g., tumor, radiation, stroke or trauma).

4. Continuation of Therapy After Completion of Linear Growth (Therapy will be continued at standard adult doses):
   a. Member will be re-evaluated after GH treatment has been stopped for at least 3 months to determine growth hormone status AND
   b. Member must have failed to respond to at least one standard GH stimulation test, (with insulin, levodopa, arginine, propranolol, clonidine, or glucagon), defined as a peak measured GH level of less 5ng/ml after stimulation.

     **Note:** Approval is for a maximum of 1 year and must be reviewed annually.

5. Acquired Growth Hormone Deficiency (GHD):
   a. Member must have failed to respond to at least one standard GH stimulation test, (with insulin, levodopa, arginine, propranolol, clonidine, or glucagon), defined as a peak measured GH level of less 5ng/ml after stimulation.

     **Note:** Not required for Members who have had surgical removal of the pituitary.

   • Acquired GHD can be due to, but is not limited to the following:
     - Pituitary surgery
     - Pituitary insufficiency
     - Radiation treatments
     - Pituitary tumor
     - Trauma
     - Central nervous system tumors
     - Cranial irradiation
     - Panhypopituitarism

     **Note:** For members aged 18 years or older, approval is for a maximum of 1 year and must be reviewed annually.
Tufts Health Plan – Network Health may authorize coverage of recombinant human growth hormone (Serostim) for members when all the following criteria for a particular regimen are met and limitations do not apply:

1. AIDS Wasting Syndrome:
   a. A documented diagnosis of AIDS AND
   b. A weight loss of at least 10% from baseline weight OR a body mass index (BMI) of less than 20 AND
   c. Documentation that the Member has had an adequate nutritional evaluation and has failed to respond adequately to a high calorie diet AND
   d. Member is concurrently receiving antiviral therapy indicated for the treatment of the human immunodeficiency virus.

Tufts Health Plan – Network Health may authorize coverage of recombinant human growth hormone (Zorbtive) for members when all the following criteria for a particular regimen are met and limitations do not apply:

1. Short Bowel Syndrome (One time authorization for 28 days only):
   a. A documented diagnosis of Short Bowel Syndrome from a gastroenterologist AND
   b. A documented dependence on intravenous parenteral nutrition (IPN) for nutritional support.

Tufts Health Plan – Network Health may authorize coverage of recombinant human growth hormone (Nutropin, Nutropin AQ and Nutropin NuSpin) for members when all the following criteria for a particular regimen are met and limitations do not apply:

1. Chronic Renal Insufficiency:
   a. A documented diagnosis of growth failure associated with chronic renal insufficiency.

**LIMITATIONS**

1. Tufts Health Plan – Network Health does not provide coverage of growth hormone therapy for other conditions that include, but are not limited to, the following:
   - Constitutional delay
   - Idiopathic short stature
   - Genetic short stature
   - Glucocorticoid-induced growth failure
   - Down’s Syndrome

2. Patients who present with, or develop, an active neoplasm (tumor), or with an active intracranial lesion, will be excluded from coverage.

3. Tufts Health Plan – Network Health will not cover other growth hormone medications, unless a Member has either failed an adequate trial or has a contraindication to Norditropin, Norditropin FlexPro or Norditropin Nordiflex (with the exception of Serostim for AIDS Wasting Syndrome and Zorbtive for Short Bowel Syndrome).

4. Tufts Health Plan – Network Health will not cover Nutropin or Nutropin AQ except for the treatment of growth failure associated with chronic renal insufficiency.

**Notes:** Non-covered growth hormone medications include: Genotropin, Humatrope, Nutropin, Nutropin AQ, Nutropin AQ NuSpin, Omnitrope, Saizen, and Zomacton.

**CODES**

Medical billing codes may not be used for this medication. This medication must be obtained via the Member’s pharmacy benefit.

**REFERENCES**


3. American Association of Clinical Endocrinologists Medical Guidelines for Clinical Practice for Growth Hormone Use in Adults and Children 2003 Update, 64 Endocrine Practice Vol 9 No.1 January/February 2003


APPROVAL HISTORY

- October 2006: Reviewed by the Pharmacy and Therapeutics Committee.
- August 12, 2014: Reviewed by the Pharmacy and Therapeutics Committee.
- August 11, 2015: Drug name change from Tev-Tropin to Zomacton.

BACKGROUND, PRODUCT, AND DISCLAIMER INFORMATION

Pharmacy Medication Request Guidelines have been developed for determining coverage for Tufts Health Plan – Network Health benefits and are published to provide a better understanding of the basis upon which coverage decisions are made. They are used in conjunction with the applicable Member Handbook and in coordination with the member’s physician(s). Pharmacy Medication Request Guidelines are developed for selected therapeutic classes or drugs found to be

Pharmacy Medical Necessity Guidelines: Growth Hormone (somatropin) Genotropin®, Humatrope®, Norditropin®, Nutropin® / AQ, Omnitrope®, Saizen®, Serostim®, Zomacton®, Zorbtive®
safe but proven to be effective in a limited, defined population of patients or clinical circumstances. They include concise clinical coverage criteria based on current literature review, consultation with practicing physicians in the Tufts Health Plan – Network Health service area who are medical experts in the particular field, FDA and other government agency policies, and standards adopted by national accreditation organizations. Tufts Health Plan – Network Health reviews Pharmacy Medication Request Guidelines annually, or more frequently if new evidence becomes available that suggests needed revisions.

Pharmacy Medication Request Guidelines apply to all insured offerings unless otherwise noted in this policy or the applicable Member Handbook. Check the applicable Preferred Drug List (formulary) in the pharmacy section of our website to determine if the drug requires you to get prior authorization.

For Tufts Health Unify (Medicare-Medicaid One Care for people ages 21 – 64), please refer to the Tufts Health Unify Prior Authorization Medical Necessity Guidelines.

Treating providers are solely responsible for the medical advice and treatment of members. The use of this policy is not a guarantee of payment or a final prediction of how specific claim(s) will be adjudicated. Claims payment is subject to member eligibility and benefits on the date of service, coordination of benefits, referral/authorization and utilization management guidelines, when applicable, and adherence to plan policies and procedures and claims editing logic.