1. NAME OF THE MEDICINAL PRODUCT

GENOTROPIN

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Somatropin (INN) recombinant DNA-derived human growth hormone produced in *E. coli*.

3. PHARMACEUTICAL FORM

Powder and solvent for solution for injection.

In the two-chamber cartridge, there is a white powder in the front compartment and a clear solution in the rear compartment. After reconstitution, one cartridge contains 5.3 mg (16 IU) somatropin in 1 mL. The two-chamber cartridge is supplied for use sealed in a disposable multidose pre-filled pen (GoQuick).

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Children
Growth disturbance due to insufficient secretion of growth hormone and growth disturbance associated with Turner syndrome.

Adults
Replacement therapy in adults with pronounced growth hormone deficiency.

4.2 Posology and method of administration

The dosage and administration schedule should be individualized. Somatropin should be given subcutaneously and the injection site varied to prevent lipoatrophy.

Growth disturbance due to insufficient secretion of growth hormone in children: Generally, a dose of 0.07-0.10 IU/kg (0.025-0.035 mg/kg) body weight per day or 2.1-3.0 IU/m^2 (0.7-1.0 mg/m^2) body surface area per day is recommended. Even higher doses have been used.

Growth disturbance due to Turner syndrome: A dose of 0.14 IU/kg (0.045-0.050 mg/kg) body weight per day or 4.3 IU/m^2 (1.4 mg/m^2) body surface area per day is recommended.

Table 1: Dosage Recommendations for Pediatric Patients

	IU/kg body weight	**mg/kg** body weight	**IU/m^2** body surface area	**mg/m^2** body surface area
	dose per day	dose per day	dose per day	dose per day

Growth hormone deficiency in children	0.07 - 0.10	0.025 - 0.035	2.1 - 3.0	0.7 - 1.0
Turner syndrome	0.14	0.045 - 0.050	4.3	1.4

Growth hormone deficient adult patients: The recommended starting dose is 0.45 - 0.90 IU (0.15 - 0.30 mg) per day. The final dose should be individually titrated as needed with respect to age and gender. The daily maintenance dose seldom exceeds 4 IU (1.33 mg) per day. Women may require higher doses than men. This means that there is a risk that women, especially those on oral oestrogen replacement may be under-treated. As normal physiological growth hormone production decreases with age, dose requirements may be reduced. Clinical response, side effects, and determination of IGF-I in serum may be used as guidance for dose titration.

Table 2: Dosage Recommendations for Adult Patients

	IU/day start dose	**mg/day** start dose	**IU/day** maintenance dose seldom exceeds	**mg/day** maintenance dose seldom exceeds
Growth hormone deficiency in adults	0.45 - 0.90	0.15 - 0.30	4	1.33

4.3 Contraindications

Somatropin is contraindicated in patients who have evidence of neoplastic activity and in patients with uncontrolled growth of benign intracranial tumors. Anti-tumor therapy must be completed prior to starting somatropin.

Somatropin is contraindicated in patients with acute critical illness due to complications following open heart or abdominal surgery, multiple accidental trauma, or acute respiratory failure. Two placebo-controlled clinical trials (N=522), conducted in adult patients to evaluate the effects of somatropin 5.3 or 8 mg (16 or 24 IU) on length of stay in intensive care units, showed significantly higher mortality (41.9% vs. 19.3%) in patients treated with somatropin compared with those who received placebo (see section **4.4 Special warnings and precautions for use** in patients who are receiving somatropin for growth hormone replacement).

Hypersensitivity to the active substance or to any of the excipients.

4.4 Special warnings and precautions for use

Diagnosis and therapy with somatropin should be initiated and monitored by physicians who are appropriately qualified and experienced in the diagnosis and management of patients with the therapeutic indication of use.

Myositis is a very rare adverse event that may be related to the preservative m-cresol. If myalgia or disproportionate pain at injection site develops, myositis should be considered and, if confirmed, a presentation of somatropin without m-cresol should be used.

Somatropin may induce a state of insulin resistance and, in some patients, hyperglycemia.

Therefore, patients should be observed for evidence of glucose intolerance. In rare cases, therapy with somatropin may produce sufficient glucose intolerance to meet the diagnostic criteria for Type 2 diabetes mellitus. The risk of developing diabetes during treatment with somatropin is greatest in those patients with other risk factors for Type 2 diabetes mellitus, such as obesity, family history of diabetes, treatment with steroids, or prior impaired glucose tolerance. In patients with pre-existing diabetes mellitus, the dose of anti-diabetic therapy might require adjustment when somatropin is instituted.

In general, peripheral thyroid hormone levels remain within the normal reference range during treatment with somatropin. However, there is an enhanced conversion of T4 to T3 that may result in a reduction in serum T4 and an increase in serum T3 concentrations. This effect may be of clinical relevance for patients with central subclinical hypothyroidism in whom hypothyroidism may theoretically develop. Conversely, mild hyperthyroidism may occur in patients receiving replacement therapy with thyroxin. It is therefore, advisable to test thyroid function shortly after the start of treatment with somatropin, and after dose adjustments.

Introduction of somatropin treatment may result in inhibition of 11β-hydroxysteroid dehydrogenase type 1 (11β-HSD-1) and reduced serum cortisol concentrations. In patients treated with somatropin, previously undiagnosed central (secondary) hypoadrenalism may be unmasked and glucocorticoid replacement may be required. In addition, patients treated with glucocorticoid replacement therapy for previously diagnosed hypoadrenalism may require an increase in their maintenance or stress doses, following initiation of somatropin treatment (see section **4.5 Interaction with other medicinal products and other forms of interaction**).

If a woman taking somatropin begins oral oestrogen therapy, the dose of somatropin may need to be increased to maintain the serum insulin-like growth factor-I (IGF-I) levels within the normal age-appropriate range. Conversely, if a woman on somatropin discontinues oral oestrogen therapy, the dose of somatropin may need to be reduced to avoid excess of growth hormone and/or side effects (see section **4.5 Interaction with other medicinal products and other forms of interaction**).

In patients with growth hormone deficiency secondary to treatment of malignant disease, it is recommended to monitor for signs of relapse of the malignancy.

In patients with endocrine disorders, including growth hormone deficiency, slipped epiphyses of the hip may occur more frequently than in the general population. Children who develop a limp during treatment with somatropin should be evaluated (see section **4.8 Undesirable effects**).

In case of severe or recurrent headache, visual problems, nausea, or vomiting, a funduscopy for papilledema is recommended. If papilledema is confirmed, a diagnosis of benign intracranial hypertension should be considered and, if appropriate, growth hormone treatment should be discontinued. At present, there is insufficient evidence to guide the decision of whether or not to reintroduce growth hormone therapy in patients with resolved intracranial hypertension. If growth hormone treatment is restarted, careful monitoring for symptoms of intracranial hypertension is necessary.

Progression of scoliosis can occur in patients who experience rapid growth. Because growth hormone increases growth rate, physicians should be alert to this abnormality, which may manifest during growth hormone therapy.

Experience in patients above 60 years is limited.

In patients with chronic renal insufficiency, renal function should be below 50% of normal before institution of therapy with somatropin. To verify growth disturbance, growth should be followed for a year preceding institution of therapy. Conservative treatment for renal insufficiency should have been established and should be maintained during therapy with growth hormone. Somatropin should be discontinued at renal transplantation.

If patients who are receiving growth hormone replacement therapy become acutely critically ill, the potential benefit of continued treatment with somatropin should be weighed against the potential risk (see section **4.3 Contraindications**).

Somatropin is ineffective for growth promotion in children with closed epiphyses.

4.5 Interaction with other medicinal products and other forms of interaction

Concomitant treatment with glucocorticoids inhibits the growth-promoting effects of somatropin containing products. Patients with adrenocorticotropic hormone (ACTH) deficiency should have their glucocorticoid replacement therapy carefully adjusted to avoid any inhibitory effect on growth. Therefore, patients treated with glucocorticoids should have their growth monitored carefully to assess the potential impact of glucocorticoid treatment on growth.

Growth hormone decreases the conversion of cortisone to cortisol and may unmask previously undiscovered central hypoadrenalism or render low glucocorticoid replacement doses ineffective (see section **4.4 Special warnings and precautions for use**).

Administration of somatropin may increase the clearance of compounds metabolized by cytochrome P4503A4 (e.g. sex steroids, corticosteroids, anticonvulsants, and cyclosporin). The clinical significance of this potential interaction is unknown.

In women on oral oestrogen replacement, a higher dose of growth hormone may be required to achieve the treatment goal (see section **4.4 Special warnings and precautions for use**).

4.6 Fertility, pregnancy and lactation

Animal reproduction studies have not shown evidence of harmful effects on the fetus. There are, however, no studies in pregnant women. Treatment with Genotropin should be interrupted if pregnancy occurs.

During normal pregnancy, the levels of pituitary growth hormone markedly fall after Week 20 of gestation, being replaced almost entirely by placental growth hormone by Week 30. Therefore, it is unlikely that continued replacement therapy with somatropin would be necessary in growth hormone deficient women during the third trimester of pregnancy.

It is not known if somatropin is excreted into breast milk, but absorption of intact protein from the gastrointestinal tract of the infant is extremely unlikely.

4.7 Effects on ability to drive and use machines

No effects on the ability to drive and use machines have been observed.

4.8 Undesirable effects

Patients with growth hormone deficiency are characterized by extracellular volume deficit. When treatment with somatropin is started, this deficit is rapidly corrected. In general, in adult patients, adverse effects related to fluid retention, such as edema peripheral, face edema, musculoskeletal stiffness, arthralgia, myalgia and paresthesia are mild to moderate, arise within the first months of treatment, and subside spontaneously or with dose-reduction.

The incidence of these adverse effects is related to the administered dose, the age of the patients, and possibly inversely related to the age of the patients at the onset of growth hormone deficiency.

Tabulated list of adverse reactions

Tables 3-5 show the adverse reactions ranked under headings of System Organ Class and frequency using the following convention: very common (≥1/10); common (≥1/100 to <1/10); uncommon (≥1/1,000 to <1/100); rare (≥1/10,000 to <1/1,000); very rare (<1/10,000); not known (cannot be estimated from the available data) for each of the indicated conditions.

Table 3: Clinical Trials in Children with GHD

Long-Term Treatment of Children with Growth Disturbance due to Insufficient Secretion of Growth Hormone						
System Organ Class	**Very Common ≥1/10**	**Common ≥1/100 to <1/10**	**Uncommon ≥1/1,000 to <1/100**	**Rare ≥1/10,000 to <1/1,000**	**Very Rare <1/10,000**	**Not Known (cannot be estimated from available data)**
Neoplasms Benign, Malignant, and Unspecified (including cysts and polyps)			Leukemia†			
Metabolism and Nutrition Disorders						Type 2 diabetes
Nervous System Disorders						Paresthesia* Benign intracranial hypertension
Skin and Subcutaneous Tissue Disorders			Rash** Pruritus** Urticaria**			
Musculoskeletal, Connective Tissue, and Bone Disorders			Arthralgia*			Myalgia* Musculoskeletal stiffness*
General Disorders and Administration Site Conditions	Injection site reaction$					Edema peripheral* Face edema*

Long-Term Treatment of Children with Growth Disturbance due to Insufficient Secretion of Growth Hormone						
System Organ Class	**Very Common ≥1/10**	**Common ≥1/100 to <1/10**	**Uncommon ≥1/1,000 to <1/100**	**Rare ≥1/10,000 to <1/1,000**	**Very Rare <1/10,000**	**Not Known (cannot be estimated from available data)**
Investigations						Blood cortisol decreased‡
* In general, these adverse effects are mild to moderate, arise within the first months of treatment, and subside spontaneously or with dose-reduction. The incidence of these adverse effects is related to the administered dose, the age of the patients, and possibly inversely related to the age of the patients at the onset of growth hormone deficiency. ** ADR identified post-marketing. $ Transient injection site reactions in children are common have been reported. ‡ Clinical significance is unknown. † Reported in growth hormone deficient children treated with somatropin, but the incidence appears to be similar to that in children without growth hormone deficiency.						

Table 4: Clinical Trials in children with Turner Syndrome

Long-Term Treatment of Children with Growth Disturbance due to Turner Syndrome						
System Organ Class	**Very Common ≥1/10**	**Common ≥1/100 to <1/10**	**Uncommon ≥1/1,000 to <1/100**	**Rare ≥1/10,000 to <1/1,000**	**Very Rare <1/10,000**	**Not Known (cannot be estimated from available data)**
Neoplasms Benign, Malignant, and Unspecified (including cysts and polyps)						Leukemia†
Metabolism and Nutrition Disorders						Type 2 diabetes
Nervous System Disorders						Paresthesia* Benign intracranial hypertension
Skin and Subcutaneous Tissue Disorders						Rash** Pruritus** Urticaria**
Musculoskeletal, Connective Tissue, and Bone Disorders	Arthralgia*					Myalgia* Musculoskeletal stiffness*
General Disorders and Administration Site Conditions						Edema peripheral* Face edema* Injection site reaction$
Investigations						Blood cortisol decreased‡

Long-Term Treatment of Children with Growth Disturbance due to Turner Syndrome						
System Organ Class	**Very Common ≥1/10**	**Common ≥1/100 to <1/10**	**Uncommon ≥1/1,000 to <1/100**	**Rare ≥1/10,000 to <1/1,000**	**Very Rare <1/10,000**	**Not Known (cannot be estimated from available data)**
* In general, these adverse effects are mild to moderate, arise within the first months of treatment, and subside spontaneously or with dose-reduction. The incidence of these adverse effects is related to the administered dose, the age of the patients, and possibly inversely related to the age of the patients at the onset of growth hormone deficiency. ** ADR identified post-marketing. $ Transient injection site reactions in children have been reported. ‡ Clinical significance is unknown. † Reported in growth hormone deficient children treated with somatropin, but the incidence appears to be similar to that in children without growth hormone deficiency.						

Table 5: Clinical Trials in Adults with GHD

Replacement Therapy in Adults with Growth Hormone Deficiency						
System Organ Class	**Very Common ≥1/10**	**Common ≥1/100 to <1/10**	**Uncommon ≥1/1,000 to <1/100**	**Rare ≥1/10,000 to <1/1,000**	**Very Rare <1/10,000**	**Not Known (cannot be estimated from available data)**
Metabolism and Nutrition Disorders						Type 2 diabetes
Nervous System Disorders		Paresthesia* Carpel Tunnel Syndrome				Benign intracranial hypertension
Skin and Subcutaneous Tissue Disorders						Rash** Pruritus** Urticaria**
Musculoskeletal, Connective Tissue, and Bone Disorders	Arthralgia*	Myalgia* Musculoskeletal stiffness*				
General Disorders and Administration Site Conditions	Edema peripheral*					Face edema* Injection site reaction$
Investigations						Blood cortisol decreased‡
* In general, these adverse effects are mild to moderate, arise within the first months of treatment, and subside spontaneously or with dose-reduction. The incidence of these adverse effects is related to the administered dose, the age of the patients, and possibly inversely related to the age of the patients at the onset of growth hormone deficiency. ** ADR identified post-marketing. $ Transient injection site reactions in children have been reported. ‡ Clinical significance is unknown.						

Transient injection site reactions in children have been reported.

Somatropin has been reported to reduce serum cortisol levels, possibly by affecting carrier proteins or by increased hepatic clearance. The clinical relevance of these findings may be limited. Nevertheless, corticosteroid replacement therapy should be optimized before initiation of Genotropin therapy.

Rare cases of leukemia have been reported in growth hormone deficient children treated with somatropin, but the incidence appears to be similar to that in children without growth hormone deficiency.

Slipped capital femoral epiphysis and Legg-Calve-Perthes disease have been reported in children treated with growth hormone. But, it is unknown if these 2 pathologies are more frequent or not while treated with somatropin.

4.9 Overdose

Acute overdosage could lead initially to hypoglycemia and subsequently to hyperglycemia. Long-term overdosage could result in signs and symptoms consistent with the effects of human growth hormone excess.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Somatropin is a potent metabolic hormone of importance for the metabolism of lipids, carbohydrates and proteins. In children with inadequate endogenous growth hormone, somatropin stimulates linear growth and increases growth rate. In adults, as well as in children, somatropin maintains a normal body composition by increasing nitrogen retention and stimulation of skeletal muscle growth, and by mobilization of body fat. Visceral adipose tissue is particularly responsive to somatropin. In addition to enhanced lipolysis, somatropin decreases the uptake of triglycerides into body fat stores. Serum concentrations of IGF-I (Insulin-like Growth Factor-I) and IGFBP3 (Insulin-like Growth Factor Binding Protein 3) are increased by somatropin. In addition, the following actions have been demonstrated:

- Lipid metabolism: Somatropin induces hepatic LDL cholesterol receptors, and affects the profile of serum lipids and lipoproteins. In general, administration of somatropin to growth hormone deficient patients results in reductions in serum LDL and apolipoprotein B. A reduction in serum total cholesterol may also be observed.

- Carbohydrate metabolism: Somatropin increases insulin but fasting blood glucose is commonly unchanged. Children with hypopituitarism may experience fasting hypoglycemia. This condition is reversed by somatropin.

- Water and mineral metabolism: Growth hormone deficiency is associated with decreased plasma and extracellular volumes. Both are rapidly increased after treatment with somatropin. Somatropin induces the retention of sodium, potassium and phosphorus.

- Bone metabolism: Somatropin stimulates the turnover of skeletal bone. Long-term administration of somatropin to growth hormone deficient patients with osteopenia results in an increase in bone mineral content and density at weight-bearing sites.

- Physical capacity: Muscle strength and physical exercise capacity are improved after long-term treatment with somatropin. Somatropin also increases cardiac output, but the mechanism has yet to be clarified. A decrease in peripheral vascular resistance may contribute to this effect.

5.2 Pharmacokinetic properties

Absorption

The bioavailability of subcutaneously administered somatropin is approximately 80% in both healthy subjects and growth hormone deficient patients. Results were comparable in both male and female patients. A subcutaneous dose of 0.035 mg/kg of somatropin results in plasma C_{max} and t_{max} values in the range of 13-35 ng/mL and 3-6 hours, respectively.

In healthy adult males, following an SC injection in the thigh of 0.03 mg/kg, the extent of absorption (AUC) of a concentration of 5.3 mg/mL somatropin was 35% greater than that for 1.3 mg/mL somatropin. The mean (± standard deviation) peak (C_{max}) serum levels were 23.0 (± 9.4) ng/mL and 17.4 (± 9.2) ng/mL, respectively.

In a similar study involving pediatric GHD patients, 5.3 mg/mL somatropin yielded a mean AUC that was 17% greater than that for 1.3 mg/mL somatropin. The mean C_{max} levels were 21.0 ng/mL and 16.3 ng/mL, respectively.

Adult GHD patients received two single SC doses of 0.03 mg/kg of somatropin at a concentration of 1.3 mg/mL, with a one- to four-week washout period between injections. Mean C_{max} levels were 12.4 ng/mL (first injection) and 12.2 ng/mL (second injection), achieved at approximately six hours after dosing.

There are no data on the bioequivalence between the 12-mg/mL formulation and either the 1.3-mg/mL or the 5.3-mg/mL formulations.

Distribution

The mean volume of distribution of somatropin following administration to GHD adults was estimated to be 1.3 (± 0.8) L/kg.

Metabolism

The metabolic fate of somatropin involves classical protein catabolism in both the liver and kidneys. In renal cells, at least a portion of the breakdown products are returned to the systemic circulation. The mean terminal half-life of intravenous somatropin in normal adults is 0.4 hours, whereas subcutaneously administered somatropin has a half-life of 3.0 hours in GHD adults. The observed difference is due to slow absorption from the subcutaneous injection site.

Excretion

The mean clearance of subcutaneously administered somatropin in 16 GHD adult patients was 0.3 (± 0.11) L/h/kg.

Special Populations

Pediatric: The pharmacokinetics of somatropin are similar in GHD pediatric and adult patients.

Gender: No gender studies have been performed in pediatric patients; however, in GHD adults, the absolute bioavailability of somatropin was similar in males and females.

Race: No studies have been conducted with somatropin to assess pharmacokinetic differences among races.

Renal, hepatic, or cardiac insufficiency: Information about the pharmacokinetics of somatropin in patients with renal, hepatic, or cardiac insufficiency is either lacking or incomplete.

5.3 Preclinical safety data

In studies regarding general toxicity, local tolerance and reproduction toxicity, no clinically relevant effects have been observed.

In vitro and *in vivo* genotoxicity studies on gene mutations and induction of chromosome aberrations have been negative.

An increased chromosome fragility has been observed in one *in-vitro* study on lymphocytes taken from patients after long-term treatment with somatropin and following the addition of the radiomimetic drug bleomycin. The clinical significance of this finding is unclear.

In another study, no increase in chromosomal abnormalities was found in the lymphocytes of patients who had received long-term somatropin therapy.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Powder: Front compartment	Solvent: Rear compartment
Glycine, Sodium dihydrogen phosphate anhydrous, Disodium phosphate anhydrous, Mannitol	Water for injections, m-Cresol, Mannitol

6.2 Incompatibilities

This medical product must not be mixed with other medical products and should only be reconstituted in the supplied solvent.

6.3 Shelf-life

Refer to Exp date on outer carton.

After reconstitution, chemical and physical in-use stability at 2°C - 8°C has been demonstrated for 4 weeks.

From a microbiological point of view, once reconstituted, the product may be stored at 2°C - 8°C for 4 weeks.

Other in-use storage times and conditions are the responsibility of the user.

6.4 Special precautions for storage

Before reconstitution: Store in a refrigerator (2°C - 8°C), with up to 1 month at or below 25°C allowed. Keep container in the outer carton in order to protect from light.

After reconstitution: Store in a refrigerator (2°C - 8°C). Do not freeze. Keep container in the outer carton in order to protect from light.

6.5 Nature and contents of container

Powder and 1.15 mL solvent in a two-chamber glass cartridge (Type 1 glass) separated by a rubber plunger (bromobutyl). The cartridge is sealed at one end with a rubber disc (bromobutyl) and an aluminium cap at the other end by a rubber stopper (bromobutyl). The two-chamber cartridge is supplied for use sealed in a disposable multidose pre-filled pen, GoQuick.

The 5.3 mg pre-filled pen GoQuick is color-coded blue.

Pack size*:
1's x 5.3 mg pre-filled pen, 5's x 5.3 mg pre-filled pens

*Not all pack size is marketed.

6.6 Special precautions for disposal and other handling

Two-chamber cartridge: The solution is prepared by screwing the GoQuick pre-filled pen sections together so that the solvent will be mixed with the powder in the two-chamber cartridge. Gently dissolve the powder with a slow, swirling motion. Do not shake vigorously; this might cause denaturation of the active ingredient. The reconstituted solution is almost colorless or slightly opalescent. The reconstituted solution for injection is to be inspected prior to use and only clear solutions without particles should be used.

Empty GoQuick pre-filled pens should never be refilled and must be properly discarded.

7. PRODUCT OWNER

Pfizer Inc.
235 East 42nd Street
New York 10017
United States

GOQUICK

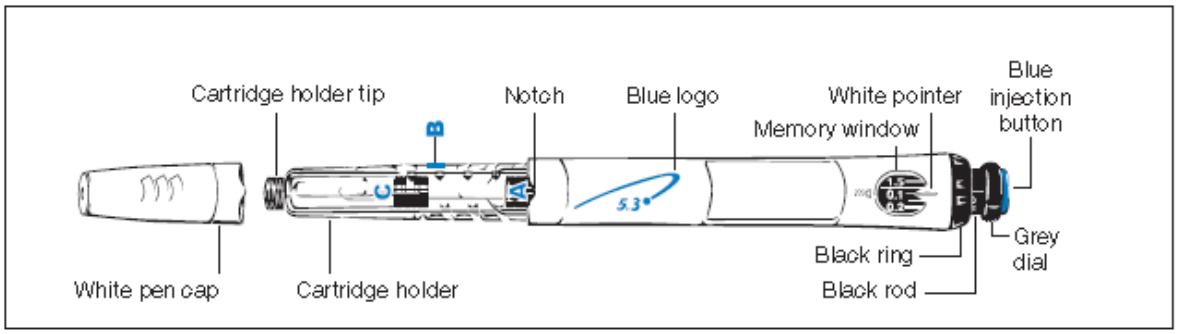
INSTRUCTIONS FOR USE

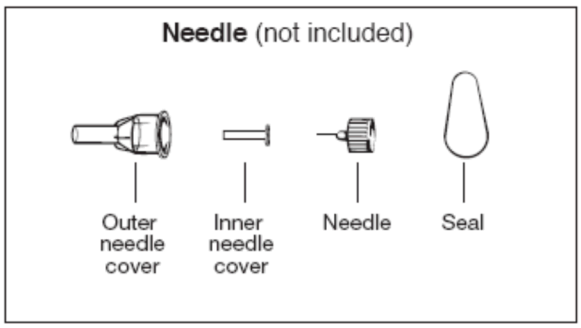
Important Information
Please read these instructions completely before using GoQuick.
If you have any questions about your dose or your treatment with Genotropin, call your doctor or nurse.

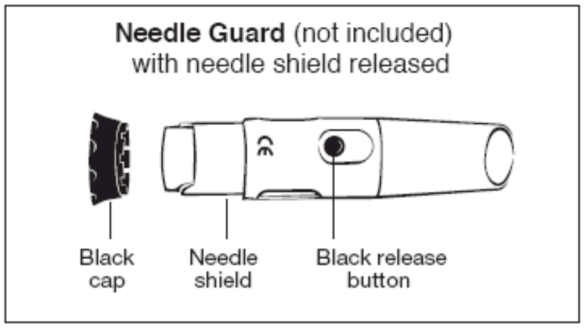
About GoQuick
GoQuick is a pre-filled, multidose, disposable injection pen that holds 5.3 mg of somatropin. The Genotropin in the pen is mixed only once, when you start a new pen. A single pen can be used up to 28 days after mixing. You never have to change cartridges. When the pen is empty, you just start a new pen.

The pen has dose memory. The dose is set once on a new pen. The pen then gives the same dose for each injection. You can use the pen with or without the optional needle guard.

Before You Use GoQuick
- Get training from your doctor or nurse.
- Know your dose. Know the pen parts.
- Make sure you have the pen with the blue injection button.
- Wash your hands.

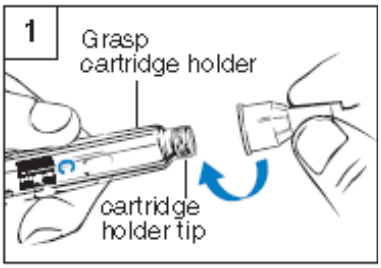






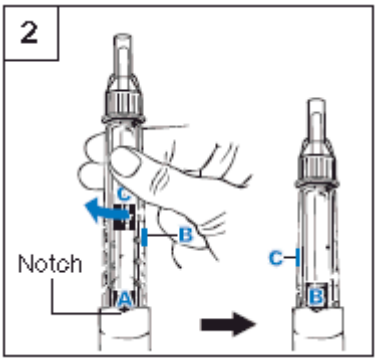
Setting Up and Using a New GoQuick

Step 1. Attach the Needle



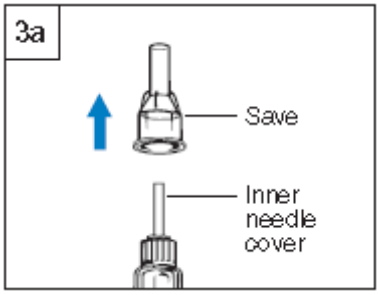
a. Pull the white pen cap straight off the pen.
b. Peel the seal from a new needle.
c. Firmly grasp the cartridge holder. (Figure 1)
d. Push the needle onto the cartridge holder tip.
e. Gently screw the needle onto the pen. Do not overtighten.
f. Leave both needle covers on the needle.

Step 2. Mix the Genotropin

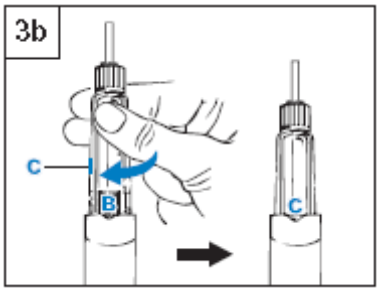


a. Hold the pen with the needle-end pointing up and the **A** facing you. (Figure 2)
b. **Firmly** twist the cartridge holder into the pen until **B** clicks into the notch.
   - Gently tilt the pen from side to side. Do not shake the pen. Shaking may damage the growth hormone.
c. Check that the liquid in the cartridge is clear. All the powder should be dissolved.
   - If not, gently tilt the pen from side to side a few more times.
d. Check the liquid again. Make sure it is clear.
   - If the liquid is clear, go to Step 3.
   - If the liquid is still cloudy or you see any powder, use a new pen.

Step 3. Remove the Air



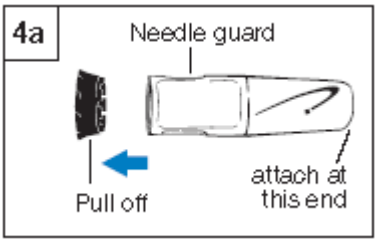
a. Pull the outer needle cover off. Save it to remove the needle. (Figure 3a)
b. Leave the inner needle cover on.



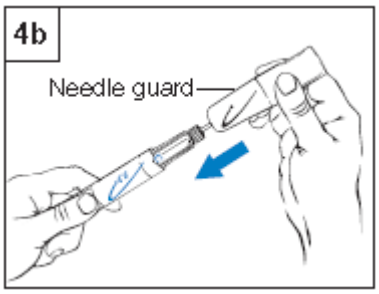
c. Hold the pen with the needle-end pointing up. (Figure 3b)
d. Tap the cartridge holder gently to help any trapped air move to the top.
e. **Firmly,** twist the cartridge holder into the pen until **C** clicks into the notch.
   - Some liquid may appear around the inner needle cover.

Step 4. Attach the Needle Guard (Optional)

a. Pull the black cap off the needle guard. (Figure 4a)
   - If the needle shield slides out, push it back into the needle guard until it clicks into place.

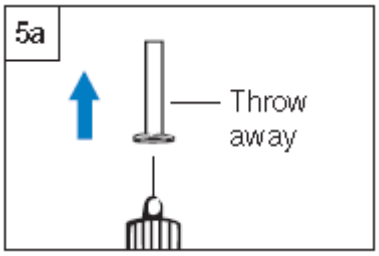


b. Hold the pen in one hand below the blue logo. With the other hand, hold the needle guard below the needle shield. (Figure 4b)
c. Line up the black logo on the needle guard with the blue logo on the pen. Carefully push the needle guard onto the pen until it snaps into place.

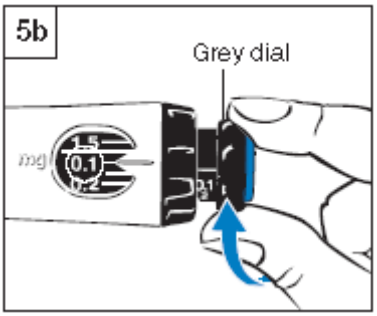


Step 5. Prime the Pen

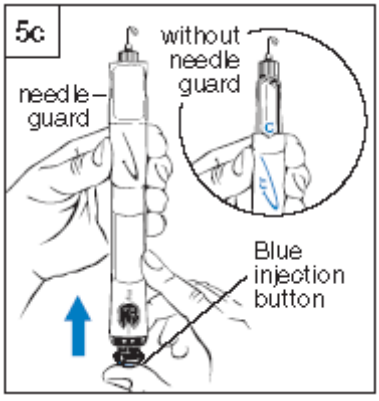
a. Pull the inner needle cover off. Throw it away. (Figure 5a)



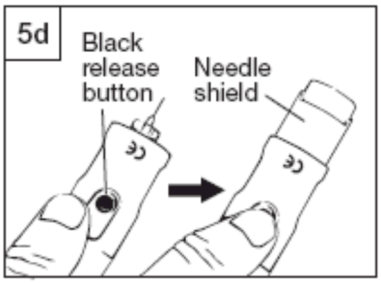
b. Check that 0.1 mg is set in the memory window.
c. Turn the grey dial in the direction of the arrows until it stops clicking. (Figure 5b)



d. Hold the pen with the needle pointing up. (Figure 5c with and without needle guard)
e. Push the blue injection button until liquid appears.
f. If liquid does not appear at Step "e", repeat Steps b-e in this section up to two more times.
g. If liquid still does not appear, do not use the pen.
   - See the Questions and Answers section below for more information.

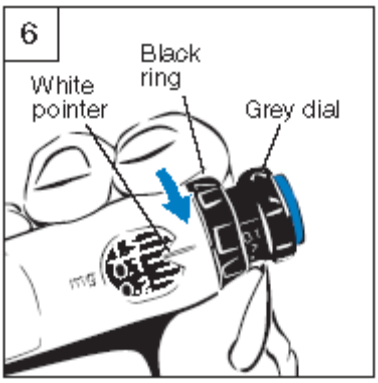


h. If you use the needle guard, press the black button to release the needle shield. (Figure 5d)



Step 6. Set the Dose

- Use the black ring to set the dose. Be careful not to turn the grey dial while setting the dose.

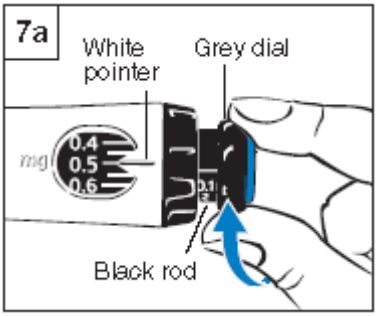


a. Hold the black ring as shown in Figure 6.
b. Turn the black ring until your dose lines up with the white pointer. Your doctor or nurse has told you your dose.
c. If you turn your dose past the white pointer, just turn the black ring back to set the correct dose.
d. Once you have set your dose, do not change it unless your doctor or nurse tells you.

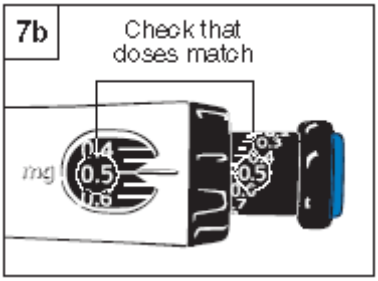
Note: If you cannot turn the black ring, press in the blue injection button until it stops clicking. Then continue to set your dose using the black ring (for more information, see also the Questions and Answers section below).

Step 7. Draw Up a Dose

a. Turn the grey dial in the direction of the arrow until the clicking stops. (Figure 7a)
b. Your dose on the black rod should line up with the white pointer.

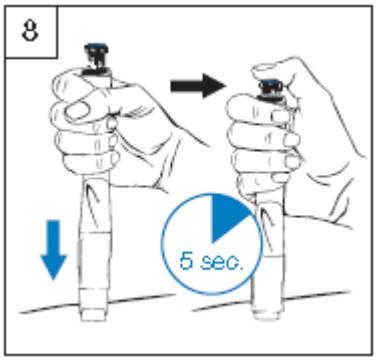


c. Check that the dose you drew up on the black rod is the same as the dose you set in the memory window. Figure 7b shows an example.
d. If the doses do not match, make sure you have turned the grey dial in the direction of the arrow until it does not click anymore.



Step 8. Give the Injection

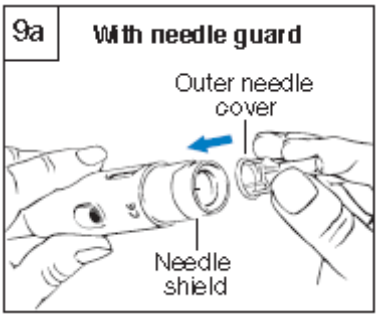
a. Prepare an injection site as your doctor or nurse has told you.
b. Hold the pen over the injection site.
c. Push the pen down to insert the needle into the skin.
d. Using your thumb, push the blue injection button down until it stops clicking. (Figure 8)
   - Count for 5 seconds before you pull the needle out of the skin. Keep light pressure on the button with your thumb while you count.
e. Pull the pen straight out from the skin.



Step 9. Remove the Needle; Cap and Store Your Pen

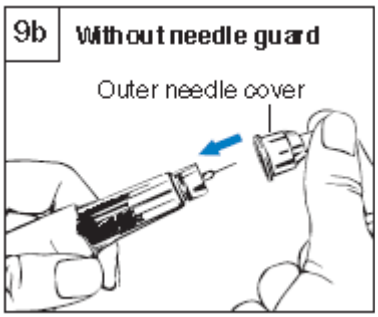
Step 9a: With needle guard

a. Place the outer needle cover into the end of the needle shield. (Figure 9a)
b. Use the needle cover to push in the needle shield until it locks into place.
c. Use the needle cover to unscrew the needle and put it in a proper container for used needles.
d. Leave the needle guard on the pen.
e. Place the black cap on the needle guard. Store your pen in the refrigerator.



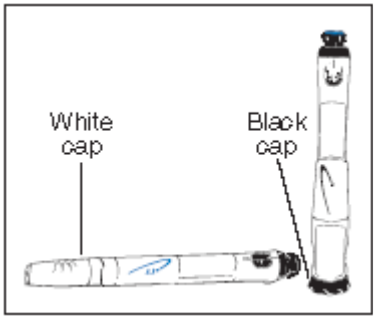
Step 9b: Without needle guard

a. Do not touch the needle.
b. Carefully cover the needle with the outer needle cover. (Figure 9b)
c. Use the needle cover to unscrew the needle and put it in a proper container for used needles.
d. Place the white cap on the pen. Store your pen in the refrigerator.

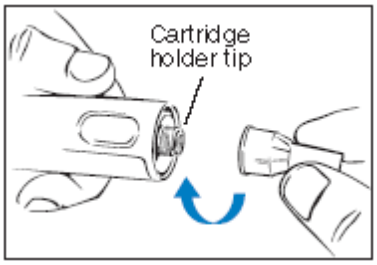


Routine Use of GoQuick

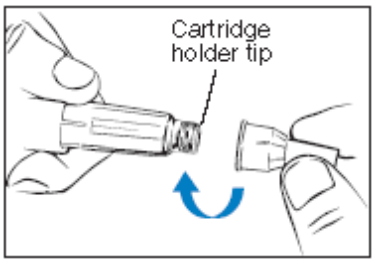
1. Pull the black cap from the needle guard or the white cap from the pen.



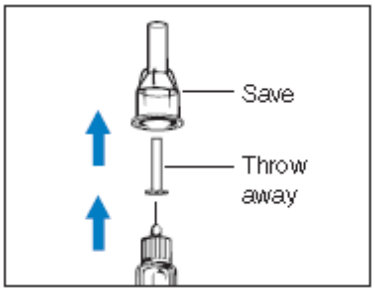
2. Attach a new needle.
   - With the needle guard:
     - If the needle shield releases, push it back into place.
     - Attach a new needle to the cartridge holder tip.



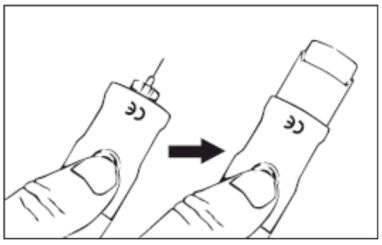
   - Without the needle guard:
     - Attach a new needle to the cartridge holder tip.



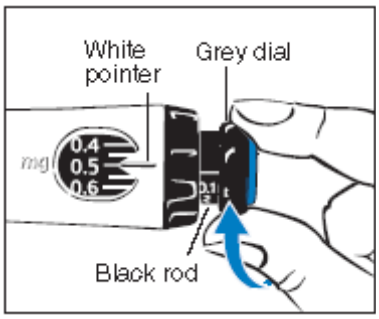
3. Remove both needle covers. Save the outer needle cover to remove the needle.



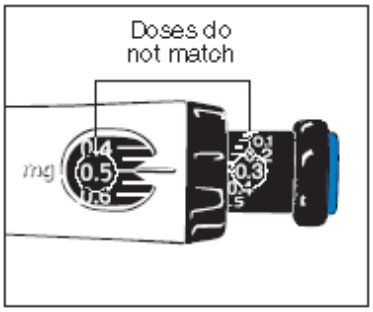
4. If you use the needle guard, press the black release button to extend the needle shield.



5. To draw up the dose, turn the grey dial until it stops clicking.

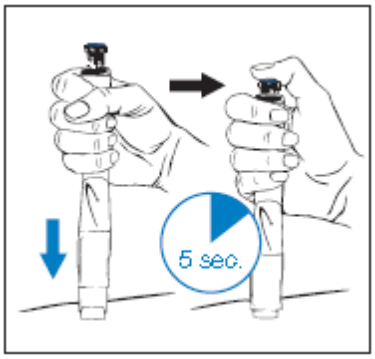


6. Check that the dose you drew up is the same as the dose you set in the memory window.
   - If the dose you drew up is smaller, the pen does not have a full dose of Genotropin.
   - Follow what your doctor or nurse told you to do when the pen does not have a full dose left.

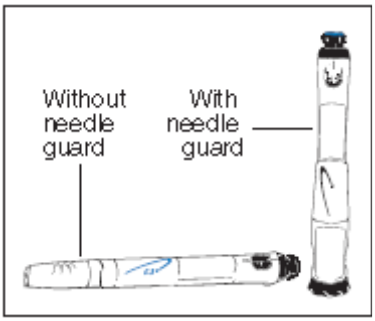


7. Prepare an injection site as your doctor or nurse has told you.

8. Give the injection.
   - Push the pen down to insert the needle into the skin.
   - Push the blue injection button down until it stops clicking.
   - Count for 5 seconds before you pull the needle out of the skin. Keep light pressure on the button with your thumb while you count.
   - Pull the pen straight out from the skin.



9. Remove the needle.
   - With the needle guard:
     - Use the outer needle cover to push in the needle shield until it locks into place.
   - Without the needle guard:
     - Carefully cover the needle with the outer needle cover.
   - Use the outer needle cover to unscrew the needle. Throw the needle away in a proper container for used needles.



10. Cap your needle guard or pen and store it in the refrigerator.

ADDITIONAL INFORMATION

Storage

- Refer to the prescribing information (see sections **6.3 Shelf-life** and **6.4 Special precautions for storage**) for how to store your GoQuick.
- After 4 weeks, dispose of the pen (or discard) even if there is some medicine left.
- Do not freeze or expose GoQuick to frost.
- Do not use your GoQuick after its expiry date.
- Follow your local health and safety laws to dispose of (or discard) your pen. Ask your doctor or nurse, if you are not sure what to do.

Handling

- Do not mix the powder and liquid of GoQuick unless a needle is on the pen.

- Do not store your GoQuick with the needle attached. The Genotropin may leak from the pen and air bubbles may form in the cartridge. Always remove the needle and attach the pen cap or needle guard cap before storing.
- Take care not to drop your GoQuick.
- If you do drop the pen you must perform another prime as described in Step 5 (Setting Up and Using a New GoQuick). But if any part of your GoQuick appears broken or damaged, do not use the pen. Contact your doctor or nurse for another pen.
- Clean the pen and needle guard with a damp cloth. Do not put the pen in water.

Needles
- Always use a new needle for each injection.
- Put all used needles in an appropriate "sharps" container. Follow your local health and safety laws to dispose of your needles. Ask your doctor or nurse, if you are not sure what to do.
- Do not share your pen or needles.

General
- The numbers and lines on the cartridge holder can help you estimate how much Genotropin is left in the pen.
- If in routine use Step 6 the pen does not have a full dose of Genotropin, the scale on the black rod indicates the amount of drug remaining in the pen.
- Patients who are blind or who do not see well should only use GoQuick with the help of someone trained to use the pen.
- Follow your doctor or nurse's instructions for cleaning your hands and skin when you prepare and give the injection.
- Do not discard your needle guard, to remove it from the pen just twist it off. Save it to use with each new pen.
- If you have questions about how to use GoQuick, ask your doctor or nurse.

QUESTIONS AND ANSWERS

Question	Answer
What should I do if I see more than a small drop of liquid on the needle after giving my injection?	For your next injection wait the full time of 5 seconds before taking the needle from the skin. If you still see some liquid after you take out the needle, hold in for a little longer next time.
Is it a problem if I see air bubbles in the cartridge?	No, small amounts of air may be present in the cartridge during normal use.
What should I do if I see Genotropin leaking from the pen?	Make sure that the needle has been attached correctly.
What should I do if the pen that I am using was not put in the refrigerator overnight?	Discard the pen and use a new GoQuick.
What should I do if I can't turn the black ring?	You have probably accidentally turned the grey dial. If you have turned the grey dial the pen will prevent you from turning the

	black ring so that your dose does not change during your injection. To release the black ring, press in the blue injection button until it stops. Note that liquid will come out of the needle. Then continue to set your dose using the black ring.
What if my doctor changes my dose when I've already started a pen?	Set the new dose by turning the black ring.
What if I inject the wrong dose?	Call your doctor or nurse immediately and follow his/her instructions.
What if my pen will not prime (i.e. if liquid did not appear in step 5g)?	Call your doctor or nurse and follow his/her instructions.
What doses can my pen deliver?	The pen can deliver doses from 0.10 mg to 1.5 mg of Genotropin. Each click of the black ring changes the dose by 0.05 mg.

GENO-SIN-0722/0
Date of last revision: July 2022