

GUIDANCE STATEMENT

Recommendations on the use of growth hormone devices in children

PAC recommendations

1. Treatment with growth hormone (somatropin, somatrogon or somapacitan) should always be initiated and monitored by a paediatrician with specialist expertise in managing growth hormone disorders in children. The least expensive option of the available treatments (including somapacitan, somatrogon, and any preparation of somatropin) should be used, taking account of administration costs, dosages, price per dose and commercial arrangements. If the least expensive option is unsuitable, people with the condition and their healthcare professional should discuss the advantages and disadvantages of other treatments.
2. Somatropin (once daily administered growth hormone):
 - 2.1 Somatropin is recommended as a treatment option for children with growth failure associated with any of the following conditions:
 - » Growth hormone deficiency (GHD)
 - » Turner syndrome (TS)
 - » Prader–Willi syndrome (PWS)
 - » Chronic renal insufficiency (CRI)
 - » Born small for gestational age with subsequent growth failure at four years of age or later (SGA)
 - » Short stature homeobox-containing gene deficiency (SHOX deficiency).
3. Somatrogon and somapacitan (once weekly administered growth hormone):
 - 3.1 Somatrogon and somapacitan are recommended as treatment options for treating growth disturbance caused by growth hormone deficiency in children and young people aged 3 years and over.
 - 3.2 Use of somatrogon and somapacitan for growth disturbance due to other causes is currently unlicensed and is not recommended.
4. Treatment discontinuation:
 - 4.1 Treatment with growth hormone (either somatropin, somatrogon or somapacitan) should be discontinued if any of the following apply:
 - » Growth velocity increases less than 50% from baseline in the first year of treatment.
 - » Final height is approached, and growth velocity is less than 2cm total growth in one year.
 - » There are insurmountable problems with adherence.
 - » Final height is attained. In Prader–Willi syndrome evaluation of response to therapy should also consider body composition.
 - 4.2 Treatment should not be discontinued by default. The decision to stop treatment should be made in consultation with the patient and/or carers either by:
 - » Paediatrician with specialist expertise in managing growth hormone disorders in children, or
 - » An adult endocrinologist if care of the patient has been transferred from paediatric to adult services.

The National Institute for Health and Care Excellence (NICE) recommends somatropin (daily administered growth hormone), as a treatment option for growth failure in children associated with any of the following conditions:¹

- Growth hormone deficiency (GHD)
- Turner syndrome (TS)
- Prader–Willi syndrome (PWS)
- Chronic renal insufficiency (CRI)
- Born small for gestational age with subsequent growth failure at four years of age or later (SGA)
- Short stature homeobox-containing gene deficiency (SHOX deficiency).

Somatrogon and somapacitan (once weekly administered growth hormone), are licensed for use in children and young people aged 3 years and over, for treatment of growth disturbance caused by growth hormone deficiency only.^{2,3} Somapacitan is also licensed for the treatment of adults with GHD.³

NICE recommends somatrogon as an option for treating growth disturbance caused by growth hormone deficiency in children and young people aged 3 years and over.⁴ NICE recommends somapacitan (once a week administered growth hormone) as an option to treat growth failure caused by growth hormone deficiency in people 3 to 17 years.⁵ Somapacitan has not been considered by NICE for treatment of GHD in adults and its use is not recommended.

Use of somatrogon and somapacitan for growth disturbance due to other causes is currently unlicensed and is not recommended.

Product availability

Table 1: Growth hormone products and presentations available in the UK at time of writing

Product	Device	Available size
Somatropin – daily administration		
Omnitrope®	SurePal® pen device	5mg, 10mg, 15mg cartridges for use in SurePal® pen device
Genotropin®	Genotropin® pen	5.3mg, 12mg
	GoQuick® pre-filled pen	5.3mg, 12mg
	Miniquick® pre-filled disposable device	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 2.0 mg
Norditropin®	FlexPro® pre-filled pen	5mg, 10mg, 15mg
Saizen®	Easypod® electronic device	6mg, 12mg and 20mg prefilled cartridges
	Aluetta® refillable pen device	6mg, 12mg and 20mg prefilled cartridges
Somatrogon – once a week administration		
Ngenla®	Pre-filled pen	24mg, 60mg
Somapacitan – once a week administration		
Sogroya®	Pre-filled pen	10mg, 15mg

Notes for table 1

Saizen® Cool.Click® and Click.Easy® are no longer available.

Humatrope® and Zomacton® were withdrawn from the UK market in 2024. Prior to market withdrawal, Humatrope® was the only growth hormone licensed to treat SHOX deficiency. In the East of England patients with SHOX deficiency have been switched to other somatropin products used off label.

There is currently no needle free device on the UK market.

The Genotropin® Pen device is non-NHS but is available free of charge from clinics. <https://bnf.nice.org.uk/drugs/somatropin/#prescribing-and-dispensing-information>

Previous stock shortages of Norditropin® products were resolved at the time of writing.

Key features and comparative costs for somatropin, somatrogon and somapacitan products are summarised in table 3.

Product choice

NICE recommends the use of somatropin, somatrogon and somapacitan if after discussion with the patient and/or their carer, more than one product is suitable, the least costly product should be chosen.^{1,4,5}

NICE TA188 (somatropin) states that there appears to be no differences in the clinical effectiveness of the various somatropin products and that if, after discussion with the patient and/or their carer, more than one product is suitable, the least costly product should be chosen.¹ Patient choice is an important factor in maximising adherence to therapy.¹ Patient choice may be influenced by the choice of delivery system and includes the following factors: convenience, reliability, ease of use, lack of pain during injection, number of steps in preparation before, during and after usage.

NICE TA863 (somatrogon) states that, if people with the condition and their clinicians consider somatrogon to be one of a range of suitable treatments (including any preparation of somatropin), discuss the advantages and disadvantages of the available treatments. After that discussion, if more than one treatment is suitable, choose the least expensive.⁴

NICE TA1044 (somapacitan) states: Use the least expensive option of the available treatments (including somapacitan and any preparation of somatropin). Take account of administration costs, dosages, price per dose and commercial arrangements. If the least expensive option is unsuitable, people with the condition and their healthcare professional should discuss the advantages and disadvantages of other treatments.⁵

Treatment costs

The dose of somatropin for the management of growth hormone deficiency in children ranges from 23-39 micrograms/kg once a day. Different dosing schedules may be used for the other indications.¹

The doses for somatrogon and somapacitan are adjusted based on the serum insulin like growth factor 1 (IGF-1) concentrations which are targeted to achieve an average IGF-1 standard deviation score (SDS) in the normal range (between -2 and +2 SDS; preferable close to 0 SDS). If the IGF-1 (SDS) is >2 after reassessment, the dose is reduced. When monitoring for IGF-1, samples should always be drawn 4 days after the prior dose.^{2,3}

The recommended dose of somatrogon is 0.66mg/kg once a week on the same day each week and the dose is adjusted according to response.²

The recommended starting dose of somapacitan is 0.16 mg/kg/week. The dose may be individualised and adjusted based on growth velocity, adverse reactions, body weight and serum insulin-like growth factor 1 (IGF-1) concentrations as set out in the Summary of Product Characteristics.³

Somatrogon and somapacitan are not dose equivalent to somatropin. Consult product literature for further information.^{2,3}

The price of some somatropin products are different in primary care and secondary care settings. Secondary care prices include Homecare services for all somatropin products.^{6,7} Somapacitan is available at a lower contract price in secondary care. Somatrogen is the same price in both primary and secondary care settings. Secondary care prices for somatrogen and somapacitan include Homecare services.⁶

The average annual costs for treating a 30kg patient are summarised in table 2.^{6,8,9}

Table 2: Average annual costs for treating 30kg child

	Primary care	Secondary care (includes Homecare)
Somatropin*	£6,818	£5,917
Somatrogen (Ngenla®)	£7,144	£7,144
Somapacitan (Sogroya®)	£7,144	£5,539

*Based on an average cost per mg across group 1 somatropin products at a mid-range dose of 34mcg/kg for management of growth hormone deficiency in children.

The East of England Priorities Advisory Committee (PAC) have worked with clinical leads in the East of England to agree a list of recommended products for use in the majority of patients whilst still providing patient choice, and criteria for where the use of more expensive products can be justified.

Group 1 products: Preferred products for use in the majority of patients

These products provide a range of core features, are cost effective, and are the preferred products for use in the majority of patients. The rationale for product selection is outlined below.

NICE guidance states that after discussing the advantages and disadvantages of the available treatments, more than one treatment is suitable, the least expensive option should be chosen.^{1,4,5}

At the time of writing, Omnitrope® (Somatropin) products are the least costly daily administered growth hormone, and Sogroya® (Somapacitan), when supplied through secondary care, is the least costly once a week administered growth hormone.

- **Omnitrope® (Somatropin) products (SurePal®)**
 - » Daily administered growth hormone. Currently the least costly product.
- **Genotropin® (Somatropin) products (Genotropin® pen, GoQuick®, Miniquick®)**
 - » Daily administered growth hormone. These provide a range of devices including a pre-filled pen and a disposable device that can be stored at room temperature for travelling.
- **Norditropin® (Somatropin) FlexPro® pre-filled pen**
 - » Daily administered growth hormone. This product is stable for 3 weeks at temperatures below 25°C and does not require fridge storage once in use. It is useful for children whose care is split between homes or whose lifestyle makes fridge storage difficult. This product is significantly more expensive in primary care and therefore, if chosen, prescribing should be retained in secondary care.
- **Sogroya® (Somapacitan)**
 - » Once a week administered growth hormone. For growth disturbance caused by growth hormone deficiency indication only. This product is significantly more expensive in primary care and therefore, if chosen, prescribing should be retained in secondary care. Somapacitan (Sogroya®) is currently the most cost effective once a week administered growth hormone when prescribed in secondary care and the preferred option in the East of England where a once weekly formulation is clinically necessary for the patient.

Group 2 products: Products for use in patients with specific needs

The following products are more costly options but have features that may provide significant benefits to a defined cohort of patients: The rationale for product selection is outlined below:

- **Saizen® Easypod® and Aluetta® pen device**
 - » Daily administered growth hormone. Saizen® Easypod®: The Easypod® is a larger device which may benefit patients who have difficulty in handling the smaller devices. It allows monitoring of compliance and is lockable to prevent dose tampering so may be useful for patients where there are concerns around compliance and safety. The device has a hidden needle and auto inserter making the whole process invisible and which may be necessary to aid compliance in some patients.
Saizen® is available in a 20mg cartridge, which may be useful for patients requiring large doses of daily administered growth hormone, when administered via the Easypod® device.
Saizen® Easypod® is significantly more expensive in primary care and therefore, if chosen, prescribing for new patients should be retained in secondary care.
 - » The Saizen® Aluetta® pen device: Aluetta® pen device used alone, does not offer any additional advantages over other daily administered growth hormone pen device presentations, and is significantly more costly. Its use is not currently recommended.

Note: The Smartdot™ is an optional device that can be attached to the Aluetta® pen. The Smartdot™ automatically captures and sends injection data (dose, date and time) to an online platform, allowing remote monitoring by carers and health care professionals. However, Merck have confirmed that the Smartdot™ is not available in the UK at the time of writing.¹⁰

- **Ngenla® (Somatrogen)**
 - » Once a week administered growth hormone. For growth disturbance caused by growth hormone deficiency indication only. Ngenla® (Somatrogen) is recommended as an option when once a week administered growth hormone is required, and Somapacitan (Sogroya®) is not clinically appropriate or acceptable to the patient.

Funding approval and governance

PAC recommends that clinicians seek funding approval before commencing treatment using the standard proforma (see appendix A), which aims to minimise the administrative burden on clinicians by only asking the necessary information to demonstrate that the patient meets NICE criteria and local recommendations on product choice.

PAC recommends that arrangements for governance on compliance with the NICE TAs should be negotiated locally.

Treatment with growth hormone (either somatropin, somatrogen or somapacitan) should be discontinued if any of the following apply:¹

- Growth velocity increases less than 50% from baseline in the first year of treatment.
- Final height is approached, and growth velocity is less than 2cm total growth in one year.
- There are insurmountable problems with adherence.
- Final height is attained. In Prader–Willi syndrome evaluation of response to therapy should also consider body composition.

Where notification of continuation of treatment is required, it is recommended ICBs use a standard proforma (see appendix B), and that these are completed at year one, and every 3 years thereafter until stopping criteria are met.

Table 3. At-a-glance comparison of the main growth hormone device characteristics^{2,3,11-17}

Brand	Devices	Cartridges for injection devices	Pre-filled pen	Reconstitution required	Room temperature stability in use	Auto-injection	Dose preset	Needle guard/cover	Dial back	Home nurse visits	Other key features	% increase over least costly product -Omnitrope	
												Primary care	Secondary Care
Somatropin– once daily products													
Omnitrope®	SurePal™	√	X	X	X	X	√	√	X ^a	√		Least costly daily product	Least costly daily product
Genotropin®	Genotropin® Pen	√	X	√ ^b	X	X	X	√	√	√	Re-usable pen injection device	18%	24%
	GoQuick®	X	√	√ ^b	X	X	√	√	√	√	Disposable, multidose pre-filled pen		
	MiniQuick®	√	√	√ ^b	X ^c	X	N/A	√	N/A	√	Prefilled, single use, disposable pen device		
Norditropin®	Norditropin® FlexPro®	X	√	X	√ ^d	X	X	√ ^e	√	√	Offer a recycling scheme for used pens.	44%	7%
Saizen®	Easypod®	√	X	X	√ ^f	√	√	√	N/A	√	Electronic device. Lockable. Data download feature allows remote monitoring by HCP.	57%	16%
	Aluetta® pen device	√	X	X	√ ^f	X	X	√	√	√			

Brand	Devices	Cartridges for injection devices	Pre-filled pen	Reconstitution required	Room temperature stability in use	Auto-injection	Dose preset	Needle guard/cover	Dial back	Home nurse visits	Other key features	% increase over least costly product -Omnitrope	
												Primary care	Secondary Care
Somatrogen – once a week product													
Ngenla®	Ngenla® pre-filled pen	X	✓	X	X ^g	X	X	X	✓	✓	Licensed for growth disturbance caused by growth hormone deficiency only	29%	29%
Somapacitan – once a week product													
Sogroya®	Sogroya® prefilled pen	X	✓	X	✓ ^h	✓	X	✓ ^e	✓	✓	Licensed for growth disturbance caused by growth hormone deficiency only	29%	Least costly once a week product

Table 3 footnotes

- a) The dose can still be changed without any wastage of the product if you dial above the correct dose, but reset is required
- b) Reconstitution within the device (2-chamber cartridge)
- c) Can be kept at room temperature ($\leq 25^{\circ}\text{C}$) for ≤ 6 months, before reconstitution and use. If not used within 6 months, it should be disposed of (i.e., it cannot be returned to fridge)
- d) Can be kept at room temperature ($\leq 25^{\circ}\text{C}$) for ≤ 3 weeks after first use
- e) When used with PenMate® device, the needle is hidden from sight during the injection process
- f) Can be stored outside of a refrigerator at or below 25°C for up to 7 days
- g) May be held at room temperature (up to 32°C) for up to 4 hours with each injection for a maximum of 5 times
- h) May be kept temporarily at temperatures up to 30°C for up to a total of 72 hours (3 days)

Author

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Document history

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Consultation process	East of England Paediatricians via PAC members
QA process	Katie Smith, Director of Clinical Quality, PrescQIPP. 23rd January 2026

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