SUMMARY OF PRODUCT CHARACTERISTICS

▼This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions. See section 4.8 for how to report adverse reactions.

1 NAME OF THE MEDICINAL PRODUCT

Wegovy 1.7 mg, FlexTouch solution for injection in pre-filled pen

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Wegovy 1.7 mg FlexTouch solution for injection
Contains 2.27 mg/mL of semaglutide*. Each dose contains 1.7mg of semaglutide in 0.75mL solution.
One pre-filled pen contains 6.8 mg (four doses) of semaglutide in 3 mL solution.

*human glucagon-like peptide-1 (GLP-1) analogue produced in *Saccharomyces cerevisiae* cells by recombinant DNA technology

For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Solution for injection.
Clear and almost colourless isotonic solution; pH=7.4.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Weight management

Adults
Wegovy is indicated as an adjunct to a reduced-calorie diet and increased physical activity for weight management, including weight loss and weight maintenance, in adults with an initial Body Mass Index (BMI) of

- $\geq$30 kg/m^2 (obesity), or

- ≥27 kg/m^2 to <30 kg/m^2 (overweight) in the presence of at least one weight-related comorbidity.

Adolescents (≥12 years)
Wegovy is indicated as an adjunct to a reduced-calorie diet and increased physical activity for weight management in adolescents ages 12 years and above with

- obesity* and
- body weight above 60 kg.

Treatment with Wegovy should be discontinued and re-evaluated if adolescent patients have not reduced their BMI by at least 5% after 12 weeks on the 2.4 mg or maximum tolerated dose.
*Obesity (BMI ≥95th percentile) as defined on sex- and age-specific BMI growth charts (CDC.gov) (see Table 1).

Table 1 BMI cut-off points for obesity (≥95th percentile) by sex and age for paediatric patients aged 12 and older (CDC criteria)

Age (years)	BMI (kg/m^2) at 95th Percentile	
	Males	Females
12	24.2	25.2
12.5	24.7	25.7
13	25.1	26.3
13.5	25.6	26.8
14	26.0	27.2
14.5	26.4	27.7
15	26.8	28.1
15.5	27.2	28.5
16	27.5	28.9
16.5	27.9	29.3
17	28.2	29.6
17.5	28.6	30.0

Cardiovascular Risk Reduction

Wegovy is indicated as an adjunct to a reduced-calorie diet and increased physical activity to reduce the risk of major adverse cardiovascular events (cardiovascular death, non-fatal myocardial infarction, or non-fatal stroke) in adults with established cardiovascular disease and either obesity or overweight (BMI ≥27 kg/m^2).

For trial results with respect to the effect on cardiovascular events, obesity-related heart failure, populations studied and background therapies see section 5.1.

4.2 Posology and method of administration

Posology

Adults

The maintenance dose of semaglutide 2.4 mg once-weekly is reached by starting with a dose of 0.25 mg. To reduce the likelihood of gastrointestinal symptoms, the dose should be escalated over a 16-week period to a maintenance dose of 2.4 mg once weekly (see Table 2).

If needed, for weight management in patients with obesity (see section 4.1), the dose can be increased to 7.2 mg once weekly after a minimum of 4 weeks on the 2.4 mg dose.

In case of significant gastrointestinal symptoms, consider delaying dose escalation or lowering to the previous dose until symptoms have improved.

Table 2 Dose escalation schedule

Dose escalation	**Weekly dose**
Week 1–4	0.25 mg
Week 5–8	0.5 mg
Week 9–12	1 mg
Week 13–16	1.7 mg
Maintenance dose (all indications)	2.4 mg
Maintenance dose (weight management in adult patients with obesity, if needed)	7.2 mg

Weight management

If patients have been unable to lose at least 5% of their initial body weight after 6 months on treatment, a decision is required on whether to continue treatment, taking into account the benefit/risk profile in the individual patient (see section 5.1).

Adolescents

For adolescents ages 12 years and above, the same dose escalation schedule as for adults should be applied (see Table 2). The dose should be increased until 2.4 mg (maintenance dose) or maximum tolerated dose has been reached. Weekly doses higher than 2.4 mg are not recommended.

Missed dose

If a dose is missed, it should be administered as soon as possible and within 5 days after the missed dose. If more than 5 days have passed, the missed dose should be skipped, and the next dose should be administered on the regularly scheduled day. In each case, patients can then resume their regular once weekly dosing schedule. If more doses are missed, reducing the starting dose for re-initiation should be considered.

Special populations

Patients with type 2 diabetes

Semaglutide should not be used in combination with other GLP-1 receptor agonist products.

When initiating semaglutide, consider reducing the dose of concomitantly administered insulin or insulin secretagogues (such as sulfonylureas) to reduce the risk of hypoglycaemia.

Elderly patients (≥65 years old)
No dose adjustment is required based on age. Therapeutic experience in patients ≥85 years of age is limited.

Patients with renal impairment
No dose adjustment is required for patients with mild, moderate or severe renal impairment. Experience with the use of semaglutide in patients with severe renal impairment is limited. Semaglutide is not recommended for use in patients with end-stage renal disease (see section 5.2).

Patients with hepatic impairment
No dose adjustment is required for patients with hepatic impairment. Experience with the use of semaglutide in patients with severe hepatic impairment is limited. Caution should be exercised when treating these patients with semaglutide (see section 5.2).

Paediatric population
No dose adjustment is required for adolescents ages 12 years and above. Doses above 2.4 mg are not recommended.
The safety and efficacy of semaglutide in children below 12 years of age have not been established.

Method of administration
Wegovy is administered once weekly at any time of the day, with or without meals.

It is to be injected subcutaneously in the abdomen, in the thigh or in the upper arm. The injection site can be changed. It should not be administered intravenously or intramuscularly.

For the 7.2 mg dose administer either 1 injection of 7.2 mg or 3 injections of 2.4 mg one after each other, depending on the device.

When administering wegovy 7.2 mg solution for injection in pre-filled pen for single use, the pen should be pressed firmly against the skin until the yellow bar has stopped moving. The injection takes about 5-10 seconds.

For 3 injections of 2.4 mg, the injections can be given in the same body area but should be at least 5 cm apart - doses from more than one pen may need to be used and the needle should be changed between each dose.

The day of weekly administration can be changed if necessary, as long as the time between doses is at least 3 days (>72 hours). After selecting a new dosing day, once-weekly dosing should be continued.

Patients should be advised to read the instruction for use included in the package leaflet carefully before administering the medicinal product.

For further information on administration see section 6.6.

4.3 Contraindications

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

Gastrointestinal effects and Dehydration
Use of GLP-1 receptor agonists may be associated with gastrointestinal adverse reactions. This should be considered when treating patients with impaired renal function, as nausea, vomiting, and diarrhoea may cause dehydration, which in rare cases can lead to a deterioration of renal function (see section 4.8). Patients treated with semaglutide should be advised of the potential risk of dehydration in relation to gastrointestinal side effects and take precautions to avoid fluid depletion.

Aspiration in association with general anaesthesia or deep sedation
Cases of pulmonary aspiration have been reported in patients receiving GLP-1 receptor agonists
undergoing general anaesthesia or deep sedation. Therefore, the increased risk of residual gastric
content due to delayed gastric emptying (see section 4.8) should be considered prior to performing
procedures with general anaesthesia or deep sedation.

Acute pancreatitis
Semaglutide has not been studied in patients with a history of pancreatitis, and should be used with caution in these patients.

Acute pancreatitis has been reported in patients treated with GLP-1 receptor agonists. This includes post-marketing reports of necrotising pancreatitis and reports with a fatal outcome. Patients should be informed of the symptoms of acute pancreatitis, including persistent, severe abdominal pain. Patients should be advised to seek immediate medical attention if they occur. If pancreatitis is suspected, semaglutide should be discontinued. If the diagnosis of pancreatitis is confirmed, semaglutide should not be restarted.

In the absence of other signs and symptoms of acute pancreatitis, elevations in pancreatic enzymes alone are not predictive of acute pancreatitis.

Non-arteritic anterior ischaemic optic neuropathy (NAION)

Data from epidemiological studies may indicate an increased risk of non-arteritic anterior ischaemic optic neuropathy (NAION) during treatment with semaglutide. There is no identified time interval for when NAION may develop following treatment start. Patients reporting a sudden loss of vision (including partial loss) should be urgently referred for ophthalmological examination and treatment with semaglutide should be discontinued if NAION is confirmed (see section 4.8).

For patients with diabetes
Semaglutide must not be used as a substitute for insulin in patients with diabetes.

Hypoglycaemia
Semaglutide lowers blood glucose and can cause hypoglycaemia. Patients should be aware of the risk of hypoglycaemia and be educated on the signs and symptoms of hypoglycaemia. In patients with diabetes, insulin and sulfonylurea are known to cause hypoglycaemia. Patients treated with semaglutide in combination with a sulfonylurea or insulin may have an increased risk of hypoglycaemia. The risk of hypoglycaemia can be lowered by reducing the dose of sulfonylurea or insulin when initiating treatment with a GLP-1 receptor agonist.

Diabetic retinopathy in patients with type 2 diabetes
In patients with diabetic retinopathy treated with insulin and semaglutide, an increased risk of developing diabetic retinopathy complications has been observed. Rapid improvement in glucose control has been associated with a temporary worsening of diabetic retinopathy, but other mechanisms cannot be excluded. Patients with diabetic retinopathy using semaglutide should be monitored closely and treated according to clinical guidelines. There is no experience with semaglutide 2.4 mg in patients with type 2 diabetes with uncontrolled or potentially unstable diabetic retinopathy.

Patients with gastroparesis

Semaglutide treated patients with gastroparesis may experience more serious or severe gastrointestinal adverse events. Semaglutide should be used with caution in these patients, and semaglutide is not recommended if gastroparesis is severe (see section 4.8).

Populations not studied
There is no experience in patients with congestive heart failure New York Heart Association (NYHA) class IV. There is limited experience in patients aged 85 years or more.

Sodium content
This medicine contains less than 1 mmol sodium (23 mg) per dose, i.e. essentially ‘sodium-free’.

Traceability
In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

4.5 Interaction with other medicinal products and other forms of interaction

As with other GLP-1 receptor agonists, semaglutide may delay gastric emptying and could potentially influence the absorption of concomitantly administered oral medicinal products. No clinically relevant effect on the rate of gastric emptying was observed with semaglutide 2.4 mg. In clinical pharmacology trials assessing the effect of semaglutide 1.0 mg on the absorption of co-administered oral medications at steady state, no clinically relevant drug-drug interactions with semaglutide was observed based on the evaluated medications. Therefore, no dose adjustment is required when co-administered with semaglutide.

Coadministration with other semaglutide-containing products or with any other GLP-1 receptor agonist is not recommended.

Oral contraceptives
Semaglutide is not anticipated to decrease the effectiveness of oral contraceptives as semaglutide did not change the overall exposure of ethinylestradiol and levonorgestrel to a

clinically relevant degree, when an oral contraceptive combination medicinal product (0.03 mg ethinylestradiol/0.15 mg levonorgestrel) was co-administered with semaglutide. Exposure of ethinylestradiol was not affected; an increase of 20% was observed for levonorgestrel exposure at steady state. C_{max} was not affected for any of the compounds.

Atorvastatin
Semaglutide did not change the overall exposure of atorvastatin following a single dose administration of atorvastatin (40 mg). Atorvastatin C_{max} was decreased by 38%. This was assessed not to be clinically relevant.

Digoxin
Semaglutide did not change the overall exposure or C_{max} of digoxin following a single dose of digoxin (0.5 mg).

Metformin
Semaglutide did not change the overall exposure or C_{max} of metformin following dosing of 500 mg twice daily over 3.5 days.

Warfarin and other coumarin derivatives
Semaglutide did not change overall exposure or C_{max} of R- and S-warfarin following a single dose of warfarin (25 mg), and the pharmacodynamic effects of warfarin as measured by the international normalised ratio (INR) were not affected in a clinically relevant manner. However, cases of decreased INR have been reported during concomitant use of acenocoumarol and semaglutide. Upon initiation of semaglutide treatment in patients on warfarin or other coumarin derivatives, frequent monitoring of INR is recommended.

Paediatric population
Interaction studies have only been performed in adults.

4.6 Fertility, pregnancy and lactation

Women of childbearing potential
Women of childbearing potential are recommended to use contraception when treated with semaglutide.

Pregnancy
Studies in animals have shown reproductive toxicity (see section 5.3). There are limited data from the use of semaglutide in pregnant women. Therefore, semaglutide should not be used during pregnancy. If a patient wishes to become pregnant, or pregnancy occurs, semaglutide should be discontinued. Semaglutide should be discontinued at least 2 months before a planned pregnancy due to the long half-life (see section 5.2).

Breast-feeding
In lactating rats, semaglutide was excreted in milk. A risk to a breast-fed child cannot be excluded. Semaglutide should not be used during breast-feeding.

Fertility
The effect of semaglutide on fertility in humans is unknown. Semaglutide did not affect male fertility in rats. In female rats, an increase in oestrous length and a small

reduction in number of ovulations were observed at doses associated with maternal body weight loss.

4.7 Effects on ability to drive and use machines

Semaglutide has no or negligible influence on the ability to drive or use machines. However, dizziness can be experienced mainly during the dose escalation period. Driving or use of machines should be done cautiously if dizziness occurs.

Patients with type 2 diabetes
If semaglutide is used in combination with a sulfonylurea or insulin, patients should be advised to take precautions to avoid hypoglycaemia while driving and using machines (see section 4.4).

4.8 Undesirable effects

Summary of safety profile
In four phase 3a trials, 2,650 adult patients were exposed to semaglutide 2.4 mg. The duration of the trials was 68 weeks. Similar to other GLP-1 receptor agonists, the most frequently reported adverse reactions were gastrointestinal disorders including nausea, diarrhoea, constipation and vomiting.

Tabulated list of adverse reactions
Table 3 lists adverse reactions identified in clinical trials in adults, the SELECT trial and post-marketing reports. The frequencies are based on a pool of the phase 3a trials. Adverse reactions associated with semaglutide 2.4 mg are listed by system organ class and frequency. Frequency categories are defined as: 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) and not known (cannot be estimated from the available data).

Table 3 Frequency of adverse reactions of semaglutide

MedDRA system organ class	**Very common**	**Common**	**Uncommon**	**Rare**	**Very rare**	**Not known**
Immune system disorders				Anaphylactic reaction		
Metabolism and nutrition disorders		Hypoglycaemia in patients with type 2 diabetes[a]	Hypoglycaemia in patients without type 2 diabetes[a]			
Nervous system disorders	Headache[b]	Dizziness[b] Dysaesthesia[a,c,f] Dysgeusia[b,c]				
Eye disorders		Diabetic retinopathy in patients with type			Non-arteritic anterior	

		2 diabetes[a]			ischaemic optic neuropathy (NAION)	
Cardiac disorders			Increased heart rate[a,c]			
Vascular disorders			Hypotension Orthostatic hypotension			
Gastrointestinal disorders	Vomiting[a,b] Diarrhoea[a,b] Constipation[a, b] Nausea[a,b] Abdominal pain[b, c]	Gastritis[b, c] Gastrooesophageal reflux disease[b] Dyspepsia[b] Eructation[b] Flatulence[b] Abdominal distension[b]	Acute pancreatitis[a] Delayed gastric emptying			Intestinal obstruction, [c,d,e]
Hepatobiliary disorders		Cholelithiasis[a]				
Renal and urinary disorders			Urolithiasis			
Skin and subcutaneous tissue disorders		Hair loss[a]		Angioedema		
General disorders and administration site conditions	Fatigue[b,c]	Injection site reactions[c]				
Investigations			Increased amylase[c] Increased lipase[c] Increased Bilirubin[a]			
Injury				Hip Fracture[a]		

[a)] See description of selected adverse reactions below
[b)] Mainly seen in the dose-escalation period
[c)] Grouped preferred terms
[d)] From post-marketing reports
[e)] Grouped term covering PTs Intestinal obstruction, Ileus, small intestinal obstruction
[f)] Frequency is based on the 3a program. An increased frequency has been observed with the 7.2 mg dose. Please refer to dysaesthesia subheading below for more information.

In a cardiovascular outcomes trial (SELECT), 8,803 patients were exposed to Wegovy for a median of 37.3 months and 8,801 patients were exposed to placebo for a median of 38.6 months (See section 5.1). Safety data collection was limited to serious adverse events (including death), adverse events leading to discontinuation, and adverse events of special interest. Sixteen percent (16%) of Wegovy-treated patients and 8% of placebo-treated patients, respectively, discontinued study drug due to an adverse event. Additional information from this trial is included in subsequent sections below when relevant.

In the HFpEF trials, in adults with obesity related heart failure with preserved ejection fraction (HFpEF), the adverse reaction profile was similar to that seen in the weight management phase 3a trials.

Description of selected adverse reactions

Gastrointestinal adverse reactions

The events were most frequently reported during dose escalation. Over 68 weeks, nausea occurred in 43.9% of patients when treated with semaglutide 2.4 mg (16.1% for placebo), diarrhoea in 29.7% (15.9% for placebo) and vomiting in 24.5% (6.3% for placebo). Most events were mild to moderate in severity and of short duration. Constipation occurred in 24.2% of patients treated with semaglutide 2.4 mg (11.1% for placebo) and was mild to moderate in severity and of longer duration.

The gastrointestinal events led to permanent treatment discontinuation in 4.3% of patients.

In STEP UP trials gastrointestinal events were most frequently reported during dose escalation (during the initial 20 weeks of treatment). Over 72 weeks, nausea occurred in 38.9% of patients when treated with semaglutide 7.2 mg (12.6% for placebo), diarrhoea in 24.2% (11.6% for placebo) and vomiting in 22.1% (5.7% for placebo). Most events were mild to moderate in severity and of short duration. Constipation occurred in 20.4% of patients when treated with semaglutide 7.2 mg (7.6% for placebo) and was mild to moderate in severity and of longer duration. The gastrointestinal events led to permanent discontinuation in 3.2% of patients.

Patients with gastroparesis may experience more serious or severe gastrointestinal effects when treated with semaglutide.

Acute pancreatitis

The frequency of adjudication-confirmed acute pancreatitis reported in phase 3a clinical trials was 0.2% for semaglutide 2.4 mg and <0.1% for placebo, respectively.

Acute gallstone disease/Cholelithiasis

Cholelithiasis was reported in 1.6% and led to cholecystitis in 0.6% of patients treated with semaglutide 2.4 mg.

Hair loss

Hair loss was reported in 2.5% of patients treated with semaglutide 2.4 mg and in 1.0% of patients treated with placebo. In STEP UP trials, hair loss was reported in 5.3% of patients treated with semaglutide 7.2 mg and in 1.0% of patients on placebo. The events were mainly of mild severity and most patients recovered while on continued treatment. Hair loss was reported more frequently in patients with a greater weight loss (≥20%).

Increased heart rate

In the phase 3a trials, a mean increase of 3 beats per minute (bpm) from a baseline mean of 72 bpm was observed in patients treated with semaglutide 2.4 mg. The proportions of patients with a maximum increase from baseline ≥20 bpm/min at any timepoint during the on-treatment period were 26.0% in the semaglutide 2.4 mg group vs 15.6% in the placebo group.

Immunogenicity

Consistent with the potentially immunogenic properties of medicinal products containing proteins or peptides, patients may develop antibodies following treatment with semaglutide. The proportion of patients testing positive for anti-semaglutide antibodies at any time post-baseline was 2.9 – 10.9% for semaglutide 2.4 mg and 15.3% for semaglutide 7.2 mg. No patients had anti-semaglutide neutralising antibodies or anti-semaglutide antibodies with endogenous GLP-1 neutralising effect.

Hypoglycaemia in patients with type 2 diabetes
In STEP 2, clinically significant hypoglycaemia was observed in 6.2% (0.1 events/patient year) of patients treated with semaglutide 2.4 mg compared with 2.5% (0.03 events/patient year) of patients treated with placebo. One episode (0.2% of subjects, 0.002 events/patient year) was reported as severe. The risk of hypoglycaemia was increased when semaglutide 2.4 mg was used with a sulfonylurea.

In STEP-HFpEF-DM, clinically significant hypoglycaemia was observed in 4.2% of subjects in both the semaglutide and placebo groups when used in combination with sulfonylurea and/or insulin (0.065 events/patient year with semaglutide and 0.098 events/patient year with placebo).

Hypoglycaemia in patients without type 2 diabetes
In a cardiovascular outcomes trial (SELECT) in adult patients without type 2 diabetes, 3 episodes of serious hypoglycaemia were reported in Wegovy-treated patients versus 1 episode in placebo. Patients with a history of bariatric surgery (a risk factor for hypoglycaemia) had more events of serious hypoglycaemia while taking Wegovy (2.3%, 2/87) than placebo (0%, 0/97).

Diabetic retinopathy in patients with type 2 diabetes
New onset or worsening of diabetic retinopathy (4.0% vs 2.7% of patients treated with semaglutide 2.4 mg vs placebo, respectively) was observed in STEP 2.

Fractures
In the cardiovascular outcomes trial (SELECT) in adults, more fractures of the hip and pelvis were reported on Wegovy than on placebo in female patients: 1.0% (24/2448) vs. 0.2% (5/2424), and in patients ages 75 years and older: 2.4% (17/703) vs. 0.6% (4/663), respectively.

Urolithiasis
In a cardiovascular outcomes trial (SELECT), 1.2% of Wegovy-treated patients and 0.8% of patients receiving placebo reported urolithiasis, including serious reactions that were reported more frequently among patients receiving Wegovy (0.6%) than placebo (0.4%).

Bilirubin
In the cardiovascular outcomes trial in adults (SELECT), increases in total bilirubin greater than or equal to 3 times the upper limit of normal were observed in 0.3% (30/8585) of Wegovy-treated patients versus 0.2% (14/8579) of placebo-treated patients.

Dysaesthesia

Events related to a clinical picture of altered skin sensation such as dysaesthesia, paraesthesia, hyperaesthesia, burning sensation, allodynia and sensitive skin were reported in 2.1% of patients treated with Wegovy injection and 1.2% of patients treated with placebo. The events were mild to moderate in severity and most patients recovered while on continued treatment.

In STEP-UP, dysaesthesia events were reported by 21.6% of patients treated with semaglutide 7.2 mg and 0.3% of patients on placebo. Most events were mild to moderate and recovered while on treatment.

Non-arteritic anterior ischaemic optic neuropathy (NAION)
Results from several large epidemiological studies suggest that exposure to semaglutide in adults with type 2 diabetes may be associated with an approximately two-fold increase in the relative risk of developing NAION, corresponding to approximately one additional case per 10 000 person-years of treatment.

Paediatric population
In a clinical trial conducted in adolescents of 12 years to below 18 years with obesity or overweight with at least one weight-related comorbidity, 133 patients were exposed to Wegovy. The trial duration was 68 weeks.

Overall, the frequency, type and severity of adverse reactions in the adolescents were comparable to that observed in the adult population. Cholelithiasis was reported in 3.8% of patients treated with Wegovy compared to 0% of patients treated with placebo.

No effects on growth or pubertal development were found after 68 weeks of treatment.

Reporting of suspected adverse reactions
Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via Yellow Card Scheme Website: https://yellowcard.mhra.gov.uk/ or search for MHRA Yellow Card in the Google Play or Apple App Store.

4.9 Overdose

Overdose with semaglutide may be associated with gastrointestinal disorders which could lead to dehydration. In the event of overdose, the patient should be observed for clinical signs and appropriate supportive treatment initiated.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Drugs used in diabetes, Glucagon-like peptide-1 (GLP-1) analogues, ATC code: A10BJ06.

Mechanism of action

Semaglutide is a GLP-1 analogue with 94% sequence homology to human GLP-1. Semaglutide acts as a GLP-1 receptor agonist that selectively binds to and activates the GLP-1 receptor, the target for native GLP-1.

GLP-1 is a physiological regulator of appetite and calorie intake, and the GLP-1 receptor is present in several areas of the brain involved in appetite regulation.

Semaglutide has direct effects on areas in the brain involved in homeostatic regulation of food intake in the hypothalamus and the brainstem, and direct and indirect effects on areas involved in hedonic regulation of food intake, including the septum, thalamus and amygdala.

In addition, in clinical studies semaglutide has shown to reduce blood glucose in a glucose-dependent manner by stimulating insulin secretion and lowering glucagon secretion when blood glucose is high. The mechanism of blood glucose lowering also involves a minor delay in gastric emptying in the early postprandial phase. During hypoglycaemia, semaglutide diminishes insulin secretion and does not impair glucagon secretion.
The exact mechanism of cardiovascular risk reduction has not been established.

Pharmacodynamic effects

Appetite, energy intake and food choice

In phase 1 trial, energy intake during an *ad libitum* meal was 35% lower with semaglutide 2.4 mg compared to placebo after 20 weeks of dosing. This was supported by improved control of eating, increased feeling of fullness, greater satiety, reduced hunger, less food cravings (for dairy and savoury foods), less desire for sweet food and a relative lower preference for high fat food.
Food cravings were further assessed in STEP 5 by a Control of Eating Questionnaire (CoEQ). At week 104, the estimated treatment difference both for control of cravings and craving of savoury food significantly favoured semaglutide, whereas no clear effect was seen for craving of sweet food.

Clinical efficacy and safety

The efficacy and safety of semaglutide 2.4 mg for weight management in combination with a reduced calorie intake and increased physical activity were evaluated in four 68 weeks double-blinded randomised placebo-controlled phase 3a trials (STEP 1-4). A total of 4,684 patients (2,652 randomised to treatment with semaglutide 2.4 mg) were included in these trials. Furthermore, the two-year efficacy and safety of semaglutide compared to placebo were evaluated in a double-blinded randomised placebo-controlled phase 3b trial (STEP 5) including 304 patients (152 in treatment with semaglutide).

As an inclusion criterion in STEP 1, 3 and 4, all patients with a BMI $\geq$27 kg/m^2 to <30kg/m^2 were required to have at least one of these weight-related comorbidities: hypertension, dyslipidaemia, obstructive sleep apnoea or cardiovascular disease. In STEP 2, all patients had a BMI $\geq$27 kg/m^2 and type 2 diabetes.

The majority of patients had at least one weight-related comorbidity. These included, however were not limited to hypertension, dyslipidaemia, cardiovascular disease, pre-diabetes, knee or hip osteoarthritis, obstructive sleep apnoea, asthma/chronic obstructive pulmonary disease (COPD), liver disease (non-alcoholic fatty liver disease (NAFLD) or non-alcoholic steatohepatitis (NASH) and polycystic ovary syndrome (PCOS).

In STEP 1, 2 and 4, all patients received instructions for a reduced calorie diet (500 kcal/day deficit) and increased physical activity (150 min/week).

Treatment with semaglutide 2.4 mg demonstrated superior, clinically meaningful, and sustained weight loss compared with placebo in patients with obesity (BMI $\geq$30 kg/m^2), or overweight (BMI $\geq$27 kg/m^2 to <30 kg/m^2) and at least one weight-related comorbidity. Furthermore, across the trials, a higher proportion of patients achieved $\geq$5%, $\geq$10%, $\geq$15% and $\geq$20% weight loss with semaglutide 2.4 mg compared with placebo. The reduction in body weight occurred irrespective of the presence of gastrointestinal symptoms such as nausea, vomiting or diarrhoea. Specific data on weight loss and its time course for STEP 1-4 are presented in Tables 4-7 and Figures 1-3.

Efficacy in terms of weight loss was demonstrated regardless of age, sex, race, ethnicity, baseline body weight, BMI, presence of type 2 diabetes and level of renal function.

STEP 1: Weight management

In a 68-week double-blind trial, 1,961 patients with obesity (BMI $\geq$30 kg/m^2), or with overweight (BMI $\geq$27 kg/m^2 to <30 kg/m^2) and at least one weight-related comorbidity were randomised to semaglutide 2.4 mg or placebo. All patients were on a reduced-calorie diet and increased physical activity throughout the trial.

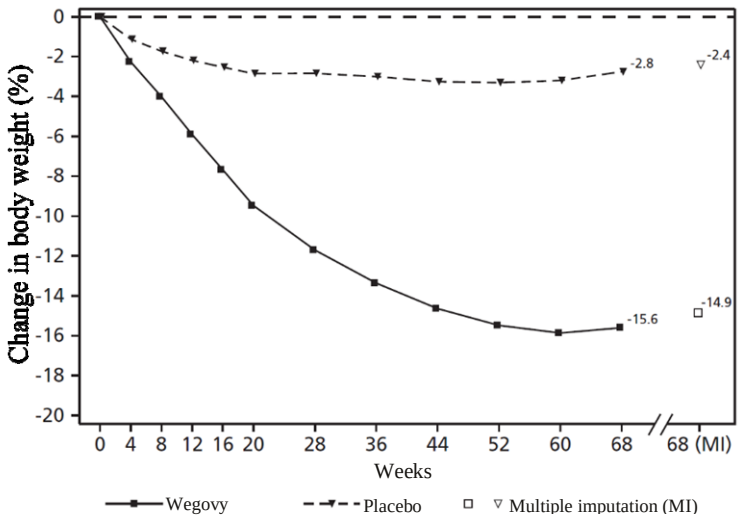
Weight loss occurred early and continued throughout the trial. At end of treatment (week 68), the weight loss was superior and clinically meaningful compared with placebo (see Table 4 and Figure 1). Furthermore, a higher proportion of patients achieved $\geq$5%, $\geq$10%, $\geq$15% and $\geq$20% weight loss with semaglutide 2.4 mg compared with placebo (see Table 4). In STEP 1, after approximately 6 months (28 weeks) of treatment, 89.8% of patients treated with semaglutide 2.4 mg achieved a $\geq$5% weight loss. Out of those who did not, 40.5% nonetheless achieved a weight loss $\geq$5% after 68 weeks of treatment.

Table 4 STEP 1: Results at week 68

	Semaglutide 2.4 mg	**Placebo**
Full analysis set (N)	1,306	655
Body weight		

Baseline (kg)	105.4	105.2
Change (%) from baseline[1,2]	-14.9	-2.4
Difference (%) from placebo[1] [95% CI]	-12.4 [-13.4; -11.5]*	-
Change (kg) from baseline	-15.3	-2.6
Difference (kg) from placebo[1] [95% CI]	-12.7 [-13.7; -11.7]	-
Patients (%) achieving weight loss ≥5%[3]	83.5*	31.1
Patients (%) achieving weight loss ≥10%[3]	66.1*	12.0
Patients (%) achieving weight loss ≥15%[3]	47.9*	4.8
Patients (%) achieving weight loss ≥20%[3]	30.2	1.7
Waist circumference (cm)		
Baseline	114.6	114.8
Change from baseline[1]	-13.5	-4.1
Difference from placebo[1] [95% CI]	-9.4 [-10.3; -8.5]*	-
Systolic blood pressure (mmHg)		
Baseline	126	127
Change from baseline[1]	-6.2	-1.1
Difference from placebo[1] [95% CI]	-5.1 [-6.3; -3.9]*	-

* p<0.0001 (unadjusted 2-sided) for superiority.
[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.
[2] During the trial, randomised treatment was permanently discontinued by 17.1% and 22.4% of patients randomised to semaglutide 2.4 mg and placebo, respectively. Assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies, the estimated changes from randomisation to week 68 for body weight based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -16.9% and -2.4% for semaglutide 2.4 mg and placebo respectively.
[3] Estimated from binary regression model based on same imputation procedure as in primary analysis.



Observed values for patients completing each scheduled visit, and estimates with multiple imputations (MI) from retrieved dropouts.

Figure 1 STEP 1: Mean change in body weight (%) from baseline to week 68

Following the 68-week trial, a 52 week off-treatment extension was conducted including 327 patients who had completed the main trial period on the maintenance dose of semaglutide or placebo. The trial extension consisted of four clinic visits and did not include structured lifestyle intervention. In the off-treatment period from week 68 to week 120, mean body weight increased in both treatment groups. However, for patients that had been treated with semaglutide for the main trial period the weight remained 5.6% below baseline compared to 0.1% for the placebo group.

STEP 2: Weight Management in patients with type 2 diabetes

In a 68-week, double-blind trial, 1,210 patients with overweight or obesity (BMI ≥27 kg/m^2) and type 2 diabetes were randomised to either semaglutide 2.4 mg, semaglutide 1 mg once-weekly or placebo. Patients included in the trial had insufficiently controlled diabetes (HbA_{1c} 7–10%) and were treated with either: diet and exercise alone or 1–3 oral anti-diabetic drugs. All patients were on a reduced-calorie diet and increased physical activity throughout the trial.

Treatment with semaglutide 2.4 mg for 68 weeks resulted in superior and a clinically meaningful reduction in body weight and in HbA_{1c} compared to placebo (see Table 5 and Figure 2). In STEP 2, after approximately 6 months (28 weeks) of treatment, 74.7% of patients treated with semaglutide 2.4 mg achieved a ≥5% weight loss. Out of those who did not, 31.9% nonetheless achieved a weight loss ≥5% at week 68 of treatment.

Table 5 STEP 2: Results at week 68

	Semaglutide 2.4 mg	**Placebo**
Full analysis set (N)	404	403
Body weight		
Baseline (kg)	99.9	100.5
Change (%) from baseline[1,2]	-9.6	-3.4
Difference (%) from placebo[1] [95% CI]	-6.2 [-7.3; -5.2]*	-
Change (kg) from baseline	-9.7	-3.5
Difference (kg) from placebo[1] [95% CI]	-6.1 [-7.2; -5.0]	-
Patients (%) achieving weight loss ≥5%[3]	67.4*	30.2
Patients (%) achieving weight loss ≥10%[3]	44.5*	10.2
Patients (%) achieving weight loss ≥15%[3]	25.0*	4.3
Patients (%) achieving weight loss ≥20%[3]	12.8	2.3
Waist circumference (cm)		
Baseline	114.5	115.5

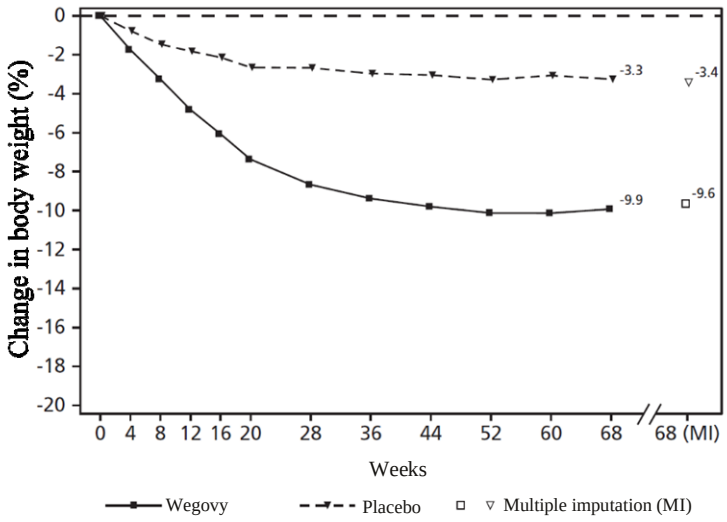
Change from baseline[1]	-9.4	-4.5
Difference from placebo[1] [95% CI]	-4.9 [-6.0; -3.8]*	-
Systolic blood pressure (mmHg)		
Baseline	130	130
Change from baseline[1]	-3.9	-0.5
Difference from placebo[1] [95% CI]	-3.4 [-5.6; -1.3]**	-
HbA_{1c} (mmol/mol (%))		
Baseline	65.3 (8.1)	65.3 (8.1)
Change from baseline[1,2]	-17.5 (-1.6)	-4.1 (-0.4)
Difference from placebo[1] [95% CI]	-13.5 [-15.5; -11.4] (-1.2 [-1.4; -1.0])*	- -
Patients (%) achieving HbA_{1c} <7%[3]	77.4	26.0
Patients (%) achieving HbA_{1c} ≤6.5%[3]	65.9	15.1

* p<0.0001 (unadjusted 2-sided) for superiority; **p<0.05 (unadjusted 2-sided) for superiority

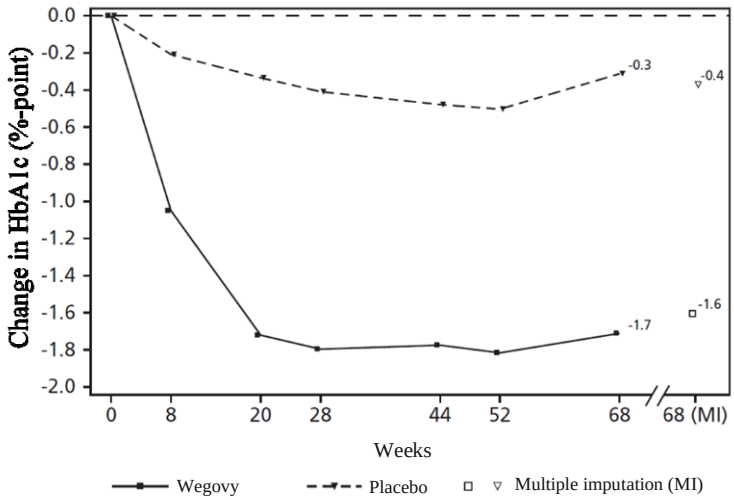
[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.

[2] During the trial, randomised treatment was permanently discontinued by 11.6% and 13.9% of patients randomised to semaglutide 2.4 mg and placebo, respectively. Assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies, the estimated changes from randomisation to week 68 for body weight based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -10.6% and -3.1% for semaglutide 2.4 mg and placebo respectively.

[3] Estimated from binary regression model based on same imputation procedure as in primary analysis.



Observed values for patients completing each scheduled visit, and estimates with multiple imputations (MI) from retrieved dropouts.



HbA1c: Haemoglobin A1c
Observed values for patients completing each scheduled visit, and estimates with multiple imputations (MI) from retrieved dropouts

Figure 2 STEP 2: Mean change in body weight (kg) and HbA_{1c} (%) from baseline to week 68

STEP 3: Weight Management with Intensive Behavioural Therapy
In a 68-week double-blind trial, 611 patients with obesity (BMI ≥30 kg/m^2), or with overweight (BMI ≥27 kg/m^2 to <30 kg/m^2) and at least one weight-related comorbidity were randomised to semaglutide 2.4 mg or placebo. During the trial, all patients received intensive behavioural therapy (IBT) consisting of an initial 8-week low-calorie diet (1000 to 1200 kcal/day) followed by 60 weeks reduced caloric diet (1200-1800 kcal/day), increased physical activity (100 mins/week with gradual increase to 200 mins/week) and behavioural counselling.

Treatment with semaglutide 2.4 mg and IBT for 68 weeks resulted in superior and clinically meaningful reduction in body weight compared to placebo (see Table 6).

Table 6 STEP 3: Results at week 68

	Semaglutide 2.4mg	**Placebo**
Full analysis set (N)	407	204
Body weight		
Baseline (kg)	106.9	103.7
Change (%) from baseline[1,2]	-16.0	-5.7
Difference (%) from placebo[1] [95% CI]	-10.3 [-12.0; -8.6]*	-
Change (kg) from baseline	-16.8	-6.2
Difference (kg) from placebo[1] [95% CI]	-10.6 [-12.5; -8.8]	-
Patients (%) achieving weight loss ≥5%[3]	84.8*	47.8
Patients (%) achieving weight loss ≥10%[3]	73.0*	27.1
Patients (%) achieving weight loss ≥15%[3]	53.5*	13.2
Patients (%) achieving weight loss ≥20%[3]	33.9	3.5

Waist circumference (cm)		
Baseline	113.6	111.8
Change from baseline[1]	-14.6	-6.3
Difference from placebo[1] [95% CI]	-8.3 [-10.1; -6.6]*	-

* p<0.0001 (unadjusted 2-sided) for superiority
[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.
[2] During the trial, randomised treatment was permanently discontinued by 16.7% and 18.6% of patients randomised to semaglutide 2.4 mg and placebo, respectively. Assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies, the estimated changes from randomisation to week 68 for body weight based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -17.6% and -5.0% for semaglutide 2.4 mg and placebo, respectively
[3] Estimated from binary regression model based on same imputation procedure as in primary analysis.

STEP 4: Sustained Weight Management

In a 68-week double-blind trial, 902 patients with obesity (BMI ≥30 kg/m^2), or with overweight (BMI ≥27 kg/m^2 to <30 kg/m^2) and at least one weight-related comorbidity were included in the trial. All patients were on a reduced-calorie diet and increased physical activity throughout the trial. From week 0 to week 20 (run-in), all patients received semaglutide. At week 20 (baseline), patients who had reached the maintenance dose of 2.4 mg were randomised to continue treatment or switch to placebo. At week 0 (start of run-in period) patients had a mean body weight of 107.2 kg and a mean BMI of 38.4 kg/m^2.

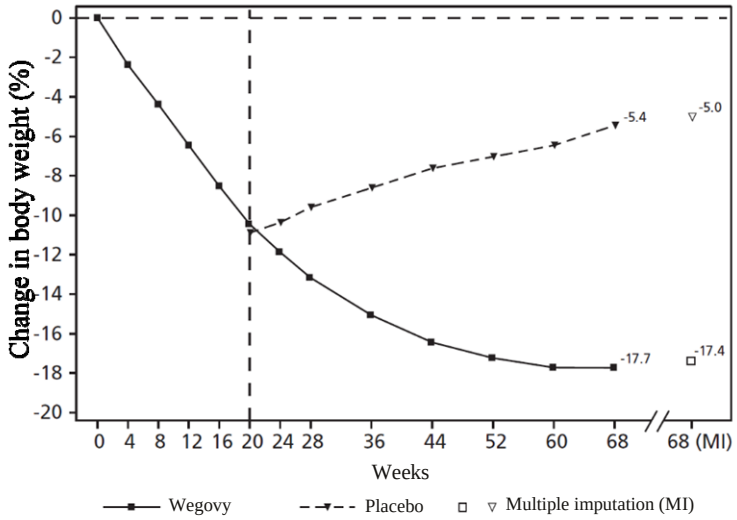
Patients who had reached the maintenance dose of 2.4 mg at week 20 (baseline) and continued treatment with semaglutide 2.4 mg for 48 weeks (week 20–68) continued losing weight and had a superior and clinically meaningful reduction in body weight compared to those switched to placebo (see Table 7 and Figure 3). On the other hand, in patients switching to placebo at week 20 (baseline), body weight increased steadily from week 20 to week 68. Nevertheless, the observed mean body weight was lower at week 68 than at start of the run-in period (week 0) (see Figure 3). Patients treated with the medicinal product from week 0 (run-in) to week 68 (end of treatment) achieved a mean change in body weight of 17.4%, with weight loss ≥5% achieved by 87.8%, ≥10% achieved by 78.0%, ≥15% achieved by 62.2% and ≥20% achieved by 38.6% of these patients.

Table 7 STEP 4: Results from week 20 to week 68

	Semaglutide 2.4mg	**Placebo**
Full analysis set (N)	535	268
Body weight		
Baseline[1] (kg)	96.5	95.4
Change (%) from baseline[2,3]	-7.9	6.9
Difference (%) from placebo[2] [95% CI]	-14.8 [-16.0; -13.5]*	-
Change (kg) from baseline	-7.1	6.1
Difference (kg) from placebo[2] [95% CI]	-13.2 [-14.3; -12.0]	-
Waist circumference (cm)		
Baseline[1]	105.5	104.7
Change from baseline[2]	-6.4	3.3
Difference from placebo[2] [95% CI]	-9.7 [-10.9; -8.5]*	-

* p<0.0001 (unadjusted 2-sided) for superiority,

[1] Baseline = week 20
[2] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.
[3] During the trial, randomised treatment was permanently discontinued by 5.8% and 11.6% of patients randomized to semaglutide 2.4 mg and placebo, respectively. Assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies, the estimated changes from randomisation to week 68 for body weight based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -8.8% and 6.5% for semaglutide 2.4 mg and placebo, respectively.



Observed values for patients completing each scheduled visit, and estimates with multiple imputations (MI) from retrieved dropouts.

Figure 3 STEP 4: Mean change in body weight (%) from week 0 to week 68

STEP 5: Long term efficacy

In a 104-week double-blind trial, 304 patients with obesity (BMI ≥30 kg/m^2), or with overweight (BMI ≥27 to <30 kg/m^2) and at least one weight-related comorbidity, were randomised to semaglutide or placebo. All patients were on a reduced-calorie diet and increased physical activity throughout the trial. At baseline, patients had a mean BMI of 38.5 kg/m^2, a mean body weight of 106.0 kg.

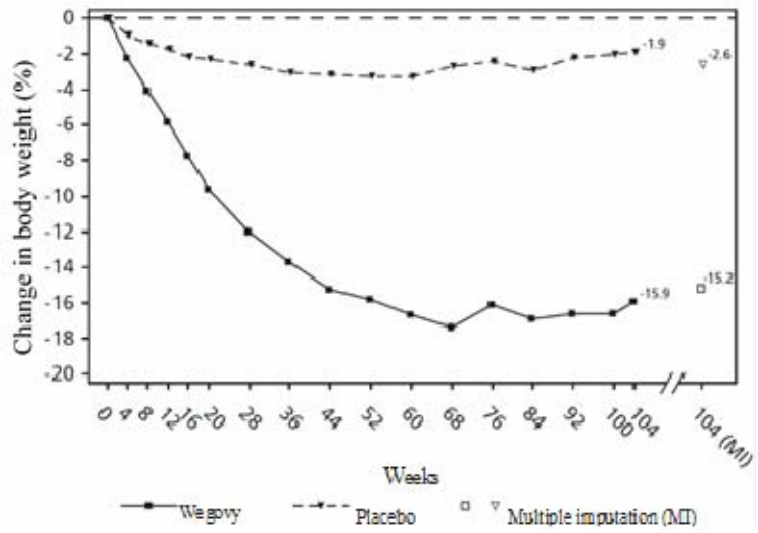
Treatment with semaglutide for 104 weeks resulted in a superior and clinically meaningful reduction in body weight compared to placebo. Mean body weight decreased from baseline through to week 68 with semaglutide after which a plateau was reached. With placebo, mean body weight decreased less, and a plateau was reached after approximately 20 weeks of treatment (see Table 8 and Figure 4)
Patients treated with semaglutide achieved a mean change in body weight of -15.2%, with
weight loss ≥5% achieved by 74.7%, ≥10% achieved by 59.2% and ≥15% achieved by 49.7% of these patients. Among patients with prediabetes at baseline, 80% and 37% achieved a normo-glycaemic status at end of treatment with semaglutide and placebo, respectively.

Table 8 STEP 5: Results at week 104

	Semaglutide 2.4mg	**Placebo**
Full analysis set (N)	152	152
Body weight		
Baseline (kg)	105.6	106.5
Change (%) from baseline[1, 2]	-15.2	-2.6

Difference (%) from placebo[1] [95% CI]	-12.6 [-15.3; -9.8]*	-
Change (kg) from baseline	-16.1	-3.2
Difference (kg) from placebo[1] [95% CI]	-12.9 [-16.1; -9.8]	-
Patients (%) achieving weight loss ≥5%[3]	74.7*	37.3
Patients (%) achieving weight loss ≥10%[3]	59.2*	16.8
Patients (%) achieving weight loss ≥15%[3]	49.7*	9.2
Patients (%) achieving weight loss ≥20%[3]	34.5*	4.0
Waist circumference (cm)		
Baseline	115.8	115.7
Change from baseline[1]	-14.4	-5.2
Difference from placebo[1] [95% CI]	-9.2 [-12.2; -6.2]*	-
Systolic blood pressure (mmHg)		
Baseline	126	125
Change from baseline[1]	-5.7	-1.6
Difference from placebo[1] [95% CI]	-4.2 [-7.3; -1.0]*	-

* p<0.0001 (unadjusted 2-sided) for superiority.
[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.
[2] During the trial, randomised treatment was permanently discontinued by 13.2% and 27.0% of patients randomised to semaglutide 2.4 mg and placebo, respectively. Assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies, the estimated changes from randomisation to week 68 for body weight based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -16.7% and -0.6% for semaglutide and placebo respectively.
[3] Estimated from binary regression model based on same imputation procedure as in primary analysis.



Observed values for patients completing each scheduled visit, and estimates with multiple imputations (MI) from retrieved dropouts

Figure 4 STEP 5: Mean change in body weight (%) from week 0 to week 104

STEP 8: Semaglutide vs liraglutide

In a 68-week, randomised, open-label, pairwise placebo-controlled trial, 338 patients with obesity (BMI ≥30 kg/m^2), or with overweight (BMI ≥27 to <30 kg/m^2) and at least one weight-related comorbidity, were randomised to semaglutide 2.4 mg once weekly, liraglutide 3 mg once daily or placebo. Semaglutide once weekly and liraglutide 3 mg were open-label, but each active treatment group was double-blinded against placebo administered at the same dosing frequency. All patients were on a

reduced-calorie diet and increased physical activity throughout the trial. At baseline, patients had a mean BMI of 37.5 kg/m^2, a mean body weight of 104.5 kg.

Treatment with semaglutide once weekly for 68 weeks resulted in superior and clinically meaningful reduction in body weight compared to liraglutide. Mean body weight decreased from baseline through to week 68 with semaglutide. With liraglutide, mean body weight decreased less (see Table 9). 37.4% of the patients treated with semaglutide lost ≥20%, compared to 7.0% treated with liraglutide. Table 9 shows the results of the confirmatory endpoints ≥10%, ≥15% and ≥20% weight loss.

Table 9 STEP 8: Results of a 68-week trial comparing semaglutide with liraglutide

	Semaglutide 2.4mg	Liraglutide 3 mg
Full analysis set (N)	126	127
Body weight		
Baseline (kg)	102.5	103.7
Change (%) from baseline[1, 2]	-15.8	-6.4
Difference (%) from liraglutide[1] [95% CI]	-9.4 [-12.0;-6.8]*	-
Change (kg) from baseline	-15.3	-6.8
Difference (kg) from liraglutide[1] [95% CI]	-8.5 [-11.2;-5.7]	-
Patients (%) achieving weight loss ≥10%[3]	69.4*	27.2
Patients (%) achieving weight loss ≥15%[3]	54.0*	13.4
Patients (%) achieving weight loss ≥20%[3]	37.4*	7.0

* p<0.005 (unadjusted 2-sided) for superiority

[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.

[2] During the trial, randomised treatment was permanently discontinued by 13.5% and 27.6% of patients randomised to semaglutide 2.4 mg and liraglutide 3 mg, respectively. Assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies, the estimated changes from randomisation to week 68 for body weight based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -16.7% and -6.7% for semaglutide and liraglutide respectively.

[3] Estimated from binary regression model based on same imputation procedure as in primary analysis.

STEP 9: Weight management in patients with knee osteoarthritis

In a 68-week double-blind trial, 407 patients with obesity and moderate knee osteoarthritis (OA) of one or both knees were randomised to either semaglutide or placebo, as an adjunct to counselling on a reduced-calorie diet and increased physical activity. The treatment effect on knee OA-related pain was assessed by the Western Ontario and McMaster Universities Osteoarthritis 3.1 Index (WOMAC). This index is designed to evaluate changes in symptoms and lower extremity functioning associated with treatment in patients suffering from OA of the hip and/or knee. At baseline, patients had a mean BMI of 40.3 kg/m^2 and a mean body weight of 108.6 kg. All patients had a clinical diagnosis of knee OA with a mean baseline WOMAC pain score of 70.9 (on a scale of 0-100).

Treatment with semaglutide for 68 weeks resulted in superior and clinically significant reduction in body weight compared to placebo (see Table 10).

Treatment with semaglutide demonstrated a clinically meaningful improvement in knee OA-related pain compared to the placebo (see Table 10). The improvements in knee OA-related pain with semaglutide were achieved without an increase in the use of pain medication.

Table 10 STEP 9: Results at week 68

	Semaglutide 2.4 mg	**Placebo**
Full analysis set (N)	271	136
Body weight		
Baseline (kg)	108.7	108.5
Change (%) from baseline[1,2]	-13.7	-3.2
Difference (%) from placebo[1] [95% CI]	-10.5 [-12.3; -8.6]*	-
Patients (%) achieving weight loss ≥5%[3]	85.2*	33.6
WOMAC pain score[4]		
Baseline	72.8	67.2
Change from baseline[1,2]	-41.7	-27.5
Difference from placebo[1] [95% CI]	-14.1 [-20.0, -8.3]*	-
Patients (%) achieving clinically meaningful improvement [3, 5]	59.0	35.0

* p< 0.0001 (unadjusted 2-sided) for superiority.
[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity therapies or other knee OA interventions and regardless of compliance with wash out period for pain medication (the latter only relevant for WOMAC related endpoint). During the trial, randomised treatment was permanently discontinued by 12.5% and 21.3% of patients randomised to semaglutide 2.4 mg and placebo, respectively.
[2] Based on a Mixed Model for Repeated Measures assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies or additional knee OA interventions and complied with washout period for pain medication (the latter only relevant for knee OA related pain), including all observations until first discontinuation the estimated changes from baseline to week 68 for body weight were -14.5% and -2.3% (semaglutide 2.4 mg and placebo, respectively) and for WOMAC pain score: -43.0 and -28.3 (semaglutide 2.4 mg and placebo, respectively).
[3] Estimated from logistic regression model based on same imputation procedure as for the primary analysis.
[4] WOMAC scores are presented on a scale from 0-100, with lower scores representing less disability.
[5] The change in WOMAC pain score of ≤ -37.3 was used as a threshold for meaningful improvement. The threshold was derived from trial data using anchor-based methods.

Secondary endpoints

Cardiovascular risk factors

Semaglutide 2.4 mg lowered waist circumference, blood pressure and C-reactive protein (CRP), and improved lipid profile compared with placebo.

Glycaemic control

In STEP 1 and 3, among those patients with pre-diabetes at baseline, more semaglutide 2.4 mg treated patients had achieved normo-glycaemic status compared to placebo-treated patients (STEP 1: 84.1% vs 47.8%; STEP 3: 89.5% vs 55.0%).

Improvement in physical functioning

Semaglutide 2.4 mg showed statistically significant improvement (Table 11) in physical functioning scores and more patients achieved a clinically meaningful improvement compared to placebo (Table 11). Physical functioning was assessed using both the generic health-related quality of life questionnaire Short Form-36v2 Health Survey, Acute Version (SF-36v2) and the obesity-specific questionnaire Impact of Weight on Quality of Life Lite Clinical Trials Version (IWQOL-Lite-CT).

Table 11 Results on physical functioning in STEP 1-2

	STEP 1		STEP 2	
	Semaglutide 2.4 mg	Placebo	Semaglutide 2.4 mg	Placebo
SF-36v2 Physical Functioning[1]				
Baseline	51.0	50.8	49.2	49.6
Change from baseline	2.2	0.4	2.5	1.0
Difference from placebo [95% CI]	1.8 [1.2; 2.4]*	-	1.5 [0.4; 2.6]*	-
Patients (%) achieving clinically meaningful improvement[2,4]	39.8	24.1	41.0	27.3
IWQOL-Lite-CT Physical Function				
Baseline	65.4	64.0	67.1	69.2
Change from baseline	14.7	5.3	10.1	5.3
Difference from placebo [95% CI]	9.4 [7.5; 11.4]*	-	4.8 [1.8; 7.9]*	-
Patients (%) achieving clinically meaningful improvement[3,4]	51.8	28.3	39.6	29.5

* $p<0.0001$ (unadjusted 2-sided) for superiority,
[1] Norm-based score
[2] Change in norm-based score ≥ 3.7
[3] Change in score ≥ 14.6
[4] Estimated from binary regression model based on same imputation procedure as in primary analysis.

Other patient reported outcomes
Beneficial effects of semaglutide 2.4 mg vs. placebo were demonstrated in STEP 1 and 2 in all additional scores on the obesity-specific questionnaire IWQOL-Lite-CT (Physical, Psychosocial, and Total).

STEP UP and STEP UP T2D: Weight management with higher dose of semaglutide
In two 72-week double-blinded clinical trials, 1407 patients with obesity (STEP UP) and 512 patients with obesity and type 2 diabetes (STEP UP T2D) were randomised 5:1:1 (STEP UP) or 3:1:1 (STEP UP T2D) to semaglutide 7.2 mg, semaglutide 2.4 mg or placebo once weekly. All patients were on a reduced-calorie diet and increased physical activity throughout the trials.

At baseline in STEP UP, patients had a mean age of 47 years, mean BMI of 39.9 kg/m^2, and a mean body weight of 113 kg. There were 26.3% males, 73.7% females, 85.5% Caucasian/white, 8.6% black/African American, 4.5% Asian and 1.2% other. A total of 4.5% were Hispanic or Latino.

At baseline in STEP UP T2D, patients had a mean age of 56 years, mean BMI of 38.6 kg/m^2, and a mean body weight of 110.1 kg. There were 48.2% males, 51.8% females, 83.6% Caucasian/white, 8.6% black/African American, 6.3% Asian, and 1.6% other. A total of 5.7% were Hispanic or Latino.

In the two trials STEP UP and STEP UP T2D, at end of treatment (week 72), the weight loss with semaglutide 7.2 mg injection was superior and clinically meaningful compared to placebo (see Table 12). Furthermore, a higher proportion achieved ≥5%, ≥10%, ≥15% and ≥20% weight loss with semaglutide 7.2 mg compared to placebo.

In STEP UP, the weight loss with semaglutide 7.2 mg injection was superior compared with semaglutide 2.4 mg injection and a higher proportion achieved ≥20% and ≥25% weight loss compared with semaglutide 2.4 mg injection (see Table 12). Additionally, among patients with pre-diabetes at baseline, 83.4% and 36.6% achieved a normo-glycaemic status at end of treatment with semaglutide 7.2 mg injection and placebo, respectively.

Effect on body composition
In a sub-study in STEP UP (N=55), body composition was measured using magnetic resonance imaging (MRI). The results of the MRI assessment showed that treatment with semaglutide injection was accompanied by a greater reduction in fat mass/volume that in lean body mass/volume leading to an improvement in body composition compared to placebo after 72 weeks.

Table 12 STEP UP and STEP UP T2D: Results at week 72

	STEP UP			STEP UP T2D	
	Wegovy 7.2 mg injection	Wegovy 2.4 mg injection	Placebo	Wegovy 7.2 mg injection	Placebo
Full analysis set (N)	1005	201	201	307	102
Body weight / composition					
Baseline (kg)	112.4	116.5	112.4	110.5	112.1
Change (%) from baseline[1,2]	-18.7	-15.6	-3.9	-13.2	-3.9
Patients (%) achieving weight loss ≥5%[3]	90.7	89.9	36.8	86.3	34.7
Patients (%)	47.7	33.3	2.9	21.3	2.1

achieving weight loss ≥20%[3]					
Patients (%) achieving weight loss ≥25%[3,4]	31.2	15.3	0	-	-

[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.
[2] During the trial, randomised treatment was permanently discontinued by 5.4% (7.2 mg), 4.0% (2.4 mg) and 1.0% (placebo) of patients randomised to semaglutide 7.2 mg, 2.4 mg and placebo, respectively in STEP-UP trial. Assuming that all randomised patients stayed on treatment and did not initiate other anti-obesity medication or bariatric surgery, the estimated changes from randomisation to week 72 for body weight based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -20.7% (7.2 mg), -17.5% (2.4 mg) and -2.4% (placebo) for semaglutide 7.2 mg, 2.4 mg and placebo respectively.
[3] Observed proportions of patients based on in-trial period (uninterrupted period from the date of randomisation until the last trial visit), regardless of discontinuation, dose reduction, or initiation of other anti-obesity medication or bariatric surgery.
[4] Assuming that all randomised patients were exposed to at least 1 dose of study treatment and stayed on treatment (excluding any off-treatment data triggered by at least two consecutive missed doses), achieved greater than or equal to 25% reduction in body weight among 33.2%, 16.7% and 0% of patients randomised Wegovy® 7.2 mg injection, Wegovy® 2.4 mg injection, and placebo, respectively in STEP UP study.

Cardiovascular evaluation

SELECT: Cardiovascular Outcomes Trial in Adult Patients with Cardiovascular Disease and BMI ≥27 kg/m^2.

SELECT (NCT03574597) was a multi-national, multi-center, placebo-controlled, double-blind trial to determine the effect of Wegovy relative to placebo on major adverse cardiovascular events (MACE) when added to current standard of care, which included management of CV risk factors and individualized healthy lifestyle counseling (including diet and physical activity). The primary endpoint, MACE, was the time to first occurrence of a three-part composite outcome which included cardiovascular death, non-fatal myocardial infarction, and non-fatal stroke.

All patients were 45 years or older, with an initial BMI of 27 kg/m^2 or greater and established cardiovascular disease (prior myocardial infarction, prior stroke, or peripheral arterial disease). Patients with a history of type 1 or type 2 diabetes were excluded. Concomitant CV therapies could be adjusted, at the discretion of the investigator, to ensure participants were treated according to the current standard of care for patients with established cardiovascular disease. Adjunct healthy lifestyle counselling were consistent with existing local standards of care (related to diet, physical activity, smoking and alcohol consumption) for adults with established cardiovascular disease and either obesity or overweight (BMI ≥27 kg/m2).

In this trial, 17,604 patients were randomized to Wegovy or placebo. At baseline, the mean age was 62 years (range 45-93), 72% were male, 84% were White, 4% were Black or African American, and 8% were Asian, and 10% were Hispanic or Latino. Mean baseline body weight was 97 kg and mean BMI was 33 kg/m^2. At baseline, prior myocardial infarction was reported in 76% of randomized individuals, prior stroke in 23%, and peripheral arterial disease in 9%. Heart failure was reported in 24% of patients. At baseline, cardiovascular disease and risk factors were managed with lipid-lowering therapy (90%), platelet aggregation inhibitors (86%), angiotensin

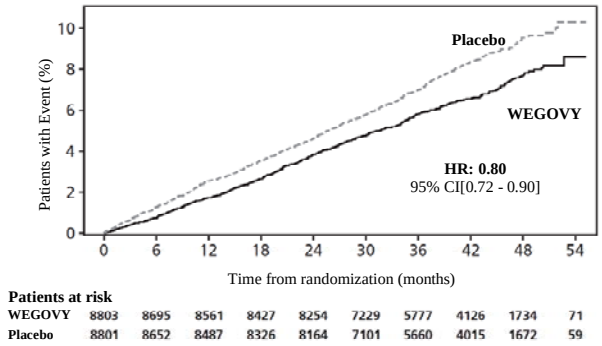
converting enzyme inhibitors or angiotensin II receptor blockers (74%), and beta blockers (70%). A total of 10% had moderate renal impairment (eGFR 30 to <60 mL/min/1.73m^2) and 0.4% had severe renal impairment eGFR <30 mL/min/1.73m^2.

Results

In total, 96.9% of patients completed the trial, and vital status was available for 99.4% of patients. The median follow-up duration was 41.8 months. A total of 31% of Wegovy-treated patients and 27% of placebo-treated patients permanently discontinued study drug.

For the primary analysis, a Cox proportional hazards model was used to test for superiority. Type 1 error was controlled across multiple tests.

Wegovy significantly reduced the risk for first occurrence of MACE. The estimated hazard ratio (95% CI) was 0.80 (0.72, 0.90) (see Figure 5 and Table 13).



Data from the in-trial period. Cumulative incidence estimates are based on time from randomization to first EAC-confirmed cardiovascular death, non-fatal myocardial infarction, or non-fatal stroke with non-CV death modeled as competing risk using the Aalen-Johansen estimator. Patients without events of interest were censored at the end of their in-trial observation period. Time from randomization to first cardiovascular death, non-fatal myocardial infarction, or non-fatal stroke was analyzed using a Cox proportional hazards model with treatment as categorical fixed factor. The hazard ratio and confidence interval are adjusted for the group sequential design using the likelihood ratio ordering.
HR: Hazard ratio; CI: confidence interval; CV: cardiovascular

Figure 5 Cumulative Incidence Function: Time to First Occurrence of MACE in SELECT

The treatment effect for the primary composite endpoint, its components, and other relevant endpoints in SELECT are shown in Table 13.

Table 13 Treatment Effect for MACE and Other Events in SELECT

	Patients with events n (%)		
	Placebo N=8,801	**Semaglutide 2.4 mg N=8,803**	**Hazard Ratio (95% CI)**
Primary composite endpoint			
Composite of cardiovascular death, non-fatal myocardial infarction, or	701 (8.0%)	569 (6.5%)	0.80 (0.72; 0.90)*[2]

non-fatal stroke[1]			
Key secondary endpoints			
Cardiovascular death[3]	262 (3.0%)	223 (2.5%)	0.85 (0.71; 1.01)
All-cause death[4]	458 (5.2%)	375 (4.3%)	0.81 (0.71; 0.93)
Other secondary endpoints			
Fatal or non-fatal myocardial infarction[5]	334 (3.8%)	243 (2.8%)	0.72 (0.61; 0.85)
Fatal or non-fatal stroke[5]	178 (2.0%)	160 (1.8%)	0.89 (0.72; 1.11)

[*] p-value < 0.001, one-sided p-value
[1] Primary endpoint
[2] Adjusted for group sequential design using the likelihood ratio ordering.
[3] Cardiovascular death was the first confirmatory secondary endpoint in the testing hierarchy and superiority was not confirmed.
[4] Confirmatory secondary endpoint. Not statistically significant based on the prespecified testing hierarchy.
[5] Not included in the prespecified testing hierarchy for controlling type-I error.
NOTE: Time to first event was analyzed in a Cox proportional hazards model with treatment as factor. For patients with multiple events, only the first event contributed to the composite endpoint.

Table 14 Mean Changes in Anthropometry and Cardiometabolic Parameters at Week 104 in SELECT[1,2]

	PLACEBO		**Semaglutide 2.4 mg**		
	Baseline	**Change from Baseline (LSMean)**	**Baseline**	**Change from Baseline (LSMean)**	**Difference from Placebo (LSMean)**
Body Weight (kg)	96.8	-0.9[3]	96.5	-9.4[3]	-8.5[3]
Waist Circumference (cm)	111.4	-1.0	111.3	-7.6	-6.5
Systolic Blood Pressure (mmHg)	131	-0.5	131	-3.8	-3.3
Diastolic Blood Pressure (mmHg)	79	-0.5	79	-1.0	-0.5
Heart Rate	69	0.7	69	3.8	3.1
HbA1c (%)	5.8	0.0	5.8	-0.3	-0.3
	Baseline	**% Change from Baseline (LSMean)**	**Baseline**	**% Change from Baseline (LSMean)**	**Relative difference from placebo (%) (LSMean)**
Total Cholesterol (mg/dL)[4]	156.0	-1.9	155.5	-4.6	-2.8
LDL Cholesterol (mg/dL)[4]	78.5	-3.1	78.5	-5.3	-2.2
HDL Cholesterol	44.2	0.6	44.1	4.9	4.2

(mg/dL)[4]					
Triglycerides (mg/dL)[4]	139.5	-3.2	138.6	-18.3	-15.6

[1] Parameters listed in the table were not included in the pre-specified hierarchical testing.
[2] Responses were analysed using an ANCOVA with treatment as fixed factor and baseline value as covariate. Before analysis, missing data were multiple imputed. The imputation model (linear regression) was done separately for each treatment arm and included baseline value as a covariate and was fitted to all subjects with a measurement regardless of treatment status at week 104.
[3] For body weight the 'change from baseline' and 'difference to placebo' the unit is percentage change from baseline.
[4] Baseline value is the geometric mean.

The reduction of MACE with Wegovy was not impacted by age, sex, race, ethnicity, BMI at baseline, or level of renal function impairment.

SUSTAIN 6: Cardiovascular outcomes trial in patients with type 2 diabetes
In the SUSTAIN 6 trial, 3,297 patients with insufficiently controlled type 2 diabetes and at high risk of cardiovascular events were randomised to semaglutide s.c. 0.5 mg or 1 mg once-weekly or placebo in addition to standard-of-care. The treatment duration was 104 weeks. The mean age was 65 years and the mean BMI was 33 kg/m^2.

Treatment with semaglutide reduced the rate of a major adverse cardiovascular event (MACE) vs. placebo with a risk reduction of 26%, HR 0.74, [0.58, 0.95] [95% CI]. This was mainly driven by a significant (39%) decrease in the rate of non-fatal stroke and a non-significant (26%) decrease in non-fatal myocardial infarction with no difference in cardiovascular death.

STEP-HFpEF and STEP-HFpEF-DM: Functional outcome trials in patients with heart failure with preserved ejection fraction without and with type 2 diabetes
In two 52-week double-blinded clinical trials, 529 patients with obesity-related heart failure with preserved ejection fraction (STEP-HFpEF), and 616 patients with obesity-related HFpEF and type 2 diabetes (STEP-HFpEF-DM) were randomised to be treated with either semaglutide 2.4 mg or placebo once weekly in addition to standard of care treatment.

At baseline, 66.2% and 70.6% of the patients were classified as New York Heart Association (NYHA) class II, 33.6% and 29.2% were NYHA class III and 0.2% and 0.2% were NYHA class IV, in STEP-HFpEF and STEP HFpEF-DM respectively. Mean age was 68 years in both trials, median left ventricular ejection fraction (LVEF) was 57.0% and 56.0%, and mean BMI was 38.5 kg/m^2 and 37.9 kg/m^2. The STEP-HFpEF trial included 56.1% females, whereas 44.3% were female in STEP-HFpEF-DM. A high proportion of patients were on cardiovascular medications including ~ 81% on diuretics, ~ 81% on beta blockers, ~ 34% on angiotensin converting enzyme (ACE) inhibitors and ~ 45% on angiotensin receptor blockers (ARBs).
In STEP-HFpEF-DM patients were also receiving standard of care glucose lowering medications of which 32.8% were treated with sodium/glucose cotransporter-2 inhibitor (SGLT-2i) and 20.8% were treated with insulin.
The treatment effect of semaglutide 2.4 mg on heart failure symptoms was assessed using the Clinical Summary Score of the Kansas City Cardiomyopathy Questionnaire (KCCQ-CSS) which includes the domains of symptom (frequency and burden) and physical limitation. The score ranges from 0 to 100, with higher scores representing

better health status. The treatment effect of semaglutide 2.4 mg on 6-Minute Walk Distance (6MWD) was assessed by the 6-Minute Walk Test (6MWT). Baseline values of KCCQ-CSS and 6MWD reflect a highly symptomatic population.

In both trials treatment with semaglutide 2.4 mg resulted in a superior effect on both KCCQ-CSS and 6MWD (Table 15). Benefits were seen both in heart failure symptoms and physical function.

Table 15 Results of 6MWD, KCCQ-CSS and body weight from the two 52-week randomised trials (STEP-HFpEF and STEP-HFpEF-DM)

	STEP-HFpEF		**STEP-HFpEF-DM**	
-	**Semaglutide 2.4 mg**	**Placebo**	**Semaglutide 2.4 mg**	**Placebo**
Full analysis set (N)	263	266	310	306
KCCQ-CSS (score)				
Baseline (mean)[1]	57.9	55.5	58.8	56.4
Change from baseline[2]	16.6	8.7	13.7	6.4
Difference from placebo[2] [95% CI]	7.8 [4.8; 10.9]		7.3 [4.1; 10.4]	
Patients (%) experiencing meaningful change[3]	43.2	32.5	42.7	30.5
6MWD (metres)				
Baseline (mean)[1]	319.6	314.6	279.7	276.7
Change from baseline[2]	21.5	1.2	12.7	-1.6
Difference from placebo[2] [95% CI]	20.3 [8.6; 32.1]		14.3 [3.7; 24.9]	
Patients (%) with meaningful change[4]	47.9	34.7	43.8	30.6
Body weight				
Baseline (kg)[1]	108.3	108.4	106.4	105.2
Change (%) from baseline[2]	-13.3	-2.6	-9.8	-3.4
Difference (%) from placebo[2] [95% CI]	-10.7 [-11.9; -9.4]		-6.4 [-7.6; -5.2]	

[1] Observed mean.
[2] Estimated using an ANCOVA model using multiple and for KCCQ and 6MWD, also a composite imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.
[3] Meaningful within patient change threshold of 17.2 points for STEP-HFpEF trial and 16.3 points for STEP-HFpEF-DM trial (derived using an anchor-based method based on a 1-category improvement in Patient Global Impression of Status (PGI-S)). Percentages are based on subjects with an observation at the visit.
[4] Meaningful within patient change threshold of 22.1 metres for STEP-HFpEF trial and 25.6 metres for STEP-HFpEF-DM trial (derived using an anchor-based method using “moderately better” in Patient Global Impression of Change (PGI-C)). Percentages are based on subjects with an observation at the visit.

The treatment benefit of semaglutide over placebo was consistent across all subpopulations defined by age, sex, BMI, race, ethnicity, region, SBP, LVEF and concomitant heart failure therapy.

Paediatric population

The MHRA has deferred the obligation to submit the results of studies with semaglutide 2.4 mg in one or more subsets of the paediatric population in the treatment of weight management (see section 4.2 for information on paediatric use).

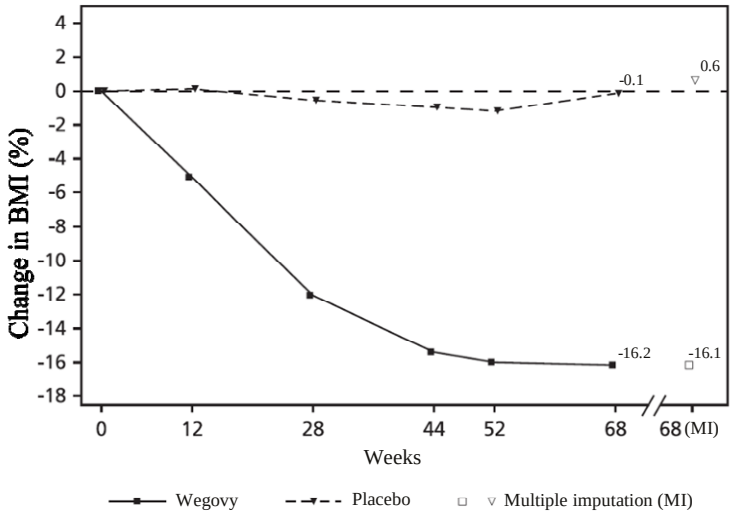
STEP TEENS: Weight management in adolescent patients
In a 68-week double-blind trial 201 pubertal adolescents, ages 12 to <18 years, with obesity or overweight and at least one weight-related comorbidity were randomised 2:1 to semaglutide or placebo. All patients were on a reduced-calorie diet and increased physical activity throughout the trial.

At end of treatment (week 68), the improvement in BMI with semaglutide was superior and clinically meaningful compared with placebo (see Table 16 and Figure 6). Furthermore, a higher proportion of patients achieved ≥5%, 10% and ≥15% weight loss with semaglutide compared with placebo (see Table 16).

Table 16 STEP TEENS: Results at week 68

	Semaglutide 2.4 mg	**Placebo**
Full analysis set (N)	134	67
BMI		
Baseline (BMI)	37.7	35.7
Change (%) from baseline[1,2]	-16.1	0.6
Difference (%) from placebo[1] [95% CI]	-16.7 [-20.3; -13.2]*	-
Baseline (BMI SDS)	3.4	3.1
Change from baseline in BMI SDS[1]	-1.1	-0.1
Difference from placebo[1] [95% CI]	-1.0 [-1.3; -0.8]	-
Body Weight		
Baseline (kg)	109.9	102.6
Change (%) from baseline[1]	-14.7	2.8
Difference (%) from placebo[1] [95% CI]	-17.4 [-21.1; -13.8]	-
Change (kg) from baseline[1]	-15.3	2.4
Difference (kg) from placebo[1] [95% CI]	-17.7 [-21.8; -13.7]	-
Patients (%) achieving weight loss ≥5%[3]	72.5*	17.7
Patients (%) achieving weight loss ≥10%[3]	61.8	8.1
Patients (%) achieving weight loss ≥15%[3]	53.4	4.8
Waist circumference (cm)		
Baseline	111.9	107.3
Change from baseline[1]	-12.7	-0.6
Difference from placebo[1] [95% CI]	-12.1 [-15.6; -8.7]	-
Systolic blood pressure (mmHg)		
Baseline	120	120
Change from baseline[1]	-2.7	-0.8
Difference from placebo[1] [95% CI]	-1.9 [-5.0; 1.1]	-

[*] p<0.0001 (unadjusted 2-sided) for superiority.
[1] Estimated using an ANCOVA model using multiple imputation based on all data irrespective of discontinuation of randomised treatment or initiation of other anti-obesity medication or bariatric surgery.
[2] During the trial, randomised treatment was permanently discontinued by 10.4% and 10.4% of patients randomised to semaglutide 2.4 mg and placebo, respectively. Assuming that all randomised patients stayed on treatment and did not receive additional anti-obesity therapies, the estimated changes from randomisation to week 68 for BMI based on a Mixed Model for Repeated Measures including all observations until first discontinuation were -17.9% and 0.6% for semaglutide 2.4 mg and placebo respectively
[3] Estimated from logistic regression model based on same imputation procedure as in primary analysis.



Observed values for patients completing each scheduled visit, and estimates with multiple imputations (MI) from retrieved dropouts

Figure 6 STEP TEENS: Mean change in BMI (%) from baseline to week 68

5.2 Pharmacokinetic properties

Compared to native GLP-1, semaglutide has a prolonged half-life of around 1 week making it suitable for once weekly subcutaneous administration. The principal mechanism of protraction is albumin binding, which results in decreased renal clearance and protection from metabolic degradation. Furthermore, semaglutide is stabilised against degradation by the DPP-4 enzyme.

Absorption
The average semaglutide steady state concentration following s.c. administration of the 2.4 mg and 7.2 mg semaglutide maintenance doses was approximately 75 nmol/L and 236 nmol/L, respectively, in patients with overweight (BMI $\geq$27 kg/m^2 to <30 kg/m^2) or obesity (BMI $\geq$ 30 kg/m^2). The steady state exposure of semaglutide increased proportionally with doses up to 7.2 mg once weekly. Similar exposure was achieved with s.c. administration of semaglutide in the abdomen, thigh, or upper arm. The absolute bioavailability of semaglutide was 89%.

Distribution

The mean volume of distribution of semaglutide following s.c. administration in patients with overweight or obesity was approximately 12.4 L. Semaglutide is extensively bound to plasma albumin (>99%).

Metabolism/Biotransformation
Prior to excretion, semaglutide is extensively metabolised through proteolytic cleavage of the peptide backbone and sequential beta-oxidation of the fatty acid side chain. The enzyme neutral endopeptidase (NEP) is expected to be involved in the metabolism of semaglutide.

Elimination
The primary excretion routes of semaglutide-related material are via the urine and faeces. Approximately 3% of the absorbed dose was excreted in the urine as intact semaglutide.
The clearance of semaglutide in patients with overweight (BMI ≥27 kg/m^2 to <30 kg/m^2) or obesity (BMI ≥ 30 kg/m^2) was approximately 0.05 L/h. With an elimination half-life of approximately 1 week, semaglutide will be present in the circulation for approximately 7 weeks after the last dose of 2.4 mg.

Special populations
Elderly
Age had no effect on the pharmacokinetics of semaglutide based on data from phase 3a trials including patients 18–86 years of age.

Gender, race and ethnicity
Gender, race (White, Black or African-American, Asian) and ethnicity (Hispanic or Latino, non-Hispanic or -Latino) had no effect on the pharmacokinetics of semaglutide.

Body weight
Body weight had an effect on the exposure of semaglutide. Higher body weight was associated with lower exposure. The 2.4 mg and 7.2 mg weekly dose of semaglutide provided adequate systemic exposures over the body weight range of 54.4−251.2 kg evaluated for exposure response in the clinical trials.

Renal Impairment
Renal impairment did not impact the pharmacokinetics of semaglutide in a clinically relevant manner. This was shown with a single dose of 0.5 mg semaglutide for patients with different degrees of renal impairment (mild, moderate, severe or patients in dialysis) compared with patients with normal renal function. This was also shown for patients with overweight (BMI ≥27 kg/m^2 to <30 kg/m^2) or obesity (BMI ≥ 30 kg/m^2) and mild to moderate renal impairment based on data from phase 3a trials.

Hepatic impairment
Hepatic impairment did not have any impact on the exposure of semaglutide. The pharmacokinetics of semaglutide were evaluated in patients with different degrees of hepatic impairment (mild, moderate, severe) and compared with patients with normal hepatic function in a study with a single-dose of 0.5 mg semaglutide.

Paediatrics
Pharmacokinetic properties for semaglutide were assessed in a clinical trial for adolescent patients with obesity or overweight and at least one weight-related comorbidity ages 12 to <18 years (124 patients, body weight 61.6.-211.9 kg). The semaglutide exposure in adolescents was similar to that in adults with obesity or overweight. Safety and efficacy of semaglutide 2.4 mg in children below 12 years of age has not been studied.

5.3 Preclinical safety data

Preclinical data reveal no special hazards for humans based on conventional studies of safety pharmacology, repeat-dose toxicity or genotoxicity.

Non-lethal thyroid C-cell tumours observed in rodents are a class effect for GLP-1 receptor agonists. In 2-year carcinogenicity studies in rats and mice, semaglutide caused thyroid C-cell tumours at clinically relevant exposures. No other treatment-related tumours were observed. The rodent C-cell tumours are caused by a non-genotoxic, specific GLP-1 receptor mediated mechanism to which rodents are particularly sensitive. The relevance for humans is considered to be low, but cannot be completely excluded.

In fertility studies in rats, semaglutide did not affect mating performance or male fertility. In female rats, an increase in oestrous cycle length and a small reduction in corpora lutea (ovulations) were observed at doses associated with maternal body weight loss.

In embryo-foetal development studies in rats, semaglutide caused embryotoxicity below clinically relevant exposures. Semaglutide caused marked reductions in maternal body weight and reductions in embryonic survival and growth. In foetuses, major skeletal and visceral malformations were observed, including effects on long bones, ribs, vertebrae, tail, blood vessels and brain ventricles. Mechanistic evaluations indicated that the embryotoxicity involved a GLP-1 receptor mediated impairment of the nutrient supply to the embryo across the rat yolk sac. Due to species differences in yolk sac anatomy and function, and due to lack of GLP-1 receptor expression in the yolk sac of non-human primates, this mechanism is considered unlikely to be of relevance to humans. However, a direct effect of semaglutide on the foetus cannot be excluded.

In developmental toxicity studies in rabbits and cynomolgus monkeys, increased pregnancy loss and slightly increased incidence of foetal abnormalities were observed at clinically relevant exposures. The findings coincided with marked maternal body weight loss of up to 16%. Whether these effects are related to the decreased maternal food consumption as a direct GLP-1 effect is unknown.

Postnatal growth and development were evaluated in cynomolgus monkeys. Infants were slightly smaller at delivery but recovered during the lactation period.

In juvenile rats, semaglutide caused delayed sexual maturation in both males and females. These delays had no impact upon fertility and reproductive capacity of either sex, or on the ability of the females to maintain pregnancy.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Disodium phosphate dihydrate
Propylene glycol
Phenol
Hydrochloric acid (for pH adjustment)
Sodium hydroxide (for pH adjustment)
Water for injections

6.2 Incompatibilities

In the absence of compatibility studies this medicinal product must not be mixed with other medicinal products.

6.3 Shelf life

3 years
In-use shelf life: 6 weeks.

Data for the product supports the controlled shipment of the product to the patient at a temperature below 30°C for up to 48 hours. Do not freeze Wegovy and do not use it if it has been frozen.

After first use: Store below 30°C or, preferably, in a refrigerator (2°C to 8°C). Do not freeze Wegovy and do not use it if it has been frozen. Keep the pen cap on when the pen is not in use in order to protect it from light.

6.4 Special precautions for storage

Before first use: Store in a refrigerator (2°C to 8°C). Keep away from the cooling element.
Do not freeze wegovy and do not use it if it has been frozen.

After first use: For storage conditions after first opening of the medicinal product, see section 6.3.

Keep the pen cap on in order to protect from light.

6.5 Nature and contents of container

1.5 mL or 3 mL multidose glass cartridge (type I glass) closed at the one end with a rubber plunger (type I/chlorobutyl) and at the other end with an aluminium cap containing a rubber disc (type I/bromobutyl/isoprene) insert. The cartridge is assembled into a pre-filled multi-dose disposable pen made of polypropylene, polyoxymethylene, polycarbonate and acrylonitrile butadiene styrene.

Pack sizes:

Wegovy 0.25 mg FlexTouch: 1 multiple dose pre-filled pen and 4 disposable NovoFine Plus needles (start dose).

Wegovy 0.5 mg FlexTouch: 1 multiple dose pre-filled pen and 4 disposable NovoFine Plus needles (for dose escalation).

Wegovy 1.0 mg FlexTouch: 1 multiple dose pre-filled pen and 4 disposable NovoFine Plus needles (for dose escalation).

Wegovy 1.7 mg FlexTouch: 1 multiple dose pre-filled pen and 4 disposable NovoFine Plus needles (for dose escalation).

Wegovy 2.4 mg FlexTouch: 1 multiple dose pre-filled pen and 4 disposable NovoFine Plus needles (maintenance dose).

The pen is designed to be used with NovoFine Plus, NovoFine or NovoTwist disposable needles up to a length of 8 mm.

6.6 Special precautions for disposal

The pen is for use by one person only.
Wegovy should not be used if it does not appear clear and almost colourless.
Wegovy should not be used if it has been frozen.

Needles and other waste material should be disposed of in accordance with local requirements.

This pen is for multi-use. It contains 4 doses. After having injected the 4 doses, there might still be solution left in the pen despite having administered correctly. Any solution left is insufficient for a dose and the pen should be disposed of.

The patient should be advised to safely discard the injection needle after each injection and store the pen without an injection needle attached. This may prevent blocked needles, contamination, infection, leakage of solution and inaccurate dosing.

7 MARKETING AUTHORISATION HOLDER

Novo Nordisk A/S
Novo Allé
DK-2880 Bagsværd
Denmark

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9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

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20/05/2026