

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Single Technology Appraisal

Semaglutide for managing overweight and obesity

Final scope

Draft remit/appraisal objective

To appraise the clinical and cost effectiveness of semaglutide, within its marketing authorisation, in addition to a reduced calorie diet and increased physical activity, for the management of people with obesity or overweight with risk factors.

Background

Overweight and obesity is a chronic condition characterised by increased body fat. People living with overweight or obesity are at an increased risk of developing cardiovascular disease, type 2 diabetes, atherosclerosis (the presence of fatty deposits in the arteries), hypertension and dyslipidaemia (abnormal levels of fats in the blood). Other conditions associated with obesity are non-alcoholic fatty liver disease, non-diabetic hyperglycaemia, subfertility, osteoarthritis, dyslipidaemia, obstructive sleep apnoea and idiopathic intracranial hypertension. The most common method for measuring obesity is body mass index (BMI) which is calculated as the ratio of weight to height squared. Overweight is typically defined by a BMI of 25 kg/m² to <30 kg/m² and obesity by a BMI of 30 kg/m² or more. Some ethnic groups may be at increased risk of some ill health conditions at lower BMI than people of European family origin.

Obesity affects approximately one in four adults in the UK, with 67% of men and 60% of women in England living with overweight or obesity.^{1,2} In 2018/19 there were 11,117 hospital admissions directly attributable to obesity, an increase of 4% on 2017/18 (10,660 admissions). There has been an upward trend since 2014/15, with an increase of 22% over that period.²

NICE clinical guideline 189 (CG189) 'Obesity: identification, assessment and management' states multicomponent interventions are the treatment of choice. Weight management programmes include behaviour change strategies to increase people's physical activity levels or decrease inactivity, improve eating behaviour and the quality of the person's diet, and reduce energy intake. Pharmacological treatments are usually considered only after dietary, exercise and behavioural approaches have been started and evaluated. It recommends orlistat for the management of obesity in people with a BMI of 30 kg/m² or more, and in people with a BMI of 28 kg/m² or more and significant comorbidities. If dietary and lifestyle advice, behaviour modification and drug treatments are unsuccessful, the NICE clinical guideline recommends bariatric surgery for people with: a BMI of ≥40 kg/m²; a BMI of between 35 kg/m² and <40 kg/m² with significant comorbidities, a BMI between 30 kg/m² and <35 kg/m² and with recent-onset of type 2 diabetes (surgery can be considered for people of Asian family origin who have recent-onset type 2 diabetes at a lower BMI than other populations). NICE technology appraisal 664 recommends liraglutide as an option for managing overweight and obesity alongside a reduced-calorie diet and increased activity in adults if they have a BMI of at least 35 kg/m² (or at least 32.5 kg/m² for members of minority ethnic groups known to be at equivalent risk of the consequences of obesity at a lower BMI than the white

population) and they have non-diabetic hyperglycaemia (defined as a haemoglobin A1c level of 42 mmol/mol to 47 mmol/mol [6.0% to 6.4%] or a fasting plasma glucose level of 5.5 mmol/litre to 6.9 mmol/litre) and they have a high risk of cardiovascular disease based on risk factors such as hypertension and dyslipidaemia and it is prescribed in secondary care by a specialist multidisciplinary tier 3 weight management service.

The technology

Semaglutide (brand name TBC, Novo Nordisk) binds to and activates the glucagon-like peptide-1 (GLP-1) receptor in order to increase insulin levels and suppress glucagon secretion. This action leads to the slowing of glucose absorption and lower post-meal blood glucose levels. It is administered by subcutaneous injection.

Semaglutide does not currently have a marketing authorisation in the UK for managing overweight and obesity. It has been studied in clinical trials as an adjunct to a reduced-calorie diet and increased physical activity for weight management in adults with an initial BMI of ≥ 30 kg/m² (obese), or ≥ 27 kg/m² to < 30 kg/m² (overweight) in the presence of at least one weight-related comorbidity such as dysglycaemia (pre-diabetes or type 2 diabetes mellitus), cardiovascular disease, hypertension, dyslipidaemia or obstructive sleep apnoea.

Semaglutide has a marketing authorisation in the UK as an adjunct to diet and exercise for treatment of adults with insufficiently controlled type 2 diabetes mellitus, either as monotherapy when metformin is considered inappropriate due to intolerance, or in combination with other medicinal products for the treatment of diabetes. Semaglutide is available as once-daily oral tablet and once-weekly injectable preparations.

Intervention(s)	Semaglutide
Population(s)	Adults who have a BMI of; <ul style="list-style-type: none"> • ≥ 30 kg/m² (obese) or • ≥ 27 kg/m² to < 30 kg/m² (overweight) in the presence of at least one weight-related comorbidity
Comparators	<ul style="list-style-type: none"> • Standard management without semaglutide (including a reduced calorie diet and increased physical activity) • Liraglutide (for the population for whom liraglutide is recommended in technology appraisal 664) • Orlistat (prescription dose)

Outcomes	<p>The outcome measures to be considered include:</p> <ul style="list-style-type: none"> • BMI • weight loss • waist circumference • incidence of type 2 diabetes • glycaemic status • cardiovascular events • mortality • adverse effects of treatment • health-related quality of life.
Economic analysis	<p>The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year.</p> <p>The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared.</p> <p>Costs will be considered from an NHS and Personal Social Services perspective.</p> <p>The availability of any commercial arrangements for the intervention, comparator and subsequent treatment technologies will be taken into account. The availability of any managed access arrangement for the intervention will be taken into account.</p>
Other considerations	<p>Guidance will only be issued in accordance with the marketing authorisation. Where the wording of the therapeutic indication does not include specific treatment combinations, guidance will be issued only in the context of the evidence that has underpinned the marketing authorisation granted by the regulator.</p>
Related NICE recommendations and NICE Pathways	<p>Related Technology Appraisals:</p> <p>‘Naltrexone–bupropion for managing overweight and obesity’ (2017). NICE Technology Appraisal 494. Review date: TBC.</p> <p>‘Liraglutide for managing overweight and obesity’ (2020). NICE Technology Appraisal TA664. Review date: 2023</p> <p>Suspended appraisals:</p> <p>‘Liraglutide for managing obesity in people aged 12 to 17’ [ID1630]. Expected publication date: TBC</p> <p>Related Clinical Guidelines:</p> <p>‘Preventing excess weight gain’ (2015). NICE guideline NG7. Update ongoing; expected publication date: June 2023.</p>

	<p>‘Obesity: identification, assessment and management’ (2014). NICE guideline CG189. Update ongoing; expected publication date: June 2023.</p> <p>‘Obesity prevention’ (2006). NICE guideline CG43. Update ongoing; expected publication date: June 2023.</p> <p>Related Interventional Procedures:</p> <p>‘Single-anastomosis duodeno-ileal bypass with sleeve gastrectomy for treating morbid obesity’ (2016). NICE interventional procedures guidance 569.</p> <p>‘Implantation of a duodenal–jejunal bypass sleeve for managing obesity’ (2013). NICE interventional procedures guidance 471.</p> <p>‘Laparoscopic gastric plication for the treatment of severe obesity’ (2012). NICE interventional procedures guidance 432.</p> <p>Related Evidence Summary:</p> <p>‘Obese, overweight with risk factors: liraglutide (Saxenda)’ (2017). NICE evidence summary ES14.</p> <p>Related Public Health Guidelines:</p> <p>‘Weight management: lifestyle services for overweight or obese adults’ (2014). NICE guideline PH53. Update ongoing; expected publication date: June 2023</p> <p>‘BMI: preventing ill health and premature death in black, Asian and other minority ethnic groups’ (2013). NICE guideline PH46. Update ongoing; expected publication date: June 2023</p> <p>‘Weight management before, during and after pregnancy’ (2010). NICE guideline PH27. Update ongoing; expected publication date 2023</p> <p>Related Quality Standards:</p> <p>‘Promoting health and preventing premature mortality in black, Asian and other minority ethnic groups’ (2018). NICE quality standard 167.</p> <p>‘Obesity: clinical assessment and management’ (2016). NICE quality standard 127.</p> <p>‘Obesity in adults: prevention and lifestyle weight management programmes’ (2016). NICE quality standard 111.</p> <p>Related NICE Pathways:</p> <p>‘Lifestyle weight management services for overweight or obese adults’ (2016). NICE Pathway</p> <p>‘Obesity’ (2019). NICE Pathway.</p> <p>‘Obesity: working with local communities overview’ (2016). NICE Pathway.</p>
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<p>Related National Policy</p>	<p>The NHS Long Term Plan, 2019. NHS Long Term Plan</p> <p>NHS England (2017) Commissioning guidance to support devolution to CCGs of adult obesity surgical services in 2016/17</p> <p>NHS England (2018/2019) NHS manual for prescribed specialist services (2018/2019) Chapter 139A</p> <p>NHS England (2017) Report of the working group into: Joined up clinical pathways for obesity.</p> <p>Department of Health and Social Care, NHS Outcomes Framework 2016-2017 (published 2016): Domains 1-2 https://www.gov.uk/government/publications/nhs-outcomes-framework-2016-to-2017</p>
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References

1. NHS. Obesity. 2019. Available from: <https://www.nhs.uk/conditions/obesity/> [Accessed October 2020].
2. NHS Digital. Statistics on Obesity, Physical Activity and Diet, England, 2020. 2020. Available from: <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/england-2020> [Accessed October 2020].