Reframing the definition and diagnosis of clinical obesity

This *Lancet Diabetes & Endocrinology* Commission report, titled "Definition and diagnostic criteria of clinical obesity", is a reframing of obesity, providing evidence-based guidance on diagnosing excess adiposity and identifying those with "pre-clinical obesity" – defined as without organ dysfunction or daily activity limitations – and those with "clinical obesity", a chronic systemic disease state diagnosed using very specific criteria. The Commission, comprised of global experts and people with lived experience of obesity, and led by Professor Francesco Rubino of King's College London, reviews and discusses the obesity literature, including the pathophysiology of obesity, the weight set-point theory, and the central nervous system's role in hunger, food storage and metabolism. It concludes with 37 recommendations for implementation. Due to the limitations of BMI, the Commission recommends the use of an additional measurement of body size, such as waist circumference, waist:height ratio or waist:hip ratio, to confirm or rule out excess adiposity, before progressing to establish whether the person has pre-clinical or clinical obesity, and to document additional "comorbidities" or "obesity-related diseases/disorders" present.

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This report and consensus statement from the *Lancet Diabetes & Endocrinology* Commission, published in January 2025, sought to establish objective criteria for the definition and diagnosis of clinical obesity, to confirm this as a disease state, and to aid clinical decision-making and prioritisation of management. The Commission comprised 58 global experts representing high-, middle- and low-income countries, and including people with lived experience of obesity. Led by Professor Francesco Rubino (King's College London), the Commission used Delphi consensus-building techniques to agree a series of evidence-based definitions, diagnostic criteria and recommendations. These reframe excess adiposity into "pre-clinical obesity", in which there is no current organ dysfunction or daily activity limitations, and "clinical obesity", a chronic, systemic disease state. The Commission makes recommendations on how to diagnose these two conditions, including specific criteria with which to define clinical obesity.

There has been much previous debate about whether obesity can or should be classified as a disease, and the pros and cons of this approach are discussed in detail. The Commission sought to develop a working definition of clinical obesity and explain how differentiating between pre-clinical and clinical obesity distinguishes between health and disease in those with excess adiposity. The detailed definitions of pre-clinical and clinical obesity, and other definitions agreed by the Commission, are outlined in *Box 1*.

The Commission also recommends changes to measurements and diagnostic processes to fit with these definitions. Due to the well-documented limitations of using BMI to measure obesity, BMI is recommended only as a surrogate measure of health risks at a population level or for screening. The Commission recommends that, in addition to BMI, body size should be measured using at least one arthropometric measure, such as waist circumference, waist:hip ratio or waist:height ratio, and using age, sex and ethnicity thresholds to confirm whether excess adiposity is present. However, in people with a BMI >40 kg/m^2, no additional measurements are required to confirm excess adiposity. Although direct measurement of body fat, for example with DXA or CT, can be used if this is available, the accompanying editorial stresses that all of the Commission's proposed changes should be implementable in the wide range of settings where

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Box 1. Definitions of pre-clinical and clinical obesity.

- **Pre-clinical obesity** is defined as "a state of excess adiposity with preserved function of other tissues and organs and a varying, but generally increased, risk of developing clinical obesity and several other non-communicable diseases".

  This definition reminds us that excess adiposity does not necessarily result in illness but can co-exist with health.

- **Clinical obesity** is defined as "a chronic, systemic illness characterised by alterations in the function of tissues, organs, the entire individual, or a combination thereof, due to excess adiposity", which can lead to end-organ damage and potentially life-threatening complications.

  Importantly, this proposed definition can occur without the presence of any other independent medical conditions, and metabolic dysfunction is not required to make the diagnosis.

  The Commission provides a table of specific criteria, listed by organ systems, to confirm clinical obesity. It is likely, however, that some criteria will result in debate and controversy going forward.

- **Remission of clinical obesity** is defined as partial or complete resolution of clinical and laboratory evidence of tissue or organ dysfunction.

  The Commission is clear that remission does not represent cure, but that it may result in a return to pre-clinical obesity if all signs and symptoms of dysfunction resolve for at least 6 months.

BMI is used currently (The Lancet Diabetes Endocrinology, 2025). The anthropometric measures proposed will take more time but use simple equipment.

Once excess adiposity is confirmed, clinicians should assess whether clinical obesity is present, by looking for evidence (signs, symptoms, diagnostic tests) of reduced or abnormal function due to obesity, or substantial limitations of daily activities due to excess adiposity. The Commission proposes detailed diagnostic criteria for each body system, which can be used to confirm clinical obesity in children, adolescents and adults. For adults, these include cardiovascular criteria, such as heart failure, chronic or recurrent atrial fibrillation, and raised blood pressure. The metabolic criterion requires the cluster of hyperglycaemia, high triglycerides and low HDL-cholesterol, rather than type 2 diabetes. The full list of criteria for adults is shown in *Box 2* (overleaf). Although the focus in this *Diabetes Distilled* summary is on adults, the report also provides definitions, diagnostic criteria and management recommendations for obesity in children and adolescents.

A total of 37 key recommendations regarding definitions, diagnosis and access to management are included in the report. For added clarity, the Commission recommends using the term "comorbidities" for conditions which may coexist with obesity but where there is no cause-and-effect relationship, and the term "obesity-related diseases/disorders" for conditions that have overlapping pathophysiology to obesity, such as type 2 diabetes and obstructive sleep apnoea.

Evidence-based public health strategies are recognised as being needed to reduce the incidence and prevalence of obesity at population levels. Clinicians and policy makers should receive appropriate training to help address weight-based bias and stigma.

The report contains detailed description of the pathophysiology of obesity, the weight set-point theory and the central nervous system's role in hunger, food storage and metabolism, which will be useful for clinicians keen to update their knowledge. The Commission acknowledges the obstacles and gaps in knowledge around obesity and highlights areas where further research is needed.

Management

Clinicians are recommended to ensure regular monitoring for development of type 2 diabetes and other obesity-related conditions in those with pre-clinical and clinical obesity. Outcomes and cost-effectiveness of management strategies for clinical obesity should be measured over shorter times, while those for pre-clinical obesity should be measured over longer periods.

Treatment in those with pre-clinical obesity should aim for risk reduction, to prevent development of clinical obesity and other obesity-related diseases. The Commission recognises that, although this is not usually urgent, assessment tools will be needed to quantify risk, urgency and treatment needs in some people, since this is a diverse group. Evidence-based health counselling, monitoring and lifestyle management are likely to be enough to reduce risk of future clinical obesity. The Commission recommends that policy-makers ensure adequate and equitable access to the services required, and it accepts that drugs and surgery may be required to prevent development of clinical obesity or to reduce adiposity to facilitate transplantation, cancer treatment or orthopaedic surgery.

Box 2. Diagnostic criteria for clinical obesity in adults.

Central nervous system
Signs of raised intracranial pressure, such as:
- Vision loss
- Recurrent headaches

Upper airways
- Apnoea/hypopnoea during sleep (due to increased upper airway resistance)

Respiratory
Signs of reduced lung compliance or diaphragmatic compliance, such as:
- Hypoventilation
- Breathlessness
- Wheezing

Cardiovascular
- Reduced left ventricular systolic function – heart failure with reduced ejection fraction (HFrEF)
- Chronic fatigue
- Lower limb oedema due to impaired diastolic dysfunction – heart failure with preserved ejection fraction (HFpEF)
- Chronic/recurrent atrial fibrillation
- Pulmonary artery hypertension
- Recurrent deep vein thrombosis
- Pulmonary thromboembolic disease
- Raised arterial blood pressure

Metabolism
- The cluster of hyperglycaemia, high triglyceride levels and low HDL-cholesterol levels

Liver
- NAFLD with hepatic fibrosis

Renal
- Microalbuminuria with reduced eGFR

Urinary
- Recurrent/chronic urinary incontinence

Reproductive (female)
- Anovulation
- Oligomenorrhoea
- Polycystic ovary syndrome

Reproductive (male)
- Male hypogonadism

Musculoskeletal
- Chronic, severe knee or hip pain associated with joint stiffness and reduced range of joint motion

Lymphatic
- Lower limb lymphedema causing chronic pain and/or reduced range of motion

Limitations of day-to-day activities
Significant, age-adjusted limitations of mobility and/or other basic activities of daily living, such as:
- Bathing
- Dressing
- Toileting
- Continence
- Eating

Note: Be aware some of these conditions may have other causes than obesity.

Detailed treatment recommendations for clinical obesity are deemed beyond the scope of the report; however, two goals are recommended: to achieve improvement, or remission when possible, of the clinical signs, symptoms and conditions which underlie the clinical obesity diagnosis; and to prevent progression to further complications or end-organ damage. Lifestyle, drug therapies, psychological therapy and consideration of bariatric/metabolic surgery are all appropriate. The Commission highlights the importance of people with clinical obesity having "timely access to comprehensive care and evidence-based treatments". Currently, these are not universally available across the UK. Treatment benefits should be defined by improvement in clinical manifestations, rather than surrogates such as weight or BMI.

Implications for practice

Clinicians will need education and training if the Commission's recommendations are to be implemented. Moving away from using BMI alone to define obesity, even though we are aware of its limitations, and moving towards diagnosing those with excess adiposity as having pre-clinical or clinical obesity, will be major changes to practice and will take time to embed.

Although some of us have been using waist circumference as a diagnostic and motivational tool for many years, using this and waist:height or waist:hip ratios will represent a change to practice for many clinicians, who will need to learn the

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thresholds for abnormal waist circumference for different sexes and ethnic groups, and how to measure and use waist:hip and waist:height ratios to identify excess adiposity. These measurements take extra time in the consultation, but the codes to record them are already available in GP electronic systems.

The Commission's definitions are not yet incorporated in UK guidelines, including the recently published NICE Technology Appraisal of tirzepatide for managing overweight and obesity. Although there are similarities, there are also differences between recommendations in the newly published NICE (2025) NG246 obesity guideline and this report, including, for example, the BMI thresholds where waist circumference and waist:height ratio are recommended. This will need clarification and agreement on best practice for the UK.

After identifying someone with excess adiposity, it may be challenging, at least initially, to decide whether any of the defining diagnostic criteria for clinical obesity are met, as well as whether a person has a "comorbidity" or an "obesity-related disease". The Commission's table of diagnostic criteria for clinical obesity will be an important guide to assist with diagnosis and decision-making. It will be important to accurately code these, which will require new codes for clinical and pre-clinical obesity.

Although we may not be aware of weight bias in our care delivery, this has been identified amongst clinicians in many studies and summarised in a systematic review (Lawrence et al, 2021). Overall, 19–42% of people with increased weight, especially women, report weight discrimination. We need to be vigilant in what we say and do as we begin to implement recommendations in the NICE obesity guideline and this Commission's report.

Published at a time when primary care will have increased responsibility for obesity pharmacotherapy, this reframing of obesity may be seen as helpful by some and as an added challenge by others. It is my hope that, with education and support, the extra time and decision-making required will be deemed worthwhile by primary care teams, given the likely the benefits in improved care delivery to those with lived experience of obesity. ■

Definition and diagnostic criteria of clinical obesity

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