Beyond BMI – a practical framework for assessing and staging obesity

Recognising that BMI alone is a poor tool for diagnosing obesity and identifying any health impacts, a group of UK obesity experts have compared three obesity staging tools: the *Lancet* Commission Obesity Criteria (LCOC), the King's Obesity Staging System (KOSS) and the Edmonton Obesity Staging System. They integrate the LCOC and KOSS into a combined framework in order to facilitate diagnosis, identify broader impacts of obesity and allow clinicians to more easily track changes with obesity management. The integrated framework, published in *Clinical Obesity*, uses the 15-domain structure of the KOSS covering functional, psychosocial and economic impact, and maps the preclinical and clinical obesity categories from the LCOC onto these domains. The authors believe this integrated framework, when implemented in real-world practice, will provide a simpler yet more holistic assessment than that currently proposed by the *Lancet* Commission, which clinicians can use to diagnose the impact of obesity and to track the effect of long-term quality care for people living with obesity. This framework could be particularly useful for primary care teams when assessing for clinical obesity in people without clear complications such as type 2 diabetes.

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It is now widely recognised that BMI does not capture the complex impact of obesity on a person's health, and recent guidelines from NICE and the *Lancet* Commission on Diagnosis of Obesity encourage use of additional measures to identify excess adiposity that correlate more closely with significant dysfunction (NICE, 2025; *The Lancet Diabetes Endocrinology*, 2025).

The NICE NG246 guideline recommends use of waist circumference and waist:height ratio as additional measurements to identify excess adiposity. Staging tools can help us understand and document the impact of obesity, and three of these in common use are summarised in *Box 1*.

The Edmonton Obesity Staging System (EOSS) includes three domains and helps stratify obesity into four stages (Sharma and Kushner, 2009). An online calculator allows speedy use in consultations.

The alphabetically organised, multiple-domain, four-stage King's Obesity Staging System (KOSS) incorporates psychosocial and economic impacts of obesity (Aasheim et al, 2011).

The *Lancet* Commission Obesity Criteria (LCOC) uses 18 specific criteria relating to 11 systems to differentiate between preclinical and clinical obesity, recommending behavioural and lifestyle interventions for those with preclinical obesity and consideration of pharmacological and surgical options for those with clinical obesity (Rubino et al, 2025). However, this binary division is perceived by many as both too simplistic and too complex, with difficulty classifying some people in whom there is no obvious clinically significant dysfunction, such as diabetes or heart disease.

In a bid to overcome some of these challenges, four UK obesity experts have sought to provide

Box 1. Examples of obesity classification systems in common use.

***Lancet* Commission Obesity Criteria (LCOC)** define obesity as a chronic, systemic disease with two stages: preclinical and clinical obesity. Diagnosis of clinical obesity requires excess adiposity and at least one of 18 criteria indicating organ or tissue dysfunction, which may require use of additional measurements and metabolic and organ-function assessments. Some people will immediately be recognised as having clinical obesity, but for others the differentiation is much more difficult and too time-consuming and impractical in primary care and other settings.

The **King's Obesity Staging System (KOSS)** assesses obesity impact across multiple domains covering metabolic, functional, psychosocial and economic factors, allocating people to one of four stages reflecting their obesity's greatest impact. This allows broader assessment than the LCOC, and affords the opportunity to track progress over time, even if weight loss does not occur.

The **Edmonton Obesity Staging System (EOSS)** assesses mental and physical health and comorbidities across three domains, from which obesity is classified from stage 0 to stage 4.

Read more

Diabetes Distilled: Reframing the definition and diagnosis of clinical obesity

Consensus report advises definitions of clinical and pre-clinical obesity, according to the presence of obesity-related conditions and dysfunction.

Diabetes & Primary Care **27**: 25–8

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a practical tool which would aid clinicians in making a holistic diagnosis of the impact of obesity, and hence therapy decisions, and which would also allow tracking of progress alongside the use of anthropometric measurements, which often underestimate or overestimate real-life benefits of obesity therapies.

An integrated framework

Ko and colleagues sought to integrate the LCOC and KOSS into a single framework to allow more comprehensive, practical and easier staging of obesity. This is designed to ensure consistent communication and agreement between clinicians and to allow tracking of progress across the 15 domains. The authors propose that stages 0 and 1 of the integrated framework can be mapped to preclinical obesity, as defined by the *Lancet* Commission, while stages 2 and 3 map to clinical obesity.

The domains, and how they track to stages in the integrated framework and the LCOC clinical and preclinical obesity categories, are shown in *Table 1* (overleaf). The integration of these two staging tools may offer the following benefits.

For clinicians, a practical, comprehensive and individualised approach to staging the impact of obesity:

- Accurate diagnosis.
- Tracking of treatment progress across physiological and psychological domains.
- Ability to measure success by clinical outcomes, as recommended by the *Lancet* Commission.

For people living with obesity, a reduced focus on weight loss alone as the only important and documented outcome.

- It is hoped this will translate to less stigma.
- A more compassionate, person-centred approach.
- Staging and management which consider their quality of life.
- Recognition, assessment and tracking of their psychosocial burdens.

Limitations

The authors cite a number of challenges and limitations of their integrated framework:

- Some domains of the KOSS are subjective, similar to some parameters in the LCOC used to differentiate between preclinical and clinical obesity.
  - ➤ Despite this, interobserver variability has been shown to be low.
  - ➤ Using patient-reported outcome measures (PROMs) could improve standardisation.
- Some conditions (e.g. stroke or myocardial infarction) will be irreversible, fixing people at stage 2, for example, even if improvements occur in other domains used for tracking progress.
- Inclusion of a collection of different conditions (e.g. skin conditions) with different potential impacts in the "Other" domain.
- The clinical mapping of the KOSS stages to the definitions of preclinical and clinical obesity has yet to be validated in real-world settings.
- More research will be needed to identify whether the integrated model works as effectively as the two separate models.

Conclusions

This integrated model seeks to build on the LCOC and KOSS models to shift the focus of obesity management from purely weight loss to tracking a more holistic view of how obesity is impacting individuals. It is hoped this integrated framework will help reduce stigma and provide a practical tool for improving quality of care, with benefits for both clinicians and people living with the disease of obesity.

Implications for practice

The last 2 years have seen huge changes in guidance on how we should diagnose and manage obesity, and most would now agree that obesity is a chronic disease requiring long-term management. BMI is not an effective measure of adiposity or likely health impact, so measuring waist:height or waist:hip ratio is becoming more mainstream.

However, with time pressures in consultations, it is unlikely that we are using staging systems consistently, if at all. In particular, it can be challenging to use the *Lancet* Commission criteria to decide whether the person sitting beside us has preclinical or clinical obesity if they don't have a designated condition such as diabetes, and this can influence whether behavioural and lifestyle management alone should be recommended or whether this needs to be combined with the offer of pharmacological or surgical options.

In primary care, some of us use the EOSS to estimate functional impact, and the

Table 1. Domains and definitions used in the integrated framework.

	Preclinical obesity		Clinical obesity	
Domain	**Stage 0: No organ or tissue dysfunction**	**Stage 1: Altered organ structure but no dysfunction**	**Stage 2: Altered organ function**	**Stage 3: Severe organ dysfunction**
Airway	Normal	Snoring	Apnoea/hypopnoea during sleep Hypoventilation, breathlessness, wheezing	Respiratory failure Cor pulmonale
BMI and adiposity	BMI <25 kg/m^2	WC <102 cm in men, <88 cm in women WHR <0.9 in men, 0.85 in women WHtR <0.5	WC >102 cm in men, >88 cm in women WHR >0.9 in men, >0.85 in women WHtR >0.5	BMI >40 kg/m^2
Cardiovascular disease	<10% MACE risk	10–25% MACE risk	Recurrent deep-vein thrombosis or pulmonary embolism Raised blood pressure, ischaemic heart disease or stroke Chronic or recurrent atrial fibrillation	Heart failure with reduced ejection fraction Chronic fatigue and lower limb oedema Pulmonary arterial hypertension
Diabetes	Normoglycaemia	Non-diabetic hyperglycaemia	Hyperglycaemia, high triglycerides and low HDL cholesterol	Diabetes complications
Economic	No impact	High cost of living	Workplace discrimination	Unemployment due to obesity
Functional	Manages 3 flights of stairs Normal joint function	Manages 1–2 flights of stairs Joint discomfort Reduced flexibility	Manages <1 flight of stairs Severe knee or hip pain and stiffness, and reduced range of movement Substantial age-adjusted limitations in daily living Osteoarthritis	Lower-limb lymphoedema (causing chronic pain, reduced range of motion or both) Housebound Disabling osteoarthritis
Gonadal	Normal	Hirsutism, acne Alopecia Low libido	Anovulation Aligomenorrhoea Polycystic ovary disease Male hypogonadism Erectile dysfunction	Infertility
Mental health	Normal	Low mood or quality of life	Mental illness (e.g. anxiety, depression)	Unstable or resistant mental illness
Body image	Normal	Dislikes body image	Body image dysphoria Disordered eating	Disordered eating due to body image dysphoria
Gastro-oesophageal	Normal	Infrequent indigestion or heartburn	Gastro-oesophageal reflux disease	Barret's oesophagus; aspiration
Kidney	Normal	eGFR normal ± microalbuminuria	CKD stage 2 with microalbuminuria Chronic incontinence	CKD stages 3–5
Liver	Normal	MASLD	MASH	Cirrhosis
Medication	None	Easy to manage	Polypharmacy	Complicated polypharmacy
Neurology	Normal	Headache	Vision loss and/or headaches due to raised intracranial hypertension	Neurological deficiency
Other	Normal organ function	Impaired organ structure	Organ dysfunction	Severe organ dysfunction

BMI=body mass index; CKD=chronic kidney disease; eGFR=estimated glomerular filtration rate; HDL=high-density lipoprotein; MACE=major adverse cardiovascular events; MASH=metabolic dysfunction-associated steatohepatitis; MASLD=metabolic dysfunction-associated liver disease; WC=waist circumference; WHR=waist:hip ratio; WHtR=waist-height ratio.

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NICE overweight and obesity guidelines: What's new?

The new NG246 guideline replaces several pre-existing NICE obesity guidelines. Sally Erskine reviews the key changes.

Diabetes & Primary Care **27**: 51–3

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online calculator makes it easy to use in the consultation, much as we use the QRISK3® or Fibrosis-4 calculators. However, only three domains are included in the EOSS, so it fails to capture many important impacts of obesity.

In a recent *BMJ* opinion piece, Ellen Fallows, GP and Fellow of the British Society of Lifestyle Medicine, reminds clinicians about the significant stigma faced by people living with obesity, and suggests we consider reframing primary care consultations to focus on the whole person rather than the numbers on a scale (Fallows, 2026). She encourages clinicians to dig deeper, to explore the individual's potentially modifiable drivers of ill health and what can realistically be achieved to change them; many of these will be contributing to obesity and ongoing symptoms, such as pain or low mood. This holistic approach resonates with the integrated framework discussed here.

As winter pressures and year-end QOF/QAIF targets recede, it is a great time to try out this new tool, especially in those cases where you are uncertain whether the person fits into the LCOC clinical obesity stage. I have printed out the staging and tried it out; it takes longer than the EOSS using the online calculator, but for those who do not have a definite comorbidity to diagnose clinical obesity, it offers clarity.

Delving deeper into the psychological and social impacts of obesity felt worthwhile, and I am sure it will encourage me to place more people in the clinical obesity stage in future. I am looking forward to using the framework to track progress in a more holistic way than simply relying on measurements alone. And in cases where we can see that the person sitting beside us has excess adiposity, we may consider offering the option to explore psychosocial factors rather than encouraging people to step on our scales.

If you haven't read Dr Fallow's opinion piece, I strongly recommend doing so. It is a short piece that provides useful resources for increasing access to healthy food, and it is thought-provoking. Spending a few minutes understanding the person's life better, rather than rushing to measure weight, may be more acceptable, especially if the person is reluctant to step on the scales. I would also strongly recommend trying out the new integrated staging tool. I look forward to hearing whether it does offer the benefits we discuss here in the real world. ■

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Beyond BMI: Practical guide for clinicians to integrate the *Lancet* Commission's obesity framework and King's Obesity Staging System

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