

RETHINKING OBESITY: BEYOND BMI TOWARDS PRECISION MEDICINE

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Obesity is a chronic, relapsing neuroendocrine disease and a major global public health burden that has reached epidemic levels, with more than one billion individuals affected worldwide. Despite widespread use due to its simplicity and utility, body mass index (BMI) as a single diagnostic metric fails to capture differences in visceral and subcutaneous fat distribution, body composition, metabolic risk and functional impairment, leading to potential misclassification. Recent perspectives, including the framework proposed by the Lancet Commission, emphasize that obesity should be defined beyond BMI, focusing on excess adiposity and related health impairment. Advanced imaging modalities, including dual-energy X-ray absorptiometry (DEXA), magnetic resonance imaging (MRI) and computed tomography (CT) provide more accurate assessment of body fat distribution. Obesity is increasingly recognized as a heterogeneous disease with distinct phenotypes based on metabolic, etiological and behavioral traits. Contemporary guidelines recommend individualized, phenotype-driven management and the use of complications-based staging systems such as the Edmonton Obesity Staging System (EOSS), which stratifies disease severity and guides stepwise management, integrating lifestyle modification, pharmacotherapy and bariatric surgery when indicated. Recent advances in anti-obesity pharmacotherapy, particularly incretin-based agents, have expanded treatment options. Landmark trials, including STEP, SELECT and SURMOUNT, demonstrate significant and sustained weight reduction with additional cardiovascular benefit shown in the SELECT trial. In conclusion, effective obesity management requires a shift beyond BMI towards a multidimensional, patient-centered approach that addresses disease heterogeneity and supports targeted, evidence-based interventions.

Keywords: Obesity; body mass index; adiposity; phenotypes; incretin therapy

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