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Comparative Review of Guidelines on Gestational Weight Management

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Abstract: Gestational weight management is a key strategy for improving perinatal outcomes and safeguarding the long-term, intergenerational health of both mother and child. To address rising rates of maternal obesity and excessive gestational weight gain, guidance and consensus statements have been revised repeatedly in China and internationally. This review compares leading guidelines from China and elsewhere, including IOM 2009, ACOG 2015, FIGO 2023, and NICE 2025, to help guide practice. Across documents, pre-pregnancy body-mass index (BMI) is the primary tool for stratification; lifestyle intervention centred on diet and physical activity is consistently recommended as first-line management; and screening and management of metabolic comorbidities in pregnancy are emphasised. Differences mainly reflect underlying philosophies and implementation pathways: Chinese guidance tends to rely on quantified targets and more frequent monitoring to reduce obstetric risk, whereas some Western guidelines place greater emphasis on life-course management, patient-centred communication, and reducing weight stigma. Important gaps remain, including limited granularity in metabolic risk stratification, insufficient evidence for severe obesity and complex pregnancies, limited practicality of recommended interventions, and delayed guidance on periconception use and management of newer anti-obesity medications. Future efforts should shift from weight-centred targets to broader metabolic health optimisation, supported by multidimensional assessment, integrated physical and psychological care, family engagement, and digitally enabled follow-up—towards more precise, multidisciplinary, and compassionate models of care.

Keywords: gestational weight management; maternal obesity; weight loss; guidelines; review

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1. Introduction

Obesity is a chronic metabolic disease driven by a combination of genetic, environmental, and behavioural factors, and its prevalence continues to rise worldwide. During pregnancy and the postpartum period, weight and metabolic health are not cosmetic concerns; they are closely tied to maternal risk across gestation and to the child's short- and long-term health. In the USA, about half of pregnant individuals gain more weight than recommended[1]. Excess

gestational weight gain is also common in Europe, the Eastern Mediterranean region, and low- and middle-income countries in the Americas[2]. Chinese studies similarly suggest a high prevalence of excessive weight gain, with 58·2% in the second trimester and 55·8% in the third trimester[3]. Clinically, entering pregnancy with overweight or obesity is associated with higher risks of gestational hypertension, gestational diabetes, and macrosomia. These risks affect not only the mother but also fetal and neonatal outcomes and may increase longer-term metabolic risk in the offspring. Strengthening weight management before and during pregnancy is therefore an important route to improving perinatal outcomes and supporting intergenerational health. As evidence accumulates and clinical needs evolve, guidance on gestational weight management has been updated repeatedly. This review summarises major Chinese and international guidelines and consensus statements to inform clinical practice.

Gestational weight gain (GWG) refers to the change in body weight from before pregnancy to delivery. Internationally, the most widely used benchmark remains the 2009 recommendations from the US Institute of Medicine[4] ("IOM 2009"). Building on IOM 2009, countries and professional organisations have issued additional recommendations reflecting population characteristics and differences in health-care systems. Key documents include the American College of Obstetricians and Gynecologists (ACOG) Committee Opinion on Weight Gain During Pregnancy[5] ("ACOG 2015"); the UK National Institute for Health and Care Excellence (NICE) guideline on diabetes in pregnancy[6] ("NICE 2015"); the International Federation of Gynecology and Obstetrics (FIGO) Best Practice Recommendations on obesity management across the life course[7] ("FIGO 2023"); and the NICE guideline on maternal and child nutrition and weight management[8]("NICE 2025"). In China, the Obstetrics Working Group of the Chinese Medical Association issued the 2018 guideline on preconception and antenatal care[9], and the National Health Commission released recommended standards for gestational weight gain in 2020[10], proposing ranges more suitable for Chinese populations. Related documents—including the 2022 Dietary Guidelines for Chinese Residents[11], the 2025 expert consensus on obesity management in infants and young children[12], and guidance on obesity/overweight management in infertility[13]—also address gestational weight management.

2. Areas of broad agreement across guidelines

Across settings, guidelines largely converge on core concepts—how obesity is framed as a health condition, when to intervene, and what to do in practice. Although recommended GWG ranges differ, most guidance uses pre-pregnancy body-mass index (BMI) as the primary stratification tool. In terms of timing, weight management is no longer treated as a one-off reminder at an antenatal visit; instead, it is increasingly framed as a continuum spanning preconception, pregnancy, delivery, postpartum, and the interpregnancy interval.

At the level of intervention, lifestyle measures—dietary counselling and physical activity—are consistently positioned as first-line. NICE 2025 explicitly lists healthy eating and physical activity as central recommendations, and Chinese guidance similarly prioritises diet plus exercise. Many documents also caution against misreading "weight management" in pregnancy as intentional weight loss. The goal is typically to support a steady, appropriate trajectory of weight gain through balanced nutrition and moderate activity, thereby improving maternal and infant outcomes.

Importantly, contemporary guidance goes beyond numbers on a scale. Many guidelines advocate patient-centred care, individualised communication, and attention to the patient's experience. They also emphasise screening for and managing obesity-related comorbidities, including gestational diabetes, hypertensive disorders of pregnancy, obstructive sleep apnoea, non-alcoholic fatty liver disease, and venous thromboembolism.

3. Key differences between Chinese and international guidance

3.1. Positioning and content framework

IOM 2009 focuses primarily on recommended GWG ranges, offering quantitative targets stratified by pre-pregnancy BMI. ACOG 2015 retains BMI-based targets but aligns recommendations more closely with obstetric decision-making, including risk assessment for obesity-related complications and perinatal management considerations. FIGO 2023 adopts a life-course perspective—before pregnancy, during pregnancy, and postpartum—treating obesity as a chronic, progressive disease and emphasising continuous risk identification and management. NICE 2025 places nutrition and weight management within a broader framework that links pregnancy with early-childhood nutrition (0–5 years) and family health behaviours. In China, the national recommended standards specify GWG ranges, while other documents (eg, infant and child obesity consensus statements and infertility-related obesity guidance) focus more on management strategies and integration with antenatal care and health-management services.

3.2. Target populations and applicability

All guidelines address the general pregnant population, but they vary in how deeply they cover specific groups—such as individuals with overweight/obesity, advanced maternal age, metabolic abnormalities, or those using assisted reproductive technologies. IOM 2009 is primarily aimed at the general pregnant population and offers limited additional stratification for complex cases. ACOG 2015 gives more attention to clinically high-risk scenarios, emphasising preconception assessment, risk management during pregnancy, and management of perinatal complications. FIGO 2023 extends beyond pregnancy to women across the life course, highlighting long-term postpartum metabolic risk and multisystem comorbidity management. NICE 2025 extends the focus beyond the pregnant individual to the mother–infant–family unit by incorporating early-childhood nutrition and family-level behaviour support.

3.3. Goals and underlying values

Guidelines represented by IOM 2009 and ACOG 2015 use pre-pregnancy BMI as the baseline and treat total GWG and the rate of gain in mid-to-late pregnancy as key process indicators. ACOG 2015 further frames management across preconception, pregnancy, delivery, and postpartum, with the central aim of keeping GWG within recommended ranges to reduce adverse outcomes. FIGO 2023 explicitly defines obesity as a chronic, treatable, multifactorial disease and places greater emphasis on health optimisation—extending goals beyond weight to include metabolic status, functional capacity, and mental health. NICE 2025 gives particular weight to communication and psychological burden, warning that an excessive focus on weight can increase anxiety and negative experiences.

China's guideline landscape shows a blended trajectory: it continues to emphasise quantitative targets and frequent monitoring to reduce risks such as macrosomia, gestational diabetes, and caesarean delivery, while more recent documents increasingly incorporate life-course and intergenerational perspectives, positioning pregnancy weight management within broader chronic disease and reproductive health frameworks.

3.4. Weight monitoring strategies

Guidelines differ substantially in their approach to monitoring. IOM and ACOG recommend documenting pre-pregnancy or early-pregnancy BMI at the first antenatal visit and tracking weight at subsequent visits to assess whether gain remains appropriate. The Chinese *Dietary Guidelines* (2022) and the expert consensus on infant and child obesity management propose more frequent measurement—at least weekly—combined with antenatal-visit data to adjust diet and activity plans dynamically. This higher-frequency, often digitally supported monitoring is

intended to provide earlier warning of excessive gain and aligns with China's practical priorities (eg, prevention of macrosomia, gestational diabetes, and high caesarean rates).

By contrast, NICE 2025 does not recommend routine repeated weighing in the absence of clinical indications, citing insufficient evidence that frequent weighing improves maternal or fetal outcomes and noting that an intense focus on weight can worsen distress and anxiety.

4. Gaps and limitations in current guideline systems

Comparing IOM 2009, ACOG 2015, FIGO 2023, NICE 2025, and related Chinese consensus documents suggests broad agreement on foundational principles. However, as clinical presentations become more heterogeneous and as mental health needs and new technologies reshape care, limitations remain—particularly in evidence for special populations, breadth of monitoring indicators, balancing physical and psychological outcomes, and feasibility of implementation.

4.1. Limited evidence for special and complex populations

Most GWG ranges used in practice still trace back to IOM 2009, published more than a decade ago. Since then, population characteristics, obesity patterns, and the spectrum of pregnancy complications have changed, and existing evidence may be insufficient for some groups. In particular, class II–III obesity (eg, BMI ≥ 35 kg/m² or ≥ 40 kg/m²) is increasingly common. Although IOM 2009 and ACOG 2015 recommend 5.0–9.1 kg gain for obesity (BMI ≥ 30 kg/m²), they do not differentiate by obesity class. Some studies suggest that tighter targets—or even minimal gain[14]—might be associated with better outcomes in some individuals with severe obesity, but the lack of large randomised trials has led to cautious recommendations and limited practical guidance[15].

In addition, as assisted reproductive technologies expand, more pregnancies occur in older individuals and after IVF. These patients often have more complex endocrine–metabolic profiles and may experience greater psychological pressure. Although Chinese guidance on obesity/overweight in infertility acknowledges this population, antenatal pathways often mirror those for spontaneous conception, which may not be sufficient in practice.

4.2. Divergent philosophies: physiological control versus psychological burden

Chinese guidance tends to favour frequent, digitally enabled, and relatively strict monitoring to reduce macrosomia and caesarean delivery. This approach may improve control of physiological indicators but can increase psychological burden. NICE 2025 and FIGO 2023 explicitly warn that fixation on weight numbers can contribute to anxiety, depression, or disordered eating, and they recommend avoiding unnecessary weighing without clear indications. In China, systems for preventing weight stigma, reducing stress, and screening for disordered eating are less developed than systems for controlling glucose and weight targets. In practice, clinicians may prioritise numeric targets while lacking tools to identify and address weight-related anxiety, potentially reinforcing a cycle of stress and metabolic dysregulation.

4.3. Narrow assessment metrics: BMI does not capture metabolic health

Most guidelines still rely on pre-pregnancy BMI as the central risk metric. BMI is easy to calculate but cannot distinguish fat from lean mass or capture fat distribution. In Asian populations, "normal-weight obesity" is not uncommon[16]: BMI may be in the normal range despite excess visceral adiposity and metabolic risk[17]. Relying on

a single BMI threshold can therefore miss individuals who would benefit from early intervention. FIGO proposes the Edmonton Obesity Staging System (EOSS) to incorporate metabolic and functional status, but this approach has not been widely implemented in busy obstetric settings. As a result, management often remains focused on weight targets rather than deeper metabolic optimisation.

4.4. Limited practical tools and localised dietary guidance

Although lifestyle intervention is universally recommended, many statements remain high-level and difficult to operationalise, which undermines adherence. ACOG and FIGO generally recommend balanced, nutrient-dense diets but provide limited practical guidance tailored to gestational stage or cultural dietary patterns. While the US Dietary Guidelines Advisory Committee (DGAC) 2025 materials and Chinese dietary guidance offer food-group advice, obstetric clinicians often lack time to deliver detailed nutrition prescriptions in routine visits. Exercise recommendations are similarly broad: moderate-intensity activity is encouraged, but for individuals with obesity and obstetric risk, guidance is often unclear on how to prescribe intensity, when to pause activity, when to refer, and how to individualise plans. As a result, exercise may remain "advice" rather than a structured component of care.

4.5. Emerging drugs and technologies: guidance is lagging

Use of newer anti-obesity medications (eg, GLP-1 receptor agonists) has increased rapidly, making it more common for individuals to conceive while planning pregnancy, to have unplanned pregnancies, or to become pregnant soon after stopping medication. Existing guidelines mention pharmacotherapy, but high-quality evidence remains limited regarding periconception safety, washout periods, risk stratification after inadvertent exposure, and follow-up strategies. These uncertainties reduce the clarity and consistency of clinical counselling and highlight the need for systematic real-world data.

5. Future directions informed by guideline comparisons

Given current gaps and China's clinical and cultural context, gestational weight management should move beyond weight targets alone toward life-course coverage, multidisciplinary care, and personalised, precision-oriented management.

5.1. Develop localised, multidimensional assessment standards

To address BMI's limitations, future assessments could incorporate waist circumference and body-fat percentage in preconception and early pregnancy. Building on infertility-related obesity guidance, clinicians should identify "hidden" high-risk groups—those with normal BMI but central adiposity—and offer comparable management. Research and clinical teams should explore models based on metabolic phenotyping. Within the FIGO-recommended EOSS framework, integrating glucose, lipids, blood pressure, and sleep apnoea could help distinguish metabolically healthy from metabolically unhealthy obesity. For metabolically unhealthy patients, tighter upper limits for GWG and closer monitoring could support more precise care.

5.2. Build a dual physiological–psychological support model

Consistent with NICE 2025's emphasis on respectful, person-centred care, clinical pathways should reduce anxiety associated with strict monitoring. Clinicians should use non-judgmental language and avoid stigmatising terms. When discussing weight gain, framing it alongside fetal growth and overall health indicators can reduce distress driven by a single number. Psychological screening tools could be incorporated into routine care for pregnant individuals with

obesity. Those with concerning results—body-image distress, disordered eating, or related symptoms—should be referred promptly for mental health support, enabling integrated management of physical and psychological health.

5.3. Strengthen life-course and family participation

Pregnancy weight management should be viewed as an entry point for long-term women's health rather than a stand-alone obstetric task. Interventions should begin preconception and continue postpartum, supported by family engagement. Chinese infertility-related guidance highlights potential adverse effects of paternal obesity on embryo quality and offspring metabolic health; health education should therefore include partners and promote shared changes in diet and lifestyle. In line with FIGO's postpartum chronic disease prevention approach, the first 6 months after delivery should be used for systematic metabolic screening in those with prior gestational diabetes or hypertensive disorders, with longer-term follow-up to reduce intergenerational transmission of obesity and metabolic disease.

5.4. Make diet and exercise guidance more actionable

Guideline principles need translation into practical, clinic-ready standard operating procedures. Nutritional counselling can draw on the DGAC 2025 emphasis on nutrient density—shifting focus from calorie counting alone to improving diet quality—and should be adapted to regional Chinese dietary patterns. Exercise prescriptions should be tailored by gestational stage, with clear guidance on safe heart-rate ranges, contraindications, and referral thresholds. This can reduce safety concerns among patients and families and help move exercise from general advice to standardised practice.

5.5. Use digital tools to extend care

Given limited access to dietitians, medically supervised weight-management apps or mini-programmes could support continuous care. With appropriate safeguards, algorithm-assisted feedback on meal photos and activity logs could provide timely guidance between clinic visits. This approach could also support remote health management and stress interventions. For medication exposure (eg, GLP-1 receptor agonists) during pregnancy, a national pregnancy exposure registry is urgently needed to generate real-world evidence and inform standardised recommendations on washout periods and risk assessment.

6. Conclusion

Gestational weight management is a key lever for improving short- and long-term maternal and child health. Comparison of major Chinese and international guidelines shows differences in management philosophy, assessment systems, and intervention models, but these approaches are largely complementary. Chinese guidance emphasises quantitative targets and standardisation, providing clear safety thresholds for maternal and infant outcomes. Western guidance offers useful perspectives on person-centred communication and life-course management. As clinical needs become more complex, no single guideline can fully meet individualised care demands. Limitations of BMI-based assessment and the challenge of balancing physiological targets with mental wellbeing underscore the need for ongoing refinement.

Future gestational weight management should shift from weight-centred control to more precise metabolic health management. Grounded in China's clinical practice and epidemiology, prevention should remain central while incorporating advanced concepts such as EOSS staging and integrated mind–body care. Multidisciplinary models that combine nutrition, physical activity, psychological support, and digital tools may help develop a refined, China-appropriate approach that is both scientifically rigorous and humanistic.

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Disclosure statement

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