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SCM

世界中医药学会联合会

World Federation of Chinese Medicine Societies

SCM **-20**

国际中医临床实践指南
妊娠期肥胖

International clinical practice guidelines for Chinese medicine

Obesity in pregnancy

（征求意见草案，CD）

世界中联国际组织标准

International Standard of WFCMS

20**-**-**发布实施

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WFCMS

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WFCMS

前　　言

本文件由世界中医药学会联合会（简称“世界中联”）发布，著作权归世界中联所有。

本文件按照 SCM 1.1—2021 标准化工作导则 第 1 部分规定的程序制定。

本文件的起草遵循SCM 1.2—202X 标准化工作导则 第2部分的规则。

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引　言

妊娠期肥胖严重危害母婴健康，显著增加了先兆流产、妊娠期糖尿病、妊娠期高血压及剖宫产等并发症风险。目前，美国妇产科协会（ACOG）、英国皇家妇产科（RCOG）、国际妇产科联盟（FIGO）等国际权威组织虽已发布妊娠期肥胖管理指南，但均基于西方人群数据，对亚洲女性体质特点及膳食结构的针对性不足，且均未涉及中医药干预方案。中国尚无专门针对妊娠期肥胖人群的临床实践指南，现有指南多聚焦于普通成人肥胖管理，未充分考虑妊娠期肥胖人群的特殊需求。

中医药具有独特优势，可通过多靶点综合调节（改善肠道菌群、调节激素水平、调控脂肪代谢），且安全性高、副作用低，符合亚洲文化背景，患者接受度高。然而，高质量的中医药循证证据尚未被系统整合进现有国际指南框架。

为此，本文件旨在规范妊娠期肥胖的中医临床诊断与管理，为国际医护人员提供针对亚洲及欧洲纳入妊娠期肥胖管理人群的中医药管理策略与方法。在该指南制定过程中，我们借鉴了国际权威指南的成熟原则，重点针对妊娠期肥胖及其相关并发症，基于高质量的中医系统评价与随机对照试验（RCT）证据，筛选出证据等级高、临床疗效确切、安全便捷的管理方法进行推荐。

本文件简明实用、可操作性强，具有指导性、普适性和可参照性，可作为临床实践、诊疗规范及质量评价的重要参考依据。本文件不是医疗行为的标准或规范，而是依据现有研究证据和特定方法研制出的声明性文件。临床实践中，医护人员可参考本文件并结合患者具体情况进行个体化干预。

WFCMS

国际中医临床实践指南　妊娠期肥胖

1　范围

本文件规定了妊娠期肥胖相关管理对象的术语和定义、诊断标准、管理原则及管理方式等内容。

本文件适用于各级医疗机构妇科、生殖医学科、内分泌科、营养科及相关专业的中医医护人员，作为妊娠期肥胖相关管理对象进行评估、干预及随访的参考依据。其他相关学科医护人员可根据管理对象个体情况参照本文件内容。

2　规范性引用文件

本文件没有规范性引用文件。

3　术语和定义

下列术语和定义适用于本文件。

3.1

妊娠期肥胖

妊娠期女性存在脂肪含量过多和/或分布异常，并因此增加母体及围产期不良结局风险的临床状态，是由遗传和环境等因素共同作用而导致的代谢性疾病。

3.2

妊娠期体重增长值　gestational weight gain; GWG

从孕前（或妊娠早期）至分娩前测量体重的变化值。合理控制可降低妊娠糖尿病、高血压等风险，并有利于产后恢复。孕早期首次产检确认孕前/早期体重及孕前体质指数（Body Mass Index，BMI），并在后续产检中持续监测整个孕期 GWG 变化，以识别体重增长不足或超标等情况。

3.3

妊娠期肥胖相关管理对象

在妊娠前或妊娠期间存在肥胖或体重增长异常、需纳入体重管理和并发症风险评估路径的孕妇，包括孕前 BMI 达到肥胖标准并已妊娠者、孕期体重增长超过相应推荐范围者。若缺乏孕前体重资料，可采用孕早期首次产检 BMI 作为近似替代指标，并结合后续孕期体重增加情况进行综合判断。

4　诊断

4.1　孕前肥胖合并妊娠者

根据世界卫生组织（WHO）肥胖标准、亚洲人群超重及肥胖标准（详见**附录 B**），将以下人群纳入本指南管理路径。

亚洲女性：孕前 BMI≥28.0 kg/m^{2}的孕妇，应诊断为妊娠期肥胖，并纳入妊娠期肥胖管理对象。

欧美女性：孕前 BMI≥30.0 kg/m^{2}的孕妇，应诊断为妊娠期肥胖，并纳入妊娠期肥胖管理对象。

证据质量：高级。

推荐强度：强推荐。

4.2 孕期体重增长超标者

根据《中国妇女妊娠期体重监测与评价》[1,2]或美国医学研究所（IOM）[3,4]关于不同孕前 BMI 人群的妊娠期体重增长推荐范围（详见**附录 C**），若孕期体重增长超过相应推荐范围，应纳入妊娠期体重异常增长管理对象，并启动强化生活方式干预及并发症风险评估。

证据质量：高级。

推荐强度：强推荐。

5 管理

5.1 管理原则

适用对象：孕前肥胖或孕期体重增长超标的单胎妊娠女性。

推荐意见：对于纳入管理对象的孕妇，合理控制孕期体重增长，预防妊娠期、分娩及产后并发症，保障母婴健康与安全分娩[5]。

实施要点：肥胖治疗应将降低长期并发症风险作为主要目的，而非单纯追求体重的降低[6]。孕前 BMI 达到肥胖标准并已妊娠者，管理重点在于孕早期风险评估、全孕期体重控制及妊娠并发症筛查。对于孕期体重增长超过相应推荐范围者，管理重点在于动态监测 GWG、及时强化生活方式干预并评估相关风险因素。

知情同意：实施超出常规产检的中医药、针刺、药物或生活方式干预等体重管理干预前，应告知患者：干预目的为控制体重增长、降低并发症风险；对胎儿影响方面，生活方式干预目前认为安全但存在不确定性，中医药、针刺、药物的大样本安全数据有待完善，已知风险可能包括影响胎儿生长或诱发宫缩；同时缺乏对子代远期的长期安全性数据，应提供常规产检、营养师咨询等可替代方案，并告知患者可自愿退出且不影响常规医疗。知情过程需记录并提供书面信息，鼓励多学科沟通。

禁忌/慎用：中医药方式干预妊娠期肥胖时，需避免使用妊娠禁忌药物及穴位，且在患者知情同意后谨慎应用针药，严格掌握用法用量，以防伤胎动胎，妊娠禁忌药物及穴位详见**附录 G**。

证据质量：高级。

推荐强度：强推荐。

5.2 运动管理

适用对象：孕前肥胖或孕期体重增长超标且无运动禁忌的单胎妊娠女性。

推荐意见：建议制定孕期持续个体化运动方案。

实施要点：通常从妊娠期第 10 周至 36 周都可进行日常锻炼。主要采用中等强度身体活动，20 min~30 min 短时长运动为主。孕前 BMI≥28 kg/m^{2}的孕妇建议从孕早期甚至孕前开始运动管理（低强度、短时间，循序渐进）。

禁忌/慎用：有先兆流产、严重心肺疾病等风险的孕产妇禁止盲目运动，需专科评估。

证据质量：高级。
推荐强度：强推荐。

5.3 饮食管理

适用对象：孕前肥胖或孕期体重增长超标的单胎妊娠女性。
推荐意见：建议实施个体化均衡膳食管理。
实施要点：均衡膳食，控制总热量摄入，合理搭配低升糖指数的碳水化合物、优质蛋白质及脂肪摄入；少食多餐，定时定量进餐。
禁忌/慎用：营养不良、合并特殊代谢病者需专科评估。
证据质量：中级。
推荐强度：强推荐。

5.4 情志管理

适用对象：孕前肥胖或孕期体重增长超标的单胎妊娠女性。
推荐意见：从多维度（如五音音乐、正念干预等）改善情绪状态、睡眠质量及压力性进食风险，属于体重综合管理中的辅助措施。
实施要点：多维度调节身心状态，其中：中式音乐（五音疗法、古琴音乐）可改善情绪状态及睡眠质量[7-9]；正念干预可有效降低孕期抑郁水平[10]；情绪改善与睡眠质量提升可能通过调节下丘脑－垂体－肾上腺轴功能、改善压力性进食行为及代谢状态，间接有利于体重管理[11,12]。
禁忌/慎用：合并严重精神疾病、认知功能障碍的孕妇，需在精神科专科医师指导下联合干预。
证据质量：低级。
推荐强度：弱推荐。

5.5 针刺/耳穴

适用对象：孕前肥胖或孕期体重增长超标且无针灸禁忌及高危妊娠因素的单胎妊娠女性。
推荐意见：在专业规范操作下开展针刺、耳穴特色中医干预以管控孕期体重异常增长。
实施要点：由具备资质的专业人员进行针刺或耳穴操作，严格把握妊娠期针刺禁忌穴位与手法，操作过程若出现腹部、腰骶部坠胀、疼痛或胎动异常，需立即终止。
禁忌/慎用：有先兆流产、凝血功能异常、皮肤破损感染等风险的孕产妇谨慎应用，需专科评估。
证据质量：高级。
推荐强度：强推荐。

5.6 中医芳香疗法

适用对象：孕前肥胖或孕期体重增长超标，且妊娠 16 周后、无精油过敏史、存在睡眠差及身心疲劳的单胎妊娠女性。
推荐意见：推荐将中医芳香疗法作为孕期体重综合管理的辅助干预手段。
实施要点：在医生指导下，针对妊娠 16 周后、无过敏史的纳入管理对象的孕妇，

作为综合管理的辅助措施使用薰衣草精油嗅吸或苦橙精油经鼻吸入。

禁忌/慎用：精油过敏禁用、过敏体质慎用。

证据质量：极低。

推荐强度：弱推荐。

5.7 综合干预与管理模式：包含饮食、运动、作息、健康教育等

适用对象：孕前肥胖或孕期体重增长超标的单胎妊娠女性。

推荐意见：推荐在专业指导下实施个体化综合生活方式干预管理。

实施要点：肥胖孕妇在专业指导下接受综合生活方式管理，包括膳食指导、运动干预、作息管理、健康教育等，以有效控制孕期体重增长，降低妊娠期并发症发生率。

禁忌/慎用：合并运动禁忌证、严重内外科疾病及危重产科并发症者，需多学科专科评估后定制干预方案。

证据质量：高级。

推荐强度：强推荐。

5.8 并发症筛查：先兆流产（固肾安胎类药膳）、糖尿病（山药薏米粥、八段锦）、高血压（八段锦、穴位按摩、药膳）

5.8.1 先兆流产

推荐意见：对高危孕妇在孕早期进行先兆流产风险筛查，并根据筛查结果实施分层管理。

筛查对象：孕前或早孕期 BMI ≥ 30 kg/m^2，或年龄≥ 35 岁，或有反复流产史、先兆流产史者[13]。

筛查时点：孕早期（建议于孕 6～10 周）。

筛查方法：联合超声检查与血清内分泌指标。

a） 超声指标：胚芽顶臀长（CRL）、孕囊（MSD）、卵黄囊、胚胎心管搏动、头臀长、胎心率。

b） 血清指标：孕酮（Progesterone，Prog）、β-人绒毛膜促性腺激素（β-hCG）。

异常阈值：

a） 超声指标：CRL≥7 mm 无胎心或 MSD≥25 mm 无胚芽等，为明确诊断非存活妊娠（妊娠失败）的核心标准[14]；胎儿心动过缓、胎龄与头臀长不匹配时，流产风险从 6%升至 84%[15]。

b） 血清指标：Prog<45 nmol/l（14 ng/ml）提示异常妊娠（敏感度 87.6%，特异度 87.5%）；β-hCG < 20 ng/ml 提示异常妊娠（敏感度 88.3%，阳性预测值 82.6%）[15]。

实施要点：

a） 对筛查阳性者，建议加强动态监测（结合激素水平变化，必要时 1~2 周复查），增加雌二醇作为可选监测指标。

b） Prog 补充可降低流产风险（需在确诊宫内妊娠后规范使用）。

c） 中医方式预防：中医辨证施膳及茶饮（如固肾安胎类药膳），有助于降低先兆流产发生率，但应在中医师指导下根据个体体质选用。

禁忌/慎用：难免流产、不全流产、急症妇科出血患者需立即专科干预，不可单纯保守调理。

证据质量：低级。

推荐强度：弱推荐。

5.8.2 妊娠期糖尿病

推荐意见：对纳入管理对象的孕妇尽早进行妊娠期糖尿病（GDM）早期筛查与分层管理。

筛查对象：所有纳入管理对象的孕妇，尤其具备以下高危因素者：年龄≥35 岁、孕前 BMI ≥ 30 kg/m^2、有 GDM 病史、糖尿病家族史[16-20]。

筛查时点：首次产检时（孕早期）尽早进行筛查；若首次筛查阴性，于孕 24～28 周再次筛查[21,22]。

筛查方法：采用 75 g 口服葡萄糖耐量试验（OGTT），测定空腹血糖、服糖后 1 小时及 2 小时血糖。

异常阈值（符合以下任一即诊断 GDM）：

空腹血糖≥ 5.1 mmol/l（92 mg/dl）；

服糖后 1 小时血糖≥ 10.0 mmol/l（180 mg/dl）；

服糖后 2 小时血糖≥ 8.5 mmol/l（153 mg/dl）。

实施要点：

a） 生活方式干预：控制总热量、低升糖指数（GI）饮食、规律有氧运动。若生活方式干预后血糖不达标，转诊内分泌科或产科，必要时启动胰岛素治疗。

b） 中医方式预防：药膳（如山药薏米粥、滋啐饮）、传统功法（如八段锦），可降低 GDM 发病率，改善母婴结局。

c） 血糖控制目标：空腹血糖<5.3 mmol/l，餐后 2 小时血糖<6.7 mmol/l。

禁忌/慎用：合并严重糖代谢异常、特殊遗传性代谢病及危重产科并发症孕妇，需内分泌与产科联合评估，个体化制定干预方案。

证据质量：中级。

推荐强度：强推荐。

5.8.3 妊娠期高血压

推荐意见：对高危孕妇进行妊娠期高血压疾病早期筛查与分层管理。

筛查对象：孕前或早孕期 BMI ≥ 30 kg/m^2，或年龄≥ 35 岁，或有慢性高血压病史、子痫前期病史、抗磷脂综合征病史者[23,24]。

筛查时点：首次产检时（孕早期）进行基线评估；孕 20 周后每 2～4 周复查血压及相关指标。

筛查方法：

规范血压测量；联合平均动脉压（MAP）、子宫动脉搏动指数（UtA-PI）、胎盘生长因子（PlGF）等[25-27]。

异常阈值：

血压：收缩压≥ 140 mmHg 和/或舒张压≥ 90 mmHg（间隔 4 小时以上两次测量）；若合并蛋白尿或靶器官损害，诊断子痫前期；MAP、UtA-PI、PlGF 的具体阈值可参考本地实验室标准。

实施要点：

1.生活方式干预：充足休息、避免劳累、低盐饮食；

2.中医方式预防：药膳食疗、传统功法（如八段锦）、穴位按摩（如太冲、足三里），可降低子痫前期及妊娠期高血压疾病发生率；

3.血压控制目标：<140/90 mmHg；若出现重度高血压（≥160/110 mmHg）或子痫前期症状，及时转诊产科，必要时启动降压药物治疗。

禁忌/慎用：重度高血压、重度子痫前期、严重心肝肾疾病及危重孕产妇，需产科

专科监护与对症治疗。

证据质量：中级。

推荐强度：强推荐。

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附录 A
（资料性）
指南制定流程

图 A.1　标准审定程图

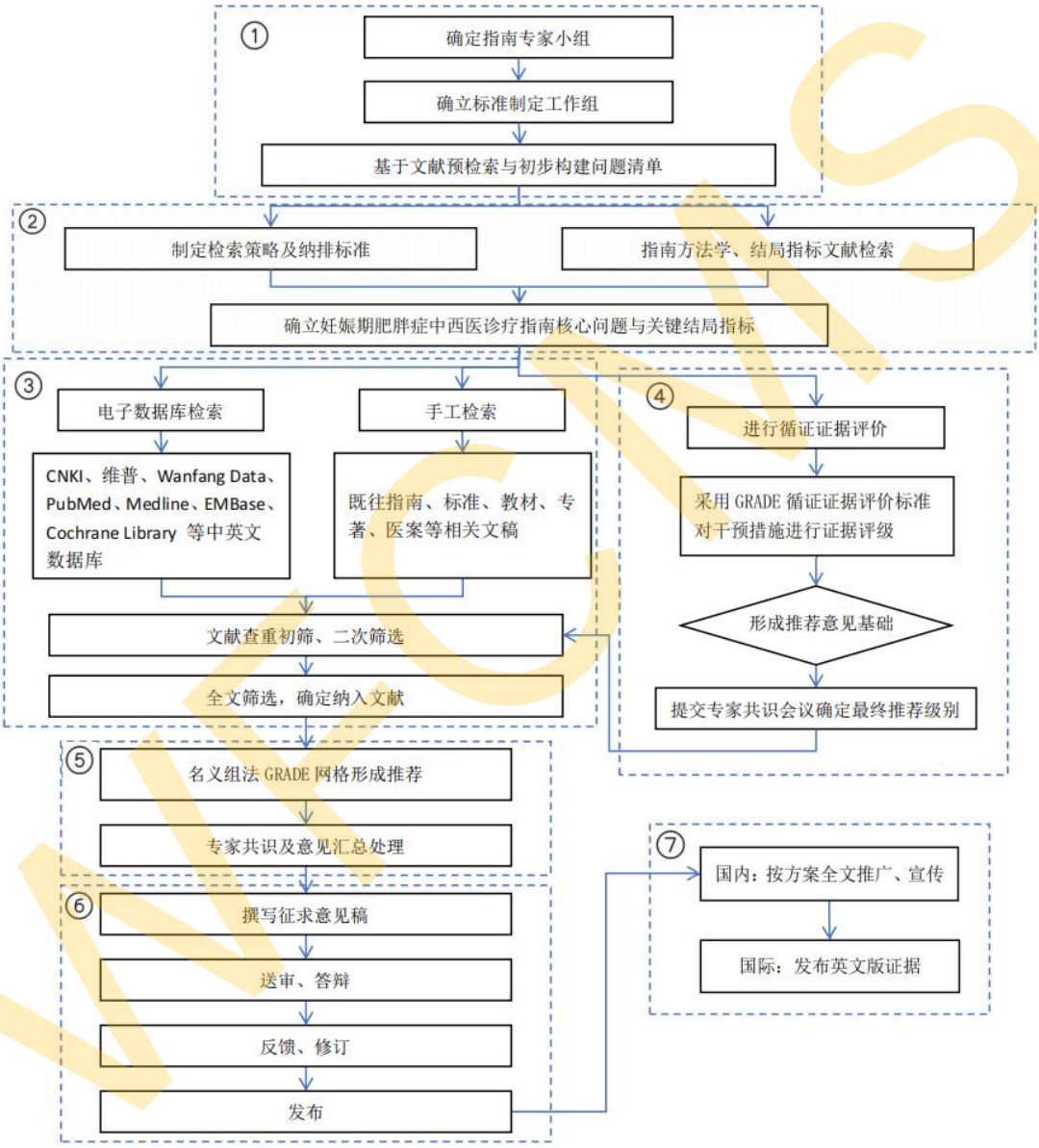

表 A.1　系统检索与证据合成简表

推荐主题	检索来源与时限	纳入研究	研究对象	关键结局	合成方法	质量评价工具	对应推荐条目
运动管理	数据库 PubMed、Embase、WOS、CNKI、WANFANG，建库至 2026 年 3 月	16 项 RCT，*n*=2742	单胎妊娠、肥胖或 GWG 超标	GWG、GDM、剖宫产、不良事件	Meta 分析	Cochrane RoB + GRADE	5.2
饮食管理	同上	2 项 RCT+间接证据，*n*=244	同上	GWG、GDM、妊高征	定量+定性综合	Cochrane RoB/NOS + GRADE	5.3
情志管理	同上	1 项 RCT + 2 项 Meta + 综述，*n*=2116	单胎妊娠、肥胖或 GWG 超标	抑郁、睡眠、压力性进食	定性综合为主	AMSTAR/NOS + GRADE	5.4
针刺/耳穴	同上	2 项 RCT，*n*=393	单胎妊娠、肥胖或 GWG 超标且无针灸禁忌和 HRP	GWG、不良事件	Meta 分析	Cochrane RoB + GRADE	5.5
芳香疗法	同上	2 项 RCT，*n*=142	无精油过敏史和存在睡眠、疲惫问题，单胎妊娠 16 周后女性	睡眠质量、不良事件	定量/定性综合	Cochrane RoB + GRADE	5.6
综合生活方式	同上	20 项 RCT，*n*=8430	肥胖或 GWG 超标单胎妊娠	GWG、GDM、妊娠并发症、剖宫产	Meta 分析	Cochrane RoB + GRADE	5.7

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附录 B
（规范性）
肥胖评定标准

表 B.1　世界卫生组织（WHO）肥胖标准

WHO 体重指数（BMI）分类	BMI 范围（kg/m^2）
体重过轻	<18.5
正常体重	18.5~24.9
超重	25.0~29.9
肥胖 I 类	30.0~34.9
肥胖 II 类	35.0~39.9
肥胖III类	≥40.0

表 B.2　亚洲人群超重及肥胖标准

亚洲人群的肥胖标准	BMI 范围（kg/m^2）
轻度肥胖症	28.0~32.4
中度肥胖症	32.5~37.4
重度肥胖症	37.5~49.9
极重度肥胖症	≥50.0

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附录 C
（规范性）
孕期体重增长推荐目标

C.1　适用于欧美女性的标准：

根据 2009 年美国医学研究所（IOM）发布的妊娠期体重建议，构成美国人口的各个种族或民族亚群中 BMI≥30 kg/m^2 的孕妇孕期应增重＜5 kg～9 kg，见表 C.1。

表 C.1　按孕前 BMI 划分的妊娠期总体重增加和体重增加率的新建议

孕前 BMI	总体重增加			孕中期和孕中期体重增加率*	
	范围（kg）	范围（lbs）		平均值（范围） 单位 ：kg/周	平均值（范围） 单位：磅/周
低体重（<18.5kg/m^2）	12.5-18	28-40		0.51 (0.44-0.58)	1 (1-1.3)
正常体重（18.5～24.9kg/m^2）	11.5-16	25-35		0.42 (0.35-0.50)	1 (0.8-1)
超重（25.0～29.9kg/m^2）	7-11.5	15-25		0.28 (0.23-0.33)	0.6 (0.5-0.7)
肥胖（≥30.0 kg/m^2）	5-9	11-20		0.22 (0.17-0.27)	0.5 (0.4-0.6)
注：该推荐值不适用于身高＜157cm 或年龄＜20 岁、多胎妊娠的孕妇。					

C.2　适用于亚洲女性的标准：

2021 年 9 月中国营养学会发布《中国妇女妊娠期体重监测与评价》，制定了中国妊娠期妇女体重增长范围和妊娠中晚期每周体重增长推荐值，见表 C.2。

表 C.2　妊娠期妇女体重增长范围和妊娠中晚期每周体重增长推荐值

孕前 BMI（kg/m^2）类型	总增长至（kg）	孕早期增长值（kg）	孕中晚期增长值（kg/w）
低体重（BMI＜18.5）	11.0-16.0	0-2.0	0.46(0.37-0.56)
正常体重（18.5≤BMI＜24.0）	8.0-14.0	0-2.0	0.37(0.26-0.48)
超重（24.0≤BMI＜28.0）	7.0-11.0	0-2.0	0.30(0.22-0.37)
肥胖（BMI≥28.0）	5.0-9.0	0-2.0	0.22(0.15-0.30)

附录 D
（规范性）
GRADE 证据质量与推荐强度分级方法

表 D.1　GRADE 证据质量分级

质量等级	定义	典型证据来源
高（High）	非常确信真实效应接近效应估计值。	无重大局限的 RCT 或 RCT 的系统评价/Meta 分析。
中（Moderate）	对效应估计值有中等信心：真实值可能接近估计值，但存在一定差异的可能性。	RCT 存在部分局限性；或观察性研究具有大效应量、剂量反应关系等升级因素。
低（Low）	对效应估计值的信心有限：真实值可能与估计值差异较大。	观察性研究（队列、病例对照）或 RCT 存在严重局限性。
极低（Very low）	对效应估计值几乎没有信心：真实值很可能与估计值差异很大。	病例系列、病例报告、专家意见；或观察性研究存在严重局限性。

表 D.2　GRADE 推荐强度分级

推荐强度	定义	临床表述
强推荐（↑↑）	获益明显大于风险与负担，或风险与负担明显大于获益，几乎适用于所有患者。	“一定做”/“一定不做”。
弱推荐（↑）	获益与风险、负担相当，或获益不确定，需根据患者具体情况、价值观与偏好进行选择。	“可能做”/“可能不做”。
无明确推荐（/）	利弊相当或不确定，无明确倾向。	“不确定”。

表 D.3　GRADE 证据质量降级因素

因素	说明
偏倚风险	研究设计或实施存在局限性（如未随机、未盲法、失访率高）。
不一致性	不同研究结果差异大，无法解释。
间接性	研究人群、干预、对照、结局与临床问题不完全匹配。
不精确性	样本量小、置信区间宽，效应估计不精确。
发表偏倚	可能存在未发表的阴性结果。
注：每存在一项，可降低 1 级，严重时降 2 级	

表 D.4　GRADE 证据质量升级因素

因素	说明
大效应量	效应值大（RR>2 或 RR<0.5）。
剂量反应关系	暴露与效应呈明确量效关系。
混杂偏倚	可能的混杂因素会降低效应，但实际效应仍存在。
注：观察性研究可升级	

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附录 E
（资料性）
中医证型及其它干预方式

E.1 使用说明

本附录用于补充正文推荐条目的辨证思路、候选干预方案及实施要点，供临床理解、研究设计及专家讨论参考。附录内容不单独构成新的推荐意见，其证据等级与推荐强度以正文相应条目为准。根据现有证据情况，附录内容统一分为以下三类：

a） 与正文一致的实施要点：用于补充正文已推荐干预的实施细节（不单独构成新的推荐意见。证据等级与推荐强度以正文对应条目为准，临床应用时应结合孕周、风险分层及专科评估执行。）；

b） 可供参考的候选方案：可作为辅助管理参考，但不作为常规推荐路径（现有证据多为间接证据，且针对妊娠期肥胖人群的直接高质量研究不足。）；

c） 仅供研究设计参考：证据不足或安全性边界尚不清晰，不作为常规推广方案（本部分内容主要来源于中医临床经验、古籍、观察性研究或非直接证据，针对妊娠期肥胖人群的高质量直接研究不足；同时部分方案涉及妊娠期特殊安全性问题，不作为常规推荐路径，仅供研究设计、专家讨论或在严格评估下个体化参考。）。

E.2 与正文一致的实施要点

E.2.1 运动管理

E.2.1.1 日常锻炼

建议孕期持续干预，从妊娠期第 10 周至 36 周都可进行日常锻炼[28]。在专业指导下，主要采用中等强度身体活动[29,30]，包括步行、游泳、固定自行车[31]、健身课程[28]；配合力量与柔韧性训练[28,29,31]：二头肌卷曲、手臂侧举、膝关节伸展[32]、瑜伽[33]。每天至少半小时[30]，每周至少 150 min[31]，频率 3～5 次/周，每次 45 min～60 min[32]。孕中期（13~28 周）：可增加至每周 3~4 次，每次 45 min。孕晚期（29~40 周）：以 20 min~30 min 短时长运动为主[34]。

注：有以下情形者不适宜锻炼：胎盘异常、胎膜早破或早产高风险、重度子痫前期或血压控制不佳、严重心血管疾病、重度阻塞性睡眠呼吸暂停综合征、妊娠期糖尿病血糖控制极差、胎儿生长受限或窘迫等。

E.2.1.2 中医传统功法

太极：每周 2~3 次，每次 60 min~90 min，持续 1~6 个月[35-37]。

八段锦：每周 3 次，每次 60 min，持续 3 个月[38,39]。

五禽戏：每周 3~6 次，每次 30 min~45 min，持续 6 个月[36]。

易筋经：每周 7 次，每次 60 分钟，持续 3 个月[40]。

六字诀：每日 1~2 次，每次 20 min~30 min，持续 3 个月[41]。

从妊娠 16 周（孕中期）开始，以低至中等强度的训练为主，强调动作舒缓、配合呼吸与冥想。

注：宫颈机能不全、胎膜破裂、早产、持续性阴道出血、子痫前期、轻/中度心血管疾病或呼吸系统疾病、哮喘控制不佳、糖尿病未控制、高血压未控制、甲状腺疾病未控制、可能因体力活动

加重的骨关节问题、前置胎盘、症状性贫血、饮食失调、营养不良及宫内生长受限等[42]。

E.2.2 饮食管理

建议妊娠期肥胖妇女每日能量摄入中脂肪占 25%～30%，膳食纤维 25 g~30 g。采用“3-2-1”蔬菜模式（叶菜 150 g+瓜果 100 g+菌藻 50 g），搭配鱼禽蛋豆等优质蛋白 120 g/d、奶类 500 ml、健康油脂 25 g。安排 3 次主餐（早 25%、午晚各 30%）+2 次加餐（5%），优先蒸煮炖，注意选择低 GI 食物控制血糖[43-45]。

注：血糖较高的孕妇需减少水果摄入，尿酸较高的孕妇应减少菌藻摄入。

E.2.3 针刺干预

E.2.3.1 孕妇人群应用针刺的安全性说明

针灸因其临床有效性和安全性被广泛使用[46]。美国国立卫生研究院（NIH）于 1997 年发表了“NIH 针灸共识声明”，针灸在治疗妊娠期恶心呕吐、妊娠期的各种疼痛、抑郁、失眠和其他精神疾病方面具有显著疗效[47]。针灸相关不良事件，通常是由于操作不当所致。在训练有素的从业者手中，针灸本质上可被视为安全的治疗方式[48]。高质量的循证文献支持针灸可用于治疗妊娠期疾病的临床有效性和安全性，报告的不良反应包括刺痛、瘀点、疲劳和嗜睡[46]。

E.2.3.2 针刺（毫针）操作

主穴：中脘、关元、足三里。辨证加减：脾虚湿阻配丰隆；胃肠实热加上巨虚、内庭；肝郁气滞配太冲；脾肾阳虚配肾俞、脾俞。进针手法轻柔，具体进针深度约为 20 mm。疗程：隔日 1 次，每次 30 min，共干预 12 周[49-61]。

E.2.4 妊娠并发症的筛查

肥胖是育龄女性最常见的健康问题[17]。不仅危害孕期女性健康，还会导致妊娠并发症发生的风险升高。纳入管理对象的孕妇患妊娠期糖尿病的可能性是正常体重女性的 3 至 4 倍[16,17]。同时，妊娠期高血压疾病的发生率也显著升高，子痫前期风险随 BMI 增加呈现剂量－反应关系，BMI 每增加 5~7 个单位，风险可翻倍[62]；重度肥胖（II/III 级）女性的风险更是比 I 级肥胖（BMI 30.0~34.9）高出 3 至 4 倍[62,63]。此外，肥胖还与流产及复发性流产风险增加相关[64-67]。鉴于肥胖显著增加妊娠期糖尿病、妊娠期高血压疾病及先兆流产风险，因此纳入管理对象的孕妇除重视体重管理外，对其进行常见并发症的有效筛查并实施针对性预防措施也至关重要，更是中医“治未病”理念的重要实践。

E.2.4.1 妊娠期肥胖并发先兆流产

E.2.4.1.1 早期风险评估

高危窗口期：孕早期重点筛查，纳入管理对象的孕妇较正常体重者流产风险升高[13]。

E.2.4.1.2 预测因子

BMI≥30 kg/m^2[尤其合并胰岛素抵抗、多囊卵巢综合征（PCOS）者风险倍增]。

内分泌指标：早孕期血清 Prog<45 nmol/l、β-hCG 翻倍异常（游离β-hCG 值为 20 ng/ml，β-hCG 在 48 小时内增加<66%，生物活性/免疫反应比β-hCG<0.5）、空孕囊>15~17 mm[15]。

E.2.4.1.3 动态监测方案

超声监测：孕 6~8 周首次超声（确认胎心）；高危者每 1~2 周复查胚胎发育，至产前。
激素水平：血清 Prog + β-hCG + 雌二醇（可选用），至孕 12 周。

E. 2. 4. 2 妊娠期肥胖并发妊娠期糖尿病

E. 2. 4. 2. 1 早期风险评估

纳入管理对象的孕妇应尽早进行妊娠期糖尿病（GDM）筛查，尤其年龄≥35 岁、孕前 BMI≥30 kg/m^2、有 GDM 病史及糖尿病家族史的孕妇需根据情况在孕 28 周时重复检测[18-20]。对于纳入管理对象的孕妇，连续的血糖监测（CGM）在早期妊娠中能够更准确地预测 GDM 及其不良妊娠结局[68]。

E. 2. 4. 2. 2 预测因子

若纳入管理对象的孕妇既往妊娠葡萄糖挑战试验（GCT）结果＞140 mg/dl（7.8 mmol/l）、空腹血糖水平（FPG）＞5.7 mmol/l、早期妊娠的糖化血红蛋白（HbA1c）水平＞5.3%、空腹胰岛素水平升高及常见血脂指标水平异常（包括甘油三酯（TG）及低密度脂蛋白（LDL）水平升高、高密度脂蛋白（HDL）水平降低）均提示 GDM 风险增高[20,69-72]。纳入管理对象的孕妇应及时监测其水平变化，预防 GDM 发生。

E. 2. 4. 2. 3 动态监测

a） BMI：纳入管理对象的孕妇应监测体重变化（每周至少测量 1 次体重，测量时间为每个孕周的最后一天）至产前，以保证体重的合理增长，预防 GDM 的发生[21]。

b） 血糖：孕妇应按照医生的建议定期监测血糖至产前，包括空腹血糖、餐后 1 小时血糖和餐后 2 小时血糖等[22]。建议 GDM 孕妇的妊娠期血糖控制目标为 FPG 及餐前血糖<5.3 mmol/l、餐后 1 h 血糖<7.8 mmol/l 或餐后 2 h 血糖<6.7 mmol/l，避免夜间血糖<3.3 mmol/l。

E. 2. 4. 3 妊娠期肥胖并发妊娠期高血压

E. 2. 4. 3. 1 早期风险评估

于孕 11-13+6 周进行风险评估[25,26]。

E. 2. 4. 3. 2 预测因子

孕前或孕早期 BMI ≥ 30 kg/m^2，产妇年龄≥35 岁，既往有慢性高血压病史，子痫前期病史，抗磷脂综合征病史显著增加了妊娠期高血压风险[23,24]。并发妊娠期肥胖的风险随着患者的平均动脉压（MAP）、子宫动脉搏动指数（UtA-PI）、乳酸脱氢酶（LDH）、尿酸（UA）水平的升高而增加，随着外周血胎盘生长因子（PLGF）水平增加而降低[26,27]。

E. 2. 4. 3. 3 动态监测

a） 血压：每次产检测量（对于有子痫前期风险的孕妇，应考虑提供家庭血压监测并指导其使用）[73]。

b） 尿蛋白：尿常规或 24 h 尿蛋白定量，每次产检测量[73]。

E. 3 可供参考的候选方案

E. 3. 1 情志调节（不包含穴位刺激方式）

妊娠期肥胖人群因下丘脑-垂体-肾上腺轴功能异常、免疫调节紊乱、体型不满、受到体重相关的歧视及暴食行为，故易发生孕期焦虑/抑郁，进而导致早产、胎儿神经发育异常及

后代长期心理行为问题等不良结局[11,12]。情志调节包括五音疗法、古琴及正念干预等多种方法，从多维度调节身心状态，缓解不良情绪，促进整体身心和谐。

E.3.1.1 中医五音疗法

中式五音为宫、商、角、徵、羽，对应土、金、木、火、水及脾、肺、肝、心、肾，旋律婉转可调和身心、平衡气血。每天 1 h，持续 30 d，使用基于五行理论的民间音乐[7,8]。

E.3.1.2 古琴

亦称瑶琴、玉琴、七弦琴，是中国最古老的弹拨乐器之一，有着悠久历史和丰富文化内涵。每次 30 分钟，每周 5 天，持续 8 周[74]，建议作为日常保健可每日睡前聆听 15 min~20 min，或每周参与 1~2 次集体演奏活动[9]。

E.3.1.3 正念干预

可作为改善情绪状态、睡眠质量及压力性进食风险的辅助干预。配合孕妇减重，强调调动全身与心灵一起参与，唤醒肥胖者在简单的吃喝、运动中形成自我觉察，找到快乐的途径[10]。包括正念综合认知行为疗法、正念认知疗法、基于正念的分娩和育儿干预以及基础正念干预，通过引导孕妇进行正念练习，改变其认知和心理状态，从而缓解焦虑。专家指导的干预频率为每周 1~8 次，每次练习时长 6 min~180 min 不等，持续时间从 3 d 到 8 周[75]。

E.3.2 中医芳香疗法

a） 薰衣草精油：1） 局部涂抹：将含 1.25%薰衣草精油的乳膏涂抹于腿部，或与足浴结合使用；或使用含 2%薰衣草精油的按摩油进行全身按摩（头部、颈部、肩部等）。2）吸入疗法：通过芳香吊坠或扩散器吸入薰衣草精油，部分研究结合古典音乐增强效果。3）局部涂抹每日 1 次，吸入方式为将 3 滴薰衣草精油滴于面纸中，在距离鼻尖 10 cm 处嗅闻 20 min[76,77]。

b） 橙花精油：将 3 滴橙花精油滴在非吸收性手帕上，用别针固定在衣领处，每次吸入 1 h。持续 1 个月，每周 3 次（在偶数天进行）[78,79]。

c） 柠檬精油：将香茅和柠檬混合精油进行芳香疗法，通过扩散器吸入，连续 7 d，每晚睡前每 2 小时吸入 1 次[80]。

注：限妊娠 16 周后、无精油过敏史者；不建议口服，不建议腹部皮肤涂抹；其他精油方案仅供研究设计参考。

E.4 仅供研究设计参考

E.4.1 辨证

E.4.1.1 脾虚湿阻证

主症：妊娠数月，肥胖，面浮肢肿，神疲乏力，身体困重，脘腹痞闷，小便不利，大便溏或便秘。

次症：或有四肢轻度浮肿，懒言少动，口淡纳差。

舌脉：舌质淡胖，边有齿印，苔薄白或白腻，脉缓或濡细。

E.4.1.2 胃肠实热证

主症：妊娠数月，肥胖，多食，消谷善饥，多汗，大便干结，小便黄。

次症：口臭，或有口干口苦，口渴喜饮。
舌脉：舌质红，苔黄腻，脉滑数。

E.4.1.3 肝郁气滞证

主症：妊娠数月，肥胖，胸胁苦满，胃脘痞满，肢体肿胀，皮色不变，压痕不显。
次症：情绪不宁，精神抑郁，失眠多梦，喜太息。
舌脉：舌暗红，苔白或薄腻，脉弦。

E.4.1.4 脾肾阳虚证

主症：妊娠数月，肥胖，胎萎不长，畏寒，疲乏无力，带下量多，质稀，腰酸腿软，小便清长，大便稀溏。
次症：虚浮肿胀，小腹隐痛，喜暖喜按，纳呆。
舌脉：舌淡，苔薄白，脉沉细无力。

E.4.2 辨证管理

E.4.2.1 脾虚湿阻证

治则治法：健脾益气，渗利水湿。
参考方药：白术散（《全生指迷方》）
注：含大腹皮行气下气易动胎元，其所含生物碱可刺激子宫平滑肌，易诱发宫缩，妊娠期慎用。

E.4.2.2 胃肠实热证

治则治法：清泄胃热，通腑泄浊。
参考方药：佩连麻黄汤（《肥胖症中医诊疗方案专家共识》）
注：含麻黄可能对子宫具有兴奋作用，妊娠期慎用。

E.4.2.3 肝郁气滞证

治则治法：疏肝解郁，行气化痰。
参考方药：正气天香散（《医学纲目》）
注：含乌药，有小毒，香附辛香走窜，可能兴奋子宫平滑肌，扰动胎气，孕早期尤忌，孕中晚期也需严格配伍安胎药，苏叶：辛温，有刺激子宫平滑肌收缩风险，另紫苏梗可抑制子宫收缩，机制近似黄体酮，可达安胎作用，乌药+干姜+陈皮整体偏温燥行气，孕期慎用。

E.4.2.4 脾肾阳虚证

治则治法：补益脾肾，温阳利水。
参考方药：真武汤（《伤寒论》）
注：含附子为药典孕妇慎用药）合寿胎丸（《医学衷中参西录》。

E.4.3 温针

主穴：a 组，脾俞、肾俞；b 组，中脘、足三里。具备资质的专业医师在毫针疗法的基础上，可交替选择上述 a、b 组穴位进行温针灸干预。疗程：隔日 1 次，共干预 12 周[81,82]。

E.4.4 艾条温和灸

选定穴位[83]：足三里、脾俞、胃俞，3 个穴位中每次选择 2 个穴位施灸。选择艾条灸

中的温和灸法：点燃艾条，将点燃的一端，在距离施灸穴位皮肤 2 min~3 cm 处进行熏灸。施灸过程中注意观察孕妇局部皮肤情况及全身症状，适时询问孕妇有无不适反应。温和灸以局部有热感而无灼痛为宜。灸至局部皮肤稍起红晕为度，每处灸 5 min~7 min[84]。灸后嘱孕妇不能喝冷水，多喝温开水，半小时内不能用冷水洗手或洗澡。施灸每日 1 次，7 天为 1 个疗程。操作过程中注意保持舒适体位，注意观察胎心和胎动情况。

E.4.5 中药穴位贴敷

中药配方[83]：丁香、炮姜、吴茱萸、胡椒及艾叶（**注**：药性辛热温通，丁香吴茱萸艾叶有小毒，成分透皮吸收可兴奋子宫平滑肌，妊娠期慎用；禁止在下腹部、腰骶部及子宫相关穴位敷贴，胡椒辛热走窜，含胡椒碱类挥发油。可能扰动气血，炮姜性味辛热，妊娠期慎用），按一定比例调配，研成细末密封藏。取生姜少许榨汁与药末调成糊状制成直径约 1 cm 的药丸，分别置于足三里、上下巨虚、脾俞、胃俞穴，随证加减，每次取 2 穴即可。用不透气的敷贴进行穴位贴敷，每 6 h~8 h 更换 1 次，更换时用生理盐水清洗穴位处。观察贴敷部位皮肤变化，防止过敏，局部皮肤破损等情况[85]，并观察胎心及胎动情况。嘱孕妇贴敷期间，避免食用寒凉、腥发、辛辣、刺激性食物。每日 1 次，7 天为 1 个疗程，共做 2 个疗程。

E.4.6 中药干预

鉴于妊娠期女性生理的特殊性，药膳和茶饮可作为中医辨证调养的候选方式，用于研究设计或个体化参考；应用前应由专业医师评估其安全性、适用性及潜在禁忌。

E.4.6.1 辨证施膳

饮食管理是妊娠期肥胖干预的重要部分。中医强调“辨证施膳”和“代茶饮调养”，即依据孕妇不同证型选用相应功效的药食同源食材，按证型给出具体食谱（粥、汤、茶饮等），含做法、用法及热量，给予药膳调理和简便茶饮方。注意使用前务必咨询专业医师，评估安全性与适用性。

E.4.6.1.1 脾虚湿阻证

a） 膳食：1） 建议纳入管理对象的孕妇饮食中可选择性加入白扁豆（孕妇须炒用）、大枣、山药、龙眼肉（龙眼肉滋腻助湿满；温燥又可能助热，孕期需由专业医师评估使用）、茯苓、橘皮、莲子[86]。2） 鲤鱼汤：鲤鱼，白术，陈皮[87]；

b） 茶饮：橘枣茶：大枣、橘皮。大枣去核，炒焦，橘皮洗净，一起用沸水冲泡 10 分钟。用法用量：代茶饮，温热频服，枣可食用[88]。

E.4.6.1.2 胃肠实热证

膳食及制法：

铁皮石斛玉竹煲瘦肉：猪瘦肉 60 g，铁皮石斛，玉竹（性微寒，过量腹痛腹泻；低血压、过敏忌）。制作方法：所有食材洗净放进瓦煲内，加入清水，大火煲沸后，改为小火煲 1 小时，放入精盐适量。用法用量：可佐餐食用，温服。酌情每日或隔日食用 1 次[89]。

茶饮

黄芩、茯苓、白术、枳实（妊娠慎用药）、甘草泡水饮用[90]。

E.4.6.1.3 肝郁气滞证

a） 膳食：建议纳入管理对象的孕妇饮食中可选择性加入佛手（含柠檬烯挥发油，孕

早期、有流产史、先兆流产者慎用，孕期需医师指导使用）、橘皮、粳米。所有食材洗净，将佛手、橘皮用纱布包起，与粳米一起放入锅中，加适量清水，大火煮沸后改为小火煲 30 分钟。用法用量：可作为主食食用。每周 3~5 次[86,89]。

b） 茶饮：山楂饮：山楂（活血散瘀，易刺激子宫收缩，妊娠期慎用），陈皮泡水饮用[87]。

E.4.6.1.4 脾肾阳虚证

膳食：

a） 建议纳入管理对象的孕妇饮食中可选择性加入芡实、山药、茯苓[86]。

b） 羊肉炒大葱：瘦羊肉，大葱（辛温，通阳气,孕早期慎用，适量不宜过量）。

c） 胡桃枸杞粥：胡桃肉，枸杞，黑芝麻，粳米[87]。

E.4.7 情志调节

E.4.7.1 皮内针

具备专业资质的针灸师，在确保角度、深度安全的情况下，选定穴位：神门、内关、太冲，双侧取穴。使用 0.20 mm×1.5 mm 或 0.20 mm×1.2 mm 的皮内针垂直刺入皮肤，6 周内进行 10 次，每 4 天 1 次，每次留置 72 小时，移除后休息 1 天[91,92]。

E.4.7.2 普通针刺

具备专业资质的针灸师进行操作，选定穴位：太溪、神门、足三里、内关、百会、风池、安眠等穴位，使用 0.340 mm 或 0.325 mm 不锈钢针垂直刺入，行逆时针捻转手法至得气后留针 30 min，3 周内进行 10 次干预，第 1 周 4 次，后续每周 3 次[93]。

E.4.7.3 脑针

具备专业资质的针灸师选取颅骨表面特定区域，枕外隆凸上 0.5 cm 的中线处定位，后续穴位间隔 2 cm，局部麻醉后快速垂直进针至骨面，针尖刺入骨膜约 1 mm，操作时间约 60 s，共 15 次，前 5 次连续干预 5 天，剩余 10 次每隔一天干预 1 次[94]。

E.4.7.4 耳穴

具备专业资质的针灸师进行操作，选定穴位：神门、肾穴、交感穴，作为“开启点”激活其他穴位；之后选定：脑干、脾穴、焦虑穴，还可选内脏神经系统穴、心穴、垂前、生殖器、内分泌。使用王不留行籽（黄色油菜籽）贴于耳穴，需每日手动按压穴位 10 次，每次约 10 s，若穴位不适则停止按压，单侧贴敷，每次交替左右耳，三天一次[95-97]，操作过程确保手法符合安全规范。

E.4.7.5 穴位按压

选定穴位：照海、阴陵泉、列缺、梁丘、外关、阳池、内关、天柱、流点[98]，手指、拇指施加垂直压力于穴位，可结合被动拉伸和关节旋转，每日按压 2~3 次，每次 1 min~2 min[99]。因三阴交容易导致宫缩，故在干预期间需密切关注孕妇状态及宫缩情况。

E.4.7.6 茶饮

妊娠期伴有焦虑/抑郁的可考虑选用以下药物：橘皮、薄荷、柴胡、香附、紫苏叶、郁金、栀子（此类药多为行气药，妊娠期慎用，需在专业医生指导下使用），均匀打碎并磨成粉，混合均匀后取药粉装入茶包袋中，每次 1 包，加 500 ml 水，用茶壶煎煮 15 min，代茶饮[100]。

E.4.8 妊娠并发症的预防

E.4.8.1 妊娠期肥胖并发先兆流产

E.4.8.1.1 中医预防

药膳

a） 巴戟枸杞猪腰汤：巴戟（温燥助阳，易滋生内热、扰动胎元，妊娠肥胖、有先兆流产史者慎用，妊娠期需医师指导使用）、枸杞、党参、陈皮、红枣、新鲜猪腰 1 个，洗干净猪腰后去除内膜臊筋，将所有材料放入砂锅，放少许食盐、适量水，旺火煮开后文火慢炖 60 min 食用[101]。

b） 砂仁枸杞蒸鸡：春砂仁（打碎，砂仁理气安胎，但打碎后挥发油（樟脑、乙酸龙脑酯）释放量大幅提升，刺激性变强，风险高于整粒砂仁）、枸杞、土鸡肉 500 g，鸡肉剁块后焯水、去除血沫，倒入汽锅，放入适量的盐、葱、生姜、砂仁、枸杞，蒸半个小时后食用[101]。

c） 食疗粥：饮食中添加枸杞子、熟地黄（易致腹泻）、当归（可活血，孕早期谨慎应用）、山药、人参（热证谨慎应用）、大枣（在医生指导下应用，避免自行用药）等补益之品，摄入优质蛋白质（牛奶、鸡蛋等）。

d） 党参、玉竹、百合（含秋水仙碱类（微量，鲜百合更高），久服或过量可能胃肠不适）、山药、红莲子、枸杞子、大枣等加减方，与瘦肉 50 g 隔水炖煮 1.5 h[102]。

茶饮

花茶饮：桑叶及荷叶（可在医生指导下少量服用）、竹茹颗粒、合欢花（活血，孕早期谨慎应用）、冰糖；或玫瑰花（可活血，孕早期谨慎应用）、枸杞、麦冬、荞麦仁，大枣，红糖，根据患者口感，可酌加柠檬片干（胃酸过多/虚寒底/空腹者慎用）、木瓜片干（番木瓜含木瓜酶有刺激子宫平滑肌收缩风险，孕妇慎用），用养生壶煮茶喝，少量频服，一日泡服 2~3 袋[103]。

E.4.8.2 妊娠期肥胖并发妊娠期糖尿病

E.4.8.2.1 中医预防

针对超重、肥胖存在 GDM 风险的高危人群，建议通过以下膳食、运动及情志指导方法来控制血糖、降低体重。

药膳

a） 山药薏米粥：山药、薏米（药典中孕妇慎用），煲汤；

b） 太子参黄芪生地丹参鸡羹：太子参、黄芪（妊娠晚期及临产时慎用）、鲜地黄（无明确热证不建议应用）、丹参（活血谨慎应用）、鸡肉丝。同时可添加药食两用之品，如玉竹、天花粉（药典中孕妇慎用）、白扁豆等。患者可根据身体状况选用[104]。

茶饮

滋啐饮：黄芪及鲜地黄（在医生指导下使用）、山药、猪胰粉，煎汤代茶饮[104]。

传统功法

太极、八段锦。建议患者每周运动 3~4 次，每次持续 60 min，含 3 段运动时间和 3 段休息时间，运动时间 15 min，休息时间 5 min，患者可根据自身情况选择适宜的运动方式[105-107]。

E.4.8.2.2 生活方式干预

针对超重/肥胖存在 GDM 风险的孕妇建议其均衡膳食，控制总热量摄入，合理搭配碳水化合物、蛋白质和脂肪摄入。少食多餐，定时定量进餐。严格限制蔗糖、蜂蜜、巧克力

等纯糖制品的摄入，选择低糖水果，如苹果、梨（性凉，脾胃虚弱、孕妇不宜多吃）、柚子（性寒，脾胃虚弱、孕妇不宜多吃）等，并分次食用[25,108]。同时，选择适合孕妇的有氧运动，如散步、孕妇瑜伽、游泳等，每次运动时间一般为 30 min 左右，每周运动 3~5 次。进行适当的伸展运动，如全身伸展、肢体拉伸等，每次 10 min~15 min[25,108]。

E. 4. 8. 3　妊娠期肥胖并发妊娠期高血压

E. 4. 8. 3. 1　中医体质保健

针对体质类型和评估情况进行起居调养、药膳食疗、情志调摄、动静养生等中医指导[109,110]（中医体质分型方法参考北京中医药大学王琦教授九分法为基础[111]）。

起居调养

孕妇每天保证至少 10 h 休息时间，应避免长时间站立和过度劳累[112]。

药膳食疗

避免油腻、辛辣等食物，多吃瘦肉、鸡蛋、蔬菜、水果等富含蛋白质、维生素、矿物质的食物，并限制盐的摄入[112,113]。特别是一些具有清热降压、活血化瘀、益气养阴作用的食材，如冬瓜（冬瓜性寒，孕期不宜长期服用）、荸荠（其性甘寒，《纲目》言：“主血痢、下血、血崩”虚寒及血虚者、孕妇慎服）、芹菜（芹菜性凉质滑，故不宜多食，脾胃虚寒、肠滑不固者食之尤慎）、山药、莲子等[112]。建议痰湿体质妊娠期高血压患者饮用菊花茶（性寒味甘，孕妇孕期免疫力低下、脾胃虚弱者慎服，易引起腹痛腹泻）、绿豆汤（绿豆性寒，孕妇不宜多用）、绿茶（含鞣酸影响铁的吸收，宜饭后 1 小时服用，不宜过量饮用，过多饮用可能导致孕妇神经兴奋出现失眠、焦虑等症状）、银耳汤（功效滋补生津、润肺养胃，对于湿热酿痰孕妇禁用/慎用），同时汤类饮品中加入茯苓、芡实等祛湿化痰、辛温燥湿的食物[114]。

功法养生

太极[112]、五禽戏[113]。

E. 4. 8. 3. 2　穴位按摩

选定穴位：百会、足三里、内关。双手拇指螺纹面置于相对合适位置，拇指做环形运动，带动皮肤和皮下组织，缓慢轻柔，每分钟 120～160 次，每穴按摩 1 min～2 min，7 日 1 疗程，疗程间休 1 天，共 4 疗程[115]。

患者取仰卧位，以温和适中力度用拇指按压或空拳叩击，每日 1 次，每次按压时间为 3 min～5 min。三/四指顺时针按揉天枢穴 2 min～3 min，每天按揉 1 次。另对下脘穴、上脘穴、中脘穴、关元穴进行点揉，1 个穴位 2 min～3 min，每天按揉 1 次。双侧取足三里、阴陵泉，每穴 3 min，每天 1～2 次，以酸、麻、胀感为佳[116]。

E. 4. 9　纳入管理对象的孕妇胎儿监测

临床医生应充分告知纳入管理对象的孕妇胎儿异常及死产的风险。母体肥胖与胎儿结构异常有关联，尤其是先天性心脏病和神经管缺陷。纳入管理对象的孕妇的 BMI 每增加一个单位，胎儿出现先天性心脏病的风险也会相应增加。肥胖也会干扰胎儿的正常发育，导致结构异常。此外，肥胖还使妊娠期女性的死产风险大幅提高，其 BMI 每增加 5 个单位，死产风险约增加 1.28 倍。肥胖相关孕期并发症，如高血压等，可能限制胎儿氧气和营养供应，从而增加胎儿死亡风险[4]。因此，纳入管理对象的孕妇应在妊娠 20 周以后注意胎动变化，定期进行胎儿监测。对于孕前体重指数在 35.0 kg/m^2~39.9 kg/m^2 之间的孕妇，建议从怀孕 37 周开始每周进行产前胎儿监测。对于孕前体重指数≥40 kg/m^2 的孕妇，建议从怀孕 34 周开始每周进行产前胎儿监测[117]。然而，目前尚无确定胎儿监测的最佳类型或频率的

研究，也没有针对纳入管理对象的孕妇的具体证据。

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附录 F
（资料性）
妊娠期肥胖高发并发症预测因子

表 F.1　妊娠期肥胖高发并发症风险因素相关文献总结表

高发并发症	预测因子	题目/作者/期刊	Q	IF
妊娠期糖尿病	人体测量学指标			
	高龄产妇（年龄≥35 岁）	(1)Huang Y, Li Z, Zhu J, et al. Construction of a risk prediction model for adverse pregnancy outcomes in primipara with gestational diabetes mellitus combined with pregnancy-induced hypertension syndrome. Clin Exp Hypertens. 2025;47(1):2492621. doi:10.1080/10641963.2025.2492621	2	3.5
		(2)Jin F, Sun J, Yang Y, et al. Development and validation of a clinical model to predict preconception risk of gestational diabetes mellitus in nulliparous women: A retrospective cohort study. Int J Gynaecol Obstet. 2024;165(1):256-264. doi:10.1002/ijgo.15134	2	2.4
		(3)Zhang X, Wang Y, Zhao H, Chen S, Gao X. A retrospective study to investigate the risk factors for gestational diabetes mellitus and its impact on maternal and neonatal outcomes. J Diabetes Complications. 2025;39(6):109035. doi:10.1016/j.jdiacomp.2025.109035	3	3.1
	年龄	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(2)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
		(3)Zhang R, Li Z, Xilifu N, et al. A nomogram to predict gestational diabetes mellitus: a multi-center retrospective study. J Mol Cell Biol. Published online March 10, 2025. doi:10.1093/jmcb/mjaf008	2	5.9
		(4)Syngelaki A, Wright A, Gomez Fernandez C, Mitsigiorgi R, Nicolaides KH. First-Trimester Prediction of Gestational Diabetes Mellitus Based on Maternal Risk Factors. BJOG. 2025;132(7):972-982. doi:10.1111/1471-0528.18110	2	4.3

		(5)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
	孕前 BMI	(1)Huang Y, Li Z, Zhu J, et al. Construction of a risk prediction model for adverse pregnancy outcomes in primipara with gestational diabetes mellitus combined with pregnancy-induced hypertension syndrome. Clin Exp Hypertens. 2025;47(1):2492621. doi:10.1080/10641963.2025.2492621	2	3.5
		(2)Zhang R, Li Z, Xilifu N, et al. A nomogram to predict gestational diabetes mellitus: a multi-center retrospective study. J Mol Cell Biol. Published online March 10, 2025. doi:10.1093/jmcb/mjaf008	2	5.9
		(3)Lu YT, Chen CP, Sun FJ, Chen YY, Wang LK, Chen CY. Associations between first-trimester screening biomarkers and maternal characteristics with gestational diabetes mellitus in Chinese women. Front Endocrinol (Lausanne). 2024;15:1383706. Published 2024 Aug 8. doi:10.3389/fendo.2024.1383706	2	4.6
		(4)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(5)Wang X, He C, Wu N, et al. Establishment and validation of a prediction model for gestational diabetes. Diabetes Obes Metab. 2024;26(2):663-672. doi:10.1111/dom.15356	2	5.7
		(6)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
	家族史及既往史			
	糖尿病家族史	(1)Wang X, He C, Wu N, et al. Establishment and validation of a prediction model for gestational diabetes. Diabetes Obes Metab. 2024;26(2):663-672. doi:10.1111/dom.15356	2	5.7

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		(2)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(3)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
		(4)Syngelaki A, Wright A, Gomez Fernandez C, Mitsigiorgi R, Nicolaides KH. First-Trimester Prediction of Gestational Diabetes Mellitus Based on Maternal Risk Factors. BJOG. 2025;132(7):972-982. doi:10.1111/1471-0528.18110	2	4.3
		(5)Lu YT, Chen CP, Sun FJ, Chen YY, Wang LK, Chen CY. Associations between first-trimester screening biomarkers and maternal characteristics with gestational diabetes mellitus in Chinese women. Front Endocrinol (Lausanne). 2024;15:1383706. Published 2024 Aug 8. doi:10.3389/fendo.2024.1383706	2	4.6
		(6)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
	GDM 病史	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(2)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
		(3)Lu YT, Chen CP, Sun FJ, Chen YY, Wang LK, Chen CY. Associations between first-trimester screening biomarkers and maternal characteristics with gestational diabetes mellitus in Chinese women. Front Endocrinol (Lausanne). 2024;15:1383706. Published 2024 Aug 8. doi:10.3389/fendo.2024.1383706	2	4.6
		(4)Wang X, He C, Wu N, et al. Establishment and validation of a prediction model for gestational diabetes. Diabetes Obes Metab. 2024;26(2):663-672. doi:10.1111/dom.15356	2	5.7

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	PCOS 病史	(1)Zhang J, Cao Q, Mao C, et al. Development and validation of a prediction model for gestational diabetes mellitus risk among women from 8 to 14 weeks of gestation in Western China. BMC Pregnancy Childbirth. 2025;25(1):385. Published 2025 Apr 2. doi:10.1186/s12884-025-07442-1	4	2.7
		(2)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
	血清学指标			
	糖化血红蛋白（HbA1c）	(1)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
		(2)Huang Y, Li Z, Zhu J, et al. Construction of a risk prediction model for adverse pregnancy outcomes in primipara with gestational diabetes mellitus combined with pregnancy-induced hypertension syndrome. Clin Exp Hypertens. 2025;47(1):2492621. doi:10.1080/10641963.2025.2492621	2	3.5
	甘油三酯-葡萄糖（TyG）指数	(1)Gurza G, Martínez-Cruz N, Lizano-Jubert I, et al. Association of the Triglyceride-Glucose Index During the First Trimester of Pregnancy with Adverse Perinatal Outcomes. Diagnostics (Basel). 2025;15(9):1129. Published 2025 Apr 29. doi:10.3390/diagnostics15091129	3	3.3
		(2)Zhang J, Fang X, Song Z, et al. Positive association of triglyceride glucose index and gestational diabetes mellitus: a retrospective cohort study. Front Endocrinol (Lausanne). 2025;15:1475212. Published 2025 Jan 6. doi:10.3389/fendo.2024.1475212	2	4.6
	甘油三酯，高密度胆固醇-葡萄糖体指数（TyHGB）	(1)Xu Z, Li C, Wang N, Song G. Association between the new TyG indicator-TyHGB and gestational diabetes mellitus: results from the case-control and prospective cohort studies. J Transl Med. 2025;23(1):190. Published 2025 Feb 16. doi:10.1186/s12967-025-06166-2	1	7.5
	甘油三酯	(1)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0

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		(2)Zhang R, Li Z, Xilifu N, et al. A nomogram to predict gestational diabetes mellitus: a multi-center retrospective study. J Mol Cell Biol. Published online March 10, 2025. doi:10.1093/jmcb/mjaf008	2	5.9
	高密度胆固醇	(1)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
	低密度胆固醇	(1)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
	空腹血糖	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(2)Zhang J, Cao Q, Mao C, et al. Development and validation of a prediction model for gestational diabetes mellitus risk among women from 8 to 14 weeks of gestation in Western China. BMC Pregnancy Childbirth. 2025;25(1):385. Published 2025 Apr 2. doi:10.1186/s12884-025-07442-1	2	2.7
	既往妊娠葡萄糖挑战试验（GCT）结果	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
妊娠期高血压	遗传因素（基因位点）	Tyrmi JS, Kaartokallio T, Lokki AI, et al. Genetic Risk Factors Associated With Preeclampsia and Hypertensive Disorders of Pregnancy. JAMA Cardiol. 2023;8(7):674-683. doi:10.1001/jamacardio.2023.1312	1	14.1
	人体测量学指标			
	BMI	(1)Zhou Y, Xiao C, Yang Y. Pre-pregnancy body mass index combined with peripheral blood PLGF, DCN, LDH, and UA in a risk prediction model for pre-eclampsia. Front Endocrinol (Lausanne). 2024;14:1297731. Published 2024 Jan 8. doi:10.3389/fendo.2023.1297731	3	4.6
	BMI ≥28（中国） BMI ≥30（瑞典）	(2)Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7

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	BMI≥35	(3)Simon A, Pratt M, Hutton B, et al. Guidelines for the management of pregnant women with obesity: A systematic review. Obes Rev. 2020;21(3):e12972. doi:10.1111/obr.12972	2	7.4
	BMI >30	(4)Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	产妇年龄（孕 37 周）	(1)Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	高龄产妇（分娩时 ≥35 岁）	(2)Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
	平均动脉压（MAP） 子宫动脉搏动指数（UtA-PI） 正相关	O'Gorman N, Wright D, Poon LC, et al. Accuracy of competing-risks model in screening for pre-eclampsia by maternal factors and biomarkers at 11-13 weeks' gestation [published correction appears in Ultrasound Obstet Gynecol.Ultrasound Obstet Gynecol. 2017;49(6):751-755. doi:10.1002/uog.17399	2	6.3
	血压（孕 37 周） 血压（产后＞130 mmHg）	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	多胎妊娠 经产或未产	Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
	母体疾病与病史			
	糖尿病史	(1)Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open.	2	9.7

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		2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401 (2)Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	妊娠糖尿病	Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
	慢性高血压	Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	肺栓塞病史（产时） 头痛（包括偏头痛）（产时） 体位不正（产时） 胎位不良（产时） 胎膜早破（产时）	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	抗磷脂抗体综合征 既往有子痫前期病史	Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	血清学指标			
	外周血胎盘生长因子（PLGF）负相关	(1)Zhou Y, Xiao C, Yang Y. Pre-pregnancy body mass index combined with peripheral blood PLGF, DCN, LDH, and UA in a risk prediction model for pre-eclampsia. Front Endocrinol (Lausanne). 2024;14:1297731. Published 2024 Jan 8. doi:10.3389/fendo.2023.1297731 (2)Mendoza M, Garcia-Manau P, Arévalo S, et al.	3	4.6
			2	6.3

		Diagnostic accuracy of first-trimester combined screening for early-onset and preterm pre-eclampsia at 8-10 compared with 11-13 weeks' gestation. Ultrasound Obstet Gynecol. 2021;57(1):84-90. doi:10.1002/uog.22071 (3)O'Gorman N, Wright D, Poon LC, et al. Accuracy of competing-risks model in screening for pre-eclampsia by maternal factors and biomarkers at 11-13 weeks' gestation [published correction appears in Ultrasound Obstet Gynecol.Ultrasound Obstet Gynecol. 2017;49(6):751-755. doi:10.1002/uog.17399	2	6.3
	血浆蛋白 A（PAPP-A）负相关	Mendoza M, Garcia-Manau P, Arévalo S, et al. Diagnostic accuracy of first-trimester combined screening for early-onset and preterm pre-eclampsia at 8-10 compared with 11-13 weeks' gestation. Ultrasound Obstet Gynecol. 2021;57(1):84-90. doi:10.1002/uog.22071	2	6.3
	核心蛋白聚糖蛋白（DCN） 乳酸脱氢酶（LDH） 尿酸（UA） 正相关	Zhou Y, Xiao C, Yang Y. Pre-pregnancy body mass index combined with peripheral blood PLGF, DCN, LDH, and UA in a risk prediction model for pre-eclampsia. Front Endocrinol (Lausanne). 2024;14:1297731. Published 2024 Jan 8. doi:10.3389/fendo.2023.1297731	3	4.6
	白细胞计数（产时）正相关	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	药物及技术的使用			
	氯化钠（盐）的使用（产时）	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	辅助生殖技术	Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	人体测量学指标			

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妊娠期肥胖合并先兆流产	BMI ≥28（中国） BMI ≥30（瑞典）	Boxem AJ, Blaauwendraad SM, Mulders AGMGJ, Bekkers EL, Kruithof CJ, Steegers EAP, Gaillard R, Jaddoe VWV. Preconception and Early-Pregnancy Body Mass Index in Women and Men, Time to Pregnancy, and Risk of Miscarriage. JAMA Netw Open. 2024 Sep 3;7(9):e2436157.	2	9.7
	年龄	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
		Boxem AJ, Blaauwendraad SM, Mulders AGMGJ, Bekkers EL, Kruithof CJ, Steegers EAP, Gaillard R, Jaddoe VWV. Preconception and Early-Pregnancy Body Mass Index in Women and Men, Time to Pregnancy, and Risk of Miscarriage. JAMA Netw Open. 2024 Sep 3;7(9):e2436157. doi: 10.1001/jamanetworkopen.2024.36157.	2	9.7
	母体疾病与病史			
	先兆流产史	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	癌症史	Kao WH, Kuo CF, Chang CC, Liu YC, Wang CC, Hsu JT, Chuang YF. Cancer survivorship and risk of pregnancy complications, adverse obstetric outcomes, and maternal morbidities in female adolescents and young adults: a nationwide population-based study from Taiwan. Br J Cancer. 2023 Aug;129(3):503-510. doi: 10.1038/s41416-023-02333-8.	1	6.8
	超声指标			
	胎心	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	孕囊	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	内分泌指标			
	孕酮	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6

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		Devall AJ, Papadopoulou A, Podesek M, Haas DM, Price MJ, Coomarasamy A, Gallos ID. Progestogens for preventing miscarriage: a network meta-analysis. Cochrane Database Syst Rev. 2021 Apr 19;4(4):CD013792. doi: 10.1002/14651858.CD013792.pub2.	2	9.4
	β-hCG	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	其它			
	极端热暴露（EHE）	Qu Y, Zhang W, Ryan I, Deng X, Dong G, Liu X, Lin S. Ambient extreme heat exposure in summer and transitional months and emergency department visits and hospital admissions due to pregnancy complications. Sci Total Environ. 2021 Jul 10;777:146134. doi: 10.1016/j.scitotenv.2021.146134.	1	8.0
	焦虑 抑郁	Kidd C, O'Driscoll D, O'Byrne LJ, O'Keeffe GW, Khashan AS, Maher GM. The association between threatened miscarriage in early pregnancy and depression or anxiety in offspring in late adolescence. J Affect Disord. 2025 Aug 1;382:48-54.	2	4.9
	沙眼衣原体血清阳性	Chakraborti Y, Hinkle SN, Jensen JS, Haggerty CL, Darville T, Mumford SL, Schisterman EF, Silver RM, Taylor BD. Preconception Chlamydia trachomatis seropositivity and fecundability, live birth, and adverse pregnancy outcomes. Fertil Steril. 2025 Jun;123(6):1072-1081. doi: 10.1016/j.fertnstert.2024.12.017	1	7.0

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Foreword

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Introduction

Obesity in pregnancy seriously threatens maternal and infant health and significantly increases the risk of complications such as threatened miscarriage, gestational diabetes mellitus, gestational hypertension, and cesarean delivery. Although international authoritative organizations, including the American College of Obstetricians and Gynecologists (ACOG), the Royal College of Obstetricians and Gynaecologists (RCOG), and the International Federation of Gynecology and Obstetrics (FIGO), have issued guidelines for the management of obesity in pregnancy, these guidelines are based primarily on data from Western populations, provide insufficient consideration of the constitutional characteristics and dietary patterns of Asian women, and do not include Chinese medicine interventions. China currently has no clinical practice guideline specifically for people with obesity in pregnancy; existing guidelines focus mainly on obesity management in the general adult population and do not fully consider the special needs of this population.

Chinese medicine has unique advantages and may exert multilevel regulation through multiple targets (improving the gut microbiota, regulating hormone levels, and regulating fat metabolism). It is highly safe, has few adverse effects, is compatible with the Asian cultural context, and has high patient acceptance. However, high-quality evidence-based evidence on Chinese medicine has not yet been systematically integrated into existing international guideline frameworks.

Accordingly, this document aims to standardize the clinical diagnosis and management of obesity in pregnancy using Chinese medicine and to provide international healthcare professionals with Chinese medicine management strategies and methods for Asian and European populations included in obesity-in-pregnancy management. During development of this guideline, mature principles from authoritative international guidelines were adopted. Focusing on obesity in pregnancy and its related complications, management methods with high-certainty evidence, definite clinical efficacy, safety, and convenience were selected for recommendation on the basis of high-quality Chinese medicine systematic reviews and randomized controlled trial (RCT) evidence.

This document is concise, practical, highly operable, instructive, generally applicable, and suitable for reference, and may serve as an important reference for clinical practice, diagnosis and treatment specifications, and quality evaluation. This document is not a standard or specification for medical conduct, but a declarative document developed on the basis of existing research evidence and specified methods. In clinical practice, healthcare professionals may refer to this document and provide individualized interventions according to each patient's circumstances.

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International Clinical Practice Guideline for Chinese Medicine

Obesity in Pregnancy

1 Scope

This document specifies the terms and definitions, diagnostic criteria, management principles, and management methods for populations eligible for obesity-in-pregnancy management.

This document applies to Chinese medicine healthcare professionals in gynecology, reproductive medicine, endocrinology, nutrition, and related specialties at healthcare institutions of all levels, as a reference for the assessment, intervention, and follow-up of populations eligible for obesity-in-pregnancy management. Healthcare professionals in other related disciplines may refer to this document according to the individual circumstances of the person being managed.

2 Normative references

There is no normative references in this document.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1
obesity in pregnancy
clinical condition in which a pregnant woman has excessive body fat and/or abnormal fat distribution, thereby increasing the risk of adverse maternal and perinatal outcomes; it is a metabolic disease caused by the combined effects of genetic and environmental factors.

3.2
gestational weight gain; GWG
change in measured body weight from prepregnancy (or early pregnancy) to before delivery. Appropriate control may reduce the risks of gestational diabetes mellitus and hypertension and facilitate postpartum recovery. At the first antenatal visit in early pregnancy, prepregnancy/early-pregnancy weight and prepregnancy body mass index (Body Mass Index, BMI) should be confirmed, and changes in GWG should be monitored continuously at subsequent antenatal visits throughout pregnancy to identify insufficient or excessive weight gain.

3.3
population eligible for obesity-in-pregnancy management
pregnant women who have obesity or abnormal weight gain before or during pregnancy and need to be included in a pathway for weight management and complication risk

assessment, including women whose prepregnancy BMI meets the obesity criterion and who become pregnant, and women whose gestational weight gain exceeds the corresponding recommended range. If prepregnancy weight data are unavailable, BMI measured at the first antenatal visit in early pregnancy may be used as an approximate substitute, together with subsequent gestational weight gain, for a comprehensive judgment.

4 Diagnosis

4.1 Women with pre-pregnancy obesity who become pregnant

In accordance with the World Health Organization (WHO) obesity criteria and the criteria for overweight and obesity in Asian populations (see Annex B), the following populations shall be included in the management pathway of this guideline.

Asian women: Pregnant women with a prepregnancy BMI ≥28.0 kg/m^2 should be diagnosed with obesity in pregnancy and included in the population eligible for obesity-in-pregnancy management.

European and American women: Pregnant women with a prepregnancy BMI ≥30.0 kg/m^2 should be diagnosed with obesity in pregnancy and included in the population eligible for obesity-in-pregnancy management.

Certainty of evidence: High.

Strength of recommendation: Strong recommendation.

4.2 Women with excessive gestational weight gain

According to the recommended ranges of gestational weight gain for populations with different prepregnancy BMI values in the Chinese Standard for Monitoring and Evaluation of Gestational Weight Gain in Women [1,2] or the US Institute of Medicine (IOM) recommendations [3,4] (see Annex C), women whose gestational weight gain exceeds the corresponding recommended range should be included in the population eligible for management of abnormal gestational weight gain, and enhanced lifestyle intervention and complication risk assessment should be initiated.

Certainty of evidence: High.

Strength of recommendation: Strong recommendation.

5 Management

5.1 Management principles

Applicable population: Women with a singleton pregnancy who have prepregnancy obesity or excessive gestational weight gain.

Recommendation: For pregnant women included in the management population, gestational weight gain should be appropriately controlled to prevent complications

during pregnancy, delivery, and the postpartum period and to safeguard maternal and infant health and safe delivery [5].

Implementation points: The main purpose of obesity treatment should be to reduce the risk of long-term complications rather than merely to pursue weight loss [6]. For women whose prepregnancy BMI meets the obesity criterion and who become pregnant, management should focus on risk assessment in early pregnancy, weight control throughout pregnancy, and screening for pregnancy complications. For women whose gestational weight gain exceeds the corresponding recommended range, management should focus on dynamic monitoring of GWG, timely intensification of lifestyle interventions, and assessment of related risk factors.

Informed consent: Before implementing weight-management interventions beyond routine antenatal care, including Chinese medicine, acupuncture, medications, or lifestyle interventions, patients should be informed that the purpose of intervention is to control weight gain and reduce the risk of complications; regarding fetal effects, lifestyle interventions are currently considered safe but uncertainty remains, while large-sample safety data for Chinese medicine, acupuncture, and medications require further improvement, and known risks may include effects on fetal growth or induction of uterine contractions; long-term safety data for offspring are also lacking. Alternative options, including routine antenatal care and dietitian consultation, should be provided, and patients should be informed that they may withdraw voluntarily without affecting routine medical care. The informed-consent process should be documented, written information should be provided, and multidisciplinary communication should be encouraged.

Contraindications/precautions: When Chinese medicine methods are used to intervene in obesity in pregnancy, contraindicated medicines and acupoints during pregnancy should be avoided. Acupuncture and herbal medicine should be applied cautiously after informed consent, with strict control of the method and dosage to prevent harm to the fetus or disturbance of pregnancy. Medicines and acupoints contraindicated during pregnancy are detailed in Annex G.

Certainty of evidence: High.

Strength of recommendation: Strong recommendation.

5.2 Exercise management

Applicable population: Women with a singleton pregnancy who have prepregnancy obesity or excessive gestational weight gain and no contraindications to exercise.

Recommendation: A continuous, individualized exercise program during pregnancy is suggested.

Implementation points: Daily exercise may generally be undertaken from week 10 to week 36 of pregnancy. Moderate-intensity physical activity is the main approach, with short sessions of 20 min~30 min. Pregnant women with a prepregnancy BMI ≥28 kg/m^2

are advised to begin exercise management in early pregnancy or even before pregnancy, using low intensity and short duration with gradual progression.

Contraindications/precautions: Pregnant and postpartum women at risk of threatened miscarriage, severe cardiopulmonary disease, or similar conditions should not exercise indiscriminately and require specialist assessment.

Certainty of evidence: High.

Strength of recommendation: Strong recommendation.

5.3 Dietary management

Applicable population: Women with a singleton pregnancy who have pre-pregnancy obesity or excessive gestational weight gain.

Recommendation: Individualized balanced dietary management is suggested.

Implementation points: Maintain a balanced diet, control total energy intake, and appropriately combine low-glycemic-index carbohydrates, high-quality proteins, and fats; eat smaller, more frequent meals and eat at regular times in specified amounts.

Contraindications/precautions: Individuals with malnutrition or special metabolic diseases require specialist assessment.

Certainty of evidence: Moderate.

Strength of recommendation: Strong recommendation.

5.4 Emotional management

Applicable population: Women with a singleton pregnancy who have pre-pregnancy obesity or excessive gestational weight gain.

Recommendation: Improve emotional status, sleep quality, and the risk of emotional or stress-related eating through multiple approaches (such as five-tone music and mindfulness interventions); these are adjunctive measures in comprehensive weight management.

Implementation points: Regulate physical and mental status through multiple approaches. Chinese music (five-tone therapy and guqin music) may improve emotional status and sleep quality [7-9]; mindfulness interventions may effectively reduce depression during pregnancy [10]; improvement in emotion and sleep quality may indirectly benefit weight management by regulating hypothalamic-pituitary-adrenal axis function and improving stress-related eating behavior and metabolic status [11,12].

Contraindications/precautions: Pregnant women with severe mental illness or cognitive impairment require combined intervention under the guidance of a psychiatric specialist.

Certainty of evidence: Low.

Strength of recommendation: Conditional recommendation.

5.5 Acupuncture/auricular acupressure

Applicable population: Women with a singleton pregnancy who have prepregnancy obesity or excessive gestational weight gain and have no contraindications to acupuncture or high-risk pregnancy factors.

Recommendation: Acupuncture and auricular acupoint interventions characteristic of Chinese medicine may be performed under professional and standardized practice to manage abnormal gestational weight gain.

Implementation points: Acupuncture or auricular acupoint procedures should be performed by qualified professionals. Acupoints and techniques contraindicated during pregnancy should be strictly observed. If lower abdominal or lumbosacral distension, pain, or abnormal fetal movement occurs during the procedure, the intervention should be discontinued immediately.

Contraindications/precautions: Acupuncture should be used cautiously in pregnant and postpartum women at risk of threatened miscarriage, coagulation dysfunction, skin damage or infection, or similar conditions; specialist assessment is required.

Certainty of evidence: High.

Strength of recommendation: Strong recommendation.

5.6 Chinese medicine aromatherapy

Applicable population: Women with a singleton pregnancy who have prepregnancy obesity or excessive gestational weight gain, are beyond 16 weeks of gestation, have no history of essential-oil allergy, and experience poor sleep and physical or mental fatigue.

Recommendation: Chinese medicine aromatherapy is recommended as an adjunctive intervention in comprehensive weight management during pregnancy.

Implementation points: Under a physician's guidance, pregnant women included in the management population who are beyond 16 weeks of gestation and have no history of allergy may use inhalation of lavender essential oil or nasal inhalation of bitter orange essential oil as an adjunct to comprehensive management.

Contraindications/precautions: Essential oils are contraindicated in individuals with essential-oil allergy and should be used cautiously in those with an allergic constitution.

Certainty of evidence: Very low.

Strength of recommendation: Conditional recommendation.

5.7 Comprehensive intervention and management model: including diet, exercise, daily routine, health education, and other components

Applicable population: Women with a singleton pregnancy who have pre-pregnancy obesity or excessive gestational weight gain.

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Recommendation: Individualized comprehensive lifestyle intervention and management under professional guidance is recommended.

Implementation points: Pregnant women with obesity should receive comprehensive lifestyle management under professional guidance, including dietary guidance, exercise intervention, daily-routine management, and health education, to effectively control gestational weight gain and reduce the incidence of pregnancy complications.

Contraindications/precautions: Individuals with contraindications to exercise, severe medical or surgical diseases, or critical obstetric complications require multidisciplinary specialist assessment before a tailored intervention plan is developed.

Certainty of evidence: High.

Strength of recommendation: Strong recommendation.

5.8 Complication screening: threatened miscarriage (kidney-tonifying and fetus-stabilizing medicinal diets), diabetes (Chinese Yam and Coix Seed Congee, Baduanjin), hypertension (Baduanjin, acupoint massage, medicinal diets)

5.8.1 Threatened Miscarriage

Recommendation: High-risk pregnant women should undergo risk screening for threatened miscarriage in early pregnancy, followed by stratified management according to screening results.

Screening population: Women with a pre-pregnancy or early-pregnancy BMI ≥30 kg/m^2, age ≥35 years, or a history of recurrent miscarriage or threatened miscarriage [13].

Screening time: Early pregnancy (recommended at 6~10 weeks of gestation).

Screening methods: Combined ultrasonography and serum endocrine markers.

a) Ultrasonographic indicators: crown-rump length (CRL), mean sac diameter (MSD), yolk sac, embryonic cardiac activity, crown-rump length, and fetal heart rate.

b) Serum indicators: progesterone (Progesterone, Prog) and beta-human chorionic gonadotropin (β-hCG).

Abnormal thresholds:

a) Ultrasonographic indicators: CRL ≥7 mm without fetal cardiac activity or MSD ≥25 mm without an embryo are core criteria for definitive diagnosis of a nonviable pregnancy (pregnancy failure) [14]; when fetal bradycardia or discordance between gestational age and crown-rump length is present, the risk of miscarriage increases from 6% to 84% [15].

b) Serum indicators: Prog <45 nmol/l (14 ng/ml) indicates an abnormal pregnancy (sensitivity 87.6%, specificity 87.5%); β-hCG <20 ng/ml indicates an abnormal pregnancy (sensitivity 88.3%, positive predictive value 82.6%) [15].

Implementation points:

a) Enhanced dynamic monitoring is suggested for women with positive screening results (in conjunction with changes in hormone levels, with repeat examination after 1~2 weeks when necessary), and estradiol may be added as an optional monitoring indicator.

b) Prog supplementation may reduce the risk of miscarriage (it should be used in a standardized manner after an intrauterine pregnancy has been confirmed).

c) Chinese medicine prevention: Pattern-based medicinal diets and herbal teas (such as kidney-tonifying and fetus-stabilizing medicinal diets) may help reduce the incidence of threatened miscarriage, but should be selected according to individual constitution under the guidance of a Chinese medicine practitioner.

Contraindications/precautions: Patients with inevitable miscarriage, incomplete miscarriage, or acute gynecological bleeding require immediate specialist intervention and should not rely solely on conservative regulation.

Certainty of evidence: Low.

Strength of recommendation: Conditional recommendation.

5.8.2 Gestational diabetes mellitus

Recommendation: Pregnant women included in the management population should undergo early screening and stratified management for gestational diabetes mellitus (GDM) as early as possible.

Screening population: All pregnant women included in the management population, particularly those with the following high-risk factors: age ≥35 years, prepregnancy BMI ≥30 kg/m^2, a history of GDM, or a family history of diabetes [16-20].

Screening time: Screening should be performed as early as possible at the first antenatal visit (early pregnancy); if the initial screening result is negative, repeat screening should be performed at 24~28 weeks of gestation [21,22].

Screening method: A 75 g oral glucose tolerance test (OGTT) should be used to measure fasting plasma glucose and plasma glucose at 1 hour and 2 hours after glucose administration.

Abnormal thresholds (GDM is diagnosed when any one of the following is met):

Fasting plasma glucose ≥5.1 mmol/l (92 mg/dl);

1-hour post-load plasma glucose ≥10.0 mmol/l (180 mg/dl);

2-hour post-load plasma glucose ≥8.5 mmol/l (153 mg/dl).

Implementation points:

a) Lifestyle intervention: Control total energy intake, follow a low-glycemic-index (GI) diet, and engage in regular aerobic exercise. If blood glucose targets are not met after lifestyle intervention, refer the patient to endocrinology or obstetrics and initiate insulin therapy when necessary.

b) Chinese medicine prevention: Medicinal diets (such as Chinese yam and coix seed congee and Zicui Drink) and traditional exercises (such as Baduanjin) may reduce the incidence of GDM and improve maternal and infant outcomes.

c) Blood glucose control targets: fasting plasma glucose <5.3 mmol/l and 2-hour postprandial plasma glucose <6.7 mmol/l.

Contraindications/precautions: Pregnant women with severe glucose-metabolism abnormalities, special inherited metabolic diseases, or critical obstetric complications require joint assessment by endocrinology and obstetrics and an individualized intervention plan.

Certainty of evidence: Moderate.

Strength of recommendation: Strong recommendation.

5.8.3 Gestational Hypertension

Recommendation: High-risk pregnant women should undergo early screening and stratified management for hypertensive disorders of pregnancy.

Screening population: Women with a prepregnancy or early-pregnancy BMI ≥30 kg/m^2, age ≥35 years, or a history of chronic hypertension, preeclampsia, or antiphospholipid syndrome [23,24].

Screening time: Baseline assessment should be performed at the first antenatal visit (early pregnancy); blood pressure and related indicators should be reassessed every 2~4 weeks after 20 weeks of gestation.

Screening methods:

Standardized blood-pressure measurement combined with mean arterial pressure (MAP), uterine artery pulsatility index (UtA-PI), placental growth factor (PlGF), and other indicators [25-27].

Abnormal thresholds:

Blood pressure: systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg on two measurements at least 4 hours apart; preeclampsia is diagnosed when proteinuria or target-organ damage is also present. Specific thresholds for MAP, UtA-PI, and PlGF may follow local laboratory standards.

Implementation points:

a) Lifestyle intervention: Adequate rest, avoidance of overexertion, and a low-salt diet;

b) Chinese medicine prevention: Medicinal dietary therapy, traditional exercises (such as Baduanjin), and acupoint massage (such as Taichong [LR3] and Zusanli [ST36]) may reduce the incidence of preeclampsia and hypertensive disorders of pregnancy;

c) Blood-pressure control target: <140/90 mmHg. If severe hypertension (≥160/110 mmHg) or symptoms of preeclampsia occur, promptly refer the patient to obstetrics and

initiate antihypertensive medication when necessary.

Contraindications/precautions: Pregnant women with severe hypertension, severe preeclampsia, severe cardiac, hepatic, or renal disease, or critical illness require specialist obstetric monitoring and symptomatic treatment.

Certainty of evidence: Moderate.

Strength of recommendation: Strong recommendation.

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Annex A
(Informative)
Guideline Development Process

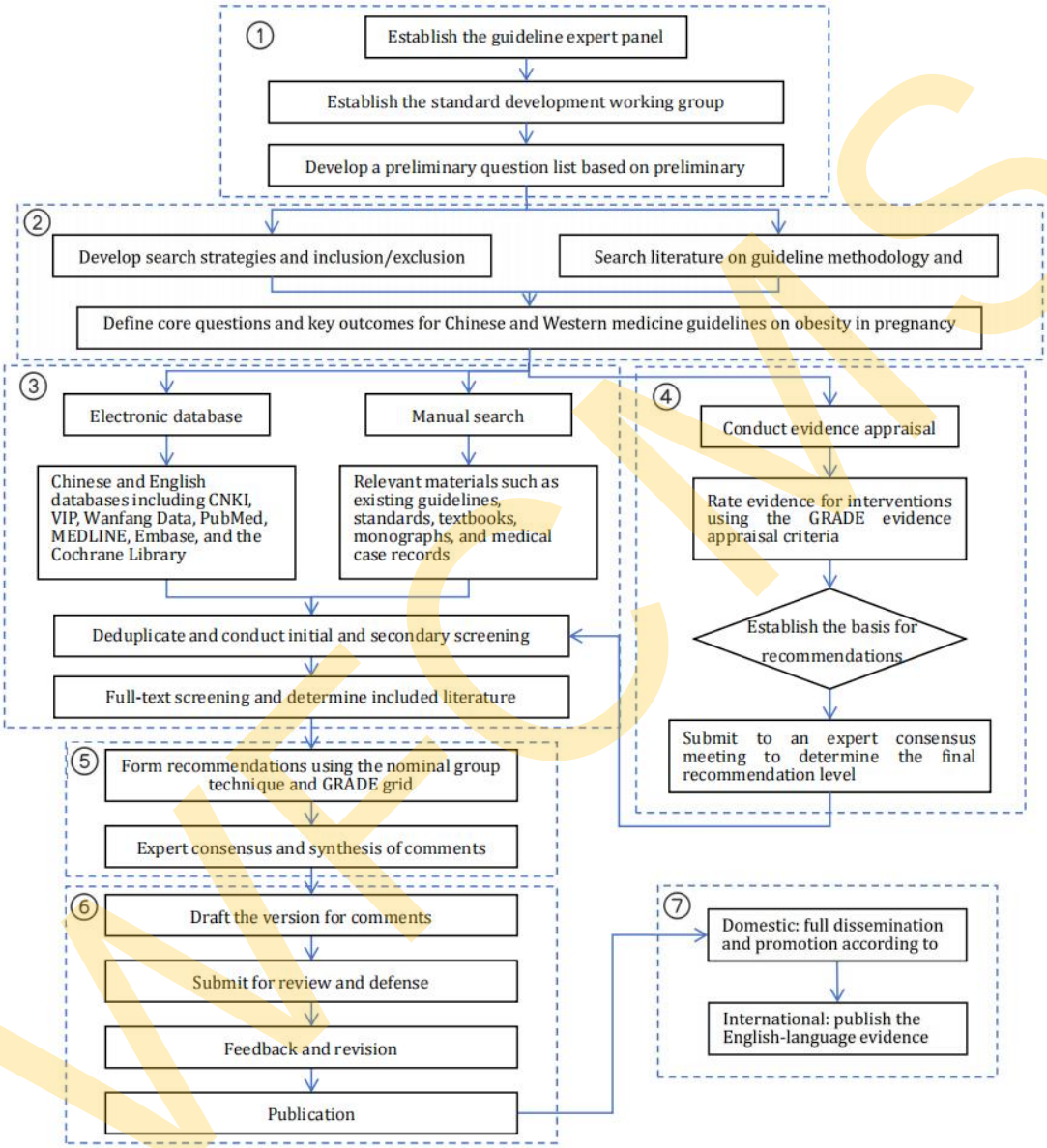

Figure A.1 Standard Review and Approval Flowchart

Table A.1 Summary Table of Systematic Searches and Evidence Synthesis

Recommendation topic	Search sources and time limit	Included studies	Study population	Critical outcomes	Synthesis method	Quality assessment tool	Corresponding recommendation item
Exercise Management	Databases: PubMed, Embase, WOS, CNKI, and WANFANG, from database inception to March 2026	16 RCTs, n=2742	Singleton pregnancy, obesity, or excessive GWG	GWG, GDM, cesarean delivery, adverse events	Meta Analysis	Cochrane RoB + GRADE	5.2
Dietary Management	Same as above	2 RCTs + indirect evidence, n=244	Same as above	GWG, GDM, gestational hypertension	Quantitative + qualitative synthesis	Cochrane RoB/NOS + GRADE	5.3
Emotional Management	Same as above	1 RCT + 2 meta-analyses + reviews, n=2116	Singleton pregnancy, obesity, or excessive GWG	Depression, sleep, stress-related eating	Primarily qualitative synthesis	AMSTAR/NOS + GRADE	5.4
Acupuncture/ Auricular acupressure	Same as above	2 RCTs, n=393	Singleton pregnancy, obesity, or excessive GWG, with no contraindications to acupuncture or HRP	GWG, adverse events	Meta Analysis	Cochrane RoB + GRADE	5.5
Aroma-therapy	Same as above	2 RCTs, n=142	Women beyond 16 weeks of singleton pregnancy with no history of essential-oil allergy and with sleep or fatigue problems	Sleep quality, adverse events	Quantitative/qualitative synthesis	Cochrane RoB + GRADE	5.6
Comprehensive lifestyle	Same as above	20 RCTs, n=8430	Singleton pregnancy with obesity or excessive GWG	GWG, GDM, pregnancy complications, cesarean delivery	Meta Analysis	Cochrane RoB + GRADE	5.7

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Annex B
(Normative)
Criteria for Assessing Obesity

Table B.1 Obesity Criteria of World Health Organization (WHO)

WHO body mass index (BMI) classification	BMI range (kg/m^2)
Underweight	<18.5
Normal weight	18.5~24.9
Overweight	25.0~29.9
Class I obesity	30.0~34.9
Class II obesity	35.0~39.9
Class III obesity	≥40.0

Table B.2 Criteria for Overweight and Obesity in Asian Populations

Obesity criteria for Asian populations	BMI range (kg/m^2)
Mild obesity	28.0~32.4
Moderate obesity	32.5~37.4
Severe obesity	37.5~49.9
Extreme obesity	≥50.0

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Annex C
(Normative)
Recommended Targets for Gestational Weight Gain

C.1 Criteria applicable to European and American women:

According to the gestational weight recommendations issued by the US Institute of Medicine (IOM) in 2009, pregnant women with a BMI ≥30 kg/m2 in the various racial or ethnic subgroups that constitute the US population should gain <5 kg~9 kg during pregnancy, as shown in Table C.1.

Table C.1 New Recommendations for Total Gestational Weight Gain and Rate of Weight Gain by Prepregnancy BMI

Prepregnancy BMI	Total weight gain			Rate of weight gain in the second and second trimesters*	
	Range (kg)	Range (lbs)		Mean (range) Unit: kg/week	Mean (range) Unit: lb/week
Underweight (<18.5 kg/m2)	12.5-18	28-40		0.51 (0.44-0.58)	1 (1-1.3)
Normal weight (18.5~24.9 kg/m2)	11.5-16	25-35		0.42 (0.35-0.50)	1 (0.8-1)
Overweight (25.0~29.9 kg/m2)	7-11.5	15-25		0.28 (0.23-0.33)	0.6 (0.5-0.7)
Obesity (≥30.0 kg/m2)	5-9	11-20		0.22 (0.17-0.27)	0.5 (0.4-0.6)
Note: These recommended values do not apply to pregnant women who are <157 cm tall or <20 years of age, or to women with multiple pregnancy.					

C.2 Criteria applicable to Asian women:

In September 2021, the Chinese Nutrition Society issued Weight monitoring and evaluation during pregnancy period of Chinese women, which established recommended ranges for gestational weight gain and weekly weight gain during the second and third trimesters for pregnant women in China, as shown in Table C.2.

Table C.2 Recommended Ranges for Gestational Weight Gain and Weekly Weight Gain During the Second and Third Trimesters

Prepregnancy BMI (kg/m2) category	Total gain (kg)	Gain during early pregnancy (kg)	Gain during the second and third trimesters (kg/w)
Underweight (BMI <18.5)	11.0-16.0	0-2.0	0.46(0.37-0.56)
Normal weight (18.5≤BMI<24.0)	8.0-14.0	0-2.0	0.37(0.26-0.48)
Overweight (24.0≤BMI<28.0)	7.0-11.0	0-2.0	0.30(0.22-0.37)
Obesity (BMI≥28.0)	5.0-9.0	0-2.0	0.22(0.15-0.30)

Annex D
(Normative)
GRADE Method for Rating Certainty of Evidence and Strength of Recommendations

Table D.1 GRADE Rating of Certainty of Evidence

Certainty level	Definition	Typical evidence sources
High	Very confident that the true effect lies close to the estimate of the effect.	RCTs without major limitations or systematic reviews/meta-analyses of RCTs.
Moderate	Moderately confident in the effect estimate: the true effect is likely to be close to the estimate, but there is a possibility that it is substantially different.	RCTs with some limitations; or observational studies with upgrading factors such as a large effect or dose-response relationship.
Low	The confidence in the effect estimate is limited: the true effect may be substantially different from the estimate.	Observational studies (cohort or case-control studies), or RCTs with serious limitations.
Very low	There is very little confidence in the effect estimate: the true effect is very likely to be substantially different from the estimate.	Case series, case reports, or expert opinion; or observational studies with serious limitations.

Table D.2 GRADE Classification of Recommendation Strength

Strength of recommendation	Definition	Clinical wording
Strong recommendation (↑↑)	Benefits clearly outweigh risks and burdens, or risks and burdens clearly outweigh benefits; applicable to almost all patients.	"Definitely do"/"Definitely do not do."
Conditional recommendation (↑)	Benefits and risks/burdens are comparable, or benefits are uncertain; selection should be based on the patient's circumstances, values, and preferences.	"May do"/"May not do."
No clear recommendation (/)	Benefits and harms are balanced or uncertain, with no clear preference.	"Uncertain."

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Table D.3 Factors for Downgrading GRADE Certainty of Evidence

Factor	Description
Risk of bias	Limitations in study design or conduct (e.g., lack of randomization, lack of blinding, or high loss to follow-up).
Inconsistency	Large, unexplained differences among study results.
Indirectness	The study population, intervention, comparator, or outcomes do not fully match the clinical question.
Imprecision	Small sample size, wide confidence intervals, or imprecise effect estimates.
Publication bias	Unpublished negative results may exist.
Note: Each factor may result in downgrading by one level, or by two levels if serious.	

Table D.4 Factors for Upgrading GRADE Certainty of Evidence

Factor	Description
Large magnitude of effect	Large effect size (RR>2 or RR<0.5).
Dose-response relationship	A clear dose-response relationship exists between exposure and effect.
Confounding bias	Potential confounding factors would reduce the observed effect, yet the effect remains present.
Note: Observational studies may be upgraded.	

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Annex E
(Informative)
Chinese medicine Patterns and Other Interventions

E.1 Instructions for use

This Annex supplements the pattern differentiation concepts, candidate intervention regimens, and implementation details of the recommendations in the main text, for reference in clinical understanding, research design, and expert discussion. The Annex does not independently constitute new recommendations; the certainty of evidence and strength of recommendation are those of the corresponding items in the main text. Based on the available evidence, the contents of the Annex are divided into the following three categories:

a) Implementation details consistent with the main text: used to supplement implementation details for interventions already recommended in the main text (these do not independently constitute new recommendations. The certainty of evidence and strength of recommendation are those of the corresponding item in the main text, and clinical application should take gestational age, risk stratification, and specialist assessment into account.);

b) Candidate regimens for reference: may be considered for adjunctive management but are not part of the routine recommended pathway (the available evidence is largely indirect, and direct high-quality studies in populations with obesity in pregnancy are insufficient.);

c) For research design reference only: evidence is insufficient or safety boundaries remain unclear, and the regimen is not intended for routine dissemination (the contents of this section are derived mainly from TCM clinical experience, ancient texts, observational studies, or indirect evidence. Direct high-quality studies in populations with obesity in pregnancy are insufficient; in addition, some regimens involve pregnancy-specific safety concerns. Therefore, they are not part of the routine recommended pathway and are provided only for research design, expert discussion, or individualized consideration following strict assessment.).

E.2 Implementation Details Consistent With the Main Text

E.2.1 Exercise Management

E.2.1.1 Daily Exercise

Continuous intervention throughout pregnancy is recommended, and daily exercise may generally be performed from gestational week 10 to week 36 [28]. Under professional guidance, moderate-intensity physical activity should be used primarily [29,30], including walking, swimming, stationary cycling [31], and fitness classes [28], together with strength and flexibility training [28,29,31], such as biceps curls, lateral arm raises, knee extension exercises [32], and yoga [33]. Exercise should be performed for at least 30 min per day [30] and at least 150 min per week [31], at a frequency of 3~5 sessions/week, for 45 min~60 min per session [32]. During the second trimester (13~28 weeks), exercise may be increased to 3~4 sessions per week, 45 min per session. During the third trimester (29~40 weeks), shorter sessions of 20 min~30 min should be emphasized [34].

Note: Exercise is unsuitable in the following circumstances: placental abnormalities, premature rupture of membranes or a high risk of preterm birth, severe preeclampsia or poorly controlled blood pressure, serious cardiovascular disease, severe obstructive sleep apnea syndrome, very

poor glycemic control in gestational diabetes mellitus, fetal growth restriction, fetal distress, etc.

E.2.1.2 Traditional Chinese Exercise Therapies

Tai Chi: 2~3 times per week, 60 min~90 min each time, for 1~6 months [35-37].
Baduanjin: 3 times per week, 60 min each time, for 3 months [38,39].
Five-Animal Exercises: 3~6 times per week, 30 min~45 min each time, for 6 months [36].
Yijinjing: 7 times per week, 60 minutes each time, for 3 months [40].
Six-Character Formula: 1~2 times daily, 20 min~30 min each time, for 3 months [41].
Beginning at gestational week 16 (the second trimester), low- to moderate-intensity training should be emphasized, with gentle movements coordinated with breathing and meditation.
Note: Cervical insufficiency, ruptured membranes, preterm labor, persistent vaginal bleeding, preeclampsia, mild/moderate cardiovascular or respiratory disease, poorly controlled asthma, uncontrolled diabetes, uncontrolled hypertension, uncontrolled thyroid disease, musculoskeletal problems that may be aggravated by physical activity, placenta previa, symptomatic anemia, eating disorders, malnutrition, intrauterine growth restriction, etc. [42].

E.2.2 Dietary Management

It is recommended that fat account for 25%~30% of daily energy intake and dietary fiber intake be 25 g~30 g for women with obesity in pregnancy. A "3-2-1" vegetable pattern may be used (150 g leafy vegetables + 100 g gourds and fruits + 50 g fungi and algae), together with 120 g/day of high-quality protein from fish, poultry, eggs, and legumes, 500 ml of dairy products, and 25 g of healthy oils. Three main meals (25% at breakfast and 30% each at lunch and dinner) plus two snacks (5% each) should be arranged. Steaming, boiling, and stewing should be prioritized, and low-GI foods should be selected to control blood glucose [43-45].
Note: Pregnant women with elevated blood glucose should reduce fruit intake, and those with elevated uric acid should reduce their intake of fungi and algae.

E.2.3 Acupuncture Intervention

E.2.3.1 Safety information on the use of acupuncture in pregnant women

Acupuncture is widely used because of its clinical effectiveness and safety [46]. In 1997, the U.S. National Institutes of Health (NIH) issued the "NIH Consensus Statement on Acupuncture." Acupuncture has demonstrated significant efficacy in treating nausea and vomiting during pregnancy, various types of pain during pregnancy, depression, insomnia, and other mental disorders [47]. Acupuncture-related adverse events are usually caused by improper practice. In the hands of well-trained practitioners, acupuncture may essentially be regarded as a safe treatment modality [48]. High-quality evidence-based literature supports the clinical effectiveness and safety of acupuncture for pregnancy-related disorders; reported adverse reactions include needling pain, petechiae, fatigue, and drowsiness [46].

E.2.3.2 Acupuncture (filiform needle) procedure

Primary acupoints: Zhongwan (CV12), Guanyuan (CV4), and Zusanli (ST36). Modifications according to pattern differentiation: add Fenglong (ST40) for spleen deficiency with dampness obstruction; add Shangjuxu (ST37) and Neiting (ST44) for excess heat in the stomach and intestines; add Taichong (LR3) for liver qi stagnation; and add Shenshu (BL23) and Pishu (BL20) for spleen-kidney yang deficiency. Needle insertion should be gentle, with an insertion depth of approximately 20 mm. Course of intervention: once every other day, 30 min each session, for 12 weeks [49-61].

E.2.4 Screening for pregnancy complications

Obesity is one of the most common health problems among women of reproductive age [17]. It not only harms women's health during pregnancy but also increases the risk of pregnancy complications. Pregnant women included in the management population are three to four times more likely to develop gestational diabetes mellitus than women of normal weight [16,17]. The incidence of hypertensive disorders of pregnancy is also significantly increased, and the risk of preeclampsia shows a dose-response relationship with increasing BMI; the risk may double for every 5~7-unit increase in BMI [62]. The risk among women with severe obesity (class II/III) is three to four times higher than that among women with class I obesity (BMI 30.0~34.9) [62,63]. Obesity is also associated with an increased risk of miscarriage and recurrent miscarriage [64-67]. Because obesity substantially increases the risks of gestational diabetes mellitus, hypertensive disorders of pregnancy, and threatened miscarriage, it is essential for pregnant women included in the management population not only to emphasize weight management but also to undergo effective screening for common complications and receive targeted preventive measures. This is also an important application of the TCM concept of "preventive treatment of disease."

E.2.4.1 Obesity in pregnancy complicated by threatened miscarriage

E.2.4.1.1 Early risk assessment

High-risk window: focused screening should be performed in early pregnancy, because pregnant women included in the management population have a higher risk of miscarriage than women of normal weight [13].

E.2.4.1.2 Predictive factors

BMI≥30 kg/m^2 [particularly when accompanied by insulin resistance or polycystic ovary syndrome (PCOS), which doubles the risk].
Endocrine indicators: serum Prog<45 nmol/l in early pregnancy; abnormal doubling of β-hCG (free β-hCG value of 20 ng/ml, increase in β-hCG of <66% within 48 hours, and bioactivity/immunoreactivity ratio of β-hCG<0.5); and an empty gestational sac >15~17 mm [15].

E.2.4.1.3 Dynamic monitoring plan

Ultrasound monitoring: first ultrasound at 6~8 weeks of gestation (to confirm fetal cardiac activity); for high-risk women, repeat assessment of embryonic development every 1~2 weeks until the prenatal period.

Hormone levels: serum Prog + β-hCG + estradiol (optional), until 12 weeks of gestation.

E.2.4.2 Obesity in pregnancy complicated by gestational diabetes mellitus

E.2.4.2.1 Early risk assessment

Pregnant women included in the management population should undergo screening for gestational diabetes mellitus (GDM) as early as possible. In particular, women aged ≥35 years, with prepregnancy BMI≥30 kg/m^2, a history of GDM, or a family history of diabetes should be retested at 28 weeks of gestation as appropriate [18-20]. In pregnant women included in the management population, continuous glucose monitoring (CGM) during early pregnancy can more accurately predict GDM and its adverse pregnancy outcomes [68].

E.2.4.2.2 Predictive factors

For pregnant women included in the management population, a glucose challenge test (GCT) result >140 mg/dl (7.8 mmol/l) in a previous pregnancy, fasting plasma glucose (FPG) >5.7 mmol/l, glycated hemoglobin (HbA1c) >5.3% in early pregnancy, elevated fasting insulin, and abnormal common lipid indices (including elevated triglycerides [TG] and low-density lipoprotein [LDL] and reduced high-density lipoprotein [HDL]) all indicate an increased risk of GDM [20,69-72]. Changes in these levels should be monitored in a timely manner to prevent GDM.

E.2.4.2.3 Dynamic monitoring

a) BMI: Pregnant women included in the management population should monitor changes in body weight (at least once weekly, on the last day of each gestational week) until the prenatal period to ensure appropriate weight gain and prevent GDM [21].
b) Blood glucose: Pregnant women should regularly monitor blood glucose until the prenatal period as directed by a physician, including fasting blood glucose and blood glucose at 1 hour and 2 hours after meals [22]. The recommended glycemic targets during pregnancy for women with GDM are FPG and premeal blood glucose <5.3 mmol/l, 1-hour postprandial blood glucose <7.8 mmol/l, or 2-hour postprandial blood glucose <6.7 mmol/l, while avoiding nocturnal blood glucose <3.3 mmol/l.

E.2.4.3 Obesity in pregnancy complicated by gestational hypertension

E.2.4.3.1 Early risk assessment

Risk assessment should be performed at 11-13+6 weeks of gestation [25,26].

E.2.4.3.2 Predictive factors

Prepregnancy or early-pregnancy BMI ≥30 kg/m^2, maternal age ≥35 years, a history of chronic hypertension, a history of preeclampsia, and a history of antiphospholipid syndrome significantly increase the risk of gestational hypertension [23,24]. The risk associated with obesity in pregnancy increases as mean arterial pressure (MAP), uterine artery pulsatility index (UtA-PI), lactate dehydrogenase (LDH), and uric acid (UA) levels rise, and decreases as peripheral blood placental growth factor (PlGF) levels rise [26,27].

E.2.4.3.3 Dynamic monitoring

a) Blood pressure: Measure at every antenatal visit (for pregnant women at risk of preeclampsia, home blood pressure monitoring should be considered and instructions for its use should be provided) [73].
b) Urinary protein: Urinalysis or 24-h urinary protein quantification at every antenatal visit [73].

E.3 Candidate regimens for reference

E.3.1 Emotional regulation (excluding acupoint stimulation methods)

People with obesity in pregnancy are prone to anxiety/depression during pregnancy because of hypothalamic-pituitary-adrenal axis dysfunction, immune dysregulation, body dissatisfaction, weight-related discrimination, and binge-eating behavior, which may in turn lead to adverse outcomes such as preterm birth, abnormal fetal neurodevelopment, and long-term psychological and behavioral problems in offspring [11,12]. Emotional regulation includes various methods such as five-tone therapy, guqin music, and mindfulness interventions to regulate physical and mental states from multiple dimensions, relieve negative emotions, and promote overall mind-body harmony.

E.3.1.1 TCm five-tone therapy

The five Chinese tones are gong, shang, jue, zhi, and yu, corresponding respectively to earth, metal, wood, fire, and water, and to the spleen, lung, liver, heart, and kidney. Their gentle melodies may harmonize the body and mind and balance qi and blood. Folk music based on five-phase theory is used for 1 h daily for 30 d [7,8].

E.3.1.2 Guqin

Also known as yaoqin, yuqin, or the seven-stringed qin, the guqin is one of China's oldest plucked string instruments and has a long history and rich cultural significance. Sessions last 30 minutes, 5 days per week, for 8 weeks [74]. For daily health maintenance, listening for 15 min~20 min before sleep each day or participating in group performances 1~2 times per week is recommended [9].

E.3.1.3 Mindfulness intervention

This may be used as an adjunctive intervention to improve emotional status, sleep quality, and the risk of stress-related eating. In conjunction with weight reduction in pregnant women, it emphasizes engaging the whole body and mind, helping people with obesity develop self-awareness during simple eating, drinking, and exercise activities, and find sources of happiness [10]. It includes mindfulness-based cognitive behavioral therapy, mindfulness-based cognitive therapy, mindfulness-based childbirth and parenting interventions, and basic mindfulness interventions. Pregnant women are guided through mindfulness practice to change their cognitive and psychological states and thereby relieve anxiety. Expert-guided interventions range from 1~8 sessions per week, with each practice lasting 6 min~180 min, over a duration ranging from 3 d to 8 weeks [75].

E.3.2 Chinese medicine aromatherapy

a) Lavender essential oil: 1) Topical application: apply a cream containing 1.25% lavender essential oil to the legs, either alone or together with a foot bath; alternatively, use massage oil containing 2% lavender essential oil for whole-body massage (head, neck, shoulders, etc.). 2) Inhalation: inhale lavender essential oil through an aroma pendant or diffuser; some studies combined it with classical music to enhance the effect. 3) Topical application is performed once daily. For inhalation, place 3 drops of lavender essential oil on a tissue and inhale for 20 min at a distance of 10 cm from the tip of the nose [76,77].

b) Neroli essential oil: Place 3 drops of neroli essential oil on a nonabsorbent handkerchief, pin it to the collar, and inhale for 1 h each time. Continue for 1 month, 3 times per week (on even-numbered days) [78,79].

c) Lemon essential oil: Use a mixture of citronella and lemon essential oils for aromatherapy by inhalation through a diffuser for 7 consecutive days, once every 2 hours before bedtime each night [80].

Note: Restricted to women after 16 weeks of gestation without a history of essential-oil allergy; oral administration and application to abdominal skin are not recommended; other essential-oil regimens are provided only for research design reference.

E.4 For research design reference only

E.4.1 Pattern differentiation

E.4.1.1 Spleen deficiency with dampness obstruction pattern

Primary symptoms: several months of pregnancy, obesity, facial puffiness and limb edema, fatigue and lack of strength, a sensation of bodily heaviness, epigastric and abdominal fullness, difficult urination, and loose stools or constipation.

Secondary symptoms: mild edema of the limbs may be present, with reluctance to speak or move, bland taste in the mouth, and poor appetite.

Tongue and pulse: pale, enlarged tongue with tooth marks along the edges and a thin white or white greasy coating; moderate or soggy-thready pulse.

E.4.1.2 Excess heat in the stomach and intestines pattern

Primary symptoms: several months of pregnancy, obesity, excessive eating, rapid digestion with frequent hunger, profuse sweating, dry stools, and yellow urine.

Secondary symptoms: halitosis, or dry and bitter mouth, thirst, and preference for drinking.

Tongue and pulse: red tongue with a yellow greasy coating; slippery-rapid pulse.

E.4.1.3 Liver qi stagnation pattern

Primary symptoms: several months of pregnancy, obesity, fullness and discomfort in the chest and hypochondrium, epigastric fullness, swelling of the limbs without change in skin color, and no obvious pitting on pressure.

Secondary symptoms: emotional unease, depressed mood, insomnia with frequent

dreams, and frequent sighing.
Tongue and pulse: dark-red tongue with a white or thin greasy coating; wiry pulse.

E.4.1.4 Spleen-kidney yang deficiency pattern

Primary symptoms: several months of pregnancy, obesity, poor fetal growth, aversion to cold, fatigue and lack of strength, profuse thin vaginal discharge, soreness and weakness of the lower back and legs, copious clear urine, and loose stools.
Secondary symptoms: generalized puffiness and swelling, dull lower-abdominal pain relieved by warmth and pressure, and poor appetite.
Tongue and pulse: pale tongue with a thin white coating; deep, thready, and weak pulse.

E.4.2 Pattern-based management

E.4.2.1 Spleen deficiency with dampness obstruction pattern

Treatment principle and method: strengthen the spleen, replenish qi, and promote the drainage of dampness.
Reference formula: Baizhu San (Formulas to Aid the Living)
Note: The formula contains Arecae Pericarpium, which moves qi downward and may disturb the fetus; its alkaloids may stimulate uterine smooth muscle and readily induce uterine contractions. Use with caution during pregnancy.

E.4.2.2 Excess heat in the stomach and intestines pattern

Treatment principle and method: clear and drain stomach heat, unblock the bowels, and discharge turbidity.
Reference formula: Peilian Mahuang Tang (Expert Consensus on a TCM Diagnosis and Treatment Plan for Obesity)
Note: The formula contains Ephedrae Herba, which may stimulate the uterus. Use with caution during pregnancy.

E.4.2.3 Liver qi stagnation pattern

Treatment principle and method: soothe the liver, relieve constraint, move qi, and transform phlegm.
Reference formula: Zhengqi Tianxiang San (Outline of Medicine)
Note: The formula contains Linderae Radix, which is mildly toxic. Cyperi Rhizoma is pungent, aromatic, and dispersing and may stimulate uterine smooth muscle and disturb fetal qi; it is particularly contraindicated in early pregnancy, and even in the second and third trimesters it must be strictly combined with fetal-stabilizing medicines. Perillae Folium is pungent and warm and carries a risk of stimulating uterine smooth-muscle contraction; Perillae Caulis, however, may inhibit uterine contractions through a mechanism similar to progesterone and may stabilize pregnancy. The overall combination of Linderae Radix + Zingiberis Rhizoma + Citri Reticulatae Pericarpium is warm, drying, and qi-moving. Use with caution during pregnancy.

E.4.2.4 Spleen-kidney yang deficiency pattern

Treatment principle and method: tonify the spleen and kidney, warm yang, and promote urination.

Reference formula: Zhenwu Tang (Treatise on Cold Damage)

Note: Contains Aconiti Lateralis Radix Praeparata, which is listed in the Pharmacopoeia as a medicine to be used with caution in pregnant women) combined with Shoutai Wan (Records of Chinese Medicine With Reference to Western Medicine).

E.4.3 Warm-needling

Primary acupoints: group a, Pishu (BL20) and Shenshu (BL23); group b, Zhongwan (CV12) and Zusanli (ST36). On the basis of filiform-needle acupuncture, qualified physicians may alternate between groups a and b for warm-needling intervention. Course: once every other day for 12 weeks [81,82].

E.4.4 Mild moxibustion with a moxa stick

Selected acupoints [83]: Zusanli (ST36), Pishu (BL20), and Weishu (BL21); two of the three acupoints are selected for each treatment. Use mild moxibustion with a moxa stick: ignite the moxa stick and hold the lit end 2 min~3 cm from the skin over the acupoint for warming. During moxibustion, observe the local skin condition and systemic symptoms and ask the pregnant woman about any discomfort as appropriate. Mild moxibustion should produce local warmth without burning pain. Continue until slight local erythema appears, for 5 min~7 min at each site [84]. After moxibustion, instruct the pregnant woman not to drink cold water, to drink more warm water, and not to wash her hands or bathe with cold water within 30 minutes. Perform once daily; 7 days constitute one course. Maintain a comfortable position during the procedure and monitor fetal heart rate and fetal movement.

E.4.5 Herbal acupoint application

Herbal formula [83]: Caryophylli Flos, Zingiberis Rhizoma Praeparatum, Evodiae Fructus, Piperis Fructus, and Artemisiae Argyi Folium (note: these medicines are pungent, hot, warming, and unblocking. Caryophylli Flos, Evodiae Fructus, and Artemisiae Argyi Folium are mildly toxic; transdermal absorption of their constituents may stimulate uterine smooth muscle, so use with caution during pregnancy. Application to the lower abdomen, lumbosacral region, or uterus-related acupoints is prohibited. Piperis Fructus is pungent, hot, and dispersing and contains piperine-type volatile oils, which may disturb qi and blood. Zingiberis Rhizoma Praeparatum is pungent and hot and should be used with caution during pregnancy). Mix in an appropriate proportion, grind into a fine powder, seal, and store. Squeeze a small amount of fresh ginger juice and mix it with the powder into a paste; form pellets approximately 1 cm in diameter and place them on Zusanli (ST36), Shangjuxu (ST37), Xiajuxu (ST39), Pishu (BL20), or Weishu (BL21), with modifications according to the pattern, using two acupoints each time. Apply with an occlusive patch and replace every 6 h~8 h; clean the acupoint area with normal saline when replacing the patch. Observe skin changes at the application site to prevent allergy and skin damage [85], and monitor fetal heart rate and fetal movement. During application, instruct the pregnant woman to avoid cold, raw, fishy, spicy, and irritating foods. Perform once daily; 7 days constitute one course, for a total of two courses.

E.4.6 Chinese herbal medicine intervention

Given the special physiological characteristics of women during pregnancy, medicated diets and herbal teas may be considered as candidate methods of TCM pattern-based regulation for research design or individualized reference. Before use, a qualified practitioner should assess safety, applicability, and potential contraindications.

E.4.6.1 Pattern-based dietary therapy

Dietary management is an important component of intervention for obesity in pregnancy. TCM emphasizes "pattern-based dietary therapy" and "herbal tea regulation," meaning that medicinal and edible ingredients with corresponding actions are selected according to the pregnant woman's pattern, and specific recipes (porridge, soup, herbal tea, etc.) are provided for each pattern, including preparation, administration, and caloric content, to offer medicated-diet regulation and convenient herbal-tea formulas. A qualified practitioner must be consulted before use to assess safety and suitability.

E.4.6.1.1 Spleen deficiency with dampness obstruction pattern

a) Diet: 1) The diets of pregnant women included in the management population may selectively include Lablab Semen Album (must be stir-fried for use in pregnant women), Jujubae Fructus, Dioscoreae Rhizoma, Longan Arillus (rich and cloying, it may aggravate dampness and fullness; its warming and drying nature may also aggravate heat, so use during pregnancy must be assessed by a qualified practitioner), Poria, Citri Reticulatae Pericarpium, and Nelumbinis Semen [86]. 2) Carp soup: carp, Atractylodis Macrocephalae Rhizoma, and Citri Reticulatae Pericarpium [87];

b) Herbal tea: Tangerine Peel and Jujube Tea: Jujubae Fructus and Citri Reticulatae Pericarpium. Remove the pits from the jujubes and dry-fry until browned; wash the tangerine peel and steep both in boiling water for 10 minutes. Administration and dosage: drink warm as a tea in frequent small amounts; the jujubes may be eaten [88].

E.4.6.1.2 Excess heat in the stomach and intestines pattern

Diet and preparation:

Dendrobium officinale and Polygonatum odoratum Lean Pork Soup: 60 g lean pork, Dendrobii Officinalis Caulis, and Polygonati Odorati Rhizoma (slightly cold in nature; excessive intake may cause abdominal pain and diarrhea; contraindicated in people with hypotension or allergy). Wash all ingredients and place them in an earthenware pot with water. Bring to a boil over high heat, reduce to low heat, and simmer for 1 hour; add an appropriate amount of salt. Administration and dosage: serve warm with meals. It may be consumed once daily or every other day as appropriate [89].

Herbal tea

Scutellariae Radix, Poria, Atractylodis Macrocephalae Rhizoma, Aurantii Fructus Immaturus (a medicine to be used with caution during pregnancy), and Glycyrrhizae Radix et Rhizoma steeped in water for drinking [90].

E.4.6.1.3 Liver qi stagnation pattern

a) Diet: The diets of pregnant women included in the management population may

selectively include Citri Sarcodactylis Fructus (contains limonene volatile oil; use with caution during early pregnancy and in women with a history of miscarriage or threatened miscarriage, and use during pregnancy only under physician guidance), Citri Reticulatae Pericarpium, and nonglutinous rice. Wash all ingredients, wrap Citri Sarcodactylis Fructus and Citri Reticulatae Pericarpium in gauze, and cook them with the rice and an appropriate amount of water. Bring to a boil over high heat and then simmer over low heat for 30 minutes. Administration and dosage: may be eaten as a staple food, 3~5 times per week [86,89].

b) Herbal tea: Hawthorn Drink: Crataegi Fructus (invigorates blood and disperses stasis and may readily stimulate uterine contractions; use with caution during pregnancy) and Citri Reticulatae Pericarpium steeped in water for drinking [87].

E.4.6.1.4 Spleen-Kidney Yang Deficiency Pattern

Diet:

a) The diets of pregnant women included in the management population may selectively include Euryales Semen, Dioscoreae Rhizoma, and Poria [86].

b) Stir-Fried Mutton With Scallions: lean mutton and scallions (pungent and warm, promote yang qi; use with caution during early pregnancy and consume only in moderation).

c) Walnut and Goji Berry Porridge: walnut kernels, Lycii Fructus, black sesame seeds, and nonglutinous rice [87].

E.4.7 Emotional regulation

E.4.7.1 Intradermal needle

A professionally qualified acupuncturist, while ensuring a safe angle and depth, selects bilateral Shenmen (HT7), Neiguan (PC6), and Taichong (LR3). Intradermal needles measuring 0.20 mm×1.5 mm or 0.20 mm×1.2 mm are inserted vertically into the skin. Ten sessions are completed within 6 weeks, once every 4 days; each needle is retained for 72 hours, followed by a 1-day rest after removal [91,92].

E.4.7.2 Conventional acupuncture

The procedure is performed by a professionally qualified acupuncturist. Selected acupoints include Taixi (KI3), Shenmen (HT7), Zusanli (ST36), Neiguan (PC6), Baihui (GV20), Fengchi (GB20), Anmian (EX-HN22), and others. A 0.340 mm or 0.325 mm stainless-steel needle is inserted vertically and rotated counterclockwise until deqi is achieved, then retained for 30 min. Ten interventions are performed over 3 weeks: 4 in the first week and 3 per week thereafter [93].

E.4.7.3 Scalp acupuncture

A professionally qualified acupuncturist selects a specific area on the skull surface. The midline point 0.5 cm above the external occipital protuberance is located, with subsequent points spaced 2 cm apart. After local anesthesia, the needle is inserted rapidly and vertically to the bone surface, with the tip penetrating approximately 1 mm into the periosteum. The procedure lasts approximately 60 s. A total of 15 sessions are

performed: the first 5 on 5 consecutive days and the remaining 10 once every other day [94].

E.4.7.4 Auricular acupoints

The procedure is performed by a professionally qualified acupuncturist. Selected acupoints are Shenmen, Kidney, and Sympathetic, used as "opening points" to activate other acupoints; Brainstem, Spleen, and Anxiety are then selected, with optional addition of Visceral Nervous System, Heart, Anterior Vertical Point, Genitalia, and Endocrine. Vaccaria seeds (yellow rapeseeds) are affixed to the auricular acupoints. The acupoints are manually pressed 10 times daily for approximately 10 s each time; pressing is discontinued if discomfort occurs. Application is unilateral, alternating ears each time, once every 3 days [95-97], with all procedures performed in accordance with safety standards.

E.4.7.5 Acupressure

Selected acupoints: Zhaohai (KI6), Yinlingquan (SP9), Lieque (LU7), Liangqiu (ST34), Waiguan (TE5), Yangchi (TE4), Neiguan (PC6), Tianzhu (BL10), and Liudian [98]. Apply vertical pressure to the acupoints with a finger or thumb, optionally combined with passive stretching and joint rotation, 2~3 times daily for 1 min~2 min each time [99]. Because Sanyinjiao (SP6) may readily induce uterine contractions, the pregnant woman's condition and uterine contractions should be closely monitored during the intervention.

E.4.7.6 Herbal tea

For anxiety/depression during pregnancy, the following medicines may be considered: Citri Reticulatae Pericarpium, Menthae Haplocalycis Herba, Bupleuri Radix, Cyperi Rhizoma, Perillae Folium, Curcumae Radix, and Gardeniae Fructus (most are qi-moving medicines and should be used with caution during pregnancy and only under the guidance of a qualified physician). Crush and grind them evenly into powder, mix thoroughly, and place one dose into a tea bag. Add 500 ml of water and decoct in a teapot for 15 min; drink as a tea [100].

E.4.8 Prevention of pregnancy complications

E.4.8.1 Obesity in pregnancy complicated by threatened miscarriage

E.4.8.1.1 TCM prevention

Medicated diet

a) Morinda and Goji Berry Pork Kidney Soup: Morindae Officinalis Radix (warm and drying, assists yang, may readily generate internal heat and disturb the fetus; use with caution in pregnant women with obesity or a history of threatened miscarriage, and use during pregnancy only under physician guidance), Lycii Fructus, Codonopsis Radix, Citri Reticulatae Pericarpium, red dates, and one fresh pork kidney. Wash the kidney, remove its inner membrane and strong-smelling tendons, place all ingredients in a clay pot with a little salt and an appropriate amount of water, bring to a boil over high heat, and simmer over low heat for 60 min before eating [101].

b) Steamed Chicken With Amomum and Goji Berries: Amomi Fructus (crushed; it regulates qi and stabilizes the fetus, but crushing greatly increases the release of volatile oils [camphor and bornyl acetate], increasing irritation and posing greater risk than whole Amomi Fructus), Lycii Fructus, and 500 g free-range chicken. Cut the chicken into pieces, blanch, and remove the blood foam. Place in a steam pot, add an appropriate amount of salt, scallion, fresh ginger, Amomi Fructus, and Lycii Fructus, and steam for 30 minutes before eating [101].

c) Therapeutic porridge: Add nourishing ingredients such as Lycii Fructus, Rehmanniae Radix Praeparata (may cause diarrhea), Angelicae Sinensis Radix (invigorates blood; use cautiously in early pregnancy), Dioscoreae Rhizoma, Ginseng Radix et Rhizoma (use cautiously in heat patterns), and Jujubae Fructus (use under physician guidance and avoid self-medication) to the diet, together with high-quality protein (milk, eggs, etc.).

d) Modified formula containing Codonopsis Radix, Polygonati Odorati Rhizoma, Lilii Bulbus (contains trace colchicine-like compounds, at higher levels in fresh lily bulbs; long-term or excessive use may cause gastrointestinal discomfort), Dioscoreae Rhizoma, red lotus seeds, Lycii Fructus, and Jujubae Fructus, double-boiled with 50 g lean meat for 1.5 h [102].

Herbal tea

Flower Tea Drink: Mori Folium and Nelumbinis Folium (may be taken in small amounts under physician guidance), Bambusae Caulis in Taenias granules, Albiziae Flos (invigorates blood; use cautiously in early pregnancy), and rock sugar; or Rosae Rugosae Flos (invigorates blood; use cautiously in early pregnancy), Lycii Fructus, Ophiopogonis Radix, buckwheat kernels, Jujubae Fructus, and brown sugar. According to the patient's taste, dried lemon slices (use with caution in those with excessive gastric acid, deficiency-cold constitution, or an empty stomach) or dried papaya slices (papaya contains papain, which may stimulate uterine smooth-muscle contractions; use with caution in pregnant women) may be added. Brew in a health-preserving kettle and drink small amounts frequently, 2~3 bags per day [103].

E.4.8.2 Obesity in pregnancy complicated by gestational diabetes mellitus

E.4.8.2.1 TCM Prevention

For high-risk people with overweight or obesity who are at risk of GDM, the following dietary, exercise, and emotional guidance methods are recommended to control blood glucose and reduce body weight.

Medicated diet

a) Chinese Yam and Coix Seed Porridge: Dioscoreae Rhizoma and Coicis Semen (listed in the Pharmacopoeia as requiring caution in pregnant women), prepared as a soup;

b) Pseudostellaria, Astragalus, Fresh Rehmannia, Salvia, and Chicken Custard: Pseudostellariae Radix, Astragali Radix (use with caution in late pregnancy and during labor), fresh Rehmanniae Radix (not recommended in the absence of a clear heat pattern), Salviae Miltiorrhizae Radix et Rhizoma (use cautiously because it invigorates blood), and shredded chicken. Medicinal and edible ingredients such as Polygonati Odorati Rhizoma, Trichosanthis Radix (listed in the Pharmacopoeia as requiring caution

in pregnant women), and Lablab Semen Album may also be added. Patients may select according to their physical condition [104].

Herbal tea
Zicui Drink: Astragali Radix and fresh Rehmanniae Radix (use under physician guidance), Dioscoreae Rhizoma, and porcine pancreatic powder, decocted and taken as a tea [104].

Traditional exercise therapy
Tai Chi and Baduanjin. Patients are advised to exercise 3~4 times per week for 60 min each session, comprising three exercise periods and three rest periods; each exercise period lasts 15 min and each rest period 5 min. Patients may select an appropriate exercise modality according to their condition [105-107].

E.4.8.2.2 Lifestyle intervention

Pregnant women with overweight/obesity who are at risk of GDM are advised to consume a balanced diet, control total energy intake, and appropriately balance carbohydrate, protein, and fat intake. Small, frequent meals should be eaten at regular times and in fixed quantities. Intake of pure-sugar products such as sucrose, honey, and chocolate should be strictly limited. Low-sugar fruits such as apples, pears (cool in nature; women with spleen-stomach weakness and pregnant women should not consume excessive amounts), and grapefruit (cold in nature; women with spleen-stomach weakness and pregnant women should not consume excessive amounts) should be selected and eaten in divided portions [25,108]. At the same time, aerobic exercise suitable for pregnant women, such as walking, prenatal yoga, and swimming, should be selected, generally for approximately 30 min per session, 3~5 times per week. Appropriate stretching exercises, such as whole-body stretching and limb stretching, should be performed for 10 min~15 min each session [25,108].

E.4.8.3 Obesity in pregnancy complicated by gestational hypertension

E.4.8.3.1 TCM constitution-based health care

Based on the constitution type and assessment findings, TCM guidance may include daily-routine regulation, medicated dietary therapy, emotional regulation, and health preservation through both activity and rest [109,110] (TCM constitution classification is based on Professor Wang Qi's nine-type method at Beijing University of Chinese Medicine [111]).

Daily-routine regulation

Pregnant women should ensure at least 10 h of rest each day and avoid prolonged standing and excessive fatigue [112].

Medicated dietary therapy

Avoid greasy and spicy foods, eat more foods rich in protein, vitamins, and minerals, such as lean meat, eggs, vegetables, and fruits, and limit salt intake [112,113]. Particular ingredients with actions such as clearing heat and lowering blood pressure, invigorating blood and resolving stasis, supplementing qi, and nourishing yin include wax gourd

(cold in nature and unsuitable for long-term consumption during pregnancy), water chestnut (sweet and cold in nature; the Compendium of Materia Medica states that it "treats bloody dysentery, hematochezia, and uterine bleeding"; people with deficiency-cold or blood deficiency and pregnant women should use it with caution), celery (cool and slippery in nature and therefore unsuitable for excessive consumption, particularly in people with spleen-stomach deficiency-cold or insecure intestines), Chinese yam, and lotus seeds [112]. Pregnant women with gestational hypertension and a phlegm-dampness constitution are advised to drink chrysanthemum tea (cold and sweet; use with caution in pregnant women with reduced immunity or spleen-stomach weakness because it may readily cause abdominal pain and diarrhea), mung bean soup (mung beans are cold in nature and should not be consumed excessively by pregnant women), green tea (contains tannic acid that affects iron absorption; consume 1 hour after meals and avoid excessive intake, which may cause nervous excitation, insomnia, or anxiety in pregnant women), and tremella soup (nourishes and generates fluids and moistens the lung and stomach; contraindicated/use with caution in pregnant women with damp-heat generating phlegm). Poria and Euryales Semen and other ingredients that dispel dampness, transform phlegm, and are pungent, warm, and dampness-drying may be added to soups [114].

Exercise therapy for health preservation

Tai Chi [112] and Five-Animal Exercises [113].

E.4.8.3.2 Acupoint massage

Selected acupoints: Baihui (GV20), Zusanli (ST36), and Neiguan (PC6). Place the ribbed surfaces of both thumbs at the appropriate positions and move them in circles to mobilize the skin and subcutaneous tissue, slowly and gently, at 120~160 movements per minute. Massage each acupoint for 1 min~2 min; 7 days constitute one course, with a 1-day rest between courses, for a total of four courses [115].

The patient lies supine. Apply gentle, moderate pressure with the thumb or tap with a loosely clenched fist once daily for 3 min~5 min each time. Massage Tianshu (ST25) clockwise with three or four fingers for 2 min~3 min once daily. In addition, press and knead Xiawan (CV10), Shangwan (CV13), Zhongwan (CV12), and Guanyuan (CV4), each for 2 min~3 min, once daily. Treat bilateral Zusanli (ST36) and Yinlingquan (SP9), each for 3 min, 1~2 times daily, ideally producing soreness, numbness, and distention [116].

E.4.9 Fetal monitoring in pregnant women included in the management population

Clinicians should fully inform pregnant women included in the management population about the risks of fetal abnormalities and stillbirth. Maternal obesity is associated with fetal structural abnormalities, particularly congenital heart disease and neural tube defects. For every one-unit increase in BMI among pregnant women included in the management population, the risk of congenital heart disease in the fetus increases correspondingly. Obesity may also interfere with normal fetal development and lead to structural abnormalities. In addition, obesity substantially increases the risk of stillbirth during pregnancy; for every five-unit increase in BMI, the risk of stillbirth increases by

approximately 1.28-fold. Obesity-related pregnancy complications, such as hypertension, may restrict the fetal supply of oxygen and nutrients, thereby increasing the risk of fetal death [4]. Therefore, pregnant women included in the management population should pay attention to changes in fetal movement after 20 weeks of gestation and undergo regular fetal monitoring. For pregnant women with a prepregnancy BMI of 35.0 kg/m2~39.9 kg/m2, weekly antenatal fetal surveillance is recommended beginning at 37 weeks of gestation. For those with prepregnancy BMI≥40 kg/m2, weekly antenatal fetal surveillance is recommended beginning at 34 weeks of gestation [117]. However, no studies have established the optimal type or frequency of fetal monitoring, and no specific evidence is available for pregnant women included in the management population.

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Annex F
(Informative)
Predictive Factors for Common Complications of Obesity in Pregnancy

Table F.1 Summary of literature on risk factors for common complications of obesity in pregnancy

Common complication	Predictive factor	Title/Author/Journal	Q	IF
Gestational diabetes mellitus	Anthropometric indicators			
	Advanced maternal age (age ≥35 years)	(1)Huang Y, Li Z, Zhu J, et al. Construction of a risk prediction model for adverse pregnancy outcomes in primipara with gestational diabetes mellitus combined with pregnancy-induced hypertension syndrome. Clin Exp Hypertens. 2025;47(1):2492621. doi:10.1080/10641963.2025.2492621	2	3.5
		(2)Jin F, Sun J, Yang Y, et al. Development and validation of a clinical model to predict preconception risk of gestational diabetes mellitus in nulliparous women: A retrospective cohort study. Int J Gynaecol Obstet. 2024;165(1):256-264. doi:10.1002/ijgo.15134	2	2.4
		(3)Zhang X, Wang Y, Zhao H, Chen S, Gao X. A retrospective study to investigate the risk factors for gestational diabetes mellitus and its impact on maternal and neonatal outcomes. J Diabetes Complications. 2025;39(6):109035. doi:10.1016/j.jdiacomp.2025.109035	3	3.1
	Age	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(2)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
		(3)Zhang R, Li Z, Xilifu N, et al. A nomogram to predict gestational diabetes mellitus: a multi-center retrospective study. J Mol Cell Biol. Published online March 10, 2025. doi:10.1093/jmcb/mjaf008	2	5.9
		(4)Syngelaki A, Wright A, Gomez Fernandez C, Mitsigiorgi R, Nicolaides KH. First-Trimester Prediction of Gestational Diabetes Mellitus Based on Maternal Risk Factors. BJOG. 2025;132(7):972-982. doi:10.1111/1471-0528.18110	2	4.3

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		(5)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
	Prepregnancy BMI	(1)Huang Y, Li Z, Zhu J, et al. Construction of a risk prediction model for adverse pregnancy outcomes in primipara with gestational diabetes mellitus combined with pregnancy-induced hypertension syndrome. Clin Exp Hypertens. 2025;47(1):2492621. doi:10.1080/10641963.2025.2492621	2	3.5
		(2)Zhang R, Li Z, Xilifu N, et al. A nomogram to predict gestational diabetes mellitus: a multi-center retrospective study. J Mol Cell Biol. Published online March 10, 2025. doi:10.1093/jmcb/mjaf008	2	5.9
		(3)Lu YT, Chen CP, Sun FJ, Chen YY, Wang LK, Chen CY. Associations between first-trimester screening biomarkers and maternal characteristics with gestational diabetes mellitus in Chinese women. Front Endocrinol (Lausanne). 2024;15:1383706. Published 2024 Aug 8. doi:10.3389/fendo.2024.1383706	2	4.6
		(4)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(5)Wang X, He C, Wu N, et al. Establishment and validation of a prediction model for gestational diabetes. Diabetes Obes Metab. 2024;26(2):663-672. doi:10.1111/dom.15356	2	5.7
		(6)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
	Family and medical history			
	Family history of diabetes	(1)Wang X, He C, Wu N, et al. Establishment and validation of a prediction model for gestational diabetes. Diabetes Obes Metab. 2024;26(2):663-672. doi:10.1111/dom.15356	2	5.7

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		(2)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(3)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
		(4)Syngelaki A, Wright A, Gomez Fernandez C, Mitsigiorgi R, Nicolaides KH. First-Trimester Prediction of Gestational Diabetes Mellitus Based on Maternal Risk Factors. BJOG. 2025;132(7):972-982. doi:10.1111/1471-0528.18110	2	4.3
		(5)Lu YT, Chen CP, Sun FJ, Chen YY, Wang LK, Chen CY. Associations between first-trimester screening biomarkers and maternal characteristics with gestational diabetes mellitus in Chinese women. Front Endocrinol (Lausanne). 2024;15:1383706. Published 2024 Aug 8. doi:10.3389/fendo.2024.1383706	2	4.6
		(6)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
	History of GDM	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(2)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
		(3)Lu YT, Chen CP, Sun FJ, Chen YY, Wang LK, Chen CY. Associations between first-trimester screening biomarkers and maternal characteristics with gestational diabetes mellitus in Chinese women. Front Endocrinol (Lausanne). 2024;15:1383706. Published 2024 Aug 8. doi:10.3389/fendo.2024.1383706	2	4.6
		(4)Wang X, He C, Wu N, et al. Establishment and validation of a prediction model for gestational diabetes. Diabetes Obes Metab. 2024;26(2):663-672. doi:10.1111/dom.15356	2	5.7

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	History of PCOS	(1)Zhang J, Cao Q, Mao C, et al. Development and validation of a prediction model for gestational diabetes mellitus risk among women from 8 to 14 weeks of gestation in Western China. BMC Pregnancy Childbirth. 2025;25(1):385. Published 2025 Apr 2. doi:10.1186/s12884-025-07442-1	4	2.7
		(2)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
	Serological indicators			
	Glycated hemoglobin (HbA1c)	(1)Saravanan P, Deepa M, Ahmed Z, et al. Early pregnancy HbA1c as the first screening test for gestational diabetes: results from three prospective cohorts. Lancet Diabetes Endocrinol. 2024;12(8):535-544. doi:10.1016/S2213-8587(24)00151-7	1	41.8
		(2)Huang Y, Li Z, Zhu J, et al. Construction of a risk prediction model for adverse pregnancy outcomes in primipara with gestational diabetes mellitus combined with pregnancy-induced hypertension syndrome. Clin Exp Hypertens. 2025;47(1):2492621. doi:10.1080/10641963.2025.2492621	2	3.5
	Triglyceride-glucose (TyG) index	(1)Gurza G, Martínez-Cruz N, Lizano-Jubert I, et al. Association of the Triglyceride-Glucose Index During the First Trimester of Pregnancy with Adverse Perinatal Outcomes. Diagnostics (Basel). 2025;15(9):1129. Published 2025 Apr 29. doi:10.3390/diagnostics15091129	3	3.3
		(2)Zhang J, Fang X, Song Z, et al. Positive association of triglyceride glucose index and gestational diabetes mellitus: a retrospective cohort study. Front Endocrinol (Lausanne). 2025;15:1475212. Published 2025 Jan 6. doi:10.3389/fendo.2024.1475212	2	4.6
	Triglyceride, high-density cholesterol-glucose body index (TyHGB)	(1)Xu Z, Li C, Wang N, Song G. Association between the new TyG indicator-TyHGB and gestational diabetes mellitus: results from the case-control and prospective cohort studies. J Transl Med. 2025;23(1):190. Published 2025 Feb 16. doi:10.1186/s12967-025-06166-2	1	7.5

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	Triglycerides	(1)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
		(2)Zhang R, Li Z, Xilifu N, et al. A nomogram to predict gestational diabetes mellitus: a multi-center retrospective study. J Mol Cell Biol. Published online March 10, 2025. doi:10.1093/jmcb/mjaf008	2	5.9
	High-density cholesterol	(1)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
	Low-density cholesterol	(1)Zhang Z, Yang L, Han W, et al. Machine Learning Prediction Models for Gestational Diabetes Mellitus: Meta-analysis. J Med Internet Res. 2022;24(3):e26634. Published 2022 Mar 16. doi:10.2196/26634	1	6.0
	Fasting blood glucose	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
		(2)Zhang J, Cao Q, Mao C, et al. Development and validation of a prediction model for gestational diabetes mellitus risk among women from 8 to 14 weeks of gestation in Western China. BMC Pregnancy Childbirth. 2025;25(1):385. Published 2025 Apr 2. doi:10.1186/s12884-025-07442-1	2	2.7
	Results of glucose challenge testing (GCT) in a previous pregnancy	(1)Artzi NS, Shilo S, Hadar E, et al. Prediction of gestational diabetes based on nationwide electronic health records. Nat Med. 2020;26(1):71-76. doi:10.1038/s41591-019-0724-8	1	50.0
Gestational hypertension	Genetic factors (gene loci)	Tyrmi JS, Kaartokallio T, Lokki AI, et al. Genetic Risk Factors Associated With Preeclampsia and Hypertensive Disorders of Pregnancy. JAMA Cardiol. 2023;8(7):674-683. doi:10.1001/jamacardio.2023.1312	1	14.1
	Anthropometric indicators			

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	BMI	(1)Zhou Y, Xiao C, Yang Y. Pre-pregnancy body mass index combined with peripheral blood PLGF, DCN, LDH, and UA in a risk prediction model for pre-eclampsia. Front Endocrinol (Lausanne). 2024;14:1297731. Published 2024 Jan 8. doi:10.3389/fendo.2023.1297731	3	4.6
	BMI ≥28 (China) BMI ≥30 (Sweden)	(2)Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
	BMI≥35	(3)Simon A, Pratt M, Hutton B, et al. Guidelines for the management of pregnant women with obesity: A systematic review. Obes Rev. 2020;21(3):e12972. doi:10.1111/obr.12972	2	7.4
	BMI >30	(4)Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	Maternal age (at 37 weeks of gestation)	(1)Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	Advanced maternal age (≥35 years at delivery)	(2)Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
	Mean arterial pressure (MAP) Uterine artery pulsatility index (UtA-PI) Positive correlation	O'Gorman N, Wright D, Poon LC, et al. Accuracy of competing-risks model in screening for pre-eclampsia by maternal factors and biomarkers at 11-13 weeks' gestation [published correction appears in Ultrasound Obstet Gynecol.Ultrasound Obstet Gynecol. 2017;49(6):751-755. doi:10.1002/uog.17399	2	6.3
	Blood pressure (at 37 weeks of gestation) Blood pressure (>130 mmHg postpartum)	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1

	Multiple pregnancy Parous or nulliparous	Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
	Maternal diseases and medical history			
	History of diabetes	(1)Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
		(2)Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	Gestational diabetes	Yang Y, Le Ray I, Zhu J, Zhang J, Hua J, Reilly M. Preeclampsia Prevalence, Risk Factors, and Pregnancy Outcomes in Sweden and China. JAMA Netw Open. 2021;4(5):e218401. Published 2021 May 3. doi:10.1001/jamanetworkopen.2021.8401	2	9.7
	Chronic hypertension	Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7

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	History of pulmonary embolism (intrapartum) Headache (including migraine) (intrapartum) Malpresentation (intrapartum) Abnormal fetal presentation (intrapartum) Premature rupture of membranes (intrapartum)	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	Antiphospholipid antibody syndrome Previous history of preeclampsia	Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
	Serological indicators			
	Peripheral blood placental growth factor（PLGF） Negative correlation	(1)Zhou Y, Xiao C, Yang Y. Pre-pregnancy body mass index combined with peripheral blood PLGF, DCN, LDH, and UA in a risk prediction model for pre-eclampsia. Front Endocrinol (Lausanne). 2024;14:1297731. Published 2024 Jan 8. doi:10.3389/fendo.2023.1297731	3	4.6
		(2)Mendoza M, Garcia-Manau P, Arévalo S, et al. Diagnostic accuracy of first-trimester combined screening for early-onset and preterm pre-eclampsia at 8-10 compared with 11-13 weeks' gestation. Ultrasound Obstet Gynecol. 2021;57(1):84-90. doi:10.1002/uog.22071	2	6.3
		(3)O'Gorman N, Wright D, Poon LC, et al. Accuracy of competing-risks model in screening for pre-eclampsia by maternal factors and biomarkers at 11-13 weeks' gestation [published correction appears in Ultrasound Obstet Gynecol.Ultrasound Obstet Gynecol. 2017;49(6):751-755. doi:10.1002/uog.17399	2	6.3

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	Plasma protein A（PAPP-A） Negative correlation	Mendoza M, Garcia-Manau P, Arévalo S, et al. Diagnostic accuracy of first-trimester combined screening for early-onset and preterm pre-eclampsia at 8-10 compared with 11-13 weeks' gestation. Ultrasound Obstet Gynecol. 2021;57(1):84-90. doi:10.1002/uog.22071	2	6.3
	Decorin protein (DCN) Lactate dehydrogenase (LDH) Uric acid (UA) Positive correlation	Zhou Y, Xiao C, Yang Y. Pre-pregnancy body mass index combined with peripheral blood PLGF, DCN, LDH, and UA in a risk prediction model for pre-eclampsia. Front Endocrinol (Lausanne). 2024;14:1297731. Published 2024 Jan 8. doi:10.3389/fendo.2023.1297731	3	4.6
	White blood cell count (intrapartum) Positive correlation	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	Use of medicines and technology			
	Use of sodium chloride (salt) (intrapartum)	Li S, Wang Z, Vieira LA, et al. Improving preeclampsia risk prediction by modeling pregnancy trajectories from routinely collected electronic medical record data. NPJ Digit Med. 2022;5(1):68. Published 2022 Jun 6. doi:10.1038/s41746-022-00612-x	1	15.1
	Assisted reproductive technology	Bartsch E, Medcalf KE, Park AL, Ray JG; High Risk of Pre-eclampsia Identification Group. Clinical risk factors for pre-eclampsia determined in early pregnancy: systematic review and meta-analysis of large cohort studies. BMJ. 2016;353:i1753. Published 2016 Apr 19. doi:10.1136/bmj.i1753	1	42.7
Obesity in pregnancy complicated by threatened miscarriage	Anthropometric indicators			
	BMI ≥28 (China) BMI ≥30 (Sweden)	Boxem AJ, Blaauwendraad SM, Mulders AGMGJ, Bekkers EL, Kruithof CJ, Steegers EAP, Gaillard R, Jaddoe VWV. Preconception and Early-Pregnancy Body Mass Index in Women and Men, Time to Pregnancy, and Risk of Miscarriage. JAMA Netw Open. 2024 Sep 3;7(9):e2436157.	2	9.7
	Age	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6

		Boxem AJ, Blaauwendraad SM, Mulders AGMGJ, Bekkers EL, Kruithof CJ, Steegers EAP, Gaillard R, Jaddoe VWV. Preconception and Early-Pregnancy Body Mass Index in Women and Men, Time to Pregnancy, and Risk of Miscarriage. JAMA Netw Open. 2024 Sep 3;7(9):e2436157. doi: 10.1001/jamanetworkopen.2024.36157.	2	9.7
	Maternal diseases and medical history			
	History of threatened miscarriage	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	History of cancer	Kao WH, Kuo CF, Chang CC, Liu YC, Wang CC, Hsu JT, Chuang YF. Cancer survivorship and risk of pregnancy complications, adverse obstetric outcomes, and maternal morbidities in female adolescents and young adults: a nationwide population-based study from Taiwan. Br J Cancer. 2023 Aug;129(3):503-510. doi: 10.1038/s41416-023-02333-8.	1	6.8
	Ultrasound indicators			
	Fetal heart activity	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	Gestational sac	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	Endocrine indicators			
	Progesterone	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
		Devall AJ, Papadopoulou A, Podesek M, Haas DM, Price MJ, Coomarasamy A, Gallos ID. Progestogens for preventing miscarriage: a network meta-analysis. Cochrane Database Syst Rev. 2021 Apr 19;4(4):CD013792. doi: 10.1002/14651858.CD013792.pub2.	2	9.4
	β-hCG	Sotiriadis A, Papatheodorou S, Makrydimas G. Threatened miscarriage: evaluation and management. BMJ. 2004 Jul 17;329(7458):152-5. doi: 10.1136/bmj.329.7458.	1	93.6
	Other			

	Extreme heat exposure (EHE)	Qu Y, Zhang W, Ryan I, Deng X, Dong G, Liu X, Lin S. Ambient extreme heat exposure in summer and transitional months and emergency department visits and hospital admissions due to pregnancy complications. Sci Total Environ. 2021 Jul 10;777:146134. doi: 10.1016/j.scitotenv.2021.146134.	1	8.0
	Anxiety and depression	Kidd C, O'Driscoll D, O'Byrne LJ, O'Keeffe GW, Khashan AS, Maher GM. The association between threatened miscarriage in early pregnancy and depression or anxiety in offspring in late adolescence. J Affect Disord. 2025 Aug 1;382:48-54.	2	4.9
	Chlamydia trachomatis seropositivity	Chakraborti Y, Hinkle SN, Jensen JS, Haggerty CL, Darville T, Mumford SL, Schisterman EF, Silver RM, Taylor BD. Preconception Chlamydia trachomatis seropositivity and fecundability, live birth, and adverse pregnancy outcomes. Fertil Steril. 2025 Jun;123(6):1072-1081. doi: 10.1016/j.fertnstert.2024.12.017	1	7.0

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世界中医药学会联合会国际组织标准

国际中医临床实践指南 妊娠期肥胖

编制说明

1 工作简况

主要起草单位：浙江中医药大学附属第一医院、黑龙江中医药大学第一附属医院。

参与起草单位：香港中文大学；香港大学；Monash University；澳大利亚悉尼科技大学；LAc Herb Acupuncture Clinic；Karolinska Institutet；英国中医学院；芬兰图尔库大学；北京中医药大学；广州市荔湾区中医医院；黑龙江天元生殖妇产医院；北京国康中西医结合医院；辽宁中医药大学附属医院；东南大学附属徐州市中心医院；成都中医药大学附属广安医院；浙江大学医学院附属邵逸夫医院；南昌大学第一附属医院；广东省中医院；北京中医药大学东直门医院；湖南中医药大学第一附属医院；南京大学；江西省妇幼保健院；上海市（复旦大学附属）公共卫生临床中心；首都医科大学附属北京中医医院；江西省中医院；大连医科大学附属第二医院；四川大学华西医院；广西壮族自治区桂林市中医医院；澳门科技大学；浙江大学；泰安市中心医院。

主要起草人：高敬书、吴效科、徐敏；

参与起草人（按姓氏拼音排序）：

中　　国：包立新、曹立幸、曹义娟、常惠、陈晓勇、陈秀芳、陈艳、葛航、韩从辉、黄志超（中国香港）、贾丽妍、李立峰、李璐、梁瑞宁、刘涛、刘文娥、刘悦、陆杉、马红丽、孙斐、孙林、谭桂云、谭婧、佟庆、王丽丽、王昕、王勇、吴鸿裕（中国香港）、伍琼芳、杨观虎、杨洪伟、杨新鸣、杨雁鸿、姚斌莲、游卉、袁少英、岳晓燕、张颖、张跃辉、郑崇勇、朱冰；

澳大利亚：Ben Mol、Chi Eung Danforn LIM；

美　　国：李永明；

瑞　　典：Elisabet Stener-Victorin；

英　　国：汤淑兰；

芬　　兰：Risto Erkkola。

2 标准起草过程简介

2.1 编制理由

目前肥胖已经成为全球面临的主要公共卫生问题之一，妊娠期肥胖的发病率也逐年增加。肥胖可降低女性的生育能力，在妊娠期，肥胖还会显著升高妊娠期并发症的发生风险，如妊娠期糖尿病、子痫前期、剖宫产、流产等。同时，妊娠期肥胖也会带来如巨大儿、胎儿畸形、早产等诸多不良影响，甚至可能危害隔代子女的健康。

当前国际权威的妊娠期肥胖指南主要基于西方人群数据，其推荐标准与亚洲孕妇的体质特点及代谢特征适配性较低。中医药具备安全性高、副作用小的特点，可通过调节激素水平、调控脂肪代谢、改善肠道菌群等多种途径干预妊娠期肥胖，在一定程度上弥补了西药作用机制明确但相对单一的特点。据此，项目组将循证医学与中医传统经验相结合，系统整合中医药临床试验证据，深度融合中医古籍理论与名医经验，并参考国际权威医学组织的指南和标准，遵循“立足 GRADE 框架接轨国际规范，依托权威循证严控偏倚风险，参酌典籍精粹赓续文化根脉”的原则，形成兼具科学性与中医特色的妊娠期肥胖诊疗推荐意见，制定《国际中医临床实践指南 妊娠期肥胖》，以期保障母婴健康，贡献中医药智慧，提升中医妇科学的国际影响力，推动中医药走向世界。

2.2 主要工作过程

2.2.1 启动部署阶段

指南编制研讨会

本指南于 2025 年 4 月启动立项申报工作，6 月 4 日收到立项函审通知书，团队于 2025 年 6 月 7 日在北京召开立项审定会讨论以下方面：

a）指南研制总体原则、目的、适用范围；

b）指南研制总体流程；

c）指南研制总体时间安排；

d）指南研制工作组人员构成及总体分工；

e）指南专家组成员范围的扩大；

f）指南研制过程中的关键注意事项；

会后，分别成立了指南研制工作组微信群、指南研制专家组微信群，要求定时督促工作组研制进程，并阶段性汇报指南进展情况。

2025 年 7 月 23 日正式获批立项。

2.2.2 确定本指南主题和目的

在启动部署阶段，项目组基于前期文献调研和临床需求分析，经专家组充分讨论，明确了本指南的编制方向与定位。

由于目前海内外尚无专门针对妊娠期肥胖的中医临床实践指南，现有肥胖诊疗指南未能区分孕期与非孕期人群，在体重管理、用药安全性等核心问题上缺乏针对性指导，项目组决定以“妊娠期肥胖”作为本指南的核心主题，聚焦孕期这一特殊生理阶段。

经专家组反复论证，最终确定本指南的编制目的：立足国际临床实践需求，整合中医药循证证据与传统经验，形成一部兼具科学性、安全性和可操作性的国际中医临床实践指南，为海内外医护人员在妊娠期肥胖管理中规范应用中医药提供参考依据。

2.2.3 编制阶段

2.2.3.1 组织管理

本指南制定过程中开通了微信工作群，主要由共识专家和工作组成员组成。考虑到工作时效性，日常工作主要通过线上会议、电话联系等方式进行，定期召开内部讨论会和网络交流会。

2.2.3.2 避免利益冲突

凡参与制定工作的成员均已声明未存在利益冲突，未发现任何与本文件主题相关的商业、专业或其他方面的利益关系，以及所有可能受本文件成果影响的利益冲突情况。

2.2.3.3 指南研发计划的制定和实施步骤的落实

工作组依据任务分工，制定了指南研究计划，明确各编制时间节点，在征求有关专家意见的基础上，完善研究计划，落实指南制定的具体实施步骤。具体安排如下：

a）2025 年 4 月：收集海内外先兆流产相关标准或指南文献资料进行研究，确定立项内容；

b）2025 年 5 月至 6 月：指南研制工作组查阅先兆流产相关文献，收集相关干预措施证据，确定质量评价方法，正式编写草案内容，形成初稿；

c）2025 年 7 月：召开专家立项审查会，对草案初稿进行讨论，根据收集的建议对草案进行第一轮修改；

d）2025 年 8 月至 2026 年 2 月：指南研制工作组对草案内容进行二次检索，对收集的证据进行数据处理，完善证据描述，形成推荐意见；

e）2026 年 3 月至 4 月：采用线上问卷调查方式，组织开展两轮专家共识投票，对推荐意见形成推荐强度；

f）2026 年 4 月：在线上先后向组内及组外专家征求意见，对草案进行第二、三轮修改；

g）2026 年 5 月至 6 月：报送世界中医药学会联合会（世中联）进行终审定稿。

2.2.3.4　广泛临床调研确定临床问题

在指南制定过程中，为充分纳入临床医生最关心的问题，工作组基于“妊娠期肥胖”的西医诊疗难点及中医药或中西医结合干预的优势，通过前期文献预检索和临床经验总结，多次组内讨论，最终形成了 12 个临床问题。见表 1。

表 1　指南临床问题清单

编号	临床问题清单
1	妊娠期肥胖的西医诊断标准是什么？
2	妊娠期肥胖的干预原则是什么？
3	孕期体重增长范围是什么？
4	针刺或耳穴能否有效控制妊娠期肥胖女性的体重增加？
5	中医芳香疗法能否辅助控制妊娠期肥胖女性体重增加？
6	运动管理能否有效控制妊娠期肥胖女性的体重增加？
7	合理膳食结构能否有效控制妊娠期肥胖女性的体重增加？
8	情志调节能否辅助控制妊娠期肥胖女性的体重增加？
9	综合生活方式管理能否有效控制妊娠期肥胖女性的体重增加？
10	妊娠期肥胖并发妊娠期糖尿病风险指标是什么？中西医预防的方法是什么？
11	妊娠期肥胖并发妊娠期高血压风险指标是什么？中西医预防的方法是什么？
12	妊娠期肥胖并发先兆流产风险指标是什么？中西医预防的方法是什么？

2.2.3.5　证据检索、筛选与综合

2.2.3.5.1　检索数据库

中国知网（CNKI）、万方全文数据库（Wanfang Data）、PubMed、EMBase、Web of Science（WOS）等中英文数据库。

2.2.3.5.2　检索词

a）疾病相关的检索词，如妊娠期肥胖，孕期肥胖；

b）干预措施相关的检索词，如中草药，针刺，艾条，温和灸，中药穴位贴敷，饮食，运动，传统功法，Traditional medicine，Acupuncture，Traditional exercises，Medicated diet 等；

c）研究类型相关的检索词，如“随机对照试验”“Meta 分析”等。

2.2.3.5.3　检索式（以知网查阅；运动干预方式为例）

SU=（妊娠+孕期+孕妇）*（肥胖+超重+孕期体重增长+体重增长）*（运动+体力活动+体育锻炼+运动干预+有氧运动+抗阻训练+瑜伽+八段锦+太极拳+五禽戏+六字诀+易筋经）。

2.2.3.5.4　纳入标准

同时符合以下条件：文献类型包括指南、共识、系统综述（systematic review，SR）、随机对照试验（randomized controlled trial，RCT）、观察研究、病例报告等；研究对象为诊断为超重或肥胖的育龄期女性；干预方式为中医药相关疗法；对照措施包括空白组、

安慰剂、生活方式干预及药物治疗；研究指标包括体重、身体质量指数（BMI）、腰围、腰臀比、体脂百分比等。

2.2.3.5.5　排除标准

符合以下任一条：研究对象为男性或非妊娠期女性；对照措施为中医疗法、外科手术者。

2.2.3.5.6　文献筛选结果

通过检索式在中国知网、万方、PubMed、Embase、WOS 数据库进行文献检索，共获得 7 407 篇相关文献；剔除不同数据库的重复文献后，剩余 6 611 篇文献；通过阅读题目和摘要进行初筛，剔除综述类、动物实验、会议书籍共识类及低相关性文献共 6 269 篇，初筛后得到 356 篇文献；进一步阅读全文，剔除研究数据不符、研究内容不符、文章类型不符及内容未开放的文献共 318 篇，最终纳入文献 38 篇（中文 RCT 25 篇，英文 RCT 13 篇）。文献筛选流程见下图。

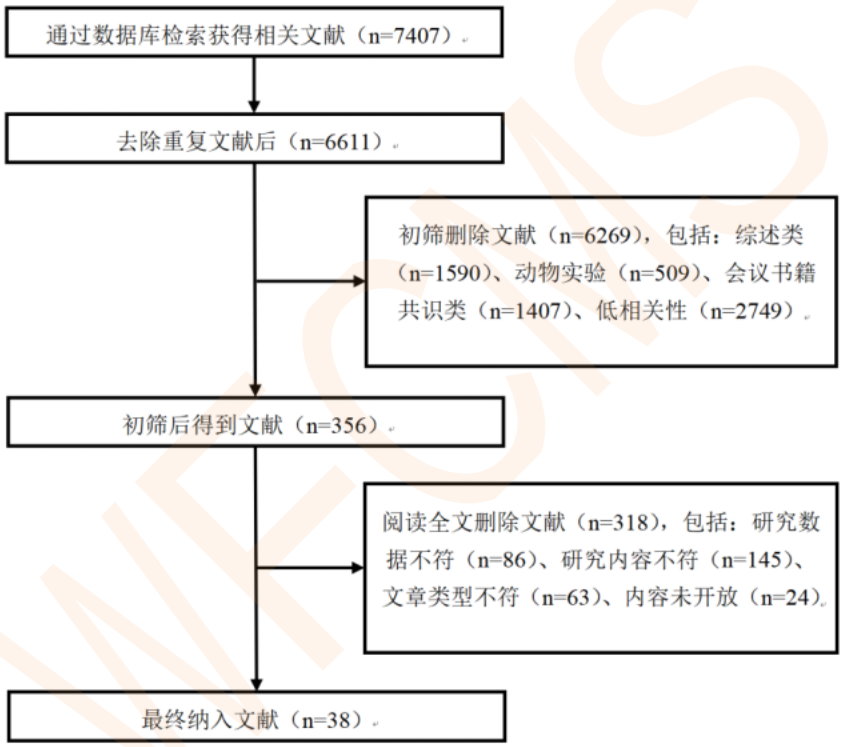

图 1　中医药治疗妊娠期肥胖文献筛选流程图

2.2.3.6　现有海内外指南、共识梳理

此外，检索、查阅相关指南、共识、标准、规范、教材等。

发现相关指南、共识、标准、规范，分别为：

[1] Sagi-Dain L. Obesity in Pregnancy: ACOG Practice Bulletin, Number 230. Obstet Gynecol. 2021;138(3):489.

[2] Denison FC, Aedla NR, Keag O, et al. Care of Women with Obesity in Pregnancy: Green-top Guideline No. 72. BJOG. 2019;126(3):e62-e106.

[3] Maxwell C, Gaudet L, Cassir G, et al. Guideline No. 391-Pregnancy and Maternal Obesity Part 1: Pre-conception and Prenatal Care. J Obstet Gynaecol Can. 2019;41(11):1623-1640.

[4] McAuliffe FM, Killeen SL, Jacob CM, et al. Management of pre-pregnancy, pregnancy,

and postpartum obesity from the FIGO pregnancy and non-communicable diseases committee: a FIGO (International Federation of Gynecology and Obstetrics) guideline. Int J Gynecol Obstet. 2020;151 (suppl 1):16-36.
[5] Royal Australian and New Zealand College of Obstetricians and Gynecologists. Management of obesity in pregnancy. Women's Health Committee. C-Obs 49.2017.
[6] 关于印发“体重管理年”活动实施方案的通知。国家卫生健康委，国卫医急发〔2024〕21 号,2024-06-06.
[7] 中华中医药学会《中医体重管理临床指南》专家组，广东省针灸学会肥胖专病联盟. 肥胖症中医诊疗方案专家共识[J].北京中医药大学学报,2022,45(08):786-794.
[8] 中华医学会妇产科学分会产科学组. 孕前和孕期保健指南(2018)[J]. 中华妇产科杂志,2018,53(1):7-13.

2.2.3.7 证据评价与分级

2.2.3.7.1 文献质量评价

本文件循证证据级别的评定采用国际公认的 GRADE（Grading of Recommendations Assessment, Development and Evaluation）标准。GRADE 标准是目前国际指南制定中广泛采用的证据质量与推荐强度分级体系，其核心在于明确证据质量与推荐强度的影响因素，确保评价过程的透明性与结果的可靠性。

本指南在应用 GRADE 标准时，严格遵循 GRADE 协作组发布的证据质量评价指南，对证据体进行系统评价与分级。

2.2.3.7.2 GRADE 评价

GRADE 循证证据评价标准遵从 GRADE 协作组循证证据质量评价指南，包括“⊕⊕⊕⊕（高级/4 分）”“⊕⊕⊕○（中级/3 分）”“⊕⊕○○（低级/2 分）”和“⊕○○○（极低级/1 分）”4 个等级，初始评级为高级/4 分，采取减分制。

表 2　GRADE 循证证据评价标准降级/升级因素

降级/升级因素	说明
可能降低证据质量等级的因素	
1.研究的局限性	
·严重	减 1 分
·极其严重	减 2 分
2.研究结果不一致	
·严重	减 1 分
·极其严重	减 2 分
3.不能确定是否为直接证据	
·严重	减 1 分
·极其严重	减 2 分
4.精确度不够或置信区间较宽	
·严重	减 1 分
·极其严重	减 2 分
5.存在发表偏倚	
·严重	减 1 分
·极其严重	减 2 分
可能增加证据质量等级的因素	
1.效应值	
·大：2 个或 2 个以上研究的证据一致显示 RR>2 或 RR<0.5，且几乎无混杂因素	加 1 分
·很大：直接证据显示 RR>5 或 RR<0.2，且不影响其真实性	加 2 分
2.可能的混杂因素会降低疗效	加 1 分
3.剂量－效应关系：干预措施“剂量”及其效应大小有明显关联	加 1 分

2.2.3.7.3　GRADE 推荐强度分级

根据证据质量及利弊权衡，推荐强度分为“强推荐”“弱推荐”“无明确推荐”。

表 3　GRADE 循证证据评价标准降级/升级因素

推荐强度	定义	临床表述
强推荐（↑↑）	获益明显大于风险与负担，或风险与负担明显大于获益，几乎适用于所有患者	“一定做”/“一定不做”
弱推荐（↑）	获益与风险、负担相当，或获益不确定，需根据患者具体情况、价值观与偏好进行选择	“可能做”/“可能不做”
无明确推荐（/）	利弊相当或不确定，无明确倾向	“不确定”

2.2.3.7.4　推荐意见问卷形成

本指南在证据评价与分级的基础上，形成最终推荐意见投票单及问卷。推荐意见的强度综合考虑证据质量、临床获益、安全性、经济性及患者可接受度等因素，确保推荐意见的科学性、实用性与可操作性。

2.2.3.8 专家推荐意见/共识意见形成

针对本指南的诊断、干预、结局指标，采用“德尔菲-名义组”法进行了问卷调查，结合专家网络会议达成本指南的各部分共识内容。遴选的共识专家成员为与妊娠期肥胖有关的临床一线专家，以中医、中西医结合妇产科医师为主。

2.2.3.8.1 总体原则

本文件专家共识的实施过程采取“德尔菲法”，主要通过线上进行。共识推荐结果的达成与判定参考中华中医药学会“形成推荐意见和共识建议”。

共识专家基于临床和（或）科研经验、理论分析、文献记载等，权衡利弊，分别于问卷中各条目勾选非常重要（一定利大于弊）、比较重要（可能利大于弊）、一般（利弊关系不确定，或无明显差异）、比较不重要（可能弊大于利）、非常不重要（一定弊大于利），分别记 5、4、3、2、1 分。空白选项记录为弃权。统计各条目获投“非常重要”百分比、“比较重要”百分比、“高重要性”百分比、“一般”百分比、“比较不重要”百分比、“非常不重要”百分比、“低重要性”百分比。

2.2.3.8.2 共识建议

结合 GRADE 循证证据形成专家推荐意见，如为无 GRADE 证据支持类条目时，则结合相关资料形成专家共识建议。当除“一般”选项外，条目任意一选项，即“非常重要”“比较重要”“比较不重要”或“非常不重要”，得票百分比大于 50%，则达成该共识；此外，当任意一侧，即“高重要性”（“非常重要”+“比较重要”）或“低重要性”（“比较不重要”+“非常不重要”），得票百分比大于等于 70%，也可达成相应共识（“弱推荐/可考虑选择”或“弱不推荐/不建议”），否则视为未达成共识。

最终产生的专家推荐意见共 4 级，对应各重要性（即“非常重要”“比较重要”“比较不重要”“非常不重要”）分别为“强推荐”“弱推荐”“弱不推荐”“强不推荐”最终产生的专家共识建议共 4 级，对应各重要性（即“非常重要”“比较重要”“比较不重要”“非常不重要”）分别为“优先选择”“建议选择”“不建议选择”“不宜选择”。

2.2.3.8.3 变异系数及多轮问卷

统计各条目得分投票数、得分均数（mean）、得分标准差（SD）及得分变异系数（CV）。本研究采用同意率、四分位距（IQR）和变异系数（CV）作为专家共识的判定指标。同意率≥70%且 IQR≤1 且 CV≤0.3 视为达成共识。其中，同意率反映专家积极支持的比例，IQR 反映离散程度（不受极端值影响），CV 则标准化比较不同均分条目的相对分歧。未达成共识的共识建议或推荐意见，经由本文件专家组确认后予以删除达成共识且变异系数小于等于 0.3 的条目，经本文件专家组确认后予以纳入；达成共识但变异系数大于 0.3 的条目，经本文件专家组讨论或做必要修改后，予以下一轮共识投票或删除。

2.2.3.8.4 专家基本情况、积极程度与权威程度

本指南的两轮专家咨询共邀请来自全国 18 个省市、30 余家单位的专家参与。第一轮 36 人，第二轮 32 人，两轮专家群体基本一致，以正高级职称（主任医师、教授等）为主（占比>80%），专业覆盖妇产科学、中医妇科学、生殖医学、循证医学、针灸学、护理学等，具有良好学科代表性。两轮问卷有效回收率均为 100%，专家积极性高。

第一轮未单独收集专家的熟悉程度与权威系数。为评估专家权威性，在第二轮咨询中补充收集了熟悉程度（Cs）和判断依据（Ca），并计算权威系数（Cr = (Cs+Ca)/2）。

结果显示：平均 Cs 为 0.93（很熟悉占 65.6%），平均 Ca 为 0.92，平均 Cr 为 0.93（范围 0.78~1.00），所有专家 Cr≥0.70。鉴于两轮专家构成相似，可认为第一轮专家的权威程度与第二轮相近，整体咨询结果可靠。

2.2.3.8.5　**第一轮专家推荐意见结果**

第一轮专家推荐意见过程中，36 位同行专家对 11 项干预或管理措施进行重要性评分（5 级量表：A=5 分，B=4 分，C=3 分，D=2 分，E=1 分）。各条目的统计结果及处理意见见表 4。

表 4　第一轮专家推荐意见统计结果及处理意见

条目	Mean	SD	A%	B%	C%	同意率	IQR	CV	处理意见
妊娠期肥胖的诊断标准	4.97	0.17	97.22	2.78	0.00	100.00	0	0.03	强推荐
妊娠期肥胖的干预原则	4.97	0.17	97.22	2.78	0.00	100.00	0	0.03	强推荐
妊娠期肥胖女性的体重监测	4.94	0.23	94.44	5.56	0.00	100.00	0	0.05	强推荐
针刺/耳穴干预	4.14	0.80	41.67	44.44	11.11	86.11	1	0.19	强推荐
中医芳疗干预	3.64	1.02	19.44	38.89	25.00	58.33	2	0.28	修正后进入第二轮
运动方式干预	4.72	0.51	75.00	22.22	2.78	97.22	1	0.11	强推荐
合理膳食干预	4.97	0.17	97.22	2.78	0.00	100.00	0	0.03	强推荐
情志调节干预	4.61	0.60	66.67	27.78	5.56	94.44	1	0.13	弱推荐
妊娠期肥胖并发先兆流产的筛查与监测	4.72	0.62	77.78	13.89	5.56	91.67	1	0.13	弱推荐
妊娠期肥胖并发妊娠期糖尿病的筛查与监测	4.92	0.28	91.67	8.33	0.00	100.00	0	0.06	强推荐
妊娠期肥胖并发妊娠期高血压的筛查与监测	4.92	0.28	91.67	8.33	0.00	100.00	0	0.06	强推荐

注：Mean 为均数，SD 为标准差，A%为“非常重要”比例，B%为“比较重要”比例，C%为“一般”比例；同意率=A%+B%；IQR 为四分位距；CV 为变异系数（CV≤0.3 视为共识）；处理意见为条目最终判定。

如**表 4** 所示，“中医芳疗干预”条目 Mean=3.64（介于“一般”与“比较重要”之间），CV=0.28，虽未超过 0.3 但接近临界值，且标准差较大（SD=1.02），表明专家意见存在一定分歧。经本文件专家组讨论，认为该条目表述过于笼统，且部分专家对其临床可操作性存疑。决定对该条目进行如下修正：①原条目“中医芳疗干预”修改为“在医生指导下，妊娠期肥胖患者可采用柠檬精油嗅吸或薰衣草精油穴位按摩作为辅助干预

（仅限孕中期，避免口服）”，并补充相关循证依据摘要。②修正后的条目将进入第二轮共识投票，若 CV≤0.25 且 Mean≥4.0，则予以纳入；否则删除。其余条目均直接采纳，进入最终共识文件。

2.2.3.8.6　第二轮专家推荐意见结果

第二轮专家推荐意见过程中，32 位同行专家对 2 项干预或管理措施进行重要性评分（5 级量表：A=5 分，B=4 分，C=3 分，D=2 分，E=1 分）。各条目的统计结果及处理意见见表 5。

表 5　第二轮专家推荐意见统计结果及处理意见

条目	Mean	SD	A%	B%	C%	同意率	IQR	CV	处理意见
综合生活方式管理	5.00	0.00	100.00	0.00	0.00	100.00	0	0.00	强推荐
中医芳疗干预	4.13	0.83	34.38	50.00	9.38	84.38	1	0.20	弱推荐

注：Mean 为均数，SD 为标准差，A%为“非常重要”比例，B%为“比较重要”比例，C%为“一般”比例；同意率=A%+B%；IQR 为四分位距；CV 为变异系数（CV≤0.3 视为共识）；处理意见为条目最终判定。

2.2.3.9　证据汇编存

本指南在证据检索、筛选、评价等方面的具体操作过程及其所产生的本底资料均进行了汇总。

2.2.4　征求意见阶段

2.2.4.1　组内专家审查评议

《国际中医临床实践指南 妊娠期肥胖》推荐意见强度确定后，起草工作组于 2026 年 4 月 19 日至 4 月 25 日通过线上收集的方式组织了专家审查评议会。参与评议的人员包括项目组全体起草人、主要参与单位代表及相关领域特聘专家。评议重点围绕标准框架的合理性、技术内容的完整性、辨证分型的代表性以及治疗措施的可行性展开。经充分讨论，评议组共形成 19 条修改意见，采纳 19 条，形成《组内专家审查意见汇总处理表》。起草工作组据此对草案进行了系统修改，形成组外专家征求意见稿。

表 6 组内专家审查意见汇总处理表

序号.	专家意见	提出单位/个人	处理意见
1.	诊断定义与适用对象不清。正文将“孕前肥胖”“妊娠期体重增长异常”“妊娠后 BMI 超阈值”混合表述，易造成临床对象界定不清。建议明确本指南究竟针对：①孕前肥胖合并妊娠；②孕期体重增长超标；③两者兼有，但需分别定义、分别管理。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据。团队已修改为先定义一个总概念：“本指南所称妊娠期肥胖相关管理对象，包括： a）孕前体质指数（body mass index，BMI）达到肥胖标准并已妊娠者； b）孕期体重增长超过相应推荐范围者。
2.	诊断表述存在实质性错误。第 4 章中“BMI≥28.0 kg/m^2 的女性诊断妊娠”等表述显然应为“诊断妊娠期肥胖”或	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，现已重新校对，确保学术严谨性。将“BMI≥28.0 kg/m^{2}的女性诊断妊娠”类似句子，改成“诊断为妊娠期肥胖”或“纳

	“纳入妊娠期肥胖管理对象”，建议逐句校正，避免影响学术严谨性。		入妊娠期肥胖管理对象”。
3.	证据等级与推荐强度不够匹配。部分条目存在推荐偏强、证据偏弱或存在明显间接性的情况。尤其针刺/耳穴、情志管理、芳香疗法等，应严格按 GRADE 原则重做“证据质量—推荐强度”对应，避免给人以“先有结论、后找证据”的印象。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已再次审查证据，根据 GRADE 原则重新核查并制作“证据质量—推荐强度”。
4.	安全性边界与附录操作建议存在张力。正文强调妊娠禁忌药物及穴位需慎用/禁用，但附录中仍列出多项孕期敏感穴位及操作方案，且风险提示不足。建议单列“妊娠期慎用/禁用干预清单”，不要将高风险内容直接写入常规推荐路径。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已整合补充孕期敏感及禁用的医疗安全性的循证医学证据，同时单列一个附录：“妊娠期慎用/禁用干预清单”。
5.	正文与附录的证据口径不一致。正文对药膳、茶饮、中医特色疗法多处承认缺乏针对妊娠期肥胖人群的高质量直接证据，但附录给出的辨证施膳、茶饮、方药和操作方案较为具体，易被理解为常规可推广方案。建议统一口径，明确“证据充分推荐”“可供参考”“仅供研究/探索”三个层级。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已统一正文与附录证据，针对药膳、茶饮、中医特色疗法等统一规范推荐及可用程度。具体分成三层： （1）证据充分推荐 如运动、综合生活方式管理 （2）可供参考/辅助管理 如情志管理、部分芳香疗法 （3）仅供研究或专家参考，不作为常规推荐 如口服中药方药、辨证施膳、部分敏感穴位操作、脑针等
6.	并发症筛查章节逻辑层级需重构。目前把危险因素、预测因子、筛查时点、监测指标、预防措施混排，建议按“筛查对象—筛查时点—筛查方法—异常阈值—后续管理”重写，以增强临床可执行性。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，将并发症筛查章节修改为“筛查对象—筛查时点—筛查方法—异常阈值—后续管理。”
7.	国际指南定位还需进一步收紧。既然文件定位为“国际临床实践指南”，建议减少地区经验性、传统经验性内容的直接推荐，增加证据来源国	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据文章中章节内容，删减或增加证据，以适应国际，增强指南的外推性。

	别、适用人群、外推边界及文化适配说明。		
8.	结局指标需进一步前置和标准化。建议在引言或方法学部分明确本指南优先关注的核心结局，如孕期体重增长、GDM、妊娠期高血压、剖宫产、巨大儿、不良新生儿结局、安全性事件等。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，明确本指南优先关注的核心结局为孕期体重增长。
9.	推荐语句需要统一格式。建议将每条推荐统一为“推荐意见—适用条件—实施要点—禁忌/慎用—证据等级—推荐强度”的固定模板，提升整体规范性。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据建议按照示例格式“推荐意见—适用条件—实施要点—禁忌/慎用—证据等级—推荐强度”进行修改。
10.	指南制定方法学过程还可再充实。附录 A 仅为流程图，建议补充检索策略、纳排标准、共识形成方法、专家遴选原则、利益冲突管理及外审流程摘要，以增强透明度。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，修改并补充附录 A。
11.	错字、病句和术语不统一较多。如“妊娠肥期胖”等明显错字应全面排查；“体质量/体重”“妊娠期肥胖/肥胖孕妇”等术语建议统一	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已统一核对并检查修改。
12.	表格存在明显错误。例如表 1 首行将低体重误写为“超重（<18.5 kg/m²）”之类问题，属于表格级错误，建议逐表核对原始来源。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已统一核对并检查修改。
13.	中英文信息尚未补齐。封面及前言中发布日期、标准号、翻译人员等仍为占位符，英文标题和中文标题的对应关系也应统一核对。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已统一核对并检查修改。
14.	引文与正文对应关系建议复核。部分正文表述较强，但其后所列参考文献是否足以直接支持该结论，建议逐条交叉核验。	澳门科技大学/杨观虎	采纳： 具体理由：起草团队认真记录并采纳此意见，已核对参考文献与引文内容的表述恰当性，交叉验证。
15.	在文首呈现一个证据和建议的汇总表，以便参考。该汇总	香港中文大学/黄志超	采纳： 具体理由：起草团队认真记录并采纳此意

	表可以采用 Cochrane Review 的 SOF 格式，展示绝对效应、相对效应、样本量以及 GRADE 的 4 个等级（用圆圈表示）		见，已根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据。并根据干预主题制作 SOF 表，放置在引言后、正文推荐前。
16.	请确保附录中列出的所有诊断和治疗方法都必须在内容中进行描述。如果没有相关研究，仍需提及，只需说明“无相关试验”即可。这是重要信息，因为研究人员应考虑针对这些缺失信息开展新的试验。例如，口服中药已被纳入附录，但内容中只纳入了芳香中药，而附录中未纳入相同的芳香中药相关内容，因此最好保持一致性。	香港中文大学/黄志超	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据建议修改附录出现的干预，正文必有对应条目。此外，正文没有直接证据支撑的内容，附录必须降级标注。
17.	一些提到的 meta 分析实际上并不是 meta 分析，所以你可能需要再次检查。如果不是或没有 meta 分析，也请提及，研究人员可能会考虑将来进行 meta 分析。	香港中文大学/黄志超	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，所有“Meta 分析”要逐条核对。实际是 systematic review，就改成“系统评价”；是 retrospective cohort，就改成“回顾性队列研究”；如无 Meta，正文不再写 Meta，同时在讨论或研究空白里补一句：“目前某些干预尚缺乏针对妊娠期肥胖人群的系统评价/Meta 分析，未来可进一步开展。”
18.	并发症管理，根据妊娠时间排序，例如先处理先兆流产，然后是妊娠糖尿病（GDM），再然后是子痫前期（PE）。	香港中文大学/黄志超	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据建议修改并发症章节顺序，按妊娠时间线： 5.8.1 先兆流产/早期妊娠丢失（孕早期） 5.8.2 妊娠期糖尿病（孕中期重点筛查） 5.8.3 妊娠期高血压疾病/子痫前期（孕中晚期重点监测）
19.	目前尚未收录的相同副作用及不良反应。如无相关报告，请一并予以说明。	香港中文大学/黄志超	采纳： 具体理由：起草团队认真记录并采纳此意见，已根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，在每个干预后面各加一个小段：安全性与不良反应 已报告的不良反应：…… 妊娠期特殊风险：…… 当前证据情况：若无系统报告，写“现有研究对不良反应报告不足，无法充分评估安全性” 是否列为常规推荐：是/否

2.2.4.2 组外专家审查评议

在内部修改的基础上，起草工作组于 2026 年 4 月 24 日至 5 月 6 日通过线上收集的方式，向海内外 32 名中医及中西医结合妇科领域的知名专家征求意见。本次征求意见由项目组自行组织，专家范围涵盖全国各省地区。共收到反馈意见 19 条，其中采纳 18 条，暂不采纳 1 条，意见涉及诊断与鉴别诊断、干预方式的安全性、并发症动态监测等方面。起草工作组对所有意见进行汇总分析，形成《组外专家意见汇总处理表》，并对标准草案对应进行修改。

表 7 组外专家审查意见汇总处理表

序号.	专家意见	提出单位/个人	处理意见
	对于孕前体质指数超过 28 的人群，建议从孕早期甚至孕前即开始进行运动管理。	黑龙江省医院/周莉莉	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了 2021 年中华围产医学杂志《妊娠期运动专家共识（草案）》文献，完善了草案相关部分描述。
	指南存在重复词语：暂无针对针对妊娠期肥胖人群	江西中医药大学附属医院/李佩双	采纳： 具体理由：起草团队已统一核对重复词语及排版错误并检查修改。
	正文前缺少“缩略词表”。	江西中医药大学附属医院/李佩双	采纳： 具体理由：起草团队认真记录并采纳此意见，于正文前添加了“缩略词表”。
	SOF 表排版混乱。	江西中医药大学附属医院/李佩双	采纳： 具体理由：起草团队认真记录并采纳此意见，完善了 SOF 表格的内容及排版。
	诊断标准部分存在“人群混淆”：第 4.1 节同时给出了亚洲女性和欧美女性的肥胖诊断标准。建议明确：本指南主要适用于哪一人群？如同时适用，是否应在适用范围或前言中说明“本指南可分别适用于亚洲与欧美人群，具体 BMI 阈值见 4.1”。	江西中医药大学附属医院/李佩双	采纳： 具体理由：起草团队认真记录并采纳此意见，在适用范围或前言中增加了“本指南分别适用于亚洲与欧美人群，具体 BMI 阈值见 4.1”等内容。
	管理原则中“禁忌/慎用”表述略泛：需避免使用妊娠禁忌药物及穴位，且在患者知情同意后谨慎应用针药。	江西中医药大学附属医院/李佩双	采纳： 具体理由：起草团队认真记录并采纳此意见，更新了附录 F（妊娠期慎用/禁用干预清单），增加具体药物举例；并在 5.1 管理原则中补充“典型妊娠禁忌药物与穴位举例”并引用附录。
	中高强度身体活动建议骑自行车是否适合。	广州市荔湾区中医医院/沈瑞扬	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅相关文献后，修改附录 D-A2 中的“骑自行车”建议，改为“固定自行车（在专业指导下）”。
	动态监测建议明确终止时间。	广州市荔湾区中医医院/沈瑞扬	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了相关文献后，将草案对应内容明确到各项动态监测的终止时间（如超声

			监测至孕几周）。
	茶饮不用枳实，枳实为药典慎用药。	广州市荔湾区中医医院/沈瑞扬	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了中药药典，认真核对附录 D-C 中所有中药、药膳、茶饮的药食同源属性，删除或标注妊娠慎用/禁用药物（如麻黄、枳实、茯苓、山楂等），同时更新了附录 F（妊娠期慎用/禁用干预清单），增加具体药物举例。
	建议管理对象是否增加：孕前 BMI 达到超重标准并已妊娠者。对孕前超重女性妊娠后进行管理，在临床实际中对预防妊娠期糖尿病具有意义	浙江中医药大学附属温州市中医院/孙云	暂不采纳： 具体理由：起草团队查阅了国际相关权威指南，均未将 BMI 达到超重标准人群专门纳入妊娠期肥胖的管理对象中。与组内专家讨论之后，决定暂不采纳该意见，在妊娠期糖尿病的管理中对孕期 BMI 达到超重标准的人群进行密切监测进行补充。
	异常阈值：1.超声指标：（1）胚芽≥7mm，未见胎心；（2）平均孕囊直径≥25mm，未出现胚芽；（3）见孕囊但未发现卵黄囊，2 周后仍未见胎心；（4）见孕囊和卵黄囊，11 天后未出现胎心。	浙江中医药大学附属温州市中医院/孙云	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅最新相关海内外指南后，统一了异常阈值的内容。
	妊娠高血压筛查对象：或有慢性高血压病史、子痫前期、抗磷脂综合征病史者。	浙江中医药大学附属温州市中医院/孙云	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了相关文献，将妊娠期高血压的筛查对象增加了“抗磷脂综合征”。
	先兆流产动态监测方案：超声监测：孕 6~8 周首次超声（确认胎心）；高危者结合激素水平变化每 1~2 周复查胚胎发育	浙江中医药大学附属温州市中医院/孙云	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了相关文献，将先兆流产的动态监测频率改为“结合激素水平变化，必要时 1~2 周复查”，避免硬性规定；增加雌二醇作为可选监测指标。
	先兆流产动态监测方案：激素水平：血清孕酮+β-hCG+雌二醇	浙江中医药大学附属温州市中医院/孙云	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了相关文献，将先兆流产的动态监测频率改为“结合激素水平变化，必要时 1~2 周复查”，避免硬性规定；增加雌二醇作为可选监测指标。
	建议茶饮药膳中去茯苓、山楂	浙江中医药大学附属温州市中医院/孙云	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了中药药典，认真核对附录 D-C 中所有中药、药膳、茶饮的药食同源属性，删除或标注妊娠慎用/禁用药物（如麻黄、枳实、茯苓、山楂等），同时更新了附录 F（妊娠期慎用/禁用干预清单），增加具体药物举例。
	妊娠期糖尿病的强推荐、证据	浙江省中医院/	采纳：

	质量 B（中）与文中的证据空白（暂无高质量 RCT）存在矛盾。	张晓兰	具体理由：起草团队认真记录并采纳此意见，已根据建议修改了草案存在矛盾的相关表述。
	建议去除草案内“电针”相关内容。	河南省中医院/陈建设	采纳： 具体理由：起草团队认真记录并采纳此意见，重新查阅相关文献之后，删除了全文（包括附录 D）中所有“电针”相关内容（如电针参数、操作描述），仅保留“毫针”。同时检查是否有其他穴位刺激类（如皮内针、耳穴）的安全性描述。
	佩连麻黄汤中的麻黄可能不适合于妊娠期使用。	河南省中医院/陈建设	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了中药药典，认真核对附录 D-C 中所有中药、药膳、茶饮的药食同源属性，删除或标注妊娠慎用/禁用药物（如麻黄、枳实、茯苓、山楂等），同时更新了附录 F（妊娠期慎用/禁用干预清单），增加具体药物举例。
	使用说明“本指南附录中推荐的中医药膳及茶饮均选用药食同源之品”，似有不是药食同源之品，需逐一核对。	河南省中医院/陈建设	采纳： 具体理由：起草团队认真记录并采纳此意见，查阅了中药药典，认真核对附录 D-C 中所有中药、药膳、茶饮的药食同源属性，删除或标注妊娠慎用/禁用药物（如麻黄、枳实、茯苓、山楂等），同时更新了附录 F（妊娠期慎用/禁用干预清单），增加具体药物举例。

2.2.4.3 世界中医药学会联合会网站征求意见

本指南将在世界中医药学会联合会网站公开征求意见。

3 主要技术内容介绍

3.1 指南制定依据

本文件的起草程序依据世界中医药学会联合会发布的《SCM1.1-2021 标准化工作指导导则 第 1 部分：标准制修订与发布》的要求进行，同时参考《GB/T 1.1-2020 标准化工作导则（第 1 部分：标准化文件的结构和起草规则）》的相关规定进行编制。

本指南的制定严格遵循 ZYYXG/T-473-2015《中医临床诊疗指南编制通则》，即以科学性、实用性、先进性和符合中医实际为基本原则，并参照国际指南开发组织颁布的最新指南制定步骤及相关评价标准，构建科学规范的制定框架。同时，制定遵循以下标准：

a）依据《执业医师法》《医疗机构管理条例》等法律法规；

b）参考国际 GRADE 标准；

c）结合中国临床实际情况和患者特点。

本指南在制定技术的核心原则方面，坚持“循证为依据，共识为主导，经验为参考，中西医结合，创新与传承”的总体思路：

a）循证证据评价以国际公认的 GRADE 标准为核心，保持国际化接轨。纳入相关 RCT 为主要依托，同时结合已公开出版的教材、既往指南/共识/标准、古代医学文献、近现代中医药名家医案等，以此弥补中医药领域缺少的相关证据，减少证据偏倚，在创新中保持中医药文化的传承。

b）根据 GRADE 标准形成名义组网，组织中西医临床一线专家、方法学专家等多领

域专业人员汇总推荐意见，形成专家共识。并基于科研经验、理论分析及文献记载等，对指南条文内容进行多轮论证与投票，确保推荐意见的科学性与实用性。

c）专家共识是本指南形成重要依据，基于此，专家共识形成严格遵循循证医学和结构性方法论，并采用名义组法形成。

d）按照国际指南报告标准 RIGHT 进行报告。

e）制订计划按照目前国际上发布的指南更新报告规范，在未来 2～3 年进行更新。

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3.2 指南制定技术路线

本指南的编制严格按照规范步骤进行。技术路线图如下：

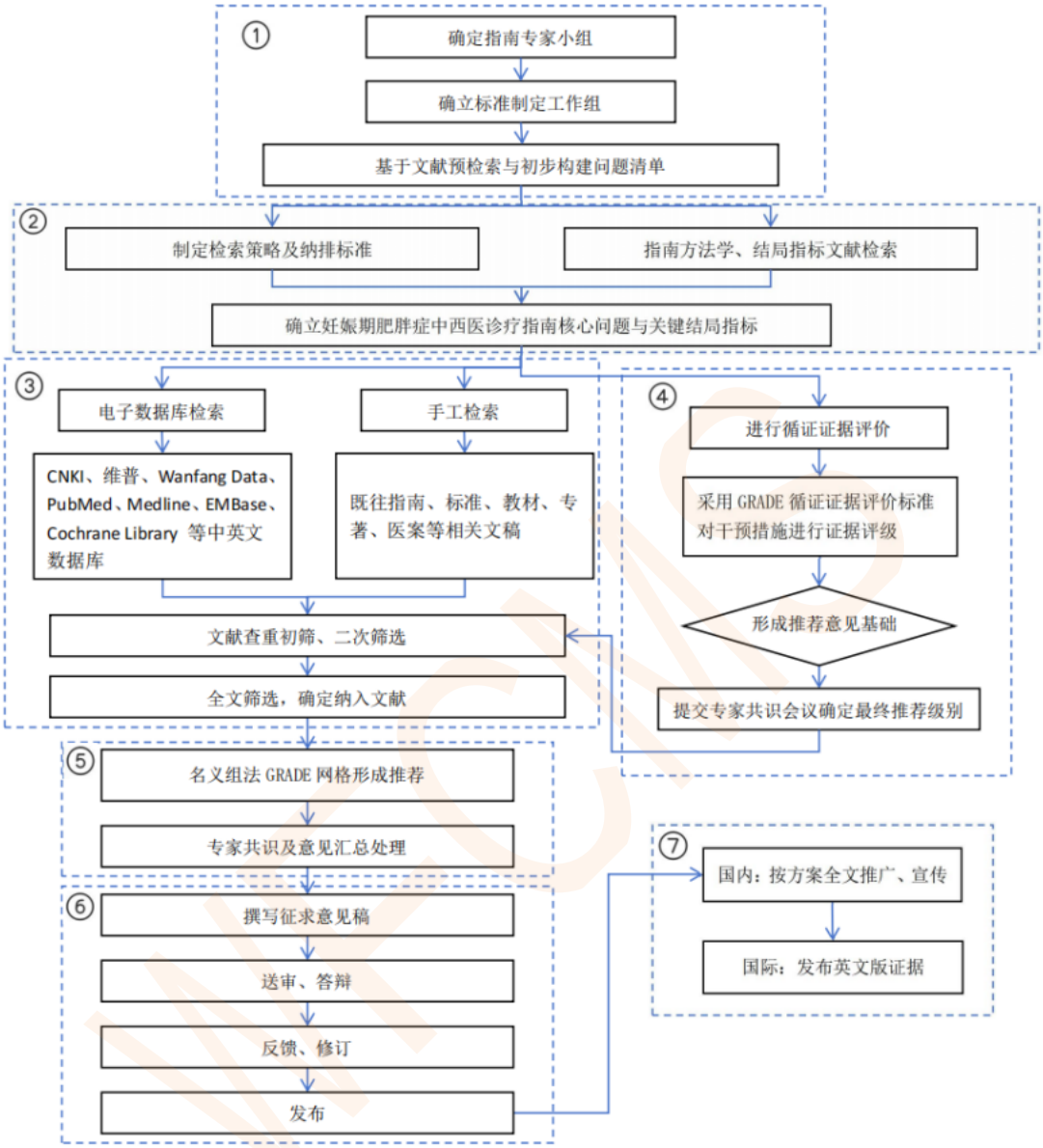

图 2 指南制定技术路线图

3.3 总体内容

本指南正文共涉及 5 部分，结构清晰、逻辑严谨，具体内容如下：第 1-2 部分明确了本指南的范围、规范性引用文件和术语定义；第 3 部分明确了本指南的诊断标准；第 4 部分明确了本指南的管理原则；第 5 部分明确了本指南针对妊娠期肥胖患者的中西医结合方式管理，包括针刺/耳穴、饮食、运动、情绪调节、并发症筛查管理等。

本指南以中医药辨证论治为核心原则，系统整合了海内外古今中医药研究成果及循证医学证据，形成专家共识，具有中医药传承与中西医结合的特色，强调方法学的国际性标准与临床实践的应用价值，旨在为海内外医护人员提供科学、规范且具可操作性的中医药管理策略与方法。医护人员在参照并实施本指南前，应具备相关中医药知识，并依据患者的地域、民族、种族及个体差异，实施个体化诊疗方案。

3.4 与相关法律、法规、强制性标准和临床实践指南的关系

本指南制定标准采用（ZYYXH/T-473-2015）中医临床诊疗指南编制通则。本指南重点参考了《国家卫生健康委办公厅关于印发肥胖症诊疗指南（2024 年版）的通知:国卫办医政函》、（中国营养学会团体标准 T/CNSS 009-2021）《中国妇女妊娠期体质量监测与评价》、（美国妇产科医师学会 ACOG，2021 年）《妊娠期肥胖：ACOG 临床实践指南（第 230 号）》、（英国皇家妇产科医师学院 RCOG，2019 年）《肥胖女性妊娠期照护：绿顶指南（第 72 号）》、（加拿大妇产科医师学会，2019 年）《第 391 号指南：妊娠与母体肥胖 第一部分：孕前与产前保健》、（国际妇产科联盟 FIGO，2020 年）《FIGO 孕前、孕期及产后肥胖管理指南》、（澳大利亚与新西兰皇家妇产科医师学院，2017 年）《妊娠期肥胖管理》等。

4 重大分歧意见的处理经过和依据

本指南在制定过程中，两次专家立项审查会意见及处理意见如**表 8**：

表 8 专家立项审查会意见处理汇总表

序号 No.	标准条文号 Standard Clause	意见内容 Comments	提出单位/个人 Proposed Unit/ Individuals	处理意见（由起草单位填写）Proposed Comments (Filled by Draft Unit)	备注 Notes
1.	立项审查内容	暂无意见或建议	立项审查专家 1		
2.	立项审查内容	暂无意见或建议	立项审查专家 2		
3.	5.辨证	第五条“辨证”部分，主证中均有关于月经的描述，本项目关注“妊娠期肥胖”是否冲突，建议补充“痰瘀互结证”“脾虚痰湿证”等作为常见证型，以覆盖更广泛的临床实践需求。	立项审查专家 3	采纳： 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据。团队重新对中医辨证中主证含有月经的描述进行修改，针对“脾虚痰湿证”证型进行完善。	
4.	6.治疗	建议关注妊娠期用药及非药物治疗的安全性，如佩连麻黄汤的麻黄，参苓白术散中的薏苡仁为妊娠慎用药，建议补充安全性说明，或标注“需在严格监测下使用”，建议明确孕期禁用穴位，并标注操作注意事项。	立项审查专家 3	采纳： 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，删除明确规定的妊娠禁用药包括麻黄、薏苡仁等。明确孕期禁用穴位，并添加操作注意事项。	
5.	7.妊娠期肥胖的分期非药物治疗及中医特色疗法	茶饮、药膳部分建议标注适用人群或慎用人群。	立项审查专家 3	采纳： 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，在茶饮、药膳后添加适用人群或慎用人群的内容。	
6.	8.妊娠期肥胖引发的	“8.3.2.1 穴位贴敷”标题下“两组的疗效均	立项审查专家 3	采纳： 具体理由：起草团队认真记录并采纳	

	特异性并发症	为治疗 2 周”是否表述有误?建议修改。		此意见，重新校对内容，修正为正确表述。	
7.	草案总体内容的意见	建议明确所推荐干预措施的疗效。	立项审查专家 3	采纳： 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，明确推荐干预措施的疗效。	
8.	立项审查内容	暂无意见或建议	立项审查专家 4		
9.	草案总体内容的意见	题目是妊娠期肥胖症，不应该涵盖计划怀孕和产后内容。	立项审查专家 5	采纳： 具体理由：起草团队认真记录并采纳此意见，删除孕前及产后的内容。	
10.	5.辨证	妊娠期肥胖症，与月经无关，证候罗列了月经相关内容，与题目不符合。	立项审查专家 5	采纳： 具体理由：起草团队认真记录并采纳此意见，重新对中医辨证中主证含有月经的描述进行修改。	
11.	草案总体内容的意见	未见孕期肥胖中医行之有效的安全方案。	立项审查专家 5	采纳： 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，团队重新对干预方案进行完善和补充。	
12.	3.术语和定义	妊娠年龄定位 18 岁~49 岁，定位 18 岁的依据不充分，本指南没有针对孕前肥胖者妊娠与孕前非肥胖妊娠、孕期肥胖与有无并发代谢疾病等分类指导等，本指南没有参考价值。	立项审查专家 5	采纳： 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，团队对妊娠年龄定位重新进行修正，且删除孕前内容，仅保留妊娠期肥胖内容。针对孕期肥胖与有无并发代谢疾病等进行分类指导。	
13.	诊断界定	1、怀孕后体重自然上升，单凭 BMI 难以判断是否肥胖，是否需要加入其他的诊断标准； 2、建议统一使用国际公认的 BMI 界定标准，特别考虑亚洲与欧洲人群差异。	1、北京中医药大学东直门医院/陈艳 2、世界中联标准部/王丽丽	采纳； 具体理由：起草团队认真记录并部分采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，完善对 BMI 不同人群的界定。	
14.	草案范围划定问题	1、建议只聚焦“妊娠期”，删除孕前和产后内容； 2、若纳入孕前、产后，名称应修改为“围妊娠期肥胖”； 3、关于是否纳入合并症与并发症，如内容完整，可不再纳入全部并发症，仅择典型列举。	1、江西省妇幼保健院/陈晓勇、广东省中医院/陆杉、世界中联标准部/王丽丽 2、辽宁中医药大学/王昕 3、广东省中医院/曹立幸	部分采纳； 具体理由：起草团队认真记录并部分采纳此意见，删除孕前和产后内容，仅保留妊娠期内容，对妊娠期肥胖常见 3 个妊娠期并发症进行预防，并在此基础上进行了扩充。	
15.	穴位刺激疗法安全	1、穴位埋线可能化脓肿痛，对孕妇不安全，	1、广东省中医院珠海医院/袁	采纳； 具体理由：起草团队认真记录并部分	

	性存疑	不建议孕期使用； 2、穴位贴敷等需注明安全风险。	少英、洛阳市中医院/杨雁鸿 2、广东省中医院/陆杉	采纳此意见，删除穴位埋线相关内容，对穴位贴敷的注意事项进行补充。	
16.	针灸使用规范问题	1、需注明刺激量和时间； 2、孕期不推荐针刺，穴位按摩更可取； 3、建议引入专业针灸专家确定方案。	1、广东省中医院珠海医院/袁少英 2、洛阳市中医院/杨雁鸿 3、世界中联标准部/王丽丽	部分采纳； 起草团队认真记录并采纳此意见，后续基于文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，补充了孕期使用针刺的安全性细节，规范针刺刺激量、用法及时间。	
17.	饮食干预	1、多数孕妇靠饮食与生活方式调控体重，药物治疗极少； 2、孕期减重以预防为主，体重调节不等于药物干预。	1、北京中医药大学东直门医院/陈艳、荔湾区中医医院/杨洪伟 2、洛阳市中医院/杨雁鸿	暂不采纳； 具体理由：起草团队认真记录并采纳此意见，后续基于文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据。针对妊娠期肥胖女性按照肥胖程度进行辨证论治、药物治疗及日常生活干预方式管理体重增长，预防并发症，保障母婴健康。	
18.	茶饮方药问题	1、决明子、番泻叶禁用于孕期，存在安全隐患，需删除； 2、建议所有茶饮、灌肠类治疗在孕期指南中删去。	1、北京中医药大学东直门医院/陈艳、世界中联标准部/王丽丽 2、广东省中医院/陆杉	采纳； 具体理由：起草团队认真记录并采纳此意见，后续基于文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，对孕期有明确禁忌的药物、疗法进行删除。	
19.	中药剂量问题	因不同国家药品规格不同，建议指南中不列固定剂量。	世界中联标准部/王丽丽	采纳； 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，删除中药剂量。	
20.	指南应适用于国际环境的问题	1、指南面向海外，须考虑抽血、用药、体征测量等可行性； 2、茶饮、灌肠等在国外难以推广，非药物疗法更具普适性。	1、广东省中医院/曹立幸、世界中联标准部/王丽丽 2、广东省中医院/陆杉	部分采纳； 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，删除灌肠等难以实施的疗法，保留推广性高，适用性强的疗法。	
21.	中医特色与西医内容比例	1、应以中医治疗为主，西医内容仅用于诊断与鉴别； 2、如需包含西医部分，应放入附录，避免正文混杂。	1、北京中医药大学东直门医院/陈艳、香港大学/吴鸿裕 2、世界中联标准部/王丽丽	部分采纳； 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合实际数据，对西医部分进行精简，部分西医内容补充至附录部分，同时将中医部分进行扩展。	
22.	循证等级需明确	1、指南应设立推荐等级（强/弱推荐），明确文献纳排标准； 2、建议通过提出问题，查证据，评价强度	1、广东省中医院/曹立幸、辽宁中医药大学/王昕 2、香港大学/吴	采纳； 具体理由：起草团队认真记录并采纳此意见，按照牛津大学循证证据评级建议，对指南参考文献的循证证据进行评级。	

		后形成推荐。	鸿裕		
23.	体重管理建议标准化	1、建议设定孕前体重标准，若为超重/肥胖是否建议暂缓怀孕； 2、建议加入业内共识如“孕期增重范围”作为参考。	1、广西壮族自治区桂林市中医医院/陈秀芳 2、广东省中医院/陆杉	采纳； 具体理由：起草团队认真记录并采纳此意见，后续根据文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，整合循证证据，团队加入业内共识如“孕期增重范围”作为参考，对妊娠期肥胖的定义及体重管理建议标准进行了修正。	
24.	针刺安全性	1、针灸穴位的选择，用法的安全性需要详细描述，增加较高等级的证据支持。 2、针对妊娠期肥胖女性，建议不纳入针灸治疗。	1、北京中医药大学东直门医院/薛晓鸥、天津中医药大学第一附属医院/闫颖、首都医科大学附属北京中医医院/佟庆、北京中医药大学东方医院/刘艳霞、北京中医药大学第三附属医院/李云波，湖南中医药大学/刘丹卓 2、上海中医药大学附属龙华医院/付金荣	部分采纳； 具体理由：起草团队认真记录并采纳此意见，后续基于文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，继续补充孕期使用针刺的安全性的循证医学证据，规范针刺穴位选择、用法及时间。	
25.	西药问题	二甲双胍、阿司匹林等西药建议不纳入在指南内。	北京中医药大学东直门医院/薛晓鸥	采纳； 具体理由：起草团队认真记录并采纳此意见，删除指南内二甲双胍等西药内容。	
26.	孕期用药安全性	妊娠期药物的安全性建议详尽补充，对子代的安全性影响也进行补充。	北京中医药大学第三附属医院/李云波 北京中医药大学东方医院/刘艳霞	采纳； 具体理由：起草团队认真记录并采纳此意见，后续基于文献证据、专家访谈、专家共识、团队流行病学横断面研究等多种研究方式，继续补充孕期用药安全性及对自带安全性的循证医学证据，规范妊娠期用药。	
27.	草案范围划定问题	建议删除剖腹产的针刺麻醉、产后出血等分娩、产后内容。	北京中医药大学东直门医院/薛晓鸥 首都医科大学附属北京中医医院/佟庆	采纳； 具体理由：起草团队认真记录并采纳此意见，删除指南内分娩、产后内容。	
28.	多学科合作	建议项目成员内加入专业的营养师，多学科合作。	天津中医药大学第一附属医院/闫颖 首都医科大学附属北京中医医院/佟庆	采纳； 具体理由：起草团队认真记录并采纳此意见，项目组成员加入专业营养师。	

5 其他应予说明的事项

无。

WECMS

附录 A

GRADE 证据概要表

临床问题 4.针刺或耳穴能否有效控制妊娠期肥胖女性的体重增加？

Certainty assessment							No;研究的		效果		Certainty
No; 研究的	研究设计	偏倚风险	不一致性	间接性	精确性	其他考虑因素【注意事项】	综合生活方式管理	对照组	相对(95%CI)	绝对(95% CI)	
针刺或耳穴											
2	随机试验	严重[ab]	严重[a]	严重[a]	严重[ab]	无	196	197		MD=-1.19，[95% CI:-1.28~-1.09]	低等质量[ab]

CI: Confidence interval; MD: Mean difference

Explanations

a. 纳入研究在随机、分配隐藏和盲法方面存在较大偏倚

b. 纳入研究样本量太小

临床问题 5.中医芳香疗法能否辅助控制妊娠期肥胖女性体重增加？

Certainty assessment							No;研究的		效果		Certainty
No; 研究的	研究设计	偏倚风险	不一致性	间接性	精确性	其他考虑因素【注意事项】	综合生活方式管理	对照组	相对(95%CI)	绝对(95% CI)	
匹兹堡睡眠质量指数 PSQI											
2	随机试验	严重[b]	严重[b]	严重[b]	严重[b]	无	71	71		MD=-2.72，[95% CI:-5.43~-0.02]	低等质量[b]

CI: Confidence interval; MD: Mean difference

Explanations

a. 纳入研究在随机、分配隐藏和盲法方面存在较大偏倚

b. 纳入研究样本量太小

临床问题 6.运动管理能否有效控制妊娠期肥胖女性的体重增加？

Certainty assessment	No;研究的	效果	Certainty

No; 研究的	研究设计	偏倚风险	不一致性	间接性	精确性	其他考虑因素【注意事项】	综合生活方式管理	对照组	相对(95%CI)	绝对(95% CI)	
	运动管理										
14	随机试验	不严重	不严重	不严重	不严重	无	1372	1370		MD=-3.26，[95% CI:-3.44~-3.08]	中等质量[a]

CI: Confidence interval; MD: Mean difference

Explanations

a. 纳入研究在随机、分配隐藏和盲法方面存在较大偏倚

b. 纳入研究样本量太小

临床问题 9.综合生活方式管理能否有效控制妊娠期肥胖女性的体重增加？

Certainty assessment							No;研究的		效果		Certainty
No; 研究的	研究设计	偏倚风险	不一致性	间接性	精确性	其他考虑因素【注意事项】	综合生活方式管理	对照组	相对(95%CI)	绝对(95% CI)	
	综合生活方式管理										
20	随机试验	不严重	不严重	不严重	严重[b]	无	4395	4035		MD=-2.95，[95% CI:-3.06~-2.85]	中等质量[a]

CI: Confidence interval; MD: Mean difference

Explanations

a. 纳入研究在随机、分配隐藏和盲法方面存在较大偏倚

b. 纳入研究样本量太小

附录 B

证据概要说明

临床问题 1：妊娠期肥胖的西医诊断标准是什么？

证据描述：依据 WHO 肥胖标准、IOM 指南及《中国妇女妊娠期体重监测与评价》行业标准[1-3]，采用国际及中国公认 BMI 界值，与妊娠期肥胖相关并发症（GDM、高血压、巨大儿等）风险高度相关，有利于早期识别高危人群，减少妊娠期并发症风险。

临床问题 2：妊娠期肥胖的干预原则是什么？

证据描述：证据来源于 2024 年《柳叶刀》肥胖症管理指南及 2022 年《新英格兰医学杂志》妊娠期肥胖综述[4,5]。两篇顶刊综述文章综合了多项高质量研究，研究指出合理控制孕期体重增长可显著降低妊娠期糖尿病、高血压疾病、巨大儿、剖宫产及产后体重滞留等并发症风险，早期筛查结合个体化生活方式干预可进一步改善母婴结局。

临床问题 3：孕期体重增长范围是什么？

证据描述：国际的 IOM 指南及《中国妇女妊娠期体重监测与评价》行业标准[2,3]确定不同肥胖等级孕妇体重增长的安全性。设定个体化孕期体重增长目标并定期监测，可显著降低妊娠期糖尿病、妊娠期高血压疾病、巨大儿、剖宫产及产后体重滞留等并发症的发生风险，改善母婴结局。

临床问题 4：针刺或耳穴能否有效控制妊娠期肥胖女性的体重增加？

证据描述：基于 2 项随机对照试验的 Meta 分析[6,7]，效应量精确[MD=-1.19, 95%CI -1.28~-1.09, P<0.00001]，结果稳定，未发现明显偏倚、不一致性或间接性。针刺及耳穴疗法可通过刺激口腔、食欲、胃部及新陈代谢相关穴位，有效控制妊娠期肥胖女性的体重过度增加。

临床问题 5：中医芳香疗法能否辅助控制妊娠期肥胖女性体重增加？

证据描述：证据来源于以睡眠/疲劳为结局的 2 项 RCT 实验[8,9]，未直接测量体重变化；Meta 分析结果[-2.72，-5.43~-0.02，P=0.05]。芳香疗法可显著改善睡眠质量、缓解疲劳。睡眠质量改善与疲劳缓解可能通过调节压力、改善情绪、减少压力性进食等机制，间接有利于体重控制。但此效应尚未在妊娠期肥胖人群中经高质量研究直接验证。

临床问题 6：运动管理能否有效控制妊娠期肥胖女性的体重增加？

证据描述：证据来源于 16 项临床实验[10-25]，Meta 分析结果（MD=-3.26,[95% CI:-3.44~-3.08]，P＜0.00001）。运动干预组与对照组相比，孕期体重增加量平均减少 3.26 kg（MD=-3.26，95%CI -3.44~-3.08，P<0.00001），差异具有高度统计学意义。同时，现有研究证实运动干预可显著降低妊娠期糖尿病（GDM）发生率、剖宫产率，改善新生儿结局，整体母婴预后更优。

临床问题 7：合理膳食结构能否有效控制妊娠期肥胖女性的体重增加？

证据描述：依据中国国家卫生健康委员会《肥胖症诊疗指南（2024 年版）》[26]及 2 项 RCT 研究，相关综述综合了多项高质量观察性研究及专家共识。在妊娠期肥胖人群中，研究显示合理的膳食结构（控制总热量、优化营养素配比、低升糖指数食物）可有效控制孕期体重增长，降低妊娠期糖尿病、高血压等并发症风险[27-29]。药膳及茶饮相关证据多来源于针对普通肥胖人群的研究及古籍记载[30-33]，目前缺乏专门针对妊娠期肥胖

人群的高质量随机对照试验直接验证。

证据 1[27]：干预组（包含饮食控制在内的孕早期生活方式规划）VS 对照组（常规健康宣教与产检）：结果显示两组在孕 12、24、28 周时的体重增长率及体重总增长合格率上均有明显差异。干预组孕 12、24、28 周时的体重增长率（5.44±0.36→18.77±2.95→30.03±4.85）比对照组（9.52±0.49→26.01±3.96→45.13±5.11）有所改善；体重总增长合格率有所改善（干预组 36（58.06%）；安慰剂组 25（40.32%））。

证据 2[29]：观察组（包括饮食指导在内的基于健康信念模式的综合护理＋常规护理）VS 对照组（常规护理）：结果显示两组在孕中期体质量增长量，体质量总增长量，体质量增长合格率上有明显的差异。观察组在孕中期体质量增长量（5.45±1.41），总增长量（11.24±3.52），体质量增长合格率（52（86.67%））比对照组（8.78±2.51；14.62±4.60；32（53.33%））有所改善。

临床问题 8：情志调节能否辅助控制妊娠期肥胖女性的体重增加？

证据描述：证据主要来源于 1 项 RCT，2 项 Meta 分析。中式音乐（五音疗法、古琴音乐）可改善情绪状态及睡眠质量[34-36]，正念干预可有效降低孕期抑郁水平[37]。情绪改善与睡眠质量提升可能通过调节下丘脑-垂体-肾上腺轴功能、改善压力性进食行为及代谢状态，间接有利于体重管理[38,39]。但此效应尚未在妊娠期肥胖人群中经高质量研究直接验证。

证据 1[34]：中式音乐干预组 VS 常规对照组；结果显示，中式音乐干预可显著改善抑郁相关行为及生活质量，并降低应激相关生物标志物水平。临床研究中，治疗组接受五音音乐干预 1 h/d，连续 30 d 后，血浆 TRX-1 水平较基线明显下降（P=0.0039），而对照组前后无明显变化（P=0.6429）；同时动物实验显示，中式音乐干预可改善抑郁样行为（如糖水偏好增加、强迫游泳及悬尾不动时间缩短），提示其具有缓解负性情绪及应激状态的作用。

证据 2[35]：该 Meta 分析纳入 24 项研究，比较音乐、按摩、运动及针刺等非药物干预对抑郁症状的影响。结果显示，音乐干预在改善抑郁评分方面具有较好的治疗效果，其疗效排序概率为 73.30%，优于多数常规非干预措施；同时，研究提示音乐疗法是大学生抑郁情绪管理的重要非药物手段之一。

证据 3[36]：综述性研究系统梳理古琴音乐与中医五音疗法的理论基础及现代应用，指出古琴音乐可通过调节五脏及五志之间的动态平衡，缓解焦虑、抑郁及失眠等情绪障碍。

证据 4[37]：Meta 分析纳入 10 项 RCT，共 658 例孕期女性，结果显示正念冥想可显著改善孕期抑郁症状［SMD＝−0.786，95%CI（−1.289，−0.283），P＜0.001］。亚组分析提示，正念认知疗法干预效果最佳，疗程＜4 周时改善效果最明显，可有效降低孕期负性情绪水平。

证据 5[38]：综述研究指出，孕期抑郁与肥胖共病可通过下丘脑-垂体-肾上腺轴功能紊乱、炎症/免疫激活、胰岛素抵抗及肠道菌群失衡等多途径影响母体代谢状态及子代健康。

临床问题 9：综合生活方式管理能否有效控制妊娠期肥胖女性的体重增加？

证据描述：证据来源于针对 20 项临床研究的 Meta 分析（n=8430）[40-58]，结果显示综合生活方式管理可显著控制妊娠期肥胖女性的体重增加（MD=-2.95 kg，95%CI -3.06～-2.85，P<0.00001）。该干预为非侵入性措施，安全性良好，可降低不良妊娠结局发生率、妊娠合并症发生率及剖宫产率。干预成本较低，具有良好的成本效益，患者接

受度较高。需注意在专业指导下制定个体化方案，注意运动禁忌症及膳食个体差异。

临床问题 10：妊娠期肥胖并发妊娠期糖尿病风险指标是什么？中西医预防的方法是什么？

证据描述：证据主要来源于 1 项 meta 分析及多项队列回顾性研究。高龄、孕前肥胖、GDM 病史、糖尿病家族史等是 GDM 的独立危险因素[59-63]，联合血糖、血脂等指标监测[64-68]，可有效识别妊娠期肥胖发生 GDM 风险的高危人群。国际指南已明确推荐上述筛查策略[69,70]。预防措施包括药膳（山药薏米粥、滋哚饮）、传统功法及生活方式干预（控制总热量、低 GI 饮食、规律有氧运动），可显著降低妊娠期肥胖的 GDM 发病率，改善母婴结局。其中生活方式干预有多项随机对照试验支持，而中医药预防措施多来源于观察性研究或专家共识。

证据 1[60]：干预组（孕前超重、肥胖孕妇）VS 对照组（孕前正常体重孕妇）；结果显示孕前 BMI 升高与 GDM 发病风险呈显著剂量-反应关系。具体数据：体重过低、超重和肥胖孕妇 GDM 风险的综合估计值经调整 OR 分别为 0.68、2.01 和 3.98，经调整 RR 分别为 0.34、1.52 和 2.24。在粗模型与调整模型中，BMI 每增加 1 个单位，GDM 发生风险相应增加 4%，差异均具有统计学意义。

证据 2[61]：干预组（GDM 孕妇）VS 对照组（正常糖耐量孕妇）；结果显示维生素 D 缺乏、辅助生殖技术、高龄、孕前肥胖、糖尿病家族史等为 GDM 的独立危险因素。维生素 D 缺乏 OR=2.09（95% CI：1.50-2.93，P<0.001），辅助生殖技术 OR=9.17（95% CI：1.16-72.67，P=0.036），高龄（≥35 岁）OR=3.12（95% CI：1.89-5.14，P<0.001），孕前 BMI≥25.0 kg/m^2，OR=2.42（95% CI：1.54-3.80，P<0.001），糖尿病家族史 OR=6.95（95% CI：3.01-16.01，P<0.001）。

证据 3[63]：干预组（含高龄、肥胖、糖尿病家族史等高危因素孕妇）VS 对照组（无明显高危因素孕妇）；结果显示多因素联合模型可显著提高 GDM 高危人群识别效率。具体数据：基于全国电子健康记录构建的预测模型 ROC 为 0.85，显著高于传统风险评分（ROC=0.68），可在孕早期精准识别 GDM 高危人群。

证据 4[67]：干预组（孕早期 HbA_1c 升高孕妇）VS 对照组（孕早期 HbA_1c 正常孕妇；或联合年龄、BMI、糖尿病家族史的高危孕妇）；结果显示孕早期 HbA_1c 单独筛查，或联合传统危险因素的联合筛查，可有效早期预测 GDM 发生风险，显著减少 OGTT 检查需求。具体数据：三项前瞻性队列（印度 n=2115、肯尼亚 n=2142、英国 n=4320）研究显示，HbA_1c 每升高 1%，GDM 发生风险的调整 RR 分别为 1.60（95% CI：1.19-2.16）、3.49（95% CI：2.8-4.34）、4.72（95% CI：3.82-5.82）；单独 HbA_1c 筛查可使 OGTT 检查需求减少 42.0%~50.4%，而 HbA_1c 联合年龄、BMI、糖尿病家族史的联合模型，OGTT 避免率最高可达 64.0%，同时维持 80%左右的筛查灵敏度，预测效能优异。

临床问题 11：妊娠期肥胖并发妊娠期高血压风险指标是什么？中西医预防的方法是什么？

证据描述：证据来源于多项队列研究系统评价及大样本回顾性研究。孕前/早孕期高 BMI、高龄、慢性高血压病史、子痫前期病史等是妊娠期高血压疾病的独立危险因素[71,72]；联合平均动脉压、子宫动脉搏动指数、胎盘生长因子等指标可进一步提高预测效能[73-75]。国际指南已明确推荐上述筛查策略[61]。预防措施包括起居调养（充足休息、避免劳累）、药膳食疗、传统功法及穴位按摩，可降低妊娠期肥胖的子痫前期及妊娠期高血压疾病发生率。其中起居调养及穴位按摩部分有 RCT 证据支持，而中医药膳及功法多来源于观察性研究或专家共识。

证据 1[71]：妊娠期女性 BMI>30 与子痫前期发生率密切相关。对于体重指数（BMI）≥30 的女性，以国际疾病分类编码为依据的子痫前期合并率是 5.1%（5.0%至 5.2%），而以标准临床合并率是 7.7%（7.6%至 7.8%），相比之下，对于 BMI<30 的女性，子痫前期的合并率分别是 2.0%（2.0%至 2.0%）和 2.8%（2.7%至 2.8%）。

证据 2[72]：在瑞典和中国人群中，肥胖与轻度和重度先兆子痫均密切相关。对于轻度子痫，体重过轻表现为保护因素（瑞典：OR=0.76，95%CI 0.63-0.91；中国：OR=0.41，95%CI 0.18-0.92），超重为危险因素（瑞典：OR=1.71，95%CI 1.63-1.80；中国：OR=3.14，95%CI 1.98-4.99），肥胖亦为危险因素且效应更强（瑞典：OR=3.23，95%CI 3.07-3.40；中国：OR=4.86，95%CI 3.64-6.51）。对于重度子痫，体重过轻同样呈保护作用（瑞典：OR=0.78，95%CI 0.62-0.99；中国：OR=0.66，95%CI 0.45-0.95），超重（瑞典：OR=1.35，95%CI 1.26-1.45；中国：OR=2.29，95%CI 1.59-3.30）与肥胖（瑞典：OR=2.10，95%CI 1.94-2.27；中国：OR=4.46，95%CI 3.27-6.07）均显著增加重度子痫风险。

证据 3[75]：孕前子痫组 BMI(24.69±1.32)，对照组（22.63±1.65)，P<0.001 结果显示孕前 BMI 孕前 BMI 是妊娠子痫发生的一个独立风险因素。子痫前期组(16.79±4.61)，对照组（14.93±3.95），P＜0.05 孕前 BMI 与孕期体重增加之间的差异具有统计学意义，孕前 BMI 过高与 PE 的发生有显著的正相关关系。血清 PLGF、DCN、LDH、UA 水平与孕前 BMI 结合用于子痫前期的诊断，曲线下面积（AUC）为 0.952，敏感性为 0.901，特异性为 0.913，多因素结合可用于子痫前期的诊断

临床问题 12：妊娠期肥胖并发先兆流产风险指标是什么？中西医预防的方法是什么？

证据描述：主要来源于 1 项多中心观察性研究和 1 项非定量系统评价。肥胖是早期流产的独立危险因素[76,77]；结合孕酮、β-hCG 等内分泌指标及超声检查可有效识别高危人群[77]。孕酮补充可降低流产风险；中医辨证施膳及茶饮调理，有助于固肾安胎，降低先兆流产发生率。但相关证据多来源于观察性研究、病例系列或专家意见，且研究人群并非专门针对妊娠期肥胖，存在一定间接性。

证据 1[76]：“BMI≥30”定义为妊娠风险因素之一，在肯尼亚有 1 个妊娠风险因素（含肥胖）的孕妇产检完整性显著更高（Coeff=1.64, 95%CI:0.32-2.96, P=0.015）；南非同时存在高肥胖率与较高的 ANC 完成率（76%）。

证据 2[77]：超声检查有效识别高风险人群相关指标包含孕囊（MSD≥17 mm 无胚胎或 MSD≥13 mm 无卵黄囊，预测非存活妊娠特异性和阳性预测值均为 100%）、胎儿发育情况（胎儿心动过缓、胎龄、头臀长存在一种则风险从 6%→84%）；内分泌标注有效识别高风险人群包括孕酮（＜45 nmol/l（14 ng/ml）异常妊娠，敏感度 87.6%、特异度 87.5%）、β-hCG（＜20 ng/ml 异常妊娠，敏感度 88.3%、阳性预测值 82.6%）。

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International Standard of the World Federation of Chinese Medicine Societies
International Clinical Practice Guideline of Traditional Chinese Medicine: Obesity During Pregnancy
Formulation Explanation

I. Work Overview

1. Drafting Organizations

Principal drafting organizations: The First Affiliated Hospital of Zhejiang Chinese Medical University; The First Affiliated Hospital of Heilongjiang University of Chinese Medicine; the Reproductive Medicine Branch of the World Federation of Chinese Medicine Societies.

Participating drafting organizations: The Chinese University of Hong Kong; The University of Hong Kong; Monash University; University of Technology Sydney, Australia; LAc Herb Acupuncture Clinic; Karolinska Institutet; UK Academy of Chinese Medicine; University of Turku, Finland; Beijing University of Chinese Medicine; Liwan District Hospital of Traditional Chinese Medicine of Guangzhou; Heilongjiang Tianyuan Reproductive and Maternity Hospital; Beijing Guokang Hospital for the combination of Chinese and western medicine; Affiliated Hospital of Liaoning University of Traditional Chinese Medicine; Xuzhou Central Hospital affiliated to Southeast University; Guang'an Hospital affiliated to Chengdu University of Traditional Chinese Medicine; Sir Run Run Shaw Hospital, Zhejiang University School of Medicine; The First Affiliated Hospital of Nanchang University; Guangdong Provincial Hospital of Traditional Chinese Medicine; Dongzhimen Hospital, Beijing University of Chinese Medicine; The First Hospital of Hunan University of Chinese Medicine; Nanjing University; Jiangxi Maternal and Child Health Hospital; Shanghai Public Health Clinical Center (affiliated to Fudan University); Beijing Hospital of Traditional Chinese Medicine, Capital Medical University; The Affiliated Hospital of Jiangxi University of Chinese Medicine; The Second Affiliated Hospital of Dalian Medical University; West China Hospital, Sichuan University; Guilin municipal Hospital of Traditional Chinese Medicine; Macau University of Science and Technology; Zhejiang University; Tai'an City Central Hospital.

Project leader: Gao Jingshu.

Principal drafters: Gao Jingshu, Wu Xiaoke and Xu Min.

Contributing drafters (listed in alphabetical order of surname):

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Hong Kong, China: and Ng, Hung Yu Ernest (Hong Kong);

Australia: Ben Mol and Chi Eung Danforn LIM;

United States: Yong Ming Li;

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United Kingdom: Shulan Tang;

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II. Brief Introduction to the Standard Drafting Process

1. Rationale for Formulation

Obesity has become one of the major public health issues worldwide, and the incidence of obesity during pregnancy has also been increasing year by year. Obesity can reduce female fertility. During pregnancy, it also significantly increases the risk of pregnancy-related complications, such as gestational diabetes mellitus, pre-eclampsia, cesarean section, and miscarriage. In addition, obesity during pregnancy may lead to various adverse outcomes, including macrosomia, fetal malformations, and preterm birth, and may even affect the health of offspring in subsequent generations.

Currently, internationally authoritative guidelines on obesity during pregnancy are mainly based on data from Western populations, and their recommended criteria are not highly compatible with the constitutional characteristics and metabolic features of Asian pregnant women. Traditional Chinese Medicine (TCM) has the advantages of high safety and fewer side effects. It may intervene in obesity during pregnancy through multiple pathways, including regulating hormone levels, modulating lipid metabolism, and improving gut microbiota, thereby partially complementing Western medicine, whose mechanisms of action are clear but relatively limited. Therefore, the project team combined evidence-based medicine with traditional Chinese medical experience, systematically integrated clinical trial evidence on TCM, deeply incorporated theories from classical Chinese medical texts and the experience of renowned physicians, and referred to guidelines and standards issued by internationally authoritative medical organizations. Guided by the GRADE framework and international standards for guideline development, the project team emphasized rigorous evidence appraisal and bias control while integrating the theoretical essence of classical Chinese medical texts and the accumulated experience of TCM. The team developed recommendations for the diagnosis, treatment and management of obesity during pregnancy that are both scientific and distinctive of TCM, and formulated the International Traditional Chinese Medicine Clinical Practice Guideline: Obesity During Pregnancy. This guideline aims to protect maternal and infant health, contribute the wisdom of TCM, enhance the international influence of TCM gynecology, and promote the global development of TCM.

2. Main Work Process

2.1 Launch and Deployment Stage

2.1.1 Guideline Development Seminar

This guide initiated the project application process in April 2025. On June 4, we received the notification letter for project review. The team held a project approval review meeting in Beijing on June 7, 2025, to discuss the following aspects:

(1) General principles, objectives, and scope of application of the guideline development
(2) Overall process of guideline development
(3) Overall timeline for guideline development
(4) Composition and general division of labor of the guideline development working group
(5) Expansion of the membership scope of the guideline expert panel
(6) Key precautions during the guideline development process

After the meeting, WeChat groups for the guideline development working group and the guideline development expert panel were established respectively. Regular supervision of the working group's progress and phased reporting of guideline development status were required.

The project was officially approved on July 23, 2025.

2.2 Determining the Topic and Purpose of This Guideline

During the launch and deployment stage, on the basis of preliminary literature investigation and analysis of clinical needs, and after full discussion by the expert group, the project team clarified the development direction and positioning of this guideline.

At present, no clinical practice guideline on TCM specifically addressing obesity during pregnancy is available either in China or internationally. Existing guidelines for the diagnosis and treatment of obesity generally do not distinguish between pregnant and non-pregnant populations, and they lack targeted guidance on key issues such as weight management and medication safety during pregnancy. Therefore, the project team identified obesity during pregnancy as the core topic of this guideline, with a particular focus on pregnancy as a distinct physiological stage.

Following multiple rounds of expert deliberation, the purpose of this guideline was finalized as follows: to address the needs of international clinical practice, integrate evidence-based findings on TCM with traditional clinical experience, and develop an international TCM clinical practice guideline that is scientific, safe, and practical. The guideline is intended to provide a reference for healthcare professionals in China and internationally on the standardized application of TCM in the management of obesity during pregnancy.

2.3 Development Stage

2.3.1 Organization and Management

During the development of this guideline, a WeChat working group chat was established, consisting mainly of consensus experts and members of the working group. To ensure work efficiency, routine communication was primarily conducted through online meetings and telephone discussions. Internal discussion meetings and online exchange meetings were held regularly.

2.3.2 Avoidance of Conflicts of Interest

All members involved in the development of this guideline declared that they had no conflicts of interest. No commercial, professional, or other interests related to the subject of this document were identified, nor were any conflicts of interest that might be affected by the outcomes of this document.

2.3.3 Formulation of the Guideline Development Plan and Implementation Steps

Based on the assigned tasks, the working group formulated the guideline development plan, determined the development timeline, solicited expert opinions, convened expert discussions, refined the plan, and implemented the following specific steps:

(1) April 2025: Collect and analyze domestic and overseas standards, guidelines and literature concerning threatened miscarriage, and finalize the project scope.
(2) May–June 2025: The Guideline Development Working Group reviews relevant literature on threatened miscarriage, collects evidence regarding corresponding interventions, establishes quality evaluation criteria, compiles the draft and completes the first version.
(3) July 2025: Convene an expert project review meeting to discuss the initial draft, and conduct the first round of revision in accordance with expert feedback.
(4) August 2025–February 2026: The working group carries out a second literature retrieval, processes the collected evidence data, optimizes evidence statements, and develops corresponding recommendations.
(5) March–April 2026: Conduct two rounds of expert consensus voting via online questionnaires to grade the strength of recommendations.
(6) April 2026: Solicit opinions from internal and external experts successively through online channels, and complete the second and third rounds of draft revision.
(7) May–June 2026: Submit the manuscript to the World Federation of Chinese Medicine Societies (WFCMS) for final review and approval.

2.3.4 Extensive Clinical Investigation to Identify Clinical Questions

During the development of this guideline, the working group aimed to fully incorporate the issues of greatest concern to clinicians. Based on the challenges in the conventional medical diagnosis and treatment of obesity during pregnancy, as well as the advantages of TCM and integrated Chinese and Western medicine interventions, the working group conducted preliminary literature searches, summarized clinical experience, and held multiple internal discussions. Finally, 12 clinical questions were formulated, as shown in Table 1.

Table 1. List of Guideline Clinical Questions

No.	Clinical question
1	What are the diagnostic criteria for obesity during pregnancy in conventional medicine?
2	What are the principles of intervention for obesity during pregnancy?
3	What is the recommended range of gestational weight gain?
4	Can acupuncture or auricular acupoint therapy effectively control weight gain in women with obesity during pregnancy?
5	Can TCM aromatherapy assist in controlling weight gain in women with obesity during pregnancy?
6	Can exercise management effectively control weight gain in women with obesity during pregnancy?
7	Can a well-balanced diet effectively control weight gain in women with obesity during pregnancy?
8	Can emotional regulation assist in controlling weight gain in women with obesity during pregnancy?
9	Can comprehensive lifestyle management effectively control weight gain in women with obesity during pregnancy?
10	What are the risk indicators for gestational diabetes mellitus in women with obesity during pregnancy, and what are the preventive approaches in TCM and conventional medicine?
11	What are the risk indicators for hypertensive disorders of pregnancy in women with obesity during pregnancy, and what are the preventive approaches in TCM and conventional medicine?
12	What are the risk indicators for threatened miscarriage in women with obesity during pregnancy, and what are the preventive approaches in TCM and conventional medicine?

2.3.5 Evidence Retrieval, Screening, and Synthesis

(1) Databases searched: Chinese and English databases were searched, including CNKI, Wanfang Data, PubMed, Embase, and Web of Science.

(2) Search terms:

1. Disease-related terms, such as "obesity during pregnancy" and "pregnancy-related obesity";
2. Intervention-related terms, such as Chinese herbal medicine, acupuncture, moxa sticks, mild moxibustion, Chinese herbal acupoint application, diet, exercise, traditional exercises, Traditional medicine, Acupuncture, Traditional exercises, and Medicated diet;
3. Study-type terms, such as "randomized controlled trial" and "Meta-analysis."

(3) Search strategy (CNKI example; exercise intervention):

SU=（妊娠+孕期+孕妇）*（肥胖+超重+孕期体重增长+体重增长）*（运动+体力活动+体育锻炼+运动干预+有氧运动+抗阻训练+瑜伽+八段锦+太极拳+五禽戏+六字诀+易筋经）。

(4) Inclusion criteria:

Studies were included if they met all of the following criteria: the literature types included guidelines, consensus statements, systematic reviews (SRs), randomized controlled trials (RCTs), observational studies, and case reports; the study participants were women of reproductive age diagnosed as overweight or obese; the interventions were TCM-related therapies; the control measures included no-treatment control, placebo, lifestyle intervention, and pharmacological treatment; and the outcomes included body weight, BMI, waist circumference, waist-to-hip ratio, and body fat percentage, etc..

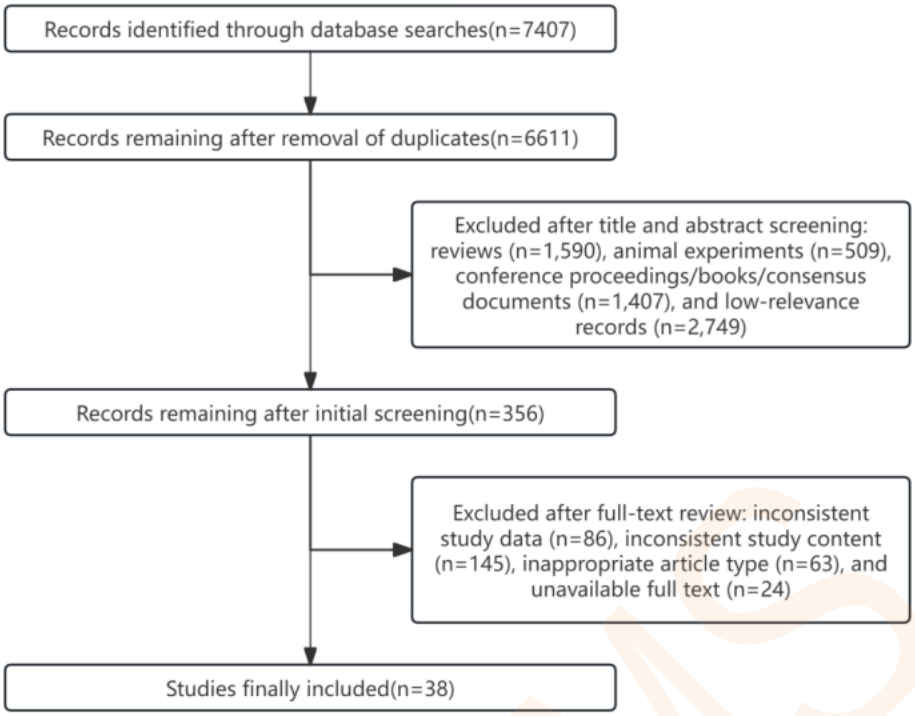
(5) Exclusion criteria:

Studies were excluded if any of the following applied: subjects were male or non-pregnant women; or control measures were TCM therapies or surgical procedures.

(6) Literature screening results:

A total of 7,407 relevant records were retrieved from CNKI, Wanfang, PubMed, Embase, and Web of Science. After removing duplicate records from different databases, 6,611 records remained. Title and abstract screening removed 6,269 review articles, animal experiments, conference proceedings/books/consensus documents, and low-relevance records, leaving 356 records. Full-text screening then excluded 318 records because study data were inconsistent, study content was inconsistent, article type was inappropriate, or full text was unavailable. Ultimately, 38 studies were included (25 Chinese RCTs and 13 English RCTs). The screening process is shown in Figure 1.

Figure 1. Literature screening process for TCM treatment of obesity during pregnancy



2.3.6 Review of Existing Domestic and International Guidelines and Consensus Documents

In addition, relevant guidelines, consensus documents, standards, technical specifications, and textbooks were searched and reviewed. The following relevant guidelines, consensus documents, standards, and technical specifications were identified:

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2.3.7 Evidence Evaluation and Grading

(1) Assessment of Literature Quality

The certainty of evidence in this document was assessed using the internationally recognized GRADE approach (Grading of Recommendations Assessment, Development and Evaluation). GRADE is a widely used framework in international guideline development for assessing the certainty of evidence and the strength of recommendations. Its core purpose is to identify the factors that influence evidence certainty and recommendation strength, thereby ensuring the transparency of the assessment process and the reliability of the results.

In applying the GRADE approach, this guideline strictly followed the evidence assessment guidance issued by the GRADE Working Group and systematically assessed and graded the bodies of evidence.

(2) GRADE evaluation

The GRADE evidence assessment criteria followed the evidence certainty guidance issued by the GRADE Working Group and included four levels: "⊕⊕⊕⊕ (high/4 points)," "⊕⊕⊕◯ (moderate/3 points)," "⊕⊕◯◯ (low/2 points)," and "⊕◯◯◯ (very low/1 point)." The initial rating was high/4 points, and a downgrading approach was applied.

Table 2. Downgrading and Upgrading Factors in the GRADE Evidence Assessment Criteria

Downgrading/upgrading factor	Description
Factors that may lower the certainty of evidence	
1. Study limitations	
Serious	Deduct 1 point
Very serious	Deduct 2 points
2. Inconsistency of study results	
Serious	Deduct 1 point
Very serious	Deduct 2 points
3. Uncertainty regarding directness of evidence	
Serious	Deduct 1 point
Very serious	Deduct 2 points
4. Insufficient precision or wide confidence interval	
Serious	Deduct 1 point
Very serious	Deduct 2 points
5. Publication bias	
Serious	Deduct 1 point
Very serious	Deduct 2 points
Factors that may increase the certainty of evidence	
1. Effect size	
Large: evidence from two or more studies consistently shows RR>2 or RR<0.5, with almost no confounding factors	Add 1 point
Very large: direct evidence shows RR>5 or RR<0.2, without compromising credibility	Add 2 points
2. Plausible confounding would reduce the observed effect	Add 1 point
3. Dose-effect relationship: a clear association exists	Add 1 point

between the "dose" of the intervention and the magnitude of effect	

(3) GRADE Grading of Recommendation Strength

Based on the certainty of evidence and the balance between benefits and harms, the strength of recommendations was classified as "strong recommendation," "weak recommendation," or "no clear recommendation."

Table 3. GRADE Categories for Strength of Recommendations

Recommendation strength	Definition	Clinical wording
Strong recommendation (↑↑)	Benefits clearly outweigh risks and burdens, or risks and burdens clearly outweigh benefits; applicable to almost all patients	"Should do" / "Should not do"
Weak recommendation (↑)	Benefits, risks, and burdens are comparable, or benefits are uncertain; the choice should be made according to the patient's specific circumstances, values, and preferences	"May do" / "May not do"
No clear recommendation (/)	Benefits and harms are balanced or uncertain, with no clear preference	"Uncertain"

(4) Development of the Recommendation Voting Form and Questionnaire

Based on the evidence assessment and grading, the final recommendation voting form and questionnaire were developed. The strength of each recommendation was determined by comprehensively considering the certainty of evidence, clinical benefits, safety, cost considerations, and patient acceptability, thereby ensuring that the recommendations were scientific, practical, and implementable.

2.3.8 Formation of Expert Recommendations and Consensus Statements

For the diagnosis, interventions, and outcome measures addressed in this guideline, questionnaire surveys were conducted using the Delphi–nominal group method. Consensus on the different components of the guideline was then reached through online expert meetings. The selected consensus experts were frontline clinical experts in fields related to obesity during pregnancy, mainly specialists in TCM obstetrics and gynecology and integrative obstetrics and gynecology.

(1) General principles

The expert consensus process for this document adopted the Delphi method and was conducted mainly online. The development and determination of consensus recommendations were informed by the China Association of TCM methodology for "formulating recommendations and consensus suggestions."

Based on their clinical and/or research experience, theoretical analysis, and published literature, the consensus experts weighed the benefits and harms of each item and selected one of the following options in the questionnaire: very important (benefits definitely outweigh harms), somewhat important (benefits may outweigh harms), neutral (the benefit–harm relationship is uncertain or there is no clear difference), somewhat unimportant (harms may

outweigh benefits), or very unimportant (harms definitely outweigh benefits). These options were assigned scores of 5, 4, 3, 2, and 1, respectively. Blank responses were documented as abstentions. For each item, the percentages of votes for "very important," "somewhat important," "high importance," "neutral," "somewhat unimportant," "very unimportant," and "low importance" were calculated.

(2) Consensus Recommendations

Expert recommendations were formulated by integrating GRADE-based evidence. For items not supported by GRADE evidence, expert consensus recommendations were developed based on relevant supporting materials. Excluding the "neutral" option, consensus was considered achieved if any single option-namely "very important," "somewhat important," "somewhat unimportant," or "very unimportant"-received more than 50% of the votes. In addition, consensus could also be considered achieved if either side, namely "high importance" ("very important" + "somewhat important") or "low important" ("somewhat unimportant" + "very unimportant"), received 70% or more of the votes. In such cases, the corresponding consensus was classified as a "weak recommendation/may be considered" or a "weak recommendation against/not recommended." Otherwise, consensus was considered not achieved.

The final expert recommendations were classified into four levels, corresponding to the four importance categories ("very important," "somewhat important," "somewhat unimportant," and "very unimportant"): "strong recommendation," "weak recommendation," "weak recommendation against," and "strong recommendation against." The final expert consensus recommendations were also classified into four levels, corresponding to the same four importance categories: "preferred," "recommended," "not recommended," and "not appropriate."

(3) Coefficient of Variation and Multiple Questionnaire Rounds

For each item, the number of scoring votes, mean score, standard deviation (SD), and coefficient of variation (CV) were calculated. Agreement rate, interquartile range (IQR), and CV were used as indicators for determining expert consensus. Consensus was considered achieved when the agreement rate was ≥70%, IQR ≤ 1, and CV ≤ 0.3. The agreement rate reflected the proportion of experts who actively supported an item; the IQR reflected the degree of dispersion and was not affected by extreme values; and the CV provided a standardized measure of relative disagreement among items with different mean scores.

Consensus suggestions or recommendations that failed to reach consensus were excluded after confirmation by the expert group. Items that reached consensus and had a CV ≤ 0.3 were included after confirmation by the expert group. Items that reached consensus but had a CV > 0.3 were discussed by the expert group and revised if necessary, after which they were either submitted to another round of consensus voting or excluded.

(4) Basic Expert Characteristics, Participation, and Authority

Two rounds of expert consultation for this guideline invited experts from more than 30 institutions across 18 provinces and cities in China. Thirty-six experts participated in the first round and 32 in the second. The two expert groups were broadly consistent, and most held senior professional titles (chief physicians, professors, etc.; >80%). Their specialties covered obstetrics and gynecology, TCM gynecology, reproductive medicine, evidence-based medicine, acupuncture, nursing, and other fields, providing good disciplinary representation. The valid

response rate was 100% in both rounds, indicating high expert enthusiasm.

The first round did not separately collect expert familiarity or authority coefficients. To assess expert authority, familiarity (Cs) and judgment basis (Ca) were collected in the second consultation, and the authority coefficient was calculated (Cr=(Cs+Ca)/2). Results showed a mean Cs of 0.93 (65.6% were "very familiar"), mean Ca of 0.92, and mean Cr of 0.93 (range 0.78–1.00), with all experts having Cr≥0.70. Given the similarity of expert composition between the two rounds, the authority level of the first-round experts can be considered similar to that of the second-round experts, and the overall consultation results are reliable.

(5) Results of the First Round of Expert Recommendation Voting

In the first round, 36 peer experts scored the importance of 11 interventions or management measures using a five-level scale (A=5 points, B=4 points, C=3 points, D=2 points, E=1 point). The statistical results and disposition of each item are shown in Table 4.

Table 4. Statistical Results and Decisions from the First Round of Expert Recommendation Voting

Item	Mean	SD	A%	B%	C%	Agreement rate	IQR	CV	Final Decision
Diagnostic criteria for obesity during pregnancy	4.97	0.17	97.22	2.78	0.00	100.00	0	0.03	Strong recommendation
Intervention principles for obesity during pregnancy	4.97	0.17	97.22	2.78	0.00	100.00	0	0.03	Strong recommendation
Weight monitoring for women with obesity during pregnancy	4.94	0.23	94.44	5.56	0.00	100.00	0	0.05	Strong recommendation
Acupuncture/auricular acupoint intervention	4.14	0.80	41.67	44.44	11.11	86.11	1	0.19	Strong recommendation
TCM aromatherapy intervention	3.64	1.02	19.44	38.89	25.00	58.33	2	0.28	Proceed to second round after revision
Exercise intervention	4.72	0.51	75.00	22.22	2.78	97.22	1	0.11	Strong recommendation
Well-balanced dietary intervention	4.97	0.17	97.22	2.78	0.00	100.00	0	0.03	Strong recommendation

Item	Mean	SD	A%	B%	C%	Agreement rate	IQR	CV	Final Decision
Emotional-regulation intervention	4.61	0.60	66.67	27.78	5.56	94.44	1	0.13	Weak recommendation
Screening and monitoring for threatened miscarriage in women with obesity during pregnancy	4.72	0.62	77.78	13.89	5.56	91.67	1	0.13	Weak recommendation
Screening and monitoring for gestational diabetes mellitus in women with obesity during pregnancy	4.92	0.28	91.67	8.33	0.00	100.00	0	0.06	Strong recommendation
Screening and monitoring for hypertensive disorders of pregnancy in women with obesity during pregnancy	4.92	0.28	91.67	8.33	0.00	100.00	0	0.06	Strong recommendation

Note: Mean=mean score; SD=standard deviation; A% = proportion of responses rated as "very important"; B% = proportion of responses rated as "somewhat important"; C% = proportion of responses rated as "neutral"; agreement rate = A% + B%; IQR = interquartile range; CV = coefficient of variation (CV ≤ 0.3 indicates consensus); decision refers to the final determination for each item.

As shown in Table 4, the item "TCM aromatherapy intervention" had a mean score of 3.64, falling between "neutral" and "somewhat important," and a CV of 0.28. Although the CV did not exceed 0.3, it was close to the threshold, and the relatively large standard deviation (SD = 1.02) indicated a certain degree of divergence among expert opinions. After discussion, the expert group considered that the wording of this item was too broad and that some experts had concerns about its clinical feasibility.

It was therefore decided to revise the item as follows: ① The original item "TCM aromatherapy intervention" was revised to: "Under the guidance of a physician, patients with obesity during pregnancy may use lemon essential oil inhalation or lavender essential oil acupoint massage as an adjunctive intervention, limited to the second trimester and avoiding

oral administration." A summary of the relevant evidence-based support was also added. ② The revised item would proceed to the second round of consensus voting. It would be included if CV ≤ 0.25 and Mean ≥ 4.0; otherwise, it would be excluded. All other items were directly adopted and included in the final consensus document.

(6) Results of the Second Round of Expert Recommendation Voting

In the second round of expert recommendation voting, 32 peer experts rated the importance of two intervention or management measures using the same five-level scale (A = 5 points, B = 4 points, C = 3 points, D = 2 points, and E = 1 point). The statistical results and decisions for each item are shown in Table 5.

Table 5. Statistical Results and Decisions from the Second Round of Expert Recommendation Voting

Item	Mean	SD	A%	B%	C%	Agreement rate	IQR	CV	Final Decision
Comprehensive lifestyle management	5.00	0.00	100.00	0.00	0.00	100.00	0	0.00	Strong recommendation
TCM aromatherapy intervention	4.13	0.83	34.38	50.00	9.38	84.38	1	0.20	Weak recommendation

Note: Mean=mean score; SD=standard deviation; A%=proportion of "very important"; B%=proportion of "somewhat important"; C%=proportion of "neutral"; agreement rate=A%+B%; IQR=interquartile range; CV=coefficient of variation (CV≤0.3 indicates consensus); disposition indicates the final determination of the item.

2.3.9 Evidence Compilation and Archiving

The specific procedures and background materials generated during evidence retrieval, screening, and evaluation for this guideline were compiled and archived.

2.4 Consultation Stage

2.4.1 Internal Expert Review and Appraisal

After the strength of the recommendations for the *International TCM Clinical Practice Guideline: Obesity During Pregnancy* had been determined, the drafting working group organized an expert review and appraisal meeting from April 19 to April 25, 2026, with comments collected online. Participants included all drafters in the project team, representatives of the main participating organizations, and specially invited experts in relevant fields. The review focused on the appropriateness of the standard framework, the completeness of the technical content, the representativeness of the syndrome differentiation categories, and the feasibility of the treatment measures. After thorough discussion, the review group put forward 19 revision comments, all of which were adopted, and the *Summary and Handling Table of Internal Expert Review Comments* was prepared. Based on these comments, the drafting working group systematically revised the draft and prepared the version for external expert consultation.

Table 6. Summary and Handling Table of Internal Expert Review Comments

No.	Expert Comment	Proposed Organization/Indivi	Handling Decision

		dual	
1	The diagnostic definition and applicable population are unclear. The main text mixes expressions such as "pre-pregnancy obesity," "abnormal gestational weight gain," and "post-pregnancy BMI exceeding the threshold," which may cause ambiguity in defining the clinical target population. It is recommended to clarify whether this guideline targets: (1) pre-pregnancy obesity combined with pregnancy; (2) excessive gestational weight gain; or (3) both, in which case they should be defined and managed separately.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Based on literature evidence, expert interviews, expert consensus, cross-sectional epidemiological research conducted by the team, and other research methods, evidence-based findings were integrated. The team has revised the text by first defining an overarching concept: "The management targets related to obesity during pregnancy in this guideline include: a) women who have become pregnant and whose pre-pregnancy body mass index (BMI) meets the criterion for obesity; b) women whose gestational weight gain exceeds the corresponding recommended range."
2	There are substantive errors in the diagnostic wording. In Chapter 4, expressions such as "women with BMI >= 28.0 kg/m² are diagnosed with pregnancy" should clearly be "diagnosed with obesity during pregnancy" or "included as management targets for obesity during pregnancy." Sentence-by-sentence correction is recommended to avoid compromising academic rigor.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The text has now been proofread again to ensure academic rigor. Similar sentences such as "women with BMI >= 28.0 kg/m² are diagnosed with pregnancy" have been changed to "diagnosed with obesity during pregnancy" or "included as management targets for obesity during pregnancy."
3	The certainty of evidence and strength of recommendations are not sufficiently matched. Some items show overly strong recommendations despite weak evidence or obvious indirectness. In particular, acupuncture/auricular acupoints, emotional regulation,	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The evidence has been reviewed again, and the "certainty of evidence-strength of recommendation" correspondence has been rechecked and prepared

	aromatherapy, and similar items should be reassessed strictly according to GRADE principles to align "certainty of evidence" with "strength of recommendation," so as to avoid giving the impression that conclusions were reached first and evidence was sought afterward.		according to GRADE principles.
4	There is tension between the safety boundaries stated in the main text and the operational recommendations in the appendices. The main text emphasizes that contraindicated drugs and acupoints during pregnancy should be used with caution or avoided, but the appendices still list a number of pregnancy-sensitive acupoints and operational protocols without sufficient risk warnings. It is recommended to provide a separate "List of Interventions to Be Used with Caution or Contraindicated During Pregnancy," rather than directly including high-risk content in the routine recommendation pathway.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Evidence-based medical evidence on the safety of pregnancy-sensitive and contraindicated interventions has been integrated and supplemented. A separate appendix, "List of Interventions to Be Used with Caution or Contraindicated During Pregnancy," has also been added.
5	The evidence standards used in the main text and appendices are inconsistent. The main text repeatedly acknowledges the lack of high-quality direct evidence in populations with obesity during pregnancy for medicinal diets, herbal teas, and distinctive TCM therapies, yet the appendices provide relatively specific syndrome-based dietary prescriptions, herbal teas, formulas, and operating procedures, which may be interpreted as routinely generalizable protocols. It is recommended to harmonize the	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The evidence standards in the main text and appendices have been harmonized. For medicinal diets, herbal teas, TCM-specific therapies, and related interventions, the recommendation status and applicable level have been standardized into three tiers: (1) Recommended based on sufficient evidence, such as exercise and comprehensive lifestyle management; (2) For reference or adjunctive

	evidence standards and clearly distinguish three levels: "recommended with sufficient evidence," "for reference," and "for research/exploratory use only."		management, such as emotional regulation and some aromatherapy interventions; (3) For research or expert reference only, not as routine recommendations, such as oral herbal formulas, syndrome-based dietary therapy, certain sensitive acupoint operations, scalp acupuncture, and similar interventions.
6	The logical hierarchy of the complications screening section needs to be restructured. At present, risk factors, predictors, screening time points, monitoring indicators, and preventive measures are mixed together. It is recommended to rewrite the section according to "screening population-screening time point-screening method-abnormal threshold-subsequent management" to improve clinical applicability and operability.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The section on screening for complications has been reorganized in accordance with the following framework, "target population for screening - screening timing-screening methods- thresholds abnormal findings-subsequent management."
7	The international positioning of the guideline should be further clarified and refined. Since the document is positioned as an "international clinical practice guideline," it is recommended to reduce direct recommendations based on regional practices or traditional empirical experience, and to add descriptions of the countries of evidence sources, applicable populations, limits of extrapolation, and cultural adaptation.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Based on the content of each section, evidence has been revised, removed or supplemented where appropriate to better align with the international positioning of the guideline and enhance the generalizability of the guideline.
8	Outcome measures need to be defined earlier and further standardized. It is recommended that the introduction or methods section clearly specify the core outcomes prioritized by this guideline, such as gestational weight	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Based on published literature, expert interviews, expert consensus, cross-sectional epidemiological research conducted

	gain, GDM, hypertensive disorders of pregnancy, cesarean delivery, macrosomia, adverse neonatal outcomes, and safety events.		by the team, and multiple sources of evidence, evidence-based findings were integrated. The guideline has clarified that the prioritized core outcome is gestational weight gain.
9	Recommendation statements need to follow a unified format. It is recommended that each recommendation use a fixed template of "recommendation-applicable conditions-implementation points-contraindications/cautions-certainty of evidence-strength of recommendation" to improve overall standardization.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The recommendations have been revised according to the suggested standardized template: "recommendation-applicable conditions-implementation points-contraindications/cautions-certainty of evidence-strength of recommendation."
10	The methodological process for guideline development could be further detailed. Appendix A currently provides only a flowchart. It is recommended to add summaries of the search strategy, inclusion and exclusion criteria, consensus development methods, expert selection principles, conflict-of-interest management, and external review process to enhance transparency.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Based on published literature, expert interviews, expert consensus, cross-sectional epidemiological research conducted by the team, and other research methods, the available evidence was comprehensively synthesized. Appendix A has been revised and supplemented accordingly.
11	There are many typographical errors, syntactically awkward sentences, and inconsistencies in terminology. Obvious typographical errors such as "妊娠肥期胖" should be comprehensively checked. Terms such as "body mass/body weight" and "obesity during pregnancy/pregnant women with obesity" should be standardized.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The text has been comprehensively checked, standardized, and revised.
12	There are obvious errors in the tables. For example, in the first row of Table 1, underweight was incorrectly labeled as "overweight (<18.5 kg/m^2)," which is a table-	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The tables have been comprehensively checked and

	level error. It is recommended that all tables be checked against the original sources.		revised.
13	Bilingual information remains incomplete. On the cover and in the foreword, the publication date, standard number, translators, and other items remain as placeholders, and the correspondence between the English and Chinese titles should also be checked for consistency.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The relevant information has been comprehensively checked and revised.
14	It is recommended to review the alignment between citations and the corresponding statements in the main text. Some statements in the main text are relatively strong, and it should be checked item by item whether the cited references directly support those conclusions.	Macau University of Science and Technology / Yang Guanhu	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The appropriateness of the correspondence between references and cited statements has been checked and cross-verified.
15	A summary table of evidence and recommendations should be presented at the beginning of the document for reference. This summary table may adopt the SOF format used in Cochrane Reviews, including absolute effects, relative effects, sample sizes, and the four GRADE levels represented by circles.	The Chinese University of Hong Kong /Chi Chiu Wang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Based on published literature, expert interviews, expert consensus, cross-sectional epidemiological research conducted by the team, and other sources of evidence, evidence-based findings were integrated. SOF tables have been prepared by intervention topic and placed after the introduction and before the main recommendations.
16	Please ensure that all diagnostic and therapeutic methods listed in the appendices are described in the main text. If no relevant study is available, this should still be mentioned, with a statement such as "no relevant trials." This is important information because researchers should consider conducting new trials to address these evidence gaps. For example, oral Chinese	The Chinese University of Hong Kong /Chi Chiu Wang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The interventions appearing in the appendices have been revised as suggested, and corresponding items are now included in the main text. In addition, content in the main text without direct evidence support clearly labeled in the appendices

	herbal medicine has been included in the appendix, but the main content includes only aromatic Chinese herbal medicine, while the appendix does not include corresponding aromatic Chinese herbal medicine content; therefore, consistency should preferably be maintained.		and assigned a lower level of recommendation.
17	Some publications described as meta-analyses are in fact not meta-analyses, so the classification of these studies should be reviewed. If they are not meta-analyses, or if no meta-analysis is available, this should also be mentioned, as researchers may consider conducting meta-analyses in the future.	The Chinese University of Hong Kong /Chi Chiu Wang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Based on literature evidence, expert interviews, expert consensus, cross-sectional epidemiological research conducted by the team, and other research methods, evidence-based findings were integrated. All references to "meta-analysis" have been checked item by item. If a study was actually a systematic review, it has been reclassified as "systematic review"; if it is a retrospective cohort study, it has been changed to "retrospective cohort study." If no meta-analysis was available, the main text no longer refers to a meta-analysis; meanwhile, the discussion or research gaps section adds a sentence such as: "At present, some interventions still lack systematic reviews/meta-analyses targeting populations with obesity during pregnancy, and future systematic reviews and meta-analyses are warranted."
18	Complication management should be organized according to gestational timing; for example, threatened miscarriage should be addressed first, followed by gestational diabetes mellitus (GDM), and then pre-eclampsia (PE).	The Chinese University of Hong Kong /Chi Chiu Wang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The order of the complications chapter has been reorganized according to the gestational timeline:

			5.8.1 Threatened miscarriage/early pregnancy loss (first trimester); 5.8.2 Gestational diabetes mellitus (screening prioritized in the second trimester); 5.8.3 Hypertensive disorders of pregnancy/pre-eclampsia monitoring prioritized in the second and third trimesters).
19	The side effects and adverse reactions that have not yet been included should be addressed. If no relevant reports are available, this should also be stated.	The Chinese University of Hong Kong /Chi Chiu Wang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Based on literature evidence, expert interviews, expert consensus, cross-sectional epidemiological research conducted by the team, and other sources of evidence, the available evidence was synthesized. A short section titled "Safety and Adverse Reactions" has been added after each intervention, including: Reported adverse reactions: ... Special risks during pregnancy: ... Current evidence status: if there is no systematic reporting, state that "current studies insufficiently report adverse reactions, and safety cannot be adequately assessed." Whether it is listed as a routine recommendation: yes/no.

2.4.2 External Expert Review and Appraisal

On the basis of the internal revisions, the drafting working group solicited comments from 32 renowned experts in the fields of TCM gynecology and integrative Chinese and Western medicine gynecology in China and internationally from April 24 to May 6, 2026, with comments collected online. This consultation was organized independently by the project team, and the experts came from provinces and regions across China. A total of 19 comments were received, of which 18 were adopted and 1 was not adopted at this stage. The comments concerned diagnosis and differential diagnosis, the safety of intervention methods, dynamic monitoring of complications, and other aspects. The drafting working group summarized and analyzed all comments, prepared the *Summary and Handling Table of External Expert Comments*, and revised the corresponding parts of the draft standard accordingly.

Table 7. Summary and Handling Table of External Expert Review Comments

No.	Expert Comment	Proposed	Handling Decision

		Organization/Individual	
1	For women with a pre-pregnancy BMI greater than 28 kg/m², it is recommended that exercise management begin in early pregnancy or preconception period.	Heilongjiang Provincial Hospital / Zhou Lili	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The 2021 expert consensus draft on exercise during pregnancy published in the Chinese Journal of Perinatal Medicine was reviewed, and the relevant parts of the draft were improved accordingly.
2	The guideline contains repeated wording: "currently no targeted targeted population with obesity during pregnancy."	The Affiliated Hospital of Jiangxi University of Chinese Medicine / Li Peishuang	Accepted. Rationale: The drafting team has comprehensively checked and corrected duplicated wording and formatting errors.
3	An "abbreviations list" is missing before the main text.	The Affiliated Hospital of Jiangxi University of Chinese Medicine / Li Peishuang	Accepted. Rationale: The drafting team carefully documented and adopted this comment, and an "Abbreviations List" has been added before the main text.
4	The formatting of the SOF table is disorganized.	The Affiliated Hospital of Jiangxi University of Chinese Medicine / Li Peishuang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The content and formatting of the SOF table have been improved.
5	There is "ambiguity regarding the target population" in the diagnostic criteria section. Section 4.1 provides obesity diagnostic criteria for both Asian women and European/American women. It is recommended to clarify which population this guideline mainly applies to. If it applies to both, the scope of application or foreword should state that "this guideline applies separately to Asian and European/American populations, and the specific BMI thresholds are provided in	The Affiliated Hospital of Jiangxi University of Chinese Medicine / Li Peishuang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Content such as "this guideline applies separately to Asian and European/American populations, and the specific BMI thresholds are provided in Section 4.1" has been added to the scope of application or foreword.

	Section 4.1."		
6	The wording regarding "contraindications/cautions" in the management principles is somewhat general. It should be stated that medications and acupoints contraindicated during pregnancy should be avoided, and that acupuncture and medication should be applied cautiously after obtaining informed consent from the patient.	The Affiliated Hospital of Jiangxi University of Chinese Medicine / Li Peishuang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. Appendix F (List of Interventions to Be Used with Caution or Contraindicated During Pregnancy) has been updated to add specific examples of medications. Section 5.1, Management Principles, has also been supplemented with "examples of typical medications and acupoints contraindicated during pregnancy," with reference to the appendix.
7	Is cycling appropriate as a suggested moderate- to high-intensity physical activity?	Liwan District Hospital of Traditional Chinese Medicine of Guangzhou / Shen Ruiyang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. After reviewing relevant literature, the recommendation on "cycling" in Appendix D-A2 was revised to "stationary cycling (under professional guidance)."
8	It is recommended to clarify the end time for dynamic monitoring.	Liwan District Hospital of Traditional Chinese Medicine of Guangzhou / Shen Ruiyang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. After reviewing relevant literature, the corresponding content in the draft was revised to specify the end time for each type of dynamic monitoring, such as the gestational week up to which ultrasound monitoring should continue.
9	Aurantii Fructus Immaturus should not be used in herbal teas.	Liwan District Hospital of Traditional Chinese Medicine of Guangzhou / Shen Ruiyang	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The Chinese Pharmacopoeia was consulted, and all Chinese herbal medicines, medicinal diets, and herbal teas in Appendix D-C were carefully

			checked for whether they are both medicinal and edible substances. Drugs to be used with caution or contraindicated during pregnancy, such as Ephedrae Herba, Aurantii Fructus Immaturus, Poria, and Crataegi Fructus, were removed or labeled. Appendix F (List of Interventions to Be Used with Caution or Contraindicated During Pregnancy) was also updated with specific examples of drugs.
10	It is suggested to consider whether the management population should be expanded to include pregnant women whose pre-pregnancy BMI meets the criterion for overweight.	Wenzhou Hospital of Traditional Chinese Medicine Affiliated to Zhejiang Chinese Medical University / Sun Yun	Not adopted at this stage: Specific rationale: The drafting team reviewed relevant authoritative international guidelines and found that none specifically included individuals whose BMI meets the criteria for overweight as a target population for the management of obesity during pregnancy. After discussion with the internal expert group, it was decided not to adopt this comment at this stage. Instead, supplementary content was added to the management of gestational diabetes mellitus, recommending close monitoring of individuals whose BMI reaches the overweight threshold during pregnancy.
11	Abnormal thresholds: 1. Ultrasound criteria: (1) embryo >= 7 mm with no fetal heartbeat; (2) mean gestational sac diameter >= 25 mm with no embryo; (3) gestational sac present but no yolk sac, with no fetal heartbeat after 2 weeks; (4) gestational sac and yolk sac present, with no fetal heartbeat after 11 days.	Wenzhou Hospital of Traditional Chinese Medicine Affiliated to Zhejiang Chinese Medical University / Sun Yun	Accepted. Rationale: The drafting team carefully documented and adopted this comment. After reviewing the latest relevant domestic and international guidelines, the abnormal thresholds has been standardized.
12	Screening population for hypertensive disorders of	Wenzhou Hospital of Traditional Chinese	Accepted. Rationale: The drafting team

	pregnancy: those with a history of chronic hypertension, pre-eclampsia, or antiphospholipid syndrome.	Medicine Affiliated to Zhejiang Chinese Medical University / Sun Yun	carefully documented and adopted this comment. After reviewing relevant literature, "antiphospholipid syndrome" has been added to the screening population for hypertensive disorders of pregnancy.
13	Dynamic monitoring protocol for threatened miscarriage: ultrasound monitoring: initial ultrasound examination at 6-8 weeks of gestation to confirm fetal heartbeat; for high-risk patients, embryonic development should be rechecked every 1-2 weeks in combination with changes in hormone levels.	Wenzhou Hospital of Traditional Chinese Medicine Affiliated to Zhejiang Chinese Medical University / Sun Yun	Accepted. Rationale: The drafting team carefully documented and adopted this comment. After reviewing relevant literature, the dynamic monitoring frequency for threatened miscarriage was revised to "recheck in 1-2 weeks when necessary in combination with changes in hormone levels," avoiding a rigid requirement. Estradiol has also been added as an optional monitoring indicator.
14	Dynamic monitoring protocol for threatened miscarriage: hormone levels: serum progesterone + beta-hCG + estradiol.	Wenzhou Hospital of Traditional Chinese Medicine Affiliated to Zhejiang Chinese Medical University / Sun Yun	Accepted. Rationale: The drafting team carefully documented and adopted this comment. After reviewing relevant literature, the dynamic monitoring frequency for threatened miscarriage was revised to "reassessment in 1-2 weeks when necessary in combination with changes in hormone levels," avoiding a rigid requirement. Estradiol has also been added as an optional monitoring parameter.
15	It is recommended to remove Poria and Crataegi Fructus from herbal teas and medicinal diets.	Wenzhou Hospital of Traditional Chinese Medicine Affiliated to Zhejiang Chinese Medical University / Sun Yun	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The Chinese Pharmacopoeia was consulted, and all Chinese herbal medicines, medicinal diets, and herbal teas in Appendix D-C were carefully checked for whether they are both medicinal and edible substances.

			Drugs to be used with caution or contraindicated during pregnancy, such as Ephedrae Herba, Aurantii Fructus Immaturus, Poria, and Crataegi Fructus, were removed or labeled. Appendix F (List of Interventions to Be Used with Caution or Contraindicated During Pregnancy) was also updated with specific examples of drugs.
16	There is a contradiction between the strong recommendation and evidence quality B (moderate) for gestational diabetes mellitus and the evidence gap stated in the text, namely the lack of high-quality RCTs.	Zhejiang Provincial Hospital of Chinese Medicine / Zhang Xiaolan	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The contradictory statements in the draft have been revised according to the suggestion.
17	It is recommended to remove content related to "electroacupuncture" from the draft.	Henan Province Hospital of Traditional Chinese Medicine / Chen Jianshe	Accepted. Rationale: The drafting team carefully documented and adopted this comment. After rechecking the relevant literature, all content related to "electroacupuncture" throughout the document, including Appendix D, such as electroacupuncture parameters and procedural descriptions, has been removed, and only filiform needle acupuncture has been retained. The safety descriptions of other acupoint-stimulation methods, such as intradermal needles and auricular acupoints, have also been checked.
18	Ephedrae Herba in Peilian Mahuang Decoction may not be suitable for use during pregnancy.	Henan Province Hospital of Traditional Chinese Medicine / Chen Jianshe	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The Chinese Pharmacopoeia was consulted, and all Chinese herbal medicines, medicinal diets, and herbal teas in Appendix D-C were carefully checked for whether they are both medicinal and edible substances.

			Drugs to be used with caution or contraindicated during pregnancy, such as Ephedrae Herba, Aurantii Fructus Immaturus, Poria, and Crataegi Fructus, were removed or labeled. Appendix F (List of Interventions to Be Used with Caution or Contraindicated During Pregnancy) was also updated with specific examples of drugs.
19	The statement in the instructions, "The TCM medicinal diets and herbal teas recommended in the appendices of this guideline all use substances that are both medicinal and edible," appears to include some substances that may not meet this criterion and should be checked one by one.	Henan Province Hospital of Traditional Chinese Medicine / Chen Jianshe	Accepted. Rationale: The drafting team carefully documented and adopted this comment. The Chinese Pharmacopoeia was consulted, and all Chinese herbal medicines, medicinal diets, and herbal teas in Appendix D-C were carefully checked for whether they are both medicinal and edible substances. Drugs to be used with caution or contraindicated during pregnancy, such as Ephedrae Herba, Aurantii Fructus Immaturus, Poria, and Crataegi Fructus, were removed or labeled. Appendix F (List of Interventions to Be Used with Caution or Contraindicated During Pregnancy) was also updated with specific examples of drugs.

2.4.3 Public Consultation on the Website of the World Federation of Chinese Medicine Societies

This guideline will be made publicly available for comments on the website of the World Federation of Chinese Medicine Societies.

III. Introduction to the Main Technical Content

1. Basis for Guideline Development

The drafting procedure for this document was drafted in accordance with the requirements of SCM1.1-2021, *Standardization Work Guidance—Part 1: Standard Development, Revision, and Publication*, issued by the World Federation of Chinese Medicine Societies. It also referenced the relevant provisions of GB/T 1.1-2020, *Guidelines for Standardization—Part 1: Rules for the Structure and Drafting of Standardization Documents*.

The development of this guideline strictly followed ZYYXG/T-473-2015, *General Principles for the Development of Clinical Diagnosis and Treatment Guidelines in Traditional Chinese Medicine*, which takes scientific rigor, practicality, advancement, and conformity with the realities of

TCM as basic principles. It also referred to the latest guideline-development steps and relevant evaluation standards issued by international guideline-development organizations, thereby constructing a scientific and standardized development framework. Development also followed the following standards: (1) relevant laws and regulations such as the Medical Practitioners Law and the Regulations on the Administration of Medical Institutions; (2) the international GRADE standard; and (3) the clinical realities and patient characteristics in China.

With respect to the core technical principles, this guideline adhered to the overall approach of "taking evidence-based medicine as the basis, consensus as the guide, experience as reference, integrating Chinese and Western medicine, and combining innovation with inheritance."

(1) Evidence assessment took the internationally recognized GRADE approach as its core in order to align with international practice. Relevant RCTs were included as the main basis, while publicly published textbooks, previous guidelines/consensus documents/standards, ancient medical literature, and case records of renowned modern and contemporary TCM practitioners were also considered to compensate for the lack of relevant evidence in TCM, minimize potential bias in the evidence base, and preserve the inheritance of TCM culture within innovation.

(2) In accordance with the GRADE approach, a nominal group process was established. Frontline experts in Chinese and Western medicine, methodologists, and other professionals from multiple fields were organized to summarize recommendations and form expert consensus. Based on research experience, theoretical analysis, and published literature, multiple rounds of deliberation and voting were conducted on the guideline statements to ensure that the recommendations were scientific and practical.

(3) Expert consensus was an important basis for the formation of this guideline. Accordingly, expert consensus was developed in strict accordance with evidence-based medicine and structured methodology, using the nominal group method.

(4) The guideline was reported according to the international RIGHT reporting standard for guidelines.

(5) According to currently published international reporting specifications for guideline updates, the guideline is planned to be updated within the next 2–3 years.

2. Technical Route for Guideline Development

The guideline was developed strictly according to standardized steps. The technical route is summarized below.

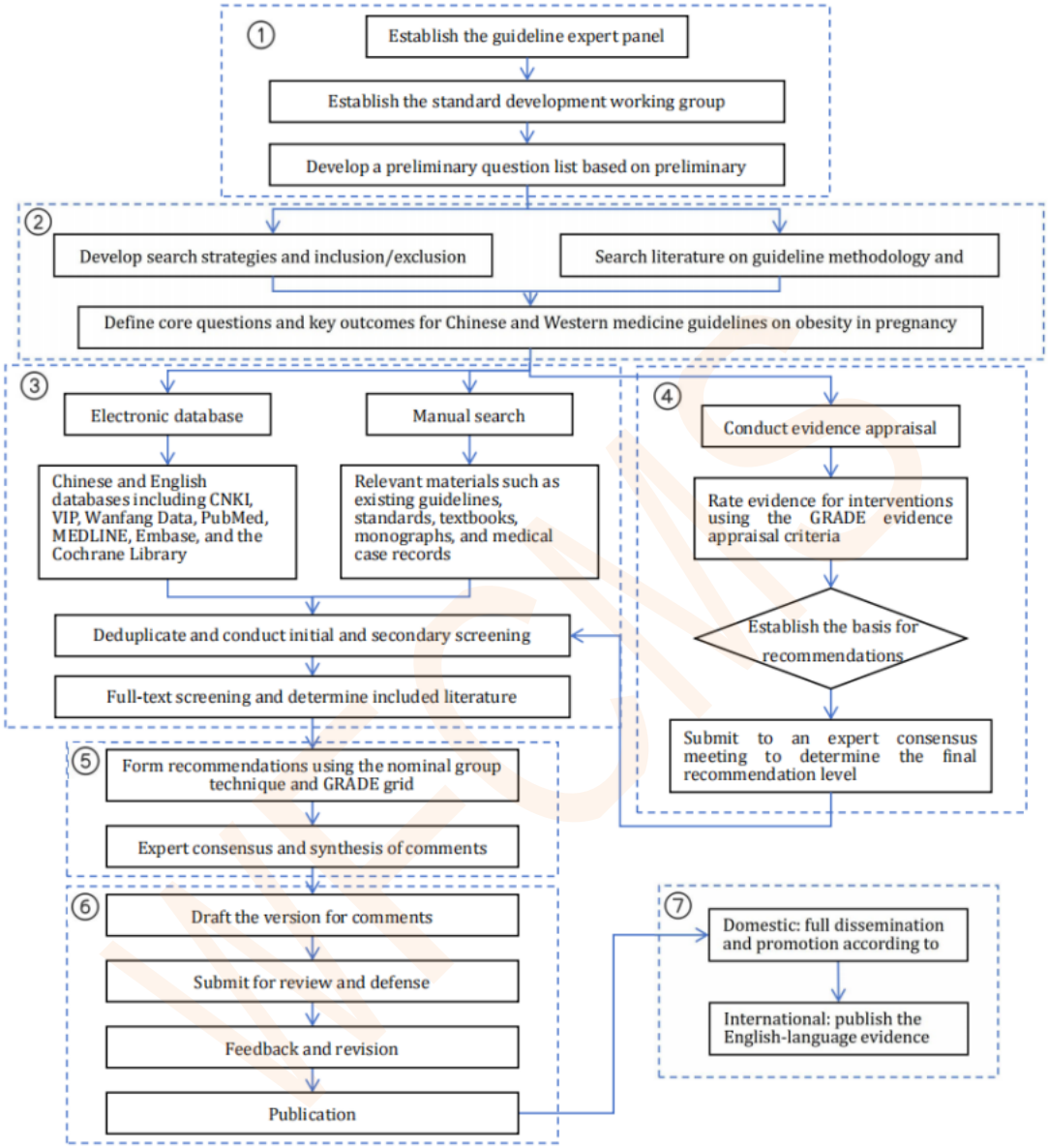

Figure 2. Technical route for guideline development

3. Overall Content

The body of this guideline consists of five parts, has a clear and coherent structure. Parts 1–2 define the scope, normative references, and terms and definitions; Part 3 specifies the diagnostic criteria; Part 4 specifies the management principles; and Part 5 specifies integrated Chinese and Western medicine management approaches for patients with obesity during pregnancy, including acupuncture/auricular acupoint therapy, diet, exercise, emotional regulation, and complication screening and management.

This guideline takes syndrome differentiation and treatment in TCM as its core principle. It systematically integrates traditional and contemporary TCM research findings from China and

abroad with evidence-based medical evidence to form expert consensus. It reflects the inheritance of TCM and the characteristics of integrated Chinese and Western medicine, emphasizes international methodological standards and the value of clinical application, and aims to provide scientific, standardized, practical, and implementable TCM management strategies and methods for healthcare professionals in China and internationally. Before referring to and implementing this guideline, healthcare professionals should possess relevant TCM knowledge and should develop individualized diagnosis and treatment plans according to patients' regional, ethnic, racial, and individual differences.

4. Relationship with Relevant Laws, Regulations, Mandatory Standards, and Clinical Practice Guidelines

The development of this guideline adopted ZYYXH/T-473-2015, *General Principles for the Development of Clinical Diagnosis and Treatment Guidelines in Traditional Chinese Medicine*. This guideline primarily referred to the *Notice of the General Office of the National Health Commission on Issuing the Guidelines for the Diagnosis and Treatment of Obesity (2024 Edition)*; the Chinese Nutrition Society group standard T/CNSS 009-2021, *Monitoring and Evaluation of Gestational Weight in Chinese Women*; *Obesity in Pregnancy: ACOG Clinical Practice Guideline (No. 230)* (American College of Obstetricians and Gynecologists, 2021); *Care of Women with Obesity in Pregnancy: Green-top Guideline No. 72* (Royal College of Obstetricians and Gynaecologists, 2019); *Guideline No. 391: Pregnancy and Maternal Obesity Part 1: Pre-conception and Prenatal Care* (Society of Obstetricians and Gynaecologists of Canada, 2019); *FIGO Guidelines on the Management of Pre-pregnancy, Pregnancy, and Postpartum Obesity* (International Federation of Gynecology and Obstetrics, 2020); and *Management of Obesity in Pregnancy* (Royal Australian and New Zealand College of Obstetricians and Gynaecologists, 2017).

IV. Handling Process and Basis for Major Divergent Opinions

During guideline development, the comments and dispositions from two expert appraisal meetings were as follows:

Table 8. Expert Review Comments Summary Form

No.	Standard clause	Comments	Proposed unit/individuals	Disposition (completed by drafting unit)	Notes
1	Project review content	No comments or suggestions for the time being.	Project review expert 1		
2	Project review content	No comments or suggestions for the time being.	Project review expert 2		
3	5. Syndrome differentiation	In Section 5 "Syndrome differentiation," all main symptoms include descriptions related to	Project review expert 3	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, evidence-based evidence was	

		menstruation. This may conflict with the project focus on "obesity during pregnancy." It is suggested to add "phlegm-blood stasis intermingling syndrome" and "spleen deficiency with phlegm-dampness syndrome" as common syndrome types to cover broader clinical practice needs.		integrated through literature evidence, expert interviews, expert consensus, and the team's epidemiological cross-sectional research. The team revised menstrual descriptions in the main symptoms of TCM syndrome differentiation and improved the syndrome type of "spleen deficiency with phlegm-dampness."	
4	6. Treatment	It is recommended to pay attention to the safety of medications and non-drug therapies during pregnancy. For example, Ephedra in Peilian Mahuang Decoction and Coix seed in Shenling Baizhu Powder are used with caution during pregnancy. Safety statements should be added, or "use under strict monitoring" should be marked. Forbidden acupoints during pregnancy should be clarified, and	Project review expert 3	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, evidence-based evidence was integrated through literature evidence, expert interviews, expert consensus, and cross-sectional epidemiological research. Clearly contraindicated medications contraindicated during pregnancy, including Ephedra and Coix seed, were removed from the guideline. Contraindicated acupoints during pregnancy were clarified, and precautions for clinical operations were	

		precautions for clinical operation should be indicated.		added.	
5	7. Staged non-drug treatment and TCM characteristic therapies for obesity during pregnancy	The tea-drink and medicated-diet sections should indicate suitable or cautious-use populations.	Project review expert 3	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, suitable populations or cautious-use populations were added after tea drinks and medicated diets on the basis of literature evidence, expert interviews, expert consensus, and epidemiological cross-sectional research.	
6	8. Specific complications caused by obesity during pregnancy	Under the heading "8.3.2.1 Acupoint application," the statement that "the efficacy of both groups was treatment for 2 weeks" appears to be inaccurate and should be revised.	Project review expert 3	Accepted. Rationale: the drafting team carefully documented and adopted this comment, rechecked the content, and corrected the statement.	
7	General comments on the draft	It is recommended to clarify the efficacy of the recommended interventions.	Project review expert 3	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, the efficacy of recommended interventions was clarified based on published literature, expert interviews, expert consensus, and epidemiological cross-sectional research.	

8	Project review content	No comments or suggestions for the time being.	Project review expert 4		
9	General comments on the draft	The title concerns obesity during pregnancy and therefore should not cover planned pregnancy and postpartum content.	Project review expert 5	Accepted. Rationale: the drafting team carefully documented and adopted this comment, and deleted pre-pregnancy and postpartum content.	
10	5. Syndrome differentiation	Obesity during pregnancy is not related to menstruation. However, menstruation-related descriptions are included among the listed syndrome manifestations, which is inconsistent with the topic of the guideline.	Project review expert 5	Accepted. Rationale: the drafting team carefully documented and adopted this comment and revised the TCM syndrome-differentiation content in which main symptoms included menstruation.	
11	General comments on the draft	No safe and effective TCM program for obesity during pregnancy is visible.	Project review expert 5	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, evidence-based evidence was integrated through published literature, expert interviews, expert consensus, and epidemiological cross-sectional research, and the team refined and supplemented the intervention strategies.	
12	3. Terms and	The pregnancy age	Project review	Accepted.	

	definitions	range of 18–49 years lacks sufficient basis for setting 18 years as the lower limit. The guideline does not provide classified guidance for pregnancy among pre-pregnancy obese versus non-obese women, obesity during pregnancy with or without metabolic complications, etc.; therefore, it has no reference value.	expert 5	Rationale: the drafting team carefully documented and adopted this comment. Subsequently, drawing on multiple research methods—including literature evidence, expert interviews, expert consensus, and the team's own cross-sectional epidemiological study—the team synthesized the evidence-based findings and revised the determination of gestational age; pre-pregnancy content was deleted, retaining only obesity during pregnancy. Classified guidance was provided for obesity during pregnancy with or without metabolic diseases.	
13	Diagnostic definition	1. Weight naturally increases after pregnancy; BMI alone makes it difficult to determine obesity, so other diagnostic criteria may need to be added. 2. It is recommended to use internationally recognized BMI criteria uniformly, especially considering differences between Asian and	1. Chen Yan, Dongzhimen Hospital, Beijing University of Chinese Medicine; 2. Wang Lili, Standardization Department of WFCMS	Accepted. Rationale: the drafting team carefully documented and partly adopted this comment. Subsequently, evidence-based findings were integrated from various research approaches, such as literature evidence, expert interviews, expert consensus, and the team's cross-sectional epidemiological study. The definitions of BMI for different populations	

		European populations.		were improved.	
14	Scope of the draft	1. It is recommended to focus only on "pregnancy" and delete pre-pregnancy and postpartum content. 2. If pre-pregnancy and postpartum content are included, the title should be changed to "perigestational obesity." 3. Regarding whether to include comorbidities and complications, if the content is complete, not all complications need to be included; typical examples may be selected.	1. Chen Xiaoyong, Jiangxi Maternal and Child Health Hospital; Lu Shan, Guangdong Provincial Hospital of Chinese Medicine; Wang Lili, WFCMS Standardization Department. 2. Wang Xin, Liaoning University of Traditional Chinese Medicine. 3. Cao Lixing, Guangdong Provincial Hospital of Chinese Medicine	Partly accepted. Rationale: the drafting team carefully documented and partly adopted this comment, deleted pre-pregnancy and postpartum content, retained only pregnancy content, and included prevention for three common pregnancy complications of obesity during pregnancy, with further expansion on this basis.	
15	Safety concerns regarding acupoint stimulation therapy	1. Acupoint catgut embedding may cause suppuration, swelling, and pain and is unsafe for pregnant women; it is not recommended during pregnancy. 2. Safety risks of acupoint application and similar therapies should be stated.	1. Yuan Shaoying, Zhuhai Hospital of Guangdong Provincial Hospital of Chinese Medicine; Yang Yanhong, Luoyang Hospital of Traditional Chinese Medicine. 2. Lu Shan, Guangdong	Accepted. Rationale: the drafting team carefully documented and partly adopted this comment, deleted content related to acupoint catgut embedding, and supplemented precautions for acupoint application.	

			Provincial Hospital of Chinese Medicine		
16	Standardization of acupuncture use	1. Stimulation intensity and duration should be specified. 2. Acupuncture is not recommended during pregnancy; acupoint massage is preferable. 3. Professional acupuncture experts should be introduced to determine the protocol.	1. Yuan Shaoying, Zhuhai Hospital of Guangdong Provincial Hospital of Chinese Medicine. 2. Yang Yanhong, Luoyang Hospital of Traditional Chinese Medicine. 3. Wang Lili, WFCMS Standardization Department	Partly accepted. The drafting team carefully documented and adopted this comment. Based on evidence integration, safety details for acupuncture use during pregnancy were supplemented, and acupuncture stimulation intensity, usage, and duration were standardized.	
17	Dietary intervention	1. Most pregnant women control weight through diet and lifestyle, and drug treatment is rarely used. 2. Weight reduction during pregnancy should focus on prevention; weight regulation is not equivalent to drug intervention.	1. Chen Yan, Dongzhimen Hospital, Beijing University of Chinese Medicine; Yang Hongwei, Liwan District Hospital of Traditional Chinese Medicine. 2. Yang Yanhong, Luoyang Hospital of Traditional Chinese Medicine	Not accepted for the time being. Rationale: the drafting team carefully documented and adopted this comment. Based on evidence integration, women with obesity during pregnancy will be managed according to obesity severity through syndrome differentiation and treatment, drug therapy, and daily lifestyle interventions to manage weight gain, prevent complications, and protect maternal and infant health.	
18	Tea-drink prescriptions	1. Cassia seed and senna leaf are contraindicated	1. Chen Yan, Dongzhimen Hospital, Beijing	Accepted. Rationale: the drafting team carefully	

		during pregnancy and pose safety risks; they should be deleted. 2. It is recommended that all tea-drink and enema therapies be deleted from the pregnancy guideline.	University of Chinese Medicine; Wang Lili, WFCMS Standardization Department. 2. Lu Shan, Guangdong Provincial Hospital of Chinese Medicine	documented and adopted this comment. Based on evidence integration, medications and therapies clearly contraindicated during pregnancy were deleted.	
19	TCM dosage	Because drug specifications differ across countries, fixed dosages should not be listed in the guideline.	Wang Lili, WFCMS Standardization Department	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, based on multiple research methods, including literature evidence, expert interviews, expert consensus, and the team's cross-sectional epidemiological study-the evidence-based findings were integrated and deleted TCM dosages after integrating evidence.	
20	Applicability of the guideline to international settings	1. As the guideline is intended for overseas use, feasibility of blood draws, medication use, vital-sign measurement, and other procedures should be considered. 2. Tea drinks and enemas are difficult to promote abroad, while non-drug	1. Cao Lixing, Guangdong Provincial Hospital of Chinese Medicine; Wang Lili, WFCMS Standardization Department. 2. Lu Shan, Guangdong Provincial Hospital of Chinese	Partly accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, evidence-based findings were integrated from various research approaches, such as literature evidence, expert interviews, expert consensus, and the team's cross-sectional	

		therapies are more universal.	Medicine	epidemiological study. Difficult-to-implement therapies such as enemas were deleted, while therapies with high promotability and strong applicability were retained.	
21	Ratio of TCM characteristics to Western medicine content	1. Chinese medicine treatment should be the focus, with Western medicine content used only for diagnosis and differentiation. 2. If Western medicine content is included, it should be placed in appendices to avoid mixing content in the main text.	1. Chen Yan, Dongzhimen Hospital, Beijing University of Chinese Medicine; Ng, Hung Yu Ernest, The University of Hong Kong. 2. Wang Lili, WFCMS Standardization Department	Partly accepted. Rationale: the drafting team carefully documented and adopted this comment. Based on evidence integration and actual data, the Western medicine portion was simplified, part of the Western medicine content was moved to appendices, and the TCM portion was expanded.	
22	Need to clarify evidence levels	1. The guideline should establish recommendation grades (strong/weak recommendations) and clarify literature inclusion and exclusion criteria. 2. Recommendations should be formed by proposing questions, searching evidence, and evaluating strength.	1. Cao Lixing, Guangdong Provincial Hospital of Chinese Medicine; Wang Xin, Liaoning University of Traditional Chinese Medicine. 2. Ng, Hung Yu Ernest, The University of Hong Kong	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Evidence levels for guideline references were graded according to Oxford evidence-based evidence-rating recommendations.	
23	Standardization of	1. Pre-pregnancy	1. Chen Xiufang,	Accepted.	

	weight-management recommendations	body-weight criteria should be set, and whether pregnancy should be postponed for overweight/obese women should be addressed. 2. Industry consensus such as the "gestational weight-gain range" should be included as a reference.	Guilin Hospital of Traditional Chinese Medicine, Guangxi Zhuang Autonomous Region. 2. Lu Shan, Guangdong Provincial Hospital of Chinese Medicine	Rationale: the drafting team carefully documented and adopted this comment. Industry consensus such as the "gestational weight-gain range" was added as a reference, and the definition of obesity during pregnancy and weight-management recommendation standards were revised.	
24	Safety of acupuncture	1. The selection of acupuncture points and safety of use should be described in detail, and higher-level evidence should be added. 2. It is recommended that acupuncture treatment not be included for women with obesity during pregnancy.	1. Xue Xiao'ou, Dongzhimen Hospital, Beijing University of Chinese Medicine; Yan Ying, First Teaching Hospital of Tianjin University of Traditional Chinese Medicine; Tong Qing, Beijing Hospital of Traditional Chinese Medicine, Capital Medical University; Liu Yanxia, Dongfang Hospital, Beijing University of Chinese Medicine; Li Yunbo, Third Affiliated Hospital, Beijing	Partly accepted. Rationale: the drafting team carefully documented and adopted this comment. Evidence on the safety of acupuncture during pregnancy was further supplemented, and selection of acupoints, usage, and duration for acupuncture were standardized.	

			University of Chinese Medicine; Liu Danzhuo, Hunan University of Chinese Medicine. 2. Fu Jinrong, Longhua Hospital, Shanghai University of Traditional Chinese Medicine		
25	Western medicine drugs	Metformin, aspirin, and other western medicines should not be included in the guideline.	Xue Xiao'ou, Dongzhimen Hospital, Beijing University of Chinese Medicine	Accepted. Rationale: the drafting team carefully documented and adopted this comment and deleted content on metformin and other western medicines from the guideline.	
26	Medication safety during pregnancy	Safety of medications during pregnancy should be supplemented in detail, and safety effects on offspring should also be added.	Li Yunbo, Third Affiliated Hospital, Beijing University of Chinese Medicine; Liu Yanxia, Dongfang Hospital, Beijing University of Chinese Medicine	Accepted. Rationale: the drafting team carefully documented and adopted this comment. Subsequently, based on multiple research approaches—including literature evidence, expert interviews, expert consensus, and the team's cross-sectional epidemiological study—we will continue to supplement the evidence-based medical evidence regarding the safety of medication during pregnancy and the safety for the mother herself, so as to	

				standardize the use of medications during pregnancy.	
27	Scope of the draft	It is recommended to delete delivery and postpartum content such as acupuncture anesthesia for cesarean section and postpartum hemorrhage.	Xue Xiao'ou, Dongzhimen Hospital, Beijing University of Chinese Medicine; Tong Qing, Beijing Hospital of Traditional Chinese Medicine, Capital Medical University	Accepted. Rationale: the drafting team carefully documented and adopted this comment and deleted delivery and postpartum content from the guideline.	
28	Multidisciplinary cooperation	It is recommended that professional nutritionists be included among project members to facilitate multidisciplinary cooperation.	Yan Ying, First Teaching Hospital of Tianjin University of Traditional Chinese Medicine; Tong Qing, Beijing Hospital of Traditional Chinese Medicine, Capital Medical University	Accepted. Rationale: the drafting team carefully documented and adopted this comment, and professional nutritionists have been added to the project team.	

V. Other Matters Requiring Explanation

None.

Appendix A: GRADE Evidence Summary Tables

Clinical Question 4. Can acupuncture or auricular acupoint therapy effectively control weight gain in women with obesity during pregnancy?

Certainty assessment							No. of studies		Effect		
No. of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations/notes	Intervention group	Control group	Relative effect (95% CI)	Absolute effect (95% CI)	Certainty
Acupuncture/Auricular Acupoint Therapy											
2	Randomized trials	Serious [ab]	Serious [a]	Serious [a]	Serious [ab]	None	196	197		MD=-1.19 [95% CI: -1.28 to -1.09]	Low-quality evidence [ab]

CI: Confidence interval; MD: Mean difference.

Explanations: a. The included studies had substantial risk of bias in randomization, allocation concealment, and blinding. b. The included studies had small sample sizes.

Clinical Question 5. Can TCM aromatherapy assist in controlling weight gain in women with obesity during pregnancy?

Certainty assessment							No. of studies		Effect		
No. of studie	Study desig	Risk of	Inconsistency	Indirectness	Imprecision	Other considerations/not	Intervention group	Control group	Relative effect	Absolute effect	Certainty

s	n	bias				es			(95% CI)	(95% CI)	

Outcome: Pittsburgh Sleep Quality Index (PSQI).

2	Randomized trials	Serious [b]	Serious [b]	Serious [b]	Serious [b]	None	71	71		MD= -2.72 [95% CI: -5.43 to -0.02]	Low-quality evidence [b]

CI: Confidence interval; MD: Mean difference.

Explanations: a. The included studies had substantial risk of bias in randomization, allocation concealment, and blinding. b. The included studies had small sample sizes.

Clinical Question 6. Can exercise management effectively control weight gain in women with obesity during pregnancy?

Certainty assessment							No. of studies		Effect		
No. of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations/notes	Intervention group	Control group	Relative effect (95% CI)	Absolute effect (95% CI)	Certainty
Exercise Management											
14	Rando	Not	Not	Not	Not	None	1,372	1,37		MD=	Mod

	mized trials	seri ous	serious	seriou s	seriou s			0		- 3.26 [95 % CI: - 3.44 to - 3.08]	erate - quali ty evide nce [a]

CI: Confidence interval; MD: Mean difference.

Explanation: a. The included studies had substantial risk of bias in randomization, allocation concealment, and blinding.

Clinical Question 9. Can comprehensive lifestyle management effectively control weight gain in women with obesity during pregnancy?

Certainty assessment							No. of studies		Effect		
No. of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations/notes	Intervention group	Control group	Relative effect (95% CI)	Absolute effect (95% CI)	Certainty
Comprehensive Lifestyle Management											
20	Randomized trials	Not serious	Not serious	Not serious	Serious [b]	None	4,395	4,035		MD= - 2.95 [95 % CI: - 3.06	Moderate - quality evidence [a]

										to -2.85]	

CI: Confidence interval; MD: Mean difference.

Explanations: a. The included studies had substantial risk of bias in randomization, allocation concealment, and blinding. b. The included studies had small sample sizes.

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Appendix B: Explanations of Evidence Summaries

Clinical Question 1: What are the diagnostic criteria for obesity during pregnancy in conventional medicine?

Evidence description: Based on the WHO obesity criteria, the IOM guideline, and the industry standard Monitoring and Evaluation of Gestational Weight in Chinese Women [1–3], internationally and domestically recognized BMI cutoffs were adopted. These cutoffs are highly correlated with the risk of complications related to obesity during pregnancy (GDM, hypertension, macrosomia, etc.), facilitate early identification of high-risk groups, and reduce the risk of pregnancy complications.

Clinical Question 2: What are the intervention principles for obesity during pregnancy?

Evidence description: The evidence comes from the 2024 Lancet guideline on obesity management and the 2022 New England Journal of Medicine review on obesity in pregnancy [4,5]. These two authoritative review articles synthesized multiple high-quality studies and indicated that reasonable control of gestational weight gain can significantly reduce the risk of complications such as gestational diabetes mellitus, hypertensive disorders, macrosomia, cesarean delivery, and postpartum weight retention. Early screening combined with individualized lifestyle intervention can further improve maternal and infant outcomes.

Clinical Question 3: What is the recommended range of gestational weight gain?

Evidence description: The international IOM guideline and the industry standard Monitoring and Evaluation of Gestational Weight in Chinese Women [2,3] determine the safety of weight-gain ranges for pregnant women with different degrees of obesity. Setting individualized gestational weight-gain targets and conducting regular monitoring can significantly reduce the incidence of gestational diabetes mellitus, hypertensive disorders of pregnancy, macrosomia, cesarean delivery, and postpartum weight retention, thereby improving maternal and infant outcomes.

Clinical Question 4: Can acupuncture or auricular acupoint therapy effectively control weight gain in women with obesity during pregnancy?

Evidence description: Based on a meta-analysis of two randomized controlled trials [6,7], the effect size was precise [MD=-1.19, 95% CI -1.28 to -1.09, P<0.00001], the results were stable, and no obvious bias, inconsistency, or indirectness was identified. Acupuncture and auricular acupoint therapy can effectively control excessive weight gain in women with obesity during pregnancy by stimulating acupoints related to the oral cavity, appetite, stomach, and metabolism.

Clinical Question 5: Can TCM aromatherapy assist in controlling weight gain in women with obesity during pregnancy?

Evidence description: The evidence comes from two RCTs using sleep/fatigue as outcomes [8,9], without direct measurement of weight changing. The meta-analysis result was [-2.72, -5.43 to -0.02, P=0.05]. Aromatherapy can significantly improve sleep quality and relieve fatigue. Improvements in sleep quality and fatigue may indirectly benefit weight control by regulating stress, improving mood, and reducing stress-related eating. However, this effect has not yet been directly verified by high-quality studies in populations with obesity during pregnancy.

Clinical Question 6: Can exercise management effectively control weight gain in women with obesity during pregnancy?

Evidence description: The evidence comes from 16 clinical trials [10–25]. The meta-analysis result was MD=-3.26 [95% CI: -3.44 to -3.08], P<0.00001. Compared with the control group, the exercise intervention group had a mean reduction in gestational weight gain of 3.26 kg (MD=-3.26, 95% CI -3.44 to -3.08, P<0.00001), with a highly statistically significant difference. Existing studies also confirm that exercise intervention can significantly reduce the incidence of gestational diabetes mellitus (GDM) and the cesarean-delivery rate, improve neonatal outcomes, and improve overall maternal and infant prognosis.

Clinical Question 7: Can a well-balanced diet effectively control weight gain in women with obesity during pregnancy?

Evidence description: According to the Guidelines for the Diagnosis and Treatment of Obesity (2024 Edition) issued by the National Health Commission of China [26] and two RCTs, related reviews synthesized multiple high-quality observational studies and expert consensus. In pregnant women with obesity, studies show that a well-balanced diet, including control of total energy intake, optimization of nutrient composition, and selection of low-glycemic-index foods, can effectively control gestational weight gain and reduce the risk of complications such as gestational diabetes mellitus and hypertension [27–29]. Evidence related to medicated diet and tea drinks mainly comes from studies of general obese populations and ancient medical records [30–33]; high-quality randomized controlled trials directly targeting women with obesity during pregnancy are currently lacking.

Evidence 1 [27]: Intervention group (early-pregnancy lifestyle planning including dietary control) versus control group (routine health education and prenatal checkups): The results showed significant differences between groups in weight-gain rates and overall qualified weight-gain rates at 12, 24, and 28 weeks of pregnancy. Weight-gain rates at 12, 24, and 28 weeks in the intervention group (5.44±0.36 → 18.77±2.95 → 30.03±4.85) were improved compared with the control group (9.52±0.49 → 26.01±3.96 → 45.13±5.11). The overall qualified weight-gain rate was also improved (intervention group 36 [58.06%]; placebo group 25 [40.32%]).

Evidence 2 [29]: Observation group (comprehensive nursing based on the health-belief model, including dietary guidance, plus routine nursing) versus control group (routine nursing): The results showed significant differences between groups in mid-pregnancy weight gain, total weight gain, and qualified weight-gain rate. The observation group had improved mid-pregnancy weight gain (5.45±1.41), total weight gain (11.24±3.52), and qualified weight-gain rate (52 [86.67%]) compared with the control group (8.78±2.51; 14.62±4.60; 32 [53.33%]).

Clinical Question 8: Can emotional regulation assist in controlling weight gain in women with obesity during pregnancy?

Evidence description: The evidence mainly comes from one RCT and two meta-analyses. Traditional Chinese music (five-element music therapy and guqin music) can improve emotional status and sleep quality [34–36], and mindfulness interventions can effectively reduce pregnancy-related depression [37]. Improvements in emotion and sleep quality may indirectly benefit weight management through regulation of the hypothalamic-pituitary-adrenal axis, improvement of stress-related eating behavior, and improvement of metabolic status [38,39]. However, this effect has not yet been directly verified by high-quality studies in populations with obesity during pregnancy.

Evidence 1 [34]: Traditional Chinese music intervention group versus routine control group:

Traditional Chinese music intervention significantly improved depression-related behavior and quality of life and reduced stress-related biomarkers. In the clinical study, after the treatment group received five-element music intervention for 1 h/day for 30 days, plasma TRX-1 levels decreased significantly from baseline (P=0.0039), while the control group showed no significant change (P=0.6429). Animal experiments also showed that Traditional Chinese music intervention improved depression-like behaviors, such as increased sucrose preference and reduced immobility time in forced swimming and tail-suspension tests, suggesting an effect in relieving negative emotion and stress status.

Evidence 2 [35]: This meta-analysis included 24 studies comparing non-drug interventions such as music, massage, exercise, and acupuncture for depressive symptoms. Music intervention showed relatively good therapeutic effects in improving depression scores, with a treatment-ranking probability of 73.30%, outperforming most routine non-intervention measures. The study also suggested that music therapy is an important non-drug measure for managing depressive mood in college students.

Evidence 3 [36]: This review systematically summarized the theoretical basis and modern application of guqin music and TCM five-element music therapy, indicating that guqin music may relieve emotional disorders such as anxiety, depression, and insomnia by regulating the dynamic balance among the five zang organs and the five emotions.

Evidence 4 [37]: A meta-analysis including 10 RCTs with 658 pregnant women showed that mindfulness meditation significantly improved depressive symptoms during pregnancy [SMD=-0.786, 95% CI (-1.289, -0.283), P<0.001]. Subgroup analysis suggested that mindfulness-based cognitive therapy had the best effect, and courses of <4 weeks produced the most obvious improvement, effectively reducing negative emotions during pregnancy.

Evidence 5 [38]: A review indicated that the comorbidity of depression and obesity during pregnancy may affect maternal metabolic status and offspring health through multiple pathways, including dysfunction of the hypothalamic-pituitary-adrenal axis, inflammatory/immune activation, insulin resistance, and gut microbiota imbalance.

Clinical Question 9: Can comprehensive lifestyle management effectively control weight gain in women with obesity during pregnancy?

Evidence description: The evidence comes from a meta-analysis of 20 clinical studies (n=8,430) [40–58], showing that comprehensive lifestyle management can significantly control weight gain in women with obesity during pregnancy (MD=-2.95 kg, 95% CI -3.06 to -2.85, P<0.00001). This intervention is non-invasive, has good safety, and can reduce the incidence of adverse pregnancy outcomes, pregnancy complications, and cesarean delivery. It is low-cost, has good cost-effectiveness, and is highly acceptable to patients. Individualized plans should be developed under professional guidance, with attention to exercise contraindications and individual dietary differences.

Clinical Question 10: What are the risk indicators for gestational diabetes mellitus in women with obesity during pregnancy, and what are the preventive methods in TCM and conventional medicine?

Evidence description: The evidence mainly comes from one meta-analysis and multiple retrospective cohort studies. Advanced maternal age, pre-pregnancy obesity, history of GDM, and family history of diabetes are independent risk factors for GDM [59–63]. Combined monitoring of blood glucose, blood lipids, and other indicators [64–68] can effectively identify

high-risk groups for GDM among women with obesity during pregnancy. International guidelines have clearly recommended these screening strategies [69,70]. Preventive measures include medicated diets (Chinese yam and coix seed porridge, Zidu drink), traditional exercises, and lifestyle interventions (total calorie control, low-GI diet, and regular aerobic exercise), which can significantly reduce the incidence of GDM in women with obesity during pregnancy and improve maternal and infant outcomes. Lifestyle intervention is supported by multiple randomized controlled trials, whereas TCM preventive measures are mainly based on observational studies or expert consensus.

Evidence 1 [60]: Intervention group (pregnant women who were overweight or obese before pregnancy) versus control group (pregnant women with normal pre-pregnancy weight): Pre-pregnancy BMI was significantly associated with GDM risk in a dose-effect manner. Specifically, the pooled adjusted ORs for GDM risk among underweight, overweight, and pregnant women with obesity were 0.68, 2.01, and 3.98, respectively, and the adjusted RRs were 0.34, 1.52, and 2.24, respectively. In crude and adjusted models, each one-unit increase in BMI increased GDM risk by 4%, with statistically significant differences.

Evidence 2 [61]: Intervention group (pregnant women with GDM) versus control group (pregnant women with normal glucose tolerance): Vitamin D deficiency, assisted reproductive technology, advanced age, pre-pregnancy obesity, and family history of diabetes were independent risk factors for GDM. Vitamin D deficiency OR=2.09 (95% CI: 1.50–2.93, P<0.001); assisted reproductive technology OR=9.17 (95% CI: 1.16–72.67, P=0.036); advanced age (≥35 years) OR=3.12 (95% CI: 1.89–5.14, P<0.001); pre-pregnancy BMI≥25.0 kg/m^2 OR=2.42 (95% CI: 1.54–3.80, P<0.001); and family history of diabetes OR=6.95 (95% CI: 3.01–16.01, P<0.001).

Evidence 3 [63]: Intervention group (pregnant women with high-risk factors such as advanced age, obesity, and family history of diabetes) versus control group (pregnant women without obvious high-risk factors): A multifactorial combined model significantly improved the efficiency of identifying high-risk GDM populations. Specifically, a prediction model based on national electronic health records had an ROC of 0.85, significantly higher than the traditional risk score (ROC=0.68), and could accurately identify high-risk GDM populations in early pregnancy.

Evidence 4 [67]: Intervention group (pregnant women with elevated HbA1c in early pregnancy) versus control group (pregnant women with normal HbA1c in early pregnancy, or high-risk women defined by age, BMI, and family history of diabetes): Early-pregnancy HbA1c alone, or in combination with traditional risk factors, effectively predicted GDM risk early and significantly reduced the need for OGTT. Three prospective cohorts (India n=2,115; Kenya n=2,142; United Kingdom n=4,320) showed that each 1% increase in HbA1c was associated with adjusted RRs for GDM of 1.60 (95% CI: 1.19–2.16), 3.49 (95% CI: 2.8–4.34), and 4.72 (95% CI: 3.82–5.82), respectively. HbA1c screening alone reduced the need for OGTT by 42.0%–50.4%; a combined model using HbA1c, age, BMI, and family history of diabetes avoided OGTT in up to 64.0% of cases while maintaining approximately 80% screening sensitivity and excellent predictive performance.

Clinical Question 11: What are the risk indicators for hypertensive disorders of pregnancy in women with obesity during pregnancy, and what are the preventive methods in TCM and conventional medicine?

Evidence description: The evidence comes from multiple cohort-study systematic reviews and large retrospective studies. High BMI before pregnancy or in early pregnancy, advanced maternal age, history of chronic hypertension, and history of pre-eclampsia are independent risk factors for hypertensive disorders of pregnancy [71,72]. Combining mean arterial pressure, uterine artery pulsatility index, placental growth factor, and other indicators can further improve predictive performance [73–75]. International guidelines have clearly recommended these screening strategies [61]. Preventive measures include daily-life regulation (adequate rest and avoiding fatigue), medicated dietary therapy, traditional exercises, and acupoint massage, which may reduce the incidence of pre-eclampsia and hypertensive disorders of pregnancy in women with obesity during pregnancy. Some evidence from RCTs supports daily-life regulation and acupoint massage, whereas evidence on Chinese medicated diets and traditional exercises mainly come from observational studies or expert consensus.

Evidence 1 [71]: BMI>30 in pregnant women was closely associated with the incidence of pre-eclampsia. Among women with body mass index (BMI)≥30, the prevalence of pre-eclampsia based on International Classification of Diseases codes was 5.1% (5.0% to 5.2%), and the prevalence based on standard clinical criteria was 7.7% (7.6% to 7.8%). In contrast, among women with BMI<30, the corresponding prevalence rates were 2.0% (2.0% to 2.0%) and 2.8% (2.7% to 2.8%).

Evidence 2 [72]: In Swedish and Chinese populations, obesity was closely associated with both mild and severe pre-eclampsia. For mild pre-eclampsia, underweight was protective (Sweden: OR=0.76, 95% CI 0.63–0.91; China: OR=0.41, 95% CI 0.18–0.92), overweight was a risk factor (Sweden: OR=1.71, 95% CI 1.63–1.80; China: OR=3.14, 95% CI 1.98–4.99), and obesity was also a stronger risk factor (Sweden: OR=3.23, 95% CI 3.07–3.40; China: OR=4.86, 95% CI 3.64–6.51). For severe pre-eclampsia, underweight was also protective (Sweden: OR=0.78, 95% CI 0.62–0.99; China: OR=0.66, 95% CI 0.45–0.95), whereas overweight (Sweden: OR=1.35, 95% CI 1.26–1.45; China: OR=2.29, 95% CI 1.59–3.30) and obesity (Sweden: OR=2.10, 95% CI 1.94–2.27; China: OR=4.46, 95% CI 3.27–6.07) significantly increased the risk of severe pre-eclampsia.

Evidence 3 [75]: The pre-pregnancy BMI in the pre-eclampsia group was 24.69±1.32, compared with 22.63±1.65 in the control group (P<0.001), suggesting that pre-pregnancy BMI is an independent risk factor for pre-eclampsia. The pre-eclampsia group had 16.79±4.61 and the control group had 14.93±3.95 for gestational weight gain (P<0.05), indicating a statistically significant difference. Excessive pre-pregnancy BMI was significantly positively correlated with pre-eclampsia occurrence. Combining serum PLGF, DCN, LDH, and UA levels with pre-pregnancy BMI for the diagnosis of pre-eclampsia yielded an AUC of 0.952, sensitivity of 0.901, and specificity of 0.913, suggesting that multifactorial combinations can be used for diagnosis.

Clinical Question 12: What are the risk indicators for threatened miscarriage in women with obesity during pregnancy, and what are the preventive methods in TCM and conventional medicine?

Evidence description: The evidence mainly comes from one multicenter observational study and one non-quantitative systematic review. Obesity is an independent risk factor for early miscarriage [76,77]. Combining endocrine indicators such as progesterone and β-hCG with

ultrasound examination can effectively identify high-risk groups [77]. Progesterone supplementation may reduce miscarriage risk; TCM syndrome-based dietary therapy and tea-drink regulation may help strengthen the kidney and calm the fetus, thereby reducing the incidence of threatened miscarriage. However, the relevant evidence mostly comes from observational studies, case series, or expert opinion, and the study populations were not specifically women with obesity during pregnancy, indicating some indirectness.

Evidence 1 [76]: "BMI≥30" was defined as one pregnancy risk factor. In Kenya, pregnant women with one pregnancy risk factor (including obesity) had significantly higher antenatal-care completeness (Coeff=1.64, 95% CI: 0.32–2.96, p=0.015); South Africa had both a high obesity rate and a relatively high ANC completion rate (76%).

Evidence 2 [77]: Ultrasound indicators that can identify high-risk populations include the gestational sac (MSD≥17 mm without embryo or MSD≥13 mm without yolk sac; specificity and positive predictive value for nonviable pregnancy both 100%) and fetal-development indicators (presence of fetal bradycardia, gestational age, or crown-rump length increases risk from 6% to 84%). Endocrine markers that can identify high-risk populations include progesterone (<45 nmol/L [14 ng/mL] for abnormal pregnancy; sensitivity 87.6%, specificity 87.5%) and β-hCG (<20 ng/mL for abnormal pregnancy; sensitivity 88.3%, positive predictive value 82.6%).

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