## HALTING THE RISE IN OBESITY AND DIABETES

**Life Stage: Pregnancy**

### INTERVENTION POINTS

<table>
<thead>
<tr>
<th>1. Social Determinants/Health Promotion</th>
<th>2. Primary Prevention/Risk Reduction</th>
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<tbody>
<tr>
<td>Health education – antenatal and parenting classes</td>
<td>Risk factor screening and identification</td>
</tr>
<tr>
<td>Health promotion – preconception care, weight management, diet and physical activity, lifestyle interventions</td>
<td>Risk reduction regarding risky lifestyles and behaviours; avoidance of risks</td>
</tr>
<tr>
<td>Risk avoidance regarding risky lifestyles and behaviours; avoidance of risks</td>
<td>Preconception care and counselling</td>
</tr>
<tr>
<td>Promotion of breastfeeding</td>
<td>Health education – antenatal diet, physical activity.</td>
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<tr>
<td>Access to quality, comprehensive prenatal care</td>
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<tr>
<th>3. Screening &amp; Early Detection</th>
<th>4. Care and Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine antenatal care guidelines and referral pathways</td>
<td>Protocols for management of prediabetes and diabetes in pregnancy</td>
</tr>
<tr>
<td>Screening guidelines for blood glucose in preconception and antenatal care</td>
<td>Protocols for management of overweight and obesity in pregnancy</td>
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<td></td>
<td>Statutory reporting of diabetes diagnoses for National Register</td>
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<th>5. Quality of Care</th>
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<tr>
<td>Adherence to national guidelines for clinical management</td>
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<tr>
<td>Clinical Care Quality Reporting system with monitoring and accountability mechanisms</td>
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### PRECONCEPTION CARE ENCOUNTERS

Preconception care - a set of interventions to identify and modify biomedical, behavioral, and psychosocial risks to a woman’s health or pregnancy outcome through prevention and management. Preconception care should be considered as a continuum of care throughout a woman’s reproductive life; any form of contact with a health care worker to prepare for a healthy pregnancy.

- Measure Height & Weight, Calculate BMI
- Provide specific information
- Counsel on lifestyle choices and risky behaviours; recommend diet, nutrition and physical activity.
- Written Referral to Nutrition services, as indicated.

Preconception care may include:
- Provision of specific information
- Screening for and treating obesity-related health problems
- Customized or general dietary and exercise advice.
- Women with diabetes should be counseled on optimizing glycemic control, and pregnancy should be discouraged until control is achieved.

### Gestational Weight Gain (GWG) Guidelines* *(Institute of Medicine)*

<table>
<thead>
<tr>
<th>Pre-Pregnancy BMI</th>
<th>Recommended Weight Gain</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight (BMI &lt;18.5)</td>
<td>25-35 lbs / 11.4-15.9 kg</td>
<td>1/3 of women gain excessive weight during their pregnancy. Maternal obesity is associated with several negative pregnancy outcomes.</td>
</tr>
<tr>
<td>Normal Weight (BMI 18.5 – 24.9)</td>
<td>25-35 lbs / 11.4-15.9 kg</td>
<td>Inform pregnant woman of appropriate weight gain at the beginning of pregnancy</td>
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<tr>
<td>Overweight (BMI 25.0-29.9)</td>
<td>15-25 lbs / 6.8-11.4 kg</td>
<td>Advice on diet during pregnancy should be more intensive for overweight or obese woman</td>
</tr>
<tr>
<td>Obese (BMI ≥30.0)</td>
<td>11-20 lbs / 5.0-9.0 kg</td>
<td>Provide advice on physical activity during pregnancy</td>
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</tbody>
</table>

* For the overweight or obese woman who is gaining less than the recommended amount but has an appropriately growing fetus, no evidence exists that encouraging increased weight gain to conform with the current IOM guidelines will improve maternal or foetal outcomes.

### PREGNANT CLIENT ENCOUNTERS

**First Prenatal Visit (GA: 8-12 wks)**

- Measure Height & Weight, Calculate BMI
- Recommended Gestational Weight Gain based on BMI
- Elicit history of Type 2 Diabetes, Gestational DM, large infant (>9 lbs/4 kg), 1st degree family member with DM
- Test for undiagnosed Type 2 DM if risk factors present (i.e. pre-pregnancy BMI ≥30, personal history of GDM, known impaired glucose metabolism) at first visit
- Counsel regarding excessive weight gain, recommend diet and physical activity
- Apply Nutrition Screening tool.

**EVIDENCE**

- Women with complex medical conditions (obesity, Diabetes) must be offered referral for assessment by a consultant obstetrician. Referral pathways should be documented.
- Structured Maternity Records and Client Passport & Itinerary should be available, showing time-line of prenatal care and what to expect at each visit.
- Informing and educating women on appropriate weight gain before and in the beginning of pregnancy may contribute to better dietary compliance.
- Diet or exercise, or both, during pregnancy can reduce the risk of excessive GWG, particularly for high-risk women.
- Exercise appears to be an important part of controlling weight gain in pregnancy.
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Life Stage: Pregnancy

| Every 4 weeks for first 28 weeks | • Weight – review total weight gain for pregnancy
| • Urine dip for glucose
| • Encourage breastfeeding
| • Screen for GDM at 24-28 weeks gestation in pregnant women not previously known to have diabetes (Do NOT use HbA1C test)
| • Offer prenatal / childbirth classes, incl:
  - weight management during pregnancy
  - promoting breastfeeding
  - preventing childhood obesity
| • Dietary advice interventions for pregnant women may prevent GDM; decrease total GWG; and long-term postpartum weight retention.
| • Most diets (except high unsaturated or mono-unsaturated fatty acid diet) demonstrated fasting glucose improvement when compared to GWG advice only. DASH-style diet appeared optimal on fasting glucose.
| • Women receiving lifestyle interventions were more likely to achieve postpartum weight goals, but no clear evidence of benefit for development of type 2 DM.
| • Overweight and obese pregnant women benefit from lifestyle, dietary and activity advice which restricts maternal weight gain and lowers prevalence of GDM.

| Every 2 weeks until 36 weeks gestation |
| Postpartum visit |
| • Weight & BMI
| • Review nutrition and exercise
| • Women with GDM should be screened for DM 6-12 weeks postpartum
| • Women with GDM should be followed up with screening for development of prediabetes or diabetes
| • Women with a history of GDM found to have prediabetes should receive intensive lifestyle interventions or Metformin to prevent diabetes.
| • Women with a history of GDM should have lifelong screening for development of diabetes or prediabetes, every 3 years.

MANAGEMENT OF DIABETES IN PREGNANCY

- **Pre-existing Diabetes**: preconception counseling; family planning/effective contraception; importance of glycemic control; risks of diabetic retinopathy: dilated eye exam prior or in 1st trimester, repeat every trimester and for 1 year post-partum.
- **GDM** – lifestyle change; medication (if needed).
- **General principles of management of DM in pregnancy** – avoid teratogenic meds if unreliable contraception; self-monitoring of blood glucose; modified targets for control using HbA1c and BP (for co-morbid hypertensives)

**REFERENCES**

1. Tieu, Joanna; Shepherd, Emily; Middleton, Philippa; Crowther, Caroline A. (2017) Dietary advice interventions in pregnancy for preventing gestational diabetes mellitus. Cochrane Database Syst Rev;
10. Morgan, Philip J; Young, Myles D; Lloyd, Adam B; Wang, Monica L; Eater, Narelle; Miller, Andrew; Murtagh, Elaine M; Barnes, Alyce T; Pagoto, Sherry L. (Feb 2017) Involvement of Fathers in Pediatric Obesity Treatment and Prevention Trials: A Systematic Review. Pediatrics; 139(2)2017 Feb