

Cultural Diversity in Gestational Diabetes Mellitus (GDM) Education Program

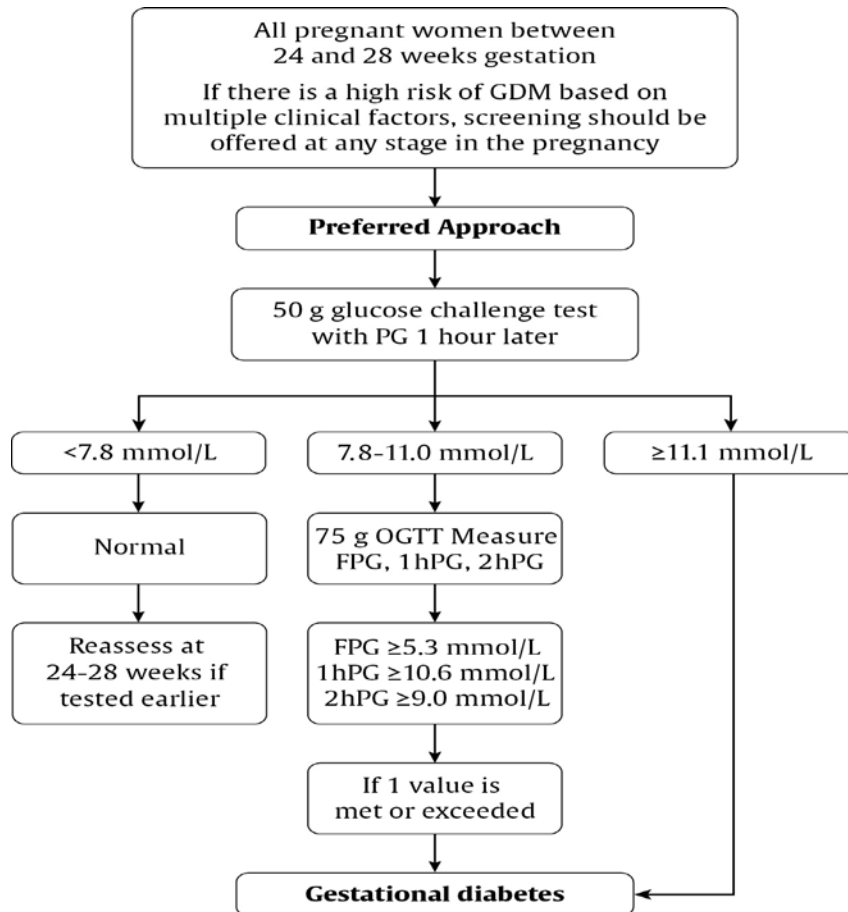


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What is GDM ?



Diagnosis of GDM

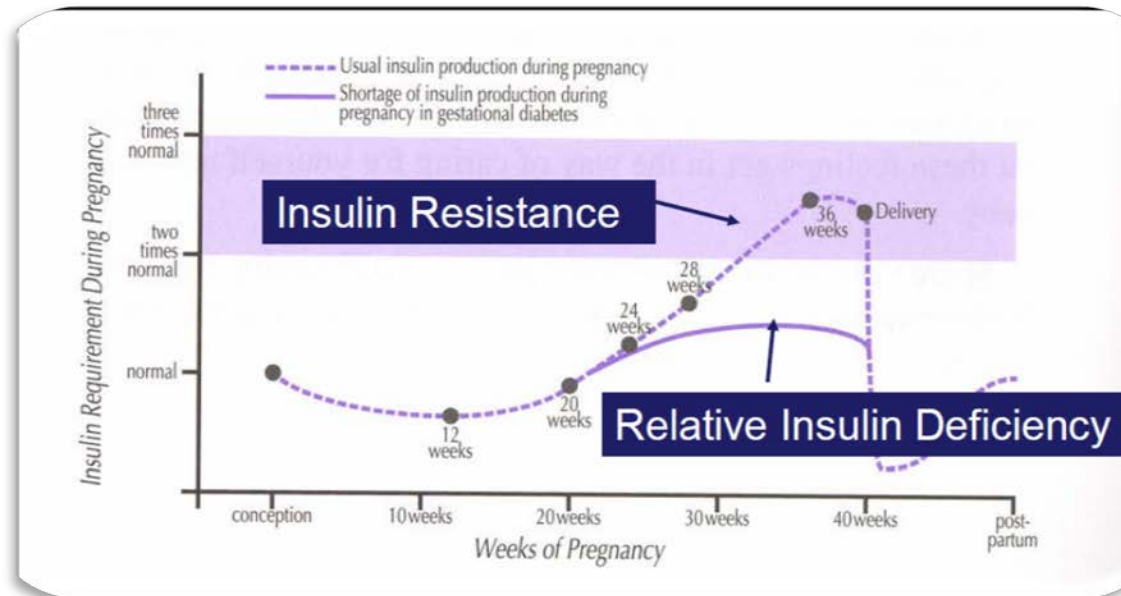


Fasting: ≥ 5.3 mmol/L

1 hour: ≥ 10.6 mmol/L

2 hours: ≥ 9.0 mmol/L

Pathophysiology and Prevalence



Occurs in 3% -20 % of all Pregnancies

Who should be tested for gestational diabetes



Every Pregnant?

Elevated Blood
Sugar?

History of Gestational
Diabetes?

Which of the following is NOT a risk factor for GDM

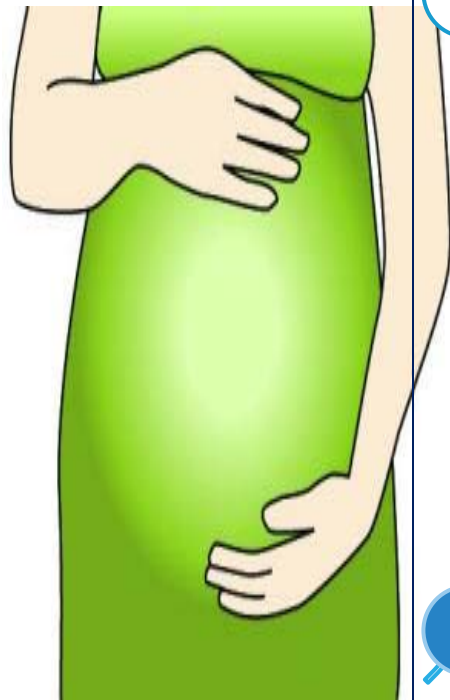


Ethnicity

Smoking

**Pregnancy >35
years of age**

What are the Risk Factors



- GDM in a previous pregnancy
- Previous macrosomia (baby weighing over 4 kg/ 9 lbs)
- History of Prediabetes
- Family history of type 2 diabetes
- Age (over 35) or Obesity (BMI >35)
- Medical conditions (PCOS, Thyroid disease, fertility treatment, corticosteroid use)
- Member of a high risk ethnic group

Ethnic group ?

- Ethnic Group: Asian, South Asian, Hispanic, African and Aboriginal
- Asian descent: Chinese, Philippines, Vietnamese, Japanese, Korean and many more
- South Asians: Heterogeneous group- countries of origin, religions, cultures, genders, ages, class, caste and occupation

Diabetes doesn't affect all societies equally

- 36.3 % of GDM in South Asians

(START study , Canada among 1012 SA with singleton Jan 2011 to Nov 2015)

- Higher in Chinese and South Asian Canadians: 2 folds higher in SA (AB and BC) and 3 fold higher in Chinese women(BC)

- Increased maternal age (32.7, 33.0) in Chinese women (Yeung, RO.2017)

Diabetes doesn't affect all societies equally!

GDM prevalence is higher in Chinese and South Asian Canadians: 2004 to 2010

- Result : Overall GDM 4.8 % in AB, 7. 2% in BC
- General population : AB: 4.2 % , BC: 5.8%
- Chinese in AB 11%, BC 13.5 %
- SA: 8.4% in AB , 13.9% in BC

* Source: Yeun. R.O et al Mar2017, Prevalence of GD among Chinese and SA: A Canadian population –based analysis

Why are we concerned?

Fetal and maternal risks and complications

	Fetal	Maternal
Short-term	<ul style="list-style-type: none">• Macrosomia• Respiratory distress syndrome• Neonatal hypoglycemia• Hyperbilirubinemia	<ul style="list-style-type: none">• Cesarean delivery• Preterm labour• Birth trauma• Hypertension (DM2)• Pre-eclampsia (DM1)
Long-term	<ul style="list-style-type: none">• Childhood obesity• IGT and DM2 in adulthood	<ul style="list-style-type: none">• GDM in future pregnancies• DM2 in 5 – 10 years

Risk For Mother

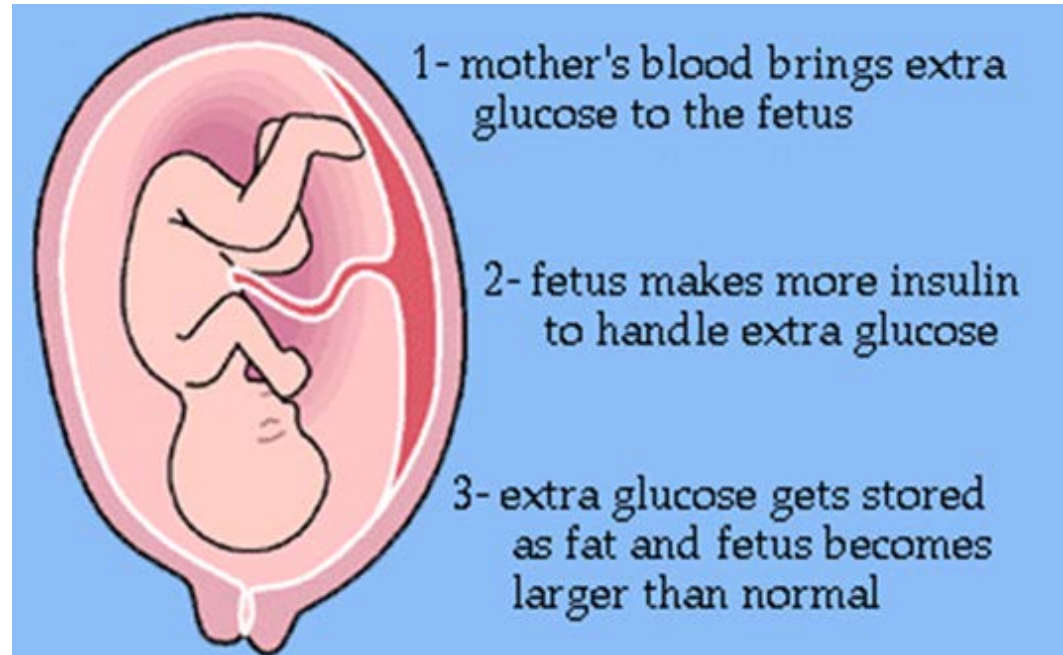
Possibility of :

- Early delivery
- Trauma during birth when baby is large
- 2 in 3 chances of developing GDM in future pregnancies
- Higher risk of developing type 2 diabetes in the future



Risk For Infant

- Large: over 9 lbs (4 kg)
- Higher risk of injury during birth
- Hypoglycemia glucose after birth
- Breathing problems
- Jaundice



Case Study: Meet Mary?

- 36-year-old South-Asian woman at 24 weeks gestation being diagnosed with GDM and told by her Ob's secretary "sugar problem" & referred to see a diabetes educator
- **Considerations and Possible Complications:** Past obstetric history (vaginal delivery of 8 lb, 2 oz. baby), family history of T2DM (mother), overweight : pre-pregnancy BMI 26 kg/m²
- **Social Considerations:** Mary reveals she is very anxious about the impact on her child; however, she is a very busy mom and does not always have time to exercise .
- **Dietary assessment:** She started to eat two meals a day, gave up sugar not sure if sweeteners are safe. Often drinks 100% juice to satisfy her cravings . Avoids "hot foods" suggested by her family member.
- **Supplements:** takes her daily prenatal multi vitamin+ mineral supplement
- She is worried that she will not be able to breast feed her baby

GDM Management: CPG Recommendations

- **Home monitoring of blood glucose:**
 - 4 x day
 - Fasting BG Target : 4.0 - 5.2 mmol/L
 - 2 hrs post-prandial: 5.0 mmol/L to 6.6 mmol/L
- **Urine ketone testing:**
 - Done to identify and correct starvation/dieting

Nutrition Therapy

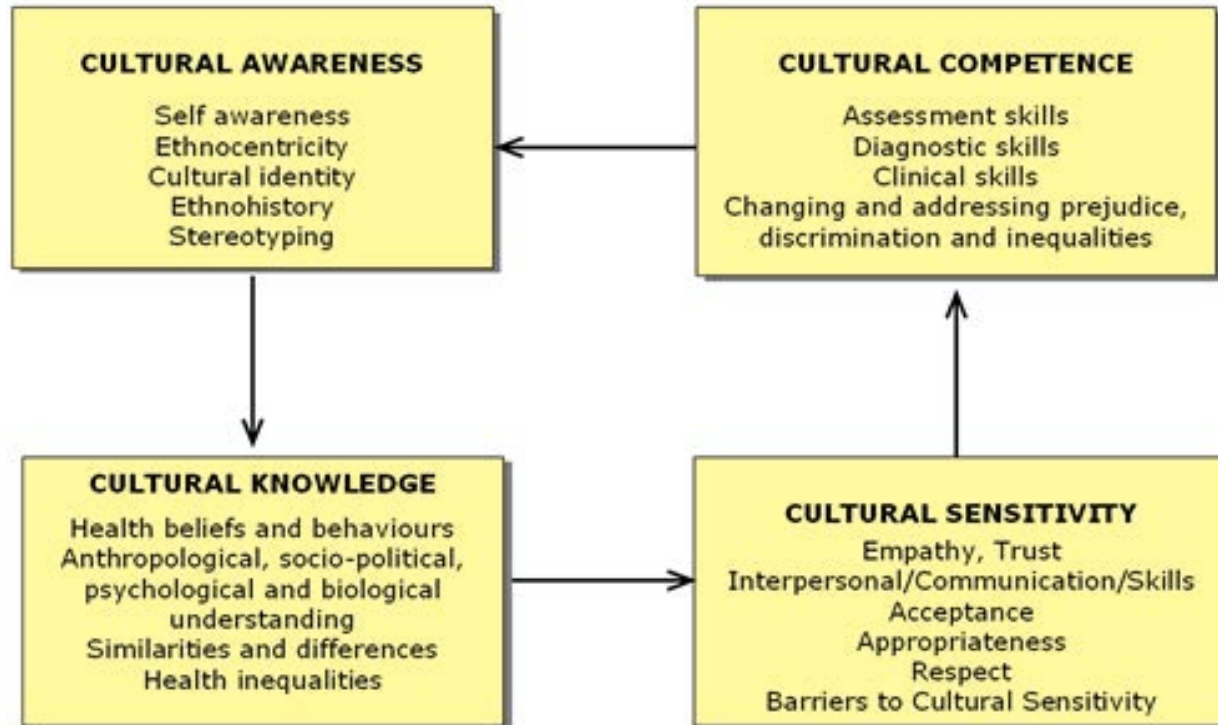
Seeing an RD is very important for management of GDM!

- Euglycemia
- Weight gain
- Moderate carbohydrate restriction
- Carbohydrate distribution

Culture and Healthcare

- Consider patient as a WHOLE
- Understand cultural aspects
- Provide relevant info in a safe and comfortable environment
- Understand barriers ; sociocultural based health beliefs

Understanding Cultural Diversity



Papadopoulos, Tilki, and Taylor: Model for Developing Cultural Competence

Communication is Key

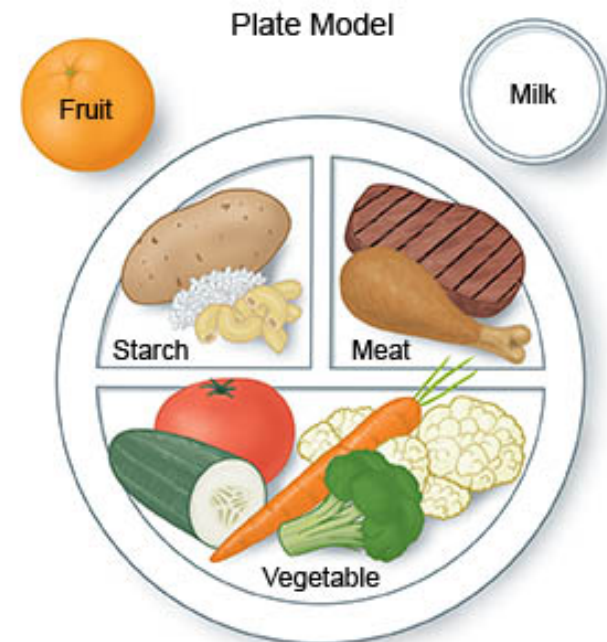
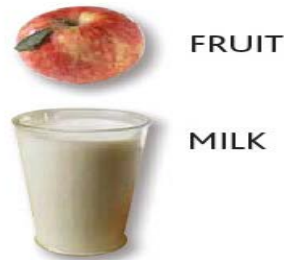


(Betancourt, Green, Carrilo, & Ananeh-Firempong, 2003)

Dietary Guidelines (CPG, 2013)

Sample meal plan

- ✓ 3 balanced meals and 3 snacks per day
- ✓ Eat every 2 – 3 hours
- ✓ Meals: 45 – 60 g CHO
- ✓ Snacks: 15 – 30 g CHO



Recommendations for Mary

Changes to her diet:

- Resume 3 regular meals, provide recommendations regarding adequate carbohydrate intake at mealtime
- Balance of CHO free food groups (fat, veggies, protein, cheese, Greek yogurt)
- Swap fruit juice with fresh /frozen fruit x 3/day
- Can enjoy treats (small amount)
- Sweetener are safe (discuss upper limit)
- Walking 10 min after larger meals

Sample meal plan from my GDM prog

BREAKFAST

- 2 slices of whole wheat bread -OR 1½ cups dry/cold cereal OR 1 English muffin OR 1½ cups cooked oatmeal OR 1 cup of congee
- 1 cup milk OR 1 cup yogurt (plain/unsweetened) OR 1 fruit
- 1 egg OR 1 tbsp. peanut butter OR 1 ounce cheese OR 1oz of meat
- Vegetables as desired

MORNING SNACK

- 4-6 crackers OR 1 slice of bread OR 1 fruit OR 1 cup of milk OR 1 cup of yogurt
- Handful nuts OR 1 tbsp. peanut butter OR 1 ounce cheese OR ½ cup of cottage cheese

LUNCH

- 1 cup of rice OR 2 (6" thin) roti/tortilla OR 2-3 slices of bread OR 6 dumplings
- 1 cup milk/yogurt OR 1 medium fruit
- 3 ounces meat, fish, poultry OR cheese OR vegetarian alternative
- Vegetables as desired



Sample meal plan from my GDM prog

AFTERNOON SNACK

- 1 slice of bread OR 4-6 high fibre crackers OR medium fruit OR 1 cup milk OR yogurt
- 1 ounce cheese or 1 tbsp. peanut butter or 1 tbsp. hummus

DINNER

- 1 cup of rice /puttu OR 1-1½ cups pasta/couscous/quinoa OR 1 medium potato OR 2 roti/tortilla OR 6 string hoppes OR 3 oz barberi/lavash bread
- 1 medium fruit OR 1 cup of milk OR 1 cup of yogurt
- 3 ounces meat, fish, poultry OR vegetarian alternative
- Vegetables as desired

BEDTIME SNACK

- 1 slice of bread OR 3 cups of popcorn or 3-6 social tea cookies OR 1 cup milk/yogurt OR 1 small tub of rice pudding or no sugar added apple sauce
- Slice cheese or 1 tbsp. peanut butter or 1 tbsp. hummus



Plate Models



Take away



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