

Updates in Prenatal Care

Indian Health Services:

2015 California Provider's Best Practices &
GPRA Measures Continuing Medical Education

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Disclosures

- **I have no disclosures or conflicts to declare.**

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Learning Objectives

By the end of the activity, the participant will be able to:

1. Discuss diabetes guidelines in pregnancy
2. Learn the prevalence of substance abuse in pregnancy and screening strategies
3. Learn the prevalence of intimate partner violence (IPV) and the role health care practitioners

Diabetes in Pregnancy

- Diabetes complicates pregnancy in 3-14 % of women
- Higher risk for maternal complications
- Fetuses can be at increased risk for congenital malformations or stillbirth.
- Appropriate prenatal care and diabetes control can reduce or prevent these problems for pregnant women and their infants.

Diabetes in Pregnancy

- **Pre-gestational**
- **Gestational**
 - Constitutes over 80% of diabetes seen during pregnancy and is increasing in prevalence

Pre-Gestational Diabetes

Preconceptional Period

- Maternal
 - Miscarriage
 - Preeclampsia spectrum disorders
 - Cesarean delivery
 - Worsening underlying diabetes

Pre-Gestational Diabetes

Preconceptional Period

- Fetus
 - Congenital birth defects
 - HgbA1c < 8% → 5%
 - HgbA1c >10% → 25%
 - Stillbirth
 - Macrosomia

Pre-Gestational Diabetes

Preconceptual Period

- Refer to Maternal-Fetal Medicine for pre-conceptual counseling

Pre-Gestational Diabetes

Preconceptional Period

- Goals in counseling:
 - Normalize HgbA1c
 - Assess for additional risk factors due to diabetes
 - Renal disease
 - Ocular disease
 - Microvascular disease

Gestational Diabetes

- Screening and diagnosis
- Education, education, education
- Pregnancy management

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Screening and Diagnosis

- **CONTROVERSIAL**
 - Who to screen early on?
 - How to screen?
 - Screening with hgbA1c?

Who To Screen Early On for Gestational Diabetes?

- ACOG (Practice Bulletin 137, Gestational Diabetes Mellitus, 2013)
 - Previous medical history of gestational diabetes mellitus
 - Known impaired glucose metabolism
 - Obesity BMI \geq 30
- California Diabetes and Pregnancy Program (eg, Sweet Success)
 - More comprehensive

Guidelines for Diagnosis of Hyperglycemia in Pregnancy – 2011

First Prenatal Visit (<13 wks)*

Many cases of diabetes or abnormal glucose tolerance are not detected until pregnancy. Early detection reduces complications.

Test: Women who have ANY risk factor:

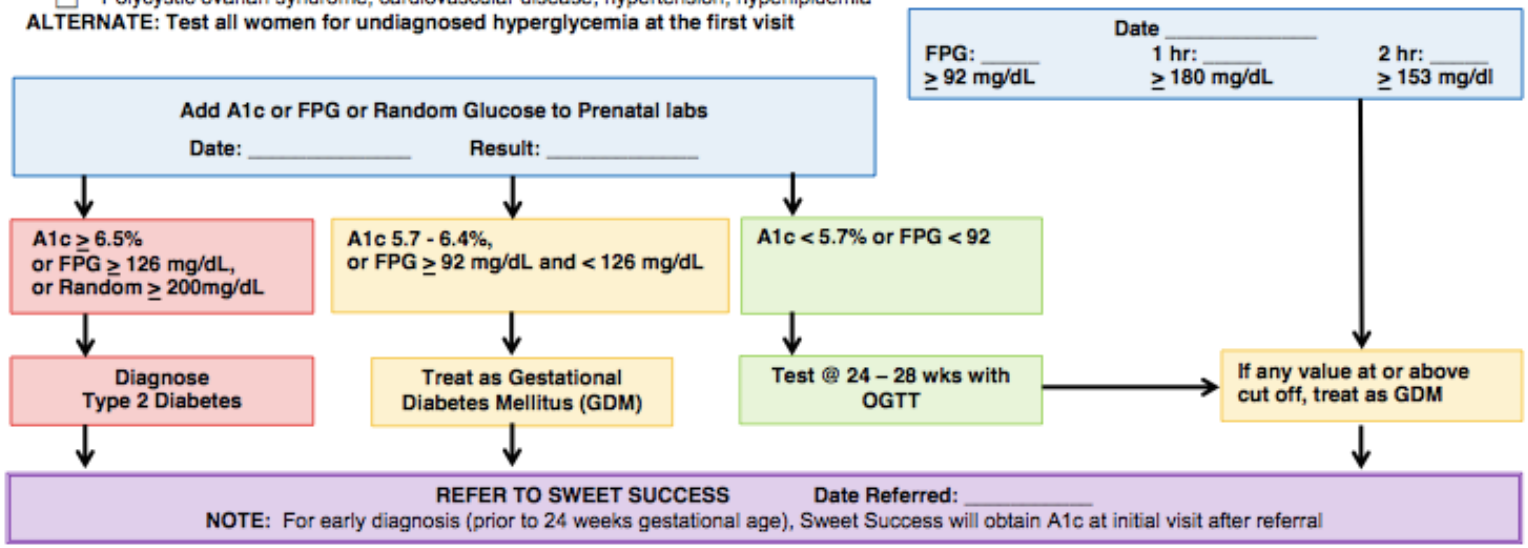
- Non-Caucasian
- BMI ≥ 25 (at risk BMI may be lower in some ethnic groups)¹
- History of GDM or pre-diabetes, unexplained stillbirth, malformed infant
- Previous baby 4000 gm or more (8 lbs 13 oz)
- 1st degree relative with diabetes mellitus
- Glucosuria
- Medications that raise glucose (e.g. steroids, betamimetics, atypical antipsychotics)
- Polycystic ovarian syndrome, cardiovascular disease, hypertension, hyperlipidemia

ALTERNATE: Test all women for undiagnosed hyperglycemia at the first visit

Universal Testing at 24-28 weeks

- 2011 ADA standard is 75 gm 2h OGTT for all women not previously diagnosed with diabetes @ 24-28 weeks gestation¹
- Fast 8-10 hours, remain seated during test
- Consider adding to third trimester labs

***If entry to care 13-23 6/7 weeks and risk factors are present, test as soon as possible with a 75 gm 2 hour Oral Glucose Tolerance Test (OGTT)**



***If entry to care 13 - 23 6/7 weeks and risk factors are present, test as soon as possible with a 75 gm 2 hour OGTT**



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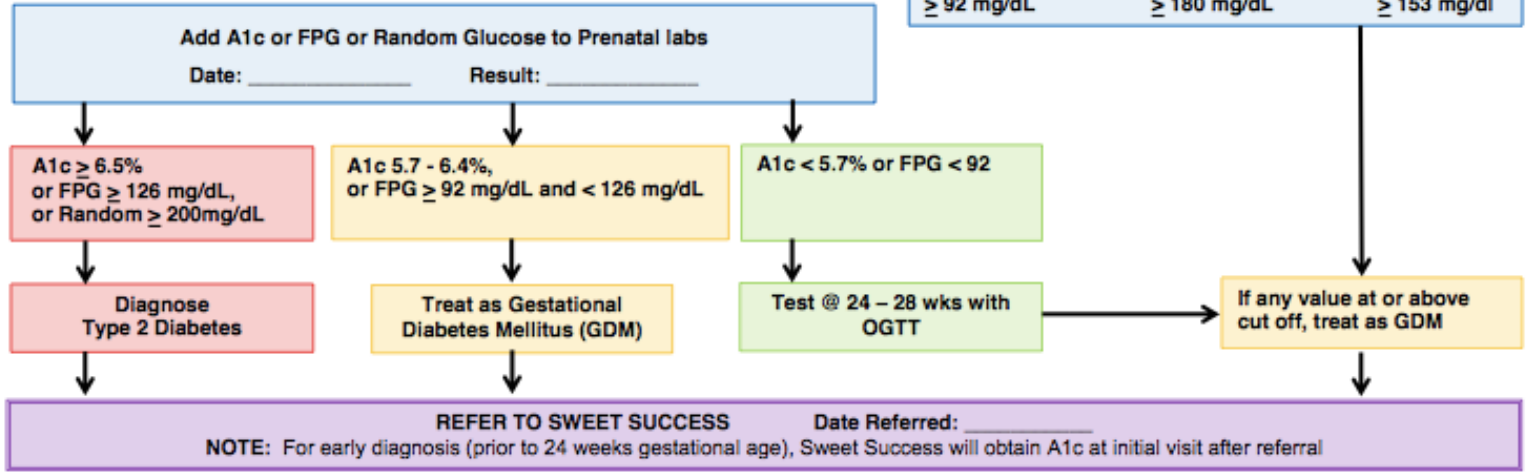
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Date _____	1 hr: _____	2 hr: _____
FPG: _____	_____	_____
≥ 92 mg/dL	≥ 180 mg/dL	≥ 153 mg/dL



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How to Screen?

- CONTROVERSIAL
- ACOG (Practice Bulletin 137, Gestational Diabetes Mellitus, 2013)
 - 1 GCT, → screening
 - 3 GTT → diagnostic
- California Diabetes and Pregnancy Program (eg, Sweet Success)
 - 2hr OGTT → screening and diagnostic

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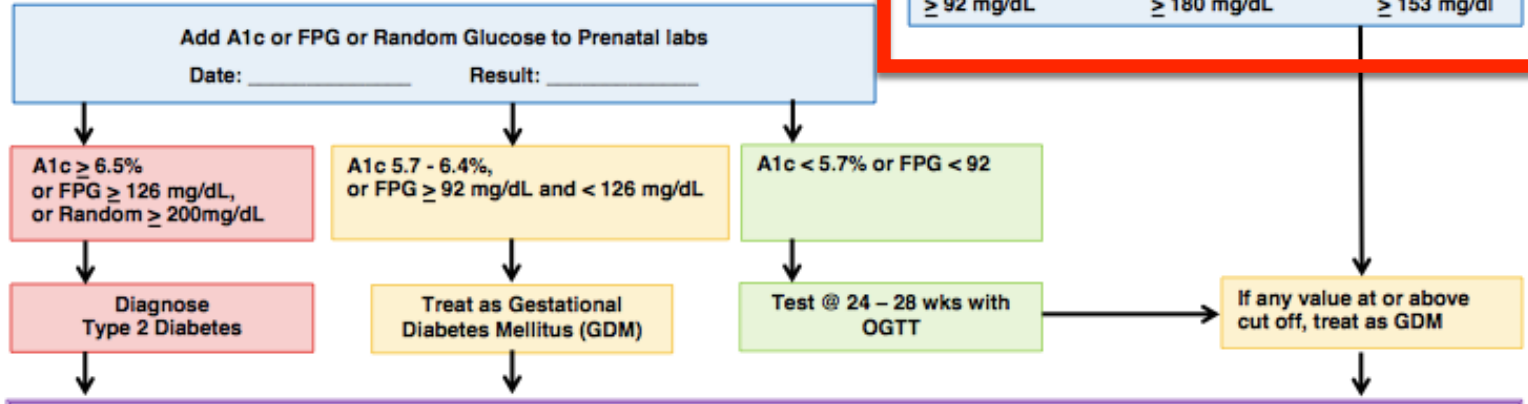
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Date: _____	1 hr: _____	2 hr: _____
FPG: _____		
≥ 92 mg/dL	≥ 180 mg/dL	≥ 153 mg/dL



REFER TO SWEET SUCCESS Date Referred: _____

NOTE: For early diagnosis (prior to 24 weeks gestational age), Sweet Success will obtain A1c at initial visit after referral

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Screening with HgbA1c?

- CONTROVERSIAL
- Early HgbA1c 5.7-6.4% are at increased risk for developing gestational diabetes (GDM)

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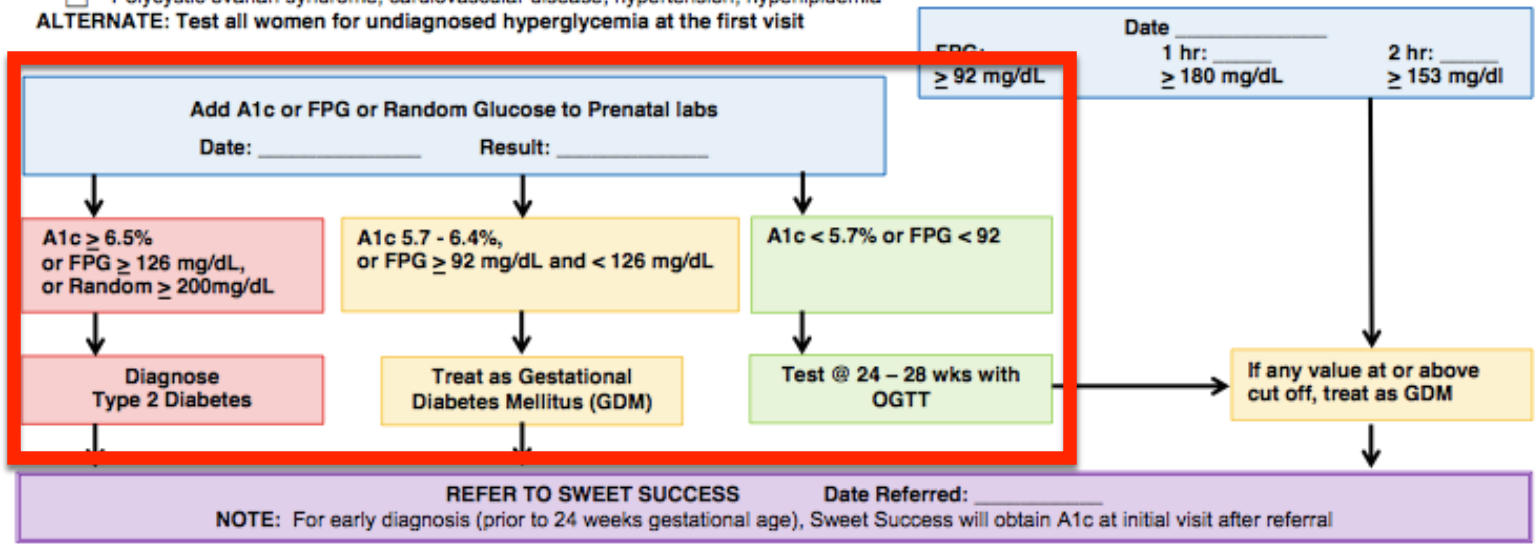
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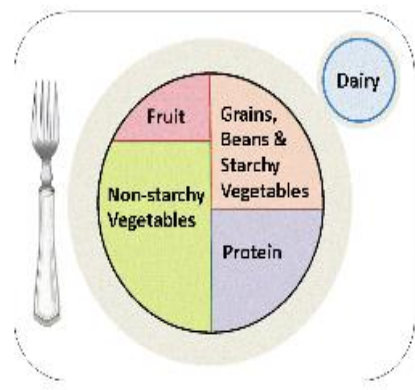
Patient Education

- What is GDM
- Management in pregnancy
- When to test
- How to test
- **What to eat and when**

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It all starts here



California MyPlate for Gestational Diabetes

When you are pregnant and have diabetes, you have special nutrition needs. Use *MyPlate for Gestational Diabetes* to help you manage your blood sugar. This will help keep you and your baby healthy. Every day, eat the number of servings/choices of food shown below. Talk to a registered dietitian (RD) to develop a meal and exercise plan that will meet your needs.

⚠️ Limit Your Carbohydrates. When you have gestational diabetes, the type and amount of carbohydrates matter. Vegetables, Grains, Fruits, and Dairy contain carbohydrates. Some have more and some have less. Eating too many or the wrong type of carbohydrate may raise your blood sugar. Avoid foods with added sugar or white flour, such as cookies, candy and soda.

Vegetables

Eat non-starchy vegetables.
 Use fresh, frozen or low-sodium canned vegetables.
 For diabetes, starchy vegetables like potatoes, sweet potatoes, yams, peas, corn & winter squash count as a Grain, not a Vegetable.
Daily Amount
 6 or more of these choices:

- 2 cups raw leafy vegetables
- 1 cup raw vegetables
- 1/2 cup cooked vegetables



5 grams (g) carbohydrate per serving

Protein

Choose lean protein.
 Avoid bacon, hot dogs & bologna.
Daily Amount
 6 or more of these choices:

- 1 ounce fish, poultry, lean meat, or cheese
- 1/4 cup cottage cheese
- 1 egg
- 1 ounce nuts
- 1/2 cup tofu
- 2 Tablespoons nut butter



8 g carbohydrate per serving

Grains

For diabetes, beans & starchy vegetables count as Grains.
 Eat 100% whole grains.
 Avoid cold breakfast cereals.
 Avoid instant rice, noodles & potatoes.
Daily Amount
 7 of these choices:

- 1 slice whole wheat bread
- 1/2 cup potato or yam
- 1 small whole grain tortilla
- 1/2 cup cooked dried beans, non-instant cereal, corn or peas
- 1/3 cup cooked pasta, rice



15 g carbohydrate per serving

Fruits

Eat unsweetened fruits of all colors.
 Do not drink fruit juice. Avoid fruit at breakfast. Limit dried fruit to 1/4 cup a day.
Daily Amount
 2 of these choices:

- 1 small apple
- 17 small grapes
- 1 cup papaya
- 1/2 banana



15 g carbohydrate per serving

Dairy

Choose only pasteurized plain milk or yogurt.
 For diabetes, cheese is in the Protein group. Do not eat yogurt or drink milk at breakfast.
Daily Amount
 3 of these choices for women
 or
 4 of these choices for teens:

- 1 cup 1% or fat free milk
- 1 cup soy milk with calcium
- 3/4 cup of plain yogurt



15 g carbohydrate per serving

Fats & Oils

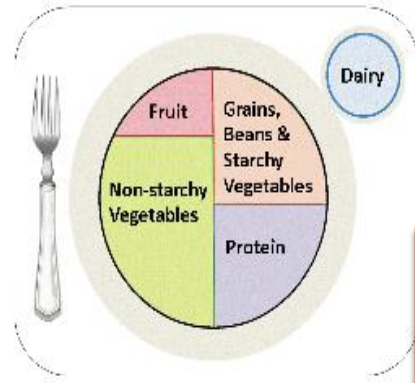
- Use healthy plant oils like canola, safflower & olive oil for cooking.
- Read labels to avoid saturated & trans fats (hydrogenated fats).
- Avoid solid fats such as lard, shortening & butter.
- Fish has healthy fats. Eat cooked fish at two meals each week.
- Limit oils to 6 teaspoons each day.

0 g carbohydrate per serving

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Daily Amount
 6 or more of these choices:

- 2 cups raw leafy vegetables
- 1 cup raw vegetables
- 1/2 cup cooked vegetables

5 grams (g) carbohydrate per serving

Protein

Choose lean protein.
 Avoid bacon, hot dogs & bologna.

Daily Amount
 6 or more of these choices:

- 1 ounce fish, poultry, lean meat, or cheese
- 1/4 cup cottage cheese
- 1 egg
- 1 ounce nuts
- 1/2 cup tofu
- 2 Tablespoons nut butter

0 g carbohydrate per serving

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 7 of these choices:

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0 g carbohydrate per serving

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California My Nutrition Plan for Gestational Diabetes

This is my plan until I meet with a registered dietitian (RD) for my personal meal and exercise plan.

EVERY day, I will:

- Eat 3 meals and 3 snacks, 2 to 3 hours apart.
- Eat my bedtime snack so that no more than 10 hours pass before I eat breakfast the next day.
- Drink plenty of fluids. I will choose caffeine-free, sugar-free beverages. I will limit coffee to 2 cups daily & not drink alcohol.
- Limit artificial sweeteners to 1 - 2 servings a day.
- Try to walk for 10 - 15 minutes after each meal, especially breakfast.

Include protein and carbohydrates at each meal and snack.

Eat at least 175 grams (g) of carbohydrates a day. For the amount of carbohydrates in one serving of food, see below:

◆ **Non-starchy Vegetables** = 5g ◆ **Protein** = 0g ◆ **Grains, Beans and Starchy Vegetables** = 15g ◆ **Fruit** = 15g ◆ **Dairy** = 15g

As a sample, meals may look like this:

Breakfast

Eat 15g carbohydrates from the Grains group

Include:

- ◆ 1-2 servings Protein
- ◆ unlimited servings of non-starchy Vegetables

Do not eat Fruit, yogurt or drink milk.

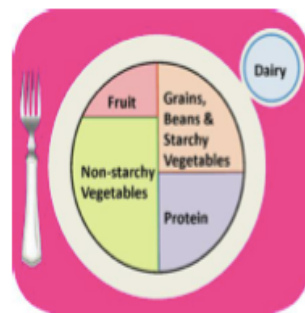
Example of a breakfast:

One egg omelet with cheese & vegetables and one slice toast

Lunch and Dinner

0-1 serving Fruit

unlimited servings non-starchy Vegetables



0-1 serving milk or yogurt

2 servings Grains, beans or starchy vegetables

2-3 servings Protein

Eat 45g carbohydrates, not including non-starchy vegetables

- ◆ Choose only one serving fruit, milk or yogurt at lunch and at dinner

Snacks

Eat 15g-30g carbohydrates from Fruit, Grains, or Dairy group

Include:

- ◆ At least 1 serving Protein with every snack
- ◆ unlimited servings of non-starchy Vegetables

Examples of snacks:

- ◆ 1 small tortilla + 1 ounce cheese
- ◆ 2 rice cakes + celery + 2 tablespoons nut butter
- ◆ 1/2 banana + 24 almonds

Pregnancy Management for the Clinician

- First intervention: modify diet and increase exercise (A1GDM)
 - Try for 2 weeks
- Recommend 30 minutes of walking on 4 or more days per week

How to Assess Glycemic Control

- Four times daily every day of the week
- Weekly blood sugar assessment by a health care provider
 - Average each meal segment over 5-7 days, if:
 - Average blood sugars > target goal **OR**
 - More than half of the values are > target goal
 - **Likely need medication**
- If fasting levels consistently ≥ 100 or post meals ≥ 150 , consider anti-hyperglycemic agent

Pregnancy Management for the Clinician

- Second intervention: medical management (A2GDM)
 - Oral Agents: Glibenclamide (Glyburide) and metformin
 - Neither is currently approved by FDA to treat GDM
 - Glibenclamide is the only sulfonylurea that has been well studied in pregnant women.
 - Subcutaneous agents: Insulin
 - Most studied, FDA approved
 - Does not cross the placenta

- **Insufficient evidence to determine whether insulin, glibenclamide, or metformin is superior in treating gestational diabetes.**

Which Medication to Use?

- Evidence-based
- Provider comfort level
- Patient compliance

Insulin vs Glibenclamide

- Studies have failed to find differences in maternal or fetal outcomes.
- Maternal serum glucose values are similar in women treated with insulin and women treated with glyburide.
- No evidence that infants born to mothers treated with glyburide weigh more or less than infants born to mothers treated with insulin.

Insulin vs Metformin

- A recent high-quality randomized trial compared insulin with metformin
- Metformin was effective at lowering blood sugar and safe for pregnant women and their fetuses
 - Higher rates of severe hypoglycemia in women using insulin
 - Women preferred metformin

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Spaulonci CP et al. Randomized trial of metformin vs insulin in the management of gestational diabetes. 2013 Jul;209(1):34.e1-7

Glibenclimide vs Metformin

- No adequate studies comparing the two
 - Metformin users:
 - Lower weight gain
 - Need increased dose due to renal filtration
 - Glibenclimide users:
 - More frequent dosing due to increase metabolism of the medication

Which Medication to Use?

- Depend on blood sugar values and gestational age
 - If fasting levels consistently ≥ 110 or post meals ≥ 160 , consider insulin
 - In gestational age:
 - < 20 weeks: consider insulin
 - > 20 weeks: consider oral agent

How To Use Glibenclamide in Pregnancy

- Glibenclamide: 1.25 mg vs 2.5 mg tablets
 - Fastings: Take at ~ 10pm night prior
 - Postmeals: Take 30 min before planned meal
 - Total daily dose is 20 mg
 - If more than one segment > 5mg, higher chance of requiring insulin

How To Use Anti-Hyperglycemics in Pregnancy

1. Total Daily Dose (TDD) – using total units of all of the current insulin doses, if applicable:

_____ = _____ **Current TDD**

2. TDD – using the patient’s current weight in kilograms and based on weeks of gestation:

Current Weight (lbs.): _____ Current Gestational Age: _____

- Determine patient’s current weight in kilograms (kgs.):
 - _____ lbs. x 0.45 = _____ kgs.
- Determine TDD of insulin :
 - _____ units/kg x _____ kgs. = _____ **Calculated TDD**

Weeks of Gestation	Total Daily Insulin Units/Kg
Week 1 - 18	0.7 U/kg actual body weight
Weeks 18 - 26	0.8 U/kg actual body weight
Weeks 26 - 36	0.9 U/kg actual body weight
Weeks 36 - 40	1 U/kg actual body weight

3. Determine bedtime NPH insulin dose:

- _____ TDD units x 0.17 = _____ NPH insulin units taken at bedtime
 (10 hours of coverage)

4. Determine pre-meal rapid-acting insulin doses:

- _____ TDD units x 0.83 = _____ TDD rapid-acting insulin units
 - _____ TDD rapid-acting insulin units x 0.33 = _____ pre-breakfast, pre-lunch
 & pre-dinner rapid-insulin units*

*Option: Use insulin to carbohydrate ratios pre-meals rather than set doses

Calculated Insulin Doses:

- _____ Rapid **Before Breakfast**
- _____ Rapid **Before Lunch**
- _____ Rapid **Before Dinner**
- _____ NPH **At Bedtime**

Weight Gain

TABLE 1: NEW RECOMMENDATIONS FOR TOTAL AND RATE OF WEIGHT GAIN DURING PREGNANCY, BY PREPREGNANCY BMI

Prepregnancy BMI	BMI ⁺ (kg/m ²)	Total Weight Gain (lbs)	Rates of Weight Gain* 2nd and 3rd Trimester (lbs/week)
Underweight	<18.5	28–40	1 (1–1.3)
Normal weight	18.5–24.9	25–35	1 (0.8–1)
Overweight	25.0–29.9	15–25	0.6 (0.5–0.7)
Obese (includes all classes)	≥30.0	11–20	0.5 (0.4–0.6)

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Institute of Medicine (IOM) 2009; Weight Gain During Pregnancy: Reexamining the Guidelines

Antenatal Testing

- Fetal Well Being
 - Antepartum fetal surveillance
 - A1GDM: 40 weeks
 - A2GDM, pre-gestational: 34 weeks
 - Poorly controlled: 28 weeks
- Fetal Growth
 - A1GDM: No recommendations
 - A2GDM, pre-gestational: ~ 38 weeks

Mode of Delivery

- Insufficient evidence to determine whether maternal or fetal outcomes are improved with an elective cesarean delivery compared to induction of labor or expectant management.
- In women with GDM or pre-gestational diabetes, offer cesarean delivery for fetal weight \geq 4500 gms

Timing of Delivery

- Insufficient evidence to determine whether early induction of labor compared with expectant management is better

Diabetes

Pregestational well-controlled*	Late preterm, early term birth not indicated	
Pregestational with vascular complications	Early term/term	37 0/7–39 6/7 weeks of gestation
Pregestational poorly controlled	Late preterm or early term	Individualized
Gestational—well controlled on diet or medications	Late preterm, early term birth not indicated	
Gestational—poorly controlled	Late preterm or early term	Individualized

* Uncomplicated, thus no fetal growth restriction, superimposed preeclampsia, or other complication. If these are present, then the complicating conditions take precedence and earlier delivery may be indicated.

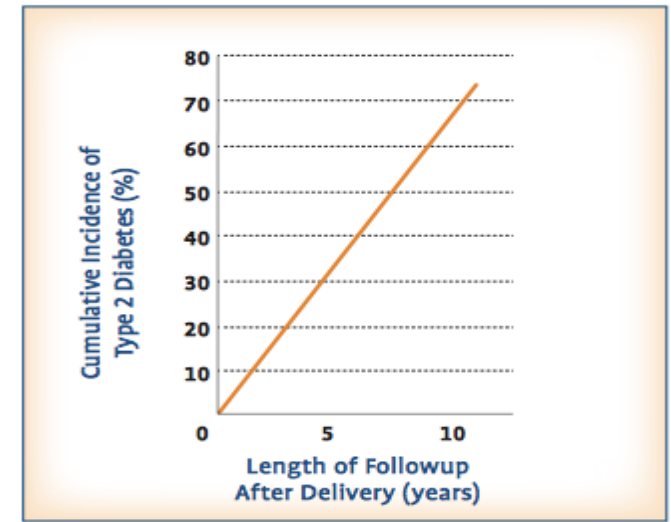
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Postpartum

- Women diagnosed with GDM earlier in pregnancy are more likely to develop type 2 diabetes than those diagnosed later in pregnancy.
- Follow-up 2 OGTT
 - 6-12 weeks
- Diagnose
 - Overt DM
 - Impaired fasting glucose
 - Impaired glucose tolerance

Figure 1. Cumulative incidence of type 2 diabetes in women with a history of gestational diabetes.



Based on data reported in *Diabetes Care* 2002;25:1862–1868.

Summary for Pregnancy Recommendations

- Screen all pregnant women in pregnancy
 - Once at intake
 - At 24-28 weeks
- Once diagnosed, refer for Maternal-Fetal Medicine consultation
- Diet modification and exercise
- Weekly blood sugar assessments
- Insulin, Glyburide and metformin are effective and all appear safe for use in pregnancy.
- Postpartum evaluation

Alcohol and Drug Abuse in Pregnancy

Is it a Problem?

- Prevalence
 - Alcohol: Pregnant women ages 15-44, nearly 12% admit to drinking during the previous month
 - Fetus at risk for fetal alcohol syndrome (FAS)
 - Drug use:
 - Illicit: 4% report illicit drug use
 - Rate is higher, 15.5%, among women ages 15-17
 - Prescription narcotic abuse: Difficult to quantify
 - Use surrogate marker of neonatal abstinence syndrome

Neonatal Abstinence Syndrome (NAS)

- Constellation of signs and symptoms in the postnatal period associated with the sudden withdrawal of maternally transferred opioid
 - Opioids (naturally occurring, synthetic, and semi-synthetic) are the most frequent drugs which give rise to the typical signs

When to Screen

- Initial Visit
- At 28 weeks
- At 36 weeks
- As needed

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How To Screen?

- Depending on your institution
 - Urine testing periodically
 - Initial OB intake and on any Labor and Delivery Admission
 - Serum alcohol testing

How To Screen?

- Make it a routine part of prenatal care
- Ask the same question of every patient
 - Reduces subjectivity in deciding who should and should not be screened.
 - Set the tone with statements such as “I ask all my patients these questions because it is important to their health and the health of their babies.”
- Figure out (ahead of time) your local resources and how you will respond to someone who reports alcohol or drug use
- **Be positive**

Substance Abuse Screening

The 4 P's

- Have you ever used drugs or alcohol during this **P**regnancy?
 - Have you had a problem with drugs or alcohol in the **P**ast?
 - Does your **P**artner have a problem with drugs or alcohol?
 - Do you consider one of your **P**arents to be an addict or alcoholic?
-
- Screening tool used as a way to begin a discussion about drug or alcohol use.
 - Any woman who answers yes to one or more questions should be referred for further assessment.

Intimate Partner Violence (IPV)

- Prevalence: In the US, 1.5 million incidents of physical or sexual assault annually in women
 - True prevalence of IPV is unknown
 - Affects as many as 324,000 pregnant women each year
 - Women pregnant within the last five years experience 12 percent higher rates of IPV
 - Possibly associated with unintended pregnancy, delayed prenatal care, smoking, alcohol and drug abuse
 - Intimate partner violence caused 2,340 deaths in 2007; (1,640 were female)

Intimate Partner Violence (IPV)

- Maternal and Fetal Consequences
 - Preterm birth
 - Low birth weight
 - Abruptio
 - IUFD

- Under Affordable Care Act, health care providers are required to offer domestic-violence screening and counseling to all women, and health insurance companies are required pay for those services

When to Screen

Pregnancy as a window of opportunity

- 96% of pregnant women receive prenatal care
- Average of 12–13 prenatal care visits
- Opportunity to develop trust in health care providers

During pregnancy, victims of IPV may be motivated by the:

- Desire to be a good parent
- Desire to prevent child abuse
- Opportunity to think about the future

When to Screen

- Initial Visit
- At 28 weeks
- At 36 weeks
- Postpartum
- As needed
 - Antepartum admission with delivery
 - Substance abuse-related problem
 - Mental-health related diagnosis

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How to Screen

- Location matters
 - Private and safe setting
 - Alone, not with her partner, friends, family, or caregiver
- Manner: no difference
 - In person: ‘How are things at home?’
 - Web based or paper questionnaire
- Repetition

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Chang et al. In Person versus computer screening for intimate partner violence among pregnant patients. Patient Educ Couns; 2012; 88(3) 443-338.

Intimate Partner Violence Screening

The 4 P's

- Have you ever been hit or hurt by your partner during **P**regnancy?
- Has your (*current or former*) partner been violent or abusive in the **P**ast?
- Does your (*current or former*) **P**artner have a problem with violence or abuse now?
- Do you consider one of your **P**arents to be violent or abusive?

Legal Reporting Requirements

- When are health care providers required to report?
 - Health care providers are required to make a report if they provide medical services to a patient whom they suspect is suffering from a physical injury due to a firearm or assaultive or abusive conduct.
- To whom?
 - Local law enforcement agency that has jurisdiction over the location in which the injury was sustained.
- What is the time limit to report?
 - A telephone report must be made immediately or as soon as practically possible, and a written report must be sent within two working days.

Legal Reporting Requirements

- Who should report?
 - All health care providers who fall under this law

- If treating a patient for injuries unrelated to the battering, but made aware that the patient has other physical injuries due to domestic violence, must I report?
 - The law is unclear on this point. Intent was that the provider does not have to be treating the domestic violence injury in order for the reporting requirements to apply; the provider must be providing medical services for a physical condition, and the patient must have a physical injury resulting from a firearm or assaultive or abusive conduct, but the former condition and latter injury do not have to be related.

Legal Reporting Requirements

- If I make a report, should I also document it in the medical record?
 - Reporting is NOT a substitute for documentation in the medical record.
 - Medical record is generally a more valuable source of documentation for legal cases
 - The reporting law emphasizes the need for documentation in the medical record, including:
 - Comments by the injured person regarding past domestic violence or regarding the name of any person suspected of inflicting the injury;
 - A map of the injured person's body showing and identifying injuries and bruises;
 - A copy of the reporting form.

Legal Reporting Requirements

- Am I required to tell patients, prior to screening for domestic violence, that I am mandated to make a report to local law enforcement if domestic violence is suspected?
 - No legal requirement
 - Ethically it would seem imperative to inform the patient of your obligation as a mandatory reporter.

- If the battered patient does not want a report to be made, must I make a report to local law enforcement?
 - Health practitioners are required to report if the terms of the law are met, whether or not the patient consents to a report.
 - Find out why the patient does not want a report made, and advocate on behalf of the patient's needs and concerns with the authorities.

Legal Implications for Health Care Providers

- It is a misdemeanor crime to not report a case of suspected abuse
- The doctor-patient and psychotherapist privileges, in any court proceeding or administrative hearing, does not hold up.
- Civil and criminal immunity is provided to health practitioners who make required or authorized reports pursuant.

Summary

- Diabetes in pregnancy should be monitored closely
- Recommend Maternal-Fetal Medicine consultation with co-management as needed
- Screen all women, multiple times, for substance abuse and IPV
- Know your local protocols for referring women with substance abuse and IPV.
- Be persistent is screening women, especially when there are risk factors

Thank you

- Questions

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