

Before, Between & Beyond Pregnancy
**The National Preconception Curriculum and Resources Guide
for Clinicians**

**Guidance for Preconception Care of Women with
Diabetes**

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This guidance should not substitute for clinical judgments or expert consultation.

Overview of Preconception Care of the Woman with Diabetes:

- Type I and Type II diabetes are among the most common medical comorbidities of pregnancy.
- Women with diabetes that preexists pregnancy have significantly increased risks for fetal loss, congenital anomalies (most commonly cardiac, CNS, skeletal, and urogenital), abnormal fetal growth, and obstetrical complications.
- Effective preconception care has been shown to decrease the likelihood of a poor pregnancy outcome, reduce resource utilization and decrease economic burden.
- With preconception planning and strict glycemic control prior to pregnancy, women can substantially minimize complications of pregnancy and increase the likelihood of delivering a healthy infant
- Primary care providers, endocrinologists, and others who care for women of childbearing age who have diabetes are in a unique position to assist them in optimizing their pregnancy outcome.
- The lowest risk of malformations has been reported for preconception programs which encourage contraceptive use and pregnancy planning, folic acid supplementation, proper diet, and excellent glycemic control
- Incorporation of these elements in the care of women with diabetes who are at risk for pregnancy is poor:
- In a recent retrospective review of the clinic notes from the annual visits of women ages 18-40 attending a general diabetes clinic, Varughese and colleagues found the mean HbA1c was 9.1% and that 41% of women were on potentially teratogenic medications. Documentation of preconception counseling was seen in only 25%.

Counseling and Care Guidance:

- All women should be assessed for risk of diabetes and tested as indicated.
- Women who have been diagnosed with diabetes should receive clear and supportive education about the advantages for planning when they want to become pregnant; education should include how preconceptional control of the disease improves the likelihood of a health pregnancy and healthy offspring.
- At every encounter, the woman's desire and risk for pregnancy should be assessed and, if pregnancy is not desired, contraceptive options should be explored and offered.
- As with all women of childbearing age, women with diabetes should be counseled to take a multivitamin with folic acid daily, whether pregnancy is planned or not. Whether women with preexisting diabetes would benefit from higher doses than those recommended by the CDC for all women has not been determined; therefore, the women with preexisting diabetes should be advised to take 0.4 mg of exogenous folic acid and eat a diet rich in folate.
- Women who have had a previous pregnancy complicated by a neural tube defect, have a personal or family history of neural tube defects or have a seizure disorder that is being treated with valproic acid or carbamazepine should be instructed to increase their supplementation to 4.0 mg folic acid starting one month before intended conception and continuing through the first trimester of pregnancy.
- Studies indicate that the prevention of fetal anomalies, spontaneous abortions and maternal complications is attained by the woman achieving euglycemia prior to conception. Studies have shown that when the HbA1c level is within 1% of normal, the rates of congenital deformities and spontaneous abortion are no different from those in women without diabetes. The commonly accepted goal is a level <7 (Greene et al., 1989, and Nielsen et al., 1997)
- Blood pressure control should be optimized, although maternal and fetal outcome is satisfactory with systolic values less than 160 or diastolic values less than 105.
- Many women with diabetes are on an ACE Inhibitor. ACE inhibitors should be discontinued and alternative therapies found before the woman attempts conception. (Cooper et al 2006).
- Thyroid dysfunction has a higher prevalence on women with diabetes. In light of the effect of thyroid dysfunction on early fetal neural development, annual screening for thyroid dysfunction in all patients with Type 1 Diabetes should be performed. Annual screening should be considered in Type 2 Diabetic women after age 30. (Perros, et al 1995)
- Obese women should be counseled on exercise and weight loss, as obesity is an independent risk factor associated with adverse obstetric outcome.
- Baseline urine protein and creatinine clearance should be obtained and evaluated.

- Women who have evidence of end organ damage or who have had diabetes for at least 10 years should receive an EKG to identify cardiac abnormalities which could be exacerbated by pregnancy.(Reece et al 1998)
- An ophthalmology evaluation should be obtained within a year of conception and retinopathy should be treated if found. (Rahman et al 2007)

Preconceptional Recommendations of CDC Select Panel on Preconception Care

Clinical Committee (Dunlop AL, Jack BW, Bottalico, JN, et al. The clinical content of preconception care: women with chronic medical conditions in: Preconception Health and Health Care: The clinical Content of Preconception care (Jack B & Atrash, H.K. ed) American J of Obstetrics and Gynecology, 199 (6B) 2008.)

- **All women of reproductive age with diabetes should be counseled about the importance of diabetes control before pregnancy. Important preconception counseling topics include maximizing glucose control; self-monitoring of blood glucose; maintaining optimal weight; evaluation for vascular complications; modification of drug treatment if conception is planned or likely; a regular exercise program; tobacco, alcohol, and substance abuse cessation; and social support to assist during the pregnancy. In the months before pregnancy, these women should demonstrate as near-normal glycosylated hemoglobin as possible for the purpose of decreasing the rate of congenital anomalies and spontaneous abortion. Those with suboptimal control of their diabetes should be encouraged to use effective birth.**

Strength of Recommendation: A; Quality of Evidence: I

- **Testing to detect prediabetes and type 2 diabetes in asymptomatic women should be considered in adults who are overweight or obese (BMI \geq 25 kg/m²) and who have 1 or more additional risk factors for diabetes including a history of GDM.**

Strength of recommendation: B

References:

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