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OREGON PUBLIC HEALTH DIVISION • DEPARTMENT OF HUMAN SERVICES

# POSTPARTUM SCREENING OF GESTATIONAL DIABETICS: DELAYING ONSET OF DIABETES

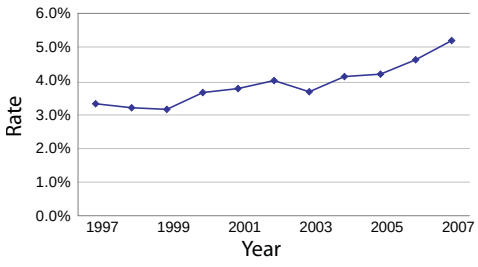
Gestational diabetes is glucose intolerance that begins or is first recognized during pregnancy. Each year in Oregon, close to 50,000 women give birth; of these, approximately 2500 (5%) have gestational diabetes. The consequences of gestational diabetes are immediate and long-term for both the child and mother. The infants of women with gestational diabetes are at increased risk for macrosomia (large-for-gestational age which occurs in 50% of these pregnancies), caesarean delivery, shoulder dystocia, and birth trauma.

In addition, children of gestational diabetic pregnancies face increased risk for obesity and diabetes later in life.[1] Most importantly for the mothers, gestational diabetes is an early warning sign of increased risk for future Type 2 diabetes after pregnancy.[2–4] This *CD Summary* reviews data from Oregon on gestational diabetes and provides screening recommendations and resources for health care providers.

## THE PROBLEM

Paralleling trends in obesity and diabetes among all Oregonians, the prevalence of gestational diabetes has increased 60%, from 3.3% in 1997, to 5.2% in 2007 (figure 1).

**Figure 1 Gestational diabetes rates, Oregon, 1997–2007**




Risk factors for development of gestational diabetes include obesity, increased maternal age, and low income. In Oregon, pregnant women 40–44 year of age were almost 7 times more likely to have gestational diabetes than women 15-19 years of age (114.0 per 1,000 compared to 17.1 per 1,000) (figure 2). The prevalence of gestational diabetes is higher among Asian/Pacific Islander (10%) and Hispanic women (7%) compared to white, African American and American Indian women (4%).

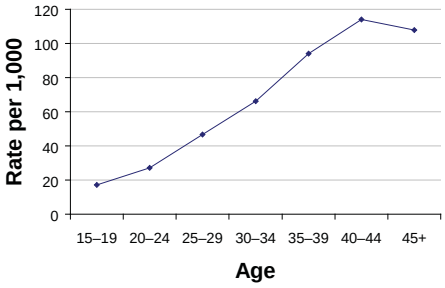
Of the 2500 Oregon women with gestational diabetes each year, about 30% will go on to develop Type 2 diabetes within five years after delivery. The risk increases most in the first 5 years after delivery and more slowly after 10 years.[4]

## PREVENTING PROGRESSION

The main risk factors for developing Type 2 diabetes after a diabetic pregnancy are: obesity, hypertention, low HDL, high triglycerides, lack of physical activity and increased maternal age. Lifestyle behavioral changes, including weight control and exercise between pregnancies, may prevent recurrence of gestational diabetes as well as modify onset and severity of Type 2 diabetes later in life.[5]

Fortunately, recent studies suggest that the progression from gestational diabetes to Type 2 diabetes can be delayed or prevented. A randomized trial in a multi-ethnic U.S. study of prediabetics (including women with gestational diabetes) found that an intensive lifestyle intervention (16 one-to-one sessions on diet, exercise and behavior modification by a case manager with some follow-up) decreased the incidence of Type 2 diabetes by 58% compared to placebo. They also found that use of metformin without intensive lifestyle intervention decreased the incidence of Type 2 diabetes by 31% compared to placebo.[6] The Finnish Diabetes Prevention Study, a randomized trial of subjects with impaired glucose tolerance, found that individualized counseling about diet and exercise decreased the risk of diabetes by 58%.[7] A large randomized Chinese study found that diet and/or exercise decreased progression from impaired glucose tolerance to diabetes.[5]

**Figure 2 Gestational diabetes by maternal age, Oregon, 2007**




The postpartum period offers an opportunity to motivate women to improve their health through lifestyle changes. Although Oregon providers do a stellar job of screening for gestational diabetes during pregnancy, screening following delivery, which could help to delay or prevent Type 2 diabetes among women with gestational diabetes, does not receive such high marks. In a 2007 study, 95% of Oregon obstetricians and family physicians (n=269) reported that they always screen pregnant women for gestational diabetes. But only 33% reported that they always or most of the time do a fasting blood glucose or glucose tolerance test in the postpartum period on women who had gestational diabetes. There was no difference between obstetricians and family physicians in their report of whether they always screened gestational diabetics after delivery.[8] Others have had similar findings.[9]

## POSTPARTUM SCREENING GUIDELINES

The most recent guidelines for diagnosis of Type 2 diabetes after gestational diabetes use threshold values of ≥126 mg/dL for fasting blood glucose and/or ≥200 mg/dL two hours after a 75-gram oral glucose tolerance test (ta-

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ble). At least one of these tests should be done 6-8 weeks postpartum; if they are normal they should be repeated at a minimum of 3-year intervals.[1]

## POSTPARTUM CARE OF GESTATIONAL DIABETICS

Women who have had gestational diabetes should be encouraged to breastfeed. They should also be counseled about diet (by a registered dietician if possible), exercise, and maintenance of normal BMI. Medications that worsen insulin resistance (e.g., glucocorticoids, nicotinic acid) should be avoided if possible. They should also be advised to seek medical attention if they develop symptoms suggestive of hyperglycemia. Education should also include the need for optimal glycemic regulation from the start of any subsequent pregnancy. Low-dose estrogen-progestogen oral contraceptives may be used in women with prior histories of gestational diabetes as long as no medical contraindications exist.[1] Patients can be referred to education materials available from the National Institutes of Health at: *http://diabetes.niddk.nih.gov/dm/pubs/gestational/#12.*

## CONCLUSIONS

All women with gestational diabetes need to screened (fasting blood glucose and/or oral glucose tolerance test) after delivery. Women need consultation with a registered dietician to educate and provide support in improving their diet. Wherever available, most women would benefit from ongoing case management and/or nutritional counseling after they have been diagnosed with gestational diabetes to set up long-term prevention, treatment and care to delay the onset of Type 2 diabetes.

## NEXT STEPS

Resources to address gestational diabetes may become available from the federal government. The Gestational Diabetes Act of 2007 (H.R. 1544) would create a Centers for Disease Control and Prevention (CDC) Research Advisory Committee to: expand and enhance surveillance and public health research on gestational diabetes; award competitive grants to nonprofit organizations or state health agencies for demonstration projects to reduce the incidence of gestational diabetes and obesity; and to encourage screening for gestational diabetes within state-based diabetes prevention and control programs to reduce the incidence of gestational diabetes and its related complications.[10]

**Postpartum evaluation for glucose intolerance in women with gestational diabetes**

| | Normal | Impaired Fasting Glucose or Impaired Glucose Tolerance | Diabetes Mellitus |
|---|---|---|---|
| Fasting Glucose | <110 mg/dL | 110–125 mg/dL | ≥126 mg/dL |
| 2-hour OGTT* | <140 mg/dL | 140–199 mg/dL | ≥200 mg/dL |

*Oral Glucose Tolerance Test using a 75-gram oral glucose load

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