Gestational Diabetes

GDM: Major Recommendations (2008)

Below you will find a list of Gestational Diabetes (GDM) Recommendations. You may also view the Executive Summary of Recommendations or print the guideline information at Print Reports.

Gestational Diabetes (GDM) Major Recommendations

GDM: Risk Assessment and Screening for Gestational Diabetes
GDM: Pregnant Women at Risk for GDM
GDM: MNT for Pregnant Women with IGT or GDM

Nutrition Assessment

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Nutrition Monitoring and Evaluation

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GDM: Prevention of Recurrence/Type 2 Diabetes

The recommendations listed below were originally developed for other ADA evidence-based nutrition practice guidelines, but have been integrated into the Gestational Diabetes Evidence-based Nutrition Practice Guideline and may provide additional guidance for the practitioner.

Diabetes Type 1 and 2 Evidence-Based Nutrition Practice Guideline for Adults Recommendations

DM: Fiber and Diabetes
DM: Carbohydrate Intake and Insulin Dose Adjustment
DM: Glycemic Index and Diabetes

Quick Links

Recommendations Summary

GDM: Risk Assessment and Screening for Gestational Diabetes Mellitus 2006

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)

GDM: Risk Assessment and Screening for Gestational Diabetes Mellitus

All pregnant women should be assessed for risk of gestational diabetes mellitus (GDM) at the first prenatal visit. Depending on level of risk, timing of screening for gestational diabetes mellitus (GDM) and/or impaired glucose tolerance (IGT) will differ. Most women are screened between 24 - 28 weeks of gestation. Research indicates the similarities between gestational diabetes mellitus (GDM) and impaired glucose tolerance (IGT), and both are associated with increased risks of poor maternal/neonatal outcomes if left untreated.

Rating: Strong
Imperative

- Risks/Harms of Implementing This Recommendation

- International consensus of the screening and diagnostic criteria have not been established

Screening may result in false-positives
Screening may result in psychological stress for some individuals
Screening may cause gastrointestinal upset and other symptoms in some individuals

Conditions of Application

Low risk: blood glucose testing not routinely required if all of the following characteristics are present:
- Member of an ethnic group with a low prevalence of GDM
- No known diabetes in first-degree relatives
- Age <25 years
- Weight normal before pregnancy
- Weight normal at birth
- No history of abnormal glucose metabolism
- No history of poor obstetric outcome

High risk: perform blood glucose testing as soon as feasible, if one or more of these are present:
- Severe obesity
- Strong family history of type 2 diabetes
- Previous history of: GDM, impaired glucose metabolism, or glucosuria
- High-risk ethnic group (such as Hispanic, African, Native American, South or East Asian, or Pacific Islands ancestry)

If GDM is not diagnosed, blood glucose testing should be repeated at 24 - 28 weeks or at any time a patient has symptoms or signs that are suggestive of hyperglycemia.

Potential Costs Associated with Application

- Costs and time associated with laboratory testing need to be addressed in screening. Insurance coverage for screening may vary.
- Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

Recommendation Narrative

Six studies were evaluated to investigate the relationship between Medical Nutrition Therapy on pregnancy outcomes in women with gestational diabetes mellitus.

- Medical Nutrition Therapy, initiated within one week of diagnosis and with a minimum of three nutrition visits, results in decreased hospital admissions and insulin use, improves likelihood of normal fetal and placental growth, and reduces risk of perinatal complications, especially when diagnosed and treated early (Svare et al, 2001; Taricco et al, 2003; Gabbe et al, 2004; Crowther et al, 2005; Reader et al, 2006; Supsanevithayakul et al, 2006).

Twenty studies were evaluated to investigate the relationship between impaired glucose tolerance (definitions vary) during pregnancy and poor outcomes.

- Two studies demonstrate the metabolic similarities between impaired glucose tolerance and gestational diabetes mellitus (Ergin et al, 2002; Retnakaran et al, 2006).
- Additional research notes increased risks of preterm birth (Yang et al, 2002; Hedderson et al, 2003; Lao and Ho, 2003), perinatal morbidity (Lao and Ho, 2001; Lao and Wong, 2002) and neonatal hypoglycemia (Tuffnell et al, 2003).

Recommendation Strength Rationale

Conclusion Statements are Grade I and Grade II

Minority Opinions

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

What is the evidence regarding Medical Nutrition Therapy on pregnancy outcomes (morbidity, birth weight, glucose control, pharmacological therapy, pre-term delivery, satisfaction with care) in women with gestational diabetes?

What is the relationship between impaired glucose tolerance and poor outcomes in pregnant women?

References


• References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process

Clinical Management Guidelines for Obstetrician-Gynecologists. ACOG Practice Guidelines Number 30,
Gestational Diabetes

Quick Links

Recommendations Summary

GDM: Pregnant Women at Risk for GDM 2006

For pregnant women at average or high risk for gestational diabetes mellitus (GDM), the RD should monitor weight gain, nutritional intake and physical activity. Research indicates that obesity, excessive weight gain prior to pregnancy and increased saturated fat intake are associated with the development of glucose abnormalities in pregnancy and increased risk of gestational diabetes. In addition, regular physical activity during pregnancy reduces the risk of gestational diabetes mellitus (GDM).

Rating: Weak
Conditional

Risks/Harms of Implementing This Recommendation

Contraindications to exercise during pregnancy may include but are not limited to: pregnancy-induced hypertension, premature rupture of membranes, intrauterine growth retardation, preterm labor or history of preterm labor, incompetent cervix/cervical cerclage, and persistent second or third trimester bleeding.

Conditions of Application

For pregnant women at average or high risk for gestational diabetes mellitus (GDM).
GDM risk assessment should be ascertained at the first prenatal visit.

Low risk:
- Member of an ethnic group with a low prevalence of GDM
- No known diabetes in first-degree relatives
- Age <25 years
- Weight normal before pregnancy
- Weight normal at birth
- No history of abnormal glucose metabolism
- No history of poor obstetric outcome

High risk:
- Severe obesity
- Strong family history of type 2 diabetes
- Previous history of: GDM, impaired glucose metabolism, or glucosuria
- High-risk ethnic group (such as Hispanic, African, Native American, South or East Asian, or Pacific Islands ancestry)

This recommendation applies to women with GDM for whom physical activity during pregnancy is not contraindicated. Medical clearance is recommended prior to initiating an exercise program.

Potential Costs Associated with Application

- Insurance coverage may vary.
- Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

Recommendation Narrative

Twelve studies were evaluated to investigate nutrition and physical activity interventions and the prevention of gestational diabetes.

- Obesity, excessive weight gain prior to pregnancy and increased saturated fat intake are associated with the development of glucose abnormalities in pregnancy and increased risk of gestational diabetes (Wang, Storlien et al, 2000; Bo, Menato et al 2001; Glazer et al, 2004; Saldana et al, 2004; Rudra et al, 2006).
- Evidence regarding the consumption of micronutrients are conflicting, as the relationship between the prevalence of gestational diabetes and vitamin and mineral intake may be related to nutritional adequacy of the diet and gestational weight gain; further research is needed in this area (Gunton et al, 2001; Lao et al, 2001; Tan et al, 2001; Lao et al, 2004; Zhang, Williams, Frederick et al, 2004; Zhang, Williams, Sørensen et al, 2004; Bo et al, 2005).

Fourteen studies were evaluated to investigate the relationship between physical activity during pregnancy and maternal/neonatal outcomes and glycemic control in women with gestational diabetes mellitus.

- Regular physical activity during pregnancy reduces the risk of gestational diabetes mellitus, as well as the common discomforts of pregnancy, without a negative effect on maternal or neonatal outcomes (ACOG, 1994; Clapp et al, 1996; Horns et al, 1996; Gray-Donald et al, 2000; Dempsey, Butler et al, 2004; Dempsey, Sørensen et al, 2004; Symons-Downs and Ulbrecht, 2006).
- Physical activity for 30 minutes per day for a minimum of three times per week is needed to aid with improved glycemic control. In addition, social support may encourage women with gestational diabetes mellitus to engage in physical activity (Langer and Hod, 1996; Soultanakis et al, 1996; Avery et al, 1997; 4th International Workshop-Conference on Gestational Diabetes Mellitus, 1998; Avery and Walker, 2001; Brankston et al, 2004).
- In addition, social support may encourage women with gestational diabetes mellitus to engage in physical activity (Thornton et al, 2006).

**Recommendation Strength Rationale**

- Conclusion Statement were both given Grade II.

**Minority Opinions**

Consensus reached.

**Supporting Evidence**

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- What are the nutrition interventions that may prevent the diagnosis of gestational diabetes mellitus in pregnant women?
- In women with GDM, what is the relationship between physical activity during pregnancy and maternal/neonatal outcomes and glycemic control?

**References**


Lao TT, Chan PL, Tam KF. Gestational diabetes mellitus in the last trimester - a feature of maternal iron excess? Diabetes Medicine 2001;18:218-223.


Clapp JF. Morphometric and neurodevelopmental outcome at age five years of the offspring of women who continued to exercise regularly throughout pregnancy. J Pediatr 1996;129:856-863.


References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


Quick Links

Recommendations Summary

GDM: MNT for Pregnant Women with IGT or GDM 2006

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

Recommendation(s)

GDM: MNT for Women with GDM

The Registered Dietitian (RD) should initiate Medical Nutrition Therapy (MNT) within one week after diagnosis of gestational diabetes mellitus (GDM), and include a minimum of three nutrition visits. Research indicates that MNT results in improved maternal and neonatal outcomes, especially when diagnosed and treated early.

Rating: Strong
Imperative

GDM: MNT for Pregnant Women with IGT

For women with impaired glucose tolerance (IGT) during pregnancy, the Registered Dietitian (RD) should initiate the same recommendations of Medical Nutrition Therapy (MNT) as those for gestational diabetes mellitus (GDM). Research indicates that impaired glucose tolerance (IGT) and gestational diabetes mellitus (GDM) carry similar risks of adverse
outcomes.

**Rating: Strong**

**Imperative**

- **Risks/Harms of Implementing This Recommendation**
  
  None.

- **Conditions of Application**
  
  None.

- **Potential Costs Associated with Application**
  
  - Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

**Recommendation Narrative**

Six studies were evaluated to investigate the relationship between Medical Nutrition Therapy on pregnancy outcomes in women with gestational diabetes mellitus.

- Medical Nutrition Therapy, initiated within one week of diagnosis and with a minimum of three nutrition visits, results in decreased hospital admissions and insulin use, improves likelihood of normal fetal and placental growth, and reduces risk of perinatal complications, especially when diagnosed and treated early (Svare et al, 2001; Taricco et al, 2003; Gabbe et al, 2004; Crowther et al, 2005; Reader et al, 2006; Sunsaneevithayakul et al, 2006).

Twenty studies were evaluated to investigate the relationship between impaired glucose tolerance (definitions vary) during pregnancy and poor outcomes.

- Two studies demonstrate the metabolic similarities between impaired glucose tolerance and gestational diabetes mellitus (Ergin et al, 2002; Retnakaran et al, 2006).


- Additional research notes increased risks of preterm birth (Yang et al, 2002; Hedderson et al, 2003; Lao and Ho, 2003), perinatal morbidity (Lao and Ho, 2001; Lao and Wong, 2002) and neonatal hypoglycemia (Tuffnell et al, 2003).

**Recommendation Strength Rationale**

Conclusion Statements were given a Grade I and II.

**Minority Opinions**

Consensus reached.

- **Supporting Evidence**
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  **What is the evidence regarding Medical Nutrition Therapy on pregnancy outcomes (morbidity, birth weight, glucose control, pharmacological therapy, pre-term delivery, satisfaction with care) in women with gestational diabetes?**

  **What is the relationship between impaired glucose tolerance and poor outcomes in pregnant women?**

- **References**
  


**Recommendations Summary**

**GDM: Assessment of Food Intake, Physical Activity and Medications 2006**

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- **Recommendation(s)**

*Gestational Diabetes*

*Gestational Diabetes (GDM) Guideline (2008)*

GDM: Assess Food Intake, Physical Activity and Medications

The Registered Dietitian (RD) should assess food intake, physical activity and medications of pregnant women, including those with gestational diabetes mellitus (GDM). Evaluation of a pregnant woman's dietary pattern, augmented by questions about medications, special concerns, conditions, and/or food preferences that might affect her nutritional adequacy or needs, provides the basis for Medical Nutrition Therapy (MNT).

Rating: Consensus
Imperative

- Risks/Harms of Implementing This Recommendation
  None.

- Conditions of Application
  None.

- Potential Costs Associated with Application
  Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

- Recommendation Narrative
  Committee on Nutritional Status During Pregnancy and Lactation, Institute of Medicine Clinical Recommendations:
  - Routine assessment of dietary practices is recommended for all pregnant women in the United States to allow evaluation of the need for improved diet or vitamin or mineral supplements
  - Periodic prenatal care provides opportunities for identifying potential problems and intervening as early as possible

- Recommendation Strength Rationale
  The ADA Gestational Diabetes Mellitus Expert Work Group concurs with the clinical recommendations from the Committee on Nutritional Status During Pregnancy and Lactation, Institute of Medicine.

- Minority Opinions
  Consensus reached.

- Supporting Evidence
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- References
  References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


- Gestational Diabetes

Recommendations Summary

GDM: Assessment of BMI and Weight Gain 2006

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)
  GDM: Assessment of BMI and Weight Gain

The Registered Dietitian (RD) should assess body mass index (based on actual or estimated prepregnancy weight) as a baseline to determine recommended weight gain in pregnant women, including those with gestational diabetes mellitus (GDM). Body mass index (BMI) is a better indicator of maternal nutritional status than is weight alone.

Rating: Consensus
Imperative

- Risks/Harms of Implementing This Recommendation
None.

- **Conditions of Application**

None.

- **Potential Costs Associated with Application**

  - Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

- **Recommendation Narrative**

Committee on Nutritional Status During Pregnancy and Lactation, Institute of Medicine Clinical Recommendations:

  - Prior to conception use consistent and reliable procedures to accurately measure and record in the medical record the woman’s height and weight without shoes
  - Determine the woman’s prepregnancy BMI
  - Measure height and weight at the first prenatal visit carefully by procedures that have been rigorously standardized at the site of prenatal care
  - Estimate the woman’s gestational age from the onset of her last menstruation
  - Record weight in a table and plot it on a chart included in the obstetric record

For BMI < 19.8: recommended total weight gain of 28 - 40 lbs (12.5 - 18 kg), at rate of approximately 0.5 kg (slightly more than 1 lb) per week in the second and third trimesters of pregnancy

For BMI 19.8 - 26: recommended total weight gain of 25 - 35 lbs (11.5 - 16 kg), at rate of approximately 0.4 kg (~1 lb) per week in the second and third trimesters of pregnancy

For BMI > 26 - 29: recommended total weight gain of 15 - 25 lbs (7 - 11.5 kg), at rate of 0.3 kg (0.66 lb) per week in the second and third trimesters of pregnancy

For BMI > 29: recommended total weight gain of at least 15 lbs (6.8 kg), at individually determined rate

- **Recommendation Strength Rationale**

The ADA Gestational Diabetes Mellitus Expert Work Group concurs with the clinical recommendations from the Committee on Nutritional Status During Pregnancy and Lactation, Institute of Medicine.

- **Minority Opinions**

Consensus reached.

- **Supporting Evidence**

  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  - References
  - References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


- **Gestational Diabetes**
- **Gestational Diabetes (GDM) Guideline (2008)**

**Quick Links**

**Recommendations Summary**

**GDM: Caloric Intake 2006**

*Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.*

- **Recommendation(s)**

  **GDM: Caloric Intake for Normal and Underweight Women**

  The Registered Dietitian (RD) should encourage normal and underweight pregnant women, including those with gestational diabetes mellitus (GDM), to consume adequate calories to promote appropriate weight gain, with guidance from the Dietary Reference Intakes (DRI) for pregnant women. Research indicates that low or inadequate weight gain during pregnancy is associated with an increased risk of preterm delivery, regardless of prepregnancy BMI levels.
GDM: Caloric Intake for Overweight/Obese Women with GDM

Since weight loss in pregnancy is not recommended, the Registered Dietitian (RD) should encourage a modest energy restriction to slow weight gain in women with gestational diabetes mellitus (GDM) who are also overweight/obese. Caloric restriction (~70% of the Dietary Reference Intakes (DRI) for pregnant women) results in considerable slowing of maternal weight gain in obese women with gestational diabetes mellitus (GDM), without causing maternal or fetal compromise and/or ketonuria.

Risks/Harms of Implementing This Recommendation
- Caloric restriction may result in non-adherence to the nutrition prescription

Conditions of Application
These recommendations only apply to singleton gestation.

BMI Categories based on the Institute of Medicine:
- Underweight: BMI < 19.8
- Normal weight: BMI 19.8 - 26
- Overweight: BMI > 26 - 29
- Obese: BMI > 29

Potential Costs Associated with Application
- Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

Recommendation Narrative
- Two clinical trials report that obese women who develop GDM have a higher risk of adverse perinatal outcomes than normal weight women with GDM. In addition, caloric restriction (~70% DRI for pregnant women) can result in a considerable slowing of maternal weight gain in obese women with GDM, without causing maternal or fetal compromise and/or ketonuria (Rae et al, 2000; Langer et al, 2005).
- Four studies report that both prepregnancy underweight (BMI<19) and obesity (BMI>30) are associated with an increased risk of preterm delivery. However, low or inadequate weight gain during pregnancy, not excessive weight gain, is associated with an increased risk of preterm delivery, regardless of prepregnancy BMI levels (Churchill et al, 1969; Scholl et al, 1995; Siega-Riz et al, 1996; Ray et al, 2001).
- Two studies were evaluated to investigate caloric intake and appropriate weight gain. Research on caloric requirements is limited (Durnin et al, 1985; Ho et al, 2005); further research is needed on the determination of caloric requirements in women with gestational diabetes mellitus.
- American Diabetes Association Recommendation: Adequate energy intake that provides appropriate weight gain is recommended during pregnancy. Weight loss is not recommended; however, for overweight and obese women with GDM, modest energy and carbohydrate restriction may be appropriate (Grade E).

Recommendation Strength Rationale

Minority Opinions
Consensus reached.

Supporting Evidence
The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

What is the relationship between caloric restriction, weight management and ketonuria for the obese woman with gestational diabetes mellitus?

In women with GDM, is there a particular caloric intake recommendation for appropriate weight gain?

References
References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


Gestational Diabetes


Quick Links

Recommendations Summary

GDM: Macronutrient and Micronutrient Intake 2006

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)

GDM: Carbohydrate Intake

The Registered Dietitian (RD) should encourage pregnant women, including those with gestational diabetes mellitus (GDM), to consume a minimum of 175 grams of carbohydrate per day based on the Dietary Reference Intake (DRI) for pregnant women for provision of glucose to the fetal brain and to prevent ketosis. Total carbohydrate intake should be less than 45% of energy to prevent hyperglycemia in women with GDM. Carbohydrate intake affects postprandial blood glucose levels; increased postprandial blood glucose levels are associated with increased incidence of large-for-gestational age infants and increased rate of Cesarean sections. Research is limited regarding fiber intake and glycemic index in women with gestational diabetes mellitus (GDM).

Rating: Fair
Imperative

GDM: Protein and Fat Intake

The Registered Dietitian (RD) should encourage pregnant women, including those with gestational diabetes mellitus (GDM), to consume adequate protein and fat based on the Dietary Reference Intakes (DRI) for pregnant women. Research is limited regarding protein and fat intake in women with gestational diabetes mellitus (GDM).

Rating: Fair
Imperative

GDM: Vitamin and Mineral Supplementation

If usual dietary intake does not meet the Dietary Reference Intakes (DRI) for pregnant women, including those with gestational diabetes mellitus (GDM), the Registered Dietitian (RD) should encourage vitamin and mineral supplementation to prevent nutritional deficiencies.

Rating: Consensus
Conditional
Risks/Harms of Implementing This Recommendation

- Some individuals may not tolerate vitamin and/or mineral supplementation

Conditions of Application

The recommendation on Vitamin and Mineral Supplementation may be especially important for women who do not ordinarily consume an adequate diet and those in high-risk categories, such as women carrying more than one fetus, heavy cigarette smokers, and alcohol and drug abusers.

Potential Costs Associated with Application

- Vitamin and mineral supplementation may be costly
- Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

Recommendation Narrative

Ten studies were evaluated to investigate the consumption of macronutrients in pregnant women and women with gestational diabetes mellitus.

- Carbohydrate intake affects postprandial blood glucose levels; increased postprandial blood glucose levels are associated with increased incidence of large-for-gestational age infants and increased rate of Cesarean sections (Peterson and Jovanovic-Peterson, 1991; Clapp, 1998; Parretti et al, 2001; Romon et al, 2001).
- Three studies showed improved outcomes at carbohydrate intakes of less than 45% of energy (Snyder et al, 1994; Major et al, 1998; Kalkwarf et al, 2001).
- Research is limited regarding protein, fat, fiber and glycemic index in women with gestational diabetes mellitus (Lauszus et al, 2001; Sloan et al, 2001; Loosemore et al, 2004); further research is needed in these areas.

Recommendation Strength Rationale

Conclusion Statement was given Grade II.

Minority Opinions

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

Is there a specific amount, type, form of carbohydrate, fat and protein for women with gestational diabetes?

References

Clapp JE. Effect of dietary carbohydrate on the glucose and insulin response to mixed caloric intake and exercise in both nonpregnant and pregnant women. Diabetes Care 1998; (Suppl 2) 21:B107-B112.


References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process

Gestational Diabetes


Quick Links

Recommendations Summary

GDM: Physical Activity 2006

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- **Recommendation(s)**
  - **GDM: Physical Activity**

Unless contraindicated, the Registered Dietitian (RD) should encourage pregnant women, including those with gestational diabetes mellitus (GDM), to participate in physical activity for 30 minutes per day for a minimum of three times per week. Research indicates that regular physical activity during pregnancy reduces the common discomforts of pregnancy without a negative effect on maternal or neonatal outcomes, and improves glycemic control in those with gestational diabetes mellitus (GDM).

**Rating:** Fair
**Conditional**

- **Risks/Harms of Implementing This Recommendation**
  - Physical activity may cause hypoglycemia in women with gestational diabetes mellitus (GDM) using pharmacological therapy.
  - Contraindications to exercise during pregnancy may include but are not limited to: pregnancy-induced hypertension, premature rupture of membranes, intrauterine growth retardation, preterm labor or history of preterm labor, incompetent cervix/cervical cerclage, and persistent second or third trimester bleeding.

- **Conditions of Application**

This recommendation applies to women with GDM for whom physical activity during pregnancy is not contraindicated. Medical clearance is recommended prior to initiating an exercise program.

- **Potential Costs Associated with Application**

None.

- **Recommendation Narrative**

Fourteen studies were evaluated to investigate the relationship between physical activity during pregnancy and maternal/neonatal outcomes and glycemic control in women with gestational diabetes mellitus.

- Regular physical activity during pregnancy reduces the risk of gestational diabetes mellitus, as well as the common discomforts of pregnancy, without a negative effect on maternal or neonatal outcomes (ACOG, 1994; Clapp et al, 1996; Horns et al, 1996; Gray-Donald et al, 2000; Dempsey, Butler et al, 2004; Dempsey, Sorensen et al, 2004; Symons-Downs and Ulfrecht, 2006).

- Physical activity for 30 minutes per day for a minimum of three times per week is needed to aid with improved glycemic control. In addition, social support may encourage women with gestational diabetes mellitus to engage in physical activity (Langer and Hod, 1996; Soutlanakis et al, 1996; Avery et al, 1997; 4th International Workshop-Conference on Gestational Diabetes Mellitus, 1998; Avery and Walker, 2001; Brankston et al, 2004).

- In addition, social support may encourage women with gestational diabetes mellitus to engage in physical activity (Thornton et al, 2006).

- **Recommendation Strength Rationale**

  - Conclusion Statement was given Grade II

- **Minority Opinions**

  Consensus reached.

- **Supporting Evidence**

  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).
In women with GDM, what is the relationship between physical activity during pregnancy and maternal/neonatal outcomes and glycemic control?

**References**

- **Summary and Recommendations of the 4th International Workshop-Conference on Gestational Diabetes Mellitus. Metzger BE, Coustan DR. Diabetes Care 1998;21 Suppl 2:B161-167.**
- **Avery MD, Leon AS, Kopher RA. Effects of a partially home-based exercise program for women with gestational diabetes. Obstet Gynecol 1997;89:10-15.**
- **Clapp JF. Morphometric and neurodevelopmental outcome at age five years of the offspring of women who continued to exercise regularly throughout pregnancy. J Pediatr 1996;129:856-863.**
- **Horns PN, Ratcliffe LP, Leggett JC, Swanson MS. Pregnancy outcomes among active and sedentary primiparous women. JOGNN 1996; 25:49-54.**
- **Symons Downs D, Ulbrecht J. Understanding exercise beliefs and behaviors in women with gestational diabetes mellitus. Diabetes Care 29:236-240, 2006.**
- **Thornton PL, Kieffer EC, Salabarria-Pena Y, Odoms-Young A, Willis SK, Kim H, Salinas MA. Weight, diet, and physical activity-related beliefs and practices among pregnant and postpartum Latino women: The role of social support. Maternal and Child Health Journal, 2006;10:95-104.**

**Gestational Diabetes**

**Gestational Diabetes (GDM) Guideline (2008)**

**Quick Links**

**Recommendations Summary**

**GDM: Blood Glucose Monitoring and Ketone Testing 2006**

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

**Recommendation(s)**

**GDM: Blood Glucose Monitoring**

The Registered Dietitian (RD) should advise women with gestational diabetes mellitus (GDM) to monitor their blood glucose, including fasting and postprandial levels. Several studies report a correlation between elevated fasting and postprandial blood glucose values with poor maternal and neonatal outcomes.

**Rating: Fair**

Imperative

**GDM: Ketone Testing**

The Registered Dietitian (RD) should recommend ketone testing for women with gestational diabetes mellitus (GDM) who have insufficient calorie and/or carbohydrate intake and/or weight loss. Two of three studies regarding ketonemia and ketonuria with poor metabolic control during a diabetic pregnancy report a positive association with lower IQ in offspring.

Rating: Fair
Conditional

- **Risks/Harms of Implementing This Recommendation**
  - Frequent glucose self-monitoring may cause pain and discomfort
  - Individuals should know of proper disposal of hazardous waste

- **Conditions of Application**
  - Persons must receive education and training in order to use the SMBG devices and data correctly.
  - Persons with low hematocrit values and their healthcare providers should be aware of inaccurate blood glucose monitoring results.
  - Ketone testing is recommended for women with gestational diabetes mellitus (GDM) who may have insufficient calorie and/or carbohydrate intake and/or weight loss.
  - Not all healthcare professionals recognize the value of ketone testing.
  - A1C is not routinely used to assess blood glucose control in gestational diabetes mellitus (GDM).

- **Potential Costs Associated with Application**
  - Costs and time associated with blood glucose monitoring and ketone testing need to be addressed.
  - Insurance coverage for blood glucose monitoring and ketone testing may vary.
  - Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

- **Recommendation Narrative**
  Sixteen studies were evaluated regarding blood glucose monitoring and ketone testing in pregnant women and in women with gestational diabetes mellitus.
  - Six studies report that fasting blood glucose monitoring results in improved glucose control and therefore less risk of poor maternal and neonatal outcomes (Langer and Mazze, 1986; Langer et al, 1989; Langer et al, 1995; Homko et al, 2002; Banerjee et al, 2003; Chen et al, 2003).
  - Seven studies report a correlation between postprandial blood glucose values with improved maternal and neonatal outcomes; however, ideal postprandial testing timing is unknown (Combs et al, 1992; De Veciana et al, 1995; Parretti et al, 2001; Sivan et al, 2001; Ben-Haroush et al, 2004; Buhling et al, 2005; Weisz et al, 2005).
  - American Diabetes Association Recommendation: Ketonemia from ketoacidosis or starvation ketosis should be avoided (Grade C).

- **Recommendation Strength Rationale**
  Conclusion Statement was given Grade II.

- **Minority Opinions**
  Consensus reached.

- **Supporting Evidence**
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  What is the relationship between blood glucose monitoring and ketone testing in women with GDM?

- **References**


References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


GDM: Use of Non-Nutritive Sweeteners 2006

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

**Recommendations Summary**

GDM: Use of Non-Nutritive Sweeteners

If pregnant women, including those with gestational diabetes mellitus (GDM), choose to consume products containing non-nutritive sweeteners, the Registered Dietitian (RD) should inform them that only FDA-approved non-nutritive sweeteners should be consumed and that moderation is encouraged. Research in this area is extremely limited.

**Rating: Consensus**

**Conditional**

- **Risks/Harms of Implementing This Recommendation**

Nonnutritive sweeteners are generally safe when consumed during pregnancy within the acceptable daily intake (ADI) levels established by the Food and Drug Administration (FDA), with the exception of saccharin due to slowed fetal clearance and aspartame in women with phenylketonuria.

- **Conditions of Application**

This recommendation applies to pregnant women with gestational diabetes mellitus (GDM) who choose to consume non-nutritive sweeteners.

- **Potential Costs Associated with Application**

None.

**Recommendation Narrative**

- While there are recognizable benefits of the use of nonnutritive sweeteners with the maintenance of blood glucose control, to date there is limited evidence to support the use or nonuse of nonnutritive sweeteners (NNS) in pregnancy, and even less evidence addressing this issue specifically in gestational diabetes mellitus (GDM).

- The FDA has approved aspartame, acesulfame potassium, saccharin and neotame for general use, while stevia has not been approved.

- The use of FDA-approved nonnutritive sweeteners during pregnancy is acceptable with the exception of aspartame for pregnant women with hyperphenylalaninemia in the blood and phenylketonuria (Levy et al, 1983).

- The American Medical Association suggests avoiding saccharin during pregnancy due to possible slow fetal clearance (Council on Scientific Affairs of the American Medical Association, 1985).

- American Diabetes Association Recommendation: Sugar alcohols and nonnutritive sweeteners are safe when consumed within the acceptable daily intake (ADI) levels established by the Food and Drug Administration (Grade A).

**Recommendation Strength Rationale**

- Conclusion Statement was given Grade IV

**Minority Opinions**

Consensus reached.

**Supporting Evidence**

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- What is the evidence regarding the use of nonnutritive sweeteners such as saccharin, aspartame, acesulfame potassium, sucralose, neotame and stevia in women with GDM?

- What are the estimated non-nutritive sweetener consumption levels (saccharin, aspartame, acesulfame-K, sucralose, neotame) and are they within acceptable daily intake limits?

**References**


- References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


Gestational Diabetes

Quick Links

Recommendations Summary

GDM: Promotion of Breastfeeding 2006

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- **Recommendation(s)**
  - GDM: Promotion of Breastfeeding

  Unless contraindicated, the Registered Dietitian (RD) should encourage breastfeeding in pregnant women, including those with gestational diabetes mellitus (GDM). Research indicates that even short duration of breastfeeding results in long-term improvements in glucose metabolism and may also reduce the risk of type 2 diabetes in children.

  **Rating:** Fair
  **Conditional**

  - **Risks/Harms of Implementing This Recommendation**
    - None.

  - **Conditions of Application**
    - Contraindications to breastfeeding include:
      - HIV infection
      - Use of some medications
      - Substance abuse

  - **Potential Costs Associated with Application**
    - Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

  - **Recommendation Narrative**
    - A matched population study and two reviews were evaluated to investigate breastfeeding in women with gestational diabetes mellitus.
      - Short duration of breastfeeding results in long-term improvements in glucose metabolism even after adjustment for maternal age, BMI, and use of insulin during pregnancy (McManus et al, 2001; Reader and Franz, 2004; Taylor et al, 2005).
      - Breastfeeding may also reduce the risk of type 2 diabetes in children (Taylor et al, 2005).
      - Further research is needed regarding breastfeeding in women with gestational diabetes mellitus.

  - **Recommendation Strength Rationale**
    - Conclusion Statement was given Grade III

  - **Minority Opinions**
    - Consensus reached.

- **Supporting Evidence**
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  **What is the evidence of the relationship between breastfeeding and women with GDM?**

  - **References**

Gestational Diabetes

Quick Links

Recommendations Summary

GDM: Prevention of GDM Recurrence / Type 2 Diabetes 2006

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)
- GDM: Weight Loss After Delivery

For women with gestational diabetes mellitus (GDM) who are overweight/obese or with above recommended weight gain during pregnancy, the Registered Dietitian (RD) should advise weight loss after delivery which includes a combination of diet modification and physical activity. Research indicates that the risks of recurrent gestational diabetes (GDM) or development of type 2 diabetes can be reduced with weight loss.

Rating: Strong
Conditional

- Risks/Harms of Implementing This Recommendation
  None.

- Conditions of Application

This recommendation applies to women with gestational diabetes mellitus (GDM) who are overweight/obese or with above recommended weight gain during pregnancy. For further information on a comprehensive weight management approach see ADA’s Adult Weight Management Evidence-based Nutrition Practice Guideline.

- Potential Costs Associated with Application

  Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

- Recommendation Narrative

Five studies were evaluated to investigate the relationship between nutrition interventions and the recurrence of gestational diabetes mellitus in women with a history of GDM.

  - In three studies reporting recurrence of GDM, prevalence ranged from 30% to 65% (Moses et al, 1996; MacNeill et al, 2001; Nohira et al, 2006).
  - Five studies evaluating modifiable risk factors for GDM recurrence include higher prepregnancy body mass index and weight gain between pregnancies (Philipson et al, 1989; Moses et al, 1996; Moses et al, 1997; MacNeill et al, 2001; Nohira et al, 2006).

Seven studies were evaluated to investigate the relationship between nutrition interventions and the diagnosis of type 2 diabetes in women with a history of gestational diabetes.

  - In four studies reporting development of type 2 diabetes, ranging from two to fifteen years in length, prevalence ranged from 15% to 40% (Dalfra et al, 2001; Linne et al, 2002; Lauenborg et al, 2004; Stage et al, 2004).
  - All seven studies examining the association between history of GDM and type 2 diabetes mellitus reported that the risks of developing diabetes can be reduced with weight loss (Coustan et al, 1993; Dalfra et al, 2001; Linne et al, 2002; Schranz et al, 2002; Lauenborg et al, 2004; Stage et al, 2004; Smith et al, 2005).
  - American Diabetes Association Recommendation: Because GDM is a risk factor for subsequent type 2 diabetes, after delivery, lifestyle modifications aimed at reducing weight and increasing physical activity are recommended (Grade A).

- Recommendation Strength Rationale

  - Conclusion Statements were both given Grade I

- Minority Opinions

  Consensus reached.
• **Supporting Evidence**

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

**What are the nutrition interventions that may prevent the diagnosis of type 2 diabetes in women with previous GDM?**

**What are the nutrition interventions that may prevent the recurrence of GDM in women with previous GDM?**

• **References**


• **References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process**


• **Gestational Diabetes**

• **Gestational Diabetes (GDM) Guideline (2008)**

**Recommendations Summary**

**GDM: Alcohol Consumption 2006**

[Click here](#) to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the **Supporting Evidence Section** below.

• **Recommendation(s)**

  **GDM: Alcohol Consumption**

  The Registered Dietitian (RD) should advise pregnant women, including those with gestational diabetes mellitus (GDM), to avoid the consumption of alcohol, including alcohol used in cooking. No amount of alcohol consumption can be considered safe during pregnancy. Alcohol use during pregnancy increases the risk of alcohol-related birth defects, including growth deficiencies, facial abnormalities, central nervous system impairment, behavioral disorders, and...
impaired intellectual development.

**Rating: Consensus**
**Imperative**

- **Risks/Harms of Implementing This Recommendation**
  None.

- **Conditions of Application**
  None.

- **Potential Costs Associated with Application**
  None.

- **Recommendation Narrative**

  2005 Advisory from the U.S. Surgeon General, Vice Admiral Richard H. Carmona, MD, MPH, FACS:
  - Alcohol consumed during pregnancy increases the risk of alcohol-related birth defects, including growth deficiencies, facial abnormalities, central nervous system impairment, behavioral disorders, and impaired intellectual development.
  - No amount of alcohol consumption can be considered safe during pregnancy.
  - Alcohol can damage a fetus at any stage of pregnancy. Damage can occur in the earliest weeks of pregnancy, even before a woman knows that she is pregnant.
  - The cognitive deficits and behavioral problems resulting from prenatal alcohol exposure are lifelong.
  - Alcohol-related birth defects are completely preventable.

  For these reasons:
  1. A pregnant woman should not drink alcohol during pregnancy.
  2. A pregnant woman who has already consumed alcohol during her pregnancy should stop in order to minimize further risk.
  3. A woman who is considering becoming pregnant should abstain from alcohol.
  4. Recognizing that nearly half of all births in the United States are unplanned, women of childbearing age should consult their physician and take steps to reduce the possibility of prenatal alcohol exposure.
  5. Health professionals should inquire routinely about alcohol consumption by women of childbearing age, inform them of the risks of alcohol consumption during pregnancy, and advise them not to drink alcoholic beverages during pregnancy.

- **Recommendation Strength Rationale**

  The ADA Gestational Diabetes Mellitus Expert Work Group concurs with the clinical recommendations from the National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control, Department of Health and Human Services, in coordination with the National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effect.

- **Minority Opinions**

  Consensus reached.

- **Supporting Evidence**

  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  - **References**
    - References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


  - **Gestational Diabetes**

**Quick Links**

**Recommendations Summary**

GDM: Pharmacological Therapy for Treatment of GDM

When optimal blood glucose levels have not been maintained with medical nutrition therapy (MNT) and/or the rate of fetal growth is excessive, the Registered Dietitian (RD) should recommend the initiation of pharmacological therapy for treatment of women with gestational diabetes mellitus (GDM). Research indicates that pharmacological therapy, such as the use of insulin, insulin analogs and glyburide, improves glycemic control and reduces the incidence of poor maternal and neonatal outcomes.

Rating: Strong

Conditional

- **Risks/Harms of Implementing This Recommendation**
  - Use of pharmacological therapy to control blood glucose levels may result in hypoglycemia
  - All medications taken in pregnancy should be reviewed for FDA-approved Pregnancy classification

- **Conditions of Application**
  - This recommendation applies to women with gestational diabetes mellitus when optimal blood glucose levels have not been maintained with medical nutrition therapy (MNT) and/or when the rate of fetal growth is excessive.
  - Not all healthcare professionals recommend the use of oral antidiabetes agents in pregnancy.

Recommended target blood glucose levels vary among organizations:

<table>
<thead>
<tr>
<th></th>
<th>Fasting</th>
<th>1-hour</th>
<th>2-hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Diabetes Association</td>
<td>&lt;105 mg/dL</td>
<td>&lt;155 mg/dL</td>
<td>&lt;130 mg/dL</td>
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<td></td>
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<td>American College of Obstetrics and Gynecology</td>
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<td></td>
<td>&lt;5.3 mmol/L</td>
<td>&lt;7.2 - 7.8 mmol/L</td>
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<tr>
<td>Fifth International Workshop-Conference on GDM</td>
<td>90 - 99 mg/dL</td>
<td>&lt;140 mg/dL</td>
<td>&lt;120-127 mg/dL</td>
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<tr>
<td></td>
<td>5.0 - 5.5 mmol/L</td>
<td>&lt;7.8 mmol/L</td>
<td>&lt;6.7 - 7.0 mmol/L</td>
</tr>
</tbody>
</table>

- **Potential Costs Associated with Application**
  - Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.
  - Additional costs of medication, blood glucose monitoring and fetal monitoring

- **Recommendation Narrative**

Twenty-four studies were evaluated to investigate the use of pharmacological therapy for women with gestational diabetes mellitus.

- In conjunction with nutrition therapy, pharmacological therapy is indicated in women with gestational diabetes mellitus when optimal blood glucose levels have not been maintained and/or when the rate of fetal growth is excessive (Rossi et al, 2000; Simpson and Kast, 2000; Kjos et al, 2001; Svare et al, 2001; Bonomo et al, 2004; Schaefer-Graf et al, 2004).

- Insulin therapy has been shown to be safe and effective in maintaining optimal blood glucose levels and reducing incidence of macrosomia, fetal morbidity and mortality. Five studies regarding the use of insulin analogs reported that lispro or aspart as rapid acting insulins may improve glycemic control and reduce the incidence of macrosomia in neonates (Franz et al, 1994; Bhattacharyya et al, 2001; Simmons et al, 2001; American Diabetes Association, 2002; Poyhonen-Alho et al, 2002; Pettitt et al, 2003; Leipold et al, 2005).

- Research on glargine is limited (Price et al, 2007).

- Eight studies reported that glyburide therapy is effective in maintaining glycemic control in conjunction with nutrition therapy, especially in women with less severe disease (Langer et al, 2000; Chmait et al, 2004; Conway et al, 2004; Kremer and Duff, 2004; Yogev et al, 2004; Bertini et al, 2005; Jacobson et al, 2005; Langer et al, 2005).

- Research on metformin is limited (Hellmuth et al, 2000; Charles et al, 2006).

- Further research on other antidiabetes agents in women with gestational diabetes mellitus is needed.

- **Recommendation Strength Rationale**

  - Conclusion Statement was given Grade II

- **Minority Opinions**
Consensus reached.

- **Supporting Evidence**
  
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  What is the evidence regarding pharmacological therapy in women with gestational diabetes mellitus?

- **References**
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  Simmons D, Thompson CF, Corony C, Scott DJ. Use of insulin pumps in pregnancies complicated by Type 2 diabetes and gestational diabetes in a multietnic community. Diabetes Care 2001;24(12):2078-2082.
  
  
  

- **References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process**


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**Quick Links**

**Gestational Diabetes**

**Gestational Diabetes (GDM) Guideline (2008)**

### Recommendations Summary

**GDM: Monitor and Evaluate MNT Effectiveness 2006**

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the **Supporting Evidence Section** below.

#### Recommendation(s)

**GDM: Monitor and Evaluate MNT Effectiveness**

The Registered Dietitian (RD) should monitor and evaluate blood glucose levels, weight change, food intake, physical activity and pharmacological therapy (if indicated) in women with gestational diabetes mellitus (GDM) at each visit. Research indicates that Medical Nutrition Therapy (MNT) results in improved maternal and neonatal outcomes.

**Rating: Strong**

**Imperative**

- **Risks/Harms of Implementing This Recommendation**

None.

- **Conditions of Application**

Recommended target blood glucose levels vary among organizations:

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</table>

- **Potential Costs Associated with Application**

  - Although costs of MNT sessions and reimbursement vary, medical nutrition therapy sessions are essential for improved outcomes.

- **Recommendation Narrative**

Six studies were evaluated to investigate the relationship between Medical Nutrition Therapy on pregnancy outcomes in women with gestational diabetes mellitus.

- Medical Nutrition Therapy, initiated within one week of diagnosis and with a minimum of three nutrition visits, results in decreased hospital admissions and insulin use, improves likelihood of normal fetal and placental growth, and reduces risk of perinatal complications, especially when diagnosed and treated early (Svare et al, 2001; Taricco et al, 2003; Gabbe et al, 2004; Crowther et al, 2005; Reader et al, 2006; Sunsaneewithayakul et al, 2006).

- American Diabetes Association Recommendation: MNT for GDM focuses on food choices for appropriate weight gain, normoglycemia, and absence of ketones (Grade E).

Conclusion Statement was given Grade II

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

What is the evidence regarding Medical Nutrition Therapy on pregnancy outcomes (morbidity, birth weight, glucose control, pharmacological therapy, pre-term delivery, satisfaction with care) in women with gestational diabetes?

References


References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


