

Screening for Gestational Diabetes Mellitus: U.S. Preventive Services Task Force Recommendation Statement

U.S. Preventive Services Task Force*

Description: Update of 2003 U.S. Preventive Services Task Force (USPSTF) recommendation about screening for gestational diabetes.

Methods: The USPSTF weighed the evidence on maternal and neonatal benefits (reduction in preeclampsia, mortality, brachial plexus injury, clavicular fractures, admission to the neonatal intensive care unit for serious illnesses) and harms (physical and psychological harms) of screening for gestational diabetes identified for their 2003 recommendation and the accompanying systematic review of articles published since the 2003 review for screening after

24 weeks' gestation. Additional searches were performed for evidence published from 1966 to 1999 on screening before 24 weeks.

Recommendation: Current evidence is insufficient to assess the balance of benefits and harms of screening for gestational diabetes mellitus, either before or after 24 weeks' gestation. (I statement.)

Ann Intern Med. 2008;148:759-765.

www.annals.org

For author affiliation, see end of text.

*For a list of the members of the U.S. Preventive Services Task Force, see the **Appendix**, available at www.annals.org.

The U.S. Preventive Services Task Force (USPSTF) makes recommendations about preventive care services for patients without recognized signs or symptoms of the target condition.

It bases its recommendations on a systematic review of the evidence of the benefits and harms and an assessment of the net benefit of the service.

The USPSTF recognizes that clinical or policy decisions involve more considerations than this body of evidence alone. Clinicians and policymakers should understand the evidence but individualize decision making to the specific patient or situation.

SUMMARY OF RECOMMENDATION AND EVIDENCE

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for gestational diabetes mellitus, either before or after 24 weeks' gestation. This is an I statement.

See the **Figure** for a summary of the recommendation and suggestions for clinical practice.

Table 1 describes the USPSTF grades, and **Table 2** describes the USPSTF classification of levels of certainty about net benefit. Both are also available online at www.annals.org.

RATIONALE

Importance

Pregestational diabetes refers to diabetes diagnosed before pregnancy. *Gestational diabetes* refers to any degree of glucose intolerance with onset or first recognition during pregnancy. Pregnant women with pregestational diabetes are at increased risk for multiple complications affecting both the mother and the fetus. The degree to which preg-

nant women with gestational diabetes are at increased risk for maternal or fetal complications is less certain.

Detection

Several different methods are used to screen for gestational diabetes; many women with positive screening test results do not meet current diagnostic criteria for gestational diabetes.

Benefits of Detection and Early Treatment Screening before 24 Weeks' Gestation

The evidence is poor to determine whether there are benefits to screening women at this time in pregnancy.

Screening after 24 Weeks' Gestation

Although screening and early treatment of gestational diabetes reduce macrosomia, and although 1 trial suggests the possibility of other health benefits, the overall evidence is poor to determine whether maternal or fetal complications are reduced by screening.

Harms of Detection and Early Treatment

There is fair evidence that short-term anxiety occurs in some women with positive screening results; longer-term

See also:

Print

Related article 766
Summary for Patients I-60

Web-Only

Appendix
CME quiz
Conversion of graphics into slides
Downloadable recommendation summary

psychological or other harms have not been documented. The majority of positive screening test results are probably false positive. Consequently, it is likely that many women and medical practices are being inconvenienced unnecessarily by screening.

USPSTF Assessment

The USPSTF concludes that the current evidence is insufficient to assess the balance between the benefits and harms of screening women for gestational diabetes either before or after 24 weeks' gestation.

CLINICAL CONSIDERATIONS

Patient Population under Consideration

This recommendation concerns pregnant women who have not previously been diagnosed with diabetes.

Suggestions for Practice Regarding the I Statement

Until there is better evidence, clinicians should discuss screening for gestational diabetes with their patients and make case-by-case decisions. Discussions should include information about the uncertainty of benefits and harms, as well as the frequency of positive screening test results.

Assessment of Risk

Women who are obese, are older than 25 years of age, have a family history of diabetes, have a history of previous gestational diabetes, or are of certain ethnic groups (Hispanic, American Indian, Asian, or African-American) are at increased risk for developing gestational diabetes.

Screening Tests

In the United States, the most common screening test is an initial 50-g 1-hour glucose challenge test. If the result of the glucose challenge test is abnormal, variably defined as either greater than 130 mg/dL or greater than 140 mg/dL, the patient undergoes a 100-g 3-hour oral glucose tolerance test. Two or more abnormal values on the oral glucose tolerance test are considered a diagnosis of gestational diabetes.

Time of Screening

Most screening is conducted between 24 and 28 weeks' gestation. There is little evidence about the value of earlier screening.

Treatment

Treatment usually includes recommendations for physical activity and dietary modification. In addition, treatment sometimes includes medication (either insulin or oral hypoglycemic agents), support from diabetes educators and nutritionists, and increased surveillance in prenatal care. The extent to which these interventions improve health outcomes is uncertain.

Other Approaches to Prevention

Nearly all pregnant women should be encouraged to achieve moderate weight gain based on their prepregnancy body mass index and to participate in physical activity.

OTHER CONSIDERATIONS

Research Needs and Gaps

Prospective studies on the health outcomes of women with various glucose levels, adjusted for obesity, would help us better understand what level of glucose constitutes an important risk to mother or fetus. It is hoped that the Hyperglycemia and Adverse Pregnancy Outcome study, which is now in the data analysis phase, will provide useful information on this issue. Future studies should examine glucose levels before 24 weeks' gestation as well as during the 24- to 28-week gestational period. They should present data on women with specific risk factors, such as prepregnancy obesity, older- or younger-than-optimal age, and history of previous large-for-gestational-age births, along with data on women with no recognized risk factors. In addition, further randomized trials comparing the health outcomes of lowering glucose with the health outcomes of not intervening, for women who have screening-detected gestational diabetes, would add weight to the findings of the ACHOIS (Australian Carbohydrate Intolerance Study in Pregnant Women). The Maternal-Fetal Medicine Units network is conducting a randomized, controlled trial (RCT) now in progress and intending to complete recruitment in the next 2 years, which should help provide this information. In addition to outcomes studies, more definitive data are required on the most appropriate screening strategies for gestational diabetes, including information on the best glucose load and timing.

DISCUSSION

Burden of Disease

Gestational diabetes mellitus is currently defined as any degree of glucose intolerance with onset or first recognition during pregnancy (1). This definition does not exclude glucose intolerance that may have antedated pregnancy. The current prevalence of gestational diabetes in the United States ranges from 1% to 9%, depending on the characteristics of the population screened (2, 3). In women with defined low-risk factors, such as white ethnic origin, age younger than 25 years, and a body mass index of less than 25 kg/m², prevalence of gestational diabetes ranges from 1.4% to 2.8% (4–9). The prevalence in women with defined high-risk factors, such as age older than 25 years, obesity, or a family history of diabetes, ranges from 3.3% to 6.1% (7). Higher rates have been reported in certain ethnic groups (2, 3). Variations in screening practices and in the prevalence of other risk factors make it difficult to quantify the independent contribution of race and ethnicity to the development of gestational diabetes.

Scope of Review

In 2003, the USPSTF concluded that the scientific evidence was insufficient to support a recommendation for or against routine screening of gestational diabetes in all pregnant women. There was fair to good evidence that screening, combined with therapy for gestational diabetes,

can reduce the rate of fetal macrosomia, but the USPSTF was unable to find sufficient evidence that gestational diabetes screening reduced adverse health outcomes for mothers or their infants (10).

With the increasing prevalence of U.S. women at high risk for type 2 diabetes and gestational diabetes, the issue of early screening is becoming increasingly important. The previous USPSTF review did not include evidence related to gestational diabetes screening before 24 weeks' gestation. The current review considered all evidence from the previous review, and identified and evaluated evidence that has become available since the prior review, on the risks and benefits of gestational diabetes screening at 24 weeks or later. In addition, the USPSTF reviewed all available evidence pertaining to gestational diabetes screening before 24 weeks.

The USPSTF reviewed the evidence for benefits of screening in the following health outcomes: perinatal mortality; brachial plexus injury; clavicular fracture; maternal mortality; preeclampsia; and admission to neonatal intensive care units for hypoglycemia, hyperbilirubinemia, or the respiratory distress syndrome. Intermediate outcomes, such as macrosomia and cesarean or vaginal delivery, were not systematically reviewed.

Accuracy of Screening Tests

There are studies that report the sensitivity and specificity of various gestational diabetes screening tests as predictors for gestational diabetes. However, the USPSTF found no studies that met its inclusion criteria. The evaluation of screening test performance in gestational diabetes is complicated by the many different accepted standards for screening tests, diagnostic tests, and diagnostic criteria. Test performance can be evaluated only in the context of how accurately the test identifies people with disease (sensitivity) and excludes those without disease (specificity). However, with gestational diabetes, the "disease" is actually many potential outcomes—and for 2 different people (mother and baby). In addition, the generally accepted primary outcomes (for example, stillbirth, neonatal death, brachial plexus injury) are rare events that make estimates unstable except in a very large study. Data to support specific timing for screening are also sparse.

Effectiveness of Early Detection or Treatment

No properly conducted RCT has examined the benefit of universal or selective screening for gestational diabetes compared with no screening. Two RCTs have studied treatment versus no treatment of gestational diabetes in screening-detected populations: one recent (ACHOIS [11]) and one conducted more than 4 decades ago (a study by O'Sullivan and colleagues [12]). Both of these trials randomly assigned participants to treatment or no treatment of gestational diabetes on the basis of a universal screening program approach. The ACHOIS reported that dietary management, glucose monitoring, and insulin treatment as needed in 1000 women with mild gestational

diabetes diagnosed after 24 weeks' gestation improved the composite neonatal outcome compared with no treatment (11). The composite outcome was defined as one or more of the following: death, shoulder dystocia, bone fracture, and nerve palsy. The majority of the actual outcomes summed in this composite outcome were shoulder dystocia, an outcome not considered by the USPSTF review as a final health outcome. Perinatal mortality, although rare, did not occur in any of the 490 babies born to mothers who were treated, compared with 5 total stillbirths or neonatal deaths among the 510 women in the untreated group. Women in the treatment group had a 30% lower risk for pregnancy-induced hypertension (defined as blood pressure >140/90 mm Hg on 2 occasions more than 4 hours apart) compared with women who were not treated for gestational diabetes; the rate of pregnancy-induced hypertension was 18% in the untreated women and 12% in the treated group (adjusted relative risk, 0.70 [95% CI, 0.51 to 0.95]). Because glucose control was not part of data collection and was not reported, the relative effect of glycemic control (versus weight control) on the improvement of outcomes with treatment cannot be estimated. All that can be concluded is that treatment improved some outcomes.

The fair-quality RCT by O'Sullivan and colleagues (12) found that treatment in a screened population of women at high risk for gestational diabetes (gestational age at screening unspecified) reduced the intermediate outcome of macrosomia but did not reduce the perinatal mortality rate. High risk was defined as a history of delivery of a baby weighing more than 9 pounds, "toxemia" in 2 or more pregnancies, fetal or neonatal death, congenital anomaly, or prematurity. Treatment was a small daily dose of insulin (10 units) initially, with irregular glucose monitoring of urine and blood (glucose monitoring was not available 40 years ago). In contrast, the ACHOIS participants used insulin only if other therapies failed to achieve tight glycemic control based on the study's glucose targets, and only 17% of the treatment group required insulin.

The USPSTF identified no RCTs for screening and treatment before 24 weeks' gestation. One fair-quality prospective cohort study of early screening and treatment for gestational diabetes was identified, and its results suggest that an early diagnosis of gestational diabetes may represent pregestational diabetes because women with early diagnosis (by an abnormal result on a 50-g glucose challenge test at the first prenatal visit) were more likely to require insulin and had a higher proportion of hypertension, perinatal deaths, and neonatal hypoglycemia than those with diagnosis at 24 to 28 weeks' gestation (13).

Potential Harms of Screening or Treatment

There are 2 potential domains of harms of screening for and treatment of gestational diabetes: the psychological and the physical. The primary adverse effects associated

with screening would be the psychological effect of screening on the mother with gestational diabetes, and potentially on the mother who does not have gestational diabetes but has the added time, cost, physical discomfort, and psychological burden of screening and confirmatory diagnostic testing. A review of the literature revealed mixed available evidence on the initial psychological impact of gestational diabetes screening. In the first few weeks after screening, women who screened positive for gestational diabetes may report higher anxiety, more psychological distress, and poorer perceptions of their general health than women who screened negative. Available evidence, however, suggests that these differences, even if present shortly after diagnosis, do not persist into the late third trimester or the postpartum period (14–16).

Further, ACHOIS found, in a subgroup that responded to the questionnaire, that treatment was potentially associated with overall improved self-reported health status and reduced postpartum depression at 3 months after birth compared with no treatment (11). Alternative explanations for the reduced postpartum depression and improved quality-of-life responses in the treated group could include unblinding before the 3 months' postpartum period before the questionnaire was completed or what is sometimes termed the *Hawthorne effect*, in which the additional attention given to the treatment group, rather than the treatment itself, could improve perceptions. Finally, a prospective study found that mood did not differ in women treated for gestational diabetes compared with controls (17).

For the mother, hypoglycemia is the potentially most serious physical harm. Not all studies monitored or reported maternal hypoglycemia, but in those that did, the rates are low with treatment and no worse with alternate therapies.

With regard to potential fetal or newborn risks, the potential teratogenicity of certain newer treatments for gestational diabetes (oral hypoglycemic agents or insulin analogues) presents a potential physical harm to the fetus that clearly could relate to gestational diabetes treatment; however, most treatments for gestational diabetes start in the second trimester, after the period of major organogenesis. Thus, data are very limited to assess potential teratogenicity of newer agents for treatment.

One potential issue is the number of false-positive screening test results. Given the lack of evidence to determine the accuracy of screening tests, it is difficult to estimate how often this occurs. However, studies show that fewer than 1 in 5 women with a positive glucose challenge test result will meet criteria for gestational diabetes on a full oral glucose tolerance test (13). This result indicates that many women are being inconvenienced, that health care services are being used unnecessarily, and that time is wasted evaluating false-positive test results.

Estimate of the Magnitude of Net Benefit

The USPSTF was unable to estimate the magnitude of net benefit, or indeed the existence of a benefit, of screening for or treatment of gestational diabetes. This was due to a lack of studies of screening with a sufficient number of participants to permit evaluation of important health outcomes, such as mortality; brachial plexus injury; clavicular fracture; and admission to neonatal intensive care units for hypoglycemia, hyperbilirubinemia, or the respiratory distress syndrome. In addition, because of the lack of an accepted gold standard for screening, evidence on the accuracy of available screening strategies is limited. There is also insufficient evidence on the benefits of treating gestational diabetes in improving health outcomes.

How Does Evidence Fit with Biological Understanding?

Data on the overall impact of gestational diabetes screening and treatment are limited because most babies with macrosomia are born to mothers without gestational diabetes, and most cases of injuries related to shoulder dystocia occur in pregnancies with infants of normal birthweight (18). The relationship between gestational diabetes and adverse outcomes is further confounded by the fact that maternal obesity is an independent risk factor for many of the same outcomes (18).

RECOMMENDATIONS OF OTHERS

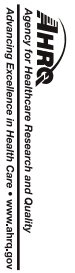
The American College of Obstetricians and Gynecologists recommends that all pregnant women be screened for gestational diabetes by patient history, clinical risk factors, or a laboratory screening test (19). The American College of Obstetricians and Gynecologists recognizes that low-risk women may be less likely to benefit from screening with laboratory testing; similarly, the American Diabetes Association states that low-risk women need not be screened with glucose testing (19, 20). The American College of Obstetricians and Gynecologists and American Diabetes Association consider a woman to be at low risk for gestational diabetes if she meets all of the following criteria: 1) age younger than 25 years, 2) not in an ethnic group with increased risk for developing type 2 diabetes, 3) body mass index of 25 kg/m² or less, 4) no previous history of abnormal glucose tolerance or adverse obstetrics outcomes usually associated with gestational diabetes, and 5) no known history of diabetes in a first-degree relative. The American Academy of Family Physicians has concluded that the evidence is insufficient to recommend for or against routine screening for gestational diabetes in asymptomatic pregnant women (21).

From the U.S. Preventive Services Task Force, Agency for Healthcare Research and Quality, Rockville, Maryland.

Disclaimer: Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

Figure. Screening for gestational diabetes mellitus (GDM): clinical summary of U. S. Preventive Services Task Force Recommendation.

Annals of Internal Medicine



**Screening for Gestational Diabetes Mellitus:
Clinical Summary of U.S. Preventive Task Force Recommendation**

Population	<p>Pregnant Women Who Have Not Previously Been Diagnosed with Diabetes</p>
Recommendation	<p>Grade: I No recommendation due to insufficient evidence*</p>
Risk assessment	<p>Women at increased risk for GDM include those who:</p> <ul style="list-style-type: none"> • are obese • are older than age 25 years • have a family history of diabetes • have a history of GDM • are of certain ethnic groups (Hispanic, American Indian, Asian, or African-American)
Rationale for no recommendation	<p>The current evidence is insufficient to assess the balance between the benefits and harms of screening women for GDM either before or after 24 weeks' gestation. Harms of screening include short-term anxiety in some women with positive screening results; inconvenience to many women and medical practices because most positive screening test results are probably false positive.</p>
Suggestions for practice	<p>Until there is better evidence, clinicians should discuss screening for GDM with their patients and make case-by-case decisions. The discussion should include information about the uncertain benefits and harms as well as the frequency and uncertain meaning of a positive screening test result.</p>
Screening tests	<p>If a decision is made to screen for GDM :</p> <p>The screening test most commonly used in the United States is an initial 50-g 1-hour glucose challenge test. If the result on the glucose challenge test is abnormal, the patient undergoes a 100-g 3-hour oral glucose tolerance test. Two or more abnormal values on the oral glucose tolerance test are considered a diagnosis of GDM.</p>
Screening intervals	<p>Most screening is conducted between 24 and 28 weeks' gestation. There is little evidence about the value of earlier screening.</p>
Other approaches to prevention	<p>Nearly all pregnant women should be encouraged to:</p> <ul style="list-style-type: none"> • achieve moderate weight gain based on their prepregnancy body mass index • participate in physical activity

For a summary of the evidence systematically reviewed in making these recommendations, the full recommendation statement (including a summary of research gaps), and supporting documents, please go to www.preventiveservices.ahrq.gov. *The current evidence is insufficient to establish the balance of benefits and harms for screening for gestational diabetes mellitus, either before or after 24 weeks' gestation.

Table 1. What the U.S. Preventive Services Task Force Grades Mean and Suggestions for Practice*

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer/provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is moderate or high certainty that the net benefit is small.	Offer/provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

* USPSTF = U.S. Preventive Services Task Force.

Table 2. U.S. Preventive Services Task Force Levels of Certainty Regarding Net Benefit

Level of Certainty*	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by such factors as: the number, size, or quality of individual studies inconsistency of findings across individual studies limited generalizability of findings to routine primary care practice lack of coherence in the chain of evidence. As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: the limited number or size of studies important flaws in study design or methods inconsistency of findings across individual studies gaps in the chain of evidence findings that are not generalizable to routine primary care practice a lack of information on important health outcomes. More information may allow an estimation of effects on health outcomes.

* The U.S. Preventive Services Task Force (USPSTF) defines *certainty* as “likelihood that the USPSTF assessment of the net benefit of a preventive service is correct.” The net benefit is defined as benefit minus harm of the preventive service as implemented in a general primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Potential Financial Conflicts of Interest: None disclosed.

Requests for Single Reprints: Reprints are available from the Agency for Healthcare Research and Quality Web site (www.preventiveservices.ahrq.gov).

References

- Hillier TA, Vesco KK, Pedula KL, Beil TL, Whitlock EP, Pettitt DJ. Screening for gestational diabetes mellitus: a systematic review for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2008;148:766-75.
- American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care.* 2006;29 Suppl 1:S43-8. [PMID: 16373932]
- Jovanovic L, Pettitt DJ. Gestational diabetes mellitus. *JAMA.* 2001;286:2516-8. [PMID: 11722247]
- Harlass FE, Brady K, Read JA. Reproducibility of the oral glucose tolerance test in pregnancy. *Am J Obstet Gynecol.* 1991;164:564-8. [PMID: 1992702]
- Lavin JP, Barden TP, Miodovnik M. Clinical experience with a screening program for gestational diabetes. *Am J Obstet Gynecol.* 1981;141:491-4. [PMID: 7294074]
- Lemen PM, Wigton TR, Miller-McCarthy AJ, Cruikshank DP. Screening for gestational diabetes mellitus in adolescent pregnancies. *Am J Obstet Gynecol.* 1998;178:1251-6. [PMID: 9662309]
- Marquette GP, Klein VR, Niebyl JR. Efficacy of screening for gestational diabetes. *Am J Perinatol.* 1985;2:7-9. [PMID: 3921038]
- Moses RG, Moses J, Davis WS. Gestational diabetes: do lean young caucasian women need to be tested? *Diabetes Care.* 1998;21:1803-6. [PMID: 9802724]
- Southwick RD, Wigton TR. Screening for gestational diabetes mellitus in adolescent Hispanic Americans. *J Reprod Med.* 2000;45:31-4. [PMID: 10664944]
- U.S. Preventive Services Task Force. Screening for gestational diabetes mellitus: recommendations and rationale. *Obstet Gynecol.* 2003;101:393-5. [PMID: 12576265]
- Crowther CA, Hiller JE, Moss JR, McPhee AJ, Jeffries WS, Robinson JS. Australian Carbohydrate Intolerance Study in Pregnant Women (ACHOIS) Trial Group. Effect of treatment of gestational diabetes mellitus on pregnancy outcomes. *N Engl J Med.* 2005;352:2477-86. [PMID: 15951574]
- O'Sullivan JB, Gellis SS, Dandrow RV, Tenney BO. The potential diabetic and her treatment in pregnancy. *Obstet Gynecol.* 1966;27:683-9. [PMID: 5936737]
- Bartha JL, Martinez-Del-Fresno P, Comino-Delgado R. Gestational diabetes mellitus diagnosed during early pregnancy. *Am J Obstet Gynecol.* 2000;182:346-50. [PMID: 10694335]
- Daniells S, Grenyer BF, Davis WS, Coleman KJ, Burgess JA, Moses RG. Gestational diabetes mellitus: is a diagnosis associated with an increase in maternal anxiety and stress in the short and intermediate term? *Diabetes Care.* 2003;26:385-9. [PMID: 12547867]
- Rumbold AR, Crowther CA. Women's experiences of being screened for gestational diabetes mellitus. *Aust N Z J Obstet Gynaecol.* 2002;42:131-7. [PMID: 12069138]
- Spirito A, Williams C, Ruggiero L, Bond A, McGarvey ST, Coustan D. Psychological impact of the diagnosis of gestational diabetes. *Obstet Gynecol.* 1989;73:562-6. [PMID: 2648224]
- Langer N, Langer O. Emotional adjustment to diagnosis and intensified treatment of gestational diabetes. *Obstet Gynecol.* 1994;84:329-34. [PMID: 8058225]
- Brody SC, Harris R, Lohr K. Screening for gestational diabetes: a summary of the evidence for the U.S. Preventive Services Task Force. *Obstet Gynecol.* 2003;101:380-92. [PMID: 12576264]
- American College of Obstetricians and Gynecologists Committee on Practice Bulletins—Obstetrics. ACOG Practice Bulletin. Clinical management guidelines for obstetrician-gynecologists. Number 30, September 2001 (replaces Technical Bulletin Number 200, December 1994). Gestational diabetes. *Obstet Gynecol.* 2001;98:525-38. [PMID: 11547793]
- American Diabetes Association. Gestational diabetes mellitus. *Diabetes Care.* 2004;27 Suppl 1:S88-90. [PMID: 14693936]
- American Academy of Family Physicians Policy Action: Summary of Recommendations for Clinical Preventive Services; Revision 6.4. Leawood, Kansas: American Academy of Family Physicians; August 2007.

PERSONAL ARCHIVES AND COLLECTIONS

Add favorite articles to your personal archives or retrieve collections for the following article types at www.annals.org:

- Clinical Guidelines and Position Papers
- Editorials
- In the Clinic
- Medical Writings
- Book and software reviews
- On Being a Doctor and On Being a Patient
- Reviews
- Academia and Clinic
- Updates

APPENDIX: U.S. PREVENTIVE SERVICES TASK FORCE

Members of the U.S. Preventive Services Task Force† are Ned Calonge, MD, MPH, *Chair* (Colorado Department of Public Health and Environment, Denver, Colorado); Diana B. Petitti, MD, MPH, *Vice Chair* (Keck School of Medicine, University of Southern California, Sierra Madre, California); Thomas G. DeWitt, MD (Children's Hospital Medical Center, Cincinnati, Ohio); Leon Gordis, MD, MPH, DrPH (Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland); Kimberly D. Gregory, MD, MPH (Cedars-Sinai Medical Center, Los Angeles, California); Russell Harris, MD, MPH (University of North Carolina School of Medicine, Chapel Hill, North Carolina); George Isham, MD, MS (HealthPartners, Minneapolis, Minnesota); Michael L. LeFevre, MD, MSPH (University of Missouri School of Medicine, Colum-

bia, Missouri); Carol Loveland-Cherry, PhD, RN (University of Michigan School of Nursing, Ann Arbor, Michigan); Lucy N. Marion, PhD, RN (School of Nursing, Medical College of Georgia, Augusta, Georgia); Virginia A. Moyer, MD, MPH (University of Texas Health Science Center, Houston, Texas); Judith K. Ockene, PhD (University of Massachusetts Medical School, Worcester, Massachusetts); George F. Sawaya, MD (University of California, San Francisco, California); Albert L. Siu, MD (Mount Sinai School of Medicine, New York, New York); Steven M. Teutsch, MD, MPH (Merck & Co., West Point, Pennsylvania); and Barbara P. Yawn, MD, MSPH, MSc (Olmsted Medical Center, Rochester, Minnesota).

†Members of the Task Force at the time this recommendation was finalized. For a list of current Task Force members, go to www.ahrq.gov/clinic/uspstfab.htm.