



USPSTF update: Screening for abnormal blood glucose, diabetes

Screen all adults, ages 40 to 70 years, who are overweight or obese. Consider screening younger patients who have specific personal or family risk factors.

Doug Campos-Outcalt, MD, MPA
Medical Director, Mercy Care Plan, Phoenix, Ariz

campos-outcald@mercyplan.org

In December 2015, the United States Preventive Services Task Force updated its recommendation on screening for abnormal blood glucose and diabetes to say that clinicians should screen all adults ages 40 to 70 years who are overweight or obese as part of a cardiovascular risk assessment.¹ This recommendation carries a B grade signifying a moderate certainty that a moderate net benefit will be gained by detecting impaired fasting glucose (IFG), impaired glucose tolerance (IGT), or diabetes, and by implementing intensive lifestyle interventions. In this article, as in the Task Force recommendation, the term diabetes means type 2 diabetes. Obesity is defined as a body mass index (BMI) of ≥ 30 kg/m², and overweight as a BMI > 25 .

Both the Task Force and the ADA acknowledge there is no direct evidence for any benefit in screening for diabetes in the general, asymptomatic population. The Task Force, with its standard of making recommendations only when good evidence supports them, has opted to address screening for abnormal glucose levels in the context of cardiovascular risk reduction and persuasive evidence that lifestyle interventions can reduce cardiovascular risks and slow progression to diabetes.

The ADA is willing to rely on less rigorous evidence of benefit in screening, diagnosing, and treating undetected diabetes. It believes that morbidity and mortality from this pervasive chronic disease can be reduced with early detection and treatment.

How the Task Force recommendation evolved

The previous Task Force recommendation on this topic, made in 2008, advised screening only adults with hypertension because there was no evidence that any other group benefited from screening. In subsequent years, there were calls for the Task Force to revise its recommendation to bring it more in line with that of the American Diabetes Association (ADA).² While this new recommendation does add more adults to the cohort of those the Task Force believes should be screened, it is still not totally in concert with the ADA, which recommends screening all adults 45 years or older and those who are younger if they have multiple risk factors.³

Still, the Task Force and ADA agree more than they differ

While it appears that significant differences exist between the recommendations of the Task Force and the ADA, a closer look shows they actually have much in common; and, as they pertain to daily practice, any remaining differences are primarily ones of emphasis. For instance, the Clinical Considerations section of the Task Force recommendation acknowledges that certain people are at increased risk for diabetes at younger ages and at a lower BMI, and that clinicians should “consider” screening them earlier than at age 40 years. The risks listed include a family history of diabetes or a personal history of gestational diabetes or polycystic ovarian

TABLE 1

USPSTF and ADA screening recommendations for abnormal blood glucose in adults: How they compare^{1,3}

USPSTF	ADA	Differences
<p>Age 40-70 years</p> <ul style="list-style-type: none"> • Anyone who is overweight or obese. • Consider for those (even if not overweight) who have a risk factor such as a family history of diabetes or a personal history of gestational diabetes or polycystic ovarian syndrome; or who are African American, Hispanic, American Indian, Alaskan Native, or Native Hawaiian. 	<p>Age ≥45 years</p> <ul style="list-style-type: none"> • Everyone 	<ul style="list-style-type: none"> • Age cutoff: 40 vs 45 years • No older age cutoff for ADA • USPSTF would not screen non-Hispanic whites who are not overweight or obese, and who have no other risk factors.
<p>Age <40 years</p> <ul style="list-style-type: none"> • Consider for those (even if not overweight) who have a risk factor such as a family history of diabetes or a personal history of gestational diabetes or polycystic ovarian syndrome; or who are African American, Hispanic, American Indian, Alaskan Native, or Native Hawaiian. 	<p>Age <45 years</p> <ul style="list-style-type: none"> • Anyone who is overweight or obese and who has an additional risk factor: physical inactivity, first-degree relative with diabetes, a personal history of gestational diabetes (or baby weighing >9 pounds at birth), or polycystic ovarian syndrome; being African American, Latino, Native American, Asian American, or Pacific Islander; history of CVD, or prior abnormal blood-glucose test. 	<ul style="list-style-type: none"> • USPSTF: Consider screening those with risk factors with or without overweight or obesity. • ADA: Screen those with risk factors if they are obese or overweight.

ADA, American Diabetes Association; USPSTF, United States Preventive Services Task Force.

syndrome; or being African American, Hispanic, Asian American, American Indian, Alaskan Native, or Native Hawaiian.

The Task Force statement seems to imply—although this is not entirely clear—that those who have these risks should also be screened if they are older than age 40 years even if they are not obese. So, although the ADA would screen everyone ages 45 and older, the Task Force would screen everyone ages 40 and older, except for non-Hispanic whites who are not overweight or obese, and who have no other risk factors. **TABLE 1**^{1,3} details the Task Force and the ADA screening criteria and how they differ.

The Task Force and the ADA also agree on the 3 tests acceptable for screening and the test values that define normal glucose, IGT, IFG, and diabetes (**TABLE 2**).^{1,3} The tests are a randomly measured glycated hemoglobin level, a fasting plasma glucose level, and an oral glucose tolerance test performed in the morning after an overnight fast, with glucose measured 2 hours after a 75-g oral glucose load. If a screening result is abnormal, confirmation

should be sought by repeating the same test. And both organizations suggest that, following a normal test result, the optimal interval for re-testing is 3 years.

Intervening to delay progression to diabetes

For anyone with a confirmed abnormal blood glucose level, the Task Force advises referral for intensive behavioral interventions—ie, multiple counseling sessions over an extended period on a healthy diet and optimal physical activity. These types of interventions can reduce blood glucose levels and lower the risk of progression to diabetes, and can help with lowering weight, blood pressure, and lipid levels. The evidence report that preceded the recommendation pooled the results from 10 studies on lifestyle modification.⁴ The length of follow-up in these studies ranged from 3 to 23 years, and the number needed to treat to prevent one case of progression to diabetes ranged from about 5 to 20.⁴

TABLE 2

Normal and abnormal test values for glucose metabolism^{1,3}

Test*	Normal	IFG or IGT	Diabetes
Hemoglobin A1c level, %	<5.7	5.7-6.4	≥6.5
Fasting plasma glucose level			
mmol/L	<5.6	5.6-6.9	≥7.0
mg/dL		100-125	≥126
Oral glucose tolerance test**			
mmol/L	<7.8	7.8-11.0	≥11.1
mg/dL		140-199	≥200

IFG, impaired fasting glucose; IGT, impaired glucose tolerance.

*Confirm all positive test results with repeat testing.

**Take measurement 2 hours after glucose administration.

Medications such as metformin, thiazolidinediones, and alpha-glucosidase inhibitors can also reduce blood glucose levels and slow progression to diabetes. However, the Task Force says there is insufficient evidence that pharmacologic interventions have the same multifactorial benefits—weight loss or reductions in glucose levels, blood pressure, and lipid levels—as behavioral interventions.¹

As for the other modifiable risk factors for cardiovascular disease—obesity, lack of physical activity, high lipid levels, high blood pressure, and smoking—the Task Force has developed recommendations on screening for and treating each of them,⁵ which supplement the recommendations discussed in this article. **JFP**

References

1. U.S. Preventive Services Task Force. Abnormal blood glucose and type 2 diabetes mellitus: screening. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/screening-for-abnormal-blood-glucose-and-type-2-diabetes>. Accessed May 20, 2016.
2. Casagrande SS, Cowie CC, Fradkin JE. Utility of the US Preventive Services Task Force criteria for diabetes screening. *Am J Prev Med.* 2013;45:167-174.
3. American Diabetes Association. Standards of medical care in diabetes - 2016. *Diabetes Care.* 2016;39(Suppl 1):S1-S112.
4. Selph S, Dana T, Bougatso C, et al. A systematic review to update the 2008 U.S. Preventive Services Task Force recommendation [Agency for Healthcare Research and Quality]. 2015. Available at: <http://www.ncbi.nlm.nih.gov/books/NBK293871/>. Accessed May 20, 2016.
5. U.S. Preventive Services Task Force. Healthful diet and physical activity for cardiovascular disease prevention in adults with cardiovascular risk factors: behavioral counseling. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/healthy-diet-and-physical-activity-counseling-adults-with-high-risk-of-cvd>. Accessed May 20, 2016.

A supplement to The Journal of Family Practice

Advances in Colorectal Cancer Screening

Author

Anas Daghestani, MD
 Director of Population Health
 and Clinical Quality
 Austin Regional Clinic
 Austin, Texas

Discussion includes:

- Colonoscopy
- Computed tomography colonography
- Fecal occult blood test and fecal immunochemical test
- Multitarget stool DNA testing

