



Diabetes and Prediabetes: Screening Guidelines and the Expansion of the National Diabetes Prevention Program in Los Angeles County

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Diabetes is a major cause of morbidity and mortality and an important contributor to the rising health care costs in the United States. In Los Angeles County, an analysis of local National Health and Nutrition Examination Survey (NHANES) data indicates that approximately 10% of LA County adults 20 years of age and older have been diagnosed with diabetes and an additional 4% remains undiagnosed.¹ In addition, the local NHANES analysis shows that approximately 40% of the county's adult population has prediabetes. The Centers for Disease Control and Prevention (CDC) estimate that 90% of persons with prediabetes are undiagnosed,² underscoring the significant need for improved screening and linkage to effective strategies for preventing diabetes or its complications.

This article summarizes the recommended screening guidelines for type 2 diabetes and prediabetes and provides information on the National Diabetes Prevention Program, an evidence-based prevention intervention for those with prediabetes. The article also highlights the importance of creating healthier environments where improved nutrition and increased physical activity are the easy choices for patients and the community.

Screening Guidelines

The U.S. Preventive Services Task Force (USPSTF) recommends that adults 40 to 70 years of age who are overweight or obese, as defined by a body mass index (BMI) of >25.0 , should be screened for abnormal blood glucose every three years.³ The USPSTF recommends screening at younger ages or at lower BMI in adults at increased risk for diabetes (see box below). For example, evidence suggests that Asians may have an increased risk of type 2 diabetes at lower BMIs and should therefore be screened at a BMI threshold of ≥ 23.0 .⁴

USPSTF Abnormal Blood Glucose and Type 2 Diabetes Mellitus Screening³

- Adults 40-70 years of age with BMI >25.0
- Consider screening earlier or with lower BMI if one or more of the following characteristics:
 - a family history of diabetes
 - have a history of gestational diabetes or polycystic ovarian syndrome
 - are members of certain racial/ethnic groups (African Americans, American Indians or Alaskan Natives, Asian Americans, Hispanics or Latinos, or Native Hawaiians or Pacific Islanders)

Recommended diabetes screening tests include fasting plasma glucose, hemoglobin A1c (HbA1c), and/or oral glucose tolerance test (GTT). The diagnostic criteria for diabetes and prediabetes are shown in the box below.

Diagnostic Criteria for Abnormal Blood Glucose

	Fasting Plasma Glucose	2-Hour Oral GTT	HgbA1c
Prediabetes	100-125 mg/dL	140 to 199 mg/dL	5.7% to 6.4%
Diabetes	≥126 mg/dL	≥200 mg/dL	≥6.5%

Final Recommendation Statement: Abnormal Blood Glucose and Type 2 Diabetes Mellitus: Screening.
U.S. Preventive Services Task Force. November 2016.

For those who screen positive, appropriate treatment and follow-up should be initiated. The USPSTF recommends that clinicians offer or refer patients with abnormal blood glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity. The rationale for this recommendation is based on evidence that lifestyle interventions are effective (and in some cases may even be more effective than metformin and other medications) at reducing progression to diabetes among those with prediabetes.

Evidence: Lifestyle Interventions Reduce Diabetes Incidence

The Diabetes Prevention Program was a major multicenter clinical research study aimed at discovering whether modest weight loss through dietary changes and increased physical activity or treatment with the oral diabetes drug metformin could prevent or delay the onset of type 2 diabetes in study participants with prediabetes. The study was halted a year early after the external monitoring board found significant effects; the lifestyle modification arm reduced the incidence of type 2 diabetes by 58% over the placebo and was more effective than metformin. The researchers published their findings in the February 7, 2002 issue of the *New England Journal of Medicine*.⁵ An additional study conducted by the same group over a 10-year period found cumulative diabetes incidence was reduced by 34% over time in the lifestyle group over the metformin and placebo groups.⁶ As a result of these findings, the National Diabetes Prevention Program was created.

The National Diabetes Prevention Program

The NDPP is an evidence-based lifestyle change program sponsored by CDC and administered through a partnership of public and private organizations working to reduce the incidence of type 2 diabetes.⁷ The program's intervention is delivered over a 12-month period by a trained lifestyle coach, who uses a CDC-developed curriculum. The coach also encourages group interaction so that participants can support one another in achieving the goal of losing 5-7% of their initial body weight. The program emphasizes improving food choices, being physically active for at least 150 minutes each week, and developing skills to identify and overcome barriers to making lifestyle changes.

Expanding Access to the NDPP

The NDPP has been adopted in a variety of community settings with promising results. The YMCA's implementation of the program was shown to significantly reduce medical care utilization and spending among Medicare beneficiaries.⁸ Based on these and other positive results, some private health plans now include the program as a covered benefit. In addition, Medicare reimbursement for the program is expected to begin in 2018, pending Centers for Medicare and Medicaid Services guidelines and roll out. To meet the growing demand for services, the CDC is supporting state and local efforts to expand the number of NDPP providers in community settings. In LA County, the Department of Public Health is assisting in these efforts.

There are currently more than 60 certified NDPP providers in LA County including several online and remote programs and more sites are in development (see resource list). Clinicians are encouraged to refer their patients with pre-diabetes to a local NDPP provider.

Other Prevention Strategies

To help optimize the NDPP as a vital resource for helping patients reduce their risk of developing type 2 diabetes, the Department of Public Health, other local organizations, including health care organizations, and community stakeholders are actively engaged in broader efforts to promote policies and environmental changes that "make the healthy choice the easy choice." These efforts include, for example, promoting land use policies that support walking, biking, and other forms of recreation; and promoting policies and practices in school, work, and community settings to increase access to affordable healthy foods while reducing the overabundance of junk food and other calorie laden food and beverages of limited nutritional value. These broader efforts offer synergistic approaches to the NDPP's core feature which is to support program participants in making lifestyle changes that can help reduce the risk of developing diabetes.

Physicians and other healthcare providers can help in this effort by becoming a champion for change in their community and in the hospital or clinic environment where they work. For example, providers can engage with food venues in their own work environment to convey the importance of and the need to offer healthier food options that are lower in calories, sugar, and sodium. Visit the Champion Provider Success Stories for other examples and inspiration.

Take Home Points

- Screen patients for abnormal blood glucose if they are at risk.
- Refer patients with prediabetes to a local NDPP provider or to another intensive behavioral counseling program to promote a healthful diet and physical activity.
- Champion healthy food and increased physical activity in your communities.

Additional Information

- Centers for Disease Control and Prevention, National Diabetes Prevention Program [homepage](#)
- Institute for Clinical and Economic Review (ICER), [Final Report](#) on Diabetes Prevention Programs
- Champion Provider Fellowship [resources](#)

Resources for Patients



211 LA County

Dial 211 or visit www.211la.org/healthy-living

211 is an information service that connects individuals to community resources, services, and information.

The 211 healthy living webpage lists resources and community events to support healthy living in Los Angeles neighborhoods.



LA Healthline

Dial 1-800-793-8090, visit the [website](#) or send an email to owh@ph.lacounty.gov

- Free hotline and email service that connects individuals to health-related resources, services, and information.
- Available to everyone regardless of health insurance status.
- Hotline staff speak English, Spanish, Chinese, Korean, and Vietnamese

Resource List of all NDPP Providers in LA County as of June 2017

Provider	Number of Sites	Zip Codes	Cost
AltaMed	2	90033, 92801	Co-pay if member has one
American Diabetes Association	5	96106, 91103, 91405	Free
Artistic Blessing and Coaching	Virtual	Open to all regions	\$500 group, \$1800 individual
Azusa Pacific University School of Nursing Wellness Center	1	91702	Pricing to be determined
A Vision of Health	2	90280, 91402	Free
BA Head Together	Not yet active	Based on demand	Pricing to be determined
Black Women for Wellness	6	90303, 90047, 90019, 90502, 90003	Varies; scholarships available
Blanca's Wellness Network	Not yet active	90640, 90260, 90201, 90022, 90262	\$350
Canary Health	Virtual	Open to all regions	Pricing not available
Encore Wellness	6	90240, 90260, 90022, 91205, 90017, 90603	Pricing not available
InterValley Health Plan	3	91766, 91711, 91709	Free for members
Jenny Craig	Telephone	Open to all regions	\$289 + cost of food
Lindora	12 + Virtual	90230, 90240, 90403, 90505, 90703, 90815, 91016, 91105, 91202, 91324, 91364, 91403, 91791, 92648	\$500 Virtual \$675 in clinic

New South Development Corporation	Not Yet Active	90003	Free
Northeast Valley Healthcare Corporation	3	91352, 91331, 91340	Free
Omada Health	Virtual	Open to all regions	
Prediabetes Professional Training Center	2	91342	Free
Real Appeal	Virtual	Open to all regions	Pricing to be determined
Senior Health Medicare Diabetes Prevention Program	Virtual	Willing to provide where there is need	Pricing will reflect Medicare reimbursement structure.
Tanner Care	1	91017	\$350 basic \$1950 expanded
Truvanta, LLC	Virtual	Open to all regions	\$175/month + supplements
UCLA Campus-Wide DPP	1	90046	\$400
UCLA Health	2	Employer only	\$800
University of Southern California Occupational Therapy Faculty Practice	Not yet active	90033, 90018, 90007, 90011	\$35
Valley Jewish Community Center	1	91365	Varies; scholarships available
YMCA Metro	10	90071, 90023, 90005, 90028, 90008, 90045, 90230, 90248, 90270, 90744	\$329
YMCA of Greater Long Beach	2	90805, 90713	\$429 non-members/ \$329 members; financial assistance available

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