

CLINICAL PRACTICE GUIDELINE NAME:	<i>Diabetes</i>
ORIGINAL DATE APPROVED BY QMC:	11/04 IHN; 11/05 SAHP
DATES RE-REVIEWED BY QMC:	1/05 IHN; 11/05 IHN; 10/09 SHPO; 5/10 SHPO
LOGO CHANGE:	5/06 SHPO

GUIDELINE DESCRIPTION:

This guideline provides facts about Diabetes and guidelines for physicians and other health care providers on screening and management of patients with diabetes

FACTS ABOUT DIABETES:

- Currently (in 2009), the prevalence of diabetes in the U.S. is 23.6 million people – 7.8% of the population have diabetes. [5.7 million people are undiagnosed]
- In 2007, the incidence of newly diagnosed diabetes cases aged 20 years and older per year in the U.S. was 1.6 million people.
- In 2006, the number of adults in Oregon with diagnosed diabetes was 250,000 and as many as another 76,000 may have the disease but are undiagnosed.
- 15% of Oregonians over the age of 65 years have been diagnosed with diabetes (2006).
- Diabetes is one of the most common chronic diseases in children and adolescents.
- The epidemics of obesity and the low level of physical activity among young people, as well as exposure to diabetes in utero, may be major contributors to the increase in type 2 diabetes during childhood and adolescence.
- Smoking is linked to a heightened risk of morbidity and premature death associated with the development of both microvascular and macrovascular complications of diabetes.
- Smoking may play a role in the development of type 2 diabetes.
- African Americans, Hispanics, American Indians, and Alaska Natives are two times more likely as whites to develop diabetes.
- If trends continue, 1 in 3 Americans will develop diabetes in their lifetime.
- Diabetes accounts for the leading cause of blindness, kidney failure, and non-accidental related amputations.
- Diabetes is the sixth leading cause of death in the U.S.
- Diabetics lose, on average, 10-15 years of life.

REFERENCES:

1. The American Diabetes Association Standards of Medical Care in Diabetes – Jan 2009
http://www.hwhn.com/Portals/0/Standards_of_Medical_Care_in_Diabetes_2009.pdf (full text) and
http://care.diabetesjournals.org/content/32/Supplement_1/S6.full (Executive Summary)
2. The American Association of Clinical Endocrinologists Guidelines
<http://www.aace.com/pub/pdf/guidelines/DMGuidelines2007.pdf>
3. CDC – National Center for Chronic Disease Prevention and Health Promotion – Diabetes
<http://www.cdc.gov/nccdphp/publications/aag/ddt.htm>
4. Oregon Population-Based Guidelines for Diabetes Mellitus – Oregon Diabetes Program 2006
<http://www.oregon.gov/DHS/ph/diabetes/docs/2006guidelinesfinal.pdf>
5. Oregon Diabetes Program – The Burden of Diabetes in Oregon Surveillance Report, March 2008
<http://www.oregon.gov/DHS/ph/diabetes/march08coalition/burdenrpt0308.pdf>
6. CMS Medicare Benefit Policy Manual 2009 <http://www.cms.hhs.gov/Manuals/IOM/list.asp#TopOfPage>

"These recommendations are designed to be guidelines but do not guarantee coverage by each plan. For coverage/benefit information please contact our member services department."

DIABETES SCREENING GUIDELINES

Diagnostic criteria for pre-diabetes:

- Impaired fasting glucose >100-125 mg/dl
- Impaired glucose tolerance >140-199 mg/dl (2hr PG during an OGTT)

Diagnostic criteria for diabetes mellitus:

- Symptoms of diabetes (polyuria, polydipsia and unexplained weight loss) plus casual plasma glucose concentration ≥ 200 mg/dl (casual is any time of day without regard to time since last meal)
- Fasting plasma glucose (FPG) ≥ 126 mg/dl (fasting is no caloric intake for at least 8 hr) 2-h PG ≥ 200 mg/dl during an OGTT

Criteria for testing for diabetes in asymptomatic adult individuals:

- Testing for diabetes should be considered in all individuals at age 45 years and above, particularly in those with a BMI 25 kg/m^2 , and, if normal, should be repeated at 3 year intervals.
- Testing should be considered at a younger age or be carried out more frequently in individuals who are overweight (BMI 25 kg/m^2) **and** have additional risk factors:
 - Habitually physically inactive
 - Have a first-degree relative with diabetes
 - Members of a high-risk ethnic population (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
 - Have delivered a baby weighing >9 lb or have been diagnosed with gestational diabetes
 - Hypertensive (“ $>$ ” 140/90 mmHg)
 - HDL cholesterol level “ $<$ ” 35 mg/dl and/or a triglyceride level “ $>$ ” 250 mg/dl
 - Have Polycystic ovary syndrome
 - On previous testing, had Impaired glucose tolerance or Impaired fasting glucose
 - Have other clinical conditions associated with insulin resistance (e.g. Polycystic ovary syndrome or acanthosis nigricans)
 - History of vascular disease
 - Waist circumference > 94 cm (men); > 80 cm (women)
 - Medication use which may predispose to diabetes (e.g., steroids, atypical antipsychotics, protease inhibitors)

Criteria for testing for type 2 diabetes in children:

- Overweight (BMI >85 th percentile for age and sex, weight for height >85 th percentile, or weight $>120\%$ of ideal for height)
- **PLUS** Any two of the following risk factors:
 - Family history of type 2 diabetes in first- or second-degree relative
 - Race/ethnicity (Native American, African American, Hispanic, Asian American, Pacific Islander)
 - Signs of insulin resistance or conditions associated with insulin resistance (acanthosis nigricans, hypertension, dyslipidemia, or Polycystic ovary syndrome)
 - Maternal history of diabetes or gestational diabetes mellitus during the child’s gestation.
- Age of initiation: age 10 years or at onset of puberty, if puberty occurs at a younger age
- Frequency: every 3 years
- Test: Fasting Plasma Glucose preferred

DIABETES MANAGEMENT GUIDELINES

Key Lab Tests	Frequency	Goal
Thyroid-stimulating hormone (TSH) in all type 1 diabetic patients; in type 2 if clinically indicated	Initial evaluation	Lab reference normal
Serum creatinine in adults, in children if proteinuria is present.	Yearly	Lab reference normal
Pre-prandial plasma glucose	As needed to monitor therapy	90-130 mg/dl (based on ADA Guideline)
Post-prandial plasma glucose	As needed to monitor therapy	<180 mg/dl (based on ADA Guideline)
HbA1c	<ul style="list-style-type: none"> • Quarterly if treatment changes or not meeting goals • At least 2 times/year if stable 	< 7 %
HDL-C	Yearly	Women > 50 Men > 40
LDL-C	Yearly	< 100
Microalbuminuria screening	Yearly	Lab reference normal
Total Cholesterol	Yearly	< 200
Triglycerides	Yearly	< 150

Exams	Frequency	Goal
Blood pressure	Each regular diabetes visit (at least twice a year)	Systolic < 130 Diastolic < 80
Depression assessment (referral as indicated)	Each regular diabetes visit	
Tobacco/alcohol assessment (encourage cessation – see Tobacco Cessation Guideline) Smoking is a risk factor for cardiovascular disease among people with diabetes that needs to be adequately addressed by health care providers	Each regular diabetes visit	Ask about tobacco status Assess willingness to quit Assist with treatment plan
Visual foot exam	Each regular diabetes visit	
Weight (encourage regular physical activity program)	Each regular diabetes visit	BMI < 25 *Lose at least 10% of excess weight
Comprehensive foot exam with microfilament testing	Yearly	
Dilated eye exam (by ophthalmologist or optometrist)	Yearly	
Oral exam (dental referral if indicated)	Yearly	

Other Recommended Management	Frequency
Drugs - ACE Inhibitors or Angiotensin II receptor blockers (ARBs)	Onset of microalbuminuria or onset of hypertension
Drugs - Aspirin Prophylaxis	For adult with diabetes, unless contraindicated
Referral - Diabetic Educator	After initial diagnosis of diabetes and again when indicated
Referral – Samaritan Health Plans Chronic Care Support Program	When compliance issues are identified (these can be related to transportation, cultural issues, health literacy issues, etc) or anytime member would benefit from additional assistance from a case management nurse
Self-management goal development (cultural and health literacy issues taken into account)	Yearly development / review compliance at each regular diabetes visit
Vaccination - Influenza	Yearly
Vaccination -Pneumococcal	At least once. Revaccinate in 5 or more years as appropriate.