

# Minnesota Algorithm for Prediabetes and Type 2 Diabetes 5/2010

Consider screening all people starting at age 45, if BMI  $\geq 25\text{kg/m}^2$  and have additional risk factors, start screening earlier and more frequently (i.e. every 1-3 yrs based on risk)

- Risk Factors for Prediabetes and Type 2 Diabetes
- 1<sup>st</sup> degree relative with diabetes
  - Habitually physically inactive
  - Hypertension ( $\geq 140/90$  mmHg or on therapy)
  - HDL  $< 35\text{mg/dL}$  and/or triglyceride  $> 250\text{mg/dL}$
  - A1C  $\geq 5.7\%$ , IGT or IFG on previous testing
  - Previous gestational diabetes or large-for-gestational age infant ( $> 9\text{lbs.}$ )
  - History of cardiovascular disease
  - Acanthosis Nigricans, severe obesity
  - Polycystic Ovary Syndrome (PCOS)
  - High risk ethnic group (Latino, African American, Asian American, American Indian, Pacific Islander)

Obtain A1C, fasting plasma glucose (FPG) or 75gm oral glucose tolerant test (OGTT)

Patient diagnosed with prediabetes or diabetes?

No

Continue to screen every three years or more frequently with risk factors

Yes

Does patient have diabetes?

Yes

Initiate therapy, screen for diabetes related complications, refer for self-management education and medical nutrition therapy

No

Initiate lifestyle interventions for treatment of prediabetes; establish achievable targets/ goals with patient; examples include:  
**Weight loss:** 5-7% total body weight  
**Physical activity:** 150 minutes/week (examples include walking, biking, dancing, swimming, pilates, yoga)  
 Structured programs such as those based on Diabetes Prevention Program, Weight Watchers, Curves, YMCA, and health clubs should be considered  
 Follow-up: Every 3 months

Diagnostic Criteria for Prediabetes and Diabetes (A1C in % and glucose values in mg/dL)			
	Normal	Prediabetes	Diabetes
A1C	$\leq 5.6$	5.7-6.4	$\geq 6.5$
FPG	$< 100$	100-125	$\geq 126$
2 hr 75gm OGTT	$< 140$	140-199	$\geq 200$
RPG	$< 140$	N.A.	$\geq 200$ + symptoms

Confirm diagnosis on subsequent day unless evidence of unequivocal hyperglycemia; consider OGTT for patients with symptoms of diabetes and normal or impaired fasting plasma glucose (IFG)

Is patient achieving targets?

Yes

Offer positive feedback, continue to reinforce lifestyle changes; screen for diabetes every 6-12 months

No

Consider starting metformin\* if no contradictions and if any of the following: BMI  $> 35\text{kg/m}^2$ ; age  $< 55$  years; FPG 120 - 125mg/dL  
**Starting Dose:** 500mg QD with food  
 Increase dose every 1-2 weeks, to achieve clinically effective dose of 1500-2000 mg/day, based on tolerability  
 Follow-up: Every 1-3 months

Common ICD-9 Codes for Diabetes Screening	
V77.1	Diabetes Screening
790.21	Impaired Fasting Glucose
790.22	Impaired Glucose Tolerance (oral)
278.00	Obesity
CPT Codes for Diabetes Screening	
CPT 83036	Hemoglobin A1C
CPT 82947	Fasting Plasma Glucose Test
CPT 82950	Post-meal Glucose
CPT 82951	Oral Glucose Tolerance Test

Medicare covers one glucose test/year if never previously tested, one test/year if previously tested and not diagnosed with prediabetes and two tests/year for individuals with prediabetes

\*Off-label use of Metformin, based on Diabetes Prevention Program