Michigan Quality Improvement Consortium Guideline

Management of Type 2 Diabetes Mellitus

The following guideline applies to patients aged 18-75 years with type 2 diabetes mellitus. It recommends specific interventions for periodic medical assessment, laboratory tests and education to guide effective patient self-management.

Key Components

Assessment (at least every 6 months, more frequently as needed to support management of weight, blood pressure, glycemia or secondary prevention interventions)

Weight **[A]**: recent weight trend. Goal for overweight patients is gradual weight loss. Weight gain is a red flag and should prompt aggressive interventions to support weight stabilization or weight loss. Record BMI annually.

Blood pressure **[A]**: Goal <140/90. If high cardiovascular disease (CVD) risk (10-year ASCVD risk ≥ 15%) or known CVD, <130/80. Calculate ASCVD risk. Record BP and risk results.
Refer to treatment algorithm (p. 124/S116) for patients with diabetes.

Glycemia: usually measured with A1c **[E]**, fasting glucose or continuous glucose monitoring may be used.
Individualize the A1c goal (pg. 79/S71). Goal depends on patient's health and frailty status. See box below for A1c targets.

Social determinants of health: especially food insecurity, housing stability and financial barriers

Additional assessment and interventions:

CVD: smoking; lipid profile **[E];** statin **[A]**; if confirmed CVD, ASA (75-162 mg/day) unless contraindicated. **[A]**
Tobacco/nicotine cessation **[B]** including second-hand smoke avoidance, offer nicotine replacement therapy and/or non-nicotine medications (varenicline, bupropion, others). **[A]**
Blood pressure control **[A]**, diet and exercise, weight loss, SGLT-2 inhibitors, GLP-1 agonists.

Chronic kidney disease (CKD): microalbuminuria **[B]**, ACE inhibitor or ARB. Serum creatinine for estimated glomerular filtration rate (eGFR) annually. **[B]**
Blood pressure control, glycemic control, limit NSAIDS and other renal-toxic medications.

Retinopathy: fundoscopic exam by an ophthalmologist or optometrist, or fundal photography if no history of retinopathy. **[B]** If retinopathy, repeat eye exam annually. If no retinopathy, every 1-2 years.
Glycemic control.

Foot ulcers: foot exam every visit. **[B]** Review home foot care education including exercise, appropriate footwear, nail and skin care. **[B]** Refer to podiatrist or foot care specialist if high risk feet.

Immunizations **[C]:** ensure appropriate immunization status, especially pneumococcal (PPSV23), influenza and HepB.

Infectious diseases: pneumococcal, influenza and HepB vaccines

Non-alcoholic steatohepatitis (NASH): consider screening with LFTs; treatment is diet, exercise and weight loss

Importance of participation in Diabetes Self-Management Education and Support (DSMES) **[A]** from a collaborative team or diabetic educator. Locate DSMES services.

Preconception counseling for all women capable of pregnancy. **[A]**

Dental care

Weight Loss:

For those patients who are obese or gaining weight over time, consider referral to a comprehensive weight loss program if available, or to a diabetes educator.
Nutritional counseling should focus on: increasing daily consumption of low glycemic index vegetables, moderate consumption of protein and heart health fats, and decreasing or eliminating high glycemic index and highly processed carbohydrates including sugar-sweetened beverages. Consider medical work-up for sleep apnea, hypothyroidism, anemia. Review medication list to eliminate obesogenic medication choices where other options are available. Encourage 30 minutes of walking daily or other exercise program.

Hypertension control:

Evidence-based non-pharmacologic interventions for blood pressure management include weight loss, regular exercise, salt restriction and alcohol reduction.
First-line medication for blood pressure management in patients with diabetes are ACE-I/ARB, thiazide-like diuretic, or dihydropyridine CCB. **[A]**

Glycemic Control:

Most type 2 diabetics benefit from Metformin, if tolerated, as it's been shown to slow progression of the disease and it can help weight loss. For those not well controlled (A1c > 7% for most people) with diet, exercise and metformin, additional medications should be considered. Consider newer medications such as SGLT-2 inhibitors and GLP-1 agonists which have been shown to slow progression of heart disease, heart failure, and CKD, and to induce weight loss in people with diabetes.

Educate on role of self-monitoring of blood glucose in glycemic control. **[A]**

A1c Goals:
<6.5% - women planning pregnancy **[B]**
<6.5% - treated only with lifestyle, metformin-like drugs
<7% - for most patients **[A]**
7-8% - those with a <10 year life expectancy, severe hypoglycemia, severe macrovascular complications or severe CKD

Levels of Evidence for the most significant recommendations: A = randomized controlled trials; B = controlled trials, no randomization; C = observational studies; E = opinion of expert panel

This guideline lists core management steps. It is based on the American Diabetes Association Standards of Medical Care in Diabetes - 2020 Jan; 43 (Supplemental 1): S1-S212. Individual patient considerations and advances in medical science may supersede or modify these recommendations.

Approved by MQIC Medical Directors 2000, 2002, 2004, 2006; June 2008, 2010, 2012, 2013, 2014, 2015, 2016, 2018, 2020 **MQIC.ORG**