Type 2 Diabetes and Serious Mental Illness

Diabetes is a disease that affects how the body uses sugar (glucose), one of the main energy sources for the body's cells. Glucose is obtained from food and enters the bloodstream when food is digested. In the adult population, the most prevalent form of diabetes is type 2 diabetes, which is the focus of this navigator tip sheet. In type 2 diabetes, insulin (a hormone that helps the body use glucose) does not work well or too little exists. Insulin is similar to a key that unlocks the doors to the cells of the body to let in the glucose from the bloodstream. In diabetes, cells that produce insulin become “exhausted” over time with the need to produce more and more insulin. This eventually leads to little or no insulin and no way for glucose to leave the bloodstream. When glucose can no longer enter into the cells from the bloodstream normally, blood sugar (glucose) levels can get too high and stay this way. Persistently high blood glucose levels can cause serious damage to other parts of the body (i.e., complications of diabetes), including the heart, kidneys, eyes, and nerves.

**RISK FACTORS**

Type 2 diabetes occurs more commonly in older adults and obese or physically inactive persons. Type 2 diabetes is strongly heritable, meaning that it is common within families and within certain ethnicities (African American, American Indian, Asian American, Pacific Islander, or Hispanic American/Latino heritage). It is also common among individuals with serious mental illness (SMI). Medications used to treat mental illness symptoms (e.g., quetiapine, risperidone, aripiprazole, olanzapine, and ziprasidone) can lead to obesity and increase the risk of developing type 2 diabetes. In sum, risk factors for type 2 diabetes include poor diet, physical inactivity, certain psychotropic medications, older age, and a family history of the condition.

**SYMPTOMS**

- Increased thirst and hunger
- Frequent urination
- Weight loss
- Fatigue
- Blurred vision
- Slow healing wounds

**DIAGNOSIS**

Any of the following:

- **Fasting Blood Glucose Test** – Blood glucose level of 126 mg/dl or higher after an 8-hour fast
- **Oral Glucose Tolerance Test** – Blood glucose level of 200 mg/dl or higher 2 hours after drinking a beverage containing 75 grams of glucose dissolved in water
- Random blood glucose level of 200 mg/dl or higher along with the presence of diabetes symptoms
- Hemoglobin A1c (a marker of long-term glucose levels) greater than or equal to 6.5%
SUPPORTING CLIENTS WITH DIABETES AND MENTAL ILLNESS

- Try to understand the client’s perspective. Managing diabetes can require changes in all areas of one’s life and can be overwhelming in the beginning stages or during the complications of illness.
- Ask directly about barriers that might hinder clients in their attempt to manage their overall health (e.g., financial challenges, lack of experience cooking healthy meals, availability of physical activity opportunities and healthy foods, home environment, difficulty in understanding doctors’ instructions, etc.).
- Reach out to clients to remind them of clinically recommended screenings and check-ups using a schedule like the one outlined in this tip sheet.
- Ask clients to demonstrate how they check their own blood sugar and read a glucometer, and provide support to encourage them to complete this task as directed by their provider.
- Make sure that the client can identify symptoms of low blood sugar, including hunger, shakiness, nervousness, sweating, dizziness, light-headedness, confusion, difficulty speaking, anxiety, and/or weakness.
- Make sure that the client can identify symptoms of high blood sugar, like increased thirst and hunger, increased urination, fatigue, weight loss, blurred vision, and/or slow healing wounds.
- Ask clients what they would do if they have symptoms of high or low blood sugar or very high or very low glucometer readings. This helps clients plan for these potential situations.
- Ask clients to show you their glucose tablets, pills, or liquid that they should always carry in case of low blood sugar. Alternatively, the client could consume hard candy, fruit juice, or milk to raise blood sugar if they do not have glucose supplements readily available.
- Use motivational interviewing techniques to help clients set goals to manage their condition and symptoms. Congratulate clients when they make progress toward their goals.
- Discuss strategies with clients for remembering to take medications, dealing with common side effects, and what clients should do if they miss a dose.
- Help clients identify questions they should ask their provider to understand management of diabetes.
- Link clients to resources, such as assistance with meal planning and shopping, nutritional counseling, exercise groups targeted to those with serious mental illness, peer support groups, and health education workshops.

★★★★★★★★★★★★★★★★WATCH OUT FOR★★★★★★★★★★★★★★★★

- Significant changes in lab values compared to previous values. Ensure that you work with the primary care team for follow-up.
- A breath smell that is fruity or like nail polish remover (indicating possible ketoacidosis, a potentially life-threatening condition requiring immediate clinical attention).
- Disoriented behavior or any rapid change in usual mental status or language, abnormality in the way the person walks or hold their arms in front of them, asymmetry in facial expressions (these could be signs of dehydration, poor glucose control, or stroke).
- Clients mentioning high blood sugar readings, frequent urination, extreme fatigue or rapid weight loss.
- Chest pain or any other unusual chest or abdominal symptoms that could be signs of heart disease (a frequent complication of diabetes). In people with diabetes, especially women, the symptoms of heart attack are frequently atypical.
- Non-healing ulcers or foot infections. Ask clients to take off their shoes so you can check for visible foot issues, and work with the primary care team for follow-up as needed.
- Greater depressive symptoms. Persons living with diabetes, a persistent illness that affects much of their life, often experience depression and changes in mood.
<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>SCREENING</th>
<th>GOAL</th>
<th>CHECKLIST</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>Postprandial Glucose Test (PPG): Measures blood glucose exactly 2 hours after eating a meal</td>
<td>&lt;180 mg/dL</td>
<td>Client is checking values daily? Yes ☐ No ☐</td>
<td>Support client in using glucometer to check blood sugar on a routine schedule and when feeling ill.</td>
</tr>
<tr>
<td>Daily</td>
<td>Fasting Plasma Glucose (FPG): Measures blood glucose at least 8 hours after eating a meal</td>
<td>70 to 130 mg/dL</td>
<td>Client is checking values daily? Yes ☐ No ☐</td>
<td>Support client in using glucometer to check blood sugar on a routine schedule and when feeling ill.</td>
</tr>
<tr>
<td>Ongoing</td>
<td>Healthy Meal Plan</td>
<td>Aim for 45-60 grams of carbohydrates per meal. Eat whole-grain foods, fruits and non-starchy vegetables. Limit salt and fat intake.</td>
<td>Client is following healthy meal plan? Yes ☐ No ☐</td>
<td>If client is not adhering to a healthy meal plan, direct them to resources to support nutrition.</td>
</tr>
<tr>
<td>Ongoing</td>
<td>Physical Activity: As recommended by provider</td>
<td>As recommended by provider, but in general aim for at least 30 minutes/day of moderate activity, 5 days of the week.</td>
<td>Client is following exercise plan? Yes ☐ No ☐</td>
<td>If client is not meeting physical activity goal, direct them to resources to support physical activity.</td>
</tr>
<tr>
<td>Ongoing</td>
<td>Smoking and Alcohol Consumption</td>
<td>Smoking cessation is strongly recommended for all clients with diabetes. Advise client to follow provider’s advice regarding alcohol consumption as alcohol can cause diabetes complications.</td>
<td>Smoker? Yes ☐ No ☐</td>
<td>Discuss smoking cessation strategies if client is a smoker, and ways to reduce alcohol consumption if not at goal. Refer to the Smoking and Serious Mental Illness tip sheet in additional resources.</td>
</tr>
<tr>
<td>Ongoing</td>
<td>Blood Pressure (if recommended by provider)</td>
<td>Systolic: &lt;120mmHg Diastolic: &lt;80mmHg If over age 65, goal is &lt;140/90mmHg</td>
<td>Date checked: __________ BP reading: ________</td>
<td>If client is not checking values as recommended by provider, support them in checking blood pressure.</td>
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<tr>
<td>Ongoing</td>
<td>Body Mass Index (BMI)</td>
<td>Underweight = &lt;18.5 kg/m² Normal weight = 18.5–24.9 kg/m² Overweight = 25–29.9 kg/m² Obesity = 30 kg/m² or greater</td>
<td>Date checked: __________ BMI reading: ________</td>
<td>If not at goal, discuss ways to improve BMI through improved diet and physical activity.</td>
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<tr>
<td>Ongoing</td>
<td><strong>Hemoglobin A1C Test:</strong> Provides an average of blood sugar control over a six to 12 week period</td>
<td>&lt;7.0%</td>
<td>Date checked: _______ A1C: _______</td>
<td>If not at goal, discuss ways to improve blood sugar control through improved diet and physical activity. Provide client reminders for appointments (in clinically recommended timeframe) to complete these labs/tests.</td>
</tr>
<tr>
<td>Annually or more frequently if not at goal</td>
<td><strong>Lipid Panel</strong></td>
<td>Cholesterol: &lt;200mg/dL HDL: Men (≥40mg/dL); Women (≥50 mg/dL) LDL: &lt;100mg/dL Triglycerides: &lt;150mg/dL</td>
<td>Date checked: _______ Cholesterol: _______ LDL: _______ HDL: _______ Triglycerides: _______</td>
<td>If not at goal, discuss ways to improve health indicators through diet and physical activity.</td>
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<tr>
<td>Annually</td>
<td><strong>Urine Sample for Protein / Microalbumin:</strong> Used to check for very small amounts of protein in the urine, indicating early stage chronic kidney disease</td>
<td>&lt;30mg</td>
<td>Date checked: _______ Protein / Microalbumin: _______</td>
<td>Provide client reminders for annual appointment to complete this lab.</td>
</tr>
<tr>
<td>Annually</td>
<td><strong>Comprehensive Foot Exam</strong></td>
<td>Inspection, assessment of foot pulses, and test for loss of protective sensation</td>
<td>Date checked: _______</td>
<td>Remind clients to check their feet regularly at home. Provide client reminders for annual appointment to complete this exam.</td>
</tr>
<tr>
<td>Annually</td>
<td><strong>Eye Exam</strong></td>
<td>Comprehensive dilated eye exam</td>
<td>Date checked: _______</td>
<td>Provide client reminders for annual appointment to complete this exam.</td>
</tr>
<tr>
<td>Annually</td>
<td><strong>Flu Vaccine</strong></td>
<td>Receipt of annual flu vaccination</td>
<td>Date of vaccine: _______</td>
<td>Provide reminders for appointments (in an appropriate timeframe) to complete vaccination.</td>
</tr>
<tr>
<td>One-Time</td>
<td><strong>Pneumonia Vaccine</strong></td>
<td>Receipt of pneumonia vaccine for adults aged 65+ or persons with diabetes aged 50+</td>
<td>Date of vaccine: _______</td>
<td>Provide reminders for appointments (in an appropriate timeframe) to complete vaccination.</td>
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</tbody>
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Clinical recommendations are based on guidelines for type 2 diabetes care and input from clinical experts. Please see additional resources for links to clinical recommendations. You can help your client use this list as a starting point to prioritize and individualize these goals and activities.

**ADDITIONAL RESOURCES**

- ADA Diabetes Pro: [http://professional.diabetes.org](http://professional.diabetes.org)
- Resources for Integrated Care, *Smoking Cessation and Serious Mental Illness Tip Sheet for Navigators*: [https://www.resourcesforintegratedcare.com/Smoking_Cessation_and_Serious_Mental_Illness](https://www.resourcesforintegratedcare.com/Smoking_Cessation_and_Serious_Mental_Illness)

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