

**Scenario: Type 2 DM**

S.S., a 58-year-old Asian woman, comes to the clinic with chronic fatigue, thirst, constant hunger, and frequent urination. She denies any pain, burning, or low-back pain on urination. She tells you she has had frequent vaginal yeast infections that she has treated with over-the-counter medication. She works full time at a bank and states she has difficulty reading numbers and reports, resulting in her making some mistakes. She says, “By the time I get home and make supper, I am too tired to do anything else.” She says her feet often “burn or feel like there are pins in them.” She has a history of gestational diabetes. In reviewing S.S.’s chart, you note she last saw the provider 6 years ago. Her current weight is 173 lbs (78.5 kg). She is 5’3” (135 cm) tall. Today her BP is 152/97 mm Hg. A random plasma glucose level is 291 mg/dL (16.2 mmol/L). The provider suspects she has developed type 2 diabetes (DM) and orders the laboratory studies shown in the chart.

**Laboratory Test Results**

|   |                         |
|---|-------------------------|
| Fasting glucose                               | 184 mg/dL (10.2 mmol/L) |
| Hemoglobin A <sub>1c</sub> (A <sub>1c</sub> ) | 8.8%                    |
| Total cholesterol                             | 256 mg/dL (6.6 mmol/L)  |
| Triglycerides                                 | 346 mg/dL (3.91 mmol/L) |
| Low-density lipoprotein (LDL)                 | 155 mg/dL (4.01 mmol/L) |
| High-density lipoprotein (HDL)                | 32 mg/dL (0.83 mmol/L)  |
| Urinalysis (UA)                               | + glucose, - ketones    |

1. Interpret S.S.’s laboratory results.

Fasting glucose is high  
 A1C is high  
 Total cholesterol is high  
 Triglycerides are high  
 LDL are high  
 HDLs are normal  
 Urinalysis- positive for glucose meaning high amounts of sugar in the urine.

2. Identify 3 methods we use to diagnose DM.

A1C  
 fasting plasma glucose test  
 random plasma glucose test

3. Name 6 risk factors for type 2 DM. Highlight those that S.S. has.

Family history, overweight, unhealthy diet, increasing age, high blood pressure, having a history of gestational diabetes

4. Which of her assessment findings are consistent with type 2 DM?

Her BP, weight, feet often feeling like they have pins in them, or they are burning (neuropathy)

## CASE STUDY PROGRESS

S.S. is diagnosed with type 2 DM. The provider starts her on metformin 500 mg orally each day at breakfast and atorvastatin 20 mg orally at bedtime. She is referred to the dietitian for instructions on starting a 1200-calorie diet using an exchange system to promote weight loss and lower glucose, cholesterol, and triglyceride levels. You are to provide teaching about pharmacotherapy and exercise.

5. How can you incorporate S.S.'s cultural preferences as you develop her teaching plan?

Educating her to eat carbohydrates in moderation and not with every meal, she can meet with a dietician in order to help her come up with healthy meal plans still incorporating foods from her culture.

6. What is the reason for starting S.S. on metformin?

We are going to be giving S.S metformin in order to lower her blood glucose.

7. Outline the general teaching you would provide S.S. about oral hypoglycemic therapy.

Primary risk associated with oral hypoglycemic therapy is hypoglycemia which you will see shakiness, sweating, hunger, irritability

8. What would you teach S.S. to do if she becomes ill with the flu or viral illness?

Make sure to continue metformin, monitor blood sugar frequently, staying hydrated, maintain a good diet.

9. What benefits would S.S. receive from exercising?

This will decrease her weight, which will help with her blood glucose which will help with her type 2 diabetes.

10. What would you teach S.S. about exercise?

Making sure she is working out 5 times a week, wearing good shoes that cover entire foot, making sure to look at feet after workout to look for any signs of open cuts.

11. Besides the dietitian, what interprofessional and community referrals may be appropriate for S.S.?

You can refer them to a support group with other people with type 2 diabetes, also a diabetic educator to help them understand everything they need to know about diabetes.

## CASE STUDY PROGRESS

S.S. comments, "I've heard many people with diabetes lose their toes or even their feet." You take this opportunity to teach her about neuropathy and foot care.

12. Which symptoms lead you to believe S.S. has some form of neuropathy?

Pins and often times burning in her foot.

13. What other findings in S.S.'s history increase her risk for developing neuropathy?

She has a history of gestational diabetes.

14. What would you teach S.S. about neuropathy?

Making sure to assess feet daily for any cuts in order to prevent them from getting worse.

15. Because S.S. has symptoms of neuropathy, placing her at risk for foot complications, you realize you need to instruct her on foot care. Outline 5 points you would include when teaching her about foot care for persons with DM.

Making sure to wash feet daily, check them for blisters and cuts daily, wearing socks and shoes everyday, make sure to cut toenails, assess for numbness and tingling in feet daily/

16. What ongoing monitoring will S.S. need for nephropathy and retinopathy?

Eating healthy, taking care of her feet, exercising, monitoring blood sugar levels frequently.

17. At the conclusion of the visit, which statements indicate S.S. has an accurate understanding of the teaching you provided about DM? Select 4 correct options.

- a. "When I am ill, I do not need to take the metformin."
- b. "The only place it is safe to go barefoot is in my house."
- c. "It is best to take the metformin at breakfast and dinner."
- d. "Looking at the condition of my feet every day is important."
- e. "I will make an appointment with the eye doctor next week."
- f. "Taking a walk for at least 20 minutes a day will help my DM."
- g. "If I take my medicine, I can eat what I want, and my glucose will be fine."
- h. "I will be able to stop the metformin when my pancreas starts working better."

**i. CASE STUDY PROGRESS**

- j. 18. S.S. returns to the clinic 6 weeks later for a follow-up appointment. She met with the diabetic educator and is making changes to her eating habits and has started walking. **For each assessment finding, use an X to indicate whether the interventions were Effective (helped to meet expected outcomes), Ineffective (did not help to meet expected outcomes), or Unrelated (not related to the expected outcomes).**

| <b>Assessment Finding</b>                               | <b>Effective</b> | <b>Ineffective</b> | <b>Unrelated</b> |
|---|------------------|--------------------|------------------|
| a. Reports stress incontinence when she coughs, sneezes |                  |                    | X                |
| b. BP 130/78 mm Hg                                      | X                |                    |                  |
| c. Fasting blood glucose level results: 153 mg/dL       |                  | X                  |                  |
| d. Weight loss of 6 pounds (2.7 kg)                     | X                |                    |                  |
| e. Reports decreased tingling in her toes.              | X                |                    |                  |
| f. Reports continued blurred vision.                    |                  | X                  |                  |
| g. Eating dinner with her husband every night.          |                  |                    | X                |
| h. Hemoglobin A1C level results: 8.2%                   | X                |                    |                  |
| i. Reports of frequent urination                        |                  | X                  |                  |