

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 _{1c} (A _{1c})	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.

- FBG is increased from the normal range of 70-99
- HbA1C is increased from normal range of 5-7%
- Total cholesterol is increased from normal range of <200
- Triglycerides are increased from normal range of <150 mg/dL
- LDL are increased from normal range of <100 mg/dL
- HDL is decreased from normal range of >50 mg/dL

2. Identify 3 methods we use to diagnose DM.

- Symptoms associated with DM (increased urination, increased thirst, glucose >100)
- Fasting Plasma Glucose Test
- Oral Glucose Tolerance Test

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

Family history, overweight, unhealthy diet, decrease in physical activity, High blood pressure, family hx.

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

Glucose levels

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?

Having written out instructions as to why she is on these meds and when to take them.

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

Treats high blood sugar levels.

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

Looking out for s/s of hypoglycemic, to take as directed and do not take with alcohol or sugary meals.

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

Stay hydrated, rest, continue to check blood glucose and if have not received the vaccine to get the vaccine.

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

Better physical and mental health, insulin injections will not be as hard, helps control bloodsugars and decreases risk for complications.

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

Do not push too hard and to try to get some form of activity at least 30 min every day, take blood sugar before exercising.

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

Physical activity specialist or personal trainer that can really help direct exercises for her.

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?

Numbness and tingling in feet.

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

Diet, feeling of pins and needles, taking over the counter meds for yeast infection.

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

Foot care, healthy lifestyle choices, no smoking and limit alcohol drinking.

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.

Daily foot inspections, proper foot hygiene, wearing well fitting shoes, seeking medical treatment for any foot issues, washing feet daily.

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

Feet and eye exams yearly.

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).**

Assessment Finding	Effective	Ineffective	Unrelated
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