

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.

Fasting Glucose: Poor control of blood sugar due to not enough insulin being produced in the body

Hemoglobin: Diabetes 2 being unmanaged

Total Cholesterol: Due to stress, unhealthy meals, low exercise

Triglycerides: Due to unhealthy diet and low exercise

LDL: Due to unhealthy diet and low exercise

HDL: Due to stress, unhealthy meals, low exercise

UA: Due to type 2 diabetes

2. Identify 3 methods we use to diagnose DM.

CLASS PREP: Endocrine

A1C level

Fasting glucose level

Symptoms present

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

Obesity

Family hx

Inadequate diet

Lack of exercise

High levels of bad cholesterol

Hypertension

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

Fasting glucose level, chronic fatigue, thirst, constant hunger, and frequent urination, pins and needles in feet

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?

Give healthy meal suggestions that match with her cultural background

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

It is a medication used for type 2 diabetes

CLASS PREP: Endocrine

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

Take as prescribed, the S/S of hypoglycemia, monitor blood sugar to go along with taking medication

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

Do not take OTC medication

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

Lower blood sugar, lower bad cholesterol, higher good cholesterol

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

It is important in diabetes management, watch out for neuropathy

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

Primary healthcare provider, diabetes support groups

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?

The pins and tingling in feet at the end of the day

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

Decreased activity level, uncontrolled blood sugar, HTN

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

CLASS PREP: Endocrine

It can be improved with increased activity level and controlling of blood sugar

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.

Inspect feet once daily

Wash feet daily

Wear shoes that fit

Contact primary provider if wounds appear

Ambulate to help improve circulation

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

Regular follow up visits with healthcare provider

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	