

### QUESTION

A 65-year-old male patient with a long history of hypertension and a recent diagnosis of type 2 diabetes mellitus is being treated with lisinopril and metformin. He has been experiencing persistent fatigue and weakness over the past several weeks. His most recent laboratory tests are as follows:

Parameter	Value	Reference Range
Hemoglobin (Hb)	11.5 g/dL	13.5-16.5 g/dL
Hematocrit (Hct)	35%	40%-50%
Mean Corpuscular Volume (MCV)	100 fL	80-100 fL
Red Blood Cell Count (RBC)	3.5 million/mm <sup>3</sup>	4.5-6.0 million/mm <sup>3</sup>
White Blood Cell Count (WBC)	8,000/mm <sup>3</sup>	4,000-11,000/mm <sup>3</sup>
Platelet Count	150,000/mm <sup>3</sup>	150,000-400,000/mm <sup>3</sup>
Serum Ferritin	200 ng/mL	50-200 ng/mL
Serum Iron	150 µg/dL	50-150 µg/dL
Total Iron Binding Capacity (TIBC)	300 µg/dL	250-400 µg/dL
Transferrin Saturation (TSAT)	50%	20%-50%
Serum Vitamin B12	300 pg/mL	200-900 pg/mL
Serum Folate	12 ng/mL	3-20 ng/mL

The patient's physical examination is unremarkable. He is not taking any over-the-counter medications or supplements. His diet is generally healthy but lacks variety. He has no family history of anemia. The most likely cause of his anemia is:

- Iron deficiency anemia
- Vitamin B12 deficiency
- Folate deficiency
- Chronic kidney disease
- Acute blood loss

Select the most appropriate answer.

### ANSWER

The correct answer is **A: Iron deficiency anemia**. The patient's laboratory findings are consistent with iron deficiency anemia. The hemoglobin is 11.5 g/dL (normal 13.5-16.5 g/dL) and the hematocrit is 35% (normal 40%-50%), indicating a normochromic, normocytic anemia. The mean corpuscular volume (MCV) is 100 fL (normal 80-100 fL), which is at the upper limit of normal. The red blood cell count is 3.5 million/mm<sup>3</sup> (normal 4.5-6.0 million/mm<sup>3</sup>). The serum ferritin is 200 ng/mL (normal 50-200 ng/mL), which is at the upper limit of normal. The serum iron is 150 µg/dL (normal 50-150 µg/dL), which is at the upper limit of normal. The total iron binding capacity (TIBC) is 300 µg/dL (normal 250-400 µg/dL), which is at the lower limit of normal. The transferrin saturation (TSAT) is 50% (normal 20%-50%), which is at the upper limit of normal. The serum vitamin B12 is 300 pg/mL (normal 200-900 pg/mL), which is at the lower limit of normal. The serum folate is 12 ng/mL (normal 3-20 ng/mL), which is at the lower limit of normal.

The patient's symptoms of fatigue and weakness are consistent with iron deficiency anemia. The most likely cause of his anemia is iron deficiency anemia. The patient's diet is generally healthy but lacks variety, which may contribute to iron deficiency. The patient's physical examination is unremarkable, which is consistent with iron deficiency anemia. The patient's laboratory findings are consistent with iron deficiency anemia. The hemoglobin is 11.5 g/dL (normal 13.5-16.5 g/dL) and the hematocrit is 35% (normal 40%-50%), indicating a normochromic, normocytic anemia. The mean corpuscular volume (MCV) is 100 fL (normal 80-100 fL), which is at the upper limit of normal. The red blood cell count is 3.5 million/mm<sup>3</sup> (normal 4.5-6.0 million/mm<sup>3</sup>). The serum ferritin is 200 ng/mL (normal 50-200 ng/mL), which is at the upper limit of normal. The serum iron is 150 µg/dL (normal 50-150 µg/dL), which is at the upper limit of normal. The total iron binding capacity (TIBC) is 300 µg/dL (normal 250-400 µg/dL), which is at the lower limit of normal. The transferrin saturation (TSAT) is 50% (normal 20%-50%), which is at the upper limit of normal. The serum vitamin B12 is 300 pg/mL (normal 200-900 pg/mL), which is at the lower limit of normal. The serum folate is 12 ng/mL (normal 3-20 ng/mL), which is at the lower limit of normal.

Select the most appropriate answer.