1. **Which of the following best describes dystrophic calcification?**

   a) Deposition of calcium in healthy tissues due to hypercalcemia

   b) Deposition of calcium in dead or injured tissues despite normal calcium levels

   c) Deposition of calcium in bones to prevent fractures

   d) Increased calcium absorption from the intestines

2. **Metastatic calcification is most commonly associated with which condition?**

   a) Diabetes mellitus

   b) Cirrhosis

   c) Hepatitis

   d) Hyperparathyroidism

3. **In which of the following organs is metastatic calcification most commonly found?**

   a) Heart, brain, and eyes

   b) Lungs, kidneys, and vessels

   c) Skin, liver, and intestines

   d) Muscles, bones, and pancreas

4. **Which of the following is a common cause of dystrophic calcification?**

   a) Vitamin D intoxication

   b) Hyperthyroidism

   c) Atherosclerosis

   d) Paget’s disease

5. **Which of the following is typically the cause of intracellular iron accumulation seen in hemosiderosis?**

   a) Increased red blood cell production

   b) Excessive intake of dietary iron

   c) Hemolytic anemia and repeated blood transfusions

   d) Chronic infection with bacteria

6. **Which pigment is known as the "wear-and-tear pigment" and accumulates with aging?**

   a) Melanin

   b) Lipofuscin

   c) Bilirubin

   d) Hemosiderin

7. **Which of the following staining techniques is used to identify iron deposits in tissues?**

   a) H&E staining

   b) Prussian blue staining

   c) Gram staining

   d) Giemsa staining

8. **Hemosiderin is a pigment derived from:**

   a) Hemoglobin

   b) Melanin

   c) Lipids

   d) Calcium

9. **What is a common histological feature of alcoholic hyaline in liver cells?**

    a) Pink material deposits around the nucleus in hepatocytes

    b) Calcium deposits in hepatocytes

    c) Blue staining of intracellular iron

    d) Brown deposits in macrophages

10. **Dystrophic calcification occurs in which of the following circumstances?**

    a) Normal calcium metabolism and normal tissues

    b) Normal calcium metabolism and dead or injured tissues

    c) Hypercalcemia and normal tissues

    d) Hypercalcemia and injured tissues

11. **What is the primary cause of lipid accumulation in the liver (fatty liver disease)?**

    a) Alcohol abuse, DM and obesity

    b) Chronic infection

    c) High dietary cholesterol

    d) Genetic mutations affecting lipid metabolism

12. **What is the most common site of dystrophic calcification in atherosclerosis?**

    a) Brain

    b) Blood vessels

    c) Liver

    d) Lungs

13. Which of the following describes metastatic calcification?

a) Deposition of calcium in areas of tissue injury or necrosis

b) Deposition of calcium in healthy tissues due to abnormal calcium metabolism

c) Deposition of calcium in areas of infection

d) Deposition of calcium in adipose tissues

14. Which pigment results from the breakdown of hemoglobin and is often associated with bruises?

a) Melanin

b) Lipofuscin

c) Hemosiderin

d) Cholesterol

15. In which condition is iron overload, leading to hemosiderosis, most likely seen?

a) Atherosclerosis

b) Repeated blood transfusions

c) Liver cirrhosis

d) Type II diabetes

16. What are Russell bodies, often found in plasma cells?

a) Calcium deposits in liver cells

b) Aggregates of immunoglobulins in the cytoplasm

c) Lipid accumulations in blood vessels

d) Cholesterol deposits in atherosclerotic plaques

17. Which of the following is a key characteristic of lipofuscin accumulation?

a) Indicative of past free radical injury and aging

b) Marker of acute inflammation

c) Indicates excessive lipid intake

d) A sign of genetic disorders

18. A 70-year-old woman presents with nausea, vomiting, fatigue, and confusion. She mentions she has been taking high doses of vitamin D supplements for several months to "strengthen her bones." Lab results show elevated serum calcium and elevated serum 25-hydroxyvitamin D levels.
Which of the following is the most likely diagnosis?

a) Osteoporosis with hypocalcemia

b) Vitamin D deficiency with hypocalcemia

c) Vitamin D intoxication with hypercalcemia

d) Primary hyperparathyroidism

19. A 65-year-old man with a history of atherosclerosis presents with chest pain and shortness of breath. Imaging reveals calcifications in the coronary arteries. His calcium levels are normal.

What type of calcification is most likely present in this patient?

a) Metastatic calcification

b) Dystrophic calcification

c) Hypercalcemia-induced calcification

d) Osteoporotic calcification

20. **A 58-year-old woman with chronic kidney disease presents with fatigue and bone pain. Lab results show elevated calcium and phosphate levels. X-ray reveals calcification in the kidneys and lungs.**

Which of the following is the most likely diagnosis?

a) Dystrophic calcification

b) Metastatic calcification due to hypercalcemia

c) Normal aging process

d) Atherosclerotic calcification

21. **A 40-year-old man with a history of multiple blood transfusions for hemolytic anemia presents with fatigue and joint pain. A biopsy of the liver shows large deposits of hemosiderin within hepatocytes.**

What is the most likely underlying cause of this intracellular iron accumulation?

a) Hemosiderosis from repeated blood transfusions

b) Atherosclerosis leading to iron buildup

c) Excessive dietary iron intake

d) Dystrophic calcification

22. **A 55-year-old patient with chronic alcoholism presents with jaundice and liver pain. A biopsy of the liver shows pink deposits around the nuclei of hepatocytes.**

What is the most likely histological finding in this patient's liver?

a) Metastatic calcification

b) Lipofuscin accumulation

c) Alcoholic hyaline

d) Hemosiderin deposits

23. A 72-year-old woman presents with multiple skin lesions that appear dark brown in color. She has a history of prolonged sun exposure. Biopsy reveals increased pigment deposition in dermal macrophages.
What is the most likely pigment responsible for the skin lesions?

a) Lipofuscin

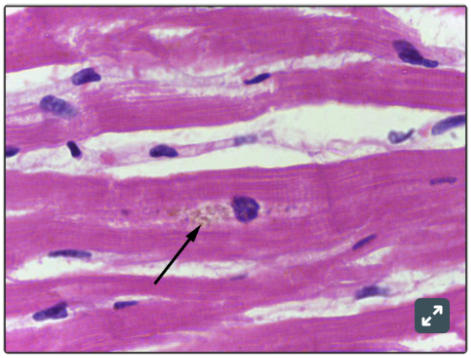
b) Melanin

c) Hemosiderin

d) Calcium deposits

Extra Step 1 question from Amboss: (Answer can be found below)

A 79-year-old homeless man is brought to the emergency department by ambulance 30 minutes after being found unresponsive by the police. On arrival, he is apneic and there are no palpable pulses. Despite appropriate life-saving measures, he dies. Examination of the heart during autopsy shows normal ventricles with a sigmoid-shaped interventricular septum. A photomicrograph of a section of the heart obtained at autopsy is shown. Which of the following is the most likely underlying cause for the structure indicated by the arrow?



A	Accumulation of iron granules	×
B	Clumping of defective mitochondria	×
C	Oxidation of phospholipid molecules	×
D	Aggregation of alpha-synuclein	×
E	Deposition of wild-type transthyretin	×

Answers:

1	2	3	4	5	6	7	8
B	D	B	C	C	B	B	A
9	**10**	**11**	**12**	**13**	**14**	**15**	**16**
A	B	A	B	B	C	B	B
17	**18**	**19**	**20**	**21**	**22**	**23**	
A	C	B	B	A	C	B	

Answer to Amboss Question: