

# Pheochromocytoma

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This month's quiz is based on the article "Pheochromocytoma: An Update on Risk Groups, Diagnosis, and Management," which begins on page 17 of this issue. Choose the single best answer for each question.

- All of the following are common signs and symptoms of pheochromocytoma EXCEPT**  
(A) Abdominal pain (C) Pallor  
(B) Nausea (D) Weight gain
- Which of the following statements about pheochromocytoma is NOT true?**  
(A) The classic triad of headache, diaphoresis, and palpitation has a diagnostic sensitivity greater than 92%  
(B) Pallor is seen more commonly than flushing  
(C) Orthostatic hypotension along with suggestive symptoms is highly specific for the diagnosis  
(D) Cholelithiasis can be seen in 3% to 23% of patients
- Pheochromocytomas may secrete all of the following EXCEPT**  
(A) Calcitonin (C) Epinephrine  
(B) Dopamine (D) Norepinephrine
- All of the following can be used for the preoperative management of pheochromocytoma EXCEPT**  
(A) Dopamine (C) Nifedipine  
(B) Metyrosine (D) Prazosin
- All of the following are appropriate measures for managing pheochromocytoma EXCEPT**  
(A) Observation for hypoglycemia in the immediate postoperative period  
(B) Preoperative medical blockade with a  $\beta$ -adrenergic blocker and metyrosine 2 weeks prior to surgery  
(C) Lifelong steroid replacement for patients undergoing bilateral adrenalectomy  
(D) Allow patients liberal salt intake 10 to 14 days prior to surgery
- A 48-year-old man reports frequent episodes of headache and diaphoresis. He has also had 2 episodes of nephrolithiasis in the past 6 months. A few years ago, he was diagnosed with medullary thyroid carcinoma. He is worried that his recent symptoms may be related to his thyroid carcinoma. Based on this patient's symptoms and past medical history, you would like to do genetic testing. Which genetic mutation is the most likely cause of all of this patient's symptoms?**  
(A) RET  
(B) von Hippel-Lindau  
(C) Neurofibromatosis type 1  
(D) Succinate dehydrogenase subunit D
- In evaluating a patient who is at low risk for pheochromocytoma, which biochemical test yields the least number of false-positive results?**  
(A) Plasma free metanephrine  
(B) Plasma norepinephrine  
(C) Urinary catecholamines  
(D) Urinary metanephrine
- A 33-year-old woman who is 16-weeks pregnant presents to the emergency department with worsening abdominal pain over the past 3 weeks. She has also had episodes of palpitations and nausea, which she believes are related to the pregnancy. Her blood pressure is 184/96 mm Hg, her heart rate is 98 bpm, and her plasma free metanephrine level is 356 ng/L. You would like to perform an imaging study. Which is the best test for this patient?**  
(A) Computed tomography scan  
(B) Magnetic resonance imaging  
(C) Metaiodobenzylguanidine  
(D) Positron emission tomography scan

For answers, see page 56.

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**Answers to the quiz on page 55. The article on pheochromocytoma appears on page 17.**

1. (D) Weight gain
2. (A) The classic triad of headache, diaphoresis, and palpitation has a diagnostic sensitivity of greater than 92%
3. (A) Calcitonin
4. (A) Dopamine
5. (B) Preoperative medical blockade with a  $\beta$ -adrenergic blocker and metyrosine 2 weeks prior to surgery
6. (A) RET
7. (D) Urinary metanephrine
8. (B) Magnetic resonance imaging

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