

Primary 12-Lead ECG Education Objectives

Section 1 A&P Review

1. Given a diagram of the chest, SWBAT locate the heart with regard to position, size and orientation within the chest cavity.
2. Given a diagram of the heart, SWBAT identify the 2 major coronary arteries and their 3 additional branches.
3. Given a diagram of the heart and its coronary arteries, SWBAT identify the region of the heart perfused by each
4. Given a diagram of the cardiac conduction system, SWBAT identify and list in order the following components:
 - SA Node
 - AV Node
 - Bundle of His
 - L and R Bundle Branches
 - Purkinje Fibers
5. SWBAT define the following terms with regard to cardiac electrophysiology:
 - Excitation
 - Depolarization
 - Resting potential
 - Action potential
 - Repolarization

Section 2 ECG Basics

6. SWBAT identify the positive and negative locations of the following leads:
 - I, II, III, AVR, AVL, AVF, V1-V6
7. With regard to a standard ECG tracing, SWBAT identify the isoelectric line and relative positive and negative deflections.
8. With regard to ECG, SWBAT recall and list the pathophysiology behind a positive deflection.
9. SWBAT identify the information available from monitoring a single ECG lead.
10. Given a standard ECG tracing SWBAT identify the following components:
 - P Wave
 - QRS Complex
 - T Wave
 - J Point

11. Given a standard ECG tracing SWBAT relate the following components to their sequence in the cardiac conduction cycle:
 - P Wave
 - QRS Complex
 - T Wave
 - J Point
12. Given a standard ECG tracing SWBAT list the correct time intervals of the following ECG components:
 - PR interval
 - QRS interval

Section 3 ECG Interpretation Review

13. SWBAT recall and list in order the appropriate steps in interpreting an ECG
14. SWBAT correctly utilize at least 2 methods of determining rate with regard to ECG interpretation
15. SWBAT define and list the three patterns of rhythm with regard to ECG interpretation
16. Given an ECG tracing, SWBAT identify and list the components of NSR
17. Given an ECG tracing, SWBAT identify and list the components of SB
18. Given an ECG tracing, SWBAT identify and list the components of ST
19. Given an ECG tracing, SWBAT identify and list the components of SVT
20. Given an ECG tracing, SWBAT identify and list the components of A Flutter
21. Given an ECG tracing, SWBAT identify and list the components of A Fib
22. Given an ECG tracing, SWBAT identify and list the components of 1st degree AV block
23. Given an ECG tracing, SWBAT identify and list the components of type I second degree block
24. Given an ECG tracing, SWBAT identify and list the components of type II second degree block
25. Given an ECG tracing, SWBAT identify and list the components of third degree AV block
26. Given an ECG tracing, SWBAT identify and list the components ventricular escape complexes
27. Given an ECG tracing, SWBAT identify and list the components PVC's
28. Given an ECG tracing, SWBAT identify and list the components V Tach

29. Given an ECG tracing, SWBAT identify and list the components V Fib
30. Given an ECG tracing, SWBAT identify and list the components asystole

Section 4 Intro to 12-Lead ECG

31. SWBAT recall and list two of the three steps necessary in preparing the chest for ECG lead placement
32. Given a modern 4-lead set of ECG leads, SWBAT correctly identify the placement location of the 4 leads on the chest.
33. Given a modern 6-lead (V-leads) set of ECG leads, SWBAT correctly identify the placement location of the 6 V-leads on the chest.

Section 5 12-Lead Interpretation

34. SWBAT recall that ECG interpretation notes nothing with regard to mechanical aspects
35. SWBAT recall and list the 3 components of the bundle branch system
36. SWBAT define the purpose of the bundle branch system
37. SWBAT define syncytium
38. SWBAT define and list at least 2 negative physiologic outcomes of a BBB
39. SWBAT recall and list the sequence of a bundle branch block
40. Using appropriate resources and given an ECG tracing, SWBAT identify a right and left BBB
41. SWBAT recall the limitation, with regard to ST elevation identification in the presence of a BBB.
42. SWBAT recall that the presence of a LBBB can indicate AMI

Section 6 Diagnostic 12-Lead ECG

43. SWBAT define and list 2 ECG findings associated with ischemia
44. SWBAT define and list at least 1 ECG finding associated with cardiac injury
45. SWBAT define and list at least 1 ECG finding associated with infarction
46. SWBAT recall the limitation of Q waves findings with regard to diagnosis of AMI
47. SWBAT recall and list the specific ECG leads associated with the inferior wall of the heart

48. Given an ECG tracing, SWBAT identify an inferior wall MI
49. SWBAT recall and list the specific ECG leads associated with the anterior wall of the heart
50. Given an ECG tracing, SWBAT identify an anterior wall MI
51. SWBAT recall and list the specific ECG leads associated with the lateral wall of the heart
52. Given an ECG tracing, SWBAT identify a lateral wall MI
53. SWBAT recall and list the specific ECG leads associated with the septal wall of the heart
54. SWBAT recall and list the specific ECG leads associated with the right ventricle of the heart
55. SWBAT recall and list the specific ECG leads associated with the posterior location of the heart
56. Given a modern 12-lead set of ECG leads, SWBAT correctly identify the placement location of the V4R lead
57. Given a modern 12-lead set of ECG leads, SWBAT correctly identify the placement location of the V8 and V9 leads
58. SWBAT define reciprocal ECG change
59. SWBAT recall and list the reciprocal ECG findings of a posterior wall AMI
60. Given an ECG tracing, SWBAT recall and list in order the steps in locating and identifying AMI.
61. SWBAT recall and list at least 2 imitators of infarction

Section 7 Diagnosing Tachycardias with 12-Lead ECG

62. Using appropriate resources and given an ECG tracing, SWBAT identify V-Tach

Section 8 EMS and ACS

63. SWBAT define ACS
64. SWBAT at least 2 complications of AMI
65. SWBAT define and list the 2 treatment goals for ACS
66. SWBAT define and list at least 1 limitation of ECG with regard to identification of ACS
67. SWBAT define STEMI

68. SWBAT define and list 2 types of diagnostic ECG findings with regard to ACS
69. SWBAT state the importance of serial 12-lead ECG
70. Given appropriate resources, SWBAT recall and list the components of a reperfusion checklist

Section 9 Practical

71. Given an ECG tracing, SWBAT identify a normal 12-lead ECG and an inferior, anterior, septal and lateral wall MI
72. Given a modern 4-lead set of ECG leads, SWBAT correctly place the 4 leads on a manikin or program patient chest.
73. Given a modern 6-lead (V-leads) set of ECG leads, SWBAT correctly place the 6 V-leads on a manikin or program patient chest.