

INTRODUCTION

Activity Summary

- Activity Title: Stress Test & Holter Monitor Course
- Release date: 2017-09-26
- Expiration date: 2022-09-26
- Estimated time to complete activity: 8 hours
- This course is accessible with any web browser. We recommend recent versions of Google Chrome, Internet Explorer 9 and later, or Apple iPad.

Target Audience

This activity has been designed to meet the educational needs of physicians, physician assistants, nurse practitioners and registered nurses involved in the diagnosis of patients experiencing cardiovascular illnesses.

Educational Objectives

After completing this activity, the participant should be better able to:

- Describe the anatomy of the heart and vascular system.
- Demonstrate an understanding of the function of the cardiovascular system.
- Understand how blood pressure is maintained in the cardiovascular system.
- Demonstrate a working knowledge of the ECG monitoring system.
- Recognize the criteria for cardiac rhythms.
- Recognize changes consistent with acute myocardial infarction.
- Determine axis on a 12-lead ECG.
- Describe the goals of stress testing.
- List the indications for stress testing.
- List the contraindications for stress testing.
- Perform common calculations related to stress testing.
- List indications for Holter Monitoring.
- Demonstrate proper lead placement.
- Describe Event Monitoring versus Holter Monitoring.

Faculty

- Judith Haluka, EMT-Paramedic – State of Pennsylvania

Disclosure of Conflicts of Interest

The *faculty* reported the following financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME activity:

- Judith Haluka — Has no real or apparent conflicts of interest to report

The *planners and managers* reported no financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME activity.

The following Pacific Medical Training planner and manager, William Entriken, hereby states that he or his spouse/life partner does not have any financial relationships or relationships to products or devices with any commercial interest related to the content of this activity of any amount during the past 12 months.

Media

Internet

Disclosure of Unlabeled Use

This educational activity may contain discussion of published and/or investigational uses of agents that are not indicated by the FDA. The planners of this activity do not recommend the use of any agent outside of the labeled indications.

The opinions expressed in the educational activity are those of the faculty and do not necessarily represent the views of the planners. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications, and warnings.

Disclaimer

Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed or suggested in this activity should not be used by clinicians without evaluation of their patient's conditions and possible contraindications and/or dangers in use, review of any applicable manufacturer's product information, and comparison with recommendations of other authorities.

SECTION 1: Certified Cardiographic Technician Exam Matrix

SECTION 2: Basic Cardiovascular Anatomy

Coronary Artery Distribution

Conduction System

Systemic Circulation

Works Cited

SECTION 3: Anatomical Terms

Works Cited

SECTION 4: Physiology

Normal Cardiac Pressures

Normal Cardiac Pressures

Normal Oxygen Saturations

Works Cited

SECTION 5: The Electrocardiogram and its Relationship to Cardiac Events

Understanding What Makes it all Work: Conduction and Contractility

Phase 4: Resting Phase

Phase 0: Depolarization

Phase 1: Early Repolarization

Phase 2: The Plateau Phase

Phase 3: Repolarization

Refractory Period: Time from Phase 0 until the next possible depolarization of the cell

Works Cited

SECTION 6: Recognition of Cardiac Arrhythmias

Sinus Bradycardia

Sinus Tachycardia

Sinus Arrhythmia (Sinus Dysrhythmia)

Wandering Atrial Pacemaker

Sinus Arrest

Section 6 Quiz, Part I — Check Your Knowledge

Section 6 Quiz, Part I Answers:

Premature Atrial Contractions

Supraventricular Tachycardia

Atrial Flutter

Atrial Fibrillation

Section 6 Quiz, Part II – Check Your Knowledge

Section 6 Quiz, Part II Answers:

Junctional Rhythm

AV Blocks

First-Degree AV Block

Second-Degree AV Block – Mobitz Type I (Wenckebach)

Second-Degree AV Block – Mobitz Type II

Third-Degree Heart Block

Section 6 Quiz, Part III – Check Your Knowledge

Section 6 Quiz, Part III Answers:

Premature Ventricular Contraction

Ventricular Tachycardia

Ventricular Fibrillation

Asystole – lack of electrical activity

Works Cited

SECTION 7: 12-Lead ECG Acquisition and Interpretation

ECG Axis Interpretation

The Important Stuff – Ischemia, Injury, and Infarction

Ischemia

Injury

Infarction

Bundle Branch Blocks

Right Bundle Branch Block (RBBB)

Left Bundle Branch Block (LBBB)

Works Cited

SECTION 8: Stress Test Techniques, Indications, and Contraindications

Indications For Stress Testing

Pharmacological Agents Used for Stress Testing

Test Interpretation: Reporting the Results

Works Cited

SECTION 9: Cardiac Medications (Routine)

Works Cited

SECTION 10: Holter and Event Monitoring

Works Cited

SECTION 11: Patient Emergencies

Ventricular Fibrillation – Pulseless Ventricular Tachycardia – Cardiac Arrest

Works Cited