

Hello and Welcome, and thank you for selecting MissionCIT's EMS Care courseware. I am Missah, your host for the first part of this Chapter About Ventilation, Perfusion and Shock: Understanding Pathophysiology.

My colleague Justin and I will take turns presenting the material.

As a reminder, or if you are starting in this Chapter, most of the course materials are available via audio. The audio

is intended to complement the written materials and may vary from the slide deck's words. More importantly, we will include some essential additional information. So be sure to listen carefully.

Justin, do you have anything to add?

Thank you Missah. First, I want to thank the course Instructor Aimee Lynn Roberts for providing the guidance and material to share with you. Aimee is a certified EMS-I, has trained untold thousands of EMS students, and was honored with the Connecticut EMS Instructor of the Year award.

And if you would like to follow our words, please click the link below to see the speech text. Also, please look for embedded 3d models and animations in the pop-up text. We hope you find them helpful. You can rotate the model using the left-click of your mouse, or one-finger on a touch screen device. Also, you can slide the model using the right-click, or two-fingers on a touch screen. And you can make them larger or smaller using the mouse wheel, or finger gestures as you would for a

clicking in the lower right-hand corner of the model image. We have included a 3d model on this page so you can try it out.

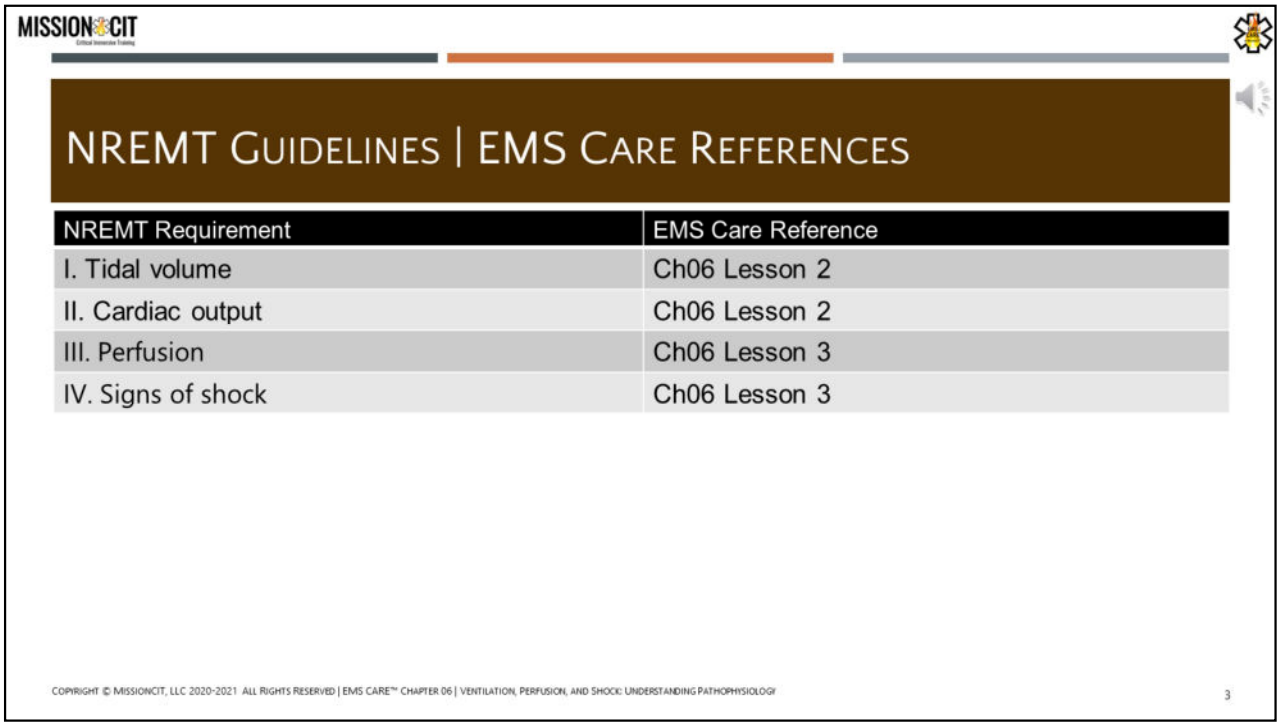
I will next provide a brief intro into the course. Good studying.



We will explore the following lessons in this chapter

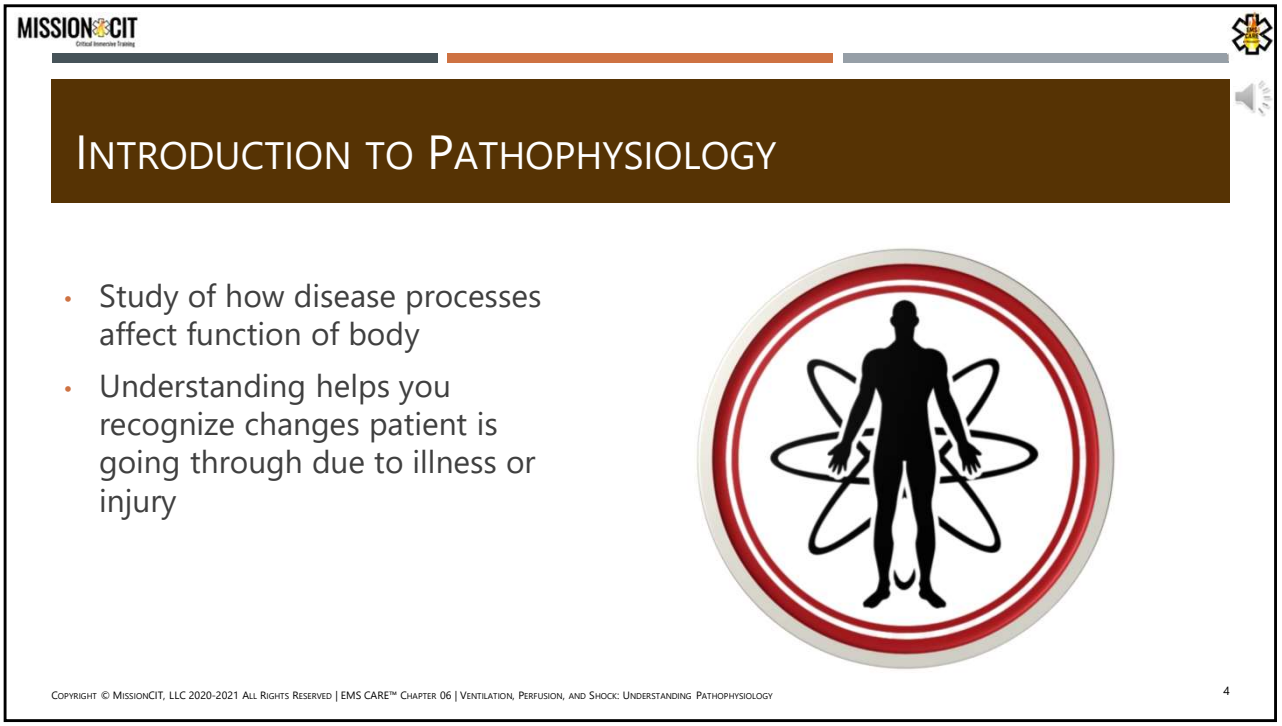
- Lesson 1: Cell, cellular metabolism, and results of the alteration of cellular metabolism
- Lesson 2: The cardiopulmonary system, movement of blood, and its combined respiratory and cardiovascular functions
- Lesson 3: The principles of perfusion, hypoperfusion, and shock
- Lesson 4: Disrupted physiology of major body systems

We complete our studies with a Chapter Review followed by a quiz. You will need to watch all the lessons, answer the interactive questions; and finally score a 75% grade or higher on the quiz, to get credit for this chapter.



The NREMT educational guidelines are listed in the table on this slide. You can reference the associated EMS Care lesson where the material is found. This Chapter's subject matter fully covers these standards, along with supplemental knowledge where appropriate.

The main NREMT Requirements are to understand and identify tidal volume, cardiac output, perfusion, and signs of shock.



As you are well aware, Pathophysiology refers to the study of how disease processes affect the functioning of the body. Understanding this helps you recognize changes a patient is going through due to illness or injury as you attend to them.

Diseases occur for many reasons. Some diseases represent spontaneous alterations in the ability of a cell to proliferate and function normally. In other cases, disease results when external stimuli produce changes in the cell's environment that make it impossible for the cell to maintain homeostasis. In such situations, cells must adapt to the new environment.

Now, Missah will take you through the first chapter.