Part II:

Pathophysiology

EMT Curriculum Correlation Guide

Pathophysiology

EMT Course Topic	EMT Review Audio Lectures App Each segment is like an insightful lecture. If you don't have this app for your class, learn more at http://bit.ly/LCReady-Audio	Other Resources
Pathophysiology	Ambient air, the airways and mechanics of ventilation Regulation of respiration Pathophysiology of perfusion Transport of gasses in the blood Why do we need to know about the cell?	Discussion Board Questions (attached below) Pathophysiology-Based Assessment (7 Things EMS podcast episode)

EMT Discussion Board Questions

Linking pathophysiology to common medical and traumatic conditions is vital to your student's education. Now that your students are learning remotely, the linking can be even more challenging. These pathophysiology exercises are designed to help bridge information you have already delivered with the medical and traumatic conditions you will be teaching about online. You may use this exercise in its entirety, by section, or as individual discussion board questions.

Pathophysiology: Application

Cardiac output is determined by heart rate x stroke volume. Blood pressure is determined by cardiac output x vascular resistance. Based on these calculations:

- Explain why the pulse increases when a patient loses blood from hemorrhage.
- Explain why the blood pressure drops in a severely bradycardic patient.
- Explain how the body compensates for reduced cardiac output.

If vascular resistance increases, what would you see in the following areas?

- Blood pressure
- Pulse pressure
- Skin color

Why would the body increase vascular resistance?

If stroke volume decreases, what would you see in the following areas?

- Cardiac output
- Blood pressure
- Skin color

What would cause the stroke volume to decrease?

Pathophysiology: Shock

Provide one example of a condition that could cause each of the following functional types of shock.

- Hypovolemic
- Distributive
- Cardiogenic
- Obstructive

Explain why obstructive shock may present with JVD when hypovolemic doesn't.

Pathophysiology: Medical

A patient is experiencing anaphylaxis.

- What happens to their vascular resistance? Why?
- What happens to their cardiac output? Why?

Explain why right heart failure may present with JVD while left heart failure doesn't.

A patient experiences cardiogenic shock after a myocardial infarction. Explain how shock will occur in each of these two situations.

- The MI affected the SA node causing a bradycardia of 38/minute.
- The MI affected the left ventricle and reduced its ability to pump.

A patient fainted at the sight of blood (not her own). She passed out and was guided to the floor without further injury. She quickly comes to.

- Why did she pass out? What happened to her heart and blood vessels?
- What nervous system was involved in causing the patient to pass out?

Why did she come to quickly after becoming supine on the floor?

Pathophysiology: Trauma

A patient lacerated their liver in a motor vehicle crash and is hemorrhaging.

- What happens to their cardiac output as a result of the internal hemorrhage? Why?
- What does the body do to compensate for the blood loss?

A patient was assaulted on the street by several subjects. They have an apparent closed head injury and you have obtained the following vital signs: P 102 R 18 BP 96/76. Skin cool and dry.

- Do you believe the patient's vital signs indicate a head injury? Why or why not?

You are working on a project in class. A fellow student makes a statement. "That patient doesn't have a tension pneumothorax. He doesn't have tracheal deviation."

- List the signs and symptoms of tension pneumothorax.
- Do you agree with your classmate or not? Why?

You are working on a case presentation with a classmate. The classmate states, "That patient can't be injured really badly. The mechanism of injury isn't significant."

- Do you agree with your classmate?
- Of the following three findings, which do you believe is the most reliable as far as predicting injury? Why?
    - Vital signs
    - Hands-on physical examination
    - Mechanism of injury

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About the resources in this curriculum guide:

EMT Audio Lecture apps

We have two audio lecture series (EMT and AEMT) as well as a pathophysiology audio series for EMTs and AEMTs. These can help students get the equivalent of an insightful lecture or a solid review to supplement coursework. For details and pricing, visit **http://bit.ly/LCReady-Audio**

EMT Review Plus app

The EMT Review Plus app contains over 1,100 items including study cards, review questions and NREMT-style practice exams, with a rationale for every answer. Critical thinking, medical terminology and pathophysiology are included. For details and pricing, visit **https://bit.ly/EMT-Review-App**

Limmer Education website

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