

March 13, 2020

Dear EMS Educator,

The changes caused by the COVID-19 virus pandemic have been sudden and wide-ranging. We recognize that you may be called to suddenly switch a brick and mortar class to online with almost no notice.

Limmer Education understands the pressure you are under to move your programs online and provide your students with quality learning content. We have created a series of free resources and reduced prices by 50% on audio lecture products that can help you meet the demands of your students and institution in this unusual situation. All of our available resources are organized in a content guide to help you find and deploy relevant content effortlessly.

Specific resources include:

New Discussion Board Material and Exercises

We created an extensive document containing discussion board questions. The questions focus on medical and trauma—the place where most EMT classes were teaching when in-person classes were canceled. You can use these immediately to get up and running with online content.

We believe pathophysiology is vital for students. We also created a series of pathophysiology discussion board questions (which may also be used as an assignment) to help bridge information you have already delivered with the medical and traumatic conditions you will be teaching about online. You can find that here.

Free Dynamic Learning Exercises

Our Dynamic Learning Exercises provide anything from discussion board fodder to exercises that can be done at home or in online groups. Covering many of the topics in the EMT curriculum as well as activities for ALS programs, these dynamic learning exercises can provide critical content for you—and they're immediately available.

When this pandemic is over, we recommend using these exercises in your flipped, hybrid, or dynamic classrooms every day.

Access these exercises through the educator portal in our EMTRReview.com site. Create a FREE instructor account here <https://emtreview.com/instructor-membership/> and then go to “Dynamic Exercises” in the navigation panel on the left side of the screen.

Audio Resources – Price Reduced 50%

We have two audio lecture series (EMT and AEMT) as well as a pathophysiology audio series for EMTs and AEMTs. We believe these could help your students get the equivalent of an insightful lecture or a solid review to supplement your online coursework.

The prices of our audio offerings are reduced by 50% to reduce the additional burden on you and your students. Some of these audios are also offered by Pearson/Brady who have also lowered prices. You may order these products through Pearson or Limmer Education. (Pearson pricing effective on or about 3/20/2020).

- EMT Review Audio Lecture Series <http://bit.ly/EMTAudio> \$17.50 (\$34.99 without discount)
- AEMT Review Audio Lecture Series <http://bit.ly/AEMTAudio> \$9.99 (\$19.99 without discount)
- EMT Review Pathophysiology Lectures (EMT/AEMT) <http://bit.ly/PathophysAudio> \$7.50 (\$14.99 without discount)

FOAMFinder.com

We strongly recommend our FOAMFinder.com product (free) to help find relevant and insightful online (#FOAMed) content for paramedic classes. Use this to search your class topic (e.g., respiratory or head injury) or more specific content (e.g., hyperkalemia or TXA). Videos on how to use FOAMFinder.com can be found at <http://bit.ly/FOAMFinderDemo>

Textbook Resources

In addition to the existing online resources offered by your publisher, consider using your textbook as fodder for assignments or discussion board questions. For example, in Limmer's Emergency Care EMT textbook, the *Critical Decision-Making* feature (13th edition) offers some solid clinical content for discussions or assignments (answers are in the back of the book). If you have the instructor's preview version of the 14th edition, the expanded *Think Like an EMT* feature (not currently available to students) provides additional content for your online coursework.

Depending on the length of this disruption, we will add additional material as necessary. If we can answer questions or be of further assistance, please get in touch!

Regards-

Limmer Education Team

Support@limmereducation.com

207.482.0622

EMT Curriculum Correlation Guide

EMT Course Topic	Dynamic Learning Exercises	EMT Review Audio Lectures	EMT Review Plus App	Discussion Board Questions
Preparatory				
Introduction to EMS	Build the Perfect EMT Exercise Protocol Exercise			
Well-being of the EMT	Size-up and Well-being exercise Death Notification	Well-being Audio		
Medical-Legal – Ethical	Medical/Legal Case Exercises Create a Video- Patient Refusal	Medical/Legal Audio		
Medical Terminology			Medical Terminology study cards and review questions	
Anatomy and Physiology	Anatomy “Labeling” Exercise			
Pathophysiology	Pathophysiology Worksheet	Pathophysiology Lectures for the EMT (5 audio segments)	Pathophysiology study cards and review questions	
Lifespan Development	Child Development – Kid Calls Exercises			
Lifting and Moving	Moving Out Exercises Get Moving Exercises			
Preparatory Overview			Preparatory study cards and review questions	

EMT Curriculum Correlation Guide

EMT Course Topic	Dynamic Learning Exercises	EMT Review Audio Lectures	EMT Review Plus App	Discussion Board Questions
Airway				
Airway and Airway Maintenance		Airway Maintenance and Suction Audio		
Respiration and Ventilation and Oxygenation	Oxygen Administration Exercise	Ventilation and Oxygenation Audio		
Airway Overview			Airway study cards and review questions	
Patient Assessment				
Scene Size-up	Size-up and Well-being exercise (if not used earlier)			
Primary Assessment	Patient Assessment - One sentence exercise	Primary Assessment Audio		
History and Vital Signs	Vital Signs Trending exercise			
Secondary Assessment	Medical Assessment Exercise Trauma Assessment Exercise	Secondary Assessment Audio		
Reassessment	Vital Signs Trending exercise			
Communication and Documentation	Radio Report Exercise Social Citizenship Exercises			
Assessment Overview			Patient Assessment study cards and review questions	

EMT Curriculum Correlation Guide

EMT Course Topic	Dynamic Learning Exercises	EMT Review Audio Lectures	EMT Review Plus App	Discussion Board Questions
Medical Emergencies				
Pharmacology				
Respiratory Emergencies	Respiratory Conditions Exercise	Respiratory Audio – Asthma Respiratory Audio - COPD		Page 1
Cardiac Emergencies	Three Questions Exercise Cardiology and Resuscitation	Cardiology Audio – Acute Coronary Syndrome Cardiology Audio – Resuscitation Cardiology Audio – Heart Failure		Page 2
Altered Mental Status (diabetes, stroke, overdose, etc.)	Altered Mental Status Differentials Exercise Diabetic Emergencies Exercise	Intro to Altered Mental Status and Opiate Overdose Audio Stroke Audio Seizure Audio		Page 2,3,4
Anaphylaxis		Anaphylaxis Audio		Page 5
Abdominal Emergencies	Abdominal Emergencies			
Psychiatric Emergencies	Taking Care of Each Other			
Hematologic and Renal Emergencies				

EMT Curriculum Correlation Guide

EMT Course Topic	Dynamic Learning Exercises	EMT Review Audio Lectures	EMT Review Plus App	Discussion Board Questions
Medical Overview	Medical Assessment Scenario Medical Shock Scenario Critical Thinking Scenario – Medical		Medical Emergencies study cards and review questions	
Trauma Emergencies				
Bleeding	Bleeding and Shock Exercise	Bleeding Audio		Page 5
Shock		Shock Audio		
Soft Tissue Trauma	Rule of 9s Exercise	Soft Tissue Trauma Audio		
Chest and Abdominal Trauma		Chest Trauma Audio Abdominal Trauma Audio		Page 7
Head Injuries		Head Trauma Audio		Page 6
Spinal Trauma		Spinal Trauma Audio		
Musculoskeletal Trauma		Musculoskeletal Trauma Audio		Page 7
Multi-system Trauma				
Environmental Emergencies		Environmental Emergencies Audio		
Trauma Overview	Finish the Story - Trauma		Trauma Emergencies study cards and review questions	

EMT Curriculum Correlation Guide

EMT Course Topic	Dynamic Learning Exercises	EMT Review Audio Lectures	EMT Review Plus App	Discussion Board Questions
Special Populations				
Obstetrics/GYN		Obstetrics Audio – Normal Delivery Obstetrics Audio – Complications and Neonatal Resuscitation		Page 8
Pediatrics		Pediatric Emergencies – Audio		
Geriatrics		Geriatric Emergencies Audio		
Patient with Special Challenges		Special Populations Audio		
Special Populations Overview			Special Populations study cards and review questions	
Operations				
Operations and Haz Mat	EMS Operations Exercise	Operations Audio		
MCI/ICS	Patient Triage Exercise	MCI/ICS and Triage Audio		
Operations Overview			Operations study cards and review questions	
NREMT Exam Preparation				
Exam Preparation	NREMT Question	Practical Exam Success	Critical Thinking & Mental Conditioning study cards and review questions Five 100-question cumulative tests	

DISCUSSION BOARD QUESTIONS

Content	Notes/Discussion Points
Respiratory Emergencies	
<p>Your patient has respiratory distress. Explain why each of the following findings may be seen:</p> <ul style="list-style-type: none"> • Wheezes • Crackles • JVD • Pedal edema • Anxiety or anxiousness 	<p>This question focuses on the causes of each of the signs listed. Wheezing is caused by air moving through narrowed bronchioles. Crackles result from fluid, often from left heart failure. JVD in this case would likely be caused by right heart failure (but there are other causes). Pedal edema is dependent and often a result of right heart failure. Anxiety in many patients is an early sign of hypoxia since the brain is very intolerant of reduced oxygen levels.</p>
<p>You are caring for an 18-year-old female with asthma. She is experiencing an attack. She states, in short breaths, “I don’t know why I keep having these attacks.” She has inspiratory and expiratory wheezes. Her vital signs are P 102 R 22 BP 142/88 SaO2 92% on room air. She used her inhaler twice (two puffs each) in the past 30 minutes.</p> <p>Please answer the following questions:</p> <ul style="list-style-type: none"> • What are the triggers for an asthma attack? • Can you administer additional bronchodilators (inhaler/nebulizer) to this patient? Why or why not? 	<p>Viral respiratory infections, allergies, and exercise are common triggers of asthma. There are other, less common triggers your students might find like air temperature and aspirin.</p> <p>This patient is young, and while slightly tachycardic, it would still be prudent to administer bronchodilators by inhaler or small volume nebulizer. Reducing respiratory distress and hypoxia would likely have a positive effect on the pulse. Be sure to know the difference between a NREMT answer and your local protocols in questions like this as part of the discussion. The NREMT correct answer may be to administer the med while your protocols may require med control contact at the EMT level.</p>
<p>You are called to a 15-year-old patient with respiratory distress. The parents say that their son can be dramatic, and they don’t know if he is having an asthma attack or hyperventilating. How would you differentiate? List at least three things you would look for to decide.</p>	<p>This will show you how deep your students read and understand. Asthma would have prolonged expiratory times, wheezing, and response to bronchodilator medications.</p> <p>With capnography, EtCO₂ would be reduced in hyperventilation while potentially increased in asthma. Asthma would also potentially show the shark fin pattern.</p> <p>Students should never simply assume it is drama unless relevant clinical conditions are ruled out.</p>

DISCUSSION BOARD QUESTIONS

Cardiology and Resuscitation	
<p>When would you use a CAB approach, and when would you use an ABC approach? Provide a brief patient presentation/situation for each.</p>	<p>CAB is used when no signs of life (breathing or movement) are observed from the patient. This may be accompanied by poor color and other signs of pulselessness. In the CAB approach, you would go right to a combined pulse and breathing check. If no pulse, begin compressions immediately.</p> <p>Everyone else gets an ABC approach.</p>
<p>The American Heart Association has eliminated pulse checks after each defibrillation. Explain two reasons for this.</p>	<p>One reason is that the more time spent doing compressions, the better pressure for perfusion. Pulse checks take time away from compressions. The other reason is that even with ROSC, blood pressure doesn't just jump up to a normal level immediately. The CPR provides a bridge until the patient's circulation can take over.</p> <p>Terms and concepts to add into posts as subsequent/follow-up questions include: What does ROSC stand for? What might you see if a patient does regain a pulse?</p>
Altered Mental Status	
<p>You are dispatched to the scene of a motor vehicle collision. A 46-year-old male is in one vehicle and appears confused. The police say he is intoxicated but want him "checked" before they take him to the station. He has a small red mark on his forehead and no other obvious injury.</p> <p>For this patient:</p> <ul style="list-style-type: none"> • Explain how you would try to differentiate between a head injury, hypoglycemia, and intoxication. • Do you believe it is in your scope of practice to "clear" patients for the police in situations like this? Why or why not? 	<p>There are several things that may be observed or assessed, including blood glucose, breath odors, what the patient states, signs of injury, skin color, temp and condition, vital signs, and more. It is always interesting to see what students come up with.</p> <p>In this case, it isn't always possible to clear the patient without the assessment and diagnostic tests available at a hospital. The head injury is the complicating factor. It is usually not recommended.</p> <p>Follow up question: If this patient wanted to refuse, would he be able to do so because of his confusion?</p>

DISCUSSION BOARD QUESTIONS

<p>There are many different types of seizures. Describe what each of the following would look like when they occur:</p> <ul style="list-style-type: none"> • Aura • Tonic activity • Clonic activity • Post-ictal period • Absence seizure • Simple partial seizure 	<p>This asks for classic definitions of seizures and may be found in the student's textbook. It is designed to get the student into the book or other reference sources and apply a description to them.</p> <p>Follow up question: Why would a patient with a history of seizures experience another seizure if they take medications to prevent them? (answer – patients may not take their medication or take less because of financial considerations or the way it makes them feel. Some stop because they haven't had a seizure in quite some time.)</p>
<p>Hyperglycemia has signs and symptoms, often referred to as the "three P's" polyuria, polydipsia, and polyphagia. Explain what each one is and why each one is seen in the hyperglycemic patient.</p>	<p>Polyuria – glucose is a large molecule that begins to spill into the urine at about 180 – 200 mg/dL. The large molecule pulls water with it. This causes excess urination.</p> <p>Polydipsia – the patient is thirsty because of dehydration (see excessive urination).</p> <p>Polyphagia – although the blood is high in glucose, the cells in the body can't access it. The body sends out a signal for more food (glucose) because of this.</p>
<p>The crew before you used all of the test strips in your blood glucometer. There are none available—and you have a diabetic patient. List three things that might indicate your patient is hypoglycemic and three things that might indicate your patient is hyperglycemic.</p>	<p>Hypoglycemia often has a sudden onset. The patient usually has moist skin. The history may include taking more insulin, a runaway insulin pump, an unusual amount of exercise, or decreased intake. IDDM history is also more common.</p> <p>Hyperglycemic patients will usually have dry skin, may have an acetone breath odor, have a history of NIDDM, and experience a gradual onset.</p> <p>If you ask this question along with the one above, ask for things other than the three Ps.</p>

DISCUSSION BOARD QUESTIONS

<p>Your patient has a history of Type II/NIDDM diabetes. She has an unusual breath odor and dry, warm skin. No blood glucose measurement is available. Your partner said that the “rule” is “when in doubt, give glucose.” Do you believe this patient should receive oral glucose? Do you believe that rule is appropriate?</p>	<p>You should make sure that your students know that the history of type II/NIDDM tends to go toward hyperglycemia, and this is compounded by the breath odor (acetone/DKA) and dry skin. Even without the technology available today, we shouldn't use blanket rules in place of thinking.</p> <p>The issue is that we are hesitant to miss a potentially correctible condition (hypoglycemia). This doesn't mean we can't think and assess before making a decision.</p>
Poisoning and Overdose	
<p>You find a 26-year old male in a dormitory room with a needle by his arm. He responds by moaning to a firm trapezius pinch. His vital signs are P 88 R 20 BP 102/68 SaO2 90%, and his skin is warm and dry.</p> <ul style="list-style-type: none"> • Would you administer naloxone to this patient? • Is there any additional information you would like to know to make this decision? 	<p>This question is definitely on the edge – intentionally. His pulse, respirations, and sats don't scream respiratory failure or arrest—and he responds to pain. The main thing is that we want students to make decisions based on their evaluation of his respiratory effort—and not the ability to “wake him up.”</p> <p>Asking about respiratory depth, minute volume, chest movement, reevaluation after a time period, or a decision to ventilate show what a student is thinking.</p>
<p>You are called for an unresponsive man at a residence. You find a man unresponsive on the couch. Two other family members say they don't feel well.</p> <ul style="list-style-type: none"> • What are your first actions? • Are the two other family members patients? Why or why not? • What assessment and care do you provide for patients at this scene? 	<p>This is potentially a carbon monoxide situation. Safety first. Realizing the cause is important. All become patients.</p> <p>Assessment and care should be guided by their level of responsiveness with ventilation provided for patients in failure. Carbon monoxide oximetry may be available. Older versions haven't shown to be accurate, but it is worth getting a reading if that technology is available.</p> <p>Oxygen administration is indicated.</p>

DISCUSSION BOARD QUESTIONS

	<p>A great follow-up question would be what students expect the patient's pulse oximetry to be. It may be high because of the binding of carbon monoxide to hemoglobin.</p>
Allergy and Anaphylaxis	
<p>List three ways you could distinguish between an asthma attack and anaphylaxis. Explain how each finding would be valuable.</p>	<p>Hives, hypotension, upper airway sounds/swelling (asthma is a lower airway disease), GI distress and/or diarrhea, and a history of allergies are at the top of the list. Your students may think of others.</p> <p>Both conditions can cause wheezing.</p>
<p>A 25-year-old female was stung by a bee. She is allergic to bee stings. She is alert and complains of a developing "lump in her throat." She has hives and swelling in her upper arm, where she was stung. Her vitals are P 88 R 16 BP 110/88 SaO2 96% on room air. Should you administer an epinephrine auto-injector? Why or why not? Justify your response.</p>	<p>This was chosen to be a challenging decision. The important part of this discussion is to recognize that many patients fall somewhere in the middle like this.</p> <p>On the administer epi side, we have a sensation in the throat with a prior allergy to bee stings. The pulse pressure is narrowing slightly.</p> <p>On the other hand, the pulse and respirations aren't the worst, and the patient is alert.</p> <p>As a follow-up question, ask what your students would look for to indicate worsening and a need for the auto-injector.</p>
Bleeding and Shock	
<p>You are at a trauma call with your experienced partner. Your patient was kicked in the abdomen by a horse. She says, "Let's get moving! I don't like the way this guy looks." Other than the obvious mark from the kick, list 3 or 4 things you think you might find or observe in this patient that would justify her belief he may be serious.</p>	<p>Rapid pulse and respirations Cool, pale, moist skin Anxiety or change in mental status Narrowed pulse pressure or low blood pressure</p>

DISCUSSION BOARD QUESTIONS

<p>Your patient was stabbed in the left chest. One crew member on the scene believes the patient has cardiac tamponade. Another believes it is tension pneumothorax. List three ways these conditions will present similarly and two ways you could potentially tell them apart.</p>	<p>Both might present with JVD, tachycardia, reduced preload/narrowed pulse pressure, hypotension, poor skin color, etc.</p> <p>Lung sounds are a big differentiator. Muffled heart sounds would be present in tamponade but may be difficult to discern.</p>
Injuries to the Head, Neck, and Spine	
<p>Consider two patients. Both were struck in the head by an assailant. One patient has a concussion. One patient has a subdural hematoma. Look up the signs and symptoms for both conditions.</p> <ul style="list-style-type: none"> • How are they similar? • How are they different? • Which is more serious? • Can you distinguish between them in the field? 	<p>These conditions may be surprisingly similar at the outset. It is difficult to differentiate without more advanced clinical assessment and diagnostic tests. This issue is that the subdural can come on gradually—after the patient has left your care. It is more serious.</p>
<p>A patient with increasing intracranial pressure will develop signs and symptoms, including an elevated blood pressure and decreasing pulse.</p> <p>Explain how and why these vital signs occur.</p>	<p>The elevated blood pressure is the body's attempt to perfuse the brain against the increasing pressure within the skull.</p> <p>The reduced pulse is a result of the baroreceptors sensing the elevated blood pressure. They advise the body to lower blood pressure. This is done by lowering the pulse in an attempt to lower cardiac output.</p>
<p>Define the following terms and list one condition where you might see each.</p> <ul style="list-style-type: none"> • Hemiplegia • Paraplegia • Quadriplegia • Paresthesia 	<p>Hemiplegia – paralysis on one vertical half of the body. Paraplegia – paralysis of the lower extremities. Quadriplegia – paralysis of all four limbs. Paresthesia – pins and needles sensation or numbness</p>

DISCUSSION BOARD QUESTIONS

<p>A patient has a spine injury which has left him essentially unable to breathe. What level of the spine (or higher) would the injury likely be at? Why?</p>	<p>Cervical vertebrae 3-5 is the area responsible for breathing. The rhyme “C3-4-5 keeps the diaphragm alive” helps to remember this.</p>
Abdominal trauma	
<p>What is the difference between hollow and solid organs when it comes to damage to each in trauma?</p> <p>For each of the following organs, describe whether they are solid or hollow and list one mechanism or type of injury when the organ might be injured.</p> <ul style="list-style-type: none"> • Liver • Spleen • Pancreas • Stomach • Small bowel/intestine • Large bowel/intestine 	<p>Hollow organs often contain digestive enzymes, acids, and food at some point in the digestive process. This creates pain and irritation when loose in the abdomen.</p> <p>Solid organs (liver, spleen, pancreas) are vascular and bleed. Hollow organs can rupture spilling contents into the abdominal cavity, causing pain and subsequent infection.</p>
Musculoskeletal Trauma	
<p>You are treating a patient who has a closed, angulated fracture of his tibia and fibula. Based on this, answer the following questions.</p> <ul style="list-style-type: none"> • Would you straighten the extremity? Why or why not? • What effect would straightening the extremity have on <ul style="list-style-type: none"> ○ The splinting process ○ Blood loss ○ Nerves and blood vessels in the extremity • Are there are times you definitely would or wouldn't straighten the extremity? Why? 	<p>Generally, angulated extremities (long bone) are straightened. This makes splinting and transport easier. It may also reduce the size of the space in the area of the fracture and help limit bleeding.</p> <p>Long bones should be straightened unless there is resistance or an unusual amount of pain. It is a painful process normally.</p> <p>When straightening is done properly, damage to surrounding structures is minimal.</p>
<p>An experienced EMT you are working with said, “Multiple extremity fractures are multiple trauma.” Do you agree with this statement? Explain why or why not.</p>	<p>Bones themselves bleed. Damage may also be done to surrounding vessels and tissue. If this occurs to multiple extremities, it is considered multiple trauma because of the</p>

DISCUSSION BOARD QUESTIONS

	<p>potential for blood loss. It also takes considerable force to break multiple extremities, so the potential for other injuries exists.</p>
<p>Obstetrics</p>	
<p>Two positions are used to transport pregnant patients who are experiencing problems during the third trimester. One is with the supine patient rolled slightly to the left (putting padding under her right side), and the other is elevating the hips/head-down position.</p> <p>What is each position used for? How does each position help the patient and fetus?</p>	<p>The supine patient should be rolled to the left by propping pads under her right side. This prevents supine hypotensive syndrome.</p> <p>Elevating the hips/head-down position is used in conditions like prolapsed cord and limb presentation to use gravity to slow down the birth process.</p>
<p>Define each of the following conditions. Identify the ones which are likely to be delivered in the field successfully. Explain why.</p> <p>Single birth Multiple births Breech presentation Limb presentation Prolapsed cord</p>	<p>The single birth and multiple births may be delivered in the field successfully. Multiple births may be of lower birth weight and delivered before full term, so caution is advised.</p> <p>Breech birth may deliver, but potential complications are higher.</p> <p>Limb presentation and prolapsed cord are not delivered in the field.</p>

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 Questions

- 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?

General Shock Review

- 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 Application Questions

- 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 Application Questions

- 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