

**Project:** Ghana Emergency Medicine Collaborative

**Document Title:** Approach to Acute Chest Pain

**Author(s):** Rockefeller Oteng (University of Michigan), MD 2012

**License:** Unless otherwise noted, this material is made available under the terms of the **Creative Commons Attribution Share Alike-3.0 License:**  
<http://creativecommons.org/licenses/by-sa/3.0/>

**We have reviewed this material** in accordance with U.S. Copyright Law **and have tried to maximize your ability to use, share, and adapt it.** These lectures have been modified in the process of making a publicly shareable version. The citation key on the following slide provides information about how you may share and adapt this material.

Copyright holders of content included in this material should contact [open.michigan@umich.edu](mailto:open.michigan@umich.edu) with any questions, corrections, or clarification regarding the use of content.

For more information about **how to cite** these materials visit <http://open.umich.edu/privacy-and-terms-use>.

Any **medical information** in this material is intended to inform and educate and is **not a tool for self-diagnosis** or a replacement for medical evaluation, advice, diagnosis or treatment by a healthcare professional. Please speak to your physician if you have questions about your medical condition.

**Viewer discretion is advised:** Some medical content is graphic and may not be suitable for all viewers.

for more information see: <http://open.umich.edu/wiki/AttributionPolicy>

## Use + Share + Adapt

{ Content the copyright holder, author, or law permits you to use, share and adapt. }



**Public Domain – Government:** Works that are produced by the U.S. Government. (17 USC § 105)



**Public Domain – Expired:** Works that are no longer protected due to an expired copyright term.



**Public Domain – Self Dedicated:** Works that a copyright holder has dedicated to the public domain.



**Creative Commons – Zero Waiver**



**Creative Commons – Attribution License**



**Creative Commons – Attribution Share Alike License**



**Creative Commons – Attribution Noncommercial License**



**Creative Commons – Attribution Noncommercial Share Alike License**



**GNU – Free Documentation License**

## Make Your Own Assessment

{ Content Open.Michigan believes can be used, shared, and adapted because it is ineligible for copyright. }



**Public Domain – Ineligible:** Works that are ineligible for copyright protection in the U.S. (17 USC § 102(b)) \*laws in your jurisdiction may differ

{ Content Open.Michigan has used under a Fair Use determination. }



**Fair Use:** Use of works that is determined to be Fair consistent with the U.S. Copyright Act. (17 USC § 107) \*laws in your jurisdiction may differ

Our determination **DOES NOT** mean that all uses of this 3rd-party content are Fair Uses and we **DO NOT** guarantee that your use of the content is Fair.

To use this content you should **do your own independent analysis** to determine whether or not your use will be Fair.

# Pathophysiology

- Somatic Pain fibers
  - Dermis and parietal pleura innervations
  - These enter the spinal cord at specific levels and arranged in a dermatomal pattern
- Visceral Pain fibers
  - Found in internal organs such as heart and esophagus and blood vessels
  - Enter the cord at multiple levels and “share” parietal cortex space with the somatic fibers

# Pathophysiology

- Somatic Pain fibers
  - Pain is usually easily described
  - Precisely located
  - Described as a sharp sensation
- Visceral Pain fibers
  - Imprecisely localized
  - Difficult to describe
  - Often described as aching, discomfort, heaviness
  - Often misinterpreted because the pain is referred to a different area by the adjacent somatic nerve

# Pathophysiology

- Several modifying factors to the pain sensation
- Co-morbidities, age, gender, medications, drugs, alcohol
- “Cultural and language difference”

# Initial Approach

- In our evaluation we are concerned with the “acute chest pain”
- What recent event or change has brought them to the hospital?
- How is the patient experiencing the discomfort?
- The initial approach is based on the fact that there are life threatening causes of chest discomfort

# Initial Approach

- Given the potentially serious concerns the patient should be addressed quickly and systematically
- IV, O2, Monitor
- Immediate life threats should be addressed systematically:
  - Airway
  - Breathing
  - Circulation

# Initial Approach

- Vital signs should be assessed and repeated at regular intervals
- While you direct the rest of the team you then begin your direct questioning and primary survey
- What types of questions would you like to ask?



# Initial Approach: History

- Are you having discomfort?
- How would you describe the discomfort?
- Where is the discomfort?
- Does it radiate anywhere?
- Any aggravating/alleviating factors?
- Any associated discomfort?
  - Diaphoresis, nausea, vomiting, cough, fevers

# Initial Approach: History

- Frequency of the discomfort?
- Time of onset or acute worsening?
- Has there been any progression?
- History of Cardiopulmonary disease?
- Risk factors for cardiopulmonary disease?
- Family history of cardiopulmonary disease?

# Physical Examination

- Your primary survey is a focused examination and will allow you to start interventions
- What is part of your primary survey?
  - General appearance of patient
  - Assessment of the airway
  - Assessment of breathing ( listen to the pulmonary sounds)
  - Assessment of Circulation (listen to heart sounds)

# Physical Examination

- Once you've evaluated for acute, life threatening conditions and reassessed vital signs then continue to the secondary survey
- During this examination, you should look the other body systems and peripheral signs that can be associated with acute cardiopulmonary issues.