

# National Museum of Health and Medicine



## The General Tour

### Teacher's Guide for Grades 9-12

This guide will help you prepare for your visit to the museum. It outlines the major ideas and exhibitions that will be presented during the visit and suggests activities to help extend your museum experience into your classroom.

#### **About Your Tour**

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Explore the history of military medicine from the Civil War through the current conflict in Iraq, learn about the history use of microscopes, and explore the wonders of the human body.

At the conclusion of this tour, the student should be able to:

1. Explain the relationship between anatomy and physiology for each organ system.
2. Identify characteristics of good health and disease. Relate to lifestyle choices such as nutrition, exercise, or toxic substances.
3. List the professionals who explore the body and describe their equipment, including:
  - Forensic anthropologists
  - Medical professionals
  - Engineers
4. Explain the use of two antique equipments, such as the iron lung and the shoe fluoroscope.
5. Explain how and why the museum was founded.
6. Explain an advancement that occurred during the Civil War.
7. Explain the events surrounding President Lincoln's death.
8. Explain the importance of one microscope that was on display. This may include the Hooke microscope, comparison microscope, or trichinae microscope.

Exhibitions used for this guided tour include:

- "Human Body/Human Being" - all organ systems
- "To Bind our Nation's Wounds: Civil War Exhibit"
- "Microscope Collection"
- "Antique Equipment"
- "Battlefield Surgery"

Optional Exhibits:

- " From a Single Cell"-Human Developmental Anatomy
- "Korean War"
- "Resolved: Advancements in forensic Identification of US war Dead"
- "Balad Field Hospital"

### **Pre-Visit Classroom Activities**

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- Discuss *Visiting Our Museum* and what they will see.
- Discuss with your students different diseases and disorders associated with the body systems. This should include cancers, genetic disorders and communicable diseases. Have the students determine the causes and ways that taking care of your body can prevent some of these diseases.
- Visit one of the Museum's flickr sites available at <http://www.flickr.com/search/?q=otisarchives1&m=text> and choose a photograph(s) for the students to analyze (this may include any major war from Civil War through Vietnam)— ask them to make a list of observations about the photograph (for example, clothing, housing, food, etc.) and have them write a story about the photograph, including their observations. Photos also are available on the Museum's website: [www.nmhm.washingtondc.museum/collections/archives/agalleries/agalleries.html](http://www.nmhm.washingtondc.museum/collections/archives/agalleries/agalleries.html).

### **Vocabulary**

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*Amputation*: surgical removal of all or part of a limb

*Anesthesia*: A method of preventing sensation, used to eliminate pain.

*Anthropology*: the study of humanity

Aspiration The act of breathing and especially breathing in.

Autopsy An examination of the body after death.

Blood pressure Pressure exerted by the blood upon the walls of the blood vessels, especially arteries, usually measured on the radial artery by means of a sphygmomanometer.

Disease An impairment of the normal state of the living animal or plant body that interrupts or modifies the performance of the vital functions and is a response to environmental factors, to specific infective agents, to inherent defects of the organism, or to a combination of these factors.

Electron Microscope: a type of microscope that uses electrons to create an image of the target. It has much higher magnification or resolving power than a normal light microscope, up to two million times, allowing it to see smaller objects and details.

Hypertension Abnormally high arterial blood pressure.

Microscope: An optical instrument used for observing small objects by magnification.

Osteoporosis Condition characterized by a decrease in bone mass and density which produces porosity and fragility. Results from disturbance of nutrition and mineral metabolism.

Pathology: the study of the nature of disease and its causes, processes, development, and consequences

Physiology: the study of the mechanical, physical and biochemical processes of living organisms.

Plastination: The process of preserving remains by injecting a solution containing a polymer (plastic) that maintains the original properties of the specimen.

Peristalsis Successive waves of involuntary contraction passing along the walls of the intestine or other hollow muscular structure that forces the contents onward.

Polio or Poliomyelitis: Acute infection by the poliovirus, especially of the motor neurons in the spinal cord and brainstem, leading to muscle weakness, paralysis and sometimes deformity.

Prosthesis An artificial device to replace a missing part of the body.

Public Health The art and science dealing with the protection and improvement of community health by organized community effort, including preventive medicine and sanitary and social science.

Trephination: the surgical procedure in which a hole is drilled in the skull and a circular piece of bone removed

## Post-Visit Classroom Activities

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- Brainstorm together some ways to better care for yourselves. Ask each student to make a "Top Ten" list of specific ways they can take charge of their health. Take into account decisions they make at this age that will affect their health in later years.
- Investigate a medical professional career or interview a medical professional. Discuss their job, career path and schooling. Have the students present their research to the class.
- Have the class develop a health fair for their school. This may be a general health fair, a blood drive, or focus on a specific illness or disorder. If you are able to raise money, donate the proceeds to a local charitable organization promoting health or disease awareness.
- Have the students research current therapies or treatments used for soldiers returning from the current conflict in Iraq. Have the students compare this to a previous conflict and describe how this has improved the health care of soldiers returning from war.
- Have the students one disease discussed on the tour. Have them create an information brochure on the disease that should include pathology, treatment and prevention.

## Resources

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### *Websites:*

- **Science and Nature, Human Body and Mind**  
[www.bbc.co.uk/science/humanbody/body/](http://www.bbc.co.uk/science/humanbody/body/)
- **Cells Alive!** [www.cellsalive.com](http://www.cellsalive.com)
- **Center for Disease Control** [www.cdc.gov](http://www.cdc.gov)
- **Human Anatomy Online,** [www.innerbody.com](http://www.innerbody.com)
- **Forensic Anthropology,**  
<http://library.med.utah.edu/kw/osteo/forensics/>

*Publications:*

- The Human Body Book, DK Publishing, 2007
- Gray's Anatomy Book, Henry F.R.S. Gray, 1992
- The Anatomy Coloring Book, Kapit and Elson, 2002
- Stiff, Mary Roach, 2004
- The Forensic Casebook: The Science of Crime Scene Investigation, Genge, 2002
- From conception to birth: A life unfolds, Alexander Tsiaras, 2002

*Museum Videos (viewing upon request):*

- Live Autopsy Videos
- 100 Greatest Discoveries: Genetics
- Frontline: Genetically Modified Foods
- Triumph at Carville: Leprosy in America
- The Secret Life of the Brain

