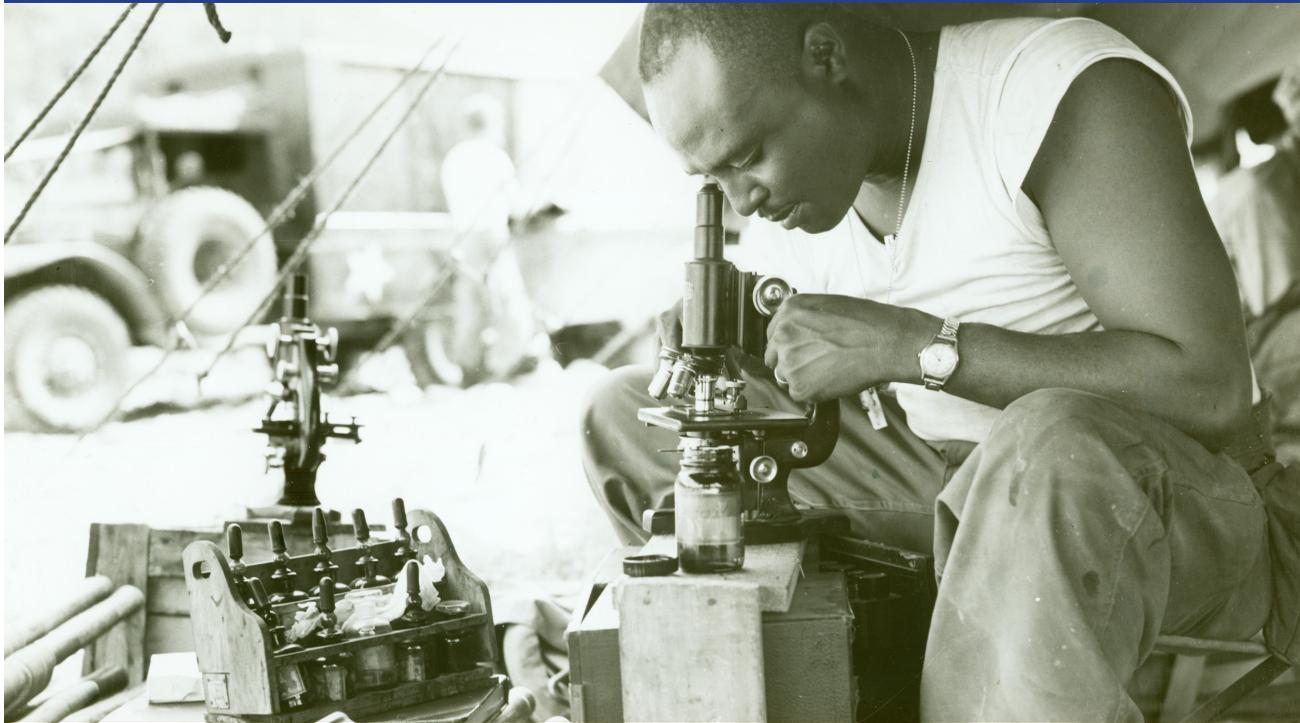


NATIONAL MUSEUM OF HEALTH AND MEDICINE



# *Innovations Discovery Guide*

ACTIVITIES AND INFORMATION FOR AGES 8 - 14



Lab technician checks blood types of wounded men brought in from the battlefield, Korea, July 30, 1950.  
SC 0344909

2500 Linden Lane, Silver Spring, Maryland 20910

Main: 301.319.3300 • Tours: 301.319.3312 • Public Affairs: 301.319.3349

[www.medicalmuseum.mil](http://www.medicalmuseum.mil) • [www.facebook.com/MedicalMuseum](https://www.facebook.com/MedicalMuseum) • [www.twitter.com/MedicalMuseum](https://www.twitter.com/MedicalMuseum)

# Welcome!

Welcome to the National Museum of Health and Medicine! NMHM was founded in 1862 during the Civil War to “study specimens of morbid anatomy.”

Photographs, drawings, letters, bones, bullets, and surgical tools were all collected to understand and improve the care of service members. Today, we inspire interest in the past, present and future of American military medicine.

This family guide will help you “explore” the museum’s collections.

This guide will explore:



- Challenges and Triumphs
- Inventions
- Materials
- Pioneers in Military Medicine
- Illustrations and Images

*Now, pretend you are a researcher and “explore” the museum’s collections!*

## Vocabulary

### **ALTERNATIVE MEDICINE:**

medical therapies that are not considered to be part of the traditional fields of medicine, such as acupuncture

### **BIOMEDICAL ENGINEERING:**

applying engineering concepts to biology or medicine for healthcare purposes

### **INNOVATION:**

a new method, idea or product

### **INVENTOR:**

a person who invents a particular process or device

### **MICROSCOPE:**

a tool used to look at very small objects, such as cells

### **PRESERVATION:**

the process of preserving something, such as an organ

### **PROSTHETIC:**

an artificial body part, such as an arm or leg

### **TRAUMA:**

a physical injury

### **TRAUMATIC BRAIN INJURY:**

injury to the brain as a result of a blow or force to the head

## Challenges and Triumphs



The military constantly faces challenges in keeping their service members healthy both at home and abroad. The military researches possible drugs and vaccines to prevent and treat diseases. In order to get the best results from their research they will often use human test subjects. Today, in order to volunteer as a test subject, you must sign a consent form or contract that says you understand the risks associated with the research. Major Walter Reed created one of the first informed human consent forms for the Yellow Fever Commission in 1900.



Find the consent form and answer the following questions.

Who wrote this document?

being more than twenty-five years of age, native of

Who was the document written for?

, the son of

and here states by those presents, being in

List three things that the author said that you think are important.

the enjoyment and exercise of his own very free will, that he consents

to submit himself to experiments for the purpose of determining the

Why was this document written?

methods of transmission of yellow fever, made upon his person by the

Commission appointed for this purpose by the Secretary of War of the

United States, and that he gives his consent to undergo the said ex-

What evidence in the document helps you know why it was written?

(provide a quote from the document)

The undersigned understands perfectly well that in case of the

development of yellow fever in him, that he endangers his life to a

List two things this document tells you about the Army or medical care:

infection during his stay in this island, he prefers to take the

receive from the said Commission the greatest care and the most skill-

Write a question to the author that you think the document leaves unanswered.

ful medical service.

It is and retord that at the completion of these experiments, with

## Did you know?

The Yellow Fever contract was also written in Spanish for the Cuban participants in the research trial.



## Inventions

Locate the inventions pictured



Inventions are new or unique methods, products or processes that change the way something is done. Due to the extreme conditions of battlefield medicine, the military is always looking for innovations that can improve the care and protection of service members.

1. A MACHINE USED TO REPLACE THE FUNCTION OF AN ORGAN
2. A MANNEQUIN USED TO RESEARCH HUMAN REACTIONS TO EXTREME CONDITIONS
3. A TECHNIQUE USED TO PRESERVE SPECIMENS BY USING POLYMERS
4. A TOOL USED TO DEVELOP A NEW DRUG
5. A TOOL USED TO IMPROVE THE IMMEDIATE CARE OF THE SERVICE MEMBER
6. A TOOL USED TO PROTECT THE HEAD FROM INJURY

*How many examples of each type of invention can you find in the museum?*

*What do these objects tell you about their use?*

*What makes these objects an invention or innovation?*

1



2



3

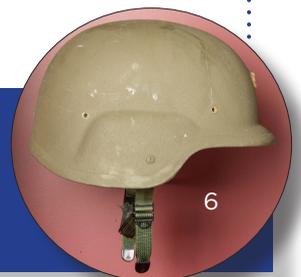


4



*Did you know?*

Penicillin chrysogenum, the fungus that produces the antibiotic penicillin, can be found naturally on salted food products.



# Materials



Bandages or dressings are used to stop bleeding and protect the wound from dirt and infection. Bandages are easily transportable and can be applied to a wound at any location. Bandages can be made of anything from lint, cloth, gauze, or even silver. **Find the First Aid Packet for Shell Wounds.**



What material is used in this bandage?

How would this bandage have been used?

Who would have used this bandage?

What type of bandages do you have at home?

If you were an inventor, what type of materials or methods would you use to make a bandage?

Can you locate other bandages in the museum?

## Did you know?

Optical fibers can be woven into bandages to help monitor wounds.



# Meet the Inventors, Pioneers and Patients

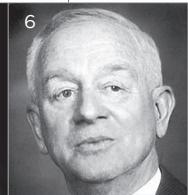
Can you identify the following people as an Inventor, Pioneer or Patient?

Hint: Look for the solid topic panels!



**INVENTOR    PIONEER    PATIENT**

	<b>INVENTOR</b>	<b>PIONEER</b>	<b>PATIENT</b>
1. Dr. Gurdon Buck			
2. Peter Cluckey			
3. Dr. Gunther Van Hagens			
4. LTC J.J. Woodward			
5. Dr. Willem Kolff			
6. Dr. Peyton Rouse			
7. Dr. Jonathan Chisholm			
8. Dr. Mary Walker			
9. President Abraham Lincoln			
10. MAJ Walter Reed			
11. COL Emma Vogel			
12. Dr. Ellis Kerley			
13. Dr. Jules-Emile Pean			
14. SFC Eric Smeed			
15. PVT Julius Fabry			



## Illustrations and Images



Illustrations, images, and models can be used to record or interpret human anatomy, disease, battlefield images, and injuries. These different types of mediums can help us understand the process of military medicine in order to educate future caregivers.



List the different types of images you see in the museum



Go to the *Normal Anatomy* exhibit  
Choose an image from the collage and answer the following questions:



- What is the image?
- What are the parts of the image?
- How was the image created?
- Who do you think is the intended audience for the image?

Choose a specimen or artifact in the museum and draw an image of that object.



### Did you know?

The Army first used X-ray machines during the Spanish-American War in 1898.

## NATIONAL MUSEUM OF HEALTH AND MEDICINE



The National Museum of Health and Medicine, a Department of Defense museum established in 1862, inspires interest in and promotes the understanding of medicine— past, present and future—with a special emphasis on tri-service American military medicine. As a National Historic Landmark recognized for its ongoing value to the health of the military and to the nation, NMHM identifies, collects, and preserves important and unique resources to support a broad agenda of innovative exhibits, educational programs, and scientific, historical, and medical research.

NMHM is located at 2500 Linden Lane, Silver Spring, MD, 20910, and is open daily (including weekends and holidays) from 10:00 AM to 5:30 PM. Visit [www.medicalmuseum.mil](http://www.medicalmuseum.mil) or call 301-319-3300 for information on tour programs and special events.

### ANNUAL EVENTS:

Brain Awareness Week, Anatomy of Sports, Teddy Bear Clinic, Science Café