



# Fighting Malaria

## Treatment for Malaria Found in Common Plant



Washington, DC (Walter Reed Army Institute of Research)—Army scientists have developed a new treatment for malaria, a deadly disease transmitted by the Anopheles mosquito. They isolated a compound from the sweet wormwood plant, manipulated its chemistry and after years of testing created a new drug, Artesunate. This drug destroys the protozoa parasite within the infected cells and is saving thousands of lives throughout the world.

*"Malaria is a protozoal disease that is transmitted by mosquitoes. Malaria can transfer to humans as well as other mammals, birds, and reptiles and cause a disease."* **Peter Weina, scientist physician**

### Framework

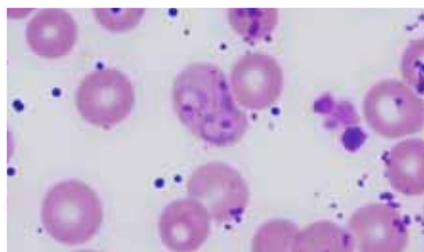
Middle School

### Standards

- NSES - C.i.6 ➤ Disease is the result of infection by other organisms.
- STL - 4.D ➤ Technology affects human safety and comfort.
- STL - 4.G ➤ Cultural issues are influenced by technology.
- STL - 9.H ➤ Testing, evaluating and modifying are conducted.
- STL - 14.G ➤ Advances and innovations in medical technology improve healthcare.

### Content Illustrated

- Knowing that wormwood was an ancient Chinese remedy for fever, a medicinal chemist set out to see if the effective agent could be extracted.



## Content



### Life Science

- Malaria is a disease transmitted by mosquitoes. It affects more than 300 million people a year, mostly in South America, India, Southeast Asia, and Africa.
- The female mosquito needs blood (from humans or other animals such as birds or reptiles) as food for its eggs. The mosquito is attracted to heat and carbon dioxide.
- While feeding, the mosquito (the vector) can transmit the malaria parasite to an animal or human (the host). Mosquitoes inject their parasitic-carrying saliva before drawing out blood. Once inside the host, the parasite multiplies and causes illness.
- Malaria symptoms start like flu, but if untreated the parasite will destroy red blood cells, leading to death.
- Researchers extracted a compound from *Artemisia annua*, the sweet wormwood plant, tested its effectiveness on the malaria protozoa and developed a safe and effective drug, Artesunate.
- The extract has been found to be effective in curing malaria. Patients get better in hours rather than days or weeks.

### Technology

- Medicines are technologies to treat diseases. Some medicines can be developed from plants.

## Guiding Questions

- What other medicines are based on plants?
- What other vector-borne diseases have you heard about? How are they treated?

## Suggested Activities

*To think about as you watch:*

- Find out which medicines are being used to treat malaria.
- Research how to avoid being infected with malaria.

## Keywords

Artesunate  
Anopheles mosquito  
disease cycle  
disease transmission  
host  
protozoa  
sweet wormwood  
vector

➤ *Fighting Malaria* can be found online at [www.ndep.us/Fighting-Malaria](http://www.ndep.us/Fighting-Malaria). Visit [www.ndep.us/LabTV](http://www.ndep.us/LabTV) for a list of process skills modeled in webisodes.