

MALARIA

The Problem: Malaria sickens **about 220 million people around the world each year – claiming nearly 2,000 lives a day**, many of them children. As malaria becomes resistant to the drugs now used to treat it, the need for an effective vaccine is greater than ever.

The Role of NIH:

- Researchers from NIH, the Army, and the Navy recently tested something different: **a vaccine made from the entire parasite**.
- The results of this early-stage trial have been promising, and **may provide evidence that it is possible to create a vaccine that offers 100 percent protection**. If all goes well, an effective vaccine could be available in the next 5 to 10 years.

MRSA¹

The Problem: Methicillin-resistant *Staphylococcus aureus* bacteria (MRSA) poses a serious public health threat, causing more than 80,000 skin, lung, and blood infections that **kill about 11,000 people annually in the United States**.

The Role of NIH:

- NIH-funded researchers have created tiny sponges that trap and bind MRSA's toxin, **which could be a promising new avenue to fight bacterial infections without the use of antibiotics**. This is particularly important as antibiotic resistance is an escalating public health problem worldwide, causing bacteria to spread faster and become more difficult and expensive to treat.

ACTING NOW TO DEFEND AGAINST TERRORISM

Scientific knowledge can be used for harm in the wrong hands. That is why the United States' investment in biodefense research against terrorist attacks with pathogenic microbes or toxins is so important. NIAID leads that research at NIH to protect our citizens and people around the world.

- New research conducted and funded by NIAID on anthrax, the disease caused by the bacterium *Bacillus anthracis*, is improving how to prevent and treat this infection.
- NIAID researchers and grantees are uncovering the molecular pathways of how the bacterium forms spores, survives in people, and causes illness – research that could lead to new vaccines, treatments, and diagnostic tools.¹
- There are no approved antiviral drugs for treating *variola*, the virus that causes smallpox. The anthrax attacks in fall 2001 raised the possibility that *variola* might re-emerge as an agent of bioterrorism. In 2006, NIAID awarded a contract for the development and clinical testing of the anti-*variola* compound ST-246, which has been demonstrated to be safe and well-tolerated in humans.¹

NIH-funded research **protects the health of our citizens** and **ensures the security of our country**.

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