



## Teaming Up to Improve Health: NIH-Funded Advances by America's Medical Schools and Teaching Hospitals

For more than 60 years, the National Institutes of Health has teamed with the nation's medical schools and teaching hospitals to pioneer many of medicine's most remarkable advances, including life-saving vaccines; new and better treatments for diabetes, cancer and heart disease; and advanced technology to improve quality of life, from artificial hips to minimally invasive techniques.

Today, Americans are living healthier, longer lives thanks to NIH-supported research and the efforts of the nation's medical schools and teaching hospitals:

- Death rates from heart disease and stroke have been cut in half
- More and more Americans are surviving cancer, and
- Seniors are more active than ever before in their "golden years," with disability rates for people 65 years and older having dropped by 25 percent.

Here are some examples of NIH-funded research advances achieved at the nation's medical schools and teaching hospitals since 1990:

1990 Discovered that premature babies can be saved from blindness and vision complications by freezing part of the eye

**Oregon Health & Science University School of Medicine**

Basic science research on breast cancer cell proteins, leading to the development of the drug Herceptin®, effective in 20-30 percent of breast cancers

**University of Pennsylvania School of Medicine**

1992 Discovered the gene for Huntington's Disease, allowing the development of a screening test for families at risk

**Harvard Medical School, Massachusetts General Hospital**

Developed the Arrow LionHeart™ - the first wireless, electrically transmitted, implanted heart assist device to reach clinical trials

**Pennsylvania State University College of Medicine,  
Milton S. Hershey Medical Center**

- Determined that not all organ transplant recipients require costly lifelong anti-rejection drugs, radically changing the way organ rejection is managed  
**University of Pittsburgh School of Medicine**
- 1993 Pioneered new uses for MRI imaging technology to better understand the brain and disorders that affect it  
**University of Minnesota Medical School**
- 1994 Developed the first cardiac stent approved by the FDA for use in keeping coronary arteries open  
**University of Texas Medical School at San Antonio**
- 1995 Developed the first vaccine for cholera, now in clinical trials  
**Harvard Medical School**
- 1996 Identified the gene for basal cell carcinoma, a common form of skin cancer  
**Stanford University School of Medicine**
- 1998 Identified a gene for prostate cancer  
**Johns Hopkins University School of Medicine, University of Maryland School of Medicine, Fox Chase Cancer Center and the Mayo Clinic**
- Identified the protein that more reliably signals warning signs for cervical cancer, leading to an improved standardized screening test  
**University of California, Irvine, College of Medicine**
- Discovered that the drug tamoxifen decreases the incidence of breast cancer by almost 50 percent in women who have a higher risk of developing the disease National Surgical Adjuvant Breast and Bowel Project (lead researcher from **University of Pittsburgh School of Medicine**)
- 2000 Discovered a way to prevent chemotherapy-related hearing loss in children undergoing cancer treatment (nearly one-third of all children with cancer experience permanent hearing loss)  
**Oregon Health & Science University School of Medicine**
- Bioengineered corneal tissue to restore or improve vision in blind or visually impaired patients  
**University of California, Davis, School of Medicine**
- 2001 Discovered the genetic cause of myotonic dystrophy, the most common type of muscular dystrophy in adults  
**University of Minnesota Medical School**
- Discovered the hormone, “resistin” that promotes type-2 diabetes and is resistant to insulin  
**University of Pennsylvania School of Medicine**

2003 Determined that Americans at risk of developing advanced age-related macular degeneration can avoid vision loss by taking daily supplements of antioxidant vitamins and zinc

**Johns Hopkins University School of Medicine**

2004 Discovered a new, progressive neurological disorder affecting men over age 50 that causes tremors, balance problems and memory deficits

**University of California, Davis, School of Medicine; University of Colorado Health Sciences Center; RUSH-Presbyterian-St. Luke's Medical Center**

Designed a robotic, prosthetic arm controlled by the brain that promises to restore mobility to patients with paralyzing injuries or lost limbs

**University of Pittsburgh School of Medicine**

To learn more about medical firsts achieved in your state or local medical school and teaching hospital, go to the *Fulfilling the Promise* Web site ([www.aamc.org/ftp](http://www.aamc.org/ftp)) and click on life-saving innovations to access the AAMC's Discoveries and Innovations in Patient Care and Research Database.