

Impact of Orthopaedic Research

NIH-funded research reaches every American for less than \$100 in taxes per person. 91% of Americans support medical research, and 78% indicate supporting medical discoveries should be a priority of Congress.

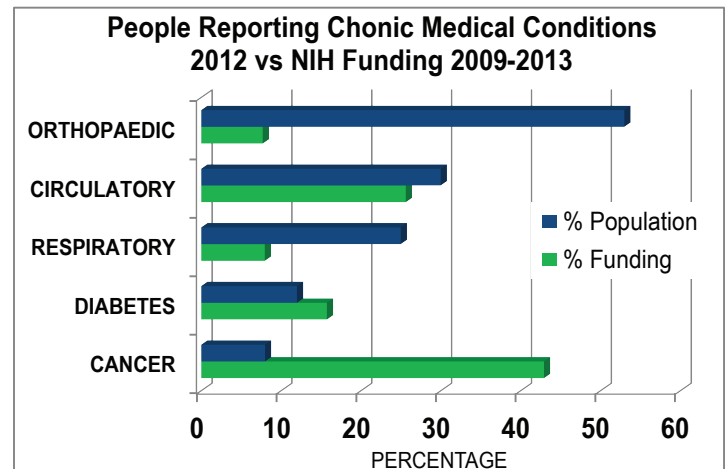


NIH provides funding to fuel discoveries, drive medical advances, and generate new jobs and companies.

- + Supported 7,000,000 jobs over the last 40 years
- + Generated \$60 billion in economic value in 2015 to raise GDP
- + Saved \$37.1 billion in 2002 due to healthier population
- + Supported 758 new start-up companies between 2004-2012

Low NIH funding for orthopaedic research is impacting discoveries needed to improve patient health

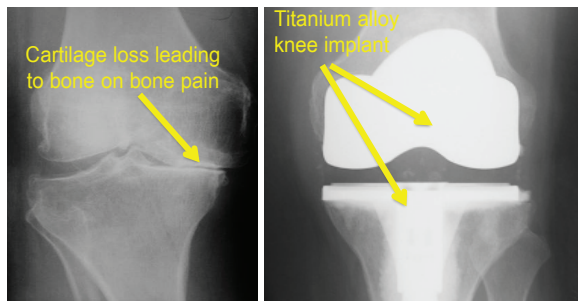
- 1 in 5 researchers are considering working overseas
- The pipeline of new scientist is drying up due to lack of funding: investigators under age 36 has declined from 18% to 3%
- 75% purchasing power compared to one decade ago



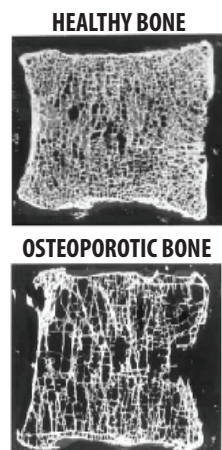
Modified from: National Center for Health Statistics, National Health Interview Survey (2012) and http://report.nih.gov/categorical_spending.aspx

Orthopaedic Research has Improved Quality of Life for Millions of Americans

Orthopaedic diseases/injuries are the leading cause of disability world wide. Limb trauma alone costs \$325 billion/year with 51% of employees not returning to work at 6 months. Orthopaedic research has generated new therapeutics and technologies that decrease healthcare cost burden and improve quality of patients' lives.



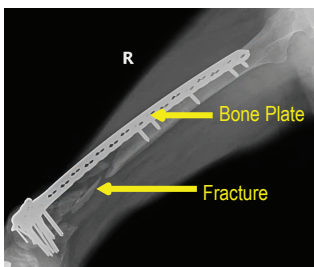
Total hip and total knee replacement surgery provides more than 1 million patients per year with relief from intractable and agonizing pain and restores mobility. Success is due to new discoveries in fields that include bone biology, biomechanics, infection control, and material research.



Osteoporosis is the most common bone disease, producing weak and brittle bones due to excessive bone loss. 1 in 3 women and 1 in 5 men will suffer an osteoporotic fracture. Orthopaedic research identified and validated antiresorptive therapies for osteoporosis that have cut fracture risk in patients by 50%. Continued research aims to understand the underlying causes of the disease and improve treatment options.

Next Generation Therapies in Research and Development

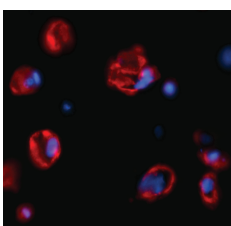
Investment in innovative Orthopaedic Research will translate into new solutions that address major disease burdens in the USA.



Approximately 15 million people break a bone each year, and up to 20% won't heal properly, such as in this femur fracture. Research efforts are ongoing to develop new drugs, bone plates, and rehabilitation strategies to accelerate healing.



Degeneration of the intervertebral disc is often associated with lower back pain and is the most common job-related disability. Research is aimed at identifying factors which lead to degeneration and develop therapies that mitigate the excruciating pain and loss of function to reduce the need for expensive surgical treatments.



Stem cell therapies hold great promise in regenerative medicine. Research efforts are focused on identifying stem cell populations in adult orthopaedic tissues, understanding their normal function and stimulating them to repair or reregulate damaged tissues.