



The American Brain Coalition (ABC) is a non-profit organization that brings together people with disabling brain disorders, the families of those that are affected, and the professionals who research and treat diseases of the brain. The mission of the ABC is to reduce the burden of brain disorders and advance the understanding of the brain.

### Federal Funding for Brain Research

#### **Congressional Support Accelerates Discovery**

In the late 1990s, Congress made a commitment to double the budget of the National Institutes of Health (NIH) over the course of five years. The primary goal for the added funds was to discover better treatments and cures for human disease. Congress delivered on its promise, and scientists have amassed a wealth of medical knowledge. Today, researchers have a greater understanding of how the brain and nervous system function due to NIH-funded research.

Many recent scientific discoveries, including those in neurology, psychiatry, and behavioral research have begun to show their potential. Insights into the biology of schizophrenia, epilepsy, Alzheimer's, and other disorders have led to the development of enhanced diagnostic techniques, better prevention methods, and more effective treatments. Simply put the result of Congressional support for life sciences research leads to improved patient care.

#### **Today's Research: Hope for the Future**

Today's research is the foundation for future medical breakthroughs. The federal government's investment in research must be sustained in order to translate today's scientific findings into further bedside treatments, and the ABC strongly supports funding for NIH in its entirety. Recent discoveries, such as those listed below, are a direct result of robust funding for the NIH.

- The development of drugs that reduce the severity of symptoms for those suffering with multiple sclerosis and Parkinson's disease
- The identification of stroke treatment and prevention methods
- The discovery of a new class of anti-depressants that produce fewer side effects than their predecessors
- The creation of new drugs to help prevent epileptic seizures
- The expansion of treatments for the psychotic symptoms of schizophrenia

## **Research Improves Health and Fuels the Economy**

Diseases of the nervous system pose a significant public health and economic challenge, affecting nearly one in three Americans at some point in life. Improved health outcomes and positive economic data support the assertion that biomedical research is needed today to improve public health and save money tomorrow.

Not only does research save lives and fuel today's economy, it is also a wise investment in the future. For example, 5 million Americans suffer from Alzheimer's disease today, and the cost of caring for these people is staggering. Medicare expenditures alone are \$91 billion each year, and the cost to American businesses exceeds \$60 billion annually, including lost productivity of employees who are caregivers. As the baby boom generation ages and the cost of medical services increases, these figures will only grow. Treatments that could delay the onset and progression of the disease by even five years could save \$50 billion in healthcare costs each year. Research funded by the NIH is critical for the development of such treatments. The cost of investing in NIH today is minor compared to both current and future healthcare costs.

Additionally, the direct economic benefit of investing in research is significant. It is estimated that each \$1.0 billion of NIH funding generates up to 20,000 jobs. Science funding also generates more than twice as much in state and local economic output. A strong federal investment in research can assist your state in maintaining a biomedical research foundation that attracts companies and investors. For instance, in FY2007, NIH dollars generated more than \$50 billion in new state business.

Strong science funding can bolster the economy today and improve our nation's long term health and competitiveness tomorrow. Robust research and development investment remains the key to America's long-term global competitiveness. NIH funding serves as the basis for future innovation and industries such as pharmaceutical, medical device, and biotechnology.

## **Recommendation**

NIH funding must be set at a sustainable level of at least three percent above the rate of increase in the Biomedical Research and Development Price Index (BRDPI).

There is still much work to be done to uncover the mysteries of the brain. Each year provides Congress with the opportunity to renew its previous commitment to health funding as a national priority.

## Chronic Care

**Acute Versus Chronic Care** - The U.S. healthcare system, including Medicare, pays providers to treat patients who are sick or injured rather than to ensure that they remain healthy. It then fails to provide high-quality care designed to treat chronic diseases because of its focus on acute care. Those with chronic illnesses are left with a system that lacks appropriate services and does not address all of their needs.

**Costs Associated with Chronic Conditions are Growing** - The rapid expansion of the country's aging population threatens to overwhelm society's ability to provide high quality healthcare for those affected by chronic conditions. The number of individuals with chronic conditions and the cost associated with their care is growing significantly. The U.S. Department of Commerce estimates that 70 percent of those who reach the age of 65 will require some form of long-term care, 88 percent of those over age 75 will have one chronic condition, and 70 percent will have more than one.

American families must be protected against the catastrophic physical, emotional, and financial burdens that make up a large portion of having a chronic condition. Yet, because our healthcare system has been designed to meet the needs of acute, not chronic illness, our system of services for those with chronic conditions such as Alzheimer's, multiple sclerosis, and other disorders is both fragmented and inadequate.

**Chronic Conditions Affect Most Americans** - According to the American Association of Retired Persons (AARP), an estimated 44 million Americans provide unpaid assistance and support to adults with disabilities. Given these factors, and that people are living longer and the number of older adults is increasing, too many Americans families are seriously impacted by chronic conditions.

## **Recommendations**

The ABC supports the following specific federal initiatives:

- Effective implementation of mandated healthcare coverage for all US residents, which would enable people with chronic conditions to have increased access to healthcare services and providers.
- Improved payment for evaluation and management services of patients with chronic conditions, combined with incentives for high quality patient-centered disease management, comprehensive service integration, interdisciplinary care, preventive services and promotion of self-management by patients and caregivers.

## Stem Cell Research

### **Hope for the Future: Stem Cells**

ABC, along with over 70 percent of the American public, supports federal funding for stem cell research. This research holds much promise for better understanding brain disorders such as Parkinson's and autism, and spinal cord injury, and for developing new treatments and even cures for people with brain disorders. Human cellular models will allow researchers to explore the basic biology of the healthy brain, and help understand what goes wrong in the brains of individuals with brain disorders.

These disorders, and many others, are caused by damage to a patient's cells and tissue. Stem cell research produces new cells that can become any specialized cell in the body, such as a brain cell or a heart cell. One benefit of stem cells is that their creation does not require knowledge about the causes of the disease (genetic or otherwise); thus, they are especially suited for disease states that have complicated or unknown etiologies.

Recent advances have allowed scientists to reprogram adult human skin cells, providing them with a new method for obtaining pluripotent stem cells, which can theoretically develop into almost any of the body's roughly 200 cell types. The use of adult cells paves the way for creation of stem cells genetically matched to individuals. Importantly, this technique does not require the controversial use of eggs or destruction of human embryos as is necessary to derive embryonic stem cells. Although this research is in its infancy, initial characterization of these cells has so far shown them to mimic human embryonic stem cells.

### **The ABC Opposes Human Reproductive Cloning**

Along with all of the major scientific and professional medical societies, the ABC supports an immediate ban on human reproductive cloning. There is a difference, however, between stem cell research and reproductive cloning. Stem cell research produces new cells with the potential to become any specialized cell in the body; reproductive cloning aims to recreate an entire human being.

Researchers do many kinds of cloning, and most methods are long established and widely accepted. For example, accepted methods of cloning allow us to develop new drugs, catch criminals, and sequence the human genome. Stem cell research offers great promise for curing deadly diseases; it does not create people.

### **Recommendation**

Stem cells may provide new treatments and perhaps cures for the 50 million Americans suffering from brain diseases or disorders. The ABC looks forward to working with the NIH and

Congress to ensure that all opportunities in this field can be fully pursued within a sound ethical framework.

### The Ethical Use of Animals in Research

The American Brain Coalition (ABC) supports the use of animals in research since this research has played a critical role in nearly every major medical advance of the last century. From the development of life saving medications, to better diagnosis and prevention techniques, the knowledge generated through this research is essential to both human and animal health. Research on animals has not only saved lives and money but also improved health and reduced suffering in both humans and animals. In order to treat and cure disorders of the brain, continued research on the complex functions of the living nervous system is necessary.

#### **A Model of the Brain is Necessary**

The American Brain Coalition seeks to advance the understanding of the brain and to reduce the burden of disabling brain disorders. The use of animals in research is essential for accomplishing this goal.

For many human illnesses, the affected organ can be probed, biopsied and excised for treatment and study. In general, the brain cannot be examined directly during life, except for rare instances during neurosurgical procedures. For most behavioral disorders, there is often no clearly abnormal part of the brain that can be removed and studied. Thus, animal models are critical for the development of understanding normal brain function. There are numerous specific examples of how the study of brain and nerve cell function in animals has aided the development of treatment for brain-related illnesses.

The ABC strongly supports the specific laws and regulations that ensure the humane treatment and safety of animals utilized in educational studies or trials. Researchers follow strict guidelines relating to minimum, set standards for handling, housing, watering, feeding, sheltering and ventilation of experimental animals. Additionally, institutions that conduct research on animals are required to establish a committee to evaluate and monitor animal use procedures. Before embarking on any project that involves animals, researchers carefully evaluate whether the research is justified based on the science. If the project is deemed scientifically meritorious, researchers must receive approval from their local ethics committee to ensure that the research meets the standards set forth by the Institutional Animal Care and Use Committee, which provides oversight to animal experiments.

#### **Recommendations**

The ABC strongly believes that scientists and their families deserve protection from terrorists who sponsor violent acts against the research community. Additionally, medical progress could potentially be endangered if we allow the actions of animal extremists to intimidate researchers.

The ABC supports the Animal and Enterprise Terrorism Act, which was established to protect animal researchers and their families.