The National Advisory Council of the National Institute of Neurological Disorders and Stroke submitted its report, entitled "Decade of the Brain," to the United States Congress in January 1988. Prepared at the request of the House Appropriations Committee, the report documented the exciting achievements that have been made in neurologic and neuromuscular research in recent years. Further, it brought into focus the significant opportunities in basic and clinical neurologic research that can be realized if the necessary personnel and financial resources are made available.

Members of both the House of Representatives and the Senate, led by Representative Silvio Conte and Senator Donald Riegle, were persuaded that the opportunity for progress in understanding the mysteries of the brain has never been greater. Representative Conte and Senator Riegle introduced legislation designating the decade beginning January 1, 1990, as the Decade of the Brain. The Congress recognized that such a declaration would focus needed government attention on research addressing improved methods of prevention, treatment, and rehabilitation for disorders and disabilities that affect the nervous system; the measure was passed by Congress this summer. On July 25, 1989, President Bush signed the bill which has now become law.

Designation of the 1990s as the Decade of the Brain emphasizes the staggering human and social costs of brain disorders and documents the tremendous opportunities presented by recent and anticipated research advances in the basic and clinical neurosciences. Technologic developments including powerful imaging devices are bringing the anatomy and biochemistry of the brain into sharp focus. Neuroscientists are mapping the brain's biochemical circuitry through which drugs may eliminate the suffering of persons with previously intractable disorders. By studying the interactions of specific brain structures and chemicals, investigators are approaching the realization of improved interventions for people disabled by central nervous system injury or shaken by the seizures of epilepsy. Applications of the methodologies of molecular and cellular biology are beginning to explain how neurocellular elements function in normal tissue and how they dysfunction when hypoxia or pH changes occur in stroke, head injury, or neuronal toxicity. Advances in molecular genetics show great promise of yielding methods to prevent or treat Huntington's disease, the muscular dystrophies, and other life-threatening disorders. There is evidence that many neurologic disorders affecting millions of Americans could be prevented, cured, or alleviated if the research opportunities we have in hand were fully investigated. Among the most significant of these neurologic disorders are stroke and other cerebrovascular diseases.

Nearly 400,000 Americans suffer a stroke each year, and 150,000 die. The number of stroke survivors in the United States now approaches 2 million. Although the stroke mortality rate continues to decline, there is now evidence that the stroke incidence rate is again increasing. As one of the nation's leading debilitators and its third leading killer, stroke merits considerable additional scientific attention and the transfer of knowledge gained through research to clinical practice. Half of strokes could be prevented by the application of available knowledge, and many persons who survive a stroke could benefit immeasurably from state-of-the-art treatment. However, even with these advances, too many strokes are still not preventable and the resulting neurologic deficit is still not treatable.

Advances made over the last 10 years in the field of stroke research are especially promising and provide new avenues of hope for those at risk for and disabled by this major health problem. In particular, advances in understanding the mechanisms of stroke and its treatment (biochemistry, molecular biology, and pathophysiology) hold promise for changing many of the current ideas and approaches to this problem. Epidemiologic studies that can identify the weight of risk factors, research approaches that could limit the amount of brain damage suffered at the time of a stroke, controlled clinical trials of new medical and surgical therapies, and measures to evaluate and improve rehabilitation after stroke are all areas in which advances are being made and in which even more information is essential.
So much has been accomplished, yet we are on the threshold of so much more. There is a new excitement in stroke research—new technology, new findings, renewed promise of stroke prevention, intervention at the time of stroke to limit destruction, new clinical therapies, and hope that new approaches to restoration of function after stroke will improve the long-term outlook for patients. With adequate attention by the scientific community and with funding support, all these things are possible. The basic and clinical research programs of the National Institute of Neurological Disorders and Stroke are prepared to help accomplish this national objective. The documents underlying the Decade of the Brain provide the executive and legislative branches of our government with a template for meeting these goals in the area of stroke research. As proclaimed by the President, their implementation must be a national priority. The cause is just, the goals are attainable, and the time is right. Let's do it!
The decade of the brain: challenge and opportunities in stroke research.
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