

## Why CDRPA?

### **Statistics on Paralysis:**

- Approximately 4 to 5 million Americans are living with paralysis of the extremities
- Up to 400,000 people live with spinal cord injuries in the United States
- 5.6 million Americans are living with the effects of stroke and about 700,000 people have strokes every year
- Approximately 400,000 people in the United States have been diagnosed with some form of multiple sclerosis
- 800,000 children and adults in the United States manifest one or more of the symptoms of Cerebral Palsy
- 30,000 Americans living with Amyotrophic Lateral Sclerosis, also known as Lou Gehrig's disease and more than 5,600 new cases are diagnosed each year
- Spina Bifida, the most frequently occurring permanently disabling birth defect, affects approximately 7 out of every 10,000 newborns in the United States

### **Human and Economic Costs of Paralysis**

- Healthy People 2010 reports that the number of people with disabilities is increasing among all age groups
- More individuals with disabilities report 1) no leisure-time physical activity 2) less social participation 3) being overweight 4) more adverse effects from stress 5) lower employment rates 6) more environmental barriers 7) less access to preventive services and 8) more activity limitation than people living without disabilities
- The Institute of Medicine's Enabling America, reports that four percent of the gross national product, or over \$300 billion is the annual cost associated with disability
- Beyond the prevalence and economic cost, individuals living with paralysis have increased health concerns and susceptibility to secondary conditions
- Stays in hospitals and rehabilitation centers have decreased dramatically, giving an individual less time to learn how to cope with life changes
- Additional strategies must be undertaken to promote health and prevent secondary conditions among individuals with paralysis in an effort to complement national efforts to improve access to health care and eliminating environmental barriers to full participation in society for persons with disabilities

### **Promising Research: Yet Much Remains to be Done**

- Promising progress has been reported in the four principle strategies for repairing the damaged spinal cord: 1) promoting axon regrowth using nerve growth factors and/or molecules to suppress the inhibitory factors present in the adult brain and spinal cord; 2) bridging spinal cord lesions using scaffolds impregnated with nerve growth factors to promote axon growth and reduce the barrier caused by scar tissue 3) repairing damaged myelin and 4) enhancing brain and spinal cord plasticity
- The relationship between rehabilitation strategies (e.g., treadmill training) and nerve fiber growth, and the effects of combining growth factors with specific training programs, are very promising therapies for treating spinal cord injuries
- The pace of Multiple Sclerosis research is exciting and new drugs and therapeutic interventions are being developed now as a result of knowledge gained through long years of basic research
- Research for ALS holds great promise in many areas including human genetics, genomics, animal models and stem cell research
- Randomized control trials and observational studies have shown that if all women who could become pregnant were to take a multivitamin with the B-vitamin folic acid, the risk of neural tube defects could be reduced by up to 75%
- Two of the major causes of cerebral palsy have been eliminated including German Measles and maternal-child blood type incompatibility (Rh factor)
- Recent research has shown that the final steps leading to nerve cell death may be the same in many disorders including ALS, Parkinson's, Alzheimer's and Huntington's disease, and in trauma and stroke. The discovery that common themes play out in each disease offers hope because progress against one disorder will very likely help in the fight against others