Who we are
The Center for Cerebral Palsy Research is a non-profit organization founded in 1996 at Teachers College, Columbia University, a leading institution of Education, Health and Psychology. Our Center is committed to improving the lives of children with cerebral palsy (CP) and other individuals with brain injuries through research and education. Emphasis has been placed on understanding the mechanisms underlying motor and speech disorders associated with cerebral palsy, and developing evidence-based treatment approaches targeting these disorders. The center is led by Dr. Andrew Gordon, who has more than 20 years of research experience in children with CP, and consists of a unique team of physical and occupational therapists, speech-language pathologists, social workers and psychologists, neuroscientists, a pediatric neurologist, and many volunteers and collaborators from throughout the world. Based on knowledge gained about impaired hand function in children with CP, we developed and began studying the efficacy of intensive rehabilitation techniques in 1997, and approximately 140 children have participated in our free day-camp programs since 2002.

Our program differs from most other CP treatment programs in that we do not simply take existing therapies (PT, OT, SLP) and apply them more intensively. Rather we have built our treatment models from the ground up using theoretically defensible ingredients gleaned from the basic neurosciences, child development and motor learning disciplines. We are committed to evidence-based models of medicine, and we are constantly revising and improving our treatments and testing their efficacy. Participating in our projects not only may help your child, but will also help aid our understanding of the optimal ingredients and dosage of successful rehabilitation with the hope that this information will improve rehabilitation services for all children with cerebral palsy.

What we do
We know that efficacy depends on how we engage children rather than how the unaffected hand is restricted. Thus all our activities are conducted in the most child-friendly means possible, and we incorporate the latest technologies (e.g., video-gaming). For example, treatments for children age 4 years and up are often conducted in fun day-camp environments during school recess, while still having each child receive individualized attention by assigning them their own individual interventionist.

Presently we have several exciting projects:

* We are refining and testing two highly effective interventions, Constraint-Induced Movement Therapy (CIMT) and Hand-Arm Bimanual Intensive Therapy (HABIT), on involved hand and arm function in children with hemiplegia. We are examining how the brain organizes movement and responds to intensive rehabilitation using cutting edge brain imaging (diffusion tensor imaging) and brain stimulation (transcranial magnetic stimulation) techniques. We hope to use this information to optimize rehabilitation ingredients.

* We are attempting to make our treatments more feasible and widely available and suitable for young children. Thus we are also conducting a project for children 1 ½ to 4 years of age using modified schedules in the home environment. Parents/caregivers are trained to provide an adapted version of our treatments.

* Finally, we are beginning to conduct studies on speech intelligibility, with the aim being to evaluate the impact of intervention on functional intelligibility in children with CP.

Participation for all projects is free. Some projects take place throughout the year, while others such as the day camp projects are generally held during school recess. Please see our website http://www.tc.edu/centers/cit or contact us at cpresearch@tc.columbia.edu for more information or to have your child considered for participation in our programs.
Some accomplishments
We regularly present these findings to the clinical community and publish in peer-reviewed journals. Our work has been funded by the National Institutes of Health, United Cerebral Palsy Research & Education Foundation, the Thrasher Research Fund, CVS Landmark Cares and the generous donations of people who share our hope. Some highlights of our accomplishments include:

* Our basic research delineating the mechanisms of impaired hand function in CP showed that hand function is not static—it improves during development and following intensive practice. This work was described in the prestigious journal, The Lancet: “Gordon and colleagues provide new insights into the nature of the disabilities. More effective therapies and rehabilitation may be possible by targeting [these findings] to assist children with [CP] to learn how to optimize their manipulative capacities.”

* In keeping with this promise, in 1997 we were among the first to adapt Constraint-Induced Movement Therapy to be child friendly and test its efficacy. Our initial paper describing the findings was awarded the Hughs Award for best pediatric research paper by the American Physical Therapy Association. We subsequently demonstrated that participants across a variety of ages benefit from CIMT.

* Based on findings that children with hemiplegia have impairments in bimanual coordination (both hands) and movement planning deficits above and beyond their unimanual impairment, in 2004 we developed an intensive form of bimanual training (HABIT). The American Academy of Cerebral Palsy and Developmental Medicine awarded the Gayle G. Arnold Award for best scientific paper for our subsequent work demonstrating the efficacy of HABIT.

* Recently we found that both CIMT and HABIT improve hand function, but HABIT may improve coordination of the two hands to a greater extent and allow practice of functionally meaningful goals.

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Donate
We depend on donations to help us with our research and dissemination activities, purchase of the latest activities (including video-gaming) and supplies and to defray our costs of providing the interventions and keeping them free for participants. The funds are also used to provide scholarships to subsidize housing or transportation costs for families who might not otherwise be able to participate. All proceeds go directly into costs of research, providing intervention services or toward the scholarship fund (there are no administration or overhead costs).

You may make a tax-deductible (federal tax ID: 131624202) donation by writing a check out to “Teachers College, Columbia University”, writing “Center for cerebral palsy research” under the memo line, and sending it to the Center Director, Professor Andrew Gordon, at the above address.