

REACH: Randomized trial of Rehabilitation very Early in Congenital Hemiplegia

What is this study about? This study is about infants with asymmetrical brain injury where only one side of the brain is impaired or one side is significantly more impaired than the other. These infants can have problems with the development of hand skills of the arm opposite to the side of injury (or the more impaired side of the brain). Early interventions are recommended to improve hand and arm development for these children. These treatments involve encouraging the infant to use his/her arms and hands for play based activities, such as reaching for, grasping and manipulating toys. This study compares two types of intervention to improve hand and arm skills and general motor development. The interventions will start between 3 and 9 months corrected age and will be provided by parents/caregivers in their home with the support of experienced occupational therapists and physical therapists.



The first intervention is called **infant-friendly modified Constraint-Induced Movement Therapy (mCIMT)**. A sock or fabric glove is placed on the infant's more able hand, so the child can practice movement and skills with the impaired hand and arm. mCIMT consists of daily sessions in which one of the parents/caregivers plays with the infant to encourage him/her to use their impaired hand/arm to interact with toys and the parent/caregiver. The second intervention is called **infant-friendly Bimanual Therapy (BIM)**. BIM also consists of daily sessions in which one of the parents/caregivers plays with their infant to encourage equal use of both hands and arms. Infants in the study will be randomly assigned to one of the two types of interventions.

How can you help? This study seeks 20 babies with asymmetric brain lesions that live within 90 miles from the Twin Cities.

Inclusion criteria: Infants 9 months (corrected age) or younger with:

1. Asymmetric brain lesion identified on MRI **or** cranial ultrasound; AND/OR
2.
 - a. Absent Fidgety Movements on General Movements assessment at 12-15 weeks corrected age; AND/OR
 - b. Delayed development of the Hammersmith Infant Neurological Examination (between 14 weeks and 9 months corrected age); AND
3. Reduced upper limb function with asymmetric reach and grasp between 3 and 9 months corrected age that is congruent with the brain MRI or CUS findings.

(In the absence of #1 above, infants must have #2a AND/OR #2b. All infants must have #3)

*Note: The inclusion criteria will be assessed by our team. We will need permission to access the infant's radiology reports or MRI images to confirm inclusion.

What do parent/caregivers need to do? You will be taught techniques to train your baby's hand skills for reaching, grasp and manipulation of toys in play activities as part of your daily routine. The therapist will visit you monthly in your home and maintain contact between visits with video calls or phone calls. In addition to this daily training, we will need to assess your infant. Assessments at study entry and 6-9 months of age consist of a short video (30 minutes) of your infant and some questionnaires for you to complete. The final 2 assessments at 12-15 and 24 months may take a little more time. All assessments will be done in your home.

Benefits:

- The training may enhance your child's reaching and grasping skills
- You will receive a summary report of your child's assessment results
- You will be assisting us to gather information that may influence treatment for children with brain injury and provide better outcomes for their future

If you would like to find out more or know someone who might be interested, please contact:

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