Table 1

**Pediatric Studies on Constraint Therapy**

<table>
<thead>
<tr>
<th>Title of Study</th>
<th>Description of Study</th>
<th>Outcome</th>
<th>Level of Evidence</th>
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| Efficacy of Constraint-Induced Movement Therapy for Children with Cerebral Palsy with Asymmetric Motor Impairment (Taub et al., 2004) | ▪ Randomized control study  
▪ 18 children with hemiplegia cerebral palsy age 7-96 months  
▪ CIMT group=9  
▪ Control group=9  
▪ Ax= precast, post cast, 3 weeks post cast, and 3 & 6 month follow-up for CIMT group only  
▪ Tx=long arm bivalve cast worn 6 hrs/day for 21 days including intensive practice and shaping techniques | ▪ Spontaneous use, new motor movements, improved quality of hand use in constraint group as measured by Emerging Behavioral Scale (EBS), Pediatric Motor Log (PML), Toddler Arm Use Test (TAUT)  
▪ Results maintained at 6 months | I  
Comment:  
▪ Small number of children studied |
| Forced Treatment of Childhood Hemiparesis (Willis et al., 2002) | ▪ Randomized crossover control study with children with hemiplegia ages 1-8 years  
▪ CIT group=12 children primarily ages 3-6 years  
▪ Control group=10 children primarily ages 1-2 years  
▪ Tx= casted below elbow to fingertips for 1 month paired with preexisting OT or PT (no increase in therapy provided) | ▪ Improved hand function as measured by the Peabody Developmental Motor Scale (PDMS)  
▪ Some decrease in scores at 6 months in CIT group but scores remain higher than at onset  
▪ Parents reported improved ADLs after casting  
▪ Parents reported persistence of some improvement at follow-up | I  
Comments:  
▪ Small number of children studied  
▪ Children in the control group were younger |
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| Efficacy of Forced-Use Therapy in Hemiplegic Cerebral Palsy (Sung et al., 2005) | ▪ Randomized control study (8 yrs and younger) with hemi cerebral palsy  
  ▪ Tx group=18  
  ▪ Control group=13  
  ▪ Tx=cast paired with 30 min. OT 2x weekly x 6 weeks and encouragement to use arm at home  
  ▪ Control=received same OT  
  ▪ Ax=baseline and 6 weeks post cast | ▪ Improvements as measured by Box and Block Test, WeeFIM, and Erhardt Developmental Prehension Assessment | I Comment:  
  ▪ Less subjects in control group compared to treatment group |
| Effects of Constraint-Induced Movement Therapy in Young Children with Hemiplegic Cerebral Palsy: an adapted model (Eliasson et al., 2005) | ▪ Non-randomized controlled clinical trial of children aged 18 mths to 4 yrs  
  ▪ Tx group=21  
  ▪ Control group=20  
  ▪ Ax= baseline, 2 months, 6 months  
  ▪Tx=fabric glove with stiff plastic splint 2 hrs/day x 2 months | ▪ Improvement in Tx group was significant as measured by the Assisting Hand Assessment (AHA) and improvement continued 6 months post treatment | III |
| Modified Constraint Induced Movement Therapy for Young Children with Hemiplegic Cerebral Palsy: a Pilot Study (Naylor et al., 2005) | ▪ Prospective study of 9 children with hemi cerebral palsy (ages 18 mths – 5 years)  
  ▪ Tx=gentle restraint (adult holding unaffected hand) x | ▪ Improvement in grasps, weight bearing, protective extension as measured on the Quality of Upper Extremity Skills Test seen 4 and 8 weeks post | V |
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| Clinical Experience of Constraint Induced Movement Therapy in Adolescents   | 1 hour twice weekly paired with carryover at home by parent  
  ▪ Ax= every 4<sup>th</sup> week                                                                                                                                                                                      | improvements on Jebson Taylor Test and Brunincks Oseretsky sustained at 5 months  
  ▪ Assessment of Motor and Process Skills (AMPS) small but significant improvement  
  ▪ No improvement in grip strength                                                                                                                                   | V                 |
| with Hemiplegic Cerebral Palsy in a day camp (Eliasson et al., 2003)         | ▪ Prospective study of 9 children with hemi cerebral palsy  
  ▪ Tx=glove like mitt x 7hrs/day x 5 days x 2 weeks  
  ▪ Day camp activities encouraging recreational activities  
  ▪ Ax=baseline, 2 weeks, 5 months                                                                                                                                             | ▪ Improvements on Jebson Taylor Test and Brunincks Oseretsky sustained at 5 months  
  ▪ Assessment of Motor and Process Skills (AMPS) small but significant improvement  
  ▪ No improvement in grip strength                                                                                                                                   | V                 |

Table 1: CIMT=constraint induced movement therapy; CIT= constraint induced therapy; Tx=treatment; Ax=assessment; ADLs=activities of daily living.