# Occupational and Physical Therapy Case Study Form

## Diagnosis
Diplegic Cerebral Palsy  
GMFCS II

## Body Functions/Structures
- Weakness in trunk and LE’s
- Poor balance
- Poor ability to adjust to balance perturbation
- Poor speed of activation

## Activities
- Fatigue with extended sitting or walking
- Ambulates with 1 or two lofstrand crutches
- Cannot transition to stand form floor with AFOs on
- Slow ambulation speed - knee HE, Trendelenburg, limited advancement in swing

## Personal
- Twin younger brothers
- Father past away recently
- Very intelligent
- LOVES football
- Freshman in highschool

## Participation
- Difficulty playing football with brothers as he cannot make quick balance adjustments. Excellent at throwing ball.
- Has scooter at school, difficulty transitioning into class with school bag and crutches

## Environmental
- Difficult to get to sessions due to only one parent who works full time

## Short Term Objectives for intensive
1. Transition from floor to stand with AFOs on, independently – PSFS 0/10
2. Throw and catch a football with ability to take three steps in any direction quickly to adjust position – PSFS 0/10
3. Walk 20’ with school bag without crutches for independent ambulation in classroom – PSFS 4/10
Intervention Strategies

1. Power training on shuttle for bilateral PFs, 4-point hip and knee extension single leg, supine leg press
2. Functional activities for balance: step-touches, ½ stance advancing instability of surface, adding weighted bars for added perturbation challenge
3. Tall kneeling balance to focus on hip control
4. Resisted walking in all directions, Resisted stepping – FAST (advancing resistance as appropriate)
   (Activities done with AFOs as he will be wearing AFOs in all functional activities)

Outcome Measures Used

<table>
<thead>
<tr>
<th></th>
<th>8/23/2016</th>
<th>12/6/16</th>
<th>3/6/17</th>
<th>5/10/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gait speed (m/s): Self selected</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gait speed (m/s): Fast</td>
<td></td>
<td></td>
<td>1.04</td>
<td>1.0</td>
</tr>
<tr>
<td>GMFM (D) - 66 (%)</td>
<td>44</td>
<td>66</td>
<td>69</td>
<td>72</td>
</tr>
<tr>
<td>GMFM (E) - 66 (%)</td>
<td>53</td>
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</tr>
<tr>
<td>1 Rep max - leg press: Bilateral (lbs)</td>
<td>154</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1 Rep max - leg press: Left (lbs)</td>
<td>40 (Comment: sidelying 80% = 35 lbs)</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1 Rep max - leg press: Right (lbs)</td>
<td>44 (Comment: sidelying 80% = 32 lbs)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1 minute walk test (meters)</td>
<td>59.7</td>
<td>59.7</td>
<td>53.95</td>
<td>71</td>
</tr>
<tr>
<td>30&quot; sit-to-stand</td>
<td>14</td>
<td>13</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>30&quot; lateral step-up: Left</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30&quot; lateral step-up: Right</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30&quot; 1/2 kneel-to-stand: Left</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30&quot; 1/2 kneel-to-stand: Right</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Functional Strength Testing Total: Left</td>
<td>14</td>
<td>13</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Functional Strength Testing Total: Right</td>
<td>14</td>
<td>13</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>4-Square step test (seconds)</td>
<td>36.19</td>
<td>21.78</td>
<td>14.51</td>
<td>21.35</td>
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<tr>
<td>PRONE TO STAND no afsos</td>
<td>8.7&quot;</td>
<td>3.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRONE TO STAND afsos</td>
<td>Could not do</td>
<td></td>
<td></td>
<td>3.6</td>
</tr>
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</table>
**Response to Intervention**
This is the second intensive John has participated in. Overall he responds very well to this model of therapy. First 8 week intensive focussed on resistance training for LE extensor muscles. Second intensive focussed on core and balance training. With this combination of intensive John was able to improve on his goals. He had significant improvement in 1 min walk tests by over 10 meters since December. He has improved his prone to stand from 8.5” to 3.7” without AFOs and from inability to perform with AFOs to 3.3” with AFOs. He did not have significant changes in 10M gait speed. Functional strength testing did not demonstrate change either although he could not perform a step up at all at initiation and could do today with assistance only for balance. Sitting posture did not improve during intensive improvements in goals have been significant with overall improved confidence with ambulating without canes and ability to carry school bag or binders. Improved ability and speed to transition body between laying, sitting and standing as well as ability to get AFOs off on his own.

**Goal Response:**

1. Transition from floor to stand with AFOs on, independently – PSFS 0/10 to 10/10

2. Throw and catch a football with ability to take three steps in any direction quickly to adjust position – PSFS 0/10 to 10/10

3. Walk 20’ with school bag without crutches for independent ambulation in classroom – PSFS 4/10 – 10/10

**Prognosis (plan of care)**

Determined that power training intensive was effective. MOC still concerned about sitting posture and lack of sitting endurance as well as continues issues with balance and confidence without crutches.

Plan for another intensive in 3-6 months focused on core strength, balance.
Occupational and Physical Therapy
Case Study Form

Diagnosis
Athetoid/Spastic Cerebral Palsy
GMFCS III/IV

Body Functions/Structures
LE weakness bilaterally (notably in extensor groups)
Trunk weakness
Extensor synergistic patterning
Pronated foot position
Excessive dorsiflexion
Limited reactive postural control
Dysarthria

Activities
Stands with SBA, floor transfers with use of support surface, walks 3-4 steps with very close stand by assistance; posterior falls without protective reactions

Participation
Difficulty interacting with peers due to speaking and lack of mobility
Limited independence in family routines
Limited independence with environmental and school access
No physical recreational activity

Personal
- Family recently immigrated from India and have tenuous visa situation
- Very supportive parents that are willing to trial new types of interventions
- Sensitive to frustration

Environmental
- No adaptive equipment or significant bracing previously prescribed or received
- Uses loaner equipment at school
- Strong social and adaptive supports at school

Long Term Goal: (Participation Level) – To be met in 3 months
1. Patient will walk with supervision in a distracting environment without loss of balance for 100 feet to demonstrate improved strength, balance reactions and attention to task for increased independence in family and school activities.
2. Patient will have average score on the patient specific functional scale increased to 4/10 to demonstrate increased functional independence and participation in family and school activities.
Established 11/4/2014

Short Terms Goals: (Activity/ Impairment Level) – To be met in 8 weeks
Re-assessment date: 1/4/2014

1. Patient will complete a 1/2 kneel to stand transition without use of a support surface with either leg leading to demonstrate increased lower extremity strength, improved balance, and increased functional independence for improved physical play with peers. Established 11/4/2014
2. Patient will ambulate through a non-distracting hallway for 50 feet in less than 3 minutes to demonstrate improved gait kinematics and balance for increased ability to ambulate at school and home. Established 11/4/2014
3. Patient will increase total side to side score on functional strength testing to 16 bilaterally to demonstrate improved strength and balance for use in functional movement for improved ability to participate in physical play with peers. Established 11/4/2014
Intervention Strategies
1. Initial 8 week period consistent of strength based training for bilateral leg press, bilateral plantar flexors, single leg gluteus maximus and single leg gluteus medius
2. Progressed to power based program for single leg press, single leg heel raises, and gluteus medius training
3. Functional activities for stability in standing with reactive postural control, sit<>stand transitions from deep sitting, manually facilitated floor to stand transfers
4. Gait training over ground and on treadmill for reactive postural control and increased distance with and without AD
5. Stability work on ball, quadruped, tall kneel for hip and core stability

OUTCOME MEASURES

**Patient Specific Functional Scale** (parent proxy Evaluation; 8 weeks; 16 weeks)
1. Walk Independently - Initially - 2/10; 4/10 (posterior instability, lacks confidence, increased speed); 4/10
2. Toileting independently (climbing on, balancing while managing clothing) - Initially - 0/10; 0/10; 2-3/10
3. Participating in play with peers (physically, not socially) - Initially - 1/10; 1/10; 2/10
   Average: Initially: 1/10; 1.67; 3/10

**10 Meter Walk Test**  
Posterior walker, no orthosis support:
Evaluation: 44.6, 35.08, 29.71, 35.28 seconds; Average 36.08 seconds, 0.28 m/s
8 weeks: 33, 31, 30; Average: 31.33 seconds; 0.32 m/s
16 weeks: 25 seconds; 0.4 m/s

No assistive Device or orthosis support:
Evaluation: Unable
8 weeks: Unable
16 weeks: 0.02 m/s (8 minutes)

**Functional Strength Testing**

<table>
<thead>
<tr>
<th>Test</th>
<th>Side</th>
<th>Evaluation</th>
<th>8 weeks</th>
<th>16 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sit to Stand</td>
<td></td>
<td>8</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>1/2 Kneel to Stand</td>
<td>Left</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lateral Raise</td>
<td>Left</td>
<td>0</td>
<td>0</td>
<td>9*</td>
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<tr>
<td></td>
<td>Right</td>
<td>0</td>
<td>0</td>
<td>11*</td>
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<td><strong>Total</strong></td>
<td>Left</td>
<td>8</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>8</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

*With upper extremity support
Gross Motor Functional Measures
Evaluation: Lying and Rolling - 100%, Sitting - 100%, Crawling & Kneeling - 92.86%, Standing - 79.49%, Walking, Running & Jumping - 43.06%
Total - 83.08%
8 weeks: Lying and Rolling - 100%, Sitting - 100%, Crawling & Kneeling - 97.6%, Standing - 82.1%, Walking, Running & Jumping - 44.4%
Total - 84.82%
16 Weeks:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Raw Score</th>
<th>Possible</th>
<th>Percent: Raw Score / Possible Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lying and Rolling</td>
<td>51</td>
<td>51</td>
<td>100</td>
</tr>
<tr>
<td>B. Sitting</td>
<td>60</td>
<td>60</td>
<td>100</td>
</tr>
<tr>
<td>C. Crawling &amp; Kneeling</td>
<td>41</td>
<td>42</td>
<td>97.62</td>
</tr>
<tr>
<td>D. Standing</td>
<td>32</td>
<td>39</td>
<td>82.1</td>
</tr>
<tr>
<td>E. Walking, Running, &amp; Jumping</td>
<td>41</td>
<td>72</td>
<td>56.94</td>
</tr>
<tr>
<td>Total Score: Sum of Percent Scores / 5</td>
<td></td>
<td></td>
<td>87.33</td>
</tr>
</tbody>
</table>

Response to Intervention
Gained ability to walk safely without an AD with supervision
Completes floor to stand transfers pushing through floor
Steps up onto 3 inch step without using hands
Transitions from no protective response posterior falls to anterior displacement and controlled loss of balance
Negotiates stairs with close supervision with alternating/reciprocal pattern and 1 railing
Steps over 2 inch obstacle in path walking without loss of balance
Patient reports improved ability to play with peers and increased time playing on the playground

Prognosis (plan of care)
Patient to transition to body weight support treadmill training using split belt in the CGMA for 6-8 weeks, take 8 week break, and return for re-assessment and further intervention planning.

*Family lost their visa and had to leave prior to completion of BWSTT*
## Occupational and Physical Therapy Case Study Form

### Diagnosis

Diplegic CP s/p bilateral strayers—rehabbed with strengthening intensive 3 month then power intensive 3 month then power intensive
hx of SDR 2004, no other ortho intervention

### Body Functions/Structures

- Tight gastroc and hamstrings
- Weakness
- Poor balance
- Poor endurance

### Activities

- Walking, stairs, running, jumping

### Participation

- Golf team
- Vacations with family (road trip to Wyoming to hike, Las Vegas)

### Personal

- 16 year old male
- Intense family dynamics
- Extensive hx of therapy in past
- Working on driver’s license

### Environmental

- Gym in community
- Currently uses golf cart

### Personal Goals:

- Get out of AFOs in community and during golf, lift weights with friends

### Intensive Goals (Power Intensive)

1. Patient will improve Functional Strength Testing Total by 10%, indicating an improvement in strength to perform dynamic functional activities, such as stairs, curbs, floor to stand.

2. Patient will increase 6 minute walk test by 10% without AFOs, indicating an improvement in walking endurance, in order to participate in recreational activities more easily such as hiking with family or walking golf course.
Intervention Strategies

1. Resistance training- 8 weeks of strengthening, 8 weeks of power (shuttle)
2. Functional strength training (step ups, half kneel, resisted stepping and walking)
3. Balance training (half stance, tilt board, tandem stance)
4. Treadmill (estim to dorsiflexors, visual and verbal cues)
5. Night splints

Outcome Measures Used

*all testing below without AFOS, and not allowed to use hands for functional strength testing.

PT Resistance Training Intensive
The values below have been condensed into a single column per date.

<table>
<thead>
<tr>
<th>PT Resistance Training Intensive</th>
<th>11/2/16</th>
<th>1/9/17</th>
</tr>
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<tbody>
<tr>
<td>Gait speed (m/s): Self selected</td>
<td>1.30</td>
<td>1.56</td>
</tr>
<tr>
<td>Gait speed (m/s): Fast</td>
<td>3.55</td>
<td>2.3</td>
</tr>
<tr>
<td>1 Rep max - leg press: Left (lbs)</td>
<td>175</td>
<td></td>
</tr>
<tr>
<td>1 Rep max - leg press: Right (lbs)</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td>30&quot; sit-to-stand</td>
<td>14</td>
<td>18</td>
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<tr>
<td>30&quot; lateral step-up: Left</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td>30&quot; lateral step-up: Right</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>30&quot; 1/2 kneel-to-stand: Left</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>30&quot; 1/2 kneel-to-stand: Right</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Functional Strength Testing Total: Left</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>Functional Strength Testing Total: Right</td>
<td>33</td>
<td>42</td>
</tr>
<tr>
<td>4-Square step test (seconds)</td>
<td>6.22</td>
<td>4.3</td>
</tr>
</tbody>
</table>

11/2/16
6 minute walk test: 1552 feet
Shuttle single leg heel raise 1 repetition maximum: left, 104 (50% = 52), right 141(50% = 71)
Single leg stance: left 2 seconds, right 15 seconds

1/6/2017
6 minute walk test: 1708 feet
Single leg stance: right 15 seconds, left 6 seconds
Response to Intervention

Patient has made excellent progress. On the shuttle, he started at 87.5-100 pounds for single leg press (progressed to 150-175 pounds), 60-62.5 for single leg heel raises (progressed to 150 pounds). He is able to perform single leg heel raises with same resistance bilaterally, historically left side has been weaker. Functional Strength Testing Total improved by 27% on the right and 43% on the left. 6 Minute walk test, a measure of endurance, improved by 10%. Functionally, Patient is able to achieve heel contact gait for at least 100 feet when asked. Able to run with true flight phase. He is able to recover from step up/step downs more quickly - takes fewer steps to regain balance. He has met several of his short term and long term goals. His left gastrocnemius/soleus has tightened a bit, plan to continue with stretching and night splint.

Prognosis (plan of care)
2 resistance intensives per year with range of motion checks every 3-6 months
## Occupational and Physical Therapy Case Study Form

### Diagnosis
Aneurysm May 2016
14 year old

### Body Functions/Structures
- Weakness in left LE
- Decreased speed of activation
- Decreased stability on left
- Left ankle clonus
- Decreased endurance

### Activities
- Gait: circumduction, knee hyperextension, foot drop, decreased tibial translation, decreased hip flexion
- Run: unstable, poor left advancement

### Participation
- Cannot run safely or effectively
- Trying to play baseball but very limited participation due to poor running, poor endurance and left limited UE function
- Not able to attend school full day

### Personal
- High pressure family with pressure to return to competitive baseball
- Social emotional issues addressed through rehab psych
- Inconsistent or inaccurate report of concerns
- Family resistant to taking break in PT but patient losing motivation for rehab

### Environmental
- Previously participated in in-patient rehab and sub-acute program. Focus mainly on balance and gait and some strengthening
- Also planning BMIT intensive in July
- Entering highschool fall 2017

### Long Term Goal
1. Patient will be able to play Baseball

### Short Term Objectives
1. Full day at school without AFO - PSFS 3/10

2. Increase running speed by 10%
   - Ex. hit ball and get to first base - PSFS 3/10

3. Ascend/descend Full flight without holding on (prepare for highschool) - PSFS 5/10
Intervention Strategies

1. Power training on shuttle for left PF, Left 4-point hip and knee extension single leg,
2. Functional activities for stability and eccentric PF control: ½ stance advancing instability of surface, adding weighted bars and fast movements for added perturbation challenge. ½ stance squats for eccentric PF control
3. Resisted walking in all directions, resisted stepping – FAST (advancing resistance as appropriate) focus on FAST left advancement for swing, and fast right advancement with focus on left terminal stance and stance stability
4. Stability work on ball for hip and core stability

OUTCOME MEASURES

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Gait speed (m/s): Self selected</td>
<td>1.50</td>
<td>1.64</td>
</tr>
<tr>
<td>Gait speed (m/s): Fast</td>
<td>3.37 run</td>
<td>Fast walk 2.08m/s; Run 4.17 m/s</td>
</tr>
<tr>
<td>1 Rep max - leg press: Left (lbs)</td>
<td>100</td>
<td>185</td>
</tr>
<tr>
<td>1 Rep max - leg press:LEFT prone extension (lbs)</td>
<td>32</td>
<td>87</td>
</tr>
<tr>
<td>1 Rep max - heel raise (lbs)</td>
<td>56</td>
<td>136</td>
</tr>
<tr>
<td>1 minute walk test (meters)</td>
<td>288’ 3&quot;</td>
<td>371’ 8&quot;</td>
</tr>
<tr>
<td>30” sit-to-stand</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>30” lateral step-up: Left</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>30” lateral step-up: Right</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>30” 1/2 kneel-to-stand: Left</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>30” 1/2 kneel-to-stand: Right</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Functional Strength Testing Total: Left</td>
<td>36</td>
<td>57</td>
</tr>
<tr>
<td>Functional Strength Testing Total: Right</td>
<td>39</td>
<td>49</td>
</tr>
</tbody>
</table>

Response to Intervention

- 29% increase in 1 min walk
- 21 rep increase in Left functional strength test
- 9% increase in self selected gait speed (24% increase in 10M run
- PSFS improved from 3.67/10 to 9.3/10
- Gait improved with decreased knee hyperextension, improved terminal stance and tibial translation, increased speed of swing and no circumduction. Gained stance phase control so that he does not need AFO but only foot drop control
Prognosis (plan of care)

Determined that power training intensive was effective and he has ability to gain strength and function with this intervention. Plan to take at least 1-2 months off for summer and BMIT. Will return in August to determine next steps. Most likely an intensive focused on DF activation to decrease use of foot drop brace using e-stim and motor control techniques.
CASE STUDY FORM

Diagnosis
Spastic Diplegic CP (GMFCS Level II)

Body
Functions/Structures
- Bilateral lower extremity weakness
- Plantar flexor/hamstring spasticity
- Limited ankle, hamstring, and hip ROM
- Genu valgum skeletal alignment

Activities
- Reduced gait speed in and out of AFOs
- Modified independence with sit/stand transfers (hands on rests)
- Modified independence with floor transfers (needs a chair to get up)
- Supervision to negotiate stairs
- Difficulty donning/doffing pants independently
- Unable to run, jump, enter/exit pool independently
- Unable to negotiate obstacle independently

Participation
- Restricted independent access to her home, school, and community
- Unable to attend sleep-overs with friends due to fear of falling and concern regarding level of assistance needed to get dressed
- Restricted participation in family outdoor activities

Personal
- Anxious of new activities or injury
- High degree of peer social awareness
- Motivated to participate in multiple faith group, community, and school activities
- Accepting of her diagnosis, but frustrated with physical limitations
- Exceptionally supportive family that helps her challenge herself
- Extensive surgical history

Environmental
- Use of Crocodile walker to ambulate
- 504 plan in place at school to support physical needs
- Limited ankle, hamstring, and hip ROM
- Genu valgum skeletal alignment
- Uses solid polyethylene AFOs

Long Term Goal: 12 weeks
Patient will increase average score on the Patient Specific Functional Scale to 8.33 for increased independence in daily activities and community, home, and school mobility for improved ability to interact with peers.

Short Terms Goals: 8 weeks
Goal status:
1. Patient will increase both fast and self selected gait speed by 0.1 m/s to demonstrate improved quadriceps power for improved ambulatory ability for increased participation in peer activities.
2. Patient will be independent in donning/doffing of all clothing (except braces and shoes) for ability to do sleep overs with friends.
3. Patient will increase Functional Strength Testing scores by 8.8 repetitions on each side to demonstrate improved lower extremity strength and power for improved transitional movement independence.

Intervention Strategies
- Power based strength training focused on bilateral gluteal, quadriceps and plantar flexor musculature targeted at individual lower extremities
- Functional skills practice
- Interval based treadmill training
- Home based range of motion intervention focused on positioning (low load, long duration stretched of hamstrings)

Surgical History
- 1/11/06 – bilateral varus derotational osteotomy with hip spica casting, delayed healing on the right side, treated with e-stim
- 3/15/07 – revision right varus derotational osteotomy with bone grafting and spica cast, hardware removal left hip
- 1/24/08 – Botox – bilateral medial hamstrings
- 6/4/08 – right hip hardware removal, Botox bilateral hamstrings
- 6/24/09 – Botox bilateral hamstrings
- 10/26/09 – Botox bilateral gastrocnemii, Phenol bilateral hamstrings
- 4/22/10 – Phenol bilateral adductors, bilateral medial hamstrings
- 12/18/14 – Hardware removal and scar revision, with retained hardware bilateral distal femora, bilateral great toes. Partial fibrous non-union bilateral 1st MTPJ arthrodese. Scar hypertrophy left lateral distal femur
**Outcome Measures Used**

GMFM 66 only D and E  
Patient Specific Functional Scale  
10 meter walk test  
1 minute walk test  
Functional Strength Testing

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**Response to Intervention:**

**Patient Specific Functional Scale**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Evaluation</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running (with walker, 5 minute)</td>
<td>4/10</td>
<td>7/10</td>
</tr>
<tr>
<td>Getting dressed independently (for sleepovers)</td>
<td>8/10</td>
<td>10/10</td>
</tr>
<tr>
<td>Getting up and down from the floor</td>
<td>1/10</td>
<td>7/10</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>4.33</strong></td>
<td><strong>8/10</strong></td>
</tr>
</tbody>
</table>

**Gross Motor Function Measure 88 (GMFM-88)**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Evaluation</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Standing</td>
<td>66.7</td>
<td>74.4</td>
</tr>
<tr>
<td>E. Walking, Running, &amp; Jumping</td>
<td>54.17</td>
<td>63.8</td>
</tr>
</tbody>
</table>

**Gait Speed:**

<table>
<thead>
<tr>
<th>Test</th>
<th>Evaluation</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 meter gait speed, self selected</td>
<td>0.74 m/s</td>
<td>0.98 m/s</td>
</tr>
<tr>
<td>10 meter gait speed, fast</td>
<td>1.07 m/s</td>
<td>1.14 m/s</td>
</tr>
<tr>
<td>1 minute walk</td>
<td>167.2 feet (no walker)</td>
<td>192 feet (no walker)</td>
</tr>
</tbody>
</table>

**Functional Strength Testing**

<table>
<thead>
<tr>
<th>Test</th>
<th>Side</th>
<th>Evaluation</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sit to Stand</td>
<td>Left</td>
<td>9 (HHA)</td>
<td>15 (HHA)</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>0</td>
<td>9*</td>
</tr>
<tr>
<td>1/2 Kneel to Stand</td>
<td>Left</td>
<td>0</td>
<td>9*</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>0</td>
<td>9*</td>
</tr>
<tr>
<td>Lateral Raise</td>
<td>Left</td>
<td>11*</td>
<td>9*</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>12*</td>
<td>10*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Left</td>
<td>20</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>21</td>
<td>34</td>
</tr>
</tbody>
</table>

*completes with bilateral hand hold assistance for stability

**Functional Gains:**
- Negotiates stairs independently using a railing
- Negotiates a 4 inch curb independently and consistently, 6 inch curb with occasional physical assistance
- Achieves all short and long term goals
- Able to jump for first time in her life
- Completes 1/2 kneel to stand transfers using a support surface
- Completed 1 mile hike with family
- Stated increased confidence in physical abilities

**Plan of Care:**

*Patient completed 2 time per week (1 hour sessions), 8 week intensive program of power based resistance programming, functional training, interval treadmill training, and home-based positioning program. Patient able to discharge from physical therapy at end of intervention period with plan for further monitoring by her home-based PT.*