

Guide to the Physical Therapy Evaluation

The physical therapy evaluation was designed to provide a comprehensive assessment of the student's gross motor performance as it relates to school function and participation. The evaluation should include the student's strengths and weaknesses as they relate to school participation outlined in the IDEA 1997. Part B of IDEA sec.300.24 (a) states that the provision of related services "are required to assist a child with a disability to benefit from special education." Treatment implementation and goals should reflect the child's ability to access the school environment and achieve educational goals. The evaluation is submitted to the CSE or SPST along with page 5 (health and physical development) and page 6 (annual goals and short term objectives) of the IEP.

Guidelines For Reporting Scores

Age equivalence should not be included in the physical therapy evaluation as they are often misconstrued. Percentile ranks and standard scores may be used for evaluative and decision making purposes when appropriate. In accordance with the recommendations made in the Board of Education Test Resources Guide, reporting scores should be used with caution. The student's performance on the assessment should reflect areas of strengths and weaknesses and should be descriptive and qualitative. Charts and checklists are provided for keeping data on range of motion, muscle strength etc., and for helping you to organize a thorough evaluation, however these numbers need not be written in your report. This information should be on file so that you can address and monitor the specific impairments that are limiting function.

Guidelines for Writing Evaluations

The evaluation is a document that will be reviewed by parents and school personnel who do not have a background in medical therapy terminology. The evaluation should be written in clear, non-professional language. A description of the student's functional strengths as well as weaknesses should be included. The crux of the evaluation should reflect the child's participation level as opposed to his impairment level. The language should be objective, descriptive and qualitative rather than stigmatizing and judgmental.

Recommended Assessment Tools

School Function Assessment

Peabody Developmental Motor Scale II (used as norm reference or criterion reference test)

PEDI

Gross Motor Function Measure / Gross Motor Performance measure.

Bruinks Osteretsky Test of Motor Proficiency

I. Medical History/Medications/Contraindications/Precautions/Previous Surgeries

- Can get the necessary info from the student's file located in the special ed office or the nurse's records.
- Medical information may also be obtained from the parent interview.
- Specify any contraindications or precautions and past surgeries.
- Specify any baclofen or botox use, seizure/asthma meds and allergies.

II. Social History: (family, # of flights of stairs, private home/apt.) With or without w/c accessibility, elevator accessibility)

- Indicate if the child is living with relatives versus parents or whether in a foster home. ? To be discussed.
- Indicate if the child is affiliated with outside agencies. They are part of the team and may be able to offer information regarding previous therapies or equipment.
- Indicate whether the child lives in a W/C accessible building, number of stairs in the building to access living corridors and elevator accessibility. You may be asked to provide input when equip is ordered.

III. Range of Motion: (limitations/contractures; influences on functional tasks)

- Indicate any contracture and joint limitations that are impacting the student's ability to sit in a chair or stand etc.
- Assess active range of movement/voluntary movement in reference to school based tasks i.e. raising your hand in class, lifting foot to climb up a step, reaching for coat on the rack, reaching for pencil/book that fell on the floor.
- Can the child explore all possibilities of movement that impact on the functional tasks demanded of him?
- Avoid numbers and focus on function.
- Look at compensatory movement patterns or lack of movement that may set up the potential for further musculoskeletal deformities. This may be important when deciding whether or not a child will benefit from 12 month services.

SEE APPENDIX 1A & 1B

IV. Muscle Tone/Muscle Strength

- Muscle tone refers to the background resting state of the muscle. This can be assessed through palpation of the muscle. Resistance to passive stretch when the joint is moved throughout the range at different velocities is spasticity. Postural tone can be assessed through the child's ability to orient himself to the vertical in relation to the forces of gravity. Too much or too little muscle tone can adversely affect the child's ability to move smoothly and efficiently.
- Discuss muscle tone as it relates to the child's ability to sit in a classroom chair, transition from floor to stand, run, jump, and kick a ball. Tone is only problematic if it impacts on function. A child who is "low tone" does not necessarily require services if this is his only impairment and it does not impact function.
- Muscle strength can be assessed through manual muscle testing when appropriate. Refer to Daniel's and Woirthingham pediatric muscle strength assessment section.

- Muscle strength can also be described in terms of the student's ability to perform functional tasks, i.e. (1) Lifting his head to the vertical while in prone
 (2) Sitting unsupported with head in midline
 (3) Transitioning from half kneel to stand
 (4) Stepping on a step without support
 (5) Standing on one foot without support
 (6) Climbing up on playground equipment
 (7) Negotiating steps in a reciprocal pattern without rails

SEE APPENDIX 1B

V. Posture and Joint Alignment (scoliosis, lordosis, pelvic tilt/rotation, leg length discrepancies, etc.)

- Scoliosis can be assessed in short sitting or forward bending in standing. Look for any abnormal curvature in the spine, assess if the student can move out of the scoliosis. Is it functional/flexible/structural? Make sure the pelvis is level and neutral when assessing for scoliosis. Scoliosis is named for the convex side.
- Lordosis: Does the student present with an excessive lumbar lordosis? Check different positions and note if lordosis is fixed. Is this due to excessive hip flexor tightness or a compensation for weak hip extensors?
- Pelvic tilt/rotation: Does the student sit in a posterior pelvic tilt? Can the student come out of this position or is it the student's predominant posture? Is the pelvis level or rotated; is it fixed or flexible? Can the student's pelvis be held in neutral with a good w/c-positioning belt?
- Leg Length Discrepancies: Assess the child in supine: Make sure the pelvis is leveled prior to measuring so as not to misinterpret the findings. Rule out apparent versus true leg length discrepancy and keep your landmarks consistent. You may want to have another therapist also take the measurement for intra-tester reliability.
- Look at the student's postural alignment in floor sitting and when sitting in a classroom chair or w/c. Is the student able to maintain sitting without falling/slipping out of his chair, is the student grounded or is the chair too large/small for him/her. Remember many children often have lessons while sitting on the floor (i.e. circle time).
- Look at the student's standing postural alignment. Is the spine straight? Are the hips symmetrical? Are the knees in genu valgus/varus position? Assess the student's foot alignment for excessive foot pronation/ supination/equinovarus.

SEE APPENDIX 2

VI. Motor Performance (transitional movements, transfers, gross motor component of ADL's)

- It is important to describe how a child moves. Is there dissociation? Is movement in straight planes or is there a rotational component? Does child appear fearful of movement?
- How much assist, and when during the movement, does a child need?

- Remember to place child in different positions on a mat (if applicable) and see if there is volitional, purposeful movement. Can a child maintain a position if placed (if they can't assume a position independently)?
- Observe the child as he or she goes through a typical school day. Many children participate in floor activities.
- Observe transfers in different situations, not just in the therapy room (i.e. bathroom, cafeteria)

SEE APPENDIX 3A & 3B, also School Function Assessment

VII. Gross Motor Skills

- School children are often asked to participate in non-academic activities with peers. It is important to note how the child performs basic play tasks.
- Dependent on grade level. Observe child at playtime, in music class, in gym or APE.
- Includes but is not limited to jumping, hopping, throwing, catching, crawling, etc.

SEE APPENDIX 3A & 3B

VIII. Balance, Postural Control, Coordination

- Important to determine where the functional limitation stems from. Is it a proprioceptive, strength or vision problem for example.
- Poor posture (kyphosis, rounded shoulders) may be due to a challenged vestibular sense.
- Check static and dynamic balance in sitting and standing. For dynamic balance have child attempt to reach out of his or her base of support.

SEE APPENDIX 4

IX. Ambulation (distance, endurance, equipment, orthoses, supervision)

- How does child ambulate? Describe gait pattern with and without orthoses.
- How fast can child go? Time how long it takes child to get from classroom to different areas of the school. Can he or she keep up with peers? Is the child exhausted by the end of the day due to poor endurance?
- Is child safe or does he or she require assist?

SEE APPENDIX 5

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X. Stairs

- Again, describe how the child ascends and descends stairs.
- Is there a reciprocal pattern or step to step, do they use railings (one or two)
- Amount of assist required, can they carry an assistive device if there is one?
- *Rate*.

SEE APPENDIX 5

XI. Wheelchair Mobility

- What kind of wheelchair does the child use (manual or power), how does child propel (joystick, one-arm drive, dependent)?
- Are they independent, in what situations (indoor vs. outdoor, ramps)
- Can the child keep up with peers? How long does it take child to get from classroom to different areas of the school?
- Is child exhausted at the end of the day?

SEE APPENDIX 6

XII. Task Behaviour (sensory involvement, ability to follow commands, communication, attention span, cooperation, unusual behaviours)

- Sensory involvement refers to the child's ability to take in information from the environment and from his or her own body and organize it. Many children become overwhelmed if they are unable to process information from many different places at once (i.e. auditory from a noisy room plus visual from all the work hanging from walls and ceilings plus a hyperactive tactile system may cause a child to become uncomfortable or disruptive).
- A sensory screening is included with this guide however it is meant only to alert you to a possible sensory problem. This screening is in no way meant to be a diagnostic tool. If you suspect a sensory issue, alert someone with knowledge or training in this area so that the proper follow up can be done.
- Note if a child engages in any unusual behaviours such as biting themselves or others, hand flapping, "tuning out" or "shutting down". Does the child interact with peers appropriately?
- Can the child follow one, two or three step commands? If not is it because the setting is over-stimulating? Try moving the child to a quieter area.

SEE APPENDIX 7A & 7B

APPENDIX 1A

Upper Extremity ROM and Muscle Strength

	PROM		AROM		MMT	
	Right	Left	Right	Left	Right	Left
Shoulder flexion						
Shoulder extension						
Shoulder internal rotation						
Shoulder external rotation						
Shoulder abduction						
Shoulder horizontal adduction						
Elbow flexion						
Elbow extension						
Forearm supination						
Forearm pronation						
Wrist flexion						
Wrist extension						
Radial deviation						
Ulnar deviation						
Finger flexion						
Finger extension						

6

APPENDIX 1B

Lower Extremity ROM and Muscle Strength

	PROM		AROM		MMT	
	Right	Left	Right	Left	Right	Left
Hip flexion						
Hip extension						
Hip internal rotation						
Hip external rotation						
Hip abduction						
Hip adduction						
Knee flexion						
Knee extension						
Ankle dorsiflexion						
Ankle plantarflexion						
Foot inversion						
Foot eversion						
MTP flexion						
MTP extension						

Comments (note synergy movements or lack of dissociation):

Muscle Tone (mild, moderate, or severe) or can use Modified Ashworth Scale.

R UE _____
 L UE _____
 R LE _____
 L LE _____
 Trunk _____

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APPENDIX 2

Posture

Pelvic Tilt neutral fixed
 posterior flexible
 anterior (lumbar lordosis)

Pelvic Rotation none fixed
 R forward of L flexible
 L forward of R

Spine straight fixed
 kyphosis flexible
 scoliosis cervical - R/L convexity
 CT junction - R/L convexity
 thoracic - R/L convexity
 TL junction - R/L convexity
 lumbar - R/L convexity

Lower Extremities LLD: umbilicus-R lateral malleoli _____
 umbilicus-L lateral malleoli _____
 genu valgum R L
 genu varum R L
 genu recurvatum R L
 foot pronation R L
 foot supination R L
 pes equinus R L

Other:

8

APPENDIX 3a

Motor Development (Pre-ambulatory)

Scale	Comments
Head raising	
Prop on elbows	
Pull to sit (no head lag)	
Rolling (supine → sidelying → prone)	Note if log rolling or dissociated
Rolling (prone → sidelying → supine)	Note if log rolling or dissociated
Long sitting	
Short sitting	
Ring/Tailor sitting	
Side sitting	
Prone → sit	
Supine → sit	
Quadruped	
Crawling	
Kneeling	
½ kneeling	
Pull to stand	

APPENDIX 3B

Motor Development (Post-ambulatory)

Scale	Comments
Sit → stand	
Standing	
Walking	Assistive device and rate of amb.
Backward walking	
Running	
Jump (level surface)	
Jump (off ___"height)	
Unilateral stance: R	
Unilateral stance: L	
Unilateral jump: R	
Unilateral jump: L	
Forward hop (both LE's)	
Unilateral hop: R	
Unilateral hop: L	
Skipping	

Throwing
catching
Jumping JACKS
Other

Key to scales: I – achieves and maintains position independently

CG – contact guard

A – assist (specify min, mod, or max)

* – can maintain position if placed

10

APPENDIX 4A

Balance and Coordination

Coordination	Grade	Comments
Finger to nose		
Finger to therapist's finger		
Heel to shin		
Standing with feet together		
Walk on heels		
Walk on toes		
Ball catching/throwing		

Key to grading: 1 – normal performance

2 – minimal difficulty is demonstrated

3 – moderate difficulty: movements are arrhythmic and performance deteriorates with increased speed

4 – severe difficulty noted: movements are very arrhythmic, significant unsteadiness, oscillations, and/or extraneous movements

5 – unable to accomplish activity

Balance

- Sitting bilateral UE support required
 unilateral UE support required
 no UE support
 able to perform unilateral UE activities
 able to perform bilateral UE activities

- Standing bilateral UE support required
 unilateral UE support required
 no UE support
 able to perform unilateral UE activities
 able to perform bilateral UE activities

Comments:

APPENDIX 4B

Righting and Equilibrium Reactions

Trunk/Head Control

In pull to sit,

- good head control – child flexes neck firmly and chin touches chest
- fair head control – the head is aligned with the trunk, but chin does not reach chest
- poor head control – child demonstrates a head lag

In short sit,

- good head control – head is held steady and is aligned with the trunk
- fair head control – bobbing of head
- poor head control – head is held in a flexed position forward of vertical

In short sit,

- good trunk control – child maintains a stable sitting position without hand support
- fair trunk control – child sits unsupported with periodical placement of hands
- poor trunk control – child uses hands for support at all times

Comments:

Equilibrium Reactions

- UE protective extension
- front
 - backwards
 - sideways

- LE protective extension
- front
 - backwards
 - sideways

Postural Reactions

- Reaction to perturbation
- ankle strategy
 - hip strategy
 - stepping strategy

Comments:

APPENDIX 5

Gait Analysis

Note any abnormalities

	Heel Strike		Foot Flat		Midstance	
	Right	Left	Right	Left	Right	Left
Hip						
Knee						
Ankle						

	Heel Off		Toe Off		Swing Phase	
	Right	Left	Right	Left	Right	Left
Hip						
Knee						
Ankle						

Trunk Movements

- forward lean
- backward lean
- lateral lean
- ↓'d trunk rotation
- ↓'d arm swing

Stairs Up

- I
- supervision
- CG
- min A
- mod A
- max A
- with handrails
- without handrails
- reciprocal gait

Stairs Down

- I
- supervision
- CG
- min A
- mod A
- max A
- with handrails
- without handrail
- reciprocal gait

APPENDIX 6

Wheelchair Mobility and Management

Wheelchair Type

power
manual
stroller

Vendor information _____

Wheelchair Management

Arm rests (fixed, removable, or swing away) _____
Seat belt _____
Harness _____
Brakes _____
Foot rests (fixed, removable, or swing away) _____
Foot straps _____

Wheelchair Mobility

Forward propulsion I, verbal cues, min A, mod A, dependent

Rate of propulsion _____

Turns Right _____ Left _____

Doors I, verbal cues, min A, mod A, dependent

Wheelchair transfers

W/C → mat _____

Mat → W/C _____

W/C → chair _____

Chair → w/c _____

Sit → stand _____

W/C → floor _____

Floor → W/C _____

124

APPENDIX 7A

Mental State

Alert and Oriented __name __place __time

Main Mode of Communication __verbal __computer __direct select/pointing

Follows Directions __one step __two step

Attention Span/Cooperation __good __fair __poor

Emotional Behavior (agitated, frightened, motivated, etc.) _____

Response to visual stimuli _____

Response to auditory stimuli _____

Tactile Sensitivity

Hypersensitivity:

pulls away from a hand placed lightly on head, shoulder, or back

reacts with aggression to touch

gets upset and begins to cry when touched

avoids messy play and dislikes using glue

Hyposensitivity:

touches everything

uncoordinated with small objects like beads, dropping them frequently

unable to match textures

no response to light touch

Vestibular Function

Swing Tolerance: back and forth (prone, sitting) _____

rotation (prone, sitting) _____

Reaction to bouncing _____

Oculomotor Function

Tracking/Pursuit (Ask child to follow an object with eyes only. Hold child's chin if no head-eye isolation. Note for midline crossing.)

Convergence (Move an object along a midline towards child's nose)

SEE ALSO SENSORY INTEGRATION INVENTORY APPENDIX 7B