Wheelchair Assessment

Introduction

Districts choose the assessment tools that they feel are appropriate for the students served. However, depending on circumstances and funding source, there may be mandates concerning the choice of wheelchair assessment that must be used. This evaluation tool was created in collaboration with OT/PTs in Florida's school system. For additional information about wheelchair assessment, see Gierach (2009).

Instructions

This assessment is used when a student is being evaluated regarding his/her current wheelchair and possible modifications. It is also used when evaluating a student for a new wheelchair.

Whenever possible, this assessment should be completed as part of a team. Team members should include the therapist, the rehabilitation technology specialist (RTS)/wheelchair vendor, and the student's parent(s) as well as any other person qualified to give input.

In addition to evaluating the wheelchair, there is a section designated to evaluate the student's body as it pertains to the wheelchair. The team should consider the adaptations needed and the medical necessity for each component part of the wheelchair. It is very important that each section be completed fully and have details given for each custom modification and medical necessity.

I. Identifying Information:

- The information concerning the student's demographics, medical condition, and diagnosis should be filled out completely.
- Under "Summary of Needs," provide a detailed description of the child and the reason for needing a custom wheelchair. Include information regarding prognosis, ambulation potential, and overall use of a wheelchair.
- Be sure to document any orthopedic surgeries the student has received that will affect positioning.
- Whenever possible, consider attaching a picture of the student.

II. Wheelchair Use:

It is important to note where the wheelchair is used and how it is transported. It is also important to note if the current wheelchair frame or any component of the seating system can be used again.

III. Musculoskeletal Status:

A. Pelvis/Hips

Evaluate the pelvis and the tilt the pelvis is usually in while sitting. Also note pelvic obliquity and whether one side is higher or more forward.

Measure thigh length, being sure that the student is sitting upright. Also note the position of the lower extremities and whether there appears to be hip dislocation(s).

It is critical that in each section you note **all** custom modifications and why they are medical necessities.

Consider the following:

- **Solid Seat:**
  - Reasons
    - Provides a firm base of support.
    - Provides a base for symmetrical sitting.
    - Provides a central point from which to align the pelvis and trunk.
    - Facilitates balance capabilities.
    - Helps to minimize pelvic obliquity.
    - Positions lower extremities in more neutral position.
  - Considerations
    - Seat length must be accurate to provide for neutral alignment of the pelvis.
    - Seat must be firm enough to provide stability and the covering surface must be sufficient to provide comfort and pressure relief.

- **Hip Positioning:**
  - Reasons
    - Provides for symmetry of the hips.
    - Positions the pelvis for stability.
    - Allows for symmetrical weight bearing and discourages scoliosis, pelvic tilts, and/or dislocated hips.
  - Considerations
    - Degree of hip flexion must accommodate for fixed deformities and provide for best trunk alignment.
    - Seat to back angle should be 87–88 degrees of hip flexion.
    - Bilateral hip guides provide symmetrical alignment.

- **Split Length Seat:**
  - Reasons
    - Allows proper support of each lower extremity when there is a difference in leg length in the thigh area.
    - Supports longer leg to align it in neutral instead of adduction and internal rotation.
  - Considerations:
    - If the leg length discrepancy is greater than one inch, accommodate for the difference.

- **Positioning Belt:**
  - Reasons
    - Aids in pelvic stability
    - Allows for trunk balance
  - Considerations

- Analyze the angle and directional pull of the positioning belt.
- Size of webbing and closure should be proportional to the size of the student.
- For students who ride the school bus, the type of closure may need to be a positive locking closure.
- Assess need for padding under the positioning belt.

B. Skin

Establish whether the student has any loss of sensation through testing or parent report. Determine if the student had a skin breakdown.

- **Specialized Cushion:**
  - Reasons
    - Evens distribution of sitting pressure resulting in improved circulation.
    - Minimizes potential for skin breakdown.
  - Considerations:
    - Appraise the type and density of cushion material.
    - Plan for the need for protective waterproof covering.
    - Identify the extent of maintenance and care of cushion.

C. Trunk/Head

Evaluate the spine, noting any curves present. Note what occurs when the student is tired. Evaluate the student's head control. Consider the following:

- **Solid Back:**
  - Reasons
    - Helps to properly align the trunk and upper extremities to maximize head function and help prevent deformities.
    - Minimizes posterior pelvic tilt.
  - Considerations
    - Sufficient foam can provide comfort, pressure relief, and stability.
    - Additional foam might be needed to support fixed deformities.

- **Lateral Trunk Supports**
  - Reasons
    - To decrease excessive trunk mobility.
    - To align the trunk, maintain symmetry, and discourage spinal deformity.
  - Considerations
    - Use lateral supports on both sides of the student's trunk.
    - Allow room for chest expansion and some trunk movement.
    - Do not cut into axilla.
    - Removable or swing away supports are important for transfers.

- **Tilt in Space System**
  - Reasons
    - Student with low tone cannot remain in an upright sitting position against gravity for any length of time.

        - Student unable to reposition self to change pressure points.
        - Tilt decreases the effects of gravity and thus assists in trunk alignment, prevents hanging of shoulder harness, and assists in positioning of head.
    - Considerations
        - Degree of tilt in space needs to be carefully evaluated for each student, with consideration of their muscle tone.
- **Harness System and Strap Guides:**
    - Reasons
        - Provides symmetrical trunk support.
        - Helps prevent forward trunk flexion.
    - Considerations
        - Type of harness must be evaluated on an individual basis.
        - Shoulder strap should pass over the shoulder and insert at a point directly at or slightly below the shoulder line.
        - Harness must attach to a second lower strap and not to the pelvic positioning strap.
        - Dynamic straps allow for some movement.
        - Strap guides assist in keeping straps on the student's shoulders.

- **Head Control System:**
    - Reasons
        - Keeps the head and neck in functional chin tuck position where the head is supported on a neutrally aligned neck and eyes are held in a parallel plane to the floor.
    - Considerations
        - Maintain head in neutral alignment.
        - Use a head control system or extended back to assist in minimizing possible whiplash injuries during transportation.
        - Student may need a custom contoured system to allow for room at the ears and no interfere with vision.

D. Lower Extremities

Evaluate the tone in the lower extremities in regard to type and predominant movements. Evaluate the range of motion and patterns of movement that interfere with positioning. Measure the lower lengths of each extremity. Consider the following:

- **Medial Knee Support:**
    - Reasons
        - To maintain the lower extremities in neutral alignment and discourage adduction and internal rotation.
        - To increase sitting stability.
        - To discourage hip dislocation.

    - Considerations
        - Medial knee support should never be used to hold a student in the wheelchair.
        - Medial knee support should be removable to allow for transfers and personal care.

        - Medial knee support should be firm to provide for alignment.
        - Overall medial knee support width and length must be evaluated on an individual basis.

- **Lateral Knee Support:**
    - Reasons
        - To maintain the lower extremity in neutral alignment.
    - Considerations
        - An individual may typically need bilateral knee supports.
        - It is important to avoid pressure over the fibula head, and do not force medially if passive movement is not present.

- **Footrests and Straps:**
    - Reasons
        - To provide a stable base of support on which to build trunk, upper extremity, and head control.
        - To inhibit the influence of abnormal tone, thereby maintaining proper pelvic position.
        - To discourage circulatory problems.
    - Considerations
        - Foot position follows the angle of the knee.
        - Weight bearing should be through a flat foot and equal on the heel and sole; in the case of foot orthoses, angle-adjustable foot plates might be needed.
        - The purpose of heel loops, foot straps, etc., is to maintain the feet in forward alignment.
        - Accommodations may be necessary for lower leg discrepancy.

E. Upper Extremities

Evaluate the tone in the upper extremities in regard to type and predominant movements. Also, evaluate the range of motion and patterns of movement that interfere with positioning. Consider the following:

- **Upper Extremity Support Surface:**
    - Reasons
        - Encourages upper trunk extension and upright sitting through weight bearing on the forearms.
        - Provides for a functional work surface.
    - Considerations
        - Height of support surface should support the flexed elbow and forearm.
        - Determine material used in support surface in view of functional vision.
        - Size of support surface should not be wider than the widest part of the wheelchair, and the depth should end at the student's toes.

- **Elbow Blocks:**
    - Reasons
        - Prevents arms from falling off the tray/arm rest when the wheelchair is tilted or when the child has excessive posterior arm movement.

- Considerations
  - It is important to take into account the student's size when determining the size of elbow blocks.
  - Elbow blocks can be mounted to wheelchair or to upper extremity support surfaces.

- **Type of Arm Rest:**
  - Reasons
    - Encourages upper trunk extension through weight on the forearms.
  - Considerations
    - Adjustable height can grow with the student.
    - Desk length allows the student to move in closer to his work area.

IV. Functional Skill Level

Using the following letters, describe the student's physical/functional ability.

I = Independent
A = Assisted independent
D = Dependent

Describe the student's gross and fine motor ability. Consider the following:

- **Frame, Wheels, Wheel Rim, and Casters:**
  - Reasons
    - Can accommodate for growth changes.
    - Affects overall weight of the wheelchair and thus affects the maneuverability of the wheelchair.
  - Considerations
    - Lifestyles of the family.
    - Surfaces where the wheelchair will be used.
    - Need for pneumatic wheels and casters, solid inserts, etc.
    - How the wheelchair will be transported.

- **Anti-tippers:**
  - Reasons
    - Prevents the wheelchair from tipping over posteriorly and causing serious injury to the student.

- **Transit Option:**
  - Reasons
    - To provide for safe transportation to and from medical appointments and school.
    - To prevent the wheelchair from tipping over during transportation, causing serious injury to the child.
    - To minimize the need for repairs to wheelchair due to incorrect tie down attachment and subsequent damage to wheelchair.

- **Extension Handles:**
  - Reasons
    - To allow for movement of student while in a maximum posteriorly tilted position.
    - To maintain the child consistently in the tilted position for medical reasons.

V. Powered Wheelchair Operation Assessment

The best way to assess a student's potential in regard to powered mobility is to have the student try a powered wheelchair. Also, assess ability through joystick control and computer programs, if appropriate.

VI. Seating Measurements

Be sure to measure each side individually. (Measurements are not applicable if modifications are not needed [e.g., if the student has good head control, head and neck measurements are not needed].)

VII. Recommendations

Describe the frames that were considered, and give the approximate cost.

Circle or indicate the appropriate description/measurement of the wheelchair frame and positioning adaptations needed by the student. Be sure to complete each line.

NOTE: The "Signature Page" is provided when the wheelchair evaluation is being submitted to Medicaid or other third party payer for payment.

Wheelchair Assessment

Assessment Date: _____

I. Identifying Information

Name _____ M☐ F☐

DOB_____ Age _____

Primary Diagnosis _____ Date of Onset _____

Secondary Diagnosis _____

Medicaid # _____ Insurance Company: _____

Children's Medical Services client: ☐ Yes ☐ No
Agency for Persons with Disabilities client: ☐ Yes ☐ No

Parent/Guardian _____
Street Address _____
City _____ State _____ Zip _____
Home Phone _____ Work Phone _____

Referring Physician _____
Occupational Therapist Evaluator _____ Phone#: _____
Physical Therapist Evaluator_____ Phone#: _____

Name of School _____
Days per Week_____ Hours _____

Therapies: Specify (OT, PT)
Type __ Site _____ Minutes/wk _____
Type __ Site _____ Minutes/wk _____

Summary of Needs for Custom Wheelchair _____
_____
_____
_____

Past Surgeries (if applicable) _____
_____
_____

II. Wheelchair Use

At Home: ☐ Yes ☐ No At School: ☐ Yes ☐ No

Number of hours per day child is in wheelchair: _____

Is the home accessible? ☐ Yes ☐ No

Are modifications needed: (If yes, explain) _____

_____

Means of transporting the wheelchair: _____

Does the child ride a school bus? ☐ Yes ☐ No

Describe the current wheelchair frame: _____

Can the frame be renovated or resized for further use?

___ Yes, describe what needs to be done: _____

_____

___ No, describe why not: _____

_____

Where was the current wheelchair obtained?

Vendor: _____ Date: _____

Describe the current seating system: _____

Can any components of the current seating system be used?

☐ Yes, list the components:_____
☐ No, describe why not: _____

III. Musculoskeletal Status

A. Pelvis/Hip

Pelvic Tilt:

Neutral Tilt _____
Anterior Pelvic Tilt _____
Posterior Pelvic Tilt _____

Pelvic Obliquity:

Present _____ Not Present _____
Which side is higher?
Left _____ Right _____
Which side is forward?
Left _____ Right _____

Thigh Length:

Left _____ Right _____
Measurement is taken from just behind the hips to the popliteal fossa. For seat depth then subtract 0.5” to 1.0”.

Windswept Lower Extremities:
None _____
Toward Left _____ Toward Right _____
Hip Dislocation
None _____
Left _____ Right _____

*Be sure all custom modifications are medically justified.

Custom Modifications and Medical Necessity:

Solid Seat: _____
_____
_____

Hip Positioners:_____
_____
_____

Split Length Seat: _____
_____
_____

Positioning Belt: _____
_____
_____

Other: _____
_____
_____

B. Skin:

Does the student/child have sensory impairment in his/her lower extremities?
☐ Yes Location _____
☐ No

Has the student/child had skin breakdown?
☐ Yes Location _____
☐ No

What is currently being used for pressure relief? _____
_____
_____
_____

Custom Modifications and Medical Necessity:

Specialized Cushion:_____
_____
_____

C. Trunk/Head:

Spinal Deformities:
None: _____
Kyphosis: _____ Fixed: _____ Correctable: _____
Lordosis: _____ Fixed: _____ Correctable: _____
Scolosis: _____ Fixed: _____ Correctable: _____
C-Curve _____ Location _____
S-Curve _____ Location _____

Describe posture/tone in sitting:
_____

Does posture change when tired?
☐ Yes ☐ No

If yes, describe what occurs: _____
_____

Head control in supported sitting?
Is the head erect?
80–100% of the time ☐
50–79% of the time ☐
0–49% of the time ☐
When the head is not erect it is?
Tilted to the left ☐
Tilted to the right ☐
Dropped forward ☐
Hyperextended at the neck ☐

Custom Modifications and Medical Necessity:

Solid Back: _____
_____
_____

Lateral Trunk Supports: _____
_____
_____

Tilt in Space System: _____
_____
_____

Harness System and Strap Guides: _____
_____
_____

Head Control System: _____
_____
_____

Other: _____
_____
_____

D. Lower Extremities:

Tone:

Left: _____
_____
Right: _____
_____

Range of Motion:

List presence of limited ranges or contractures that interfere with positioning:

Hip: Left: _____
Right: _____

Knee: Left: _____
Right: _____
Ankle: Left: _____
Right: _____

Lower Leg Length:

Left _____Right _____
(Measurement is taken from popliteal fossa to the heel.)

Patterns limiting movement/positioning:

_____
_____
_____
_____

Custom Modifications and Medical Necessity:

Medial Knee Support: _____
_____
_____

Lateral Knee Support: _____
_____
_____

Footrests and Straps: _____
_____
_____

Accommodations for the lower leg length discrepancy:_____
_____
_____

Other: _____
_____
_____

E. Upper Extremities:

Tone:

Left:_____
Right:_____

Range of Motion:

List presence of limited ranges or contractures that interfere with positioning:
Shoulder: Left: _____
Right: _____
Elbow: Left: _____
Right: _____

Wrist: Left: _____
Right: _____

Describe patterns limiting movement/positioning:
_____
_____
_____

Custom Modifications and Medical Necessity:

Upper Extremity Support Surface: _____
_____
_____

Elbow Blocks:_____
_____
_____

Type of Arm Rest:_____
_____
_____

Other: _____
_____
_____

IV. Functional Skill Level:

Codes:
I = Independent D = Dependent A = Assisted

Sitting: Floor _____ Bench _____

Transfers:_____ Describe:_____

Self Care: Feeding _____ Dressing_____ Hygiene_____

Toileting: _____

Is the student ambulatory: ☐ Yes ☐ No

If yes, check all the conditions/areas in which the student is ambulatory:
Exercise: _____ Household: _____ Community:_____

Assistive Device: ☐ Yes ☐ No

If "yes" describe: _____

_____

Wheelchair Control:

Dependent _____ Independent _____

Self-propel manually _____

Self-propel power _____

Distances: Long _____ Short _____

Developmental Status:

Describe gross motor ability: _____

_____

Describe fine motor ability: _____

_____

Custom Modifications and Medical Necessity:

Type of Frame: _____

_____

Type of Wheel Rims: _____

_____

Type of Wheels: _____

_____

Type of Casters: _____

_____

Anti-Tippers: _____

_____

Transit Option: _____

_____

Extension Handles: _____

_____

Other: _____

_____

V. Powered Wheelchair Operation Assessment:

	Yes	No
Has severe abnormal upper extremity dysfunction/weakness	_____	_____
Propels lightweight manual chair	_____	_____
Has sufficient cognitive/perceptual skills	_____	_____
Has sufficient eye skills	_____	_____
Able to operate/control wheelchair during trials	_____	_____
Has wheelchair accessible transportation	_____	_____
Facilitates social/recreational skills with wheelchair	_____	_____
Facilitates learning/educational opportunities with wheelchair	_____	_____

Control switch recommendation: _____

_____

To be controlled by: _____

Briefly describe how the student was able to maneuver the wheelchair during trials

_____

Seating Measurements: (Child must be wearing braces, shoes, body jacket, etc., during all measurements).

Left:		Right:
_____	Behind hips to politeal fossa	_____
_____	Popliteal fossa to heel	_____
_____	Knee flexion angle	_____
_____	Sitting surface to axilla	_____
_____	Sitting surface to shoulder	_____
_____	Sitting surface to top of lateral support	_____
_____	Sitting surface to hanging elbow	_____
_____	Depth of trunk	_____
_____	Heel to toe	_____

Other:

_____	Sitting surface to occiput
_____	Sitting surface to crown of head
_____	Width across shoulders
_____	Width across trunk
_____	Width across hips
_____	Width across the thighs
_____	Seat belt girth
_____	Head circumference
_____	Neck circumference
_____	Height
_____	Weight

VII: Recommendations:

A. The following wheelchair frames were considered due to their durability, safety, transportability, and their ability to be changed to accommodate physical growth.

Basic Frame	Approximate Cost
1. _____	_____
2. _____	_____
3. _____	_____

B. The most appropriate wheelchair for this child/student is summarized as follows (circle the appropriate responses and/or fill in the blank spaces when necessary):

Frame:

Style:	Reg, Hemi, Kids, Adult, Tall, One Arm Drive, Tilt in Space, Folding, Rigid
Arm Rests:	Desk, Full-length, Fixed, Height adjustable, Tube, Omit
Footrest Hangers:	90, 70, 60, Elevating, Smart Leg, Removable, Fixed, Omit
Footplates:	Standard, Angle adjustable, Fixed, Other
Rear Wheels:	Pneumatic, Solid, 12, 20, 22, 24, 26, Spoke, Mag
Front Casters:	Pneumatic, Solid 3, 5, 6, 8, 10, 12
Brakes:	Push, Pull, High Mount, Low Mount
Brake Extensions:	L, R, Both
Back Height:	8, 10, 12, 14, 16, 18, 20, 22, 24, Other:
Seat Width:	8, 10, 12, 14, 16, 18, 20, 22, 24, Other:
Seat Depth:	8, 10, 12, 14, 16, 18, 20, 22, Other:
Tilt in Space:	Manual, Power, Omit
Recline:	Manual, Power, Omit
Anti Tippers:	☐ Yes ☐ No
Transit Option:	☐ Yes ☐ No
Extension Handles:	☐ Yes ☐ No
Power Chair:	☐ Yes ☐ No Type of battery: Acid, Gel
Joystick Mount:	Right, Left, Center, Other: N/A Swing away, Fixed
Joystick Handle:	Ball, T-Style, Straight Stick, N/A, Other
Programmable by:	User, Dealer, Both, N/A
Computer/AAC Mount:	

Describe: _____
_____
_____
_____

C. Custom Modifications:

Solid Seat: Removable, Fixed, Split Length Right Left
Hardware: Fixed, Adjustable
Foam Type: Thickness: ½" 1" 2"
Other:
Cover: Vinyl, Para, Color:
Solid Back: Removable, Fixed, I Back, T Back
Hardware: Fixed, Adjustable
Foam Type: Thickness ½" 1" 2" Other:
Cover: Vinyl, Para, Color:

Special Cushion: Describe:_____
_____
Special Back: Describe:_____
_____

Positioning Belt: Buckle, Airplane, Velcro, Plastic, Metal
Width: 1" 1½" 2"

Padded Nonpadded Other _____

Lateral Thigh Supports: Fixed, Swing away
Pad Size: _____
Lateral Trunk Supports: Fixed Removable Swing away
Pad Size: _____
Straight Curved
Hip Positioners: Fixed, Swing away Pad Size: _____
Medial Thigh Supports: Fixed, Removable, Flip Down, Pad Size:_____
Anterior Knee Block: ☐ Yes ☐ No
Subasis Bar: ☐ Yes ☐ No
Ankle Straps: Velcro Buckle, D-ring, Leather
Size:_____ Width:_____ Length Each Side: _____
Heel Loops: ABS, Fabric, Shoe Holder, Other:
Toe Loops: Velcro, Buckle, D Ring, Leather, NA
Size:_____ Width:_____ Length Each Side: _____
Headrest: Fixed, Removable, Flip Down
Describe:_____
_____
Upper Extremity
Support Surface: Lexan, Wood, Other: _____ Omit
Mounting Hardware: Cams, Toggle, Slide On
Elbow Blocks: On Tray, On Chair Pad Size: _____ Omit
Harness System: H-Style, X-Style, Chest Belt, Padded, Soft, Hard Rubber
Strap Guides: ☐ Yes ☐ No
Arm Rest Pads: Standard, Troughs, Flat Pad Size
Shoulder Retractors: Length:_____ Pad Size:_____

Signature Page

This is to certify that the following people have been consulted and/or participated in this evaluation for an adaptive seating and mobility system for ____.
Student's Name

Conflict of Interest

This also certifies that no consultant or participant in this evaluation process has any fiduciary interest or association with manufacturers, vendors, or dealers of the above prescribed equipment.

Signatures

Occupational Therapist Signature: _________________________________ Date: ____________
Name Printed or Typed: ____
Medicaid Provider Number: ____

Physical Therapist Signature: _____________________________________ Date: ____________
Name Printed or Typed: ____
Medicaid Provider Number: ____

Physician Signature: ____ Date: ____________
Name Printed or Typed: ____
Physician Medical Provider Number:____
Physician DEA Number:____

Parent/Legal Guardian Signature:__________________________________ Date: ____________
Name Printed or Typed: ____

* *

DME Signature

DME Provider Signature: ____________________________ Date: __________
Name Printed or Typed: ____________________________
Medicaid Provider Number:__________________________