An Introduction to Seating and Positioning for Individuals Who Use Assistive Technology

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Module Goals

To answer the following questions:
Module Goals

Why is seating and positioning important?

Module Goals

What does appropriate seating and positioning look like?

Module Goals

What are the roles of Assistive Technology (AT) Team Members?

Module Goals

What resources are available, when should a referral be made, and to whom?

Agenda

- The Role of the Occupational Therapist
- Terminology
- Seating and Positioning
- Role of the AT Team Member
  - Recognition
  - Resources
  - Referrals
- Take Home Messages
- Case Study and Quiz Questions

The Role of the Occupational Therapist
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Occupational Therapists...

- Facilitate client’s ability to function independently
  - Focus on upper body
  - Provide technology
- Are members of the multidisciplinary AT team
- Have some training in seating and positioning

Terminology- Muscular

**Tone** - state of tension in a muscle

**Spasticity** - abnormally high tone

**Hypotonicity** - abnormally low tone
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Seating and Positioning - What are the goals?

- Provide comfort
- Provide safety and stability
- Increase functional skills

Seating and Positioning - Complex cases

- Accommodate impaired sensation
- Minimize effects of abnormal tone and reflexes
- Accommodate physical differences
- Delay or prevent development of physical differences

Seating and Positioning - What are the dangers of poor seating?

- Pain
  - Contractures
  - Skin breakdown
- Impaired function
  - Contractures
  - Compensatory movements
- Lack of motivation
Seating and Positioning in AT - Why is it important?

- Facilitates the optimal use of existing motor skills to access AT

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Proximal Stability = Distal Mobility

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- Developmental concept - What do babies do?
- First they sit, then they explore!

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Proximal Stability = Distal Mobility

- Practical concept - Think about yourself!
Seating and Positioning in AT - Why is it important?

Proximal Stability = Distal Mobility

- Evidence - More research required
  - Positioning impacts the speed of several functional hand tasks in boys with cerebral palsy (Noronha et al., 1989)
  - Positioning changes affect speed and accuracy in head controlled typing of woman with spastic quadriplegia (Bay, 1991)

Seating and Positioning in AT - When is it important?

- Right from assessment and thereafter!
  - Assess in a functional position
  - Obtain a true picture of the individual's abilities
  - Consider seating and positioning as a component of the AT system

But does an Assistive Technology Team Member need to know this?

Seating and Positioning in AT

Team Approach Requires Communication!

- All AT team members...
  - May not be in the same room at the same time
  - Should understand basic seating and positioning principles and strategies in order to:
    - Consider from the start of the AT process
    - Make referrals and communicate as needed
    - Temporarily adapt a seating system/solve simple problems

Role of the Assistive Technology Team Member

Remember the 3 R’s!

- Recognition
  - Of appropriate/inappropriate seating
  - Of the abilities of the individual
  - Of professional abilities/ boundaries

- Resources
  - Know where to look, who to call for help

- Referrals
  - Take steps to get help when needed
Role #1- Recognition: Appropriate Seating/Positioning

Ensure Appropriate Base of Support:
- Area formed by an object's contact points with the ground

Directly Face Object of Interest:
- Optimal visual and auditory input

Role #1- Recognition: Appropriate Seating/Positioning

While In Chair:
- Consider 90-90-90 rule for hips, knees, ankles
  - Encourages neutral pelvis position
  - Promotes Proximal Stability = Distal Mobility
  - Exceptions exist
  - Promoted by "stamping feet"

Role #1- Recognition: Appropriate Seating/Positioning

While In Chair:
- Largely neutral positioning for other joints
  - Elbow at 90 degrees
  - Wrist in neutral
  - Head and neck aligned on shoulders
  - Chin slightly tucked
  - Trunk erect
  - Back displaying natural curves
### Role #1- Recognition: Appropriate Seating/Positioning

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**While On Floor:**
- Avoid strange or unnatural positioning e.g. W-sitting
  - May indicate weakness/ lack of support
  - May cause joint issues, contractures
  - Likely limits function

**While On Floor:**
- Encourage cross-legged or side sitting
- Provide support for longer tasks
- Encourage propping
- Modify tasks, length of tasks
- Position AT system accordingly
- Enable rotation
- Enable crossing of midline

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### Role #1- Recognition: Modifying Task/Activity

**Consider:**
- What does the client want to do?
- What does the client need to do?
- What is the best way for the client to do this?
Role #1 - Recognition:
Modifying Task/Activity

Consider:
Seat work in Mrs. Smith’s grade 4 class takes 30 minutes to complete. Sam has mild cerebral palsy and though he can sit in a classroom chair independently, he experiences fatigue and low muscle tone after about 20 minutes.

How about two 15 minute seat work sessions for Sam?

Role #1 - Recognition:
Modifying Task/Activity

Role #1 - Recognition:
Modifying Environment

Choose Appropriately Sized Furniture:
- Fit furniture to the client/student
- Maintain base of support

Creatively Solve Simple Problems:
- Use footstools, boosters, pillows
- Place objects of interest at eye level

Can an AT Team Member make these modifications?
- Consider the goals
  - Sensory and muscle tone issues, reflexes, physical differences
  - Consultation and/or Referral
- Consider professional abilities
- Determine when a more permanent solution is required

Role #1 - Recognition:
Modifying Environment

Choose A Good Seat/Chair:
- Provide...
  - Seat and back support
  - Height and angle adjustable arms
  - One-handed easy adjustment of seat and back heights and angles
  - Accommodation of AT system
- One chair does not fit all!
Role #1 - Recognition:
Modifying Person

Consult With Occupational Therapist or Physical Therapist On:
- Strength training
- Flexibility training
- Endurance training
- Range of motion training

Role #2 - Resources

People
- Occupational and physical therapists
- Previously involved professionals
- Equipment vendors
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People
- Occupational and physical therapists
- Previously involved professionals
- Equipment vendors
- Parents/caregivers
- Individual themselves!

Role #2- Resources: 
Online
- Most resources are product oriented- be careful!
- www.seatingandmobility.ca

Role #2- Resources: 
Academic


Role #3- Referrals
When Should There Be a Referral?
Recall Overall Goals:
- Provide comfort
- Provide safety and stability
- Increase functional skills

If the Goals Include...
- Accommodate impaired sensation
- Minimize effects of abnormal tone and reflexes
- Accommodate physical differences
- Delay or prevent development of physical differences

Refer!

Role #3- Referrals
Who Should Receive the Referral?
Consider:
- Examining typical workplace procedure
- Consulting professionals to discover their roles
- Following the paper trail (e.g. IEP, reports)
- Consulting the individual/caregivers for input on previous service/involved individuals
Take Home Messages

- Seating/positioning is required for individuals who use AT right from the start because:
  Proximal Stability = Distal Mobility

- AT Team role is to remember the 3 R’s!
  - Recognition
  - Appropriate/inappropriate seating
  - Abilities of the individual
  - Professional abilities/ boundaries
  - Resources
    - Occupational and physical therapists

Case Study & Quiz Questions

Case Study

Jessica is a young client with mild cerebral palsy and communication difficulties who:
- Is in kindergarten
- Is short for her age
- Has low muscle tone
- Has a short attention span
- Requires frequent breaks to get up and move around the room

You are trying to:
- Encourage her to use a communication board at home
- Support her in using this intervention at school in her typical classroom during circle time and table time
Case Study- Question #1

What seating/positioning goals exist for Jessica?

Recall the overall goals of seating and positioning!

Case Study- Answer #1

- Provide comfort
  - Access to seated positions that maximize attention span and ability to meet classroom expectations
- Provide safety and stability
  - Access to appropriately sized furniture
- Increase functional skills
  - Provide least restrictive proximal physical support to promote communication board use during while in chairs and on the floor

Case Study- Question #2

Within your AT team member role, what strategies might you try with Jessica to improve her seating and positioning?

Remember Task/Activity, Environment, Person Modifications!

Case Study- Answer #2

Possible Task/Activity Modifications:

- Provide movement breaks for Jessica to get up and shift position
- Develop a signal for Jessica to use when she needs to get up and move around
- Monitor Jessica’s muscle tone and fatigue:
  - Schedule active tasks (e.g. communication board training) for periods when she maintains tone well and passive tasks for periods when tone tends to be low

Possible Environment Modifications:

- Provide furniture that allows Jessica’s feet to touch the ground or support using a foot stool
- Provide a chair with arms for extra support
- Provide pillows, floor level supports for sitting on the floor
- Position communication board to capture and maintain Jessica’s interest
- Ensure that Jessica’s place at table and circle time is away from distractions

Possible Person Modifications:

- Consult with OT/PT on core strengthening and endurance training
- Teach Jessica proper positions for table top and floor activities including propping
- Educate parents/school staff on importance of seating and positioning for communication board use and provide training on how to position Jessica
Case Study- Question #3

What resources might you consult to assist with Jessica’s seating and positioning?

Case Study- Answer #3

Resources include:
- Occupational therapist
- Physical therapist
- Jessica and her parents
- Jessica’s teacher
- Classroom assistants
- The literature

Case Study- Question #4

Would you consider a referral in Jessica’s case? Who to? For what?

Case Study- Answer #4

Consider touching base with:
- Occupational therapist
- Physical therapist

Regarding:
- Possible referral for core strengthening and endurance training

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References


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