Twenty-four Hour Postural Care:

Positioning for Daytime and Nighttime
Presenters

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Course Objectives

2. Understand current evidence relevant to nighttime sleep positioning, seating and positioning for wheeled mobility, and trunk orthoses.
3. Use critical reasoning to select appropriate assessments.
4. Articulate implications for practice as they relate to choice of intervention approaches (i.e. health promotion, remediation, maintenance, modification & prevention).
5. Identify the pros and cons of various sleep systems, seating systems, mobility base features, and non-rigid trunk orthoses.
6. Communicate important considerations in determining use of positioning products across the lifespan, as they relate to occupational performance.
Session Overview

11:00 am - 12:00 pm: OT Process: Twenty-four hour postural care

12:00 - 1:30 pm: Lunch Break

1:30 - 2:15 pm: OT Process: Postural care applications (Case Discussion)

2:15 - 2:30 pm: Break

2:30 - 4:30 pm: OT Process: Assistive Technology Choices (Hands on Lab)

4:30 - 4:45 pm: OT Process: Lifespan considerations

4:45 - 5:00 pm: Course Evaluation
Maintain symmetrical posture in all positions, such as sitting, standing, and lying (Castle, Stubbs, Clayton, & Soundy, 2014)

• Video: https://www.youtube.com/watch?v=qXZjm1tbs-0
Benefits of 24-Hour Postural Care

(Castle, Stubbs, Clayton & Soundy, 2014; Humphreys & Poutney, 2006)
Cause of Body Distortion

1. Disability
2. Difficulty Readjusting
3. Asymmetry in Sleep & Daytime Positions
4. Fixed Asymmetric Body
5. Health Complications & Decreased Activity
What is the Unique Role of Occupational Therapy in 24-Hour Postural Care?
Process of Occupational Therapy

• Evaluation: Occupational profile and analysis of occupational performance

• Intervention
  o Plan: Select approach (i.e. health promotion, remediation, maintenance, modification & prevention)
  o Implementation: Preparatory methods
  o Review

• Targeting Outcomes
Occupational Therapy Outcomes

- Maximize occupational performance (ADL, IADL, sleep, work, social participation, etc.)

- Provide necessary supports to affect client functions (attention, vision, skin, respiration, digestion, movement, etc.)

- Address disability prevention (provide supports to reduce risk of body distortions; corrective forces for flexibility & accommodation for fixed asymmetries)
1. Assess the individual’s postural and functional condition
2. Communicate assessment findings with the individual, caregivers, and multidisciplinary team
3. Identify appropriate positioning equipment
4. Provide postural care training for caregivers
5. Reassess the individual’s needs and evaluate efficacy of equipment

(Wynn and Wickham, 2009)
Process: Daytime Positioning

1. Referral and Appointment
2. Assessment
3. Prescription (i.e. selecting wheelchairs and cushions)
4. Funding and Ordering
5. Product Preparation (i.e. making sure the wheelchair and seating system is ready for the person)
6. Fitting
7. User Training
8. Maintenance and Follow Up

(World Health Organization, 2012)
Assistive Technology: Models to Guide OT Process

- Person Environment Occupation (PEO)
- Human Activity Assistive Technology (HAAT)
- Client-Centered Model for Equipment Prescription
- Student, the Environment, the Tasks, and the Tools (SETT)

(Smith, Seitz, Jansen, & Longenecker Rust, 2015)
Assistive Technology Assessments


(Asher, 2014)
Nighttime Positioning: Postural Care
Pediatric Sleep Assessments

• BEARS Sleep Screening Assessment
  (Brown, Swedlove, Berry, & Turlapati, 2012; Fung, Wiseman-Hakes, Stergiou-Kita, & Nyguen, 2013; Jan et al., 2008)

• Sleep Disturbances Scale for Children
  (Newman, O’Regan, & Hensey, 2006; Schurman et al., 2012)

• Children’s Sleep Habits Questionnaire
  (Brown, Swedlove, Berry, & Turlapati, 2012; Jan et al., 2008)

• Mansfield Checklist
  (Waugh and Hill, 2009)
Adult Sleep Assessments

- Pittsburg Sleep Quality Index
  (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989; Fung et al., 2013; Leland, Marcione, Schepens Niemiec, Kelkar, & Fogelberg, 2014; Tietze, Zernikow, Michel, & Blankenburg, 2014)

- Functional Outcome of Sleep Questionnaire
  (CGH Sleep Center, n.d.; Fung et al., 2013; Schotland, 2014)

- Insomnia Severity Index
  (Morin et al., 2014)

- Mansfield Checklist
  (Waugh and Hill, 2009)
Sleep Positioning Products

- SymmetriSleep  
  - http://www.position2relax.com/
- Jenx Dreama 2  
- Leckey Sleepform  
Building a Sleep Positioning System
Daytime Positioning: Postural Care
Best Practices: Seating and Mobility Evaluation

• Complete a thorough interview
• Apply biomechanical anatomical knowledge to the situation
• Perform a thorough mat assessment
• Simulate desired position using equipment
• Use and interpret pressure mapping system
• Complete an environmental assessment

(Isacson, 2011)
Mat Assessment: Determine Optimal Sitting Position

• Examine in supine and sitting
• Apply corrective forces to determine degree of flexibility
• Assess amount of support needed for upright posture
Supine

Does customer’s flexibility allow for:

- pelvis
  - slight anterior pelvic tilt
  - iliac crests aligned & level
- trunk/neck
  - slight lumbar lordosis
  - slight thoracic kyphosis
  - slight cervical extension
- lower extremities
  - slight hip abduction
  - hips, knees & ankles close to 90 degrees

Hutson J. 2013
In sitting, does customer’s flexibility allow for

- pelvis
  - slight anterior pelvic tilt
  - iliac crests aligned & level
- trunk / neck
  - slight lumbar lordosis
  - slight thoracic kyphosis
  - slight cervical extension
- lower extremities
  - slight hip abduction
  - hips, knees & ankles close to 90 degrees
- upper extremities
  - elbows slightly bent
  - forward of shoulder

Hutson, J. 2013
Seating/Positioning & Mobility Products

Seating Functions

• **Seating System:** Consider commercial vs. custom, clients level of support needs and degree of flexibility

• **Mobility Base:** Consider seat to back angle, tilt feature, adjustable angle footplate, etc.
Postural / Trunk Assessment

Child Assessments: Literature review of 19 measures
- Measures of sitting posture, seated postural control, & functional abilities for children with motor impairments
- None met criteria for well-developed measure.
- Measures reviewed: The Level of Sitting Scale (LSS), Sitting Assessment of Children with Neurological Dysfunction, Spinal Alignment and Range of Motion Measure, and Trunk Control Measurement Scale, & others

(Field & Livingstone, 2013)
Adult Assessments: Meta-analysis of 66 balance measures
• Identified only one that evaluated all components of balance from systems framework for postural control; The Balance Evaluation Systems Test (BESTest)

(Sibley et al., 2015)
Dynamic Trunk Orthoses

Products
- SPIO
- Second Skin
- Benik Vests
- Dynamic Movement Orthoses
- SpineCor
- Theratogs
Conclusion: Twenty-four Hour Postural Care

- Use of twenty-four hour postural care is intended to limit disability and maximize clients’ ability to participate in occupations.
- Processes for service delivery have been suggested for bedtime positioning and seating/positioning for wheeled mobility.
- Existing models, assessments, and technologies are available. An OT needs to consider which are most appropriate for use with a particular client.
Additional Links and Resources
WHO Links

Main page on WHO site for accessing training packages

•  http://www.who.int/disabilities/technology/wheelchairpackage/en/

WHO Wheelchair Service Training Package: Basic

•  http://apps.who.int/iris/bitstream/10665/78236/1/9789241503471 Reference_manual_eng.pdf?ua=1

WHO Wheelchair Service Training Package: Intermediate

•  http://apps.who.int/iris/bitstream/10665/85776/4/9789241505765_eng_refmanual.pdf?ua=1
Mat Assessment Video Links

In supine
  • https://www.youtube.com/watch?v=Is8WAT4i9ZU

In sitting
  • https://www.youtube.com/watch?v=Phy9p9J3SsY
References


References Continued


