POSITIONING THE HEAD
Michelle L. Lange, OTR/L, ABDA, ATP/SMS

Introductions
- Who I am
- Who are you?
- Goals Today?
- Disclosures
  - I provide education for Stealth Products and Seating Dynamics. I am also a practicing clinician who recommends a variety of strategies and products. I will attempt to present this information without bias.

Learning Objectives:
1. The participant will be able to list 3 causes of decreased head control.
2. The participant will be able to list 3 strategies to provide posterior head support.
3. The participant will be able to list 3 strategies to support the head for clients without any head control.

Assessment
- To position the head, we first need to perform a seating assessment
- The position of the head is extremely dependent on the position of the pelvis and trunk
- Seat to back angle and position in space allows the client to "balance" the head

Impact of general position on the head
- Kian
  - Very poor positioning led to extreme neck hyperextension and choking

What do you think?
- Kian
  - What is wrong with his head position?
  - What would you adjust?
    - Hint: we already positioned the pelvis in neutral and adjusted the headrest
What do you think?

- Kian
- Supporting the trunk aligned the neck, reducing hyperextension and improving vision, breathing and swallow

Look Again…

Before

After

Decreased or No Head Control

- Possible Causes:
  - Decreased neck strength
  - Hyperextension of neck in compensation for poor trunk control
  - Forward tonal pull
  - Visual impairment, particularly a vertical midline shift

Vertical Midline Shift

- Midline "shifts" so that client drops head to optimize visual field
- Horizontal Midline Shift can lead to lateral head lean

Decreased or No Head Control

- Interventions:
  - Increase trunk extension and scapular retraction
  - Change pull of gravity against head by reclining or tilting seating system
  - Refer to behavioral optometrist, if appropriate
  - Neck rest
  - Posterior head support
  - Anterior solutions

Posterior Head Supports

- Many posterior head rests or head supports are on the market
- None will be effective if the client’s head never touches it!
- Use those other strategies
### Occipital and Suboccipital
- Occipital support contacts the upper rear of the head
- Suboccipital can actually provide postural support as it "cups" the occipital shelf
- This also can reduce neck hyperextension

### Posterior Head Supports
- **AEL**
- **Metalcraft**
- **Otto Bock**
- **Stealth Products**
- **Symmetric Designs**
- **Whitmyer**

**Posterior Head supports**
- Tri-pad includes some suboccipital support, as well as adjustable lateral support
- Designed to provide mostly suboccipital support
- Can lead to neck hyperextension and high pressures on the posterior neck during tilt or recline

**Posterior Head Supports**
- The P.L.O.S.H. includes some suboccipital support
- Concave, fixed or adjustable lateral control
- 3 pad offers fixed or adjustable lateral support
Posterior Head Supports

- Otto Bock
  - Komfi Fit and Molded offer mild suboccipital support

- Moldable
  - Some lateral and suboccipital support
  - Designed to emulate a "hand"

Posterior Head Supports

- Stealth Products Comfort Plus Series
  - Hinged version provides mild lateral support

- Fixed lateral support

Posterior Head Supports

- Stealth Products Combo Series
  - Adjustable lateral support

- Stealth Products All Positioning Series
  - Mild suboccipital support
  - Lateral support can be added
Posterior Head Supports
- Stealth Products QCRS Series
- Nino version for kids
- Occipital, suboccipital and lateral options
- Premade configurations
- Custom configurations

Building a Head Support
- Occipital Support
  - Large or small
  - Large is more contoured
  - Children have large heads in proportion to their bodies

Building a Head Support
- Suboccipital Support

Building a Head Support
- Lateral Supports
  - Suboccipital pad provides some lateral support, as well

Building a Head Support
- Materials and Upholstery
  - Foam is standard, but solid gel can be used too
  - Smoother upholstery = less friction. Less bald spots!

Building a Head Support
- Mounting and Swing-Away
  - Separate depth adjustment for occipital and suboccipital pads
Building a Head Support

- Accessories
  - Switches
  - Access to AT
  - AbleNet Speca mounting plate SSM-100
- Micro Lite switch on gooseneck

Building a Head Support

- Accessories
  - Switches
  - Access to AT
- AbleNet switch on swing away bar
- Micro Lite switch on gooseneck

Case Study

- Hannah
- Poor head position
- Leaning to side
- Propped on chest

Case Study

- Hannah
- With suboccipital and lateral supports added
- Right lateral support provided by suboccipital and spot pads
- Suboccipital limits any hyperextension
Case Study

- Hannah
- Improved head position allowed switch access by left side of head

Before:
Much improved visual gaze
Impact on swallow and breathing

Posterior Head Supports

- Stealth i2i
- Head, Neck, Shoulders Positioning System

i2i Head Support

- Clinical Indicators:
  - No pressure on the occiput for clients who extend in response to contact with this area
  - Encourages midline head position
  - Prevents hooking
  - Minimizes neck hyperextension

Head Position and Eye Gaze

Before adjustment - hyperextended
After adjustment - aligned
Posterior Head Supports

- Symmetric Designs

- Savant headrest

- Whitmyer

- Contoured cradle

- Single Sub-Occipital

- Three pad
Whitmyer Heads Up

What about Fixed Kyphosis?
- Open Seat to Back Angle
- Or
- Tilt in Space
- Funding issues in long term care...

Dynamic Options
- Providing movement at the head has several goals:
  - Absorbs force to protect equipment from breakage
  - Absorbs force to protect the client!
  - Diffuses force to reduce extensor patterns
  - Increases tolerance to seating system

Dynamic Posterior Head Supports
- Miller’s Adaptive Technologies

Dynamic Posterior Head Supports
- Otto Bock Dynamic Rock-n-Lock Headrest Bracket
  - Spring loaded mechanism, 1 1/2” travel
  - Shrouded to protect hands and hair

Dynamic Headrest Options
- Seating Dynamics Dynamic Headrest
  - Single Axis moves along midline or the Y Axis
  - Multi-Axis moves in both X and Y Axis and anywhere in between
### Dynamic Posterior Head Supports
- Stealth Tone Deflector
  - 10 degrees in any direction
  - Works well for clients who do not tolerate a larger degree of movement
  - Protects hardware
  - Absorb and Avert!

### Dynamic Headrest Options
- Symmetric Designs Axion Rotary Interface

### Anterior Head Solutions
- Tread lightly – many clients will not tolerate anterior head support and many caregivers are resistant to the idea
- Controversial whether to use in transport
  - At least, use anterior trunk support if anterior head support is used
  - Soft collar is safest in transport
  - Do not attach collar to seating system

### Head Solutions for Clients with Little to No Head Control
- Anterior forehead supports can reduce any remaining head control
  - Under chin supports limit active range and can actually improve head control in some clients
  - The Head Pod has increased head control in many clients

### Forehead and Lateral Support
- Bend long pad to provide some anterior support
- Lateral pads “hug” the head
- Stealth Products
Forehead Strap
- Whitmyer Dynamic forehead strap on pulley system
  - Allows head to turn side to side
  - Strap stays on forehead better

Hat Forehead Support
- Whitmyer Pulley system using a hat instead of forehead strap
  - May be more readily accepted

Forehead Strap
- Whitmyer
  - Static Strap
  - Tends to slip off

Under Chin Support
- Soft cervical collar
  - Good for transportation
  - Soft, weight of head can fold this and lead to pressure against throat

Collars
- HeadMaster
  - Open to allow for Trach and/or vent
Collars
- Danmar
- Swirl
  - Adjustable firmness
- Many other collars

Collars
- Danmar
- Hinsinger Collar
  - Can be used with Trach and/or Vent
- Can attach to headrest
  - Do not do so during transport

Chin Prompt
- Stealth (2)
  - Prompt only
  - Will release under pressure for safety

Head Pod

Decreased or No Head Control
- Goals:
  - Improved swallow, feeding, breathing
  - Prevent over stretching of neck extensors and shortening of neck flexors (if head is usually hanging down)
  - Prevent shortening of neck extensors (if shortened by neck hyperextension)
  - Capital flexion (chin tuck)
  - Promote visual attention to the environment, peers, etc.
  - Increase function
  - Prevent subsequent distortions of neck and shoulder girdle

Contact Information:
- Michelle Lange
- MichelleLange@msn.com
- www.atilange.com