



POSITIONING THE HEAD


Michelle L. Lange, OTR/L, ABDA, ATP/SMS

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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.*



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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.

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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

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Impact of general position on the head


- Kian
- Very poor positioning led to extreme neck hyperextension and choking



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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



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What do you think?


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




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Look Again...

Before



After



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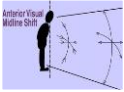
Decreased or No Head Control

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


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Vertical Midline Shift

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




VISUAL MIDLINE SHIFT TEST



Normal Response

VISUAL MIDLINE SHIFT TEST



Posterior Shift of Visual Midline

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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

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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



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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

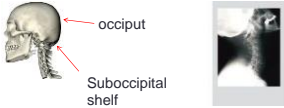


Diagram labels: occiput, Suboccipital shelf

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Posterior Head Supports

- AEL
- Metalcraft
- Otto Bock
- Stealth Products
- Symmetric Designs
- Whitmyer

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Posterior Head Supports

- AEL
- Tri-pad includes some suboccipital support, as well as adjustable lateral support



Labels: Soft, Curved, Tri-pad

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Posterior Head Supports

- Metalcraft
- The P.L.O.S.H. includes some suboccipital support



Labels: Contoured, Adjustable Winged, Posterior Lateral Support P.L.S.H., Posterior Lateral Occipital Support P.L.O.S.H.

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Posterior Head Supports

- Metalcraft
- Designed to provide mostly suboccipital support
 - Can lead to neck hyperextension and high pressures on the posterior neck during tilt or recline



Labels: Head Support Adjustable Wing Collar H.A.W.C., Rigid Anterior Trunk Support R.A.T.S., Occipital Ring

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Posterior Head Supports

- Otto Bock
- 3 pad offers fixed or adjustable lateral support



Labels: Concave, fixed or adjustable, Lateral Control, 3 pad, fixed or hinged

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Posterior Head Supports

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



Belled



Komfi Fit




Molded

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Posterior Head Supports


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



X-style headrest

The X-Style headrest offers maximum posterior head support with an anatomical shape that doesn't interfere with the ears. The headrest can be adjusted to conform to an individual's needs by hand-shaping the flexible steel insert.

Article no.	Size
4800Cu1.7 (single)	A: 8 1/2" (220 mm) B: 7 1/2" (195 mm) C: 5 1/4" (138 mm) D: 5 1/2" (138 mm)
4800Cu1.7 (swivel)	A: 8" (203 mm) B: 7 1/2" (191 mm) C: 5 1/4" (138 mm) D: 5 1/2" (138 mm)



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Posterior Head Supports

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






Swing away assembly on rear

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Posterior Head Supports

- Stealth Products Tri-Comfort Plus Series
 - Fixed lateral support




TCP205

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Posterior Head Supports

- Stealth Products Combo Series
 - Adjustable lateral support






CB305


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Posterior Head Supports

- Stealth Products All Positioning Series
 - Mild suboccipital support
 - Lateral support can be added




All positioning headrest



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Posterior Head Supports

- Stealth Products QCRS Series
 - Nino version for kids
- Occipital, suboccipital and lateral options
- Premade configurations
- Custom configurations

The diagram shows a side profile of a human head with yellow highlights on the occipital and suboccipital regions, indicating the areas where the head support is applied.

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Building a Head Support

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




Two black oval-shaped pads are shown, one larger than the other. Below them are labels: "Ultra Large" and "Ultra Small".

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Building a Head Support

- Suboccipital Support








Three different suboccipital support pads are shown, each with a label: "600", "610", and "620".

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Building a Head Support

- Lateral Supports
 - Suboccipital pad provides some lateral support, as well

A vertical stack of four different lateral support pads is shown, each with a label: "330", "340", "350", and "360".

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Building a Head Support

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



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Building a Head Support

- Mounting and Swing-Away
 - Separate depth adjustment for occipital and suboccipital pads






Two different mounting and swing-away mechanisms are shown, each with a label: "SU980" and "TWB480-QFDM".


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Building a Head Support

- Accessories
 - Switches
 - Access to AT
 - AbleNet Specs mounting plate SSM-100



AbleNet Specs switch on swing away bar





Micro Lite switch on gooseneck

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Building a Head Support

- Accessories
 - Switches
 - Access to AT



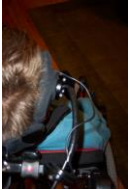


Switch used with spot pad for stability

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Building a Head Support


- Accessories
 - Speakers
 - Auditory scanning
 - Other auditory output




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Case Study

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






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Case Study


- Hannah
- With suboccipital and lateral supports added



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Case Study


- Hannah
- Right lateral support provided by suboccipital and spot pads
- Suboccipital limits any hyperextension



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Case Study


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




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Case Study

Before:





Much improved visual gaze
Impact on swallow and breathing



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Posterior Head Supports


- Stealth i2i
- Head, Neck, Shoulders Positioning System

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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




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i2i Head Support

Before




After




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Head Position and Eye Gaze

Before adjustment - hyperextended




After adjustment - aligned




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Posterior Head Supports


- Symmetric Designs




Large



Standard
Combination



Small
combination



Small

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Posterior Head Supports

- Symmetric Designs
 - moldable



Full support

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Posterior Head Supports

- Symmetric Designs
- Savant headrest





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Posterior Head Supports: Whitmyer



Plus



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Posterior Head Supports

- Whitmyer



Contoured cradle

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Posterior Head Supports

- Whitmyer




Single Sub-Occipital



Three pad

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Whitmyer Heads Up



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What about Fixed Kyphosis?

- Open Seat to Back Angle
- Or
- Tilt in Space
- Funding issues in long term care...



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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

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Dynamic Posterior Head Supports

- Miller's Adaptive Technologies



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Dynamic Posterior Head Supports

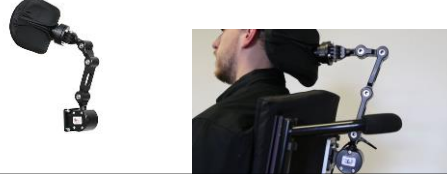
- Otto Bock Dynamic Rock-n-Lock Headrest Bracket
- Spring loaded mechanism, 1 1/2" travel
- Shrouded to protect hands and hair



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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



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Dynamic Posterior Head Supports

- Stealth Tone Deflector
 - 10 degrees any direction
 - Works well for clients who do not tolerate a larger degree of movement
 - Protects hardware
 - Absorb and Avert!






TD-100

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Dynamic Headrest Options

- Symmetric Designs Axion Rotary Interface

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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 the least, use anterior trunk support if anterior head support is used
 - Soft collar is safest in transport
 - Do not attach collar to seating system

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Head Solutions for Clients with Little to No Head Control

- Anterior Forehead
 - Forehead band, strap, or pad
 - Lateral pads
 - Halo
 - Baseball cap/helmet attached back
- Under Chin
 - Collars
 - Chin support/orthosis
- Superior support
 - Head Pod

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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



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Forehead and Lateral Support

Bend long pad to provide some anterior support

Lateral pads "hug" the head

- Stealth Products

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Forehead Strap

- Whitmyer Dynamic forehead strap on pulley system
- Allows head to turn side to side
- Strap stays on forehead better



Another WBI Patented Advance in Support Systems - Forehead Support That Moves with the User!

How does it work? The secret's in the pulleys.

The WBI pulley system allows the strap to move freely on the top of the head.



The WBI pulley system allows the forehead band to move with the user, providing greater freedom of movement.



Many individuals cannot control their forehead band position allowing them to slide to the side if when not supported.

The WBI solution securely in the WBI Head Support System (not included).

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Hat Forehead Support

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





Whitmyer

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Forehead Strap



- Whitmyer
- Static Strap
- Tends to slip off



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Forehead Strap

- Savant with forehead strap

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Under Chin Support



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



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Collars

- Symmetric Designs
- HeadMaster
- Open to allow for Trach and/or vent

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Collars

- Danmar
- Swirl
 - Adjustable firmness
- Many other collars



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Collars

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



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Chin Prompt

- Stealth i2i
 - Prompt only
 - Will release under pressure for safety



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Head Pod



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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

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Contact Information:

- Michelle Lange
- MichelleLange@msn.com
- www.atlange.com