

power
mobility
The power to move you



Alternative Power Controls Workshop



Presented by **Lauren Hunter**,
OT Clinical Educator and Product consultant with
Linds Rehabilitation Equipment

Lauren@lindsrehab.com.au

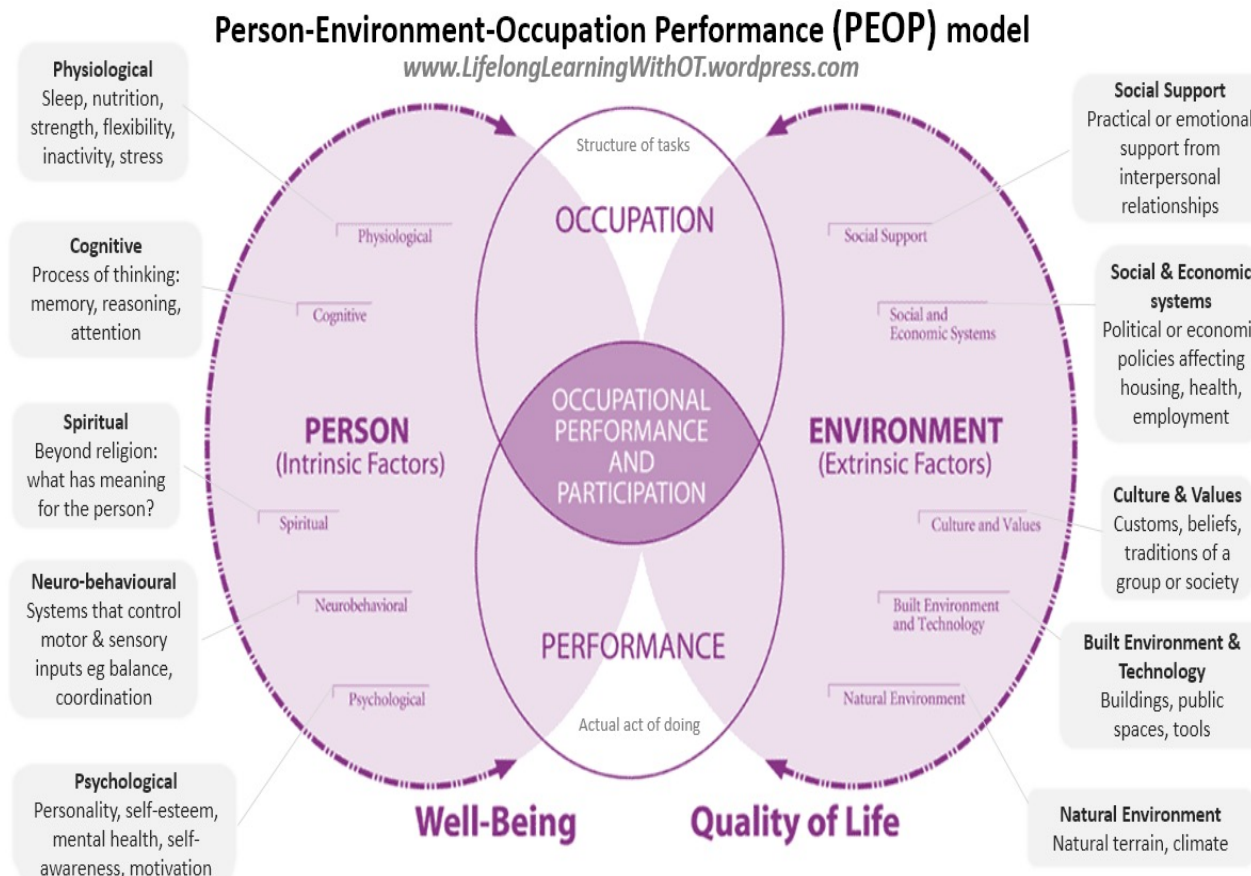


Learning Objectives:

- Learn hands-on assessment techniques and physical considerations to support the choice of controls
- Discover the vast range of alternative drive controls available including eye tracking and eye control - a technology that makes it possible for computers to know exactly where users are looking. When eye tracking and eye control are combined with speech generating devices, communication opportunities are enabled for individuals with special needs, including those with Motor Neuron Disease (MND), Cerebral Palsy, Rett Syndrome, Spinal Cord Injury, Multiple Sclerosis and Stroke/Aphasia
- Understand their points of difference in a clinical sense and considerations for application
- And most importantly, try them for yourself!



Building your client profile



References: Christiansen CH, Baum CM & Bass-Haugen J. (2005). *Occupational therapy: Performance, participation and well-being* (3rd ed). Thorofare NJ: SLACK incorporated
 Duncan EES (2012) *Foundations for Practice in Occupational Therapy* (5th Ed) Edinburgh: Churchill Livingstone

- Standard comprehensive occupational therapy assessment will explore the intrinsic/extrinsic factors to identify occupational performance issues for individuals within our models of theory. This allows us to produce a client profile.

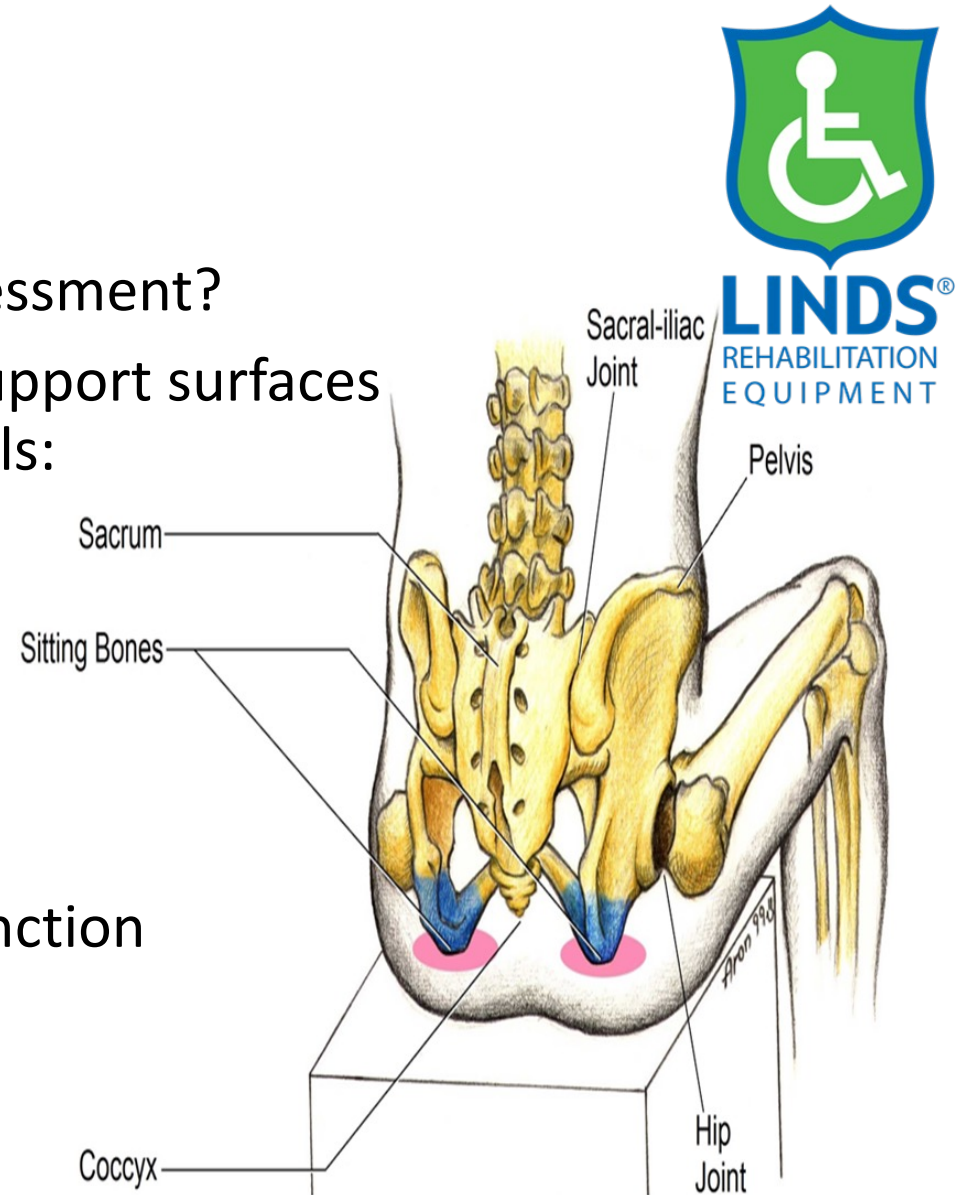
Systematic Assessment Process

- Initial assessments that lead to identifying occupational performance issues: Creating a Client Profile
- Wheelchair specific proforma
- Pressure risk tools
- MAT (mechanical assessment tool) evaluation/ physical mapping
- Cognitive screen
- Sensory Profile
- Wheelchair skill specific



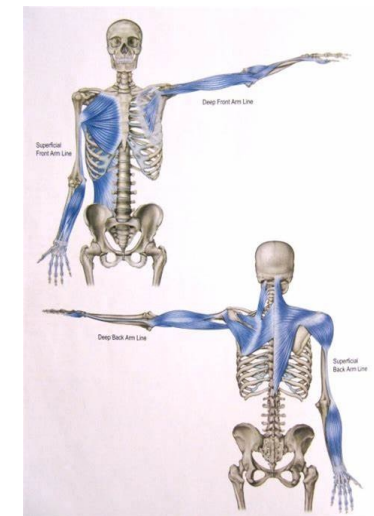
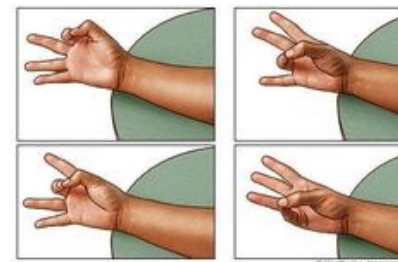
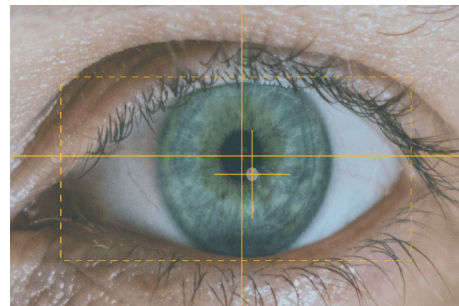
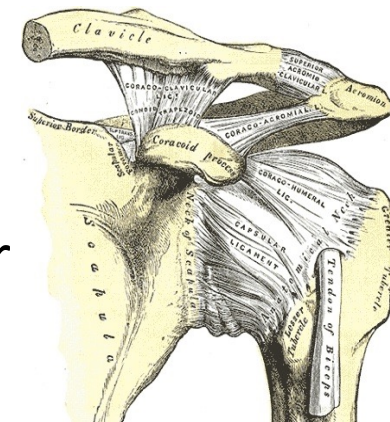
Building the Base Support

- What were the outcomes of the MAT assessment?
- How do you translate that into the seat support surfaces when considering alternative drive controls:
 - Create/optimize muscle activate and control
 - Create support for high fatigue points
 - Consider access for function
- Three or Four points of control
- Stacking the spine
- Locking the points of control to create function
- 24hr positioning profile



Assessing Controlled Function

- Upper Limb Assessment – fine motor/gross motor
- Head control
- Chin control
- Lip control/breath control
- Eye tracking
- Foot function
- Support splints, braces, second skin...



Matching Function to Product Trial



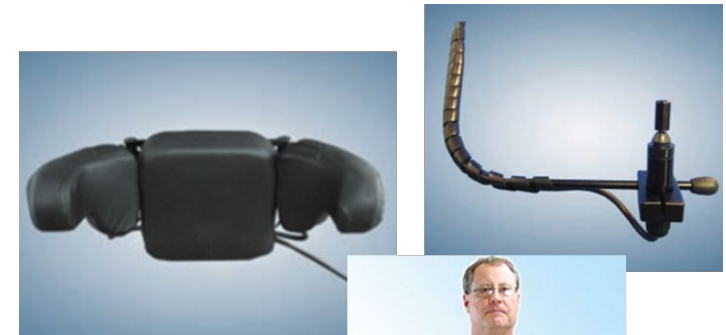
- Standard Drive System

- Proportional control
- With standard joystick / modified joystick
- Mounted on armrest
- Mode for power functions, drive and environmental controls on controller



- Alternate Drive Systems

- Different source of control
- Placement of systems
- Would require additional screen set up



- Why use alternate drive system?

- To accommodate for client's needs / ability to drive
- Better posture









Alternative Drive Systems - Types





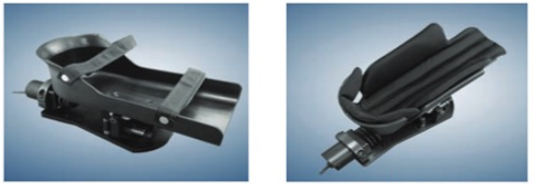
Types	Description
<p>Mini / Micro JoyStick</p>	<ul style="list-style-type: none"> - Proportional control - Reduced force and area of control 
<p>Scooter Bar</p>	<ul style="list-style-type: none"> - Drives like a scooter - Center mounted 
<p>Touch Screen</p>	<ul style="list-style-type: none"> - Proportional control (Absolute / Relative) - Based on touch not pressure - Assignable areas for control (TDTray) 

Alternative Drive Systems - Types

Types	Description
<p>Switches</p> <ul style="list-style-type: none"> - Button Switch - Proximity Switches 	<ul style="list-style-type: none"> - Switch Drive system - Multiple switches vs Single control unit   
<p>Head Array</p>	<ul style="list-style-type: none"> - Switch Drive system - Mounted within headrest system - Powered switch (proximity sensors) or button switches  
<p>Sip and Puff</p>	<ul style="list-style-type: none"> - Switch System - Use of breath control - Increase concentration / Requires practice and training 

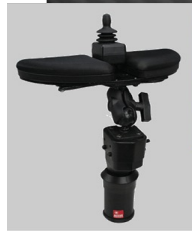
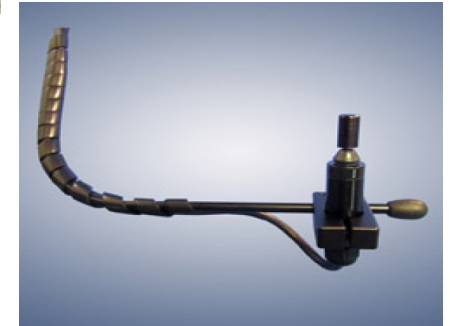
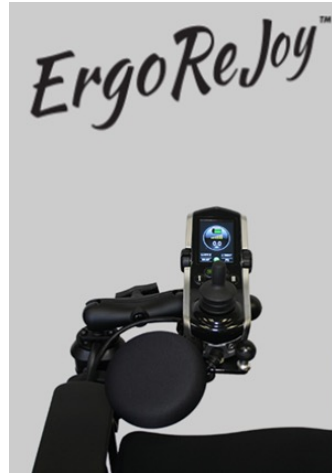
Alternative Drive Systems - Types



Types	Description
Eye Gaze	<ul style="list-style-type: none">- Combines proprietary software, a modified tablet computer and eye tracking camera to create a "virtual joystick." 
Proportional Head Control	<ul style="list-style-type: none">- 3 direction proportional joystick integrated into a headpad- can be toggled between forward/left/right and reverse/left/right set-up 
JSC Compact Joystick	<ul style="list-style-type: none">- full direction joystick in a very small housing for alternative mounting solutions  <p data-bbox="904 1329 1104 1347">JSC for foot drive (FCMH)</p> <p data-bbox="1189 1329 1384 1347">JSC for arm drive (ACMH)</p>

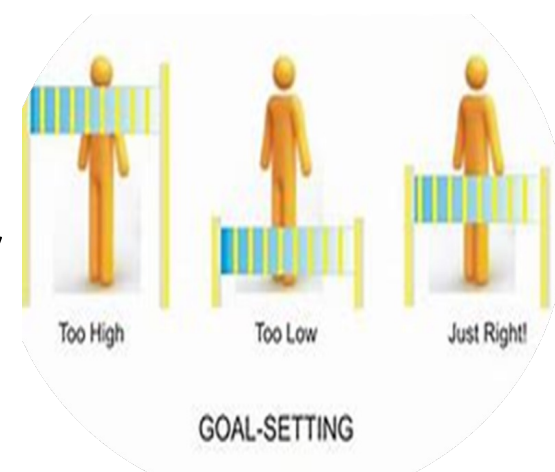
Mounting

- Swing away vs removable
- Strength
- Midline mount
- Center drive socket....



Setting Goals for Mobility & Seating

- Collaboration between therapist/s & consumer/their support network
- Will it be independent or assisted mobility? Or a combination of both. Will mobility plan be required?
- Does the power seating system need to independently accessed? Will memory seating positions be required? Or a combination of both.
- Does the seating system need increased postural supports and pressure care?
- How does the wheelchair and seating system fit into a 24hr profile?
- Identify what daily tasks will be completed by the end user while positioned in the wheelchair (performed independently vs with assistance)
- What are the transport requirements?
- Short-term vs long-term goals vs goals for trial



Considerations for Successful Alternate Control Prescription

- Complete a comprehensive client profile
- Plan to assess and train for successful transfers
- Create a base of stability
- Have a mobility plan, does it need a remote stop?
- Programming!!!! Plan for fine tweaks and reviews
- Don't forget the 24hr positioning

