Slide 1

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Shaping Better Lives
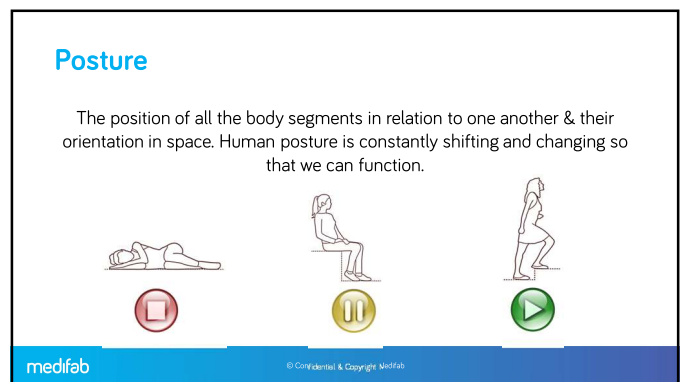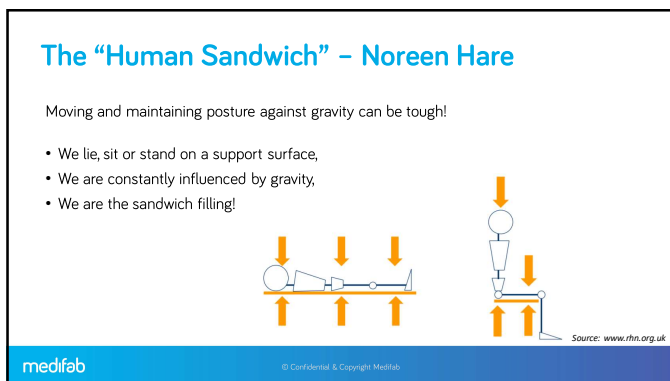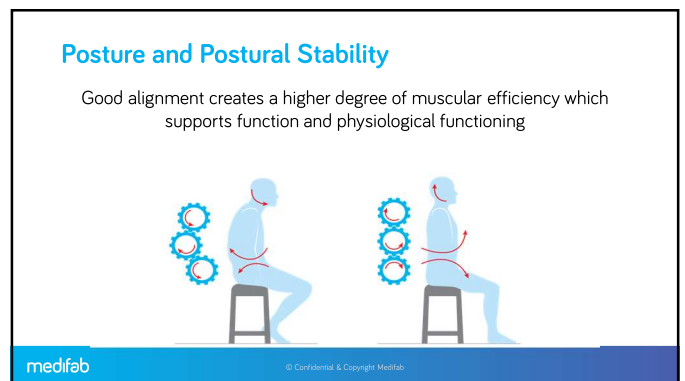
Wheelchair Seating Simplified

power mobility
The power to move you

1

Slide 2

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SHAPING BETTER LIVES FOR 30 YEARS

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- Headquarters – Tasmania
- Comfort and Solution Specialists
- Distributor of Spex Seating
- Export complex rehabilitation technology around the globe

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Slide 3

Topics Covered

- Posture, Postural Stability and Postural Control
- Overview of common postural deviations
- Overview of the Seating Assessment Process
- Practical Considerations and Positioning Strategies for postural and functional goals
- Digital platform to support clinicians working in complex wheelchair seating prescription

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Slide 4

Posture

The position of all the body segments in relation to one another & their orientation in space. Human posture is constantly shifting and changing so that we can function.

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Slide 5

The "Human Sandwich" – Noreen Hare

Moving and maintaining posture against gravity can be tough!

- We lie, sit or stand on a support surface,
- We are constantly influenced by gravity,
- We are the sandwich filling!

Source: www.rhn.org.uk

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Slide 6

Posture and Postural Stability

Good alignment creates a higher degree of muscular efficiency which supports function and physiological functioning

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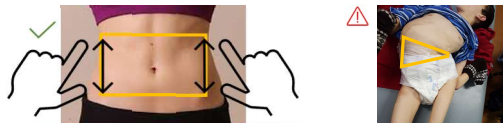
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Physiological Functioning – The "Life-box"

Poor physiological functioning can be life threatening. One of the most important goals to achieve in seating with Propped Sitters is improved trunk space.

"Life-Box" is a visual tool that can be used in sitting and in supine to check trunk space and the possible implications of chest rotation/ compression.
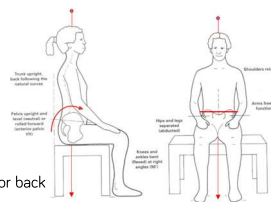
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Neutral Sitting Posture

- Pelvis upright and level
- Shoulder over pelvis
- Spinal curvature in optimal alignment
- Head in midline, balanced over the trunk
- Hips and knees flexed around 90°
- Thighs/ femurs loaded, slight in ABD
- Feet directly below the knees or slightly forward or back

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NEUTRAL versus OPTIMAL Sitting Posture

While a NEUTRAL sitting posture is based on an anatomic reference point, an OPTIMAL sitting posture is patient specific, based on postural control, ROM and tone/spasticity.

Optimal posture:
- Stable, balanced and as aligned as possible
- Support physiological functioning
- Support non-destructive resting postures
- Allow for pressure distribution
- Allow for function

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SEATING ASSESSMENT PROCESS

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Seating Assessment Objectives

1. Identify the problem (What is exactly happening with posture, postural stability/ control, pressure, function, comfort/ tolerance for seating?)

2. Discuss and establish goals/expectations with the client/ caregivers

3. Identify the cause (Why is that happening? What is contributing to that posture?)
   - Consider internal factors (person related)
   - Consider external factors (equipment related)

4. Identify flexibility away from destructive tendencies.

5. Determine optimal posture related to client's goals and functional ability

6. Translate findings into product features and equipment solutions

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Steps to Take

- Initial Assessment/ Intake
- Physical Assessment
    - 1st. Analysis of current seating posture and equipment
    - 2nd. Supine on the plinth – MAT evaluation
    - 3rd. Sitting on the plinth – hand simulation
- Translation findings into product parameters
- Trial and clinical justification
- Delivery and Follow up

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Seating Assessment Form

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Posture Analysis

Always consider the 3 planes of movement when analysing postural deviations in seating.

Front View
(Frontal Plane)

Side View
(Sagittal Plane)

Top View
(Transverse Plane)

(Waugh, 2013)

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Postural deviations - Sagittal Plane

Neutral

PPT + Kyphosis

APT + Lordosis

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Postural deviations – Frontal plane:

Pelvic obliquity

Scoliosis

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Postural deviation – Frontal plane

Windswept hips
*with obliquity

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Postural Deviations – Transverse plane

Trunk rotation

Pelvic rotation

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Practical Considerations and Positioning Strategies

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Seating goals
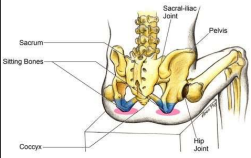
- Posture
- Skin integrity
- Function
- Comfort

Source: www.aci.health.nsw.gov.au
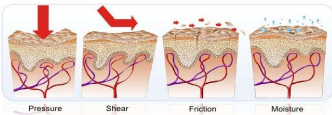
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Pressure management

- Is the seating system distributing pressure evenly across surfaces?
- Are there any risk factors which may impact pressure management?
- Are there any areas that are not being loaded?

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Pressure Management

Increase surface area distribution through product configuration to enhance **postural stability** and **control**, to **distribute pressure** evenly, to increase seating tolerance and **comfort**.

Consider:
- Materials (fluid, air, gel, foam, ...)
- Type of cover
- Shapes and contours
- Adjustability – ability to accommodate postural changes over time

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Provide a stable base of support

What's the main goal?

Provide comfort

Prevent skin breakdown

Positioning needs

23

Provide postural support for function

Consider goal, balance and functional ability

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Decision-making matrix

What level of **skin protection** is needed?	How much **stability** is required for **function**?	How much positioning is needed (**accommodation** versus **correction**)?	What **changes** are predicted to occur?
Is orientation in space required?	How does the client **transfer**?	Personal needs/ care/ preferences?	**Environmental considerations?**

Pressure injury history?

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Blocking movement: 3 point of control

The body will move where it is mobile!

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Manufacturer of **spex**

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Anterior postural supports – 3rd point of control

Most of the times, anterior postural supports work as the 3rd point of control, thus, determining optimal placement, angle and force and direction of pull is paramount!

Posterior Pelvic Tilt   Anterior Pelvic Tilt   Pelvic Rotation

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Address tight hamstrings carefully

Knee extension: pulls the pelvis into posterior pelvic tilt, trunk into kyphosis and head into flexion, then hyperextension.

Knee flexion: reduces pull on the pelvis and has more trunk and head extension.

TIGHT HAMSTRINGS

Pelvis is pulled into posterior tilt when knees are extended.

TIGHT HAMSTRINGS

Flexing the knees releases the pull on the pelvis.

© NeuroBiology Institute, 1997

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"Positioning for Postural Control" or "Positioning for Function".

- Maintain or improving level of function on the seating system should be a priority – to reach, to stretch, to breath, to swallow, …

- Ask yourself, "Is my client functional in this position?" Don't forget that **function is often asymmetric**, and they may need that asymmetry in order to be functional.
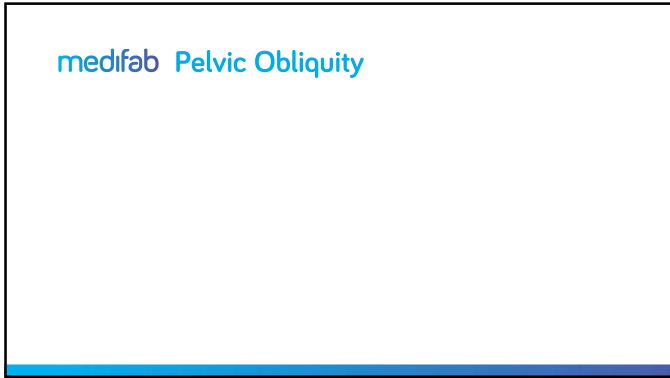
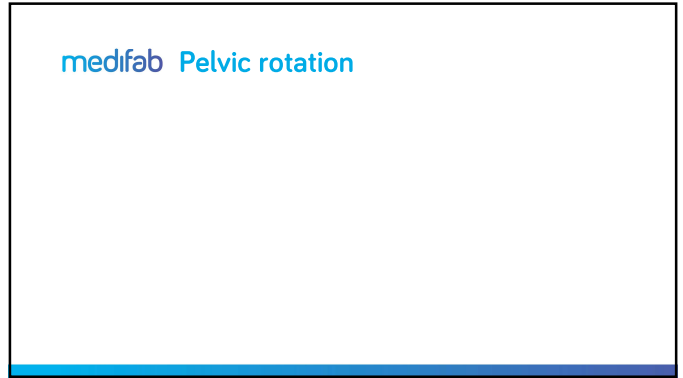medifab   © Confidential & Copyright Medifab
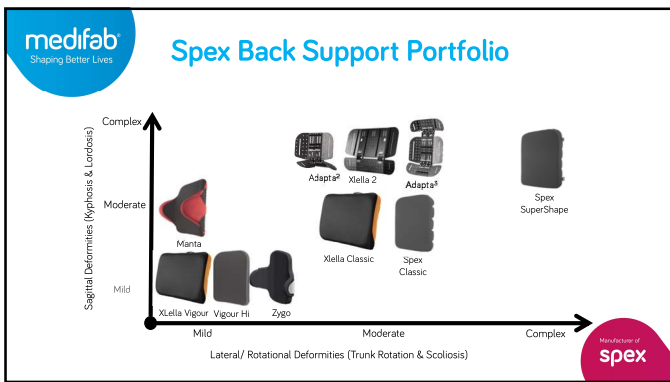
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medifab Posterior Pelvic Tilt

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medifab Pelvic Obliquity

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medifab Pelvic rotation

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Spex Back Support Portfolio

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Lateral trunk supports

Standard Swing-away

Axial® Swing-away

Biangular axial swing away

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Biangular Axial Lateral Trunk Support

ITEM CODE	PAD WITH COMFY-COVER
1266-3044-800	4, 12mm Pressure-Reduction
1266-3044-810	4, 24mm Pressure-Reduction
1266-3046-800	6, 12mm Pressure-Reduction
1266-3046-810	6, 24mm Pressure-Reduction
1266-3048-800	8, 12mm Pressure-Reduction
1266-3048-810	8, 24mm Pressure-Reduction

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Spex positioning cushions - contours

Standard contour
1105-WWDD-0SC

High Contour
1105-WWDD-0HC

Super High Contour
1105-WWDD-0SS

Super High Contour: 10cm (Kidz = 8cm)
High Contour: 5cm
Standard Contour: 3cm

Front view

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Constructa Flex

An array of improved positioning features to dramatically enhance adjustment range.

- Structured ischial well to distribute and offload pressure
- Complex solutions with an off-the-shelf product.

For a wide range of physical challenges, including...
- Flexion Limitations
- Pelvic Obliquities
- Windsweeping
- Abduction
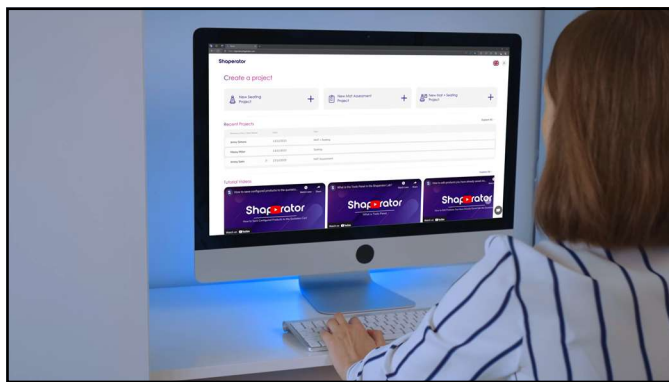- Leg length discrepancies

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Shaperator

Digital Platform to foster learning and support clinicians working in Complex Wheelchair Seating

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medifab **Resources**

- Spinal seating professional development program | Agency for Clinical Innovation (nsw.gov.au)
- RESNA Wheelchair Service Provision Guide WC SVC PROVISION GUIDE - FINAL 6-1-11 (resna.org)
- Spex Seating – Other Resources – Clinical Flyers Downloads - Spex Seating Global : Spex Seating Global
- Seating and Wheelchair Mobility – A Clinical Resource Guide. Michelle Lange & Jean Minkel

Downloads - Spex Seating Global : Spex Seating Global

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Thanks for attending!

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