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Shaping Better Lives

Let's face it together!

The 5 most common mistakes made during wheelchair seating evaluations

ATSA 2024 - Adelaide
Edward, Clinical Educator | Medifab

Manufacturer of
spex®

Edward Milner

Background:

Occupational Therapist with a passion for Complex Rehab Technology (CRT) and neurological disability.

Experience:

Experienced in a wide range of clinical presentations from acute hospital in-patient management through to community rehabilitation services.

Proudly responsible for Education & Product Training around Australia for Medifab.

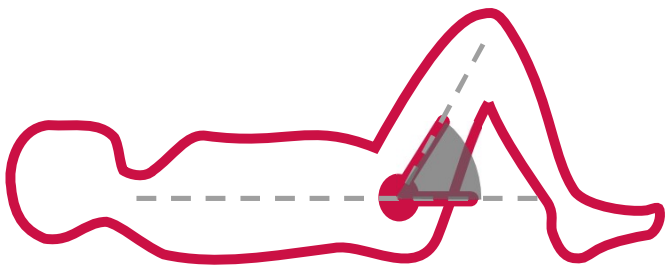
1. Skipping the MAT

MAT Assessment

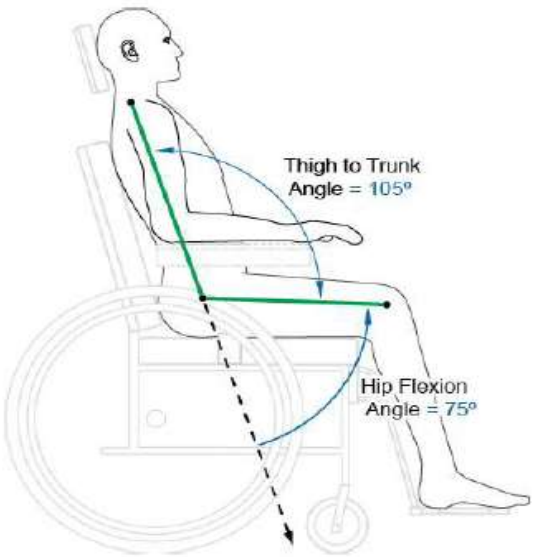
The Mechanical Assessment Tool (MAT) is a physical, musculoskeletal examination of the client and it includes:

1. **Posture analysis on current seating system**
   - To help understanding the **problem**
   - To determine current **loading areas** and **positioning strategies**
2. **Supine assessment on the plinth**
   - To determine if deformities are **reducible** or not.
   - To determine **angles** for sitting – hip flexion and knee extension are crucial!
3. **Sitting assessment on the plinth – hand simulation**
   - To determine **optimal posture**
   - To determine where **support surfaces** are needed

Translating information



Joint range of motion

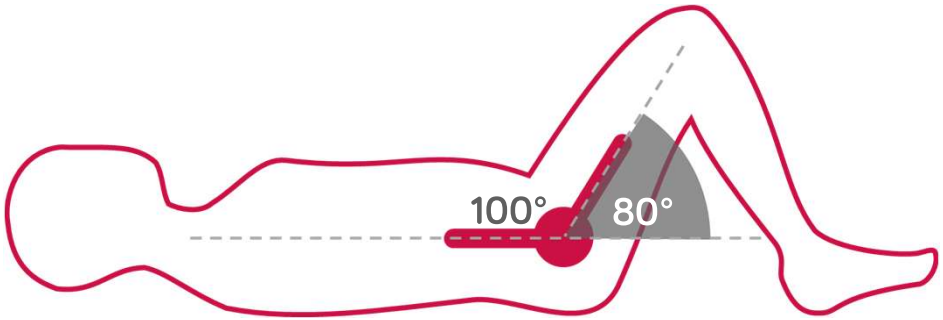


Body segment angles

Seating angles

Assessment on the plinth

Client photo removed



Client photo removed

ROM of hips and knees

Pelvis-trunk- head relationship

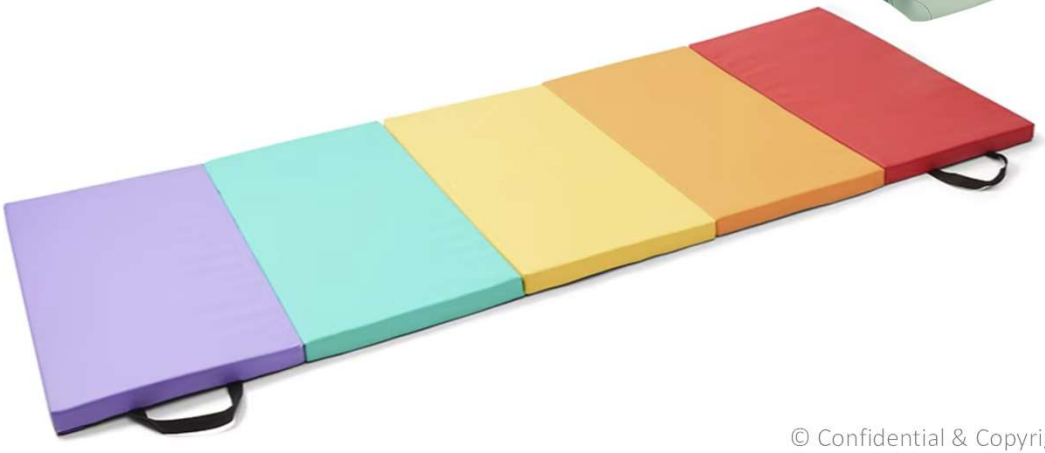
Optimal (supported) sitting posture

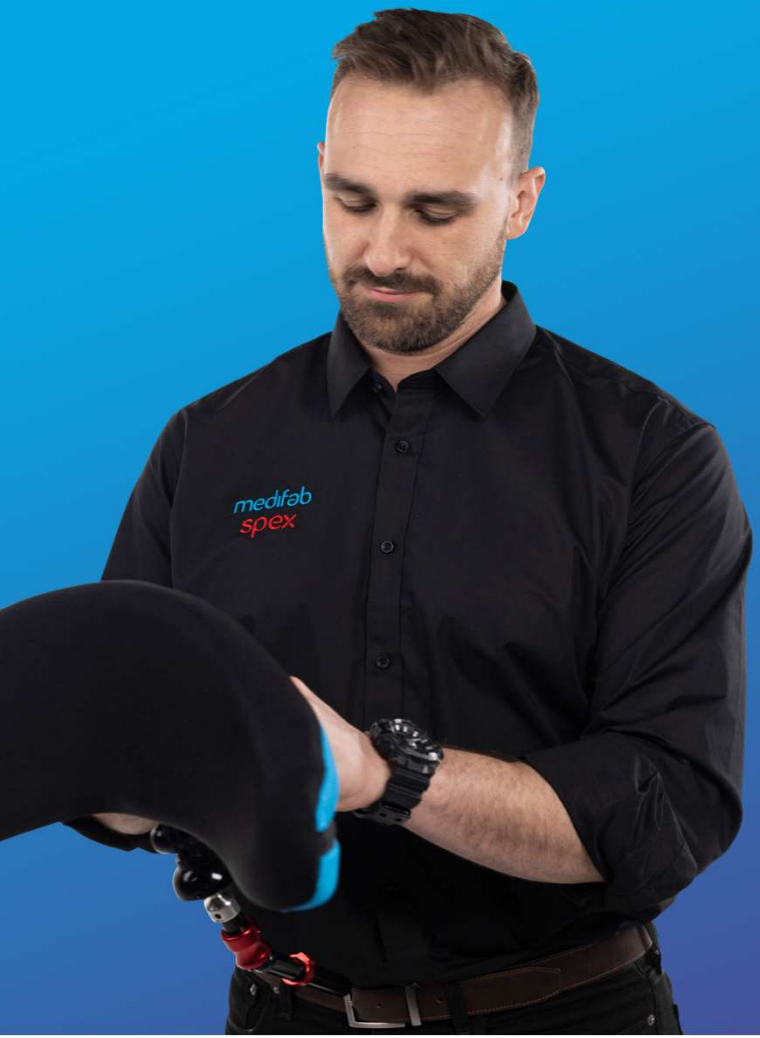
MAT Assessment

The MAT Assessment takes time and effort BUT it is critical:

- To determine available **range** for a seated posture;
- To determine seated **angles;**
- To determine **loading areas;**
- To determine whether postural asymmetries are **reducible** or **non-reducible**;
- To determine if **neutral alignment** is achieved, and what is the most **optimal position** for function
- To determine where support surfaces are required? Where? Of what kind?

Alternatives for community Ax.





2. Jumping to product before defining parameters

Jumping to product before defining parameters

It can be tempting to start trying out equipment immediately, HOWEVER, you may end up:

- Addressing the problem but not the cause of it;
- Spending extra time as you didn't narrow down the options;
- Transferring the client multiple times to adjust the equipment or to try different solutions;
- Not being client/family centered.

Clinical reasoning worksheet

REFERRAL Client's current issues	OBJECTIVES Goals to achieve	CLIENT Problems and potentials		PRODUCT PARAMETERS Ways to achieve	POSSIBLE SOLUTIONS Products for trial
1. Constant sliding which is impacting comfort, skin integrity and assistance care provision 2. Reduced seating tolerance. E. can only sit for short periods of time. 3. Bulky and heavy wheelchair which is currently impacting the way E. is transported on a vehicle					

Clinical reasoning worksheet

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1. Constant sliding which is impacting comfort, skin integrity and assistance care provision 2. Reduced seating tolerance. E. can only sit for short periods of time. 3. Bulky and heavy wheelchair which is currently impacting the way E. is transported on a vehicle	✓ Sitting upright for long periods of time, ✓ Sliding less on wheelchair, ✓ Reduce manual handling, ✓ Compact mobility base (for ease of transport and maneuverability)				

Clinical reasoning worksheet

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		HIPS	90° hip flexion on the left; 80° hip flexion on the right.		
		LE'S	Both knees tolerate 90° thigh-to-lower leg angle when available hip ROM is respected		
		TRUNK	Hardly reducible scoliosis convex to left with pronounced rib hump.		
		HEAD	Head control but strong tendency to rotate it towards the left.		

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		TRUNK	Hardly reducible scoliosis convex to left with pronounced rib hump.	Deep contour back support that can accommodate scoliosis and rib hump. Lateral supports adjusted to an angle to support thoracic spine and promote optimal trunk alignment.	
		HEAD	Head control but strong tendency to rotate it towards the left.	Posterior head support with lateral angle adjustment to correct head tendency.	

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		TRUNK	Hardly reducible scoliosis convex to left with pronounced rib hump.	Deep contour back support able to accommodate scoliosis and rib hump. Lateral supports adjusted in angle in order to support thoracic spine and promote optimal trunk alignment.	... ...
		HEAD	Head control but strong tendency to rotate it towards the left.	Posterior head support with lateral angle adjustment to correct head tendency.	...

3. Providing poor documentation

Providing poor documentation

Not “painting a picture” can impact the success of your process.

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Seating Assessment Form

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Client Data Assessment Form for Wheelchair Seating

Client Details:

Client Name:	Client Email Address:
Date of Birth:	Carer Name:
Gender:	Carer Contact Number:
Client Contact Number:	Assessment Date:

Reason for Referral:

Medical History:		Considerations for Outcome in Seating:
Diagnosis		
Condition	◯ Stable ◯ Deteriorating	
Cognition and perception		
Medication		
Hearing	◯ Normal ◯ Impaired ◯ Deaf	
Vision	◯ Normal ◯ Impaired ◯ Blind	
Respiration	◯ Normal ◯ Ventilator dependant ◯ Oxygen dependant	
Sensation	◯ Intact ◯ Impaired	
History of pressure injury (PI)?	◯ No ◯ Yes ___	
Risk of PI related to seating?	◯ No ◯ Yes ___	
Pressure relief	◯ Independant ◯ Dependant ◯ Assisted Method ___	
Pain history	Area of concern ___ Severity (1 – no pain, 5 – severe pain) ___	
Postural Assessment:		
Current wheelchair base	◯ Stroller ◯ Manual ◯ Tilt-in-space ◯ Powerchair ◯ None	
Impact of current seating in ADL's		
Postural needs and concerns		
Transfers	◯ Independent ◯ Needs assistance ◯ Dependent	
Client expectations from assessment		

Draw any asymmetries that need to be addressed in seating:

FRONT VIEW (FRONTAL PLANE) SIDE VIEW (SAGGITAL PLANE) TOP VIEW (TRANSVERSE PLANE)

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Supine Assessment on the Plinth (MAT Evaluation)

Pelvis			Considerations for Outcome in Seating:
Anterior Tilt		◯ Reducible ◯ Non-Reducible	
Posterior Tilt		◯ Reducible ◯ Non-Reducible	
Rotation	◯ Left ◯ Right	◯ Reducible ◯ Non-Reducible	
Obliquity (Lateral flexion)	◯ Left ◯ Right	◯ Reducible ◯ Non-Reducible	
Hips	**Left**	**Right**	
Dislocated/Subluxed			
Flexion			
Abduction			
Adduction			
Internal Rotation			
External Rotation			
Knees	**Left**	**Right**	
Flexion			
Extension			
Feet	**Left**	**Right**	
Dorsi-flexion			
Plantar flexion			
Upper Limb	**Left**	**Right**	
Shoulder flexion			
Elbow flexion/extension			
Wrist/hand			
Skin Inspection			
Pelvis/buttocks			
Trunk			
Lower limbs			
Upper Limbs			
Muscle Tone			
◯ Normal			
◯ Increased	Body segments affected: ___		
◯ Decreased	Body segments affected: ___		
◯ Mixed	Describe: ___		

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Sitting Simulation on the Plinth

Sitting Balance — Considerations for Outcome in Seating:

◯ Hands-free sitter ◯ Hands dependent sitter ◯ Propped sitter

Pelvis

◯ Neutral ◯ Anterior pelvic tilt ◯ Posterior pelvic tilt

Rotation ◯ Left ◯ Right

Obliquity ◯ Left ◯ Right

Trunk

◯ Neutral ◯ Scoliosis ◯ Kyphosis ◯ Lordosis

◯ Other Describe: ___

Head and Neck

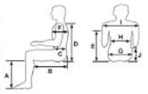
◯ Neutral ◯ Extension ◯ Flexion

◯ Other Describe: ___

Optimal position for sitting:

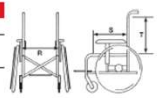
Seating Measurements:

	LEFT	RIGHT		LEFT	RIGHT
A Lower Leg Length			F Chest Depth		
B Thigh Depth			G Hip Width		
C Ischial Well Length			H Chest Width		
D Shoulder Height			I Shoulder Width		
E Ankle Height			J Elbow Height		
Other Biomechanical Measurements:					



Wheelchair Measurements:

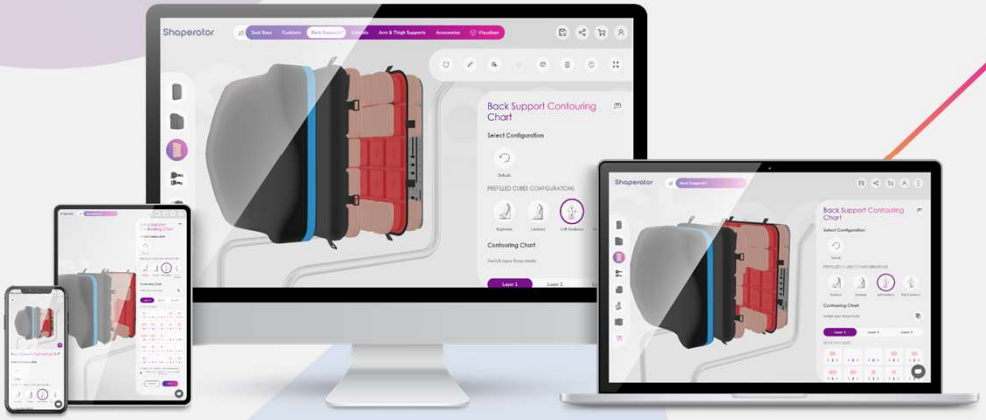
R Frame Width		S Seat Depth	
T Back Support Cane Height		Footplate Hanger Angle	
Mobility Base Considered	◯ Stroller ◯ Manual ◯ Tilt-in-space ◯ Powerchair ◯ None		
Wheelchair Brand/Type			
Wheelchair Cane Type			
Wheelchair Notes			



Introducing the **Shaperator!**

A ground-breaking platform which assists in **prescribing**, **configuring**, **visualising**, and **ordering** Assistive Technology.

Instead of traditional ordering tools such as script forms and ordering guides, the Shaperator combines an easy-to-use ordering tool with 3D visualisation and intelligent product selection guides to take the pain out of the process and deliver the solution you're expecting.



https://app.shaperator.com/login

4. No follow-up

You did a great job so far! Don’t stop there.

Follow up is essential to understand what is working versus what is NOT working!

- For client
- For support worker / caregiver

Work on strategies that work for everybody.

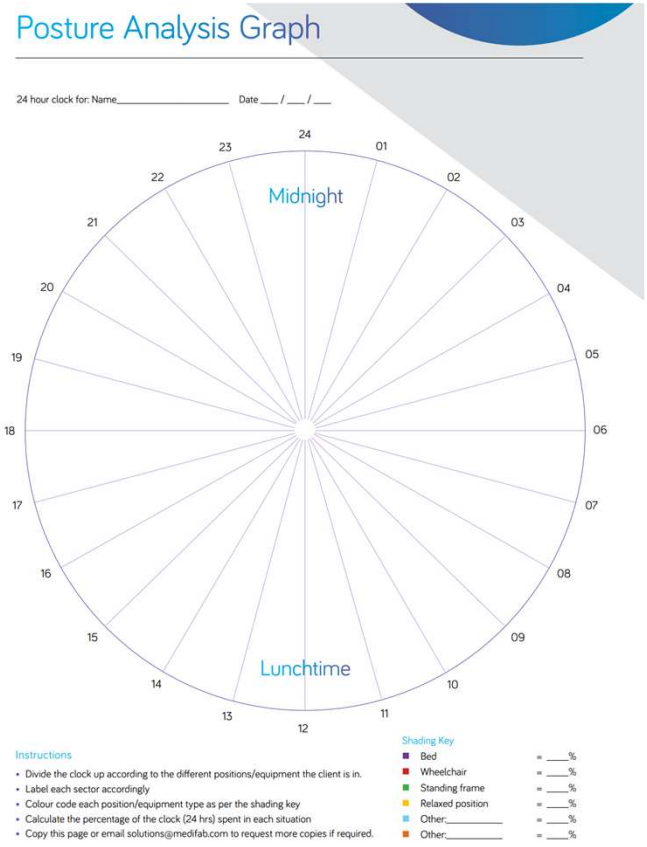
Use photos, sketches, videos, reminders, …

5. Not considering Postural Care

We spend 1/3 of our lives in bed!

All the effort you have put into a new wheelchair process can unravel if the client is spending 8-10 hours a night in a destructive position.

Wheelchair seating must be part of an individualized 24-h Positioning Plan.



Promote symmetry out of the wheelchair!

Well targeted interventions outside of the wheelchair can promote reduction of the postural tendencies seen in seating.

- Set up realistic goals. Can they be linked with seating?
- Promote gentle and gradual correction of destructive postural tendencies
- Aim for supine lying with pelvis leveled
- Support knees, trunk and feet accordingly.

Wheelchair Seating can be complex!

- Be **systematic**. Use forms, checklists and tools to support information collection and decision-making process.
- Be **pragmatic**. Discuss and set up realistic goals.
- Stay **informed**. Know what is available to support your clients better.
- Be **meticulous**. Provide in-depth and accurate information to other stakeholders.
- Promote **24-h Positioning**. Wheelchair seating is just part of it!
- Be patient and persevere!!

Thank you for attending!

Edward Milner, BSc OT

Clinical Educator | Medifab

ed.milner@medifab.com

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