Cerebral Palsy ALLIANCE

TechnoTalk Newsletter

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From the editor's desk

This month we have taken a seating focus to highlight some of the insights we have gained in dealing with clients with complex postural needs, particularly the challenge of clients with limited hip flexion and/or posterior pelvic tilt and sitting upright. Our previous seating consultant and physiotherapist, Debbie Davis, was a great asset to the team in terms of her anatomical knowledge and ability to clearly articulate how certain postural issues impact on potential seating solutions. Debbie started this article before she left us, and it has been completed by seating consultants Liz Nade and Catherine Kos. If you have any questions about any of the information or recommendations in the article then please feel free to contact us.

Sadly, this will be my last edition of TechnoTalk as I will be leaving TASC and Cerebral Palsy Alliance at the end of May for a new opportunity outside the organisation. It has been a fantastic experience working with such a knowledgeable, skilled and dedicated team over the last six years and it will be very sad to leave both the team, and the organisation. It has also been a pleasure working with many of our readers, either directly through seeing clients with you, or indirectly by offering advice and information over the phone and emails over the years. I would also like to thank all the suppliers who have generously offered their time and support to myself, our clients and our service.

On that note – so long, farewell, auf wiedersehen, adieu to all of you!

Happy reading,

Liza MacLean
Team Leader TASC

CEREBRAL PALSY CHALLENGE
EVERY STEP COUNTS

The **Cerebral Palsy Challenge** is an exciting eight week team activity that will get you active and improve your well being. At the same time, you will help to raise much needed funds to support people living with cerebral palsy.

It's an activity everyone can enjoy – corporate teams, school children, family and friends can all get involved.

Register a team of four participants to receive your starter pack, and from 6 September the fun begins!

You can walk, ride, swim, push your wheelchair and compete against other teams to see who can reach the top of the virtual mountain first.

Every step counts, so please, join the **Cerebral Palsy Challenge** and help us raise funds for equipment, services and research.

Registrations will open in June,
so for more information go to:

www.cerebralpalsychallenge.org.au

Cerebral Palsy Challenge 1

A Guide to Sitting Upright 2

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A Guide to Sitting Upright

by
Debbie Davis, Liz Nade and Catherine Kos

It is important to be able to sit as upright as possible in terms of:

- ease and safety of swallowing and saliva management
- social and environmental interaction
- ability to access communication devices and computers
- management of gastro-oesophageal reflux and to promote bowel function
- respiratory function
- participation in tasks and activities

To sit completely upright it is generally assumed that people need to bend (flex) their hips to 90° and stretch (extend) their knees to 90°.

Sometimes this is not always achievable for a variety of reasons, which may be postural or could be due to seating that no longer fits optimally.

Postural Causes

When completing a mat evaluation you are assessing posture in terms of movement at joints and the flexibility of the surrounding muscles. There are two key features that may be observed during a postural assessment that may indicate that sitting at right angles may be difficult or not feasible. This includes:

- reduced hip flexion where the hips cannot bend past a certain point
- posterior pelvic tilt which is when the pelvis is angling backwards, i.e. slumped sitting

Postural Limitation	Possible Causes
Reduced hip flexion	• Subluxed/dislocated hip(s) • Tone • Contractures – gluteus maximus or hamstrings • Joint damage – osteoarthritis
Posterior pelvic tilt	• Low trunk tone • Tone/contractures, e.g. abdominal muscles • 'Tight' hamstrings • Limited hip flexion

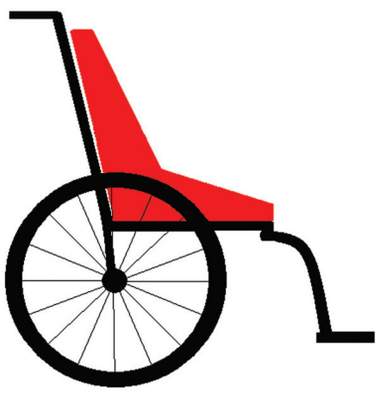
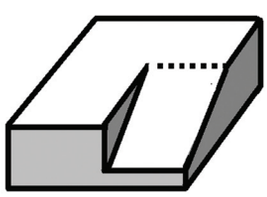
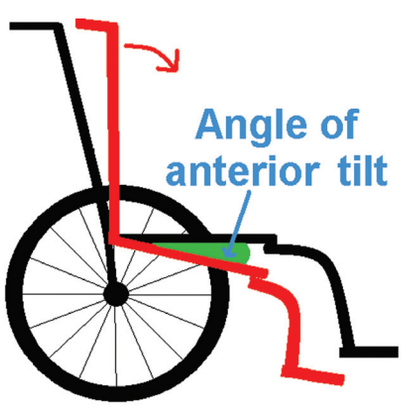
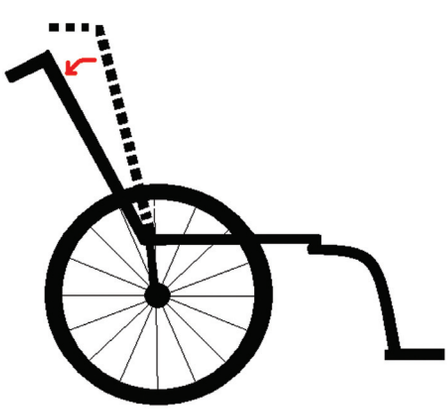
Seating Causes

If the mat evaluation does not indicate that there are postural asymmetries causing a person to slide forward in their wheelchair or 'sacrally sit' then it may be occurring due to seating which is no longer providing adequate postural support. Another factor may be if the seating or mobility base does not accommodate for fixed postural asymmetries. Possible causes include:

Seating Component	Reasoning
Seat depth	May require shortening if: • Calves impede on front of cushion (a gap is recommended between the back of the knee and front of the seat cushion) • Hamstring tightness is present, causing person to 'lever off' front of cushion, calf strap or heel keeper
Seat-to-back angle	May need to be opened up if: • Seat-to-back angle does not accommodate limited hip flexion (i.e. if the seat-to-back angle is not opened up enough) • Take care with people who have poor hip flexion but a fixed anterior pelvic tilt, by opening up the seat-to-back angle you may be forcing the spine into too much extension
Seat contouring	Consider additions such as: • Lumbar support - to ensure spine is adequately supported • Anti thrust - to 'grab' the ischial tuberosities • Stable pelvic support - to ensure person stays in optimal position
Pelvic belt	Consider the pelvic belt may: • Be too loose • Be positioned at incorrect angle of pull • Require an extra point of attachment to stop the pelvic belt from 'riding up'
Footplate and hangers	Consider: • Footplate hanger angle may be incorrect - if hamstrings are tight a 90˚ hanger angle or swept-back footplates may be required to prevent excessive stretching and sliding forward along the seat base • Footrest too low – causing pelvis to slide forward to improve weight bearing • Footrest too high – causing excessive hip flexion leading to posterior pelvic rotation to accommodate
Functional changes	Consider: • Transfer procedure • Habitual slumping • Fatigue, e.g. improved postural support to increase trunk stability for functional tasks • Tilt-in-space

So what can we do to get around this?

There are several ways in which we can aim to accommodate postural asymmetry, whilst maintaining the functional and medical goals of sitting upright. This may include:

Seating Solutions	
Wedging the seat cushion anteriorly • If wedging the seat cushion anteriorly the wheelchair user may need to spend the majority of time in slightly more posterior tilt-in-space to reduce 'sliding' forward due to the effect of gravity. • Allows wheelchair user to be more upright for short periods, e.g. mealtimes, computer access. • A pommel should not be used for the purpose of stopping the wheelchair user sliding forwards. • Consider foot position, particularly for people who have tight hamstrings – wedging the whole system may result in the feet needing to be supported further back on the footplates.	
Ramping down on the affected thigh • If only one hip is affected, e.g. picture indicates left hip had reduced flexion. • +/- anti thrust to assist with maintaining optimal pelvis position. Be careful not to 'close up' the angle too much.	
Anterior tilt on wheelchair base • This can be prescribed to assist people in sitting more upright when they require a significantly opened up seat-to-back angle, particularly for saliva management, communication and/or interacting with the environment. • Depending on the wheelchair prescribed, this can vary from between 0˚ to 10˚. • Consider the impact of the footplates on castors, additions may be required including: o Higher seat-to-floor height o Contracture style hangers o Castor cut-out on footplates o Small castors o Splayed castors	
Fitting a recline function into the wheelchair • This can have further implications, e.g.: o Friction between trunk and backrest when reclining. Particularly consider impact of lateral thoracic supports riding up under arms and/or shearing of contoured backrest. o Change in position/height of postural supports thereby reducing effectiveness. • Some newer recline functions accommodate this by adjusting the height of the backrest proportionately as it reclines. This is sometimes known as an anti-shear function. • Allows people to sit more upright for certain tasks and recline at other times.	

The balance between opening up the seat-to-back angle to accommodate limited hip flexion and/or hamstring length and sitting as upright as possible for functional tasks can be complex. Many factors need to be considered in regards to the person's seated posture and positioning in their wheelchair. Medical and environmental factors also need to be considered and therefore a full assessment should be completed with all factors being considered and discussed with the wheelchair user and their team, including appropriate health/medical professionals, when required.

Please do not hesitate to contact one of the seating consultants at TASC if you have any questions about how to support your clients with sitting upright.

Test of Aided-Communication Symbol Performance (TASP)

Many people rely on symbols to assist their understanding of the world and to communicate their needs. Sometimes it can be difficult to establish how much the person understands of the information that is presented to them.

When looking into assistive technology it is often important to know:

- Does the person understand what an object, photo, symbol or text represents?
- How many symbols on a page can they process at the one time?
- Can they combine multiple symbols to express a message?

Where do we begin when we want to find out the answers to these questions in a consistent and comprehensive way?

One option to assist with establishing this is the **Test of Aided-Communication Symbol Performance (TASP)** which is an easy-to-use tool for assessing symbolic skills.

This assessment tool is designed to assist in making decisions about:

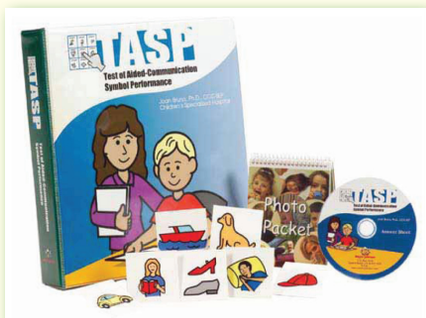
- designing a low tech communication board/ book
- selecting an appropriate speech generating device page set establishing appropriate AAC intervention goals for symbolic and syntactic development

Why was it developed?

It was developed due to the absence of formal "tools" for assessment of symbolic skills.

What does it consist of?

There are four main step-by-step tests that look at determining a client's strengths and weaknesses in using symbols to communicate.



Subtests, which can be administered over a period of sessions, include:

1. *Symbol Size and Number* – looking at maximum number of symbols a client can select from.
2. *Grammatical Encoding* – determining what symbols the client knows and understands. Different verbs, nouns, adjectives and location words are tested.
3. *Categorisation* – tests a client's knowledge for grouping/categorising words and if the client can understand topical or grammatical page sets.
4. *Syntactic Performance* – combining symbols to produce sentences.

Who can I use it with and how long will it take?

It can be used with children through to adults who are able to functionally point or indicate (e.g. through eye gaze) a choice. The assessment takes ten to twenty minutes to administer.

Are there any limitations?

The major limitation is that it requires the client to be able to have the physical ability to point; therefore modifications would need to be made for clients with physical disabilities.

The TASP can be purchased from Spectronics for $329.

www.spectronicsinoz.com.au

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