



Postural Case Study

Subject: Client A

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OVERVIEW

Goal:

To empower the end user to function safely and securely in her wheelchair

BACKGROUND

The client contacted us to schedule a 'postural seating review' of her existing wheelchair set up.

Her hope was that our team could provide additional support in her existing powerchair to enable her to accomplish her day-to-day tasks, remaining comfortable throughout.

The client's existing provision is a Quickie Q500R, the seat width supplied was too wide and the depth too long. The chair was prescribed with a 'Sedeo flexi deep contour backrest', individual 70 degree swingaway legrests, and a standard foam cushion.

CHALLENGES

'Client A' experienced a brain injury a number of years ago resulting in a left side hemiplegia (paralysis of both her left limbs) and right side weakness.

The existing chair's seat width and depth were incorrect. The overly large seat width allowed the client to slide to the right and the long seat depth prevented her from reaching the backrest forcing her to sit posteriorly.

The client reported that after only a short duration in the chair she would collapse forward and fall to the left; this resulted in her hanging either over the armrest or down the inside of the armrest. On some occasions she had even slipped forward off the seat.

The existing backrest with inbuilt lateral support was unable to hold her as she could not sit into the back and when she inevitably dropped forward she was beyond the reach of the laterals; and therefore these performed no useful postural function.

Client A had to use a belt across her chest, however she'd invariably end up hanging on the belt. This caused discomfort and negatively impacted her ability to function. The flat foam cushion gave no postural support

to the pelvis, allowing 'Client A's' pelvis to drift to the right hand side of the seat to seek support. The unsuitability of the seating prescribed to the client meant she experienced severe discomfort and fatigue as she attempted to stabilize her core in the chair. Breathing, eating and swallowing were all compromised.

The implications of leaving a person with poor posture can cause spinal deformities; like pelvic obliquity (pelvis not sitting symmetrically), pelvic rotation (one side of the pelvis is moving forward or back, leading to leg length discrepancies), scoliosis of the spine (abnormal curvature of the spine), kyphosis (curvature of the top of the spine the pelvis normal adopts a sacral position) and lordosis (curvature of the lower spine). All of the above create muscle contractures and muscle shortening /lengthening. This restricts lung function, compresses internal organs and can lead to the loss of bowel/bladder control. Its imperative to correct or accommodate, where possible, these adopted postures to avoid them becoming fixed.

The client's employer also expressed concern about the risk of her falling out of the chair.



Pelvis drifts to the right resulting in a heavy lean leading from the head

Weakness

'Client A' presents with paralysis on her left hand side and right side weakness.

Instability

Sitting in the chair Client A's positioning was uncontrolled: descending forward and slumping to the left.

Discomfort

Clients body is fatiguing while using the chair. The pain levels were such that she often was forced to return to bed to seek relief.

Neoprene strap

Client had become dependent on using a neoprene strap to remain in the chair; leaving her with only one functional arm. Client A experienced difficulty attempting to correct her position/posture, leaving her unable to affect any meaningful improvement to her posture and resulting in loss of functionality.

OBJECTIVE

Create a stable base to promote a mid line seating position for the client, supporting functionality and stability.

HOW TO ACHIEVE THIS?

At the start we completed a full seating assessment. We reviewed 'Client A's' current seated posture and assessed where additional support was required and the most beneficial method of supporting her left side weakness.

Seat

Reset seat base to the correct seat width and depth for client's body dimension.

Back setup

Review postural backrests

Legrests

Changing the legrest to allow client's feet to sit in a natural position

Pelvic stability

Review cushion options that promote pelvic stability and provide a postural pelvic belt to prevent her pelvis from sliding forward.

PROCESS

Barbara and Mhairi attended the client's home to complete a thorough postural assessment and review the whole seating set up.

This session is very much client led, we want to learn what the client would like to achieve. We review their expectations and discuss where compromises can be made (i.e. function over posture) and the most effective method of achieving the aims.

To give our team the best understanding we removed the client from her chair and sat her on a plinth.



First Postural assessment

Using the plinth allows the team to scrutinize the client's back, pelvic position checking the range of movement in joints to assess what is achievable

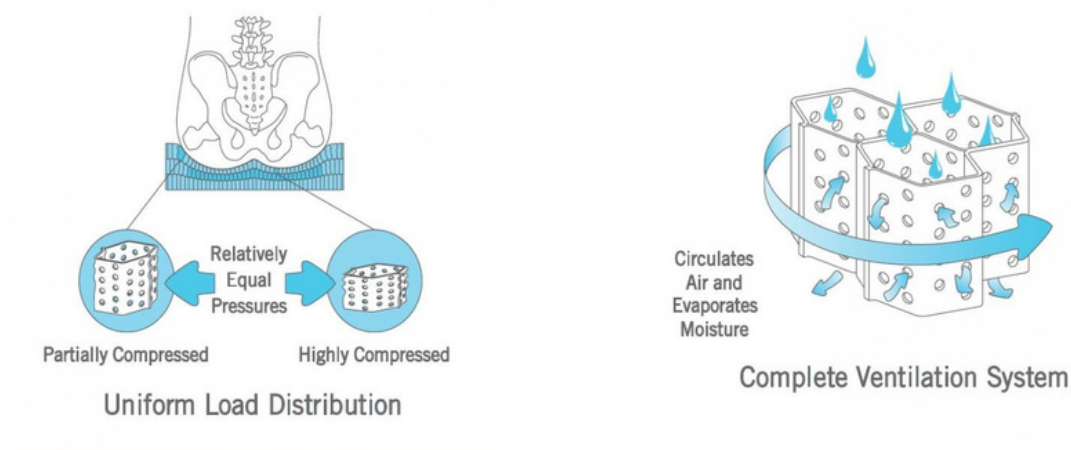
The team then get hands on; observing and feeling where the additional support is required. They use their hands to simulate where lateral and wedges are required; gauging feedback and client reactions throughout.



During the initial assessment various cushions and backrests are trialed in numerous combinations to reach the optimum solution for the client's body. Our experience means we understand the scope and limitations of what each product can achieve over the other.

The initial priority is to support the pelvis creating a stable base to build on, which can then be supported

through the use of a postural backrest. To begin with we considered a more supportive cushion, like the Inserto Domino cushion, which held the pelvis perfectly however it was discounted as it was problematic for the client to transfer from. A selection of cushions were tried and the Stimulite range gave pelvic stability, comfort and support for the legs. Stimulite is a honeycomb texture that reacts with body heat to allow the users pelvis to sink deeper into the cushion; immersing bony protuberances whilst supporting surrounding anatomy. Inbuilt shaping guides at the sides and centre front of the cushion guide legs into a midline posture. The Stimulite range can be customised for changing physical and functional needs.



We identified that 'Client A' would benefit from a 'Spex' backrest. This backrest can be built to provide additional support where the user requires, in this case additional lumbar support on the left side of the trunk was required. This back can be fitted with laterals that can be swung in and out by the client. For a Spex back to be installed the existing wheelchair backrest frame had to be changed to canes to accept the Spex clamp fitting.

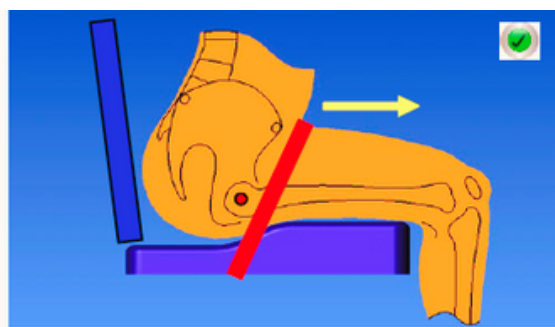


Laterals were required to provide support for the trunk, ensuring the client is positioned in midline, giving stability to allow them to function during the day. The laterals needed to be sited close against the body, providing a block on the weaker side and support on the upper left. The laterals had to swing in and out so that the client can transfer independently. Experimentation with a range of supports in the backrest allowed full lateral support in the back cushion on the left. Added support just above the lumbar on the right immediately brought the client to midline and gave her the ability to function confidently within the chair.



Follow up postural assessment

A pelvic positioning belt was recommended to ensure that the client maintained good pelvic contact in the well of the cushion and to discourage them from adopting the posterior pelvic position that they had to adopt over the past few years.



The existing swingaway legrests had an open angle and in combination with the too long seat depth

resulted in 'Client A' being pulled forward on the seat. The footplates were then acting as a prop and at times would be the only thing keeping the client in the chair.

Once we had stabilised her seated posture the client's legs naturally came into a 90 degree angle. Previously the client had used a centre mount legrest the decision was made to revert to this style. This offered advantages indoors as she is able to negotiate tight corridors and doorways.

From the first postural assessment to the follow up seating assessment there is a marked transformation in her posture, this is before adding a postural pelvic belt and before changing the legrests



Follow up postural assessment

THE HANDOVER

Once the Spex backrest is installed we construct the backrest around the client, building in support where she required until we have full contact right down her back, then the laterals are fitted to 'Client A'.



At handover

The difference to the client's posture is incredible, she can now maintain a central position within the chair and is no longer falling forward. She does not require a neoprene strap to hold her up.

AFTER HANDOVER

A few days after the handover we contacted the client to check in; she reported: “she hadn’t sat this straight in years and she felt so held, supported and comfortable within the chair”.



BEFORE



DURING



AFTER

FEEDBACK FROM CLIENT A

“The assessment process was really relaxed, very thorough and I felt listened to and consulted at all stages.

My actual seating is amazing. The personalised seating system has changed both my comfort and posture for the better.

I feel so much better both physically but also emotionally as pain levels are lower and just feeling and seeing myself straighter and taller than before has really helped how I see myself in a chair.

I honestly wished I had known that such a service was available as I would have done it ages ago!”

Client A

THANK YOU!

We want to take this opportunity to thank 'Client A' for taking the time to contribute to this case study and for allowing us to share the positive results she has experienced. We hope that this study can help more people to function better, live more comfortably and enjoy a better product.



CONTACT

ALBION MOBILITY
UNIT 2 MILLAR COURT
ALLOA BUSINESS VILLAGE
ALLOA
CLACKMANNANSHIRE
FK10 3SA

T: 01259 272 167
E: SALES@ALBIONMOBILITY.CO.UK