

## Summary

To highlight the importance that seating can have on a disabled individual's quality of life and independence even when it's not being used as a traditional form of mobility.

## Aims and Objectives

The challenge was to develop a seating system that would allow Richard to independently care for his baby boy. Richard wanted to be able to care for his son within the home environment, this would include, feeding, transferring in and out of the cot and moving his son to the changing table.

## Background

Richard was born with a condition, which left him without lower limbs, so he lives with a pelvis only.



As a child he was provided with a manual wheelchair to enable him to mobilize independently. In his early teens he was given a custom made power chair with a hi/lo function, which was capable of in and outdoor use. This is the only wheelchair provision that Richard has required over the years. In adulthood Richard opted for prosthetic limbs and still uses these for everyday life outside with the aid of walking sticks. These have also given Richard the freedom of driving independently.

Indoors, Richard rarely uses his prosthetics and he still uses the power chair he was given during his teens for its hi/lo function enabling him to access the food preparation and cooking areas in the kitchen. Apart from that, Richard is very active and has tremendous upper body strength enabling him to transfer independently throughout their ground floor flat.

Richard lives with his wife and they were due to have their first baby two months after my first meeting.

## Objectives

Richard was aware that he would need some alternative support to ensure he would be able to lift the baby independently and safely. The main objectives of this piece of equipment were to allow Richard to have a range of movement, while maintaining a stable and safe position, for example leaning forwards with both arms free. This would enable him to hold his baby securely whilst placing him in his cot or on a changing table.

## Technique

The moulding technique was carried out like any other conventional custom seating. We used a tilt in space wheelchair and a moulding bag to capture Richard's body shape, paying particular attention to his pelvis' shape. We evacuated the air and then plastered the impression to preserve the shape ready for manufacturing.



We factored in lateral and anterior support thus freeing both arms for these activities in the form of a bespoke, custom made moulded seating shell. It was mounted on to an electrically operated indoor hi/lo base with the seating shell positioned in an anterior tilt as its normal and functional operating position. When the electric rearward tilt was engaged it would then bring the system back to a neutral upright position. Across the laterals we fitted a padded 40mm Velcro securing strap giving security while tilted forward.

## Testing

It was decided that it would be worthwhile conducting a mid-fit to ensure we were meeting our objectives and that the base was stable enough for all the distal functions Richard completes. With the cot in position, we were able to carry out simulated actions Richard would be required to perform. This gave us a better idea of where to position the anterior padded belt to give maximum support and reassurance to Richard. We were also able to fine-tune the interface angle thus ensuring that Richard could achieve the required amount of forward movement to make certain he could retrieve his son from the cot. It was also identified that the back of the moulded shell would need several cm's removed so that when Richard was to hold his son over his shoulder he wouldn't come in to contact with the shell.



## Results

Richard using the equipment is now able to care for his son independently. He is now self-sufficient and has the ability to place his son in his cot, reassure his son during the night if needed and also transfer him from the cot to the changing table. All of these activities are performed at various heights with easy use of the electric hi/lo function of the base. This equipment has given Richard a full and active role in such a demanding time of his son's life.



## Discussion

Professionals need to ensure they use a holistic person centred approach when assessing clients' for a piece of equipment. Richard's case highlights how a simple, but effective piece of equipment can be designed to meet an individual's needs as a result of a good understanding of what is required and expected through the use of the equipment. It could have been easy for us to fall into the trap of dismissing the needs of Richard and his newborn son by not giving the problem our full attention. We could have ended up just suggesting that a standard piece of equipment, such as his existing powered wheelchair be used to perform the simple but demanding and potentially unsafe activities. But with an open mind and a blank canvas to work with it was possible to enable Richard and allow him to carry out normal parenting tasks, with increased safety to both him and his new born son.