



VIRTUS DYNAMIC SEATING SYSTEM

FIELD TRIAL REPORT

OCTOBER 2020 - NOVEMBER 2021



FIELD TRIAL PROCESS

With the Virtus Seating System coming out of development in the summer of 2020, RMS wanted to take this new product out into a real life environment to gather first hand data on the clinical benefits of the seat unit.

Fortunately, we were made aware of a 10 year old girl called Amy who was struggling with her current seating system. We approached the parents and therapists who were on board with us using Amy's case to see if the Virtus could provide her with a better seating situation.

This report is split into three main sections:

- i. Firstly, a brief description of Amy and her requirements, a look at her current equipment and what we were trying to achieve with the Virtus;
- ii. Next is a description of work carried out and the observed benefits after six weeks, three months and six months;
- iii. Finally, overviews from our in-house Product Specialist, the local school area Occupational Therapist and the Occupational Therapy Assistant who is in the classroom with Amy on a daily basis.

REPORT CONTRIBUTORS

CONDUCTED ON BEHALF OF RMS

Martin Rennie, BSc Occupational Therapy, RMS Product Specialist for Scotland.

WITH SPECIAL ASSISTANCE FROM

Debbie White, Children and Young People's Occupational Therapy Lead, Dundee.

AND VALUABLE FEEDBACK FROM

Eleanor Black, Occupational Therapy Assistant taking daily care of Amy.

INTRODUCING AMY



DIAGNOSIS

- Mixed Quadriplegic C.P - GMFCS Level 5
- Strong ATNR to RHS **(Picture 1)**
- Profound learning disability + sensory neural deficit
- Visual impairment / Cochlea implants

SITUATION

Amy extends and rotates in all positions. Previous seating systems would support her initially but as Amy actively extends and rotates, her position would begin to deteriorate. This resulted in reduced tolerance to

seating, at times extreme distress, reduced ability to access her curriculum and increased concerns about safety during assisted feeding.

EQUIPMENT GOALS

PREVIOUS EQUIPMENT & SEATING TOLERANCE

- Seated in the Leckey Mygo 2. **(Picture 2)**
- Up to 1 hour in small sessions throughout the day.

VIRTUS SHORT TERM GOALS

Stabilise her pelvis and promote a symmetrical seated position, while accommodating fluctuating tone.

VIRTUS LONG TERM GOALS

Increase her tolerance of a seated position in order to access curriculum and school occupations. Achieve and maintain a seated position that will promote better and safer oral feeding.



SIX WEEK REVIEW

POSITIONING

- Amy sat well in the Virtus. The IT shelf in the seat cushion has positively stabilised her pelvis and has promoted and enabled a much more symmetrical position.
- Amy was taking weight equally through both lower limbs and was evenly bearing weight through both feet.
- The dynamic back rest in combination with the dynamic footplate is working well in absorbing Amy's tone on extension and there is minimal rotation through the trunk and pelvis on extension.
- Both the pelvic belt and trunk harness are sized appropriately and are supporting Amy as expected.
- The Type G head support is working well in allowing Amy's head to rotate to the RHS on extension, but return to midline at rest.

FUNCTION

- It was reported by class staff that Amy is tolerating the Virtus significantly more than her old class chair, spending up to 2 hours in the Virtus over the course of a school day and she is requiring less time in side lying. **(Picture 3)**
- Class staff further reported that orally feeding Amy in the chair is easier with less effort required from staff to facilitate.
- It was reported that transfers in/out of the chair were easier with the flip down pommel and swing away laterals.

ADJUSTMENTS MADE

- Head rest position was reviewed and adjusted to promote chin position and easier swallowing.
- LHS hip guide adjust to midline.

ADDITIONAL ACCESSORIES REQUIRED

- Footsures fitted after the first two weeks in order to stabilise foot positioning.

SEATING TOLERANCE

Up to 2 hours spread throughout the day



THREE MONTH REVIEW

POSITIONING

- Amy continues to sit well in the Virtus. The combination of the dynamic back and dynamic footplate are working effectively to stabilise the pelvis and the addition of footsures have promoted better alignment and positioning of the lower limbs.
- The Type G headrest is working well to support Amy's head while allowing rotation to the RHS during ATNR pattern presentation. A larger Type G head support to be supplied in order to further support head positioning.

FUNCTION

- Class staff report that Amy is tolerating the Virtus for up to 45 mins three times per day. This is significantly more than with previous seating systems.
- Feeding Amy orally continues to be going well and the staff like the larger padded tray for this activity

ADJUSTMENTS MADE

- Adjusted the thoracic laterals and opened up RHS of head rest.
- Adjusted footsures and pelvic guides.

ADDITIONAL ACCESSORIES REQUIRED

- New pommel bracketry to be replaced under warranty
- Large Type G headrest.



SEATING TOLERANCE

Up to 3 hours spread throughout the day in larger extended chunks.

VIRTUS SAFETY FEATURES

The Virtus has been crash tested to ISO16840-4 - meaning that it can be interfaced onto a crash tested base for use in transport without having to transfer the user.

SIX MONTH REVIEW

POSITIONING

- The Virtus continues to support and accommodate Amy well. The chair consistently promotes a more midline and symmetrical position and Amy's pelvis is stable and well supported.
- The larger Type G headrest has worked well in accommodating the ATNR pattern, while promoting a good chin position for feeding. It has also helped in maintaining the position of Amy's head.

FUNCTION

- Amy is able to sit in the Virtus for as long as the class activities and curriculum requires and remains comfortable and well supported.
- Participation in class activities has increased and the task of feeding Amy continues to go well.
- Transfers in and out of the chair present no difficulties

ADJUSTMENTS MADE

- Adjusted for width growth across pelvis and thoracic laterals.

ADDITIONAL ACCESSORIES REQUIRED

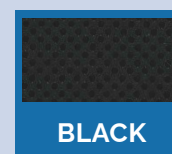
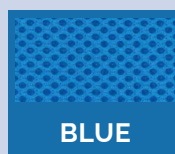
- New style sandals were fitted as staff reported the straps on the footsures were not holding the feet in place.



SEATING TOLERANCE

Up to 3 hours spread throughout the day in larger extended chunks.

VIRTUS UPHOLSTERY COLOURS



PRODUCT FEEDBACK

MARTIN RENNIE - RMS OCCUPATIONAL THERAPIST

To achieve the therapeutic goals of stabilising the pelvis and promoting a more symmetrical seated position, the Virtus chair was configured with additional ramping on the seat cushion and a dynamic backrest and footplate.

During episodes of ATNR presentation, the dynamic elements of the chair worked in conjunction with the ramped cushion, to effectively stabilise the pelvis. The Type G headrest allowed Amy's head to rotate round to the RHS, before returning back to a more midline position. **(Picture 4)**



Over the duration of this trial, Amy consistently presented with a more symmetrical and midline position. In her previous seating-system she presented with a rotated and oblique pelvis. In the Virtus, the pelvis remained neutral and her spine was less rotated. Amy's shoulders were more horizontal and she was taking appropriate support from the backrest cushion **(Picture 5)**.



As Amy was better supported and positioned in the Virtus, she was able to build up her tolerance of being in an upright seated position from less than 1 hour over the course of the school day, to up to 3 hours. It was visibly noticeable how much more relaxed Amy is when using the Virtus and she

PRODUCT FEEDBACK



was able to participate in class activities and access more of the curriculum. **(Picture 6)**

Orally feeding Amy became easier due to the improved support and positioning provided by the Virtus, combined with the head position achieved with the Type G head support. The class staff reported that feeding Amy in the Virtus required only one member of staff rather than two members of staff that were required with the previous seating system.

DEBBIE WHITE - OCCUPATIONAL THERAPY LEAD

With Amy's previous seating system class staff regularly contacted Occupational Therapy to re-assess/review and adjust seating. Our goal going into this trial was to achieve pelvic stability and best possible symmetry to enable Amy's comfort, tolerance, safety in feeding, and access to her curriculum.

Discussion about the above concerns were discussed with Martin during an assessment of Amy, and he suggested that we considered the functions of the Virtus to offer maximum support, positioning options and dynamic elements not previously possible in other seating options were tried. We were excited to go ahead with the trial, as were Amy's parents.

Over the trial period we were able to continuously assess how each change impacted on Amy's positioning over time. Where before we were getting regular negative feedback, since having the Virtus it has been noted that there have been no concerns highlighted to us from the classroom. Amy is now tolerating seating for much longer periods, shows no signs of distress in seating, and requires less assistance during feeding from an adult. Both parents and ourselves are satisfied that the Virtus best meets Amy's needs.

PRODUCT FEEDBACK

Following the success of this trial we have had initial discussions with Amy's parents and our wheelchair service about providing a base that this Virtus could be interfaced to, so that she has a single seat for mobility and school use.

Learning from this trial of the Virtus has lead to two further assessments with other children where other seating systems have not best met their specific needs.

ELEANOR BLACK - OCCUPATIONAL THERAPY ASSISTANT

Amy initially struggled when seated in her Mygo seating system and class staff were constantly asking for her seating to be reviewed. She would tolerate very short spells in the chair and only used the Mygo for feeding. Again, this was difficult as staff had to manually position her head in a safe position while trying to feed her at the same time.

Amy was becoming increasingly upset when using the Mygo and this crossed over into other items of equipment. This was having an impact on her 24hr postural management and she was spending more time in side lying or on a mat on the floor.

Since being issued with the Virtus, class staff have reported that Amy can tolerate being seated for long periods of time. She is happy and relaxed in the chair and is able to engage in activities with her peers. This has had a huge impact on her feeding and her calorie intake has increased which has helped improve her mood.

The class staff have reported that they are less stressed as Amy is no longer upset for long periods of the day and they have described the Virtus as "brilliant".

For more information or to see the Virtus for yourself contact:
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