

# DRIVING SERVICE CHANGE TO POWER INDEPENDENCE

From "Unseatable" to "Independent": Ellen's 7 year journey through the service - the rises, falls, and the changes we made to our service from reflecting on her patient experience.

An award-winning poster\*\* by John Green (Principal Clinical Scientist) & Phil Jackson (Clinical Specialist)



- Attends mainstream school. Bilingual
- Repeated requests for powered mobility
- Significant tonal problems
- Progressive windsweeping & scoliosis
- Predominant ATNR & dyskinesia
- Need for handcuffs
- Problematic head position (vision, engagement)
- No prior experience of independent movement
- Current seating not meeting her needs

- + Shifted our prescribing emphasis from foam carve to ABS shell (MSI)
- + Conducted in-house study (2019) — can we link ABS shells to tone reduction?

- ⊗ Concerns our routine foam-carves wouldn't manage her tone, but no access to other materials
- ⊗ Worried about potential pressure areas from ABS due to tone, repetitive movement & direct pressure

- + Special controls champions
- + Special controls pathway
- + Switch and alternative input devices stock

- ⊗ Only basic switches held in stock
- ⊗ She'd never driven / moved independently before
- ⊗ Previous switch use had IT focus
- ⊗ Fear that equipment trial would lead to failure
- ⊗ Need consistency on switch before powered trial

13	12	11
		10



- Started by getting posture sorted
- Cast for moulded seating— redesigned ABS
- Her tone relaxed more than expected— why?
- Now she's sat— what about access method?

- Ruled out— joystick, head controls, chin controls, sip & puff, sound switch, hand/ finger/ upper limb switch (touch or proximity)
- SALT using eye-gaze but limited success.
- Repeatable PF of right foot, but this increased her tone++
- Mum suggested bite switch



- ⊗ We had no switch training information or hardware
- ⊗ Are teaching switch skills even part of our Service remit?
- ⊗ Who has the skills to teach this?

	39	38
21	22	23

Switch skills had to be broken down into core skills for driving, not IT



<https://www.shinylearning.co.uk/freegames/>

Needed to be practised at home to build skills and exercise tolerance

- + Drivedeck Platform for Assessment



Equipment trial!— how to do this for someone so complex without making a very complex chair???



52	51
49	50



Solving one problem makes new problems:

- ⊗ Marking/ bruising from outside of MSI shell
- ⊗ Arms getting stuck in doorways (please strap my arms down again)

- + Learning standardised ways to mount MSI seating for people who hit solid things & special controls

		78
80	79	
61		

Padding to outside of MSI and a giant tray (but at least it kept her arms in)



- + (Power wheelchair training pathway + pack for schools/ carers - separate project)
- + Ellen using bite switch for access to IT and education
- + Links with SALT & agreement to joint-purchase switches
- + EMG switch driving trial— didn't work for Ellen, but might work for others

92	91
89	90

Current development project plans to:

- Reduce the force on Ellen's teeth
- Increase the durability of the switch
- Eliminate need for modifying switch
- Reduce costs of replacement components



- + Now using bite switch for driving, communication aid, and IT access at school, but.....

- ⊗ Bite switch needs replacing frequently due to daily heavy use
- ⊗ Each switch has to be manually modified from "stereo always open" to "mono always closed"



We're presenting this, but it's been a huge effort by the whole team at PAMS North Wales, Ellen, and her family. Thanks to everyone who's been a part in this.

Ellen would like you to think about her the next time you meet someone who'll "never be able to drive".

SCAN ME

\*\* Winner of the prestigious "Best Poster Written by John and Phil in June 2023" Award.