



Case Study: Brady's Story

Brady is an 8 year old boy who has a diagnosis of Spastic Quadriplegic Cerebral Palsy (GMFCS Level V). He is non-verbal, but uses an app on his iPad and a communication book to aid his communication and understanding. Brady loves playing with his friends at school and enjoys computer games. Due to weakness and tone through his body, Brady needs support for all care and daily activities. Pre case study, Brady had access to a manual wheelchair which requires carer assistance for all mobility, and he was using a full body posterior support walking frame. Brady's physiotherapist was keen to explore the inclusion of an adaptive tricycle alongside his typical therapy programme to assess the overall holistic benefits.

Study period:

Use of a Rifton Adaptive Tricycle was added alongside Brady's existing therapy routine for a period of 6 weeks. Prescription of the tricycle was determined using UK Governmental guidelines for physical activity in disabled children and adolescents ^[1] and exercise recommendations for people with cerebral palsy ^[2].

As such, therapy staff tried to adhere to the following tricycle exercise programme for Brady: 20-30 mins of moderate intensity cycling, up to 5 times per week, over a 6 week period. Intensity of cycling was determined via therapist assessment and discretion.



1) 1. UK Chief Medical Officers' Physical Activity Guidelines for Disabled Children and Disabled Young People 2022. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1055018/infographic-physical-activity-for-disabled-children-and-disabled-young-people.pdf

2) Verschuren, O. et. al. Exercise and Physical Activity Recommendations for People with Cerebral Palsy. Dev Med Child Neurol. 2016; 58(8): 798-808



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Seating

Standing

Sleeping

Therapy

Mobility

Bathroom

Initial Assessment:

On the first assessment with the Rifton Tricycle, Brady was unable to propel and pedal the tricycle independently, and needed significant support for all turning and navigation.

Results:

After 6 weeks of using the Tricycle Brady was able to:

- Push off and pedal the Tricycle independently
- Turn the tricycle independently on wider turning circles
- Join in in playtime cycling groups with his peers

Comments from Brady's Physiotherapist: "Brady initially struggled to pedal independently and really struggled with turning the tricycle. He is now able to push off and pedal independently and is working hard on independent steering. As a result of his improvement and control when steering the tricycle, he was referred for a powered wheelchair assessment. The assessment was a resounding success and he is now awaiting his new chair to improve his independence and mobility around school! Brady thoroughly enjoys using the tricycle in school – there's no such thing as 'too much time' on the trike for him!"

Comments from Brady's Teacher: "Brady loves the tricycle! It has been really pleasing to see how access to the tricycle has opened up new experiences and social opportunities for him. He is now playing with friends in a 'Biking Group' at playtime and it's exciting that he has been referred for a powered wheelchair assessment. As a team, we were unsure how well he would be able to use the tricycle due to his disabilities, but we have been astounded with his progress."

Comments from Brady's Mum: "I have never seen Brady cycle and, in truth, I never believed he would be able to it. It made me really happy to see him pedalling independently and he always seems so excited when using the tricycle too. It is great that he can access the tricycle to join in with friends at school. Brady is always so happy whenever he is using the tricycle and has been using his communication aid to ask teaching and therapy staff to bring out the Tricycle daily!"



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The ICF Framework¹ and the F-Words²

Fitness

(Body Structure & Function)

Brady is now partaking in cardiovascular activity weekly in accordance to governmental guidelines, increasing his activity levels greatly.

Functioning

(Activity)

Brady has learned a new skill in cycling independently and this has led to a prescription of a powered wheelchair to improve his independence!

Friends

(Participation)

Brady is now able to join in more activities alongside his peers, including the playtime Biking Group!

Family

(Environmental Factors)

Brady's family are so happy to see his inclusion and independence increase, and they are looking to access local cycling groups that Brady can access outside of school.

Fun

(Personal Factors)

Brady loves using the tricycle and lets therapy and teaching staff know just how much he enjoys it through his communication aid – asking to go on the tricycle every day!

Future

Brady will continue to access the Tricycle weekly at school as part of his therapy programme.

His therapy team have also noticed small improvements in his reciprocal stepping pattern and assisted transfer ability since using the tricycle and this has led to a change in mobility equipment. Brady is now working hard in

his Rifton Pacer Gait trainer to

continue the acute progress he has shown and improve his mobility and independence!

Here's Brady showing off his skills in his brand new wheelchair! Great work Brady!

Click or navigate to the below link, or scan the QR code to see Brady's progression in cycling skill and his independent mobility with his new powered wheelchair!

https://youtu.be/WUqkZ_EUCIY



1) World Health Organization. (2001) International Classification of Functioning, Disability and Health (ICF)
2) Rosenbaum P & Gorter JW. (2012). The 'F-words' in childhood disability: I swear this is how we should think! Child Care Health Dev. 38.

For more information visit the F-Words Knowledge Hub: www.canchild.ca/f-words

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