**Research snapshot: Bike riding ability in children with and without cerebral palsy**

We invited the parents and carers of children and young people with cerebral palsy to complete a survey on their child’s ability to ride a two-wheel bike. Here we summarise what the study was all about and what the main findings were.

**Why did we carry out this study?**

Cerebral palsy (CP) is the most common cause of childhood physical disability. In general, children with CP do less recreational and physical activities than kids without CP. Not doing enough physical activity in childhood can lead to chronic diseases as an adult.

Bike riding is a good physical activity for children to improve health. It is also one of the most common physical activities, and a great way to get around. It may be an activity for children with CP to do to improve their physical skills and fitness, however, there is limited research about the following areas:

- How well children with CP who can walk without aids can ride a bike;
- The best way to teach bike riding skills; and
- The health benefits for children who have learned to ride a bike.

In this study we aimed to find out the number of children who ride a bike at all, the average age at which Victorian children with and without CP learn to ride a bike, what parents believe helps children with and without CP to learn to ride a bike, and what the difficulties may be.

**What was done?**

We invited the parents and carers of Victorian children and young people with and without CP aged 6-15 who were able to walk without aids to complete a survey. We asked about their child, themselves and their family. We also asked about their child’s two-wheel bike riding ability and what they believe helps children learn to ride a bike, and what the difficulties may be.

**Who participated in this study?**

Two hundred and one parents and carers completed the survey: 114 (57%) had a child with CP while 87 (43%) did not. The average age of children was 9 years and 11 months. Of the children with CP, 81 (71%) were able to run and jump, but balance and coordination were limited (i.e. classified as Gross Motor Function Classification System (GMFCS level I)); while 33 (29%) children were able to walk without aids, but had minimal ability to run or jump (i.e. GMFCS II).

**What did we find?**

- The proportion of children with CP able to ride at each level of bicycle riding ability was much lower at each age compared to children without CP.
- While most children without CP were able to ride independently by age 10, only 51% of the children with CP classified as GMFCS level I were able to ride independently by age 15. This dropped to 3% for children with CP classified as GMFCS level II.
- The older a child was, and how important it was to the parent that their child was able to ride, were the most relevant considerations for children with CP (GMFCS level I) being able to ride.
- All parents felt that confidence and having siblings who ride, helped their children in being able to ride a bike. Parents of children with CP felt that physical issues were the most common barriers learning to ride.

**What do the findings mean?**

Although a lower proportion of children with CP ride a two-wheel bike at each age, it is possible for children with CP to learn to ride a bike, in particular if they are classified GMFCS I. Knowing which variables are associated with being able ride, may help families and professionals set realistic bike riding goals. They also highlight the potential influence of parental attitudes on their child’s skill development.

Currently, direction is lacking for families and professionals around strategies for teaching bike riding skills in children with CP. This study highlights the need for further research on ways to learn to ride a bike for the majority of children with CP (GMFCS levels I-II) who are not yet able to ride.
Further information: For more information on this research, please email rachel.toovey@mcri.edu.au
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