

# **Recumbent Cycling During PE Class for an Adolescent Girl with Cerebral Palsy: A Case Report**

**Sharon B. Antoszyk, PT** *Concord, NC*

**Background and Purpose.** Individuals with cerebral palsy (CP) need opportunities to participate in physical activities to prevent secondary health complications. Strength training helps prevent deconditioning and may increase function in children with CP. Physical therapists working in the school setting encounter difficulties incorporating exercise into a child's school schedule. This case report demonstrates the benefit of using a recumbent cycle during a physical education (PE) class to improve functional performance of an 8<sup>th</sup> grade girl with CP.

**Case Description.** The student is a 14-year-old girl with CP who has difficulty participating in a PE class with typical peers. She ambulates independently with forearm crutches. The student, assisted by her PE teacher, used a recumbent cycle for 14 weeks during a set portion of her PE class. Outcome measures used to assess her walking, balance and gross motor abilities included the Gross Motor Function Measure (GMFM), Pediatric Balance Scale (PBS), Pediatric Reach Test (PRT), Timed Up and Go (TUG), Observational Gait Scale, 6- Minute Walk Test (6MWT), 30 Second Walk Test (30sWT) and Pediatric Quality of Life Inventory.

**Outcomes.** The student reduced her crouched knee position during ambulation. She made gains in the PRT demonstrated by an increase in the distance reached in sitting and a gain of one point on the PBS. GMFM also showed a 2.8% improvement in standing and walking with the use of her crutches. During the post-test the student reported that she felt she could walk faster and farther, however she had a decrease in the distance walked for both walk tests.

**Discussion.** Lifelong fitness is a goal for all students in PE class. Physical therapists must find ways for the student with disabilities to obtain and sustain lifelong fitness. The progress made during the 14-weeks of recumbent cycling had limited impact on the student's functional abilities but did demonstrate some improvements in strength. The reduction of the crouch gait position and the increased ability to reach in sitting could indicate an increase in the strength of her hips and knees as a result of the recumbent cycling. This finding is consistent with the existing body of evidence on strength training and CP. A recumbent cycle represents a relatively inexpensive piece of equipment that is easily adapted for the adolescent student with CP. This case report demonstrates the value of incorporating a fitness activity into a PE class if adequate support for the intervention exists among teachers and school administrative personnel.