

Postural effects of using the tandem-ski in children, tenns and young adults with multiple disabilities: a pilot study.

Following successful results about postural adaptations with people suffering from motor disabilities and cerebral palsy during sports activities such as hyppotherapy, ice skating and tandem ski, this study aims to evaluate if the tandem ski involve as well postural adaptations, more specifically in the cervical and trunk areas, for polyhandicap children and polyhandicap teenagers. This study is a pilot one, as never such a project has been carried on with this type of population and in this type of conditions. 1 contrai group (GC), consisting of 10 healthy children/teenagers and 1 polyhandicap group (Gpo), consisting of 17 polyhandicap children/teenagers, have been assessed. Each subject has been equipped with a set of 9 captors type Physilog (cwww.gaitup.ch), 7 inertial captors spread over the subject to the different body segments such as « head », « C7 », « sternum », « trunk », « pelvis », « right leg », « left leg » and « seat » (scotched on the tandem ski); 1 Physilog Gold Mote located in the examiner's pocket, 1 Physilog Gold+GPS located in the pocket of the tandem ski 's driver. One slalom, consisting in 5 left turns and 5 right turns, has been organised on the same slope's portion for the entire study. Each subject led by the same tandem ski driver has done twice the slalom. The results provide first evidence of postural adaptations, more specifically in the cervical and trunk areas, against the acceleration forces caused by the turns during skiing down a slope with a tandem ski for the polyhandicap children/teenagers. Indeed, despite their disabilities, when we examined the cumulated movement's quantity on the totality of the slope's portion without making any difference between left turns and right turns, we find absolutely no difference for any segments in terms of quantity motricity's activity's between the GC and the Gpo. However, our results do not bring any information on the fact to know if these postural adaptations are the consequence of voluntary movements or a submission to the accelerations caused by the turns.

Research team

Francis Degache, main applicant,
HESAV

Diane Schmied, other applicant, HESAV

Christopher Newman, other applicant,
CHUV

Funding

Fondation Terrevent, Genève

Duration

6 months