

The Physiological Responses of Children with Spina Bifida During Arm and Leg Cycling

Janet A. Mulcare, Ph.D., Jennifer M. Conrad, M.P.T., Mary I. Hernandez, M.P.T., Daniel J. Flemming

ABSTRACT

Purpose: There have been numerous studies on healthy children regarding the benefits of regular exercise⁴⁻⁹, but very little research on exercise response of disabled pediatric populations. The purpose of this study was to measure physiological responses of children with Spina bifida during arm and leg exercise. **Subjects:** Four subjects, 6-7 years old, who had been diagnosed with Spina bifida, participated. **Methods:** Subjects pedaled the AmTryke,TM an arm and leg propelled tricycle, while physiological responses and work output were measured. **Results:** Mean energy consumption was 17.21 ml/kg/min and mean energy cost was 0.357 m./kg/m. **Discussion:** Although limited by a small sample size it does appear that this arm and leg ergometry is a more efficient exercise than reported values for walking with orthoses. **Conclusion:** Arm and leg ergometry using the AmTrykeTM is an efficient exercise for children with Spina bifida and is a useful tool in the pediatric physical therapy setting.