

# The study of the assessment of health promotion for disabled person

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The purpose of this study was to investigate the properties and the exercise intensities of various physical activities and adapted sports and to clarify the self-selected velocity of wheelchair rolling which involves routine physical activities for wheelchair users. The study also aims to obtain the data for drafting an exercise guideline for a disabled person.

The following items are suggested by this study:

- 1) Sport blowgun trials have effects on the maintenance and improvement of respiratory functions. Specifically, they decrease the respiratory quotient, and increase the energy expenditure. This suggests that sport blowguns contribute to the maintenance and improvement in residual functions.
- 2) Relative intensities of wheelchair rolling in particular self-selected speeds increased from a 20% peak  $\dot{V}O_2$  (slow) to an 80% peak  $\dot{V}O_2$  (maximal voluntary) proportionally. The upper limbs move freely to some extent and the same is expected to hold for others who can control wheelchairs. Thus, it can be proposed that when teaching a wheelchair user everyday aerobic exercise, self-selected speeds could be used as an index of exercise intensities.
- 3)  $\dot{V}O_2$  values obtained through an arm cranking test with the body trunk fixed have no differences compared with conventional methods. It is considered that while  $\dot{V}O_2$  during arm cranking with the body trunk fixed limited the muscle activities of the upper limbs, the other muscle groups assisted the locomotion of arm cranking.
- 4) Arm cranking test using an adjustable arm ergometer could monitor heart rates and peak oxygen uptakes with accuracy, and measure in shorter times compared with conventional methods.

The guidance and practice should be combined subject's sensational intensity and quantitative assessments are required for physical activities of disabled person. In addition, the guidance for physical activity of wheelchair users can be created if residual functions are evaluated appropriately.