Effectiveness of a fitness program as part of a mountain trekking with hemiplegics

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Objectives.– Measure the effectiveness of a specific exercise training in chronic hemiplegic patients involved in a mid-mountain trekking to 1000 m elevation.

Method.– Eight hemiplegics (51.4 ± 12 years, 71.6 ± 9 kg, 25.5 ± Fugl Meyer MI 7/34) received 3 months of physical preparation, 2 to 3 sessions per week combining aerobic exercise, strength training qualitative gait work on land. A physical assessment with stress test, 6 minutes walking test (6MWT), maximal isometric force of paretic quadriceps (FQ) but also vegetative by analysis of heart rate variability (SDNN) were performed before and after training.

Results.– The set of physical parameters improve after training (peak VO₂ to 21.9 ± 5 versus 26.2 ± 5 mL/kg/min, P < 0.01; 6 MWT to 477.2 ± 573.6 versus 122 ± 99 m, P < 0.01; maximal power 107.1 ± 37 versus 127.1 ± 35 Watt, P < 0.01; FQ to 51.1 ± 20 versus 79.1 ± 29 Nm, P < 0.01). We also observe an improvement in SDNN (64.1 ± 95.5 versus 19 ± 24 ms, P < 0.05). The score of Fugl Meyer remained unchanged.

Conclusions.– This fitness program is effective in improving physical performance but also on heart rate variability which is an important cardiovascular risk factor and reflects the physical reconditioning.

Further reading

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Vel’HandiRhone from Leman to the sea: This cycling challenge was met by 15 disabled patients

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Introduction.– At the end of their stay in a physical and rehabilitation medicine department, we proposed to 15 patients with physical disabilities to challenge themselves physically and humanly: to rally from the Leman Lake, Geneva to the Mediterranean Sea with adapted bicycle along the river Rhone.

Project objectives.– Conduct a bike ride with seven stages, nearly 350 km, with a group of adult subjects with different disabling conditions.

Populations.– Fifteen subjects coming from leading rehabilitation centers in the St-Etienne area agreed to participate in this adventure: three paraplegics, two cerebral palsy, six hemiplegics, one chronic low back pain patient, one amputee, one blind and one patient with cancer.

All have performed an exercise test and have any contraindication to participate in a diligently training for several months.

Implementation.– Planning this journey has required: more than 2 months of training at two workouts per week in addition to standard rehabilitation; the selection and organization of the route, establishing the needs for security (25 volunteers including two physicians, three physiotherapists, three nurses, three teachers of adapted physical activity, two mechanics), the choice of accommodation adapted to disable persons, and especially the acquisition of appropriate equipment for each disability.

Results.– This bike ride helped to highlight the functional possibilities and physical abilities of all subjects: 50 km of cycling per day on average; importance of cumulative bike time (5 to 6 hours on average in the day), no surrender, no medical complications.

Discussion-conclusion.– This experience has allowed, on one hand, to highlight the unique functional abilities of each, regardless of the level of disability and to provide and discover a new relationship caregivers/treated, but also to highlight the psychological and social benefits of such human adventure. This finally allowed to offer patients a “sports and social” forward-looking at the end of their rehabilitation.

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