LIITE S65. Fysioterapian katsauksen alkuperäistutkimusten interventioiden kuvaukset (CP, aikuiset).

<table>
<thead>
<tr>
<th>First author</th>
<th>Type of intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strength training</td>
<td></td>
</tr>
<tr>
<td>Unger et al. 2006</td>
<td>Strength training programme individually designed. The programmes were designed in consultation with the person’s own physiotherapist to ensure correct selection of exercises. A circuit training of eight to ten exercises were selected individually for each subject, including a five-minute warm-up on a stationary bicycle. The exercises were for upper- and lower-limbs and trunk. The circuit was done at the subject’s own pace and speed. Progression was made according to the guidelines of McArdle et al. (1996) and initial resistance was set to allow a set of six to ten repetitions. Resistance was increased when the subject did three sets of 12 repetitions. Body weight, free weights (including dumbbells), ankle and wrist cuff weights, bar-with-disc weights, elastic bands and rubber bands were used for resistance. For an unstable surface balls were used. The initial exercises were recorded in a participation record. The subjects were responsible for updating the programme.</td>
</tr>
<tr>
<td>Andersson et al. 2003</td>
<td>Strength training with emphasis on the lower limbs. Each position for each subject on the training equipment was standardized according to the manufacturer’s instructions. One RM was identified and the weight was decided to be 70% of 1RM. The programme consisted of 10 exercises, and there were three sets of 10 repetitions each. When the subject managed to do more than 10 repetitions, the weight or resistance was increased. There was an individual protocol for the weights after each set of repetitions. The exercises started with five minutes of bicycling on a stationary bicycle and ended with 15 minutes of stretching of adductor-, hamstring-, ilioptsoas-, quadriceps- and gastrocnemius muscles. The exercises were; leg presses (3 x 10), knee extensions (3 x 10), hip extensions (3 x 10), pull downs (3 x 10), arm-dips (3 x 10), heel rises (3 x 15), hip adductors (2 x 15 each leg), sit-ups (2 x 20), diagonal lifts (arm and leg 2 x 20).</td>
</tr>
<tr>
<td>Eagleton et al. 2004</td>
<td>A strength training program focusing on trunk, hip, knee and ankle flexors and extensors and hip abductors. Free weight and weight machines were mainly used and cuff weights, Theraband, or own body weight was used if the available equipment was inadequate or the weights were too large. The exercise load was 80% 1RM. The subjects progressed through the exercise load according to a model; 1) increased repetitions of the original load, 2) increased load and decreased repetitions to the initial number of repetitions, 3) increased repetitions at the increased load. The subjects had a log to follow the progression and any muscle soreness was noted. Before and after the exercise the subjects stretched according to a list of stretches with illustrations, which they had received. The therapists involved called each subject during the first week.</td>
</tr>
</tbody>
</table>
MacPhail et al. 1995

Strength training programme using an isokinetic dynamometer. The subjects were seated upright against the backrest with their hip joint at 80° flexion. Resistance pads were at the distal third of tibia and straps were placed across the pelvis and distal thigh. The axis of rotation of the dynamometer arm was aligned to be co-axial during knee flexion and extension movements. Subjects with diplegia and quadriplegia trained bilaterally and subjects with hemiplegia trained their involved leg. The programme started with a five minute warm up on a stationary bicycle. Three sets of five maximum effort concentric-eccentric work loads were performed, with no pause between eccentric-concentric work. Maximum voluntary effort 90°/s and a one minute rest between sets. That made 15 concentric and 15 eccentric maximum muscle contractions for both knee flexors and extensors. A computer screen gave continuous feedback to the subjects (bar graph, target torque). Muscle soreness and knee pain were assessed each time. The training session was followed by five bilaterally executed hamstring stretches.

Taylor et al. 2004

During the introductory four weeks the subjects learned a series of individually suited or tailor-made exercises with emphasis on the muscles of the upper limbs, lower limbs and trunk. Machine weights were used and the exercises were mainly three for upper limbs, two for lower limbs and one for the trunk. During the introductory period the exercises were done with minimal resistance. During the 10 week strength training period the work load was 60–80% of 1RM. Two sets of eight to ten repetitions of each exercise were done. Resistance was increased so that an optimal load was maintained. A typical exercise program was: leg press (sitting hips and knees at 90° angle); knee extension (sitting, knee flexed 90°); lateral pull down (sitting, elevate arms with hands above shoulders); chest press (sitting, both hands grasp resistance handles at shoulder height); seated row (sitting, grasp resistance bar in front with both hands); abdominals (supine with knees bent and stabilized). Each subject had an exercise log to record weights used and the number of sets and repetitions for each training session.

Holland et al. 1990

The subjects were elite athletes and they participated in a circuit strength training program that lasted ten weeks. The training sessions were two to three times per week. Non-ambulation subjects performed nine upper body exercises (i.e. pulldown, overhead press, rowing torso, triceps extension, bicep curl), while ambulatory subjects performed three lower and six upper body movements (i.e. pulldown, overhead press, rowing torso, arm cross, leg extension, leg curl) all using Nautilus equipment. For the first three weeks, subjects performed one set of eight and one set of five repetitions with a third set of three repetitions added in weeks four and five. During weeks six and seven, the same number of sets was carried out. Before the strength training session, a ten minute warm-up was done and after the session, static and dynamic stretching was done for about five minutes.
**Physical exercise**

Schloug et al. 2005

Aerobic exercise was done on an elliptical machine, treadmill or recumbent stepper. One piece of equipment was used for each session and all three were used in random order each week. A heart rate monitor was used during all sessions to signal if the subject went over or under target heart rate. The heart rate was determined using the Karvonen equation. Those who were not in condition used 40–70% maximal heart rate and those physically more fit used 65–85% heart rate. During the sessions the subjects used the Rating of Perceived Exertion scale at regular intervals to give the perception of exertion. Two things were measured during the sessions: direct measure of heart rate (monitor) and indirect measure (RPE scale). The exercise ended if the subjects wanted to finish, if they pointed to the RPE that was greater than the assigned target or if the heart rate was greater than the assigned target heart rate.

For long term optional intervention (B2 phase), each subject could tailor-make their own exercise programme. Subject one chose walking on a treadmill (2 x/week, 14 weeks) and using upper and lower weight training, subject two chose treadmill or elliptical machine (5–6 x/week, 15 weeks) and occasionally light weight training and subject three chose walking on the treadmill or light weight lifting (1–2 x/week, 4 weeks).

Choy et al. 2003

A task oriented work programme with work stations. Six of the work stations were selected to best address the problem of the subject. Tasks were graded to enable successful completion. The subjects worked in small groups (4–6 people) according to level of disability. They worked at their own pace, with balance between work and rest. The work stations included were: posture awareness (sucking/blowing activities); seated forward reach activities bilateral or upper limb); seated extended reach activities to encourage hip flexion with trunk extension/rotation and upper limb elevation; active assisted sit to stand practice; tilt table stand for up to 15 minutes; bed mobility (transfer to bed and bed mobility); flexibility exercises on a mat (positioning, stretching) and wheelchair skill development.

Pitetti et al. 1991

The subjects trained on a Schwinn-Air-Dyne ergometer (SAE) twice a week, for 30 minutes during an eight week period. The training started with a three minute warm-up and was followed by a three minute cool-down. The SAE was placed in a gymnasium at a community home where most of the subjects lived. A staff member supervised the subjects during training. Heart rate was monitored during the training session and the work load was 40–70% of peak VO\textsubscript{2}. After the eight week training, the SAE was left in the gymnasium and the subjects were invited to continue training.
Vibration exercise

Ahlborg et al. 2006  Whole body vibration (WBV) exercise in a static standing position with hips and knees at 50° of flexion. The vibration lasted about 6 minutes per session and the subjects were instructed not to hold on to the handles if possible and to stand with their weight equally distributed on both legs. The training program was progressive and starting level was dependent on subjects rating of perceived exertion on the Borg CR10 scale. When the ratio of perceived extraction was 7/very strong, the level of intensity was considered appropriate for the training session. The progression consisted of 11 levels of intensity with a frequency of 25 (level 1) to 40 (level 11). The balance between duration and rest lasted from 4 x 30 training, 120 rest and 4 x 30 training (level 1) to 3 x 110, 15 rest and 2 x 110 (level 10) and 3 x 110 without rest (level 11). The WBV exercise consisted of a 5 minute warm-up and a short muscle stretch program at the end. Resistance training started with a 5 minute warm-up and a short muscle stretch afterwards. The exercises were performed in a leg press device. Three sets of 10 to 15 repetitions with two minutes rest in between. The load started from 70% 1RM and was progressive with a maximum of 7 to 10 repetitions.

Kvam 1997  Treatment in a vibroacoustic chair. The subjects rested for about half an hour in the middle of the working day in a chair that gave both music and vibroacoustic waves. Treatment in a music chair. The subject rested for about half an hour in the middle of the working day in a music chair.

Passive ROM

Cadenhead et al. 2002  Passive range of motion exercises were performed by a physiotherapist who got the instruction from one of the authors. The subjects lay in a supine position for all exercises except hip extension, where the position was prone lying with the hips at the edge of the table. Five repetitions of each passive joint motion were done, holding the position at the end of the range for about 20 seconds. The stretch was done slowly, providing a gentle continuous stretch and the joints were moved only to the point of resistance. Five exercises were done in any chosen order.

Vogtle et al. 1998  Water shiatsu, where the therapist stabilizes or moves one body segment at the same time as moving through the water, was performed for about 45 minutes by a physiotherapy student. The water shiatsu maneuvers were individualized for each subject, but followed the same sequence (i.e. “water breath dance, accordion, rotation accordion, near leg rotation, arm rotation, chest opening”). Floats were used if needed. After the water shiatsu, a 15 to 20 minutes Halliwick method session started. The Halliwick method consists of different moving patterns that the therapist facilitates. Activities for head, trunk and extremities were performed. The aquatic training sessions were performed twice a week and lasted for seven weeks.