

Web appendix

Physiotherapy protocol

Hands-off exercise therapy

Exercise 1: Chest Press, sitting position (Technogym©)

Purpose: warming-up

2 x 10 repetitions with 5 kg.

Exercise 2: Lateral Pull-down, sitting position (Technogym©)

Purpose: warming-up

2 x 10 repetitions with 20 kg

Exercise 3: Low-back flies

Purpose: warming-up

Dumbbells in every hand and make 'flying movements', bent forward standing position or in roman chair

2 x 10 repetitions with 1 kg

Exercise 4: Neck-press

Purpose: stability

Push dumbbells from the shoulder above the head, standing position

2 x 10 repetitions with 1 kg

Exercise 5: Front-raises

Purpose: stability

Elevate dumbbells forwards to shoulder height, standing position

2 x 10 repetitions with 1 kg

Exercise 6: Upright row

Purpose: strength

'Rowing up' bar with weights; elbows finish above shoulder height and wrists finish at shoulder height, standing position

2 x 10 repetitions with 7.5 kg

Exercise 7: Weight rotation

Purpose: strength and stability

In standing position, keep bar with weights on top in vertical position, bottom part stays on the ground, with stretched arms and rotate to left and right

3 repetitions: 5 x to left, 5 x to right with 7.5 kg

Home exercises for physiotherapy group

Once a day 2x10 repetitions.

Exercise 1. Purpose: mobility

Standing position. In neutral position: withdraw chin.

Exercise 2. Purpose: mobility

Lying on the back. Withdraw chin while keeping head on the ground.

Exercise 3. Purpose: mobility

Standing position. Withdraw chin and turn head to one side as far as possible. Repeat in the opposite direction.

Exercise 4. Purpose: stability and muscle strength

Standing position. Withdraw chin, place the palm of the hand against the head (left or right side of the forehead), and give resistance against the hand with the head (do not allow any movements of the head).

Exercise 5. Purpose: stability and muscle strength

Standing position. Place right hand against the head behind the right ear, left hand on the left side of the forehead. Rotate the head to the right against the resistance of the hands. Reverse hand positions and repeat to the left. No movements of the head.

Exercise 6. Purpose: stability and muscle strength

Standing position. Withdraw chin, place both hands on the back of the head, and push the head against the hands. No movement of the head allowed.

Exercise 7. Purpose: stability and muscle strength

Standing position. Withdraw chin, place the right hand on the right side of the head and move the head to the right against resistance. Repeat to the left.

Exercise 8. Purpose: stability and muscle strength

Lying on the back. Lift the head a little from the ground and move the chin just a little bit towards the chest.

Exercise 9. Purpose: stability and muscle strength

Lying on the back, lift the head a little from the ground and turn the head to the right. Repeat to the left.

Exercise 10. Purpose: relaxation.

Sitting on a chair. Keep both arms down. Pull back the shoulders and relax again.