The Functional Index - 2

Alexanderson H et al 2006

- Disease-specific functional outcome assessing muscle endurance in polymyositis (PM) and dermatomyositis (DM).

- Equipment:
  - a chair without back or arm support
  - a bench with horizontal head support, a pillow
  - a 1-kg weight cuff
  - a digital metronome

Validation of the FI-2

- The FI-2 is a further validated version of the Functional Index (FI) (Josefson et al 1996) where redundant tasks has been excluded. The number of repetitions for each task has been increased to avoid ceiling effects. assessing muscle endurance
- The FI-2 tasks correlated best with measures of muscle endurance
- All tasks of the FI-2 have a good to excellent inter- and intra-rater reliability.

Instructions

- Instruction to patient:
  - Perform as many repetitions of each task as you can, or stop when reaching maximal number of repetitions. However, you decide when to stop due to muscle fatigue, pain or general fatigue.

- Instruction to observer:
  - Numbers of correct performed repetitions following five learning repetitions are registered for each task.
  - If passive ROM is normal, but active ROM is limited the score is 0. Do not perform the task. If passive ROM equals active ROM perform the task within actual ROM.
  - Each task is stopped if: a) the patient can not keep up the given pace and is unable to correct within three repetitions, b) the patient starts to compensate and is unable to correct within three repetitions. After completing each task, the patient is instructed to rate perceived muscular exertion on the Borg CR-10 scale from 0-10 (0=no exertion, 10=maximal exertion).
  - A metronome is used to standardize the movement pace of each task.

The Borg CR-10 scale
Perceived muscle exertion

0	Nothing at all
0.5	Extremely weak
1	Very weak
2	Weak (light)
3	Moderate
4	Somewhat strong
5	Strong (heavy)
6	
7	Very strong
8	
9	
10	Extremely strong (almost maximal)
•	Maximal

Borg GA 1982.

Shoulder flexion

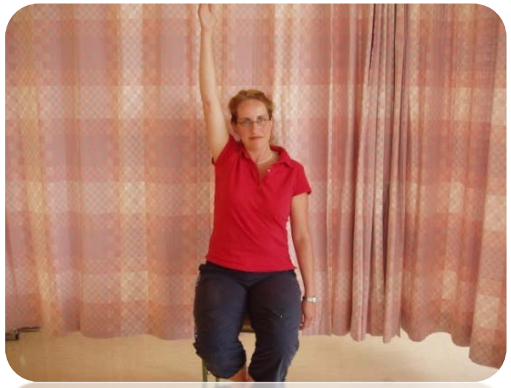


Sit on a chair without back support with 1 kg weight cuff around wrist.
Start with the right arm. Perform as many repetitions as possible, then switch sides.

Pace: 40 beats / minute – 20 repetitions / minute
Maximal number of repetitions: 60

Shoulder abduction





Sit on a chair without back support. No weight cuff around the wrist.
Perform as many repetitions as possible, then switch sides.

Pace: 40 beats / minute = 20 repetitions / minute
Maximal number of repetitions: 60

Head lift

Lying on a bench with horizontal head support. No pillow.
Lift the head as much as possible. Perform as many repetitions as possible.

Pace: 40 beats / minute = 20 repetitions / minute
Maximal number of repetitions: 60

Hip flexion

Lying on a bench, pillow under head. Straight leg raise (heel 40 cm from bench).
Perform as many repetitions as possible, then switch sides

Pace: 40 beats / minute = 20 repetitions / minute
Maximal number of repetitions: 60

Step test

Use a 25 cm high stool (40 cm from the wall). Put one hand on the wall for balance support. Climbing using right leg, descending using left leg. Perform as many repetitions as possible, then switch sides.

Pace: 40 beats / minute = 20 repetitions / minute
Maximal number of repetitions: 60

Heel lift

Stand with one hand on the wall for balance support.
Lift the heels at least 1 cm from the floor.

Pace: 80 beats / minute = 40 repetitions / minute
Maximal number of repetitions: 120

Toe lift

Stand with back and hips against wall for balance support.
Heels 15 cm from wall. Lift the toes as high as possible.
All metacarpo phalangeal joints must lift from floor.

Pace: 80 beats / minute = 40 repetitions / minute
Maximal number of repetitions: 120

References

Alexanderson H et al. Functional Index-2: Validity and Reliability of a Disease-Specific Measure of Impairment in Patients With Polymyositis and Dermatomyositis. Arthritis & Rheumatism (Arthritis Care & Research) 2006; 55:114–122.

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Josefson A et al. A functional index in myositis. J Rheumatol 1996;23:1380-4.