

# Home exercise program developed for PM and DM

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Alexanderson H et al. Scand J Rheumatol 2000;29:295-301

Alexanderson H et al. J Rheumatol 2014;41:1124-32

Dastmalchi M et al. Arthritis Rheum 2007;57:1303-10

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# Evidence for home exercise

- Has been evaluated in two studies including patients with recent onset PM and DM (2000, 2014)
  - Well tolerated and safe - does not increase CK or inflammation in muscle tissue
  - Can improve both muscle function, aerobic capacity and quality of life
- Also evaluated in patients with low-active PM/DM (1999, 2007)
  - Well-tolerated, does not increase CK or inflammation in muscle tissue
  - Can improve muscle function and quality of life
  - Normalize proportion of type-1, oxidative muscle fibers – explaining the improved muscle endurance

# Home exercise program PM/DM



1. Warm-up



2. Shoulder mobility



3. Grip strength



4. Strength knee extensors



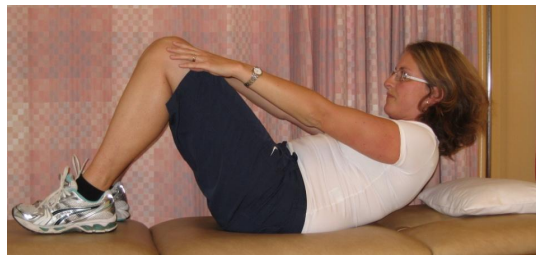
5. Strength shoulders



6. Strength hip extensors



8. Strength hip flexors



7. Strength neck flexors and trunk

- Improved muscle function and health (Physical, Pain, Fatigue) without increased muscle Inflammation
- Signs of reduced inflammation in Patients with low disease activity

# Warm-up



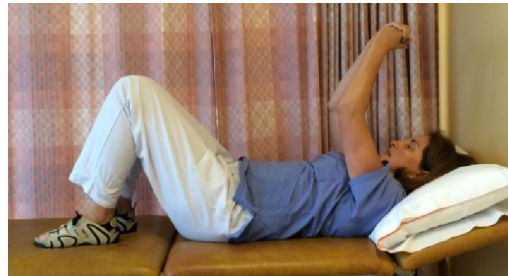
A



B (alternative)

Step-up warm-up (A) about 5 minutes. Can be changed into lifting one knee  
At the time (B), a short walk or biking (usual bike or stationary) or any other  
physical activity that will increase your heart rate.

# Shoulder mobility



A. If you have a pulley apparatus, push one arm down to help the other arm up. 10 repetitions / arm.

B. If you don't have a pulley apparatus, you can lay down on your back with bent knees and raise your arms up over your head and hold for a few seconds.

# Grip strength



A.



B.



B.

- A. Squeeze the handles of the pulley apparatus tight, one hand at the time.  
10 rep / hand
- B. Alternative: use other equipment for grip strength training

# Knee extensor strength



A.

A. Sit with your thigh supported and extend your knee and hold for a couple of seconds. Bend your knee slowly. Exercise against gravity or use extra weight cuff. 10 repetitions / leg.



B (Alternative).

B. Alternative. Sit on a chair and extend your knee against gravity

# Shoulder muscle strength



Sit on a chair or a bench and lift your arm up as much as you can.  
Go back slowly and repeat 10 times / arm.

A. Use extra weight cuff or B. a rubber band if needed. You can also  
Just exercise against gravity, C.



# Hip extensor strength



A.



B.



C.

- A. Level 1. Lay down on your back with your knees bent. Lift your pelvis and hold for a few seconds. Repeat 10 times.
- B. Level 2. Put your arms across your chest (makes it a bit more difficult)
- C. Level 3. Lift your pelvis, then straighten one knee while keeping the pelvis still.

# Neck and trunk flexor strength



A.



B.



C.

- A. Lay down on your back with bent knees. Lift your head and stretch your arms towards your knees. Repeat 10 times. You can also put your hands behind your neck to give a light head support.
- B. If this is too strenuous: Activate your abdominal muscles, press down the lower back and rotate your pelvis.
- C. If you want to specifically exercise your neck flexors: Lift your head from the bench and hold for a couple of seconds.

# Hip flexor



A.



B.



C.

- A. Lay down on you back and do straight leg raise, 10 repetition / leg.
- B. Alternative. To stabilize your lower back bend one knee.
- C. If you have problem to lift a straight leg, start by lifting one knee up at the time in a sitting position.

# How to get started and progress

- Start exercise about 4 weeks after diagnosis
- Measure muscle function before starting
- Short exercise sessions (15 minutes), but for frequent (4-5 days per week)
- Vary upper- and lower limb tasks so that you don't overexert any muscle groups
- First weeks of exercise: Perform repetitions so that your rating of exertion after completion of program does not exceed 3 on Borg CR-10 scale.
- After about 4 weeks, increase repetitions or loads to correspond to exertion of 5-7 on the Borg scale
- If it is too strenuous to the whole program at once, divide it into two sessions and rest in-between
- You can combine this program with a walk to improve your aerobic capacity
- This program can be used even if you have the need for extra oxygen supply

# Borg CR-10 scale

- 0 No exertion
  - 0.5 Extremely weak (light)
  - 1 Very light
  - 2 Light
  - **3 Moderate**
  - 4 Somewhat strong
  - **5 Strong (heavy)**
  - **6**
  - **7 Very strong**
  - 8
  - 9
  - 10 Extremely strong (almost maximal)
- 
- Maximal

# How do I maintain my exercise habits?

- Set measurable and reachable goals that can be progressed
- Register your performance in a exercise diary or an app (if available)
- Use a pedometer or other device
- To improve aerobic capacity during walks calculate your estimated maximal heart rate (220-age) and then calculate 50-70% of 220-age. This provides the heart rate range that you need to achieve during walks
- If possible, have your aerobic capacity and muscle function followed-up by a physical therapist
- Exercise together – support from friends or a myositis support group.