



THE MYOSITIS ASSOCIATION

Hand exercise in myositis

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Today's session

- ▶ How hand function is affected in different subtypes of myositis
- ▶ Results from two studies
- ▶ Examples of hand exercise

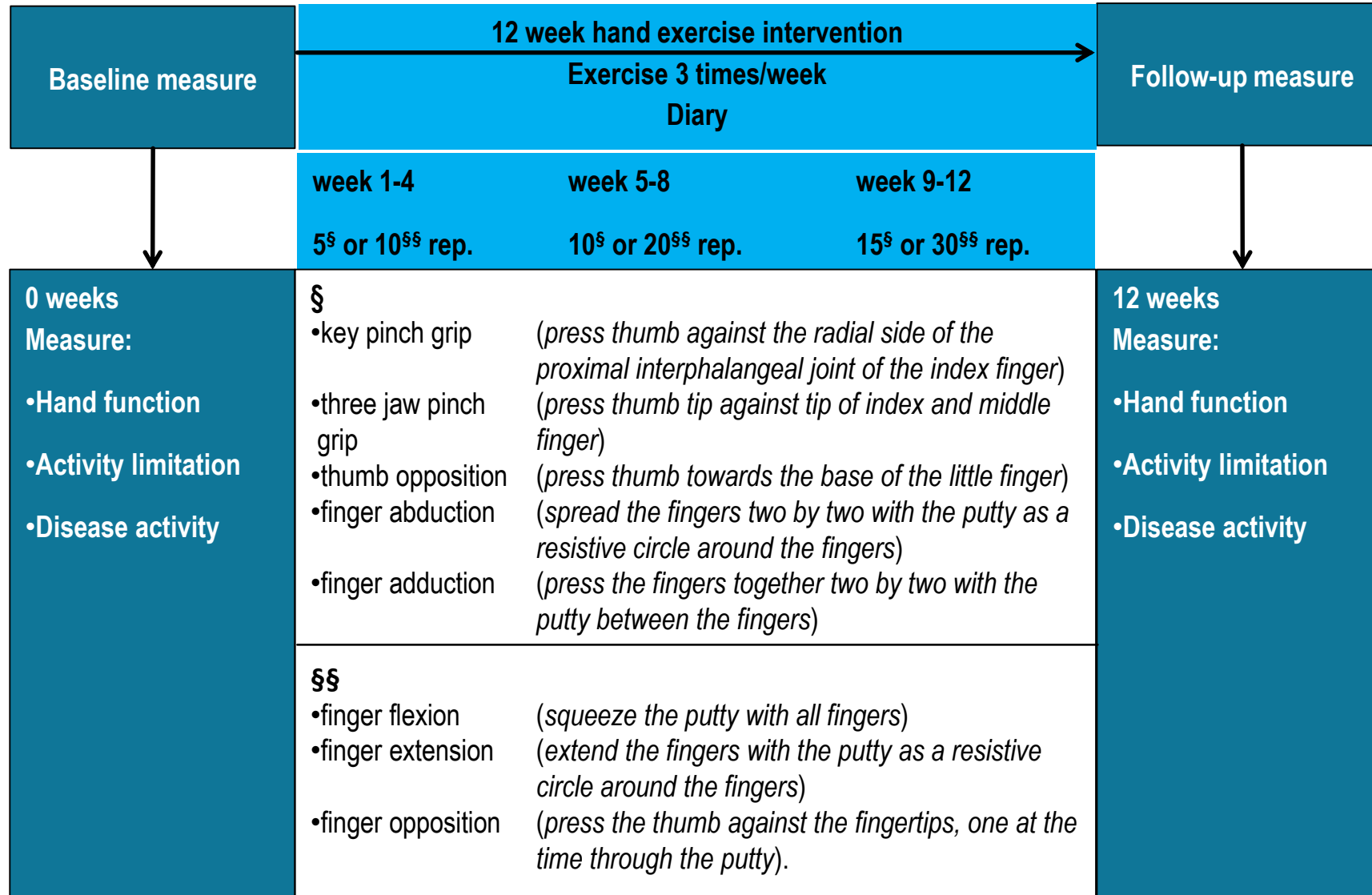
Differences in hand function in subtypes of myositis

- ▶ Polymyositis and Dermatomyositis
 - ▶ Reduced grip strength
 - ▶ Present in the late phase of the disease
 - ▶ Reduced already in the beginning of the disease
 - ▶ Women had approximately 71% and men 60%
 - ▶ Associated to domestic activities and Quality of Life
- ▶ Inclusion Body Myositis
 - ▶ Reduced strength in finger flexors → reduced ability to move fingers
 - ▶ Reduced dexterity
 - ▶ Women had approximately 42% and men 30%
 - ▶ Associated to daily activities and Quality of Life

Hand exercise intervention in PM and DM

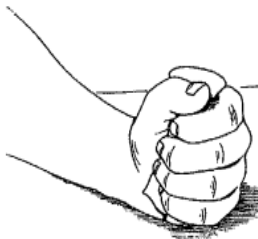


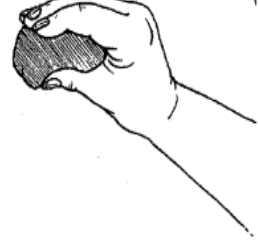
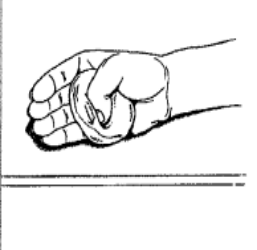


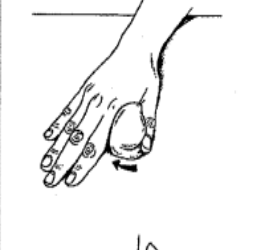
- ▶ To develop a 12-week hand exercise intervention for persons with PM and DM and evaluate
 - ▶ Adherence
 - ▶ Participants opinion of programme design and overall feasibility
 - ▶ Effect on hand function and activity limitation after the intervention

Outline of the study



This is the hand exercise program that was used in the study for people with PM or DM.

After input from participants two of the exercises were deleted because they were too difficult to perform

 <p>1</p>	 <p>2</p>	 <p>3</p>
<p>10</p> <p>Krama klossen. Håll kvar en stund.</p>	<p>10</p> <p>Lägg degen som en ring runt alla fingrarna och tumme. Drag isär ringen.</p>	<p>5</p> <p>Placera degen mellan tummen och de övriga fingrarna. Tryck ihop tumme mot pekfinger, tumme mot långfinger osv.</p>
 <p>4</p>	 <p>5</p>	 <p>6</p>
<p>10</p> <p>Pressa tummen och 2-3 fingrar mot massan.</p>	<p>10</p> <p>Rulla degen till en kolv och placera den mellan tumme och lillfingrets bas. Tryck tummen genom degen mot lillfingerbasen.</p>	<p>5</p> <p>Gör en liten boll av degen och placera mellan ytterlederna på två fingrar. Pressa ihop med böjda fingrar.</p>
 <p>7</p>	 <p>8</p>	
<p>5</p> <p>Lägg en ring runt ytterleden på två fingrar som du håller ihop. Spreta sedan isär så kraftfullt du kan med böjda fingrar.</p>	<p>10</p> <p>Lägg handen på bordet med lätt böjda fingrar och handflatan ned. Placera en degen mellan tumme och pekfinger. Tryck ihop.</p>	

Evaluation of hand exercise in PM and DM

- ▶ 11 participants with PM or DM were included in the study
- ▶ Adherence was good (78-100%)
(acceptable adherence was $\geq 75\%$ (≥ 27 sessions)).
- ▶ 30 repetitions were too many and the program was too time consuming
 - ▶ Participants suggested 10-20 repetitions 2-4 days/week
- ▶ On a group level the three-jaw pinch-grip strength had increased (left hand)
- ▶ There were some individual improvement in hand function and activities

Conclusion

- ▶ A hand exercise programme seems to be feasible to use in persons with PM and DM, but the design of the programme needs to be further evaluated to offer improvements in hand function and activity performance

Hand exercise intervention in IBM

- ▶ Needed to use another methodology
 - ▶ Single subject design - participants act as their own control
 - ▶ Less number of participants are needed
 - ▶ Information about the exercise effect before and during the intervention
 - ▶ Each participant is their own control.
 - ▶ Two consecutive values that exceed the baseline (A-Phase) measures during the exercise period (B-Phase) is a “true” improvement

A- Phase 5 weeks			B-Phase 12 weeks					
Baseline assessments			Exercise assessments every other week					
			Hand Exercise 5 days/week in 12 weeks. The participants were offered to exercise at the hospital once/week.					
Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 17
Grip strength	Grip strength	Grip strength	Grip strength	Grip strength	Grip strength	Grip strength	Grip strength	Grip strength
Pinch grip	Pinch grip	Pinch grip	Pinch grip	Pinch grip	Pinch grip	Pinch grip	Pinch grip	Pinch grip



This is the hand exercise programs that were used in the study for people in IBM. Both mobility and strengthening exercise was performed



Karolinska Universitetssjukhuset
Träningsprogram

Utfärdat för : malin regardt

Rörelseträning Myositis

Datum : 2010-10-13

Böj handleden uppåt så långt det går och sänk sakta ned.

Upprepa ____ ggr.



© PhysioTools Ltd

Böj och sträck fingrarnas ytter- och mellanleder
Upprepa ____ ggr.



© PhysioTools Ltd

Böj och sträck fingrarnas mellan- och grundleder
Upprepa ____ ggr.



© PhysioTools Ltd

Böj och sträck fingrarnas ytter- mellan- och grundleder
Upprepa ____ ggr.



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2010-10-13 Träningsprogram

Håll armbågarna intill kroppen. Vänd handflatan mot bordet. Vänd sedan handflatan mot taket utan att röra i armbågsleden. Övningen tränar upp underarmens vridrörelse.

Upprepa ____ ggr.



© PhysioTools Ltd

Vila lillfingersidan mot bordet. För isår och ihop fingrarna. Denna övning tränar och stärker musklerna inne i handen.

Upprepa ____ ggr.



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Möt tummen med fingertopparna i tur och ordning. Bilda runda ringar. Sträck på fingrarna mellan övningarna.

Tränar tummen och fingrarnas rörlighet.
Upprepa ____ ggr.



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Vila lillfingersidan mot bordet. För tummarna långsamt i en halvcirkel uppåt mot taket, innåt mot varandra och ned mot lillfingers bas. Denna rörelse tränar tummens olika muskelgrupper.
Upprepa ____ ggr.



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KAROLINSKA
Forskningsinstitutet

IBM Handträningsstudie

Utskrivet av:
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7-Aug-2017



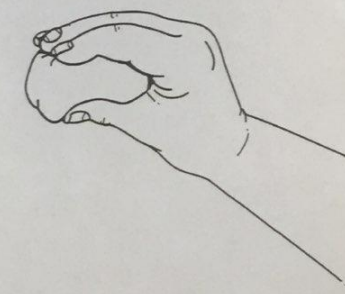
Krama degen med alla fingrarna och tumme. Upprepa 15 gånger



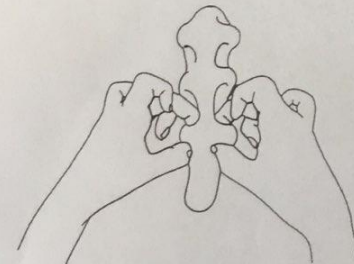
Rulla degen till en kolv och placera den mellan tumme och lillfingers bas. Tryck tummen genom degen mot lillfingerbasen. Upprepa 10 gånger



Placera degen mellan tummen och de övriga fingrarna. Tryck ihop genom massan tills fingertopparna möts. Upprepa 15 gånger.



Pressa tummen mot pekfinger och långfinger. Upprepa 10 gånger



Lägg degen som en kolv på bordet. Nyp ihop degen med tumme/pekfinger, tumme långfinger. Forma ett O med fingrarna genom att böja i fingerleder och tumleder. Upprepa 10 gånger



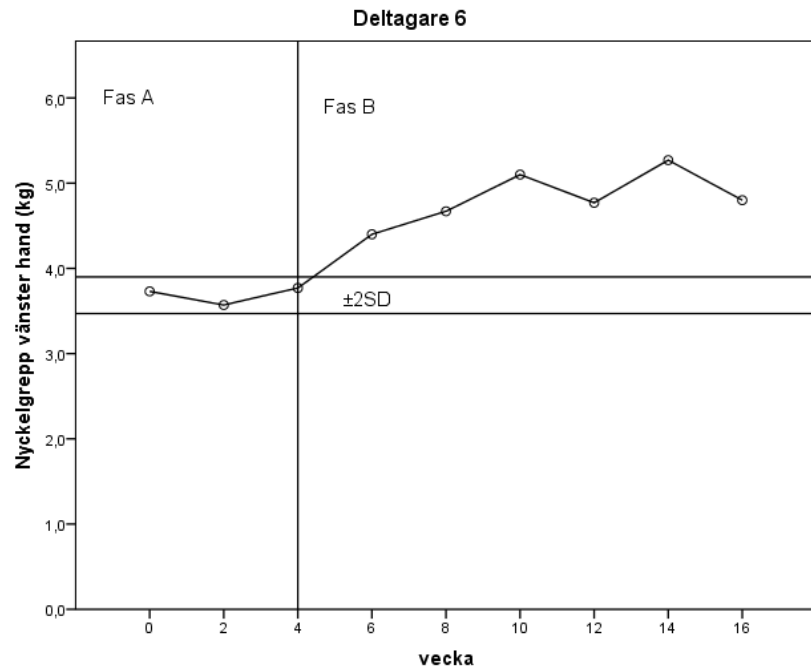
Tryck försiktigt och lägg den andra handen över. Dra fingrarna genom degen. Upprepa 10 gånger

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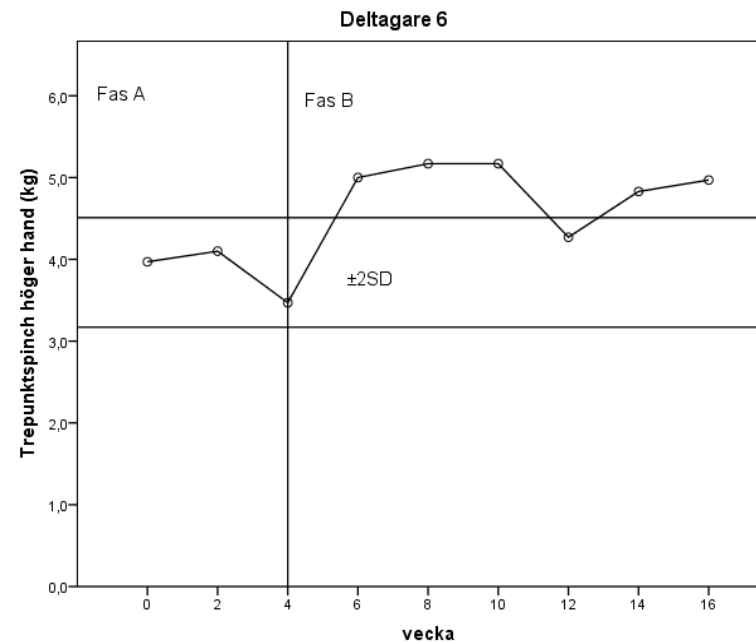
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Evaluation of hand exercise in IBM

- ▶ 9 participants with IBM were included in the study
- ▶ Examples of the results
 - ▶ Improvements in key and three jaw pinch grip strength



Key pinch grip strength left hand



Three jaw pinch grip strength right hand

Evaluation of hand exercise in IBM

- ▶ Few improvement regarding hand function (grip strength and pinch grip strength)
- ▶ No one got worse indicating that it is safe to do hand exercise
- ▶ In retrospect there are space for improvement in the method

- ▶ The participants were asked to name activity areas they wanted to improve
 - ▶ Six of nine participants improved in there performance or satisfaction in their hand related activities
 - ▶ Indicating the need to also include training in activities.

Hand exercise

- ▶ Important to do both mobility exercise and strength exercise
 - ▶ In polymyositis and dermatomyositis we have not seen so much limitation in joints, but it is important to check
 - ▶ Perform mobility exercise ones a week
 - ▶ Perform strengthening exercise ones a day
 - ▶ In inclusion body myositis limitation in joint mobility may occur due to muscle weakness
 - ▶ Important to both passively and actively exercise joint mobility
 - ▶ Perform mobility and strengthening exercise ones a day

Mobility exercise



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1) Lift your wrist,
hold.
Repeat 5-10 times



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2) Flex the finger
joints
Repeat 5-10 times



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3) Flex the finger
joints
Repeat 5-10 times

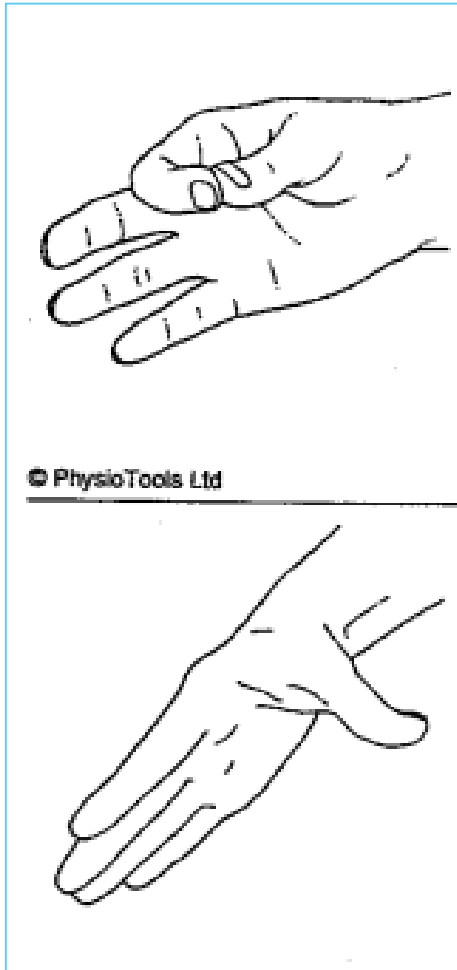


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4) Make a fist
Repeat 5-10 times

Mobility exercise



5) Make a circle with the thumb and the index finger
Repeat 5-10 times

6) Move the thumb up in a wide circle
Repeat 5-10 times

Strengthening exercise

- ▶ Chose a ball or a dough that gives enough resistance
- ▶ After performing the whole program the perceived exertion according to Borg should be on at least “somewhat hard” (4) or “hard” level (5)
- ▶ It is important that you can flex the joints in the ball or dough
- ▶ DO NOT overstretch the joints

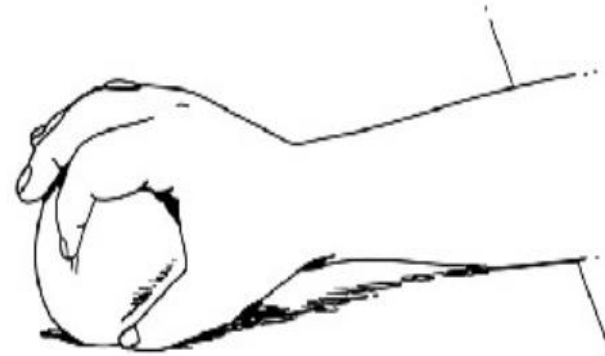
Borg scale of exertion

Rating	Descriptor
0	Rest
1	Very, Very Easy
2	Easy
3	Moderate
4	Somewhat Hard
5	Hard
6	-
7	Very Hard
8	-
9	-
10	Maximal

Strengthening exercise

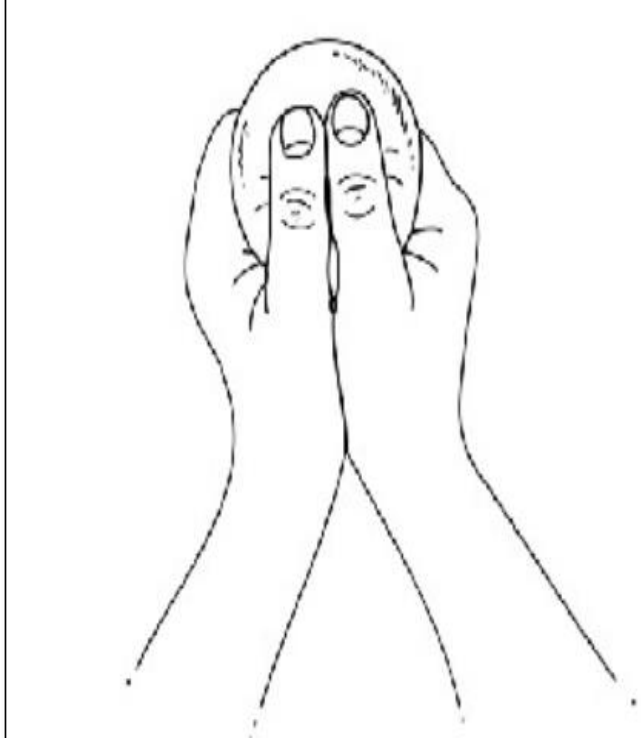


1) Squeeze the ball or the dough, flexing all fingers and thumb
Repeat 10-15 times

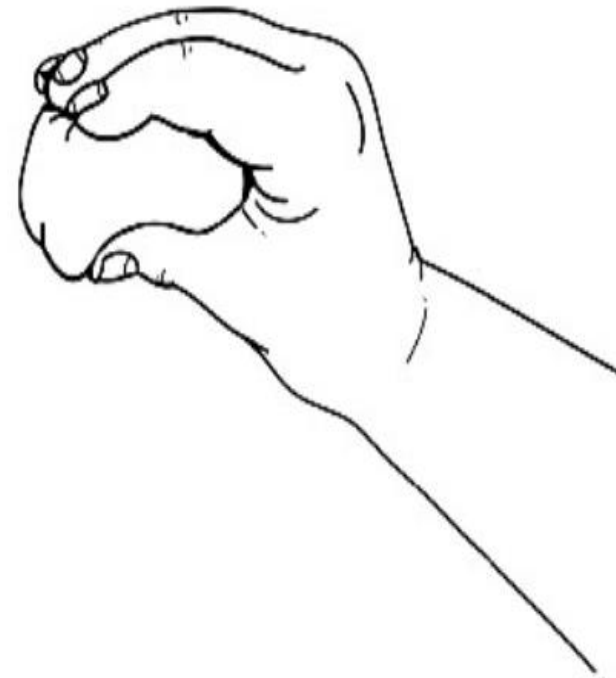


2) Press the thumb towards the fingers one at the time and try to make circles
Repeat 5-10 times

Strengthening exercise

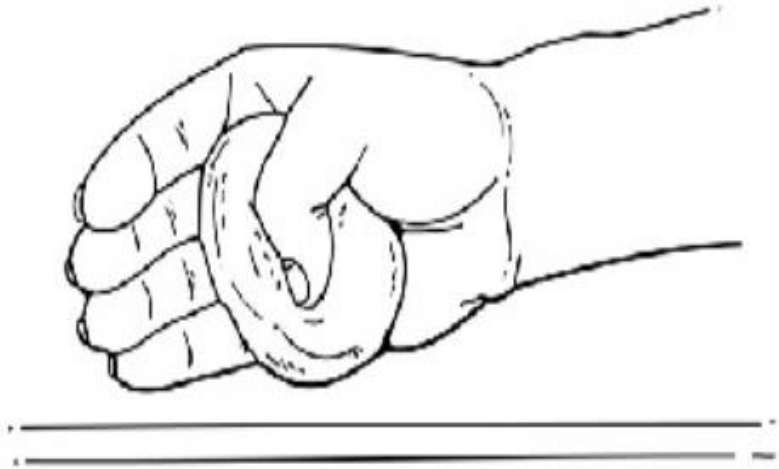


3) Press the thumb while holding the ball or dough (key grip)
Repeat 10-15 times



4) Press the thumb towards the index and middle finger trough the ball or the dough
Repeat 10-15 times

Strengthening exercise



5) Press the thumb through the ball or dough towards the base of the little finger
Repeat 10-15 times

Hand exercise

- ▶ Seems to be safe to do hand exercise
- ▶ Studies have showed some individual improvements
- ▶ No one in the studies decreased in hand function
- ▶ Better studies are needed

- ▶ Even though the improvements were limited in hand function the ability to do activities improved
 - ▶ Indicating that activity training may be useful as a complement