

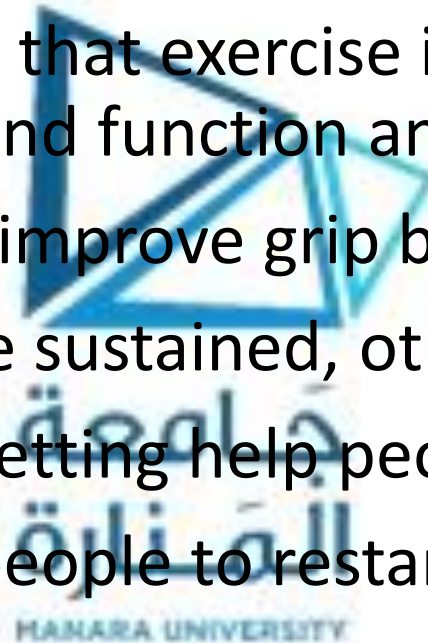
Rheumatology Intervention2



Physical Activity and Exercise

Hand Exercises

- Several trials demonstrate that exercise is effective in improving grip and pinch strength and hand function and reducing pain in RA.
- In hand OA, exercises can improve grip by up to 25% and reduce pain.
- However, exercise must be sustained, otherwise the benefits are lost.
- Exercise diaries and goal setting help people sustain exercising.
- Opportunities to remind people to restart, if they lapse, are essential.



A Home Hand Exercise Program:

1. Find a comfortable position: support the arm to avoid shoulder aching.
2. Warm up by moving the joints a little first and/or soaking in warm water for a few minutes.
3. Exercise 3 days the first week, increasing repetitions and number of days over 2–4 weeks, to 10 repetitions most/every day.

A Home Hand Exercise Program:

Range of Movement

- Wrist extension/flexion
- Wrist pronation/supination
- Tendon gliding exercise
- Radial finger walk

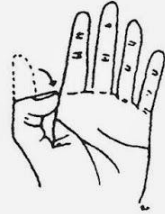


THUMB RANGE OF MOTION EXERCISES

Do each exercise 10 times, at least 3 sessions per day



Hold middle joint then bend & straighten tip joint.

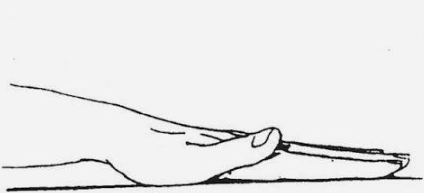


Bend thumb tip as far as possible.

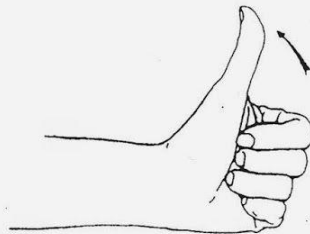


Actively bend thumb across palm as far as possible. Hold 3 seconds. Relax. Then pull thumb back into hitchhike position.

Touch tip of thumb to nail tip of each finger in turn, making an "O" shape. Repeat 10 times. Do 3 sessions per day.



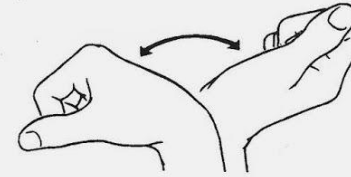
With palm on table, lift thumb up. Hold 3 seconds. Relax and lower thumb.



Bring thumb up and out in hitchhiker position. Hold 3 seconds.

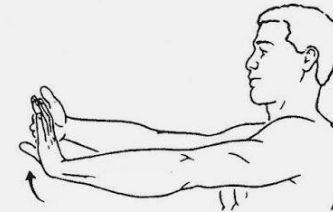
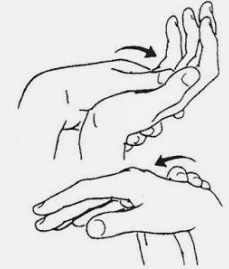
WRIST RANGE OF MOTION EXERCISES

Complete 10 repetitions of each exercise, 3 times a day.

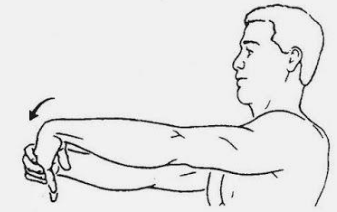


Actively bend wrist forward then back as far as possible.

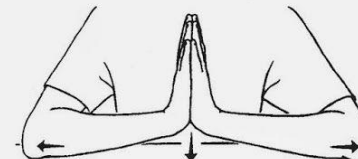
Grasp hand and slowly bend wrist until stretch is felt. Relax. Then stretch as far as possible in opposite direction. Be sure to keep elbow bent.



Keeping elbow straight, grasp hand and slowly bend wrist back until stretch is felt. Hold 5 seconds. Relax.



Keeping elbow straight, grasp hand and slowly bend wrist forward until stretch is felt. Hold 5 seconds. Relax.



Sitting with elbows on table and palms together, slowly lower wrists to table until stretch is felt. Keep palms together throughout the stretch. Hold 5 seconds. Relax.

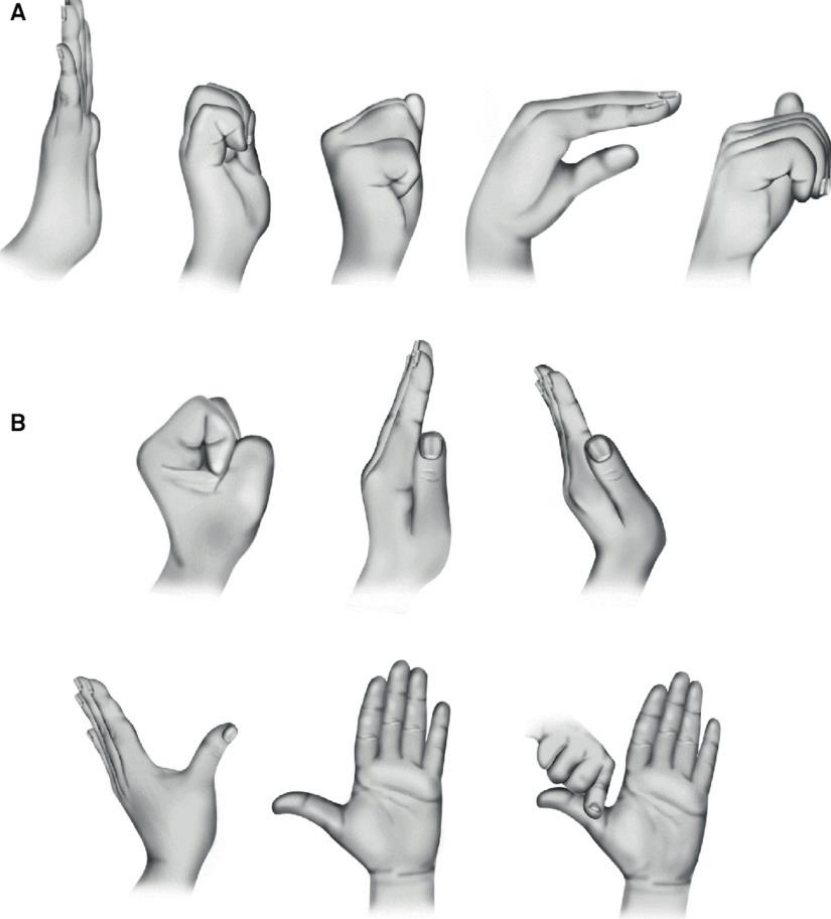


Gently bend wrist from side to side as far as possible.





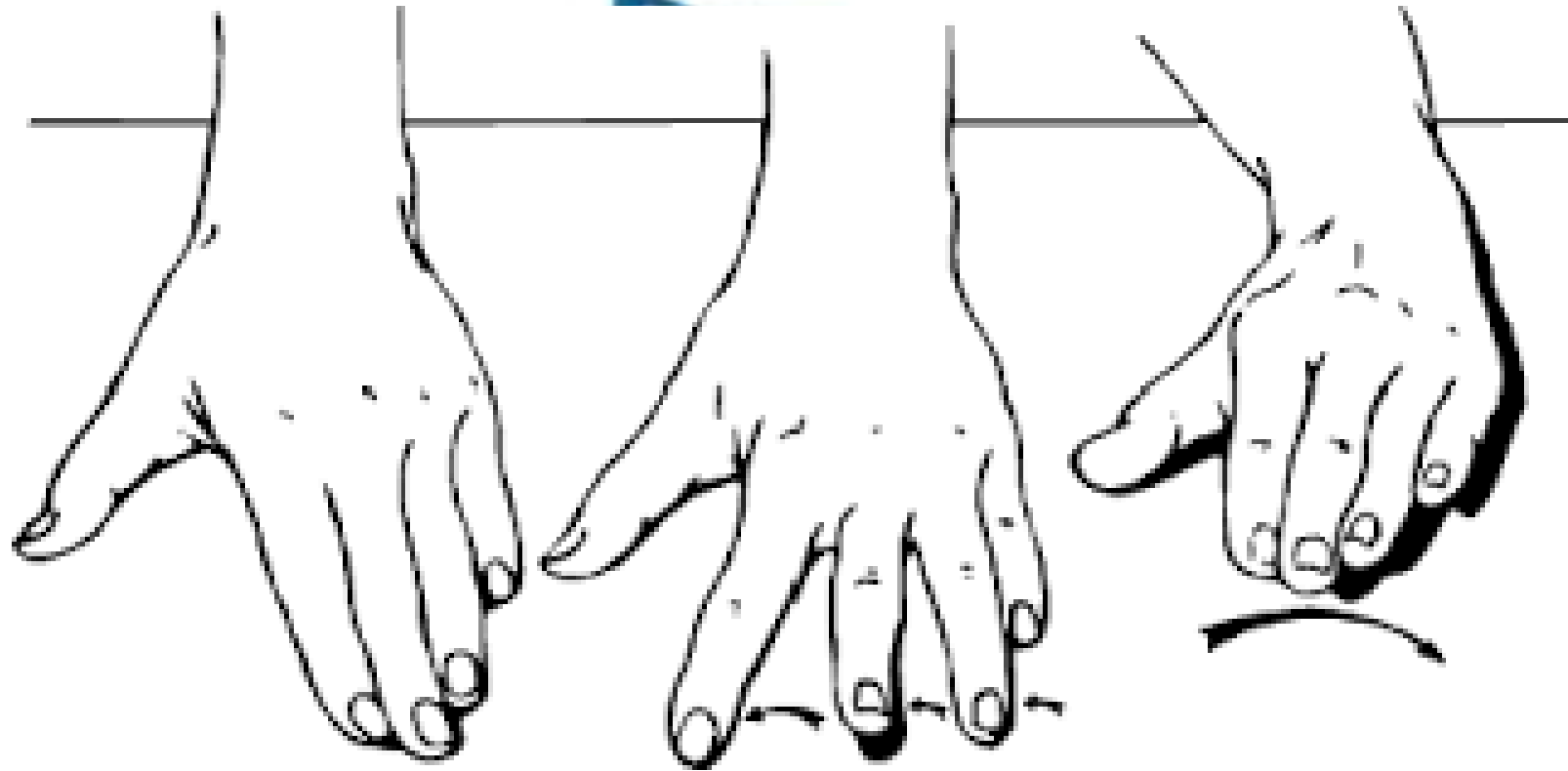
Tendon gliding exercise



A Home Hand Exercise Program:

Range of Movement

Radial finger walk



A Home Hand Exercise Program:

Range of motion

- Range of motion is the capability of a joint to go through its complete spectrum of movements. It can be passive or active.
- Passive range of motion can be defined as what is achieved when an outside force, such as a therapist, causes movement of a joint. It is usually the maximum range of motion.
- Active range of motion is what can be achieved when opposing muscles contract and relax, resulting in joint movement. Active range of motion is usually less than the passive range of motion.

- Range of motion therapy is beneficial in recovery from soft-tissue and joint lesions, maintaining existing joint and soft-tissue mobility, minimizing the effects of contracture formation, assisting neuromuscular re-education, and enhancing synovial movement.
- Measurement of range of motion can be used to evaluate available motion, determine joint stability, and determine soft-tissue elasticity as well as response to therapy over time.
- Active ROM is the motion of a joint that may be achieved by active muscle contraction. In addition to increasing strength, coordination between muscle groups is necessary because the guidance of assisting the patient through ROM is no longer provided.

- As the patient improves ROM of a joint, it is helpful to continue to perform passive ROM and stretching to achieve as complete ROM as possible, and then perform active ROM through this increased motion to emphasize more complete use of the limb.



A Home Hand Exercise Program:

Muscle Strength and Dexterity Exercise

Five minutes initially, gradually increasing to 10–15 minutes.

- Gently knead and squeeze
- Push fingers into dough and push out straight
- Pinch off dough with each finger/thumb in turn
- Roll into a sausage (two hands)
- Form a “ring doughnut” from the sausage. Put the fingers/thumbs in the hole; stretch out.
- Use an elastic band over fingers and thumb and stretch.
- Grip a 0.5-L (16.9-fl oz) drink bottle (with a “waist” filled with water or sand). Support the forearm. Lift bottle up and down slowly, first with palm facing down 10 times, and then with the palm facing up 10 times.



Finger Spread



Fingertip Pinch



Power Grip



Flat Pinch



Finger Spread



Finger Extension

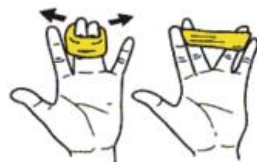


Finger Spread



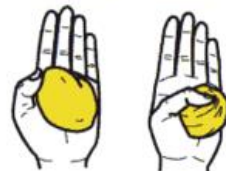
Full Grip

Scissor Spread



Wrap the Thinking Putty around two fingers and try to spread them apart.

Thumb Press



Put Thinking Putty in the palm of your hand. Push it with your thumb towards your small finger.

Thumb Extension



Bend your thumb and loop Thinking Putty around it. Try to straighten your thumb.

Thumb Pinch Strengthening



Squeeze the Thinking Putty between your thumb and the side of your index finger.

Thumb Adduction



Keep your fingers and thumb straight as you press Thinking Putty between your thumb and index finger.

Three Jaw Chuck Pinch



Using your thumb, index and middle finger, pull Thinking Putty upwards.

Finger Hook



Create a hook as you press your fingers into the Thinking Putty.

Full Grip



Make a fist while squeezing your fingers into the Thinking Putty.

Finger Pinch



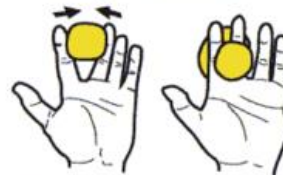
Pinch the Thinking Putty between each finger and your thumb.

Finger Extension



Bend your finger and loop Thinking Putty around it. Try to straighten your finger.

Finger Scissor

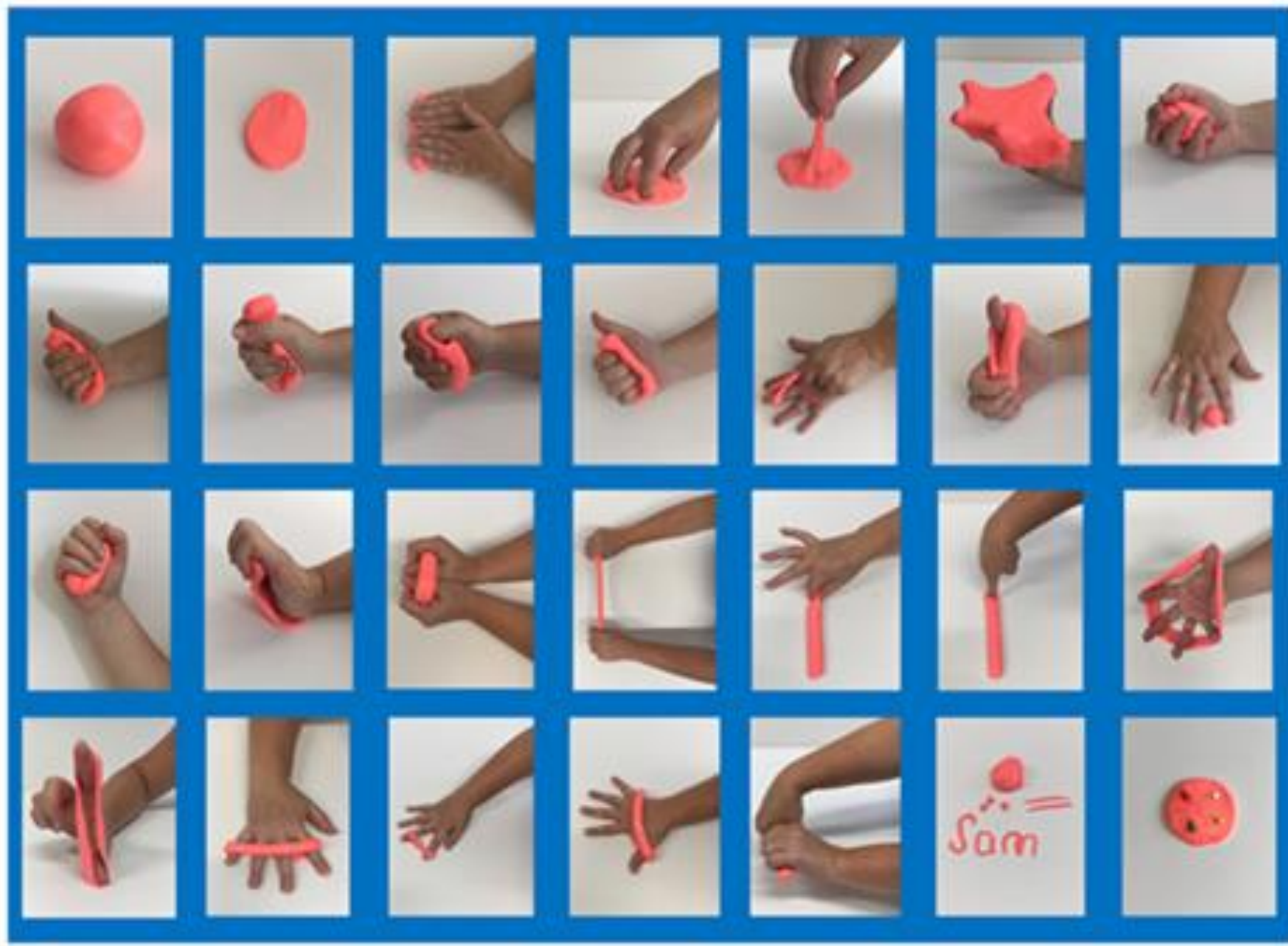


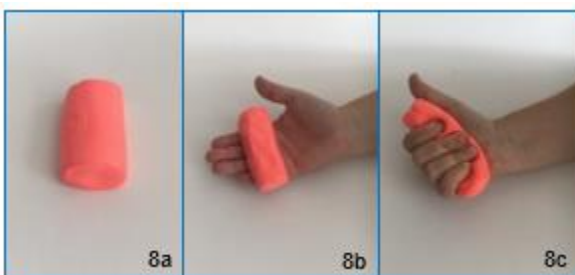
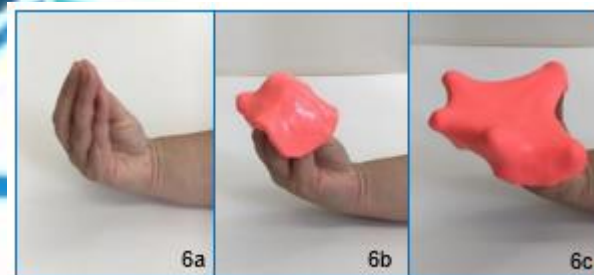
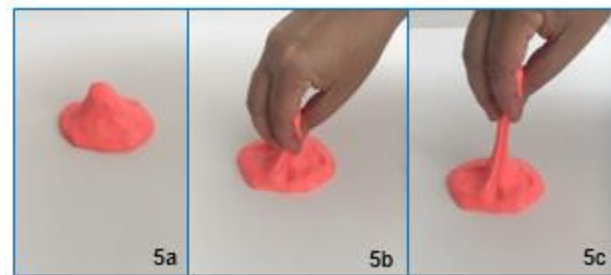
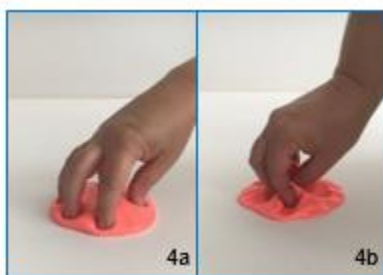
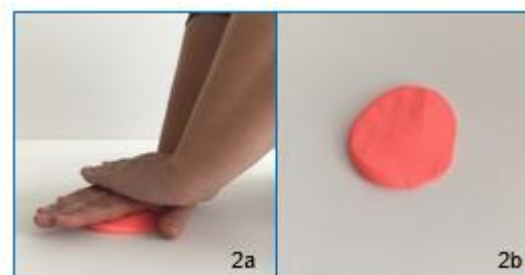
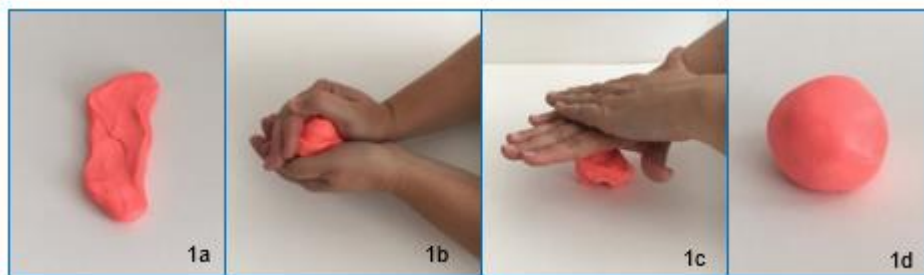
Take a one inch diameter ball of Thinking Putty and place it between your fingers.

Finger Spread

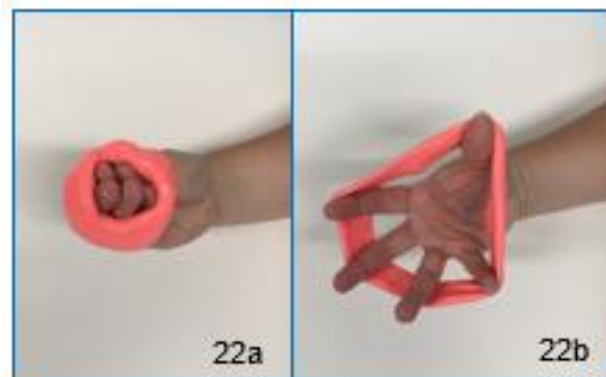
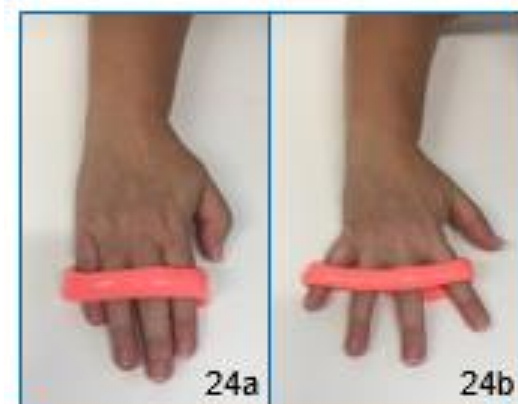
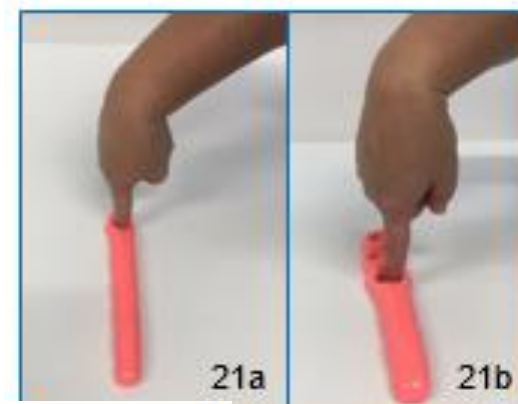
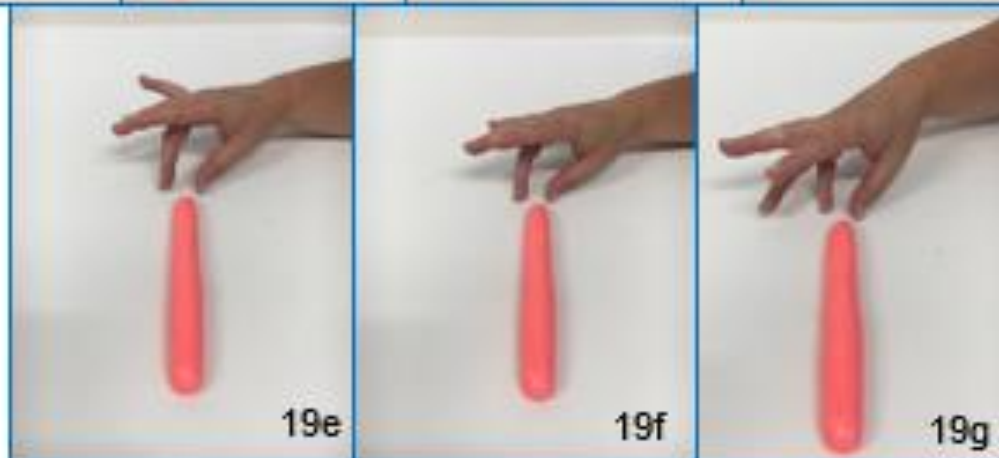
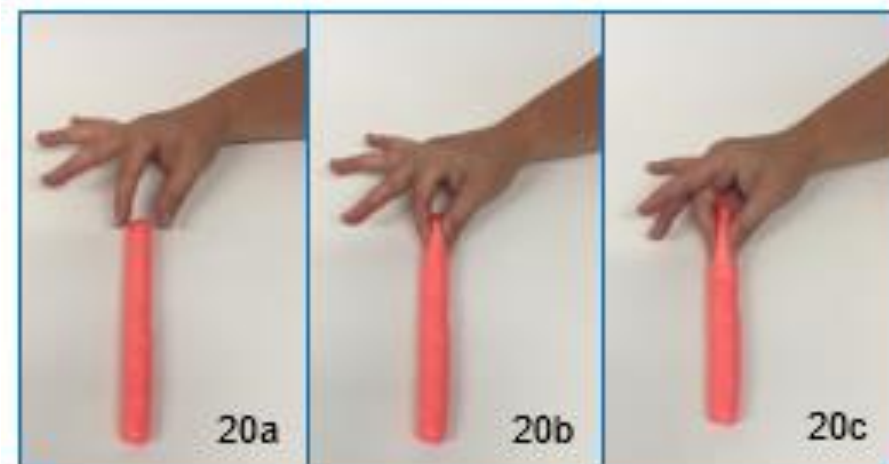
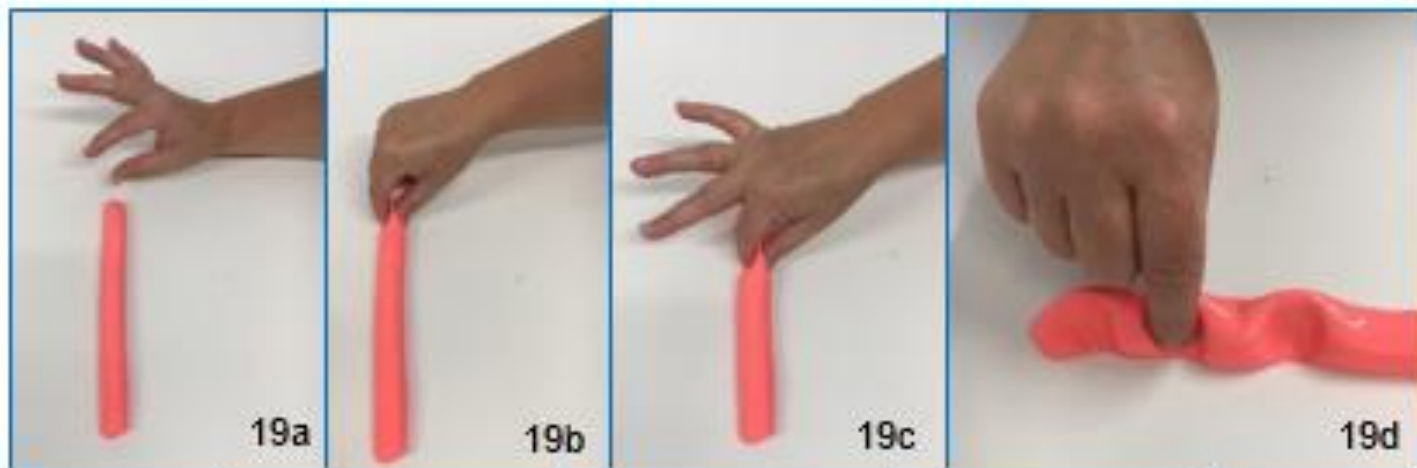


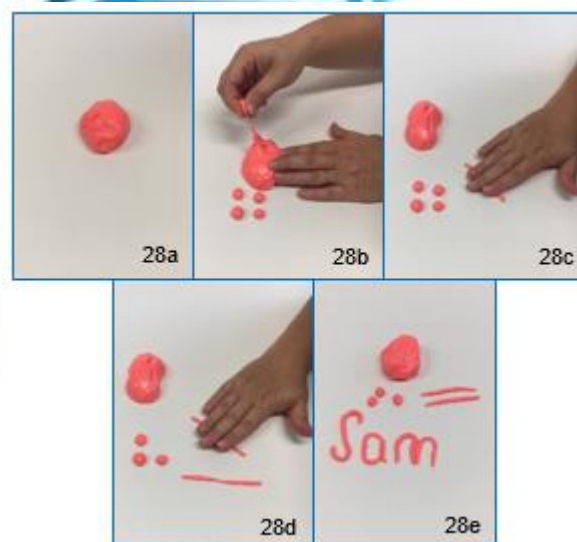
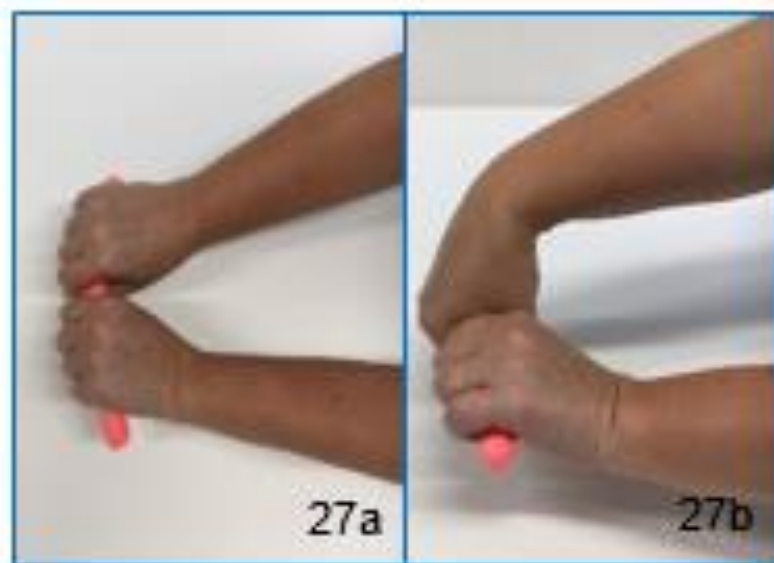
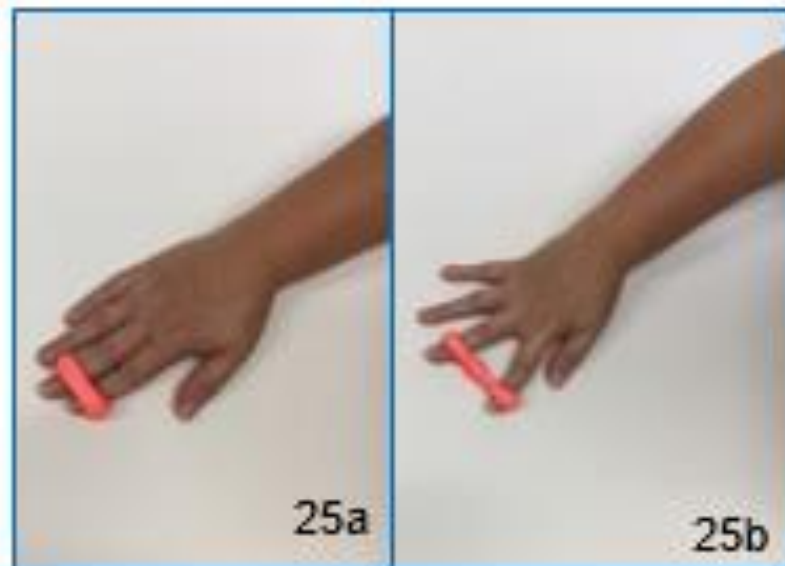
Spread a pancake of Thinking Putty over your fingers. Try to spread your fingers apart.

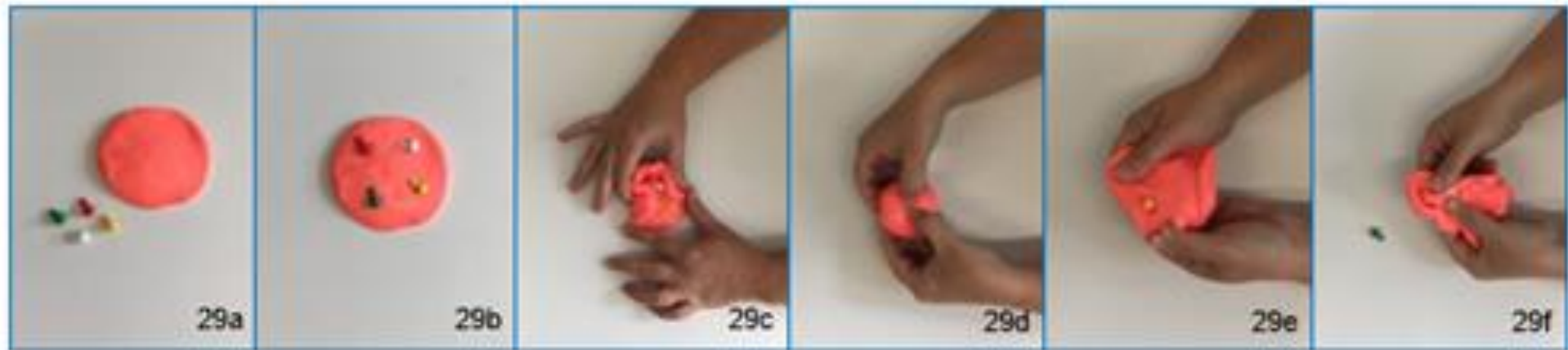












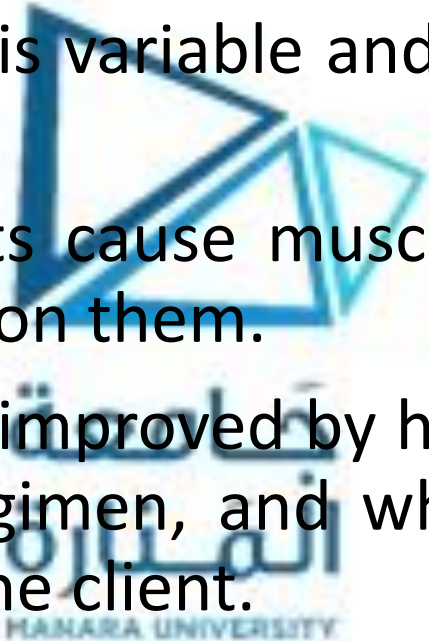


Hand Orthoses

Splinting is used to

- reduce local inflammation
- reduce soft tissue and joint pain
- correctly position joints and improve joint stability
- improve hand function



- 
- The logo of Manara University is centered in the background. It features a blue geometric design consisting of several overlapping triangles that form a larger, abstract shape. Below this graphic, the university's name is written in Arabic 'جامعة المنارة' and English 'MANARA UNIVERSITY' in a blue, sans-serif font.
- Adherence to splint wear is variable and affected by belief in efficacy and quality of fit.
 - People may believe splints cause muscle weakness and/or stiffness and therefore fear relying on them.
 - splint wear is significantly improved by how the therapist explains the splint's purpose, wear regimen, and whether he or she conducts a positive interaction with the client.
 - Hand exercises should be taught when providing splints, recommending the person does these most days.

Static Resting Splints

- In RA, resting splints reduce localized pain and inflammation by providing support in an anatomically correct position at rest.
- They can be worn at night and/or during day time rest periods.
- Trials give conflicting results.
- These splints are effective in established RA, but in early RA, acceptability may be less, or there may be only a short-term need until drug therapy reduces pain



Compression Gloves

- Compression gloves can be prescribed for nocturnal pain in RA, OA, and FM and to reduce pain during daytime activities, because they are easily worn in activity.
- that gloves reduce pain and stiffness in established RA.
- People with hand OA and FM also report reduced pain during night and day wear and improved function with day wear. There are no trials evaluating gloves in OA and FM.

Wrist Orthoses

- Wrist orthoses are widely used in RA, and many designs are available. A close fit, not impeding MCP and thumb movement, is needed. They can be worn for night time pain relief if the person has wrist but not MCP or IP pain.
- Their main aim is to reduce torque during heavy tasks involving the wrist and to stabilize the wrist in a functionally effective position (i.e., 10°–15° of extension).
- wrist orthoses are effective in reducing hand pain but not improving grip strength or hand function.
- Their benefit is largely when being worn, and clients regularly report they are helpful for heavier activities, such as ironing, gardening, housework, and at work.



Metacarpophalangeal Splints

- MCP splints either are small palm-based splints or may also have a wrist and forearm component.
- They aim to reduce medial force on the MCPs and maintain fingers in correct alignment.
- There is no evidence that they help prevent deformities because no trials have been conducted.



1



Lay splint flat with tag facing upward.

2



Place palm of hand over splint.

3



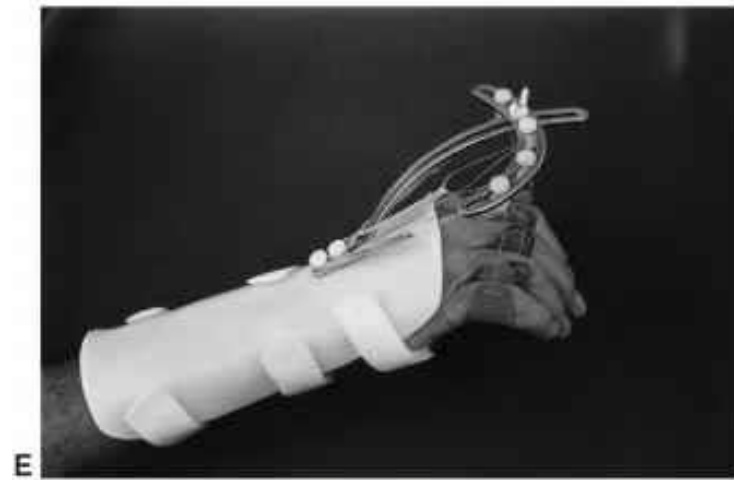
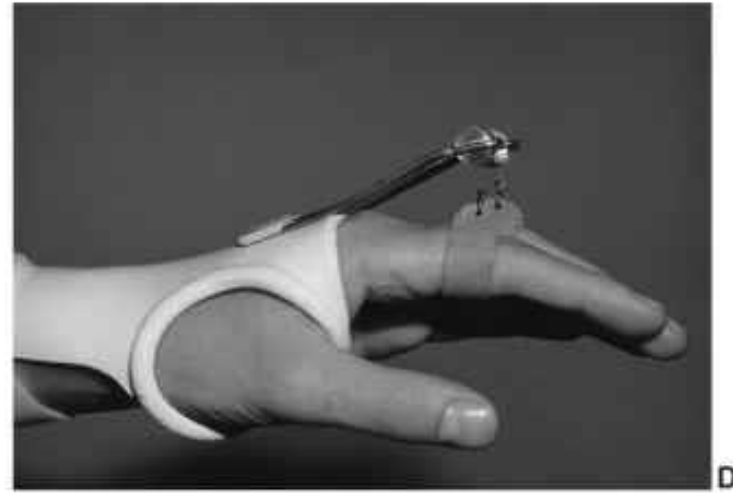
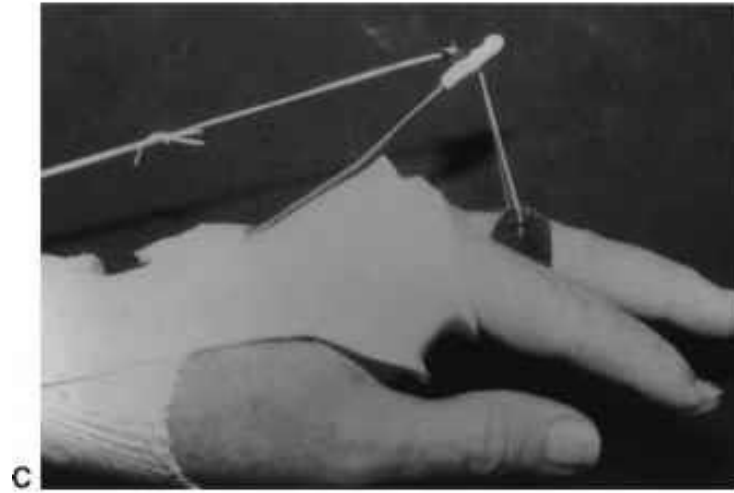
Wrap across back of hand and secure.

4



Wrap straps between fingers, pull diagonally, and secure.









Finger Splints

- Swan-neck splints apply three-point pressure around the PIP joint to prevent PIP joint hyperextension and subsequent PIP flexion.
- They can be made or bought in thermoplastics or made in silver. The latter are more popular and adherence is better.
- Trials have demonstrated that they improve dexterity and hand function, although not pain or grip strength.



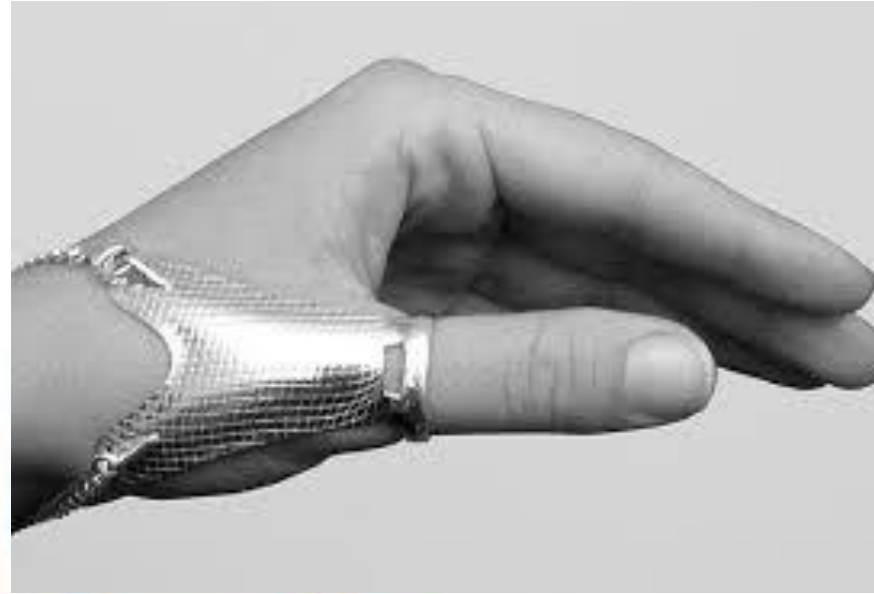


Thumb Splints

- In RA and OA, thumb splints aim to reduce pain and improve function and grip.
- They may be a short, hand-based splint immobilizing the CMC joint only or a longer hand/forearm splint if pain extends to the wrist.
- CMC joint splints for OA reduce pain and improve function and may help clients postpone or avoid surgery.
- Many prefer a short flexible splint to longer, more rigid versions.
- A trial in RA identified that CMC splints significantly reduced pain.







3D printed splint

Traditional splint



Stress Management

Stress contributes to pain, fatigue, and poor psychological status. Managing stress is a key component for FM management especially and is often best addressed first.

Explain the link between stress, pain, and fatigue and how stress can lower neurochemical levels, such as serotonin and noradrenaline, which help control sleep cycles and energy levels. In FM, these are already lowered, and stress makes the situation worse.

Stress management methods help increase neurochemical levels. Effective stress reduction approaches include mindfulness therapy, relaxation, and CBT, combined with condition education.

- Multimodal therapy is more effective.
- Undertaking additional training in such techniques can make a valuable contribution to OT, especially in FM.



Thank you

