

PHYSIOTHERAPY AND SCLERODERMA: HOW PHYSIOTHERAPY CAN HELP



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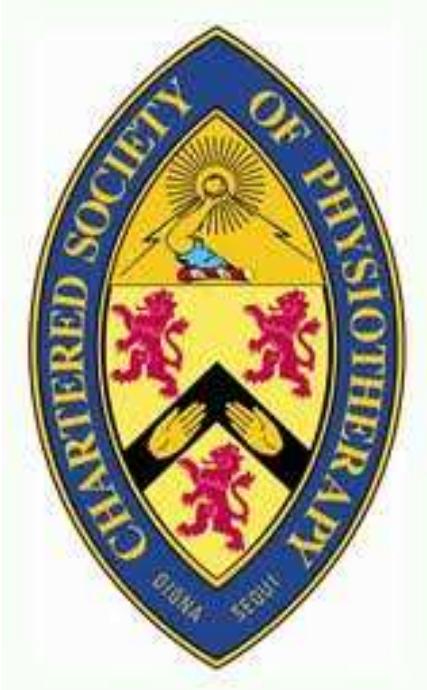
World Scleroderma Congress

Patient Programme

Sat 4th February 2012

WHAT IS PHYSIOTHERAPY?

- Physiotherapy helps restore movement and function to as near normal as possible when someone is affected by injury, illness or by developmental or other disability



PHYSIOTHERAPY FOR SCLERODERMA

- Referred to physiotherapy for the treatment of a variety problems.
- Approximately 90% of patients complain of musculoskeletal problems at some stage of the disease (*Alpiner et al. 1995*).

PHYSIOTHERAPY FOR SCLERODERMA

- Although physiotherapy techniques may not change the underlying pathological changes, or prevent all disability, **observations imply** [physiotherapy] may improve function by minimizing
 - contracture,
 - loss of strength and
 - decreased skin compliance.

Askew et al 1983, Br J Rheum 22, 224-32

RESEARCH PERFORMED TO DATE

Hand
stretches

Mouth
opening
stretches

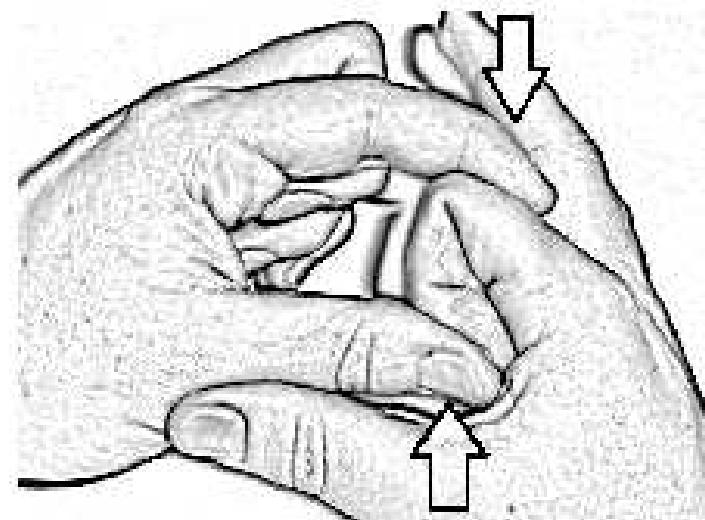
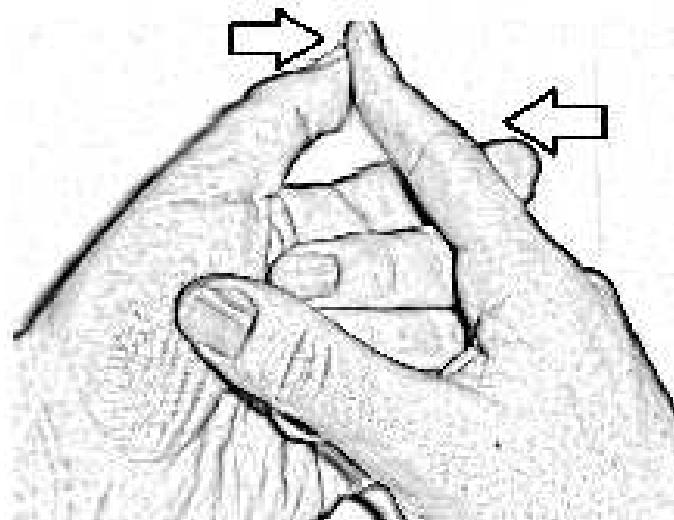
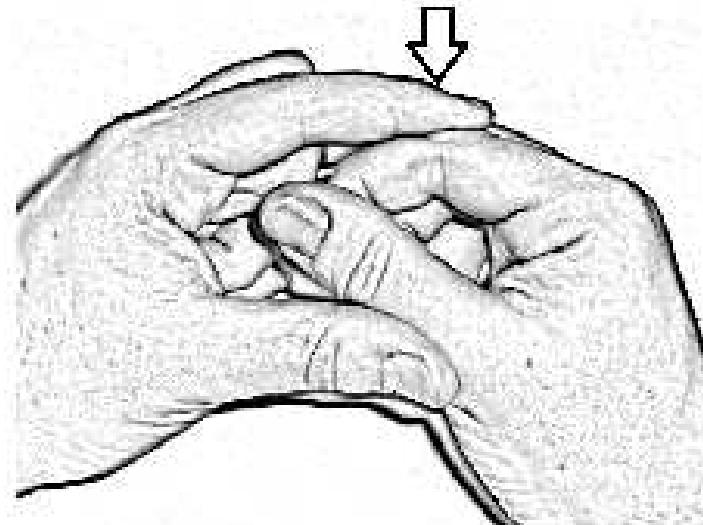
Heat
treatment
– wax
bath

General
fitness
work

FINGER STRETCHES: EXERCISE SHEET

EVIDENCE-BASED SELF-ADMINISTERED HOME PROGRAMME FOR FINGER STRETCHING

Hand
stretches



Individual fingers maintained in a stretch position using the opposite hand for 10 seconds. Repeated 3-10 times. Performing the stretches once daily. Exercises to be performed carefully especially if aches, local inflammation or ulcers occur. Since self-exercise is difficult for patients with severe contracture restrictions to perform, you may need to ask a family member or friend to assist

DRAFT COPY W. GREGORY (SRFT) Dec. 2011.

SOURCE ARTICLE: Mugii et al. 2006 The efficacy of self-administered stretching for finger joint motion in Japanese patients with Systemic Sclerosis. The Journal of Rheumatology 33 (8), p1586-92.

CASE STUDY 1

Mouth
opening
stretches

- 79 year old female
- Limited Systemic Sclerosis diagnosed March 2011
- Raynaud's phenomenon, mild sclerodactyly, probable upper gastrointestinal involvement, telangiectasias
- Weight loss
- Aware that her mouth had become smaller

CASE STUDY 1

- Physiotherapy Assessment

Mouth
opening
stretches

A



Maximal mouth opening
40mm



Tragus to wall
18cm

CASE STUDY 1

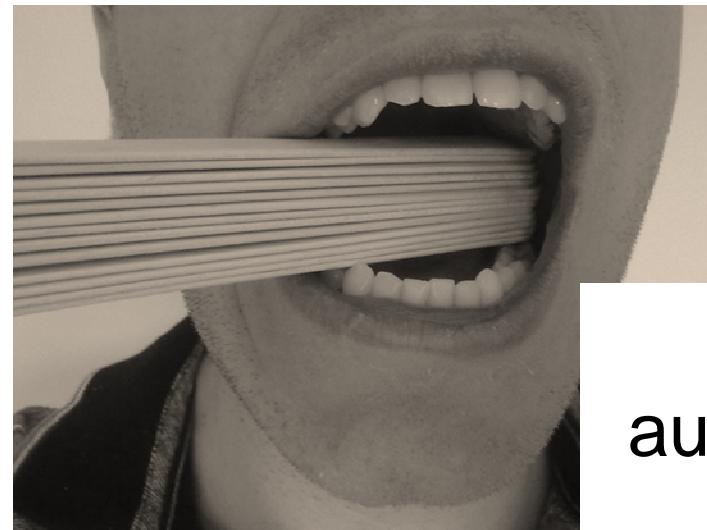
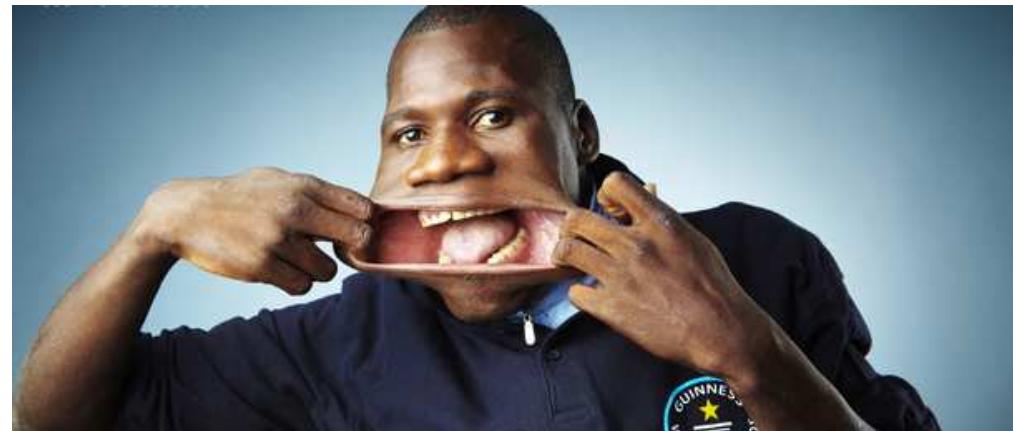
- Treatment plans:

Mouth
opening
stretches

(1) Postural
neck
retractions



(2) Self-assisted stretches



(3) Oral
augmentation
exercise

CASE STUDY 1

Mouth
opening
stretches

- **2 month review:**

Progressed to 12 sticks, 10 minute hold

MMO = 42mm, T2W = 16cm

- **3 month review:**

10-15minute hold, MMO = 45mm, T2W = 15cm

- **5 month review:**

Now up to 17 sticks, MMO = 46mm, T2W 15cm

CASE STUDY 2

Heat
treatment
– wax
bath

- 64 year old male
- 1998 he developed Raynaud's phenomenon with skin tightening and muscle weakness
- Diagnosed with limited cutaneous systemic sclerosis/ polymyositis overlap.
- He has sclerodactyly with digital pitting and telangiectasias

CASE STUDY 2

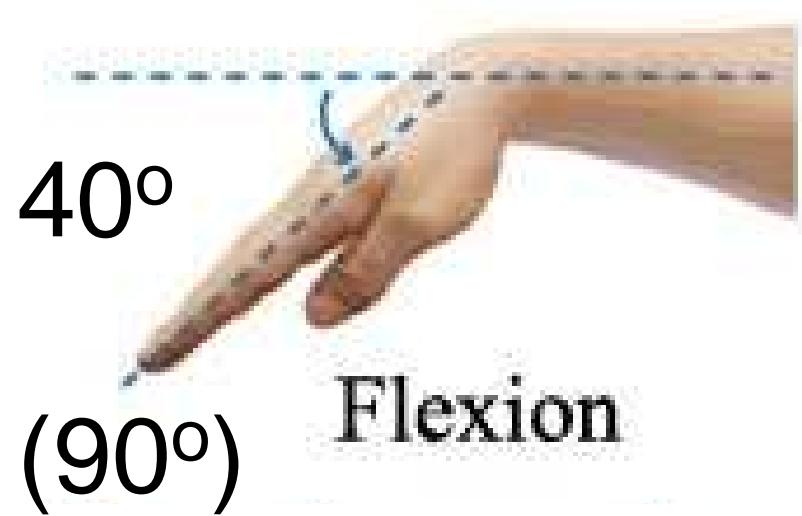
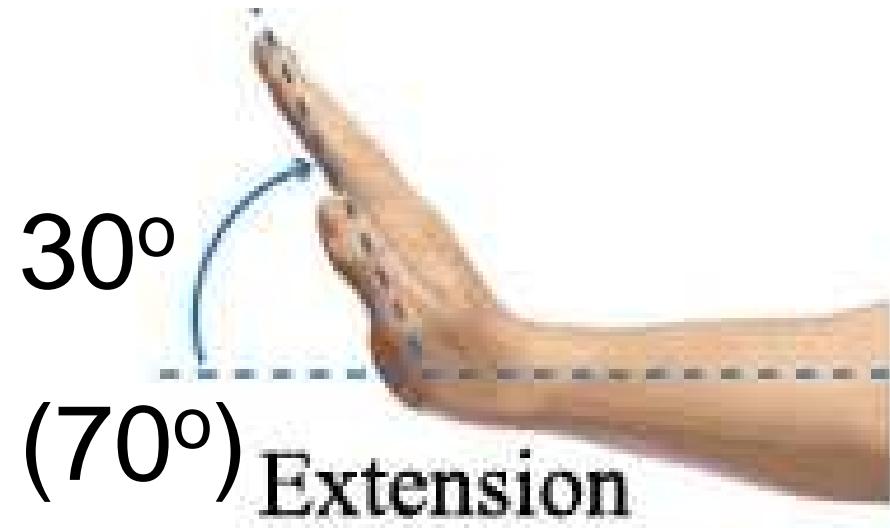
Heat treatment – wax bath

- Wrist fracture December 2009
- Presented at OT department in SRFT 9th Dec. 2010
- OT asked from physiotherapy assessment. Had been having physiotherapy at hospital where wrist operation was performed



CASE STUDY 2

Heat
treatment
– wax
bath



CASE STUDY 2

Heat
treatment
– wax
bath

Physiotherapy Treatment

(1) Wax
treatment
to heat
the area



(2) Stretches
and
mobilisations



e

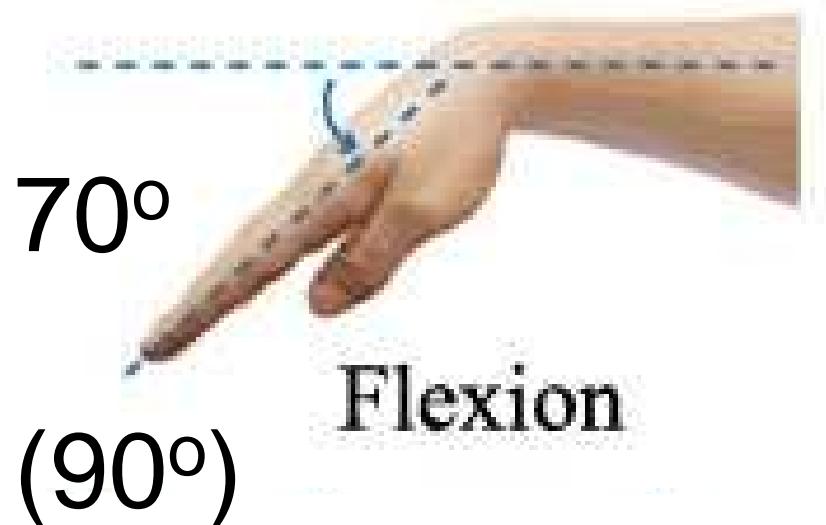
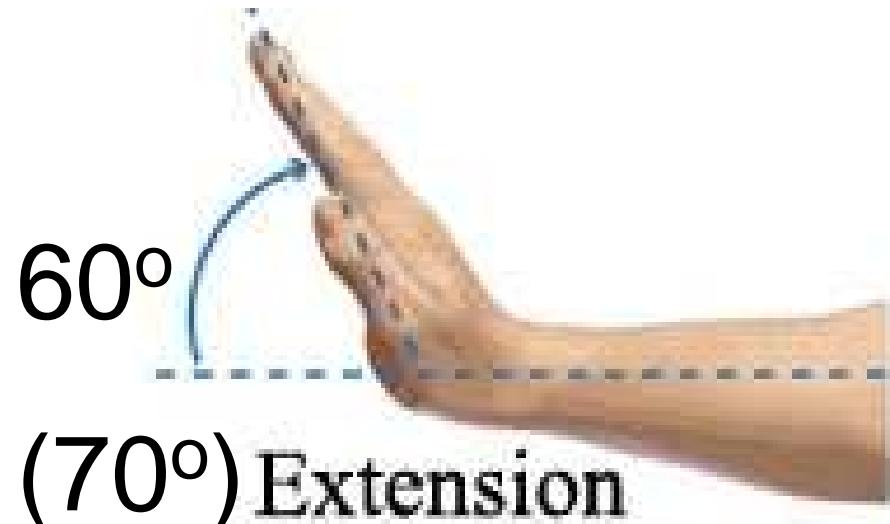


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CASE STUDY 2

Heat
treatment
– wax
bath

Outcome



Plus quality of life /
return to function

WAX BATH TREATMENT

History

- Used to diminish the symptoms of Rheumatology conditions since the early 1900s
- Hot paraffin can be safely applied to the skin at temperatures greater than other therapeutic modalities
...or with less heat transfer than other modalities applied at the same temperature



Harris and Millard 1955,
Rheum Dis Clin N Am 17, 1001-14,
Zeiter 1939, Arch Phys Therapy 20, 469-72

WAX BATH TREATMENT

Proposed Benefits

- Increases pain threshold
- Reduces joint stiffness and assists in mobilisation
- Helps prepare the body part for therapeutic treatment
- Reduces swelling and the consequences of swelling





CASE STUDY 3

General
fitness
work

- 56 year old female
- Diffuse cutaneous systemic sclerosis with inflammatory arthritis
- Diagnosed March 2009
- Pulmonary function satisfactory (FVC of 2.7 L, TLCO 86% predicted)

CASE STUDY 3

General
fitness
work

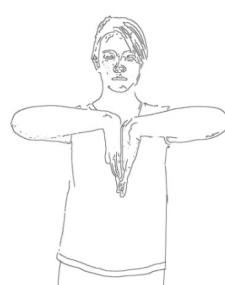
- Physiotherapy assessment Jan 2010
 - Slightly limited ankle ROM
 - Limited elbow and shoulder ROM
 - Particularly limited wrist ROM (flex 25, ext 15)
 - Poor hand movement and strength



CASE STUDY 3

General
fitness
work

Physiotherapy / Home treatment



(1) Regular stretching



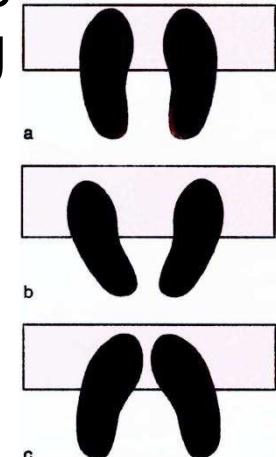
(2) Heat



(3) Pacing

(4) "Keep Moving"

(5) Tennis coach encouragement, modified equipment (lighter racquet, smaller handle size), altered grip position, swing and foot positioning training



CASE STUDY 3

General
fitness
work

Outcome

Improved mobility

Improved grip strength



GENERAL FITNESS WORK

Improved fitness is a realistic goal for all:

Oliviera et al. 2009:

21 Scleroderma patients
8 week, 2 x weekly exercise session
monitored treadmill
improved cardiovascular fitness levels / aerobic capacity.



Antonioli et al. 2009

16 participants
daily 30 minute exercise programme for 2 weeks.
better scored quality of life and found they were less
exerted doing the same exercises.

Shoemaker et al. (2009)

6 weeks of 3 x times per week
monitored exercise bike work (>50% of peak workload)
two subjects improved at very similar rates and levels

TAKE HOME MESSAGES

Stretch

- Movements can improve
- Regular, and hopefully self-performed

Strength

- Can return / be improved
- Ensure combined with stretches

Fitness

- Many options, find a passion
- Breathing issues not a true limit

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- Arthritis Research UK educational grant



- The people with Scleroderma attending Salford Royal

QUESTIONS?



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EXTRA INFO ON FOLLOWING SLIDES

WAX BATH TREATMENT

Askew et al (1983) single treatment session of wax (20 minutes), friction massage and range of movement exercises. Compared to control significant improvement in ROM, skin compliance and function.

Pils et al. (1991) 12 sessions of wax treatment then discontinued by half the group, on re-assessment there was no difference between groups.

Sandqvist et al (2004) other hand as control. Finger, thumb and wrist movement improved perceived stiffness and elasticity also improved.

Mancuso and Poole (2009) 8 weeks of daily wax and hand exercises for 3 patients found improvements in grip, pinch and joint motion. Only minimal detectable changes for the timed scores from the hand function items

FACIAL STRETCHES

Oral Surgery

Naylor et al (1984) for 3 months, six facial exercises for two sets of five stretches daily and the intervention group performed some auto-assisted mouth stretches and a new oral augmentation exercise. Control group improved maximal mouth opening by 3.0mm, intervention group by 5.6mm



Pizzo et al (2003), essentially a repeat of Naylor study, found significantly improved mouth opening

disability
and
rehabilitation

Poole et al (2010) again repeated benefits of Naylor study seen

NB. MMO ^ -> ^ speaking and eating ability and oral hygiene

GENERAL FITNESS WORK



Oliviera et al 2009 Twenty-one Scleroderma patients completed an eight week, twice weekly exercise session on a monitored treadmill. Lead to improved cardiovascular fitness levels / aerobic capacity.



Antonioli et al 2009 A daily 30 minute exercise programme for two weeks. The exercise programme included a warm up, respiratory exercises, treadmill and free walking, finger stretches, a cool down and something the authors called training of motor functions. The 16 participants had increased hand movement, better scored quality of life and found they were less exerted doing the same exercises.

GENERAL FITNESS WORK



Shoemaker et al. (2009) six weeks of three times weekly monitored exercise bike work. (50% of peak workload)

The two subjects improved at very similar rates and levels

in stark contrast to drug studies which have shown SSc patients with PAH respond suboptimally to treatments that have been shown to be effective for PAH where the individual does not have SSc (Le Pavec et al. 2010).

6-10% of SSc patients go on to develop PAH (Villela et al. 2008, Hachulla et al. 2009, Le Pavec et al. 2010).