

Is hand therapy more effective than usual care in maintaining function and improving coping in adults with hand arthritis?

Clinical bottom line

There are varying levels of evidence to support the use of hand therapy in Rheumatoid and Osteoarthritis. A tailored strengthening and stretching hand/wrist exercise programme has been shown to be a low cost beneficial intervention for adults with Rheumatoid Arthritis and is recommended by NICE (guideline CG79 updated December 2015). There is moderate evidence for hand exercise for adults with Osteoarthritis which demonstrates increased grip, improved function, range of motion (ROM) and pain reduction.

Why is this important?

Patients are referred for Occupational Therapy and Physiotherapy for hand therapy/ hand exercises to improve ROM and hand function.

Inclusion Criteria

Male and female adults 18 years +

Search

2005 -2016

Type of Study

	Description	Search terms
Population and Setting	Adults 18+ with hand arthritis	Hands Rheumatology RA OA Scleroderma SLE Scleroderma Polymyalgia Gout
Intervention or Exposure (i.e. what is being tested)	Hand exercises/mobilisation	Hand therapy Occupational Therapy Physiotherapy Physical Therapy Active Movement Hand Rehabilitation Mobilisation Passive Movement

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Comparison, if any	Usual care	Usual care No care/intervention
Outcomes of interest	Patient Satisfaction Improvement in coping strategies Increased /maintenance of function Increased/ maintenance of ROM Increased/ maintenance grip Decreased pain Reduced stiffness	Patient Satisfaction Improvement in coping strategies Increased /maintenance of function Increased/ maintenance of ROM Increased/ maintenance grip Decreased pain Reduced stiffness
Types of studies		RCT's

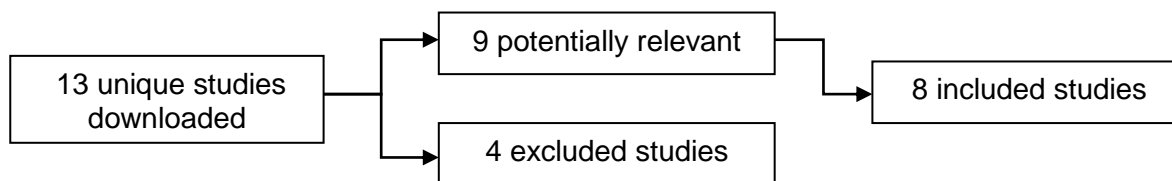
Routine Databases Searched

Clinical Knowledge Summaries, PEDro, BMJ Updates, Clinical Evidence, TRIP, Database, NICE, HTA, Bandolier, The Cochrane Library, Medline, Cinahl, Embase, PsycInfo, Professional websites. Joanna Briggs Institute, Web of science, Sports discuss and Pub Med

Date of search

January 2015 plus update April 2016

Results



First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Cima SR et al 2012	RA patients with hand deformity	20 women: Group 1: 13 patients. Exercise programme to improve hand grip and pinch strength and motor coordination - 2 sessions per week over 2	HAQ showed significantly improved functionality after 20 sessions in group 1. Significant increase in index finger/thumb, middle/thumb and little/thumb pinch grips at 10 & 20 sessions and in ring/thumb finger pinch at 20 sessions in group 1.	Limitations in overall sample size and differences in group size. Study suggests that hand strengthening exercises for individuals with RA deformities

CAT Lead: Carol Graham
Email: carol.graham@ssotp.nhs.uk

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		consecutive months. Plus home exercise once a day for 3 days a week (did not include all strengthening exercises and not completed on same day as treatment sessions). Group 2: 7 control – no treatment for hands	Significant changes in pinch grip in non-dominant hand.	are efficient and have a positive impact on capacity and functional performance
Dziedic et al, 2013	257 adults 50 years plus, with hand pain Explicit inclusion and exclusion criteria.	Randomised factorial trial: 4 areas: joint protection; hand exercises, joint protection and hand exercises combined and no joint protection or hand exercises (written advice only)	Primary Outcome: combined pain, stiffness and function using OARSI/OMERACT responder criteria at 6 months. Secondary outcomes: grip strength, arthritis self-efficacy for pain and Euro-Qol EQ-5D. At 6 months, joint protection participants were statistically significantly more likely to be classified as responders to treatment that those not receiving joint protection – not maintained at 12 months. No statistically significant difference between those receiving and not receiving hand exercises.	Well structured large-scale study Demonstrates evidence to support the role of Occupational Therapists using joint protection for older adults 50 years plus with hand OA. Further research required to evidence exercise
Valdes & Malrik, 2010	Systematic review of conservative interventions for OA hand	Joint protection & adaptive device provision, exercise & orthotics	Moderate evidence supporting: Hand exercise for: <ul style="list-style-type: none"> • increased grip • improved function • improved ROM • pain reduction Joint protection & provision of adaptive	Thorough search strategy. Used 2 people to mark studies using recognised tool and consensus where disagreement.

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			equipment for: <ul style="list-style-type: none"> • increased hand function • pain reduction Use of CMC orthotics for: <ul style="list-style-type: none"> • increased grip strength High to moderate evidence supporting use of Carpal Metacarpal orthotics to: <ul style="list-style-type: none"> • decrease hand pain • improve function 	
Wessel, 2004	Systematic review – reviewed by York university centre for reviews & disseminations	Effectiveness of hand exercises for RA	No strong evidence. Results suggest that appropriate exercises may have long term effects on strength & very short term effects on stiffness.	
Nasreen Jahan, 2013	Joaana Briggs Institute review (included Wessel 2004 review)	Hand exercises in RA	Hand exercises are an effective intervention for RA patients leading to better strength & function. Clinicians should rely on own knowledge & skill in exercise prescription to determine management goals & intervention for hand therapy.	More of a CAT than a study
Brorsson et al, 2009	Female RA patients of disease duration of minimum of 1 year with full finger extension	Comparison of hand exercises in 20 RA subjects and 20 healthy subjects & evaluation of external force measurement & ultra sound to measure change in grip over a 3-month period	Outcomes at 6 & 12 weeks. Hand force & GAT scores increased after 12 weeks of exercise in both groups. 12 weeks of hand exercise showed significant improvement in DASH score in RA group. Increase in both groups of cross sectional area of extensor digitorum communis (EDC) at 12 weeks but no improvement in muscle	Small numbers Reliability of Ex-it not evaluated in RA hand

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			thickness of EDC. There was no change in hand pain. Study supports clinical usefulness of short term hand exercise in RA patients.	
Rogers & Wilder, 2009	Hand OA in at least 1 joint with symptomatic hand OA as determined by physical function scale on AUSCAN in patients 50 years plus	Cross over trial to investigate effects of daily 16-week home exercise – exercises & sham treatments (non-medicated hand moisturising cream/lotion). Entire trial period was 48 weeks	Series of 9 self-administered hand exercises. Primary outcome: AUSCAN physical function sub-scale. Other outcomes: pain & stiffness subscales, dexterity & grip & pinch strengths. Modest improvement in hand strength (approx. 5%) but no significant improvement in self-reported physical functioning pain or stiffness compared to placebo. No effect on hand and finger dexterity.	High dropout rates during exercise phase. Authors suggest slower progression of repetitions of exercises with a day of rest between strength sessions may improve greater improvement in strength and thereby improve self-reported hand function.
Lamb et al, 2015	Randomised controlled trial to determine the effectiveness and cost effectiveness of individually tailored progressive exercises programme for the hands and arms in addition to best practice usual care in RA patients 17 NHS sites	Individually tailored progressive exercise programme for hands and arms in addition to best practice/usual care (including joint protection, education and where indicated, functional splinting). Exercise programme was added to usual care with the exercises (7 mobility and 4 strengthening /	490 patients were randomly assigned using a telephone service. 244 were allocated to & completed the exercise programme and 242 allocated & completed to usual care. Primary outcome: overall hand function subscale of the Michigan Hand Outcome Questionnaire (MHQ) at 12 months. Secondary outcome: other subscales of the MHQ- activities of daily living, pain, work performance, satisfaction and aesthetics. Results demonstrated that a tailored hand	Good quality study with large numbers. NICE guidelines were updated in December 2015 and reference this study

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		endurance exercises) completed at home for a minimum of 12 weeks.	exercise programme is a worthwhile, low-cost intervention as an adjunct to various drug regimens.	
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Summary

There are varying levels of evidence to support the use of hand therapy/exercise in RA and OA.

Results from the SARAH study (Lamb et al, 2015) demonstrated that a tailored hand exercise programme is a worthwhile, low-cost intervention as an adjunct to various drug regimens.

There is moderate evidence supporting hand exercise in OA for: increased grip, function and ROM and pain reduction.

There is no evidence regarding hand exercise for other rheumatology conditions.

Implications for Practice/Research

No change to current practice –i.e. continue use of hand exercises/therapy.

Further research is required on the effectiveness of hand therapy/exercise for those with Osteoarthritis and other rheumatological conditions.

What would you tweet? (140 characters)

NICE guideline recommends a tailored strengthening and stretching hand exercise programme for those with RA pain/dysfunction of the hands or wrists. Moderate evidence found for exercise for hand OA.

References

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