

ONLINE SUPPLEMENTARY DATA

METHODS:

Systematic literature review (SLR) of VAS/NRS pain and patient global assessment (PGA)

Studies that did not include VAS or NRS to measure pain or PGA were excluded as well as studies only including thumb base OA. Relevant manuscripts were also extracted from the SLR by Visser *et al.* for the purpose of this work. All retrieved titles and selected abstracts were reviewed by one reviewer (BK). A random sample of 100 titles was reviewed by a second reader (RW) with perfect agreement. Data extraction from all selected full-text manuscripts was done by one reviewer (RW). Psychometric features of the scales such as reliability, responsiveness, construct validity and clinical trial discrimination were extracted. For the assessment of reliability of a scale, repeated completion of data by the same group of patients during 1 study visit had to be available. Both cross-sectional and longitudinal studies were selected. For the assessment of responsiveness, longitudinal studies evaluating change of pain and/or PGA in hand OA measured by 1 or more instruments were included. Construct validity was based on studies comparing different instruments assessing pain or PGA beside VAS and/or NRS. Again, both cross-sectional and longitudinal studies were included. The assessment of clinical trial discrimination was performed by evaluating changes in pain and/or PGA between groups after the intervention being studied. Special attention was given to the explicit phrasing and other details of the accompanying question. Because of the heterogeneity of the studies with respect to the instruments, only descriptive analyses were performed.

SUPPLEMENTARY REFERENCES:

1. Aitken D, Laslett LL, Pan F, Haugen IK, Otahal P, Bellamy N, et al. A randomised double-blind placebo-controlled crossover trial of HUMira (adalimumab) for erosive hand Osteoarthritis - the HUMOR trial. *Osteoarthritis Cartilage* 2018 Mar 2 [in press].
2. Baltzer AW, Ostapczuk MS, Stosch D. Positive effects of low level laser therapy (LLLT) on Bouchard's and Heberden's osteoarthritis. *Lasers Surg Med* 2016; 48:498-504.
3. Barthel HR, Peniston JH, Clark MB, Gold MS, Altman RD. Correlation of pain relief with physical function in hand osteoarthritis: randomized controlled trial post hoc analysis. *Arthritis Res Ther* 2010;12:R7.
4. Bjurehed L, Brodin N, Nordenskiöld U, Björk M. Improved Hand Function, Self-Rated Health and Decreased Activity Limitations - results after a two month hand osteoarthritis group intervention. *Arthritis Care Res (Hoboken)*. 2017;70:1039-1045.
5. Brosseau L, Wells G, Marchand S, Gaboury I, Stokes B, Morin M, et al. Randomized controlled trial on low level laser therapy (LLLT) in the treatment of osteoarthritis (OA) of the hand. *Laser Surg Med* 2005; 36:210-219.
6. Chevalier X, Ravaut P, Maheu E, Baron G, Rialland A, Vergnaud P, et al. Adalimumab in patients with hand osteoarthritis refractory to analgesics and NSAIDs: a randomised, multicentre, double-blind, placebo-controlled trial. *Ann Rheum Dis* 2015;74:1697-1705.

7. Dilek B, Gozum M, Sahin E, Baydar M, Ergor G, El O, et al. Efficacy of Paraffin Bath Therapy in Hand Osteoarthritis: A Single-Blinded Randomized Controlled Trial. *Arch Phys Med Rehab* 2013; 94:642-649.
8. Dreiser RL, Gersberg M, Thomas F, Courcier S. Ibuprofen 800 Mg for the Treatment of Osteoarthritis of the Interphalangeal Joints of the Hand or Trapeziometacarpal Joint. *Rev Rhum* 1993;60:836-841.
9. Fioravanti A, Tenti S, Giannitti C, Fortunati NA, Galeazzi M. Short- and long-term effects of mud-bath treatment on hand osteoarthritis: a randomized clinical trial. *Int J Biometeorol* 2014; 58:79-86.
10. Gabay C, Medinger-Sadowski C, Gascon D, Kolo F, Finckh A. Symptomatic Effects of Chondroitin 4 and Chondroitin 6 Sulfate on Hand Osteoarthritis A Randomized, Double-Blind, Placebo-Controlled Clinical Trial at a Single Center. *Arthritis Rheum* 2011; 63:3383-3391.
11. Garfinkel MS, Schumacher HR, Husain A, Levy M, Reshetar RA. Evaluation of a Yoga Based Regimen for Treatment of Osteoarthritis of the Hands. *J Rheumat* 1994;21:2341-2343.
12. Grifka JK, Zacher J, Brown JP, Seriola B, Lee A, Moore A, et al. Efficacy and tolerability of lumiracoxib versus placebo in patients with osteoarthritis of the hand. *Clin Exp Rheumatol* 2004;22:589-596.
13. Gyarmati N, Kulisch A, Nemeth A, Bergmann A, Horvath J, Mando Z, et al. Evaluation of the Effect of Heviz Mud in Patients with Hand Osteoarthritis: A Randomized, Controlled, Single-Blind Follow-Up Study. *Isr Med Assoc J* 2017;19:177-182.
14. Hennig T, Haehre L, Hornburg VT, Mowinckel P, Norli ES, Kjekken I. Effect of home-based hand exercises in women with hand osteoarthritis: a randomised controlled trial. *Ann Rheum Dis* 2015;74:1501-1508.
15. Horváth K, Kulisch A, Németh A, Bender T. Evaluation of the effect of balneotherapy in patients with osteoarthritis of the hands: a randomized controlled single-blind follow-up study. *Clin Rehab* 2011;26:431-441.
16. Kanat E, Alp A, Yurtkuran M. Magnetotherapy in hand osteoarthritis: A pilot trial. *Complement Ther Med* 2013;21:603-608.
17. Kasapoglu MA, Altan L, Eroksuz R, OkmenMetin B. The Efficacy of Peloid Therapy in Management of Hand Osteoarthritis. *Ann Rheum Dis* 2017;76:974-974.
18. Keen HI, Wakefield RJ, Hensor EMA, Emery P, Conaghan PG. Response of symptoms and synovitis to intra-muscular methylprednisolone in osteoarthritis of the hand: an ultrasonographic study. *Rheumatology (Oxford)* 2010;49:1093-1100.
19. Kjekken I, Darre S, Smedslund G, Hagen KB, Nossun R. Effect of assistive technology in hand osteoarthritis: a randomised controlled trial. *Ann Rheum Dis* 2011;70:1447-1452.
20. Kortekaas MC, Kwok WY, Reijniere M, Huizinga TW, Kloppenburg M. Follow-up study of inflammatory ultrasound features in hand osteoarthritis over a period of 3 months: variable as well as constant. *Osteoarthritis Cartilage* 2014;22:40-43.
21. Kovacs C, Pecze M, Tihanyi A, Kovacs L, Balogh S, Bender T. The effect of sulphurous water in patients with osteoarthritis of hand. Double-blind, randomized, controlled follow-up study. *Clin Rheumatol* 2012;31:1437-1442.
22. Kvien TK, Fjeld E, Slatkowsky-Christensen B, Nichols M, Zhang Y, Proven A, et al. Efficacy and safety of a novel synergistic drug candidate, CRx-102, in hand osteoarthritis. *Ann Rheum Dis* 2008;67:942-948.
23. Lee W, Ruijgrok L, Boxma-de Klerk B, Kok MR, Kloppenburg M, Gerards A, et al. Efficacy of hydroxychloroquine in hand osteoarthritis: a randomized, double blind, placebo-controlled trial. *Arthritis Care Res (Hoboken)* 2018;70:1320-1325.
24. Moe RH, Garratt A, Slatkowsky-Christensen B, Maheu E, Mowinckel P, Kvien TK, et al. Concurrent evaluation of data quality, reliability and validity of the Australian/Canadian Osteoarthritis Hand Index and the Functional Index for Hand Osteoarthritis. *Rheumatology (Oxford)* 2010;49:2327-2336.

25. Moe RH, Grotle M, Kjekken I, Olsen IC, Mowinckel P, Haavardsholm EA, et al. Effectiveness of an Integrated Multidisciplinary Osteoarthritis Outpatient Program versus Outpatient Clinic as Usual: A Randomized Controlled Trial. *J Rheumatol* 2016;43:411-418.
26. Myrner JW, Johnson AW, Mitchell UH, Measom GJ, Fellingham GW. Topical analgesic added to paraffin enhances paraffin bath treatment of individuals with hand osteoarthritis. *Disabil Rehabil* 2011;33:467-474.
27. Neuprez A, Bruyere O, Maheu E, Dardenne N, Burlet N, D'Hooghe P, et al. Aesthetic discomfort in hand osteoarthritis: results from the Liege Hand Osteoarthritis Cohort (LIHOC). *Arthritis Res Ther* 2015;17:346.
28. Osteras N, Hagen KB, Grotle M, Sand-Svartrud AL, Mowinckel P, Kjekken I. Limited effects of exercises in people with hand osteoarthritis: results from a randomized controlled trial. *Osteoarthritis Cartilage* 2014;22:1224-1233.
29. Park JK, Shin K, Kang EH, Ha YJ, Lee YJ, Lee KH, et al. Efficacy and Tolerability of GCSB-5 for Hand Osteoarthritis: A Randomized, Controlled Trial. *Clin Ther* 2016;38:1858-1868.
30. Pastinen O, Forsskahl B, Marklund M. Local Glycosaminoglycan Polysulfate Injection Therapy in Osteo-Arthritis of the Hand - a Placebo-Controlled Clinical-Study. *Scan J Rheumatol* 1988;17:197-202.
31. Poiraudau S, Chevalier X, Conrozier T, Flippo RM, Liote F, Noel E, et al. Reliability, validity, and sensitivity to change of the Cochin hand functional disability scale in hand osteoarthritis. *Osteoarthritis Cartilage* 2001;9:570-577.
32. Romero-Cerecero O, Meckes-Fischer M, Zamilpa A, Jimenez-Ferrer JE, Nicasio-Torres P, Perez-Garcia D, et al. Clinical trial for evaluating the effectiveness and tolerability of topical *Sphaeralcea angustifolia* treatment in hand osteoarthritis. *J Ethnopharmacol* 2013;147:467-473.
33. Rothacker D, Difigilo C, Lee I. A Clinical-Trial of Topical 10-Percent Trolamine Salicylate in Osteoarthritis. *Curr Ther Res* 1994;55:584-597.
34. Rothacker DQ, Lee I, Littlejohn TW. Effectiveness of a single topical application of 10% trolamine salicylate cream in the symptomatic treatment of osteoarthritis. *J Clin Rheumatol* 1998;4:6-12.
35. Sautner J, Andel I, Rintelen B, Leeb BF. Development of the M-SACRAH, a modified, shortened version of SACRAH (Score for the Assessment and Quantification of Chronic Rheumatoid Affections of the Hands). *Rheumatology (Oxford)* 2004;43:1409-1413.
36. Sautner J, Andel I, Rintelen B, Leeb BF. A Comparison of the Modified Score for the Assessment of Chronic Rheumatoid Affections of the Hands and the Australian/Canadian Osteoarthritis Hand Index in Hand Osteoarthritis Patients. *Int J Rheumatol* 2009;24:906.
37. Saviola G, Abdi-Ali L, Campostrini L, Sacco S, Baiardi P, Manfredi M, et al. Clodronate and hydroxychloroquine in erosive osteoarthritis: a 24-month open randomized pilot study. *Mod Rheumatol* 2012;22:256-263.
38. Saviola G, Abdi-Ali L, Povino MR, Campostrini L, Sacco S, Carbonare LD. Intramuscular clodronate in erosive osteoarthritis of the hand is effective on pain and reduces serum COMP: a randomized pilot trial-The ER.O.D.E. study (ERosive Osteoarthritis and Disodium-clodronate Evaluation). *Clin Rheumatol* 2017;36:2343-2350.
39. Schnitzer T, Morton C, Coker S. Topical Capsaicin Therapy for Osteoarthritis Pain: Achieving a Maintenance Regimen. *Seminars in Arthritis Rheum* 1994;23:34-40.
40. Shin K, Kim JW, Moon KW, Yang JA, Lee EY, Song YW, et al. The Efficacy of Diacerein in Hand Osteoarthritis: A Double-Blind, Randomized, Placebo-Controlled Study. *Clin Ther* 2013;35:431-439.
41. Sofat N, Harrison A, Russell MD, Ayis S, Kiely PD, Baker EH, et al. The effect of pregabalin or duloxetine on arthritis pain: a clinical and mechanistic study in people with hand osteoarthritis. *J Pain Res* 2017;10:2437-2449.
42. Spolidoro Paschoal Nde O, Natour J, Machado FS, de Oliveira HA, Furtado RN. Effectiveness of Triamcinolone Hexacetonide Intraarticular Injection in Interphalangeal Joints: A 12-week Randomized Controlled Trial in Patients with Hand Osteoarthritis. *J Rheumatol* 2015;42:1869-1877.

43. Stamm TA, Machold KP, Smolen JS, Fischer S, Redlich K, Graninger W, et al. Joint protection and home hand exercises improve hand function in patients with hand osteoarthritis: A randomized controlled trial. *Arthritis Rheum* 2002;47:44-49.
44. Stange-Rezende L, Stamm TA, Schiffert T, Sahinbegovic E, Gaiger A, Smolen J, et al. Clinical study on the effect of infrared radiation of a tiled stove on patients with hand osteoarthritis. *Scand J Rheum* 2006;35:476-480.
45. Tubach F, Ravaud P, Martin-Mola E, Awada H, Bellamy N, Bombardier C, et al. Minimum clinically important improvement and patient acceptable symptom state in pain and function in rheumatoid arthritis, ankylosing spondylitis, chronic back pain, hand osteoarthritis, and hip and knee osteoarthritis: Results from a prospective multinational study. *Arthritis Care Res* 2012;64:1699-1707.
46. van Velden D, Reuter H, Kidd M, Muller F. Non-allopathic adjuvant management of osteoarthritis by alkalisation of the diet. *Afr J Prim Health Care Fam Med* 2015;7,Art. #780.
47. Watt FE, Kennedy DL, Carlisle KE, Freidin AJ, Szydlo RM, Honeyfield L, et al. Night-time immobilization of the distal interphalangeal joint reduces pain and extension deformity in hand osteoarthritis. *Rheumatology (Oxford)* 2014;53:1142-1149.
48. Wenham CYJ, Hensor EMA, Grainger AJ, Hodgson R, Balamoody S, Dore CJ, et al. A randomized, double-blind, placebo-controlled trial of low-dose oral prednisolone for treating painful hand osteoarthritis. *Rheumatology (Oxford)* 2012;51:2286-2294.
49. Widrig R, Suter A, Saller R, Melzer J. Choosing between NSAID and arnica for topical treatment of hand osteoarthritis in a randomised, double-blind study. *Rheumatol Int* 2007;27:585-591.
50. Wittoek R, Cruyssen BV, Maheu E, Verbruggen G. Cross-cultural adaptation of the Dutch version of the Functional Index for Hand Osteoarthritis (FIHOA) and a study on its construct validity. *Osteoarthritis and cartilage* 2009;17:607-612.

Supplementary Table 1. Details of included studies

Studies	Source Population, No. Patients (% women), Mean Age, Yrs	Definition of Hand OA and Inclusion criteria	Study Design (Outcome) Duration	Pain (VAS or NRS) (range)	PGA (VAS or NRS) (range)
Aitken, <i>et al.</i> 2018 (1)	Secondary care, 43 (77) , 61	ACR criteria	RCT, cross over study (intervention = control) [§] , 12 weeks	VAS (0-100mm)	-
Baltzer, <i>et al.</i> 2016 (2)	Secondary care, 34 (94) , 61	Bony nodes, symptoms and radiographic	Interventional study, 8 weeks	VAS (0-10cm)	-
Barthel, <i>et al.</i> 2010 (3)	Secondary care, 783 (80) , 64	ACR criteria, KL \geq 1, symptoms \geq 1 yr	RCT (intervention > control)*, 8 weeks	VAS (0-100mm)	VAS (0-100mm)
Bjurehed, <i>et al.</i> 2017 (4)	Primary care, 49 (88) , 69	Radiographic and symptoms, physician's diagnosis	Interventional study, 3 months	VAS (0-100mm)	-
Brosseau, <i>et al.</i> 2005 (5)	Secondary care, 88 (78) , 65	ACR criteria, radiographic OA	RCT (intervention = control), 6 weeks	VAS (0-100mm)	-
Chevalier, <i>et al.</i> 2015 (6)	Secondary care, 85 (86) , 63	ACR criteria, KL \geq 2, VAS pain \geq 40, \geq 3 symptomatic joints > 3 months	RCT (intervention = control), 6 months	VAS (0-100mm)	VAS (0-100mm)
Dilek, <i>et al.</i> 2013 (7)	Secondary care, 56 (89) , 59	ACR criteria	RCT (intervention > control), 3 weeks	VAS (0-10cm)	-
Dreiser, <i>et al.</i> 1993 (8)	Secondary care, 60 (85) , 59	Radiographic OA	RCT (intervention > control), 2 weeks	VAS (0-100mm)	-

Fioravanti, <i>et al.</i> 2014 (9)	Primary care, 60 (87) , 71	ACR criteria, symptomatic	RCT (intervention > control), 2 weeks, FU 12 months	VAS (0-100mm)	-
Gabay, <i>et al.</i> 2011 (10)	Secondary care, 162 (74) , 63	ACR criteria, radiographic OA \geq 2 joints \geq 2 flares finger OA	RCT (intervention > control), 6 months	VAS (0-100mm)	-
Garfinkel, <i>et al.</i> 1994 (11)	Not specified, 25 (56) , range 52-79	ACR criteria	RCT (intervention > control), 10 weeks	VAS	-
Grifka, <i>et al.</i> 2004 (12)	Secondary care, 594 (83) , 62	ACR criteria, symptomatic > 3 months	RCT (intervention > control), 4 weeks	VAS (0-100mm)	VAS (0-100mm)
Gyarmati, <i>et al.</i> 2017 (13)	Secondary care, 47 (96) , 64	ACR criteria, OA pain hands > 3 months	RCT (intervention 1 = intervention 2), 3 weeks	VAS (0-100mm)	VAS (0-100mm)
Hennig, <i>et al.</i> 2015 (14)	Secondary care, 80 (100) , 61	ACR criteria, physician's diagnosis	RCT (intervention 1 > intervention 2), 3 months	NRS (0-10)	NRS (0-10)
Horvath, <i>et al.</i> 2011 (15)	Secondary care, 63 (81) , 63	ACR criteria, radiographic OA, pain \geq 3 months	RCT (intervention > control), 3 weeks	VAS (0-100mm)	VAS (0-100mm)
Kanat, <i>et al.</i> 2013 (16)	Not specified, 50 (100) , 63	ACR criteria	RCT (intervention > control), 10 days	NRS (1-10)	-
Kasapoglu, <i>et al.</i> 2017 (17)	Secondary care, 55 (93) , 60	Radiographic OA, KL >2, VAS \geq 4/10	RCT (intervention 1 > intervention 2), 1 month	VAS (0-10cm)	-
Keen, <i>et al.</i> 2010 (18)	Secondary care, 36 (86) , 58	ACR criteria, radiographic OA	Interventional study, 4 weeks	VAS (0-10cm)	VAS (0-10cm)
Kjeken, <i>et al.</i> 2011 (19)	Secondary care, 70 (97) , 61	ACR criteria	RCT (intervention = control), 3 months	VAS (0-100mm)	-

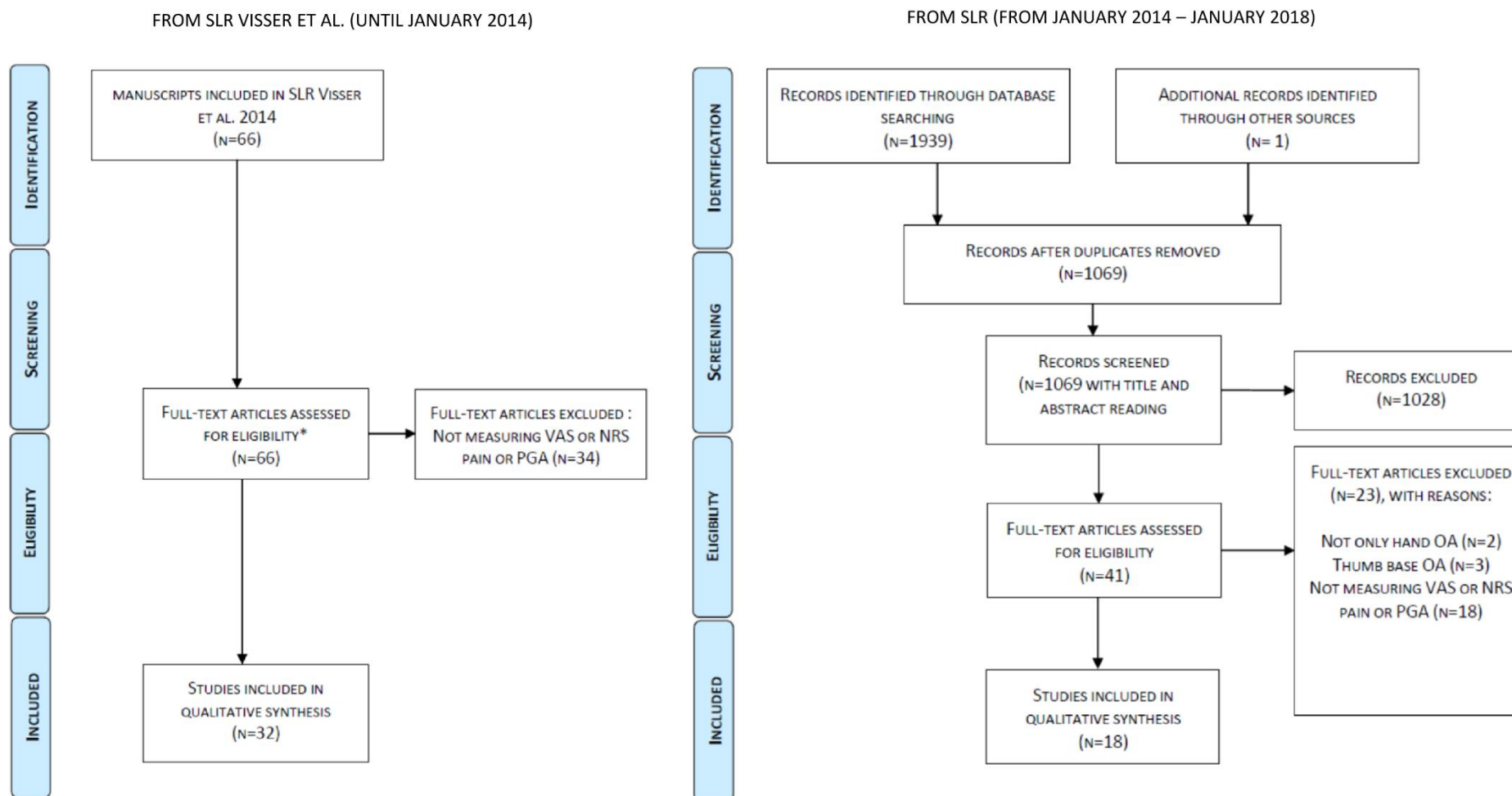
Kortekaas, <i>et al.</i> 2014 (20)	Secondary care, 25 (76) , 60	ACR criteria	Observational, FU 3 months	VAS (0-100mm)	-
Kovács, <i>et al.</i> 2012 (21)	Secondary care, 45 (93) , 59	ACR criteria, KL ≥ 2 in ≥ 2 joints, VAS pain ≥ 30	RCT (intervention > control), 3 weeks	VAS (0-100mm)	-
Kvien, <i>et al.</i> 2008 (22)	Secondary care, 83 (93) , 60	ACR criteria, KL ≥ 2 , ≥ 1 swollen/tender joint, VAS pain ≥ 30	RCT (intervention > control), 42 days	VAS (0-100mm)	VAS (0-100mm)
Lee, <i>et al.</i> 2017 (23)	Secondary care, 196 (86) , 58	ACR criteria, KL ≥ 2	RCT (intervention = control), 24 weeks	VAS (0-100mm)	-
Moe, <i>et al.</i> 2010 (24)	Secondary care, 128 (91) , 69	ACR criteria	Observational, cross sectional	VAS (0-100mm)	-
Moe <i>et al.</i> 2016 (25)	Secondary care, 391 (86) , 61	ACR criteria	RCT (intervention > control), 1 yr	NRS (0-10)	-
Myrer, <i>et al.</i> 2011 (26)	Volunteers, 35 (77) , 64	ACR criteria, FIHOA > 5	RCT (intervention > control), 4 weeks	VAS (0-100mm)	-
Neuprez, <i>et al.</i> 2015 (27)	Tertiary care, 203 (90) , 69	ACR criteria	Observational, cross-sectional	VAS (0-100mm)	-
Osteras, <i>et al.</i> 2014 (28)	Population based, 130 (90) , 66	ACR criteria	RCT (intervention > control), 12 weeks	NRS (0-10)	NRS (0-10)
Park, <i>et al.</i> 2016 (29)	Secondary care, 130 (90) , 66	ACR criteria	RCT (intervention > control), 12 weeks	-	VAS (0-100mm)
Pastinen, <i>et al.</i> 1988 (30)	Secondary care, 29 (79) , 58	Clinical/ radiographic finger OA	RCT (intervention > control), 14 weeks	VAS (0-10cm)	-
Poiraudeau, <i>et al.</i> 2001 (31)	Secondary care, 89 (91) , 63	ACR criteria	Observational, FU 6 months	VAS (0-100mm)	-
Romero-Cerecero, <i>et al.</i> 2013 (32)	Not specified, 113 (95) , 62	ACR criteria, radiographic OA ≥ 2 IP joints, VAS ≥ 40 , FIHOA ≥ 5	RCT (intervention = control), 6 weeks	VAS (0-10cm)	-

Rothacker, <i>et al.</i> 1994 (33)	Not specified, 49 (84) , 66	Physician diagnosed/radiographic OA, symptoms	RCT (intervention > control), FU 15-120 min (after cream)	NRS (1-5)	-
Rothacker, <i>et al.</i> 1998 (34)	Secondary care, 81 (74) , 61	Physician diagnosed OA, symptoms	RCT (intervention > control), FU 30-120 min (after cream)	NRS (1-5)	-
Sautner, <i>et al.</i> 2004 (35)	Secondary care, 60 (73) , 62	ACR criteria	Observational, cross-sectional	-	VAS (0-100mm)
Sautner, <i>et al.</i> 2009 (36)	Secondary care, 66 (77) , 58	ACR criteria	Observational, cross-sectional	-	VAS (0-100mm)
Saviola, <i>et al.</i> 2012 (37)	Secondary care, 38 (95) , 61	Radiographic erosive OA ≥ 2 joints, VAS ≥ 40	RCT (intervention 1 > intervention 2), 1 and 2 yr	VAS (0-10cm)	-
Saviola, <i>et al.</i> 2017 (38)	Secondary care, 40 (93) , 70	Radiographic erosive OA > 1 IP joints, VAS $\geq 4/10$	RCT (intervention 1 > intervention 2), 6 months	VAS (0-10cm)	VAS (0-10cm)
Schnitzer, <i>et al.</i> 1994 (39)	Not specified, 59 (68) , 68	Radiographic/physical OA findings	RCT (intervention > control), 9 weeks	VAS (0-100mm)	-
Shin, <i>et al.</i> 2013 (40)	Secondary care, 86 (97) , 58	ACR criteria	RCT (intervention = control), 12 weeks	-	VAS (0-100mm)
Sofat, <i>et al.</i> 2017 (41)	Secondary care, 65 (80) , 63	ACR criteria	RCT (intervention 1 > intervention 2 > control), 12 weeks	NRS (0-10)	-
Spolidoro Pashoal, <i>et al.</i> 2015 (42)	Secondary care, 60 (97) , 61	ACR criteria	RCT (intervention 1 > intervention 2), 12 weeks	VAS (0-10cm)	-

Stamm, <i>et al.</i> 2002 (43)	Secondary care, 40 (88) , 60	ACR criteria	RCT (intervention > control), 3 months	VAS (0-100mm)	-
Stange-Rezende, <i>et al.</i> 2006 (44)	Secondary care, 45 (93) , 60	ACR criteria	RCT (intervention = control), 3 weeks	VAS (0-100mm)	-
Tubach, <i>et al.</i> 2012 (45)	Secondary care, 249 (88) , 64	ACR criteria	Interventional, FU 4 weeks	NRS (0-10)	NRS (0-10)
Van Velden, <i>et al.</i> 2015 (46)	Primary care, 100 (not specified) , 65	ACR criteria	RCT, cross over study (intervention > control), 56 days	VAS (0-10cm)	-
Watt, <i>et al.</i> 2014 (47)	Secondary care, 26 (88) , 63	ACR criteria, NRS pain \geq 2, radiographic deformity	CT (intervention > control), 3 months	NRS (0-10)	-
Wenham, <i>et al.</i> 2012 (48)	Not specified, 70 (81) , 61	ACR criteria	RCT (intervention = control), 4 weeks	VAS (0-100mm)	-
Widrig, <i>et al.</i> 2007 (49)	Primary and secondary care, 204 (74) , 64	ACR criteria, radiographic OA \geq 2 joints, VAS \geq 40, FIHOA \geq 5	RCT (intervention = control), 3 weeks	VAS (0-100mm)	-
Wittoek, <i>et al.</i> 2009 (50)	Secondary care, 72 (89) , 62	ACR criteria	Observational, cross-sectional	VAS (0-100mm)	-

- : not included; *Intervention group performed better than control group, according to the primary outcome measure. [§]Intervention group did not perform better than control group, according to the primary outcome measure. OA: osteoarthritis; Yr(s): year(s); VAS: visual analogue score; NRS: numeric rating scale; PtGA: patient global assessment; ACR: American College of Rheumatology; RCT: randomized controlled trial; KL: Kellgren and Lawrence; IP: interphalangeal; FU: follow up; CT: clinical trial; FIHOA: Functional Index for Hand OA

Supplementary Figure 1. Overview of manuscript selection for NRS/VAS pain/PGA.



*original SLR, all instruments for pain, PGA and function were included

OA: osteoarthritis; VAS: visual analogue scale; NRS: numeric rating scale; PGA: patient global assessment.

Supplementary Table 2. Details of phrasing of question accompanying VAS or NRS pain

Reference	Scale	Explicit phrasing [§]	Time of recall	Other details
<i>RCT/Interventional studies</i>				
Aitken, <i>et al.</i> 2018 (1)	VAS (0-100mm)	Yes	1 week	
Baltzer, <i>et al.</i> 2016 (2)	VAS (0-10)	No	ND	
Barthel, <i>et al.</i> 2010 (3)	VAS (0-100mm)	No	24 hours	Dominant hand
Bjurehed, <i>et al.</i> 2017 (4)	VAS (0-100mm)	No	current	At rest
Brosseau, <i>et al.</i> 2005 (5)	VAS (0-100mm)	No	ND	Pain intensity
Chevalier, <i>et al.</i> 2015 (6)	VAS (0-100mm)	Yes	24 hours	Global pain
Dilek, <i>et al.</i> 2013 (7)	VAS (0-10 cm)	No	48 hours	Pain at rest and during daily activity, both hands and hands separately
Dreiser, <i>et al.</i> 1993 (8)	VAS (0-100mm)	No	ND	Overall spontaneous pain
Fioravanti, <i>et al.</i> 2014 (9)	VAS (0-100mm)	No	ND	
Gabay, <i>et al.</i> 2011 (10)	VAS (0-100mm)	No	ND	Global spontaneous hand pain
Garfinkel, <i>et al.</i> 1994 (11)	VAS	No	ND	Hand pain at rest and during activity
Grifka, <i>et al.</i> 2004 (12)	VAS (0-100mm)	Yes	24 hours	Pain intensity In target hand
Gyarmati, <i>et al.</i> 2017 (13)	VAS (0-100mm)	No	ND	At rest and on exertion
Hennig, <i>et al.</i> 2015 (14)	NRS (0-10)	No	ND	
Horváth, <i>et al.</i> 2011 (15)	VAS (0-100mm)	No	ND	Severity of pain at rest and upon exertion; in small hand joints of the hands
Kanat, <i>et al.</i> 2013 (16)	NRS (1-10)	No	ND	Hand pain at rest and on use
Kasapoglu, <i>et al.</i> 2017 (17)	VAS (0-10cm)	No	ND	
Keen, <i>et al.</i> 2010 (18)	VAS (0-10cm)	No	ND	Most painful joint, all joints of both hands
Kjeken, <i>et al.</i> 2011 (19)	VAS (0-100mm)	No	ND	
Kovács, <i>et al.</i> 2012 (21)	VAS (0-100mm)	No	ND	
Kvien, <i>et al.</i> 2008 (22)	VAS (0-100mm)	Yes	48 hours	Pain intensity
Lee, <i>et al.</i> 2017 (23)	VAS (0-100mm)	No	24 hours	
Moe, <i>et al.</i> 2016 (25)	NRS (0-10)	No	ND	
Myrer, <i>et al.</i> 2011 (26)	VAS (0-100mm)	Yes	1 week, current	Pain at rest, pain upon movement, current pain
Osteras, <i>et al.</i> 2014 (28)	NRS (0-10)	No	ND	
Pastinen, <i>et al.</i> 1988 (30)	VAS (0-10cm)	No	ND	Pain provoked by grip and pinch strength tests
Romero-Cerecero, <i>et al.</i> 2013 (32)	VAS (0-10cm)	No	ND	Pain intensity
Rothacker, <i>et al.</i> 1994 (33)	NRS (1-5)	No	Immediately	
Rothacker, <i>et al.</i> 1998 (34)	NRS (1-5)	No	ND	
Saviola, <i>et al.</i> 2012 (37)	VAS (0-10cm)	No	ND	
Saviola, <i>et al.</i> 2017 (38)	VAS (0-10cm)	No	ND	
Schnitzer, <i>et al.</i> 1994 (39)	VAS (0-100mm)	No	ND	Level of pain
Sofat, <i>et al.</i> 2017 (41)	NRS (0-10)	No	ND	

Spolidoro Pashoal, <i>et al.</i> 2015 (42)	VAS (0-10cm)	No	ND	Pain at rest, on movement
Stamm, <i>et al.</i> 2002 (43)	VAS (0-100mm)	No	ND	
Stange-Rezende, <i>et al.</i> 2006 (44)	VAS (0-100mm)	No	ND	General level of pain
Tubach, <i>et al.</i> 2012 (45)	NRS (0-10)	Yes	48hours	
Van Velden, <i>et al.</i> 2015 (46)	VAS (0-10)	No	ND	
Watt, <i>et al.</i> 2014 (47)	NRS (0-10)	No	1 week	Average pain, worst pain
Wenham, <i>et al.</i> 2012 (48)	VAS (0-100mm)	Yes	48 hours, 2 weeks	Average pain both hands, in the most painful joints, at 1st CMC
Widrig, <i>et al.</i> 2007 (49)	VAS (0-100mm)	Yes	24 hours	Finger level
<i>Observational studies</i>				
Kortekaas, <i>et al.</i> 2014 (20)	VAS (0-100mm)	No	ND	
Moe, <i>et al.</i> 2010 (24)	VAS (0-100mm)	No	ND	
Neuprez, <i>et al.</i> 2015 (27)	VAS (0-100mm)	No	ND	Global assessment of pain
Poiraudeau, <i>et al.</i> 2001 (31)	VAS (0-100mm)	No	ND	Pain intensity
Wittoek, <i>et al.</i> 2009 (50)	VAS (0-100mm)	No	1 week	Global pain, both hands

VAS: visual analogue scale; NRS: numeric rating scale; ND: not defined

[§] Explicit phrasing of scales in domain pain:

- *On this line, where would you rate your pain, using the last 7 days as a timeframe?* (1)
- *What is the global level of pain in your hands in the past 24 hours?* (6)
- *Indicate the most pain from your OA in the target hand over the previous 24hours?* (12)
- *How would you describe the intensity of your joint pain during the last 2 days?* (22)
- *How would you estimate your perception of average 'pain at rest' and average 'pain with movement' over the week prior to the assessment?* (26)
- *Circle the number that best describes the pain you felt due to your hand osteoarthritis during the last 48 hours?* (45)
- *Indicate the level of pain in the hands during the last 48 hours/ last 2 weeks?* (48)
- *Indicate the level of pain in the most painful joint during the last 48 hours?* (48)
- *Indicate the level of pain at the 1st CMC joint during the last 48 hours?* (48)
- *Indicate the most intense pain in the previous 24 hours in the worst affected finger?* (49)

Supplementary Table 3. Details of phrasing of question accompanying VAS or NRS PGA

Reference	Scale	Exact phrasing [§]	Time of recall	Other comments
<i>RCT/Interventional studies</i>				
Barthel, <i>et al.</i> 2010 (3)	VAS (0-100mm)	Yes	ND	Global assessment of disease activity
Chevalier, <i>et al.</i> 2015 (6)	VAS (0-100mm)	No	ND	
Griftka, <i>et al.</i> 2004 (12)	VAS (0-100mm)	No	ND	Global assessment of disease activity
Gyermati, <i>et al.</i> 2017 (13)	VAS (0-100mm)	No	ND	
Hennig, <i>et al.</i> 2015 (14)	NRS (0-10)	No	ND	Global assessment of disease activity
Horváth, <i>et al.</i> 2011 (15)	VAS (0-100mm)	No	ND	
Keen, <i>et al.</i> 2010 (18)	VAS (0-10 cm)	No	ND	
Kvien, <i>et al.</i> 2008 (22)	VAS (0-100mm)	Yes	48 hours	
Osteras, <i>et al.</i> 2014 (28)	NRS (0-10)	No	ND	Global assessment of disease activity and disease activity affecting activities in daily life
Park, <i>et al.</i> 2016 (29)	VAS (0-100mm)	No	ND	General health
Saviola, <i>et al.</i> 2017 (38)	VAS (0-10 cm)	No	ND	Global assessment of disease activity
Shin, <i>et al.</i> 2013 (40)	VAS (0-100mm)	No	ND	
<i>Observational studies</i>				
Sautner, <i>et al.</i> 2004 (35)	VAS (0-100mm)	No	ND	
Sautner, <i>et al.</i> 2009 (36)	VAS (0-100mm)	Yes	48 hours	
Tubach, <i>et al.</i> 2012 (45)	NRS (0-10)	Yes	48 hours	

VAS: visual analogue scale; NRS: numeric rating scale; ND: not defined

[§] Explicit phrasing of scales in domain PGA:

- *Considering all the ways osteoarthritis of your hands affects you, please indicate with an 'X' through the horizontal line how well are you doing? (3)*
- *We ask you to evaluate the activity of your osteoarthritis over the last 2 days? When you take all symptoms into consideration, how will you evaluate your condition? (22)*
- *Please indicate how severe you are compromised by your hand osteoarthritis during the last 48 hours? (36)*
- *Considering all the ways your hand osteoarthritis has affected you during the last 48 hours, circle the number that best describes how you have been doing? (45)*