Supplementary S2 List of excluded reports

Report	Reason for exclusion
1. Alemo Munters L. et al. Improved exercise performance and increased aerobic capacity after endurance training of patients with stable polymyositis and dermatomyositis. Arthritis Res Ther. 2013;15:R83.	Same trial as Alemo Munters et al. 2013.[52] The same clinical trial number, but fewer participants are included in this report.
2. Alexanderson, H., et al., Intensive aerobic and muscle endurance exercise in patients with systemic sclerosis: a pilot study. BMC Research Notes, 2014. 7: p. 86.	Study design (single subject design).
3. Alexanderson, H., et al., The safety of a resistive home exercise program in patients with recent onset active polymyositis or dermatomyositis. Scandinavian Journal of Rheumatology, 2000.	Study design (no control group).
4. Analay, Y., et al., The effectiveness of intensive group exercise on patients with ankylosing spondylitis. Clinical Rehabilitation, 2003. 17: p. 631-6.	Study design (no control group).
5. Alexanderson, H., C. Stenstrom, and I. Lundberg, Safety of a home exercise programme in patients with polymyositis and dermatomyositis: a pilot study. Rheumatology, 1999. 38: p. 608-11.	Study design (no control group).
6. Andersson, S.I. and C. Ekdahl, Dynamic and static physical training in patients with rheumatoid arthritis: application of a self-appraisal and coping model. Disability & Rehabilitation, 1996. 18: p. 469-75.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
7. Aytekin, E., et al., Home-based exercise therapy in patients with ankylosing spondylitis: effects on pain, mobility, disease activity, quality of life, and respiratory functions. Clinical Rheumatology, 2012. 31: p. 91-7.	Study design (no control group).
8. Bearne, L., D. Scott, and M. Hurley, Exercise can reverse quadriceps sensorimotor dysfunction that is associated with rheumatoid arthritis without exacerbating disease activity. Rheumatology, 2002. 41: p. 157-66.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
9. Bell, M.J., et al., A randomized controlled trial to evaluate the efficacy of community based physical therapy in the treatment of people with rheumatoid arthritis. Journal of Rheumatology, 1998. 25: p. 231-7.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
10. Breedland, I., et al., Effects of a group-based exercise and educational program on physical performance and disease self-management in rheumatoid arthritis: a randomized controlled study. Physical Therapy, 2011. 91: p. 879-93.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
11. Benatti et al. The effects of exercise on lipid profile in systemic lupus erythematosus and healthy individuals: a randomized trial. Rheumatol Int.2015. 35: p 61-69.	The same trail as Miossi et al. 2012,[27] and reported only results on lipid profile.

12. Brodin, N., et al., Coaching patients with early rheumatoid arthritis to healthy physical activity: a multicenter, randomized, controlled study. Arthritis Rheum, 2008. 59: p. 325-31.	Excluded as the main aim of the trial was to investigate the effect of coaching.
13. Byers, P.H., Effect of exercise on morning stiffness and mobility in patients with rheumatoid arthritis. Research in Nursing & Health, 1985. 8: p. 275-81.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
14. Carvalho, M.R., et al., Effects of supervised cardiovascular training program on exercise tolerance, aerobic capacity, and quality of life in patients with systemic lupus erythematosus. Arthritis & Rheumatism, 2005. 53: p. 838-44.	Study design (some of the control participants are also included in the intervention group).
15. de Jong, Z., et al., Long-term follow-up of a high-intensity exercise program in patients with rheumatoid arthritis. Clinical Rheumatology, 2009. 28: p. 663-71.	The same study as de Jong et al. 2003[35 38]. The report only included follow-up data.
16. de Jong, Z., et al., Slowing of bone loss in patients with rheumatoid arthritis by long-term high-intensity exercise: results of a randomized, controlled trial. Arthritis & Rheumatism. 2004. 50: p. 1066-76.	The same trial as de Jong et al. 2003, [35 38] and only reported results on bone mineral density.
17. Dos Reis-Neto ET et al. Supervised physical exercise improves endothelial function in patients with systemic lupus erythematosus. Rheumatology (Oxford). 2013.52: p. 2187-95.	Study design (controlled clinical trial).
18. Dundar U. et al. Effect of aquatic exercise on ankylosing spondylitis: a randomized controlled trial. Rheumatol Int. 2014.34: p.1505-1511.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
19. Ekblom, B., et al., Effect of short-term physical training on patients with rheumatoid arthritis I. Scandinavian Journal of Rheumatology, 1975. 4: p. 80-6.	Did not include outcomes measures for disease activity.
20. Ekdahl et al. 1990. Dynamic versus static training in patients with rheumatoid arthritis. Scand J Rheumatol 1990; 19: p. 17-26.	Results for disease activity were only given in text, and it was not possible to extract data from this trial.
21. Ekdahl, C., et al., Dynamic training and circulating neuropeptides in patients with rheumatoid arthritis: a comparative study with healthy subjects. International Journal of Clinical Pharmacology Research, 1994. 14: p. 65-74.	Results for disease activity were only given in text, and it was not possible to extract data from this trial.
22. Escalante, A., L. Miller, and T.D. Beardmore, Resistive exercise in the rehabilitation of polymyositis/dermatomyositis. Journal of Rheumatology, 1993. 20: p. 1340-4.	Study design (cross-over trial).
23. Gunendi, Z., et al., Does exercise affect the antioxidant system in patients with ankylosing spondylitis? Clinical Rheumatology, 2010. 29: p. 1143-7.	Study design. There was no control group that not exercised.
24. Häkkinen, A., T. Sokka, and P. Hannonen, A home-based two-year strength training period in early rheumatoid arthritis led to good	Same trial as Häkkinen et al 2001.[42 43] Only reports on follow-up data, and did not provide additional

long-term compliance: a five-year followup. Arthritis & Rheumatism, 2004. 51: p. 56-62.	information.
25. Häkkinen, A., et al., substained maintenance of exercise induced muscle strength gains and normal bone mineral density in patients with early rheumatoid arthritis: a 5 year follow up. Ann Rheum Dis 2004;63: p. 910-6.	Same trial as Häkkinen et al 2001.[42 43] Only reports on follow-up data, and did not provide additional information.
26. Häkkinen, A., et al., Dynamic strength training in patients with early rheumatoid arthritis increases muscle strength but not bone mineral density. Journal of Rheumatology, 1999. 26: p. 1257-63.	Same trial as Häkkinen et al. 2001.[36 37] The report did not provide additional information to the trial.
27. Haroardottir, H., et al., Exercise in systemic sclerosis intensifies systemic inflammation and oxidative stress. Scandinavian Journal of Rheumatology, 2010. 39: p. 63-70.	The main aim was to investigate the acute response to one exercise session.
28. Hout, W.B., et al. Cost-utility and cost-effectiveness analyses of a long-term, high-intensity exercise program compared with conventional physical therapy in patients with rheumatoid arthritis. Arthritis and rheumatism, 2005. 53, 39-47 DOI: 10.1002/art.20903.	Did not include outcome measures for disease activity.
29. Hsieh, L.F., et al. Supervised aerobic exercise is more effective than home aerobic exercise in female chinese patients with rheumatoid arthritis. Journal of rehabilitation medicine, 2009. 41, 332-7.	Study design (no control group that not exercised).
30. Ince, G., et al., Effects of a multimodal exercise program for people with ankylosing spondylitis.[Erratum appears in Phys Ther. 2006 Oct;86(10):1452]. Physical Therapy, 2006. 86: p. 924-35.	Did not include outcome measures for disease activity.
31. Jahanbin I., et al. The effect of conditioning exercise on the health status and pain in patients with rheumatoid arthritis: a randomized controlled clinical trial. 2014. IJCBNM.2: p 169-176.	Not possible to extract data to the meta-analysis as the results only were given as categorical data.
32. Janse van Rensburg, D.C., et al., Effect of exercise on cardiac autonomic function in females with rheumatoid arthritis. Clinical Rheumatology, 2012. 31: p. 1155-62.	Did not include outcome measures for disease activity.
33. Karapolat, H., et al., Comparison of group-based exercise versus home-based exercise in patients with ankylosing spondylitis: effects on Bath Ankylosing Spondylitis indices, quality of life and depression. Clinical Rheumatology, 2008. 27: p. 695-700.	The main aim was to compare supervised exercise with home exercise.
34. Lemmney A.B., et al. Are the benefits of high intensity progressive resistance training program sustained in rheumatoid arthritis patients? A 3 year follow-up study. Arthritis Care & Research 2012.64: p.71-5.	Same trial as Lemmey et al. 2009.[45] The report only included data for follow-up.
35. Lineker SC, et al. Improvements following short term home based physical therapy are maintained at one year in people with moderate to severe rheumatoid arthritis. J Rheumatol 2001;28: p. 165-8.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
36. Lyngberg, K., et al. The effect of physical training on patients with	The intervention did not fulfill the American College

rheumatoid arthritis: changes in disease activity, muscle strength and aerobic capacity. A clinically controlled minimized cross-over study. Clinical & Experimental Rheumatology, 1988. 6: p. 253-60.	of Sports Medicine's exercise recommendations.
37. Lyngberg, K.K., et al., Elderly rheumatoid arthritis patients on steroid treatment tolerate physical training without an increase in disease activity. Archives of Physical Medicine & Rehabilitation, 1994. 75: p. 1189-95.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
38. Manning, V.L., et al., Education, self-management, and upper extremity exercise training in people with rheumatoid arthritis: a randomized controlled trial. Arthritis care & research, 2014. 66: p. 217-27.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
39. Marcora SM, et al. Can progressive resistance training reverse cachexia in patients with rheumatoid arthritis? Results of a pilot study. Journal of Rheumatology. 2005;32:1031-9.	Study design (controlled clinical trial).
40. Mattukat K, et al. Short- and long-term effects of intensive training and motivational programme for continued physical activity in patients with inflammatory rheumatic diseases. European journal of physical & rehabilitation medicine. 2014;50:395-409.	Study design (controlled clinical trial).
41. Metsios, G.S., et al., Individualised exercise improves endothelial function in patients with rheumatoid arthritis. Annals of the Rheumatic Diseases, 2014. 73: p. 748-51	Study design (case matched design).
42. Munneke, M., et al., Effect of a high-intensity weight-bearing exercise program on radiologic damage progression of the large joints in subgroups of patients with rheumatoid arthritis. Arthritis & Rheumatism, 2005. 53: p. 410-7.	The same study as de Jong et al. 2003.[35 38]. The report did not provide additional information.
43. Munneke, M., et al., Adherence and satisfaction of rheumatoid arthritis patients with a long-term intensive dynamic exercise program (RAPIT program). Arthritis Care & Research, 2003. 49: p. 665-72.	Did not include outcome measures for disease activity.
44. Neuberger, G.B., et al., Effects of exercise on fatigue, aerobic fitness, and disease activity measures in persons with rheumatoid arthritis. Research in Nursing & Health, 1997. 20: p. 195-204.	Study design (no control group).
45. Nordemar, R., et al., Physical training in rheumatoid arthritis: a controlled long-term study. I. Scandinavian Journal of Rheumatology, 1981. 10: p. 17-23.	The exercise program is not described.
46. Noreau, L., et al., Effects of a modified dance-based exercise on cardiorespiratory fitness, psychological state and health status of persons with rheumatoid arthritis. American Journal of Physical Medicine & Rehabilitation, 1995. 74: p. 19-27.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
47. Orlova, E. et al. Comparative efficacy of two exercise programs in patients with early rheumatoid arthritis: 6-month randomized controlled trial. Annals of the Rheumatic Diseases. Conference	Only conference abstract available. Not possible to extract data as the results only were given in text.

abstract. June 2015.	
48. Pernadini L.A. et al. Exercise training can attenuate the inflammatory milieu in women with systemic lupus erythematousus. J appl Physiol 2014.117: p 639-647.	Study design (no control group)
49. Pool, A. and J. Axford, The effects of exercise on the hormonal and immune systems in rheumatoid arthritis. Rheumatology, 2001. 40: p. 610-4.	Review article.
50. Rahnama N. and Mazloum V. Effects of strengthening and aerobic exercises on pain severity and function in patients with knee rheumatoid arthritis. International Journal of Preventive Medicine. 2012;3: p. 493-8.	Study design (controlled clinical trial).
51. Ramsey-Goldman, R., et al., A pilot study on the effects of exercise in patients with systemic lupus erythematosus. Arthritis Care & Research, 2000. 13: p. 262-9.	The aim was to compare cardiorespiratory exercises with strength exercises.
52. Rall, L.C., et al., The effect of progressive resistance training in rheumatoid arthritis. Increased strength without changes in energy balance or body composition. Arthritis & Rheumatism, 1996. 39: p. 415-26.	Study design (no control group).
53. Rall, L.C., et al., Effects of progressive resistance training on immune response in aging and chronic inflammation. Medicine & Science in Sports & Exercise, 1996. 28: p. 1356-65.	Study design (no control group).
54. Ramsey-Goldman, R., et al., A pilot study on the effects of exercise in patients with systemic lupus erythematosus. Arthritis Care & Research, 2000. 13: p. 262-9.	The aim was to compare strength exercises with cardiorespiratory exercises.
55. Reid, A., et al. Randomised controlled trial examining the effect of exercise in people with rheumatoid arthritis taking anti-TNF? therapy medication. BMC musculoskeletal disorders, 2011. 64: p.71-5.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
56. Rodriguez-Lozano, C., et al., Outcome of an education and home-based exercise programme for patients with ankylosing spondylitis: a nationwide randomized study. Clinical & Experimental Rheumatology, 2013. 31: p. 739-48.	The intervention consisted only of an information letter.
57. Stavropoulos-Kalinoglou A., et al. Individualised aerobic and resistance exercise training improves cardiorespiratory fitness and reduces cardiovascular risk in patients with rheumatoid arthritis. Annals of the Rheumatic Diseases. 2013. 72: p. 1819-25.	Study design (case matched design).
58. Stenstrøm, C.H., et al. Dynamic training versus relaxation training as home exercise for patients with inflammatory rheumatic diseases. A randomized controlled study. Scandinavian Journal of Rheumatology, 1996. 25: p. 28-33.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
59. Stenstrøm, C.H., et al. Home exercise and compliance in	The intervention did not fulfill the American College

inflammatory rheumatic diseases--a prospective clinical trial. Journal of Rheumatology, 1997. 24: p. 470-6.	of Sports Medicine's exercise recommendations.
60. Stenstrøm, C.H., et al., Intensive dynamic training in water for rheumatoid arthritis functional class II--a long-term study of effects. Scandinavian Journal of Rheumatology, 1991. 20: p. 358-65.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
61. Strasser, B., et al. The effects of strength and endurance training in patients with rheumatoid arthritis. Clinical rheumatology, 2011. 30, 623-32.	Study design, i.e. disease activity not measured in the control group.
62. van den Ende, C.H., et al., Effect of intensive exercise on patients with active rheumatoid arthritis: a randomised clinical trial. Annals of the Rheumatic Diseases, 2000. 59: p. 615-21.	The intervention did not fulfill the American College of Sports Medicine's exercise recommendations.
63. Varju, C., et al., The effect of physical exercise following acute disease exacerbation in patients with dermato/polymyositis. Clinical Rehabilitation, 2003. 17: p. 83-7.	Study design (no control group).
64. Wadley AJ., et al. Three months of moderate-intensity exercise reduced plasma 3-nitrotyrosine in rheumatoid arthritis patients. European Journal of Applied Physiology. 2014; 114: p. 1483-92.	Study design (case matched design).
65. Wiesinger, G.F., et al., Improvement of physical fitness and muscle strength in polymyositis/dermatomyositis patients by a training programme. British Journal of Rheumatology, 1998. 37: p. 196-200.	The same trial as Wiesinger et al. 1998.[53] The report did not provide additional information.
66. Yigit, S., et al., Home-based exercise therapy in ankylosing spondylitis: short-term prospective study in patients receiving tumor necrosis factor alpha inhibitors. Rheumatology International, 2013. 33: p. 71-7	Study design (no control group)