

Bilag 6 Oversigt over inkluderede studier.

Study	Methods	Participants	Intervention / Control	Outcomes	Notes
Systematic Review (Hurkmans 2009): 8 included primary studies					
Baslund 1993	RCT	2 males, 16 females; mean (SD) age: 48(9) yrs, mean (SD): 14 (11) yrs Inclusion criteria: RA according to ARA criteria, age < 65 yr; > 2 months before baseline Exclusion criteria: inability to perform bicycle training program Setting: hospital registry	One dynamic group: 4 to 5x weekly bicycle training. One control group: training not allowed Duration: 8 weeks Supervisor: unknown Training supervisor: unknown	Aerobic capacity: VO ₂ max, Disease activity: ESR, CPR	Authors extract (Hurkmans 2009)
De Jong 2003	RCT	237 females, 63 males; mean (SD) age: experimental group 54 (18) yrs, control group 54 (16) yrs, mean (SD) DD: experimental group 8 (11) yrs, experimental group 5 (7) yrs Inclusion criteria: RA according to the 1987 ARA criteria, age 20 to 70 yrs, stable medication for	One dynamic group: high-intensity exercises 2x weekly Control group: physical therapy when necessary Duration: 2 years and a 18 months follow-up Supervisor: unknown Training supervisor: unknown	Aerobic capacity: ergo meter test (watts) Muscle strength: isokinetic dynamometer (newtons) Functional ability: MACTAR and HAQ Disease activity: DAS Radiological joint damage: Larsen score Cost-	Authors extract (Hurkmans. 2009)

		<p>3 months, ability to cycle on a home trainer, functional class I, II and III, willingness to exercise biweekly on a fixed schedule, living in a predefined region</p> <p>Exclusion criteria: serious cardiac or lung disease</p> <p>preventing cardio-respiratory fitness training and prosthesis of weight-bearing joints</p> <p>Setting: hospital registry</p>		<p>effectiveness: EQ-5D</p>	
Hansen 1993	RCT	<p>49 females / 26 males, mean age: 53 yrs, mean DD: 7 yrs</p> <p>Inclusion criteria: age 20-6- yr, RA according 1958 ARA criteria.</p> <p>Exclusion criteria: Steinbrocker III and IV, co-morbidity, presence of contra-indications for training, already training 3x per week</p> <p>Setting: hospital registry</p>	<p>4 dynamic groups, varying in amount of training and condition (water, bicycle) one control group (no exercise)</p> <p>Duration of intervention : 2 yrs</p> <p>Supervisor: physical therapists</p> <p>Training supervisor: unknown</p>	<p>Aerobic capacity: aerobic fitness</p> <p>Muscle strength: isokinetic strength knee</p> <p>Functional ability: HAQ, functional score, medicine costs</p> <p>Disease activity: ESR, Hb, swollen joint count, pain (VAS), morning</p>	<p>Authors extract (Hurkman s 2009)</p>

		and physical therapy practices		stiffness	
Harkcom 1985	RCT	20 females, ARA 1958 criteria, Steinbrocker II Mean (SD) age: 52 (12) yrs, mean (SD) DD: 9 (7) yrs Inclusion criteria: not reported Exclusion criteria: not reported Setting: outpatient clinic	3 dynamic groups with bicycle exercise 3x weekly varying in degree, control group (no exercise) Duration: 12 weeks Supervisor: physical education graduate students Training supervisor: unknown	Aerobic capacity: VO2max, heart rate, exercise test time Muscle strength: isokinetic strength knee, grip strength Functional ability: FSI Disease activity: N of tender joints	Authors extract (Hurkman s 2009)
Lyngberg 1994	RCT	22 males, 2 females; mean (SD) age: 67(9) yrs, mean (SD) DD: 9 (11) yrs, Steinbrocker II Inclusion criteria: ARA	One dynamic group: bicycling and strengthening exercises (heel lifting, step	Aerobic capacity: VO2 max Muscle strength: isokinetic strength (knee and ankle)	Authors extract (Hurkman s 2009)

		criteria, use of low dose of glucocorticosteroids, stable since 3 months Exclusion criteria: heart disease, inability to exercise Setting: outpatient clinic	climbing), 2x weekly; one control group: no exercise Duration: 3 months Supervisor: physical therapists Training supervisor: unknown	Functional ability: Fries index Disease activity and pain: no swollen joints, no of tender joints, ESR, Hb	
Minor 1989	RCT	34 females, 6 males; mean (SD) age 54(14) yrs, mean (SD) DD: 11(8) yrs Inclusion: RA 1958 criteria, symptomatic weight-bearing joints, age: >20yr, DD: >6 months Exclusion criteria: currently exercising, medical condition precluding increased activity Setting: outpatient rheumatology clinics	2 dynamic groups: aerobic pool group and aerobic walk group, 3x weekly. One control group: ROM exercises 3x weekly, Duration: 12 weeks and a 3 months follow-up Supervisor: three instructors with unknown profession Training supervisor: unknown	Aerobic capacity: VO2 max, exercise endurance, resting blood pressure, exercise heart rate Functional ability: AIMS Disease activity: N clinical active joints, morning stiffness	Authors extract (Hurkman s 2009)
Sanford-Smith 1998	RCT	19 females, 5 males; mean (SD) age: experimental group 62 (12) yrs, control group 55 (15) yrs, mean (SD) DD: experimental group 20 (13)	One dynamic group: aquaerobics 3x weekly Control group: ROM exercises 2 to 3x weekly Duration:	Functional ability: HAQ Muscle strength: grip strength Disease activity: AJC, ESR	Authors extract (Hurkman s 2009)

		<p>yrs, control group 12 (8) yrs Inclusion criteria: RA according 1958 ARA criteria, Steinbrocker functional class II and III and a stable drug regime for 3 months Exclusion criteria: unstable heart disease or already involved in an exercise program Setting: outpatient clinic</p>	<p>10 weeks Supervisor: physical therapists Training supervisor: unknown</p>		
<p>Van den Ende 1996</p>	<p>RCT</p>	<p>37 females, 37 males; mean (SD) age: 52(12) yrs, mean (SD) DD 10 (8) yrs Inclusion criteria: age 20 to 70 yr, stable on medication, able to bicycle. Exclusion criteria: arthroplasties of weight-bearing joints, co-morbidity Setting: outpatient clinic</p>	<p>One dynamic group: bicycle and weight-bearing exercises 3x weekly; 3 control groups: ROM + isometric exercises; 2 supervised, one group written instructions Duration 12 weeks and a 12 week follow-up Supervisor: physical therapists Training supervisor: unknown</p>	<p>Aerobic capacity: VO2 max Muscle strength: isometric and isokinetic muscle strength Functional ability: HAQ Disease activity and pain: ESR, no of swollen joints, no of tender joints</p>	<p>Authors extract (Hurkman s 2009)</p>

Included primary studies > 2007					
Lemmey 2009	RCT	23 females, 5 males; mean (SD) age: intervention 55.6 (8.3) yrs, control 60.6 (11.2) yrs. DD: intervention 74 (76) MO control: 125 (101) MO. Inclusion criteria: RA according to ARA 1987 criteria, functional class I or II, > 18 yrs, anti-inflammatory and/or anti-rheumatic drug therapy unchanged last 3 MO. If on corticosteroids, maintained dosage < 10 mg/day, free of medical conditions contraindicating regular high-intensity exercise, not currently undertaking regular, intense physical training. Setting: outpatient rheumatology hospital clinic	One training group: Muscle strength training Duration: 24 weeks 2x/week Intensity: progression in number of sets and load from 60% 1 RM up to 3 sets of 8 repetitions at 80 % of 1 RM within the first 6 weeks. 1 RM was tested every 4 week. Control: ROM home-exercises 2x/week Supervision : Training physiologists	Muscle strength: MVC (isom.) knee extensors. Functional ability: MDHAQ, Disease activity: DAS28, ESR and adverse events (training-log)	No training-related injuries or adverse events were reported during the study.
Strasser 2011	RCT	36 females, 4 males; mean (SD) age: intervention 59.3 (7.9) yrs,	One dynamic group: Muscle strength	Muscle strength: 1 RM shoulder, hip and	Only training of muscle strength and not

		<p>control 55.6 (9.7) yrs. DD: intervention 16.2 (6.5) yrs, control 14.2 (8.8) yrs. Inclusion criteria: RA according to ARA criteria, duration of RA symptoms > 2 yrs, stable medical during previous 3 MO. Exclusion criteria: participation in other studies, cardiac arrhythmia, recent myocardial infarction, stroke, cancer or an untreated hypertension. Setting: Rheumatological hospital dept.</p>	<p>training combined with endurance training at moderate intensity. Duration: 6 MO 2x/week. Strength: Intensity: 2 sets of 10-15 repetitions (progressive loads). Number of sets increased to 4 during the study. Endurance: Intensity: Cycling 15 min/session, additional 5 min every 4 week up to 80 min/session Intensity: constant 60% of the pulse reserve. Control: Home-exercises 2x/week without resistance. Supervision: Professional instructor and physician</p>	<p>knee flexors and extensors Functional ability: HAQ-DI. Disease activity: DAS28, and self-reported pain: VAS and adverse events.</p>	<p>training of endurance / aerobic fulfills this guideline's criteria for high-intensity training. 2 subjects in the intervention group did not complete the study due to acute disease activity. Outcomes were only reported in the intervention group besides on maximal muscle strength</p>
Stavropoulos-Kalinoglou	Non-randomised	28 females, 8 male, mean	One dynamic	Aerobic capacity:	Included narratively

2013	controlled	<p>(SD) age: intervention 55.0 ±9.8 yrs, control 52.8 (10.1). DD: intervention 5.5 (3.0-9.7) yrs, control 7.0 (5.0-10.0) yrs. Inclusion criteria: RA according to ARA criteria 1987 sedentary lifestyle (no participation in structured exercise for preceding 6 months), stable disease (no change in disease-modifying antirheumatic drug in the last 3 months) Exclusion criteria: Joint surgery (in the preceding 6 months, amputation, and co-morbidity incompatible with exercise as per American College of Sports Medicine guidelines. Setting: Hospital, outpatient rheumatological dept.</p>	<p>group: Aerob and muscle strength training combined. Duration: 6 months aerobic and 3 months strength training 3x/week. Intensity: (aerob): HR ≈ 70% VO2max 30-40 min. (strength): 3 sets of 70% 1RM (progressive loads) Control: Information on training benefit and lifestyle changes Supervision : exercise physiologists and resident exercise supervisors 2x/week</p>	<p>VO2 max on treadmill. Disease activity: DAS 28, ESR, C-reactive protein (CRP). Functional ability: HAQ</p>	<p>2 drop-outs in intervention group due to ulcer and arrhythmia</p>
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