NKR 38: PICO 3, Styrketræning efter opstart i ADT behandlingen vs vanlig behandling?

Review information

Authors

Sundhedsstyrelsen [1]

[1] [Empty affiliation]

Citation example: S. NKR 38: PICO 3, Styrketræning efter opstart i ADT behandlingen vs vanlig behandling? Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Characteristics of studies

Characteristics of included studies

Bourke 2014

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Træning ● *Age - Mean(sd)*: 71(6) ● *Højde - cm*: 173.1(6.8) ● *Vægt - kg*: 87.8(14.0) ● *BMI - kg/m2*: 29.3(4.4) Kontrol (vanlig beh) ● *Age - Mean(sd)*: 71(8) ● *Højde - cm*: 173.3(7.1) ● *Vægt - kg*: 84.6(13.5) ● *BMI - kg/m2*: 28.1(4.1)

	Included criteria: Eligiblemen were sedentary (ie, exercising < 90 min per week at a moderateintensity) and receiving continuous ADT for a minimum of 6 mo prior torecruitment, with planned long-term retention on ADT. **Excluded criteria:** Men with unstable angina, uncontrolled hypertension, recent myocardial infarction,pacemakers, and painful or unstable bony metastases wereexcluded. **Pretreatment:** NR
Interventions	**Intervention Characteristics** Træning ● *Description*: The intervention was a combined tapered exercise and dietary advice intervention deliveredwith integrated behaviour change support. Men attended a dedicated rehabilitation suite toundertake aerobic and resistance exercise, in groups up to five, supervised by an exercisephysiologist. The aerobic exercise prescription was 30 min at an intensity of 55–85% of agepredictedmaximum heart rate or 11–13 on the Borg Rating of Perceived Exertion scale [1],using stationary cycles, rowing ergometers, and treadmills. Between two and four sets and 8–12 repetitions (reps) of resistance exercises (cable machines or free weights) targeting largeskeletal muscle groups (quadriceps, deltoids, pectorals, latissimus dorsi, hamstrings)beginning at an intensity of 60% of one rep max with progression through increasing sets andreps before weight was increased.During the supervised sessions, emphasis was placed on providing instruction on the correctperformance of exercises, effective technique through instruction and demonstration, andindividual capability, with guidance on exercise intensity monitoring by using heart rate andperceived exertion. This was undertaken twice a week from weeks 1–6, and once per weekfrom weeks 7–12. During the first 6 wk, men were also asked to undertake at least one selfdirectedindependent exercise session (eg, brisk walking, cycling, and gym exercise) for atleast 30 min using the skills taught in the supervised sessions such as intensity monitoringusing the Borg scale and correct technique during resistance exercise. This requirement wasincreased to twice per week during weeks 7–12.Goals for these sessions were set with participants and included review and feedback at eachfollowing session. During sessions the facilitator aimed to address any concerns theindividual had about exercise, highlighting what the benefits might be and providingencouragement and verbal reinforcement for effort. Adherence to supervised exercise sessions was assessed by attendance records, heart rate, and Borg ratings. Independentexercise adherence was assessed via patient log books, which were also used in sessions toreflect achievement of exercise goals and monitor activity [2]. To help improve adherence, abehavioural component included exploring with patients barriers to exercise and strategies tohelp them incorporate regular physical activity in their daily lives, discussion around whatsocial support structures were available to them and how to use them, and which types ofphysical activity they preferred to engage in.In addition to exercise training, participants were encouraged to improve their diet over thecourse of the intervention. All men were provided with a nutrition advice pack advocatingreduction of saturated fats and refined carbohydrates,

	increasing dietary fibre and fruit andvegetable intake, and moderating the use of alcohol. Small-group healthy eating seminars,lasting approximately 15–20 min, were carried out every 2 wk throughout the 12-wkintervention, facilitated by the study researcher. Participants were helped to think of areas oftheir diet they would like to improve and were encouraged to set weekly goals towardsachieving these targets. Men shared experiences of trying to change dietary habits andhighlighted areas of success and issues they were finding hard to address. These experienceswere then explored within the group. The group facilitator ensured that the advice pack wasreferred to appropriately to assist problem solving. The sessions were concluded with a verbalrenegotiation of dietary goals based on the session feedback if it was appropriate. Norestriction was placed on dietary habits for any trial participant. ● *Intensity*: ● *weekly traning sessions*: This was undertaken twice a week from weeks 1–6, and once per weekfrom weeks 7–12 Kontrol (vanlig beh) ● *Description*: Men randomised to usual care were followed up in the urology clinic andseen byanoncologynursespecialistandurologist.The treatingphysicianswere informed that the man was participating in a lifestyle interventionstudy and further information would be available on application ● *Intensity*: No restrictions were placed on exercise/dietary behaviours over the period ofthe study ● *weekly traning sessions*: 0
Outcomes	*Livskvalitet - Total score EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: FACT-P ● **Range**: 0-156 ● **Unit of measure**: points ● **Direction**: Higher is better ● **Data value**: Endpoint ● **Notes**: outcome data hentet fra aflæsning på fig. 3 N hentet fra Fig1 flowchart. SD er "normal sd" for FACT-P(ikke hentet fra artikel *Livskvalitet - fysisk domæne EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Livskvalitet - Mental domæne EoT*

- **Outcome type**: ContinuousOutcome
- **Reporting**: Not reported

Deltagelse i hverdagsliv (et funktionsmål) EoT

- **Outcome type**: ContinuousOutcome
- **Reporting**: Not reported

Hjerte-kar sygdom LFU

- **Outcome type**: DichotomousOutcome
- **Reporting**: Not reported

Depression LFU

- **Outcome type**: ContinuousOutcome
- **Reporting**: Not reported

Diabetes LFU

- **Outcome type**: DichotomousOutcome
- **Reporting**: Not reported

Muskelstyrke EoT

- **Outcome type**: ContinuousOutcome
- **Reporting**: Not reported

Iltoptagelse (Vo2) EoT

- **Outcome type**: ContinuousOutcome
- **Reporting**: Fully reported
- **Unit of measure**: sekunds
- **Direction**: Higher is better
- **Notes**: "Aerobic exercise tolerance" fra table 2 sd taget fra baseline målinger

Fraktur LFU

- **Outcome type**: DichotomousOutcome
- **Reporting**: Fully reported

Frafald

- **Outcome type**: DichotomousOutcome
- **Reporting**: Fully reported

Identification	**Sponsorship source:** NR **Country:** UK **Setting:** NR **Comments:** Trial registration: ISRCTN88605738. **Authors name:** Liam Bourke **Institution:** Department of Primary Care and Public Health, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK **Email:** d.j.rosario@sheffield.ac.uk **Address:** Academic Urology Unit, K Floor, Department of Oncology, Royal HallamshireHospital, Glossop Road, University of Sheffield, Sheffield S10 2JF, UK
Notes	Risk of bias assessment is from Bourke et al 2015

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	
Allocation concealment (selection bias)	Low risk	
Blinding of participants and personnel (performance bias)	High risk	
Blinding of outcome assessment (detection bias)	Low risk	
Incomplete outcome data (attrition bias)	High risk	
Selective reporting (reporting bias)	Low risk	
Other bias	Low risk	

Galvao 2010

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Træning ● *Age - Mean(sd)*: 69,5 (7,3) ● *Højde - cm*: 171,1 (6,1) ● *Vægt - kg*: 80,7 (10,3) ● *BMI - kg/m2*: 27,4 (3,2) Kontrol (vanlig beh) ● *Age - Mean(sd)*: 70,1 (7,3) ● *Højde - cm*: 172,0 (7,7) ● *Vægt - kg*: 83,2 (14,4) ● *BMI - kg/m2*: 28,0 (3,8) **Included criteria:** Inclusion criteria included histologically documented prostate cancer, mini-mum prior exposure to AST longer than 2 months, without PSA evidence ofdisease activity, and anticipated to remain hypogonadal for the subsequent 6months. **Excluded criteria:** Exclusion criteria included bone metastatic disease, musculoskeletal,cardiovascular, or neurological disorders that could inhibit them from exer-cising, inability to walk 400 meters or undertake upper and lower limb exer-cise, and resistance training in the previous 3 months **Pretreatment:** There were nosignificant differences between groups at baseline
Interventions	**Intervention Characteristics** Træning ● *Description*: Participants undertook combined progressive resistance and aerobictraining twice a week for 12 weeks. The resistance exercises included the chestpress, seated row, shoulder press, triceps extension, leg press, leg extension andleg curl, with abdominal crunches also performed. Sessions commenced andconcluded with general flexibility exercises ● *Intensity*: The resistance exercise programwas designed to progress from 12- to 6-repetition maximum (RM) for two tofour sets per exercise.13,15The aerobic component of the training programincluded 15 to 20 minutes of cardiovascular exercises (cycling and walking/jogging) at 65% to 80% maximum heart rate and perceived exertion

	at 11 to 13(6 to 20 point, Borg scale ● *weekly traning sessions*: 2 Kontrol (vanlig beh) ● *Description*: Control participants could undergo thetraining after the assessment period had been completed. ● *Intensity*: NR - Usual care ● *weekly traning sessions*: NR - Usual care
Outcomes	*Livskvalitet - Total score EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Livskvalitet - fysisk domæne EoT* ● **Outcome type**: ContinuousOutcome *Livskvalitet - Mental domæne EoT* ● **Outcome type**: ContinuousOutcome *Deltagelse i hverdagsliv (et funktionsmål) EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: rejse-sætte-sig ● **Unit of measure**: s ● **Direction**: Lower is better ● **Data value**: Endpoint *Hjerte-kar sygdom LFU* ● **Outcome type**: DichotomousOutcome *Depression LFU* ● **Outcome type**: ContinuousOutcome *Diabetes LFU* ● **Outcome type**: DichotomousOutcome *Muskelstyrke EoT* ● **Outcome type**: ContinuousOutcome

	● scale: 1RM, kg *Iltoptagelse (Vo2) EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Fraktur LFU* ● **Outcome type**: DichotomousOutcome *Frafald* ● **Outcome type**: DichotomousOutcome
Identification	**Sponsorship source:** Supported by the Cancer Council ofWestern Australia **Country:** Australia **Setting:** SirCharles GairdnerHospital (Perth, Western Australia) **Comments:** NR **Authors name:** Daniel A. Galvão **Institution:** School of Exercise, Biomedicaland Health Sciences, Edith CowanUniversit **Email:** d.galvao@ecu.edu.au **Address:** 100 Joondalup Dr, Joonda-lup, Western Australia 6027, Australia;
Notes	Risk of bias assessment is from Bourke et al 2015

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	
Allocation concealment (selection bias)	Low risk	
Blinding of participants and personnel (performance bias)	High risk	
Blinding of outcome assessment (detection bias)	Unclear risk	unclear
Incomplete outcome data (attrition bias)	Low risk	
Selective reporting (reporting bias)	Low risk	

Other bias	Unclear risk	unclear

Nilsen 2015

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	Patients in ADT treatment for prostate cancer **Included criteria:** PCa patients with an intermediate-or high-risk profile. **Excludec criteria:** regular strength training (1 session per week), use of osteoporosis medication, and/or medical conditions that could complicate participation.
Interventions	16 weeks high-load strength STG (træning) vs CG (Kontrol) usual care
Outcomes	**Reported:** Livskvalitet: Skala: EORTC QLQ-C30 Points (higher=better), final value ADL: Rejse-sætte-sig, antal gentagelser (higher=better), final value Muskelstyrke: Benstyrke 1RM, kg (higher=better), final value Cardio-respiratory: Shuttle walk, meter (higher=better), final value Frafald: n/N, end of treatment **Not reported:** Depression Hjerte-kar sygdom Diabetes Frakturer
Identification	**Sponsorship source:** **Country:** Norway **Setting:** **Comments:** The authors report no conflicts of interest. **Authors name:** T. S. Nilsen **Institution:** Department of Physical Performance, Norwegian School of Sport Sciences **Email:** t.s.nilsen@nih.no

	Address: P.B. 4014 Ullevål stadion, 0806 Oslo, Norway.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Randomisation was computerised and performed by the staff at the clinical research office at Oslo University Hospital.
Allocation concealment (selection bias)	Low risk	At completion of the pre-intervention assessments patients are randomized in a 1:1 ratio to the EG or CG, stratified for hospital. Randomization is computerized and performed by the staff at the clinical research office at NRH
Blinding of participants and personnel (performance bias)	High risk	not possible due to nature of intervention
Blinding of outcome assessment (detection bias)	Unclear risk	dxa outcomes var blinded, de andre uvist
Incomplete outcome data (attrition bias)	Low risk	loss of follow up 6 and 3, not related to intervention
Selective reporting (reporting bias)	Low risk	outcomes reported same as stated in protocol publication
Other bias	Low risk	None detected

Segal 2003

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Træning ● *Age - Mean(sd)*: 68.2 (7.9) ● *Højde - cm*: NR

	● *Vægt - kg*: 88.0 (12.6) ● *BMI - kg/m2*: 29.0 (3.5) Kontrol (vanlig beh) ● *Age - Mean(sd)*: 67.7 (7.5) ● *Højde - cm*: NR ● *Vægt - kg*: 86.7 (13.0) ● *BMI - kg/m2*: 28.5 (3.7) **Included criteria:** They were eligible if they had histologically documented prostate cancer, were scheduled to receive androgen deprivation therapy for at least 3 months after recruitment, and if the treating oncologist provided consent. It was not necessary for patients to be newly diagnosed with prostate cancer **Excluded criteria:** Men were excluded if they had severe cardiac disease (New York Heart Association class III or greater), uncontrolled hypertension (blood pressure 160/95 mmHg), uncontrolled pain, unstable bone lesions, or residence more than 1 hour from the study center. **Pretreatment:** The groups were balanced in terms of age, body weight, body mass index, time from diagnosis, time receiving hormone therapy, cancer stage grouping, treatment intent, prior physical activity level, and experience with resistance exercise
Interventions	**Intervention Characteristics** Træning ● *Description*: Resistance exercise consisted of a 12-week program of ninestrength-training exercises carried out under supervision , at 60% to 70% of one-repetition maximum (1-RM; the maximumamount of weight that can be lifted once), estimated from the standard loadtest. ----- Patients were free tocomplete their program at any time during the fitness centers' hours ofoperation. No attempt was made to place patients in groups to exercise,although in some cases more than one participant in the intervention groupinadvertently showed up to exercise at the same time of day ● *Intensity*: Two sets of eight to 12 repetitions of the following nine exercises wereperformed: leg extension, calf raises, leg curl, chest press, latissimuspulldown, overhead press, triceps extension, biceps curls, and modifiedcurl-ups. Sixty percent of the participant's 1-RM was used as the startingresistance.40 Patients were instructed to increase the resistance by 5 lb whenthey were able to complete more than 12 repetitions. ● *weekly traning sessions*: three times perweek Kontrol (vanlig beh) ● *Description*: Men in the control group were offered the identical exercise advice andguidance; however, it was not

	provided until after the 12-week waiting period. ● *Intensity*: NR ● *weekly traning sessions*: NR
Outcomes	*Livskvalitet - Total score EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: FACT-P ● **Range**: 0-156 ● **Unit of measure**: points ● **Direction**: Higher is better ● **Data value**: Change from baseline ● **Notes**: Change værdi er valgt pga af forskel mellem grupperne ved baseline *Livskvalitet - fysisk domæne EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Livskvalitet - Mental domæne EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Deltagelse i hverdagsliv (et funktionsmål) EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Hjerte-kar sygdom LFU* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Not reported *Depression LFU* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Diabetes LFU* ● **Outcome type**: DichotomousOutcome

	● **Reporting**: Not reported *Muskelstyrke EoT* ● **Outcome type**: ContinuousOutcome *Iltoptagelse (Vo2) EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Fraktur LFU* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Not reported *Frafald* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported
Identification	**Sponsorship source:** Supported by the National Cancer Institute of Canada (NCIC) with fundsfrom the Canadian Cancer Society (CCS; grant in aid of research no.009458). R.D.R. is supported by a New Investigator Award from the Heartand Stroke Foundation of Canada. K.S.C. is supported by an InvestigatorAward from the Canadian Institutes of Health Research and a ResearchTeam Grant from the NCIC with funds from the CCS and the CCS/NCICSociobehavioral Cancer Research Network. **Country:** Canada **Setting:** The trial was coordinated at the Ottawa Regional Cancer Centre (Ottawa, Ontario, Canada). The other participating center was the Cross Cancer Institute in Edmonton (Alberta, Canada). **Comments:** NR **Authors name:** Roanne J. Segal **Institution:** Department of Medical Oncology, Ottawa Regional Cancer Centre-General Site, **Email:** email: Roanne.Segal@orcc.on.ca. **Address:** 503 Smyth Rd, Ottawa, Ontario KIH 1C4, Canada
Notes	Risk of bias assessment is from Bourke et al 2015

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	
Allocation concealment (selection bias)	Unclear risk	unclear
Blinding of participants and personnel (performance bias)	High risk	
Blinding of outcome assessment (detection bias)	Low risk	
Incomplete outcome data (attrition bias)	Low risk	
Selective reporting (reporting bias)	High risk	
Other bias	Low risk	

Uth 2014

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Træning ● *Age - Mean(sd)*: 67.1(7.1) ● *Højde - cm*: 177.0(5.7) ● *Vægt - kg*: 83.4(11.6) ● *BMI - kg/m2*: 26.6(3.2) Kontrol (vanlig beh) ● *Age - Mean(sd)*: 66.5(4.9) ● *Højde - cm*: 180.8(5.4) ● *Vægt - kg*: 89.0(11.9) ● *BMI - kg/m2*: 27.6(2.8) **Included criteria:** Patients presenting at Copenhagen Prostate Cancer Center,Copenhagen University Hospital,

	Rigshospitalet, or the Departmentof Urology, Frederiksberg Hospital, Denmark aged < 76years managed with ADT, i.e., LHRHa, or surgical castration, forat least 6 months were eligible. **Excluded criteria:** Main criteria for exclusion werecardiovascular disorders, osteoporosis, and activity limiting painfrom bone metastases. **Pretreatment:** The groups were well balanced following randomization,although participants in CON were taller than participantsin FG (P = 0.01). stor forskel i muskel studrke og funktionelle test. Kontrolgruppen har højeste målinger.OBS: ADT time (days) 376 (285–833) 560 (283–1049) OBS: PSA level at diagnosis 18 (10–39) 28 (15–43)
Interventions	**Intervention Characteristics** Træning ● *Description*: Participants in the FG performed football. During the first 4 weeks,the football training consisted of two weekly sessions, whichstarted with 15 min of warm-up exercises (running, dribbling,passing, shooting, balance, and muscle strength exercises) fol-lowed by 2×15 min of 5–7 a-side small-sided games. In weeks5–8, the duration of each session increased to 3×15-min gamesafter the warm-up, and in weeks 9–12, there were three weeklytraining sessions of the same duration. ● *Intensity*: NA ● *weekly traning sessions*: 12 weeks, 2-3 times weekly Kontrol (vanlig beh) ● *Description*: Participants in CON were encouraged to maintain their baselinephysical activity level and were offered 12 weeks football trainingafter the assessment period had been completed. ● *Intensity*: NA ● *weekly traning sessions*: NA
Outcomes	*Livskvalitet - Total score EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Livskvalitet - fysisk domæne EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported *Livskvalitet - Mental domæne EoT* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Not reported

Deltagelse i hverdagsliv (et funktionsmål) EoT

- **Outcome type**: ContinuousOutcome
- **Reporting**: Fully reported
- **Unit of measure**: repetitions
- Scale: rejse-sætte-sig
- **Direction**: Higher is better
- **Data value**: Change from baseline
- **Notes**: ikke lige ved baseline

Hjerte-kar sygdom LFU

- **Outcome type**: DichotomousOutcome
- **Reporting**: Not reported

Depression LFU

- **Outcome type**: ContinuousOutcome
- **Reporting**: Not reported

Diabetes LFU

- **Outcome type**: DichotomousOutcome
- **Reporting**: Not reported

Muskelstyrke EoT

- **Outcome type**: ContinuousOutcome
- **Reporting**: Fully reported
- **Scale**: 1RM
- **Unit of measure**: kg
- **Direction**: Higher is better
- **Data value**: Endpoint
- **Notes**: 1RM

Iltoptagelse (Vo2) EoT

- **Outcome type**: ContinuousOutcome
- **Reporting**: Fully reported
- **Scale**: Vo2max
- **Unit of measure**: mL O2/kg/min
- **Direction**: Higher is better

	● **Data value**: Endpoint *Fraktur LFU* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Partially reported *Frafald* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported
Identification	**Sponsorship source:** The study was supported by grants from TheCenter for Integrated Rehabilitation of Cancer patients (CIRE), acenter established and supported by The Danish Cancer Societyand The Novo Nordisk Foundation. The project was also supportedby TrygFonden, Preben & Anna Simonsen Fonden and TheBeckett Foundation. **Country:** Denmark **Setting:** The University Hospitals Centre for Health Research (UCSF), **Comments:** NCT01711892 **Authors name:** Jacob Uth **Institution:** The University Hospitals Centre for Health Research (UCSF), Copenhagen University Hospital Rigshospitalet **Email:** ju@ucsf.dk **Address:** Blegdamsvej 9, 2100 Copenhagen, Denmark
Notes	Risk of bias assessment is from Bourke et al 2015

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	unclear
Allocation concealment (selection bias)	Unclear risk	unclear
Blinding of participants and personnel (performance bias)	High risk	
Blinding of outcome assessment (detection bias)	High risk	
Incomplete outcome data (attrition bias)	Low risk	

Selective reporting (reporting bias)	Low risk	
Other bias	Low risk	

Footnotes

References to studies

Included studies

Bourke 2014

Bourke,L.; Gilbert,S.; Hooper,R.; Steed,L. A.; Joshi,M.; Catto,J. W.; Saxton,J. M.; Rosario,D. J.. Lifestyle changes for improving disease-specific quality of life in sedentary men on long-term androgen-deprivation therapy for advanced prostate cancer: a randomised controlled trial. European urology 2014;65(5):865-872. [DOI: 10.1016/j.eururo.2013.09.040 [doi]]

Galvao 2010

Galvao,D. A.; Taaffe,D. R.; Spry,N.; Joseph,D.; Newton,R. U.. Combined resistance and aerobic exercise program reverses muscle loss in men undergoing androgen suppression therapy for prostate cancer without bone metastases: a randomized controlled trial. Journal of clinical oncology : official journal of the American Society of Clinical Oncology 2010;28(2):340-347. [DOI: 10.1200/JCO.2009.23.2488 [doi]]

Nilsen 2015

Nilsen,Tormod S.; Raastad,Truls; Skovlund,Eva; Courneya,Kerry S.; Langberg,Carl W.; Lilleby,Wolfgang; Fossa,Sophie D.; Thorsen,Lene. Effects of strength training on body composition, physical functioning, and quality of life in prostate cancer patients during androgen deprivation therapy.. Acta Oncologica 2015;54(10):1805-1813.

Segal 2003

Segal,R. J.; Reid,R. D.; Courneya,K. S.; Malone,S. C.; Parliament,M. B.; Scott,C. G.; Venner,P. M.; Quinney,H. A.; Jones,L. W.; D'Angelo,M. E.; Wells,G. A.. Resistance exercise in men receiving androgen deprivation therapy for prostate cancer. Journal of clinical oncology : official journal of the American Society of Clinical Oncology 2003;21(9):1653-1659. [DOI: 10.1200/JCO.2003.09.534 [doi]]

Uth 2014

Uth,J.; Hornstrup,T.; Schmidt,J. F.; Christensen,J. F.; Frandsen,C.; Christensen,K. B.; Helge,E. W.; Brasso,K.; Rorth,M.; Midtgaard,J.; Krustrup,P.. Football training improves lean body mass in men with prostate cancer undergoing androgen deprivation therapy. Scandinavian Journal of Medicine & Science in Sports 2014;24 Suppl 1(Journal Article):105-112. [DOI: 10.1111/sms.12260 [doi]]

Excluded studies

Cormie 2013

Cormie,P.; Newton,R. U.; Spry,N.; Joseph,D.; Taaffe,D. R.; Galvao,D. A.. Safety and efficacy of resistance exercise in prostate cancer patients with bone metastases. Prostate cancer and prostatic diseases 2013;16(4):328-335. [DOI: 10.1038/pcan.2013.22 [doi]]

Cormie 2015

Cormie,P.; Galvao,D. A.; Spry,N.; Joseph,D.; Chee,R.; Taaffe,D. R.; Chambers,S. K.; Newton,R. U.. Can supervised exercise prevent treatment toxicity in patients with prostate cancer initiating androgen-deprivation therapy: a randomised controlled trial. BJU international 2015;115(2):256-266. [DOI: 10.1111/bju.12646 [doi]]

Dieperink 2013

Dieperink,K. B.; Johansen,C.; Hansen,S.; Wagner,L.; Andersen,K. K.; Minet,L. R.; Hansen,O.. The effects of multidisciplinary rehabilitation: RePCa-a randomised study among primary prostate cancer patients. British journal of cancer 2013;109(12):3005-3013. [DOI: 10.1038/bjc.2013.679 [doi]]

Galvao 2014

Galvao,D. A.; Spry,N.; Denham,J.; Taaffe,D. R.; Cormie,P.; Joseph,D.; Lamb,D. S.; Chambers,S. K.; Newton,R. U.. A multicentre year-long randomised controlled trial of exercise training targeting physical functioning in men with prostate cancer previously treated with androgen suppression and radiation from TROG 03.04 RADAR. European urology 2014;65(5):856-864. [DOI: 10.1016/j.eururo.2013.09.041 [doi]]

Hebert 2012

Hebert,J. R.; Hurley,T. G.; Harmon,B. E.; Heiney,S.; Hebert,C. J.; Steck,S. E.. A diet, physical activity, and stress reduction intervention in men with rising prostate-specific antigen after treatment for prostate cancer. Cancer epidemiology 2012;36(2):e128-36. [DOI: 10.1016/j.canep.2011.09.008 [doi]]

Jones 2014

Jones,L. W.; Hornsby,W. E.; Freedland,S. J.; Lane,A.; West,M. J.; Moul,J. W.; Ferrandino,M. N.; Allen,J. D.; Kenjale,A. A.; Thomas,S. M.; Herndon,J. E.,2nd; Koontz,B. F.; Chan,J. M.; Khouri,M. G.; Douglas,P. S.; Eves,N. D.. Effects of nonlinear aerobic training on erectile dysfunction and cardiovascular function following radical prostatectomy for clinically localized prostate cancer. European urology 2014;65(5):852-855. [DOI: 10.1016/j.eururo.2013.11.009 [doi]]

McGowan 2013

McGowan,E. L.; North,S.; Courneya,K. S.. Randomized controlled trial of a behavior change intervention to increase physical activity and quality of life in prostate cancer survivors. Annals of Behavioral Medicine : A Publication of the Society of Behavioral Medicine 2013;46(3):382-393. [DOI: 10.1007/s12160-013-9519-1 [doi]]

Monga 2007

Monga,U.; Garber,S. L.; Thornby,J.; Vallbona,C.; Kerrigan,A. J.; Monga,T. N.; Zimmermann,K. P.. Exercise prevents fatigue and improves quality of life in prostate cancer patients undergoing radiotherapy. Archives of Physical Medicine and Rehabilitation 2007;88(11):1416-1422. [DOI: S0003-9993(07)01448-7 [pii]]

Park 2012

Park,S. W.; Kim,T. N.; Nam,J. K.; Ha,H. K.; Shin,D. G.; Lee,W.; Kim,M. S.; Chung,M. K.. Recovery of overall exercise ability, quality of life, and continence after 12-week combined exercise intervention in elderly patients who underwent radical prostatectomy: a randomized controlled study. Urology 2012;80(2):299-305. [DOI: 10.1016/j.urology.2011.12.060 [doi]]

Segal 2009

Segal,R. J.; Reid,R. D.; Courneya,K. S.; Sigal,R. J.; Kenny,G. P.; Prud'Homme,D. G.; Malone,S. C.; Wells,G. A.; Scott,C. G.; Slovinec D'Angelo,M. E.. Randomized controlled trial of resistance or aerobic exercise in men receiving radiation therapy for prostate cancer. Journal of clinical oncology : official journal of the American Society of Clinical Oncology 2009;27(3):344-351. [DOI: 10.1200/JCO.2007.15.4963 [doi]]

Windsor 2004

Windsor,P. M.; Nicol,K. F.; Potter,J.. A randomized, controlled trial of aerobic exercise for treatment-related fatigue in men receiving radical external beam radiotherapy for localized prostate carcinoma. Cancer 2004;101(3):550-557. [DOI: 10.1002/cncr.20378 [doi]]

Winters-Stone 2015

Winters-Stone,Kerri M.; Dieckmann,Nathan; Maddalozzo,Gianni F.; Bennett,Jill A.; Ryan,Christopher W.; Beer,Tomasz M.. Resistance Exercise Reduces Body Fat and Insulin During Androgen-Deprivation Therapy for Prostate Cancer.. Oncology nursing forum 2015;42((4)):348-356.

Data and analyses

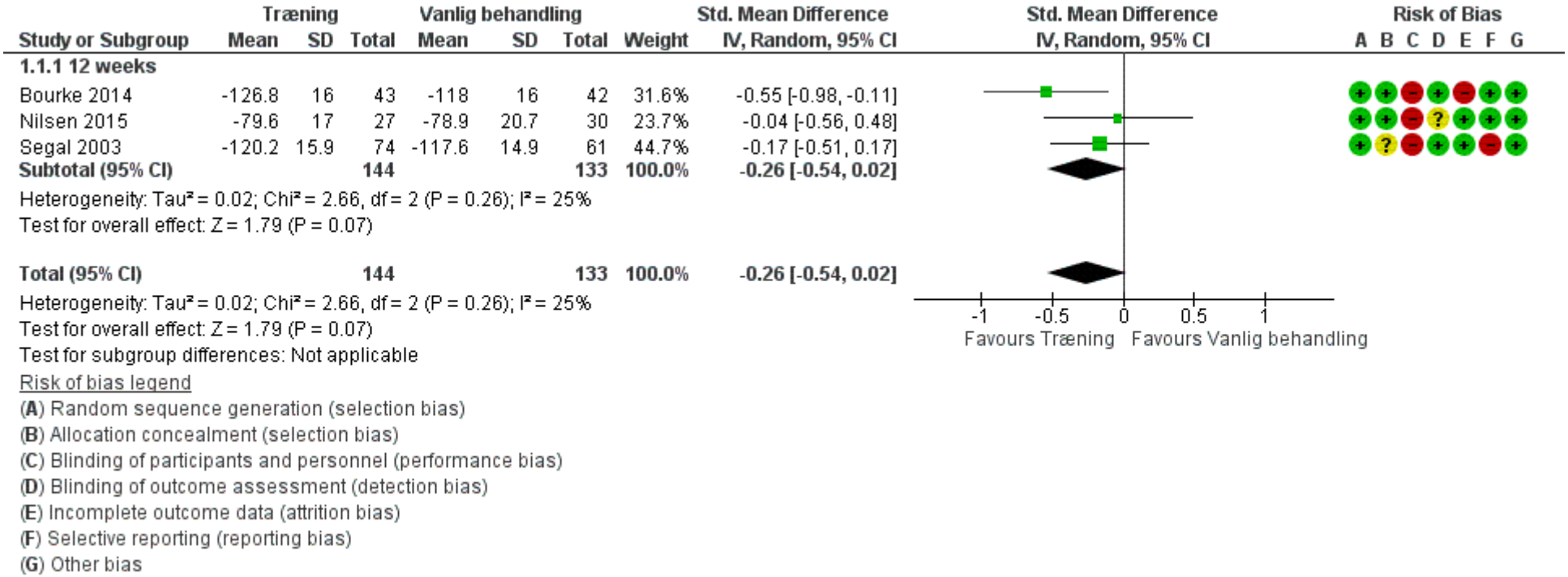
1 Træning vs Vanlig behandling

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 Livskvalitet - Total score EoT	3	277	Std. Mean Difference (IV, Random, 95% CI)	-0.26 [-0.54, 0.02]
1.1.1 12 weeks	3	277	Std. Mean Difference (IV, Random, 95% CI)	-0.26 [-0.54, 0.02]
1.2 Livskvalitet - fysisk domæne EoT	1	56	Mean Difference (IV, Fixed, 95% CI)	-4.40 [-8.99, 0.19]
1.2.1 12 weeks	1	56	Mean Difference (IV, Fixed, 95% CI)	-4.40 [-8.99, 0.19]
1.3 Livskvalitet - Mental domæne EoT	1	56	Mean Difference (IV, Fixed, 95% CI)	-1.00 [-6.73, 4.73]
1.3.1 12 weeks	1	56	Mean Difference (IV, Fixed, 95% CI)	-1.00 [-6.73, 4.73]
1.4 Deltagelse i hverdagsliv (et funktionsmål) EoT	3	160	Std. Mean Difference (IV, Random, 95% CI)	-0.31 [-0.75, 0.14]
1.4.1 12 weeks	3	160	Std. Mean Difference (IV, Random, 95% CI)	-0.31 [-0.75, 0.14]
1.5 Depression LFU	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable
1.6 Muskelstyrke EoT	3	161	Std. Mean Difference (IV, Random, 95% CI)	-0.50 [-1.20, 0.21]
1.6.1 12 weeks	3	161	Std. Mean Difference (IV, Random, 95% CI)	-0.50 [-1.20, 0.21]
1.7 Iltoptagelse (Vo2) EoT	3	188	Std. Mean Difference (IV, Random, 95% CI)	-0.54 [-0.83, -0.25]
1.7.1 12 weeks	3	188	Std. Mean Difference (IV, Random, 95% CI)	-0.54 [-0.83, -0.25]
1.8 Hjerte-kar sygdom LFU	0		Risk Ratio (IV, Fixed, 95% CI)	No totals
1.9 Diabetes LFU	0		Risk Ratio (IV, Fixed, 95% CI)	No totals
1.10 Fraktur EoT	2		Risk Ratio (IV, Random, 95% CI)	Subtotals only
1.10.1 Timepoint	2	141	Risk Ratio (IV, Random, 95% CI)	Not estimable

1.11 Frafald	5	427	Risk Ratio (IV, Random, 95% CI)	0.82 [0.50, 1.37]
1.11.1 End of treatment, 12 weeks	5	427	Risk Ratio (IV, Random, 95% CI)	0.82 [0.50, 1.37]

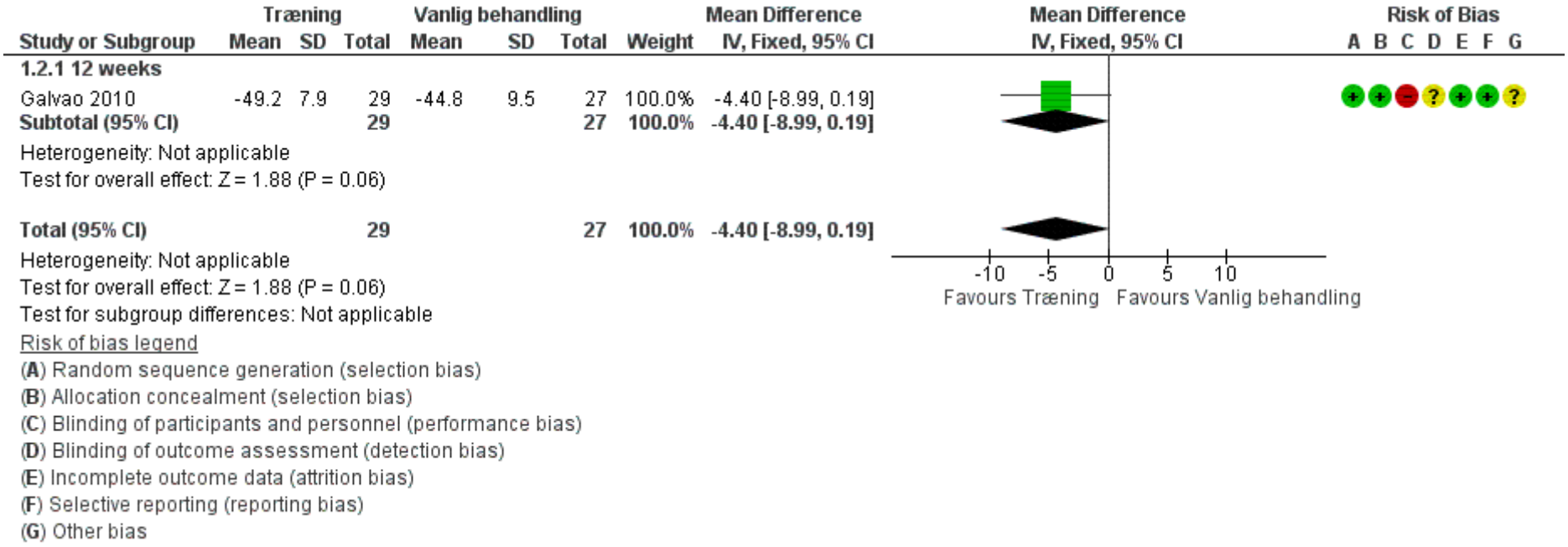
Figures

Figure 1 (Analysis 1.1)



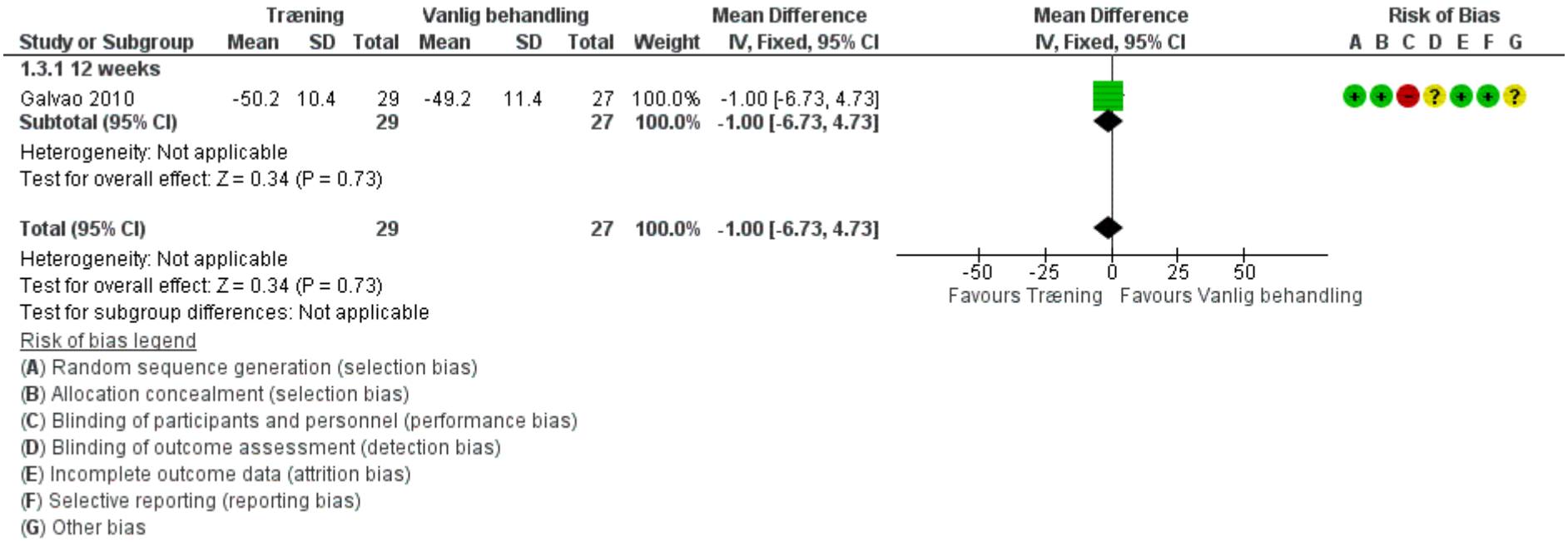
Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.1 Livskvalitet - Total score EoT.

Figure 2 (Analysis 1.2)



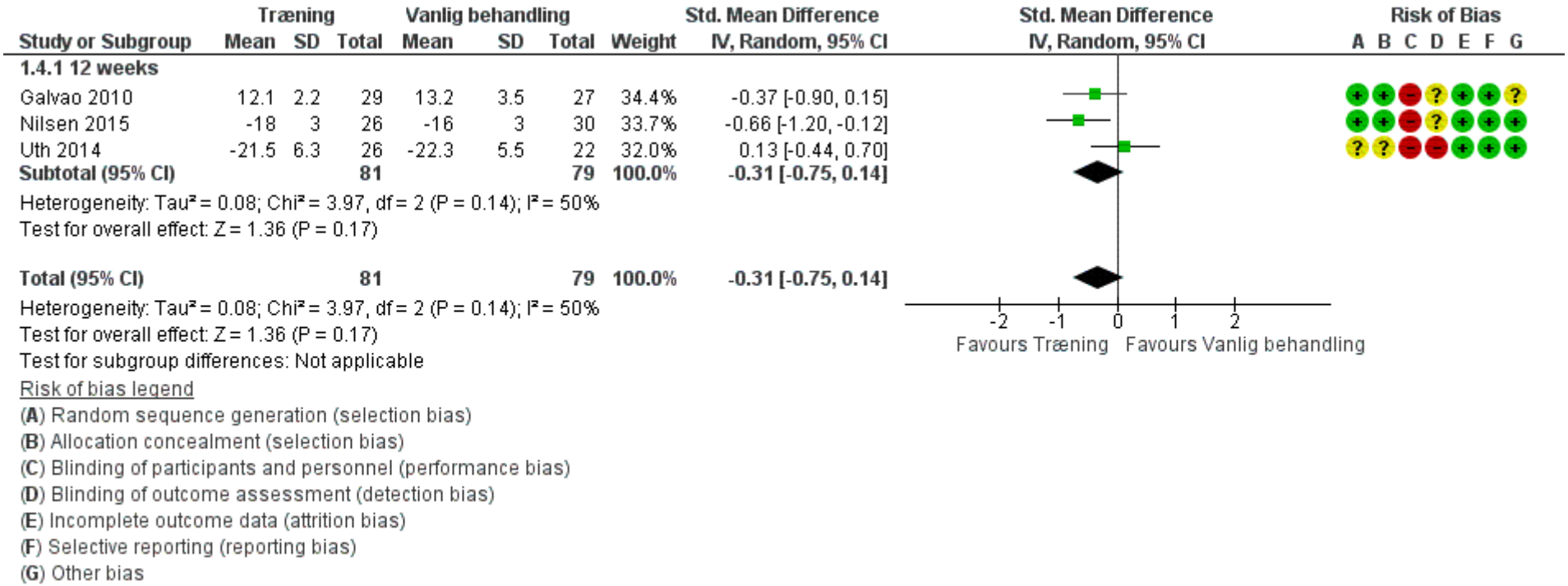
Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.2 Livskvalitet - fysisk domæne EoT.

Figure 3 (Analysis 1.3)



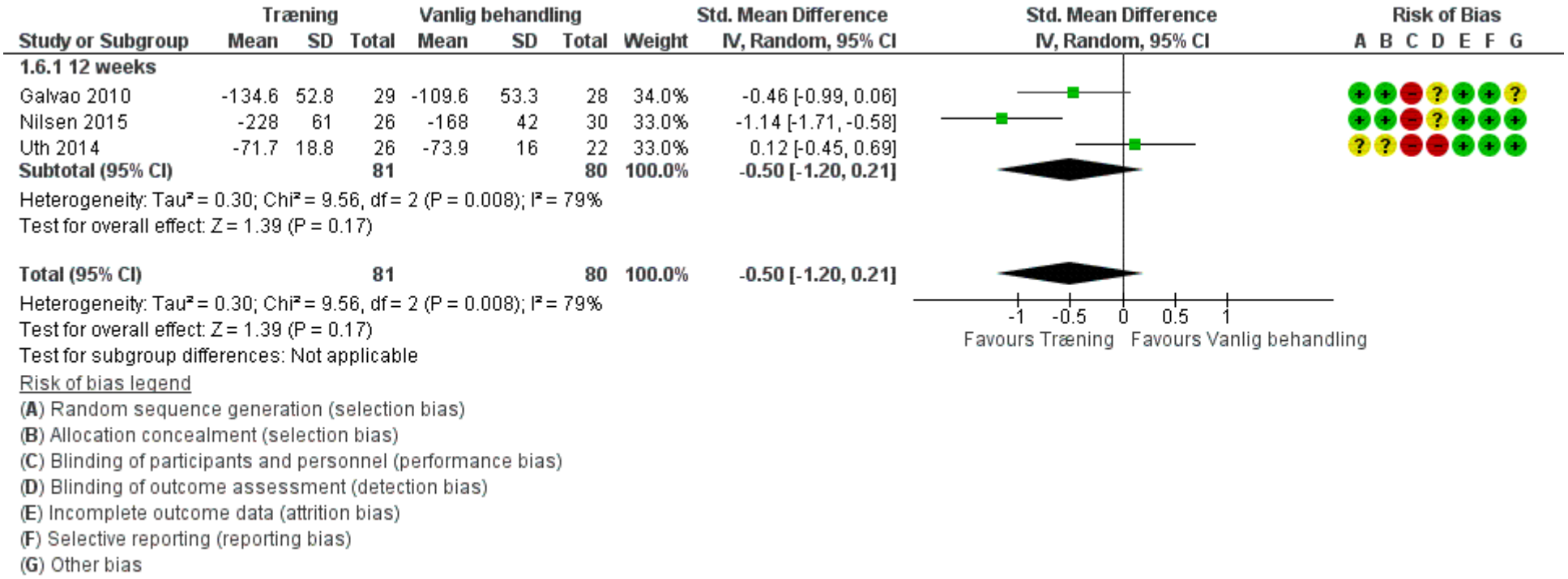
Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.3 Livskvalitet - Mental domæne EoT.

Figure 4 (Analysis 1.4)



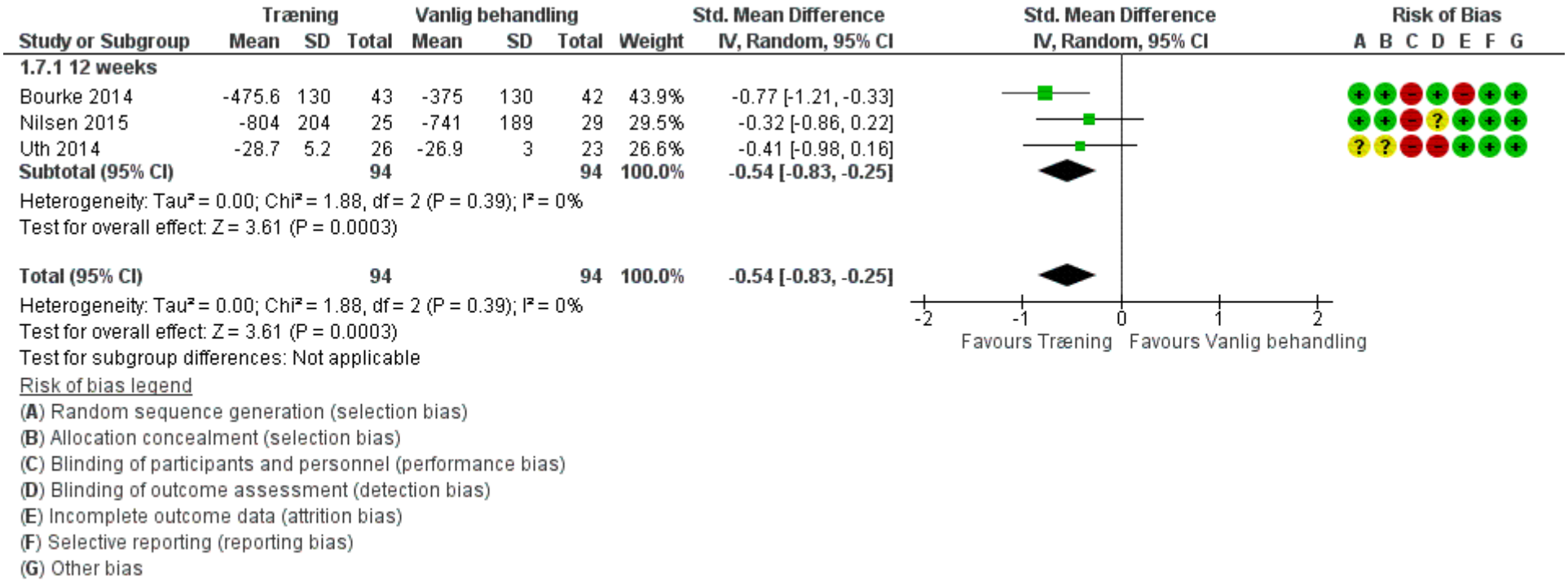
Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.4 Deltagelse i hverdagsliv (et funktionsmål) EoT.

Figure 5 (Analysis 1.6)



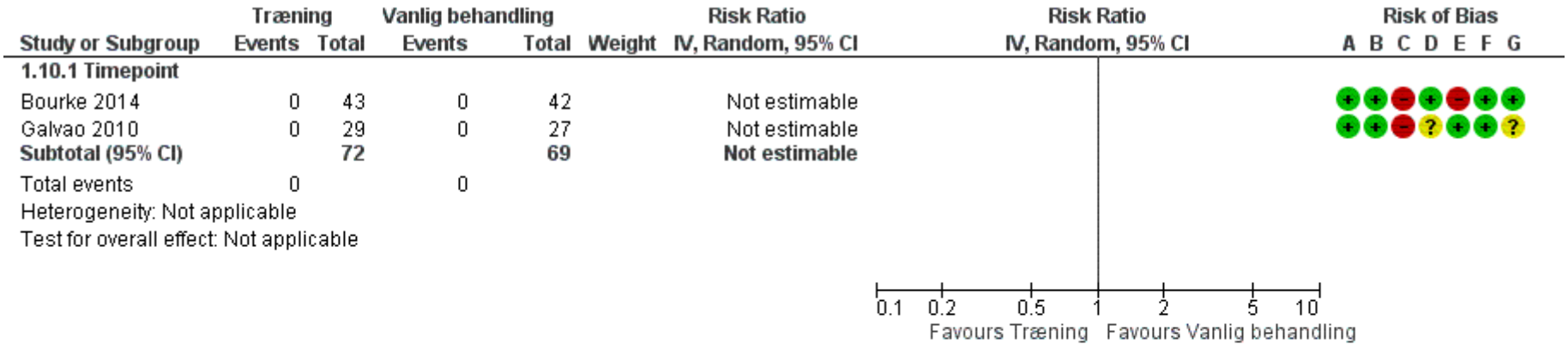
Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.6 Muskelstyrke EoT.

Figure 6 (Analysis 1.7)



Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.7 Iltoptagelse (Vo2) EoT.

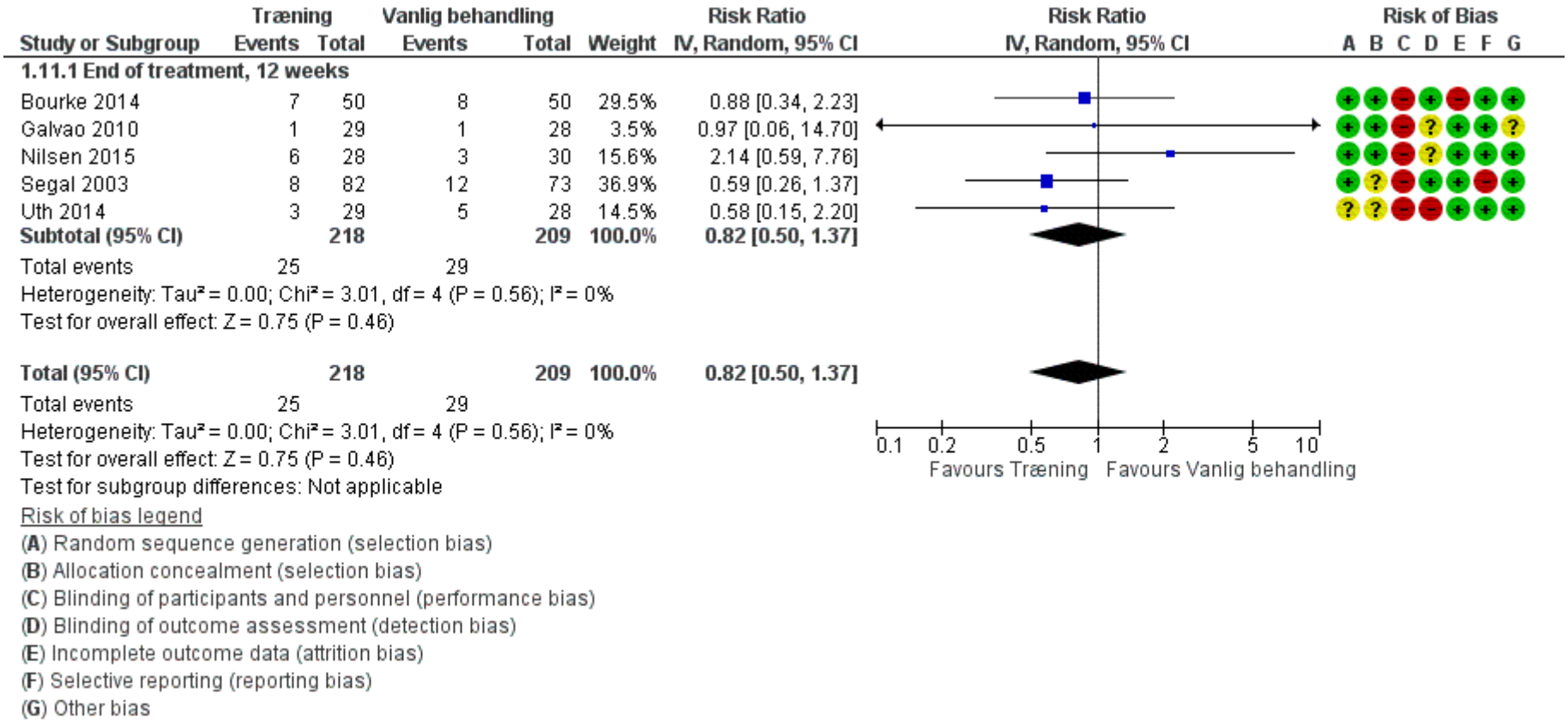
Figure 7 (Analysis 1.10)



Risk of bias legend
(**A**) Random sequence generation (selection bias)
(**B**) Allocation concealment (selection bias)
(**C**) Blinding of participants and personnel (performance bias)
(**D**) Blinding of outcome assessment (detection bias)
(**E**) Incomplete outcome data (attrition bias)
(**F**) Selective reporting (reporting bias)
(**G**) Other bias

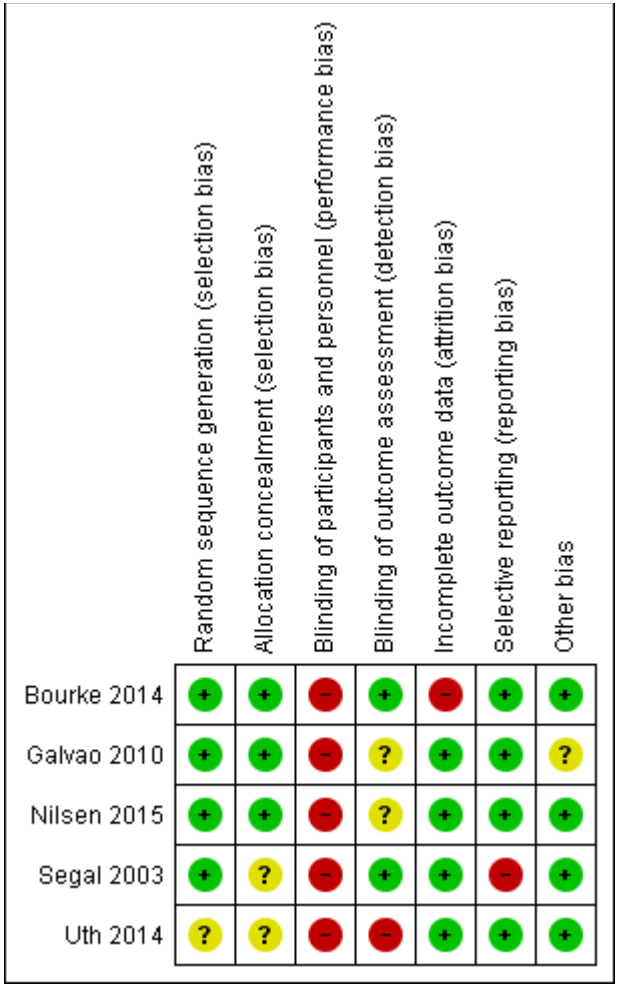
Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.10 Fraktur EoT.

Figure 8 (Analysis 1.11)



Forest plot of comparison: 1 Træning vs Vanlig behandling, outcome: 1.11 Frafald.

Figure 9



Risk of bias summary: review authors' judgements about each risk of bias item for each included study.