Abstract

Background

Objectives

Search methods

Selection criteria

Data collection and analysis

Main results

Authors' conclusions

Characteristics of studies

Characteristics of included studies

Malmivaara 1995

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Exercise group Bed rest Stay active **Included criteria:** They included patients with acute low back pain or exacerbations of chronic pain lasting less than three weeks. Patients with pain radiating below the knee were included, but not patients with a sciatic syndrome **Excluded criteria:** patients with a sciatic syndrome (defined by the presence of at least one neurologic deficit or a positive Lasègue's sign of 60 degrees or less). Also excluded were pregnant patients and those with a history of cancer, a fracture of the lumbar spine, or urinarytract disease. **Pretreatment:** The three groupswere similar with regard to most of the base-line characteristics.The control group contained a few morepeople engaged in heavy physical work, the bed-restgroup had more patients with pain radiating below theknee, and the exercise group had more patients withprolonged pain during the previous 12 months. Twopatients in the exercise group had undergone previousback surgery. The patients in all three groups workedin a wide variety of municipal occupations.
Interventions	**Intervention Characteristics** Exercise group ● *Two days of complete bed rest, with only essential walking allowed. They were advised about suitable resting positions and were given an illustration of a patient lying supine with the knees supported in a flexed position (the semi-Fowler position)*: ● *received individual instruction from a physiotherapist in one session, as well as written recommendations for back-extension and lateral bending movements to be done at home every other hour during the day until the pain subsided.*: x ● *were told to avoid bed rest and advised to continue their routines as actively as possible within the limits permitted by their back pain*: Bed rest ● *Two days of complete bed rest, with only essential walking allowed. They were advised about suitable resting*

	positions and were given an illustration of a patient lying supine with the knees supported in a flexed position (the semi-Fowler position): x ● *received individual instruction from a physiotherapist in one session, as well as written recommendations for back-extension and lateral bending movements to be done at home every other hour during the day until the pain subsided.*: ● *were told to avoid bed rest and advised to continue their routines as actively as possible within the limits permitted by their back pain*: Stay active ● *Two days of complete bed rest, with only essential walking allowed. They were advised about suitable resting positions and were given an illustration of a patient lying supine with the knees supported in a flexed position (the semi-Fowler position)*: ● *received individual instruction from a physiotherapist in one session, as well as written recommendations for back-extension and lateral bending movements to be done at home every other hour during the day until the pain subsided.*: ● *were told to avoid bed rest and advised to continue their routines as actively as possible within the limits permitted by their back pain*: x
Outcomes	*pain* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Partially reported ● **Scale**: NRS ● **Range**: 0-10 ● **Unit of measure**: none ● **Direction**: Lower is better ● **Data value**: Endpoint ● **Notes**: Difference in adjusted group means (95%CI) er afrapporteret *Disability* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Partially reported ● **Scale**: Oswestry back disability index ● **Range**: 0-100 ● **Unit of measure**: none

	● **Direction**: Lower is better ● **Data value**: Endpoint *No of sick days* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Partially reported ● **Scale**: no of days ● **Range**: 0 - 21 ● **Unit of measure**: no of days ● **Direction**: Lower is better ● **Data value**: Endpoint
Identification	**Sponsorship source:** not reported **Country:** Finland **Setting:** occupational health care centers **Comments:** **Authors name:** NTTI MALMIVAARA, M.D., PH.D., UNTO HÄKKINEN, M.SC., PH.D., TIMO ARO, M.D., PH.D., MAJ-LEN HEINRICHS, R.N., LIISA KOSKENNIEMI, M.D., EEVA KUOSMA, M.SC., SEPPO LAPPI, M.D., RAILI PALOHEIMO, M.D., CARITA SERVO, M.D., VESA VAARANEN, M.D., PH.D., AND SVEN HERN **Institution:** Department of Occupational Medicine, Finnish Institute of Oc-cupational Health **Email:** not reported **Address:** Department of Occupational Medicine, Finnish Institute of Oc-cupational Health, Topeliuksenkatu 41 aA, FIN-00250 Helsinki, Finland
Notes	*Fagkonsulent Nkr40* on 05/02/2016 02:06 **Interventions** The exercise group is not relevant for this PICO *Fagkonsulent Nkr40* on 05/02/2016 02:15 **Outcomes** PAIN: Difference in adjusted group means (95%CI): 0.3 (-0.4 to 0.9) (bed rest - stay active)DISABILITY: Difference in adjusted group means (95%CI): 3.9 (-0.2 to 8.0) (bed rest - stay active)SICK DAYS: Difference in adjusted group means (95%CI): 3.2 (1.3 to 5.0) (bed rest - stay active)

Risk of bias table

Bias	Authors' judgement	Support for judgement
Allocation concealment	Low risk	
Sequence Generation	Low risk	
Blinding of outcome assessors	High risk	
Other sources of bias	Low risk	
Blinding of participants and personnel	High risk	
Selective outcome reporting	Unclear risk	No info
Incomplete outcome data	Low risk	

Olaya Contreras 2015

Methods	
Participants	
Interventions	
Outcomes	
Identification	
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Allocation concealment	Low risk	
Sequence Generation	Low risk	
Blinding of outcome assessors	Unclear risk	No info

Other sources of bias	Unclear risk	No info
Blinding of participants and personnel	High risk	
Selective outcome reporting	Low risk	
Incomplete outcome data	Low risk	

Pengel 2007

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Exercise group + Advice - stay active (sham exercise) + Advice - stay active Exercise (+ sham advice) Sham Exercise + sham advice **Included criteria:** 18 and 80 years of agewith nonspecific low back pain lasting for at least 6 weeksbut no longer than 12 weeks. **Excluded criteria:** spinal surgery in the past 12 months, pregnancy,nerve root compromise, confirmed or suspected seriousspinal abnormality (for example, infection, fracture, or thecauda equina syndrome), contraindications to exercise, andpoor comprehension of the English languag **Pretreatment:** The groups were similar at baseline (Table 1), exceptthat slightly more participants in the sham exercise andsham advice group (6%) than in other groups had had surgery for back pain (3% in the exercise and sham advicegroup and 0% in the other 2 groups).
Interventions	**Intervention Characteristics** Exercise group + Advice - stay active ● *Aerobic exercise - individualised + based on CBT + progressive + goal setting, 12 session over 6 weeks*: x ● *Empathic physiotherapist - no advice*: ● *Graded retur to normal activities, ad modus Ingdahl, stay active*: x ● *The control for the exercise intervention consisted of sham pulsed ultrasonography (5 minutes) and sham pulsed short-wave diathermy (20 minutes)*:

	(sham exercise) + Advice - stay active ● *Aerobic exercise - individualised + based on CBT + progressive + goal setting, 12 session over 6 weeks*: ● *Empathic physiotherapist - no advice*: ● *Graded retur to normal activities, ad modus Ingdahl, stay active*: x ● *The control for the exercise intervention consisted of sham pulsed ultrasonography (5 minutes) and sham pulsed short-wave diathermy (20 minutes)*: x Exercise (+ sham advice) ● *Aerobic exercise - individualised + based on CBT + progressive + goal setting, 12 session over 6 weeks*: x ● *Empathic physiotherapist - no advice*: x ● *Graded retur to normal activities, ad modus Ingdahl, stay active*: ● *The control for the exercise intervention consisted of sham pulsed ultrasonography (5 minutes) and sham pulsed short-wave diathermy (20 minutes)*: Sham Exercise + sham advice ● *Aerobic exercise - individualised + based on CBT + progressive + goal setting, 12 session over 6 weeks*: ● *Empathic physiotherapist - no advice*: x ● *Graded retur to normal activities, ad modus Ingdahl, stay active*: ● *The control for the exercise intervention consisted of sham pulsed ultrasonography (5 minutes) and sham pulsed short-wave diathermy (20 minutes)*: x
Outcomes	*pain* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Partially reported ● **Scale**: NRS ● **Range**: 0-10 ● **Unit of measure**: none ● **Direction**: Lower is better ● **Data value**: Endpoint *Disability* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Partially reported ● **Scale**: Roland Morris ● **Range**: 0-24

	● **Unit of measure**: none ● **Direction**: Lower is better ● **Data value**: Endpoint
Identification	**Sponsorship source:** The study was funded by the National Health andMedical Research Council of Australia and the AustralasianLow Back Pain Trial Committee. The funding sources hadno role in study design; collection, analysis, or interpretationof the data; or writing of the report. **Country:** Australia and New Zealand **Setting:** 7 physiotherapy clinics in Australia and New Zealand, of which 6 were in university teaching hospitals and 1 was in a primary care clinic. **Comments:** **Authors name:** Liset H.M. Pengel, PhD; Kathryn M. Refshauge, PhD; Christopher G. Maher, PhD; Michael K. Nicholas, PhD; Robert D. Herbert, PhD; and Peter McNair, PhD **Institution:** Dr. Pengel: Centre for Evidence in Transplantation, Royal College of Surgeons of England, 35-43 Lincoln's Inn Fields, London WC2A 3PE, United Kingdom. **Email:** not provided **Address:** Dr. Pengel: Centre for Evidence in Transplantation,Royal College of Surgeons of England, 35-43 Lincoln's InnFields, London WC2A 3PE, United Kingdom.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Allocation concealment	Low risk	
Sequence Generation	Low risk	
Blinding of outcome assessors	Unclear risk	n
Other sources of bias	Low risk	
Blinding of participants and personnel	Low risk	
Selective outcome reporting	Low risk	
Incomplete outcome data	Low risk	

Rozenberg 2002

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Bed rest Stay active **Included criteria:** ambulatory patients, ages 18 to 65 years, who had acute lowback pain or a painful recent episode of chronic low back pain(in the past 72 hours) with spontaneous lumbar pain rated atleast 40 mm on a 100-mm visual analog scale (VAS) **Excluded criteria:** patients with pain radiating below the buttocks were excluded.compressive, posttraumatic, inflammatory,infectious, or tumoral lumbar disease as well aslow back pain resulting from an occupational accident **Pretreatment:** The two groups were comparable formost of the variables at inclusion
Interventions	**Intervention Characteristics** Bed rest ● *4 days of stay in bed except for personal care and eating. The mean time spent in bed was not to be less than 16 of every 24 hours*: ● *Stay active - continue normal daily activities, insofar as the pain allowed. The mean time spent in bed was not to exceed 12 of every 24 hours during the first 4 days (night rest included*: Stay active ● *4 days of stay in bed except for personal care and eating. The mean time spent in bed was not to be less than 16 of every 24 hours*: ● *Stay active - continue normal daily activities, insofar as the pain allowed. The mean time spent in bed was not to exceed 12 of every 24 hours during the first 4 days (night rest included*:
Outcomes	*pain* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: VAS

	● **Range**: 0-100 ● **Unit of measure**: none ● **Direction**: Lower is better *Disability* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: Roland Morris ● **Range**: 0-24 ● **Direction**: Lower is better ● **Data value**: Endpoint
Identification	**Sponsorship source:** not reported **Country:** Frankrig **Setting:** Primary care **Comments:** **Authors name:** Sylvie Rozenberg, Cecile Delval, Yvonne Rezvani, et al. **Institution:** Department of Rheumatology, Pitie´-Salpetriere Hospital, Paris, Frankrig **Email:** sylvie.rozenberg@psl.ap-hop-paris.fr **Address:** Dr Sylvie RozenbergGroupe Hospitalier Pitie´-Salpeˆtrie`reService de Rhumatologie47-83 Bd de l'hoˆpital75013 ParisFrance
Notes	*Fagkonsulent Nkr40* on 01/02/2016 21:14 **Select** Kirsten: Fuldtekst Kommer 2/2

Risk of bias table

Bias	Authors' judgement	Support for judgement
Allocation concealment	Low risk	
Sequence Generation	Low risk	
Blinding of outcome assessors	High risk	

Other sources of bias	Low risk	
Blinding of participants and personnel	High risk	
Selective outcome reporting	Unclear risk	No info
Incomplete outcome data	Low risk	

Wilkinson 1995

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Bed rest Stay active **Included criteria:** patients in the age range 16-60 years who presentedwith acute low back. Acute pain was classed as that of less than seven days' duration,5 and subjects had to have been free from back pain for the28 days before the present episode. Acute low back pain wasdefined as pain in the area bounded by the lowest palpable ribssuperiorly, the posterior axillary lines laterally, and gluteal foldsinferiorly; the pain could radiate down one or both legs.6 **Excluded criteria:** nonmusculoskeletalpain, previous bed rest for more than 24 hours inthe present episode, urinary tract infection, viral illness, pyrexia,illiteracy, anticoagulant or steroid therapy, medical contraindicationsto bed rest, major spinal pathology, inflammatory joint diseaseand active cancer. **Pretreatment:** There were no statistically significant differences between thebed rest and control groups with respect to the subjects' demographicand prognostic details (Table 1) or with respect to meanage, 35.2 years and 41.2 years, respectively, or mean duration ofback pain episode, 3.0 days (standard deviation (SD) 1.4 days)and 3.3 days (SD 2.0 days), respectively
Interventions	**Intervention Characteristics** Bed rest ● *48 hours' strict bed rest*: x ● *encouraged to remain mobile and to have no daytime rest (defined as between 09.00 hours and 21.00 hours)*: ● *Ibuprofen*: x Stay active

	● *48 hours' strict bed rest*: ● *encouraged to remain mobile and to have no daytime rest (defined as between 09.00 hours and 21.00 hours)*: x ● *Ibuprofen*: x
Outcomes	*Roland Morris* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: Roland Morris ● **Range**: 0-24 ● **Unit of measure**: none ● **Direction**: Lower is better ● **Data value**: Endpoint *Oswestry (ODI)* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: Oswestry back disability index ● **Range**: 0-100 ● **Unit of measure**: none ● **Direction**: Lower is better ● **Data value**: Endpoint
Identification	**Sponsorship source:** This project was funded by a Royal College of General Practitioners scientifcfoundation research grant. **Country:** UK **Setting:** Primary care **Comments:** **Authors name:** MARTIN J B WILKINSON **Institution:** Department of General Practice, University of Birmingham, Medical School, Edgbaston, Birmingham **Email:** M.J.B. Wilkinson@bham.ac.uk. **Address:** Department of General Practice, University ofBirmingham, Medical School, Edgbaston, Birmingham B15 2TT.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Allocation concealment	Unclear risk	No info
Sequence Generation	Unclear risk	No info
Blinding of outcome assessors	Unclear risk	No info
Other sources of bias	High risk	
Blinding of participants and personnel	High risk	
Selective outcome reporting	Unclear risk	No info
Incomplete outcome data	Unclear risk	No info

Footnotes

References to studies

Included studies

Malmivaara 1995

Malmivaara,A.; Hakkinen,U.; Aro,T.; Heinrichs,M. L.; Koskenniemi,L.; Kuosma,E.; Lappi,S.; Paloheimo,R.; Servo,C.; Vaaranen,V.. The treatment of acute low back pain--bed rest, exercises, or ordinary activity? The New England journal of medicine 1995;332(6):351-355. [DOI: 10.1056/NEJM199502093320602 [doi]]

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[Empty]

Pengel 2007

Pengel, L. H.; Refshauge, K. M.; Maher, C. G.; Nicholas, M. K.; Herbert, R. D.; McNair, P.. Physiotherapist-directed exercise, advice, or both for subacute low back pain: a randomized trial. Annals of internal medicine 2007;146(11):787-96. [DOI: 146/11/787 [pii]]

Rozenberg 2002

Rozenberg, S.; Delval, C.; Rezvani, Y.; Olivieri-Apicella, N.; Kuntz, J.; Legrand, E.; Valat, J.; Blotman, F.; Meadeb, J.; Rolland, D.; Hary, S.; Duplan, B.; Feldmann, J.; Bourgeois, P.. Bed rest or normal activity for patients with acute low back pain: a randomized controlled trial. Spine 2002;27(14):1487-1493. [DOI: 00007632-200207150-00002 [pii]]

Wilkinson 1995

Wilkinson,M.J.. Does 48 hours' bed rest influence the outcome of acute low back pain? 1995;45(398):481-484. [DOI:]

Data and analyses

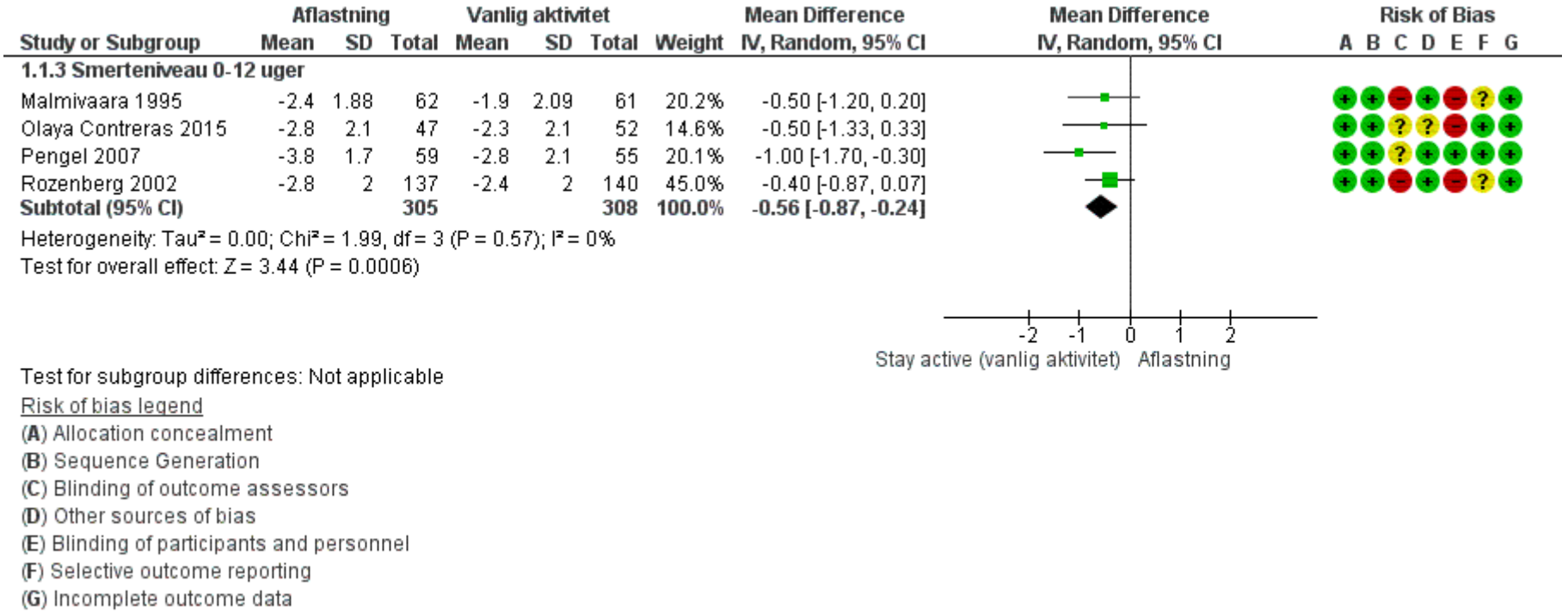
1 Aflastning vs Stay active (vanlig aktivitet)

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 Smertenivau 0-12 uger	4		Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1.3 Smerteniveau 0-12 uger	4	613	Mean Difference (IV, Random, 95% CI)	-0.56 [-0.87, -0.24]
1.2 Funktionsniveau 0-12 uger	3		Std. Mean Difference (IV, Random, 95% CI)	Subtotals only
1.2.1 Funktionsniveau 0-12 uger	3	514	Std. Mean Difference (IV, Random, 95% CI)	0.25 [0.08, 0.43]
1.3 Smerteniveau 6-18 måneder	1		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
1.3.1 Smerteniveau 6-18 måneder	1	118	Mean Difference (IV, Fixed, 95% CI)	0.30 [-0.39, 0.99]
1.4 Funktionsniveau 6-18 måneder	1		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
1.4.1 Funktionsniveau 6-18 måneder	1	115	Mean Difference (IV, Fixed, 95% CI)	0.90 [-0.95, 2.75]
1.5 Sygefravær - antal sygedage	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable
1.6 Livskvalitet 0-12 uger	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable
1.7 Sygefravær - tid tilbage til arbejde	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable
1.8 Sygefravær - proportion i arbejde	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable

1.9 Recidiv 6 - 18 måneder	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable

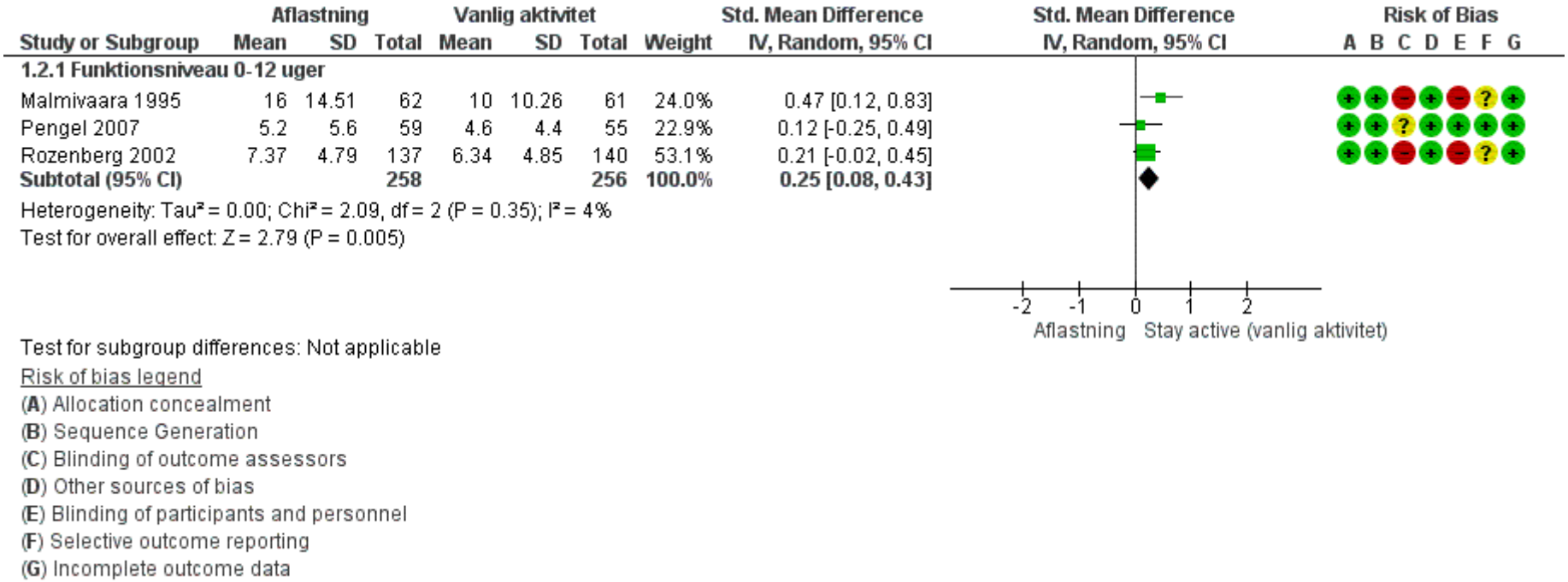
Figures

Figure 1 (Analysis 1.1)



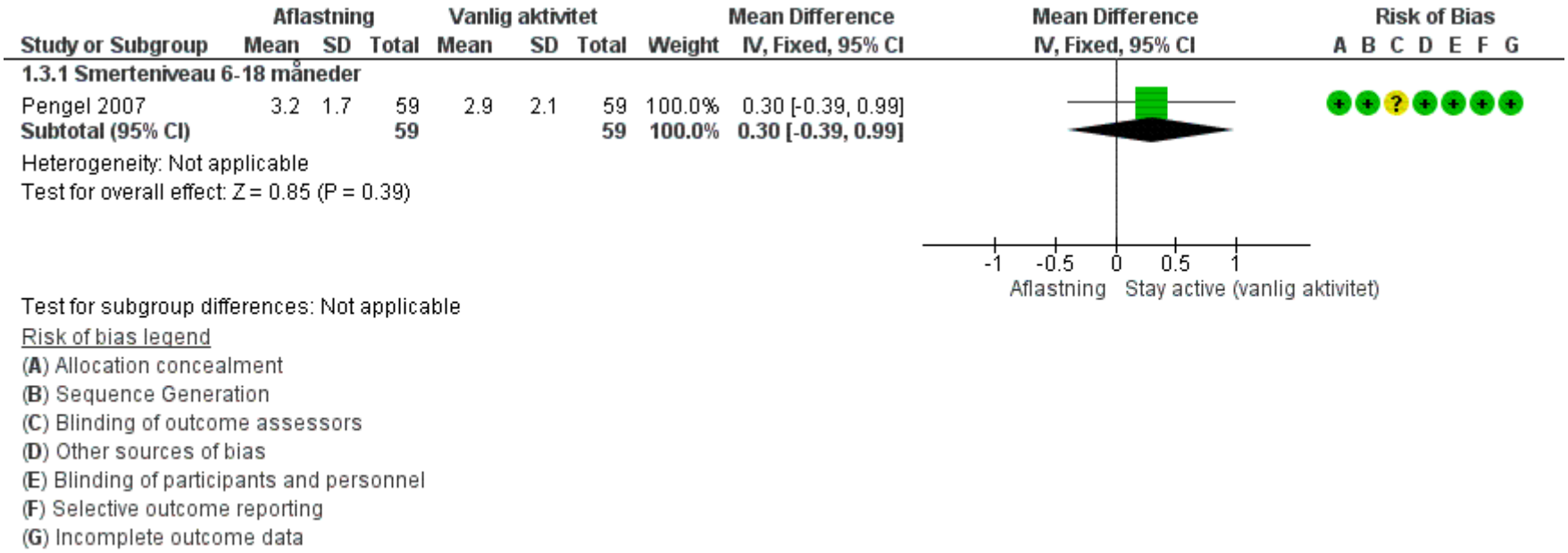
Forest plot of comparison: 1 Aflastning vs Stay active (vanlig aktivitet), outcome: 1.1 Smertenivau 0-12 uger.

Figure 2 (Analysis 1.2)



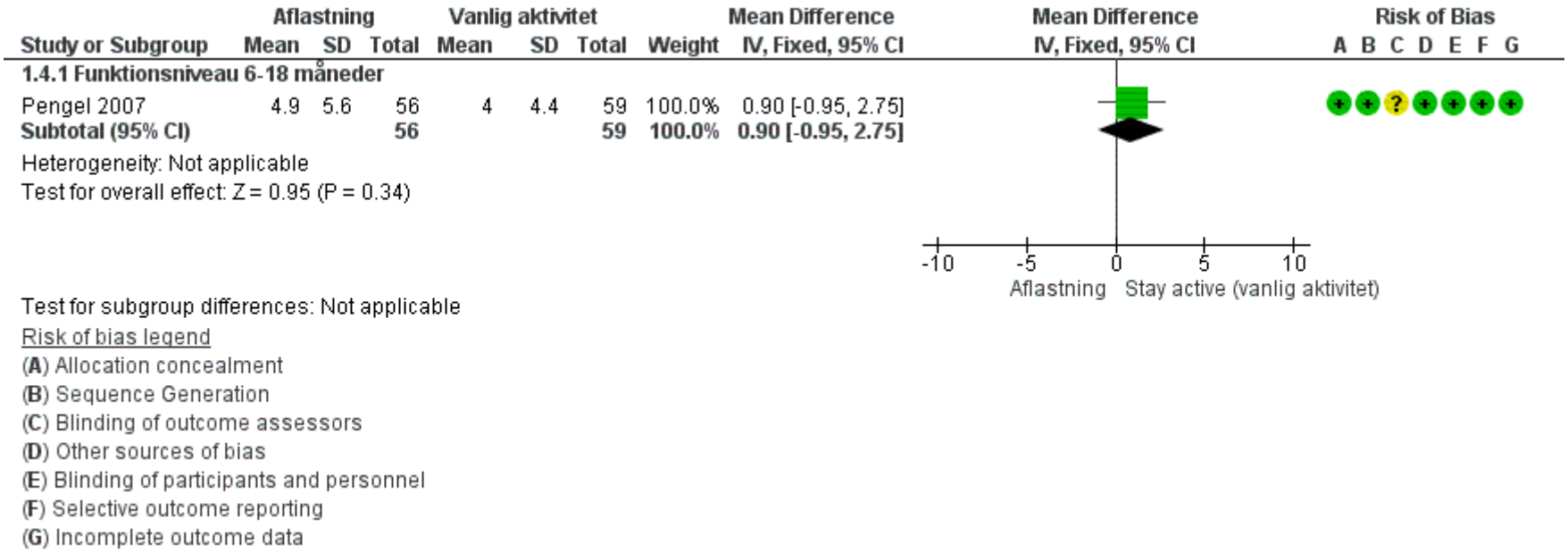
Forest plot of comparison: 1 Aflastning vs Stay active (vanlig aktivitet), outcome: 1.2 Funktionsniveau 0-12 uger.

Figure 3 (Analysis 1.3)



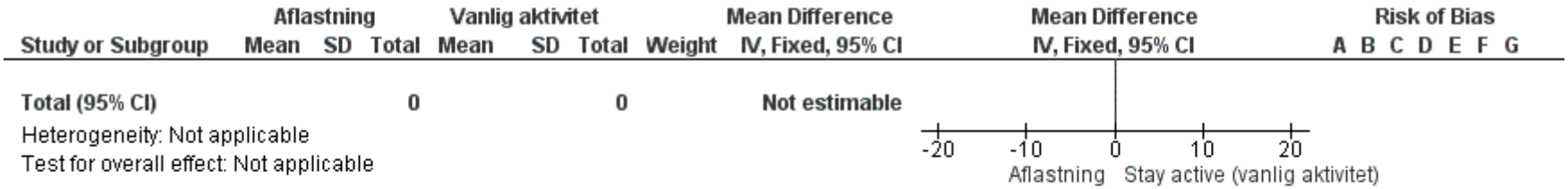
Forest plot of comparison: 1 Aflastning vs Stay active (vanlig aktivitet), outcome: 1.3 Smerteniveau 6-18 måneder.

Figure 4 (Analysis 1.4)



Forest plot of comparison: 1 Aflastning vs Stay active (vanlig aktivitet), outcome: 1.4 Funktionsniveau 6-18 måneder.

Figure 5 (Analysis 1.5)



Risk of bias legend
(**A**) Allocation concealment
(**B**) Sequence Generation
(**C**) Blinding of outcome assessors
(**D**) Other sources of bias
(**E**) Blinding of participants and personnel
(**F**) Selective outcome reporting
(**G**) Incomplete outcome data

Forest plot of comparison: 1 Aflastning vs Stay active (vanlig aktivitet), outcome: 1.5 Sygefravær - antal sygedage.