NKR-41 Bevægerestriktioner versus ingen bevægerestriktioner efter total hoftealloplastik

Review information

Authors

Sundhedsstyrelsen [1]

[1] [Empty affiliation]

Citation example: S. NKR-41 Bevægerestriktioner versus ingen bevægerestriktioner efter total hoftealloplastik. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Characteristics of studies

Characteristics of included studies

Allen 2018

Methods	**Study design:** Retrospective cohort study
Participants	**Baseline Characteristics** Intervention ● *Age, mean (SD)*: median 72 (IQR 64-78) ● *Female, N (%)*: 1576 (62) ● *Femoral head size ≤ 28 mm, N (%)*: 199 (8) ● *Posterior surgical approach, N (%):* 866 (34) Control ● *Age, mean (SD)*: median 71 (IQR 64-78) ● *Female, N (%)*: 432 (64) ● *Femoral head size ≤ 28 mm, %*: 18 (3) ● *Posterior surgical approach, N (%): 334 (50)* **Included criteria:** Patients who had had primary hip arthoplasty **Excluded criteria:** Revision surgery, conversion surgery, resurfacing surgery, no 1 year follow-up
Interventions	**Intervention Characteristics** Intervention ● *Description*: Standard hip precautions (No info on specifics) ● *Duration*: 6 weeks Control ● *Description*: No hip precautions ● *Duration*: 6 weeks
Outcomes	*Hofteluksation (tidlig)* ● **Outcome type**: Adverse Event ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint (6 weeks) *Hofteluksation (sen)* ● **Outcome type**: Adverse Event ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: 6 months - 1 year *Patientrapporteret funktionsevne, langtidseffekt* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale**: OHS ● **Range**: 12-60 ● **Direction**: Higher is better ● **Data value**: 1 year *Præstationsbaseret funktionsevne, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Smerte (hofterelateret), efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Patientrapporteret funktionsevne, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Helbredsrelateret livskvalitet, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Tilbagevenden til arbejde, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Not reported *Reoperation, alle årsager, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Not reported

Identification	**Sponsorship source:** No financial support **Country:** UK **Authors name:** Felix C. Allen **Institution:** Orthopaedic Research Department, South West London **Email:** f.allen@alumni.ucl.ac.uk **Address:** Elective Orthopaedic Research Centre, Epsom General Hospital, Surrey, York House KT18 7EG, UK
Notes	

Risk of bias table

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

Dietz 2019

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention 1 ● *Age, mean (SD)*: 63.3 (95% CI 61-64) ● *Female, N (%)*: 44 % ● *BMI, mean (SD)*: 30 (95% CI 29.3-31) ● *ASA, mean:* 2.5 ● *Femoral head size, mean (95% CI):* 35.3 (34.9-35.7) ● *Posterolateral surgical approach, %:* 100 Kontrol 1 ● *Age, mean (SD)*: 63.2 (95% CI 62-64,8) ● *Female, N (%)*: 51,1 % ● *BMI, mean (SD)*: 31 (95% CI 30.2-32) ● *ASA, mean:* 2.6 ● *Femoral head size, mean (95% CI):* 34.7 (34-35) ● *Posterolateral surgical approach, %:* 100 **Included criteria:** Age greater than 18 years old but less than 90 years old receiving a primary THA via the posterolateral approach **Excluded criteria:** Age less than 18 years old or older than 90 years, prior enrollment in this study (ie, staged bilateral patients), cognitive disorders, neuromuscular spasticity disorders, femoral neck fractures, connective tissue disorders, history of substance abuse, dual mobility implant, or the use of a constrained implant.Patients randomized to one of the intervention arms but not undergoing aTHA via the mini-posterior approach were removed from analysis
Interventions	**Intervention Characteristics** Intervention 1 ● *Description*: Standard hip precaution (SHP). Hip precautions were defined as no hip flexion greater than 90,no internal rotation of the hip, and no adduction of the hip ● *Dose*: 6 weeks Kontrol 1 ● *Description*: No hip precautions (NHP) ● *Dose*: 6 weeks
Outcomes	*Hofteluksation (tidlig)* ● **Outcome type**: Adverse Event ● **Reporting**: Not reported *Hofteluksation (sen)* ● **Outcome type**: Adverse Event ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: 12 months. *Patientrapporteret funktionsevne, efter endt behandling* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: HOOS Jr ● **Range**: 0-100 ● **Direction**: Higher is better ● **Data value**: Endpoint (6 weeks) *Smerte (hofterelateret), efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale**: Rate of pain ● **Range**: 0-10 ● **Direction**: Lower is better ● **Data value**: Endpoint (6 weeks) *Patientrapporteret funktionsevne, langtidseffekt*

	● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale**: HOOS Jr ● **Range**: 0-100 ● **Direction**: Higher is better ● **Data value**: 1 year *Helbredsrelateret livskvalitet, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale**: VAS (Health state) ● **Range**: 0-100 ● **Direction**: Higher is better ● **Data value**: Endpoint (6 weeks) *Tilbagevenden til arbejde, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Not reported *Reoperation, alle årsager, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Not reported
Identification	**Sponsorship source:** The National Institute of General Medical Sciences of the National In-stitutes of Health under Award Number 5U54GM104942-03. **Country:** USA **Setting:** Multicentre **Authors name:** Matthew J. Dietz **Institution:** Department of Orthopaedics, Health Sciences Center, WVU School of Medicine, Morgantown, WV **Address:** Department of Orthopaedics, HealthSciences Center, WVU School of Medicine, PO Box 9196, Morgantown, WV 26506-9196
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	SUPPORTING ANNOTATIONS: "The block randomization schedule was created using JMP statistical software (SAS, Cary, NC)."
Allocation concealment (selection bias)	Unclear risk	COMMENTS: No information on method described for concealing allocation.
Blinding of participants and personnel (performance bias)	High risk	SUPPORTING ANNOTATIONS: "The patient and surgeon were aware of the randomization at the time of surgery."
Blinding of outcome assessment (detection bias)	Low risk	COMMENTS: Not mentioned, however the outcome hip dislocation is probably not at risk of bias due to non-blinding. Some outcomes are self-reported. Considered low because disclocations is the critical outcome
Incomplete outcome data (attrition bias)	Low risk	COMMENTS: Low attrition in both groups (intervention 14/159, control 15/154)
Selective reporting (reporting bias)	Low risk	COMMENTS: Outcome reporting matches pre-registration: NCT03341442
Other bias	Unclear risk	SUPPORTING ANNOTATIONS: "participants in the NHP group reported adhering to some form of hip precautions in 28% of the cases." COMMENTS: Risk of contamination because hip precautions are being followed to some degree in the "no hip precaution" group

Lightfoot 2020

Methods	**Study design:** Prospective cohort study
Participants	**Baseline Characteristics** Intervention ● *Age, mean (SD)*: 67 (11.2) ● *Female, N (%)*: 73 (62) ● *BMI, mean (SD)*: 29.1 (5.34) ● *Posterior surgical approach, N (%)*: 82 (69) ● *Femoral head size ≤ 28 mm, N (%)*: Data not presented Control ● *Age, mean (SD)*: 68.2 (10.1) ● *Female, N (%)*: 85 (71) ● *BMI, mean (SD)*: 29.1 (8.85) ● *Posterior surgical approach, N (%)*: 82 (69) ● *Femoral head size ≤ 28 mm, N (%)*: Data not presented **Included criteria:** > 18 years and scheduled for an elective primary THR **Excluded criteria:** Not speaking or reading english, previous history of revision surgery on either hip, admitted for "complex" surgery (as defined by the surgeon, but typically involved bone grafting) or revision surgery, had dementia documented in medical notes. **Pretreatment:** Comparable, 62% female in hip precation group vs. 71% female in no hip precations group.
Interventions	**Intervention Characteristics** Intervention ● *Description*: In phase 1, patients were taught hip precautions which involved education about specific hip joint movements to avoid (flekxion beyond 90 degrees, adduction and rotation) and practising activites of daily living (ADLs)within these movement restrictions, sucj as getting on and off chairs. a standard package of equipment was provided which included a raised toilet seat. ● *Duration*: No information (maybe 6 weeks) Control ● *Description*: In phase 2, hip precautions were not taught. The new regime was an individualised approach to rehabilitation that

	ecouraged patients to move as they were able, within a comfortable range of motion and as pain allowed. Specialist equipment was only provided to those patients who required it, following clinical assessment. ● *Duration*: No information
Outcomes	*Hofteluksation (tidlig)* ● **Outcome type**: Adverse Event ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: 3 months, posterior approach *Hofteluksation (sen)* ● **Outcome type**: Adverse Event ● **Reporting**: Not reported *Patientrapporteret funktionsevne, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale:** Oxford Hip Score (OHS) ● **Range:** 12-60 ● **Direction:** Higher is better ● **Data value:** Endpoint (6 weeks) *Smerte (hofterelateret),efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Patientrapporteret funktionsevne, langtidseffekt* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Helbredsrelateret livskvalitet, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Scale:** EQ-5D, index score ● **Range:** 0-1 ● **Direction:** Higher is better ● **Data value:** Endpoint (6 weeks) *Tilbagevenden til arbejde, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Not reported *Reoperation, alle årsager, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Partially reported
Identification	**Sponsorship source:** CJL (primary investigator) was funded by school of Health sciences, University of Nottingham. **Country:** UK **Setting:** Nottingham university hospitals **Authors name:** Courtney J. Lightfood. **Institution:** Faculty of Medicine and health sciences, University of Nottingham **Email:** courtney.lightfoot1@nottingham.ac.uk **Address:** Department of Health Sciences, University of Nottingham, B floor, South Bank, Queen's Medical Centre, Nottingham NG7 2HA, UK
Notes	

Risk of bias table

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

Mikkelsen 2014

Methods	**Study design:** Controlled interrupted time series
Participants	**Baseline Characteristics** Restricted ● *Age (years), mean (SD)*: 69 (10.1) ● *BMI, mean (SD)*: 27.2 (5.1) ● *Femoral head size ≤ 32 mm, N (%)*: 5 (4.1%) ● *Posterior surgical approach, %:* 100 Unrestricted ● *Age (years), mean (SD)*: 68.4 (9.9) ● *BMI, mean (SD)*: 26.5 (4.1) ● *Femoral head size ≤ 32 mm, N (%)*: 9 (4.2%) ● *Posterior surgical approach, %:* 100 **Included criteria:** All patients undergoing total hip replacement surgery in the inclusion period were asked to fulfill the questionnaires in the study as part of the quality assessment in the orthopedic department.

	Excluded criteria: patients undergoing revision THR, THR due to femoral fractures and other diagnosis than osteoarthritis as the primary indication for surgery, e.g. rheumatoid arthritis. **Pretreatment:** A slightly higher but significant number of patients with higher education in the unrestricted group.
Interventions	**Intervention Characteristics** Restricted ● *Description*: Patients in the restricted group (RG) underwent the traditional rehabilitation in the department including movement restrictions (maximum 90ï¿½ of flexion, no adduction beyond neutral position and no internal rotation) the first six weeks postoperatively. To obey to these restrictions patients were provided with the following assistive devices: elevated toilet seat, shoe horn, bath bench, ergonomic reacher, sock aid and wedge pillow. Unrestricted ● *Description*: The unrestricted group (UG) had no movement restrictions apart from avoiding the com-bination of full hip flexion, internal rotation and ad-duction. To illustrate this for the patients, they were advised to bend between their knees when flexing the hip, e.g., to put on shoes. In the UG assistive de-vices were only distributed when needed for the pa-tient to perform activities of daily living, e.g., if a patient could not rise from a normal toilet, an elevated toilet was lent.
Outcomes	*Patientrapporteret funktionsevne, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale**: HOOS ADL ● **Range**: 0 to 100 ● **Unit of measure**: Points ● **Direction**: Higher is better ● **Data value**: Endpoint (6 weeks) ● **Notes**: Data used are 6 weeks post as 3 weeks post has a larger loss to follow up *Hofteluksation (tidlig)* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint (6 weeks) *Hofteluksation (sen)* ● **Outcome type**: Adverse event ● **Reporting**: Not reported *Præstationsbaseret funktionsevne, efter endt behandling* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Fully reported ● **Scale**: Capable of stair climbing ● **Direction**: Higher is better *Smerte (hofterelateret), efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale**: HOOS pain ● **Range**: 0 to 100 ● **Unit of measure**: Points ● **Direction**: Higher is better *Patientrapporteret funktionsevne, langtidseffekt* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Helbredsrelateret livskvalitet, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Scale**: HOOS QoL ● **Range**: 0 to 100 ● **Unit of measure**: Points ● **Direction**: Higher is better *Tilbagevenden til arbejde, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Fully reported ● **Direction**: Higher is better ● **Data value:** 6 weeks follow-up (after surgery) *Reoperation, alle årsager, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Not reported
Identification	**Sponsorship source:** The study was supported by the Health Research Fund of Central Denmark Region. **Country:** Denmark **Setting:** Inpatient **Comments:** No published protocol. First author member of the guideline panel. **Authors name:** L. R. Mikkelsen et al. **Institution:** Silkeborg Regional Hospital **Email:** lonemike@rm.dk
Notes	

Risk of bias table

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

Tetreault 2020

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention 1 ● *Age, mean (SD)*: 63.9 (9.3) ● *Female, N (%)*: 149 (51.1) ● *BMI, mean (SD)*: 32.9 (8.49) ● *Femoral head size 28 mm, N (%)*: 2.6% ● *Posterolateral surgical approach, %:* 100 Kontrol 1 ● *Age, mean (SD)*: 62.6 (9.6) ● *Female, N (%)*: 135 (57.7) ● *BMI, mean (SD)*: 32.1 (8.14) ● *Femoral head size 28 mm, N (%)*: 2.4% ● *Posterolateral surgical approach, %:* 100 **Included criteria:** Age 18 years and older, an index diagnosis of non-inflammatory arthritis, and the ability to understand and comply with study procedures. **Excluded criteria:** A history of previous surgery on the affected hip other than arthroscopy.
Interventions	**Intervention Characteristics** Intervention 1 ● *Description*: Restrictions. Patients randomized to the hip precautions group were specifically advised to refrain from hip adduction over midline, flexion greater than 90, and internal rotation ● *Dose/Duration*: 6 weeks Kontrol 1 ● *Description*: No restrictions. Patient in the unrestricted group were not required to follow any of these precautions; however, they were given the freedom to use additional equipment (such as a pillow between their legs when sleeping or an elevated toilet) if desired for comfort. ● *Dose/Duration*: 6 weeks
Outcomes	*Patientrapporteret funktionsevne, efter endt behandling* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Fully reported ● **Scale**: Difficulty with ADL ● **Unit of measure**: n/N ● **Direction**: Lower is better ● **Data value**: Endpoint (6 weeks) *Hofteluksation (tidlig)* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint (<3 months) *Hofteluksation (sen)* ● **Outcome type**: Adverse event ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: 203 days post op. *Smerte (hofterelateret), efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Patientrapporteret funktionsevne, langtidseffekt* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Helbredsrelateret livskvalitet, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Tilbagevenden til arbejde, længste follow-up* ● **Outcome type**: Continuous Outcome ● **Reporting**: Fully reported ● **Unit of measure:** no. of days after surgery ● **Direction**: Lower is better ● **Data value:** 1 year follow-up *Reoperation, alle årsager, længste follow-up* ● **Outcome type**: Dichotomous Outcome

	● **Reporting**: Not reported
Identification	**Sponsorship source:** Not reported **Country:** USA **Setting:** Hospital **Authors name:** Matthew W. Tetreault, **Institution:** Department of Orthopedic Surgery, Rush University Medical Center, Chicago, Illinois **Address:** The Bone & Joint Center, 1367 Washington Avenue, Suite 200, Albany, NY 12206.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	SUPPORTING ANNOTATIONS: "randomization was performed immediately post- operatively to avoid patient-selection bias or alteration in surgical technique. Sealed envelopes were made by the study coordinator and contained group designation as determined by a random numbers table. These were opened after surgery and before transfer to the floor to reveal a patient's group assignment."
Allocation concealment (selection bias)	Low risk	SUPPORTING ANNOTATIONS: "Sealed envelopes were made by the study coordinator and contained group designation as determined by a random numbers table. These were opened after surgery and before transfer to the floor to reveal a patient's group assignment."
Blinding of participants and personnel (performance bias)	High risk	SUPPORTING ANNOTATIONS: "Study participation and group assignment were noted on the home screen of the patient's electronic medical record, with nursing and physical therapists specifically reminded of study protocol.To help mitigate this risk, surgeons remained blinded to randomization group until completion of the surgery, and extensive measures were taken to inform all postoperative care providers as to the study protocol." COMMENTS: not feasible to blind patients or personnel Der er blindet så langt som man kan ift inteventionens art
Blinding of outcome assessment (detection bias)	Low risk	COMMENTS: The critical outcome (dislocations) is probably not at risk of bias Some important outcomes are self-reported
Incomplete outcome data (attrition bias)	Low risk	COMMENTS: Low attrition in both groups (intervention 4/292; control 5/295). Fig 1
Selective reporting (reporting bias)	Low risk	COMMENTS: Outcomes reported matches those stated in protocol (NCT02686528)
Other bias	Unclear risk	SUPPORTING ANNOTATIONS: "For 74 of 291 (25.4%) hips in the restricted group, patients admitted failure to observe some or all the prescribed hip pre- cautions at the 6-week postoperative visit. Meanwhile, for 65 of 294 (22.1%) hips in the unrestricted group, patients stated that they observed at least some hip precautions despite not being required to do so."

vanderWeegen 2019

Methods	**Study design:** Prospective cohort study
Participants	**Baseline Characteristics** Intervention ● *Age, median:* 69.1 (IQR 13.6) ● *Female, N (%)*: 699 (63.4) ● *Femoral head size ≤ 28 mm, N (%)*: 594 (54%) ● *Posterior surgical approach, %:* 100 Control ● *Age, median:* 69 (IQR 13.4) ● *Female, N (%)*: 652 (62.2) ● *Femoral head size ≤ 28 mm, N (%)*: 443 (42%) ● *Posterior surgical approach, %:* 100 **Included criteria:** Elective primary hip replacements
Interventions	**Intervention Characteristics** Intervention ● *Description*: Standard hip precautions: Supine sleeping, abduction pillow, hip flexion > 90 degrees, elevated toilet seat, elevated chair, crutches (taken from Kornuijt, 2016) ● *Duration*: 6 weeks Control ● *Description*: Minimal restrictions ● *Duration*: 6 weeks
Outcomes	*Hofteluksation (tidlig)* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint (3 months) *Hofteluksation (sen)* ● **Outcome type**: Adverse event ● **Reporting**: Not reported *Patientrapporteret funktionsevne, efter endt behandling* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Not reported *Smerte (hofterelateret), efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported

	Patientrapporteret funktionsevne, langtidseffekt ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Helbredsrelateret livskvalitet, efter endt behandling* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Tilbagevenden til arbejde, længste follow-up* ● **Outcome type**: Continuous Outcome ● **Reporting**: Not reported *Reoperation, alle årsager, længste follow-up* ● **Outcome type**: Dichotomous Outcome ● **Reporting**: Fully reported ● **Unit of measure:** n/N with revision surgery ● **Direction**: Lower is better ● **Data value:** 3 months
Identification	**Sponsorship source:** No financial support **Country:** The Netherlands **Authors name:** Walter van der Weegen **Institution:** Department of Orthopeadic Surgery, St. Anna Hospital, Geldrop, The Netherlands **Email:** kog@st-anna.nl **Address:** Department of Orthopeadic Surgery, St. Anna Hospital, Borgerdeind 2, 5664 EH, Geldrop, The Netherlands
Notes	

Risk of bias table

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

Footnotes

Characteristics of excluded studies

Barker 2013

Reason for exclusion	Wrong patient population

Brown 2020

Reason for exclusion	Wrong study design

Eannucci 2019

Reason for exclusion	Wrong study design

Ganapathy 2016

Reason for exclusion	Abstract only

Gromov 2015a

Reason for exclusion	Wrong population.

Gromov 2019

Reason for exclusion	Wrong study design

Husted 2014

Reason for exclusion	Abstract only

JameBozorgi 2016

Reason for exclusion	Wrong comparator

Jepson 2016

Reason for exclusion	Wrong intervention

Jorgensen 2014

Reason for exclusion	Already included in NKR

Jorgensen 2016a

Reason for exclusion	Wrong study design.

Kornuijt 2016

Reason for exclusion	Same population as other included study

Lee 2017

Reason for exclusion	Wrong study design

Mikkelsen 2014a

Reason for exclusion	Already included in NKR

Mikkelsen 2014b

Reason for exclusion	Already included in NKR

Olley 2019

Reason for exclusion	Abstract only

Peters 2017

Reason for exclusion	Wrong study design

Peters 2019

Reason for exclusion	Wrong comparator

Schmidt Braekling 2015

Reason for exclusion	Wrong study design

Smith 2016

Reason for exclusion	Wrong study design

vanderWeegen 2016

Reason for exclusion	Wrong study design

VanDerWeegen 2016

Reason for exclusion	Abstract only

VanDerWeegen 2018

Reason for exclusion	Abstract only

Footnotes

References to studies

Included studies

Allen 2018

Allen, Felix C.; Skinner, Daniel L.; Harrison, Jane; Stafford, Giles H.. The effect of precautions on early dislocations post total hip arthroplasty: a retrospective cohort study.. Hip International 2018;28(5):485-490. [DOI:]

Dietz 2019

Dietz, Matthew J.; Klein, Adam E.; Lindsey, Brock A.; Duncan, Stephen T.; Eicher, Jennifer M.; Gillig, Jonathan D.; Smith, Brett R.; Steele, G. Daxton. Posterior Hip Precautions Do Not Impact Early Recovery in Total Hip Arthroplasty: A Multicenter, Randomized, Controlled Study.. Journal of Arthroplasty 2019;34(7S):S221-S227.e1. [DOI:]

Lightfoot 2020

Lightfoot C.J.; Sehat K.R.; Coole C.; Drury G.; Ablewhite J.; Drummond, A. E. R.. Evaluation of hip precautions following total hip replacement: a before and after study.. Disability and rehabilitation 2020;(Journal Article):1-8. [DOI:]

Mikkelsen 2014

Mikkelsen LR.; Petersen MK.; Sï¿½balle K.; Mikkelsen S.; Mechlenburg I.. Does reduced movement restrictions and use of assistive devices affect rehabilitation outcome after total hip replacement? A non-randomized, controlled study.. European journal of physical and rehabilitation medicine 2014;50(4):383-93. [DOI: R33Y9999N00A140283 [pii]]

Tetreault 2020

Tetreault, Matthew W.; Akram, Faisal; Li, Jefferson; Nam, Denis; Gerlinger, Tad L.; Della Valle, Craig J.; Levine, Brett R.. Are Postoperative Hip Precautions Necessary After Primary Total Hip Arthroplasty Using a Posterior Approach? Preliminary Results of a Prospective Randomized Trial.. Journal of Arthroplasty 2020;35(6S):S246-S251. [DOI:]

vanderWeegen 2019

van der Weegen, Walter; Kornuijt, Anke; Das, Dirk; Vos, Rein; Sijbesma, Thea. It is safe to use minimal restrictions following posterior approach total hip arthroplasty: results from a large cohort study.. Hip International 2019;29(6):572-577. [DOI:]

Excluded studies

Barker 2013

Barker, K. L.; Newman, M. A.; Hughes, T.; Sackley, C.; Pandit, H.; Kiran, A.; Murray, D. W.. Recovery of function following hip resurfacing arthroplasty: a randomized controlled trial comparing an accelerated versus standard physiotherapy rehabilitation programme [with consumer summary]. Clinical rehabilitation 2013;27(9):771-784. [DOI:]

Brown 2020

Brown, Matthew L.; Ezzet, Kace A.. Relaxed Hip Precautions Do Not Increase Early Dislocation Rate Following Total Hip Arthroplasty.. Journal of the American Academy of Orthopaedic Surgeons 2020;28(10):e440-e447. [DOI:]

Eannucci 2019

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Ganapathy 2016

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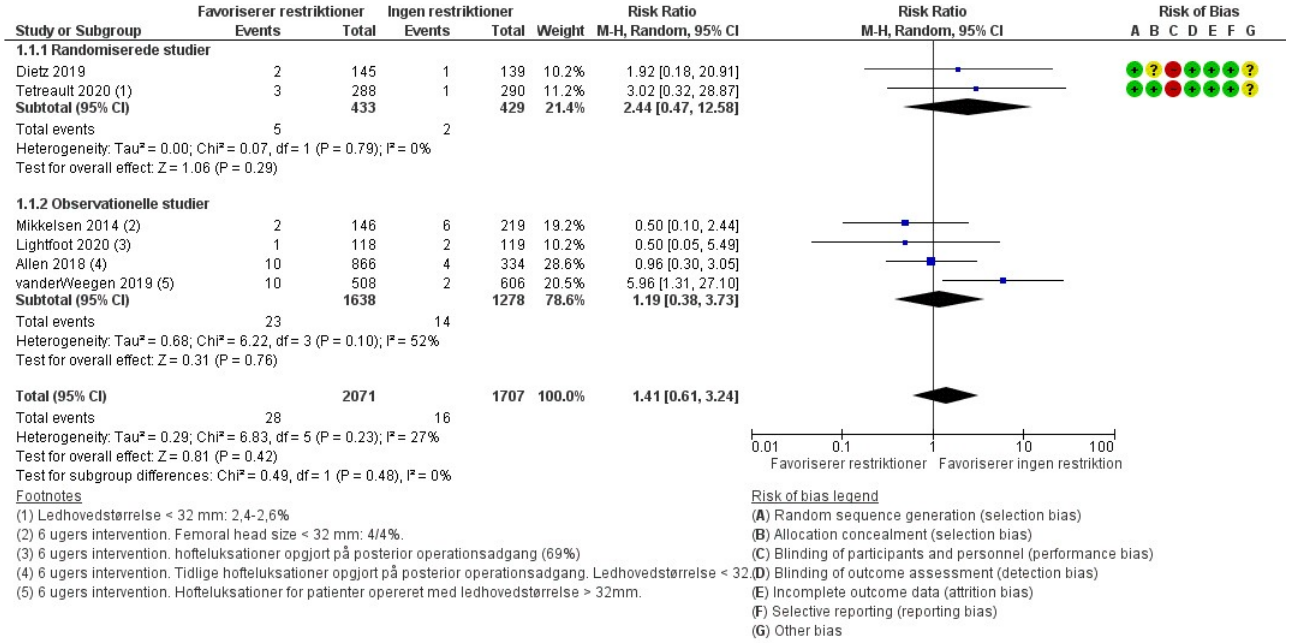
Data and analyses

1 Restriktioner vs ingen restriktioner

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 Hofteluksation, tidlig, indenfor 3 måneder postoperativt	6	3778	Risk Ratio (M-H, Random, 95% CI)	1.41 [0.61, 3.24]
1.1.1 Randomiserede studier	2	862	Risk Ratio (M-H, Random, 95% CI)	2.44 [0.47, 12.58]
1.1.2 Observationelle studier	4	2916	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.38, 3.73]
1.2 Hofteluksation, sen, længste follow-up	2	3802	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.19, 6.38]
1.2.1 Randomiserede studier	1	578	Risk Ratio (M-H, Random, 95% CI)	0.34 [0.01, 8.21]
1.2.2 Observationelle studier	1	3224	Risk Ratio (M-H, Random, 95% CI)	1.85 [0.23, 14.98]
1.5 Patientrapporteret funktionsevne, efter endt behandling	1	284	Mean Difference (IV, Fixed, 95% CI)	1.00 [0.42, 1.58]
1.6 Patientrapporteret funktionsevne, efter endt behandling, antal med problemer med dagligdagsaktiviteter	1	578	Risk Ratio (IV, Fixed, 95% CI)	1.54 [1.18, 2.02]
1.7 Patientrapporteret funktionsevne, langtidseffekt, længste follow-up (6-12 måneder efter endt behandling)	1	284	Mean Difference (IV, Fixed, 95% CI)	1.00 [0.07, 1.93]
1.8 Smerte (relateret til hofteregionen), efter endt behandling	1	284	Mean Difference (IV, Fixed, 95% CI)	0.00 [-0.08, 0.08]
1.9 Helbredsrelateret livskvalitet, efter endt behandling	1	284	Mean Difference (IV, Fixed, 95% CI)	1.00 [0.30, 1.70]
1.13 Præstationsbaseret funktionsevne målt ved fysisk test, efter endt behandling	1	323	Risk Ratio (IV, Fixed, 95% CI)	0.64 [0.48, 0.85]
1.16 Tilbagevenden til arbejde, længste follow-up	1	578	Mean Difference (IV, Fixed, 95% CI)	2.10 [-0.30, 4.50]
1.21 Reoperation, alle årsager, længste follow-up, mindst 1 år	1	2151	Risk Ratio (M-H, Fixed, 95% CI)	1.36 [0.52, 3.56]

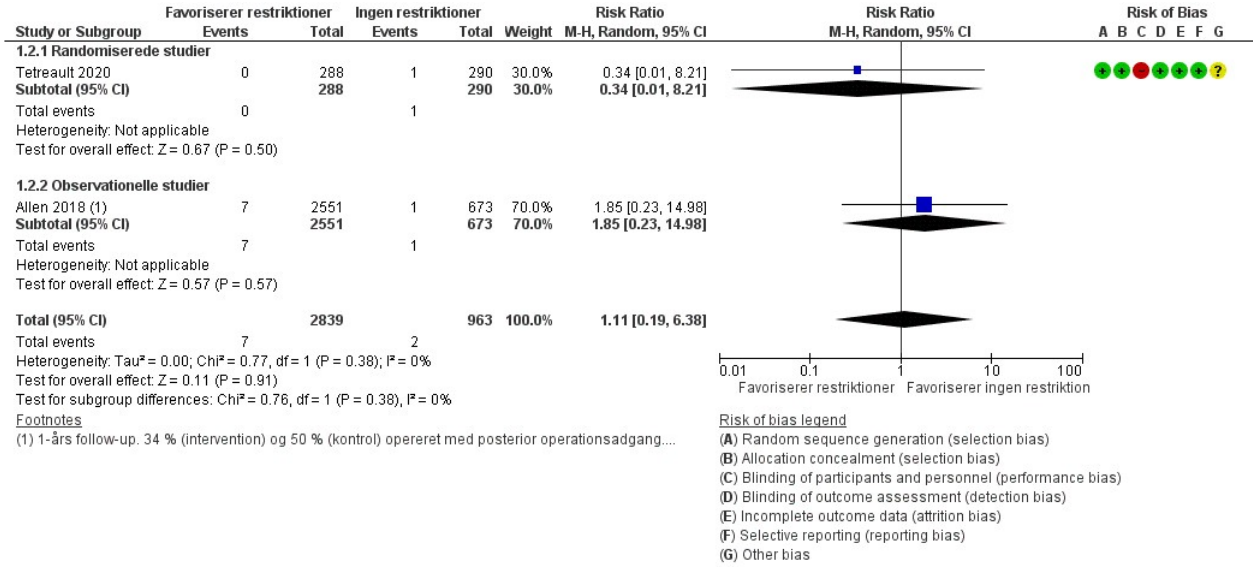
Figures

Figure 1 (Analysis 1.1)



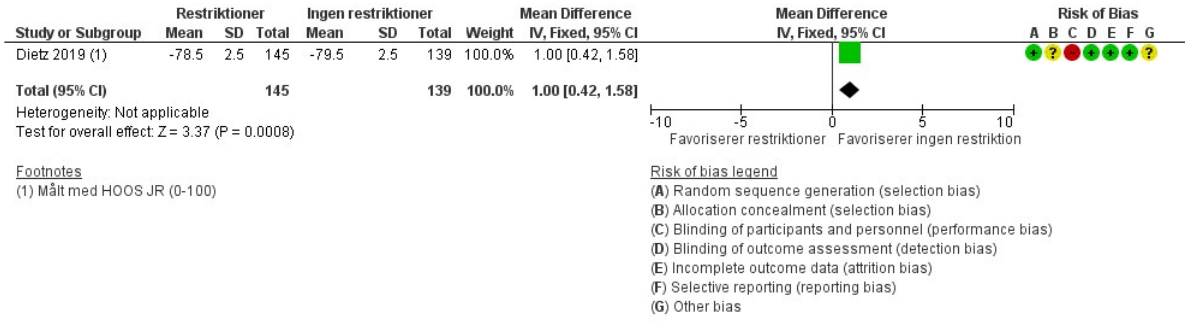
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.1 Hofteluksation, tidlig, indenfor 3 måneder postoperativt.

Figure 2 (Analysis 1.2)



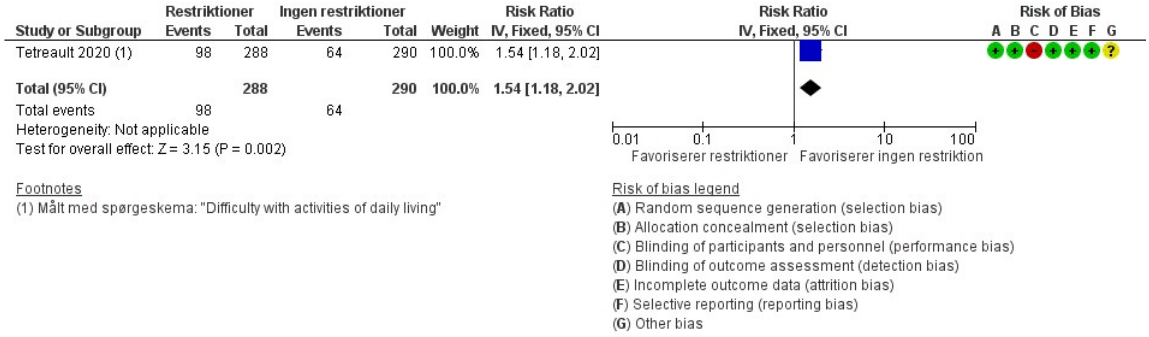
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.2 Hofteluksation, sen, længste follow-up.

Figure 3 (Analysis 1.5)



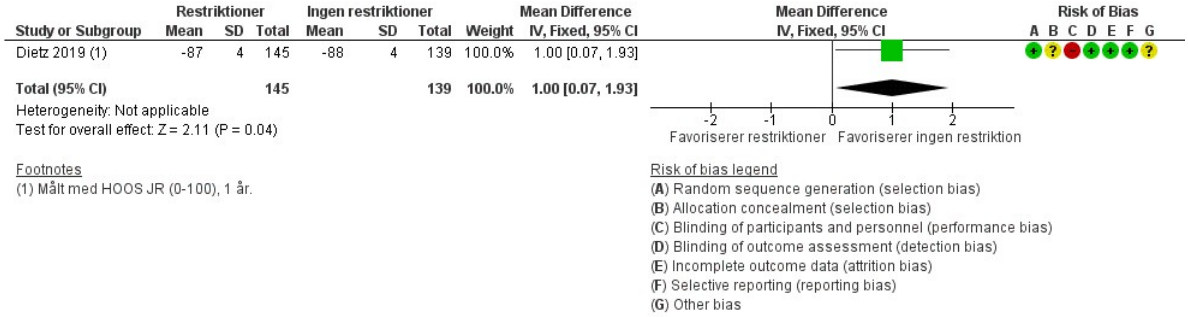
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.5 Patientrapporteret funktionsevne, efter endt behandling.

Figure 4 (Analysis 1.6)



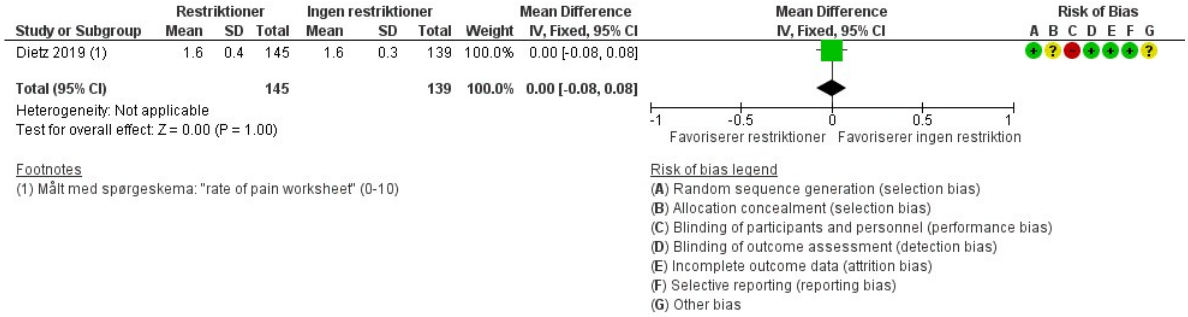
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.6 Patientrapporteret funktionsevne, efter endt behandling, antal med problemer med dagligdagsaktiviteter.

Figure 5 (Analysis 1.7)



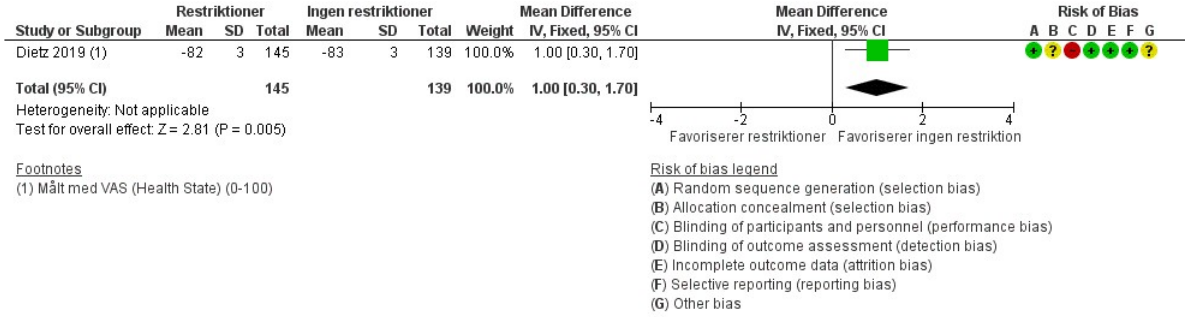
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.7 Patientrapporteret funktionsevne, langtidseffekt, længste follow-up (6-12 måneder efter endt behandling).

Figure 6 (Analysis 1.8)



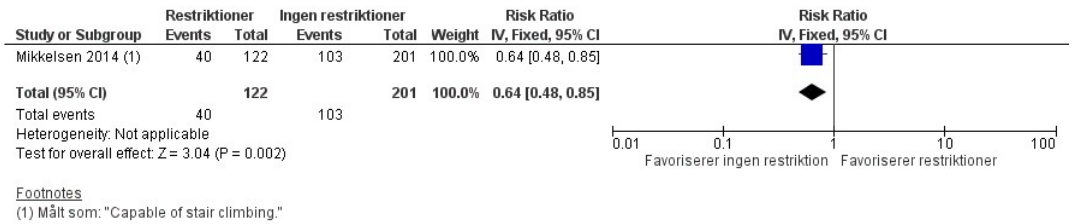
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.8 Smerte (relateret til hofteregionen), efter endt behandling.

Figure 7 (Analysis 1.9)



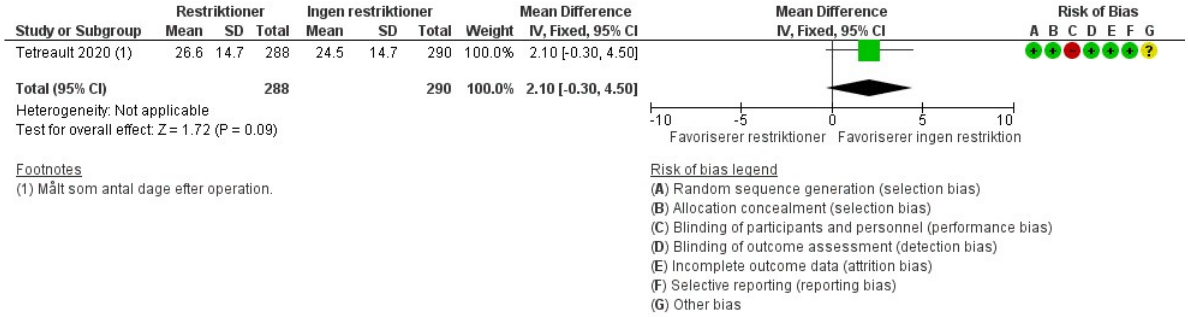
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.9 Helbredsrelateret livskvalitet, efter endt behandling.

Figure 8 (Analysis 1.13)



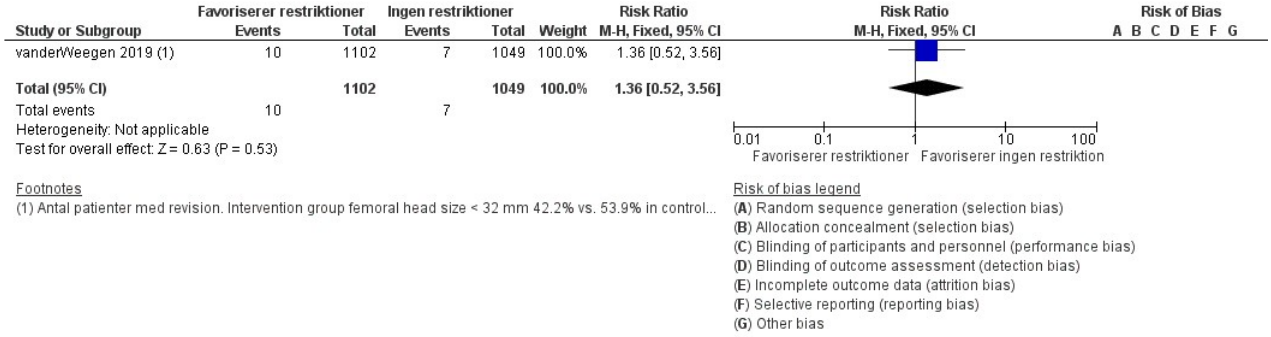
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.13 Præstationsbaseret funktionsevne målt ved fysisk test, efter endt behandling.

Figure 9 (Analysis 1.16)



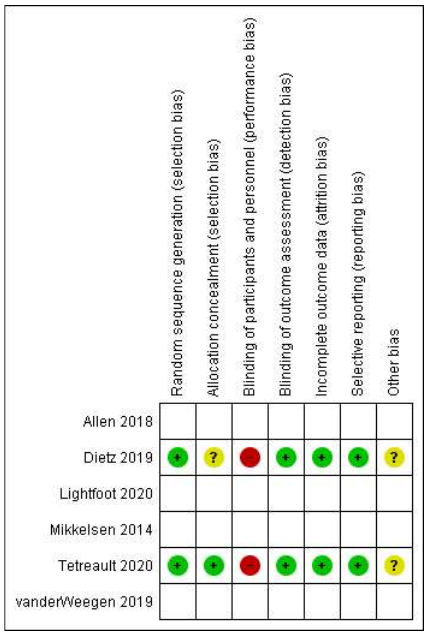
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.16 Tilbagevenden til arbejde, længste follow-up.

Figure 10 (Analysis 1.21)



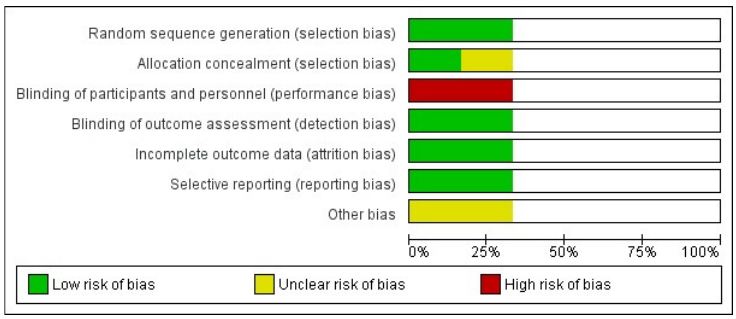
Forest plot of comparison: 1 Restriktioner vs ingen restriktioner, outcome: 1.21 Reoperation, alle årsager, længste follow-up, mindst 1 år.

Figure 11



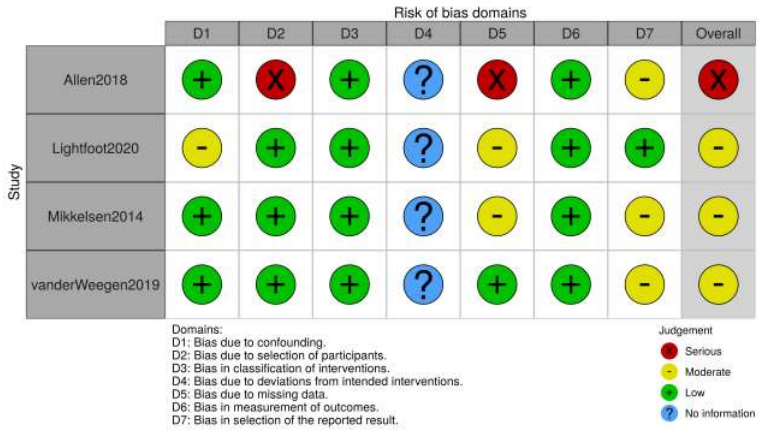
Risk of bias summary: review authors' judgements about each risk of bias item for each included study.

Figure 12



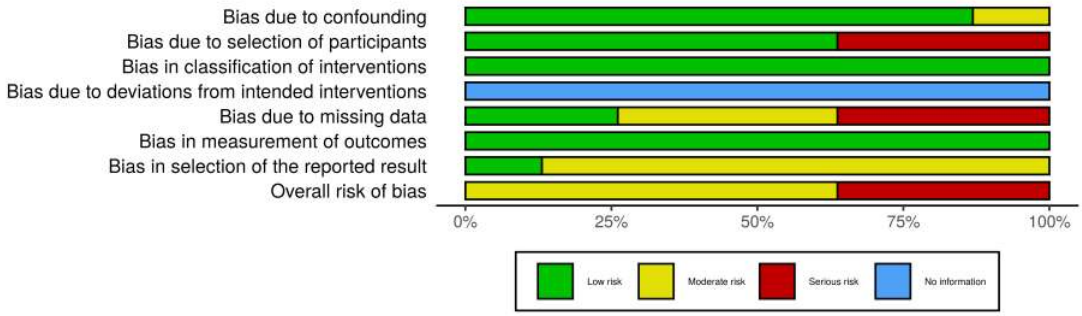
Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.

Figure 13



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

Figure 14



Risk of bias graph: review authors' judgements about each risk of bias domain presented as percentages across all included studies.