NKR 33 Urininkontinens, PICO 1: Bør kvinder med urininkontinens tilbydes superviceret bækkenbundstræning?

Review information

Authors

Sundhedsstyrelsen[1], [Empty name][2], [Empty name][2]

[1]The Danish Health and Medicines Authority, Denmark

[2][Empty affiliation]

Citation example: S, [Empty name], [Empty name]. NKR 33 Urininkontinens, PICO 1: Bør kvinder med urininkontinens tilbydes superviceret bækkenbundstræning? Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Characteristics of studies

Characteristics of included studies

Bertotto 2017

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 59.3 ± 4.9 ● *Mean BMI; SD*: 27 ± 3.6 ● *Mean Parity, SD*: 2.3 ± 1 Control ● *Mean age, years, SD*: 57.1 ± 5.3 ● *Mean BMI, Sd*: 26.8.8 ± 3.6 ● *Mean Parity, SD*: 2.6 ± 1 **Included criteria:** The inclusion criteria were postmenopausal status, age 50-65 years, a complaint of loss of urine on exertion (detectedby the International Consultation on Incontinence Question-naire), and provision of written informed consent. **Excluded criteria:** The exclusion criteria were presence of a urinary tractinfection, failure to understand pelvic floor muscle contrac-tion, cognitive alterations, collagen- or muscle-relateddiseases, or neurological abnormalities. **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: Those in the PFME group began an 8-session protocol of pelvic floor muscle training and werer eassessed 4 weeks late ● *Dose*: The proposed PFME protocol consisted of 20-minsessions twice weekly for a total of eight sessions:1.Sustained contractions lasting 6 to 10 s, with the sameresting time, 6-10 repetitions, 1-2 sets.2.Phasic contractions lasting 2 s, with twice the resting time,10 repetitions, 1-3

	sets.3.Phasic contractions sustained for 3 to 5 s, with twice theresting time, 8-10 repetitions, 1-2 sets.4.Guided-imagery training on a white background, askingparticipants to contract the pelvic floor before performingan abdominal strain, in order to generate or enhanceprecontraction (involuntary PFM co-contraction second-ary to increased abdominal pressure) ● *Duration*: 4 weeks Control ● *Description*: The control group was assessed on day 1 and reassessed at 6 weeks, and received no treatment in the intervening period. ● *Dose*: None ● *Duration*: 4 weeks
Outcomes	*ICIQ-UI-SF, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: ICIQ-UI-SF ● **Range**: 0-21 ● **Direction**: Lower is better ● **Data value**: Endpoint *Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Judgement Comment: Women who met the inclusion criteria were randomized across 3 groups. Randomisation was performed using envelopes containing the letters A, B and C, where each letter corresponded to a specific group to which the participant would be allocated, by order of presentation to the study facility.
Allocation concealment (selection bias)	Low risk	Judgement Comment: Randomisation was performed using envelopes containing the letters A, B and C, where each letter corresponded to a specific group to which the participant would be allocated by order of presentation to the study facility. This allocation was performed by a blinded, independent researcher not otherwise involved in the study.
Blinding of participants and personnel (performance bias)	High risk	Judgement Comment: No information om blinding of participants and health care providers, blinding no feasible.

Blinding of outcome assessment (detection bias)	High risk	Quote: "presentation to the study facility. The study was conducted by two investigators (1 and 2). Assessment of groups before and after intervention was performed by investigator 1, while training was performed by investigator 2. Both had been previously trained. The participants completed an interview designed to collect identifying information and data on age, weight, height, body mass index (BMI), severity of urine loss on exertion, number of pregnancies, mode of delivery, and use of hormone therapy (systemic or topical). The ICIQ-SFQoL instrument, in its Portuguese-language version, was adminis- tered to participants in all three groups, at the start and end of the study, in the form of an investigator-led interview. 4 Shortly thereafter, participants were shown a" Judgement Comment: The study was conducted by 2 investigators (1 and 2). Assessment of groups before and after intervention was performed by investigator 1, while training was performed by investigator 2. Both had been previously trained. No mention if the assessor was blinded to the intervention.
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Total of 3 (9.4%), reasons unknown. By group: PFMT = 1 (6.3%); control = 2 (12.5%).No intention-to-treat analysis used.
Selective reporting (reporting bias)	Low risk	Judgement Comment: Registred at clinicaltrials.gov. Reports on all pre specified outcomes. Outcomes of interrest that were not reported were the number of incontinence episodes and patient perceived effect, but this was not stated in the protocol
Other bias	Low risk	Judgement Comment: Baseline comparability: groups were comparable at baseline. The study appears to be free of other sources of bias

Beuttenmuller 2010

Methods	3 arm RCT
Participants	75 female patient with SUI Method of diagnosis: not reported 'women with a diagnosis of SUI' Inclusion: not reported Exclusion: not reported Mean age (SD): Group PFMT: 49.96 (5.26); Group Control : 44.82 (4.88) Single Center: the rehabilitation unit of PF disorders in Fortaleza-Ceara
Interventions	Group A (n = 25): PFMT intervention Taught by: physiotherapist Correct VPFMC confirmed? not reported but assessed by the evaluator prior to treatment Number VPFMC per set: 8 Number sets per day: not reported Duration of hold: 5 sec Duration of rest: not reported Type(s) of contraction, e.g. submaximal, maximal ?: long and short contraction with the participant in supine lying position with knee bent, sitting in the chair or on the gym ball, on all fours, standing Duration of programme: 20 minutes (in groups of 4) twice weekly for 6 weeks except during menstrual periods or due to other complications Number and type of contact with health professional(s): twice/ weekly Measure of adherence? Not reported Reported level of adherence: Not reported Other information: Kinesitherapy was accomplished through standing or sitting exercises using a Swiss ball of varying size, according to the height and weight of the patient. Proprioceptive exercises such as hopping on a ball, moves to raise the pelvis (anteversion, retroversion, lateralisation and circumduction) were used. Additionnaly exercises were used to contract the PFM to the original position, working the two fiber types I and II by performing contract-relax perineal exercises and hold-relax training, respectively, up to 6 sec Group B (n =25): Control intervention 'no physical therapy at that time.'
Outcomes	KHQ, PFM 1finger intravaginal evaluation using the Oxford scale, intra-vaginal pressure perineometry
Notes	Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	randomly divided in 3 groups’
Allocation concealment (selection bias)	Unclear risk	Not clear if allocation concealment
Blinding of participants and personnel (performance bias)	High risk	Not blinded
Blinding of outcome assessment (detection bias)	Unclear risk	Not clear if outcome assessment blinded
Incomplete outcome data (attrition bias)	Unclear risk	Not clear if there was attrition
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	Groups comparable at baseline for age and BMI

Bo 1999

Methods	4 arm RCT, parallel design Stratified by severity of leakage on pad test Adequate allocation concealment Blinded outcome assessment Secondary analysis by intention to treat A priori power calculation
Participants	122 women, with urodynamic SUI Inclusion: women with a history of SUI, waiting for surgery or recruited through advertising, >4g leakage on pad test with standardised bladder volume Exclusion: other types of incontinence, DO on urodynamics, residual urine >50 ml, maximum uroflow < 15 ml/s previous surgery for urodynamic SUI, neurological or psychiatric disease, ongoing urinary tract infection, other disease that could interfere with participation, use of concomitant treatments during trial, inability to understand instructions given in Norwegian Mean age, years: PFMT 49.6 (SD 10.0), control 51.7 (SD 8.8) Mean duration symptoms, years: PFMT 10.2 (SD 7.7), control 9.9 (SD 7.8) Mean leakage episodes 24 hours: PFMT 0.9 (SD 0.6), control 1.0 (SD 1.0) Diagnosis: 122 urodynamic SUI (100%) 5 centres, Norway
Interventions	1. PFMT (n=29). Explanation of anatomy, physiology, and continence mechanism by physiotherapist. Audiotape of home training programme. Weekly 45 minute exercise class with PFMT in a variety of body positions, and back, abdominal, buttock and thigh muscle exercises. Monthly clinic visit with physiotherapist, 6 months. Details of PFMT programme in Data Table 01.03 2. Controls (n=32). Explanation of anatomy, physiology, and continence mechanism. Correct VPFMC confirmed by palpation. No clinic visits. Offered instruction in use of the Continence Guard (14 accepted) 3. Electrical stimulation (n=32) 4. Vaginal cones (n=29)
Outcomes	Primary outcomes: 60 second pad test with standardised bladder volume, self-report (very problematic to unproblematic) Secondary outcomes: Norwegian Quality of Life Scale, Bristol Female Lower Urinary Tract Symptoms Questionnaire, Leakage Index, Social Activity Index, leakage episodes (3 day urinary diary), 24 hour pad test, vaginal squeeze pressure
Notes	Post-treatment evaluation at 6 months, no longer-term follow-up Dropouts: 4/29 PFMT, 2/32 controls, 7/32 electrical stimulation, 2/29 vaginal cones ITTA: baseline values used for losses to follow up Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	“computer generated random number”
Allocation concealment (selection bias)	Low risk	Publication states “random”. Contact with author confirms random number generation, and sealed opaque envelopes
Blinding of participants and personnel (performance bias)	High risk	not blinded
Blinding of outcome assessment (detection bias)	Low risk	“physicians evaluating the effect of the treatment were also blind to allocation of treatment”
Incomplete outcome data (attrition bias)	Low risk	Attrition details: 3 could not complete the study (asthma, change of work, death in the family), 2 were excluded because they used other treatment during the trial. Dropout: 2 from PFMT (8%) (motivation, travel time) and 0 from control group (0%)
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	No jugdement comment in the original NKR

Burgio 1998

Methods	3 arm RCT, parallel design Stratified by type (UUI, MUI) and severity of incontinence (number of leakage episodes) Not clear if adequate allocation concealment Blinded outcome assessment Primary analysis by intention-to-treat
Participants	197 women, with DO with or without urodynamic SUI Inclusion: community dwelling women aged 55 years or more, 2 or more urge accidents per week, urge incontinence predominant pattern Exclusion: continual leakage, uterine prolapse past introitus, unstable angina, decompensated heart failure, history of malignant arrhythmias, impaired mental status (MMSE
Interventions	1. PFMT (n=65). Use of anorectal biofeedback to teach VPFMC with abdominal muscle relaxation. Response to urge (pause, sit, relax, repeated VPFMC to suppress urge). Use of bladder-sphincter biofeedback at third visit for those with <50% eduction in leakage episodes to teach VPFMC against increasing fluid volume and urge. Fortnightly clinic visit with nurse practitioner, 8 weeks. Details of PFMT programme in Data Table 01.03 2. Controls (n=65). Placebo drug, three times a day, for 8 weeks. Capsule contained 500 mg riboflavin phosphate marker. Fortnightly clinic visit with nurse practitioner 3. Drug (n=67)
Outcomes	Primary outcome: change in leakage frequency (2 week urinary diary) Secondary outcomes: Hopkins Symptom checklist for psychological distress, self report (worse to much better), satisfaction with progress (not at all to completely), perceived improvement (none or 0% to dry or 100%), willingness to continue PFMT, desire for other treatment, leakage episodes (2 week urinary diary), cystometry (for 105/197)
Notes	Post-treatment evaluation at 10 weeks, no longer-term follow-up Dropouts: 4/65 PFMT, 12/65 control, 12/67 drug ITTA: for primary outcome, most recent urinary diary data carried forward Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	“within each stratum, randomization was performed with computer-generated random numbers using a block size of 6 to avoid inequity in group size”
Allocation concealment (selection bias)	Unclear risk	“within each stratum, randomization was performed with computer-generated random numbers using a block size of 6 to avoid inequity in group size”
Blinding of participants and personnel (performance bias)	High risk	Not blinded
Blinding of outcome assessment (detection bias)	Low risk	Blinded outcome assessment
Incomplete outcome data (attrition bias)	Low risk	Attrition rate per group and reasons given: not thought to be due to intervention except for one participant in the placebo drug groups
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	“Before treatment the groups were comparable on all key parameters except that subject in behavioral treatment had more children, were less likely to have a high school education and more likely to have a rectocele”

Burns 1993

Methods	3 arm RCT, parallel design Not clear if adequate allocation concealment Blinded outcome assessment
Participants	135 women, with urodynamic SUI with or without DO Inclusion: women with SUI or MUI, 55 years or older, minimum of 3 leakage episodes per week, demonstrates leakage with stress manoeuvres during physical examination, MMSE>23, absence of glycosuria or pyuria, post void residual 15 ml/s. Exclusion: no additional criteria reported Mean age, years: PFMT 63 (SD 6), control 63 (5) Mean leakage episodes 24 hours: PFMT 2.6 (SD 2.1), control 2.6 (2.6) Diagnosis: 123 urodynamic SUI (91%), 12 (9%) Single centre, USA
Interventions	1. PFMT (n=43, after dropouts). Booklet explaining anatomy, PFMT, and completion of exercise and urinary diaries. Videotape describing exercise protocol. Weekly exercise reminder cards mailed between visits. Weekly clinic visits with nurse, 8 weeks. Details of PFMT programme in Data Table 01.03 2. Control (n=40, after dropouts). No treatment 3. PFMT with weekly clinic biofeedback (n=40, after dropouts
Outcomes	Primary outcome: leakage episodes (2-week urinary diary) Secondary outcomes: incontinence severity (based on number of leakage episodes from diary), pelvic floor muscle EMG, cystometry
Notes	Post-treatment evaluation at 8 weeks, with longer term follow up at 12 weeks and 6 months Dropouts: 10/135 and 2/135 excluded from analysis (no urinary diary); group not specified Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	“randomized blocking was employed to balance the number of subjects in each group”
Allocation concealment (selection bias)	Unclear risk	Not clear if adequate allocation concealment
Blinding of participants and personnel (performance bias)	High risk	not blinded
Blinding of outcome assessment (detection bias)	Unclear risk	Blinded outcome assessment
Incomplete outcome data (attrition bias)	Unclear risk	10/135 dropped out or withdrawn, 2 did not have bladder diary data so excluded from analysis
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	Table 1 socio-demographic comparable

Bykoviene 2018

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 63.95 (10.75) ● *Mean BMI, SD* 30.12 (5.66) Control ● *Mean age, Sd*: 59.36 (10.47) ● *Mean BMI, SD*: 30.54 (5.42) **Included criteria:** Non-pregnant women ≥ 18 years with clinical complaints of OAB (urgency, urinary frequency, nocturia, and/or urgency incontinence) or mixed urinary incontinence with predominant urgency urinary incontinence type. **Excluded criteria:** Exclusion criteria were: positive urine analysis and culture, residual urine ≥ 100ml, measured before for all women by bladder scanning, pelvic organ prolapse higher than grade II by the POP-Q quantification system, inability to perform the Kegel exercises, presence of TPTNS contraindica-tions (active implants (including cardiac pacemakers), malignancy, tissue bleeding or skin damage in the stim-ulation site). **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: Participants were provided with the same recommen-dations as in the control group. According to the PER-FECT scheme evaluation records, they were instruct-ed via digital palpation to perform an individualized PFMT program at home. For example, if the PERFECT scheme was 2/5/6/11 (P/E/R/F), the participant was in-structed to hold submaximal to maximal PFM contrac-tions for 6 seconds and repeat this seven times with a 4 second rest period after each contraction, and after few minutes to perform 12 fast contractions. All women were instructed to practice this regimen five times daily (in the lying, standing, and sitting position alternately with the legs apart). The women were also instructed to contract their PFMs during an urge to void. After three weeks participants re-evaluation by the PERFECT scheme was done and a new exercise program estab-lished with reference to this new records. Compliance over the six weeks time was monitored ● *Duration*: 6 weeks

	Control ● *Description*: No treatment ● *Duration*: 6 weeks
Outcomes	*Inkontinensrelateret livskvalitet, KHQ, item 2, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Range**: 0-100 ● **Direction**: Lower is better ● **Data value**: Endpoint *Frafald, antal personer* ● **Outcome type**: AdverseEvent ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Antal tilfælde af inkontinens pr. dag, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Uderlivssmerter* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "The study group allocation was by a sequentially running computer-generated (16) block randomization list (prepared by the statistician from Lithuanian University of Health Sciences) as blocks of three unique numbers/block," Judgement Comment: Computer generated allocation sequence
Allocation concealment (selection bias)	Unclear risk	Judgement Comment: No infrmration of allocation concealment

Blinding of participants and personnel (performance bias)	High risk	Judgement Comment: No information of blinding of participants and health care providers, blinding not feasible
Blinding of outcome assessment (detection bias)	High risk	Judgement Comment: No information of blinding of outcome assessors. Presume outcomes of interest were self-reported (incontinence diarry and KHQ) blinding of participants not feasible
Incomplete outcome data (attrition bias)	Unclear risk	Judgement Comment: Four dropouts in the PFMT group, no dropouts in the control group. No intention to treat analyses. Total loss: 4/46 (8.7%)By group: PFMT 4/24 (16.7%); control 0/22 (0%)Reasons for loss in PFMT: 2 did not wand to follow, 2 long lasting exacerbation of comorbidities.No intention-to treat analysis used.
Selective reporting (reporting bias)	Low risk	Judgement Comment: No reference to a protocol, reports on all outcomes stated in the methods section. Seems to report on all outcomes of interest.
Other bias	Unclear risk	Judgement Comment: Some baseline differences in mean daily incontinence episodes.2.06 in the control group vs. 3.84 in the PFMT group

Carneiro 2010

Methods	2 arm RCT
Participants	50 women aged 30-55 with SUI Method of diagnosis: urodynamic Inclusion: women referred by urologists and gynaecologists with urodynamic diagnosis of SUI due to bladder neck hypermobility or pressure drop under stress (PDS) of 90 cm H2O or higher Exclusion: SUI due to intrinsic insufficiency (PDS) less than 60 cm H2O), prior surgical correction of SUI and genital prolapse of any grade in physical examination Mean age (SD): Group PFMT: 49.24 (7.37); Group Control : 45.25 (6.60) Single Center: Cafisio physical therapy clinic
Interventions	Group A (n = 25): Experimental group Taught by: physical therapist Correct VPFMC confirmed? Yes and maximum voluntary contraction was verified by inittial assessment, individually for each women Number VPFMC per set: 8-12 repetitions of 5 perineal exercises Number sets per day: once Duration of hold: 6-10 Duration of rest: not mentioned Type(s) of contraction, e.g. submaximal, maximal?: not reported Duration of programme: 30 minutes, twice weekly for 8 consecutive weeks Number and type of contact with health professional(s): twice/ weekly Measure of adherence? Not reported Reported level of adherence: Not reported Other information: - Verbal information about the PFM function,visualisation of PF component with anatomical figures -5 minutes of proprioception sitting on a 75-cm diameter therapeutic ball. During that time, participant were asked to make lateral movements of the pelvis, pelvic anteversion movements, short jumps, and figure of 8 movement with the pelvis Group B (n = 25): Control group 'The control group carried out no activity during the 8 weeks, as they were on the waiting list'
Outcomes	Ultrasound examination, surface EMG with an intra-vaginal probe, PFM bi-digital muscle strength test, KHQ
Notes	Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	'Using a simple random sampling'
Allocation concealment (selection bias)	Unclear risk	Not clear if adequate allocation concealment

Blinding of participants and personnel (performance bias)	High risk	not blinded
Blinding of outcome assessment (detection bias)	Unclear risk	Not clear if outcome assessment blinded
Incomplete outcome data (attrition bias)	Unclear risk	Attrition not reported
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	'Groups comparable for age, vaginal delivery, caesarian delivery and time with UI' 'Time with UI was almost significantly different between the two group with the Group A having had UI for a longer time'

Castro 2008

Methods	4 arm RCT, parallel design Adequate allocation concealment Blinded outcome assessment A priori power calculation
Participants	118 women, with urodynamic SUI without DO Inclusion: women with urodynamic stress urinary incontinence, no detrusor overactivity, a positive cough test, more than 3 g leakage measured on pad test with standardize bladder volume (200ml); average of 3 episodes of UI per week Exclusion: Chronic degenerative disease that would affect muscular or nerve tissues, advanced genital prolapse, pregnancy, active or recurrent UTI, vulvovaginitis, atrophic vaginitis, continence surgery within a year, subjects with pacemaker,Valsalva leak point pressure less than 60 mmH2O in sitting with 250 ml in bladder or UCP less than 20 cmH2O in sitting position at maximal cystometric capacity Mean age, years: PFMT 56.2 (SD 12.5), Control 52.6 (11.2) Leakage episodes in 7 days: PFMT 10.3 (SD 10.1), Control 10.5 (7.0). Mean BMI: PFMT 25.9 (SD 5.0), Control 26.9 (SD 5.1) Single centre?, Sao Paulo, Brazi
Interventions	1. PFMT (n=26): Three 45 minute exercises classes per week (including PFMT) for 6 months with supervision by physiotherapist 2. Control (n=24): No visit with therapist but motivational phone calls once per month
Outcomes	Primary outcomes: Objective cure of stress incontinence based on a negative pad test with a standardized bladder volume (<2g in weight) Secondary outcomes: I-QoL, voiding diary (number of leakage in 7 days), PFM digital evaluation using oxford scale, urodynamics evaluation, subjective cure "satisfied" or "dissatisfied"
Notes	Post-treatment evaluation at 6 months, no longer-term follow-up Dropouts and withdrawal: 3/26 PFMT, 5/24 controls Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Computer-generated random numbers
Allocation concealment (selection bias)	Low risk	"Once enrolled by a physician investigator, subjects were assigned to four distinct groups: pelvic floor exercises, electrical stimulation, vaginal cones, or untreated controls. The division of the four groups was undertaken by using computer-generated random numbers prepared by the Biostatistics Center of the Federal University of São Paulo"

Blinding of participants and personnel (performance bias)	High risk	not blinded
Blinding of outcome assessment (detection bias)	Low risk	Blinded outcome assessment
Incomplete outcome data (attrition bias)	Low risk	Drop out (PFM =2, 2 lack of clinical improvement) (Control = 2, 2lack of improvement) excluded (PFM =1 pregnancy) (Control = 3 change in city)
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	No jugdement comment in the original NKR

CelikerTosun 2015

Methods	RCT, Parallell group Urine incontinence diagnosed by urodynamics. PregnancyPrevious spinal surgeryPrevious spinal or pelvic fractureUrinary tract infectionVaginal infectionNeurologic disorderRespiratory diseaseMenstruation at the time of assessmentPFMT with physiotherapist within two years previous to study´Zero-one´ pelvic floor muscle strength at baseline.
Participants	Age (mean, SD) 51.7 (10.3), 52.5 (9.1)
Interventions	I: 12 week At the end of the 12-week pelvic floor muscle training, patients whose pelvic floor muscle strength did not reach a level of 5 (according to the Oxford grading system) and who agreed to do so, continued the exercise program (required pelvic floor muscle strength of grade 5, in the standing position). Of the 58 people who had completed the initial program, 34 of them continued with the additional program. The length of the program was dependent on the strength of the patients' pelvic floor muscles. Those who had weak pelvic floor muscle strength needed to continue the exercise program for a longer time to achieve a grade of 5 compared to those patients whose pelvic floor mus - cle strength was higher. Twenty-four patients did not continue the program. The patients who did not continue were given a maintenance program. Additional training program was carried on until the strength grade of the patients increased to 5. After 8-weeks of additional training, strength grade of two patients increased to 5 which was 3 at the beginning and after 12-weeks of additional training, strength grade of one patient increased to 5. The strength grade increased to 5 in six patients 8 weeks later and in 23 patients 4 weeks later, which was 4 at the beginning in all 29 patients. Additional training gives i alt i 12-24 uger. At the first visit, the patients individually received verbal information about the pelvic floor anatomy muscle localization and function using anatomic models and illustrations. Advice on bladder hygiene was also given. We applied motor re-learn - ing on steps to learning correct muscle contrac - tion. 18 They then learned how to correctly contract the pelvic floor muscle without contracting the adjacent muscles (such as the abdominal, gluteal, or hip adductor muscles) with verbal instructions and palpation of the perineal body. The training focused on better pelvic floor muscle awareness and contraction and the exercises were individual - ized according to the degree of pelvic floor weak - ness, loss of proprioception, and the patient's tolerance. The intervention was performed by the same physiotherapist during a pelvic floor muscle train - ing period of 12 weeks with the patients undergo - ing 30 min sessions three times a week for the first two weeks. These candidates, along with the patients, received posture training for the first two weeks. Damage to the pelvic floor that may develop because of bad posture was explained. They were also trained on how to fill in an exercise schedule. After they were trained to correctly contract their pelvic floor muscles, individual exercise schedules were designed according to PERFECT scheme data. The patients were given the schedules in written form. The exercise schedules included information on the correct position to assume for each exercise, the speed of contractions (either slow or rapid), the number of repetitions, the time between contractions and the length of rest between the repetitions, the number of times to do the exer - cises daily and how many weekly repetitions to perform. We aimed to increase muscular strength and endurance with pelvic floor muscle training. The recommendations of The American College of Sport Medicine and the principle of progressive overload (e.g. by increasing more than normal the resistance to movement or frequency and duration of activity) in exercise prescription were applied for the general strength training for the patients. 18 When the women visited the physical therapist on the 2nd, 4th, 6th, 8th, 10th and 12th weeks, cor -

	rect contraction of the pelvic floor muscles was checked by palpation of the perineal body and vag - inal assessment using the PERFECT scheme. The women were asked about changes in their symp - toms and adherence to pelvic floor muscle training. The exercise schedules were monitored. The patients were shown their progress from week to week, according to the PERFECT scheme. According to the progress indicated by PERFECT, exercises were added and hard copies of their new schedules were provided to the patients. All of the women were required to keep a train - ing diary to maintain their motivation during train - ing. In addition, for coordination training, all women were advised to precontract and to hold a contraction before and during coughing, sneezing, and lifting in their daily lives to give added urethral support and to control leakage. Miller et al. 19 named this voluntary counterbracing-type contrac - tion the 'knack'. They were also advised to inte - grate the exercises into their activities of daily living. Supervived. C: Volunteers in the control group were placed on a wait list for 12 weeks and then began to receive treatment. Volunteers in the control group were placed on a wait list for 12 weeks and then began to receive treatment. Ingen supervision, på venteliste
Outcomes	Inkontinensrelateret livskvalitet (IIQ-7), patientoplevet effekt (UDI-6) , Antal tilfælde af inkontinens per døgn, frafald. Alle end of treatment, 12 weeks.
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Celiker Tosun et al. 527 computer-generated random number table by the pre labeled sealed envelope method by the study coordinator (in which the person collecting the data knew whether the patients were in the control or experimental groups but the patients did not). Based on random number table, participants were assigned to two interventions. A total of 121 patients
Allocation concealment (selection bias)	High risk	method by the study coordinator (in which the person collecting the data knew whether the patients were in the control or experimental groups but the patients did not). Based on random number table,
Blinding of participants and personnel (performance bias)	High risk	Til trods for at studiet hævder at patienterne ikke ved hvilken gruppe de er i, må vi formode at patienterne god ved om de er på venteliste eller modtager aktiv behandling. Deltagere kan ikke blindes for PFMT. Det kan påvirke de påvirkbare outcomes: inkontinensrelateret livskvalitet, patientoplevet effekt, underlivssmerter.
Blinding of outcome assessment (detection bias)	High risk	method by the study coordinator (in which the person collecting the data knew whether the patients were in the control or experimental groups but the patients did not). Based on random number table, participants were
Incomplete outcome data (attrition bias)	Low risk	In the pelvic floor muscle training group (drop-out rate 11%), five women dropped out because of changes in their work situation, and the other two women dropped out because of other health problems. In the control group (drop-out rate 3%), two women dropped out because they disliked the vaginal evaluation (Figure 1). Der rapporteres om frafald i begge grupper. Årsag personlige årsager. Data vedr deltagere som frafalder er i sagens natur ikke tilstede ved 12 uger og indgår ikke i analyse. Det ser ud som om der foreligger komplette datasæt for de deltagere der fuldfører studiet, det finder jeg utroligt eftersom en del af deres outcomes er trukket ud fra patientudfyldte 3 dages dagbøger, som regel er der en vis grad af missing data i selvudfyldte dagbøger.
Selective reporting (reporting bias)	Low risk	No jugdement comment in the original NKR
Other bias	Low risk	No jugdement comment in the original NKR

Firra 2013

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 63.6 (13.3) ● *Mean BMI, SD*: 29.5 (4.1) ● *Mean births, SD*: 2.2 (1.4) Control ● *Mean age, years, SD*: 48.2 (16.2) ● *Mean BMI, Sd*: 28.2 (6.7) ● *Mean births, SD*: 1.9 (1.2) Intervention UUI population ● *Mean age, years, SD* : 66.5 (12.4) ● *Mean BMI, SD*: 25.8 (4.9) ● *Mean births, SD*: 1.5 (1.0) Control UUI population ● *Mean age, years, SD*: 63.0 (14.5) ● *Mean BMI, SD*: 29.1 (11.0) ● *Mean births, SD*: 1.3 (0.8) **Included criteria:** Women aged 21 or older with a diagnosis of SUI or UUI. **Excluded criteria:** Oxford scale for pelvic floor muscle strength score of zero.Denervation injury to the sphincters.Previous anti-incontinence surgery.Vaginal stenosis not passable for middle finger.BMI more than 50.Neurological disease.Pregnancy.POP stage III and IV.Fewer than 3 UI episodes in 3 days.Use of antimuscarinergic medicin, antihistamines and antidepressants. **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: PFMT daily at home with some visits at physiotherapist with examination and supervision ● *Duration*: 8 weeks Control ● *Description*: No treatment Intervention UUI population ● *Description*: PFMT daily at home with some visits at physiotherapist with examination and supervision. ● *Duration*: 8 weeks

	Control UUI population ● *Description*: No treatment
Outcomes	*Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Antal inkontinens tilfælde, pr 3 dage, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Judgement Comment: The trial describes block randomization, but no information of how the allocation sequnce was generated
Allocation concealment (selection bias)	Unclear risk	Judgement Comment: No information of allocation concealment
Blinding of participants and personnel (performance bias)	High risk	Judgement Comment: No blinding of participants and health care providers, blinding not feasible
Blinding of outcome assessment (detection bias)	High risk	Judgement Comment: No blinding of outcome assessors
Incomplete outcome data (attrition bias)	Unclear risk	Judgement Comment: Total of 5/38 (13%), unbalanced, reasons unknownBy group: PFMT 1/19 (5); control 4/19 (21%)No intention-to-treat analysis used 4 dropouts in the control groups and 1 dropout in the PFMT group. No reasons stated for dropout. No intention to treat analyses
Selective reporting (reporting bias)	Low risk	Judgement Comment: No information of a protocol, reports on all outcomes stated in the methods section. No reporting of quality of life or patient perceived effect
Other bias	Low risk	Judgement Comment: The study seems to be free of other sources of bias. Baseline comparabilityNo relevant differences between groups

Ghoniem 2005

Methods	Ghoniem 2005 RCT 201 participants
Participants	F 29–75 years (mean 51–54), urodynamic stress UI (18%) or positive cough stress test and normal micturition frequency of < 8 voids day (82%); ≥ 2 leakage episodes/day. 11% had prior continence surgery Exclusions: advanced POP, active or recurrent UTIs, continence surgery within 1 year, current
Interventions	Duloxetine 80 mg + PFMT (n = 52) Duloxetine 80 mg (n = 52) PFMT (n = 50) Placebo (no active tx) (n = 47) FU 12 weeks tx
Outcomes	Leakage episodes (median change from baseline) I-QOL (mean change in score Patients Global Impression of Improvement (% reporting improvement) Adverse effects (both duloxetine grps vs placebo [no duloxetine])
Notes	Funding: Eli Lilly and Company, and Boehringer Ingelheim. Primary aim of study was to compare the effectiveness of duloxetine + PFMT vs control. The study used a double-dummy design. PFM contraction checked at baseline PFMT: written instructions to perform 3×10 long and 2×10 rapid contractions 4 days/week (total 200 contractions/week), plus instructions to contract PFM with physical events known to cause leakage. Placebo (sham) PFMT: predominant hip abductor contraction (legs crossed at ankles, knees and hips flexed), same number of contractions as PFMT grp. Duloxetine daily dose taken as 40 mg twice daily INFO taken from NICE guideline 'Urinary incontinence' RoB made by

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	“random”
Allocation concealment (selection bias)	Low risk	Allocation of concealment was independent of trial sites - computer voice response system
Blinding of participants and personnel (performance bias)	Unclear risk	It was not feasible to blind treatment providers to the PFMT intervention. An attempt was made to blind participants by using an “imitation” PFMT programme (i. e. indirect PFMT).
Blinding of outcome assessment (detection bias)	Unclear risk	Blinding of outcome assessor not described

Incomplete outcome data (attrition bias)	Low risk	Total dropouts 21/201 Dropouts by group: 7/97 receiving placebo and 17/107 receiving duloxetine (but not further broken down by PFMT) ITTA: 1. Participants analysed in group to which assigned? Yes 2. Authors stated analysis by intention-totreat? Yes, which dealt with missing data by using last outcome carried forward
Selective reporting (reporting bias)	Low risk	Nothing to suggest selective reporting of data
Other bias	High risk	Funding or financial assistance: yes, Elli Lilly and Company, and Boehringer Ingelheim Ethical approval: states that “study received ethical approval” Conflict of interest: all but the first author declared a financial interest and/or other relationship with Eli Lilly and Company

KargarJahromi 2014

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 67.15±8.36 Control ● *Mean age, years, SD*: 68.05± 9.10 **Included criteria:** The inclusion criteria were age 60–74 years, having Quid score for incontinence type (stress score ≥ 4, clinical symptoms of urinary incontinence within the last 6 months, and willing to participate in the study. **Excluded criteria:** The exclusion criteria were absence in more than two training sessions, suffering from central nervous system disease (e.g. multiple sclerosis, cerebrovascular accident or acute mental illness and dementia, recent urology surgery (for less than three months), history of genitourinary malignancy, current urinary infection, hysterectomy and diabetic mellitus. **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: Each participant took part in 8 training classes. Participants were taught about the anatomy of the pelvic floor and lower urinary tract, physiology, and continence mechanisms by the trained nurse. All were taught to contract the pelvic floor muscles correctly. Participants were

	asked to conduct 8-12 high intensity (close to maximum) contractions three times a day at home with additional training in groups once a week for 45 minutes. Group training was performed in lying, standing and sitting positions with legs apart to emphasize specific strength training of the pelvic floor muscles and relaxation of other pelvic muscles. Participants aimed at holding each muscle contraction for 6-8 seconds, three or four fast contractions were then added. The rest period was about 6 seconds. A total of 8 to 12 contractions were completed in each position with maximal contraction effort encouraged. Body awareness, breathing, relaxation exercises, and strength training for the abdominal, back, and thigh muscles were performed to music between positions. The participants were encouraged to use their preferred position and perform equally intensive contractions at home ● *Duration*: 8 weeks Control ● *Description*: No intervention
Outcomes	*ICIQ-UI-SF, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: ICIQ-UI-SF ● **Range**: 0-21 ● **Direction**: Lower is better ● **Data value**: Endpoint *Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Quote: "they were randomly assigned to case and control groups." Judgement Comment: No information of how the allocation sequence was generated
Allocation concealment (selection bias)	Unclear risk	Judgement Comment: No information of allocation concealment
Blinding of participants and personnel (performance bias)	High risk	Judgement Comment: No information of blinding, blinding not feasible
Blinding of outcome assessment (detection bias)	High risk	Judgement Comment: No information of blinding of outcome assessors, blinding not feasible for self-reported outcomes.
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Total of 2/50 (4%)By group: PFMT 1/25 (4%) refused; control 1/25 (4%) migratedNo intention-to-treat analysis used

Selective reporting (reporting bias)	Low risk	Judgement Comment: No information of a study protocol. Reports on all outcomes stated in the methods section. Outcomes of interrest that were not reported in the study were the number of incontinence episodes and patient perceived effect
Other bias	Low risk	Judgement Comment: Baseline comparabilityNo difference between groups. Appears to be free of other sources of bias

Largo-Janssen 1991

Methods	2 arm RCT, parallel design Stratified by type and severity of incontinence Inadequate allocation concealment Blinded outcome assessment
Participants	110 women, with urodynamic SUI with or without DO Inclusion: women between 20 and 65 years of age reporting 2 or more leakage episodes per month Exclusion: previous incontinence surgery, neurological causes of incontinence, urinary tract infection, temporary cause of incontinence Mean age, years: PFMT 46.1 (SD 10.1), controls 44.6 (SD 8.2) Symptoms for more than 5 years: PFMT 55%, control 33% Mean leakage episodes 24 hours: PFMT 2.5 (SD 2.0), control 3.3 (SD 2.2) Diagnosis: 66 urodynamic SUI (60%), 20 MUI (18%), 18 UUI (16%), 6 other (6%). NB: only data from urodynamic SUI women are included in the review, because women with other diagnoses also had bladder training 13 general practices, the Netherlands
Interventions	1. PFMT (n=54, but 33 with urodynamic SUI only). Advice about incontinence pads from practice assistant. Information on PFM function and how to contract by family doctor. PFMT for 12 weeks. Details of PFMT programme in Data Table 01.03 2. Control (n=56, but 33 with urodynamic SUI only). Advice about incontinence pads only. Offered treatment after 12 weeks
Outcomes	Primary outcome: not stated Other outcomes: incontinence severity (12 point score), subjective assessment, health locus of control questionnaire, general health questionnaire, leakage episodes (7 day diary), self-reported treatment adherence
Notes	Post-treatment evaluation at 12 weeks, with longer term follow up at 6 months, 12 months and 5 years Dropouts: 1/54 PFMT, 3/56 control. Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	High risk	Consecutively (ie: quasi-random because of alternation)
Allocation concealment (selection bias)	High risk	“the patient were assigned consecutively to the treatment or control groups which were stratified on the basis of the severity of their incontinence” Inadequate allocation concealment
Blinding of participants and personnel (performance bias)	High risk	not blinded
Blinding of outcome assessment (detection bias)	Unclear risk	Blinded outcome assesment
Incomplete outcome data (attrition bias)	Unclear risk	No dropout reported before 6 months (or end of study first phase which is of interest for us)
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	No jugdement comment in the original NKR

Leong 2015

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 73.0 ± 4.0 ● *mean BMI, SD*: 24.9 ± 2.7 ● *mean parity, SD*: 4.1 ± 1.6 Control ● *Mean age, years, SD*: 75.4 ± 5.0 ● *Mean BMI, SD*: 25.4 ± 2.6 ● *Mean Parity, SD*: 4.5 ± 2.4 Overall ● *Mean age, years, SD*: 74.3 ± 4.6 ● *Mean BMI, SD*: 25.2 ± 2.6 ● *Mean Parity, SD*: 4.3 ± 2.1 **Included criteria:** Inclusion criteria were Chinese females aged 65 years or older who had a clinical diagnosis of SUI, UUI, or MUI (with reference to the definition from International Continence Society1) of a mild-to-moderate severity (based on the scoring system by Lagro-Janssen et al12) which is made by the EHC medical officers in-charge. **Excluded criteria:** Exclusion criteria were active urinary tract infection, patients on diuretic medication, presence of bladder pathology or dysfunction due to genitourinary fistula, tumour, pelvic irradiation, neurological or other chronic conditions (eg diabetes mellitus, Parkinson's disease), previous anti-incontinence surgery, significant cognitive impairment assessed by the Cantonese version of Mini-Mental State Examination Score (CMMSE13 with cutoffs of: ≤ 18 for illiterate subjects, ≤ 20 for those who had had 1 to 2 years of schooling, ≤ 22 for those who had had more than 2 years of schooling out of a maximum score of 30), obesity (body mass index [BMI] of >30 kg/m2), and use of concomitant treatments during the trial. **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: There were three major components in the UCPP: education (anatomy of the pelvic floor muscle [PFM] and urinary tract, urinary continence mechanism, and bladder care), PFMT with the aid of vaginal palpation, and BT. Pelvic floor muscle training included Kegel exercise programme and neuromuscular re-education (the 'knack').15Bladder training involved strategies to increase the time interval between voids by a combination of progressive void schedules, urge suppression, distraction, self-monitoring, and reinforcement. ● *Duration*: 12 weeks. The intervention group received a 30-minute individual training session at a pre-decided time of the day, once weekly for the first 4 weeks; and then once bi-weekly for the remaining 8 weeks. A total of eight treatment sessions were given to each recipient. Control ● *Description*: The control group was given advice and received an educational pamphlet with information about management of UI at baseline. Participants were given an appointment for a follow-up visit in 12 weeks.

Outcomes	*IIQ7, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Range**: 0-100 ● **Direction**: Lower is better ● **Data value**: Endpoint *Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Patientoplevet effekt, VAS, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Range**: 0-10 ● **Direction**: Higher is better ● **Data value**: Endpoint *Antal tilfælde af urininkontinens, pr uge, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Underlivssmerter* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Randomisation was performed prior to the study by an off-site investigator using a computerised randomisation programme"

Allocation concealment (selection bias)	Low risk	Quote: "Randomisation was performed prior to the study by an off-site investigator using a computerised randomisation programme with allocation con- cealment by sequentially numbered, opaque, and sealed envelopes. After taking consent, grouping of the individual participants was revealed to the principal investigator by phone. Overall,"
Blinding of participants and personnel (performance bias)	High risk	Judgement Comment: No information of blinding of participants or health care providers, blinding not feasible
Blinding of outcome assessment (detection bias)	High risk	Quote: "The questionnaire was administered by the same physiotherapist" Judgement Comment: Assessor same as physiotherapist. No information of blinding of the outcome assessors. Number of incontinence episodes were self-reported
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: No dropouts
Selective reporting (reporting bias)	Low risk	Judgement Comment: No information of a protocol, the study reports on all outcomes stated in the method section. The study seems to report on all outcomes of interest
Other bias	Low risk	Judgement Comment: the study appears to be free of other sources of bias

McLean 2013

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 49.5 +/- 8.2 ● *Mean BMI; SD*: 27.0 +/- 3.8 ● *Mean Births, SD*: 2.6 +/- 1.1 Control ● *Mean age, years, SD*: 54.0 +/- 8.4 ● *Mean BMI, SD*: 28.6 +/- 11.3 ● *mean Births, SD*: 2.2 +/- 1.0 **Included criteria:** Women were included if they were 18 years or older, had symptoms of SUI with or without urge incontinence, nocturia or anterior compartment prolapse. **Excluded criteria:** women with fecal incontinence. Potential volunteers were also excluded if they were on medications known to increase or alleviate incontinence, if they had known neurological impairments involving the central nervous system or the sacral nerves or known connective tissue disorders. **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: The women assigned to the PFM strength training group attended weekly private physiotherapy sessions. In the first session, participants learned to perform a proper PFM contraction using manual palpation and feedback to optimize PFM contraction quality and in which they learned to contract their PFMs before tasks that increase intra-abdominal pressure including coughing, laughing, sneezing, and postural perturbations. These women were instructed to practice three sets of 12 PFM contractions daily until their next visit 1 week later. At subsequent

	weekly visits, the physiotherapist reviewed and reinforced the proper PFM contraction tech-nique, evaluated PFM strength using a modified Oxford scale to provide feedback about progress, reviewed the technique of contracting the PFMs before coughing or postural perturba-tions, and encouraged the participant to continue with her home exercise program. Each session lasted approximately 30 min. ● *Duration*: 12 weeks Control ● *Description*: No treatment.
Outcomes	*IIQ7, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Range**: 0-100 ● **Direction**: Lower is better ● **Data value**: Endpoint *Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Antal inkontinens tilfælde, pr 3 dage, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Recruitment continued until 40 women who met all inclusion and exclusion criteria agreed to participate, 20 of these were randomly allocated to the inter- vention cohort and 20 were allocated to the control cohort using a custom automated computer algorithm."
Allocation concealment (selection bias)	Unclear risk	Judgement Comment: No information of allocation concealment
Blinding of participants and personnel (performance bias)	High risk	Judgement Comment: No information of blinding of participants and health care providers, blinding not feasible
Blinding of outcome assessment (detection bias)	High risk	Judgement Comment: No information of blinding of outcome assessors. Number of incontinence episodes were self-reported

Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Total of 5/40 (13%), reasons statedBy group: PFMT 2/20 (10%); control 3/20 (15%)No intention-to-treat analysis used
Selective reporting (reporting bias)	Low risk	Judgement Comment: no information of a protocol, the study reports on all the outcomes stated in the methods section
Other bias	Low risk	Judgement Comment: The study appears to be free of other sources of bias. Baseline comparabilityNo differences

Pereira 2011

Methods	3 arm parallel RCT
Participants	49 women over 18 years of age Method of diagnosis: SUI symptoms Inclusion: complain of urinary leakage on stress (two standard questions about stress and urgency UI used to determine patient eligibility: During the past month, have you involuntary got wet while performing some kind of physical exertion, coughing, lifting, sneezing or laughing? For urgency, the question was During the past month, have you experienced such a strong urge to urinate that it was impossible to get to the toilet on time? Those answering yes to the stress question only and who had not undergone physical therapy for UI before were included Exclusion: With symptoms of urgency urinary incontinence and mixed urinary incontinence, latex allergies, vaginal or urinary infections, pelvic organ prolapse greater than grade II on Baden-Walker classification system, cognitive or neurological disorder, uncontrolled hypertension and inability to carry out the evaluation or treatment Mean age (SD): Group PFMT intervention: 60.20 (8.16); Individual PFMT intervention: 60.6 (12.63); Control intervention: 61.53 (10.11) A single centre study: Labortory for assessment and intervention on Women's health, Federal university of Sao Carlos, Brazil
Interventions	Group A (n = 17): Group PFMT intervention Taught by: Physical therapist Correct VPFMC confirmed? Yes with vaginal palpation Number VPFMC per set: not clear, 100 in total on average in intervention sessions Number sets per day: not mentioned Duration of hold during intervention sessions: (mean time of the group was considered as the time of sustained contraction). The time of sustained contraction was increased by 1 s per week up to 10 s Duration of rest during intervention sessions: double the duration of hold Type(s) of contraction, e.g. submaximal, maximal: '100 contractions were performed on average, composed of phasic contractions held for 3 sec with 6 sec rest and tonic contractions of 5-10 s followed by 10-20 sec rest. To minimize the muscle fatigue, the resting time was rigidly observed in all sessions and the time of sustained contraction was slowly increased. PFMT was carried out in supine, sitting and standing positions. The degree of difficulty progressed according to the positions adopted, the number of repetitions, and the time of sustained contraction.' Group B (n = 17): Individual PFMT intervention: Taught by: physical therapist Correct VPFMC confirmed? Yes with vaginal palpation Number VPFMC per set: not clear, 100 in total on average in intervention sessions Number sets per day: not mentioned Duration of hold: 3-10 seconds during intervention sessions. The time of sustained contraction was increased by 1 s per week up to 10 s Duration of rest: 6-20 seconds in intervention sessions Type(s) of contraction, e.g. submaximal, maximal: "100 contractions were performed on average, composed of phasic contractions held for 3 sec with 6 sec rest and tonic contractions of 5-10 s followed by 10-20 sec rest. To minimize the muscle fatigue, the resting time was rigidly observed in all sessions and the time of sustained contraction was slowly increased. PFMT was carried out in supine, sittting and standing positions. The degree of difficulty progressed according to the positions adopted, the number of repetitions, and the time of sustained contraction." Other important information on the group and individual interventions: Duration of programme: two 1h weekly sessions in clinic for 6 weeks Number and type of contact with health professional(s): 12 group or individual sessions twice/ weekly for 1h for a total of 6 weeks Measure of adherence? No Explanation about anatomy of the PFM and continence mechanism Group C (n = 15): Control intervention: did not received any treatment during the corresponding treatment time
Outcomes	1hour pad test, KHQ, PFM pressure perineometry, PFM digital evaluation of strength, subjective satisfaction with tx (The only two response options available were 'satisfied ' and ' dissatisfied ' . Answering ' satisfied ' indicated that the patient did not want a different treatment. Answering 'dissatisfied ' indicated that the patient wanted a different treatment from the initial one), adverse effects
Notes	Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	”participants blindly drew one of the 49 preprinted cards in opaque sealed envelopes from a box” no mention of successively numbered
Allocation concealment (selection bias)	Unclear risk	”participants blindly drew one of the 49 preprinted cards in opaque sealed envelopes from a box”
Blinding of participants and personnel (performance bias)	High risk	not blinded
Blinding of outcome assessment (detection bias)	High risk	Evaluator was not blinded
Incomplete outcome data (attrition bias)	Unclear risk	Total: 4/34 (8%) Group intervention= 2/17 (12%)* Individual intervention = 2/17 (12%)* control intervention = 0/15 0% * reasons: health problem or family (information not given per treatment group)
Selective reporting (reporting bias)	Unclear risk	unclear
Other bias	Low risk	No jugdement comment in the original NKR

Sari 2009

Methods	2 arm parallel RCT
Participants	41 Women Diagnosis of urinary incontinence: signs (2g. of urine on a 1h pad test) Inclusion: women with stress or mixed signs on surgical waiting list between 2005-2007, MMSE score: 25 and more Exclusion: UTI, previous surgery of UI,neurological disease, diabetes mellitus, comorbid conditions likely to interfere with tx, UI medication, inability to understand Turkish language Mean age: PFMT group =41.82 (8.65); Control group = 44.64 (6.90) Two centres: Outpatient urology clinics attached to a country hospital and a university hospital in Izmir, Turkey
Interventions	Group A (n = 19): PFMT Taught by: nurse Correct VPFMC confirmed? Yes using vaginal palpation Number VPFMC per set: 30 contractions per set Number sets per day: 3 Duration of hold: 1 to 10 seconds. Duration of rest: same as contraction time Type(s) of contraction, e.g. submaximal, maximal: quick flicks (1-2 sec contractions), sustained progressive (5-10 seconds) contractions + knack Duration of programme: 6 weeks Position: supine, sitting and standing Measure of adherence? weekly telephone call to encourage exercises practice and answer questions Reported level of adherence: not reported Other important information on the intervention: taught about the anatomy of the pelvic floor, lower urinary tract anatomy and continence mechanism. Information was summarised in an illustrated handbook Group B (n = 22): control not contacted
Outcomes	Sar reported all outcomes as change scores and SD which we could not use in our forest plot. All outcomes significantly favoured PFMT versus control (P < 0.01) I-QOL: PFMT A 23.19 (11.43) 17, versus control B 5.74 (6.26) 17 Bladder diary (change in leakage/3 days): PFMT A -3.23 (2.19) 17 versus control B 0. 82 (2.81) 17 1h pad test (change in gms from baseline): PFMT A -5.11 (7.29) 17 versus control B 8. 88 (12.52) 17 PFM strength: mean and maximum as pressure using intra-vaginal perineometry: PFMT A 9.47 (6.53) 17 versus control B -2.23 (4.43) 17 and PFMT 11.23 (7.60) 17 versus control B -3.70 (4.71) 17 respectively
Notes	Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	'randomly assigned to an intervention or control group' 'stratified based on PFM strength, frequency of UI episodes and severity of UI on a 1h pad test
Allocation concealment (selection bias)	Unclear risk	Not clear if allocation concealment
Blinding of participants and personnel (performance bias)	Unclear risk	'this trial was not blinded'
Blinding of outcome assessment (detection bias)	High risk	'this trial was not blinded'
Incomplete outcome data (attrition bias)	High risk	Total 7/41 (17%) Group A = 2 (11%) drop out: non adherence to treatment regimen Group B = 5 (23%) Excluded: used other treatment during the tria
Selective reporting (reporting bias)	Unclear risk	unclear. No jugdement comment in the original NKR
Other bias	Low risk	No jugdement comment in the original NKR

Solberg 2016

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Age, years, median*: 63.5 ● *BMI, median*: 24.0 ● *Births, median*: 2 Control ● *Age, years, median* : 52.5 ● *BMI, median*: 23.1 ● *Births, median*: 2 **Included criteria:** All women above 18 years of age with MUI, who were not pregnant or planning to become pregnant during the study, were considered eligible for inclusion. **Excluded criteria:** Women who had given birth within 12 months before the onset of the current study were excluded. Women using medication for the urinary incontinence, or who had undergone surgery for incontinence, were not eligible. **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: 12 weekly sessions of PFMT in their group. The individual consultation included vaginal examination to verify that the correct procedure of using the pelvic floor muscles was obtained.

	● *Duration*: 12 weeks Control ● *Description*: No treatment
Outcomes	*ICIQ-UI-SF, median final, IQR* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: ICIQ-UI-SF ● **Range**: 0-21 ● **Direction**: Lower is better ● **Data value**: Endpoint *Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Underlivssmerter* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "All women meeting the inclusion criteria were ran- domly assigned to the treatment groups using the SurveyMonkey tool. Four women were not internet users. They answered the questions by phone, and results were manually entered into SurveyMonkey by the first author (MS) before randomisation."
Allocation concealment (selection bias)	Low risk	Judgement Comment: Central allocation, web-based
Blinding of participants and personnel (performance bias)	High risk	Judgement Comment: No information of blinding of participants and health care providers, blinding not feasible
Blinding of outcome assessment (detection bias)	High risk	Judgement Comment: ICIQ was self-reported and it was not feasible to blind the participants.

Incomplete outcome data (attrition bias)	High risk	Judgement Comment: Total of 10/22 (45%)By group: PFMT 4/10 (40%); control 6/12 (50%)Unbalanced + high attrition rate in both groups No intention-to-treat analysis used High dropout rate, 4 out of 10 in the PFMT group and 6 out of 12 in the control group. No intention to treat analyses
Selective reporting (reporting bias)	Low risk	Judgement Comment: No reference to a protocol. Reports on the outcomes stated in the methods section. The study do not report on all outcomes of interests, no reporting of the number of incontinence episodes and patient perceived effect
Other bias	High risk	Judgement Comment: Baseline comparabilityGroup were not comparable at baseline for primary outcomes (ICIQ-UI SF)

Sran 2016

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 66.17 (6.66) ● *Mean BMI, SD*: 24.69 (3.93) ● *Mean Parity, SD*: 1.35 (1.15) Control ● *Mean age, years, SD*: 67.13 (8.38) ● *Mean BMI, SD*: 23.08 (2.03) ● *Mean parity, SD*: 2.05 (1.47) **Included criteria:** To participate, women were required to be postmenopausalwith osteoporosis or low bone density, defined by a T score of2.0 or lower for the lumbar spine or hip, or a history of anontraumatic hip, vertebral, wrist, or rib fracture; 55 years and over; have symptoms of stress, urge, or mixed UI for at least the past 3 months and at least two UI episodes in 3 days (self-reported); able to communicate in English (both written and verbal); and willing to give written consent to participate.The determination of UI type was based on answers to twostandardized questions: Do you ever leak when you sneeze,cough, laugh, lift, bend forward, stand up from a sitting orlying position, walk, or run quickly? When you have a strongurge to go to the toilet, do you ever leak any urine before youcan get to the toilet, for example, when you arrive home, orwhen you get up in the morning, or during the night? To beeligible for further screening, women had to answer yes to atleast one or both questions **Excluded criteria:** Exclusion criteria included previous treatments or work-shops on incontinence in the past 5 years; previous UI surgeries (except for those who had had anti-incontinence surgery at least 20 y previously); fecal incontinence; continuous urine leakage; a current urinary tract infection; perineal pain or genital prolapse likely to interfere with the PFM assessment and treatment; previous pelvic irradiation; hormone therapy, use of vaginal estrogen, or an unstable hormone dose within the previous 6 months; use of concomitant treatments for UI during the trial period; severe mobility impairments requiring the use of mobility aids (that would make going to the toilet difficult); use of high-dose diuretics or medications to improve bladder control; history of radiation for pelvic organ cancers; score of less than 24 on the Mini Mental State Exam(MMSE); any other medical problem likely to interfere with treatment and evaluation (serious cardiovascular disease, ongoing cancer treatments, neurological conditions, psychiatric conditions); and individuals performing a Valsalva manoeuvre in lieu of PFM contraction. **Pretreatment:**

Interventions	**Intervention Characteristics** Intervention ● *Description*: Subsequent to the baseline measurement, the physical therapy group received 12 individual sessions once per week at the health center from a trained physical therapist. The sessions included evaluation by manual digital palpation); education on the causes of incontinence, conservative treatment, management of constipation, and urge control techniques; PFM retraining using electromyography (EMG) biofeedback; motor control exercises; functional PFM exercises; bladder habit retraining; dietary recommendations/changes (as needed); and audio tapes for home use. ● *Duration*: 12 weeks Control ● *Description*: No treatment
Outcomes	*IIQ Total Score, median final, IQR* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Scale**: IIQ ● **Range**: 0-400 ● **Direction**: Lower is better ● **Data value**: Endpoint *Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Antal tilfælde af urininkontinens, pr uge, median final, IQR* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Underlivssmerter* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Computer-generated ran- dom-block assignment was used to randomly allocate partici- pants to the experimental (physical therapy) or control (osteoporosis education and follow-up) groups." Judgement Comment: Computer generated random-block assignment
Allocation concealment (selection bias)	Low risk	Quote: "Allocation concealment was assured through the use of opaque, sequen- tially numbered, sealed envelopes. The research assistant revealed group assignments to the participants after complet- ing their baseline measurement session."
Blinding of participants and personnel (performance bias)	High risk	Quote: "Physical therapists and participants allocated to the physical therapy group were aware of their allocated arm." Judgement Comment: No blinding, but blinding not feasible.
Blinding of outcome assessment (detection bias)	Low risk	Quote: "Outcome assessors, data analysts, and the data collection and analysis team were blinded to group allocations. Participants were asked not to mention their group assignment to the evaluators." Judgement Comment: Assume that the outcomes "number of incontinence episodes" and "self-percieved efficacy score" were self-reported.
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Low number of dropouts, 2 in the PFMT group, 3 in the control group, reasons for dropout are stated. Intention to treat analyses, last observation carried foward. Total of 5/48 (10%)By group: PFMT 2/24 (8%); control 3/24 (13%)Reasons for missing outcome data unlikely to be related to true outcomeIntention-to-treat analysis used
Selective reporting (reporting bias)	Low risk	Judgement Comment: Reporting on all outcomes that were presented in the method section and registry available. Reports on all the outcomes stated in the methods section. Reports on all outcomes of interest
Other bias	Low risk	Judgement Comment: Baseline comparabilityNo differences between groups. The study appears to be free of other sources of bias

Wagg 2019

Methods	**Study design:** Cluster randomized controlled trial **Study grouping:** Parallel group
Participants	**Baseline Characteristics** Intervention ● *Mean age, years, SD*: 64·5 (4·2) ● *Mean BMI, SD*: 21·0 (4·2) Control ● *Mean age, years, SD*: 64·7 (4·1) ● *Mean BMI, SD*: 21·1 (4·1) **Included criteria:** Women aged 60–75 years, as recorded on the family card and confirmed by the woman, and had current urinary incontinence, with a positive response to one or more of questions 2, 3, or 4 (on urinary leakage with urgency, stress, or drops of urine loss) from the six-item Urinary Distress Inventory (UDI) Short Form (version 6). **Excluded criteria:** Uterine prolapse of third degree or higher, determined by asking each woman if she had any uterine prolapse. The paramedic then recorded whether she believed it to have been third degree or higher (ie, the cervix protrudes outside the vagina). Since village paramedics provided

	health care to these women, they would be likely to know of such an issue, and were not asked to carry out a physical examination before recording the presence of this condition. Furthermore, the paramedic assessed whether the women were able to stand from sitting without help, walk without help at a normal pace for someone of their age, and had the intellectual capacity to understand the paramedic's questions and follow instructions; women were excluded if they did not meet one or more of these criteria. **Pretreatment:**
Interventions	**Intervention Characteristics** Intervention ● *Description*: The exercise intervention entailed 60 min of group exercises done twice weekly for 12 weeks, followed by 30 min of brisk walking. The exercises included both PFMT and mobility exercise. the research paramedic organised group exercises in weeks 13–24 and women were offered the option of these extra classes. ● *Duration*: 12 weeks organized PFMT and optional extra classes in further 12 weeks. Control ● *Description*: No treatment
Outcomes	*Frafald, antal personer* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Antal inkontinens tilfælde, pr 3 dage, mean final, SD* ● **Outcome type**: ContinuousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint *Underlivssmerter* ● **Outcome type**: DichotomousOutcome ● **Reporting**: Fully reported ● **Direction**: Lower is better ● **Data value**: Endpoint
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement

Random sequence generation (selection bias)	Low risk	Quote: "was followed. Randomisation and masking After choosing the 16 pairs of villages, one village in each pair was randomly assigned to the exercise plus education group and the other to the education-only group by use of a random number generator from a fixed seed. Allocations within each pair, generated by the study biostatistician (YY), were transferred to 16 sealed, opaque, numbered envelopes by a third party and the other investigators and the field workers were masked to allocation. The nature of the intervention was disclosed"
Allocation concealment (selection bias)	Low risk	Quote: "After choosing the 16 pairs of villages, one village in each pair was randomly assigned to the exercise plus education group and the other to the education-only group by use of a random number generator from a fixed seed. Allocations within each pair, generated by the study biostatistician (YY), were transferred to 16 sealed, opaque, numbered envelopes by a third party and the other investigators and the field workers were masked to allocation."
Blinding of participants and personnel (performance bias)	Unclear risk	Quote: "The nature of the intervention was disclosed by the principal investigator (NC) to investigators in Bangladesh after determination of eligibility of women in that pair of villages but before consent was obtained from the women (protocol deviation). Women in the villages were told only about the intervention to which they had been allocated. Once the allocation was revealed, everyone was unmasked (ie, participants, research staff, and coding staff)." Judgement Comment: Participants were told only about the intervention to which they were allocated
Blinding of outcome assessment (detection bias)	High risk	Quote: "workers were masked to allocation. The nature of the intervention was disclosed by the principal investigator (NC) to investigators in Bangladesh after determination of eligibility of women in that pair of villages but before consent was obtained from the women (protocol deviation). Women in the villages were told only about the intervention to which they had been allocated. Once the allocation was revealed, everyone was unmasked (ie, participants, research staff, and coding staff). Procedures In April, 2012, before the" Judgement Comment: No blinding of outcome assessors
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Low and equal dropout rate, reasons for dropout stated. Overall losses 17/579 (2.9%)By group: PFMT 10/298 (3.4%); control 7/281 (2.5%)Reasons reported and no relevant clinical difference between groups.
Selective reporting (reporting bias)	High risk	Quote: "Other secondary outcomes were questionnaire data reporting severity and distress caused by urinary symp- toms with a depression score at 3 months, and will be reported elsewhere." Judgement Comment: Protocol available at clinicaltrials.gov. The study do not report on all outcomes in the protocool in this publication, but reports on the outcomes stated in the methods section. Reporting of severity and distress caused by urinary symptoms will be reported elsewere. These results were of interest for our review (quality of life)
Other bias	Low risk	Judgement Comment: Baseline comparabilityNo relevant differences between the groups

Wells 1999

Methods	4-arm RCT, parallel design Comparison: PFMT versus PFMT with intravaginal resistance device (and 2 arms not considered in this review: “self-insight” versus “health promotion”) A priori power calculation: no
Participants	286 women with stress or mixed urinary incontinence from a single centre in the USA Inclusion criteria: stress or mixed urinary incontinence, aged 21 years or more, independent in self care, able to speak and hear conversation in English adequately over the telephone, negative urinalysis, able to contract the PFM as demonstrated on physical examination, and able to read, understand and agree to the diagnostic consent form Exclusion criteria: degenerative neurological disorder, pregnancy, high risk of infection following urologic instrumentation Mean (SD) age in years in all groups: 56 (12.76) Symptom duration > 1 year in all groups: 68% Trialists stated that the groups were comparable at baseline

Interventions	Details of PFMT in Table 10 1. PFMT (n = 71) 2. PFMT with intravaginal resistance device (n = 71) 3. “Self-insight” (n = 72): observation of voiding behaviour and lifestyle. No clinic visits. This arm not considered in this review. 4. “Health promotion” (n = 72): good bladder hygiene, individualised lifestyles intervention and monthly clinic visits. This arm not considered in this review
Outcomes	Primary endpoint: 5 months Primary outcome measure(s): not stated Other outcome measures: PFM EMG (PerryMeter anal or vaginal sensor attached to the Dantec urodyn 5000 system), digital PFM assessment (Brink Scale, Brink 1994) , urethral pressure and cough test (urodynamics), 10-point VAS for leakage (0 = no leakage, 10 = a lot of leakage), number of leak episodes per day, pad test with standardised bladder volume
Notes	Risk of bias/info from Cochrane review by Hay-Smith/Dumolin

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	“randomly assigned”
Allocation concealment (selection bias)	Unclear risk	See above. Not further described.
Blinding of participants and personnel (performance bias)	High risk	Not feasible to blind participants or treatment provider. Outcome assessors not blinded
Blinding of outcome assessment (detection bias)	High risk	Not feasible to blind participants or treatment provider. Outcome assessors not blinded
Incomplete outcome data (attrition bias)	Unclear risk	Total dropouts: 127/286 Dropouts by group: 30/71 PFMT, 32/71 PFMT + device (35/72 self insight, 30/72 health promotion) ITTA: 1. Participants analysed in group to which assigned? Not stated 2. Authors stated analysis by intention-totreat? No
Selective reporting (reporting bias)	Low risk	Nothing to suggest selective reporting of data
Other bias	Unclear risk	Funding or financial assistance: National Institute for Nursing Research Ethical approval: yes, Institutional Review Board of the University of Rochester Conflict of interest: not stated

Footnotes

Characteristics of excluded studies

Asklund 2015

Reason for exclusion	Wrong intervention

Asklund 2017

Reason for exclusion	Wrong intervention

Bezerra 2018

Reason for exclusion	Wrong outcomes

Borello-France 2006

Reason for exclusion	

Cacciari 2019

Reason for exclusion	Wrong study design

Chu 2019

Reason for exclusion	Wrong intervention

de Oliveira 2009

Reason for exclusion	

Dumoulin 2011

Reason for exclusion	dublicate data

Ferreira 2014

Reason for exclusion	Wrong setting

Hay-Smith 2002

Reason for exclusion	

Henalla 1989

Reason for exclusion	

Johnson 2001

Reason for exclusion	

Konstantinidou 2007

Reason for exclusion	

Monteiro 2018

Reason for exclusion	Wrong study design

Sacomori 2019

Reason for exclusion	Wrong intervention

SaintOnge 2018

Reason for exclusion	Wrong comparator

Sugaya 2003

Reason for exclusion	

Vaz 2019

Reason for exclusion	Wrong study design

Footnotes

Characteristics of studies awaiting classification

Footnotes

Characteristics of ongoing studies

Footnotes

References to studies

Included studies

Bertotto 2017

Bertotto, A.; Schvartzman, R.; Uchoa, S.; Wender, M. C. O.. Effect of electromyographic biofeedback as an add-on to pelvic floor muscle exercises on neuromuscular outcomes and quality of life in postmenopausal women with stress urinary incontinence: A randomized controlled trial. Neurourology and urodynamics 2017;36(8):2142-2147. [DOI: 10.1002/nau.23258 [doi]]

Beuttenmuller 2010

[Empty]

Bo 1999

[Empty]

Burgio 1998

[Empty]

Burns 1993

[Empty]

Bykoviene 2018

Bykoviene, Lina; Kubilius, Raimondas; Aniuliene, Rosita; Bartuseviciene, Egle; Bartusevicius, Arnoldas. Pelvic Floor Muscle Training With Or Without Tibial Nerve Stimulation and Lifestyle Changes Have Comparable Effects on The Overactive Bladder. A Randomized Clinical Trial.. Urology Journal 2018;15(4):186-192. [DOI:]

Carneiro 2010

[Empty]

Castro 2008

[Empty]

CelikerTosun 2015

[Empty]

Firra 2013

Thompson, Firra J.. Paradoxical findings in the treatment of predominant stress and urge incontinence: a pilot study with exercise and electrical stimulation. Journal of Women's Health Physical Therapy 2013 Sep-Dec;37(3):113-123 2013;(Journal Article). [DOI:]

Ghoniem 2005

[Empty]

KargarJahromi 2014

Kargar Jahromi, M.; Talebizadeh, M.; Mirzaei, M.. The effect of pelvic muscle exercises on urinary incontinency and self-esteem of elderly females with stress urinary incontinency, 2013. Global journal of health science 2014;7(2):71-79. [DOI: 10.5539/gjhs.v7n2p71 [doi]]

Largo-Janssen 1991

[Empty]

Leong 2015

Leong, B. S.; Mok, N. W.. Effectiveness of a new standardised Urinary Continence Physiotherapy Programme for community-dwelling older women in Hong Kong. Hong Kong medical journal = Xianggang yi xue za zhi 2015;21(1):30-37. [DOI: 10.12809/hkmj134185 [doi]]

McLean 2013

McLean, L.; Varette, K.; Gentilcore-Saulnier, E.; Harvey, M. A.; Baker, K.; Sauerbrei, E.. Pelvic floor muscle training in women with stress urinary incontinence causes hypertrophy of the urethral sphincters and reduces bladder neck mobility during coughing. Neurourology and urodynamics 2013;32(8):1096-1102. [DOI: 10.1002/nau.22343 [doi]]

Pereira 2011

[Empty]

Sari 2009

[Empty]

Solberg 2016

Solberg, M.; Alraek, T.; Mdala, I.; Klovning, A.. A pilot study on the use of acupuncture or pelvic floor muscle training for mixed urinary incontinence. Acupuncture in medicine : journal of the British Medical Acupuncture Society 2016;34(1):7-13. [DOI: 10.1136/acupmed-2015-010828 [doi]]

Sran 2016

Sran, M.; Mercier, J.; Wilson, P.; Lieblich, P.; Dumoulin, C.. Physical therapy for urinary incontinence in postmenopausal women with osteoporosis or low bone density: a randomized controlled trial. Menopause (New York, N.Y.) 2016;23(3):286-293. [DOI: 10.1097/GME.0000000000000594 [doi]]

Wagg 2019

Wagg, Adrian; Chowdhury, Zafrullah; Galarneau, Jean-Michel; Haque, Rezaul; Kabir, Fardous; MacDonald, Dianna; Naher, Kamrun; Yasui, Yutaka; Cherry, Nicola. Exercise intervention in the management of urinary incontinence in older women in villages in Bangladesh: a cluster randomised trial.. The Lancet Global Health 2019;7(7):e923-e931. [DOI:]

Wells 1999

[Empty]

Excluded studies

Asklund 2015

Asklund, I.; Nyström, E.; Sjöström, M.; Umefjord, G.; Stenlund, H.; Samuelsson, E.. Treatment of stress urinary incontinence via a smartphone application: a randomised controlled trial. Neurourology and Urodynamics 2015;34(S3):S40. [DOI:]

Asklund 2017

Asklund, I.; Nystrom, E.; Sjostrom, M.; Umefjord, G.; Stenlund, H.; Samuelsson, E.. Mobile app for treatment of stress urinary incontinence: A randomized controlled trial. Neurourology and urodynamics 2017;36(5):1369-1376. [DOI: 10.1002/nau.23116 [doi]]

Bezerra 2018

Bezerra L.O.; Nobrega M.; De Oliveira M.C.E.; Goncalves A.K.; Menezes G.F.; Micussi, M. T. A. B. C.. Evaluation of urinary loss and quality of life after training of pelvic floor musculature.. International Journal of Gynecology and Obstetrics 2018;Conference: 22nd FIGO World Congress of Gynecology and Obstetrics. Brazil(Journal Article):ate of Pubaton: Otober 2018. [DOI:]

Borello-France 2006

[Empty]

Cacciari 2019

Cacciari, Licia P.; Dumoulin, Chantale; Hay-Smith, E. Jean. Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women: a cochrane systematic review abridged republication. Brazilian Journal of Physical Therapy 2019;23(2):93-107. [DOI:]

Chu 2019

Chu CM; Schmitz KH; Khanijow K; Stambakio H; Newman DK; Arya LA; Andy, U. U.. Feasibility and outcomes: pilot randomized controlled trial of a home-based integrated physical exercise and bladder-training program versus usual care for community-dwelling older women with urinary incontinence. Neurourology and Urodynamics 2019 Apr 18:Epub ahead of print 2019;(Journal Article). [DOI:]

de Oliveira 2009

[Empty]

Dumoulin 2011

Dumoulin, C.; Sran, M.; Lieblich, P.; Wilson, P.. Physiotherapy significantly reduces leakage in postmenopausal women with osteoporosis and urinary incontinence: result of a parallel RCT [abstract 130].. Neurourology and Urodynamics 2011;30(6):985. [DOI:]

Ferreira 2014

Ferreira, Silvia; Ferreira, Margarida; Carvalhais, Alice; Santos, Paula Clara; Rocha, Paula; Brochado, Gabriela. Reeducation of pelvic floor muscles in volleyball athletes. Revista da Associação Médica Brasileira 2014;60(Journal Article):428-433. [DOI:]

Hay-Smith 2002

[Empty]

Henalla 1989

[Empty]

Johnson 2001

[Empty]

Konstantinidou 2007

[Empty]

Monteiro 2018

Monteiro, Silvia; Riccetto, Cassio; Araujo, Angelica; Galo, Laryssa; Brito, Nathalia; Botelho, Simone. Efficacy of pelvic floor muscle training in women with overactive bladder syndrome: a systematic review.. International Urogynecology Journal 2018;29(11):1565-1573. [DOI:]

Sacomori 2019

Sacomori, Cinara; Zomkowski, Kamilla; Dos Passos Porto, Isabela; Cardoso, Fernando Luiz; Sperandio, Fabiana Flores. Adherence and effectiveness of a single instruction of pelvic floor exercises: a randomized clinical trial.. International Urogynecology Journal 2019;(Journal Article). [DOI:]

SaintOnge 2018

SaintOnge K.; Fraser S.; Southall K.; FrechetteChaine E.; Morin M.; Dumoulin, C.. Beyondthetraining: The benefits of peer support and improved self-perceptions experienced by women completing a 12 week pfm training program.. Neurourology and urodynamics 2018;Conference(Journal Article):48th. [DOI:]

Sugaya 2003

[Empty]

Vaz 2019

Vaz, Camila Teixeira; Sampaio, Rosana Ferreira; Saltiel, Fernanda; Figueiredo, Elyonara Mello. Effectiveness of pelvic floor muscle training and bladder training for women with urinary incontinence in primary care: a pragmatic controlled trial.. Brazilian Journal of Physical Therapy 2019;23(2):116-124. [DOI:]

Data and analyses

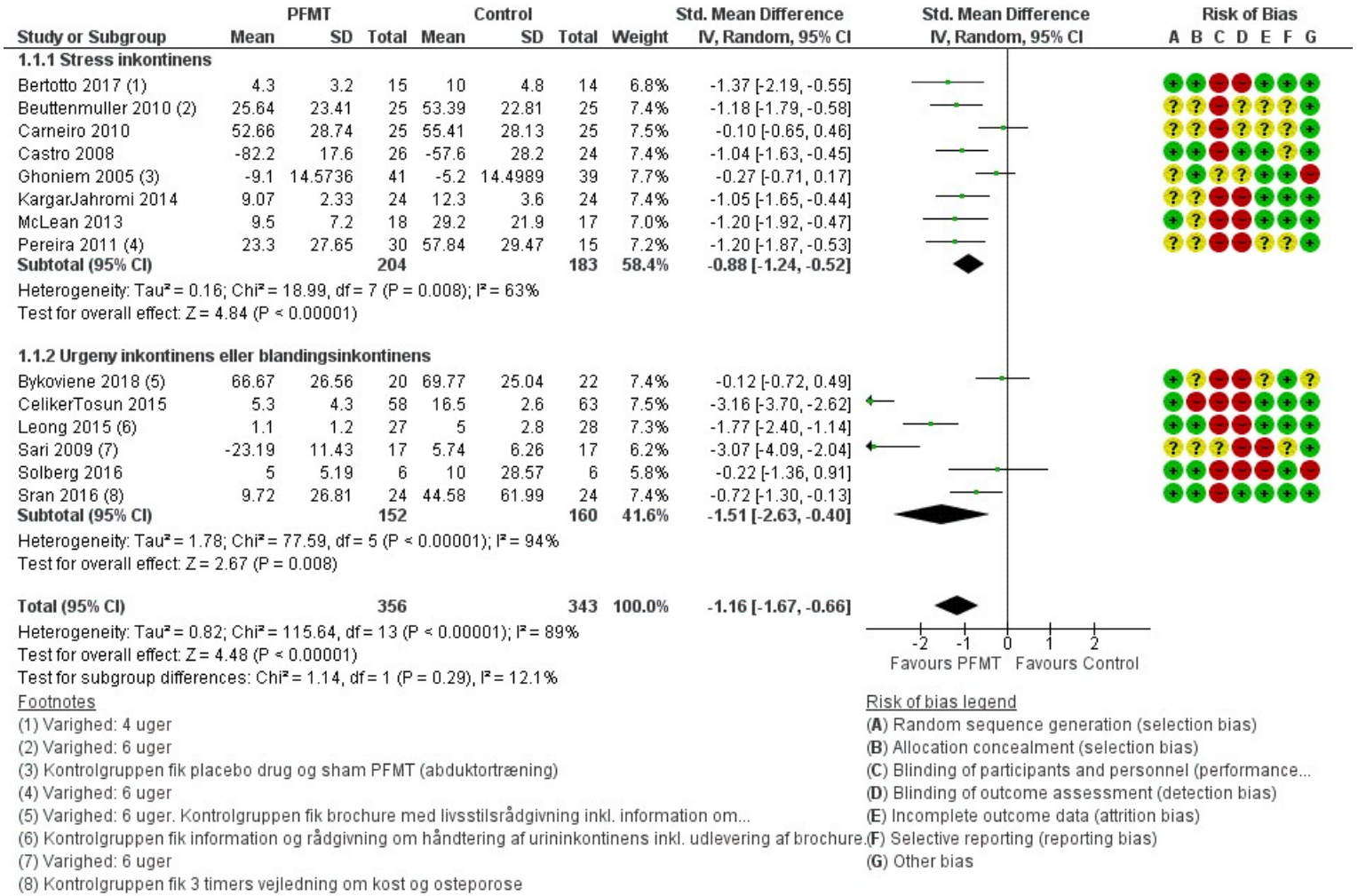
1 PFMT vs Control

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 inkontinensrelateret livskvalitet (incontinence quality of life)	14	699	Std. Mean Difference (IV, Random, 95% CI)	-1.16 [-1.67, -0.66]
1.1.1 Stress inkontinens	8	387	Std. Mean Difference (IV, Random, 95% CI)	-0.88 [-1.24, -0.52]
1.1.2 Urgeny inkontinens eller blandingsinkontinens	6	312	Std. Mean Difference (IV, Random, 95% CI)	-1.51 [-2.63, -0.40]

1.2 Inkontinensrelateret livskvalitet (incontinence quality of life)one year follow-up)	1	48	Mean Difference (IV, Fixed, 95% CI)	-10.28 [-32.11, 11.55]
1.3 Antal tilfælde af inkontinens (episodes of urinary incontinence)	14	1404	Std. Mean Difference (IV, Random, 95% CI)	-0.97 [-1.70, -0.24]
1.3.1 Pr. dag (per day)	1	42	Std. Mean Difference (IV, Random, 95% CI)	0.15 [-0.46, 0.76]
1.3.2 Pr. 3 dage (per 3 days)	6	857	Std. Mean Difference (IV, Random, 95% CI)	-1.36 [-2.73, 0.02]
1.3.3 Pr. uge (per week)	6	426	Std. Mean Difference (IV, Random, 95% CI)	-0.93 [-1.37, -0.49]
1.3.4 Other, % reduktion	1	79	Std. Mean Difference (IV, Random, 95% CI)	0.11 [-0.33, 0.56]
1.4 Antal inkontinens tilfælde, pr 3 dage (episodes of urinary inconrinence per 3 days)	6	857	Mean Difference (IV, Random, 95% CI)	-3.51 [-5.92, -1.09]
1.5 Antal tilfælde af urininkontinens, pr uge (episodes of urinary incontinence per week)	6	426	Mean Difference (IV, Random, 95% CI)	-9.06 [-13.92, -4.21]
1.6 Antal tilfælde af inkontinens, pr uge (one year follow-up)	1	48	Mean Difference (IV, Fixed, 95% CI)	-5.50 [-12.24, 1.24]
1.7 Patientoplevet effekt, antal personer med klinisk relevant forbedring (patient perceived effect)	5	358	Risk Ratio (M-H, Random, 95% CI)	3.24 [1.38, 7.59]
1.8 Patientoplevet effekt, antal personer med klinisk relevant forbedring (patient perceived effect)	5	358	Risk Difference (M-H, Random, 95% CI)	0.55 [0.25, 0.85]
1.9 Patientoplevet effekt VAS skala (patient perceived effect)	1	55	Mean Difference (IV, Fixed, 95% CI)	7.30 [6.84, 7.76]
1.10 Frafald, antal personer (number of dropouts)	16	1488	Risk Ratio (IV, Random, 95% CI)	0.86 [0.60, 1.22]
1.11 Underlivssmerter (pelvic pain)	5	736	Risk Difference (IV, Random, 95% CI)	0.00 [-0.01, 0.01]

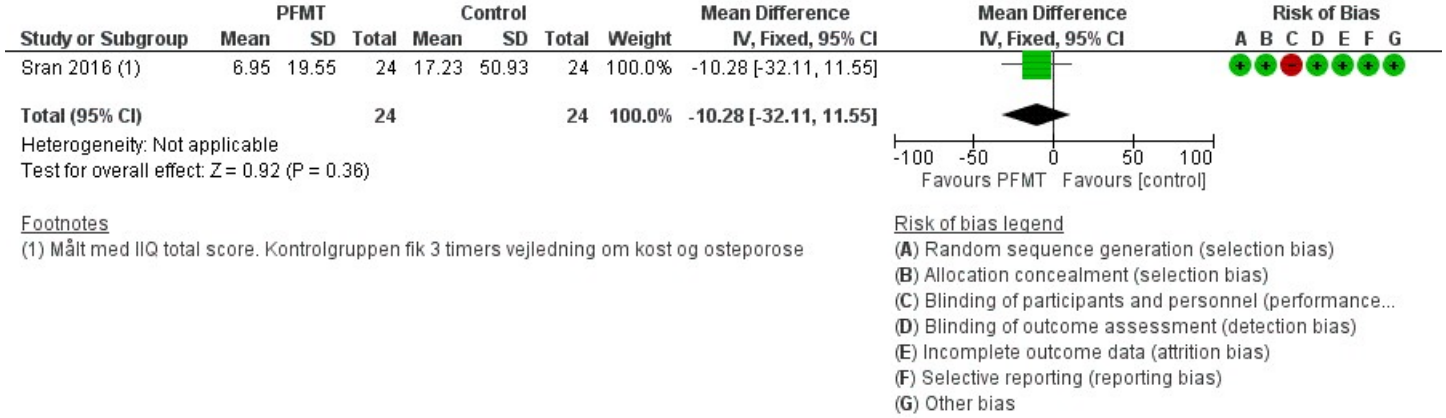
Figures

Figure 1 (Analysis 1.1)



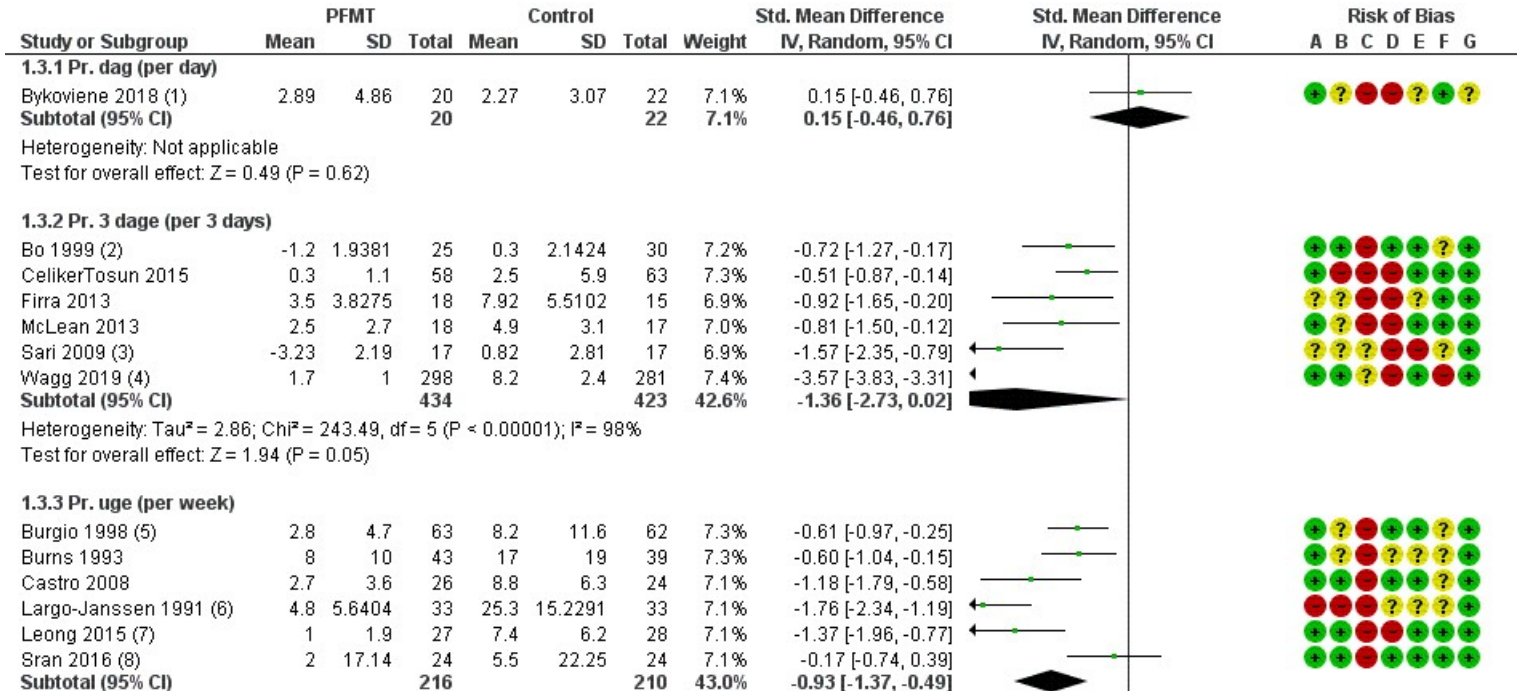
Forest plot of comparison: 1 PFMT vs Control, outcome: 1.1 inkontinensrelateret livskvalitet (incontinence quality of life).

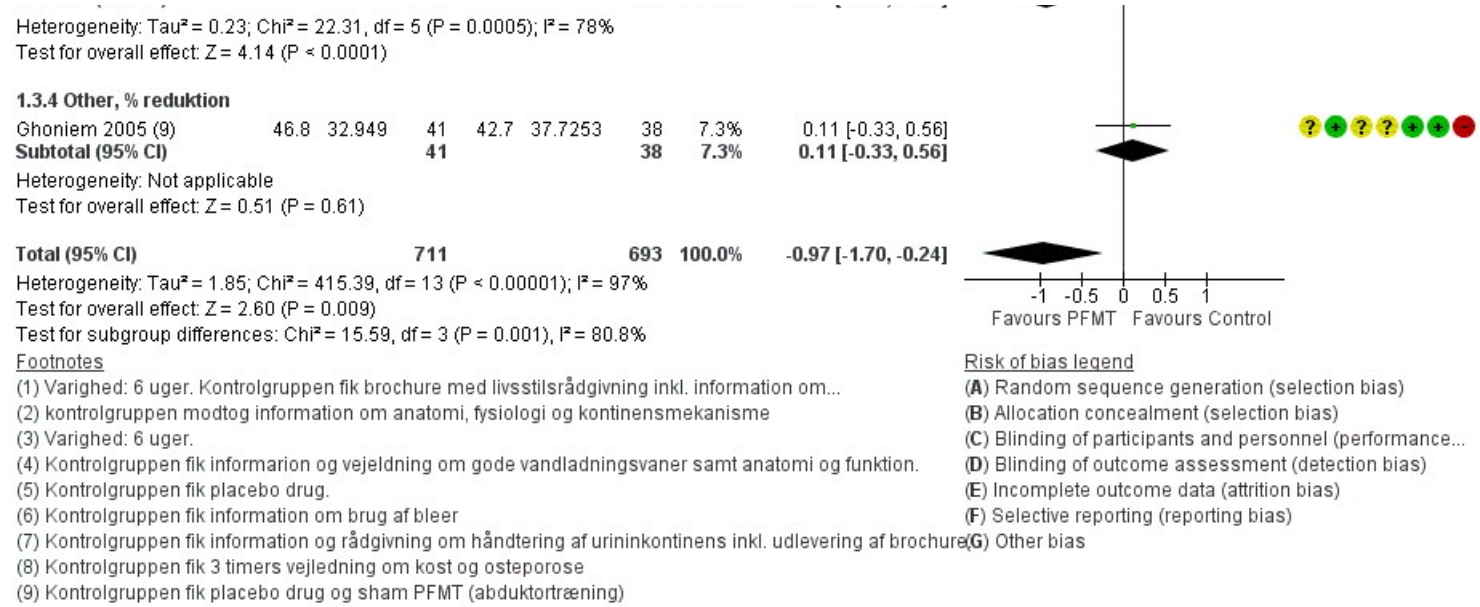
Figure 2 (Analysis 1.2)



Forest plot of comparison: 1 PFMT vs Control, outcome: 1.2 Inkontinensrelateret livskvalitet (incontinence quality of life)one year follow-up).

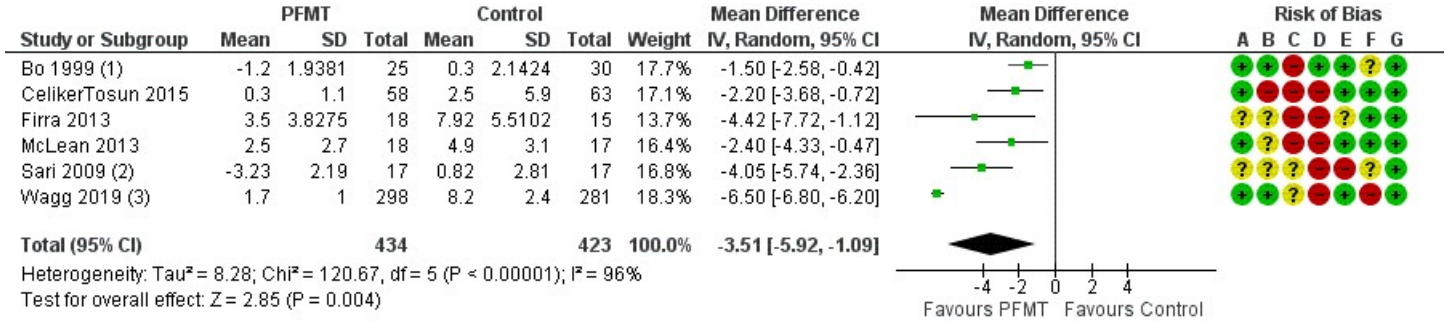
Figure 3 (Analysis 1.3)





Forest plot of comparison: 1 PFMT vs Control, outcome: 1.3 Antal tilfælde af inkontinens (episodes of urinary incontinence).

Figure 4 (Analysis 1.4)

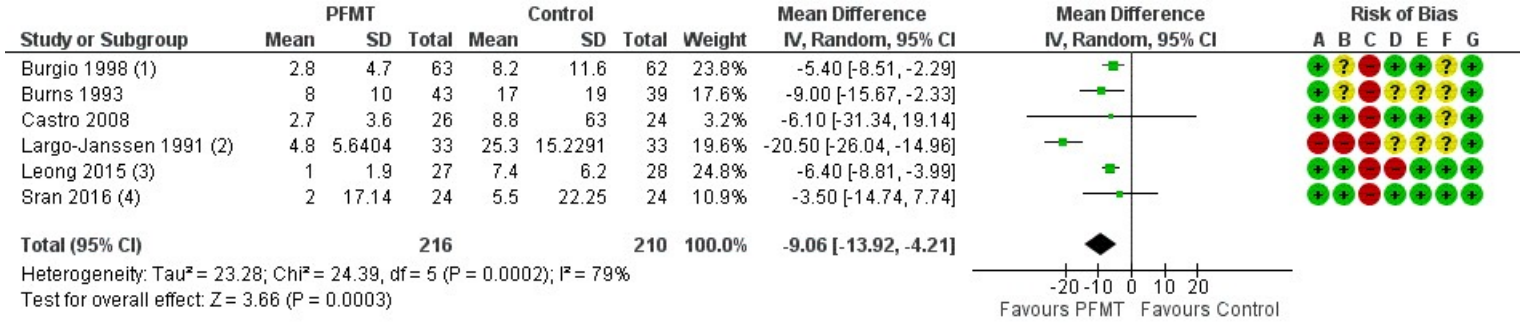


Footnotes
(1) kontrolgruppen modtog information om anatomi, fysiologi og kontinensmekanisme
(2) Varighed: 6 uger.
(3) Kontrolgruppen fik informarion og vejeldning om gode vandladningsvaner samt anatomi og...

Risk of bias legend
(A) Random sequence generation (selection bias)
(B) Allocation concealment (selection bias)
(C) Blinding of participants and personnel (performance...
(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 PFMT vs Control, outcome: 1.4 Antal inkontinens tilfælde, pr 3 dage (episodes of urinary inconrinence per 3 days).

Figure 5 (Analysis 1.5)

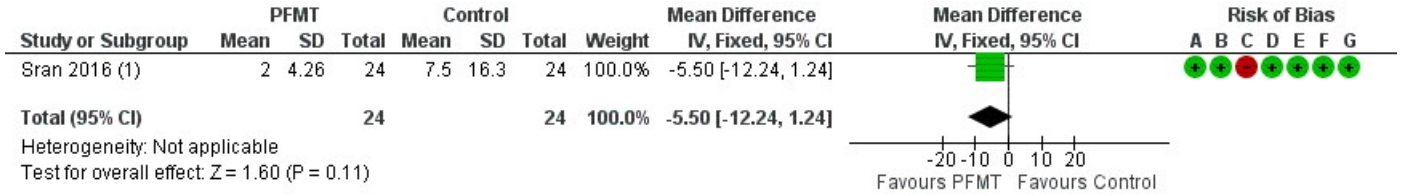


Footnotes
(1) Kontrolgruppen fik placebo drug.
(2) Kontrolgruppen fik information om brug af bleer. Largo-Janssen studiet forklarer heterogeniteten, når...
(3) Kontrolgruppen fik information og rådgivning om håndtering af urininkontinens inkl. udlevering af brochure
(4) Kontrolgruppen fik 3 timers vejledning om kost og osteporose

Risk of bias legend
(A) Random sequence generation (selection bias)
(B) Allocation concealment (selection bias)
(C) Blinding of participants and personnel (performance...
(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 PFMT vs Control, outcome: 1.5 Antal tilfælde af urininkontinens, pr uge (episodes of urinary incontinence per week).

Figure 6 (Analysis 1.6)



Footnotes

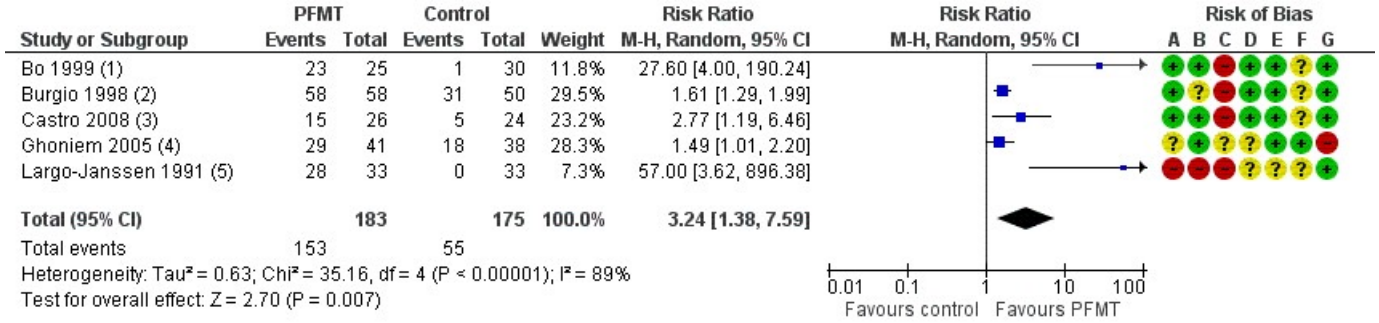
(1) Kontrolgruppen fik 3 timers vejledning om kost og osteporose

Risk of bias legend

(A) Random sequence generation (selection bias)
(B) Allocation concealment (selection bias)
(C) Blinding of participants and personnel (performance...
(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 PFMT vs Control, outcome: 1.6 Antal tilfælde af inkontinens, pr uge (one year follow-up).

Figure 7 (Analysis 1.7)



Footnotes

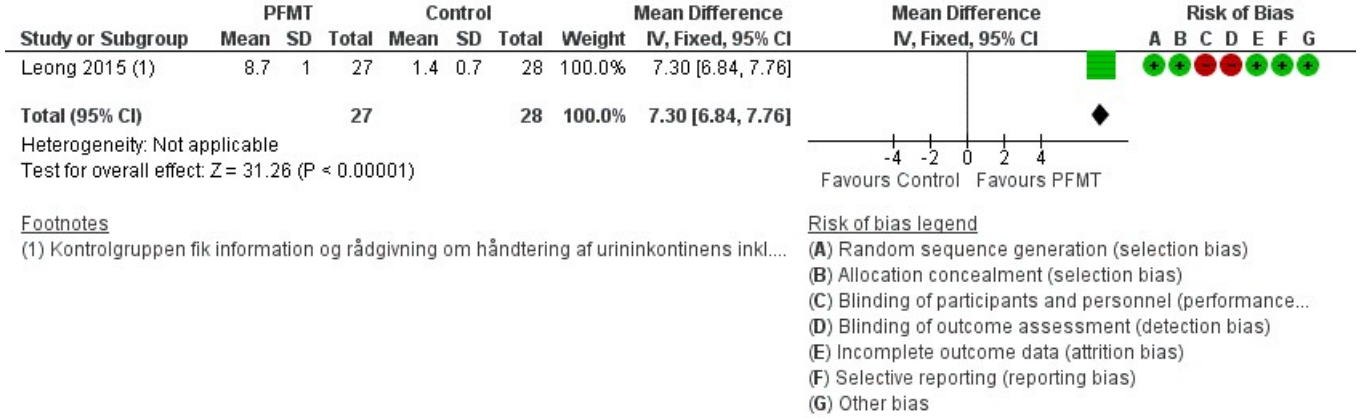
(1) kontrolgruppen modtog information om anatomi, fysiologi og kontinensmekanisme....
(2) Kontrolgruppen fik placebo drug. Completely satisfied and somewhat satisfied
(3) Satisfied
(4) Kontrolgruppen fik placebo drug og sham PFMT (abduktortræning). Improvment using...
(5) Kontrolgruppen fik information om brug af bleer. Improved/cured.

Risk of bias legend

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

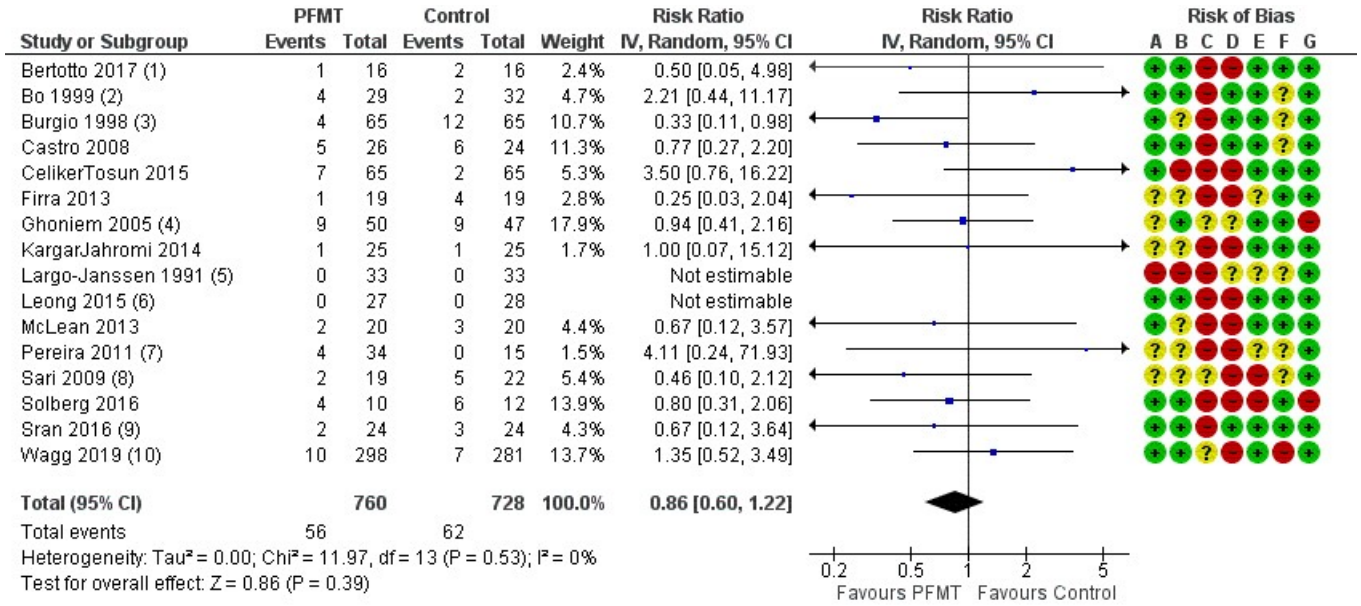
Forest plot of comparison: 1 PFMT vs Control, outcome: 1.7 Patientoplevet effekt, antal personer med klinisk relevant forbedring (patient perceived effect).

Figure 8 (Analysis 1.9)



Forest plot of comparison: 1 PFMT vs Control, outcome: 1.9 Patientoplevet effekt VAS skala (patient perceived effect).

Figure 9 (Analysis 1.10)

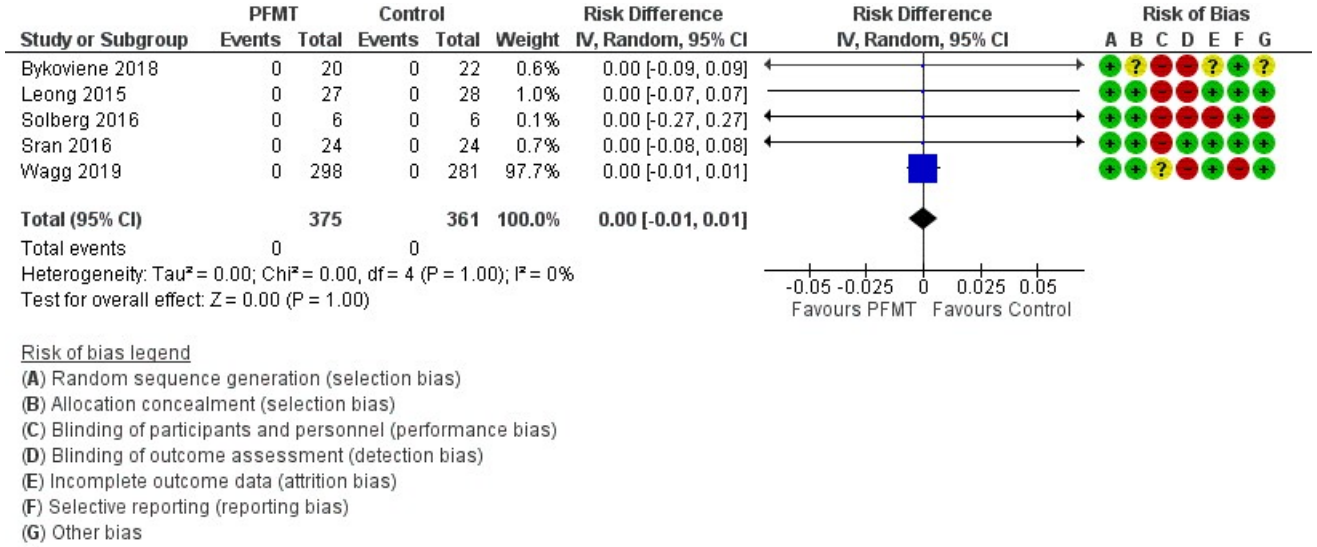


Footnotes
(1) Varighed: 4 uger
(2) kontrolgruppen modtog information om anatomi, fysiologi og kontinensmekanisme
(3) Kontrolgruppen fik placebo drug.
(4) Kontrolgruppen fik placebo drug og sham PFMT (abduktortræning)
(5) Kontrolgruppen fik information om brug af bleer
(6) Kontrolgruppen fik information og rådgivning om håndtering af urininkontinens inkl....
(7) Varighed: 6 uger
(8) Varighed: 6 uger
(9) Kontrolgruppen fik 3 timers vejledning om kost og osteporose
(10) Kontrolgruppen fik informarion og vejeldning om gode vandladningsvaner samt...

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

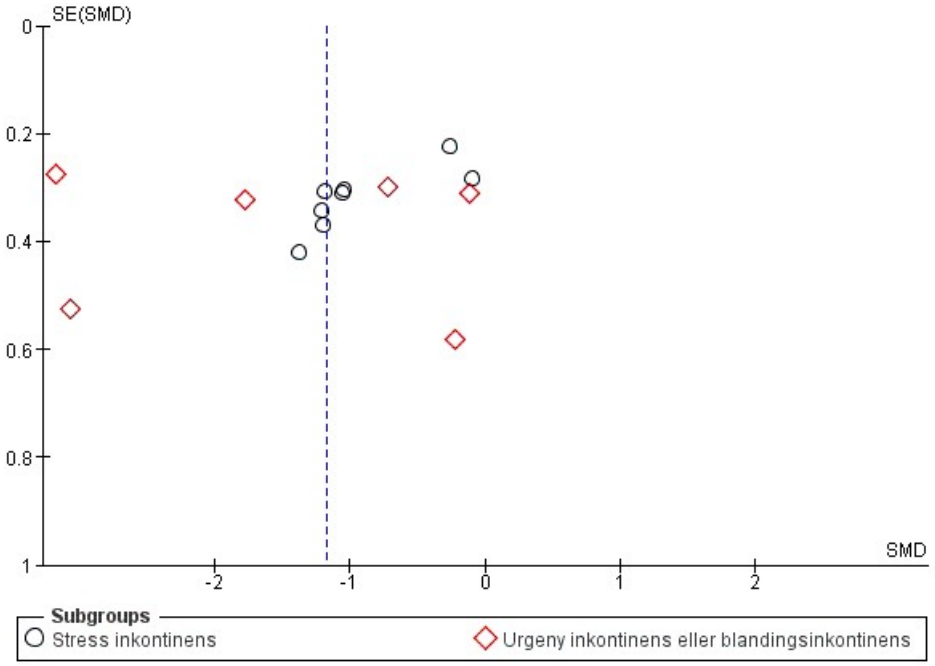
Forest plot of comparison: 1 PFMT vs Control, outcome: 1.10 Frafald, antal personer (number of dropouts).

Figure 10 (Analysis 1.11)



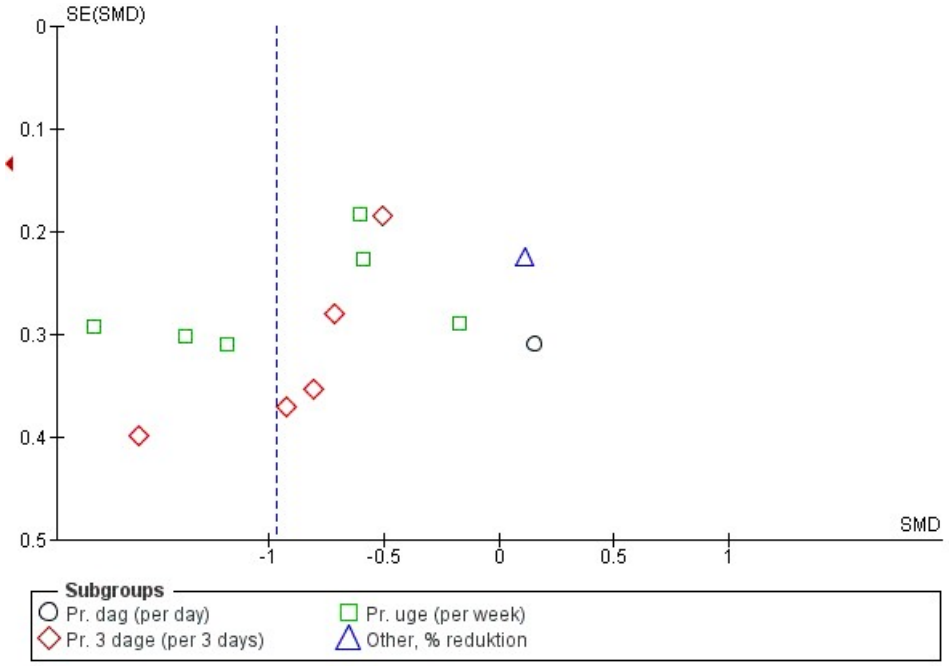
Forest plot of comparison: 1 PFMT vs Control, outcome: 1.11 Underlivssmerter (pelvic pain).

Figure 11 (Analysis 1.1)



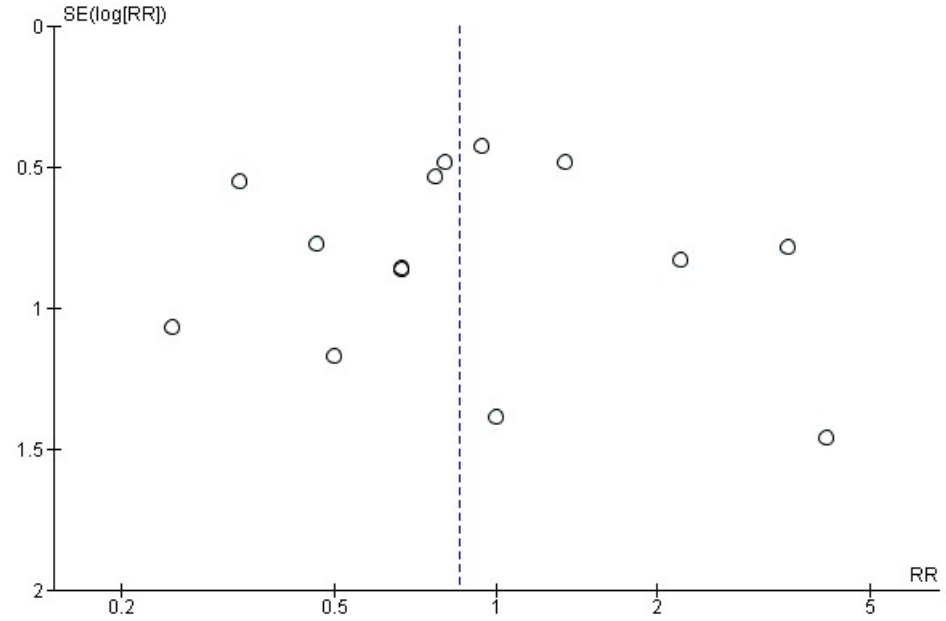
Funnel plot of comparison: 1 PFMT vs Control, outcome: 1.1 inkontinensrelateret livskvalitet (incontinence quality of life).

Figure 12 (Analysis 1.3)



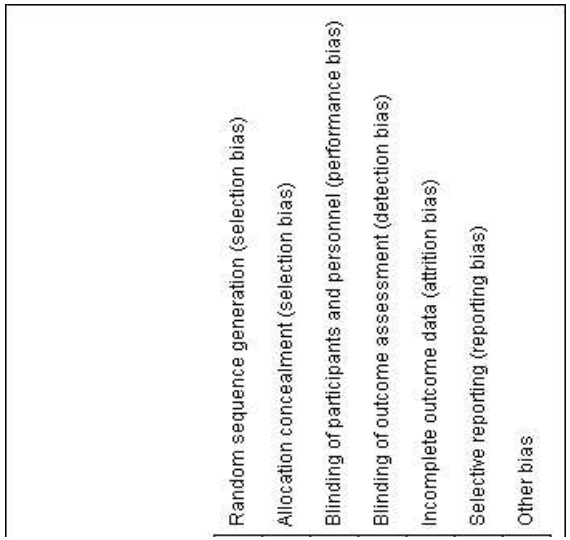
Funnel plot of comparison: 1 PFMT vs Control, outcome: 1.3 Antal tilfælde af inkontinens (episodes of urinary incontinence).

Figure 13 (Analysis 1.10)



Funnel plot of comparison: 1 PFMT vs Control, outcome: 1.10 Frafald, antal personer (number of dropouts).

Figure 14



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