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[Intervention Review]

Bladder training for urinary incontinence in adults

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ABSTRACT

Background

Urinary incontinence is a common and distressing problem. Bladder training aims to increase the interval between voids and is widely used for the treatment of urinary incontinence.

Objectives

To assess the effects of bladder training for the treatment of urinary incontinence.

Search methods

We searched the Cochrane Incontinence Group Specialised Trials Register (searched 15 March 2006). The reference lists of relevant articles were searched, and trialists contacted for details of other trials.

Selection criteria

Randomised or quasi-randomised trials of bladder training for the treatment of any type of urinary incontinence.

Data collection and analysis

Two reviewers assessed trial quality and independently extracted data. Five primary outcomes were prespecified: participant's perception of cure of urinary incontinence; participant's perception of improvement of urinary incontinence; number of incontinent episodes; number of micturitions; and quality of life. Adverse events were also noted. Three comparisons were made: bladder training compared to no bladder training; bladder training compared to other treatments; and combining bladder training with another treatment compared to that other treatment alone.

Main results

We assessed 109 reports of 60 potentially relevant trials; 31 reports of 12 trials were eligible for inclusion with a total of 1473, predominantly female, participants. In four trials not all participants with overactive bladder, in four trials had urinary incontinence. Data from eight trials with 858 participants with urinary incontinence at baseline, mostly female, are therefore included in the review. The quality of trials was variable. Few data describing long term follow up are available.

Bladder training compared to no bladder training: Data were available for 172 women from three trials comparing bladder training with no bladder training. These described only a limited number of prespecified outcomes, which varied across the three trials. Point estimates of effect favoured bladder training; however, confidence intervals were wide and no statistically significant differences were found for primary outcome variables.

Bladder training compared to other treatments: Three trials including 159 women compared bladder training with drugs: two with oxybutynin and one with imipramine plus flavoxate. In the former trials the only outcomes demonstrating a statistically significant difference were participant's perception of cure at six months (RR 1.69; 95% CI 1.21 to 2.34), quality of life (general physical measure) (WMD 9.00; 95% CI 1.64 to 16.36) and adverse events, all favouring bladder training, and number of daytime micturitions per week (WMD 2.80; 95% CI 0.91 to 4.69) favouring drug treatment. In the latter trial participant's perception of cure immediately after treatment just achieved statistical significance (RR 1.50; 95% CI 1.02 to 2.21) favouring bladder training, and this difference was maintained at approximately two months post treatment. Two comparisons of bladder training with pelvic floor muscle training plus biofeedback included 164 women: none of the differences in the primary outcomes achieved statistical significance.

Combining bladder training with another treatment compared to that other treatment alone: Two trials including 331 participants compared the combination of bladder training plus an anticholinergic drug with the drug alone. For the largest trial, data for only one prespecified outcome were available: the median number of incontinent episodes was the same for both treatment groups. One trial compared pelvic floor muscle training plus biofeedback supplemented with bladder training versus pelvic floor muscle training plus biofeedback alone and included 125 women. Of the primary outcomes, both participants' perception of improvement and quality of life, both immediately after treatment, achieved statistical significance, favouring the bladder training combined with pelvic floor muscle training and biofeedback group (perception of improvement: RR 1.18; 95% CI 1.01 to 1.39; quality of life: MD -47.20; 95% CI -87.03 to -7.37), this was not sustained at three months.

Authors' conclusions

The limited evidence available suggests that bladder training may be helpful for the treatment of urinary incontinence, but this conclusion can only be tentative as the trials were of variable quality and of small size with wide confidence intervals around the point estimates of effect. There was also not enough evidence to determine whether bladder training was useful as a supplement to another therapy. Definitive research has yet to be conducted.

PLAIN LANGUAGE SUMMARY

Bladder training for urinary incontinence in adults

Urinary incontinence is the inability to control the leakage of urine and is a common and distressing problem. Urge incontinence is leakage of urine when a person is unable to control the strong desire to pass urine (void). Stress incontinence is the leakage of urine when a person coughs or undertakes physical exertion. Bladder training encourages people to extend the time between voiding so that continence might be regained. This can take months to achieve but may help people who are physically and mentally able to use this method. The review of trials did not find enough rigorous evidence and concluded that more research is needed. The limited evidence available suggests that bladder training may be helpful in treating urinary incontinence but this is not definite.

BACKGROUND

Epidemiology and causes of urinary incontinence

Urinary incontinence is a common problem. The prevalence in women is reported variably to be from around 9% to 72%. One of the largest studies found an overall prevalence of 25% of community-dwelling women, age 20 years or over, reporting some form of urinary leakage (Hunskaar 2002). In men the prevalence is lower with reports ranging from 3% to 11% (Hunskaar 2002). The causes or risk factors are still uncertain and appear to differ between women and men. In women, urinary incontinence has been associated with increasing age, childbirth, obesity, presence of lower urinary tract symptoms and decreased mobility (Hunskaar 2002). In men associated risk factors are increasing age, lower urinary tract symptoms such as cystitis or bladder outlet obstruction, decreased mobility, and radical prostatectomy (Hunskaar 2002).

Economic consequences

Cost of illness analyses found that the direct costs of urinary incontinence were approximately $16 billion (based on 1994 US$) in the USA in 1994 (Hu 2002). Many of the costs are indirect and these are difficult to estimate (Hu 2002).

Types of incontinence

Urinary incontinence is defined as 'the complaint of any involuntary leakage of urine' (Abrams 2002). There are three main types of urinary incontinence:

- urge urinary incontinence - the complaint of involuntary leakage of urine, immediately following or concurrent with, an urgent sensation of needing to void which is difficult to defer;
- stress urinary incontinence - the complaint of involuntary leakage of urine during exertion or effort eg during exercise or on coughing;
- mixed urinary incontinence - the complaint of involuntary leakage of urine where there is both an urgency component and a 'stress' component to the incontinent episodes.

Diagnosis

The diagnosis of urinary incontinence can be made on the basis of (Abrams 2002):

- a person's symptoms and signs - eg a person may report urinary leakage during exercise and the health care provider verifies this by observing urinary leakage when the person coughs. Other symptoms and signs may be present such as daytime frequency and nocturia; or on the basis of
- urodynamic diagnosis which includes: eg detrusor overactivity incontinence or urodynamic stress incontinence; or
- a mixture of symptom and sign-based and urodynamic-based diagnosis, eg people may report symptoms of both stress and urge urinary incontinence but urodynamically have only detrusor overactivity incontinence.

Treatments

Conservative, pharmacological and surgical interventions are available for the treatment of urinary incontinence. This review focuses on bladder training, a conservative treatment - many of the other interventions have been or will be covered by other Cochrane reviews.

Bladder training is widely used for the treatment of urinary incontinence in both primary and secondary care and within institutional settings in the community. It is sometimes known as bladder drill or bladder retraining. It is generally used for the treatment of people with urge incontinence (Kennedy 1992; Williams 1995; Fantl 1996; Button 1998), although it is also thought that it might be of use for people with mixed incontinence or stress incontinence (Fantl 1996; Wilson 2002). Bladder training is often commenced based upon a classification of a patient's symptoms (such as urgency, frequency, nocturia, urge, stress, or mixed urinary incontinence) (Fantl 1996), as a urodynamic diagnosis is not always available or warranted. In part, this reflects a lack of consensus amongst clinicians as to when urodynamics should be used in the management of urinary incontinence (Button 1998).

Bladder training aims to increase the time interval between voids, either by a mandatory or self-adjustable schedule, so that incontinence is ultimately avoided and continence regained: this can take some months to achieve. The mechanism of action of bladder training is uncertain: one hypothesis is that by increasing the interval between voids, the bladder capacity increases, leading to a reduction in urinary incontinence (Wilson 2002). Bladder training is recommended for people who are physically and cognitively able and motivated (Hadley 1986; Kennedy 1992). It is generally comprised of three components (Fantl 1996):

- patient education - this often includes information about the bladder and how continence is usually maintained;
- scheduled voiding - a 'timetable for voiding' which may be fixed or flexible to suit the participant's rate of increase in interval between voids, commonly the aim is to achieve an interval of three to four hours between voids; and
- positive reinforcement - psychological support and encouragement is generally considered important and is usually provided by a health care professional.

Some health care professionals also add in self-monitoring or charting, and urge suppression techniques such as distraction and relaxation and some include limited identification of pelvic muscles to help delay voiding. Some additions such as fluid manipulation are not generally recommended but the education process may include information about caffeine use (Wilson 2002).

This review includes all forms of urinary incontinence, however diagnosed. It is an update of an earlier Cochrane review originally published in 1998 and updated in 1999 and 2004.

OBJECTIVES

To assess the effects of bladder training on urinary incontinence, however that diagnosis is made.

The following comparisons were made:

A. Bladder training versus no bladder training for the management of urinary incontinence.

B. Bladder training versus other treatments (such as conservative or pharmacological) for the management of urinary incontinence.

The following comparisons will be made:
i bladder training compared with anticholinergic drugs;
ii bladder training compared with adrenergic agonist drugs;
iii bladder training compared with other drugs (non-anticholinergic, non-adrenergic agonist drugs);
iv bladder training compared with other behavioural/physical/psychological treatments;
v bladder training compared with surgical management;
vi bladder training compared with medical devices;
vii bladder training compared with other interventions.

C. Combining bladder training with another treatment (such as conservative or pharmacological) versus that other treatment alone.

We looked at the following comparisons:
i bladder training combined with a pharmacological treatment compared with that pharmacological treatment alone;
ii bladder training combined with a non-pharmacological treatment compared with that non-pharmacological treatment alone.

METHODS

Criteria for considering studies for this review

Types of studies

All randomised or quasi-randomised controlled trials of bladder training for the treatment of urinary incontinence, however the incontinence was diagnosed.

Types of participants

All adult men and women with urinary incontinence. The term adult was accepted however defined by the trialists. Participants were eligible whatever the type of incontinence diagnosed and however that diagnosis was made. The trialists' classification of incontinence type was accepted as stated (eg if trialists classified participants as having urodynamically proven detrusor overactivity incontinence and ignored a concurrent symptom-based diagnosis of stress incontinence then we too have ignored the symptom-based diagnosis and used the trialists' classification). Use of the term 'urinary incontinence ' was accepted as defined by the trialists. Participants having symptoms of overactive bladder that included urinary incontinence (however diagnosed) were included in this review but if urinary incontinence was not present participants were excluded.

Types of interventions

To be eligible for this review at least one trial group had to be managed with bladder training. Bladder training was assumed to have been tested, even if there was no further description of the intervention, other than when the term 'bladder training' described clamping and/or removal of urinary catheters. The terms bladder retraining, bladder drill or bladder re-education were assumed to be synonymous with bladder training. Trialists who did not use these terms had to have described an intervention which included:

- mandatory schedule or self schedule with the aim of increasing the interval between voids, as a minimum; and ideally,
- a method of participant education;
- positive reinforcement and follow up.

If there was no mention of mandatory schedule or self schedule these trials were excluded. If it was unclear as to what behavioural intervention had been used the trialists were contacted.

The use of an additional intervention, such as pelvic floor muscle training (PFMT), supplemental to bladder training, compared to bladder training alone, 'usual treatment' or no treatment - led to the exclusion of that trial as it is not possible to establish any direct effects due to bladder training from these trials.

There was no restriction on where the bladder training was administered. This could be as an outpatient, an in-patient or in a home setting. Comparisons of different forms of bladder training, such as in different settings or provided by different health care professionals were not considered in this review.

Types of outcome measures

Five primary outcomes were prespecified: participant's perception of cure of urinary incontinence; participant's perception of improvement of urinary incontinence; number of incontinent episodes; number of micturitions; and quality of life. Adverse events was also an important prespecified outcome. Other secondary outcomes were also prespecified.
The categories of outcomes were based on those suggested by the International Continence Society (Lose 1998):

1. Participant's symptoms

Participant's perception of cure or improvement of urinary incontinence (as reported by the participants or as marked on a visual-analogue scale)

2. Quantification of symptoms

- Number of incontinent episodes (derived from self completed bladder diary, ideally over a seven-day period)
- Cure of incontinent episodes (derived from self completed bladder diary, ideally over a seven day period)
- Improvement of incontinent episodes (derived from self completed bladder diary, ideally over a seven day period)
- Number of micturitions, daytime and nocturnal (derived from self completed bladder diary, ideally over a seven-day period)
- Cure of frequency of urination, however defined by the trialists, daytime and/or nocturnal (derived from self completed bladder diary, ideally over a seven-day period)

3. Health status measures

- Severity of incontinence eg index score, - slight, moderate, severe (Sandvik 1993)
- Impact of incontinence eg Incontinence Impact Questionnaire, Urogenital Distress Inventory (Shumaker 1994)
- Psychological measures eg Crown-Crisp Experiential Index 1979 (Crown 1979)
- General health status eg Short Form 36 (Ware 1993)

4. Adverse events

Any reported adverse events.

5. Health economics

Costs of interventions
Resource use

6. Other outcomes

Non-prespecified outcomes judged important when performing the review

Timing of outcome measurement:

Two time points were considered - at the end of the treatment phase and, at least two months after the end of the treatment phase to assess longer term effects. Adverse events data during the treatment phase and at follow up were also sought. Ideally longer term follow up would also be available.

Search methods for identification of studies

This review has drawn on the search strategy developed for the Incontinence Review Group. Relevant trials were identified from the Group's Specialised Register of controlled trials which is described, along with the search strategy, under the Incontinence Group's details in *The Cochrane Library (*For more details please see the 'Specialized Register' section of the Group's module in The Cochrane Library). The register contains trials identified from MEDLINE, CINAHL, The Cochrane Central Register of Controlled Trials (CENTRAL) and handsearching of journals and conference proceedings. The Incontinence Group's trials register was searched using the Group's own keyword system, the search terms used were:

topic.urine.incon*
AND
({design.cct*} OR {design.rct*})
AND
({intvent.psych.bladderdrill} OR {intvent.education.patient} OR {intvent.psych.motivation} OR {intvent.lifestyle.} OR {intvent.psych.} OR {intvent.psych.behavioural})
(All searches were of the keyword field of Reference Manager 9.5 N, ISI ResearchSoft).

Date of the most recent search of the register for this review: 15 March 2006.

The trials in the Incontinence Group's Specialised Register are also contained in CENTRAL.

For this review extra specific searches were performed. These are detailed below.

We searched the reference lists of relevant articles for other possible relevant trials.

Investigators were contacted to ask for information about other possible relevant trials, published or unpublished.

We did not impose any language or other limits on the searches.

Data collection and analysis

The reports of all potentially eligible studies were evaluated for methodological quality and appropriateness for inclusion by two reviewers without prior consideration of the results. Any disagreements were resolved by discussion. Assessment of methodological quality was undertaken by each reviewer using the Incontinence Group's assessment criteria which include quality of random allocation and concealment, description of dropout and withdrawal, analysis by intention to treat, and 'blinding' during treatment and at outcome assessment. Again, any disagreements were resolved by discussion. Data extraction was undertaken independently by two reviewers and cross checked by a third. Where data might have been collected but not reported clarification was sought from the trialists. Included trial data were processed as described in the Cochrane Collaboration Handbook (Higgins 2005).

The results are presented in three main sections (A, B and C), each addressing one of the three main comparisons. Within each of these sections trial data are subgrouped by type of incontinence:

- urge incontinence: either urge urinary incontinence based upon a symptom classification or detrusor overactivity incontinence based on a urodynamic diagnosis;
- mixed incontinence: symptoms of urge and stress incontinence or urodynamically diagnosed detrusor overactivity and urodynamic stress incontinence;
- stress incontinence: either stress urinary incontinence based upon a symptom classification or urodynamic stress incontinence based on a urodynamic diagnosis;
- other incontinence: either undefined by the trialists or where trialists had presented data for two or more diagnostic categories of incontinence in combination.

Any difference of opinion related to the data extracted was discussed and resolved.

Dichotomous data are presented as relative risks (RR) and continuous data as weighted mean differences (WMD), both with 95% confidence intervals (CIs). We had intended to derive summary estimates from groups of trials, but in the event, no meta-analysis was carried out; in part this reflected the heterogeneity of the trials, and in part the skewness of most of the continuous data. Because of skewness means and standard deviations for most of the continuous data have been presented in the Other Data Tables. Where the continuous data were not skewed and measured on the same scale weighted mean differences were used to present the data. Where continuous data were measured on different scales eg daytime micturitions per week or micturitions per 24 hours the data were presented using the standardised mean difference (SMD) method where the units are standard deviations rather than number of micturitions per week and the summary estimates were not used (Deeks 2005). For both dichotomous and continuous data the denominators used were the number of participants actually followed up rather than the number of participants randomised.

Studies were excluded from the review if they were not randomised or quasi-randomised controlled trials or made comparisons other than those prespecified. Excluded studies have been listed with reasons for their exclusion given in the Table of Excluded Studies.

Outcomes are reported in terms of favourable events (eg cured), rather than as unfavourable (eg not cured) as in the previous version of this review.

The terminology used in the main body of the text is in accordance with the International Continence Society recommendations (Abrams 2002), however the actual terminology used in the reports of trials is used in the Characteristics of Included and Excluded studies.

RESULTS

Description of studies

For update Issue 1, 2007
The skewed data originally present in Additional Tables 1 and 2 have been moved and are presented as 'Other Data' in the main tables. Two new trials (Herbison 2004; Yoon 2003) (with 107 randomised participants) have been added and new data for 301 of the 305 participants with urinary incontinence at baseline are now available for one of the already included trials (Mattiasson 2001) which did not previously have useable data available. Three new ongoing trials (Mattiasson 2006; Sereika 2003; SISTEr 2002) have been added. 24 reports of 19 new studies were assessed and excluded from the review mainly due to the combination of too many other treatments along with the bladder training. Eight additional reports of already excluded studies were added.

A total of twelve trials with 1473 participants now meet the criteria for inclusion in the review (Colombo 1995; Dougherty 1998; Fantl 1991; Herbison 2004; Jarvis 1980; Jarvis 1981; Lagro-Janssen 1992; Lentz 1994; Mattiasson 2001; Milani 1986; Wyman 1998; Yoon 2003).

Eight of the 12 trials provided useable data on 850 participants at the end of the treatment phase. Three (Herbison 2004; Wyman 1998; Yoon 2003) were three-armed trials. Of these trials: three (Fantl 1991; Lagro-Janssen 1992; Yoon 2003) provided data on bladder training compared to 'no treatment'; three (Colombo 1995; Herbison 2004; Jarvis 1981) provided data comparing bladder training alone with drug treatment, two (Colombo 1995; Herbison 2004) used oxybutynin and one used flavoxate plus imipramine (Jarvis 1981); two trials (Wyman 1998; Yoon 2003) compared bladder training with pelvic floor muscle training (with biofeedback) and one of these trials (Wyman 1998) had a third arm comparing pelvic floor muscle training plus biofeedback with the addition of pelvic floor muscle training plus biofeedback to bladder training. The latter trial (Wyman 1998) was the only one to provide long-term follow up (mean 3.2 years) of bladder training participants who had not received other treatments within the context of the trial. Two trials (Herbison 2004; Mattiasson 2001) compared bladder training plus an anticholinergic drug with the anticholinergic drug alone; in one trial (Mattiasson 2001) the drug was tolterodine and in the other (Herbison 2004) oxybutynin.

Altogether four trials did not provide analysable data, in two trials (Lentz 1994; Milani 1986), all participants had overactive bladder with or without urinary incontinence, but there was no separate report of data for participants with urinary incontinence at baseline. For the other two trials (Dougherty 1998; Jarvis 1980) the data for the bladder training phase of the trial were not reported separately.

Setting

Care was provided in an out-patient/clinic setting in eight trials: two in departments of obstetrics and gynaecology, both in Italy (Colombo 1995; Milani 1986); two in clinics in the southeastern USA (Fantl 1991; Wyman 1998); one in a hospital clinic in the UK (Lentz 1994); one in a School of Medicine clinic in New Zealand (Herbison 2004); one in a urinary incontinence clinic in a university hospital in South Korea (Yoon 2003); and one multicentre trial in 51 centres in Scandinavia (19 in Sweden, 18 in Norway and 14 in Denmark) (Mattiasson 2001). One trial (Lagro-Janssen 1992) was based in general practice in The Netherlands and one (Dougherty 1998) involved visits to the participants' homes, in rural Florida, USA. In two trials (Jarvis 1980; Jarvis 1981b) bladder training was provided on an in-patient basis in a women's hospital in the UK.

Participants

All participants were female except in one trial (Mattiasson 2001) where there were 378 female and 123 male participants (75% female to 25% male) however only 308 of participants had incontinence at baseline and the proportions of female and male for this subgroup are not reported.

Age

Seven trials had age restrictions. In one trial (Yoon 2003) women were aged between 35 and 55 years; in one trial (Wyman 1998) women were aged 45 years or over; in two trials (Dougherty 1998; Fantl 1991) participants were 55 years or over; in three trials (Colombo 1995; Lagro-Janssen 1992; Milani 1986) women were age 65 years or below. The other five trials (Herbison 2004; Jarvis 1980; Jarvis 1981b; Lentz 1994; Mattiasson 2001) did not have stated age restrictions.

Diagnosis

In six trials, the diagnosis was based on urodynamics. Four trials (Colombo 1995; Jarvis 1980; Jarvis 1981b; Lagro-Janssen 1992) included only urodynamically proven detrusor overactivity incontinence; the other two (Fantl 1991; Wyman 1998) included other types of incontinence (urodynamic stress or mixed incontinence), although most of their data were presented in just two categories urodynamic stress incontinence or detrusor overactivity incontinence with or without urodynamic stress incontinence. One trial (Dougherty 1998) included participants on the basis of symptoms of stress, urge or mixed urinary incontinence and three trials (Lentz 1994; Mattiasson 2001; Milani 1986) were of participants diagnosed with frequency and urgency with or without urge incontinence: this was a urodynamic diagnosis in two of the trials (Lentz 1994; Milani 1986) and was symptom-based in the third (Mattiasson 2001). One trial (Herbison 2004) included participants with predominant urge urinary incontinence, a subset of whom also had concurrent stress urinary incontinence but how this diagnosis was made is not described. In one trial (Yoon 2003) the diagnosis is not described other than stating that the inclusion criteria included loss of urine of 1.0 g or more on 30 minute pad test and 14 voids or more during a 48 hour period before the preliminary evaluation.

Description of interventions

Descriptions of bladder training

All but two trials (Jarvis 1981b; Lentz 1994) gave some details of the bladder training provided:

- scheduled voiding (seven trials) (Colombo 1995; Dougherty 1998; Fantl 1991; Jarvis 1980; Lagro-Janssen 1992; Milani 1986; Wyman 1998); in two additional trials (Herbison 2004; Yoon 2003) scheduled voiding was not described but it was stated in one (Yoon 2003) that the 'interval between voluntary voiding was gradually extended weekly' and in the other (Herbison 2004) that BT 'comprised strategies to increase the voiding interval and suppress urge.'
- participant education (three trials) (Colombo 1995; Fantl 1991; Lagro-Janssen 1992). Two other trials (Dougherty 1998; Wyman 1998) gave education to all women in the trial; a further trial (Jarvis 1980) just stated that the rationale for bladder training had been explained to participants;
- relaxation and distraction techniques (two trials) (Fantl 1991, Wyman 1998);
- self-monitoring/charting (as part of the intervention rather than as just an outcome measure) (seven trials), of which one (Dougherty 1998) gave this only to a subset of participants with particular problems during phase one of a three phase trial. One trial (Fantl 1991) used daily 'bladder charts'; one trial (Jarvis 1980) 'fluid balance charts'; one (Lagro-Janssen 1992) 'bladder diaries'; one (Milani 1986) daily 'micturition charts'; and one (Wyman 1998) gave self-monitoring/charting to all women in the trial; one trial (Mattiasson 2001) gave 12 sets of seven-day micturition diaries with instructions on how to use them to cover a 24 week intervention period;
- positive reinforcement (five trials); four trials (Colombo 1995; Dougherty 1998; Fantl 1991; Jarvis 1980) gave this just to the bladder training group and one trial (Wyman 1998) gave this to all women in the three arms.
- other details - one trial (Jarvis 1980) provided motivation by allowing a participant to meet a person already helped by bladder training. One trial (Wyman 1998) encouraged 'affirmations and self statements'. A further trial (Lagro-Janssen 1992) provided information to all participants on the use of incontinence pads. One trial (Mattiasson 2001) gave 'simplified bladder training' described in a one-page instruction sheet given to the bladder training group and other than clinic visits at two, 12 and 24 weeks no additional clinic visits or telephone follow up were allowed.

The intensity and duration of bladder training varied between the trials. In one trial this ranged from 5-13 days with a mean of 6.25 days (Jarvis 1980); in two trials (Colombo 1995; Fantl 1991) it lasted for six weeks; in one trial (Dougherty 1998) it lasted for 6-8 weeks; in one trial (Yoon 2003) it lasted for eight weeks; in two trials (Milani 1986; Wyman 1998) it lasted for 12 weeks ; in one trial (Mattiasson 2001) it lasted for 24 weeks and in four trials (Herbison 2004; Jarvis 1981b; Lagro-Janssen 1992; Lentz 1994) its duration is not reported. The bladder training was provided by nurses in two trials (Dougherty 1998; Wyman 1998), by the general practitioner in one trial (Lagro-Janssen 1992), by the participants using a one page leaflet and a set of seven-day micturition charts with instructions in one trial (the trialists report that no formal training from study personnel was provided) (Mattiasson 2001) and this was not described in the other eight trials.

Description of comparators

Please see the Characteristics of Included Studies Table for more details.

- *Bladder training compared with 'no treatment'* (Dougherty 1998; Fantl 1991; Jarvis 1980; Lagro-Janssen 1992; Yoon 2003): participants in the control groups received no treatment during the intervention phase. One trial (Dougherty 1998) allowed participants to use 'other community-based and institutional alternatives' if they wished and another (Lagro-Janssen 1992) gave advice on the use of 'protective pads'. Two trials (Fantl 1991; Yoon 2003) had no further contact with the controls until the end of the intervention phase. The fifth trial (Jarvis 1980) discharged the control participants after their cystometry under general anaesthesia advising them that they would now be continent with a four hour voiding interval.
- *Bladder training compared with anticholinergic drug treatment* (Colombo 1995; Herbison 2004; Milani 1986): all three trials compared oxybutynin with bladder training. In one trial (Colombo 1995) participants started with 5 mg three times per day for six weeks but if they had substantial side effects this was reduced to 2.5 mg three times per day. One trial (Herbison 2004) started participants on 2.5 mg once per day of immediate release oxybutynin increasing to 5 mg three times per day 'depending on effectiveness and side effects.' The third trial (Milani 1986) gave 15 mg oxybutynin three times per day for an unclear duration of three to six weeks, possibly four weeks.
- *Bladder training compared with adrenergic agonist drug treatment*: no trials identified.
- *Bladder training compared with other drugs (non-anticholinergic non-adrenergic agonist)* (Jarvis 1981b): controls received 200 mg of flavoxate (three times per day) plus 25 mg of imipramine (three times a day) for four weeks.
- *Bladder training compared with other behavioural/physical/psychological interventions* (Lentz 1994; Wyman 1998; Yoon 2003): in one trial (Lentz 1994) the comparator was vaginal cones - no further details of weights, duration of treatment etc. The other two trials (Wyman 1998; Yoon 2003) compared bladder training with PFMT plus biofeedback. In one of these trials (Wyman 1998) PFMT consisted of a graded home exercise regimen with audio cassette practice tapes - the participants were aiming at a total of ten fast and 40 sustained contractions per day by the third week of the intervention phase. The biofeedback consisted of four weekly 30 minute sessions of visual and verbal biofeedback. In this trial (Wyman 1998) the PFMT group also received education, self monitoring/charting, positive reinforcement and were encouraged to use pelvic muscle contractions for urge inhibition and prevention of leakage. In the other trial (Yoon 2003) the participants performed 30 pelvic muscle contractions for strength and endurance per day which were expected to take 15 to 20 minutes. They also had weekly 20 minute visual biofeedback sessions using electromyography, which were provided by a nurse therapist based in a urinary incontinence clinic.
- *Bladder training plus pharmacological intervention compared with pharmacological intervention alone* (Herbison 2004; Mattiasson 2001): in both trials the pharmacological intervention was an anticholinergic drug: in one trial (Mattiasson 2001) it was tolterodine and in the other it was oxybutynin. In the trial involving tolterodine (Mattiasson 2001) the tolterodine only group received the same dosage of drug 2 mg twice daily for 24 weeks as the comparator group, both groups also filled in three-day micturition diaries at two, 12 and 24 weeks. The tolterodine only group received a shortened information sheet similar to the one given the those receiving

the drug and bladder training but without the paragraphs describing bladder training. In the other trial (Herbison 2004) the drug only group were similar to the BT plus drug group with participants starting on 2.5 mg once per day of immediate release oxybutynin increasing to 5 mg three-times per day 'depending on effectiveness and side effects.'

- *Bladder training plus non-pharmacological compared with non-pharmacological interventions alone* (Wyman 1998): this trial (Wyman 1998) compared bladder training plus PFMT plus biofeedback (the combined therapy group) with PFMT plus biofeedback alone. PFMT consisted of a graded home exercise regimen with audio cassette practice tapes - the participants were aiming at a total of ten fast and 40 sustained contractions per day by the third week of the intervention phase. The biofeedback consisted of four weekly 30 minute sessions of visual and verbal biofeedback. In this trial (Wyman 1998) the PFMT group also received education, self monitoring/charting, positive reinforcement and were encouraged to use pelvic muscle contractions for urge inhibition and prevention of leakage.

Compliance with bladder training and other treatments

Only one trial (Wyman 1998) reported on compliance with treatment. Three measures were used:

- percentage of treatment visits attended (Group I = 57%; Group II = 53%; Group III = 73%) (Group I is bladder training alone, Group II is PFMT plus biofeedback, Group III is bladder training plus PFMT plus biofeedback);
- completion of scheduled voidings (Immediately after treatment phase: Group I = 85%; Group II = not applicable; Group III = 81%. At three months: Group I = 44%; Group III = 40%);
- adherence to PFMT (Immediately after treatment phase: Group I = not applicable; Group II = 84%; Group III = 78%. At three months: Group II = 64%; Group III = 58%).

One further trial (Mattiasson 2001) did not report compliance separately for those participants with urinary incontinence at baseline.

Description of outcomes

Eight trials (Colombo 1995; Fantl 1991; Herbison 2004; Jarvis 1981b; Lagro-Janssen 1992; Mattiasson 2001; Wyman 1998; Yoon 2003) had useable data. Most of the trials reported a limited number of prespecified outcomes and for individual outcomes within a comparison, data were available for only one trial.

The prespecified outcomes reported were :

- participant's perception of cure of incontinence (Colombo 1995; Jarvis 1981b; Lagro-Janssen 1992);
- participant's perception of improvement of incontinence (Colombo 1995; Lagro-Janssen 1992; Wyman 1998);
- cure of incontinent episodes, from urinary diary, in both cases seven-day (Fantl 1991; Wyman 1998);
- improvement of incontinent episodes, from urinary diary, seven-day (Fantl 1991);
- number of incontinent episodes: reported per week (Fantl 1991; Wyman 1998) and reported per day (Herbison 2004; Mattiasson 2001);
- number of micturitions, daytime and nocturnal: reported per week (Fantl 1991) and reported per day (Herbison 2004; Yoon 2003);
- cure of frequency, daytime and nocturnal (Colombo 1995; Jarvis 1981b);
- quality of life (Fantl 1991; Herbison 2004; Wyman 1998) of which one was incontinence specific (Herbison 2004);
- adverse events (Colombo 1995; Herbison 2004; Jarvis 1981b; Yoon 2003).

Non prespecified outcomes considered important when undertaking the review:

- cure of incontinent episodes (from seven-day diaries) at a mean of 3.2 years follow up (Wyman 1998); and
- participant satisfaction immediately after and three months after treatment ended (Wyman 1998).

Risk of bias in included studies

Quality of allocation concealment

Only five trials (Colombo 1995; Herbison 2004; Lagro-Janssen 1992; Mattiasson 2001; Wyman 1998) gave any details of how allocation to treatment groups was concealed. One of these trials (Herbison 2004) appeared to have secure concealment stating that a 'password protected webpage ..remotely accessed a computer-generated randomisation list.' In another of these trials (Wyman 1998) the method was probably secure - 'sealed opaque envelopes'; in one (Colombo 1995) this is unclear as the method was described as 'computer generated random assignment' and this might refer to only the generation of the sequence rather than subsequent concealment of the allocation. The fourth trial (Lagro-Janssen 1992) 'assigned consecutively to treatment or control groups', and it is unclear whether this was concealed allocation or alternation. Again in the fifth trial (Mattiasson 2001) it was reported that participants were randomised 'in balanced blocks of four, according to a computer-generated randomization list' but there is no description of the concealment process. The other seven trials gave no details other than using terms such as 'randomly allocated' or 'random assignment', for example one trial (Yoon 2003) stated that participants were assigned randomly using random numbers but there was no mention of any attempt at concealment.

Stratification/minimisation

Four (Dougherty 1998; Fantl 1991; Lagro-Janssen 1992; Wyman 1998) of the ten trials used stratification or minimisation. The three trials (Fantl 1991; Lagro-Janssen 1992; Wyman 1998) which used stratification based this on: urodynamic diagnosis of urodynamic stress incontinence or detrusor overactivity incontinence with or without urodynamic stress incontinence (Fantl 1991; Wyman 1998); type of urodynamically diagnosed urge incontinence (Lagro-Janssen 1992); severity of incontinence (Lagro-Janssen 1992; Wyman 1998) and treatment centre in a trial with two sites (Wyman 1998). The trial that used minimisation (Dougherty 1998) based this on age, ethnicity, presence of caregiver, severity of incontinence, bacteriuria at first evaluation; there was deliberate unequal allocation in the ratio 5:4, such that more participants were allocated bladder training.

Blinding

Only five reports (Dougherty 1998; Herbison 2004; Mattiasson 2001; Wyman 1998; Yoon 2003) mentioned blinding: one trial (Yoon 2003) reported that the outcome assessor for both subjective and objective measures was blinded to the treatment allocations; one (Mattiasson 2001) stated that it was single blind with no further details; two (Herbison 2004; Wyman 1998) specifically stated that participants and outcome assessors were not blinded; and the fourth (Dougherty 1998) stated that only pad weight assessors were blinded (an outcome measure not used in this review).

Intention to treat analysis

Whether an intention to treat analysis had been used was judged on whether participants were analysed in the groups to which they were allocated AND whether follow up data were obtained for all participants. One trial (Mattiasson 2001) stated that an intention to treat analysis was performed using the 'last value carried forward approach.' One trial (Dougherty 1998) used partial intention to treat analysis stating that participants were analysed in the groups to which they were allocated but did not include losses to follow up. One trial (Jarvis 1981b) described five participants withdrawn from the trial due to adverse events but it is unclear if the trial was conducted on an intention to treat basis. The basis for the analysis was unclear for the other nine trials.

Length of follow up

Only three trials (Colombo 1995; Jarvis 1980; Wyman 1998) had follow up beyond the treatment phase: one trial (Jarvis 1980) had approximately three months follow up; one trial (Colombo 1995) followed up only those clinically cured at the end of the treatment phase, for 6 months; and one trial (Wyman 1998) had follow up at three months after the treatment phase and long term follow up with a mean of 3.2 years. In four trials (Herbison 2004; Jarvis 1981b; Lagro-Janssen 1992; Lentz 1994) the length of follow up was unclear as the duration of the treatment phase was unclear. One (Jarvis 1981b) had approximately eight to 12 weeks follow up; one (Lagro-Janssen 1992) had an unknown duration of treatment and the follow up may have been to the end of the treatment phase only or up to three months; for the third trial (Lentz 1994) it was completely unclear; in the fourth trial (Herbison 2004) which is a pilot study the duration of treatment was unclear but outcomes were assessed at three months and were due to be assessed again at 12 months. Five trials (Dougherty 1998; Fantl 1991; Mattiasson 2001; Milani 1986; Yoon 2003) had no follow up beyond the end of the treatment phase: in two of them (Dougherty 1998; Fantl 1991) this was due to the fact that participants received other treatments after the end of the bladder training phase.

Withdrawals/dropouts/lost to follow up

At the end of the treatment phase (all trials): Eight trials (Colombo 1995; Dougherty 1998; Fantl 1991; Herbison 2004; Mattiasson 2001; Milani 1986; Wyman 1998; Yoon 2003) described losses to follow up. Rates ranged from 5% - 8% (Colombo 1995; Fantl 1991; Milani 1986) up to 21% (Dougherty 1998) in the bladder treatment groups, and from 5% (Fantl 1991) to up to 15% (Dougherty 1998) in the control group. The losses to follow up in each arm of the trials seemed roughly comparable - bladder training vs control: 5% vs 10% (Colombo 1995); 21% vs 15% (Dougherty 1998); 8% vs 5% (Fantl 1991); 5% vs 10% (Milani 1986); 1.4% versus 3% for participants with incontinence at baseline (Mattiasson 2001); bladder training vs PFMT plus biofeedback vs bladder training plus PFMT plus biofeedback, 0% vs 7% vs 9% (Wyman 1998); and for bladder training versus PFMT plus biofeedback versus control, 9.5% versus 13% versus 14% (Yoon 2003). The exception was one trial (Herbison 2004), a three-armed pilot study of bladder training versus oxybutynin versus bladder training combined with oxybutynin, which did have high losses in the combined treatment arm, these losses were respectively 14% vs 6% vs 37%. Four trials (Colombo 1995; Dougherty 1998; Milani 1986; Yoon 2003) gave reasons for loss to follow up. In each of two trials (Colombo 1995; Milani 1986) comparing bladder training with oxybutynin, the bladder training group lost two participants due to the length of the therapy and the drug group lost four participants due to severe side effects mainly dry mouth. The third trial (Dougherty 1998) gave reasons for dropout for the trial as a whole and stated that 15 participants left due to the demands of participation and 10 left due to extended illness. In the fourth trial (Yoon 2003) with three arms, two participants left the bladder training group due to 'swelling in the wrists and ankles, they previously had hypertension', two participants left each of the other two arms (PFMT plus biofeedback and control) due to family problems. No losses to follow up were reported in three trials (Jarvis 1980; Jarvis 1981b; Lagro-Janssen 1992) however it is uncertain whether there really were no drop-outs or whether they were not reported: one trial (Jarvis 1981b) did report that five controls were withdrawn from the trial but it is unclear whether or not these five were included in the analyses. One trial (Lentz 1994) gave losses to follow up figures for both arms of the trial combined; 10% at one month and 44% at three months; the duration of treatment was not given so it is unknown if this was during the treatment phase assessments or after the end of the treatment phase.

Follow up beyond the treatment phase (Colombo 1995; Jarvis 1980; Wyman 1998): the three month follow up data for one trial (Wyman 1998) gave losses to follow up for bladder training vs PFMT plus biofeedback vs bladder training plus PFMT plus biofeedback of 9% vs 6% vs 10%. Reasons for these losses included busy, stressful life (n = 6) study design (n = 1); transport problems (n = 2); no improvement or non-compliance (n = 2). One trial (Jarvis 1980) did not report any losses to follow up at three months. One trial (Colombo 1995) with six month follow up of only clinically cured patients had losses to follow up of 31% in the bladder training group and 33% in the control group. The only trial (Wyman 1998) with useable long term follow up data, at a mean follow up of 3.2 years, had losses to follow up of 29% vs 25% vs 30% for bladder training vs PFMT plus biofeedback vs bladder training plus PFMT plus biofeedback. Reasons for loss to long-term follow up included: refusal (16%); died or admitted to a nursing home (1%); and moved with no forwarding address (7%).

Baseline measurement and comparability

All trials had baseline measures. Three trials (Jarvis 1981b; Mattiasson 2001; Yoon 2003) stated that there was baseline comparability. Four trials stated that the arms were comparable except for: duration of residence in the community (Dougherty 1998); duration of incontinence and oestrogen use (Fantl 1991); duration of incontinence (Lagro-Janssen 1992); and education, symptoms of stress and mixed incontinence and oestrogen use (Wyman 1998). One trial (Herbison 2004) stated that there were differences in the groups at baseline but does not state if any of these differences are statistically significant. Four trials (Colombo

1995; Jarvis 1980; Lentz 1994; Milani 1986) did not state whether the baseline measurements were similar at trial entry.

Other aspects of trial design

Eight trials (Colombo 1995; Dougherty 1998; Fantl 1991; Jarvis 1980; Jarvis 1981b; Lentz 1994; Mattiasson 2001; Milani 1986) were parallel group design with two intervention arms. Of these five (Colombo 1995; Fantl 1991; Jarvis 1980; Jarvis 1981b; Lentz 1994) appeared to be at a single site; one (Milani 1986) was at two sites, one (Mattiasson 2001) was a multicentre trial and one (Dougherty 1998) was based in the community. In the latter trial (Dougherty 1998) the intervention arm had three phases of which bladder training was one phase. Two further trials (Lagro-Janssen 1992; Wyman 1998) had various arms into which participants were entered on the basis of their diagnosis. One of these (Wyman 1998) had a particularly complex design in which participants with urodynamic stress incontinence could choose between the 'behavioural therapies' arm or surgery; those with a 'lack of oestrogen' and those with a stage III or IV prolapse went into other parts of the trial. Three of the trials were three-armed (Herbison 2004; Wyman 1998; Yoon 2003), one (Herbison 2004) of which was a pilot study. In four trials (Fantl 1991; Jarvis 1980; Lagro-Janssen 1992; Milani 1986) the control group were offered the chance to receive bladder training at the end of the treatment phase.

Reporting of trials

Information for three of the trials (Lentz 1994; Herbison 2004; Milani 1986) was available only in conference abstracts, one of which had useable data (Herbison 2004). In the other two (Lentz 1994; Milani 1986), none of the data reported were useable (both trials included some participants who did not have incontinence). Fuller published reports were available for the other nine trials.

Sample sizes and power calculations

The trials were mainly small and ranged in size from 18 to 501 participants but not all participants in some of the trials had urinary incontinence at baseline. Eight trials provided useable data and these were smaller ranging from 18 to 301 participants. Only three trials (Fantl 1991; Herbison 2004; Wyman 1998) reported a power calculation. The first trial (Fantl 1991) reported that after a power calculation, no 'separate randomisation stratum' was created for detrusor overactivity incontinence alone due to the expectation of only 10% of participants having this diagnosis. The second trial (Wyman 1998) reported that the power calculation based on their previous trial (Fantl 1991) gave a sample size of 187 to provide 90% power to detect a minimum difference of 2.5 incontinent episodes per week between groups at a significance level of p = 0.05. The third trial (Herbison 2004) stated that 500 participants would be required for each arm to eliminate important between-group differences.

Contact has been made with the authors of the Fantl (Fantl 1991) study for further information and data, but as yet no further data have been made available to the reviewers. Lagro-Janssen (Lagro-Janssen 1992) was also contacted and has provided further data which have been included in the review.

Effects of interventions

The twelve included trials had a total of 1473, predominantly female, participants.

A. Bladder training compared with no bladder training for the management of urinary incontinence

Bladder training was compared with 'no treatment' in five trials (Dougherty 1998; Fantl 1991; Jarvis 1980; Lagro-Janssen 1992; Yoon 2003) (see Graphs and tables: Comparison 01, Outcomes 1-21). These trials involved a total of 427 women randomised. Two of the trials did not have useable data (Dougherty 1998; Jarvis 1980): one (Dougherty 1998) involved three treatment phases and did not present data for the bladder training phase alone; in the other (Jarvis 1980), the controls who were not cured or improved were withdrawn from the trial and offered bladder training and it is unclear whether the data presented include these treated controls. It is hoped that in both cases authors may be able to provide extra data. Data for 172 women were available from the other three trials (Fantl 1991; Lagro-Janssen 1992; Yoon 2003). The scope of the analyses was limited. For all but one of the outcomes, data were only available from one trial. While these few data tend to favour bladder training, the scarcity of data implies that they should be interpreted cautiously.

- Urge urinary incontinence (however diagnosed)

Both of the two trials (Fantl 1991; Lagro-Janssen 1992) included women with urodynamically diagnosed urge incontinence. One trial (Lagro-Janssen 1992) provided data for two outcomes: perception of cure at two months, and perception of improvement at two months (data provided by trialists). The trial included only 18 participants and therefore the confidence intervals are very wide. The other trial (Fantl 1991) provided data for one outcome, for the 14 participants who had detrusor overactivity incontinence alone: number of incontinent episodes per week.

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence (Lagro-Janssen 1992) at two months, 1/9 vs 0/9; RR 3.00; 95% CI 0.14 to 65.16;
(b) participant's perception of improvement of urinary incontinence (Lagro-Janssen 1992) at two months, 8/9 vs 0/9; RR 17.00; 95 % CI 1.13 to 256.56;
(c) number of incontinent episodes (Fantl 1991) per week, at the end of the treatment phase, seven in each group; mean (SD), bladder training = 5 (6), control group = 18 (14) (see Other data tables 01.06.01);
(d) number of micturitions - no data available;
(e) quality of life - no data available.

- Mixed urinary incontinence (however diagnosed)

Only one trial presented data for mixed incontinence (Fantl 1991) - this was a urodynamic diagnosis. Data describing one prespecified outcome were available: number of incontinent episodes per week at the end of the treatment phase. There were fewer incontinent episodes in the bladder training group at the end of the treatment phase but, again, there were few participants (n = 20).

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes (Fantl 1991) per week, at the end of the treatment phase, 8 and 12 participants respectively;

mean (SD), bladder training = 7 (8), control group = 20 (12) (see Other data tables 01.06.02);
(d) number of micturitions - no data available;
(e) quality of life - no data available.

- Stress urinary incontinence (however diagnosed)

One trial (Fantl 1991) included women with stress urinary incontinence. This considered three of our prespecified outcomes: daytime micturition at the end of treatment; nocturia; and number of incontinent episodes per week.

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes (Fantl 1991) per week, at the end of the treatment phase, 45 and 43 participants respectively; mean (SD), bladder training = 10 (12), control group = 19 (19) (see Other data tables 01.06.03);
(d) number of micturitions (Fantl 1991) per week, at the end of the treatment phase, 45 and 43 participants respectively; daytime SMD -0.31; 95% CI -0.73 to 0.11 (the SMD is given in units of standard deviations rather than micturitions per week), nocturia WMD -3.00; 95% CI -5.14 to -0.86) favouring bladder training;
(e) quality of life - no data available.

- Other incontinence ie undefined by the trialists or where the trialists presented data for two or more categories of incontinence in combination (however diagnosed)

Two trials (Fantl 1991; Yoon 2003) were eligible for this comparison. For some outcomes, one trial (Fantl 1991) considered participants with detrusor overactivity incontinence as a single group irrespective of whether or not they also had stress incontinence. All the outcomes were measured immediately at the end of treatment. They reported five of our pre-stated outcomes: daytime micturition; nocturia; cure of incontinent episodes from urinary diary; improvement of incontinent episodes from urinary diary; and quality of life. The number of daytime micturitions appeared to favour bladder training but the numbers of participants were small and due to the use of different measurement scales the results for the two trials (Fantl 1991; Yoon 2003) could not be combined.

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes - no data available;
(d) number of micturitions (Fantl 1991; Yoon 2003) per week, at the end of the treatment phase. One of the trials (Fantl 1991) included 15 and 20 participants respectively; daytime (Comparison 01, Outcome 08) SMD -0.13; 95% CI -0.80 to 0.54, nocturia WMD -1.00; 95% CI -5.69 to 3.69. One further trial (Yoon 2003), 19 and 12 participants respectively, reported number of micturitions per 24 hours which was multiplied by seven to give a 'weekly' figure; daytime SMD -3.95; 95% CI -5.22 to -2.67, nocturia mean (SD), bladder training = 4.9 (5.6), control group = 13.3 (7.7) (see Other data tables 01.11.04). As different scales were used by the two trials to measure this outcome the SMD method was used to analyse the data: the SMD is given in units of standard deviations rather than micturitions per week and the data were not combined to provide a summary estimate of effect.
(e) quality of life (Fantl 1991), at the end of the treatment phase, using the Incontinence Impact Questionnaire (lower scores equate to less impact on quality of life), 39 participants in each group; mean (SD), bladder training = 0.25 (0.29), control group = 0.50 (0.59) (see Other data tables 01.14.04). The authors reported a significant difference in quality of life, favouring the bladder training group.
Other outcomes:
In respect of 'improvement of incontinent episodes' (45/60 vs 15/65; RR 3.15; 95% CI 1.98 to 5.02), the results were statistically significantly in favour of the bladder training group (Fantl 1991).

B. Bladder training compared with other treatments (such as conservative or pharmacological) for the management of urinary incontinence

Seven trials (Colombo 1995; Herbison 2004; Jarvis 1981b; Lentz 1994; Milani 1986; Wyman 1998; Yoon 2003) were eligible for this comparison but useable data were only available for five of the trials (Colombo 1995; Herbison 2004; Jarvis 1981b; Wyman 1998; Yoon 2003). The three trials (Colombo 1995; Herbison 2004; Jarvis 1981b) comparing bladder training with pharmacological treatment included 159 women: one of the trials (Herbison 2004) was a three-arm trial that included the comparison bladder training versus oxybutynin. The other two trials (Wyman 1998; Yoon 2003) were both three-arm trials that included a comparison of bladder training with PFMT plus biofeedback, involving 164 women.

B. i Bladder training compared with anticholinergic drugs (Colombo 1995; Herbison 2004; Milani 1986) (see Graphs and tables: Comparison 02, Outcomes 1-20)

Three trials (Colombo 1995; Herbison 2004; Milani 1986) compared bladder training with anticholinergic drugs; all three tested oxybutynin. One of the trials (Milani 1986) (n = 81) did not report useable data as not all the participants had incontinence. Of the two trials with useable data one (Colombo 1995) had follow up immediately following treatment (n = 75) and, for those patients who did not have incontinence at this stage (n = 55), follow up at six months; the other trial (Herbison 2004) was a pilot study reporting results immediately following the treatment phase (n = 34).

- Urge urinary incontinence (however diagnosed)

Colombo (Colombo 1995) recorded data on: perception of cure immediately following treatment and at 6 months; perception of improvement immediately following treatment; adverse events; cure of daytime frequency; and cure of night-time frequency. For adverse events a statistically significant difference was demonstrated favouring bladder training (0/37 vs 18/38; RR 0.03; 95% CI 0.00 to 0.44). Adverse events included dry mouth, constipation, nausea; and one participant developed tachycardia. The dosage of the drug was halved in those reporting adverse events.

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence (Colombo 1995) - at the end of the treatment phase 27/37 vs 28/38; RR 0.99; 95% CI 0.75 to 1.30, and six months after the treatment ended 26/27 vs 16/28; RR 1.69; 95% CI 1.21 to 2.34;
(b) participant's perception of improvement of urinary incontinence (Colombo 1995) -at the end of the treatment phase 34/37 vs 31/38; RR 1.13; 95% CI 0.94 to 1.35;

(c) number of incontinent episodes - no data available;
(d) number of micturitions - no data available;
(e) quality of life - no data available.

- Mixed urinary incontinence (however diagnosed)

No trials identified.

- Stress urinary incontinence (however diagnosed)

No trials identified.

- Other incontinence ie undefined by the trialists or where the trialists presented data for two or more categories of incontinence in combination (however diagnosed)

One trial (Herbison 2004) reported data on: number of incontinent episodes, number of daytime micturitions and nocturia, quality of life (both condition-specific and general measures) and adverse events. For both number of daytime micturitions per week and for the general measure of quality of life (physical component) the data appeared to favour anticholinergic (oxybutynin) treatment but the number of participants were very small. For the adverse event of dry mouth a statistically significant difference was demonstrated favouring bladder training (3/18 vs 14/16; RR 0.19; 95% CI 0.07 to 0.54).

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes (Herbison 2004) per week - at the end of the treatment phase, 18 and 16 participants respectively, mean (SD), bladder training = 5.6 (5.6), anticholinergic = 0.7 (4.9) (see Other data tables 02.06.04);
(d) number of micturitions (Herbison 2004) (the data were reported per 24 hours but were multiplied by seven to give the figures per week) - at the end of the treatment phase, 18 and 16 participants respectively, daytime (Comparison 02 Outcome 08) WMD 2.8; 95% CI 0.91 to 4.69, nocturia mean (SD), bladder training = 7.0 (6.3), anticholinergic 6.3 (4.9) (see Other data tables 02.11.04);
(e) quality of life - both condition-specific and general quality of life measures were reported in one trial (Herbison 2004). Condition-specific measures (using OAB-q) (Comparison 02 Outcome 13) WMD -8.00; 95% CI -18.77 to 2.77 and for the general measure SF-12 (physical component) (Comparison 02 Outcome 19) WMD 9.00; 95% CI 1.64 to 16.36 and for the mental component (Comparison 02 Outcome 20) of the SF-12 WMD -1.00; 95% CI -7.73 to 5.73.
Other outcomes:

B. ii Bladder training compared with adrenergic agonist drugs

No trials identified.

B. iii Bladder training compared with other drugs (non-anticholinergic, non-adrenergic agonist drugs) (Jarvis 1981b) (see Graphs and tables: Comparison 04, outcomes 1-16)

One trial (Jarvis 1981b) was identified for this comparison. Bladder training was compared with 200 mg (three times a day) of flavoxate hydrochloride plus 25 mg (three times a day) of imipramine. All 50 participants had a urodynamic diagnosis of 'detrusor instability'.

- Urge urinary incontinence (however diagnosed)

Data were available for five prespecified outcomes. There were adverse events (dry mouth, dizziness, headache, nausea, vomiting and drowsiness) amongst participants receiving the drugs (0/25 vs 14/25; RR 0.03; 95% CI 0.00 to 0.55). Five people stopped the drug treatment as a consequence.
Results for the five primary outcomes are presented below:
(a) participant's perception of cure of urinary incontinence (Jarvis 1981b) - at the end of the treatment phase and, approximately two months after treatment ended 21/25 vs 14/25; RR 1.50; 95% CI 1.02 to 2.21;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes - no data available;
(d) number of micturitions - no data available;
(e) quality of life - no data available.
Other outcomes:
More women in the bladder training group were cured of frequency symptoms. This difference was statistically significant for nocturnal frequency (17/21 vs 6/19; RR 2.56; 95%CI 1.28 to 5.13), but not for diurnal frequency (19/25 vs 15/25; RR 1.46; 95% CI 0.94 to 2.26).

- Mixed urinary incontinence (however diagnosed)

No trials identified.

- Stress urinary incontinence (however diagnosed)

No trials identified.

- Other incontinence ie undefined by the trialists or where the trialists presented data for two or more categories of incontinence in combination (however diagnosed)

No trials identified.

B. iv Bladder training compared with other behavioural/ physical/psychological treatments (Lentz 1994; Wyman 1998; Yoon 2003) (see Graphs and tables: Comparison 05, Outcomes 1-22)

Three trials (Lentz 1994; Wyman 1998; Yoon 2003) were eligible for this comparison. One trial (Lentz 1994), comparing bladder training with vaginal cones (n = 22), had no useable data as not all patients had incontinence and the authors did not present separate data for those with incontinence. The other two trials (Wyman 1998; Yoon 2003) provided data on 164 participants in a comparison of bladder training with PFMT plus biofeedback (see section Cii below for the comparison involving the third arm of one trial Wyman 1998 and see A above for the third arm of the Yoon 2003 trial). In one of the trials (Wyman 1998) the results were presented for two diagnostic groups based on urodynamics: those with stress incontinence only and those with detrusor instability with or without stress incontinence and in the other trial (Yoon 2003) the diagnostic group(s) were not defined.

- Urge urinary incontinence (however diagnosed)

No trials identified.

- Mixed urinary incontinence (however diagnosed)

No trials identified.

- Stress urinary incontinence (however diagnosed) (Wyman 1998)

Data were available for two prespecified outcomes for the group with stress incontinence only - quality of life (immediately after treatment) measured using the Urogenital Distress Inventory, and the number of incontinent episodes per week (from a seven-day urinary diary) immediately after treatment. For neither of these outcomes were the differences statistically significant (the latter based on the trialists' report).

Results for the five primary outcomes were:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes (Wyman 1998) - immediately after treatment ended (see Other data tables 05.06.03), 48 and 46 participants respectively; mean (SD), bladder training = 12.5 (8.3) and PFMT plus biofeedback = 8.7 (10.0);
(d) number of micturitions - no data available;
(e) quality of life (Wyman 1998) - at the end of the treatment phase 47 and 45 participants respectively; Urogenital Distress Inventory WMD 18.00; 95% CI -1.38 to 37.38, favouring PFMT plus biofeedback.

- Other incontinence ie undefined by the trialists or where the trialists presented data for two or more categories of incontinence in combination (however diagnosed)

One of the trials (Wyman 1998) had data for eight prespecified outcomes for the group with detrusor instability with or without stress incontinence. These were: perception of improvement at the end of treatment and at 3 months; quality of life immediately at the end of treatment and at three months; cure of incontinence immediately after treatment and at three months, (from a 7-day urinary diary); and number of incontinent episodes per week immediately after treatment and at three months (see Other data tables for the latter two outcomes as the data were skewed). The other trial (Yoon 2003) had data for two of the prespecified outcomes: number of micturitions (daytime) and nocturia per week at the end of the treatment phase.

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence (Wyman 1998) - at the end of the treatment phase 43/66 vs 48/63; RR 0.86; 95% CI 0.68 to 1.07, at three months after treatment ended 37/60 vs 45/64; RR 0.88; 95% CI 0.68 to 1.13;
(c) number of incontinent episodes (Wyman 1998), mean (SD) - at the end of the treatment phase (see Other data tables 05.06.04), 19 and 18 participants respectively; bladder training = 6.2 (9.1) and PFMT plus biofeedback = 11.9 (12.7), at three months after the end of the treatment phase (see Other data tables 05.08.01), 62 and 65 participants respectively; bladder training = 10.0 (12.0) and PFMT plus biofeedback = 9.4 (14.0);
(d) number of micturitions (Yoon 2003) - at the end of the treatment phase, per week, 19 and 13 participants respectively, daytime (Comparison 05 Outcome 09) WMD -27.30; 95% CI -38.05 to -16.55; nocturia (see Other data tables 05.12.04) mean (SD), bladder training = 4.9 (5.6), PFMT plus biofeedback = 13.3 (7.7)
(e) quality of life (Wyman 1998) - at the end of the treatment phase, 20 and 18 participants respectively; Urogenital Distress Inventory WMD -28.00; 95% CI -68.39 to 12.39 and at three months after the end of treatment, 60 and 64 participants respectively; WMD 6.70; 95% CI -12.23 to 25.63.

Other outcomes:
Data were also available for three outcomes that were not prespecified for one of the trials (Wyman 1998): cure of incontinent episodes (from diaries) at a mean of 3.2 years follow up, and participant satisfaction immediately after and three months after treatment ended. The only statistically significant result was for participant satisfaction immediately after treatment ended which favoured the controls (PFMT plus biofeedback) (48/66 vs 56/63; RR 0.82; 95% CI 0.69 to 0.97) this difference was not sustained at three months.

B. v Bladder training compared with surgical management

No trials identified.

B. vi Bladder training compared with medical devices

No trials identified.

B. vii Bladder training compared with other interventions

No trials identified.

C. Combining bladder training with another treatment (such as conservative or pharmacological) compared with that other treatment alone

Three trials (Herbison 2004; Mattiasson 2001; Wyman 1998) combined bladder training with another treatment compared with that other treatment alone. Useable data were available for all three trials (Herbison 2004; Mattiasson 2001; Wyman 1998) including from the two relevant arms of the two three-armed trials (Herbison 2004; Wyman 1998).

C. i Bladder training combined with a pharmacological treatment compared with a pharmacological treatment alone (Herbison 2004; Mattiasson 2001) (see Graphs and Tables: Comparison 09, Outcomes 01 to 18)

Two trials were identified in which bladder training was combined with an anticholinergic agent and compared with the use of the anticholinergic alone. Data were available for 329 participants. In one of the trials (Mattiasson 2001) bladder training combined with tolterodine was compared to tolterodine alone: not all the participants had incontinence, and most data were not presented separately for those who did have incontinence. The one prespecified outcome available was number of incontinent episodes at the end of the treatment phase for those with urinary incontinence at baseline. For the second trial (Herbison 2004) data were available for five of the prespecified outcomes, all at the end of the treatment phase: number of incontinent episodes; number of micturitions (daytime) and nocturia; incontinence-specific and general measures (both physical and mental components) of quality of life. Data for the number of adverse events were available for one of the trials (Herbison 2004).

- Urge urinary incontinence (however diagnosed) (Mattiasson 2001)

The one trial (Mattiasson 2001) identified compared bladder training combined with tolterodine with tolterodine alone: not all the participants had incontinence, and most data were not presented separately for those who did have urinary incontinence at baseline. Data were available for 301 participants for one prespecified outcome: number of incontinent episodes at the end

of the treatment phase - the medians and interquartile ranges were the same for both groups.

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes per 24 hours (Mattiasson 2001) - at the end of the treatment phase (see Other data tables 09.06.01), 141 and 160 participants respectively, median (IQR), bladder training plus tolterodine = 0.3 (0.0 to 14.7), tolterodine alone = 0.3 (0.0 to 14.7);
(d) number of micturitions - no data available;
(e) quality of life - no data available.

- Mixed urinary incontinence (however diagnosed)

No trials identified.

- Stress urinary incontinence (however diagnosed)

No trials identified.

- Other incontinence ie undefined by the trialists or where the trialists presented data for two or more categories of incontinence in combination (however diagnosed) (Herbison 2004)

One pilot study was identified (Herbison 2004) with 28 participants providing data for five of the prespecified outcomes, all at the end of the treatment phase: number of incontinent episodes; number of micturitions (daytime) and nocturia; incontinence-specific and general measures (both physical and mental components) of quality of life. The trial (Herbison 2004) compared combining bladder training plus anticholinergic (oxybutynin) with anticholinergic (oxybutynin) alone. Data were available for the adverse event of dry mouth (10/12 vs 14/16; RR 0.95; 95% CI 0.70 to 1.30) (Comparison 09, Outcome 15).

Results for the five primary outcomes are summarised below:

(a) participant's perception of cure of urinary incontinence - no data available;

(b) participant's perception of improvement of urinary incontinence - no data available;

(c) number of incontinent episodes per 24 hours (Herbison 2004) mean (SD) - at the end of the treatment phase (see Other data tables 09.06.04), 12 and 16 participants respectively, bladder training plus oxybutynin = 0.6 (0.8), oxybutynin alone 0.1 (0.7);

(d) number of micturitions (Herbison 2004) per week - at the end of the treatment phase, 12 and 16 participants respectively, daytime (Comparison 09, Outcome 08) WMD 3.50; 95% CI 1.09 to 5.91; nocturia (see Other data tables 09.11.04) mean (SD), bladder training plus anticholinergic = 4.9 (3.5), anticholinergic alone = 6.3 (4.9).

(e) quality of life (Herbison 2004) - all at the end of the treatment phase, 12 and 16 participants respectively, incontinence specific quality of life (Comparison 09, Outcome 13) WMD 2.00; 95% CI -6.78 to 10.78; general quality of life measure (physical component) (Comparison 09, Outcome 17) WMD 6.00; 95% CI -1.81 to 13.81; general quality of life measure (mental component) (Comparison 09, Outcome 18) WMD -4.00; 95% CI -10.67 to 2.67.

C. ii Bladder training combined with a non-pharmacological treatment compared with that non-pharmacological treatment alone (Wyman 1998) (see Graphs and tables: Comparison 10, Outcomes 1-20)

The one trial (Wyman 1998) provided data on 125 participants and compared bladder training combined with PFMT plus biofeedback versus PFMT plus biofeedback alone (see Section B.iv above for the comparison involving the third arm of this trial). These results were presented for two diagnostic groups based on urodynamics: those with stress incontinence only and those with detrusor instability with or without stress incontinence.

- Urge urinary incontinence (however diagnosed)

No trials identified.

- Mixed urinary incontinence (however diagnosed)

No trials identified.

- Stress urinary incontinence (however diagnosed)

Data describing two prespecified outcomes were available: quality of life (immediately after treatment) measured using the Urogenital Distress Inventory, and the number of incontinent episodes per week (from a seven-day urinary diary) immediately after treatment (see Other Data tables, the data were skewed) (Wyman 1998). (Based on the trialists' report the data on number of incontinent episodes in the pairwise comparison of PFMT plus biofeedback with the combined therapy of bladder training plus PFMT plus biofeedback was statistically significantly different, favouring the combined therapy, p = 0.003).

Results for the five primary outcomes are summarised below:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence - no data available;
(c) number of incontinent episodes (Wyman 1998) mean (SD) - at the end of the treatment phase (see Other data tables 10.06.01), 42 and 46 participants respectively; combined PFMT plus biofeedback plus bladder training = 9.2 (11.5) and PFMT plus biofeedback = 8.7 (10.0);
(d) number of micturitions - no data available;
(e) quality of life (Wyman 1998) - at the end of the treatment phase, 44 and 45 participants respectively; Urogenital Distress Inventory WMD -18.00; 95% CI -36.58 to 0.58.

- Other incontinence ie undefined by the trialists or where the trialists presented data for two or more categories of incontinence in combination (however diagnosed)

The one trial (Wyman 1998) reported seven prespecified outcomes for the group with detrusor instability with or without stress incontinence. These were: perception of improvement at the end of treatment and at three months; quality of life immediately at the end of treatment and at three months; cure of incontinence immediately after treatment and at three months, (from a seven-day urinary diary); and number of incontinent episodes per

week immediately after treatment (see Other Data for the latter outcome as the data were skewed). Data were available for three outcomes that were not prespecified: cure of incontinent episodes (from diaries) at a mean of 3.2 years follow up; and participant satisfaction immediately after and three months after treatment ended. Differences in cure of incontinent episodes, immediately after treatment, were statistically significant favouring bladder training combined with PFMT and biofeedback (cure of incontinent episodes WMD 2.49; 95% CI 1.18 to 5.26): this was not sustained at three months. (Based on the trialists' report for number of incontinent episodes, the pairwise comparison of PFMT plus biofeedback with the combined therapy of bladder training plus PFMT plus biofeedback was statistically significant, favouring the combined therapy, p = 0.003).

Results for the five primary outcomes were:
(a) participant's perception of cure of urinary incontinence - no data available;
(b) participant's perception of improvement of urinary incontinence (Wyman 1998) - at the end of the treatment phase, 55/61 vs 48/63; RR 1.18; 95% CI 1.01 to 1.39, at three months after treatment ended, 44/58 vs 45/64; RR 1.08; 95% CI 0.87 to 1.34;
(c) number of incontinent episodes (Wyman 1998) - at the end of the treatment phase (see Other data tables 10.06.04), 16 and 18 participants respectively; combined PFMT plus biofeedback plus bladder training = 5.8 (9.5) and PFMT plus biofeedback = 11.9 (12.7), at three months after the end of treatment, combined PFMT plus biofeedback plus bladder training = not reported and PFMT plus biofeedback = 9.4 (14.0);
(d) number of micturitions - no data available;
(e) quality of life (Wyman 1998) - at the end of the treatment phase, 17 and 18 participants respectively, Urogenital Distress Inventory WMD -47.20; 95% CI -87.03 to -7.37, at three months after the end of treatment WMD -12.20; 95% CI -30.45 to 6.05.

DISCUSSION

The value of this review is limited by the few data available. Confidence intervals were all wide.

Despite extensive literature searching, only twelve eligible trials were identified and these included 1473 participants with urinary incontinence. As a group, these trials were not of high quality - although this varied - and the reporting of data describing the prestated outcomes was limited. The types of incontinence that were eligible for the trials also varied. For this reason we presented data separately for the four main diagnostic groupings. This further reduced the numbers considered in individual comparisons.

Across all the comparisons, data were available for eight of the prespecified outcomes but mostly only in single trials for each comparison. No single trial reported all five of the primary outcomes. Of the eight trials where data were available only three reported a power calculation (Fantl 1991; Herbison 2004; Wyman 1998). If a meta-analysis of more than one trial is possible, this would not be an important consideration. However, in this case only single trials provided data for individual outcomes. One trial (Wyman 1998) reported that a sample size of 187 was required to provide 90% power to detect a minimum difference of 2.5 incontinent episodes per week between groups at a significance level of p = 0.05 and another trial (Herbison 2004) stated that 500 participants would be required for each arm to eliminate important between-group differences; it is important to bear this in mind when looking at these results.

Interpretation is further limited by the lack of some details describing the teaching methods, the process, content and duration of patient education for bladder training, fluid intake, and medication. One trial provided data on compliance with chart completion (Lagro-Janssen 1992). Clinical experience suggests that any effects of bladder training tend to wane over time. The length of follow up was too limited in the trials reported to assess this. Also, the trials do not address the value of later reinforcement of bladder training, and this might have an important impact on its being carried out and its long term benefit. The few data that are available suggest that bladder training is useful in the management of urinary incontinence. Nevertheless, this conclusion can only be tentative for the reasons discussed above and better quality evidence is still required. These considerations apply to all three of the comparisons made.

The design of some of the trials was a further limitation with lack of long-term follow up of participants and limited measurement of outcomes that are important to participants and health care professionals.

Some trials included participants with overactive bladder with no separate data presented for those with urinary incontinence at baseline - these data were therefore not useable in this review. As overactive bladder is an important and common condition, a review of bladder training for any symptoms of overactive bladder would be useful.

At the outset we identified three main comparisons:
(A) bladder training compared to no bladder training; (B) bladder training compared to other treatments (particularly anticholinergics for urge incontinence); and (C) combining bladder training with another treatment (particularly anticholinergics for urge incontinence) compared to that treatment alone.

There were very few data assessing the value of bladder training compared with no bladder training. This was especially true for participants with urge incontinence, arguably the group most likely to benefit. This is surprising given how widely bladder training is recommended in these circumstances. When data were available, they tended to favour bladder training but no finding was conclusive.

The pattern applied to all four subgroups of trials characterised by diagnostic group of incontinence. To put this another way, there was no evidence that bladder training was more effective for some types of incontinence than others, but the sparsity of the evidence meant that this issue could not be addressed reliably.

Other than bladder training, the commonest management of urge incontinence is anticholinergic drug therapy. Bladder training was compared with the anticholinergic drug, oxybutynin, in three trials. One of these (Milani 1986) included women with urge symptoms and data describing those with urge incontinence were not reported separately. In one (Colombo 1995) of the other two trials (Colombo 1995; Herbison 2004), incontinence outcomes were similar in the two groups, albeit with wide confidence intervals. The only difference was that about 50% of those allocated oxybutynin reported side effects (such as dry mouth) typical of anticholinergics. The second trial (Herbison 2004) was a pilot study

with small numbers of participants and differences in baseline measurements between the treatment arms. This review does not, therefore, provide a basis for deciding whether first line therapy should be bladder training or anticholinergic drugs.

The third main question is whether the addition of bladder training to anticholinergics is preferable to anticholinergics alone. Two trials (Herbison 2004; Mattiasson 2001) addressed this question. In the largest (Mattiasson 2001) of the two trials that addressed this, it proved difficult to identify data that described those with incontinence separately from those with less severe symptoms except for incontinent episodes per 24 hours where the result was exactly the same for both treatment groups. The second trial was a pilot study (Herbison 2004) with small numbers of participants, differences in baseline measurements and differential dropouts between the treatment arms.

This review evaluated the comparisons: bladder training compared to no treatment; bladder training compared to any other treatment; and the addition of bladder training to a treatment compared to that treatment alone. We decided to wait until these questions are answered before addressing secondary questions such as comparing types of bladder training, caregiver, setting or whether bladder training plus another treatment is better than bladder training alone.

A relatively large trial (MRC Trial 2003) is due to be reported soon. However, this three-arm trial, of 280 men and women with detrusor overactivity incontinence, compares bladder training plus placebo with bladder training plus oxybutynin with bladder training plus imipramine. It is therefore assessing the value of adding drugs to bladder training rather than the value of bladder training itself.

Bladder training itself is evolving. Some health care professionals now incorporate cognitive behavioural management including urge suppression techniques. Some have tried simplifying bladder training (Mattiasson 2001) others have added so many extras to bladder training that for the purposes of this review they were excluded eg lower urinary tract exercises (LUTEs) (Berghmans 2001). These developments should be evaluated.

The results in the trials tend to favour bladder training, but the data are too few to assess this reliably.

AUTHORS' CONCLUSIONS

Implications for practice

There is inconclusive evidence to judge the effects of bladder training in both the short and long term. The results of the trials reviewed tended to favour bladder training (with no evidence of adverse effect) but there were too few data to assess this reliably. The data that were available were from trials of variable quality and small size. There are resource implications but the magnitude of these is not clear from the trials. The data are also too few to provide any guidance on the choice among bladder training, drug treatment, or other conservative approaches, or on whether adding bladder training to another treatment enhances any effect.

Implications for research

Some trials that included people with urinary symptoms other than incontinence had to be excluded from this review because people with incontinence could not be identified separately. A systematic review of trials of bladder training for any symptoms of overactive bladder would therefore be useful. Further, larger and more fully reported trials with longer term follow up are needed if the place of bladder training in the clinical management of incontinence is to be determined reliably. These should include the range of outcomes sought in this review, including measures of quality of life and resource use, and patients with conditions other than urge incontinence. In situations where some form of treatment cannot be withheld, trials should be conducted to compare bladder training with other management (particularly drug treatment), and to assess whether the combination of bladder training with a drug is more effective than either bladder training or the drug treatment alone. Definitive research has yet to be conducted.

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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Colombo 1995

Methods	Design: RCT of bladder training (Group I) versus oxybutynin (Group II). Allocation concealment method: described as 'computer generated random assignment' unclear if this was concealment or just the random number sequence generation. Blinding: not stated. Setting - place: Department of Obstetrics and Gynaecology, University of Milan, San Gerado Hospital, Italy. Setting - time: May 1990 to March 1993. Intention to treat analysis: No. Length of follow up: 6 months. Withdrawals/dropouts/losses to follow up: at end of treatment phase: Group I: 2/39 (treatment time consuming and did not give consistent results at 2 weeks of treatment); Group II: 4/42 (severe side effects: 3 dry mouth, 1 previously unknown glaucoma); at six months - follow up only of those clinically cured at end of treatment, no losses to follow up. Power calculation: not stated. Funding: not stated.
Participants	Number of participants randomised: total = 81; Group I = 39; Group II = 42. Number of participants followed up: at end of treatment phase, total = 75; Group I = 37; Group II = 38; at six months only the clinically cured at the end of the treatment phase were followed up (n = 55), none were lost to follow up; Group I = 27; Group II = 28. Gender: Female. Age: for all randomised women, mean (range), Group I = 49 years (24-65); Group II = 48 years (range 31-65). Inclusion criteria: symptoms of severe urge incontinence 'socially embarassing' and a urodynamic diagnosis of 'detrusor instability, low-compliance bladder or sensory bladder'. Exclusion criteria: age over 65 years; stable bladder at cystometry; neurologic disease; co-existing genuine stress incontinence; genital prolapse; previous uro- or gynaecological surgery; prior drug use for urge incontinence; post void residual volume greater than 50 ml; urethral diverticula, fistulas, urinary tract neoplasia; bladder stones; bacterial or interstitial cystitis; previous pelvic radiotherapy. Diagnostic groups: urge incontinence, see inclusion criteria. Baseline measurement: yes. Baseline comparability: not stated. Menopausal status: all randomised patients, postmenopausal: Group I = 20; Group II = 16.

Colombo 1995 *(Continued)*

Interventions	Group I: bladder training. Scheduled voiding: yes, at baseline maximum voiding interval identified, women encouraged to increase interval by 30 minutes every four to five days up to an interval of three to four hours. Participant education: yes. Relaxation and distraction techniques: not stated. Self monitoring or charting: not mentioned as part of the intervention, one week urinary diary at baseline and at evaluation at end of treatment phase. Positive reinforcement: yes. Other: two-weekly follow up during treatment phase, both groups. Treatment duration: six weeks. Bladder training provided by: not stated. Group II: oxybutynin 5 mg three times per day for six weeks but, if there were 'substantial side effects' dose reduced to 2.5 mg three times per day; two-weekly follow up during treatment. Co-interventions: Prior to baseline evaluation all postmenopausal women received topical oestrogen replacement of 1.25 mg of conjugated equine oestrogen nightly for a minimum of four weeks before baseline evaluation. Treatment compliance: not stated.
Outcomes	Primary outcomes. Participant's perception of cure: yes, if reported total disappearance of urge incontinence. Participant's perception of improvement (includes cured and improved): yes measured, if participants reported the incontinence was less troublesome but still needed to use pads. Number of incontinent episodes: not stated. Number of micturitions: seven-day diaries to find cure of diurnal frequency (eight or more daytime voids) and nocturnal frequency (two or more night time voids). Quality of life: not stated. Adverse events: evaluated at the two-weekly follow ups during the treatment phase. Socioeconomic: not stated. Other outcomes: not used. Outcomes measured: at end of treatment phase and only for those clinically cured at this evaluation, a further evaluation at six months after treatment ended.
Notes	Group II - adverse events during the treatment phase (unclear exactly when during the six weeks) led to 18 women receiving a half dose of oxybutynin, numbers of events: 15 dry mouth; 6 constipation; 5 nausea; 2 dizziness; 1 decreased visual acuity and 1 tachycardia.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Dougherty 1998

Methods	Design: RCT involving random assignment to behavioural management, given in three phases (Group I) versus 'no treatment' (Group II)(see notes section for details of the phases). Used minimization technique based on age, ethnicity, presence of caregiver, severity of incontinence, bacteriuria at first evaluation - with deliberate over sampling into Group I. Allocation concealment method: not stated. Blinding: only for scoring of pad weights. Setting - place: community-based, rural north Florida, USA. Setting - time: 'recruitment over 24 months', no dates. Intention to treat analysis: analysed in groups randomised to. Length of follow up: less than six months after entering the trial, depended on how many treatment phases the participant had how long this was after treatment. Withdrawals/dropouts/losses to follow up: total 40, Group I = 25; Group II = 15. Reasons: for study as a whole and only for a proportion: demands of participation n = 15; extended illness n = 10.

Dougherty 1998 *(Continued)*

	Power calculation: not stated. Funding: National Institutes of Health, USA.
Participants	Number of participants randomised: total 218, Group I = 119; Group II = 99. Number of participants followed up: total 178, Group I = 94; Group II = 84. Gender: female. Age: based on 218 women, mean 67.7 years (SD 8.25). Inclusion criteria: age 55 years or over; living in private residence in north Florida, urine loss of at least 1 gramme per day at least twice per week; symptoms of stress, urge or mixed incontinence based on health history, physical findings and bladder function tests; urine negative for bacteria on study entry. Exclusion criteria: residual urine of 100 cc or more; caregiver needed but not available; available for less than six months; bladder carcinoma; kidney disease; use of urinary catheter. Diagnostic groups: n = 217, urge incontinence = 33; stress incontinence = 40; mixed incontinence = 144. Baseline measurement: yes. Baseline comparability: yes, except for duration of residence in the community. Menopausal status: ?all postmenopausal.
Interventions	Group I: bladder training. Referenced Fantl 1991, Urologic Nursing. Scheduled voiding: gradually increasing voiding interval - no times given. Participant education: yes but both Groups received this. Relaxation and distraction techniques: not mentioned. Self monitoring or charting: this was phase one of the study, lasting two to four weeks, and only a subset of Group I used it, if they had a problem with fluid or caffeine intake; excessive voiding interval or participant reported constipation. Bladder diary (three-day) was completed at baseline and at follow up six months after entering the study. Positive reinforcement: continence goals were decided at outset and reassessed during training. Other: none Treatment duration: the bladder training phase lasted 6 to 8 weeks. Bladder training provided by: nurse Group II: 'used other community-based and institutional alternatives'. Baseline assessment during two home visits and one further home visit by nurse to give patient education on normal bladders and types and causes of urinary incontinence and suggestions for improving bladder control. Compliance: not stated. Co-interventions: see notes for the three phases of the study.
Outcomes	Primary outcomes. Participant's perception of cure: yes, use of Cantril ladder. Participant's perception of improvement (includes cured and improved): not stated. Number of incontinence episodes: three-day bladder diary. Number of micturitions: three-day bladder diary (daytime and night-time). Quality of life: IIQ Adverse events: not mentioned. Socioeconomic: Other outcomes: pad weights; voided volumes and voiding interval.
Notes	No useable data presented, all results presented together for behavioural interventions - need to contact authors. Phase 1 (2 to 4 weeks) self-monitoring only in a subset of patients; Phase 2 (6 to 8 weeks) bladder training; some patients then went on to PFMT with biofeedback depending on patient choice and attainment of continence goals in Phase 2.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Fantl 1991

Methods	Design: RCT stratified by urodynamic diagnosis, (two categories: genuine stress incontinence (GSI) or detrusor instability (DI) with or without stress incontinence) then randomly allocated to bladder training (Group I) or control (Group II). Allocation concealment method: not stated. Blinding: not stated. Setting - place: USA, not specified. Setting - time: not stated. Intention to treat analysis: no. Length of follow up: to end of treatment phase only. Withdrawals/dropouts/lost to follow up: Group I = 5; Group II = 3. Power calculation: no 'separate randomisation stratum' was created for detrusor overactivity incontinence alone due to the expectation of only 10% of participants having this diagnosis. Funding: National Institutes of Health, USA
Participants	Number of participants randomised: total = 131; Group I = 65; Group II = 66. Number of participants followed up: Group I = 60; Group II = 63. Gender: female. Age mean (SD)(years): Group I: 66 (8); Group II: 68 (9). Inclusion criteria: age 55 years or over; independant community dwelling; at least one involuntary episode of urine loss per week; mentally intact and functionally capable of independent or assisted toileting. Exclusion criteria: no DI or GSI on urodynamics; metabolic decompensation eg diabetes mellitus; lower urinary tract infection; urinary obstruction; diverticulum; fistula; reversible cause of urinary incontinence; permanent indwelling catheter. Diagnostic groups (urodynamic): Group I: DI = 7; GSI = 45; DI and GSI = 8; Group II: DI = 7; GSI = 44; DI and GSI = 12. Baseline measurement: yes. Baseline comparability: yes, for all measures except incontinence duration and oestrogen use. Menopausal status: ?presume all postmenopausal.
Interventions	Group I: bladder training. Scheduled voiding: starting from baseline frequency of 30 or 60 minute voiding interval participants were instructed to increase interval between voids by 30 minutes each week, aiming to get a two and a half hour or three hour interval betweeen voiding. Participant education: yes, audiovisual programme and verbal instruction according to an education protocol. Relaxation and distraction techniques: yes. Self monitoring or charting: daily standardised bladder chart. Positive reinforcement: yes. Other: weekly clinic visits of 15-20 minutes. Treatment duration: six weeks. Bladder training provided by: not stated. Group II: No further contact and asked to return in six weeks. Co-interventions: none stated. Compliance: not mentioned.
Outcomes	Primary outcome: Participant's perception of cure: not stated. Participant's perception of improvement (includes cured and improved): not stated. Number of episodes of urinary incontinence: that occured during a one week period based on self completed bladder chart; Number of micturitions: diurnal and nocturnal micturition frequency based on one week of bladder chart; Quality of life: Incontinence Impact Questionnaire (IIQ); visual-analogue scales and depression scale. Adverse events: not stated. Socioeconomic: not stated. Other outcomes: cure and improvement of incontinent episodes from seven-day diary;

Fantl 1991 *(Continued)*

	urine loss using pad weighing. Outcomes measured: at end of treatment phase.
Notes	After the first six weeks, women in the control group went on to also have bladder training. Further data were collected from these women after six months - these data not useable. Four women withdrew due to the 'comprehensiveness of the programme' but not clear whether this was during treatment or at the six month follow up including the treated controls?

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Herbison 2004

Methods	Design: RCT (pilot study) - random allocation to three parallel groups - bladder training (Group I) versus oxybutynin (Group II) versus BT combined with oxybutynin (Group III). Allocation concealment method: described as 'password protected webpage that remotely accessed a computer- generated randomisation list'. Blinding: stated not possible. Setting - place: Dunedin School of Medicine, New Zealand. Setting - time: recruitment between February 2003 to June 2003. Intention to treat analysis: No. Length of follow up: 3 months but 12 month follow up planned followed by large trial. Withdrawals/dropouts/losses to follow up: at three months during the treatment phase: reasons not given - Group I: 3/21; Group II: 1/17; Group III: 7/19. Power calculation: pilot study designed to provide data for a power calculation - authors state that 500 participants would be required per arm to eliminate important differences between the three treatment groups. Funding: not stated.
Participants	Number of participants randomised: total = 57; Group I = 21; Group II = 17; Group III = 19. Number of participants followed up: total =46; Group I = 18; Group II = 16; Group III = 12. Gender: female. Age, based on the original numbers randomised, mean and SD: Group I = 53.8 (14.8); Group II = 63.9 (17.2); Group III = 47.6 (16.3). Inclusion criteria: women with predominant urge urinary incontinence, aged over 18 years who had reported at least one monthly urinary leakage episode. Exclusion criteria: predominant stress incontinence; contraindications to anticholinergic drugs. Diagnostic groups: all have predominant urge urinary incontinence - not stated how diagnosed. A subset of participants also had concurrent stress incontinence. Baseline measurement: yes. Baseline comparability: states that "there were differences in groups at baseline" but not stated if this was statistically significant. Menopausal status: premenopausal at baseline - Group I = 7/21; Group II = 3/17; Group III = 9/19.
Interventions	Group I: bladder training. No detail of method given or how long the intervention period was. Scheduled voiding: not reported. Participant education: not stated. Relaxation and distraction techniques: not reported. Self monitoring or charting: not reported. Other: states BT 'comprised strategies to increase voiding interval and suppress urge." Treatment duration: not stated - at least three months, possibly 12 months. Bladder training provided by: not stated.

Herbison 2004 *(Continued)*

	Group II: 2.5 mg (once per day) of immediate release oxybutynin increasing to 5 mg (three times a day) "depending on effectiveness and side effects." Group III: received a combination of BT plus oxybutynin as described for Groups I and II above. Compliance: not reported. Co-interventions: all participants were 'offered advice about good bladder habits.'
Outcomes	Primary outcomes. Participant's perception of cure: not reported. Participant's perception of improvement (includes cured and improved): bladder problems were measured using a visual analogue scale (higher better) but numbers of participants reporting improvement are not reported. Number of incontinence episodes: reported per day from bladder diary - not stated how many days per diary. Number of micturitions: reported per day from bladder diary - not stated how many days per diary. Quality of life: used condition specific OAB-q as well as general health status measure SF12 (both physical and mental components reported). Adverse events: dry mouth reported. Socioeconomic: not reported. Other outcomes: urgent episodes per day (from bladder diary, not reported how many days per diary); bladder problems were measured using a visual analogue scale (higher better).
Notes	Ongoing pilot study.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Jarvis 1980

Methods	Design: RCT random allocation to bladder training (Group I) versus 'no treatment' (Group II). Allocation concealment method: not specified. Blinding: not mentioned. Setting - place: Group I: in-patient, ?Sheffield, UK; Group II: at home, ?Sheffield/South Yorkshire, UK. Setting - time: not stated. Intention to treat analysis: unclear. Length of follow up: approximately three months (and six months - data not useable). Withdrawals/drop-outs/losses to follow up: unclear of numbers, at three months any control participants not cured or improved were withdrawn from the trial. Power calculations: not stated. Funding: not stated.
Participants	Number of participants randomised: total = 60, Group I = 30; Group II = 30. Numbers of participants followed up: Group I = 30; Group II = 30. Gender: female. Age, mean and range, years: Group I = 49.7 (35 to 74) Group II = 46.7 (range 27 to 79). Inclusion criteria: idiopathic detrusor instability, defined according to International Continence Society terminology (1977) and diagnosed by pressure flow studies using provocation cystometry. Cystoscopy and urethral dilatation under general anaesthesia was performed for all women to exclude local pathology and to measure bladder capacity, which had to be more than 650ml for all women Exclusion criteria: urinary tract infection; taking a drug that might affect the lower urinary tract; co-existing GSI. Diagnosis: urodynamically diagnosed DI only. Baseline measurement: yes. Baseline comparability: appears yes. Menopausal status: postmenopausal: Group I = 22; Group II = 21.

Jarvis 1980 *(Continued)*

Interventions	Group I: In-patient bladder drill. Scheduled voiding: instructed to pass urine at specific intervals during the day, usually one and a half hours, and not to do so earlier (mandatory) either wait or be incontinent. Once target reached interval increased by half an hour each day until voiding four hourly. Nighttime micturition was ignored. Participant education: ?yes 'the rationale was explained'. Relaxation and distraction techniques: not mentioned. Self monitoring and charting: Usual fluid intake maintained with fluid balance chart kept by the women. Positive reinforcement: yes, by the ward sisters. Other: introduced to a woman successfully treated by bladder drill which the trialists suggest provided a positive psychological message. Treatment duration: mean 6.25 days (range 5 to 13 days). Bladder training provided by: unclear, positive reinforcement provided by ward sisters. Group II: After the cystometry under general anaesthesia the women were advised that they should be able to hold urine for four hours and be continent; then sent home. Compliance: not reported but bladder training provided on an in-patient basis. Co-interventions: Group I had night sedation during in-patient stay.
Outcomes	At three months: all patients were reassessed 'clinically and urodynamically'. The clinical diagnosis was symptom based but no details were given of how this was measured. Participant's perception of cure: unclear. Participant's perception of improvement (includes cured and improved): unclear. Number of incontinence episodes: unclear. Number of micturitions: unclear. Quality of life: unclear. Adverse events: unclear. Socioeconomic: unclear. Other outcomes: repeat cystometry pressure flow studies; and mean duration of hospital stay.
Notes	N.B. At the three month follow up controls not cured or improved were withdrawn from the trial and were offered in-patient bladder drill - no three month data are presented and it is unclear if the six month data includes these women or not. Seek clarification from trialists as no useable data at present. At six months follow up outcomes were: patient perception of continence status and self reported urinary symptoms; One woman undertaking bladder drill who became continent relapsed four months after discharge for bladder drill.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Jarvis 1981

Methods	Design: RCT randomly allocated to bladder training (Group I) versus flavoxate hydrochloride along with imipramine (Group II). Allocation concealment method: not specified. Blinding: not stated. Setting - place: Group I: inpatient, ?Gynaecology ward, Sheffield, UK; Group II: at home. Setting - time: not stated. Intention to treat analysis: ?yes. Length of follow up: at end of 4 week drug treatment phase and unclear but appears to be at 8 weeks after this time. Withdrawals/droouts/lost to follow up: five participants stopped drug treatment but ?were included in the analysis. Power calculations: not stated.

Jarvis 1981 *(Continued)*

	Funding: not stated.
Participants	Number of participants randomised: total = 50, Group I = 25; Group II = 25. Number of participants followed up: 50. Gender: female. Age, mean (range): Group I = 47 years (17 to 78); Group II = 46 years (17 to 65). Inclusion criteria: urinary incontinence due to urodynamically proven detrusor instability. Exclusion criteria: no co-existing GSI; neurological abnormalities; diabetes mellitus; urinary tract infection; participants taking drugs that might affect the lower urinary tract. Diagnostic groups: see inclusion criteria above. Baseline measurement: yes. Baseline comparability: authors state yes. Menopausal status: not stated.
Interventions	Group I: In-patient bladder drill. No detail of method given or how long the patients stayed in hospital. Scheduled voiding: ? Participant education: ? Relaxation and distraction techniques: ? Self monitoring or charting: ? Other: Treatment duration: not stated. Bladder training provided by: not stated. Group II: 200mg (three times a day) of flavoxate hydrochloride and 25 mg (three times a day) of imipramine for four weeks. Co-interventions: all participants had cystoscopy under general anaesthesia to measure bladder capacity and to exclude pathology. Compliance: not reported.
Outcomes	Primary outcomes. No details were reported of how these were measured. Participant's perception of cure of incontinence: yes measured 'subjectively', no other details. Participant's perception of improvement of incontinence: not stated. Number of incontinence episodes: not stated. Number of micturitions: cure of diurnal frequency symptoms and cure of nocturia, 'subjective' measurement, no further details. Quality of life: not stated. Adverse events: number of patients experiencing these events. Other outcomes: repeat cystometry after four weeks, bladder capacity and first sensation to void on filling. Outcomes measured at: end of four weeks: urinary symptoms and continence status; then eight weeks after, at end of (drug) treatment phase and unclear, ?at two month follow up after end of (drug) treatment phase.
Notes	Side effects occured in drug therapy group for 14 participants and five of them ceased treatment: dizziness = 8 (3 of whom withdrew); headache = 6 (1 of whom withdrew); dry mouth = 6, nausea = 4, drowsiness = 2 and vomiting = 1 (1 of whom withdrew). Cystometry data, before and after, only included for 21 patients who underwent bladder drill and for 14 patients on drugs.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Lagro-Janssen 1992

Methods	Design: RCT/quasi-RCT unclear. Multiple trials - participants stratified on the basis of type and severity of incontinence - if urodynamically proven urge incontinence then randomly allocated 'consecutively' to bladder training (Group I) or 'no treatment' (Group II) after (see notes for treatment for other types of incontinence). Allocation concealment method: not specified. Blinding: not mentioned: Setting - place: 13 general practices, The Netherlands. Setting - time: 1987 to 1990. Intention to treat analysis: ?no. Length of follow up: three months, after this time the control group received the treatment. Withdrawals/drop-outs/losses to follow up: unclear, one participant drop-out of treatment group but not clear whether from the urge incontinence or other incontinence types. Power calculations: not stated. Funding: not stated, five year follow up study supported by the Dutch Prevention Fund.
Participants	Number of participants randomised: total = 18; Group I = 9; Group II = 9. Number of participants followed up: ?18. Gender: female. Age, based on the original numbers for the whole study, mean and SD: Group I = 44.6 (10.4); Group II = 42.3 (10.0) Inclusion criteria: women with DI only, aged between 20 to 65 who had reported urinary incontinence to their GP, defined as loss of urine twice or more per month. Exclusion criteria: previous surgery for urinary incontinence; neurological disease which may cause incontinence; urinary tract infection. Diagnostic groups: urodynamically diagnosed urge incontinence only. Baseline measurement: yes Baseline comparability: for whole study only, yes except for duration of incontinence. Menopausal status: not reported.
Interventions	Group I: Bladder training. Scheduled voiding: A mandatory schedule was set and then the interval between voids was increased by 15 minutes to obtain a micturition pattern of seven times per day with an ordinary fluid intake. What an ordinary fluid intake was, was not specified. Participant education: information was provided by the GP on loss of bladder reservoir function and how it can be restored through bladder training. It is unclear whether this information was oral or written. Relaxation and distraction techniques: not mentioned. Self monitoring or charting: Women were instructed to keep a bladder diary recording micturition and incontinent episodes. Positive reinforcement: not mentioned. Other:At baseline, women in both groups were advised on the use of protective pads by a nurse. Treatment duration: unclear. Bladder training provided by: general practitioner. Group II: at baseline, women were advised on use of protective pads by a nurse. No other intervention was received. Repeat measure at three months and then women were instructed on bladder training, as above. Compliance: unclear.
Outcomes	Primary outcomes. Participant's perception of cure: self assessment of continence status. Participant's perception of improvement (includes cured and improved): self assessment of continence status. Number of incontinence episodes: mean number per week, calculated from seven day bladder diary. Number of micturitions: not stated. Quality of life: not stated. Adverse events: not stated. Socioeconomic: not stated. Other outcomes: severity of incontinence scale.
Notes	Additional published data on women with DI were provided by the lead author. Can only use: 'dry scores' for 'objective' severity of incontinence scale at three months; and 'subjective' assessment of im-

Lagro-Janssen 1992 *(Continued)*

provement of incontinence at three months for treatment and true control group. The mean number of incontinent episodes per week - not able to compare as they were not recorded at similar points in time. One in five women admitted non-compliance in 'exercise schedule' in PFMT group. Eight of the 110 women dropped out of the study during the trial. It is unknown if any of these women had DI. After 3 months the control received bladder training with further repeat measures in observational analyses.
Women with stress incontinence were randomised to PFMT or control, those with urge incontinence were randomised to bladder training or control and those with mixed incontinence were randomised to bladder training followed by PFMT - in this later case the first phase data would be useable - ?further contact with authors.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Lentz 1994

Methods	Design: RCT randomisation to BT (Group I) versus vaginal cones (Group II). Allocation concealment method: not stated. Blinding: not stated. Setting - place: ?St George's Hospital, London, UK. Setting - time: not stated. Intention to treat analysis: unclear. Length of follow up: treatment duration uncertain but assessed at one and three months. Withdrawals/dropouts/losses to follow up: n = 22, 10% at one month and 44% at three months but unclear how many from each arm of the trial, reasons not given. Group I: ? Group II: ? Power calculations: not stated. Funding: not stated.
Participants	Number of participants randomised: total = 22, Group I = 11; Group II = 11. Number of participants followed up: unclear for each arm, overall 90% at one month and 56% at three months. Gender: female. Age: n = 22, mean = 42 years (range 19 - 64) Inclusion criteria: frequency, urgency and/or urge incontinence; more than seven voids per day, urinary diary; stable substracted cystometry; urine culture, cystoscopy and cytology negative; no vaginal infection. Exclusion criteria: see inclusion criteria. Diagnostic groups: see inclusion criteria. Baseline measurement: yes. Baseline comparability: not stated. Menopausal status: not stated.
Interventions	Group I: bladder training. Not described or referenced. Scheduled voiding: ? Participant education: ? Relaxation and distraction techniques: ? Self monitoring or charting: urinary diary at baseline, one month and three months. Positive reinforcement: ? Other: ? Treatment duration: not stated. Bladder training provided by: not stated. Group II: vaginal cones, no other details of duration of use, etc. Co-interventions: none stated.

Lentz 1994 *(Continued)*

	Compliance: not stated.
Outcomes	Primary outcomes. Participant's perception of cure: yes, not stated how. Participant's perception of improvement (includes cured and improved): not stated how measured. Number of incontinence episodes: not stated. Number of micturitions: yes, one week urinary diary. Quality of life: not stated. Adverse events: none mentioned. Socioeconomic: none state. Other outcomes: voided volumes.
Notes	No useable data. 'Bladder drill for sensory urgency treatment'. Patients were eligible if they had 'frequency, urgency and/or urge incontinence' and if 'subtracted cystometry was stable. Data for patients with incontinence not presented separately - need to contact authors?

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Mattiasson 2001

Methods	Design: RCT multicentre, parallel group with randomisation to BT plus tolterodine (Group I) versus tolterodine alone (Group II). Allocation concealment method: not stated. Reports that participants were randomised 'in balanced blocks of four, according to a computer-generated randomization list' but no mention of concealment. Blinding: single blind, no further information. Setting - place: 51 centres in Scandinavia (19 in Sweden, 18 in Norway and 14 in Denmark). Setting - time: October 1999 to December 2000. Intention to treat analysis: states yes using the 'last value carried forward approach'. Length of follow up: to end of treatment phase (ie 24 weeks). Withdrawals/dropouts/losses to follow up: (for participants with incontinence at baseline only) at end of treatment phase, Group I = 2/143; Group II = 5/165. Power calculation: not stated. Funding: Pharmacia Corporation.
Participants	For this review only those participants with urinary incontinence at baseline are eligible - Number of participants with urinary incontinence at baseline randomised: total = 308; Group I = 143; Group II = 165. (Number of participants with overactive bladder randomised: total 501, Group I = 244; Group II = 257.) Number of participants followed up: (for those with incontinence at baseline) Group I = 141; Group II = 160. Gender: (for all participants at baseline) 378 (75%) female; 123 (25%) male. Age: (for all participants at baseline) n = 501, mean 61 years, Group I median age = 62 years (range 19-86); Group II median age = 63 years (range 22-86). Inclusion criteria: overactive bladder with urinary frequency (a minimum of eight micturitions per 24 hours, on average) and urgency (a strong and sudden desire to urinate) with or without urge incontinence (based on one week voiding diaries), male or female aged 18 years or over. Exclusion criteria: stress or mixed incontinence; any contraindication to antimuscarinic therapy; use of electrical stimulation or BT within the previous three months; use of urinary catheters; pregnancy or lactation; use of anticholinergic treatment or other treatment for overactive bladder other than oestrogen therapy started at least two months before the start of the trial. Diagnostic groups: recruited on the basis of symptoms alone, urge incontinence present in a subset of participants at baseline.

Mattiasson 2001 *(Continued)*

	Baseline measurement: yes Baseline comparability: authors state 'well balanced at baseline'. Menopausal status: not reported but judging by age ranges at baseline may include some pre-menopausal women.
Interventions	Both groups received the same package containing the drug therapy and an information leaflet about the drug. Additionally the participants in Group I received 'a single page instruction detailing the goals of BT'. Patients in both groups filled in the micturition diaries for three days prior to clinic visits at baseline, two, 12 and 24 weeks. Both Groups I and II received the same drug regimen: tolterodine 2 mg twice daily for 24 weeks - this could be reduced to 1 mg twice daily during the first two weeks if adverse effects were intolerable) The bladder training: 'simplified' BT, described in a one page instruction leaflet (given in the Appendix of one of the trial reports), aiming to reduce clinic resource use by reducing time spent on education, motivation and positive reinforcement . No reference given but the one page sheet in shown as an Appendix in the 2003 full report of the trial. Scheduled voiding: not explicitly mentioned, states 'target is to reduce your urination frequency to around 5-6 times in 24 hours. Participant education: only that given in the information leaflet. Relaxation and distraction techniques: mentioned in the leaflet. Self monitoring or charting: 12 sets of seven-day micturition diaries with instructions on how to use them and advised to complete every other week. Positive reinforcement: not mentioned. Other: clinic visits during treatment phase at two, 12 and 24 weeks - no additional visits or telephone follow up were allowed. Treatment duration: 24 weeks. Bladder training provided by: participants were self-taught using the leaflet provided - the trialists explicitly state that no formal training in BT was provided by study personnel. Group II: received tolterodine alone. Tolterodine 2 mg twice daily for 24 weeks, this could be reduced to 1 mg twice daily during the first two weeks if adverse effects were intolerable. The only difference compared to the BT group was a similar information sheet but without mention of BT - otherwise care was the same as Group I. Co-interventions: none mentioned. Compliance: not stated.
Outcomes	Primary outcomes. Participant's perception of cure of urinary incontinence: data not reported separately. Participant's perception of improvement of urinary incontinence (includes cured and improved): data not reported separately. Number of incontinence episodes in those with urinary incontinence at baseline: yes reported, taken from 3-day voiding diaries. Number of micturitions: data not reported separately for participants with urinary incontinence at baseline. Quality of life: not reported. Adverse events: yes reported but data not reported separately for participants with urinary incontinence at baseline. Socioeconomic: not reported. Other outcomes: none relevant.
Notes	'Overactive bladder patients with/without urge incontinence'. Only participants with urinary incontinence at baseline are eligible for this review. Results for participants with incontinence are not always presented separately. Request information from authors. The proportions of male to female are correct in the text of the BJU paper and accidentally reversed in the tables - Professor Mattiasson kindly verified this.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Milani 1986

Methods	Design: RCT randomised to BT (Group I) versus oxybutynin (Group II). Allocation concealment method: not described. Blinding: not stated. Setting - place: at two hospitals in Monza, University of Milan, Italy. Setting - time: May 1983 to December 1985. Intention to treat analysis: no. Length of follow up: to end of trreatment phase only, after this participants not cured or markedly improved 'crossed over'. Withdrawals/dropouts/losses to follow up: total = 6 Group I: n = 2, due to the lengthy therapy. Group II: n = 4, due to side effects, mainly dry mouth. Power calculations: not stated. Funding: not stated.
Participants	Number of participants randomised: total = 81; Group I = 39; Group II = 42. Number of participants followed up: total = 75, Group I = 37; Group II = 38. Gender: female. Age: mean (range), Group I = 49 years (24-65); Group II = 48 years (31-65). Inclusion criteria: idiopathic urge syndrome, all participants did not have urinary incontinence. Exclusion criteria: age greater than 65 years; previous pelvic radiotherapy; pelvic masses or malignancy; urinary tract or kidney pathology, nervous system diseases; second or third degree genital prolapse. Diagnostic groups: sensory urge or motor urge syndrome diagnosed urodynamically. Baseline measurement: yes. Baseline comparability: no comment by authors. Menopausal status: postmenopausal, Group I = 20/37; Group II = 16/38.
Interventions	Group I: bladder training. Reference given to Frewen (1972 and 1978 - but provided on an outpatient basis with no drugs or psychotherapy. Scheduled voiding: instructed to void every three hours. Participant education: not mentioned. Relaxation and distraction techniques: no details 'control desire to void'. Self monitoring or charting: used daily micturition charts. Positive reinforcement: not mentioned. Other: both groups clinically reassessed two to four times on treatment. Treatment duration: 12 weeks. Bladder training provided by: not mentioned. Group II: oxybutynin 15 mg three times per day for (unclear possibly three to six weeks, possibly four weeks). Co-interventions: reports none administered. Compliance: not stated.
Outcomes	No useable data - not all participants had incontinence - await separate data from authors if available. Primary outcomes. Symptom-based 'clinically assessed' no further details of how these were measured. Participant's perception of cure: unclear. Participant's perception of improvement (includes cured and improved): unclear. Number of incontinence episodes: unclear. Number of micturitions: unclear how measured, daytime and night-time frequency. Quality of life: unclear. Adverse events: yes reported. Socioeconomic: not stated. Other outcomes: urodynamic measures; symptoms of urgency; symptoms of urge and stress incontinence.
Notes	'treatment of idiopathic urge syndrome'. Initially 61 (increased to 81 at end of study) women with urge syndrome were randomised - of those with data presented 34 had urge syndrome with bladder instability (with uninhibited detrusor contractions in some and high pressure bladder in others) (32 had urge

Milani 1986 *(Continued)*

incon, 20 had stress incon, it is unclear whether the missing 2 had only stress or no incontinence?) and 25 had a stable bladder (with reduced volumes at 1st desire of boiding and capacity) (15 had urge incon, 10 had stress incon, it is unclear whether each patient had only a single type of incontinence or whether some had both and others had none). They also use the terms 'sensorial urge syndrome' and 'motor urge syndrome'. Clarifying with authors.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Wyman 1998

Methods	Design: RCT part of a multi-study (see notes section for further details of the other studies) multicentre randomised controlled trial - 3 parallel groups; participants first stratifed by urodynamic diagnosis, baseline incontinence severity and treatment centre then randomised to bladder training (Group I) versus pelvic floor muscle training (PFMT) plus biofeedback (Group II) versus bladder training plus PFMT plus biofeedback (Group III). Allocation concealment method: sealed opaque envelopes. Blinding: No - patients and outcome assessors not blinded. Setting - place: two university gynecological practices, South East USA. Setting - time: January 1989 to June 1994. Intention to treat analysis: No Length of follow up: Immediately after treatment phase at 12 weeks and three months at the end of the treatment phase followed by long term follow up mean 3.2 years (no range or standard deviation given). Withdrawals/dropouts/losses to follow up: immediately after treatment phase: Group I = 0, Group II = 5, Group III = 6; three months after end of treatment phase numbers unclear numbers in tables dont quite tally with text Group I = ?6, Group II = ?+1, Group III = ?1; at long term follow up, Group I = 20, Group II = 17, Group III = 20. Power calculation: based on their previous trial (Fantl) gave a sample size of 187 to provide 90% power to detect a minimum difference of 2.5 incontinent episodes per week between groups (p = 0.05). Funding: National Institutes for Health, USA.
Participants	Number of participants randomised: total = 204; Group I = 68; Group II = 69; Group III = 67. Number of participants followed up: immediately after treatment phase total = 193, Group I = 68, Group II = 64 and Group III = 61; at three months after treatment, (however numbers unclear in tables and text) total = 187, Group I = 62, Group II = 65, Group III = 60; long term follow up, total = 147, Group I = 48, Group II = 52 and Group III = 47. Gender: female. Age: for the 204 participants randomised, means (SD), years, Group I = 60 (10); Group II = 62 (10); Group III = 61 (9). Inclusion criteria: age 45 years or over; independent community dwelling; at least one involuntary episode of urine loss per week; mentally intact and functionally capable of independent or assisted toileting. Exclusion criteria: no DI or GSI on urodynamics; uncontrolled metabolic conditions eg diabetes mellitus; urinary tract infection; genitourinary fistula; reversible cause of urinary incontinence; indwelling catheter; residual urinary volume after voiding of greater than 100 mL; inability to perform a pelvic floor contraction on digital examination. Diagnostic groups: for the purposes of presenting the results the patients in the trial were grouped into two diagnostic groups according to urodynamic diagnosis, GSI only or DI with or without concurrent GSI. Baseline measurement: yes Baseline comparability: yes, except for education, symptoms of stress and mixed incontinence and the use of oestrogen.

Wyman 1998 *(Continued)*

	Menopausal status: postmenopausal without hormone replacement therapy: Group I = 15/68; Group II = 16/69; Group III = 10/67.
Interventions	Group I: bladder training. Referenced Fantl 1991, Urologic Nursing. Scheduled voiding: yes, starting from baseline frequency of 30 or 60 minute voiding interval participants were instructed to increase interval between voids by 30 minutes each week, aiming to get a two and a half hour or three hour interval betweeen voiding. The schedule usually remained unchanged in the last six weeks. Participant education: yes, all three arms of the trial received the same. Relaxation and distraction techniques: yes, bladder training component only. Self monitoring or charting: yes, all three arms of the trial received the same. Positive reinforcement: yes, all three trial arms received this. Other: Affirmations/self-statements, bladder training component only. Treatment duration: 12 weeks. Bladder training provided by: registered research nurses provided all training for bladder training, PFMT and biofeedback. Group II: PFMT and biofeedback - consisted of graded home exercise regimen with audio cassette practice tapes and four office biofeedback sessions. PFMT - five fast (3 seconds) contractions and ten sustained (10 seconds) contractions with ten second relaxation between contractions twice a day. Sustained contractions were increased by ten contractions per week aiming in third week at a total of ten fast and 40 sustained contractions per day. Participants also encouraged to use pelvic muscle contractions for urge inhibition and prevention of leakage. Biofeedback - after initial teaching sessions women had four weekly 30 minute sessions of visual and verbal biofeedback. Group III: the combined therapies group. Bladder training was taught first then in the third week PFMT and biofeedback were added. Women were instructed to use both urge inhibition techniques and preventive contractions, and relaxation and distraction techniques. Compliance: three measures were used: percentage of treatment visits attended (Group I = 57%; Group II = 53%; Group III = 73%); completion of scheduled voidings (Immediately after treatment phase: Group I = 85%; Group II = not applicable; Group III = 81%. At three months: Group I = 44% Group III = 40%); adherence to PFMT (Immediately after treatment phase: Group I = not applicable; Group II = 84%; Group III = 78%. At three months: Group II = 64%; Group III = 58%). Co-interventions: none stated.
Outcomes	Primary outcomes. Participant's perception of cure: not perception of cure, but seven day bladder diaries were used to chart incontinent episodes. Participant's perception of improvement (includes cured and improved): yes, use of five-point Likert-type scale. Number of incontinence episodes: yes, as recorded in a seven day urinary diary. Number of micturitions: not stated. Quality of life: yes, both the Urogenital Distress Inventory and the Incontinence Impact Questionnaire - Revised were used. Adverse events: none reported. Socioeconomic: not reported. Other outcomes: patient satisfaction with the treatment was measured using a five-point Likert-type scale.
Notes	1. This is one trial within a multicentre study including several different trials. Any women considered insufficiently 'oestrogenised' were entered into a different trial. Any women who had a stage III or stage IV prolapse were entered into a different trial. Women diagnosed with GSI only could choose between entering into this trial of behavioural therapies or could choose to enter a surgical trial. 2. At long term follow up (mean 3.2 years) of those women reporting no subsequent treatments for incontinence, the number of women reporting no incontinent episodes from a seven-day bladder diary was: Group I = 4/22; Group II = 1/11; Group III = 8/16.

Risk of bias

Bias	Authors' judgement	Support for judgement

Wyman 1998 *(Continued)*

Allocation concealment?	Low risk	A - Adequate

Yoon 2003

Methods	Design: RCT, parallel group with three arms, randomised to BT (Group I) versus PFMT plus biofeedback (Group II) versus control (Group III). Allocation concealment method: not clear states 'assigned randomly' 'using random numbers' but no mention of concealment. Blinding: of outcome assessor - different nurse at the same clinic. Setting - place: recruitment from the community using advertisements, investigators based at a urinary incontinence clinic in a university hospital, Seoul, South Korea. Setting - time: February to June 1997. Intention to treat analysis: no. Length of follow up: only to end of treatment phase. Withdrawals/dropouts/losses to follow up: at end of treatment phase: Group I = 2/21 (due to swelling in wrists and ankles, previously had hypertension; Group II = 2/15 (due to family problems); Group III = 2/14 (due to family problems). Power calculation: not reported. Funding: not reported.
Participants	Number of participants randomised: total = 50; Group I = 21; Group II = 15; Group III = 14. Number of participants followed up at end of treatment phase: total = 44; Group I = 19; Group II = 13; Group III = 12. Gender = female. Age (years), of participants followed up: not reported. Inclusion criteria: parous, aged 35 to 55 inclusive, female, loss of urine of 1.0 g or more on 30 minute pad test (referenced, see notes) and 14 voids or more during a 48 hour period before the preliminary evaluation. Exclusion criteria: presence of UTI tested by urinalysis and urine culture, previous surgery for urinary incontinence, current use of hormonal or other medication for urinary incontinence. Diagnostic groups: not described. Baseline measurement: yes. Baseline comparability: states yes. Menopausal status: not reported - the age range for inclusion means that participants could be either premenopausal, perimenopausal or postmenopausal.
Interventions	Group I: bladder training. Referenced: no. Scheduled voiding: not fully described, states 'progressive program in which the interval between voluntary voiding was gradually extended weekly for eight weeks.' Participant education: not mentioned. Relaxation and distraction techniques: not mentioned. Self monitoring or charting: not mentioned. Positive reinforcement: not mentioned. Other: none. Treatment duration: eight weeks. Bladder training provided by: not explicitly stated - possibly the same as for PFMT below? Group II: PFMT and biofeedback. Referenced: Dougherty et al 1989; Saltin et al 1977. 'The exercise protocols require subjects perform 30 pelvic muscle contractions for strength and endurance per day and overall it takes 15 to 20 minutes every day.' Duration: 8 weeks. Biofeedback: 20 minute session of visual feedback per week using electromyography. Provided by: nurse therapist based in an urinary incontinence clinic at a university hospital (not the outcome assessor). Group III: control group. No intervention - asked to return after eight weeks without clinic contact. Compliance: not mentioned. Co-interventions: none reported.
Outcomes	Primary outcomes. Participant's perception of cure: not reported. Participant's perception of improvement (includes cured and improved): not reported. Number of incontinence episodes: not reported.

Yoon 2003 *(Continued)*

	Number of micturitions: daytime and night-time reported separately per day using 48 hour urinary diary (referenced, see notes). Quality of life: not reported. Adverse events: two participants from the bladder training group withdrew due to swelling in wrists and ankles - they had a previous history of hypertension. Socioeconomic: not reported. Other outcomes: severity of urine loss - a composite score from participants self-rating, using a 5-point Likert scale, of loss of urine for 18 different activities eg coughing, sneezing, etc.
Notes	References for the 30 minute pad test: Dumoulin et al 1995; Fantl 1991. Reference for the 48 hour urinary diary: Wyman et al 1988. There is a discrepancy between the text and the tables as to how many participants were followed up in Group II (PFMT) text says 12 but table 1 and 2 says 13, and the control group (Group III) where the text states 13 and Tables 1 and 2 say 12 - contacted authors but as yet no reply.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

DI = detrusor instability
GP= general practitioner
GSI = genuine stress incontinence
ICS = International Continence Society
IIQ = Incontinence Impact Questionnaire
mg = milligrams
PFMT = pelvic floor muscle training
RCT = randomised controlled trial
UTI = urinary tract infection

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Alewijnse 2003	RCT - all participants received PFMT with or without an education and motivatin programme. Only those participants with 'a deviant voiding frequency' were told they should 'train their bladder by timeing their voidings during the day until a normal frequency of seven voidings a day is reached.'
Berghmans 2001	RCT - main focus is on 'lower urinary tract exercise' (LUTE) which is a combination of BT, specific PFMT, patient information, and toileting behaviour. There may be too many extra additions to the BT to be able to say what effect BT alone would have. LUTE vs electrical stimulation vs LUTE plus electrical stimulation vs no treatment. Women only, all had urge incontinence.
Berghmans 2002	Possibly the same trial as Berghmans 2001. RCT - main focus is on 'lower urinary tract exercise' (LUTE) which is a combination of BT, specific PFMT, patient information, and toileting behaviour. There may be too many extra additions to the BT to be able to say what effect BT alone would have. LUTE vs electrical stimulation vs LUTE plus electrical stimulation vs no treatment. Women only, all had urge incontinence.
Borrie 1992	RCT - too many interventions combined with BT. Used behavioural interventions including - BT plus Kegel PFMT plus urge suppression techniques plus counselling on caffeine use, fluid intake and weight. Includes both women and men. Continence nurse adviser led intervention which wasa 'tailored to the individual client'.

Study	Reason for exclusion
Bryant 2001	RCT - but addresses the secondary question of 'does the addition of another intervention lead to better outcomes than BT alone'. BT plus usual caffeine intake versus BT plus decreased caffeine intake. Includes both women and men.
Burgio 1998	RCT - 'behaviour training'. Does not appear to include scheduled voiding one of the crucial components of BT - no mention of increased intervals between voids. The intervention described involves: biofeedback, urge reduction strategies including relaxation and use of pelvic muscles, reinforcement and bladder diaries. 'Behavioural training' versus oxybutynin versus placebo. Women only. Conducted between 1 July 1989 and 30 August 1995.
Burgio 2002	RCT - 'behaviour training'. Does not appear to include scheduled voiding one of the crucial components of BT - no mention of increased intervals between voids. The behavioural iintervention described involves: PFMT, urge suppression strategies, reinforcement and daily bladder diaries. The interventions compared were: behavioural therapy plus biofeedback with computer monitor versus behavioural therapy with verbal biofeedback versus a self-administered behavioural therapy course. Women only. Conducted from 1 April 1995 to 30 March 2001.
Burgio 2003	Secondary analysis of data from three excluded RCTs: Burgio 1998; Burgio 2002 and Goode 2003.
Castleden 1986	RCT. Addresses a secondary question. BT plus imipramine versus BT plus placebo. Both men and women.
Castleden 1987	RCT. Addresses a secondary question. BT plus dicyclomine versus BT plus placebo. Both men and women.
Davila 1998	RCT. Addresses the secondary question - is one form of BT better than another. Women only.
Diokno 2004	RCT. Prevention of urinary incontinence is not covered by this review. This is not one of the specified comparisons as the intervention (behavioural modification programme) involves combined education, 'bladder training', and 'PFMT' as described by the trialists versus no treatment. Not all the participants in the intervention group necessarily received BT according to the authors practicing BT was suggested 'if the intervoid interval was less than 3.5 hours. This is an ongoing four year follow up of this trial due to finish in September 2006.
Dowd 2000	CCT - alternation. Too many interventions to identify the effects of any BT component. All participants received 'education' along with a voiding diary - the intervention group also received an audiotape using cognitive strategies to encourage eg positive self statements. The 'education' was based on behavioural techniques including bladder training, PFMT, self-monitoring and fluid management.
Dowell 1997	RCT - randomised to urethral device plus bladder education leaflet versus urethral device plus PFMT with or without BT (?depending on type of incontinence) -not all women in second arm of the trial got BT. Women only.
Fonda 1995	RCT. Too many interventions - participants randomised to immediate or delayed treatment of their incontinence including some receiving BT with or without PFMT with or without lifestyle interventions with or without incontinence aids. Included both men and women.
Glazener 2004	RCT. Post prostatectomy urinary incontinence. Compares PFMT plus lifestyle plus biofeedback with or without BT versus lifestyle intervention alone. Too many interventions to be able to attribute an effect to the BT component if present. Ongoing trial.
Goode 2003	RCT - trial run concurrently with Burgio 2002. Does not appear to include scheduled voiding one of the crucial components of BT - no mention of increased intervals between voids. Participants were randomised to 'behavioural training' (consisting of PFMT plus biofeedback with home exercises, urge suppression techniques and self monitoring with bladder diaries) versus behavioural therapy plus home pelvic floor electrical stimulation versus self-administered behavioural training.

Study	Reason for exclusion
Gorman 1995	RCT. Participants randomised to methods of receiving information either computer versus booklet versus control. Participants received PFMT and/or BT (?depending on type of incontinence). Women only.
Grady 2004	RCT - Ongoing PRIDE Trial - the executive summary states 'At baseline, all women will be given a pamphlet describing a self-administered behavioral treatment program for incontinence (instructional booklet with voiding diaries, bladder training and pelvic muscle exercises).'
Gunthorpe 1994	RCT - participants randomised to two behavioural treatments - one intensive with follow up visits, verbal feedback and/or biofeedback and reminder prompts, the other treatment was a self-help program. The interventions are not described further. Awaiting reply from author. Women only.
Henalla 1991	RCT. Addresses a secondary question. BT plus terodiline versus BT vs BT plus bladder augmentation. Women only.
Herschorn 2004	RCT. Too many interventions. No formal BT. Tolterodine plus a 'health education intervention' versus tolterodine alone. The 'education' consisted of three leaflets, two giving details of tolterodine and its correct use and the third providing information about scheduled voiding, bladder stretching, PFMT, fluid manipulation, caffeine reduction and urge suppression techniques.
Holtedahl 1998	RCT - randomised to immediate versus delayed treatments. Multiple interventions including BT for mixed or urge incontinence, pads and pants, PFMT, electrical stimulation, some participants also received oestrogen. Women only.
Janssen 2001	RCT. Individual versus group therapy of PFMT with or without BT depending on voiding frequency. Not all patients received BT.
Kincade 2005	Two RCTs. No formal bladder training - only a subset of participants were encouraged to increase their voiding interval - no bladder diaries or similar were used during this intervention. Participants were randomised in the first trial to self-monitoring versus 'waiting period' proceeding to self-monitoring after 3 weeks - all participants then entered the second trial of PFMT only versus PFMT plus biofeedback versus self-monitoring.
Klarskov 1984	RCT. Addresses a secondary question. BT plus terodiline versus BT plus placebo - crossover design. Women only.
Klijn 2003	RCT. Children aged 5 to 14 years.
Locher 2002	Not RCT. Convenience sample - participants either volunteered for RCT (Burgio 1998) or sought treatment at a continence programme.
Macaulay 1987	RCT - randomisation to BT vs propantheline vs psychotherapy. Excluded from the original BT review as DI data not presented separately. The reviewers had contacted authors to see if this was available. Dr Macaulay very kindly loaned his MD thesis to one of the reviewers but no separate data available for DI. The trialists inclusion criteria were 'cystometric diagnosis of detrusor instability or sensory urgency'. Even though all types of urinary incontinence are now included in the BT review according to the paper 20% of patients in the BT group, 50% of patients in the propantheline group and ˜58% in the psychotherapy group had no incontinence before treatment even started - therefore this study is still excluded.
Madersbacher 2003	RCT - not clear that there is a BT component. For those with urge incon: extracorporeal magnetic innervation therapy (ExMI) versus anticholinergics (type not specified) plus 'behavioural treatment' (not further described). If there is a BT component there may be too many interventions to identify the effects of the BT component. This was not a specified comparison.
McFall 2000	RCT. Immediate versus delayed treatment. BT plus PFMT plus lifestyles interventions. Women only.

Study	Reason for exclusion
Nikoletti 2003	RCT. The intervention is habit retraining.
O'Brien 1991	Randomised trial - excluded because the intervention was pelvic floor muscle training, combined with bladder training depending on type of incontinence, versus control. It is therefore not possible to attribute any effect to bladder training. Both men and women included.
Park 2002	RCT - randomised to BT vs tolterodine vs BT plus tolterodine. 'Patients with overactive bladder'. Conference abstract only at the moment. No description of how patients diagnosed. Outcomes were frequency (diurnal and nocturia), 'subjective urgency score and subjective perception of bladder condition/symptom score'. No mention of incontinence - will contact authors to double check. Women only.
Prashar 1998	RCT. Randomised to health care provider - urogynaecologist versus continence advisor - both arms received BT plus PFMT with or without anticholinergic drug depending on diagnosis. Women only.
Ramsay 1995	RCT. Randomisation to diagnosis with or without urodynamics. Treatment depended on diagnosis in the urodynamics group. In those diagnosed without urodynamics the treatment was PFMT and BT and other conservative interventions. Women only.
Ramsay 1996	This trial was excluded as the participants were randomised to in-patient or out-patient care - both arms received the same treatment bladder training and PFMT. Women only.
Sampselle 2003	RCT. This is not one of the specified comparisons as the intervention (behavioural modification programme) involves combined education, 'bladder training', and 'PFMT' as described by the trialists versus no treatment. Possibly part of the Diokno 2004 trial but not enough information in this conference abstract to verify this.
Steers 2004	RCT. Ongoing BE-DRI trial due to be completed June 2006. Not clear that there is a BT component but if there is it is probable that there will be too many interventions to assess the effects of any BT component. Comparisons are tolterodine plus 'behavioural treatment' (including PFMT and other components that are not described) versus tolterodine alone.
Subak 2002	RCT - parallel groups, randomised to bladder training (Group I) or control (Group II). Excluded after correspondence with the lead author (Professor Subak - 19 May 2006). PFMT training was also taught during the six weekly sessions, not just for urge suppression but also 'the focus of the Kegel exercises was pelvic muscle strength and incontinence prophylaxis rather than to do urge suppression effectively.' Therefore the groups were actually randomised to BT plus PFMT (Group I) versus control (Group II) which was not one of the comparisons addressed by this review.
Swithinbank 1999	Fluid and caffeine manipulation. Women only.
Szonyi 1995	RCT. Addresses a secondary question. BT plus oxybutynin versus BT plus placebo. Both men and women.
Tak 2004	RCT. Education, BT, PFMT, exercises to improve mobility versus 'standard treatment'. Too many interventions to assess the effect of the BT component.
Wilson 1997	This trial was excluded as the intervention combined the two conservative approaches of PFMT with or without bladder training (depending on diagnosis). It is therefore not possible to attribute any effect to bladder training.
Wiseman 1991	RCT. Addresses a secondary question. BT plus terodiline versus BT plus placebo. Both men and women.

BT bladder training
UI urinary incontinence

DI detrusor instability
PFMT pelvic floor muscle training
LUTE lower urinary tract exercise
RCT randomised controlled trial

Characteristics of ongoing studies *[ordered by study ID]*

Mattiasson 2006

Trial name or title	A study of solifenacin with bladder training versus solifenacin alone in patients with overactive bladder : a randomised controlled trial (SOLAR).
Methods	
Participants	Aged 18 years or over, male or female with symptoms of overactive bladder with or without urge incontinence. Multicentre study in 14 European countries.
Interventions	Solifenacin succinate with or without bladder training
Outcomes	Patient diaries and other patient reported outcomes.
Starting date	No dates but were recruiting at 27 September 2006.
Contact information	Sponsored by Astellas Pharma Europe BV. Contact: Astellas Medical Affairs Europe +44 (0) 1784 419426
Notes	

MRC Trial 2003

Trial name or title	MRC Incontinence Trial, Leicester, UK
Methods	
Participants	Men and women with detrusor overactivity incontinence (n = 280)
Interventions	Randomised controlled trial with two phases. Phase 1 involves a continence nurse practitioner service for eight weeks with a follow up of 13 weeks - participants to be randomised 1:4. During phase 1 postmenopausal women may have oestrogen therapy. Phase 2 - participants with DI will be randomised to BT + placebo vs BT + oxybutynin vs BT + imipramine. Women with GSI will be randomised to PFMT vs cones vs pelvic floor awareness
Outcomes	
Starting date	Start date: April 1998. End date: Sept 2000.
Contact information	Prof Cath McGrowther
Notes	The initial Phase I report has now been published. Awaiting the publication of the Phase II report as this Phase included BT.

Sereika 2003

Trial name or title	
Methods	
Participants	Older adults, community dwelling with urinary incontinence
Interventions	Biofeedback assisted PFMT and 'strategies to prevent urine loss' - no further details. Not enough details to tell if this involves BT or not.
Outcomes	
Starting date	Described as an ongoing study in October 2003 - no further details
Contact information	
Notes	

SISTEr 2002

Trial name or title	SISTEr Trial
Methods	
Participants	
Interventions	
Outcomes	
Starting date	
Contact information	
Notes	Also involves a trial for those with persistent de novo DI at 12 weeks of drug vs behavioural intervention. Also a perioperative behavioural training programme vs usual care on post op bladder and voiding dysfunction.

BT = bladder training
PFMT = pelvic floor muscle training

DATA AND ANALYSES

Comparison 1. BLADDER TRAINING VS 'NO TREATMENT'

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1.1 Urge incontinence (any diagnosis)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. 2 months post treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
3.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 2 months post-treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: immediately after the treatment phase			Other data	No numeric data
6.1 Urge incontinence (however diagnosed)			Other data	No numeric data
6.2 Mixed incontinence (however diagnosed)			Other data	No numeric data
6.3 Stress incontinence (however diagnosed)			Other data	No numeric data
7 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): immediately after the treatment phase	2		Std. Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence	0		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence	0		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence	1		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence	2		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
9 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: immediately after the treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Nocturia, number of micturitions per week: immediately after the treatment phase			Other data	No numeric data
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			Other data	No numeric data
12 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

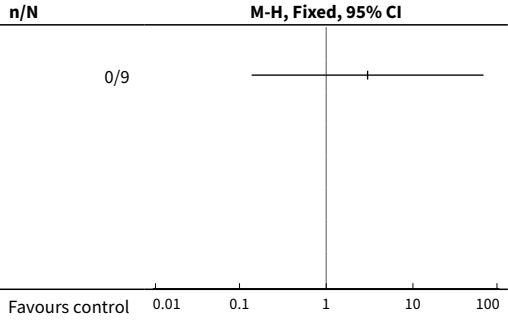
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
13 Quality of life health measure (incontinence specific): immediately after treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Quality of life health measure (incontinence specific): immediately after treatment phase - other data			Other data	No numeric data
14.4 Other incontinence (undefined or gouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			Other data	No numeric data
15 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
15.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16 Adverse events, number of participants experiencing	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
16.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
16.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
17.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
18 Cure of incontinent episodes, from urinary diary: number of participants cured: immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
18.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19 Cure of incontinent episodes, from urinary diary: number of participants cured: min. 2 months after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
19.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20 Improvement/cure of incontinent episodes, urinary diary, number of participants: immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
20.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
20.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21 Improvement/cure of incontinent episodes, urinary diary: number of participants: min. 2 months after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
21.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

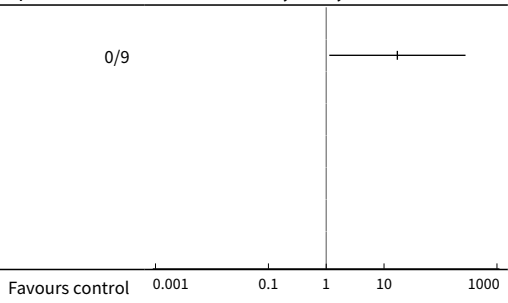
Analysis 1.2. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. 2 months post treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
1.2.1 Urge incontinence				
Lagro-Janssen 1992	1/9	0/9		3[0.14,65.16]
1.2.2 Mixed incontinence				
1.2.3 Stress incontinence				
1.2.4 Other incontinence				



Analysis 1.4. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 2 months post-treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
1.4.1 Urge incontinence				
Lagro-Janssen 1992	8/9	0/9		17[1.13,256.56]
1.4.2 Mixed incontinence				
1.4.3 Stress incontinence				
1.4.4 Other incontinence				

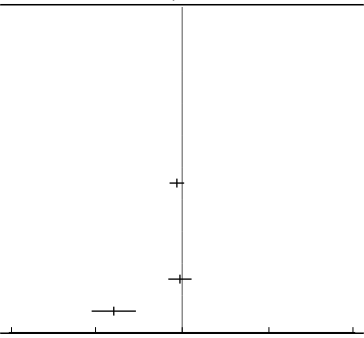


Analysis 1.6. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 6 Number of incontinent episodes per week: immediately after the treatment phase.

Number of incontinent episodes per week: immediately after the treatment phase			
Study	**At end of BT**	**'No treatment'**	**Notes**
Urge incontinence (however diagnosed)			
Fantl 1991	5 (6) n = 7	18 (14) n = 7	From urinary diary. Mean (SD)
Mixed incontinence (however diagnosed)			
Fantl 1991	7 (8) n = 8	20 (12) n = 12	From urinary diary. Mean (SD).
Stress incontinence (however diagnosed)			
Fantl 1991	10 (12) n = 45	19 (19) n = 43	From urinary diary. Mean (SD).

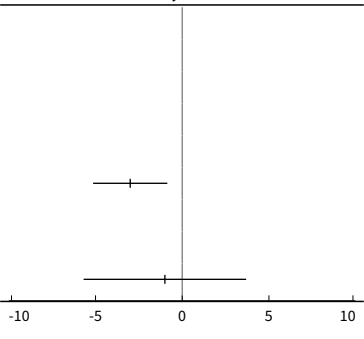
Analysis 1.8. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 8 Number of micturitions per week (daytime): immediately after the treatment phase.

Study or subgroup	Bladder training		Control		Std. Mean Difference	Std. Mean Difference
	N	Mean(SD)	N	Mean(SD)	Fixed, 95% CI	Fixed, 95% CI
1.8.1 Urge incontinence						
1.8.2 Mixed incontinence						
1.8.3 Stress incontinence						
Fantl 1991	45	51 (11)	43	56 (20)		-0.31[-0.73,0.11]
1.8.4 Other incontinence						
Fantl 1991	15	56 (20)	20	60 (35)		-0.13[-0.8,0.54]
Yoon 2003	19	72.8 (12.6)	12	121.8 (11.2)		-3.95[-5.22,-2.67]



Analysis 1.10. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 10 Nocturia, number of micturitions per week: immediately after the treatment phase.

Study or subgroup	Bladder training		Control		Mean Difference	Mean Difference
	N	Mean(SD)	N	Mean(SD)	Fixed, 95% CI	Fixed, 95% CI
1.10.1 Urge incontinence						
1.10.2 Mixed incontinence						
1.10.3 Stress incontinence						
Fantl 1991	45	5 (4)	43	8 (6)		-3[-5.14,-0.86]
1.10.4 Other incontinence						
Fantl 1991	15	8 (7)	20	9 (7)		-1[-5.69,3.69]



Analysis 1.11. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 11 Nocturia, number of micturitions per week: immediately after the treatment phase.

Nocturia, number of micturitions per week: immediately after the treatment phase

Study	Bladder training	Control	Notes
Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			
Yoon 2003	Mean (SD) 4.9 (5.6) n = 19	Mean (SD) 13.3 (7.7) n = 12	Taken from 48 hour urinary diary (reference given - Wyman 1988)

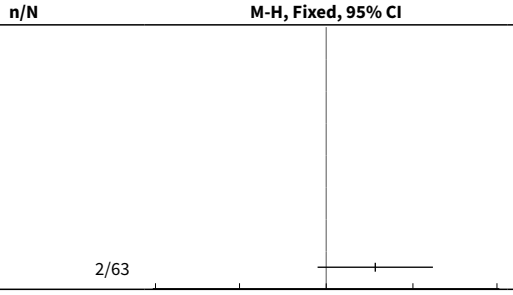
Analysis 1.14. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 14 Quality of life health measure (incontinence specific): immediately after treatment phase - other data.

Quality of life health measure (incontinence specific): immediately after treatment phase - other data

Study	Bladder training	No treatment	Notes
Other incontinence (undefined or gouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			
Fantl 1991	0.25 (0.29) n = 39	0.50 (0.59) n = 39	Used Incontinence Impact Questionnaire, composite score. Mean (SD). The lower the score the less bothersome the incontinence, four point rating scale

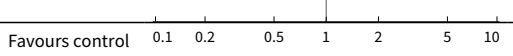
Analysis 1.18. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 18 Cure of incontinent episodes, from urinary diary: number of participants cured: immediately after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
1.18.1 Urge incontinence				
1.18.2 Mixed incontinence				
1.18.3 Stress incontinence				
1.18.4 Other incontinence				
Fantl 1991	7/60	2/63		3.68[0.79,16.99]



Analysis 1.20. Comparison 1 BLADDER TRAINING VS 'NO TREATMENT', Outcome 20 Improvement/ cure of incontinent episodes, urinary diary, number of participants: immediately after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
1.20.1 Urge incontinence				
1.20.2 Mixed incontinence				
1.20.3 Stress incontinence				
1.20.4 Other incontinence				



Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
Fantl 1991	45/60	15/63		3.15[1.98,5.02]

Favours control — Favours BT

Comparison 2. BLADDER TRAINING VS ANTICHOLINERGIC DRUGS

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. two months post treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
3.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. two months post-treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
4.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: immediately after the treatment phase - other data			Other data	No numeric data
6.1 Urge incontinence (however diagnosed)			Other data	No numeric data
6.2 Mixed incontinence (however diagnosed)			Other data	No numeric data
6.3 Stress incontinence (however diagnosed)			Other data	No numeric data
6.4 Other incontinence (undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incon)			Other data	No numeric data
7 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): immediately after the treatment phase	1		Std. Mean Difference (IV, Fixed, 95% CI)	Totals not selected

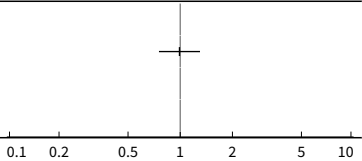
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
8.1 Urge incontinence (however diagnosed)	0		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Nocturia, number of micturitions per week: immediately after the treatment phase			Other data	No numeric data
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			Other data	No numeric data
12 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Quality of life health measure (incontinence specific): immediately after treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15 Adverse events, number of participants experiencing	2		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
15.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
16.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

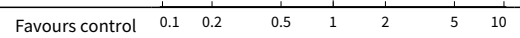
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
16.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17 Cure of daytime frequency: number of participants cured (from daily bladder chart)	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
17.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18 Cure of nocturia: number of participants cured (from daily bladder chart)	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
18.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19 Quality of life measure (general, physical)	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
19.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
20 Quality of life measure (general, mental)	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
20.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Analysis 2.1. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
2.1.1 Urge incontinence				
Colombo 1995	27/37	28/38		0.99[0.75,1.3]
2.1.2 Mixed incontinence				

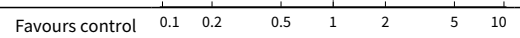


Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
2.1.3 Stress incontinence				
2.1.4 Other incontinence				



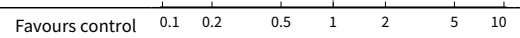
Analysis 2.2. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. two months post treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
2.2.1 Urge incontinence				
Colombo 1995	26/27	16/28		1.69[1.21,2.34]
2.2.2 Mixed incontinence				
2.2.3 Stress incontinence				
2.2.4 Other incontinence				



Analysis 2.3. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
2.3.1 Urge incontinence				
Colombo 1995	34/37	31/38		1.13[0.94,1.35]
2.3.2 Mixed incontinence				
2.3.3 Stress incontinence				
2.3.4 Other incontinence				

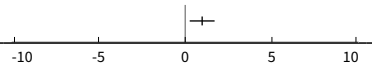


Analysis 2.6. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 6 Number of incontinent episodes per week: immediately after the treatment phase - other data.

Number of incontinent episodes per week: immediately after the treatment phase - other data			
Study	**Bladder training**	**Anticholinergic**	**Notes**
Other incontinence (undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incon)			
Herbison 2004	5.6 (5.6) n = 18	0.7 (4.9) n = 16	Mean (SD). Measured using voiding diaries - not stated how many days. Anticholinergic: Oxybutynin

Analysis 2.8. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 8 Number of micturitions per week (daytime): immediately after the treatment phase.

Study or subgroup	Bladder training N	Bladder training Mean(SD)	Anticholinergic N	Anticholinergic Mean(SD)	Std. Mean Difference Fixed, 95% CI	Std. Mean Difference Fixed, 95% CI
2.8.1 Urge incontinence (however diagnosed)						
2.8.2 Mixed incontinence (however diagnosed)						
2.8.3 Stress incontinence (however diagnosed)						
2.8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	18	46.9 (2.8)	16	44.1 (2.8)		0.98[0.26,1.69]



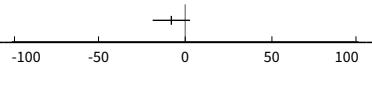
Analysis 2.11. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 11 Nocturia, number of micturitions per week: immediately after the treatment phase.

Nocturia, number of micturitions per week: immediately after the treatment phase

Study	Bladder training	Anticholinergic	Notes
Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			
Herbison 2004	Mean (SD) 7.0 (6.3) n = 18	Mean (SD) 6.3 (4.9) n = 16	Taken from bladder diaries - not stated how long used for.

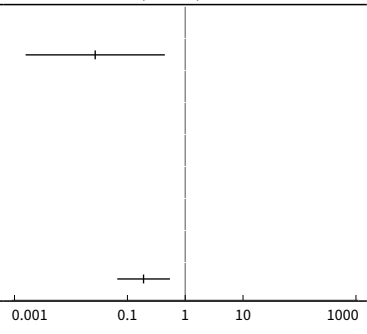
Analysis 2.13. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 13 Quality of life health measure (incontinence specific): immediately after treatment phase.

Study or subgroup	Bladder training N	Bladder training Mean(SD)	Anticholinergic N	Anticholinergic Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
2.13.1 Urge incontinence (however diagnosed)						
2.13.2 Mixed incontinence (however diagnosed)						
2.13.3 Stress incontinence (however diagnosed)						
2.13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	18	82 (16)	16	90 (16)		-8[-18.77,2.77]



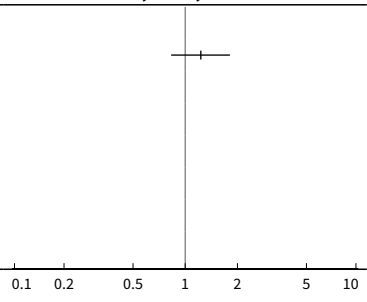
Analysis 2.15. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 15 Adverse events, number of participants experiencing.

Study or subgroup	Bladder training n/N	Anticholinergic n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
2.15.1 Urge incontinence				
Colombo 1995	0/37	18/38		0.03[0,0.44]
2.15.2 Mixed incontinence				
2.15.3 Stress incontinence				
2.15.4 Other incontinence				
Herbison 2004	3/18	14/16		0.19[0.07,0.54]



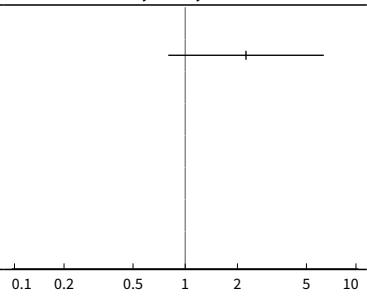
Analysis 2.17. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 17 Cure of daytime frequency: number of participants cured (from daily bladder chart).

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
2.17.1 Urge incontinence				
Colombo 1995	20/29	18/32		1.23[0.83,1.81]
2.17.2 Mixed incontinence				
2.17.3 Stress incontinence				
2.17.4 Other incontinence				



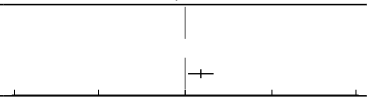
Analysis 2.18. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 18 Cure of nocturia: number of participants cured (from daily bladder chart).

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
2.18.1 Urge incontinence				
Colombo 1995	11/18	3/11		2.24[0.8,6.3]
2.18.2 Mixed incontinence				
2.18.3 Stress incontinence				
2.18.4 Other incontinence				



Analysis 2.19. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 19 Quality of life measure (general, physical).

Study or subgroup	Bladder training N	Bladder training Mean(SD)	Anticholinergic N	Anticholinergic Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
2.19.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	18	51 (8)	16	42 (13)		9[1.64,16.36]



Analysis 2.20. Comparison 2 BLADDER TRAINING VS ANTICHOLINERGIC DRUGS, Outcome 20 Quality of life measure (general, mental).

Study or subgroup	Bladder training N	Bladder training Mean(SD)	Anticholinergic N	Anticholinergic Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
2.20.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	18	50 (10)	16	51 (10)		-1[-7.73,5.73]

Comparison 3. BLADDER TRAINING VS ADRENERGIC DRUGS

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. one month post treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
3.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 1 month post-treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
6.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
7 Number of micturitions per week (daytime): immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
11 Quality of life health measure (incontinence specific): immediately after treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
11.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Adverse events, number of participants experiencing	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Comparison 4. BLADDER TRAINING VS OTHER DRUGS (NON-ANTICHOLINERGIC NON-ADRENERGIC DRUGS)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. two months post treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
3.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 1 month post-treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
4.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
6.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7 Number of micturitions per week (daytime): immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

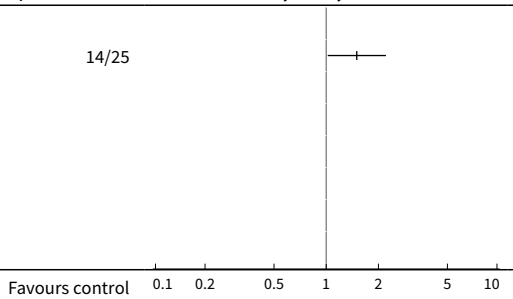
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
11 Quality of life health measure (incontinence specific): immediately after treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
11.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Adverse events, number of participants experiencing	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
14.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15 Cure of daytime frequency symptoms: number of participants cured	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
15.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16 Cure of nocturia: number of participants cured (from daily bladder chart)	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
16.1 Urge incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.4 Other incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

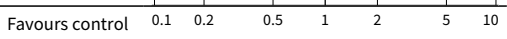
Analysis 4.1. Comparison 4 BLADDER TRAINING VS OTHER DRUGS (NON-ANTICHOLINERGIC NON-ADRENERGIC DRUGS), Outcome 1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
4.1.1 Urge incontinence				
Jarvis 1981	21/25	14/25		1.5[1.02,2.21]
4.1.2 Mixed incontinence				
4.1.3 Stress incontinence				
4.1.4 Other incontinence				



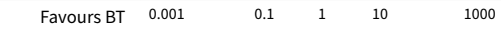
Analysis 4.2. Comparison 4 BLADDER TRAINING VS OTHER DRUGS (NON-ANTICHOLINERGIC NON-ADRENERGIC DRUGS), Outcome 2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. two months post treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
4.2.1 Urge incontinence				
Jarvis 1981	21/25	14/25		1.5[1.02,2.21]
4.2.2 Mixed incontinence				
4.2.3 Stress incontinence				
4.2.4 Other incontinence				



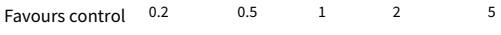
Analysis 4.13. Comparison 4 BLADDER TRAINING VS OTHER DRUGS (NON-ANTICHOLINERGIC NON-ADRENERGIC DRUGS), Outcome 13 Adverse events, number of participants experiencing.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
4.13.1 Urge incontinence				
Jarvis 1981	0/25	14/25		0.03[0,0.55]
4.13.2 Mixed incontinence				
4.13.3 Stress incontinence				
4.13.4 Other incontinence				



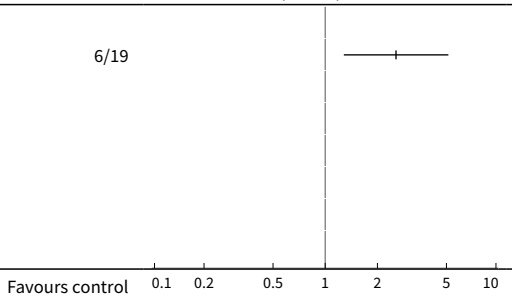
Analysis 4.15. Comparison 4 BLADDER TRAINING VS OTHER DRUGS (NON-ANTICHOLINERGIC NON-ADRENERGIC DRUGS), Outcome 15 Cure of daytime frequency symptoms: number of participants cured.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
4.15.1 Urge incontinence				
Jarvis 1981	19/25	13/25		1.46[0.94,2.26]
4.15.2 Mixed incontinence				
4.15.3 Stress incontinence				
4.15.4 Other incontinence				



Analysis 4.16. Comparison 4 BLADDER TRAINING VS OTHER DRUGS (NON-ANTICHOLINERGIC NON-ADRENERGIC DRUGS), Outcome 16 Cure of nocturia: number of participants cured (from daily bladder chart).

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
4.16.1 Urge incontinence				
Jarvis 1981	17/21	6/19		2.56[1.28,5.13]
4.16.2 Mixed incontinence				
4.16.3 Stress incontinence				
4.16.4 Other incontinence				



Comparison 5. BLADDER TRAINING VS OTHER BEHAVIOURAL/PHYSICAL/PSYCHOLOGICAL TREATMENTS

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. one month post treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
3.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. two months post-treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: immediately after the treatment phase - other data			Other data	No numeric data
6.1 Urge incontinence (however diagnosed)			Other data	No numeric data
6.2 Mixed incontinence (however diagnosed)			Other data	No numeric data
6.3 Stress incontinence (however diagnosed)			Other data	No numeric data
6.4 Other incontinence (undefined or grouping of 2 or more diagnoses:urge and/or stress and/or mixed incontinence)			Other data	No numeric data
7 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of incontinent episodes per week: minimum of one month after the treatment phase - other data			Other data	No numeric data
8.1 Other incontinence (undefined or grouping of 2 or more diagnoses:urge and/or stress and/or mixed incontinence)			Other data	No numeric data
9 Number of micturitions per week (daytime): immediately after the treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
11.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

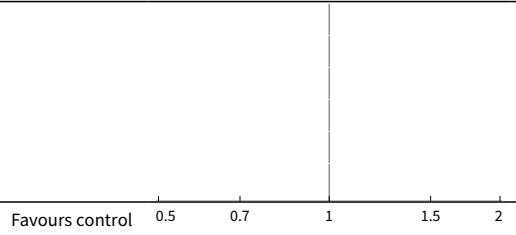
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
11.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12 Nocturia, number of micturitions per week: immediately after treatment phase			Other data	No numeric data
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			Other data	No numeric data
13 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Quality of life health measure (incontinence specific): immediately after treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15 Quality of life health measure (incontinence specific): minimum of two months after the treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
15.1 Urge incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.2 Mixed incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.3 Stress incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
15.4 Other incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16 Adverse events, number of participants experiencing	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
16.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
17.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
18 Cure of incontinent episodes, from urinary diary: number of participants cured: immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
18.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19 Cure of incontinent episodes, from urinary diary: number of participants cured: min. 2 months after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
19.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

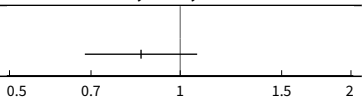
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
19.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20 Cure of incontinent episodes: number of participants cured: mean 3.2 years follow up	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
20.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21 Participant satisfaction with intervention: number satisfied or very satisfied: immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
21.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
21.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
22 Participant satisfaction with intervention: number satisfied or very satisfied: min. 2 months after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
22.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
22.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
22.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
22.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Analysis 5.3. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
5.3.1 Urge incontinence				
5.3.2 Mixed incontinence				
5.3.3 Stress incontinence				



Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
5.3.4 Other incontinence				
Wyman 1998	43/66	48/63		0.86[0.68,1.07]



Analysis 5.4. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. two months post-treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
5.4.1 Urge incontinence				
5.4.2 Mixed incontinence				
5.4.3 Stress incontinence				
5.4.4 Other incontinence				
Wyman 1998	37/60	45/64		0.88[0.68,1.13]

Analysis 5.6. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 6 Number of incontinent episodes per week: immediately after the treatment phase - other data.

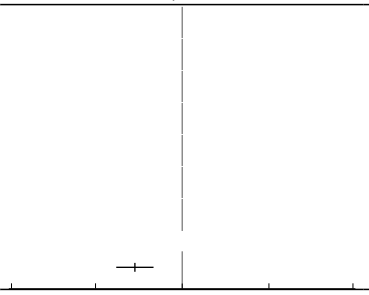
Number of incontinent episodes per week: immediately after the treatment phase - other data			
Study	**At end of BT**	**At end of PFMT/biofe**	**Notes**
Stress incontinence (however diagnosed)			
Wyman 1998	12.5 (8.3) n = 48	8.7 (10.0) n = 46	From urinary diary. Mean (SD).
Other incontinence (undefined or grouping of 2 or more diagnoses:urge and/or stress and/or mixed incontinence)			
Wyman 1998	6.2 (9.1) n = 19	11.9 (12.7) n = 18	From urinary diary. Mean (SD).

Analysis 5.8. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 8 Number of incontinent episodes per week: minimum of one month after the treatment phase - other data.

Number of incontinent episodes per week: minimum of one month after the treatment phase - other data			
Study	**BT at 3 months FU**	**PFMT/bio at 3 mon FU**	**Notes**
Other incontinence (undefined or grouping of 2 or more diagnoses:urge and/or stress and/or mixed incontinence)			
Wyman 1998	10.0 (12.0) n = 62	9.4 (14.0) n = 65	From urinary diary. Mean (SD).

Analysis 5.9. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 9 Number of micturitions per week (daytime): immediately after the treatment phase.

Study or subgroup	Bladder training N	Bladder training Mean(SD)	PFMT plus Biofeed N	PFMT plus Biofeed Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
5.9.1 Urge incontinence (however diagnosed)						
5.9.2 Mixed incontinence (however diagnosed)						
5.9.3 Stress incontinence (however diagnosed)						
5.9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Yoon 2003	19	72.8 (12.6)	13	100.1 (16.8)		-27.3[-38.05,-16.55]



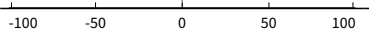
Analysis 5.12. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 12 Nocturia, number of micturitions per week: immediately after treatment phase.

Nocturia, number of micturitions per week: immediately after treatment phase

Study	Bladder training	PFMT plus biofeedbac	Notes
Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			
Yoon 2003	Mean (SD) 4.9 (5.6) n = 19	Mean (SD) 13.3 (7.7) n = 13	Taken from 48 hour urinary diaries - reference given Wyman 1988.

Analysis 5.14. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 14 Quality of life health measure (incontinence specific): immediately after treatment phase.

Study or subgroup	Bladder training N	Bladder training Mean(SD)	Control N	Control Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
5.14.1 Urge incontinence						
5.14.2 Mixed incontinence						
5.14.3 Stress incontinence						
Wyman 1998	47	99.2 (54.4)	45	81.2 (39.6)		18[-1.38,37.38]
5.14.4 Other incontinence						
Wyman 1998	20	86.8 (54.8)	18	114.8 (70.3)		-28[-68.39,12.39]

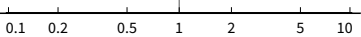


Analysis 5.15. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 15 Quality of life health measure (incontinence specific): minimum of two months after the treatment phase.

Study or subgroup	Bladder training		Control		Mean Difference	Mean Difference
	N	Mean(SD)	N	Mean(SD)	Fixed, 95% CI	Fixed, 95% CI
5.15.1 Urge incontinence						
5.15.2 Mixed incontinence						
5.15.3 Stress incontinence						
5.15.4 Other incontinence						
Wyman 1998	60	91.7 (55)	64	85 (52.4)		6.7[-12.23,25.63]

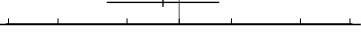
Analysis 5.18. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 18 Cure of incontinent episodes, from urinary diary: number of participants cured: immediately after treatment.

Study or subgroup	Bladder training	Control	Risk Ratio	Risk Ratio
	n/N	n/N	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI
5.18.1 Urge incontinence				
5.18.2 Mixed incontinence				
5.18.3 Stress incontinence				
5.18.4 Other incontinence				
Wyman 1998	12/68	8/64		1.41[0.62,3.23]



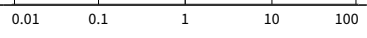
Analysis 5.19. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 19 Cure of incontinent episodes, from urinary diary: number of participants cured: min. 2 months after treatment.

Study or subgroup	Bladder training	Control	Risk Ratio	Risk Ratio
	n/N	n/N	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI
5.19.1 Urge incontinence				
5.19.2 Mixed incontinence				
5.19.3 Stress incontinence				
5.19.4 Other incontinence				
Wyman 1998	10/62	13/65		0.81[0.38,1.7]



Analysis 5.20. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 20 Cure of incontinent episodes: number of participants cured: mean 3.2 years follow up.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
5.20.1 Urge incontinence				
5.20.2 Mixed incontinence				
5.20.3 Stress incontinence				
5.20.4 Other incontinence				
Wyman 1998	4/45	1/52		4.62[0.54,39.87]



Analysis 5.21. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 21 Participant satisfaction with intervention: number satisfied or very satisfied: immediately after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
5.21.1 Urge incontinence				
5.21.2 Mixed incontinence				
5.21.3 Stress incontinence				
5.21.4 Other incontinence				
Wyman 1998	48/66	56/63		0.82[0.69,0.97]

Analysis 5.22. Comparison 5 BLADDER TRAINING VS OTHER BEHAVIOURAL/ PHYSICAL/PSYCHOLOGICAL TREATMENTS, Outcome 22 Participant satisfaction with intervention: number satisfied or very satisfied: min. 2 months after treatment.

Study or subgroup	Bladder training n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
5.22.1 Urge incontinence				
5.22.2 Mixed incontinence				
5.22.3 Stress incontinence				
5.22.4 Other incontinence				
Wyman 1998	47/60	53/64		0.95[0.8,1.13]

Comparison 6. BLADDER TRAINING VS SURGICAL MANAGEMENT

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. one month post treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
3.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 1 month post-treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
4.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
6.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7 Number of micturitions per week (daytime): immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Quality of life health measure (incontinence specific): immediately after treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
11.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Adverse events, number of participants experiencing	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Comparison 7. BLADDER TRAINING VS MEDICAL DEVICES

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. one month post treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
3.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 1 month post-treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
6 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
6.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7 Number of micturitions per week (daytime): immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
10 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Quality of life health measure (incontinence specific): immediately after treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
11.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Adverse events, number of participants experiencing	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
14 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Comparison 8. BLADDER TRAINING VS OTHER INTERVENTIONS

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. one month post treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
3.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 1 month post-treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
6.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7 Number of micturitions per week (daytime): immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Quality of life health measure (incontinence specific): immediately after treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
11.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Adverse events, number of participants experiencing	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Comparison 9. BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. one month post treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
3.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 1 month post-treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
4.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per 24 hours: immediately after the treatment phase			Other data	No numeric data
6.1 Urge incontinence (however diagnosed)			Other data	No numeric data
6.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			Other data	No numeric data
7 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): immediately after the treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
9 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Nocturia, number of micturitions per week: immediately after the treatment phase			Other data	No numeric data
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			Other data	No numeric data
12 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Quality of life health measure (incontinence specific): immediately after treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Quality of life health measure (incontinence specific): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15 Adverse events, number of participants experiencing	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
15.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
16.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
17 Quality of life measure (general, physical)	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
17.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
18 Quality of life measure (general, mental)	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of partici-pants	Statistical method	Effect size
18.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

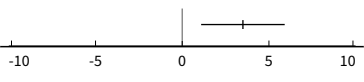
Analysis 9.6. Comparison 9 BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE, Outcome 6 Number of incontinent episodes per 24 hours: immediately after the treatment phase.

Number of incontinent episodes per 24 hours: immediately after the treatment phase

Study	BT plus Antichol	Antichol only	Notes
Urge incontinence (however diagnosed)			
Mattiasson 2001	Median = 0.3 Range = (0.0, 14.7) n = 141	Median = 0.3 Range = (0.0, 14.7) n = 160	Taken from 3 day voiding diaries.
Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			
Herbison 2004	Mean (SD) 0.6 (0.8) n = 12	Mean (SD) 0.1 (0.7) n = 16	From bladder diaries - not stated how long used for.

Analysis 9.8. Comparison 9 BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE, Outcome 8 Number of micturitions per week (daytime): immediately after the treatment phase.

Study or subgroup	BT plus antichol N	BT plus antichol Mean(SD)	Antichol alone N	Antichol alone Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
9.8.1 Urge incontinence (however diagnosed)						
9.8.2 Mixed incontinence (however diagnosed)						
9.8.3 Stress incontinence (however diagnosed)						
9.8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	12	47.6 (3.5)	16	44.1 (2.8)		3.5[1.09,5.91]



Analysis 9.11. Comparison 9 BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE, Outcome 11 Nocturia, number of micturitions per week: immediately after the treatment phase.

Nocturia, number of micturitions per week: immediately after the treatment phase

Study	BT plus antichol	Antichol alone	Notes
Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)			
Herbison 2004	Mean (SD) 4.9 (3.5) n = 12	Mean (SD) 6.3 (4.9) n = 16	from bladder diaries - not stated how long.

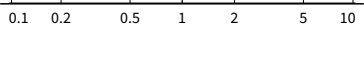
Analysis 9.13. Comparison 9 BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE, Outcome 13 Quality of life health measure (incontinence specific): immediately after treatment phase.

Study or subgroup	BT plus antichol N	BT plus antichol Mean(SD)	Antichol only N	Antichol only Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
9.13.1 Urge incontinence (however diagnosed)						
9.13.2 Mixed incontinence (however diagnosed)						
9.13.3 Stress incontinence (however diagnosed)						
9.13.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	12	92 (7)	16	90 (16)		2[-6.78,10.78]

Favours antich only — Favours antich + BT

Analysis 9.15. Comparison 9 BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE, Outcome 15 Adverse events, number of participants experiencing.

Study or subgroup	BT plus Anticholiner n/N	Anticholinergic only n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
9.15.1 Urge incontinence (however diagnosed)				
9.15.2 Mixed incontinence (however diagnosed)				
9.15.3 Stress incontinence (however diagnosed)				
9.15.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)				
Herbison 2004	10/12	14/16		0.95[0.7,1.3]



Favours BT plus anti — Favours antichol onl

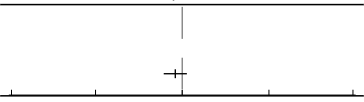
Analysis 9.17. Comparison 9 BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE, Outcome 17 Quality of life measure (general, physical).

Study or subgroup	BT plus antichol N	BT plus antichol Mean(SD)	Antichol alone N	Antichol alone Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
9.17.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	12	48 (8)	16	42 (13)		6[-1.81,13.81]

Favours anti only — Favours BT plus anti

Analysis 9.18. Comparison 9 BLADDER TRAINING PLUS PHARMACOLOGICAL TREATMENT VS PHARMACOLOGICAL TREATEMENT ALONE, Outcome 18 Quality of life measure (general, mental).

Study or subgroup	BT plus antichol N	BT plus antichol Mean(SD)	Anticholinergic only N	Anticholinergic only Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
9.18.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)						
Herbison 2004	12	47 (8)	16	51 (10)		-4[-10.67,2.67]



Comparison 10. BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Participant's perception of cure: number cured vs improved, unchanged or worse: Immediately after treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
1.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
1.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Participant's perception of cure: number cured vs improved, unchanged or worse: min. one month post treatment	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
3.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
3.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 2 months post-treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
4.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
4.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
5 Number of incontinent episodes per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
5.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
5.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Number of incontinent episodes per week: immediately after the treatment phase - other data			Other data	No numeric data
6.1 Stress incontinence (however diagnosed)			Other data	No numeric data
6.4 Other incontinence (undefined or grouping of 2 or more diagnoses:urge and/or stress and/or mixed incontinence)			Other data	No numeric data
7 Number of incontinent episodes per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
7.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
7.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
7.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8 Number of micturitions per week (daytime): immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
8.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Number of micturitions per week (daytime): minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
9.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
9.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10 Nocturia, number of micturitions per week: immediately after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
10.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]

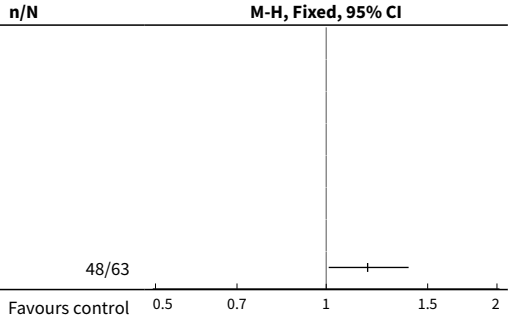
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
10.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
10.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11 Nocturia, number of micturitions per week: minimum of one month after the treatment phase	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
11.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
11.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12 Quality of life health measure (incontinence specific): immediately after treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
12.1 Urge incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.2 Mixed incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.3 Stress incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
12.4 Other incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13 Quality of life health measure (incontinence specific): minimum of two months after the treatment phase	1		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
13.1 Urge incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.2 Mixed incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.3 Stress incontinence	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
13.4 Other incontinence	1		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
14 Adverse events, number of participants experiencing	0		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
14.1 Urge incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
14.2 Mixed incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.3 Stress incontinence (however diagnosed)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
14.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
15 Cost of intervention	0		Mean Difference (IV, Fixed, 95% CI)	Totals not selected
15.1 Urge incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.2 Mixed incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.3 Stress incontinence (however diagnosed)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
15.4 Other incontinence(undefined or grouping of 2 or more diagnoses: urge and/or stress and/or mixed incontinence)	0		Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
16 Cure of incontinent episodes, from urinary diary: number of participants cured: immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
16.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
16.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17 Cure of incontinent episodes, from urinary diary: number of participants cured: min. 2 months after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
17.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
17.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18 Cure of incontinent episodes: number of participants cured: mean 3.2 years follow up	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
18.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
18.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19 Participant satisfaction with intervention: number satisfied or very satisfied: immediately after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
19.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
19.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20 Participant satisfaction with intervention: number satisfied or very satisfied: min. 2 months after treatment	1		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
20.1 Urge incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.2 Mixed incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.3 Stress incontinence	0		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
20.4 Other incontinence	1		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

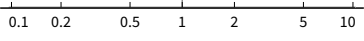
Analysis 10.3. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 3 Participant's perception of improvement: number improved, cured vs unchanged, worse: immediate after treatment.

Study or subgroup	BT+non-pharmacol n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
10.3.1 Urge incontinence				
10.3.2 Mixed incontinence				
10.3.3 Stress incontinence				
10.3.4 Other incontinence				
Wyman 1998	55/61	48/63		1.18[1.01,1.39]



Analysis 10.4. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 4 Participant's perception of improvement: improved, cured vs unchanged, worse: min. 2 months post-treatment.

Study or subgroup	BT+non-pharmacol n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
10.4.1 Urge incontinence				
10.4.2 Mixed incontinence				
10.4.3 Stress incontinence				
10.4.4 Other incontinence				
Wyman 1998	44/58	45/64		1.08[0.87,1.34]

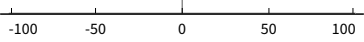


Analysis 10.6. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 6 Number of incontinent episodes per week: immediately after the treatment phase - other data.

Study	At end of BT plus PF	At end of PFMT alone	Notes
Number of incontinent episodes per week: immediately after the treatment phase - other data			
Stress incontinence (however diagnosed)			
Wyman 1998	9.2 (11.5) n = 42	8.7 (10.0) n = 46	From urinary diary. Mean (SD).
Other incontinence (undefined or grouping of 2 or more diagnoses:urge and/or stress and/or mixed incontinence)			
Wyman 1998	5.8 (9.5) n = 16	11.9 (12.7) n = 18	From urinary diary. Mean (SD).

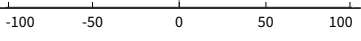
Analysis 10.12. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 12 Quality of life health measure (incontinence specific): immediately after treatment phase.

Study or subgroup	BT+non-pharmacol N	Mean(SD)	Control N	Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
10.12.1 Urge incontinence						
10.12.2 Mixed incontinence						
10.12.3 Stress incontinence						
Wyman 1998	44	63.2 (49.2)	45	81.2 (39.6)		-18[-36.58,0.58]
10.12.4 Other incontinence						
Wyman 1998	17	67.6 (48.5)	18	114.8 (70.3)		-47.2[-87.03,-7.37]



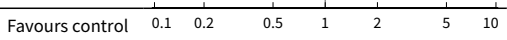
Analysis 10.13. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 13 Quality of life health measure (incontinence specific): minimum of two months after the treatment phase.

Study or subgroup	BT+non-pharmacol N	BT+non-pharmacol Mean(SD)	Control N	Control Mean(SD)	Mean Difference Fixed, 95% CI	Mean Difference Fixed, 95% CI
10.13.1 Urge incontinence						
10.13.2 Mixed incontinence						
10.13.3 Stress incontinence						
10.13.4 Other incontinence						
Wyman 1998	58	72.8 (50.4)	64	85 (52.4)		-12.2[-30.45,6.05]



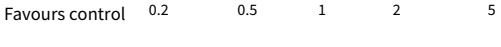
Analysis 10.16. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 16 Cure of incontinent episodes, from urinary diary: number of participants cured: immediately after treatment.

Study or subgroup	BT + non-pharmacol n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
10.16.1 Urge incontinence				
10.16.2 Mixed incontinence				
10.16.3 Stress incontinence				
10.16.4 Other incontinence				
Wyman 1998	19/61	8/64		2.49[1.18,5.26]

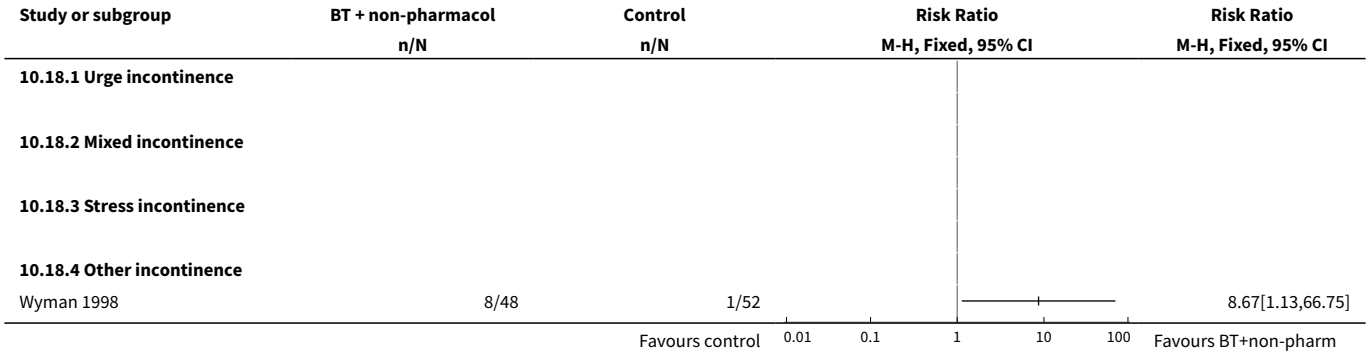


Analysis 10.17. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 17 Cure of incontinent episodes, from urinary diary: number of participants cured: min. 2 months after treatment.

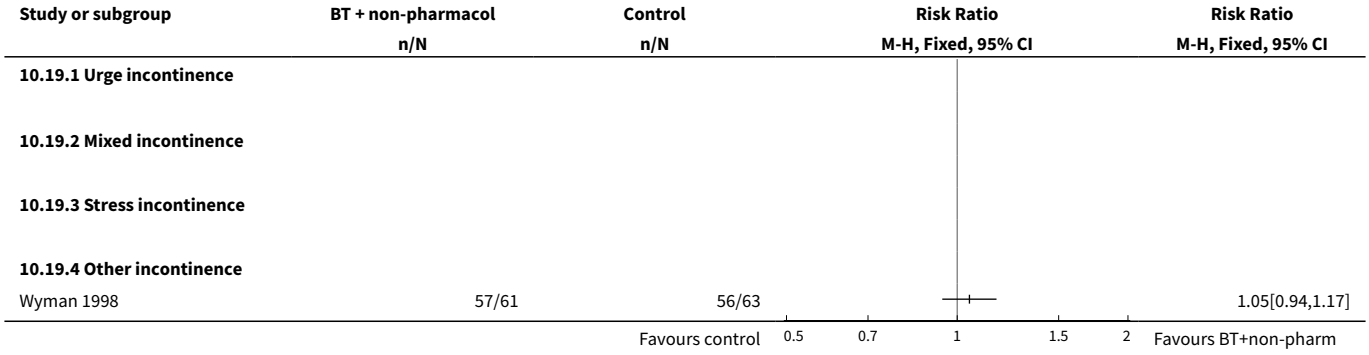
Study or subgroup	BT + non-pharmacol n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Risk Ratio M-H, Fixed, 95% CI
10.17.1 Urge incontinence				
10.17.2 Mixed incontinence				
10.17.3 Stress incontinence				
10.17.4 Other incontinence				
Wyman 1998	16/60	13/65		1.33[0.7,2.53]



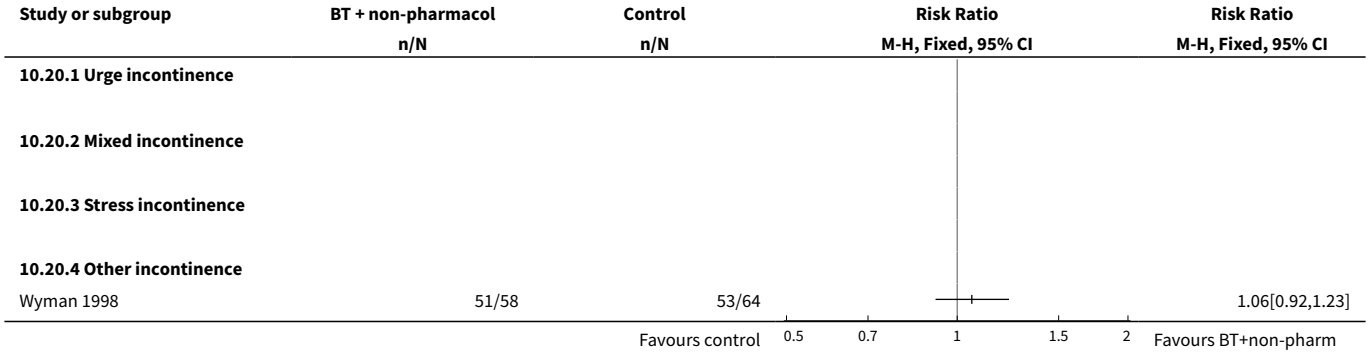
Analysis 10.18. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 18 Cure of incontinent episodes: number of participants cured: mean 3.2 years follow up.



Analysis 10.19. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 19 Participant satisfaction with intervention: number satisfied or very satisfied: immediately after treatment.



Analysis 10.20. Comparison 10 BLADDER TRAINING PLUS NON-PHARMACOLOGICAL TREATMENT VS NON-PHARMACOLOGICAL TREATMENT ALONE, Outcome 20 Participant satisfaction with intervention: number satisfied or very satisfied: min. 2 months after treatment.



WHAT'S NEW

Date	Event	Description
16 September 2008	Amended	Converted to new review format.

HISTORY

Protocol first published: Issue 3, 1997
Review first published: Issue 4, 1998

Date	Event	Description
14 November 2006	New search has been performed	Update - conclusions unchanged
26 November 2003	New citation required and conclusions have changed	Substantive amendment
26 October 1999	New search has been performed	Updated - conclusions not changed

CONTRIBUTIONS OF AUTHORS

Update Issue 1, 2007: Brenda Roe and Sheila Wallace both independently assessed the potentially relevant abstracts and extracted the data. Sheila entered the data and made revisions to the text and Brenda, Kate Williams and Mary Palmer commented on the text.
Update Issue 1, 2004:
A fourth reviewer (SAW) joined the team. She reassessed all the potentially eligible studies and re-extracted all data from the already included trials. New trials for the update were double data extracted by a second reviewer. All four reviewers considered eligibility of trials. One (SAW) reviewer updated the text and entered the data. These were checked by the other reviewers, whose additional comments and edits were then incorporated.
Original version of the review and first update:
All three reviewers assessed the methodological quality of the trials independently and undertook the data extraction. This information was then collated and checked by the lead reviewer for agreement and in the few instances where this did not occur, consensus was reached. The lead reviewer updated the text and entered the data. These were checked by the other two reviewers, whose additional comments and edits were then incorporated.

DECLARATIONS OF INTEREST

None known.

SOURCES OF SUPPORT

Internal sources

- Chief Scientist Office, Scottish Executive Health Department, UK.
- Health Services Research Unit, University of Aberdeen, UK.

External sources

- NHS Executive R& D Programme, UK.

NOTES

For update Issue 1, 2007
The skewed data originally present in Additional Tables 1 and 2 have been moved and are presented as 'Other Data' in the main tables. Two new trials (Heribson 2004; Yoon 2003) have been added and new data are now included for one of the already included tri-

als (Mattiasson 2001). Three new ongoing trials have been added. 24 reports of 19 new studies were assessed and excluded from the review mainly due to the combination of too many other treatments along with the bladder training. Eight additional reports of already excluded studies were added.

For update Issue 1, 2004
This update of the bladder training review has a slightly amended remit. It has gathered evidence to try to answer the questions:
- does bladder training work;
and
- does the addition of bladder training to another treatment work better than that treatment alone?

This means that three of the previously included trials (Davila 1998; Szonyi 1995; Wiseman 1991) are now excluded as they address secondary questions outside our remit: Three of the previously included trials (Davila 1998; Szonyi 1995; Wiseman 1991) are now excluded, as they address secondary questions not now covered by this review: one (Davila 1998) compared different types of bladder training; the other two trials (Szonyi 1995; Wiseman 1991) were assessing the value of adding drugs to bladder training rather than the value of bladder training itself. Sixteen reports of six new trials have been added (Colombo 1995; Dougherty 1998; Lentz 1994; Mattiasson 2001; Milani 1986; Wyman 1998). Four extra reports have been added to three (Fantl 1991; Jarvis 1981; Lagro-Janssen 1992) of the already included trials; one provided extra quality of life data (Fantl 1991) the other reports did not provide any extra data. The six new trials included 1107 participants: four trials did not provide analysable data (Dougherty 1998; Lentz 1994; Mattiasson 2001; Milani 1986) including the largest trial providing 501 participants (Mattiasson 2001). One of the other two trials provided data about comparing bladder training with oxybutynin (Colombo 1995); the other was a three-arm trial (Wyman 1998) comparing bladder training alone, pelvic floor muscle training plus biofeedback, and the addititon of bladder training to pelvic floor muscle training plus biofeedback. Wyman 1998 provides the only long term follow up data of bladder training participants who have not received other treatments, within the context of a randomised trial.

Outcomes which were previously reported as unfavourable (eg not cured) are now reported in terms of favourable events (eg cured).

INDEX TERMS

Medical Subject Headings (MeSH)

Behavior Therapy; Exercise Therapy; Randomized Controlled Trials as Topic; Urinary Bladder [*physiology]; Urinary Incontinence [*therapy]

MeSH check words

Adult; Humans