Conservative management of continence in women over the age of 65 years living in the community: a review

Abstract
The purpose of this review of the literature was to evaluate the most common forms of conservative management used to manage urge, stress and mixed incontinence in women over the age of 65 living in the community. Conservative management includes non-surgical and non-pharmacological interventions such as lifestyle interventions, physical therapies, behavioural therapies and devices including pessaries. The literature shows that the most common conservative management programme is bladder retraining using pelvic floor muscle training (PFMT) with biofeedback. There is evidence that most motivated patients receive some benefit from behavioural treatment and, because it involves minimal risk or discomfort, there is no reason to discourage any older woman with stress, urge or mixed incontinence, who is motivated, to participate in behavioural management. Women, particularly older women experiencing urinary incontinence, should not be excluded from a trial of behavioural therapy in conjunction with physical therapy as well as other conservative measures. The literature illustrates a need to improve access and outcomes for the older woman to address symptoms of urinary incontinence.

Keywords: urinary incontinence, women’s health, therapies, pelvic floor.

Introduction
The symptom of urinary incontinence is the complaint of any involuntary leakage of urine. It is a disorder that remains under-diagnosed, under-reported and under-treated despite it being a highly treatable condition. It is associated with a poorer quality of life, decreased self-esteem, social isolation, potential for falls, depression, and an increased likelihood of going into either a rest home (residential aged care) or private hospital care.

Urinary incontinence is a prevalent disorder among older women. By the year 2050 most western countries will have a significant increase in the number of women over the age of 65; the most rapid growth over the next 50 years is likely to be in the group aged 86 years and older. The total population of people over the age of 65 years is estimated to increase by 158%, worldwide and in New Zealand that age group population is estimated to increase by 20% ¹. The anticipated ageing of the population in Australia and New Zealand ² means that, unless there is a change in the age-associated incidence and prevalence of urinary incontinence, this will be an increasingly important problem for clinicians.

Many of the studies and reviews concerning incontinence and women report studies of younger women of childbearing age or menopausal women. Continence in the older woman and the mechanisms of incontinence may not always be the same as for younger adults and therefore management strategies identified for younger adults may not work as effectively in older adults. This warrants an increased research effort into incontinence and the woman aged over 65 years.

The case for conservative management
The International Consultation on Incontinence published an extensive and comprehensive evaluation of conservative treatment in women ³, ⁴. On the whole, conservative treatments are seen as simple, low cost therapies with a low risk of adverse effects, and do not prejudice other treatment options. As the prevalence of incontinence is high, and with constraints on the healthcare dollar, conservative management constitutes the principal form of management recommended at a primary care level.

Conservative management therapies are generally low-risk interventions that include lifestyle interventions such as weight loss, reduced caffeine and alcohol intake, treating constipation and smoking cessation. Studies regarding these interventions have reported associations but only a small number of randomised controlled trials (RCTs) have been carried out to assess the effect of specific lifestyle issues on incontinence treatment.

The aim of this paper is to present the results of a literature review to gauge the evidence for effective conservative management strategies for continence problems specifically in women age 65 years and over who are living in the community.
Method
The literature search included the electronic databases MEDLINE, CINAHL, PsychINFO, Cochrane Controlled Trials register and Cochrane Database of Systematic reviews. Keywords and MeSH terms used included urinary incontinence, bladder control and lower urinary tract symptoms. Keywords and phrases were combined to search for studies on older people, people over the age of 65, home-bound, living at home, bowel and bladder management, toilet training, urination disorders, bladder retraining, pelvic floor muscle training (PFMT), incidents of urinary incontinence, behavioural interventions and conservative management. The search was date limited to material published in English from 1990-2006.

To obtain background and information on the topic, other electronic information sources were researched including the websites of New Zealand Continence Association, Continence Foundation of Australia, International Continence Society, Association of Continence Advisers, New Zealand Guidelines Group, Statistics New Zealand and the New Zealand Ministry of Health. This was supplemented by a focus group discussion of clinicians, working in the area of urinary incontinence for older adults, that provided further background information.

Eligible studies included systematic reviews, meta-analyses, RCTs, cohort studies, cross-sectional studies and pilot studies. The outcome of major interest was a reduction in the reported incidents of urinary incontinence (stress, urge or mixed). Other outcomes of interest were decreased nocturia, reduction in the use of pads and reduced frequency of urination. Exclusion criteria included correspondence and abstracts, studies not written in English, studies about men and articles reviewing pharmacological and surgical interventions. A narrative review of the literature is presented.

Results
The search revealed 49 papers, of which 43 relevant papers were categorised into three broad themes that reflected the different types of conservative management interventions – lifestyle interventions, physical therapies and behavioural therapies.

Lifestyle interventions
Weight loss
Obesity is regarded as an independent risk factor for urinary incontinence and was explored in 10 papers 6, 7, 11-19. Some researchers reported an association between increased weight and urinary incontinence and recommended that weight reduction should be considered for moderately obese women who experience incontinence 11. The association between weight and incontinence remained after controlling for age and parity, with Brown and colleagues 12 reporting the prevalence of daily incontinence increased by an odds ratio of 1.6 per 5 BMI (body mass index). Hannestad and colleagues 13, in the Norwegian population-based EPINCONT study, discovered a dose–response type relationship between BMI and severe urinary incontinence and confirmed the strong association between incontinence and obesity.

However, although obesity is an independent risk factor for developing urinary incontinence and substantial weight loss significantly decreases the incidence of incontinence in morbidly obese women 14-16, there is little evidence that moderately overweight women who lose weight experience less incontinence compared to those who do not 6. Nevertheless, based on current evidence, maintenance of normal body weight appears to be an important factor in preventing the development of incontinence 16-18.

Smoking cessation
Three papers explored the possible link between smoking and incontinence and, while some authors hold the opinion that smoking is causative for urinary incontinence, none of the studies showed strong evidence to directly link smoking and incontinence 7, 11, 19. In the EPINCONT study 13, 19, it was found that smoking did not increase the risk of mild incontinence, but could affect those already diagnosed with severe incontinence.

Dietary factors: caffeine
A high caffeine intake has come under wider scrutiny in recent times as a factor causing incontinence and six papers were retrieved that explored this link 19-24. Caffeine is considered to promote detrusor overactivity 20, an involuntary contraction of the detrusor muscle during bladder filling which can be spontaneous or provoked 1. Arya and colleagues 20 undertook a case control study to investigate the role of caffeine. The link remains controversial since other investigators have found either no association, or limited association, between caffeine and incontinence 21. However, Creighton & Stanton 22, in a study on the effects of caffeine intake on women, found that women already diagnosed with detrusor overactivity had increased detrusor pressure on bladder filling, and women who were continent did not.

Tomlinson and colleagues 23, in a study of 34 rural women with symptoms of urinary incontinence (stress, urge and mixed) who decreased their caffeine intake by 50% (900mg/day to 480mg/day), experienced a decrease in episodes of urine loss from 2.33 to 1.0 incidents per day, a 57% reduction. A similar caffeine reduction study decreased caffeine consumption from 238.7mg/day to 95mg/day 24 and, in that study, the bladder retaining and bladder pressure on bladder filling, and women who were continent did not.

In the EPINCONT study 15, no association between coffee or alcohol (in any amount) and the incidence of urinary
incontinence was found. However, tea drinkers were found to have a slightly higher risk for all types of incontinence. It was concluded that tea may contain components other than caffeine that had the potential to cause incontinence.

**Dietary factors: decreased fluid intake**

Fluid intake plays a secondary role in the aetiology of incontinence and one paper specifically explored this link. Wyman and colleagues studied a cohort of women aged 55 years and older and found a modest positive relationship between fluid intake and severity of incontinence in women with stress incontinence, but there was no correlation found between the severity of incidents of incontinence due to overactive bladder (urgency and urge incontinence) and fluid intake. Fluid intake accounted for 14% of the explained variability in the number of incontinence episodes.

Among elderly people and those people experiencing nocturia, urge/urgency or stress incontinence, it is a common strategy to restrict fluids in the early or late evening in order to reduce nocturia. Decreasing fluid intake can potentially lead to dehydration, urinary tract infections and constipation, therefore fluid restriction should only be considered for people with an abnormal evening fluid intake and in the elderly who have a high fluid intake in the evening and who experience nocturia and severe urge incontinence

**Dietary factors: constipation**

One paper discussed the link between urinary incontinence and constipation. A large population-based study of 1,154 women over the age of 60 living in the community found that those with urinary incontinence were slightly more likely to report constipation than those who were continent of urine (32.6% versus 24.7%). Some researchers have concluded that chronic straining may be a risk factor for the development of incontinence because the straining associated with constipation possibly weakens pelvic floor muscles and ligaments, resulting in the dysfunction of pelvic floor muscles. No interventional trials that examined the effect of bowel management alone on symptoms of urinary incontinence were found.

**Physical therapies**

**Pelvic floor muscle training (PFMT)**

Pelvic floor muscle exercises are thought to strengthen the muscular components of the urethral closing mechanism by using principles of strength training (isometric repetitions). Continence is maintained as long as the urethral pressure remains higher than the pressure within the bladder. The International Continence Society defines PFMT as repetitive selective voluntary contraction and relaxation of specific pelvic floor muscles as taught by a healthcare professional. PFMT exercises, in combination with other physical therapies such as biofeedback electrical stimulation and vaginal cones, are used to rehabilitate dysfunction and to strengthen the pelvic floor muscles. Previously used terms to describe PFMT included Kegel exercises, pelvic exercises or pelvic floor exercises.

PFMT is the most commonly used treatment for women with stress urinary incontinence, mixed incontinence, but is less common for urge urinary incontinence. Some authors argued that by restoring the function of the pelvic floor, this in turn increased the urethral closure pressure, thus preventing involuntary loss of urine.

Recommendations for training protocols include three sets of 8-12 slow velocity maximal contractions sustained for 6-8 seconds each, performed 3-4 times a week and continued for at least 15-20 weeks. Prior to the start of the training, women should be assessed by a person with specialist training to ensure that a correct voluntary pelvic floor muscle contraction is being performed and to determine what training regimen should take place in order to prevent muscle fatigue from over-vigorous exercise.

A systematic review of 24 RCTs, two Cochrane Reviews, and a review of PFMT to treat stress urinary incontinence were retrieved. Berghmans and colleagues' review of 24 RCTs showed limited evidence for the efficacy of high intensity versus a low intensity exercise regimen and found no evidence that PFMT exercises with biofeedback were more effective than pelvic floor muscle exercises alone, nor that electro-stimulation was superior to other physical therapies, despite it being superior to placebo electro-stimulation.

A Cochrane Review of PFMT for urinary incontinence in women completed in 2001 evaluated 31 RCTs to answer the questions: whether PFMT was better than no treatment and placebo treatment, whether it was better than any other single treatment, or whether it added benefit to another therapy when compared with the same therapy alone and when given in combination with any other single treatment. The reviewers concluded that PFMT programmes showed higher improvement rates and reduced daily leakages over 3-6 months in women with stress or mixed incontinence compared with no treatment or placebo, but found no significant difference in cure or improvement rates at 12 months between PFMT and pelvic floor electrical stimulation and made no particular recommendations for older women experiencing urge incontinence.

A subsequent Cochrane Review in 2006 sought to determine the effects of PFMT in the management of female stress, urge and mixed incontinence, reviewing RCTs and quasi-randomised studies. Thirteen trials involving 714 women (375 receiving PFMT and 375 controls) were examined, with six trials contributing to the analysis of final outcomes. Results showed that there was a wide variability in training programmes, considerable variability in the length of training, differences...
in the recommended number of contractions and differences in the length of hold of the contraction. The recording of urinary leakage, and digital palpitation for baseline assessment of pelvic floor muscle activity prior to randomisation were both inconsistent, and data were lacking on the effectiveness of PFMT compared with other treatments. The effect of adding PFMT to other treatments such as electrical stimulation and behavioural training was not clear due to the limited amount of evidence available. Evidence of the effect of adding other adjunctive treatments (vaginal cones or intra-vaginal resistance) to the PFMT programme was also limited. The effectiveness of biofeedback-assisted PFMT was not clear. There was evidence to show that condition-specific quality of life may be better after PFMT but further research is needed to confirm this.

Finally, Bø's review of 16 articles specifically addressed the effect of PFMT to control stress urinary incontinence and concluded that PFMT to remedy urge incontinence had a less substantial biological rationale 36.

**Electrical stimulation**

This intervention involves the application of an electrical current through a vaginal, rectal or surface electrode. Electrical stimulation is believed to cause contraction of smooth and striated peri-urethral muscles, increasing urethral closure pressure for patients with stress urinary incontinence. It may also reduce detrusor overactivity in those patients with symptoms of overactive bladder, although the mechanism of action is not clear 7, 37. A further goal of electrical stimulation is to improve pelvic floor muscle function by causing passive muscle contraction. However, there is a wide variability of stimulation parameters and protocols for treatment, thus making comparisons between studies very difficult.

Four papers were retrieved that investigated electrical stimulation as a therapy for incontinence 38-41. A systematic review of RCTs supported electrical stimulation as a treatment for overactive bladder and urge urinary incontinence 38. The review reported significant improvement in patients randomised to electrical stimulation as opposed to the non-treatment or placebo group, and found less convincing evidence for the effectiveness of electrical stimulation in women with stress incontinence. A single blind RCT of PFMT, electrical stimulation, vaginal cones and no treatment 39 reported that subjects with stress incontinence who received electrical stimulation had significantly less leakage than those in a non-treatment group. Similar research by two other groups 40, 41 found no significant differences using similar outcome measures.

The biological rationale supporting electrical stimulation is poorly substantiated. The benefits of electrical stimulation are inconclusive, perhaps due to a marked lack of consistency in the electrical stimulation protocols 42.

**Magnetic stimulation**

Galloway and colleagues 41 were the first to report on a study using magnetic stimulation; theirs was an uncontrolled study with participants aged 35-83 years with some participants reported having endured symptoms for 40 years. Extra corporeal magnetic innervation aims to stimulate the pelvic floor muscles and sacral roots without using an anal or vaginal probe; instead, a concentrated magnetic field is directed vertically through the seat of a chair. Goldberg & Sand 37 suggested that magnetic stimulation of the sacral nerve roots and pelvic floor was effective for both urge and stress incontinence, despite not being clear about the mechanism of action. Craggs and colleagues 44 suggest magnetic stimulation therapy stimulates the pelvic floor musculature, causing a contracture of the external urethral sphincter and may suppress detrusor overactivity by autonomic effects through the activation of the pudendal nerve afferents and activation of the inhibitory hypogastric sympathetic neuron.

Some researchers claim that magnetic stimulation may be effective in the treatment of women with stress and urge urinary incontinence 45, 46, but several literature reviews have concluded that there is variation in treatment protocols, including intensity and duration of treatment, with no adverse results reported, and there is little significant evidence on the effect of magnetic stimulation versus no treatment, placebo or control treatment in women with urinary incontinence 7, 47, 48.

**Biofeedback**

Biofeedback is defined as a technique by which information about a normally unconscious physiological process is presented to the patient and/or therapist as a visual, auditory or tactile signal 1. Biofeedback-assisted behavioural training consists of identification and exercise of the pelvic floor muscles which is achieved through the application of vaginal, rectal or surface electrodes that can detect and amplify a pelvic floor contraction. Information about the patient’s performance of a pelvic floor muscle contraction comes in the form of visual or auditory feedback. Biofeedback teaches the patient how to locate and contract the pelvic floor muscle in order to abort a detrusor contraction and also helps provide motivation during PFMT 5, 49-51.

Although biofeedback has generally been considered an effective technique for teaching pelvic floor muscle control, it is not established as an essential component of bladder training for urge incontinence. There is limited evidence on the efficacy of biofeedback-assisted PFMT and, when compared to placebo, it is effective in treating urge and stress incontinence in women, but it does not appear to be superior to PFMT alone 43.

Three studies 52-54 particularly addressed the use of biofeedback in the treatment of older women. One RCT which included women aged 55-92 years has shown that biofeedback-assisted
PFMT was more effective than drug therapy in reducing urinary incontinence in women with urge incontinence and was associated with greater satisfaction with the treatment. 

Burgio and colleagues examined the efficacy of the three behavioural interventions – biofeedback, verbal feedback, and use of a self-help education booklet – in the treatment of urge incontinence in older women aged 55-92 years. The study showed that all three were equally effective for helping patients correctly identify pelvic floor muscles and to use them to prevent episodes of urge incontinence. The use of biofeedback did not enhance efficacy more than what was achieved using verbal feedback or a self-help programme.

Perrin and colleagues investigated the efficacy of PFMT combined with biofeedback and bladder training in women over the age of 75 who experienced stress, urge or mixed urinary incontinence and found that women aged 75-79 years responded positively to the mixed treatment modalities with a decrease in the number of incontinence episodes. It was concluded that older women could be recruited into research projects and follow study demands despite some modifications required to enhance recruitment and facilitation of data collection.

**Mechanical devices**

A mechanical anti-incontinence device is a device inserted into the vagina that is supposed to compresses the urethra and support the bladder neck to decrease stress incontinence. Types include a standard contraceptive diaphragm, vaginal pessary, urethral plug or a urethral occlusive device. A mechanical device does not include weighted vaginal cones or electrical devices since these treatments aim to improve function of the pelvic floor musculature.

Mechanical devices are usually the first-line of treatment in physical therapies along with PFMT in younger women experiencing stress incontinence with or without prolapse. Devices are used when a patient does not want surgery or is unable to undergo surgery. Mechanical devices are inexpensive and do not compromise any surgical treatment at a later date. In older women, devices often may not be appropriate due to vaginal atrophy, scarring, prolapse, or due to problems with dexterity.

A 2006 Cochrane Review of six trials found that evidence for the efficacy of mechanical devices in the management of urinary incontinence was tenuous. Comparisons with other forms of treatment showed no significant differences.

**Behavioural therapies**

Behavioural techniques increase the patient's awareness of the lower urinary tract and can potentially improve control of the detrusor muscle and pelvic floor muscle function. Three papers and a systematic review described how behavioural therapies could be used to manage incontinence in the older woman. Researchers have investigated the efficacy of combined versus individualised strategies and suggest that education, support counselling, and encouragement may be as important to outcome as specific treatment.

While there is no research tool that can capture the impact of a health professional's interest and involvement in an older person's activities of daily living, researchers have shown that an intervention delivered by a passionate, enthusiastic health professional plays a major role in improving the wellbeing of a patient. A nurse practitioner administering a home-based therapy programme that combined PFMT programme and bladder training was found to produce significantly better results than regular social visits by a nurse practitioner. This type of patient contact is not normally quantified and is difficult to investigate because it is difficult to determine whether the improved urinary continence is the result of the effect of PFMT, or the education or advice given in addition to the training programme.

**Bladder training**

Four papers were retrieved that specifically described the use of bladder training to treat incontinence experienced by the older woman. Bladder training is a widely recommended behavioural strategy for patients with an overactive bladder, and to a lesser degree for patients with stress incontinence, and is based on using data from bladder diaries. Bladder training includes selective contraction of pelvic floor muscles in order to suppress urgency and prevent urge incontinence and encourages a gradual regimented lengthening of the interval between voids. Bladder training regimens are individualised to reflect a patient's usual voiding pattern and often involve an hourly schedule that increases weekly at 15-30 minute intervals as tolerated. The mechanism of bladder training is uncertain. One hypothesis is that by increasing the interval between voids, the bladder capacity increases, leading to a reduction in detrusor overactivity.

There are three critical elements for bladder training – patient education, scheduled voiding and positive reinforcement. The aim of bladder training is to return to a normal voiding schedule of every 3-4 hours, increase bladder capacity, and to reduce incidents of urinary incontinence. The achievement of these goals can take from 6 weeks to several months.

Fantl and colleagues in an RCT compared bladder training versus no treatment in a group of 123 women, with a mean age of 67 years who were assessed every 6 weeks. In this study there was a significant decrease in incontinence episodes, decrease in pad weigh tests, and decrease in diurnal and nocturnal frequencies, particularly significant among those women who experienced genuine stress incontinence, with the effects maintained at 6 months.
A 2003 Cochrane Review assessed 36 RCTs and quasi-randomised trials of bladder training for any type of urinary incontinence. Three hypotheses were tested – bladder training is better than no bladder training, bladder training is better than other treatment, and combining bladder training with another treatment is better than other treatments alone. It was ‘tentatively’ concluded that a combination of PFMT and bladder training was better than bladder training alone in the treatment of urge and mixed urinary incontinence. However, this conclusion is tentative since the trials were of variable quality and small size, and there was not enough evidence to determine whether bladder training was useful as an adjunct to other therapies; the reviewers recommended further research.

PFMT is frequently done in conjunction with bladder training in order to teach the patient pelvic floor muscle contraction as a deferment technique and to improve pelvic floor tone. Some studies have compared the outcome of combined bladder training and biofeedback-assisted PFMT in women who were experiencing stress urinary incontinence and in women experiencing overactive bladder symptoms and found cure and improvement rates were significantly higher in the combination group immediately after treatment, but no significant differences between outcomes in the stand-alone bladder training and PFMT groups.

**Techniques to modify behaviour**

Behavioural techniques or behaviour modification is defined as the analysis of the relationship between the patient's symptoms and their behaviour in order to treat maladaptive patterns. These interventions use antecedent and/or consequent conditioning to shape desired behaviour around bowel or bladder elimination. A systematic review by Teniissen and colleagues concluded that, since behavioural modification techniques were relatively easy to implement and had no side-effects, they should be the first intervention of choice for the older frailer person. Such techniques can be divided into caregiver-dependent techniques for patients with cognitive or motor deficits, and those requiring active rehabilitation and education techniques. Toileting assistance and routine or scheduled toileting requires passive involvement, whereas bladder training and pelvic floor muscle rehabilitation augmented with vaginal weights or pelvic floor electrical stimulation or biofeedback therapy requires active patient involvement.

**Scheduled voiding regimens**

A meta-analysis and two Cochrane Reviews were retrieved that explain scheduled voiding regimens. A scheduled voiding regimen involves a voiding schedule to treat or manage urinary incontinence and includes interventions such as habit training, timed voiding and prompted voiding, and is regarded as a distinct toileting intervention.

A 2004 Cochrane Review described timed voiding, sometime known as scheduled voiding, as involving a regimen of toileting for patients unable to toilet themselves. It is considered a passive toileting programme and is a very common strategy within residential aged care settings with application to the home setting. The goal is to avoid incontinence episodes through regular toileting, rather than to restore bladder function; however, this approach, while described in the literature, has not been rigorously tested.

Prompted voiding is described as a useful strategy to promote continence in those who are cognitively and or physically impaired through positive reinforcement and conditioning. A 2002 Cochrane Review described it as involving a form of operant conditioning with positive reinforcement in order to encourage self-initiated voids, with the goal to decrease the number of urinary incontinence episodes by increasing self-initiated requests for toileting; it relies on the caregiver to provide patient motivation. That review evaluated nine trials and found that prompted voiding was better than no treatment. It is the first-line behavioural therapy of particular relevance to those patients with cognitive impairment who have the ability to initiate an effective void.

Habit training involves toileting regimens that are individualised using baseline data taken from a voiding diary to develop a toileting schedule assigned to the patient to fit a time interval that is shorter than the patient's normal voiding pattern. Habit training is primarily used in institutional settings to assist cognitively and/or physically impaired adults; more recently it has been applied to older adults living in the community. A 2004 Cochrane Review evaluated three trials of 337 elderly women who were primarily carer-dependent with concurrent cognitive or physical impairment, and found that insufficient evidence existed to support habit training as a therapeutic intervention.

**Discussion**

While most reviews recommend further research into conservative modalities to manage and treat incontinence, recent Cochrane Reviews support PFMT as the first-line conservative management for women with stress, urge or mixed urinary incontinence; this has been supported by the International Consultation on Incontinence.

The literature review revealed there was insufficient evidence regarding other conservative treatments despite them usually being recommended as first-line treatments in women experiencing stress, mixed or urge incontinence. There is still a lack of Level 1 evidence which focuses on the conservative management of women over the age of 65 years, despite anticipated demographic changes, especially as regards the female population. Current research on the older adult is mainly focused on those living in residential care or those who...
are cognitively impaired, which ignores the trend for the elderly to remain supported at home for as long as possible. Baseline indicators for success in bladder training tend to use symptoms and urodynamic diagnoses that have been reported to be poor predictors of response to therapy. There is little research on conservative management of the well, older person living in the community, nor studies on lifestyle interventions for the older person or the frail older person.

Even when a given intervention is supported by strong evidence from a RCT, inclusion and exclusion criteria of clinical trials leave the evidence often applicable only to a narrow group of participants. This is particularly relevant for the older person who, for reasons of cognitive deficits or complex co-morbidities, is often excluded from clinical trials. However, some authors have shown that clinically significant reductions in urinary incontinence are achievable with behavioural therapies in many cognitively intact older adults, despite high levels of co-morbidity and functional impairment.

Conclusions and recommendations for practice

This review illustrates a need for methodologically sound intervention trials in older women with urinary incontinence to provide evidence of the efficacy of conservative treatment strategies in the elderly. Conservative management includes non-surgical and non-pharmacological interventions such as lifestyle interventions, physical therapies, behavioural therapies, and functional impairments. Single therapies are often combined in a conservative management programme and there is some evidence to support this. Such a programme is most likely to be a combination of bladder training and PFMT with or without biofeedback. Most motivated patients receive some benefit from behavioural treatment and it involves minimal risk or discomfort. Older women experiencing urinary incontinence should therefore not be excluded from a trial of behavioural and physical therapy in conjunction with other conservative measures.

References


