

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Aksac, 2003 ⁴⁷⁸ Country: Turkey Aim: the effects of pelvic floor muscle exercises or biofeedback on female urinary stress incontinence	50 postmenopausal women with female urinary stress incontinence taking HRT	Not reported	Pelvic floor muscle exercise (contractions for 10 seconds and relaxation for 20 seconds, 10 times/session, 3 sessions/day) via digital palpation at home; pelvic floor muscle exercise (contractions for 10 seconds and relaxation for 20 seconds) via biofeedback	Usual care, hormone replacement therapy
Alewijnse, 2003 ⁴⁷⁹ Country: The Netherlands Aim: the effectiveness of pelvic muscle floor exercise therapy supplemented with a health education program urinary incontinence among women.	129 community-dwelling women over 17 years old with urinary incontinence, ability to complete questionnaires in Dutch language.	Continence, neurological conditions, venereal disease, viral infections, using medication that may impact incontinence, pregnancy or 3 months after delivery, after surgical treatment for incontinence, and women with physical impairments. Severe prolapse	Bladder training with voiding frequency of ~7 voidings/day and pelvic floor muscle exercise: 10 slow twitch contractions (10-30 seconds) and 10 fast twitch contractions (2-3 seconds), 5 times/day, each contraction being followed by relaxation	Bladder training and pelvic floor muscle exercise
Amaro, 2005 ⁴⁸⁰ Country: Brazil Aim: the effect of intravaginal electrical stimulation on pelvic floor muscle strength in women with mixed urinary incontinence.	40 women with mixed urinary incontinence and predominant urge incontinence.	Anticholinergic and tricyclic antidepressant medications, pelvic floor exercise, bladder training, vaginal prolapse more than II grade, urinary tract infection, metal implants, and neurological diseases	Intravaginal electrical stimulation with 3 20-minute sessions/week using 4Hz frequency.	Sham stimulation with inactive device

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Amaro, 2006 ⁴⁸¹ Country: Brazil Aim: the effects of intravaginal electrical stimulation in mixed urinary incontinence	40 women symptoms of predominant urge incontinence not taking anticholinergics or tricyclic antidepressants	Use of pelvic floor exercises or bladder training, vaginal prolapse >grade II, retention complaint or obstruction diagnosis during UDS, urinary infection, changes in cutaneous sensitivity, metal implants, and neurological diseases.	Effective intravaginal electrical stimulation using frequency of 4 Hz with 3 20-minute sessions/week	Sham intravaginal electrical stimulation using frequency of 4Hz with 3 20-minute sessions/week
Andersen, 2002 ⁴⁸² Country: USA Aim: the long-term effectiveness of Durasphere vs. Contigen in the treatment of female stress urinary incontinence caused by intrinsic sphincter deficiency	Adult women 21 years of age or older with stress UI caused by intrinsic sphincter deficiency for a period of at least 12 months; positive pad weight test; failure of previous non invasive treatments, post void residual <100 mL and abdominal leak point pressure	Urge primary incontinence, uncontrolled bladder instability, positive urine culture, previous urethral bulking treatments, medication affecting the evaluation of incontinence, pregnancy	Durasphere 4.5 mL injected submucosally between the bladder neck and external sphincter	Contigen 4.2 mL injected submucosally between the bladder neck and external sphincter
Appell, 2006 ⁴⁸³ Country: USA Aim: the effects of transurethral radiofrequency energy collagen micro-remodeling on female stress urinary incontinence	173 women with stress urinary incontinence, bladder outlet hypermobility, and leak point pressure >60cm/H2O	Evidence of detrusor overactivity on cystometrogram, post-void residual bladder volumes >50cc, significant pelvic organ prolapse (POP-Q Stage IV) on physical examination, history of dry or wet overactive bladder, previous surgical or bulking agent therapy	Transurethral radiofrequency energy collagen micro-remodeling	Sham treatment probes lacked needle electrodes and sham treatment of radiofrequency generator
Arvonen, 2001 ⁴⁸⁴ Country: Sweden Aim: the effects of pelvic floor muscle training with and without vaginal balls on females stress urinary incontinence	37 women ages 25-65 with stress urinary incontinence, understanding of spoken Swedish	Pregnancy, cysto/rectocele, prolapse, urinary tract infection, altered vaginal tissue, and medication affecting the functioning of the urinary tract or kidneys	Pelvic floor muscle training program with contractions/relaxations for 5 seconds 10 times twice a day	Pelvic floor muscle training program with contractions/relaxations for 20/20 seconds 10 times twice a day using weighted vaginal balls 50-100g.

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Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Aukee, 2002 ⁴⁸⁵ Country: Finland Aim: the effects of electromyography-assisted biofeedback training and pelvic floor muscle training on female stress urinary incontinence	30 women with urodynamically tested stress incontinence ages 31 to 69 years without previous incontinence operations and an abdominal leak point pressure >90	Genital protrusion beyond the vaginal hymen, an inability to understand instructions for home training, pregnancy, and any severe disease such as malignancy in the abdominal region, multiple sclerosis, and insulin-dependent diabetes	Pelvic floor muscle exercise after verbal and written instructions for home practice of 20 minutes/day 5 times/week and individual EMG-assisted biofeedback device with vaginal probe and verbal control	Pelvic floor muscle exercise after verbal and written instructions for home practice of 20 minutes/day 5 times per week
Aukee, 2004 ⁴⁸⁶ Country: Finland Aim: the effectiveness of pelvic floor training with home biofeedback device among women with stress urinary incontinence	35 women 21-70 years old with urodynamically confirmed stress incontinent (maximal urethral closure pressure >20cm/H ₂ O and cough leak point pressure >90cm/H ₂ O)	Previous incontinence operations, genital prolapse, inability to understand instructions for home training, pregnancy, severe diseases such as malignancies in the abdominal region, multiple sclerosis and diabetes mellitus requiring insulin	1. Home program with given verbal and written instructions for home practice and advise to practice for 20 minutes/day, 5 times/week. 2. Pelvic floor training by physiotherapist 5 times/12 weeks: 3-5 second contractions with 10 second intervals in supine	Home program with given verbal and written instructions for home practice
Bano, 2005 ⁴⁸⁷ Country: UK Aim: the effects of porcine dermal implant (Permacol) and silicone injection (Macroplastique) on urodynamic stress incontinence in females	50 women with urodynamically proven stress incontinence	Not reported	Peri or transurethral porcine dermal implant injection (Permacol)	Transurethral silicone injection (Macroplastique)
Barroso, 2004 ⁴⁸⁸ Country: Brazil Aim: the effects of transvaginal electrical stimulation on urinary incontinence	36 women (24 patients and 12 controls) with stress, urge, or mixed urinary incontinence	Prolapse or first degree urogenital prolapse, intrinsic sphincter deficiency, cardiac pacemaker; pregnancy, postmenopausal climacteric with symptoms and signs of urogenital atrophy (they could be included after 3 months of treatment with hormone-replacement therapy	Transvaginal electrical stimulation at home twice a day (20-minute sessions) with frequency of 20 (urge) or 50Hz (stress UI), a pulse width of 300ms, with asymmetrical biphasic pulses, an adjustable current intensity (0-100mA)	Placebo

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Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Berghmans, 1996 ⁴⁸⁹ Country: The Netherlands Aim: the effects of biofeedback and pelvic floor muscle exercise on female genuine stress incontinence.	40 women 18-70 years with mild or moderate stress incontinence (grade 1).	Use of medicine to counteract functional disabilities of the lower urinary tract, pronounced lesions of the pudendus nerve during clinical neurophysiological examination, positive sediment of urine culture, non-compliance in the diagnostic phase, neurogenic urinary incontinence	Pelvic floor muscle exercise 12 treatment sessions, 3 times/week with contractions 3-30 seconds 10-30 times beginning with 4 sets of 10 (5 quick and 5 sustained) and increased by 10 per set until 30 times/set. Biofeedback with EMG vaginal probe and visualization	Pelvic floor muscle exercise 12 treatment sessions, 3 times/week with contractions 3-30 seconds 10-30 times beginning with 4 sets of 10 (5 quick and 5 sustained) and increased by 10 per set until 30 times/set
Berghmans, 2002 ⁴⁹⁰ Country: The Netherlands Aim: the effects of physiotherapy in women with proven bladder overactivity	98 patients older than 18 years with proven bladder overactivity defined as Detrusor Activity Index (DAI) ≥ 0.50 , able to understand Dutch	Mechanical intravesical obstruction, urinary calculus, urinary tract infection, colpitis, pacemaker, pregnancy, physiotherapy within 3 months, uncontrolled diabetes mellitus	Pelvic floor exercises with contractions for >20 seconds controlled by physiotherapist palpation with relaxation period of 10 seconds. Bladder training to inhibit the sensation of urgency and to postpone voiding, voiding schedule with an interval >2 hours	Usual care

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Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Blowman, 1991 ⁴⁹¹ Country: UK Aim: To assess the efficacy of neuromuscular stimulation and pelvic floor exercises, compared with pelvic floor exercises only, in the treatment of genuine stress incontinence	Only patients diagnosed from bladder pressure studies as suffering from genuine stress incontinence were recruited. They all had maximum bladder volumes over 500ml and exhibited no detrusor contraction in lying or standing. All patients demonstrated cough-induced leakage when standing. They were referred to the physiotherapy department gynecology unit and gave informed written consent to take part in the trial.	Not reported	Neurotrophic stimulation	Placebo stimulation
Bo, 1997 ⁴⁹² Country: Norway Aim: Crossover RCT to examine the effect of voluntary pelvic floor muscle contraction and vaginal electrical stimulation on urethral pressure in women with genuine stress incontinence	12 women with genuine stress incontinence participated in pelvic floor exercise program with 8-12 contractions	Not reported	3 voluntary PFM contractions and 2 electrical stimulators Conmax 50Hz – pulse width 0.75ms, 0-90mA Medicon 50Hz - pulse width 0.5ms, 0-100mA	Electrical stimulation with Medicon 50 Hz - pulse width 0.5ms, 0-100mA

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Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Bo, 1999 ⁴⁹³ Country: Norway Aim: the effects of pelvic floor exercises, electrical stimulation, vaginal cones, and no treatment on females genuine stress incontinence	107 women with clinically and urodynamically proved genuine stress incontinence >4g of leakage measured by pad test with standardized bladder volume.	Urinary incontinence other than genuine stress incontinence, involuntary detrusor contractions >10cm/H2O on cystometry, abnormal bladder function (residual urine >50ml and maximal uroflow <15ml/second), previous surgery for genuine stress incontinence, neurological or psychiatric disease, ongoing urinary tract infections, other diseases that could interfere with participation, use of concomitant treatments during the trial, and inability to understand instructions given in Norwegian	1. Pelvic floor exercise with 8-12 contractions 3 times/day and in groups with skilled physical therapists 1/week. 2. The electrical stimulation using vaginal intermittent stimulation with the MS 106 Twin at 50Hz 30 minutes/day. 3. The vaginal cones of 20, 40, and 70g for 20 minutes/day	The untreated control group offered the use of a continence guard
Bo, 2000 ⁴⁹⁴ Country: Norway Aim: the effects of pelvic floor muscle exercise on female genuine stress incontinence	59 women with clinically and urodynamically proven genuine stress incontinence .4 grams of leakage measured by the pad test	Urinary incontinence other than GSI, involuntary detrusor contractions exceeding 10cm/H2O on cystometry, residual urine .50ml, maximal uroflow, 15ml/second, previous surgery for GSI, neurological or psychiatric disease, ongoing urinary tract infections	Pelvic floor muscle exercise with 8-12 maximum contractions in 3 series/day and 45 minutes/week group sessions	Untreated control group
Bo, 2005 ⁴⁹⁵ Country: Norway Aim: Followup RCT to examine the effects of intensive exercise on stress urinary incontinence.	52 women with urodynamic stress urinary incontinence participated in the original RCT	Response rate 90.4%	Intensive pelvic floor exercise with 8-12 maximum contractions for 6-8 seconds 3 series/day under the supervision of physical therapist for 6 months	Home exercise groups

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Borawski, 2007 ⁴⁹⁶ Country: USA Aim: the effects of percutaneous needle electrode technique or a surgical first stage lead placement on implantation of a pulse generator in older urge incontinent women	30 women >55 years with refractory urge incontinence after failure of medical, behavioral, and pelvic floor reeducation management	Not reported	Electrical stimulation with percutaneous needle electrode (22-G spinal needle) placement	Electrical stimulation with surgical first stage lead placement
Borello-France, 2006 ⁴⁹⁷ Country: USA Aim: the effects of exercise position during pelvic-floor muscle exercises on females stress urinary incontinence	44 women 38 to 70 years old, ambulatory, with symptoms of stress urinary incontinence >1/week	Pregnancy, symptoms of urgency or urge urinary incontinence, prior treatments for stress urinary incontinence (collagen injection, medications affecting bladder tone, pessary, or surgery), practicing pelvic-floor muscle exercises, pacemaker, use of intrauterine device, medical history of pelvic cancer, severe endometriosis, neurologic or metabolic disorders likely to impair bladder or sphincter function	Pelvic floor muscle exercises with EMG biofeedback in the supine position only using maximum 30-60 repetitions of 3-12 second contractions twice daily	Pelvic floor muscle exercises with EMG biofeedback in both supine and upright positions, 1 set (3- and 12-second contractions) in each position with maximum 20 repetitions (2 sets of 10) of the 3-12 second contractions twice daily
Borello-France, 2008 ⁴⁹⁸ Country: USA Aim: comparative effectiveness of maintenance exercise program either 1 or 4 times per week in women with stress UI	Women 38 to 70 years of age, not pregnant, ambulatory, and recorded at least one SUI episode and no urgency or urge urinary incontinence (UUI) in a 7-day bladder diary	A medical history that included pelvic cancer, severe endometriosis, use of an intrauterine device, or pacemaker; neurologic or metabolic disorders associated with bladder or sphincter dysfunction; previous medical/surgical treatments for SUI; or prior in	High-frequency (4 times per week) maintenance 2 times/day exercise program with 60 repetitions (3 sets of 20 repetitions) of a 3-second PFM contraction and 30 repetitions (3 sets of 10 repetitions) of a 12-second contraction per exercise session	Low-frequency (1 time/week) maintenance 2 times/day exercise program with 60 repetitions (3 sets of 20 repetitions) of a 3-second PFM contraction and 30 repetitions (3 sets of 10 repetitions) of a 12-second contraction per exercise

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Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Borrie, 2002 ⁴⁹⁹ Country: Canada Aim: the effects of combined lifestyle and behavioral interventions led by nurses in the management of urinary incontinence	421 subjects 26 years of age or older with self reported urinary incontinence at least once per week, resided in the community, and communicated in English	Pregnancy, residency of long-term care institutions, dementia	Lifestyle modification sessions every 4 weeks led by trained "nurse continence advisers" with a physician with expertise in continence management	Usual care
Bower, 1998 ⁵⁰⁰ Country: Australia Aim: the effects of surface neuromodulation on cystometric pressure and volume parameters in women with detrusor instability or sensory urgency.	48 women with proved detrusor instability or sensory urgency	Urinary tract infection, pregnancy, cardiac pacemaker, impaired cognition, neurogenic bladder dysfunction or cystocele beyond the introitus	Active transcutaneous electrical nerve stimulation with 10Hz. frequency and 200 microsecond pulse width (sacral placement)	1. Sham transcutaneous electrical nerve stimulation with sacral or suprapubic placement 2. Active transcutaneous electrical nerve stimulation with 150Hz. frequency and 200 microsecond pulse with (suprapubic placement)
Boyington, 2005 ⁵⁰¹ Country: USA Aim: the effects of computer-based system for continence health promotion that included self-management techniques for women with symptoms of involuntary urine loss, urinary frequency or urgency, or nocturia	Women 50 years or older who lived independently in the community with symptoms of UI, urinary frequency or urgency, or nocturia; minimum of 30 on the Telephone Interview for Cognitive Status-modified (TICS-m); Self-reported ability to read and write E	Toilet dependently; blood in their urine, recurrent urinary tract infections, persistent difficulty with bladder emptying as evidenced by straining or other efforts to drain the bladder completely, or symptomatic pelvic prolapse	computer-based system to promote continence health using health clinic visit metaphor that provided fact sheets, testimonials from women who improved with the adoption of behavioral techniques; the expert system advice on Bladder training, PFMT, fluid man	Alternate computer-based system simulating women's magazine with information about breast self-examination and tips for women traveling alone
Brown, 2006 ⁵⁰² Country: USA Aim: the effects of intensive lifestyle intervention or metformin on prevalence of urinary incontinence among overweight pre-diabetic women	2,191 women in the Diabetes Prevention Program RCT older than 25 years, body mass index $\geq 24\text{kg/m}^2$, a fasting plasma glucose level 95-125mg/dl, and a 2-hour post-challenge glucose level 140-199mg/dl	Exclusion criteria: Taking medications that could affect glucose tolerance or serious medical illness	Intensive lifestyle therapy to lose and maintain at least 7% of initial body weight through a low-fat diet and to engage in moderate-intensity physical activity for at least 150 minutes each week	Placebo twice daily.

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Brubaker, 1997 ⁵⁰³ Country: USA Aim: the effects of transvaginal electrical stimulation for treatment of urinary incontinence in women	121 women >25 years of age with either urinary incontinence due to detrusor instability or genuine stress incontinence, or both (mixed incontinence) diagnosed with filling urethrocytometry	Urinary incontinence other than genuine stress incontinence, detrusor instability, or mixed incontinence; leakage episodes <3/week, inadequate genitourinary estrogen (minimum 3 months HRT), inadequate cognitive ability (investigator judgment), urinary tract infection, anatomic defect that precluded use of device, postvoid residual >100ml, implanted electric device, genitourinary surgery, drug treatment for urinary incontinence, anticipated geographic relocation during study.	The transvaginal electric stimulation for 20 minutes 2 times/day using frequency of 20Hz, a 2-second-4-second work-rest cycle with a range of stimulation intensities, from 0-100mA	Sham inactive device
Bryant, 2002 ⁵⁰⁴ Country: Australia Aim: the effects of caffeine restriction on urinary incontinence symptoms	95 consecutive adult patients with urinary symptoms with routine intake of caffeine >100mg every 24 hours	Cognitive impairment, pregnancy, urinary tract infection	Education to reduce caffeine intake to <100mg/day plus bladder training	Bladder training: increasing intervals between voiding; increasing fluid intake to 2 L/day; urinary deferment techniques; ceasing "just in case" voiding
Burgio, 2002 ⁵⁰⁵ Country: USA Aim: the effects of biofeedback as a part of complex behavioral training program for urge incontinence in community-dwelling older women	222 ambulatory, nondemented, community-dwelling women ages 55 to 92 years with urge incontinence or mixed incontinence >2 times/week for at least 3 months, and with urodynamic evidence of bladder dysfunction (detrusor instability during filling or provocation or maximal cystometric capacity of ≤400ml)	Continual leakage, postvoid residual urine volume >150ml, severe uterine prolapse past the vaginal introitus, decompensated congestive heart failure, or impaired mental status (Mini-Mental State Examination score <24)	Biofeedback-assisted behavioral training implemented by nurse practitioners. Abdominal pressure and sphincter responses were measured with 3-balloon probe inserted in rectum. Pelvic floor muscle exercise with 10 second contractions/10 second relaxation for 20-30 minutes	Self-administered behavioral treatment using a self-help booklet to advise pelvic floor exercise and bladder control

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Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Burns, 1990 ⁵⁰⁶ Country: USA Aim: the effects of pelvic floor exercises or biofeedback on female stress urinary incontinence	128 women with stress or mixed urinary incontinence >3/week with Mini-Mental scores >23	Urinary tract infection	Kegel pelvic floor exercises 4 times/day. Biofeedback with vaginal EMG probe and visual control.	Usual care
Burns, 1993 ⁵⁰⁷ Country: USA Aim: the effects of biofeedback and pelvic muscle exercise treatment on stress incontinence in older community-dwelling women	135 community-dwelling women older than 55 years with sphincteric incompetence, >3 urine losses/week, urodynamic incontinence, >23 scores in Mini-Mental State exam	Glycosuria, pyuria, residual urine >50cc, peak urine flow <15cc/second	Biofeedback using vaginal EMG probe, contraction for 10 seconds and relaxations for 10 seconds 10 times in each weekly session. Pelvic muscle exercise with 4 sets of 20 increasing by 10/set until maximum 200 sets/day	Usual care
But, 2003 ⁵⁰⁸ Country: Slovenia Aim: the effects of functional magnetic stimulation in the treatment of women with urinary incontinence	55 women with urinary incontinence older than 18 years, not pregnant, and not physically or mentally disabled	Implanted electronic equipment (pacemakers), urolithiasis, bladder infection, tumor, recent urethral or continence surgery, use of anticholinergic drugs, beta-blocking agents, and diuretics	Functional magnetic stimulation with Pulsegen device, which produced a pulsating magnetic field of B = 10 microT intensity and a frequency of 10Hz	Placebo treatment with sham not active device
But, 2005 ⁵⁰⁹ Country: Slovenia Aim: the effects of functional magnetic stimulation for treating women with mixed urinary incontinence	39 women with mixed urinary incontinence and predominant urge incontinence	Not reported	Functional magnetic stimulation applied continuously at 18.5Hz day and night	Sham inactive device

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de Oliveira Camargo, 2009 ⁵¹⁰ Country: Brazil Aim: comparative effectiveness of individual vs. group pelvic floor muscle training	Women with confirmed urodynamic SUI, positive cough stress test, and less than 3 g of leakage as measured by a pad test with a standardized bladder volume (200 ml)	Detrusor overactivity, chronic neurological or muscular diseases, abnormal genital bleeding, uterine prolapse, advanced genital prolapse, active genitourinary tract infections, pregnancy, or vaginal atrophy, intrinsic sphincter deficiencies, Valsalva leak	Pelvic floor exercises in a group with two weekly sessions of 45 minutes each. In the orthostatic position, patients received oral instructions to perform ten contractions of 5 seconds with 5 seconds of recovery time, 20 contractions of 1 second with 1 second of recovery time	Individual pelvic floor exercises Following PERFECT assessment scheme with contractions in accordance with the endurance, power, and time that the patients could tolerate.
Cammu, 1998 ⁵¹¹ Country: Belgium Aim: the effects of pelvic floor exercises and vaginal weight cones in the treatment on female genuine stress incontinence	60 ambulatory and fit white women with urodynamic urinary stress incontinence, and vaginal capacity permitting the use of a vaginal probe-EMG biofeedback-or cones post-partum period, and had neither a genital prolapse nor any other associated pathology	Not in abstract	Weekly session of pelvic floor exercises vaginal probe-EMG biofeedback using perineometer	Vaginal weight cones (20, 32, 45, 57, and 70 g) for 15 minutes, twice daily

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<p>Castro, 2008²⁵³ Country: Brazil Aim: To compare the effectiveness of pelvic floor exercises, electrical stimulation, vaginal cones, and no active treatment in women with urodynamic stress urinary incontinence.</p>	<p>Women with proven urodynamic stress urinary incontinence were enrolled at the Urogynecology and Reconstructive Pelvic Surgery</p>	<p>Patients with chronic degenerative diseases that would affect muscular and nerve tissues, advanced genital prolapses, pregnancy, active or recurrent urinary tract infections, vulvovaginitis, atrophic vaginitis, continence surgery within one year, and patients with cardiac pacemakers; patients with intrinsic sphincteric deficiencies identified by the Valsalva leak point pressure ≤ 60cm H₂O measurement in the sitting position with a volume of 250 ml in the bladder and/or by the measurement of a urethral closure pressure ≤ 20cm H₂O in the sitting position at maximum cystometric capacity.</p>	<p>Pelvic Floor Muscle Training</p>	<p>Electrical stimulation/weighted vaginal cone/no treatment</p>
<p>Chadha, 2000⁵¹² Country: Australia Aim: the effects of national guidelines and local protocols in improving hospital care for women with UI</p>	<p>449 women with urinary incontinence from gynecology units in four district general hospitals across Scotland</p>	<p>Not reported</p>	<p>National evidence based guidelines adapted locally to protocols, which were disseminated at specific local educational meetings and implemented by placing a copy of the appropriate protocol in women's hospital case notes prior to consultation</p>	<p>Usual care</p>

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Coleman, Country: USA Aim: the effect of Chronic Care Clinics on urinary incontinence in frail older adults	Frail older adults were those enrollees at high risk for hospitalization according to the Chronic Disease Score, the patients in the Group Health Cooperative of Puget Sound, a large Health Maintenance Organization located in western Washington State	Severe illness that precluded their participation in the study; moderate to severe dementia; residence in a nursing home, terminal illness	New model of primary care, Chronic Care Clinics: (1) An extended (30 minutes) visit to the patient's physician and team nurse dedicated to developing a shared treatment plan that emphasized the reduction of disability; (2) A session with the pharmacist	Usual care
Corcos, 2005 ⁵¹³ Country: Canada Aim: Noninferiority RCT to examine effects of collagen injection or surgery on female stress urinary incontinence	133 women older than 30 years with stress urinary incontinence lasted for >6 months	Contraindications to surgery or collagen injections (allergic reaction), associated conditions (e.g., severe medical disease or indication for hysterectomy) or pelvic prolapse (vault, cystocele, rectocele), neurogenic bladder or interstitial cystitis	Intraurethral collagen submucosal injection 4 injections at 1-month intervals	Surgery (needle bladder neck suspensions, Burch, and slings). The choice of technique was left to the surgeon
Demain, 2001 ⁵¹⁴ Country: USA Aim: comparative effectiveness of group versus individual management on physical symptoms and quality of life in female urinary incontinence	Women over 18 years of age with clinical symptoms of stress and/or urge incontinence (median duration of symptoms 3 years 7 months) presenting to physiotherapy	Pregnancy, recent pelvic surgery (3 months), history of pelvic malignancy, fecal incontinence, current urinary infection, grade III prolapse, diseases of central nervous system, acute mental illness and dementia, previous physiotherapy for incontinence	Three educational group sessions with 4-12 women. Women attended 3 1-hour sessions with educational and exercise components	One 45-minute individual treatment, instructions in pelvic floor muscle exercise
Demirturk, 2008 ⁵¹⁵ Country: Turkey Aim: comparative effectiveness of interferential current and biofeedback applications on incontinence severity in patients with urinary stress incontinence	Women with urodynamic stress UI and moderate intensity of incontinence as determined by a one-hour pad test referred Physical Therapy and Rehabilitation, Women's Health Unit	Urinary tract infections, detrusor over activity, cognitive problems and neoplasm	Interferential current with a frequency of 0-00 Hz 5 minutes per session, three times a week for a total of 5 sessions	Kegel exercises with biofeedback 5 minutes per session, three times a week for a total of 5 sessions

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Diokno, 2004 ⁵¹⁶ Country: USA Aim: the effects of behavioral modification program on incidence of urinary incontinence in older women	359 postmenopausal, continent women (0-5 days of incontinent episodes in the previous year) 55 years and older. At baseline 2 groups reported identical 39% absolute continence and zero UI days 61% of participants reported 1 to 5 UI episodes in year	Neurologic diseases, mini-mental scores <24, positive paper towel cough test, grade 4 uterine prolapse	1 2-hour classroom presentation on behavioral modification program: pelvic floor muscle training, bladder training, and individualized test of knowledge, adherence, and skills to reinforce the technique as needed	Usual care
Diokno, 2010 ⁵¹⁷ USA The effectiveness of behavioral modification program vs. standardized protocol taught to adult incontinent women	Adult incontinent ambulatory females from four Michigan counties in the U.S.	1) Women currently under incontinence treatment with medications or previous/current behavioral programs, 2) history of bladder cancer, stroke, multiple sclerosis, Parkinsonism, epilepsy or spinal cord tumor or trauma, 3) pregnancy, 4) MESA questionnaire of 725 or higher on urge score, 70% or higher on stress score, or urge percentage higher than stress percentage to eliminate those with total incontinence and those with urge predominant symptoms, respectively. Previously failed anti-incontinence surgery was not considered for exclusion	Group intervention	No intervention

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Dougherty, 2002 ⁵¹⁸ Country: USA Aim: the effects of behavioral management for continence on urinary incontinence in older rural women in their homes	218 women 55 years and older, who lived in a private residence in rural area; with involuntary urine loss >2/week of 1g/24 hours or more; without urinary tract infection	Bladder cancer or kidney disease, indwelling urinary catheter, residual urine >100cc, needed caregiver	Behavioral management for continence: Self-monitoring and bladder training to reduce caffeinated beverages to <2 cups/glasses, 1,500 <daily fluid intake <4000cc, no fluid consumption after 6 pm, daytime voiding interval <4 hours, and treatment of const	Usual care
Dowd, 1996 ⁵¹⁹ Country: USA Aim: the effects of hydration on the number of urinary incontinence episodes	58 women 50 years old and older with incontinence more than 6 months, independent in self-care, English speakers with >20 scores on Mini-Mental State	Exclusion criteria: not provided	1. Increase fluid intake by 500cc 2. Maintain fluid intake at baseline level	Decrease daily fluid intake by 300cc
Dowd, 2000 ⁵²⁰ Country: USA Aim: the effects of cognitive strategies combined with educational programs in urinary incontinence	40 subjects >40 years of age, independent in self-care, with history of incontinence and/or frequency for at least 6 months, able to read and write English, and having hearing adequate for listening to an audiotape	Presence of urinary tract infections or severe neurological disorders	Education about bladder health, recorded incontinence and frequency episodes in a voiding diary, and listening to the audiotape daily	Education about bladder health and recorded incontinence and frequency episodes in the voiding diary

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Dumoulin, 2004 ⁵²¹ Country: Canada Aim: the effectiveness of multimodal supervised physiotherapy programs among women with persistent postnatal stress urinary incontinence	64 premenopausal women younger than 45 years presenting symptoms of stress urinary incontinence at least once per week 3 months or more after their last delivery	Current pregnancy, urinary incontinence before pregnancy, previous surgery for stress incontinence, moderate to severe urogenital prolapse, involuntary detrusor contraction on cystometry neurologic or psychiatric disease, or a major medical condition, taking medication that could interfere with their evaluation or treatment, inability to understand French or English instructions. Loss of followup: 2, plus 2 did not attend the final examination and were excluded from the analysis.	1. Pelvic floor rehabilitation: 15 minute electrical stimulation of the pelvic floor muscle; then 25 minute pelvic floor muscle exercise program with biofeedback, which included strengthening and motor relearning exercises and a home exercise 5 days/week. 2. Pelvic floor rehabilitation plus abdominal training: in addition to PFE 30 minutes of deep abdominal muscle training consisting of isolation, reeducation, and functional retraining of the transversus abdominis	Relaxation massage for the back and extremities by physiotherapist. They were asked not to exercise their pelvic floor muscles at home.
Elser, 1999 ⁵²² Country: USA Aim: the effects of pelvic floor muscle training, bladder training, or both, on urodynamic parameters in women with urinary incontinence	204 women 45 years or older, ambulatory, mentally intact with urodynamic genuine stress incontinence or detrusor instability, with or without stress incontinence, experiencing 1–100 episodes of incontinence per week as recorded on the qualifying 7-day diary	Reversible cause of incontinence, uncontrolled metabolic conditions (e.g., diabetes mellitus), postvoid residual of >100ml, persistent urinary tract infection, urinary tract fistula, or indwelling catheterization	Patient education, self-monitoring with treatment logs, compliance assessment, and positive reinforcement techniques administered by trained research nurses. Pelvic floor muscle training with 10 fast (3 second) contractions and 40 sustained (10 second) contractions	Bladder training

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Emmons, 2005 ⁵²³ Country: USA Aim: the effects of acupuncture on overactive bladder in women	85 women older than 18 years, with symptoms of overactive bladder with urge incontinence, >8 voids per day, subjective urgency to void, and urge-associated incontinence at least twice during a 3-day period of time	Pregnancy, taking medications for overactive bladder or receiving acupuncture treatments for any condition, unable to ambulate or unable to complete a 3-day voiding diary, and hematuria or untreated urinary tract infection	Acupuncture treatment expected to improve bladder symptoms	Placebo acupuncture treatment designed to promote relaxation
Engberg, 2002 ⁵²⁴ Country: USA Aim: Cross-over RCT to examine the effects of prompted voiding in cognitively impaired homebound older adults	19 adults 60 years and older with urinary incontinence >2 episodes/week for >3 months who met Center for Medicare and Medicaid Services criteria for being homebound, residents in 2 large Medicare-approved home health agencies in a large metropolitan area	Terminal illness; postvoid residual volume >100ml; caregiver was unable or unwilling to provide toileting assistance, complete bladder diaries, or implement the PV protocol	Prompted voiding by caregivers to approach subjects hourly for perceived wet/dry status vs. objective wet checks, feedback and praising for correct response, toilet by request, positive feedback for appropriate toileting	Usual care with attention control (visits by the nurse practitioner every 1-2 weeks to provide social interaction)
Fantl, 1991 ⁵²⁵ Country: USA Aim: the effects of bladder training on urinary incontinence in older women	131 noninstitutionalized women 55 years and older with clinical and urodynamic urinary incontinence >1 leakage/week; mentally intact (Mini-Mental State Examination score >23), capable of independent toileting	Uncontrolled diabetes, urinary tract infection, urinary obstruction, reversible cause of incontinence, permanent catheterization	Bladder training using 6 weekly visits included patient education; voiding schedule to have micturition from every 30-60 minutes to every 2.5-3 hours; and positive reinforcement	Usual care

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Felicissimo, 2010 ⁵²⁶ Brazil The effectiveness of intensive supervised PFMT to unsupervised PFMT in the treatment of female stress UI	Women with confirmed urodynamic stress urinary incontinence with Valsalva leak point pressure more than 60 cm/h2O and no detrusor overactivity. All subjects had predominant symptoms of SUI with an average of at least three stress continence episodes per week.	Chronic neurological muscular diseases, abnormal genital bleeding, genital prolapse at stage ≥ 2 of POP-Q (Pelvic Organ Prolapse-Questionnaire), active genitourinary tract infections, pregnancy, and women who preferred surgery. Patients with intrinsic sphincter deficiencies as identified by Valsalva leak point pressure ≤ 60 cm H2O measured in the sitting position with a volume of 250ml in the bladder were also excluded	Supervised Pelvic Floor Muscle Training	Unsupervised Pelvic Floor Muscle Training
Finazzi-Agro, 2005 ⁵²⁷ Country: Italy Aim: comparative effectiveness of posterior tibial nerve stimulation performed weekly vs. 3 times per week in men and women with overactive bladder syndrome	Men and women with overactive bladder syndrome not responding to antimuscarinic therapy	Not reported	Posterior tibial nerve stimulation 3 times/week	Posterior tibial nerve stimulation 1 time/week

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Finazzi-Agro, 2010 ⁵²⁸ Italy To evaluate the efficacy of percutaneous tibial nerve stimulation in female patients with detrusor overactivity incontinence	1) Urge incontinence and urodynamically diagnosed detrusor overactivity; 2) Incontinent; 2) Unresponsive to behavioral and rehabilitation therapy or antimuscarinic; 3) Able to give written, informed consent; 4) 18 years of age or older; 5) Mentally competent and able to understand all study requirements; 6) Able to understand the procedures, advantages and possible side effects; 7) Willing and able to complete a 3-day voiding diary and I-QoL questionnaire; 8) Bladder capacity 100 ml or greater; 9) No signs of neurologic abnormalities at objective examination; no history of neurologic pathology; and no pharmacological treatment or pharmacological treatment unchanged for 30 days before beginning the study	1) Pregnancy or intention to become pregnant during the study; 2) Active urinary tract infection or recurrent urinary tract infections (more than 4 per year); 3) Presence of urinary fistula, bladder or kidney stones, interstitial cystitis, cystoscopic abnormalities that could be malignant; 4) Diabetes mellitus; and Cardiac pacemaker or implanted defibrillator	Percutaneous tibial nerve stimulation	Placebo
Fujishiro, 2000 ⁵²⁹ Country: Japan Aim: the effects of magnetic stimulation of the sacral roots for the treatment of stress incontinence	62 women, 37 to 79 years old with stress incontinence, >1 episode of urinary leakage recorded in a 3-day voiding diary, and 2 gm or more urine loss on a 1-hour pad test	Urinary infection, interstitial cystitis and large uterine myoma, and other treatments for stress incontinence, including pelvic floor exercises, medical treatment and electrical stimulation	Magnetic stimulation of sacral roots with 15Hz. frequency, 50% intensity output for 5 seconds per minute for 30 minutes	Sham stimulation with inactive device

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Fujishiro, 2002 ⁵³⁰ Country: Japan Aim: the effects of magnetic stimulation of the sacral roots for treating urinary frequency and urge incontinence	37 women 43 to 75 years old with the complaint of urinary frequency and/or urge incontinence, >8 voids daily and/or >1 episode of urge incontinence on a 3-day voiding diary, and mean of less than 250 ml. urine volume per void on a 3-day voiding diary	Neurological disorders suggesting neurogenic bladder dysfunction, apparent episode of stress incontinence, urinary infection, interstitial cystitis or large uterine myoma , other treatments for urinary frequency or urge incontinence, including pelvic floor exercises, medical treatment or electrical stimulation	Magnetic stimulation of sacral roots with 15Hz. frequency, 50% intensity output for 5 seconds per minute for 30 minutes	Sham stimulation with inactive device
Gallo, 1997 ⁵³¹ Country: USA Aim: comparative effectiveness of external cue to action, an audiocassette tape, to improve pelvic floor muscle exercise compliance in women with stress urinary incontinence	Women ages 20–80 with a history of self-reported stress urinary incontinence and objective genuine stress incontinence during a urodynamic evaluation	Pregnancy and psychological disorders that would make it difficult to follow pelvic floor exercise instruction	The audiotape reinforced pelvic floor exercise instruction with counted aloud 25 consecutive pelvic floor muscle exercise contractions for 10 seconds and then relaxing for 10 seconds; 45-minute appointment with the specialized on UI nurse investigator	45 minute appointment with the specialized on UI nurse investigator with detailed verbal instructions about pelvic floor muscle identification and contraction; proper pelvic floor muscle contraction by the patient measured using a biofeedback computer
Gameiro, 2010 ⁵³² Country: Brazil Aim: To compare the efficacy of the VWC (Vaginal Weight Cone) and assisted PFMT to treating UI in women.	To be eligible, patients had been referred by a gynecologist as having symptom of predominant SUI, and 50% also presented urge incontinence. None of the patients had a urodynamic diagnosis of SUI. None of the patients had taken anticholinergics or tricyclic antidepressants or had been treated using pelvic floor exercises or bladder training.	Anterior or posterior vaginal prolapse beyond grade II, urinary infection, neurological or demyelinating condition, and poor comprehension.	Assisted Pelvic Muscle Floor Training	Vaginal weight cone

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Ghoniem, 2009 ⁵³³ Country: USA, Canada Aim: the effectiveness and safety of Macroplastique [®] as minimally invasive endoscopic treatment for female stress urinary incontinence primarily due to intrinsic sphincter deficiency	Women with a diagnosis of SUI primarily due to ISD that failed behavior modification (biofeedback) or exercise (Kegel)	Not viable mucosal lining, abnormal bladder capacity, urinary tract infection, uncontrolled detrusor overactivity, high post-void residual urine volume, high grade pelvic organ prolapse, confounding bladder pathology, pregnancy or morbid obesity	Transurethral injection of Macroplastique	Transurethral injection of Contigen [®]
Gilling, 2009 ⁵³⁴ Country: New Zealand Aim: the efficacy of extracorporeal electromagnetic stimulation of the pelvic floor for treating female stress urinary incontinence	Women >20 years old; symptoms of SUI or mixed UI, genuine SUI confirmed by pad-testing and urodynamics, ambulatory and community-dwelling, neurologically normal, agree not to seek or use any other form of treatment for UI during the study, otherwise healthy	Previous incontinence or pelvic floor surgery, Grade 3 or 4 pelvic prolapse (ICS classification), pregnancy, drugs, e.g. diuretics, alpha-adrenergic antagonists or other medication prescribed for bladder dysfunction, concurrent use of internal medical device	Electromagnetic stimulation 3 times/week using the NeoControl chair (Neotonus Inc., Marietta, GA, USA) with 10-minute stimulation at 10 Hz followed by a 3-minute rest and then a further 10-minute stimulation at 50 Hz. The intensity was adjusted to the maximum level	Sham stimulation with a thin deflective aluminum plate inserted in the chair, which prevented penetration of the magnetic field into the patient, and simulated the noise and sensation produced during active treatment sessions.
Glavind, 1996 ⁵³⁵ Country: Denmark Aim: effects of biofeedback on continence rates in women with stress UI	Women with self reported incontinence when coughing, laughing, lifting and during physical exercise verified by a positive 1-hour pad-weighting test (>2 g) with a bladder volume of three-quarters of the cystometric capacity	Intravesical obstruction and detrusor instability, previous surgery for urinary incontinence	Physiotherapy 2-3 times with individual instruction combined with biofeedback four times. Biofeedback was performed with a vaginal surface electrode (Dantec 21L20, Skovlunde, Denmark) and a rectal catheter.	physiotherapy 2-3 times with individual instruction alone
Glavind, 1997 ⁵³⁶ Country: Denmark Aim: the effects of vaginal sponge intended to support the urethra during aerobic exercise in women with stress urinary incontinence	Women 44-68 years with stress urinary incontinence lasting from 1 to 11 years, with daily episodes of incontinence.	intravesical obstruction and detrusor instability	half an hour of aerobic exercises on 2 consecutive days with the vaginal sponge intended to support the urethra	Half an hour of aerobic exercises on 2 consecutive days without the vaginal sponge

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Goode, 2003 ²⁹⁴ Country: USA Aim: the effect of biofeedback-assisted behavioral training on urinary incontinence in older women	105 ambulatory, non demented, community-dwelling women 55 and older with self-reported urge incontinence at least twice per week for >3 months with urodynamic evidence of bladder dysfunction	Continual leakage, postvoid residual urine volume greater than 200ml, uterine prolapse past the introitus, narrow-angle glaucoma, unstable angina pectoralis, congestive heart failure, history of malignant arrhythmias, or impaired mental status	Four sessions (over 8 weeks) of biofeedback-assisted behavioral training by nurse practitioners	Placebo control condition, usual care
Goode, 2003 Country: USA Aim: whether pelvic floor electrical stimulation increases efficacy of behavioral training for community-dwelling women with stress incontinence	200 ambulatory, nondemented, community-dwelling women ages 40 to 78 years with urinary incontinence (at least 2 stress incontinence episodes per week on the 2-week baseline bladder diary) confirmed during urodynamic testing	Continual leakage, postvoid residual urine volume >150ml, severe uterine prolapse, congestive heart failure, hemoglobin A1C ≥9, or impaired mental status (Mini-Mental State Examination score <24)	Behavioral training (biofeedback-assisted pelvic floor muscle training, home exercises, bladder control strategies, and self-monitoring with bladder diaries). Anorectal biofeedback (~20 minutes) with 3-balloon probe to measure sphincter pressure	Control: self-administered behavioral training administered with a self-help booklet with suggestions for isolating the pelvic floor muscles, progressive home exercise, self monitoring, and bladder control strategies
Gorman, 1995 ⁵³⁷ Country: USA Aim: effectiveness of an expert system for disseminating knowledge to women with urinary incontinence	Ambulatory, alert, community dwelling women with urinary incontinence defined as accidental urine loss at least twice a week	Dependence on a urinary catheter; not successful completion of a mental competency test	1. The expert system-the Urinary Incontinence Consultation System-with the Agency for Health Care Policy and Research (AHCPR) patient guideline for urinary incontinence and research literature for behavioral treatments 2. The educational printed booklet	General health video
Hahn, 1991 ⁵³⁸ Country: Sweden Aim: To compare the effect of two conservative methods and evaluate the long - term results	Women not previously operated upon, with pure stress urinary incontinence, consecutively referred for surgery	Not reported	Pelvic floor training	Intravaginal electrical stimulation

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Harvey, 2002 ⁵³⁹ Country: Not reported Aim: To determine the comparative effectiveness of weighted cones versus biofeedback in women with urodynamic incontinence	Consecutive adult clinic patients with symptoms of mainly stress incontinence and confirmed urodynamic stress incontinence on urodynamics were approached	Age >65 year, detrusor overactivity, past treatment with cones/biofeedback/ electrical stimulation/surgery, POPQ >stage 3.	Biofeedback	Weighted vaginal cones
Hu, 1989 ⁵⁴⁰ Country: USA Aim: the effects of behavior therapy program for urinary incontinence on women residents of nursing homes	143 women with confirmed stress incontinence in seven nursing homes with ability to recognize her own name.	Hospitalization, insufficient number of wet episodes per day (an average 0.18)	13-week behavior therapy program for urinary incontinence which included hourly checking and prompting of individuals to toilet, praising for successful toileting, and social reinforcement (additional personal service).	Control group received usual incontinence-related care
Huang, 2009 ⁵⁴¹ Country: USA Aim: the effects of an intensive behavioral weight reduction intervention on sexual function in overweight and obese women with urinary incontinence	The PRIDE study: at least 30 years old, have a BMI of 25 to 50 kg/m ² and self-report at least 10 episodes of incontinence weekly	Any condition that would prevent safely participating in an intensive diet and exercise program without medical supervision, medical therapy for incontinence, or weight loss in the previous month	Intensive lifestyle and behavior change program modeled after the Diabetes Prevention Program and Look AHEAD (Action for Health in Diabetes) trials designed to produce an average loss of 7% to 9% of initial body weight weekly 1-hour group sessions led by continent nurse	The structured education program: 1-hour group educational sessions at months 1, 2, 3, and 4, providing general information about weight loss, physical activity, healthy eating habits and health promotion
Hui, 2006 ⁵⁴² Country: China Aim: the effects of telemedicine vs. a conventional outpatient continence service (CS) in community-dwelling older women with urge or stress incontinence	Community-dwelling older women 60 years or over, with symptoms of urge or stress incontinence, and with one or more incontinence episodes in a week	Active urinary tract infection, a post-void residual volume by bladder ultrasound of more than 150 ml, third-degree uterine prolapse and treatment for urinary symptoms	The nurse specialist provided behavioral training to the group via videoconferencing, with the support of a female registered nurse who helped to run the TCP sessions. Each participant was encouraged to share her experiences with the nurse specialist	Face-to-face consultation the nurse specialist to give digital assessment feedback on pelvic floor contraction + booklet on urge and stress incontinence management

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Hung, 2010 ⁵⁴³ Country: Taiwan Aim: To investigate the effect of treating SUI symptoms in women by retraining diaphragmatic, deep abdominal and PFM coordinated function.	Women aged 18-65 years and had at least one episode of SUI symptom during the previous month	Being pregnant or less than three months postpartum, having systemic neuromuscular disease, having had previous surgery or intensive PFMT for UI, having severe low back pain or pelvic pain, having had a radical hysterectomy or having ongoing urinary tract infections	Diaphragmatic, deep abdominal and pelvic floor retraining	Placebo (Self-monitored PFM exercises)
Janssen, 2001 ⁵⁴⁴ Country: The Netherlands Aim: the effects of individual and group physiotherapy for urinary incontinence in women	530 women of all ages (mean 47.8 years) with stress, urge, or mixed incontinence	Neurological cause of incontinence, a tumor or infection in the pelvis, severe vaginal prolapse	Individual pelvic floor exercises 5 times/day and bladder training with delay voiding, training with 11 30-minute sessions	Group pelvic floor exercises 5 times/day and bladder training with delay voiding, training with 9 2-hour sessions
Jeyaseelan, 2000 ⁵⁴⁵ Country: UK Aim: effects of electrical stimulation on women stress incontinence	Women with urodynamically proven stress incontinence	Neurological conditions diagnosed by consultant; Previous electrical stimulation for stress incontinence, prolapse; pregnancy; pacemakers and cardiomyopathy; abnormal urological/gynecological findings; urinary tract/vaginal infection; recent pelvic floor surgery	The electro stimulation technique described by Oldham (International Patent Publication WO98/47357) with a background low frequency (to target slow twitch fibers) and intermediate frequency with an initial doublet (to target fast twitch fibers).	Sham electrical stimulation consisted of one 250- μ s impulse every minute for 60 minutes
Karademir, 2005 ³²³ Country: Turkey Aim: the effects of Stoller afferent neurostimulation with and without a low-dose anticholinergic (oxybutynin hydrochloride) in patients with detrusor overactivity	43 patients with symptoms of detrusor overactivity confirmed urodynamically	Urinary tract obstruction, urinary retention, neurologic or metabolic disorder, other treatments for urinary incontinence	Stoller afferent neurostimulation with frequency 20Hz and amplitude 0.5-10mA	Stoller afferent neurostimulation with frequency 20Hz and amplitude 0.5-10mA combined with 5mg of oral oxybutynin hydrochloride

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Kim, 2009, ⁵⁴⁶ Country: Japan Aim: To determine the effects of exercise treatment on reducing urine leakage in Japanese elderly women with stress, urge, and mixed UI	Women aged 70 and older who reported urine leakage one or more times per month.	Not reported	Exercise treatment enhancing PFM and functional fitness	Placebo
Kim, 2001 ⁵⁴⁷ Country: Korea Aim: the effects of continence efficacy intervention program on stress urinary incontinence in Japanese women	48 women 20-75 years old with stress or mixed urinary incontinence	Drug or surgery treatment for incontinence	Continence efficacy intervention program: common pelvic floor muscle education, audiovisual tape, calendar, counseling, schedule guideline, assessing self-care methods.	Conventional care
Kim, 2007 ⁵⁴⁸ Country: Japan Aim: the effectiveness of pelvic floor muscle and fitness exercises in reducing urine leakage in elderly women with stress urinary incontinence	Women >70 years old with stress UI >1 per month	Stress UI <1/month; urge or mixed incontinence	Fitness exercises and 60-minute pelvic floor muscle exercise sessions two times per week; 10 fast contractions (3 seconds) and 10 sustained contractions (6–8 seconds) with 10-second relaxation periods between the contractions.	Not described (no active intervention)
Kim, 2008 ⁵⁴⁹ Country: South Korea Aim: the effect of hand acupuncture treatment on the stress urinary incontinence in women	Women diagnosed with stress UI, never treated for UI including estrogen therapy or surgery	Stroke, dementia, Parkinson's disease, multiple sclerosis, spinal cord injury, communication problems, glycosuria or proteinuria	Active hand acupuncture points, ST27, CV4 or SP15	Inactive hand acupuncture points

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Kincade, 2007 ⁵⁵⁰ Country: USA Aim: the efficacy of self-monitoring techniques to reduce urine loss and increase quality of life for women with urinary incontinence	Community-dwelling women 18 and older living in Wake, Nash, and surrounding counties in North Carolina with involuntary urine loss of >1 g in 24 hours	Involuntary urine loss of less than 1 g in 24 hours, positive urine test for bacteria, diagnosis of bladder cancer or kidney disease, prior treatment of UI with biofeedback, urinary catheter, available to participate for less than 1 year, post void residual	Self-monitoring group with training on self-monitoring techniques at the end of the second visit; individualized counseling about caffeine consumption, amount of and timing of fluid intake, voiding frequency, and constipation; teaching a simple pelvic floor exercise	Wait list group; teaching a simple pelvic floor muscle contraction technique (Quick Kegel)
Konstantinidou, 2007 ⁵⁵¹ Country: Greece Aim: comparative effectiveness of group pelvic floor muscle training under intensive supervision to that of individual home therapy in women with stress UI	Women over 18 years with a clinical and urodynamic diagnosis of SUI for more than 3 months, >7 incontinence episodes per week, daytime frequency of less than 8 micturition episodes, nocturia of less than 3 episodes, positive stress test (urine leakage)	Symptoms of urgency and urge incontinence (excluded by the incontinence-specific history and the absence of detrusor overactivity or increased bladder sensation during standard voiding cystometry), presence of any degree of pelvic organ prolapse	Common weekly session in subgroups of 5, written training instructions for the rest of the week, group instructions for home application of pelvic floor training. Individualized according to the strength and endurance of pelvic floor muscles training program	Group instructions for home application of pelvic floor training and individual followup in hospital every 4 weeks. Individualized according to the strength and endurance of pelvic floor muscles training program included 3 sets of fast contractions.
Kumari, 2008 ⁵⁵² Country: India Aim: effects of behavioral therapy for urinary incontinence in women	Adult women with urinary incontinence	Continuous urinary drainage catheter, those taking diuretics, diagnosed vesicovaginal fistula, multiple sclerosis, spinal injury, severe uterine prolapse, mental impairment, pregnant women, and women who had delivered a baby in last 6 months	Behavioral treatment with educational materials, pelvic floor exercises with at least 50 pelvic floor contraction exercises each day, bladder retraining, and maintenance of a voiding diary and exercise record	No active therapy
Lagro-Janssen, 1992 ⁵⁵³ Country: The Netherlands Aim: the effects of pelvic floor exercises on stress incontinence and bladder training on urge incontinence	110 women with self-reported urinary incontinence confirmed with urodynamic as stress or urge	Not reported	Pelvic floor exercises alone (stress) or bladder training (urge) or its combination (mixed)	Usual care

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Lagro-Janssen, 1991 ⁵⁵⁴ Country: The Netherlands Aim: the effects of pelvic floor exercise on urinary incontinence in women	66 women ages 20-65 years with genuine stress incontinence	Previously undergone an operation for incontinence; if they suffered from underlying neurological causes for incontinence, from diabetes mellitus or from urinary tract infection; or if there was a temporary cause for their incontinence (for example, pregnancy)	Instructions in pelvic floor exercises 5- 10 sessions of 10 pelvic muscle contractions for 6 seconds each day.	No therapy
Lamb, 2009 ⁵⁵⁵ Country: UK Aim: To compare the effectiveness of group versus individual sessions of physiotherapy in terms of symptoms, quality of life, and costs, and to investigate the effect of patient preference on uptake and outcome of treatment	Women aged 18 years and over; able and willing to give informed written consent with an interpreter if necessary; clinical symptoms of stress and/or urge incontinence.	Pregnancy; recent pelvic surgery (less than three months); history of pelvic malignancy; current urinary infection; grade III and IV prolapse; disease of the central nervous system (e.g. multiple sclerosis, cerebrovascular accident) or acute mental illness and dementia; previous physiotherapy for incontinence within the last 12 months.	Group treatment Pelvic Muscle Floor Training	Individual treatment
Lappin, 2003 ⁵⁵⁶ Country: USA Aim: Crossover, placebo controlled RCT to examine effects of pulsed electromagnetic fields on bladder control in patients with multiple sclerosis	145 patients 18-65 years old with clinically definite multiple sclerosis and light spasticity (>2 in 6 point scale) and bladder control problems	Changes in medication last 2 months, pregnancy, pacemaker, chronic diseases	Daily simulation with low frequency pulsed electromagnetic fields	Sham inactive device
Laycock, 2001 ⁵⁵⁷ Country: UK Aim: the effects of vaginal cones, pressure biofeedback, and pelvic floor exercises on stress urinary incontinence in females	101 women 20-64 years old with symptoms of stress urinary incontinence	Moderate or severe urge urinary incontinence, moderate or severe genital prolapse, pregnancy or plans to become pregnant, use of medications that can affect the lower urinary tract, HRT for <3 months, neurological diseases	Pelvic floor exercise with maximum contraction for 1 second and rest for 4 seconds, 10 minutes/day combined with home pressure biofeedback using intra-vaginal perineometer	Pelvic floor exercise for 10 minutes/day

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Lee, 2001 ⁵⁵⁸ Country: Canada Aim: the effects of periurethral autologous fat injection on female stress urinary incontinence	68 women with stress urinary incontinence determined by history, urinary leakage via the urethra with cough provocation	Detrusor instability on multichannel urodynamic, co-interventions, including hormone replacement, weight reduction, or Kegel exercises, other diagnoses causing incontinence, including bladder instability	Periurethral injections of autologous fat (30cc of fat from the anterior abdominal wall or buttock through a single 2-3mm) with 3 maximum injections depending on outcomes measures	Placebo (saline)
Liebergall-Wischnitzer, 2009 ⁵⁵⁹ Country: Israel Aim: comparative effectiveness of circular muscle exercises (Paula method) or pelvic floor muscle exercise on stress UI in women	Women at least 1 g urinary leakage in a 1-hour clinic based pad test and with the ability to understand instructions in Hebrew or English	Pregnancy or breastfeeding; 12 weeks of delivery, 6 weeks of abortion, or 6 months of pelvic surgery; cardiac, respiratory, psychiatric, and neurological illnesses that limit physical activity; no demonstrated leakage of >1 g, grade three or higher uterine prolapse	The Paula method of circular muscle exercises. The Paula method was taught by three registered instructors to give weekly individual 45-minute sessions + recommendation to practice daily for 45 minutes at home	Pelvic floor muscle training taught by ten physiotherapists using a structured exercise program in groups of 1–10 people for 30 minutes once weekly for 4 weeks, followed by two more lessons 4 weeks apart each (overall six lessons)
Liebergall-Wischnitzer, 2005 ⁵⁶⁰ Country: Israel Aim: the effects of circular muscle exercises on female urinary stress incontinence	59 women, mainly hospital employees with stress or mixed urinary incontinence with urine loss >1gin pad test	Pregnancy, severe cardiac or respiratory diseases, pelvic surgery within 6 months, grade 3 and 4 cystocele, previous pelvic radiation, active mucosal lesion in vagina or perineum	Paula method of circular muscle training 15-45 minutes/day with training sessions of 45 minutes/week	Pelvic floor muscle exercise 15 minutes with 30 minute lesson session/week
Lightner, 2001 ⁵⁶¹ Country: USA Aim: the effects of bulking agents on stress urinary incontinence due to intrinsic sphincter deficiency in women	355 women diagnosed with stress urinary incontinence due to intrinsic sphincter deficiency, abdominal leak point pressure of less than 90cm/H2O, who failed prior surgical and medical treatment	355 women diagnosed with stress urinary incontinence due to intrinsic sphincter deficiency, abdominal leak point pressure of less than 90cm/H2O, who failed prior surgical and medical treatment	Injection of bulking agent 1.0ml durasphere maximum 5 times with a minimum 7 day interval	Injection of bulking agent bovine collagen maximum 5 times with a minimum 7 day interval

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Lightner, 2009 ⁵⁶² Country: USA Aim: Comparative effectiveness of Zuidex using a non-cystoscopy mid-urethral injection technique vs. Contigen injected endoscopically at the bladder neck in the treatment of urinary stress incontinence secondary to intrinsic sphincter deficiency in adult women	Zuidex Study Group: adult women seeking treatment for stress UI with confirmed urodynamic stress incontinence with abdominal leak point pressures <100 cm H ₂ O, positive pad testing (mean urinary leakage of >10 g during screening	Previous treatment with bulking agents of any type, pure predominant symptoms, mean voided volumes <200 ml on bladder diary, detrusor overactivity on filling cystometry, postvoid residual volumes >100 ml on 2 occasions, or stage III or IV pelvic floor prolapse	Non-cystoscopy mid-urethral injection of Zuidex	Endoscopic injection of Contigen
Luber, 1997 ⁵⁶³ Country: USA Aim: the effects of functional electrical stimulation for stress incontinence in women	57 women with stress urinary incontinence who could adequately retain the vaginal probe and cooperate with the study protocol	Significant pelvic prolapse and detrusor instability, postvoid residual urine >100cc, extra urethral incontinence, history of vaginal intraepithelial neoplasia, urinary tract infection, and a fixed, immobile urethra	Functional electrical stimulation with 15-minute treatment session/day using pulse-width of 2msec scheduled for 2 seconds with 4 seconds rest, frequency of 50Hz, and power 10-100mA.	Sham stimulation with inactive device
MacDiarmid, 2010 ³⁶⁰ Country: USA Aim: To assess the sustained effectiveness of PTNS therapy offered at individualized intervals during 1 year in subjects who finished an initial course of 12 consecutive weekly sessions.	Subjects in the OrBIT trial who finished an initial course of 12 consecutive weekly PTNS treatments were offered ongoing sessions of therapy for an additional 9 months to monitor improvement in frequency, nocturia, urgency, urge incontinence episodes and voided volume. Subjects were required to be OAB drug-free throughout the study.	Not reported	Percutaneous Tibial Nerve Stimulation	Percutaneous Tibial Nerve Stimulation

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Majumdar, 2010 ⁵⁶⁴ UK To evaluate treatment outcomes based on baseline urodynamics vs. symptoms alone	Patients over 18 years of age referred from a primary care with UI and other lower urinary tract symptoms	Patients who were referred for undergoing surgery for significant prolapse (stage2 or more) or had previous consultation and were then referred for surgery for incontinence, cognitive difficulties (consent issue), neurological disorders, previous treatment for incontinence at tertiary level, recurrent dysuria or infection on urine culture	Urodynamics	Conservative treatment based on symptoms and bladder diary
Manganotti, 2007 ⁵⁶⁵ Country: Italy Aim: the short and long-term effects of repetitive magnetic stimulation on the sacral roots	Women with stress UI, >1 episodes of stress UI in 3-day diary, >2g of urine loss in 1 hour pad test	Urinary tract infection, interstitial cystitis, large uterine myoma, severe cardiac or cerebrovascular disorders	Fifteen-Hz repetitive magnetic stimulation of the sacral roots (S2-S4) applied for 15 minutes 3 days a week for 2 weeks (6 times in all)	Sham stimulation
Manonai, 2006 ⁵⁶⁶ Country: Thailand Aim: Cross-over RCT to examine the effect of a soy-rich diet on urogenital symptoms in peri- and postmenopausal women	42 healthy perimenopausal and postmenopausal women between 45-70 years old reported at least one type of urinary incontinence	Exclusion criteria: Presence or history of sex hormone dependent malignancies, liver or renal disorders, and pathology of urogenital tract	Self-selected diet with low-fat and low cholesterol foods and soy protein 25g in various forms of soy foods containing more than 50mg/day of isoflavones	Self-selected diet with low fat and low cholesterol foods
Mayer, 2007 ⁵⁶⁷ Country: USA Aim: comparative effectiveness of soft-tissue augmentation of the urethral sphincter with calcium hydroxylapatite vs. glutaraldehyde cross-linked bovine collagen in female stress urinary incontinence due to intrinsic sphincter deficiency and without associated urethral hypermobility	Women age 18 years old or older, stress UI due to intrinsic sphincter deficiency without associated urethral hypermobility (straining urethral angle of 35° or less from horizontal), good bladder function and capacity (more than 250 mL without detrusor instability)	Morbid obesity (more than 100 lb over ideal body weight) and a urethral length of less than 2.5 cm	Transurethral or periurethral soft-tissue augmentation of the urethral sphincter with calcium hydroxylapatite; up to 5 injections during 6 months	Transurethral or periurethral soft-tissue augmentation of the urethral sphincter with glutaraldehyde cross-linked bovine collagen; up to 5 injections during 6 months

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
McDowell, 2006 ⁵⁶⁸ Country: Northern Ireland Aim: the effects of pelvic floor training and advice, electromyography biofeedback, and neuromuscular electrical stimulation on urinary incontinence in patients with multiple sclerosis	30 women >18 years with multiple sclerosis stabilized for the previous 3 months. Expanded Disability Status Scale score <7.5 with at least one of the following: any involuntary leakage of urine, voiding frequency >8/24 hours, nocturia, and/or reported voiding dysfunction such as hesitancy, straining, poor stream, and incomplete emptying demonstrated by uro-flowmetry.	MS relapse necessitating hospitalization 3 months prior to or during the study, symptomatic prolapse, presence of urinary tract infection, current or recent diagnosis of a serious medical condition (other than MS), severe cognitive impairment, contraindications to neuromuscular electrical stimulation.	Pelvic Floor Training and Advice: education with booklet about normal bladder control, lifestyle interventions (weight reduction, relieving constipation, cessation of smoking, caffeine reduction, fluid management, clothing, reducing emotional stress)	Pelvic Floor Training and Advice with EMG Biofeedback and neuromuscular electrical stimulation. Stimulation at clinic (weekly) initially for 5 min 30 minutes using pulse rate 40Hz, pulse width 250msec, with 5sec on and 10 sec off or 10 Hz, 450msec, 10sec
McDowell, 1999 ⁵⁶⁹ Country: USA Aim: Cross-over RCT to examine the effects of behavioral therapies of urinary incontinence in homebound older adults.	105 adults 60 years and older, homebound (Health Care Financing Administration, cognitively intact (Folstein Mini-Mental State Examination score >24), with urinary incontinence (>2 urinary accidents/week for at least 3 months), who understand and speak English	Folstein MMSE scores <24, severe pelvic prolapse, terminal illness, post-void residual >100ml unable to toilet independently, no caregiver willing and able to assist with toileting, <2 urinary accidents per week, unable to provide satisfactory self-report	Biofeedback-assisted pelvic floor muscle training by nurse practitioners skilled in behavioral therapies for urinary incontinence. Behavioral therapy: 8 weekly sessions at homes with biofeedback-assisted pelvic floor muscle exercises, urge and stress strategies, and bladder training	Usual care with attention control (visits by the nurse practitioner every 1-2 weeks to provide social interaction).
McFall, 2000 ⁵⁷⁰ Country: USA Aim: the effects of group educational intervention for urinary incontinence in elderly women	145 women ages 65 or older with self reported urinary incontinence ≥3 months, residing in Oklahoma.	Severe prolapse of uterus, hematuria, diverticulum, fistula, unresolved urinary tract infection, two or more urinary tract infections within 3 months, urinary obstruction, overflow incontinence, a postvoid residual volume of urine (PVR) >100ml, and blood	Community-based intervention with 5 biweekly sessions of education and skill-building, for bladder training, managing the urge to urinate, and performing pelvic muscle exercises. Group support by registered nurses; occupational therapist, and public health professional	Usual care

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
McFall, 2000 ⁵⁷¹ Country: USA Aim: To report an assessment of a community-based intervention for UI and to summarize the outcomes of the intervention model related to incontinence and other urinary symptoms.	Most participants attended a community presentation prior to enrollment. Participants lived independently in a four-county region in central Oklahoma. The women were 65 years or older and had urinary incontinence for 3 months or more.	Severe prolapse of uterus, hematuria, diverticulum, fistula, unresolved urinary tract infection, two or more urinary tract infections within 3 months, urinary obstruction, overflow incontinence, a postvoid residual volume of urine (PVR) >100 ml, and blood glucose >300 mg/dl on two or more visits in a 3 month period. Functional or disability exclusions were being homebound because of frailty, severe hearing or vision problems, low literacy, and cognitive impairment.	Small group educational approach	Wait control
Miller, 1998 ⁵⁷² Country: USA Aim: the effects of intentionally contracting the pelvic floor muscles before and during a cough on mild and moderate female stress urinary incontinence.	27 women with self reported stress urinary incontinence and demonstrable urine loss during a deep cough with leakage occurring at least weekly and up to 5 times/day.	History of systemic neuromuscular disease, previous bladder surgery, active urinary tract infection, leakage that was delayed after coughing and categorized as detrusor instability, leakage that saturated a paper towel and/or pooled on the floor when coughing in the standing posture, inability to demonstrate any voluntary contraction of the pelvic floor muscles despite detailed instruction during the pelvic exam, and significant coexistent pelvic organ prolapse below the hymenal ring	Immediate intervention group taught intentionally contracting the pelvic floor muscles before and during a cough (Knack)	Wait-listed control group

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Moore, 2003 ⁵⁷³ Country: Australia Aim: the effects of nurse continence advisors and urogynecologists in conservative management of urinary incontinence.	145 consecutive patients with stress and/or urge incontinence with idiopathic detrusor instability, sensory urgency, and mild or moderate leakage (urine loss in 1-hour pad test 2-9.9ml/hour or 10-50ml/hour).	Previous pelvic radiotherapy, proven recurrent bacterial cystitis, prolapse beyond the introitus, uterine enlargement or incomplete bladder emptying (postvoid residual >100ml).	2 nurse continence advisors/ patient and consulting urogynecologist for 25-35 minutes/week provided bladder training, gradual increase in fluid intake, individual deferment techniques, pelvic floor muscle exercise and examination, transvaginal electro stimulation	Outpatient regimen with 15-20 minute consultation with referral to physiotherapist and bladder training.
Morkved, 2002 ⁵⁷⁴ Country: Norway Aim: the effects of individual pelvic floor muscle training with and without biofeedback in women with urodynamic stress incontinence.	103 women with symptoms of stress incontinence and >2g leakage measured by a pad test with standardized bladder volume.	involuntary detrusor contractions on cystometry, abnormal bladder function (residual urine >50ml), previous surgery for stress incontinence, neurologic or psychiatric disease, urinary tract infection, other diseases that could interfere with participation	Pelvic floor muscle training with 3 sets of 10 contractions 3 times/day, individually supervised by a physical therapist. At home, 3 sets of 10 high intensity (close to maximum) contractions per day with a biofeedback apparatus	Pelvic floor muscle training with 3 sets of 10 contractions 3 times/day, individually supervised by a physical therapist. At home, 3 sets of 10 high intensity (close to maximum) contractions per day without biofeedback
Du Moulin, 2007 ⁵⁷⁵ Country: Netherlands Aim: effects of a specialized nurse in the care of community-dwelling women with urinary incontinence	Community-dwelling women aged 18 years who attended general practitioner clinic because of urinary incontinence	Urinary tract infection, PVR of 100 mL or more, delivery within 3 months preceding recruitment, bladder cancer, renal disease, or uterine prolapse past the introitus	The continence nurse and multidisciplinary team comprising a GP, urologist, physiotherapist	Standard care provided by the general practitioners
Nager, 2009 ⁵⁷⁶ Country: USA Aim: association between successful incontinence pessary fitting or pessary size and specific pelvic organ prolapse measurements in women without advanced pelvic organ prolapse	Pelvic Floor Disorders Network (PFDN): women with stress urinary incontinence (SUI) and POPQ stage ≤ 2	Not reported	Incontinence pessary+ behavioral therapy including pelvic floor muscle training and exercise and bladder control strategies	Incontinence pessary

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Ng, 2008 ⁵⁷⁷ Country: Taiwan Aim: the effect of nursing intervention to enhance the efficacy of a home-based pelvic floor muscle exercise (PFME) on mixed urinary incontinence in community-dwelling women	Women with mixed urinary incontinence interested in behavioral training and potentially available for telephone contact	no educational background, dependent in daily activities	A registered nurse monitoring via telephone checkups twice a week home based PFMT. Education about the pelvic anatomy, the function of the pelvic floor muscle, the bladder and urethra, the use of PFMT, and how to perform PFMT: 1 hour per session, twice weekly, for 4 weeks in total.	Home based PFMT. Education about the pelvic anatomy, the function of the pelvic floor muscle, the bladder and urethra, the use of PFMT, and how to perform PFMT: 1 hour per session, twice weekly, for 4 weeks in total.
Nielsen, 1993 ⁵⁷⁸ Country: Denmark Aim: Cross-over RCT to examine effects of urethral plug on female genuine urinary stress incontinence	40 women with genuine urinary stress incontinence	Not reported	Urethral plug as oval metal plate, a soft stalk, and 1 sphere along the stalk with fixed distances between the metal plate and the spheres. Inside the stalk is a removable semi-rigid guide pin to ease insertion.	Urethral plug as oval metal plate, a soft stalk, and 2 spheres along the stalk with fixed distances between the metal plate and the spheres. Inside the stalk is a removable semi-rigid guide pin to ease insertion.
Nygaard, 1995 ⁵⁷⁹ Country: USA Aim: Crossover RCT to examine the effects of Hodge pessary with support, a super tampon on urinary incontinence during exercise.	20 female exercisers ages 33-73 with urinary incontinence during exercise and positive coughing test.	Prolapse of the uterus, stenotic vagina, or pelvic mass.	40-minute standardized aerobics session wearing a Hodge pessary with support 40-minute standardized aerobics sessions wearing a super tampon	40-minute standardized aerobics sessions with no mechanical device
Nygaard, 1996 ⁵⁸⁰ Country: USA Aim: the effects of pelvic floor muscle exercises in combination with specially designed audiotape on stress, urge, and mixed urinary incontinence in women.	71 women non pregnant women >21 years old with urinary incontinence.	Genital prolapse past the vaginal introitus, parturition within the preceding 6 months, and deafness	Pelvic floor muscle exercises with 2 5-minute daily sessions, beginning with contractions for 4-8 seconds in combination with specially designed audiotape with 270 minutes of music and verbal instructions of technique tips, reminders, and exercise cues.	Pelvic floor muscle exercises with 2 5-minute daily sessions, beginning with contractions for 4-8 seconds.

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
O'Brien, 1991 ⁵⁸¹ Country: England Aim: the effects of pelvic floor exercises and bladder retraining supervised by non-specialist nurse on urinary incontinence in adults with regular urinary incontinence.	561 adults ages 35 years and older with regular urinary incontinence (two or more leaks in any one month).	Urinary tract infection.	Four sessions of pelvic floor exercises and bladder retraining supervised by non-specialist nurse.	Usual care
O'Brien, 1996 ⁵⁸² Country: UK Aim: Long term (followup of O'Brien, 1991 ⁵⁸¹) effects of behavioral training on urinary incontinence in adult women	Female patients over 35 years from two large Somerset general practices with urinary incontinence two or more leaks in any one month	Reported previously	Nurse-led four sessions of pelvic floor exercises or bladder retraining depending on the dominant symptoms (stress or urge respectively)	Postponed treatment
Oldham, 2010 ⁵⁸³ Country: Canada Aim: Evaluation of a self-contained, fully automated, disposable device (Femestin), with application similar to that of a tampon	Women with urinary incontinence were recruited via a process of self-referral through ads placed in local newspapers and on local radio to reflect future practice	Not reported	Pelvic Floor Exercises obtained from Bladder and Bowel Foundation + Femestin device	Pelvic Floor Exercises obtained from Bladder and Bowel Foundation

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
O'Sullivan, 2003 ⁵⁸⁴ Country: Australia Aim: the effect modification by baseline severity of any urinary incontinence on continence rates after nurse intervention in women with urodynamic UI	Women with urodynamically proven GSI, DI, or Sumild (2-9.9 g) to moderate (10-49.9 g) incontinence (as judged by weight gain on 1-hour pad testing)	Previous pelvic radiotherapy, proven recurrent bacterial cystitis, prolapse beyond the introitus, uterine enlargement of duration more than 12 weeks, or incomplete bladder emptying (residual >100 ml)	Nurse continence adviser with the first visit of 45 minutes with pelvic floor digital testing, verbal biofeedback, bladder training with individual deferment techniques; followup weekly visits of approximately 30 minutes with re-exam of pelvic floor muscle	Routine urogynecology outpatient therapy with a referral note to a physiotherapist (SUI) or educational videotape about bladder training (Urge UI) or anticholinergic therapy (DI)
Pages, 2001 ⁵⁸⁵ Country: Germany Aim: the effects of intensive group physical therapy program with individual biofeedback training for female patients with urinary stress incontinence.	51 women, referred by gynecologists for nonoperative treatment of genuine stress incontinence of mild-to-moderate severity.	Not reported	Specific physical therapy program. Group therapy 5 times/week and home pelvic floor exercise with 50 contractions for 10 minutes 2 times/day. Recommendation of weight loss and aerobic sports.	Biofeedback training daily 90-minutes in group and individually for 15 minutes, 5 times/week; Intra vaginal pressure sensor and visual biofeedback in computer monitor
Peters, 2010 ⁵⁸⁶ Country: USA Aim: To compare the efficacy of PTNS to a validated sham	Women and men ≥18 years of age; a score of ≥4 on the OAB-q short form for urgency; average urinary frequency of ≥10 voids per day; self-reported bladder symptoms ≥3 months; self-reported failed conservative care; discontinued all antimuscarinic for ≥2 weeks; capable of giving informed consent; ambulatory and able to use toilet independently without difficulty; and capable and willing to follow all study-related procedures	Pregnant or planning to become to pregnant during the study; neurogenic bladder; Botox use in bladder or pelvic floor muscles within the past one year; pacemakers or implantable defibrillators; current urinary tract infection; current vaginal infection; use of Interstim; use of Bion; current use of TENS in pelvic region, back or legs; previous PTNS treatment; use of investigational drug/device therapy within past 4 weeks; and participation in any clinical investigation involving or impacting gynecologic, urinary or renal function within past 4 weeks	Percutaneous tibial nerve stimulation	Placebo

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Peters, 2010 ⁵⁸⁷ Country: USA Aim: To compare the efficacy of PTNS to a validated sham in subjects who have previously used OAB pharmacologic therapy	This analysis includes only those subjects who previously used OAB pharmacologic therapy prior to their participation in the study. Women and men ≥ 18 years of age; a score of ≥ 4 on the OAB-q short form for urgency; average urinary frequency of ≥ 10 voids per day; self-reported bladder symptoms ≥ 3 months; self-reported failed conservative care; discontinued all antimuscarinic for ≥ 2 weeks; capable of giving informed consent; ambulatory and able to use toilet independently without difficulty; and capable and willing to follow all study-related procedures.	Pregnant or planning to become to pregnant during the study; neurogenic bladder; botox use in bladder or pelvic floor muscles within the past one year; pacemakers or implantable defibrillators; current urinary tract infection; current vaginal infection; use of Interstim; use of Bion; current use of TENS in pelvic region, back or legs; previous PTNS treatment; use of investigational drug/device therapy within past 4 weeks; and participation in any clinical investigation involving or impacting gynecologic, urinary or renal function within past 4 weeks	Percutaneous Tibial nerve stimulation	Placebo
Ramsay, 1996 ⁵⁸⁸ Country: Scotland Aim: comparative effectiveness of inpatient vs. outpatient behavioral treatment for urinary incontinence in women	Women with urgency, nocturia, urge incontinence and stress incontinence	Previous treatment for their incontinence, symptoms of hematuria, recurrent dysuria or voiding difficulty, or infection on urine culture	Bladder retraining and physiotherapy as an inpatient 5-day hospital stay	Bladder retraining and physiotherapy as an outpatient with two 2-hour sessions, 1 week apart.

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Richter, 2010 ³⁶³ Country: USA Aim: To compare the effectiveness of a continence pessary to evidence-based behavioral therapy for stress incontinence and to assess whether combined pessary and behavioral therapy is superior to single modality therapy	ATLAS trial: Women at least 18 years old with symptoms of stress only or stress-predominant mixed-incontinence symptoms	Previously reported in Richter, 2007 ⁵⁸⁹	Behavioral therapy	Pessary + Behavioral therapy/Pessary alone
Robinson, 2003 ⁵⁹⁰ Country: Canada Aim: the effects of new urethral device or the reliance insert on female urinary incontinence.	24 women 30-75 years old with mixed or stress urinary incontinence >2 episodes/week >2g urine loss on baseline pad weight test, with sound mental condition, willing to use >3 devices/week.	Overflow incontinence or neurogenic bladder, type III incontinence, kidney inflammatory diseases, urinary tract infection, use of anticoagulants or incontinence medications, allergy to antibiotics, diabetes mellitus type II, pregnancy, urethral mucosal abnormalities, prosthetic heart valve, HRT last 3 months, collagen injections or other urethral bulking agents last 3 months, detrusor contraction >20cm/H2O.	Urethral device (NEAT) –sterile urethral insert with disposable applicator packaged with device.	Reliance insert sterile balloon type device
Sand, 1995 ⁵⁹¹ Country: USA Aim: the effects of transvaginal electrical stimulation in treating genuine stress incontinence.	52 community dwelling women with urodynamically proven genuine stress incontinence, who would comply with visits, not use/seek other treatment for incontinence.	Detrusor instability, pregnancy, pacemaker, prior pelvic floor stimulation, pelvic implanted devices, active vaginal lesions or infections, urinary tract infection, hypermenorrhea or menorrhagia, urinary retention (>100ml), pelvic surgery in past 6 months	Active pelvic floor stimulator with gradually adjusted 60-80mA from 5 seconds on/1 second off for 15 minutes to 5 seconds on/5 seconds off for 30 minutes.	Sham inactive device

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Schreiner, 2010 ⁵⁹² Brazil To examine the efficacy of transcutaneous electrical tibial nerve stimulation (TTNS) to treat urge urinary incontinence (UUI) in older women	52 patients from the Urogynecology Section of the Gynecology Department in Sao Lucas Hospital of Pontificia Universidade Catolica do Rio Grande do Sul in the city of Porto Alegre with complaint of urge incontinence and age of 60 years or more.	Presence of urinary infection during the recruitment process, prior surgery for urinary incontinence, history of genito-urinary cancer, prior pelvic irradiation, pure stress urinary incontinence, genital prolapse above the second degree of Walker, and inability to perform the Kegel exercises.	Transcutaneous electrical tibial nerve stimulation + Bladder training	Bladder training
Schulz, 2004 ⁵⁹³ Country: Canada Aim: the effects of periurethral and transurethral injections of bulking agents on stress urinary incontinence in females.	40 women ages 18-80 years old, with genuine stress incontinence for >12 months, or mixed incontinence with a minor and controlled urge component, who failed 3 months conservative treatments.	Other treatments for incontinence, urinary tract infection, bladder capacity <250ml or postvoid residual volume >100ml, neurogenic bladder, grade 3 cystocele, uterine prolapse or rectocele, radiation of urethra, pregnancy, life expectancy <15 months.	Periurethral route of injection of bulking agent-dextran copolymer	Transurethral route of injection of bulking agent-dextran copolymer
Seo, 2004 ⁵⁹⁴ Country: South Korea Aim: the effects of vaginal cone with conventional FES-biofeedback therapy for female urinary incontinence.	120 patients, who required a non-surgical treatment for urinary incontinence.	Not reported	Pelvic floor exercise (5 second contraction and 10 second relaxation, 3-5 times for >5 minutes/day) and functional electrical stimulation biofeedback (35Hz-50Hz for 24 seconds); 2 training sessions/week.	Vaginal cone, 150g dumbbell-shaped made of fine ceramic material.
Sherman, 1997 ⁵⁹⁵ Country: USA Aim: the effects of pelvic muscle exercises with urethral biofeedback on exercise-induced urinary incontinence in female soldiers.	39 female active duty soldiers with exercise-induced urinary incontinence (stress or mixed).	Not reported	Pelvic muscle exercises with contractions for 10 seconds and relaxation for 10 seconds 5 times/session, 20 minutes twice/day with urethral biofeedback using vaginal EMG probe.	Pelvic muscle exercises with contractions for 10 seconds and relaxation for 10 seconds 5 times/session 20 minutes twice/day alone.

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Smith, 1996 ⁵⁹⁶ Country: USA Aim: the effects of intravaginal electrical stimulation on genuine stress urinary incontinence and detrusor instability in women.	57 women with urinary incontinence.	Type 3 stress urinary incontinence, pregnancy, urinary retention, vaginal prolapse, cardiac pacemaker, mixed incontinence with no major and minor components.	18 women with stress urinary incontinence: Electrical stimulation using frequency 12.5Hz.-50Hz and amplitude 5-10mA-80mA for 15 to 60 minutes 2/day 38 women with detrusor instability Anticholinergic therapy with Propantheline bromide in dose of 7.5 to 4	Kegel exercise
Spruijt, 2003 ⁵⁹⁷ Country: The Netherlands Aim: the effects of intravaginal electrical stimulation of the pelvic floor for urinary incontinence in elderly women.	51 women ≥65 years of age, with symptoms of stress, urge or mixed urinary incontinence of >3 months' duration, and with urinary leakage >10cc/24hours.	Persistent urinary tract infection (positive urine culture after antibiotic treatment), recurrent urinary tract infection (within 4 weeks after treatment), bladder pathology or dysfunction because of fistula, tumor, pelvic irradiation, neurological or other chronic conditions (diabetes mellitus, Parkinson's disease), genital, pacemaker, and insufficient mental condition.	Intravaginal electrical stimulation of the pelvic floor using stimulator generated biphasic current pulses with duration of 1ms and a frequency of 50Hz (stress urinary incontinence) or 20Hz (urge urinary incontinence).	Kegel exercise program with verbal instructions on how to exercise at home.
Strasser, 2007 ⁵⁹⁸ Country: Austria Aim: the effects of ultrasonography-guided injections of autologous cells or endoscopic injections of collagen on stress urinary incontinence.	63 females 36-84 years old with intrinsic sphincter insufficiency or stress urinary incontinence with only mild hypermobility of the urethra and the urinary bladder; good state of health who failed pelvic floor muscle exercises.	Urge incontinence and pronounced hypermobility of the urethra.	Transurethral ultrasonography-guided injections of autologous myoblasts and fibroblasts; regular training of the rhabdosphincter for 12 weeks and trans vaginal electrical stimulation for 4 weeks.	Conventional endoscopic injections of collagen; regular training of the rhabdosphincter for 12 weeks and trans vaginal electrical stimulation for 4 weeks

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Subak, 2002 ⁵⁹⁹ Country: USA Aim: the effects of low-intensity behavioral therapy program on urinary incontinence in older women	Women 55 years and older with self reported urinary incontinence, members of health maintenance organization, living independently in the community and functionally capable of independent toileting.	Uncontrolled diabetes mellitus, urinary tract infection, history of urinary obstruction, overflow, functional incontinence, urinary tract anomalies	6 weekly 20-minute group instructional sessions on bladder training by nurse educators and followed individualized voiding schedules.	Usual care
Subak, 2005 ⁶⁰⁰ Country: USA Aim: the effect of weight loss on urinary incontinence in overweight and obese women.	48 women 18 to 80 years old with body mass index between 25 and 45 kg/m ² , urinary incontinence for at least 3 months and at least 4 incontinent episodes/week, the stable dose of other incontinence therapy .	Exclusion criteria: pregnancy, urinary tract infection, significant medical condition, pelvic cancer, neurological condition possibly associated with incontinence, interstitial cystitis or potential inability to complete the study.	Weight reduction intervention: 3-month standard low calorie liquid diet (800kcal/day or less), increased physical activity to 60 minutes/day, training by a nutritionist, exercise physiologist or behavioral therapist	Usual care
Subak, 2009 ⁶⁰¹ Country: USA Aim: effectiveness of weight loss on urinary incontinence in obese women	Women at least 30 years of age, a body-mass index of 25 to 50, >10 urinary-incontinence episodes/week, ability to walk unassisted for two blocks (approximately 270 m) without stopping	Pregnancy, urinary tract infection, significant medical condition, pelvic cancer, neurological condition possibly associated with incontinence, interstitial cystitis or potential inability to complete the study.	Intensive 6-month weight-loss program to produce an average loss of 7 to 9% of initial body weight that included diet, exercise, and behavior modification (AHEAD ,Action for Health in Diabetes) trial	Structured education program: four education sessions at months 1, 2, 3, and 4. During these 1-hour group sessions, which included 10 to 15 women, general information was presented about weight loss, physical activity, and healthful eating habits
Sung, 2000 ⁶⁰² Country: Korea Aim: the effects of pelvic floor muscle exercises on female genuine stress incontinence.	90 married women with urinary incontinence.	Not reported.	Functional electrical stimulation-biofeedback for 20 minutes/session with frequency 35Hz-50Hz and contractions of 32 seconds, 2 sessions/week Intensive pelvic floor muscle exercises	Control usual care

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Sung, 2000 ⁶⁰³ Country: South Korea Aim: comparative effectiveness of pelvic floor muscle exercise and the functional electrical stimulation - biofeedback for female urinary incontinence	Married women diagnosed with genuine stress UI	Not reported	Intensive pelvic floor muscle exercise at home, videotape with instructions to perform exercise, weekly examination of accuracy and intensity of contractions	Functional electrical stimulation (FES)-biofeedback for 20 minutes/session, 2 sessions/week and weekly examination of accuracy and intensity of contractions. Pelvic electrical stimulation for 24 seconds at 35 and 50 Hz simultaneously followed by biofeedback
Swithinbank, 2005 ⁶⁰⁴ Country: England Aim: Cross-over RCT to examine the effect of caffeine restriction and fluid manipulation in the treatment of patients with urodynamic stress incontinence.	69 women with urodynamically proven stress incontinence naive to surgery.	Urinary tract infection, hepatic, cardiac or renal disease and diabetes mellitus, use of antidepressants, anticholinergics or diuretics.	1. Increased decaffeinated fluids to 3 liters daily (20 cups) or decreased decaffeinated fluids to 750ml (5 cups) daily 2. Caffeine restriction and increased fluid intake to 2, 2,673ml/day 3. Caffeine restriction and decreased fluid intake to 872ml/day	Usual care
Tibaek, 2007 ⁶⁰⁵ Country: Denmark Aim: the long term effect of pelvic floor muscle training in women with urinary incontinence after stroke	Women, diagnosed with first ever ischemic stroke according to the definition of World Health Organization and verified by CAT scan, stroke symptoms in at least one month; normal cognitive function (mini-mental state examination a.m. Folstein >25)	Urinary tract infection; symptoms of descensus urogenitale; chronic respiration diseases; psychiatric diseases; other neurological diseases; and do not speak Danish.	Systematic, controlled, intensive pelvic floor muscle training program by the specialist physiotherapist: group treatment with 6–8 patients/group for 1 hour/week, vaginal palpation 2-3 times and home exercises 1-2 times daily	Standard program of rehabilitation for patients with stroke without any specific treatment of urinary incontinence

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Theofrastous, 2002 ⁶⁰⁶ Country: USA Aim: the efficacy of bladder training and pelvic muscle exercise with biofeedback-assisted instruction on urinary incontinence in women.	137 community-dwelling women 45 years and older diagnosed with genuine stress incontinence, (urine loss at least once per week), with urodynamic evidence of genuine stress incontinence, and mentally intact (Mini-Mental State Examination Score >23).	Reversible causes of urinary incontinence, uncontrolled metabolic conditions, residual urine volume after voiding >100ml, urinary tract infection, genitourinary fistula or indwelling catheterization, and inability to correctly perform a pelvic muscle contraction	Pelvic floor muscle training: 4 office biofeedback sessions and home exercise with two sets of 5 quick and 10 sustained contractions with 10-second rest periods increased to 5 quick and 20 sustained contractions 2/day for a total of 50 contractions per day	Bladder training
Thornburn, 1997 ⁶⁰⁷ Country: UK Aim: the relationship between pad properties (absorption capacity, strike-through, and wetback) and wet comfort in women with light urinary incontinence	Women with light urinary incontinence who used disposable incontinence pads	Not reported	Pad A with the largest wetback	Pad B with the largest strike-through time; Pad F with the largest absorption capacity
Thyssen, 2001 ⁶⁰⁸ Country: Denmark Aim: Crossover RCT to examine the effects of disposable intravaginal device on stress incontinence in women.	94 women with the predominant symptom of stress incontinence, 39 were recruited in Denmark, 28 in England, and 27 in Australia.	Major uterovaginal prolapse	Conveen Continence Guard, CCG made of hydrophilic polyurethane and requires soaking in water before being placed on a handle like applicator for insertion.	Contrelle Continence Tampon, CCT, Coloplast made of hydrophobic polyurethane and supplied ready-assembled within an applicator, allowing insertion directly into the vagina with no manual contact

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Tibaek, 2004 ⁶⁰⁹ Country: Denmark Aim: the effect of pelvic floor muscle training in women with urinary incontinence after ischemic stroke	Women diagnosed with first-ever ischemic stroke according to the definition of the World Health Organization and verified by CAT scan; stroke symptoms in at least 1 month; normal cognitive function (Mini-mental state examination a.m. Folstein >25)	Urinary tract infection; symptoms of descensus urogenitale; chronic respiration diseases; psychiatric diseases; other neurological diseases; and do not speak Danish	Systematic, controlled, intensive pelvic floor muscle training program in 12 consecutive weeks by the same specialist physiotherapist. Women received instructions how to perform strength PFM exercise with close to maximum contraction (6 s contraction/6 seconds relaxation)	The normal, standard program of rehabilitation without any specific treatment of urinary incontinence
Tibaek, 2005 ⁶¹⁰ Country: Denmark Aim: the effect of pelvic floor muscle training in women with urinary incontinence after ischemic stroke.	26 women 40 and 85 years old with acute ischemic stroke verified by CAT scan lasting >24 hours; stroke symptoms in at least 1 month; normal cognitive function (mini-mental state examination >25); urinary incontinence related to stroke; independent walking	Urinary tract infection; symptom of vaginal prolapse; chronic respiratory diseases; psychiatric diseases; other neurological diseases; does not speak Danish.	Intensive pelvic floor muscle training 1-2 times/day by specialized physiotherapist: group information on incontinence and instruction in self-palpation of PFM, motivation and instruction in home exercises	Usual care
Tsai, 2009 ⁶¹¹ Country: Taiwan Aim: comparative effectiveness of interpersonal support and digital vaginal palpation as part of the pelvic floor muscle exercise training compared to pelvic floor muscle exercise training with a printed handout instructions on stress urinary incontinence	Women who presented to the family medicine outpatient clinic without having urine leakage as their chief complaint but with transient UI	Severe uterine prolapse, past the vaginal introitus, heart failure; history of dementia (Mini-Mental State Examination (MMSE) score <24); prior knowledge of PFME prescribed by a physician, a nurse, a physical therapist, or any other health problems	Interpersonal support and digital vaginal palpation as part of the pelvic floor muscle exercise training. The researcher contacted the patients of experimental group by telephone once per week to inquire about any difficulties and/or improvements	Pelvic floor muscle exercise training with a printed handout instruction

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Wang, 2004 ⁶¹² Country: Taiwan Aim: the efficacy of pelvic floor muscle training, biofeedback-assisted PFMT, and electrical stimulation in the management of overactive bladder.	120 women 16-75 years, symptoms of overactive bladder for more than 6 months, frequency of voiding eight times or more per day, and urge incontinence one time or more per day.	Pregnancy, deafness, neurologic disorders, diabetes mellitus, pacemaker or intrauterine device use, genital prolapse greater than Stage II of the International Continence Society grading system, residual urine >100ml, and urinary tract infection.	1. Pelvic floor muscle training with submaximal to maximal PFM contractions for 6 seconds 5 times and 10 fast contractions per session at least 3 times/day. 2. Biofeedback-assisted pelvic floor muscle training with an intravaginal electromyogram probe to contract or relax PFMs following the visual EMG signals.	Electrical stimulation in the management of overactive bladder with intravaginal electrode at the physiotherapy unit.
Wells, 1991 ⁶¹³ Country: USA Aim: the effects of pelvic muscle exercise or pharmacologic treatment of stress urinary incontinence in community-living elderly women	157 community-living women, ages 55 to 90 years.	Nursing home residency	Pelvic muscle exercises with contractions for 10 seconds and relaxation for 10 seconds, 90-160 times/day.	Phenylpropanolamine hydrochloride in a dose of 50mg /day, increasing to 50mg 2 times/ day
Williams, 2005 ⁶¹⁴ Country: England Aim: the effects of continence service provided by specially trained nurses delivering evidence-based interventions using predetermined care pathways in adults.	3,746 men and women ages 40 years and over living in private households reporting incontinence several times per month or more, or several times a year and reported significant impact of symptoms on quality of life.	Pregnancy, urinary fistula, pelvic malignancy, treatment for urinary symptoms.	Continence service that included advice on diet and fluids; bladder training; pelvic floor awareness and lifestyle advice.	Existing primary care including GP and continence advisory services in the area

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Williams, 2006 ⁶¹⁵ Country: Aim: the efficacy and cost-effectiveness of pelvic floor muscle therapies (PFMT) in women ≥40 years with urodynamic stress incontinence (USI) and mixed UI	Women ≥40 years were randomly sampled by household from the Family Health Service Authority registers of participating GP practices and invited if they had urodynamic diagnosis of USI or mixed UI and DO	Pregnant, had urinary fistula, pelvic malignancy, severe prolapse and those currently receiving treatment for urinary symptoms (e.g. on a waiting list for continence surgery).	Pelvic floor muscle therapies training by specially trained nurses, after an initial digital assessment and perineometry to develop individualized exercise regimen.	Standard care: leaflet with information about pelvic floor muscles and three steps in exercising these muscles
Wing, 2010 ⁶¹⁶ Country: USA Aim: To examine the longer term effects of a weight loss intervention on urinary incontinence.	Being at least 30 years old, having a BMI of 25 to 50 kg/m ² , reporting at least 10 UI episodes on a 7-day voiding diary at baseline and agreeing not to initiate new treatments for incontinence or weight reduction during the trial.	Reported Previously in Subak, 2009 ⁶⁰¹	Behavioral weight loss program	Structured education program
Wong, 2001 ⁶¹⁷ Country: China Aim: the efficacy of biofeedback in Chinese women with urinary stress incontinence	Chinese women with genuine stress incontinence	Second or third degree uterine prolapse, previous failure of pelvic floor muscle exercise, continence surgery, pad test with urine loss <2g, neurologic disease	Biofeedback from the abdominal muscle contractions during pelvic floor exercises with EMG attached over their abdominal muscles	Biofeedback from pelvic floor muscles during pelvic floor exercises
Wyman, 1997 ⁶¹⁸ Country: USA Aim: the effects of bladder training on quality of life in older women with urinary incontinence.	131 women 55 years and older, ambulatory, mentally intact, independent residents in the community with urodynamic stress urinary incontinence >1 episode/week.	Metabolic decompensation, urinary tract infection, outlet obstruction, fistula, reversible cause of urinary incontinence, permanent indwelling catheter.	Bladder training: patient education, progressive scheduled voiding regimen, positive reinforcement.	Usual care

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Wyman, 1998 ⁶¹⁹ Country: USA Aim: the efficacy of bladder training, pelvic muscle exercise with biofeedback-assisted instruction, and combination therapy, on urinary incontinence in women.	204 community-dwelling women age 45 years and older diagnosed with genuine stress incontinence, (urine loss at least once per week), with urodynamic evidence of genuine stress incontinence, and mentally intact (Mini-Mental State Examination Score >23).	Reversible causes of urinary incontinence, uncontrolled metabolic conditions, residual urine volume after voiding >100ml, urinary tract infection, genitourinary fistula or indwelling catheterization, and inability to correctly perform a pelvic muscle contraction	Structured 12-week program of patient education, self-monitoring of voiding behavior with daily treatment logs, compliance assessment, and positive reinforcement administered by trained registered nurses.	Bladder training
Yamanishi, 1997 ⁶²⁰ Country: Japan Aim: CT to examine the effects of electrical pelvic stimulation in stress incontinence.	35 patients with stress incontinence.	Persistent urinary infection, uterine or rectal prolapse and cystocele, severe cardiac or cerebrovascular disorders including on-demand heart pacemakers, hepatic disorders and renal dysfunction. Anticholinergics, calcium antagonists, alpha or beta agonist	Electrical pelvic stimulation with 50Hz. square waves of 1msec. pulse duration and vaginal electrode in women and an anal electrode in men for 15 minutes 2 or 3 times daily	Sham electrical pelvic stimulation with inactive device
Yamanishi, 2000 ⁶²¹ Country: Japan Aim: the effects of electrical stimulation for urinary incontinence due to detrusor overactivity	68 patients with urinary incontinence due to detrusor overactivity urodynamically defined as involuntary detrusor contractions of more than 15cm/H ₂ O during the filling phase.	Use of anticholinergics or tricyclic depressants, pelvic floor exercise, bladder training, or pelvic surgery before entry into the study.	Electrical stimulation 15 minutes twice daily for 4 weeks (vaginal electrode in women and an anal or surface electrode in men to provide alternating pulses of 10Hz square waves of 1-ms pulse duration and a maximum output current of 60mA).	Sham inactive device

Appendix Table F81. Randomized controlled clinical trials of nonpharmacological nonsurgical treatment for UI (continued)

Reference country aim of the Study	Inclusion criteria	Exclusion criteria	Active treatment	Control treatment
Yoon, 2003 ⁶²² Country: South Korea Aim: the effectiveness of bladder training versus pelvic muscle exercises in the treatment of urinary incontinence in women.	50 parous women 35–55 years old with urine loss of 1.0g or more on a 30 minute pad test and 14 voids or more during a period of 48 hours before the preliminary evaluation.	Urinary tract infection tested by urinalysis and urine culture, previous experience of surgery for urinary incontinence, HRT and other medication for urinary incontinence.	Bladder training with increased interval between voluntary voids ; Pelvic muscle exercise (30 contractions for 15 to 20 minutes/day) with immediate and simultaneous visual feedback of pelvic muscles during a 20 minute weekly biofeedback session	Usual care
Zanetti, 2007 ⁶²³ Country: Brazil Aim: comparative effectiveness of pelvic floor muscle exercises with or without physiotherapist supervision on female stress UI	Women with stress urinary incontinence confirmed by means of urodynamic testing	Topical hormone replacement therapy for less than three months, disorder affecting muscle or nerve tissues, or genital bleeding, pregnancy, urinary tract infection, vulvovaginitis, genital prolapse beyond the hymen, atrophic vaginitis or cardiac pacemaker	Supervised perineal exercises repeated in the orthostatic, sitting and supine positions under guidance from a physiotherapist (twice a week, for 45 minutes).	Unsupervised perineal exercises repeated in the orthostatic, sitting and supine positions performed at home with monthly assessment from a physiotherapist.
Clarke-O'Neill, 2002 ⁶²⁴ Country: UK Aim: The Continence Product Evaluation Network: comparative survey of washable pants with integral pads for women with light incontinence	The Continence Product Evaluation Network: women 18 years of age and normally used an absorbent product (disposable or reusable) for light incontinence	Not reported	10 pants designed for light incontinence	Cross over evaluation
Tomlinson, 1999 ⁶²⁵ Country: USA Aim: The effects of dietary caffeine and fluid intake on urinary incontinence in older rural women	The Behavioral Management for Continence (BMC): women 55 or older living in their own home in one of seven rural counties in northern Florida with involuntary urine loss at least twice a week and of 1 g per day or more	Diagnosis of bladder cancer or kidney disease; use of a urinary catheter; retention of 100 ml or more of urine; need for a caregiver but none was available; and availability for less than 6 months	The Behavioral Management for Continence: self-monitoring (2–4 weeks' duration); bladder training (6–8 weeks' duration); and pelvic muscle exercise with biofeedback (12 weeks' duration). The goal was appropriate intake of 1800–2400 ml/day of fluids	No active treatments; alternative resources within the community