

NEW EVIDENCE
For People at Risk for
Bladder and Bowel Dysfunction

Clinical Highlights from Studies for
BLADDER AND BOWEL FUNCTION
with **BEYOND KEGELS PROTOCOL**
ROLL FOR CONTROL EXERCISES

Beyond Kegels™
Roll for Control®

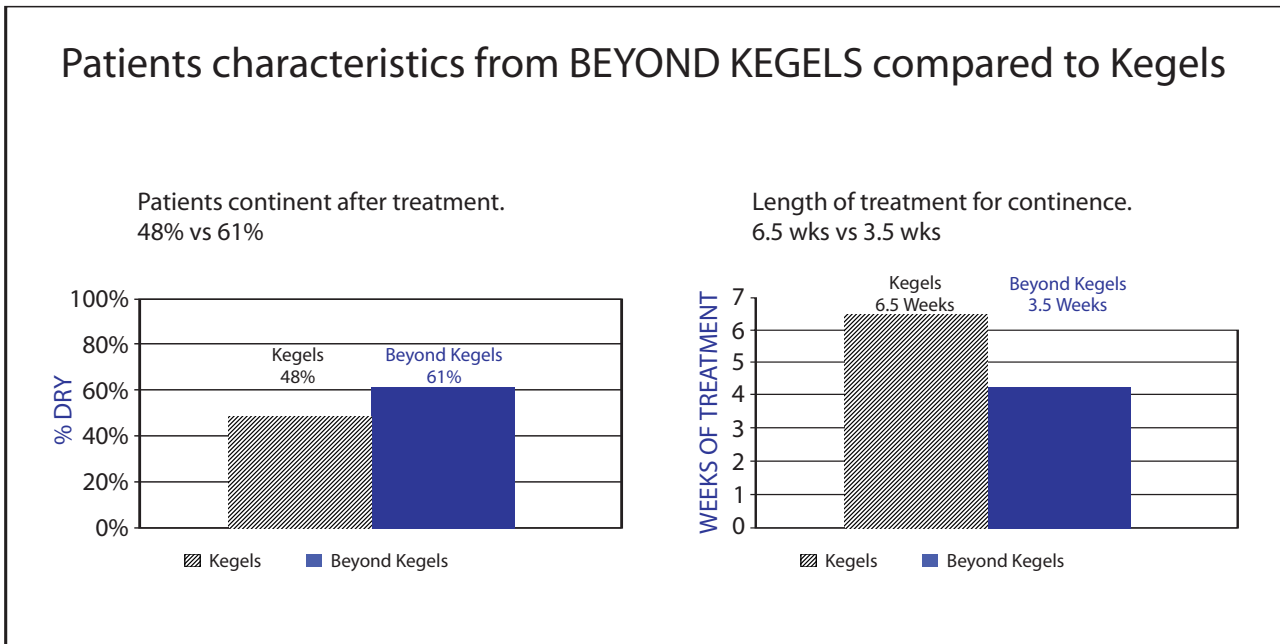


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises in patients with urinary incontinence.

Patient Population:

Bladder/Bowel Protection Study with BEYOND KEGELS Protocol (Hulme, J)

BEYOND KEGELS Compared to Traditional Kegels 64 Females with Urinary Incontinence



Study Design

Purpose: The purpose was to compare effectiveness and treatment length using Beyond Kegel exercises utilizing the Roll for Control® compared to Kegel exercises in a sample of convenience of 64 patients.

Population: Sixty-four female patients aged 3-85 years old were experiencing stress, urge or mixed urinary incontinence.

BEYOND KEGEL PROTOCOL is indicated to reduce urinary incontinence in ambulatory females compared to Kegel exercises. BEYOND KEGELS increases the number of patients continent in a shorter amount of time.

**Beyond Kegels
Roll for Control**

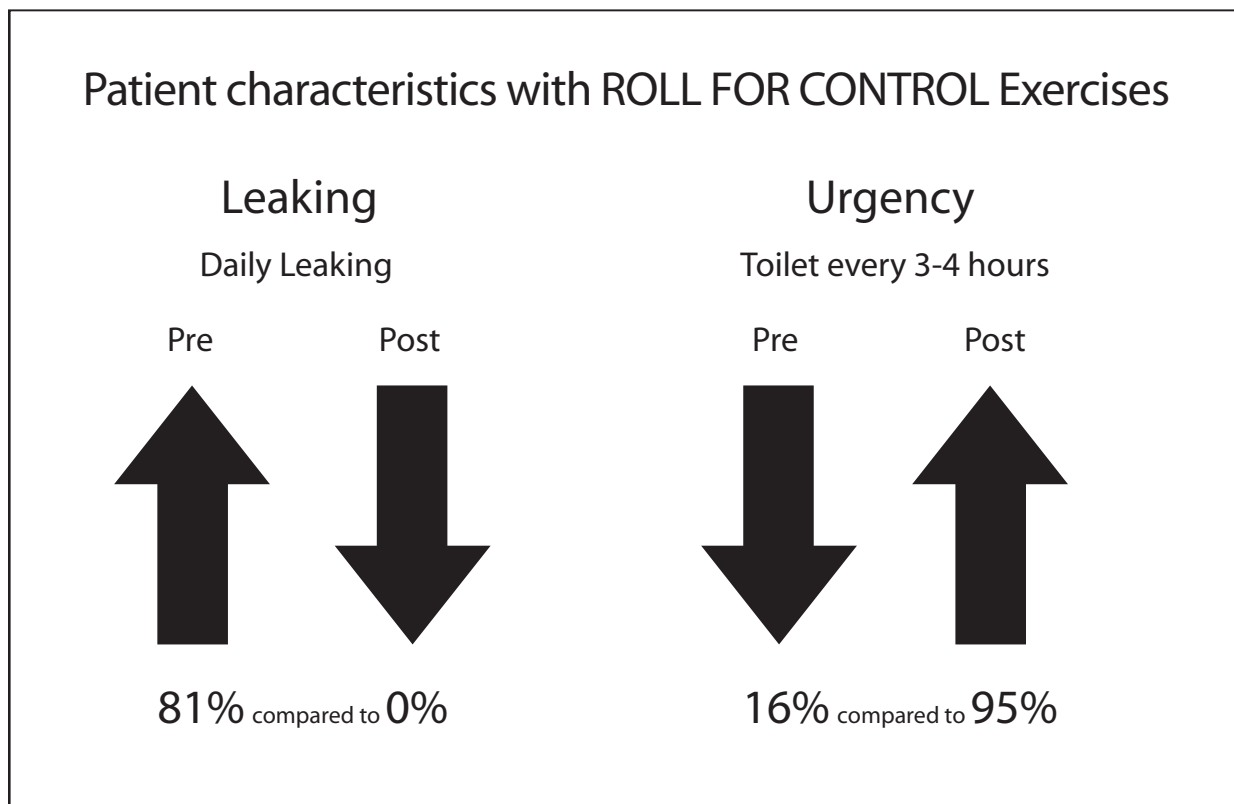


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises in patients with urinary incontinence using a home program format.

Patient Population:

Bladder/Bowel Protection Study, with BEYOND KEGELS Protocol (Penner, B)

BEYOND KEGELS in a Home Program 43 Females with Urinary Incontinence



Study Design

Purpose: The purpose was to assess effectiveness of ROLL FOR CONTROL exercises and autonomic nervous system training in a home-program based treatment.

Design: Descriptive statistics were collected for 43 females in a 4 week home program using a daily diary.

Population: Patients, aged 32-83 years old, with urge, stress or mixed incontinence.

BEYOND KEGEL PROTOCOL is indicated to reduce urinary incontinence and toileting frequency

**Beyond Kegels
Roll for Control**

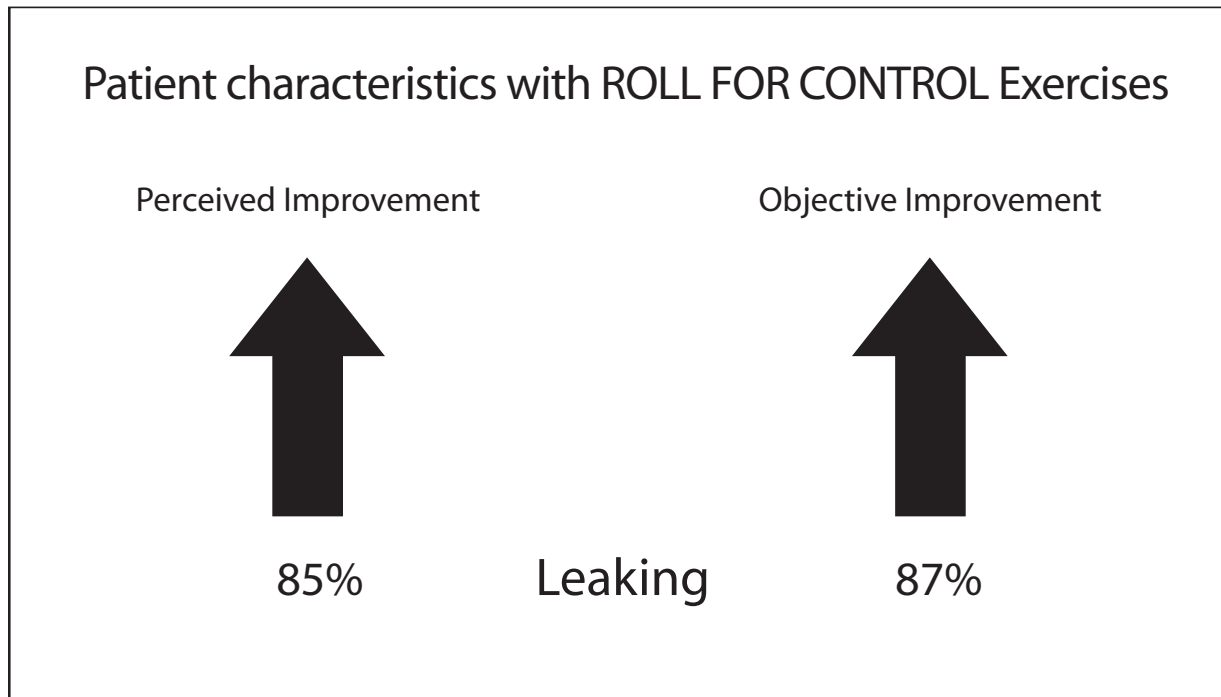


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises in patients with urinary incontinence

Patient Population:

Bladder/Bowel Protection Study with BEYOND KEGELS Protocol (Nadler, C)

**BEYOND KEGELS Exercises with Biofeedback
33 Females with Urinary Incontinence**



Study Design

Purpose: The purpose was to determine the perceived and objective continence outcome using Roll for Control exercises and biofeedback.

Design: Six weekly clinic visits with biofeedback and daily home program of Beyond Kegel exercises. Perceived and objective data were analyzed.

Population: Thirty-three female patients, ages 27-82 years old, were experiencing stress, urge or mixed urinary incontinence.

BEYOND KEGEL PROTOCOL and biofeedback is indicated to reduce urinary incontinence in ambulatory females with congruent perceived and objective data

**Beyond Kegels
Roll for Control**

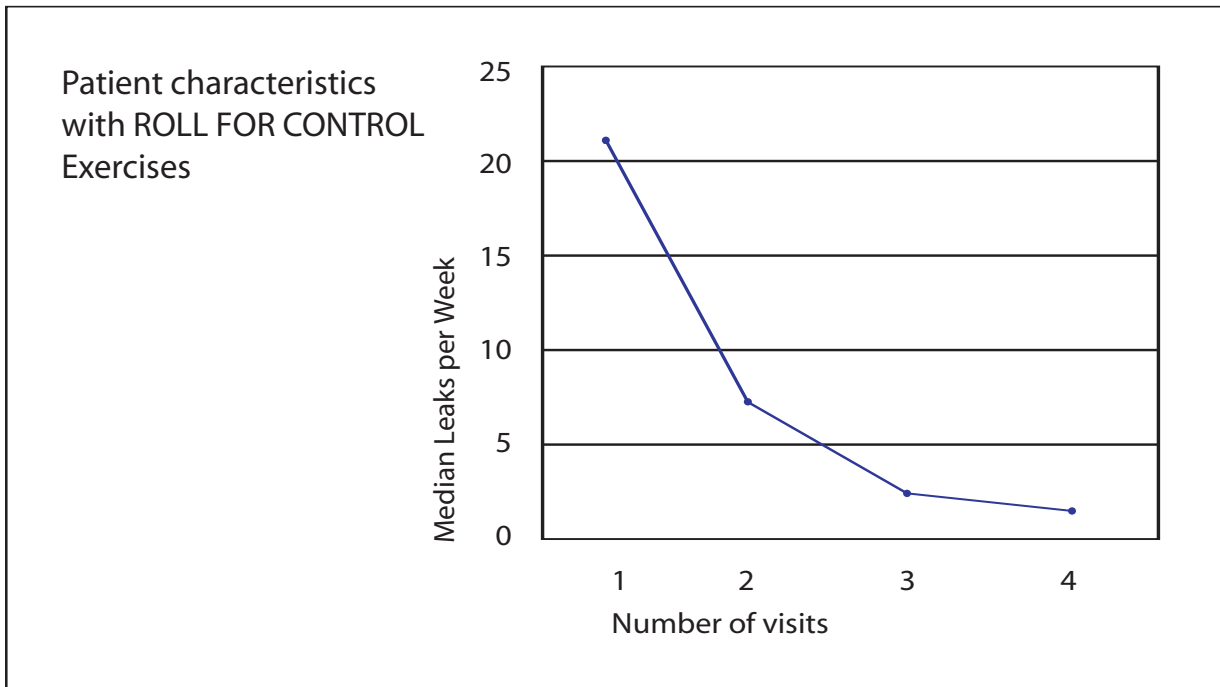


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises in patients with urinary incontinence

Patient Population:

Bladder/Bowel Protection Studies with BEYOND KEGELS Protocol (Ames, K)

**BEYOND KEGELS Exercises with biofeedback
29 Females with Urinary Incontinence**



Study Design

Purpose: The purpose was to determine the continence outcome using ROLL FOR CONTROL exercises and biofeedback.

Design: Four weekly clinic visits with biofeedback and daily home program of ROLL FOR CONTROL exercises.

Population: Twenty-nine female patients ages 31-86 years old were experiencing stress, urge or mixed urinary incontinence.

BEYOND KEGEL PROTOCOL and biofeedback is indicated to reduce urinary incontinence in ambulatory females within four weeks

**Beyond Kegels
Roll for Control**

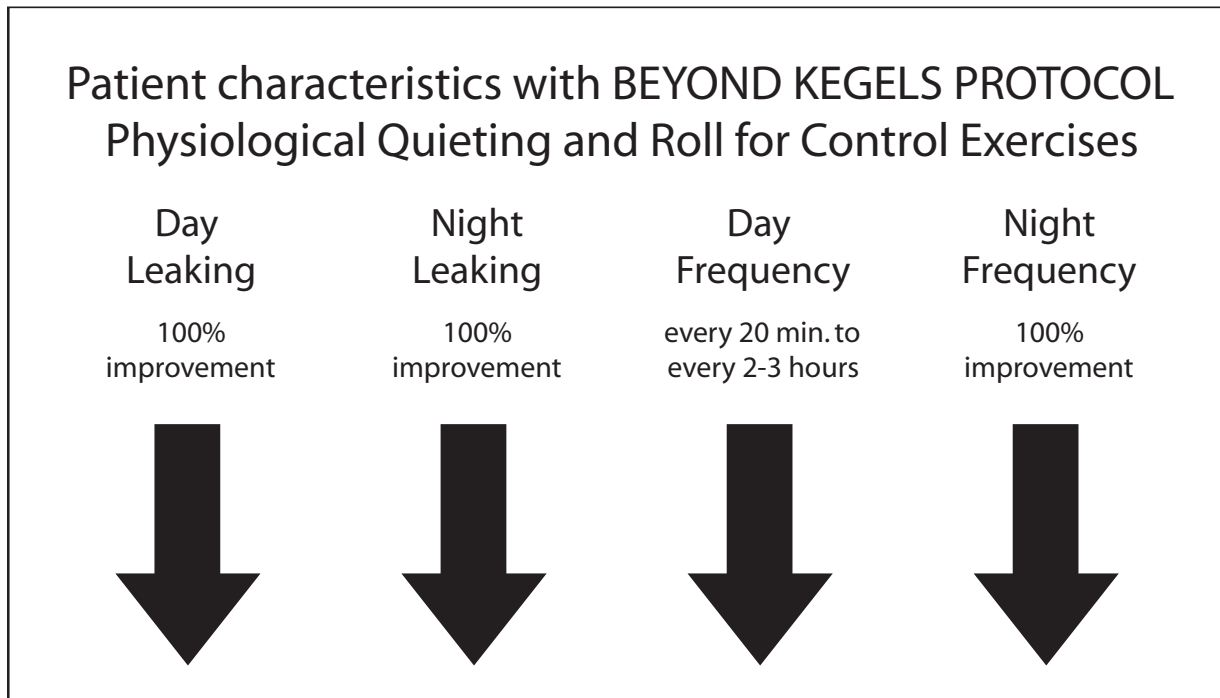


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of Physiological Quieting in patients with urge incontinence.

Patient Population:

Bladder/Bowel Protection Study with BEYOND KEGELS Protocol (Ewers,S)

BEYOND KEGELS with Physiological Quieting and Biofeedback 3 Perimenopausal Females with Urge Incontinence



Study Design

Purpose: The purpose was to determine the continence outcome using Beyond Kegel Protocol with Physiological Quieting, Roll for Control Exercise and biofeedback.

Design: Three weekly clinic visits with biofeedback and daily home program of Roll for Control exercises and Physiological Quieting.

Population: Three female patients aged 4-47 years old were experiencing urge incontinence.

BEYOND KEGEL PROTOCOL and biofeedback is indicated to reduce urgency incontinence in perimenopausal females within three weeks.

**Beyond Kegels
Roll for Control**

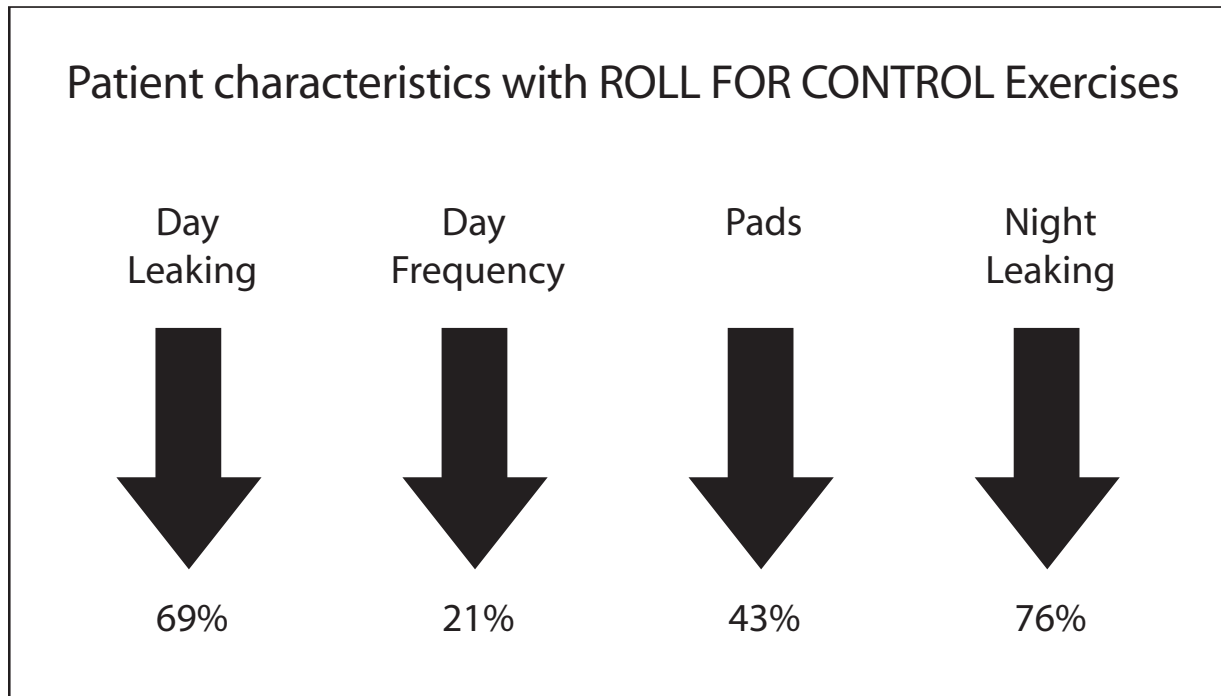


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises for individuals living in assisted living

Patient Population:

Bladder/Bowel Protection Study with BEYOND KEGELS Protocol (Dominiczak, L)

BEYOND KEGELS in Assisted Living Facility for Individuals 83-93 years old with Bladder Dysfunction



Study Design

Purpose: This study compares urinary incontinence before and after a 4-week program of ROLL FOR CONTROL exercises and PHYSIOLOGICAL QUIETING.

Design: Four weekly clinic visits and 3 times/day ROLL FOR CONTROL exercise program. Pre and post treatment data were analyzed.

Population: Twelve individuals, ages 83-93 years old, 10 females and 2 males, were experiencing stress, urge or mixed urinary incontinence.

BEYOND KEGEL PROTOCOL is indicated to reduce urinary incontinence in individuals aged 83-93 years old living in an assisted living facility

Beyond Kegels
Roll for Control

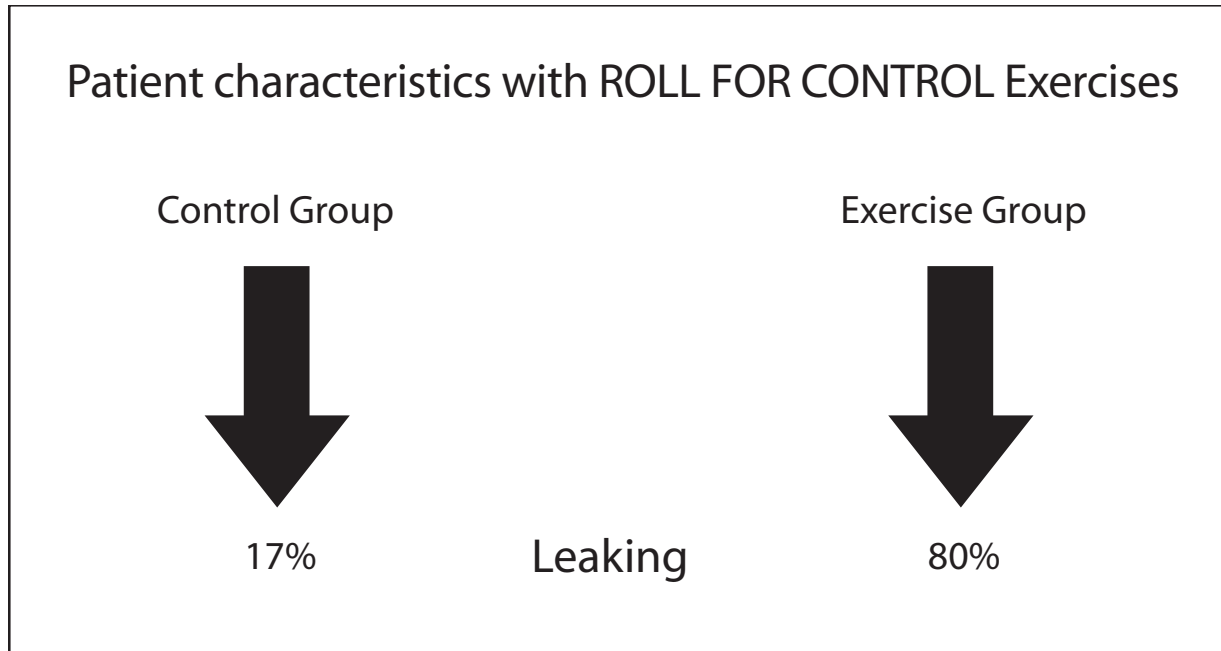


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises in elderly individuals with the risk of urinary incontinence and falling

Patient Population:

Bladder/Bowel Protection Study with BEYOND KEGELS Protocol (Hulme, J)

**BEYOND KEGELS Exercises with Mall Walkers
38 Individuals at Risk for Incontinence and Falling**



Study Design

Purpose: The purpose was to compare the continence outcome between using ROLL FOR CONTROL exercises and no exercise in mall walkers walking 1/2-3 miles three times per week.

Design: Home program of Roll for Control exercises for the exercise group compared to no additional exercise for the control group for 10 weeks. Descriptive data were analyzed.

Population: Thirty-eight individuals, with mean age of 77 years, who walked the mall 3 times per week and were at risk for incontinence and/or falls.

BEYOND KEGEL PROTOCOL is indicated to reduce urinary incontinence in active elderly individuals

**Beyond Kegels
Roll for Control**

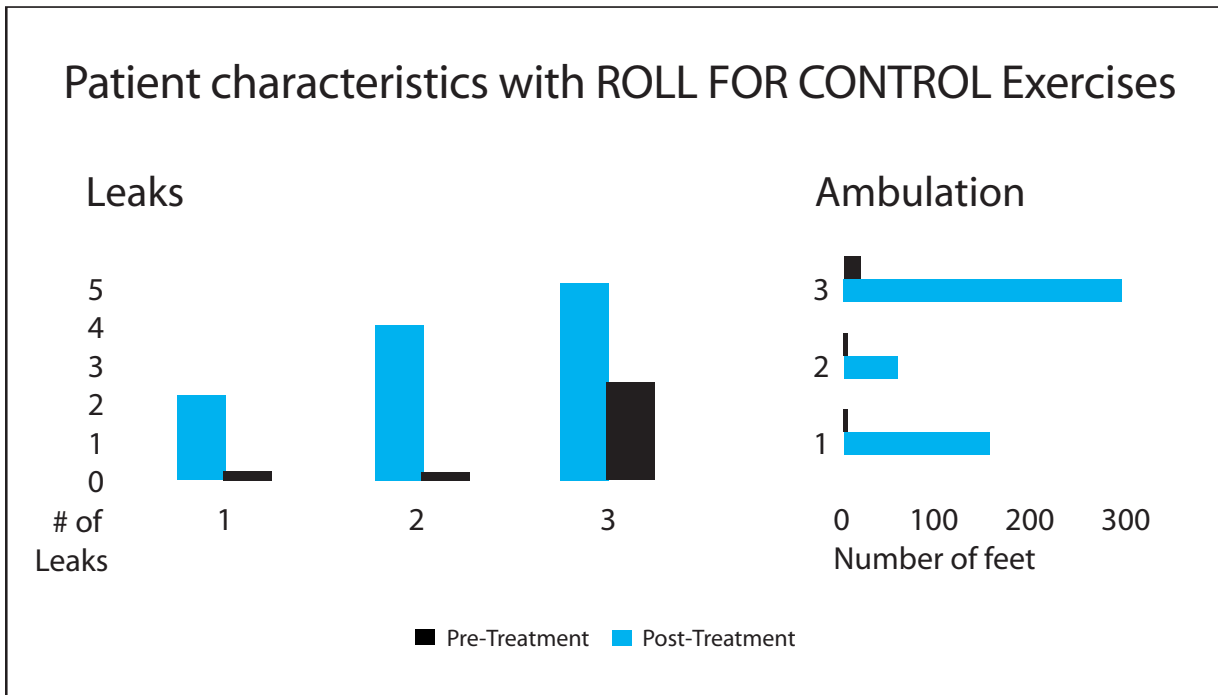


Examined the effects of ROLL FOR CONTROL Exercises in hospitalized CVA patients with urinary incontinence.

Patient Population:

Bladder/Bowel Protection Study with BEYOND KEGELS Protocol (Thane, M)

BEYOND KEGELS in a Hospital CVA Rehab Program 3 Females with CVA and Urinary Incontinence



Study Design

Purpose: The purpose was to assess effectiveness ROLL FOR CONTROL exercises in treating urinary incontinence in patients with recent CVA.

Design: Descriptive statistics were collected for 3 females. Patients performed 10 repetitions of exercise twice daily.

Population: Patients, ages 80-86 years old, were hospitalized with recent CVA and urinary incontinence.

BEYOND KEGEL PROTOCOL is indicated to reduce urinary incontinence and improve ambulation distance in patients with recent CVA.

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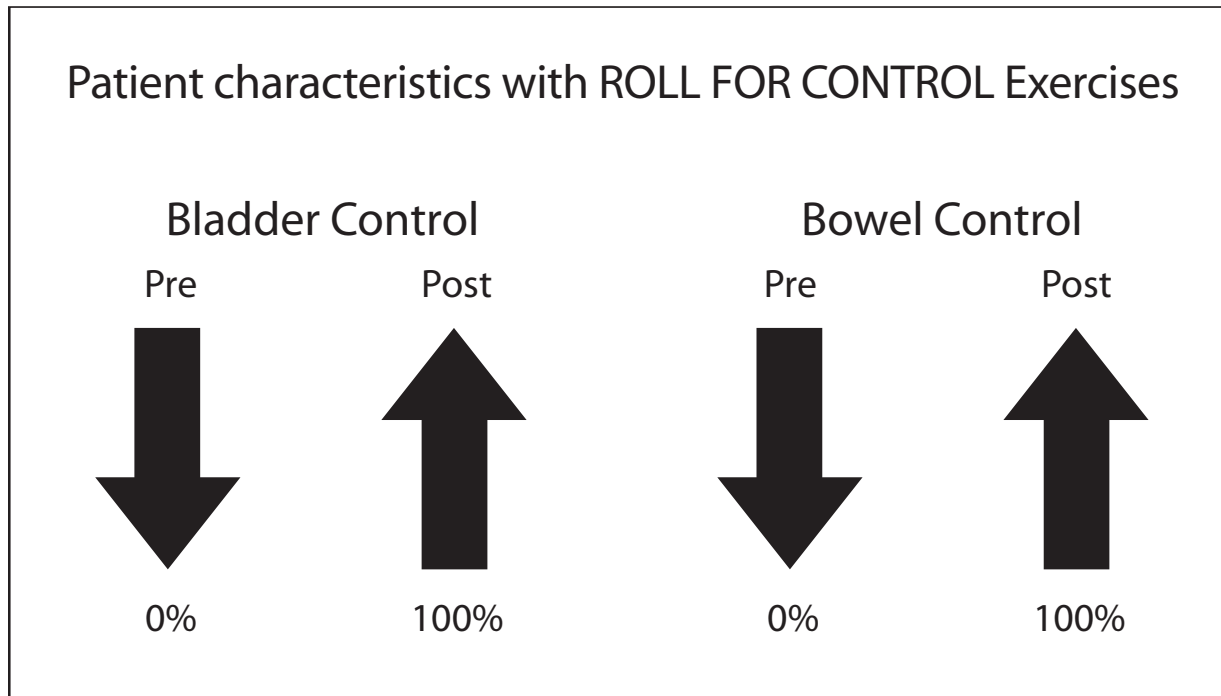


One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises for individuals living in assisted living

Patient Population:

Bladder/Bowel Protection Study with BEYOND KEGELS Protocol (Hulme, J)

BEYOND KEGELS for a Woman with Developmental Disabilities and Bladder and Bowel Incontinence



Study Design

Purpose: The purpose was to assess effectiveness of ROLL FOR CONTROL exercises in treating urinary and fecal incontinence in an individual with developmental disabilities.

Design: Four-week home program of ROLL FOR CONTROL exercise program. Pre and post treatment data were analyzed.

Population: One nonverbal female, 69 years old, with autism, developmental disabilities, and urinary and fecal incontinence.

BEYOND KEGEL PROTOCOL is indicated to improve bowel and bladder continence in elderly individuals with developmental disabilities

Beyond Kegels
Roll for Control



One Bladder/Bowel Protection Study with Beyond Kegels Protocol Examined the effects of ROLL FOR CONTROL Exercises in elderly individuals with the risk of urinary incontinence and falling

Patient Population:

Bladder/Bowel Protection Study, with BEYOND KEGELS Protocol (Nadler, C)

BEYOND KEGELS in a Patient with Cystocele, Pelvic Pain, and Nighttime Frequency

Patient characteristics with ROLL FOR CONTROL exercises with hips elevated on wedge.

	<u>Pre</u>	<u>Post</u>
CYSTOCELE	Grade II	Grade I
PELVIC PAIN	Painful	Non Painful
FREQUENCY	3x	0-1x

Study Design

Purpose: The purpose was to determine if elevating a patient’s hips and doing Roll for Control exercises would result in reduction of pelvic pain, cystocele and frequency of nighttime urination.

Design: Home program of Roll for Control exercises on an 8 inch wedge for 6 weeks and once weekly clinic visits for biofeedback assessment.

Population: Female, 45 years bId, with diagnoses of grade 2 cystocele, pelvic pain during intercourse and mixed incontinence.

BEYOND KEGEL PROTOCOL is indicated to reduce cystocele, pelvic pain during intercourse and incontinence

Beyond Kegels
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The Bladder and Bowel Protection Studies with Beyond Kegels examined the effects of Beyond Kegels with patients 8 to 94 years old.

New Daily Program: Bladder and Bowel Health Studies with BEYOND KEGELS

New Recommended Beginning Daily Program For Patients 8 to 94 Years Old.

BLADDER AND BOWEL HEALTH DAILY PROGRAM

Along with diet,

BEYOND KEGEL PROTOCOL

ROLL FOR CONTROL EXERCISE

PHYSIOLOGICAL QUIETING

Patients using BEYOND KEGELS PROTOCOL begin therapy with 10 repetitions twice daily of ROLL FOR CONTROL exercises and 30 seconds hourly, 20 minutes at night Physiological Quieting.

Contraindications: increased pain in pelvic region

The recommended starting dose for ROLL FOR CONTROL exercise is 5-10 repetitions twice daily, once in the morning and once at night. This can be increased to 3 times daily over a 2-week period. The dose for Physiological Quieting is 30 seconds hourly and 20 minutes at night. The dosage can be individualized according to the goals of therapy. Adjustments should be made at 1-week intervals.

Beyond Kegels
Roll for Control



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Hulme, J. Research in Geriatric Urinary Incontinence: Pelvic Muscle Force Field. *Top Geriatr* 2000; 16(1): 10-21.

Hulme, J. *Beyond Kegels: Fabulous Four Exercises and More to Prevent and Treat Incontinence*. 2nd ed. Phoenix Publishing, Missoula, MT, 2003.

- **COMPARISON OF TRADITIONAL KEGEL EXERCISES**
- **WITH OBTURATOR INTERNUS EXERCISE PROTOCOL**
- **FOR TREATING BLADDER INCONTINENCE**

Hulme, J.,
Phoenix Physical Therapy
Missoula, MT 59803

Purpose:

Bladder incontinence affects as many as 19 million individuals in the U.S. As many as 30 percent of women between the ages of 21 and 45 who perform regular aerobic exercise experience periodic leaking. Women during the perimenopausal years of 40 and 55 experience: more urge and frequency during the day and nighttime. After 60 years of age the incidence of bladder incontinence may increase over 50 percent.

Historically Kegel exercises with or without biofeedback has been the conservative protocol of choice. Treatment length and effectiveness has varied depending on the population characteristics of age, primary and secondary diagnosis, complications, motivation and-compliance with a home program.

The urological and anorectal surgical literature cites the interrelationship and importance of the obturator internus muscles in the positional support and function of bladder and bowel. However no references to exercise application in the treatment of urinary incontinence was found.

- **The purpose of this study was to compare effectiveness and treatment length when treating bladder incontinence with traditional Kegel exercises versus a protocol of utilizing the pelvic muscle force field which includes the obturator internus muscles.**

Subjects:

Sixty four females, age 33-85 years, were a sample of convenience referred by various physicians to an outpatient physical therapy clinic for chronic stress, urge, or mixed incontinence. All subjects were ambulatory and appropriate for referral for exercise treatment as determined by physician's clearance exam.

Methods:

Retrospective data collection included diagnosis, age, degree of bladder incontinence, previous treatment, number of weeks and treatment sessions to discharge, degree of bladder incontinence at discharge, and compliance with home exercise program.

Subjects were divided into two groups:

Group One individuals were given Kegel exercises as a home program protocol.

Group Two individuals were given the obturator internus assisted pelvic muscle force field exercises as a home program protocol.

Both groups were given lifestyle changes and bladder diaries as part of the home program. Both groups were seen once a week in the clinic and biofeedback was used during these sessions.

Analysis:

Data were coded and analyzed using descriptive statistics.

Results:

Analysis indicated treatment length decreased an average of 46% when obturator internus assisted pelvic muscle force field exercises were added to the incontinence home program. Group One individuals averaged 6.5 weeks of treatment (ranging from 3 to 16 sessions). Group Two individuals averaged 3.5 weeks of treatment (ranging from 2 to 5 sessions). Forty eight percent of Group One individuals were totally dry on discharge. Sixty one percent of Group Two individuals were totally dry on discharge.

Conclusions:

Results of this study support the addition of obturator internus assisted pelvic muscle force field exercises as part of the treatment protocol for stress, urge or mixed urinary incontinence.

- Use of the obturator internus assisted pelvic muscle forcefield exercises can decrease the length of treatment needed to eliminate urinary incontinence.
- Use of the obturator internus assisted pelvic muscle force field exercises can improve the outcome of treatment when compared to Kegel exercises alone.

A PRACTICAL APPROACH TO URGE SUPPRESSION TRAINING

Susan Ewers, P.T., Incontinence and Pelvic Support Institute, Mission Viejo, California

AIM: To train patients with urgency and urge incontinence in a simple, effective, self activated technique to suppress urge and delay voiding until a convenient time when they have reached the toilet .

METHODS: The initial assessment includes a medical and drug history, possible dietary irritants, and voiding habits. The patient is asked for an explanation of their chief voiding concerns and the triggers for urgency. It is important to assure the patient that they are not alone with this problem. At this point the “Vicious Cycle of Urgency” is explained (see Figure 1). The patient is then presented with instruction for learning to break this patho-physiological habit. An explanation is given of the “Suppression Cycle for Urgency” (See Figure 2).

Assessment includes a pelvic manual muscle test and biofeedback EMG assessment including training for pelvic muscle control, isolation and strengthening. Instruction is given in diaphragmatic breathing to increase mobility of the pelvic musculature and quiet the parasympathetic nervous system. Use of an anatomical pelvic model helps the patient visualize the levator ani muscle and isolate muscle contractions. When evaluation is complete and questions addressed, the patient is given written instructions based on Figure 2, and a program for pelvic muscle exercises based on Janet Hulmes’ “Beyond Kegels”. Diaphragmatic Breathing illustrated directions, and a list of dietary irritants are also given to the patient.

OBSERVATIONS: The average patient has very little knowledge of anatomy and physiology of the pelvic area. When a patient is given information about their own body that makes sense to them, they are more able and motivated to assume responsibility for gaining control over this most perplexing problem of urinary urgency.

The patient’s understanding of the body’s response to triggers, even at a very elementary level, helps them to gain a better way of coping with the “panic attack” stress, embarrassment and leakage, and to break this “vicious cycle of urgency.”

Biofeedback, and personal instruction will follow-up visits allow the therapist to reinforce the “Suppression Cycle for Urgency”, document progress, and encourage new habit formation enabling the patient to have control, and a new positive self image and outlook on their future. Consistently, the over-active bladder patients report prolonged voiding intervals and fewer episodes of urge incontinence after 2-4 weeks.

CONCLUSION: Patient education for understanding of the anatomy and physiology involved in urge incontinence will help them to break the cycle of this dysfunctional brain-bladder connection.

COMPARISON OF PERCEIVED AND LEAK DIARY IMPROVEMENT WITH PELVIC MUSCLE FORCE FIELD AND BIOFEEDBACK PROTOCOL

C. Nadler, Carol L Nadler Physical Therapy, Kittanning, PA, USA

AIM: Urinary incontinence has significant consequences in the quality of life experienced by the adult female population. An individual's perception of the problem may or may not be congruent with more objective measures. From a clinician's viewpoint, significant decrease in leaking indicates success, however an individual may or may not perceive the same improvement as success and freedom from worry. This study compares individuals' perception of improvement with leak diary improvement (objective data) between the first and last visit with a pelvic muscle force field (PMFF) and biofeedback protocol.

METHODS: Thirty-three (33) females, ages 22-82, with stress, urge or mixed incontinence were referred by physicians to an outpatient physical therapy. Noncompliant clients were excluded. Data collection under review included a daily diary record of leaks, perceived improvement, age, and diagnosis. The protocol consisted of six visits: 1) evaluation and home program of lifestyle changes and relaxed awareness of the pelvic muscles, 2) assisted PMFF exercise- adductor assist, 3) assisted PMFF exercise- obturator assist, 4) combined obturator and adductor assist PMFF exercise, quick flicks, and urge protocol, 5) standing plie (PMFF), isolated contraction, and cough protocol, 6) reassessment and maintenance protocol of standing plies, and quick flicks (three to four weeks after fifth visit).

RESULTS: Comparisons were made between the amount of perceived improvement (PI) reported by the patient post-treatment and the objective improvement (OI) recorded in daily leak diaries. Nineteen of 33 individuals exhibited 100% OI over the course of treatment. These 19 individuals average PI was 87% (range of 50% to 100%). The remaining individuals (14 of 33) had an average OI of 35% (range of 50% to 98%) and PI of 82% (range 60% to 100%). As a group PI ranged from 50%-100% with a mean of 85%, while OI ranged from 50% (one individual leaked more) to 100% with a mean of 72%. Five individuals (15% of the group) had 100% PI and corresponding OI of 98%. Five individuals had 70% or less PI and corresponding varied, with three of the five having 100% OI, one with zero OI and one with an OI of 63%. The remaining 23 individuals average PI was 85% while average OI was 87%.

CONCLUSION: Preliminary results indicate that an individual's perception of improvement is often congruent with objective measures of improvement. A majority of the individuals who experienced excellent objective improvement also perceived excellent results, and the majority of individuals who showed moderate results with objective measures perceived moderate improvement. Only three of the 33 individual's perception of improvement was inaccurate according to objective data. These results indicate that in most cases, having a patient keep a detailed leak diary in order to determine improvement is no more accurate than measures of perceived improvement. The data analysis in this study included outliers of varying degrees indicating that further data analysis and additional studies with larger number of participants are warranted.

OUTCOMES OF PHYSICAL THERAPY INTERVENTION FOR URINARY INCONTINENCE: A CASE SERIES

Ames, KA, Levangie, PK. Adventist Health Medical Center, Portland, OR.

PURPOSE: The purpose of this case series was to determine the outcome of treating urinary incontinence with biofeedback and exercise using the “Beyond Kegels” Protocols developed by Janet Hulme, PT, MS.

PATENTS: 29 women, ages 31 to 86 with subjective reporting of urinary incontinence. Each patient was referred to PT by her primary care physician or OB/GYN with a diagnosis of Pelvic Muscle Dysfunction. All had pelvic exams by their physician to rule out infection or other disease processes.

TREATMENT: Prior to starting therapy, each patient was sent a history form including medical/surgical history, reproductive history, bowel and bladder habits, fluid intake, exercise level and leaking history. The examination consisted of the Beyond Kegels Evaluation and Training protocol. The sEMG sites monitored were the Levator Ani (LA) muscles with an internal vaginal sensor, and the abdominal muscles with a surface sensor. The biofeedback system used was the ORION PC/12m by SRS Medical. Resting baseline tone, isolated LA amplitude and endurance, and assisted LA amplitude and endurance were examined. Two exercises were chosen for the patients to do at home, based on ease of LA activation, isolation, and endurance. The patient was instructed to do the exercises only for 5 minutes, twice a day. The patient was given written handouts of the exercises, as well as a daily bladder diary to complete for 3 days in the week prior to the next visit. Fluid intake, dietary and general exercise guidelines were also part of the educational program.

OUTCOME: Average reported leaks/wk initially were 15 (range of 1 to 49). Average reported leaks/wk post-intervention were 2.1 (range of 0 to 14). Average treatment duration was 4.2 visits (range of 2 to 8 visits).

INSIGHT: Biofeedback with the “Beyond Kegels” protocol appears to be an effective intervention for treatment of urinary incontinence, with significant change reported within 4 visits.

OUTCOMES OF A HOME PROGRAM INTERVENTION FOR URINARY INCONTINENCE- A CASE SERIES

Penner B. Capitol Physical Therapy, Helena, MT, USA.

PURPOSE: Bladder incontinence affects as many as 17 million individuals. Pelvic floor exercise with biofeedback and lifestyle changes have been documented as 45% to 86% effective in regaining continence in 6-12 visits. This study analyzed the effectiveness of a home program utilizing therapeutic exercise, autonomic nervous system training and lifestyle changes.

SUBJECTS: Forty-three females, ages 32-83 years, with stress, urge, and mixed incontinence referred by physicians to an outpatient physical therapy clinic were included. Noncompliant clients were excluded.

METHODS: Data collection included diagnosis, age, degree of bladder incontinence, length of incontinence, frequency of bladder incontinence and toileting day and night, surgeries and pregnancies, and number of clinic visits. The first visit included: 1) anatomy, physiology, and function of the urogenital and pelvic muscle systems, 2) individualized dietary and lifestyle changes, 3) pelvic muscle 10 second holds and quick contractions five minutes three times per day. 4) autonomic nervous system training including diaphragmatic breathing and a physiological quieting audiotape at night. 5) data collection using a daily diary. Instruction on the second visit, two weeks later, added pelvic muscle force field exercises including resisted hip obturator and adductor assist exercises to the home program. If a third visit occurred it included a review of the previous instructions. Follow up phone calls to encourage compliance were employed as necessary.

ANALYSIS AND RESULTS: Data were coded and analyzed using descriptive statistics. Clients reported a history of incontinence from 6 months to 25 years. Continence was achieved in 70 % of the clients. Initially 81% experienced daily leaking episodes, 19% experienced leaking 1-3 times/week. At discharge none were leaking daily, 23% leaked 1-3 times/ week and 7% leaked once a month. One hundred percent of the women seen for 2-3 visits decreased toileting frequency. Before intervention, 16% toileted every 3-4 hours, 72% every 1-2 hours, and 11% percent every 30-60 minutes. At discharge, 95% toileted every 3-4 hours, 5% every 1-2 hours and none every 30-60 minutes. Sixteen percent of the clients were continent after a 2 week intervention with isolated pelvic muscle exercises. Eighty one percent of the clients were continent after adding a 2- week intervention of pelvic rotator cuff exercises.

CONCLUSIONS: This study suggests that compliance with a home program of pelvic pelvic rotator cuff exercise, autonomic nervous system training, lifestyle changes, and daily diary recording is effective in improving and/or eliminating stress, urge or mixed bladder incontinence in a 24 week period.

RELEVANCE: Case series provide important data which lead to more controlled studies that are necessary to develop intervention guidelines for women experiencing urinary incontinence.

OUTCOMES OF INTERVENTION FOR URINARY INCONTINENCE IN HOSPITALIZED INDIVIDUALS EXPERIENCING CEREBRAL VASCULAR ACCIDENTS

Thane M. Fegely T. Community Medical Center, Missoula, MT.

PURPOSE: The purpose of this pilot study was to determine the outcome of treating urinary incontinence using pelvic muscle force field exercises for hospitalized individuals with recent cerebral vascular accidents (CVA).

SUBJECTS: Three individuals post CVA, incontinent and non ambulatory, ages 80-86, admitted to a hospital rehabilitation unit for physical therapy. Prior to insult all were ambulatory and continent. Past medical history included coronary artery disease, diabetes millitus, depression, degenerative joint disease, and breast cancer. Two experienced left CVA, one experienced cerebellar CVA.

METHODS: Based on their motor ability, individuals were assisted in 10 repetitions of passive to active resistive hip internal rotation/ adduction and external rotation exercise twice daily. All were assisted to the toilet 5-8 times per day. Individual #1 performed passive exercise for the first 8 days, active exercise for last 5 days. Individual #2 performed active-assistive exercise for 7 days. Individual #3 performed active resistive exercise for 22 days.

ANALYSIS AND RESULTS: Descriptive data were used. Individual #1(L CVA) leaked twice daily before intervention and was continent after 13 days of exercise. Individual #2 (L CVA) leaked 4-5 times daily before intervention and was continent after 7 days of exercise. Individual #3 (cerebellar CVA) leaked 4-6 times/day before intervention and leaked 2-3 times/day after 22 days of exercise. She was confused and was diagnosed with depression and a swallowing disorder. At discharge all individuals were ambulating 50-300 feet with minimal assistance.

CONCLUSION: Pelvic rotator cuff exercises, passive to resistive, can be of benefit in a rehabilitation program for elderly hospitalized individuals with CVA diagnosis. Further research in the area using a larger number of individuals and comparing different CVA types is recommended.

RELEVANCE: Pilot studies and their resulting data are important precursors to larger, controlled studies that can develop treatment guidelines and functional outcome scales for hospitalized individuals with CVA and incontinence.

CASE STUDY: OUTCOME OF URINARY INCONTINENCE PROGRAM FOR A WOMAN WITH AUTISM AND DEVELOPMENTAL DISABILITIES

Hulme. J. Phoenix Physical Therapy, Missoula, MT, USA.

PURPOSE: The purpose of this case study was to determine the outcome of treating urinary incontinence experienced by an elderly woman with autism and developmental disabilities with pelvic muscle force field exercises. Incontinence is a major risk factor for independence in the elderly, in particular the elderly with disability labels. Community dwelling individuals with developmental disabilities are at risk for losing their independence and having to live in nursing homes or institutions. Families and personal care attendants become overwhelmed by incontinence and are unable to continue to care for individuals in their own homes. This case study describes an elderly woman with multiple disabilities who was at risk for transferring from a foster home to a nursing home because of bladder and bowel incontinence but was able to stay in her own home because of a few simple exercises.

SUBJECT: JR, a 69-year-old woman with the diagnoses of autism, developmental disabilities, asthma, and osteoporosis exhibited progressively greater incontinence of bladder and bowel over 6 months. She was ambulatory with minimal assistance, had no personal hygiene skills or dressing skills and was unable to follow simple directions consistently. She had previously been independent in bladder and bowel care. At the time of treatment she was incontinent day and night using adult diapers that did not contain all the lost urine and feces. No improvement was evident after an 8-week trial of medication. Her foster family and day activity center were unable to care for her with the continuing incontinence problem.

METHOD: A ROLL FOR CONTROL exercise program was initiated by the foster mother with instruction and demonstration by a physical therapist. The foster mother performed resisted hip adduction with medial rotation and lateral rotation utilizing obturator internus and adductor muscles to facilitate pelvic rotator cuff action, 10 repetitions each in the morning and at night for 4 weeks. A comparison was made between the initial data and 4 week and 12 week data. Data collection included: 1) successful toiletings, 2) adult diapers used, and 3) bladder and bowel accidents.

RESULTS: Compared to constant incontinence with no active toileting behavior day or night and use of 34 adult diapers daily, at 4 weeks of treatment JR was toileting independently with no leaking episodes during the day or night. At 12 weeks the results continued to be similar to the 4-week results.

CONCLUSION: A four week simplified ROLL FOR CONTROL exercise program performed twice daily with assistance of caregivers eliminated bladder and bowel incontinence in an individual with multiple disabilities who was at risk for losing her living and activity center situations and being placed in a nursing home. Continence was maintained over a 19-week period with a once daily exercise program.

RELEVANCE: Case studies and their resulting data are important precursors to larger, more controlled studies that are necessary to develop treatment and functional outcome guidelines for special populations of women with urinary incontinence. Pelvic muscle force field exercises can be effective for an individual with multiple disabilities and an inability to follow directions when age related incontinence threatens independence and family living situation.

RESULTS OF A URINARY INCONTINENCE PROGRAM IN THE ELDERLY OVER 80 YEARS OLD LIVING IN AN ASSISTIVE LIVING FACILITY

Dominiczak, L. Schroeder. M. William, J.G. Benevolent
Corporation of Cedar Community, West Bend, Wi.

Purpose: Urinary incontinence (UI) has significant consequences on independence and quality of life in the elderly over 80 years old living in an assistive living facility. UI has been linked with decreased socialization and ambulation as well as increased incidence of falls and skin breakdown. From the skilled nursing administration perspective UI increases costs from increased use of protective pads and labor costs for cleaning and changing clothing and linens. This study compares UI before and after a 4-week program of pelvic muscle force field exercises, physiological quieting, and lifestyle changes in an ambulatory population over 80 years old living in an assistive living facility.

Methods: Twelve individuals (10 females/ 2 males), ages 83-93 (average 88.5), with stress, urge, or mixed incontinence were identified by medical staff as having UI and indicated a high motivation to be part of a UI program. Data collection included number of leaking episodes during (be day, number of toileting episodes during the day, number of toileting episodes during the night, number of nights per week leaking occurred, and number of pads used per day. The protocol consisted of 4 weekly physical therapy visits: 1) evaluation 2) active to resistive pelvic muscle force field exercises; 3) physiological quieting; 4) lifestyle changes; and 5) education. The individuals carried out an exercise and physiological quieting program 3-4 times per day. Assistance from restorative personnel was implemented as needed.

Results: Frequency of daytime leaking decreased 69% (4.1x/day to 1.3x/day). Daytime toileting frequency decreased 21% (6.1x/day to 4.8x/day). Frequency of nighttime leaking decreased 76% (7 of 7 nights to 2.6 of 7 nights). Frequency of nighttime toileting decreased 43% (1.9x/night to 1.1x/night). Protective pad/product use decreased 43% (3.3/day to 1.9/day). All clients improved in daytime and/or nighttime leaking and 11 of 12 individuals decreased pad/protective garment use. Four individuals reported no daytime or nighttime leaking and 7 individuals reported no nighttime leaking after treatment.

Conclusion: These results indicate that individuals with UI over 80 years old living in an assistive living environment can benefit from a 4 week program of exercise, physiological quieting and lifestyle changes. Improvement was seen in leaking frequency day and night in all individuals and pad/protective garment in all but one individual. These results encourage conservative, relatively short-term intervention in the elderly over 80 years old living in an assistive living environment when UI becomes a problem and the individual is motivated-to follow through with a program.

SUCCESSFUL TREATMENT OF A PATIENT WITH CYSTOCELE, PELVIC PAIN, AND MIXED STRESS-URGE INCONTINENCE USING MODIFIED ROLL FOR CONTROL EXERCISES

Nadler CL. Nadler-Kubatko Physical Therapy Associates, Kittanning, PA.

Purpose: The purpose of this study was to determine if elevating a patient's hips while implementing a program of modified pelvic muscle force field exercises in a patient with cystocele, pelvic pain and mixed incontinence would result in reduction of the cystocele and accompanying symptoms.

Subject: The subject was a 45 year-old female who was referred by a surgeon specializing in pelvic problems and laparoscopic surgery of the lower abdomen. Her symptoms as outlined by the referring physician included a Grade II cystocele, levator ani and obturator internus muscle pain and spasm (left worse than right), and pain with hip abduction. In addition, the patient also had mild stress and urge incontinence, frequency of urination and complained of severe pain with intercourse.

Methods: The patient was started on a six-week program of pelvic muscle force field exercises in the Beyond Kegels protocol. Exercises were performed with the patient in supine position with the hips elevated on an 8 inch solid foam wedge and consisted of ten repetitions each of pelvic floor ten-second holds while adducting the knees against a soft 9 inch ball, followed by ten repetitions of pelvic floor ten-second holds while externally rotating the hips against an elastic band. Between each contraction against the ball or band, the patient was instructed to rest for for ten seconds. Biofeedback analysis of pelvic floor activity was done each week. In addition to exercising, the patient was given recommendations for life style changes including appropriate beverage intake and keeping a daily log for frequency of urination.

Analysis: The patient came to the office once a week for six weeks and was assessed for changes in pelvic pain' frequency of urination, recorded fluid intake, and subjective perception of cystocele presence. In addition, pelvic floor muscle activity was reassessed through the use of EMG biofeedback.

Results: At the end of six weeks of treatment the patient demonstrated excellent increased activity and coordination the pelvic floor musculature. She noted a decrease in frequency of urination at night from an average of three times per night to zero to one time per night. As reported by her referring surgeon, the cystocele was reduced from a Grade II to a Grade I. The patient also reported an absence of levator ani and obturator internus pain and spasm. When re-contacted eight weeks post treatment the patient reported that she had continued to do her exercises 3-4 times per week but was no longer using the foam wedge and stated she was having pain-free sexual intercourse. Conclusion: Elevation of the hips on a foam wedge while performing pelvic muscle force field exercises as outline in this abstract may prove effective in reducing the severity of a cystocele while allowing pelvic floor muscle re education and reduction of pelvic pain.

Relevance: Position of the pelvis during pelvic floor muscle strengthening is an important factor to consider when cystocele is present.

THE EFFECTS OF BOWEL AND BLADDER CONTINENCE PROGRAM IN SKILLED NURSING HOME CLIENTS

Hulme, J., Penner, B. Phoenix Physical Therapy Missoula, MT 59803

Purpose: Skilled nursing home clients who are incontinent present care givers with unique problems including infection, skin breakdown, odor control, and control of urine loss. The incontinent individual is limited in independence, in potential for discharge to less restrictive environment, and in self control/self esteem.

- The purpose of this study is to present an alternative approach to decreasing incontinence and pad use in four skilled nursing home clients.

Subjects: Sample of convenience of four clients, ages 64-97 years, 2 males, 2 females; diagnoses of dementia, multiple sclerosis/ Alzheimer's, organic brain syndrome/cerebral vascular accident, and hypertension; Mini-Mental State Exam scores indicating moderate to severe impairment; caretaker report indicating chronic bladder incontinence day and night and enema/laxative dependent bowel; therapist report indicating 2 clients ambulatory, 1 client using wheelchair and minimal assistance to transfer and 1 client non ambulatory and maximum assistance to transfer.

Methods: A referral for bowel and bladder continence program was obtained from the physician. A repeated measures within subject design was used. Baseline data of day and night bladder and bowel accidents and toiletings, pads used, fluids and bowel continence formula ingested, exercise type and frequency were obtained initially for 1 week. Repeated measures of the same variables were collected after 3 periods- bowel program of 3 weeks, daily active obturator internus exercise program of 3 weeks, and daily active resistive obturator internus exercise program of 3 weeks.

Analysis: Mean values were calculated for day/night bowel and bladder accidents and toileting, pads used, laxative used and fluid/bowel continence formula use

Results: Clients' episodes of incontinence decreased during treatment sessions compared to baseline.

Client #1 improved bladder continence during the day from baseline leaking 32% of the time to 0% leaking at completion of trials. Nighttime continence improved from baseline leaking 46% of the time to 19% leaking at completion of the trials.

Client #2 improved bladder continence during the day from baseline leaking 27% of the time to .06% leaking at completion of the trials. Nighttime continence improved from baseline leaking 23% of the time to .05% leaking at completion.

Client #3 leaked continuously during baseline assessment compared to 27% of the time at completion of the trials. This client decreased number of undergarments used weekly by 43%.

Client #4 decreased number of undergarments used weekly by 50%.

Three of 4 clients were able to eliminate use of all laxatives and were bowel continent at completion of trials. One client, laxative dependent for over 10 years, returned to the laxative program due to chronic constipation problems.

Conclusion: The bowel and bladder program utilizing daily active obturator internus exercises, bowel continence formula and fluid control was demonstrated to be effective in improving bowel and bladder continence in 4 elderly individuals with multiple diagnosis residing in a skilled nursing home facility.

The number of incontinence episodes decreased during the day and night.

- The number of pads and undergarments used decreased.
- Laxative dependent bowel movements decreased
- These results provide support for use of noninvasive continence programs with the elderly in skilled nursing facilities.

SUCCESSFUL TREATMENT OF URGE INCONTINENCE, URGENCY AND FREQUENCY USING AUTONOMIC NERVOUS SYSTEM TRAINING AND HIP ROTATION EXERCISES IN A CASE SERIES

Susan Ewers, The Incontinence & Pelvic Support Institute, Mission Viejo, Ca

The purpose of this study was to determine if using an urge protocol of autonomic nervous system training and exercise would result in reduction of the incidence of urge and leaking episodes in ambulatory peri-menopausal women.

Subjects: The subjects were 3 women 45-47 years old with a diagnosis of urgency/ frequency and urge incontinence referred to physical therapy by a urologist.

Methods: The subjects were seen weekly in the physical therapy clinic. Initial evaluation included history and biofeedback assessment of pelvic muscles. Subjects started a home exercise program at the first visit. This included autonomic nervous system training, hip mid-range rotations in supine, sitting and standing' and lifestyle changes.

Results: Daytime voiding frequency improved from every 20 minutes to 2 hours initially to every 2-3 hours after one week of treatment. Nighttime frequency improved from 2-6 times/night initially to 0 times/night after 3 weeks of treatment. Initially two subjects leaked multiple times/ day and one leaked occasionally compared to no leaking after 3 weeks. Two of three women leaked multiple times/night initially compared to no leaking post treatment.

Conclusion: Autonomic nervous system training and hip mid-range rotation exercises can be effective in reducing the symptoms of day and night frequency and urgency as well as leaking in peri-menopausal women as demonstrated in this series of 3 women. Further study with larger number of subjects is recommended.

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