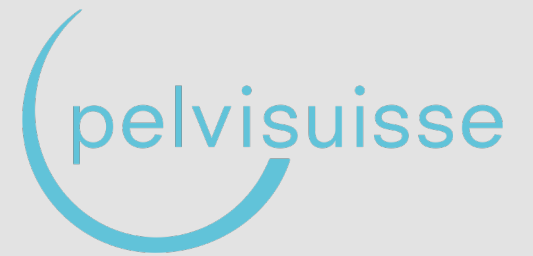


Inkontinenz und Mobilität

Petra Spalding, Physiotherapeutin FH,
MSc Pelvic Physiotherapy, Zürich



Schweizerische Gesellschaft für
Beckenbodenphysiotherapie



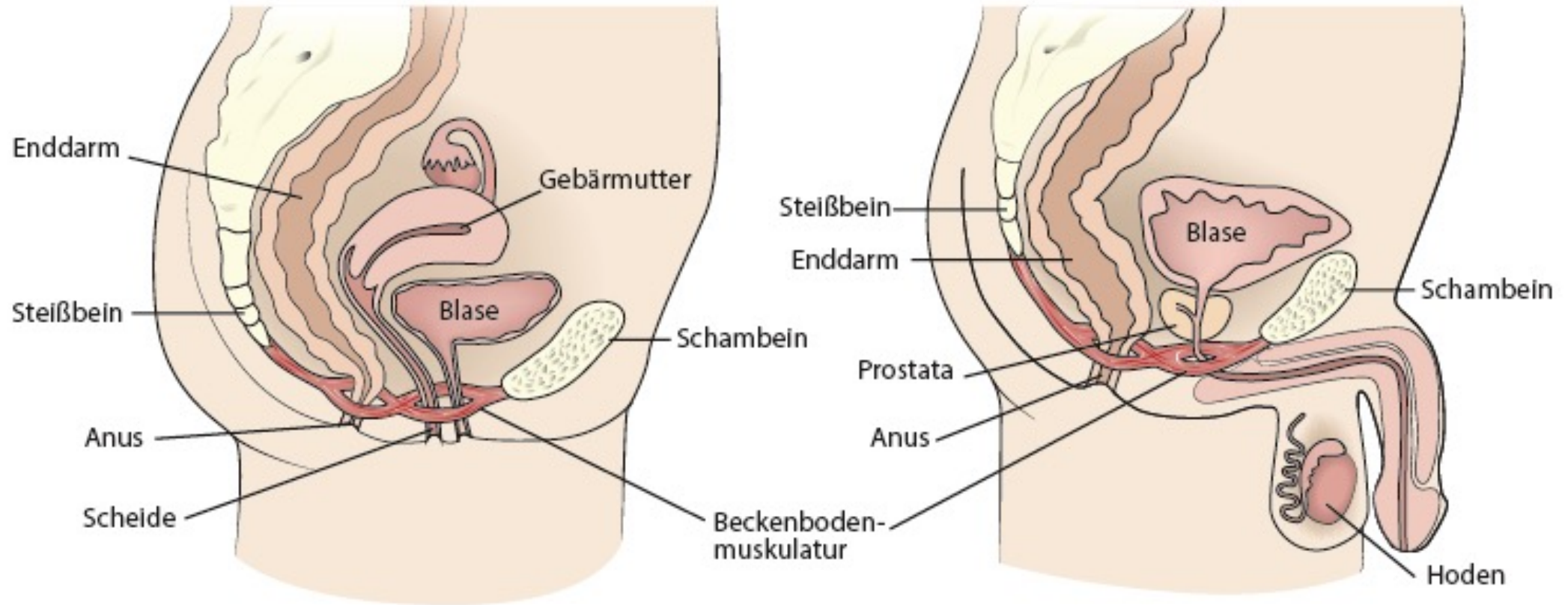
Inkontinenz
Mobilität
Gleichgewicht
Kognition
?



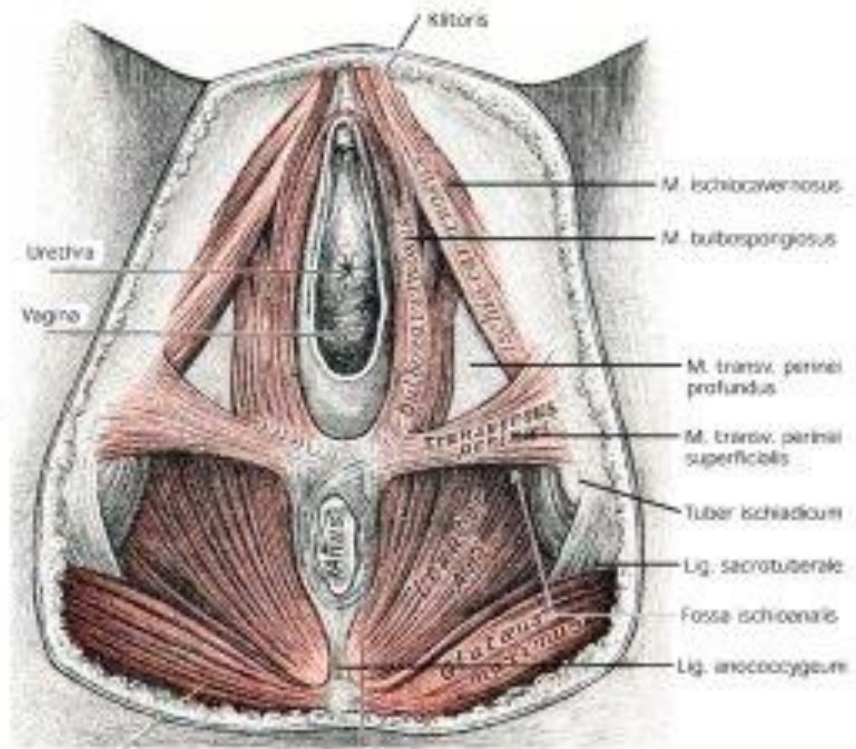
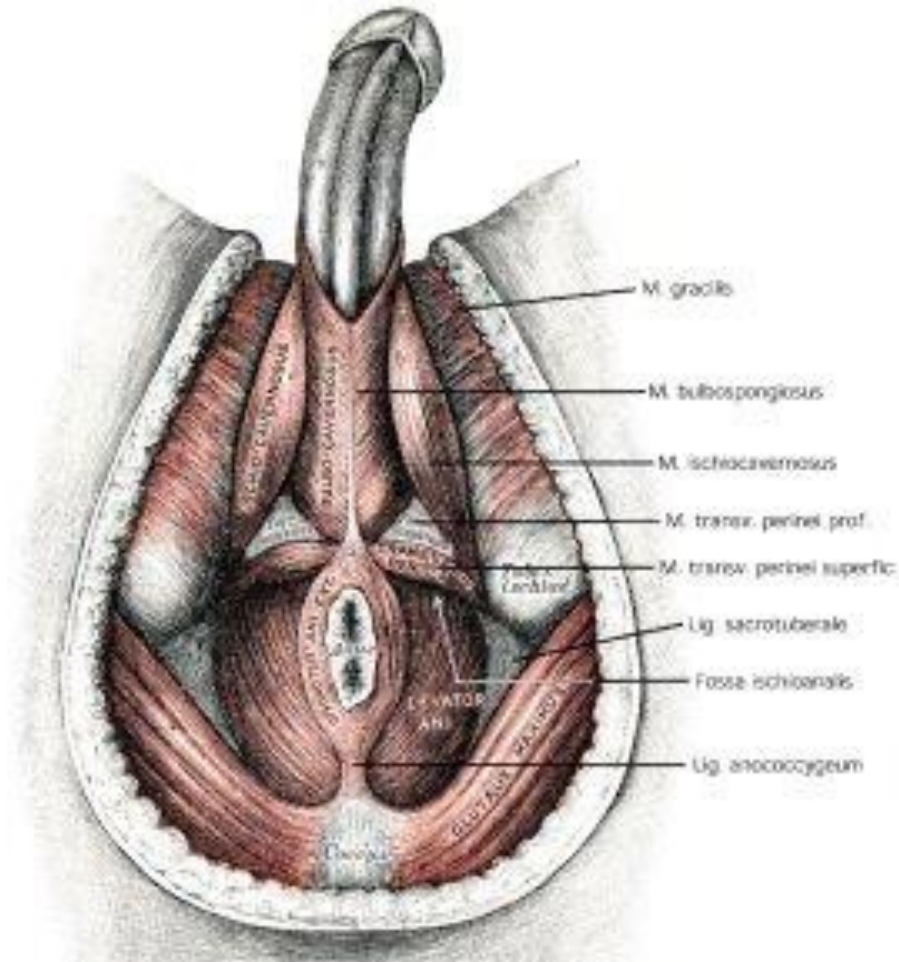
pelvisuisse

Schweizerische Gesellschaft für
Beckenbodenphysiotherapie

Frau / Mann



Mann / Frau



Funktion der Beckenbodenmuskulatur

- Stützfunktion für die Beckenorgane Blase und Rektum
- Sicherung deren Lage während der Füllungs- und Entleerungsvorgänge
- Sicherung der Lage und Winkelverhältnisse am vesikourethralen und anorektalen Übergang
- Unterstützt die Speicherung und Entleerung von Harn und Stuhl

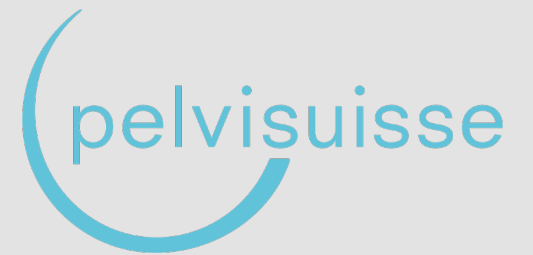
Frau:

Stabilisierung des unteren Drittel der Vagina und indirekt des Uterus

Mann:

Stützung des Blasenfundus und des oberen Drittel der Urethra über der Prostata

Funktion und Dysfunktion des Beckenbodenmuskels



Schweizerische Gesellschaft für
Beckenbodenphysiotherapie

Der Beckenboden im Lebenszeitmodell (DeLancy et al 2008)

Prädisponierende Phase:

- Zeit des Wachstums / Entwicklung
- Es werden über genetisch determinierende und Lebensstilfaktoren Ressourcen aufgebaut
- Grundstein für eine gute Resistenz gegen später negativ beeinflussende Faktoren

2. Phase:

- Belastungen wie z.B. Schwangerschaften/ Geburten oder operative Eingriffe an den Beckenorgane
- Ohne Behandlung bleiben Narben, Verlust an Elastizität und Gleitfähigkeit
- Es entstehen Funktionsdefizite und stören die BB-Funktion möglicherweise nachhaltig

3. Phase:

- Fortschreitender Alterungsprozess
- Neben degenerativen Veränderungen im Muskel-und Bindegewebe kommt es zur Reduktion des allgemeinen Leistungszustandes
- Zusätzliche Krankheiten des metabolischen, kardiorespiratorischen, neurogenen und psychischen Systems tragen zum auftreten von BB-Dysfunktionen bei

Veränderungen im Beckenboden mit dem Alter

(Keeping the pelvic floor healthy Dumoulin et al. 2019)

- Östrogenmangel in den Wechseljahren (perineale, vulväre, vaginale und urethrale Veränderungen)
- Blasenveränderungen: Verringerung der Blasenkompatibilität, des Blasengefühls und der Kontraktionsfähigkeit der Blase
- Verringerung des Schliessdruckes der Harnröhre
- Veränderungen der Beckenbodenmuskulatur: Sarkopenie, verminderte Kraft und Leistung, erhöhte Ermüdbarkeit (Chen, 2017)

Altersbedingte Veränderungen, die sich auf den Beckenboden auswirken

(Keeping the pelvic floor healthy Dumoulin et al. 2019)

- Höherer Body-Mass-Index
- Obstipation
- Frühere Beckenoperationen
- Komorbiditäten (z. B. Diabetes)
- Gebrechlichkeit (kognitiver Verfall, Funktionsstörungen der unteren Extremität) *(Chen, 2007)*

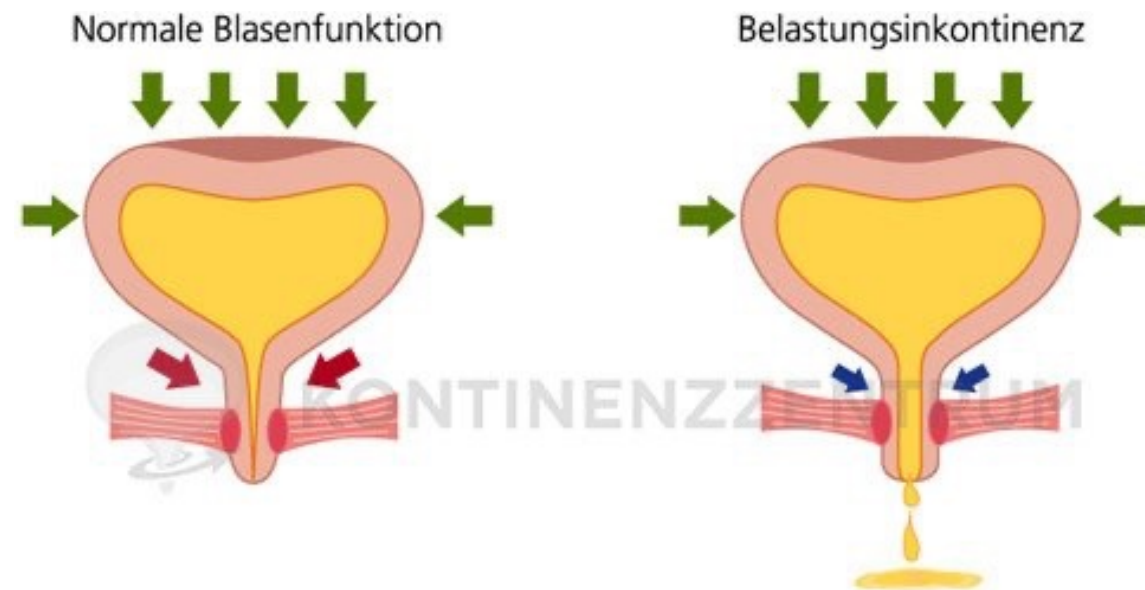
Beckenboden und Alter

- Physiologischer Alterungsprozess
- Ab dem 60. Lebensjahr Abnahme von Muskelmasse
- Im Bindegewebe gibt es eine Reduktion von Elastizität, Hydratation, Gleitfähigkeit
- Verminderung der Fähigkeiten die Funktionen sicher und zuverlässig zu erfüllen



**Dysfunktionen von Miktion und Defäkation
Organsenkungen**

Belastungsinkontinenz: Urinabgang bei körperlicher Belastung, wenn der Druck im Bauch und damit in der Blase > Harnröhrendruck Stressurinaryincontinence (SUI)

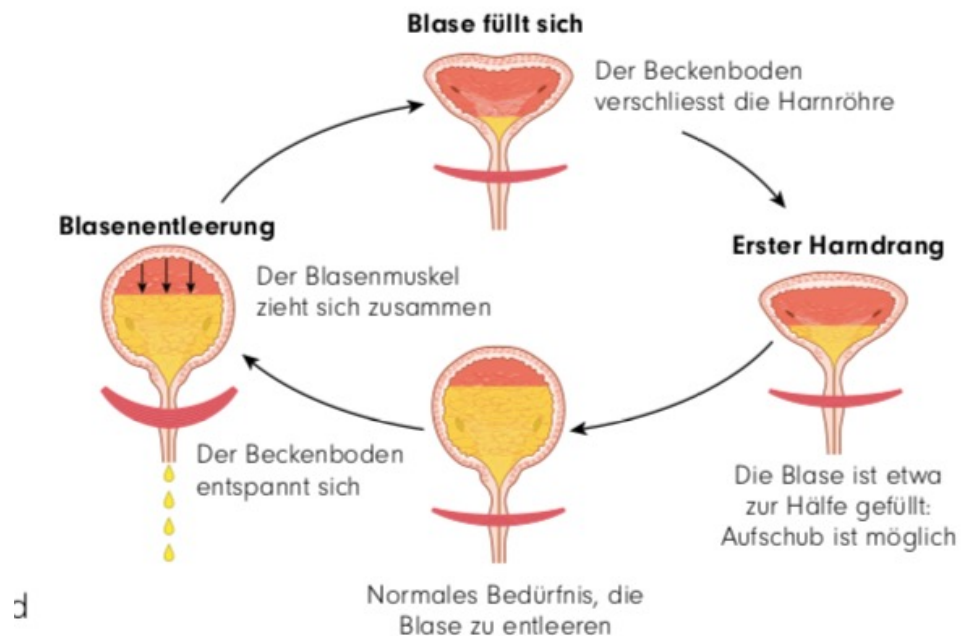


- ➔ Anstieg des Druckes im Bauchraum bei körperlicher Betätigung oder Husten/Niesen
- ➔ Druck in der Harnröhre reicht nicht aus, um einen wasserdichten Verschluss sicherzustellen

(aus Kontinenzzentrum Hirslanden)

Dranginkontinenz: Harndrang mit unkontrolliertem Urinverlust bei Drang

Overactive Bladder wet/dry (OAB wet / dry)

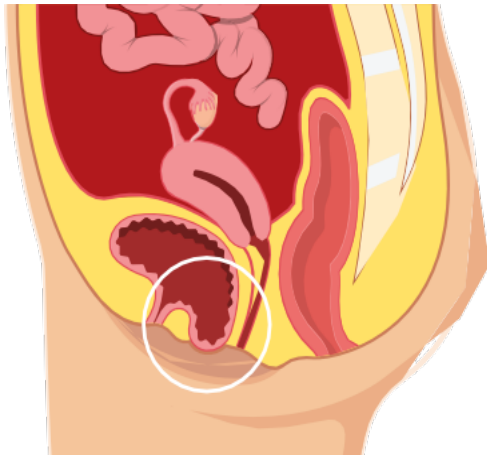


- Häufige Blasenentleerung (>8x/d)
- Entleerung kleiner Urinmengen
- Nicht oder nur schwer unterdrückbarer Urindrang
- Häufige nächtliche Entleerungen
- Dranginkontinenz (ca. 1/3 der Patient:innen)
- Inkontinenz beim Geschlechtsverkehr

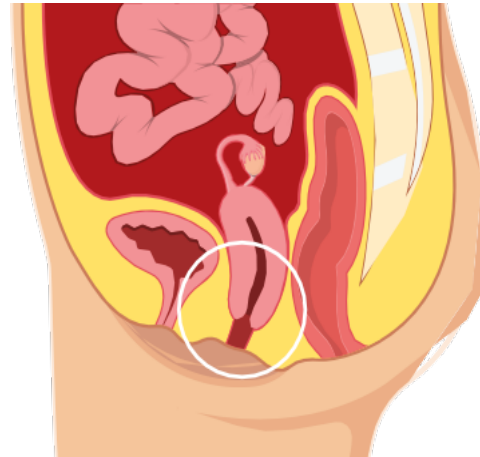
Stuhlinkontinenz *(nach Rome IV Kriterien)*

- **Anale Inkontinenz:** Unwillkürlicher Verlust von Flatus und flüssigem und festem Stuhl
- **Fekale Inkontinenz:** Unfreiwilliger Verlust von flüssigem und festem Stuhl
- **Passive Inkontinenz:** ohne Bewusstsein oder Dringlichkeit unwillkürlicher Verlust von Stuhl und/oder Flatus
- **Drang Inkontinenz:** mangelnde Kontrolle über den Stuhldrang, was zu unwillkürlichem Verlust von Stuhl führen kann

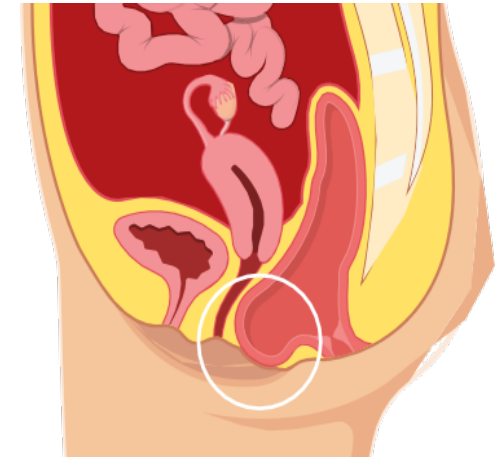
Organsenkungen



Cystocele



Uteroccele



Rectocele

Prävalenz und Auswirkung

- Frauen 60 und mehr:
 - 40-55% leiden unter Urininkontinenz
 - Mischinkontinenz > Stressinkontinenz > Dranginkontinenz
 - 20-25% leiden an schweren Symptome (> als 10 Episoden/Woche) (*ICI 2017*)
- Männer 60 und mehr:
 - 10% leiden unter Urininkontinenz
- Die Urininkontinenz ist eine von vier gesundheitlichen Prioritäten für ältere Frauen, zusammen mit:
 - Osteoporose
 - Sturzprävention
 - Kognition (*Tannenbaum 2003*)

Prävalenz und Auswirkung

- Urininkontinenz kann:
 - teuer sein
 - einen negativen Impact auf die Lebensqualität haben
 - Folge von Isolation und Verschlechterung der ADL haben
 - eine Erhöhung des Risikos von Stürzen und Einweisungen in Pflegeheime haben
(*Resnick, 1989, Nygaard, 1996; Johnson, 1998, Wilson, 2005*)
- Urininkontinenz beeinträchtigt die Lebensqualität stärker als andere chronische Krankheiten wie Diabetes (*Ko, Lin et al. 2005*)

Zusammenhang zwischen Stürze und Urininkontinenz

- Ältere Frauen mit Harninkontinenz haben ein höheres Risiko für Stürze (*Odds Ratio (OR): 1,45, Konfidenzintervall 95%: [1.36-1.54]*) (Gale, 2018)
- Das Sturzrisiko bei älteren Frauen ist höher bei:
 - Drangharninkontinenz (*OR: 1,54, [1,41-1,69]*)-
 - Mischharninkontinenz (*OR: 1,92, [1,69-2,18]*)
 - Stressharninkontinenz (*OR: 1,11, [1,00-1,23]*) (Gale, 2018)

Prävalenz und Auswirkung

- 1/3 der älteren Menschen (65 Jahre und älter) stürzen einmal pro Jahr
- 1/2 der älteren Menschen (80 Jahre und älter) stürzen einmal pro Jahr
- mit erheblichen Folgen (Lebensqualität, Schmerzen, Funktionseinbussen)
- sehr kostspielig für das Gesundheitssystem

Zusammenhang zwischen Stürze und Urininkontinenz

(William Gibson et al 2018)

Hypothesen:

- Eiliger Gang zur Toilette oder Ausrutschen beim Urinieren
- Aktivitätseinschränkung
- Gebrechlichkeit, Multimorbidität und Multimedikation
- Zentrale Kontrolle und kognitive Faktoren
- Rolle der exekutiven Funktion beim Gehen und bei der Kontinenz

The association between lower urinary tract symptoms and falls: Forming a theoretical model for a research agenda

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Joanne Booth⁴ | Dawn A. Skelton⁴ | Chantale Dumoulin⁵ | Lorna Paul⁴ |
Adrian Wagg¹

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Funding information

International Continence Society

Background: There is a well-recognised association between falls and lower urinary tract symptoms (LUTS) in older adults, with estimates of odd ratios for falls in the presence of LUTS ranging between 1.5 and 2.3. Falls and LUTS are both highly prevalent among older people and both are markers of frailty, with significant associated morbidity, mortality, and healthcare resource cost. This association is not well examined or explained in the literature.

Aims: We aimed to outline current knowledge of the association between falls and lower urinary tract symptoms and suggest a research program to further investigate this.

Materials and Methods: A consensus conference of experts in the field was convened to review the current literature and brainstorm potential future investigative avenues.

Results and discussion: Despite the recognition of this association, there has been little research to examine its potential causes, and no intervention trial has established if reducing LUTS or urinary incontinence can reduce the risk of falls. The commonly held assumption that urgency causes falls through rushing to the toilet is likely incorrect. Falls and LUTS are both symptoms of frailty and have many common causes. Gait, balance, and continence are all processes requiring cognitive input, and the concept of dual tasking may be a further link.

Conclusion: The significant association between lower urinary tract symptoms and falls is currently unexplained, and further research into the potential causes of this association is needed.

KEYWORDS

falls, incontinence, nocturia, older people, urinary urgency

1 | INTRODUCTION

Hashim Hashim led the peer-review process as the Associate Editor responsible for the paper.

Urinary incontinence (UI) and lower urinary tract symptoms (LUTS), including urinary urgency, frequency, and nocturia

Gangeschwindigkeit

Lusardi M, Pellecchia GL, Schulman M. ,Functional performance in community living older adults. *J Geriatr Phys Ther.* 2003;26(3):14-22

Table 1. Normal gait speeds for healthy community-dwelling men and women.¹¹

Age (years)	Gender	Average Gait Speed (m/s)
20-29	Men	1.36
	Women	1.34
30-39	Men	1.43
	Women	1.34
40-49	Men	1.43
	Women	1.39
50-59	Men	1.43
	Women	1.31
60-69	Men	1.34
	Women	1.24
70-79	Men	1.26
	Women	1.13
80-89	Men	0.97
	Women	0.94

The effects of a strong desire to void on gait for incontinent and continent older community-dwelling women at risk

(Marie-Hélène Paquin et al, 2019)

Received: 14 August 2019 | Accepted: 1 November 2019
DOI: 10.1002/nm.2424

ORIGINAL CLINICAL ARTICLE

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The effects of a strong desire to void on gait for incontinent and continent older community-dwelling women at risk of falls

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Funding information
Ordre Professionnel de la Physiothérapie du Québec (OPFQ); Réseau Québécois de Recherche sur le vieillissement (RQIV); Fond de Recherche du Québec-santé

Abstract
Aims: The fall rate in urgency urinary incontinence (UUI) and mixed UI (MUI) older women is higher when compared with that of continent women. One hypothesis is that a strong desire to void (SDV) could alter gait parameters and therefore increase the risk of falls. The aim of this study was to investigate and compare the effect of SDV on gait parameters in UUI/MUI and continent older women who experienced falls. The secondary aim was to determine the relationship between UI severity and gait parameters in incontinent women.
Methods: A quasi-experimental pilot study was conducted with two groups of healthy community-dwelling women who experienced at least one fall in the last year: continent (n = 17; age: 74.1 ± 4.3) and UUI/MUI (n = 15; age: 73.5 ± 5.9). We recorded, analyzed, and compared spatiotemporal gait parameters for participants in each group with both SDV and no desire to void condition.
Results: A pattern of reduced velocity (P = 0.05) and stride width (P = 0.02) was observed in both groups with SDV. Incontinence severity was correlated with reduced velocity (r_s = -0.63, P = 0.01), increased stance time (r_s = 0.65, P = .01) and stance time variability (r_s = 0.65, P = .01) in no desire to void condition and with reduced velocity (r_s = -0.56, P = .03) and increased stride length variability (r_s = 0.54, P = .04) in SDV condition.
Conclusions: SDV reduced gait velocity and stride width regardless of continence status in older women at risk of falls. Further, UI severity in the UUI/MUI women was correlated to reduced gait velocity and increased variability. Our findings could explain the higher fall rate in this population.

KEYWORDS
bladder sensation, community-dwelling, elderly women, falls, spatiotemporal gait parameters, urgency, urinary incontinence

642 | © 2019 Wiley Periodicals, Inc. | wileyonlinelibrary.com/journal/nm | *Neurology and Urodynamics*, 2020, 9, 640-649

Resultate

- Klinisch langsamere Geschwindigkeit in der inkontinenten Gruppe
- Auf dem Weg zur Toilette in beiden Gruppen:
 - Reduzierte Geschwindigkeit
 - Reduzierte Schrittweite (? Adduktoren versuchen den Beckenboden zu kontrahieren?)
- Der Schweregrad der Inkontinenz war mit beiden Bedingungen korreliert:
 - langsameren Gangparametern
 - erhöhter Gangvariabilität



**Die Physiotherapie sollte diese Erkenntnisse bei der Behandlung von
Urininkontinenz und/oder Stürzen bei alternden Frauen unbedingt
berücksichtigen**

Characteristics of Lower Limb Muscle Strength, Balance, Mobility, and Function in Older Women with Urge and Mixed Urinary Incontinence

(Mélanie le Berre et al 2019)

ARTICLE

Characteristics of Lower Limb Muscle Strength, Balance, Mobility, and Function in Older Women with Urge and Mixed Urinary Incontinence: An Observational Pilot Study

Mélanie Le Berre, MSc, PT,*¹ Mélanie Morin, PhD, PT,² Héliane Corriveau, MSc, PT,² Mathieu Hamel, MSc Eng,² Sylvie Nadeau, PhD, PT,³ Johanne Filiatrault, PhD, OT,*¹ Chantale Dumoulin, PhD, PT*¹

ABSTRACT

Purpose: After the age of 65, urinary incontinence (UI) occurs in one of every two women. A positive correlation between falls and urgency UI (UI) or mixed UI (MI) has also been identified. However, lower extremity impairments in older women with UI or MI have not been thoroughly investigated. The primary goal of this study was to compare lower limb strength, balance, mobility, and function in older women with and without UI or MI. The secondary goal was to evaluate the association between these measurements and UI severity. **Method:** A total of 40 older women with and without UI or MI completed standardized tests for lower limb strength (knee flexor or extensor dynamometry, 30-second sit-to-stand test), balance (single-leg stance test, Four Square Step Test, ActiLife-specific Balance Confidence questionnaire), mobility (10-metre walk test, 6-minute walk test), and function (Human Activity Profile questionnaire, 12-Item Short Form Health Survey). **Results:** Significant differences in balance and mobility were observed between the two groups. Women with UI had shorter single-leg stance times, lower balance confidence scores, and slower gait speeds. **Conclusions:** The results from this pilot study suggest that high-functioning older women with UI or MI have balance and mobility impairments. More studies are needed to confirm these results. By reporting power calculations for sample size, this pilot study provides a useful basis on which to design and conduct larger studies.

Key Words: mobility limitation; muscle strength; postural balance; urinary incontinence; women's health.

RÉSUMÉ

Objetif : après l'âge de 65 ans, une femme sur deux souffre d'incontinence urinaire (IU). On constate également une corrélation entre les chutes et l'incontinence par urgence (IU) ou l'incontinence urinaire mixte (MI). Cependant, les déficiences des membres inférieurs chez les femmes âgées qui souffrent d'IU ou d'MI n'ont pas fait l'objet d'études approfondies. La présente étude avait comme principal objectif de comparer la force des membres inférieurs, l'équilibre, la mobilité et la fonction générale des femmes âgées présentant ou non une IU ou une MI. L'objectif secondaire consistait à évaluer l'association entre ces mesures et la gravité de l'IU. **Méthodologie :** au total, 40 femmes âgées présentant ou non une IU ou une MI ont effectué des tests standardisés pour mesurer la force de leurs membres inférieurs (mesure dynamométrique de flexion et d'extension du genou, test assis-début de 30 secondes), leur équilibre (test d'équilibre unipodal, et Four Square Step Test, questionnaire sur la confiance en leur équilibre ActiLife-Specific Balance Confidence scale), leur mobilité (test de marche sur 10 mètres, test de marche de six minutes) et leur fonction (Human Activity Profile questionnaire, 12-Item Short Form Health Survey). **Résultats :** les chercheurs ont observé des différences d'équilibre et de mobilité importantes entre les deux groupes. Les femmes ayant une IU ont obtenu des temps réduits au test d'équilibre unipodal, présentèrent des scores de confiance en leur équilibre plus bas ainsi qu'une vitesse de marche réduite. **Conclusion :** d'après les résultats de ce projet pilote, on constate des problèmes d'équilibre et de mobilité chez les femmes âgées hautement fonctionnelles qui présentent une IU ou une MI. D'autres études sont nécessaires pour confirmer ces résultats. En rendant compte des calculs de puissance de taille échantionnelle, le présent projet pilote représente un point de départ utile pour concevoir et réaliser des études plus vastes.

From the: *Institut Universitaire de Gériatrie de Montréal; ¹School of Rehabilitation, Université de Montréal; ²Pathokinesiology Laboratory, Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal, Montreal; ³School of Rehabilitation, Université de Sherbrooke, Sherbrooke, Que.

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Contributors: All authors designed the study, collected, analyzed, interpreted the data, drafted or critically revised the article, and approved the final draft.

Competing Interests: Mélanie Le Berre has received scholarships from the Faculty of Medicine of Université de Montréal, the Canadian Institute of Health Research, and the Fonds de recherche de Québec – Santé.

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Physiotherapy Canada 2019; 71(3):250-260; doi:10.3138/ptc.2018-30

Resultate

- Ältere Frauen mit Mischinkontinenz / Urgeinkontinenz hatten im Allgemeinen einen schlechteren körperlichen Gesundheitszustand als kontinente Frauen
- Frauen mit Urininkontinenz zeigten im Vergleich zu kontinenten Frauen eine signifikant niedrigere Ganggeschwindigkeit, Gleichgewichtsleistung und Gleichgewichtsvertrauen auf



Diese Studie deutet darauf hin, dass Frauen, die an einer Misch-/Urgeinkontinenz leiden, Gleichgewichts- und Mobilitätsdefizite aufweisen

Are stress- and mixed urinary incontinence associated with impaired executive control in community - dwelling older women? (Maxime Lussier et al, 2013)

Journal of Clinical and Experimental Neuropsychology, 2013
Vol. 35, No. 5, 445-454, <http://dx.doi.org/10.1080/13803395.2013.789483>



Are stress and mixed urinary incontinence associated with impaired executive control in community-dwelling older women?

Maxime Lussier^{1,2}, Mélanie Renaud^{1,2}, Sima Chiva-Razavi^{2,3}, Louis Bherer^{1,2}, and Chantale Dumoulin^{2,3}

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Objective: To assess whether stress or mixed urinary incontinence (UI) is associated with deficits in executive functioning among community-dwelling women. **Design:** An observational study comparing the performance, using multivariate analyses of variance (MANOVAs) and Bonferroni post hoc test, of continent women and women with stress or mixed UI during executive control tasks. **Setting:** The research center of the Institut universitaire de gériatrie de Montréal. **Participants:** One hundred and fifty-five community-dwelling women aged 60 and older participated in the study. **Measurements:** Based on the Urogenital Distress Inventory (UDI), participants were split into three groups: 35 continent women, 43 women with stress UI, and 78 women with mixed UI. Participants completed a battery of neuropsychological tests and a computerized dual-task test. **Results:** Women with mixed UI showed poorer performances than continent and stress UI women in executive control functions. Deficits were specific to tests involving switching and sharing/dividing attention between two tasks. **Conclusion:** Results of this study suggest that mixed UI can be associated with executive control deficits in community-dwelling older women. Future intervention studies in the treatment of UI should take the higher risk of an executive control deficit in women with UI under consideration.

Keywords: Cognition; Urinary incontinence; Executive control; Attention; Divided attention.

Urinary incontinence (UI) is one of the most prevalent health concerns confronting women aged 60 and older (Milson et al., 2009; Tannenbaum, Mayo, & Ducharme, 2005). In fact, up to 55% of community-dwelling women (i.e., not institutionalized) suffer from UI. Of these, 20% to 25% suffer from severe symptoms (> 10 episodes/week; Milson et al., 2009; Wetle et al., 1995). UI is subdivided into three types according to symptoms: (a) Stress UI refers to leakage on effort, exertion, sneezing, or

coughing; (b) urgency UI refers to leakage accompanied by a sudden, intense desire to urinate; and (c) mixed UI refers to symptoms of both stress and urgency UI. Stress and mixed UI tend to predominate in women between the ages of 60 to 69 years, accounting for 43% of mixed UI, 40% of stress UI, and 12% of urgency UI in women (Abrams et al., 2002; Dooley, Lowenstein, Jenton, Fitzgerald, & Brubaker, 2008; Hannestad, Rortveit, Sandvik, & Hunskaar, 2009).

This research was supported by grants from the Canadian Institute of Health Research (CIHR) and the Fond de la Recherche en Santé du Québec (FRSQ), by CIHR and FRSQ salary support to L.B. and C.D., and a Natural Sciences and Engineering Research Council of Canada (NSERC) fellowship to M.L. The authors wish to thank Mariel Jadin, project coordinator, as well as the participants for their commitment in this study. The authors declare no conflict of interest.

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Resultate

Frauen mit Mischinkontinenz zeigten eine schlechtere kognitive Leistung bei

- Tests der Exekutivfunktion
- Tests der geteilten Aufmerksamkeit

Schwierigkeiten in folgenden Bereichen

- Ablenkung von einer Aufgabe, um eine andere zu erledigen
- Umgang mit Störungen



muss in der Beckenbodenphysiotherapie beachtet werden

Virtual Reality Rehabilitation as a Treatment Approach for Older Woman with Mixed Urinary Incontinence *(Valérie Elliot et al, 2012)*

ND

Neurology and Uroynamics 34(236-243) (2015)

Virtual Reality Rehabilitation as a Treatment Approach for Older Women With Mixed Urinary Incontinence: A Feasibility Study

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Background: Motivated patients are more likely to adhere to treatment resulting in better outcomes. Virtual reality rehabilitation (VRR) is a treatment approach that includes video gaming to enhance motivation and functional training. **Aims:** The study objectives were (1) to evaluate the feasibility of using a combination of pelvic floor muscles (PFM) exercises and VRR (PFM/VRR) to treat mixed urinary incontinence (MUI) in older women, (2) to evaluate the effectiveness of the PFM/VRR program on MUI symptoms, quality of life (QoL), and (3) gather quantitative information regarding patient satisfaction with this new combined training program. **Methods:** Women 65 years and older with at least 2 weekly episodes of MUI were recruited. Participants were evaluated two times before and one time after a 12-week PFM/VRR training program. Feasibility was defined as the participants' rate of participation in and completion of both the PFM/VRR training program and the home exercise. Effectiveness was evaluated through a bladder diary, pad test, symptom and QoL questionnaires, and participant satisfaction through a questionnaire. **Results:** Twenty-four women (70.2 ± 5.6 years) participated. The participants complied with the study demands in terms of attendance at the weekly treatment sessions (91%), adherence to home exercise (92%) and completion of the three evaluations (96%). Post-intervention, the frequency and quantity of urine leakage decreased and patient-reported symptoms and QoL improved significantly. Most participants were very satisfied with treatment (91%). **Conclusions:** A combined PFM/VRR program is an acceptable, efficient, and satisfying functional treatment for older women with MUI and should be explored through RCTs. *Neurolog. Urodynamic.* 34:236-243, 2015. © 2014 Wiley Periodicals, Inc.

Key words: elderly; mixed urinary incontinence; pelvic floor muscle; virtual reality rehabilitation; women

INTRODUCTION

Pelvic floor muscle (PFM) training has shown efficacy and is the recommended first-line treatment for patients with stress (SUI), urge (UI), or mixed (MUI) urinary incontinence.¹ Both individualized PFM treatments and group-based exercises have been shown to be effective in treating these types of UI, even in older women.²⁻⁶ However, despite the effectiveness of PFM training, the potential and realized benefits are frequently hindered by poor patient adherence, both in the short- and long-term, and has been identified as an important predictor of overall PFM effectiveness.^{7,8}

Adherence to a regular PFM exercise program is key to its initial effectiveness⁹ and poor adherence to a maintenance exercise program is responsible for a decline in effect.¹⁰ However, despite the low level of difficulty, non-adherence, and efficacy of PFM training, high attrition rates, and low adherence are well documented in both clinical and research settings,¹¹ as a result, adherence has been identified as an influential short- and long-term predictor of PFM exercise effectiveness.^{12,13} Motivation is key to adherence as motivated patients are more likely to adhere to treatment.¹⁴ Thus, one of the greatest challenges for PFM physiotherapists is identifying and incorporating techniques or approaches in their interventions that will promote patient adherence and, consequently, treatment effectiveness.

This study examined one such approach, virtual reality rehabilitation (VRR). VRR is a treatment approach that combines dynamic functional exercises (those that focus on lower body muscles and core stability to simulate common movements to prepare muscles for daily tasks) and video

gaming in order to enhance motivation, thereby increasing participation, promoting adherence, and reducing dropout rates.¹⁵ VRR employs computer-generated (virtual reality) environments using widely available game consoles (eg, Nintendo Wii, Sony PlayStation) to guide patients through clinician-prescribed interactive functional exercises in a fun and engaging manner.¹⁶ Although many randomized control trials (RCTs) have demonstrated the effectiveness and motivational advantages of VRR-delivered therapies for various conditions and patient populations (eg, those with stroke or balance problems),¹⁷⁻²⁰ no study has yet evaluated the effects of this novel treatment approach on urinary incontinence treatments and, more specifically, for older women with UI. Therefore, this feasibility study was necessary to determine VRR (functional training combined with PFM training interventions) is a feasible treatment approach with older women with MUI. Such is, would they participate, comply to and complete the combined PFM/VRR program demands.

The objectives of this quasi-experimental, post-test

Conflict of interest none.
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Resultate

Ein Beckenbodentraining und Virtual Reality Programm scheint wirksam zu sein, wenn es darum geht

- Urininkontinenz Symptome zu reduzieren
- den Gang und die Kognition zu verbessern
- die Lebensqualität zu erhöhen

Group physiotherapy compared to individual physiotherapy to treat urinary incontinence in aging women: a non inferiority randomized control trial

(Chantal Dumoulin et al. 2020)

Dumoulin et al. *Trials* (2017) 18:544
DOI 10.1186/s13063-017-2261-4

Trials

STUDY PROTOCOL

Open Access



Group physiotherapy compared to individual physiotherapy to treat urinary incontinence in aging women: study protocol for a randomized controlled trial

Chantal Dumoulin^{1*}, Mélanie Morin², Marie-Hélène Mayrand³, Michel Toussignant⁴ and Michal Abrahamowicz⁵

Abstract

Background: Urinary incontinence (UI), one of the most prevalent health concerns confronting women aged over 60 years, affects up to 55% of older community-dwelling women—20–25% with severe symptoms. Clinical practice guidelines recommend individualized pelvic floor muscle training (PFMT) as a first-line treatment for stress or mixed UI in women, although lack of human and financial resources limits delivery of this first-line treatment. Preliminary data suggest that group-based treatments may provide the answer. To date, no adequately powered trials have evaluated the effectiveness or cost-effectiveness of group compared to individual PFMT for UI in older women. Given demographic projections, high prevalence of UI in older women, costly barriers, and group PFMT promising results, there is a clear need to rigorously compare the short- and long-term effectiveness and cost-effectiveness of group vs individual PFMT.

Methods/Design: The study is designed as a non-inferiority randomized controlled trial, conducted in two facilities (Montreal and Sherbrooke) in the Canadian province of Quebec. Participants include 364 ambulatory, community-dwelling women, aged 60 years and older, with stress or mixed UI. Randomly assigned participants will follow a 12-week PFMT, either in one-on-one sessions or as part of a group, under the supervision of a physiotherapist. Blinded assessments at baseline, immediately post intervention, and at one year will include the seven-day bladder diary, the 24h pad test, symptoms and quality of life questionnaires, adherence and self-efficacy questionnaire, pelvic floor muscle function, and cost assessments. Primary analysis will test our main hypothesis that group-based treatment is not inferior to individualized treatment with respect to the primary outcome: relative (%) reduction in the number of leakages.

Discussion: Should this study find that a group-based approach is not less effective than individual PFMT, and more cost-effective, this trial will impact positively continence-care accessibility and warrant a change in clinical practice.

Trial registration: ClinicalTrials.gov, NCT02039830. Registered on 12 December 2013; Study protocol version 2; 21 November 2013.

Keywords: Urinary incontinence, Pelvic floor muscle training, Elderly women

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Resultate

- Die gruppenbasierte Beckenbodentraining unterscheidet sich nicht wesentlich von der individuellen Beckenbodenphysiotherapie bei Frauen im Alter von 60+.
- Es gab langfristige morphometrische und funktionelle Veränderungen der Beckenbodenmuskulatur nach individueller oder gruppenbasierter Physiotherapie, die durch die verbesserte Selbstwirksamkeit der Teilnehmerinnen bei der Durchführung von Beckenboden Übungen und der Verwendung des „Knack“ als Kontinenzstrategie unterstützt wurden

Ganzkörpertraining Beckenbodentraining Alltagsverhalten



- Kraft-/ Ausdauertraining
- Kognitives Training in Kombination mit Ganzkörper-/ Gleichgewichtstraining (Exergame, StepMania, Wee, Sensopro)
- Beckenbodentraining individuell / Gruppe (spezialisierte BB-PT) (Level of Evidence I, Grad A in der Behandlung von Belastungsinkontinenz)
- Trink-/ Miktionsverhalten
- Drangstrategien
- Hilfsmittel (Binden, Pessare)
- Toiletten App (z.B. nette Toiletten)

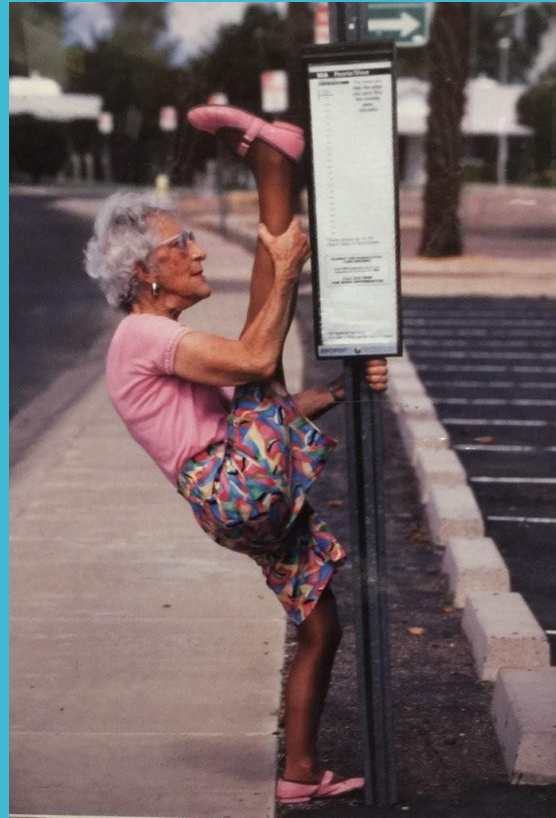
Take Home



- Mobilität
- Gleichgewicht
- Kognition
- Beckenboden



Schweizerische Gesellschaft für
Beckenbodenphysiotherapie



FRAGEN?



Schweizerische Gesellschaft für
Beckenbodenphysiotherapie



Operationen / Anticholinerge Medikamente im Alter

- Cognitive changes in older women after urogynaecological surgery
(*Brandner et al 2018*)
 - Signifikante Verbesserung der Beschwerden (Inkontinenz, Senkungen, OAB)
 - Signifikante Verschlechterung der kognitiven Funktionen nach 6 Wochen
- Medikamente mit anticholinergen Eigenschaften können die kognitive Leistung verschlechtern
(*Lechevallier-Michel N et al. 2005*)

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