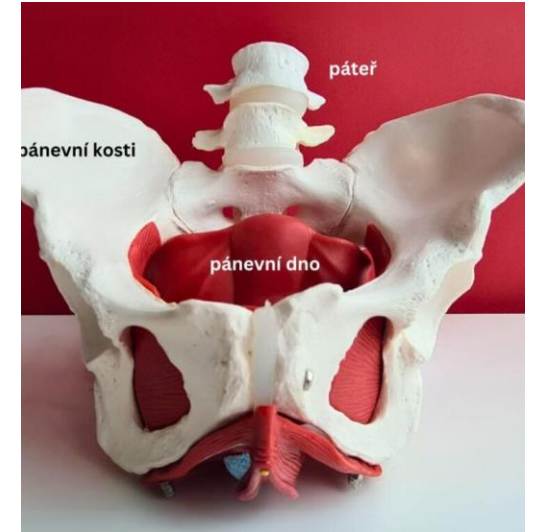


# How to keep female pelvic floor in balance by exercise - multiple approach



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2025

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# Outline

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Physiology

Anatomy

Connection with deep stabilisation system

Pathology

Ways to improve pelvic floor function

Therapeutical alliance (!!!)

Active approach from females

# PHYSIOLOGICAL Function of PF

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## STABILISATION of spine

AGR holding a symmetry posture

STRONG AND resilient „chassis“

COG - middle of body

BREATHING diaphragma and  
pelvic floor

SEXUAL FUNCTION, PREGNANCY

## SUPPORT inner parts

SPHINCTERS- CONTINENTIA  
external sphincter by coughing,  
sneezing, , blow one's nose

LIMBIC SYSTEM emocional  
fields-role

*ENERGY CENTER ( joga, tai-chi )*

INTRAABDOMINAL pressure.  
(IAP) support

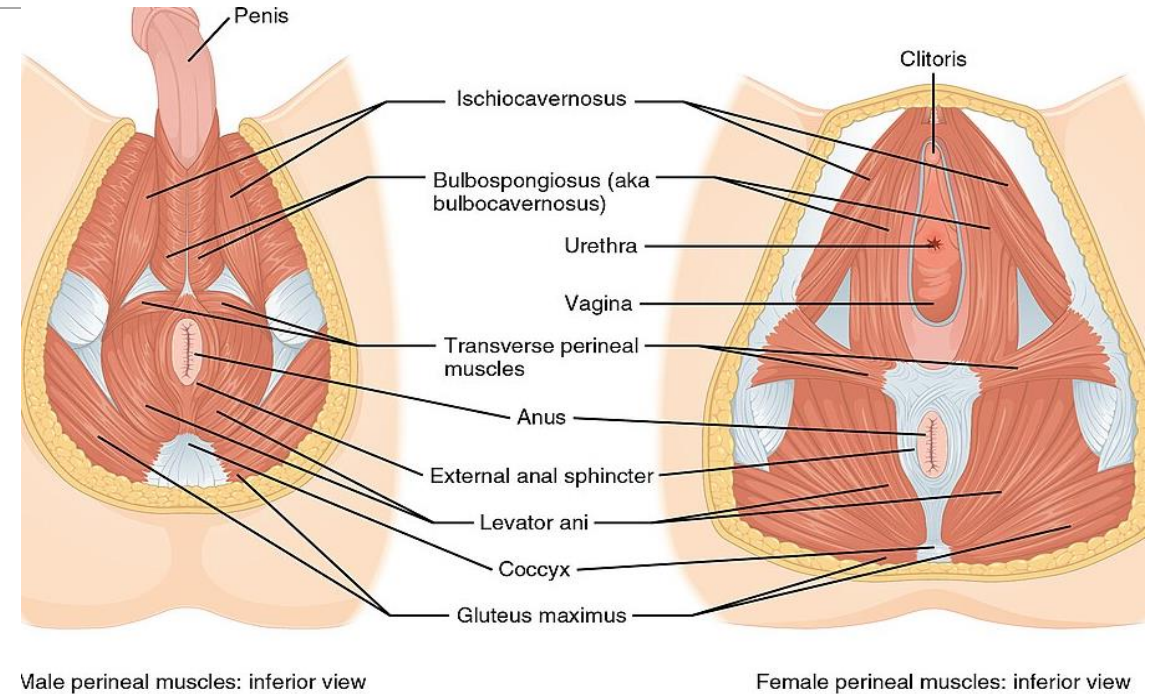
# Pelvic Floor DYSFUNCTION

Symptoms, which influence

***quality of life*** (male and female)

Socially awkward situations  
psychological problems

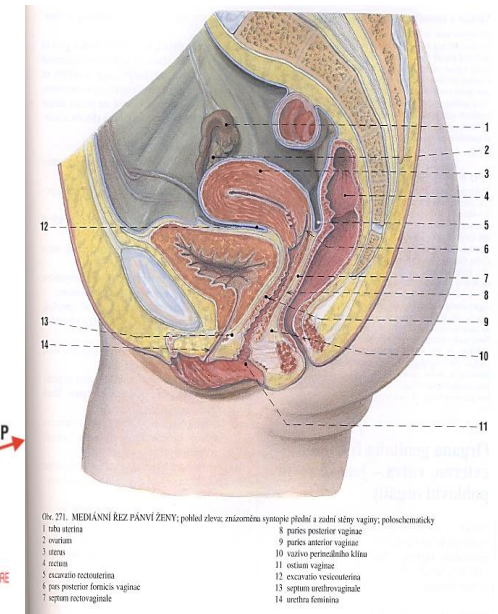
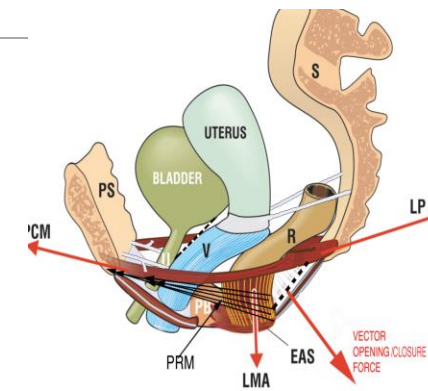
financial expense (toilets article) etc. /1/,/7/,/8/,/9/,/10/



The Pelvic Floor Muscles (PFM) are found in the base of the pelvis. There are superficial muscles as well as the deep levator ani muscles. A proper PFM contraction Incorporates both motion: squeeze and a lift Changes in their function and strength can contribute to Pelvic Floor dysfunction.

PELVIC ORGAN PROLAPSE, INCONTINETIA (URINARY AND FECAL), PELVIC PAIN, INFERTILITY ETC.

/1,3/



# Peggy Norton's „boat in Dry dock“ concept

## Pelvic-Floor Dysfunction Special Issue

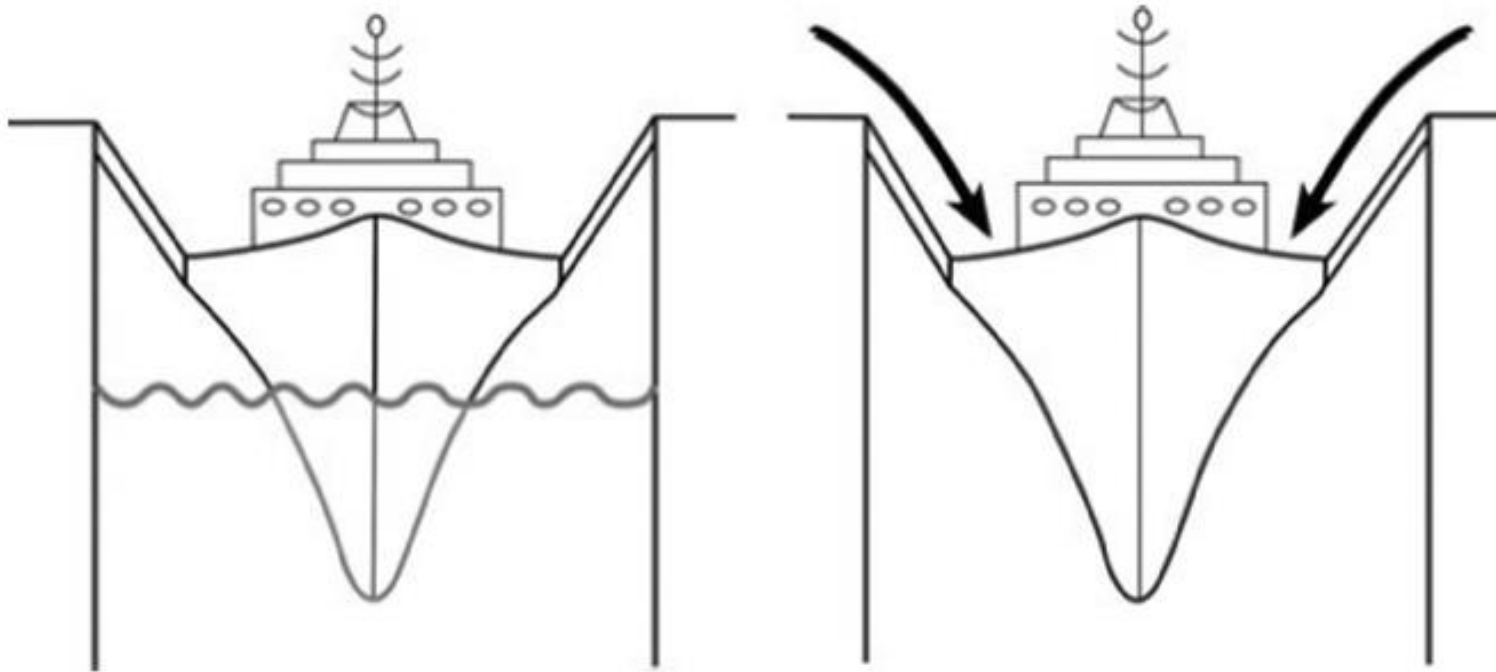
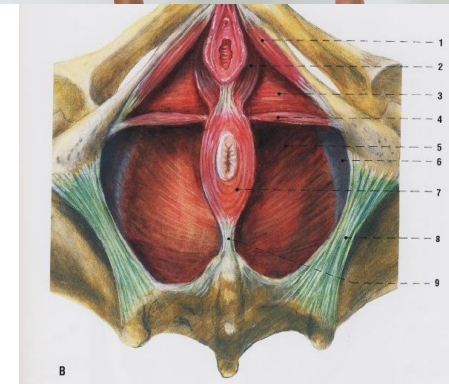
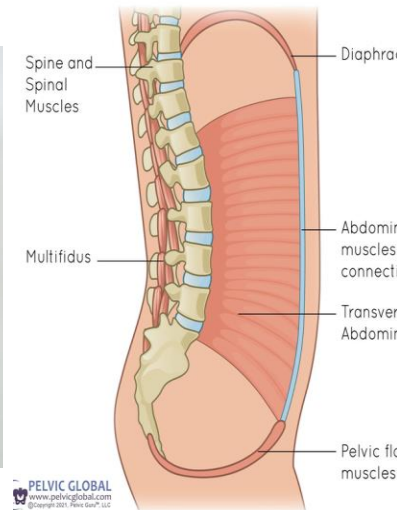
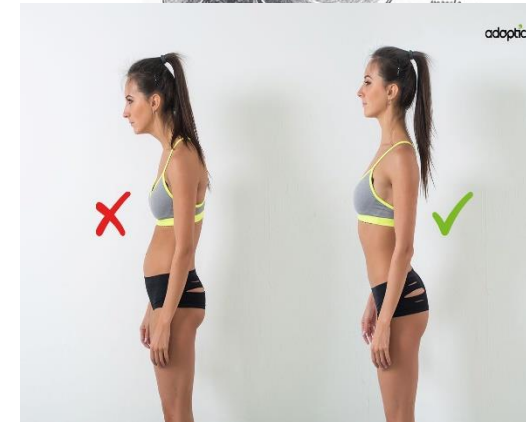
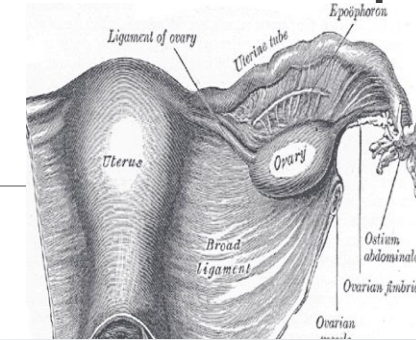


Figure 1.

Peggy Norton's „Boat in Dry Dock“ concept. Schematic representation of pelvic support that illustrates pelvic organ prolapse as a multifactorial problem. Under optimal conditions (left image), the pelvic organs (boat) are supported by the levator ani muscle (water) and stabilized by the ligaments (cables). Damage or weakness of the levator ani muscle is represented by absence of the water (right image), leaving the ligaments (cables) to support the entire weight of the pelvic organs (boat). The ligaments (cables) may be able to support the organs (boat) initially, but in the presence of external forces (black arrows), the ligaments (cables) will eventually become insufficient allowing the pelvic organs (boat) to prolapse (fall down). Reprinted from Lammers K, Prokop M, Vierhout ME, et al. A pictorial overview of pubovisceral muscle avulsions on pelvic floor magnetic resonance imaging. *Insights Imaging*. 2013;4(4):431–441. Creative Commons Attribution License.



Recent Advances in Understanding  
Pelvic-Floor Tissue of Women With  
and Without Pelvic Organ Prolapse:  
Considerations for Physical Therapists

Kristen Sanders

# COMPONENTS

## ACTIVE

SUPPORTING TISSUE

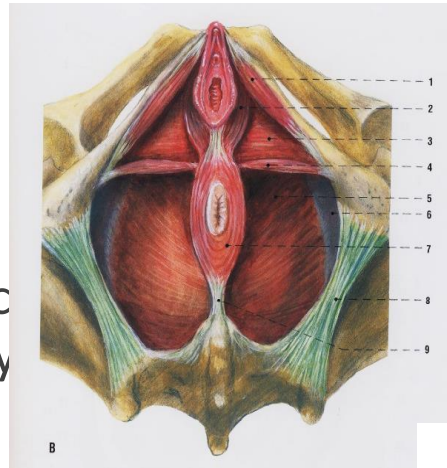
### DIAPHRAGMA PELVIS

(m. pubovaginalis pubococcygeus, m. puborectalis, m. iliococcygeus, m. coccygeus)

### DIAPHRAGMA UROGENITALE

(transv. Perinei,

### EXTERNAL sphincters

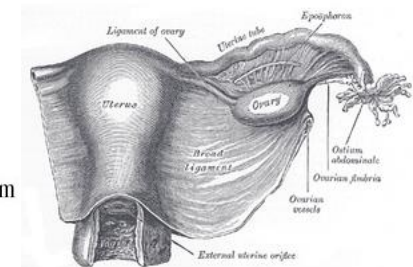
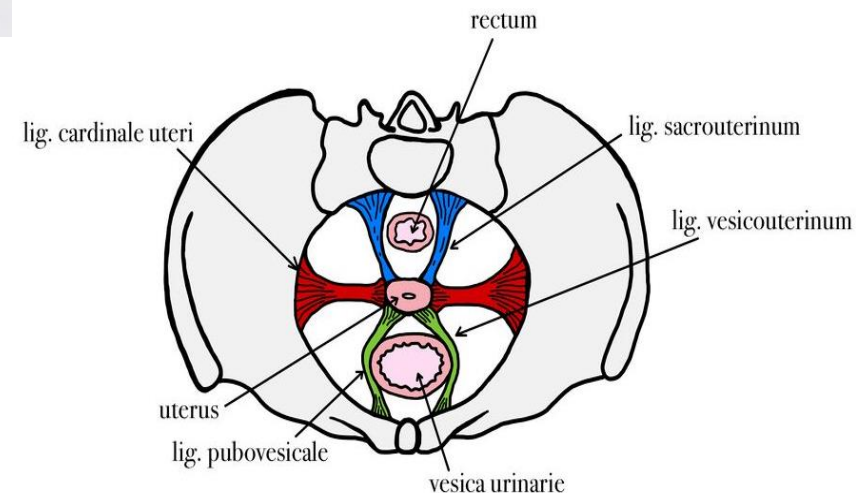


## PASIVE

**LIGAMENT (PESAR TH.) :**



Round ligament (AFL), parametrial ligaments, lig. cardinale uteri, lig. teres uteri (seu lig. rotundum vel chorda uteroingvinalis), ligg. sacrouterina, vesicouterina et pubovesicalia.



## MANIFESTATION OF PF dysf.

Inkontinentia (SUI, OAB, mixed), pelvic pain sy, L-back pain, dyspareunia, sexual dysfunction (vaginism, erectill dysf., infertility) **PROLAPSUS** (Cystocele, urethrocele, rectocele, enterocele, prolapse of the uterus, prolapse of the vaginal vault)

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IPOP AFFECTS NEARLY 50% PAROUS WOMEN  
THEY CAN HAVE SOME DYSFUNCTION /16/

# MOST COMMON PF CONDITIONS

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- **Dysbalance, TrPs, hypertonus, hypotonus**
- **WRONG POSITION OF PELVIS, MUSCLE CHAINS, SCARS**
- **POOR SENSITIVITY - isolated relaxation, contraction**
- **Dyscoordination after wrong physical exercises**
- **Trauma, disruption of muscle mLA or ligaments during delivery**
- **Broken tail of bone, or os sacrum**
- **Weak ligament congenital**
- **Overloading ligaments**

# POP

## Symptoms and risks

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### Symptoms

vaginal bulging, incomplete bowel or bladder emptying, urinary or fecal incontinence, a need to splint the posterior vaginal wall or perineum to defecate, and sexual discomfort

### Risk factor :

older age, menopause, vaginal childbirth(s) , neurologic dysfunction, connective tissue abnormalities, joint hypermobility, heavy lifting (IAT presser), chronic constipation, cough , increase body mass, smoking (denervation, oxidative stress))<sup>16/</sup>

# A TYPICAL FEMALE PATIENT

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**Incontinence:** Stress, mild to moderate SUI, mixed

**Muscle Tone:**  
Hypo/hypertonic  
poor perception

**Pregnancy:** Preparation for childbirth

Functional STERILITY

**Post-Urogyn Surgery**

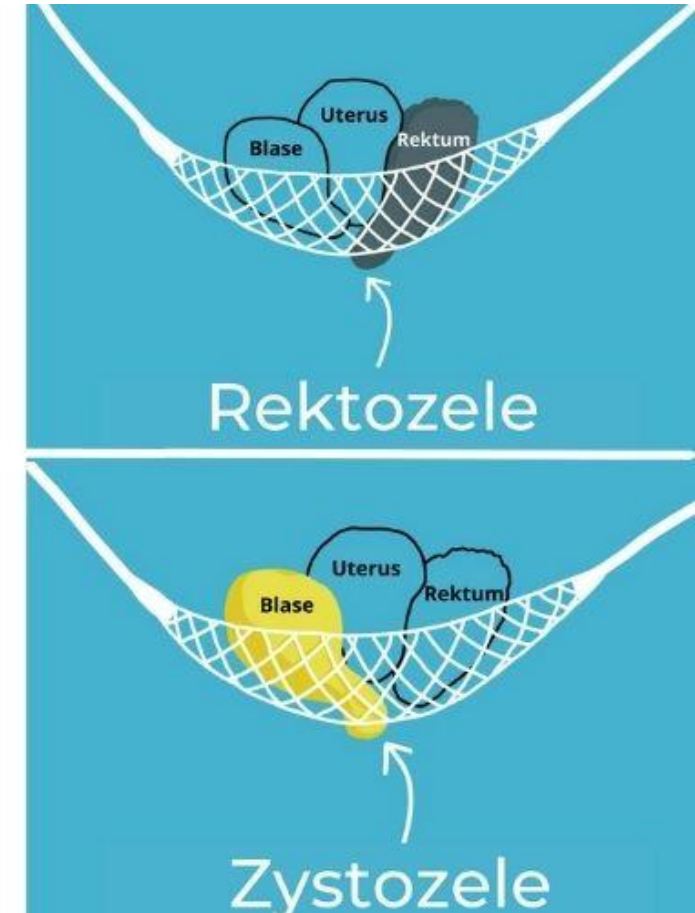
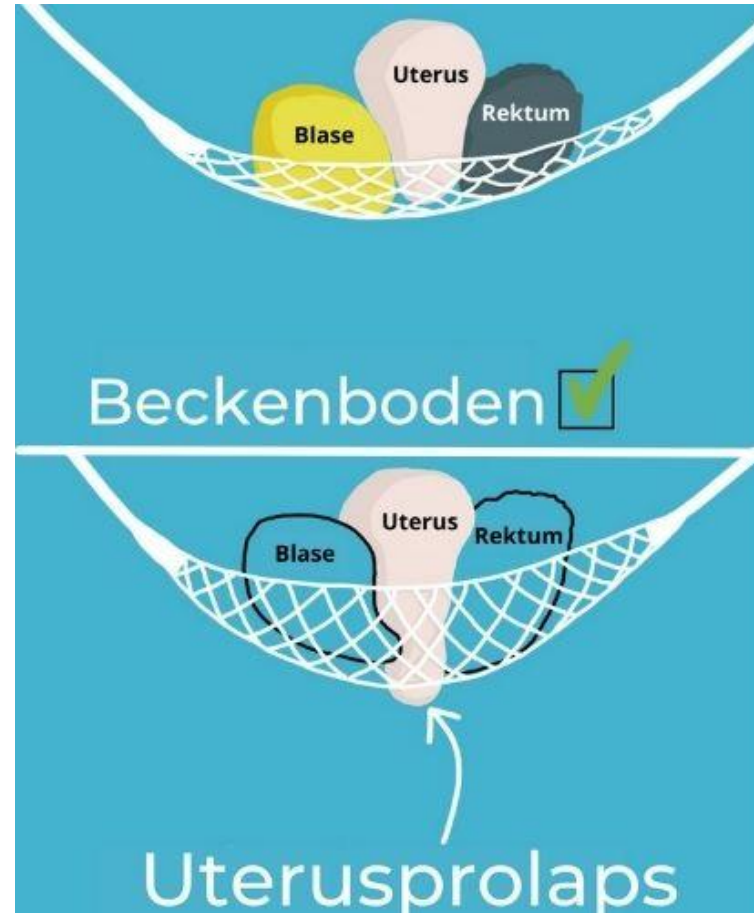
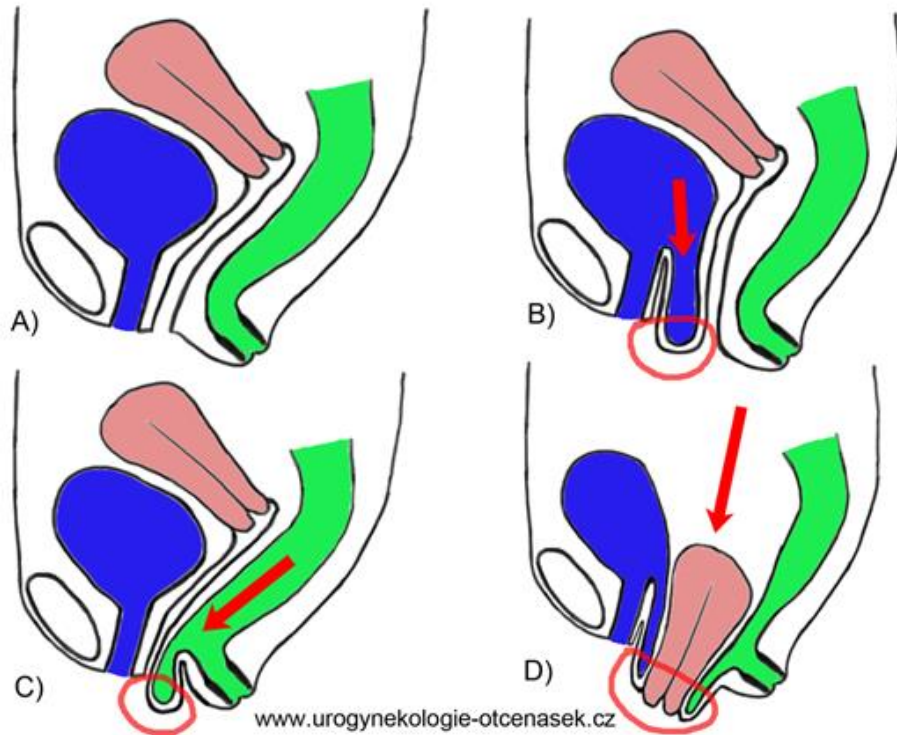
**CLIMACTERIC** (menopause)

**Spinal Issues:** Lumbalgia, tailbone syndrome, scoliosis, feet deformation

**Pelvic Organ Prolapse (POP),**  
Descensus

**Puerperium:** 6 weeks postpartum

# PROLAPSES

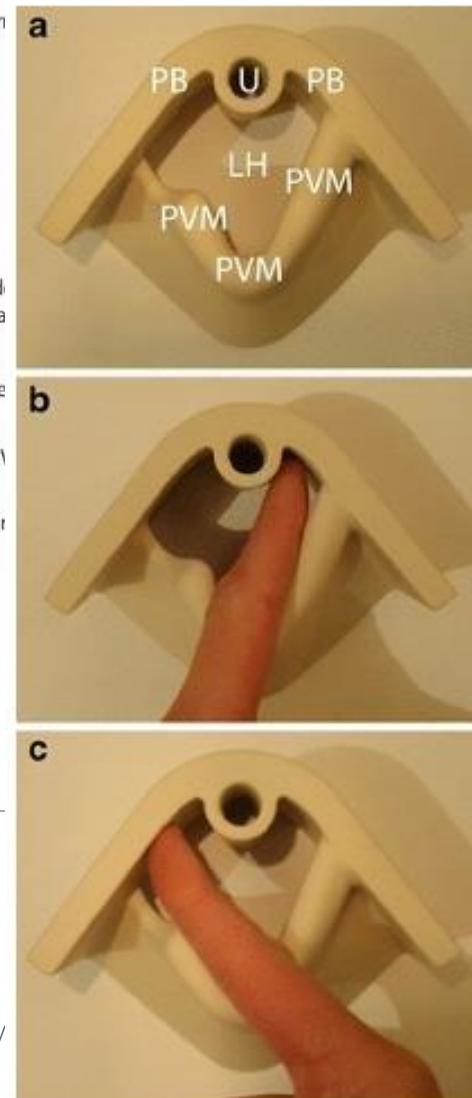
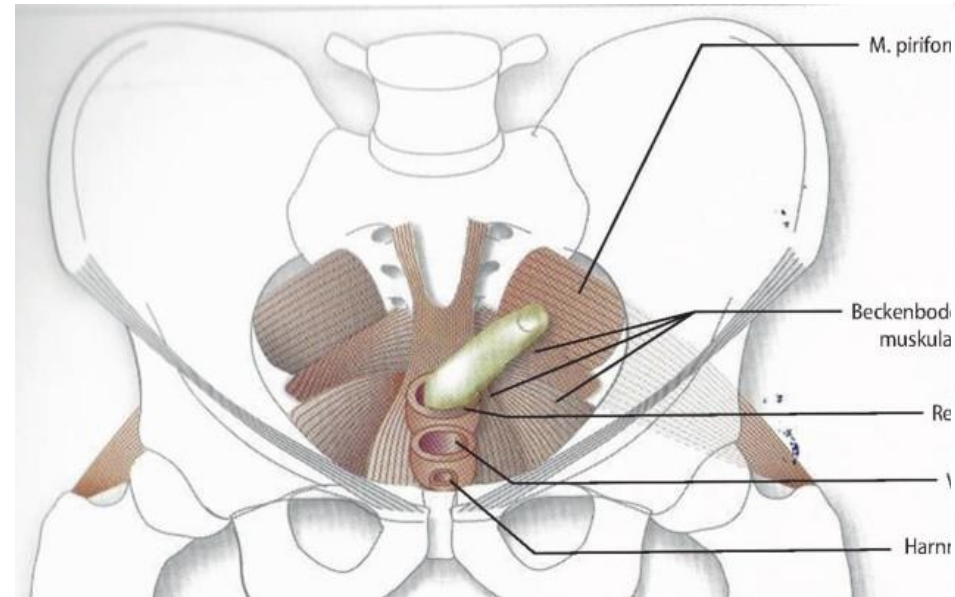


# Assessment of PF

Internal digital examination of the vagina is a helpful examination

ANAMNESIS, ULTRASOUND, PALPATION /17/

HOWEVER, FINDINGS BETWEEN DIFFERENT EXAMINERS MAY NOT BE IDENTIC AS GENERALLY IN FOLLOW UP FROM PHYSIOTHERAPISTS . /



# EVALUATION PF PERFECT SCHEMA :

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Evaluating pelvic floor muscle strength isn't just about one strong contraction. Looking at the perineum shows how the muscles work together during contraction.

Factors such as

- **Power**
- **Endurance**
- **Repetitive contraction**
- **Fast contraction**
- **Every Contraction Timing**
- and ability to **relax**

all need to be evaluated

# Pelvic Floor Muscle Training (PFMT)

Patient education on PFM functions and exercises is key for long-term well-being. Observing PFM contractions is challenging due to their invisibility and variability. A combined approach of subjective and objective methods is vital for accurate assessment in clinical practice!

cooperation among specialist: urodynamic flow, cystoscopy, special questionnaire ICIQ-SF/18 etc.

# DEVELOPMENT and GOALS of Physio

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**EDUCATION OF FEMALE : explanation anatomy, function PF** (picture, model, anatomical, topography in her body)  
Connection brain and PF „awareness“

**Kinesiology assessment and palpation**

**Individually setting PFMT dynamical and static parts** - approaches

MOJŽIS method, DNS, PPA,  
FELDENKRAIS, TAI-CHI, JOGA , FITNESS  
TRAINING etc.)

**Changes some habits, ADL, sport,**

**Receiving of fluids, fibers**

**Practice ability voluntary activation, relaxation**  
muscles PD (static part of function PFM)

**Electrostimulation**  
(according findings IN PERFECT)

# FREQUENCY OF SESSIONS

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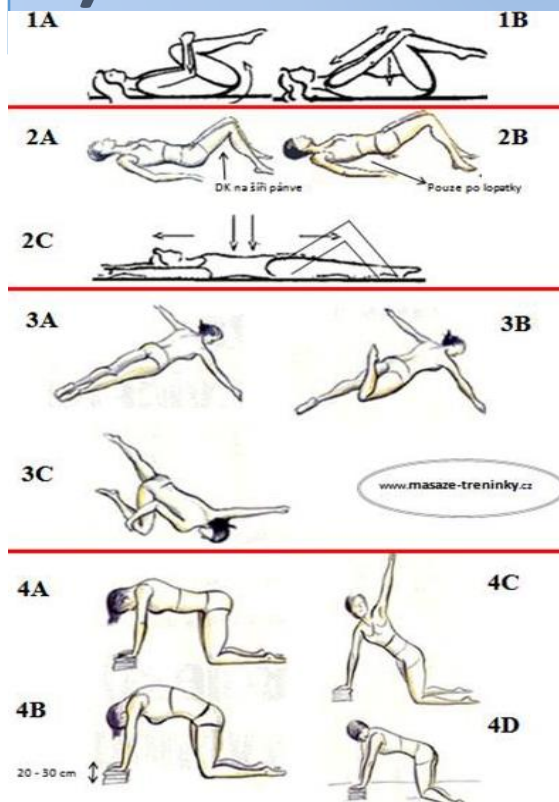
- Monitoring Duration: Approx. 6 months
- Follow-up: Check after 6 months
- Frequency:
  - First 3 visits: 1-2x per week
  - After: 1x every 2 weeks
  - Later: 1x every 2 months

1. eutonization of PFM
2. integration of postural supp. Sphincter function
3. ADL

The first improvement we expect after 6-8 weeks, usually 6 months.

# METHODS OF PHYSIO

## 1) L. MOJŽÍŠOVÁ



## 2) PPA CONCEP PALAŠČÁK PELVIC APPROACH

Form for PPA CONCEP PALAŠČÁK PELVIC APPROACH, titled "VSTUPNÍ PROTOKOL ŠKALA PERF-RSM".

Fields include:

- Příjmení, jméno
- Datum narození
- Dotaz a čas vyšetření
- Lékařská diagnóza
- Sport (nebo jiné aktivity)
- Věk
- Výška
- Stupeň izolace: 0 / 1 / 2 / 3
- Věk: S / M / L
- Plav
- Věk (doplnění & jiné)
- Infekce
- Dělní operace
- Žena: ☐ Ano / ☐ Ne
- Četnost
- Kohortace
- Poměrky

mixed UI, dysparunia, ...M, F./1

### 3) DNS METHOD prof. Kolář



### 4) JOGA, Tai-Chi



# SUPPORTIVE AID (tools)

Biofeedback-MYO, pericalm, periform, VIOLETTA

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# COMMON ISSUES IN PHYSIOTHERAPY PRACTICE

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Inability to activate 30-40% of pelvic floor muscles (0.5 cm)

Activation of abdominal muscles, glutes, and adductors instead of PFM

Breathing held during activation

Perineum moves outward instead of inward

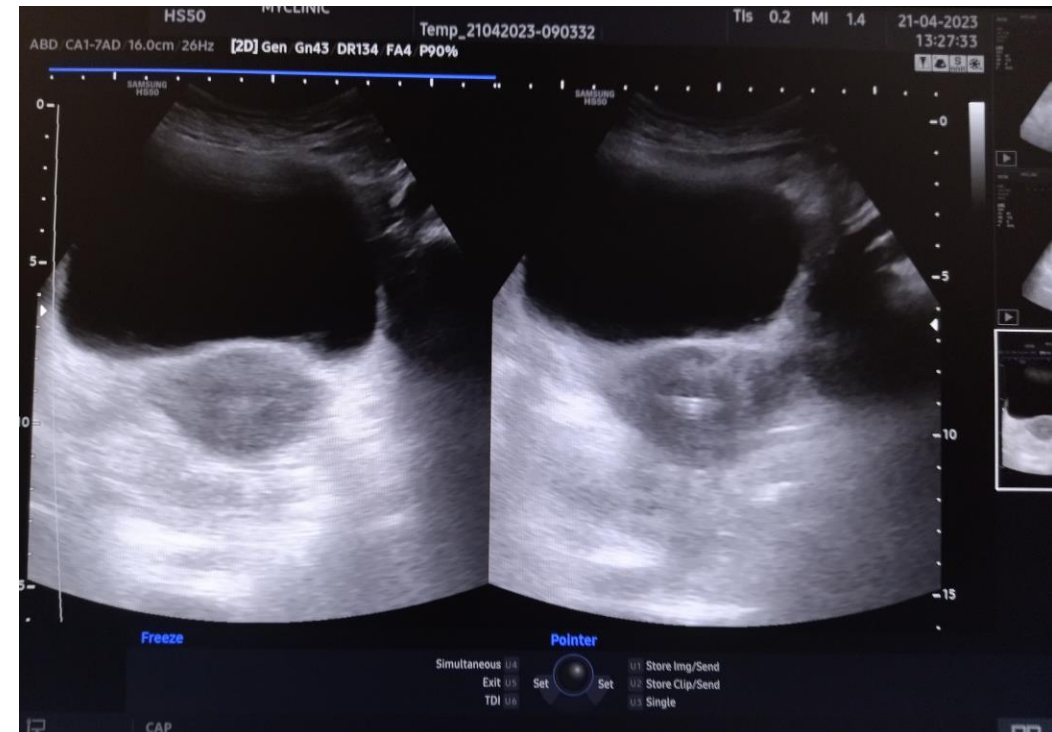
Squeezing without proper lifting technique

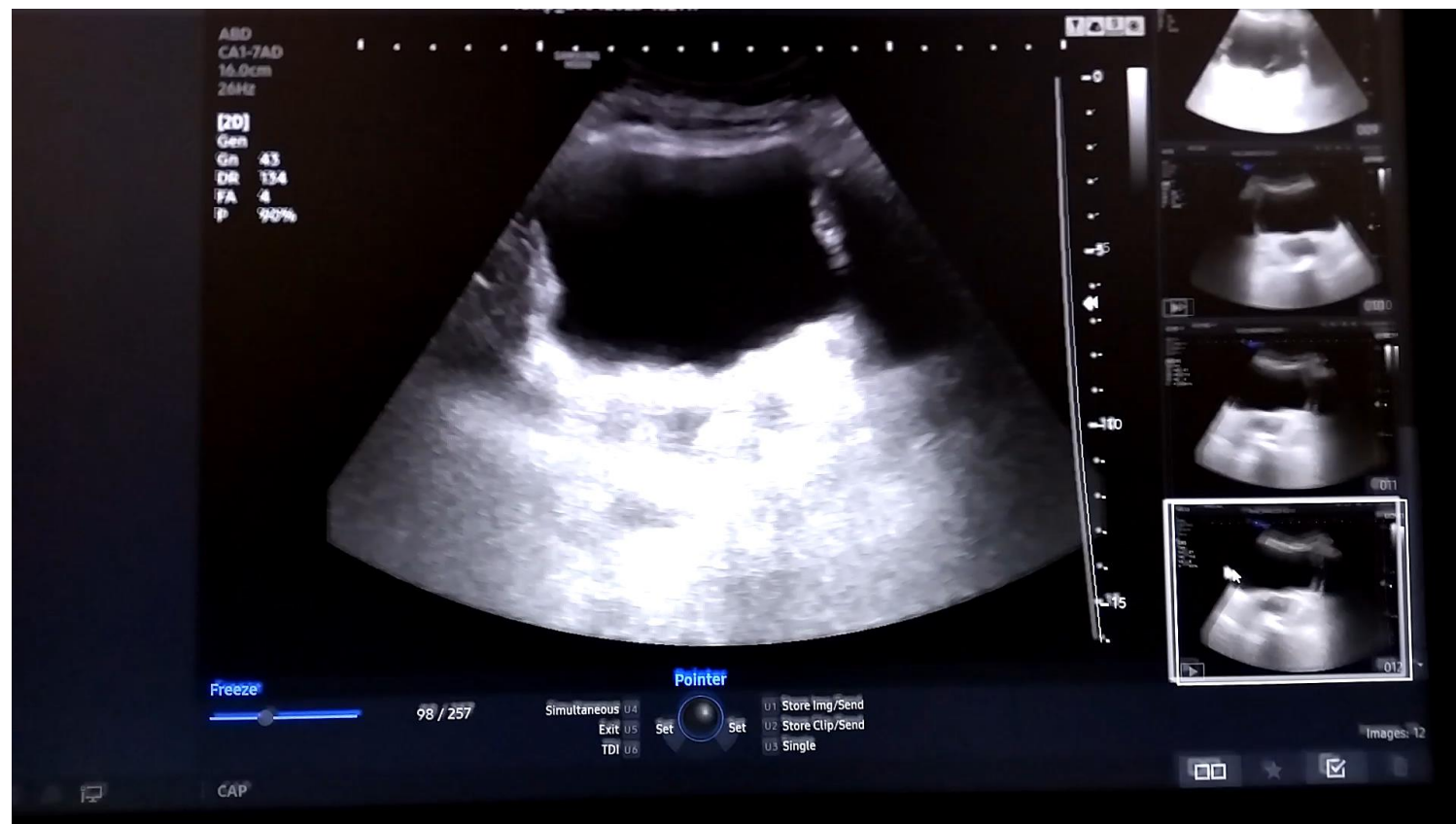
Lack of regularity in pelvic floor muscle training (PFMT)

Need for support: biofeedback, MYO, Pericalm

# ULTRASOUND OF PELVIC FLOOR

Transabdominal ultrasound is a non-invasive, valid, and reliable tool that can be used to assess pelvic floor muscle Biofeedback ! /14/





Physical therapists play a major role in the nonsurgical management of PF dysf. Along with pessary support, pelvic floor muscle training (PFMT) is cited in highly credible review as a main non-surgical option for women with POP.

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I.

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1) ČIHÁK, Radomír a Miloš GRIM. *Anatomie*. 2. vydání. Praha : Grada Publishing, 2002. 470 s. sv. 1. [ISBN 80-7169-970-5](#) .

/1/netterova anatomie

2) /www.urogynekologie\_otčenašek

3) <https://my.clevelandclinic.org/health/body/22729-pelvic-floor-muscles>

5) Saunders, K: Recent Advances in Understanding Pelvic-Floor Tissue of Women With and Without Pelvic Organ Prolapse: Considerations for Physical Therapists, April 2017 Volume 97 Number 4 Physical Therapy

6)

[https://www.google.com/search?q=perfect+schema+beckenboden&rlz=1C1GCEU\\_csCZ819CZ819&oq=](https://www.google.com/search?q=perfect+schema+beckenboden&rlz=1C1GCEU_csCZ819CZ819&oq=)

II.

7) <https://my.clevelandclinic.org/health/body/22729-pelvic-floor-muscles>

8) <https://www.adaptic.cz/odborne-clanky/hluboky-stabilizacni-system-jak-ho-posilit/adaptic.cz>

9) [https://www.wikiskripta.eu/w/Svalov%C3%A9\\_dno\\_p%C3%A1nev%C3%AD](https://www.wikiskripta.eu/w/Svalov%C3%A9_dno_p%C3%A1nev%C3%AD)

10) HÁJEK, Zdeněk, Evžen ČECH a Karel MARŠÁL, et al. *Porodnictví*. 3. vydání. Praha : Grada, 2014. 538 s. [ISBN 978-80-247-4529-9](#) .

11)

[https://www.wikiskripta.eu/w/Podp%C5%Afrn%C3%BD\\_a\\_z%C3%A1v%C4%Bsn%C3%BD\\_apar%C3%A1t\\_mal%C3%A9\\_p%C3%A1nve](https://www.wikiskripta.eu/w/Podp%C5%Afrn%C3%BD_a_z%C3%A1v%C4%Bsn%C3%BD_apar%C3%A1t_mal%C3%A9_p%C3%A1nve)

12) <https://www.foundationspelvichealth.com/pelvic-floor-journal/what-exactly-is-the-pelvic-floor>

III.

15) [https://www.physio-pedia.com/Pelvic Floor Muscle Function and Strength](https://www.physio-pedia.com/Pelvic_Floor_Muscle_Function_and_Strength)

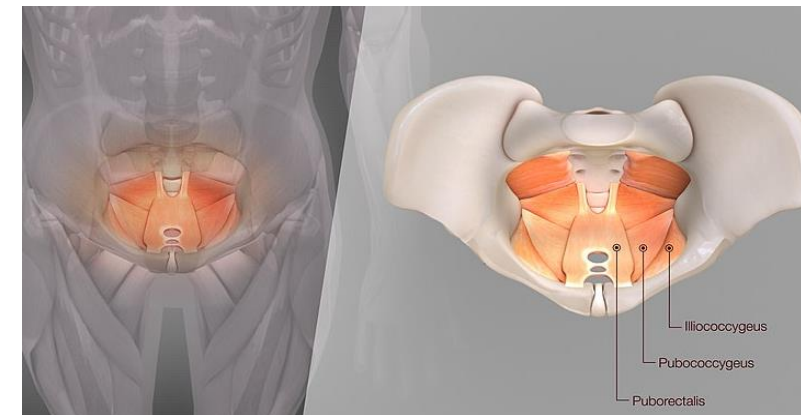
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16) Hagen S., Mark D., Conservative prevention and management of pelvic organ prolapse in women.(Update in cochrane Database sys.Rev.2006 CD003882, PMID: 17054190)Cochrane database sys. Rev.2011, 4 CD003882

17) Jordana B.de Silva, Jesica Gabriela de Godo Fernandes, Raguel B., Carcciolo, Capana Zanelio S., Oliveira Sato T., Driusso P., : Reliability of the PERFECT scheme assessed by unidigital and bidigital vaginal palpation, Affiliations  
PMID: 33416969 DOI: [10.1007/s00192-020-04629-2](https://doi.org/10.1007/s00192-020-04629-2)

18) <https://www.ppapelvic.com>

19) <https://www.dns-cz.com>



# THANK YOU

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„Do you know what scares  
me most about getting old?“

„No, what?“

„Incontinence.“

