# Pelvic Floor Exercise

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# Treatment for urinary incontinence

- Pelvic floor muscle exercise (Kegel, 1948)
- Bladder retraining
- Behaviour modification

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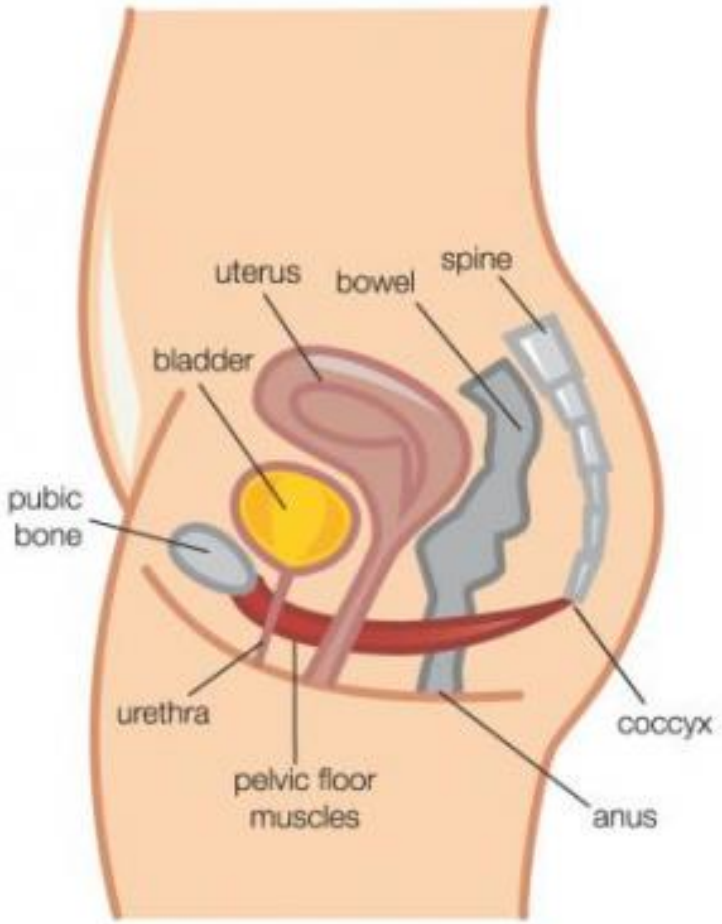
# Evidence of pelvic floor rehabilitation

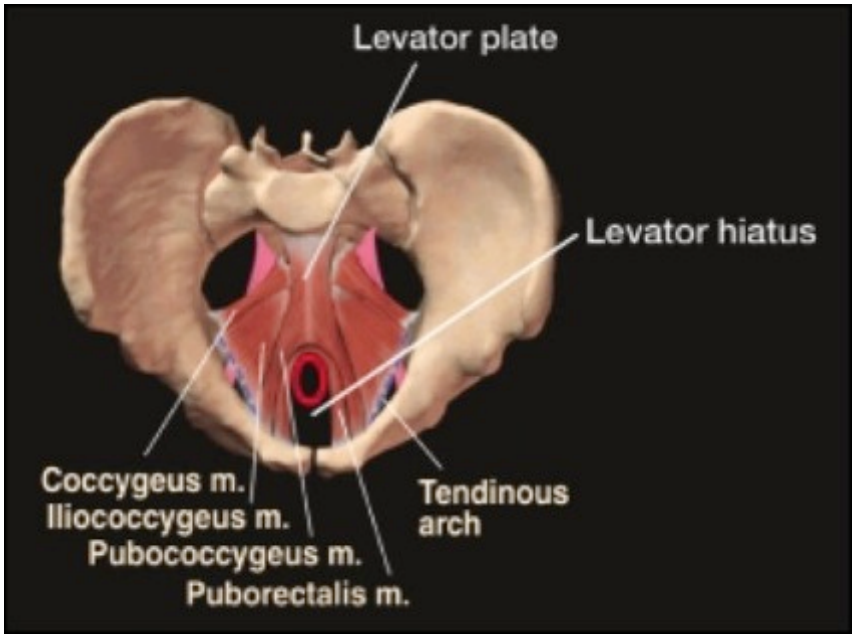
level 1A evidence (Abrams et al 2009)

- Strong pelvic floor muscles compress the urethra against the pubic bone to create a functional sphincter, form a stiff hammock to support the bladder and urethra, and work with the urethral sphincteric muscles to compress the lumen of the urethra (Bo et al 2009).

- Pelvic floor muscle training has been shown to be effective in healthy older women and for the effect to last after the treatment ceases (Sherburn et al 2011).

# Pelvic floor muscles



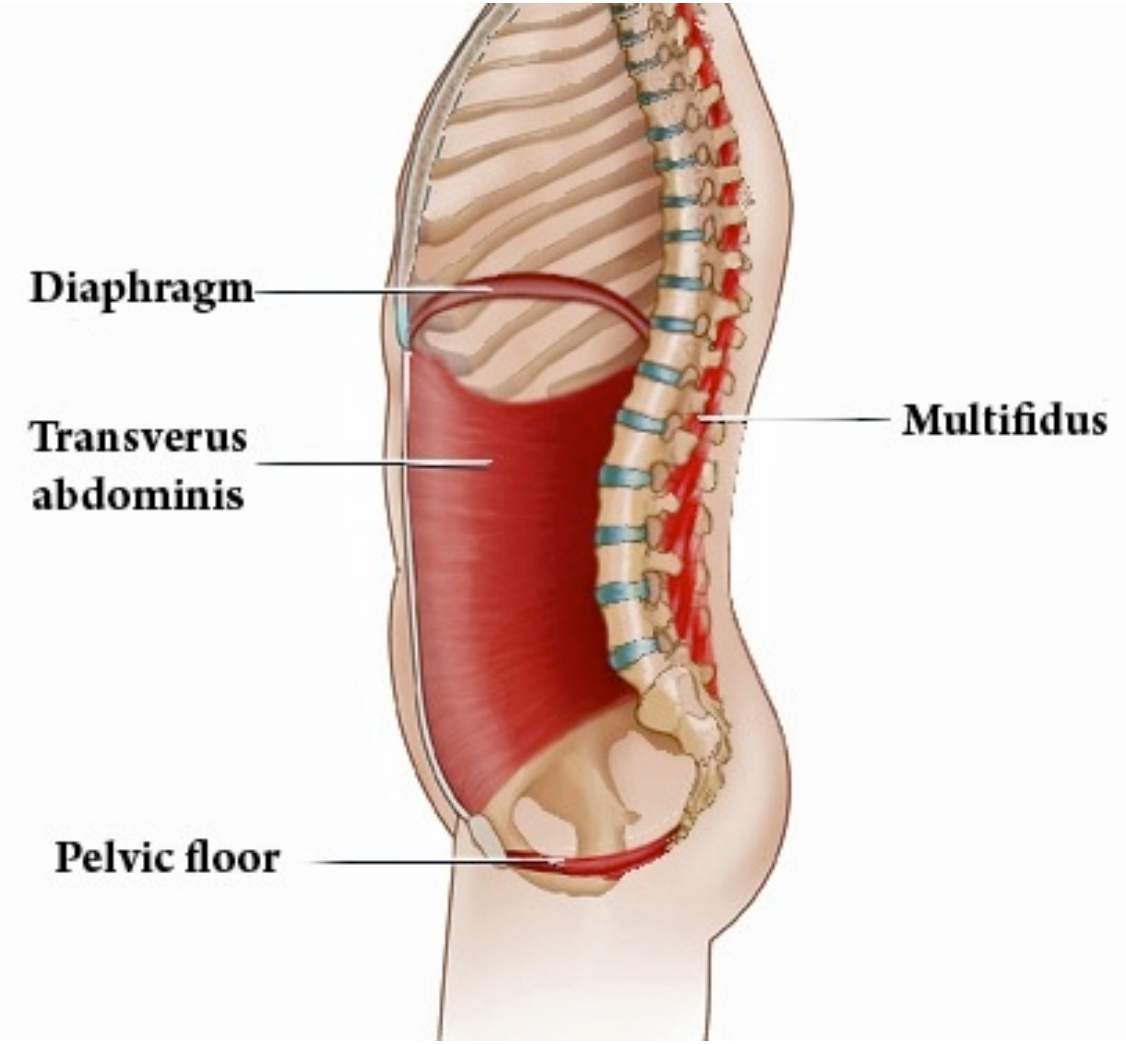




http://www.mumsandbubshq.com/why-is-the-pelvic-floor-important/

# Pelvic Floor Muscle

- PFM are not an isolated unit, but part of the abdominal capsule surrounding the abdominal and pelvic organs

# The Core……



# Pelvic Floor Muscle Exercise

- PFM contraction and the position of the lumbar spine, either flexion, extension or neutral, varies the EMG response in each abdominal muscle.
- isometric abdominal contractions were performed in lying, PC and EAS/EMG activity increased (Sapsford and Hodges, 2001)

# HOW DOES IT WORKS?

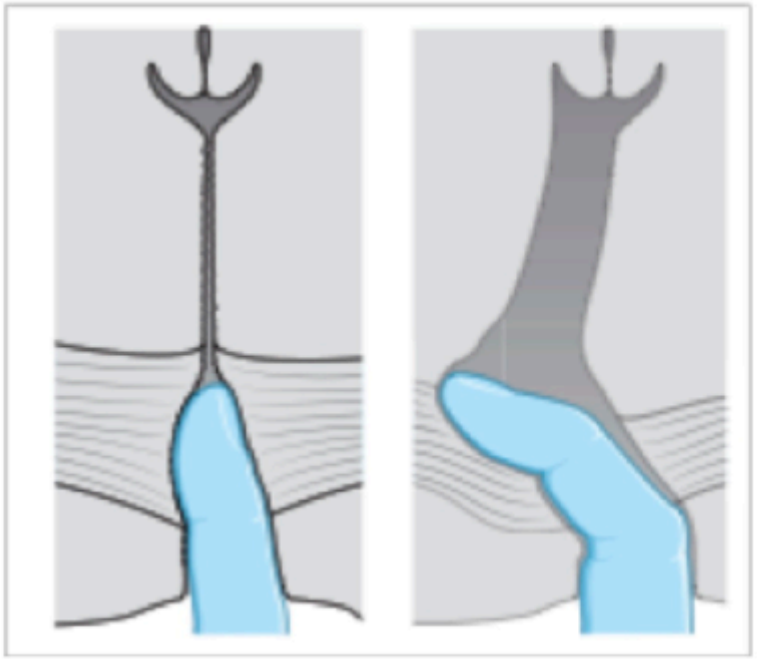
•On contraction, the effect of pressing the urethra against the posterior aspect of the symphysis pubis, thereby producing a mechanical increase in intra-urethral pressure (DeLancey 1988).

•→→ a positive urethral closure pressure is maintained during an increase in intra-abdominal pressure → correction of the negative closure pressure usually observed in patients with stress incontinence.

# Digital examination

| Grade | Characteristics |
|---|---|
| 0 | No discernible contraction |
| 1 | Barely palpable, flickering contraction, not visible on inspection of the perineum |
| 2 | Weak, distinctly palpable contraction, felt as slight pressure on the examining finger |
| 3 | Moderate muscle strength, distinct pressure on the examining finger, and palpable upward and forward movement, visible on the perineal surface |
| 4 | Good muscle strength, elevation possible against slight resistance, circular pressure can be felt around the examining finger. During simultaneous examination by the index and middle finger these are pressed against each other |
| 5 | Very strong muscle strength, contraction possible against vigorous resistance, with suction-type effect on the examining finger. During simultaneous examination by the index and middle finger, these are pressed against each other despite resistance |

Oxford scale for grading pelvic floor muscle strength (Laycock 1994)



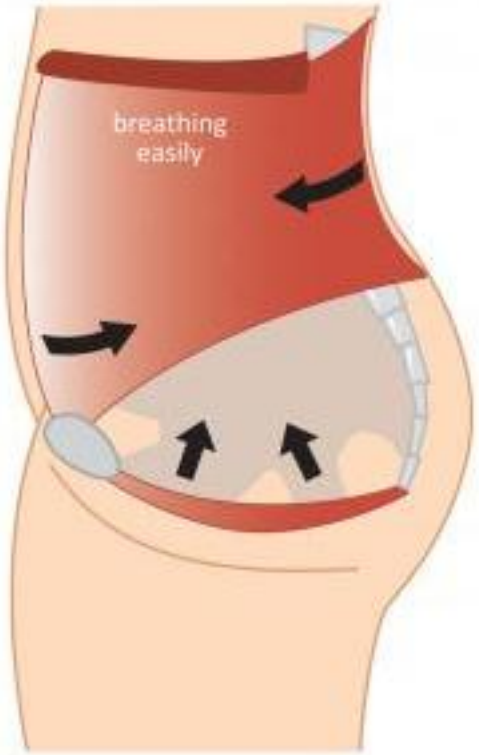
Carriere, The Pelvic Floor (ISBN 3131392118) 2006 Georg Thieme Verlag

# Pelvic floor muscle exercise

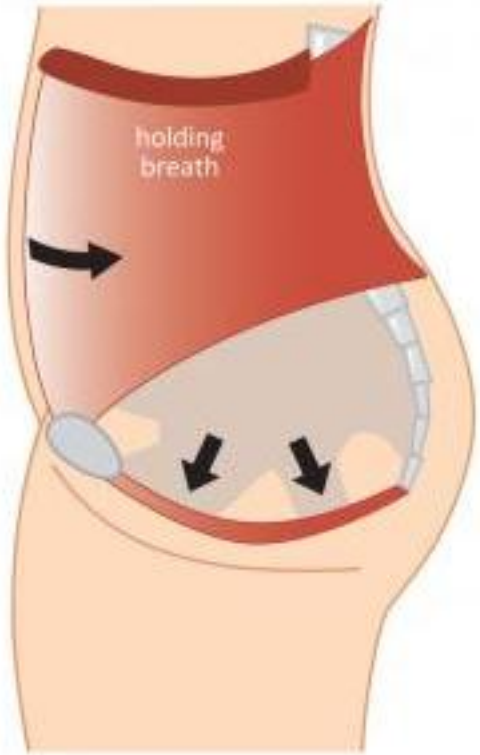
- Tightening and drawing in and up around both the anus and urethra
- Try to hold as long as possible (1 - 10 seconds) while keep breathing
- Rest 10 - 20 seconds
- Try short, fast strong contractions

# Pelvic floor muscle exercise

- Trick movement: stomach or buttocks muscles tighten, breathe holding
- Try to set aside 5 minutes for exercise routine
- A few good contractions are more beneficial than many half-hearted ones
- Always tighten before cough, sneeze, lift, bend, get up out of a chair etc




**Correct action**
The pelvic floor lifts, the deep abdominals draw in and there is no change in breathing




**Incorrect action**
Pulling the belly button in towards the backbone and holding your breath can cause bearing-down on pelvic floor

# Prevention is better than cure

- In Australia only 20% had been taught PFMT by a health professional during pregnancy (Chiarelli 03)

- Success of pelvic floor training includes strength training and skill application( “knack”)

# The “Knack”

- The trick or skill of using the PF at the moment of expected leakage: 1/ urinary;2/ flatus; 3/ faecal

# Cure Rate Depends….

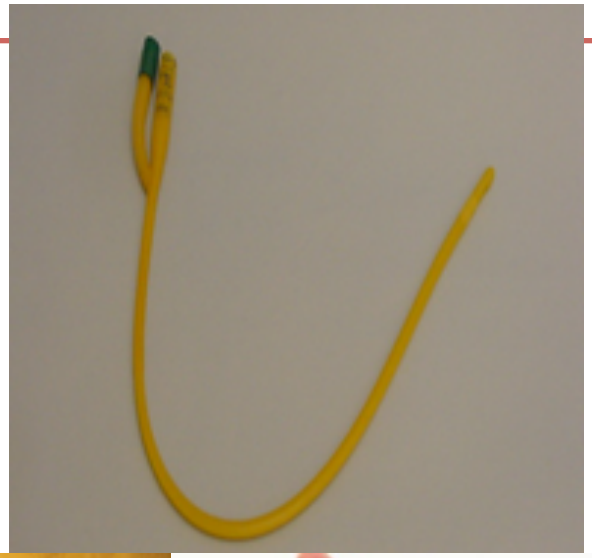
- Types and severity of incontinence
- Type of instruction and follow up
- Patient's adherence
- Structured programmes with more success than simple verbal instructions (Bo 1990; Dumoulin 2010)

# Use of adjunctive therapy for pelvic floor rehab.

- Biofeedback
- Intravaginal weights
- Neuromuscular stimulation
- Bladder & bowel retraining
- Ultrasound imaging

# Biofeedback

# Biofeedback

# Ultrasound imaging

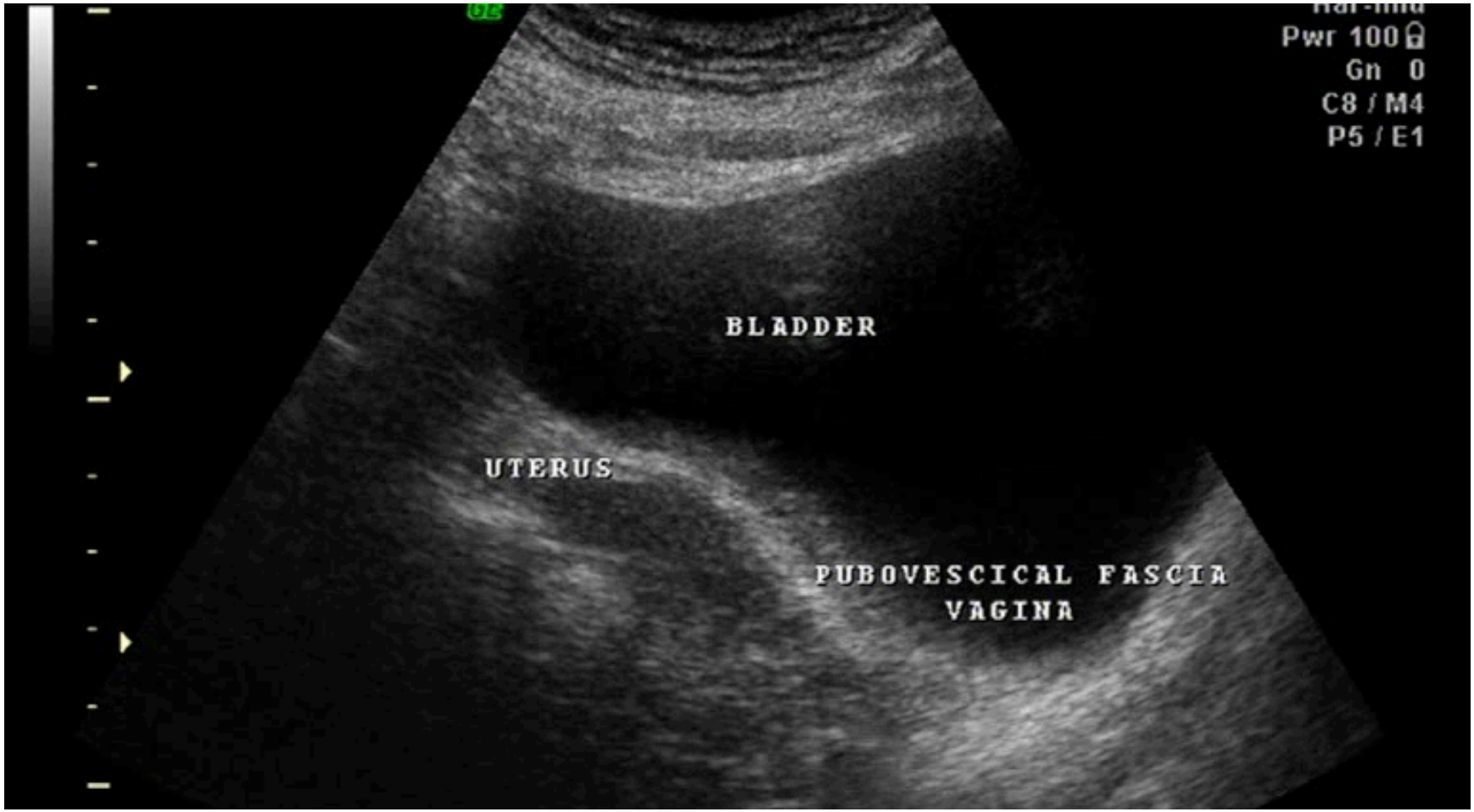
- Transabdominal:

1. No bony landmark to measure the absolute values for PF displacement
2. All values are relative
3. Clinical comparisons must remain intra-patient rather than inter-patient

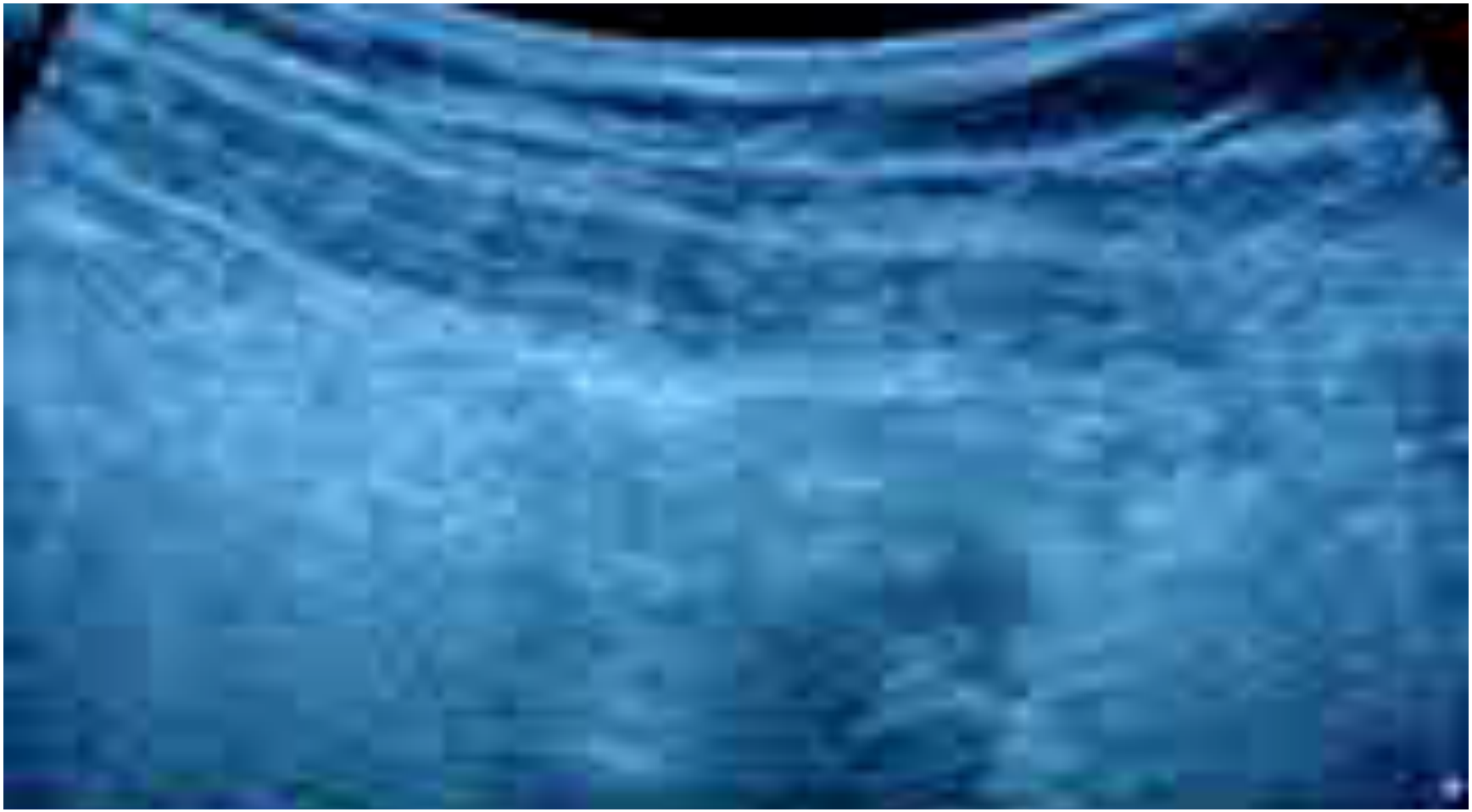
- Translabial (transperineal):

➢ inconvenient

# Bladder base displacement after training



# Correct TrA contraction

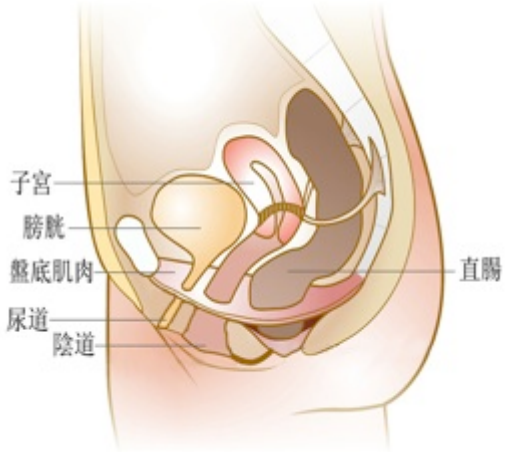


# Electrical Stimulation



# Pelvic Floor Exercise FOR DI

- Inhibit involuntary <u>detrusor contraction</u>



# Mechanism

Voluntary contraction
of PF

Inhibit parasympathetic excitatory pathway for micturition reflex &
urge to void

Somatic motor efferents that contract striated external sphincter improve sphincter tone which prevent leakage
during involuntary detrusor contraction

continence

| **PFMT as monotherapy** | **LE** |
|---|---|
| PFMT is better than no treatment for reducing episodes of UI and improving QoL in women with SUI and MUI. There is no evidence that PFMT is better than no treatment in providing a cure. | 1 |
| Higher-intensity regimes, or the addition of biofeedback, confer greater benefit, but differences are not sustained long term. | 1 |
| A taught/supervised programme of PFMT is more effective than self-taught PFMT. | 1 |
| Group-based PFMT is as effective as treatment delivered individually. | 1 |
| Short-term benefits of intensive PFMT are not maintained at 15 years' follow-up. | 2 |
| PFMT appears effective for improvement of UI in elderly women | 1b |
| PFMT does not result in measurable improvement in quality of life. | 2 |
| **PFMT compared with other conservative treatments** | **LE** |
| PFMT results in better reduction in leakage episodes than training using vaginal cones, but no difference in self-reported cure or improvement. | 1 |
| PFMT results in fewer incontinence episodes than electrical stimulation. | 1 |
| PFMT is better than bladder training for improvement of leakage and quality of life, in women with SUI. | 2 |
| Intensive PFMT is more effective than bladder training in older women with SUI | 1 |
| PFMT is as effective as duloxetine in women with SUI and has fewer side effects. | 2 |
| PFMT is better tolerated than oxybutynin for UUI. | 2 |

Eurpean Association of Urology 2013

# Adherence strategies in promotion of PFMT

Definition: "… the extent to which patients follow the instructions they are given for perscribed treatments…"

Haynes et al 2002

# Rationale for adherence to and effectiveness of PFMT

- Adherence was a significant predictor of effects , both short- and long term
  - Bo & Thalseth 1996
  - Chen et al 1999
  - Lagro- Janssen & Van Weel 1998

# Adherence to a Behavioural Program to Prevent Incontinence

- Women incorporated PFMT into their lives using either a routine or ad hoc approach
  - Those using a routine approach was significantly more likely to adhere at high level at 3 and 2 months
  - adherence associated with practice of PFMT

# Use of adherence strategies to enhance PFMT

- Short & long term adherence
- Morkved & Bo 1997, 2000 (PFMT 3 days per week or more)

| | Training group | Control group |
|---|---|---|
| Post treatment | 100% | 65% |
| One year follow up | 53% | 30% |