PATIENT EDUCATION TO PERFORM A CORRECT PELVIC FLOOR MUSCLE CONTRACTION WITH VISUAL FEEDBACK

Bärbel Junginger
Charité University Berlin, Germany
Pelvic Floor Centre

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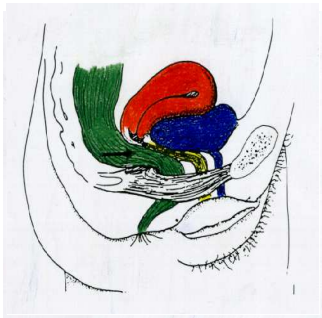
Goal in PFM re-education

- a correct PF muscle/ levator ani muscle contraction



mod. nach Baessler

a correct PFM contraction ....

that is with...

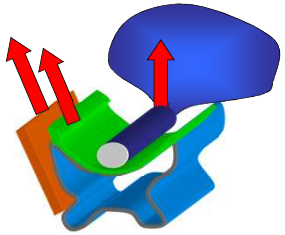
- ... good afference
- ... good feeling
- ... good perception
- ... good awareness

from Euro London Appointments

Evaluation of a correct PFM contraction?

- palpable PF/ LA muscle contraction
- movement of pubo-rectalis sling in a cranio-ventral direction
- elevation of the bladder neck (PFM contraction has to be effective at this structure)
- Co-contraction of the TrA lower part

PFM contraction resulting in a bladder neck elevation



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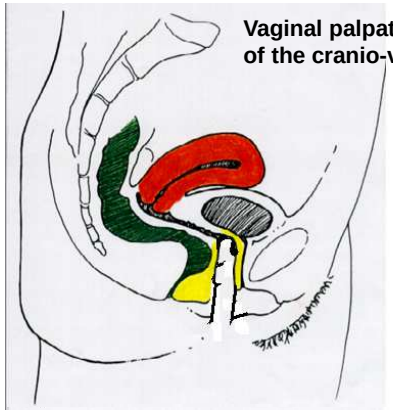
Evaluation of a correct PFM contraction

1. Palpation with focus on cranio-ventral movement of the levator ani muscle



Vaginal palpation: evaluation of the cranio-ventral movement

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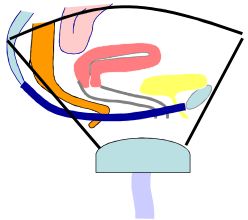
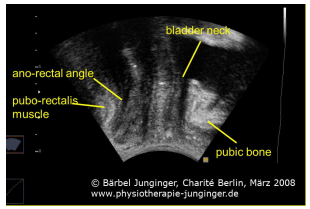
Evaluation of a correct PFM contraction

2. Perineal ultrasound to evaluate position and movement of
   - pubo-rectalis sling/ ano-rectal angle
   - bladder neck position





Example for a good BN elevation on PFM contraction

Example of a contraction without influence on the BN

Role of ultrasound in patient´s education

- Small number of studies! More than 100 studies on PT evaluation of biomechanics etc. with ultrasound
- Junginger/ Baessler 2008: „Follow-up investigation..“ IUJ; 19/ Suppl 1; S5
- Junginger 2008: ICS Educational course Berlin: “Dynamic rehabilitative ultrasound (DRUS): assessment of pelvic floor function and application as a biofeedback instrument.”
- Croppy et al. 2011: „Investigation of optimal cues to instruction for PFM contraction...“ NUU;Nov;30(8):1620-6

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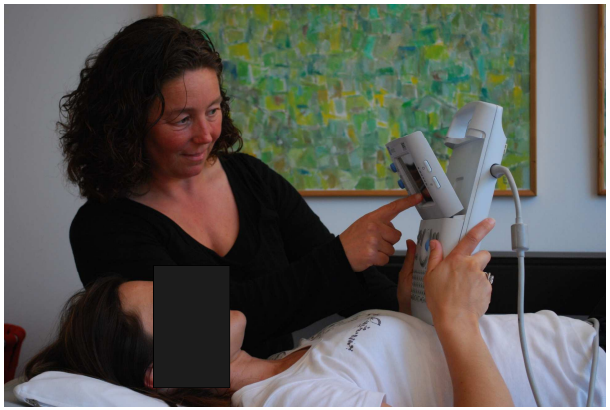
The availability and usage frequency of real time ultrasound by physiotherapists in South Australia: an observational study

A. Jedrzejczak and L.S. Chipchase

Physiotherapy board of South Australia:
Febr/ March 2007
Response rate 50% = 664 PT´s
11,6 % used US
19,4 % have access to a machine

Of these PT:
88,3% assessment and 87% biofeeback
94,7% for abdominals
72,7% for Pelvic floor
54,5% for multifidi
26,7% ≤ 2 hours of training

Use of US during a therapeutical setting



Visual feedback

- Augmented feedback ≙ extrinsic feedback
- Definition:

  Information that cannot be elaborated without an external source (trainer or display/ screen)

- Intrinsic feedback: always present during motor learning (sensory afferences)

Evidence of visual feedback for motor learning

- Guidance hypothesis: enhance performance in acquisition phase (performance gains lost in retention phase)[#]
- Permanent feedback: dependency on the feedback (loss of intrinsic feedback ≙ proprioception)*
- „No-feedback-trials are needed to develop a persistent internal movement representation“[+]

[#]Salmoni 1984, *Schmidt 1991, [+]Crowell&Davis 2011

Feedback

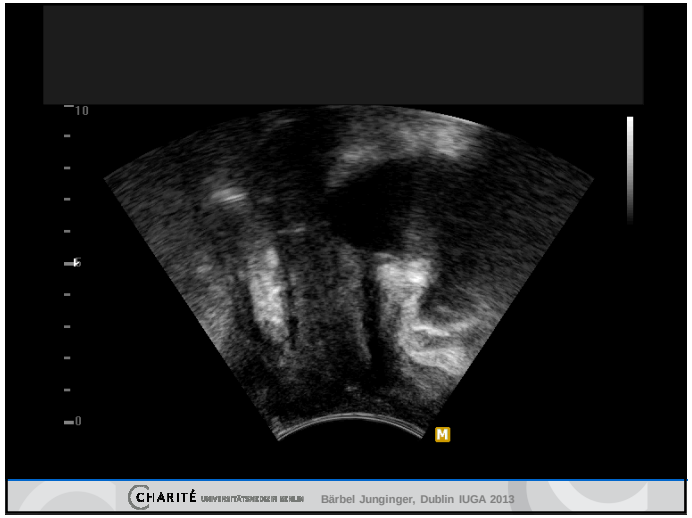
- Specifity-of-learning hypothesis: integration of most optimal sources of afferent information for performing the given task – surpassing other information like proprioception[#]

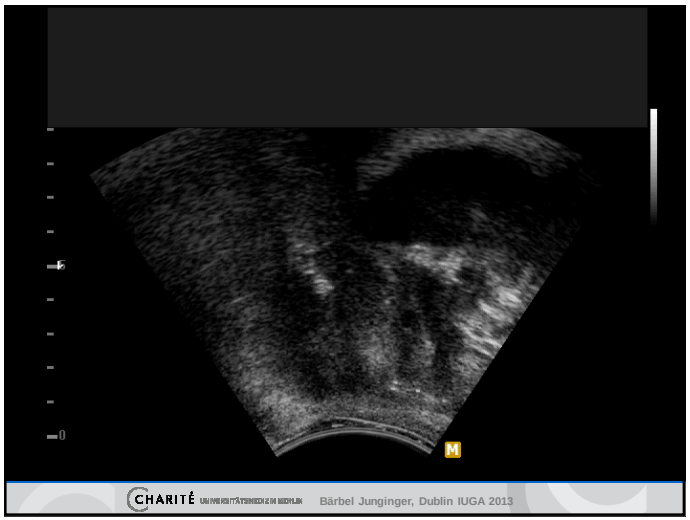
[#]Proteau 1992

Concurrent feedback

- ... attracts an external focus of attention* and promotes „automaticity“ in movement control+
- ... can prevent cognitive overload and enhance learning of complex motor tasks#

*Shea&Wulf 1999, + Wulf 2007, # Wulf&Shea 2002





Contact:

Bärbel Junginger
baerbel.junginger@charite.de
Mobil +49 172 7325794