Name of Article: Pelvic Floor Muscle Function, Pelvic Floor Dysfunction, and Diastasis Recti Abdominis: Prospective Cohort Study.

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Introduction: The etiology of diastasis rectus abdominis (DRA) is not clear but connective tissue weakness may be one reason. It has been proposed that when the abdominal wall is weakened via DRA, it cannot effectively co-contract with the PFM and may impact function of the PFM.

Aim/Primary Aim: Compare vaginal resting pressure (VRP), PFM strength and PFM endurance in primiparous women with and without DRA.

Study Design/Study Format: prospective cohort study from week 21 gestation to 12 months postpartum.

Methods: inclusion: 300 nulliparous women in Norway recruited from a single hospital
Exclusion: previous miscarriage after week 16; ongoing exclusions: premature birth <32 weeks, stillbirth, or serious illness of mother or child.

Analysis at: 21 weeks gestation, 6 weeks pp, 6 months pp, 12 months pp.

DRA Assessment: finger breadth of 2 or more = DRA. Locations tested: 4.5 cm above umbilicus, at umbilicus or 4.5 cm below umbilicus.

PFM Assessment: participants were trained by trained physiotherapists (blinded to symptoms) observation and vaginal palpation first. VRP, PFM strength assessed by mean of 3 MVCs each via vaginal balloon catheter followed by a 10 second hold for endurance testing. Strength was calculated by MVC-VRP.

Outcome measures: ICIQ-UI-SF to assess urinary incontinence (UI) and type of incontinence – Stress, Urge, Mixed. POP was assessed by POP-Q by two gynecologists (blinded to symptoms), defined as >/= stage 2 of any compartment.

Results: Table II Demographics (p718): Lower BMI pre-pregnancy (DRA=22.5 vs Non DRA= 24.5) and at 21 wks gestation (DRA= 24.9 vs non DRA = 26.4). General exercise pre-pregnancy and at 21 weeks gestation 3x/week or more was associated with DRA (55.6% DRA vs 40% non DRA pre-pregnancy and 22.2% DRA vs 15.5% non DRA@ 21 weeks gestation). No difference in DRA with abdominal training or no abdominal training pre-pregnancy or at 21 weeks gestation.

21 weeks gestation women with DRA had higher VRP, PFM strength and PFM endurance. (Table III, p.719).

6 weeks, 6 mo, and 12 mo. Pp findings: no differences between DRA vs non-DRA groups in VRP, PFM strength or PFM endurance. (Table III)
Table IV (p.720): No statistically significant association with UI at any assessment point and with DRA was found. POP was associated with NO DRA at 6 weeks postpartum, but that difference did not continue at 6 months postpartum.

**Conclusion/Summary:**

- Women with DRA at 21 weeks gestation had higher VRP, PFM strength and PFM endurance. At 6 weeks postpartum more women without DRA had POP.
- Results conflict with previous study by Spitznagle et al which found in middle aged women that DRA was associated with POP and fecal incontinence. (perhaps this is more of a tissue aging issue and cannot be compared to the immediate postpartum population).
- No differences were found in mode of delivery.

**Strengths:** blinding, use of valid and reliable measures, use of several data points.

**Weaknesses:** no pre-pregnancy DRA measures available; use of fingerbreadths rather than US imaging for DRA measurements; authors state in discussion that at the time of the study it was not reported as a reliable method. Report intra rater and inter rater reliability at 0.7 and 0.5 respectively. Did not rate the DRA as far as mild, mod, severe, only yes or no.

**Clinical Application:**

- This study does not support the need to manage DRA in an effort to affect PFM function, UI and POP.
- I would like to see this repeated with US measurements of DRA and categorize mild, mod, severe DRA for more specific results.

**Discussion questions:**

1. Does anyone treat the immediate postpartum DRA patient differently than any other DRA patient (men, nulliparous women, or older adults years after having children)? Manual reduction of the DRA vs exercise choices? Binders?
2. What are your patient’s main concerns when it comes to DRA? Aesthetics? Function of the abs? Relationship to back pain?
3. Should we, as PTs treat DRA if there are no other concerns –no POP, NO UI, no pain, good pelvic stability, etc.?

**Other References:**


Previous Journal Club, November 2015 Trish Jenkyns: [Prevalence and risk factors of diastasis recti abdominis from late pregnancy to 6 months postpartum, and relationship with lumbo-pelvic pain](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5021661/).

Mota PGF, Pascoal AGBA, Carita AIAD, Bø K. Manual Therapy 2015; 20, 200-205

Notes from the blog: looked at risk factors for DRA: beighton scale; No significant differences in lumbopelvic pain; Trish points out there was no pain history taken nor and clinical evaluation other than the US viewed/evaluation.