

The impact of vaginal delivery on pelvic floor function and rectus abdominis during the early postpartum period. A systematic review.

Concluding message

- OASI and forceps delivery is a common risk factor for AI, FI and UI while OASI is responsible also for sexual dysfunction due to the intense morbidity it causes.
- Women with DRA are not more likely to develop UI and probably POP.
- The significance of DRA as well as the incidence and risk factors for POP in the immediate post-partum period needs further investigation.
- More studies of high methodological quality are needed and additionally regression analysis would help to determine the interactions between risk factors and will prevent selective reporting.

KOTANIDOU I¹, SOTIRIADIS A¹, THEODOULIDIS I², GRIMBIZIS FG², MIKOS T²

1. 2nd Department of Obstetrics & Gynecology, Ippokrateion General Hospital, Department of Medicine, School of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece
2. 1st Department of Obstetrics & Gynecology, Papageorgiou General Hospital, Department of Medicine, School of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece

Hypothesis / aims of study

This study aims to determine the impact of vaginal delivery on pelvic floor muscle dysfunction (PFD) and the prevalence of PFDs in the early postpartum period (6-14 weeks postpartum). Secondary outcome of interest is to questing about a possible connection between diastasis recti abdominis (DRA) and PFDs over the same postpartum period.

Study design, materials and methods

Systematic review of contemporary studies (published since 2000).

Primary Outcomes

Risk factors of interest:

- Episiotomy
- Perineal Lacerations
- Parity
- Forceps Vacuum
- Length of the 2o stage of labor
- Obstetric Sphincter Anal Injury(OASI)

PFDs of Interest:~

- Urinary Incontinence (UI)
- Fecal Incontinence (FI)
- Anal Incontinence (AI)
- Pelvic Floor Prolapse (POP)
- Sexual Dysfunction
- Perineal Pain

Only prospective studies or randomized controlled trials were included.

Secondary Outcomes

Woman with DRA after birth at 6-14 weeks postpartum and not random women who experiencing the problems of DRA.

Results

The search indentified 927 studies, including those from grey literature. Eventually 14 studies were considered eligible and were included in this review article. A total of 5.303 women were analyzed after birth.

Table 1. Incidence of PFDs 6-14 weeks in association of elicited factors after Vaginal Delivery.

	UI (%)	SUI (%)	Urgency (%)	UUI (%)	AI (%)	FI (%)	Sex. Active (%)	Dyspareunia (%)	Perineal Pain (%)
Overall	29.0-46.6	8.2-85.7	0-89.3	0.0-12.7	1.8-45.1	0.0-7.8	57.0-89.5	32.0-71.3	7.0-22.0
Perineal Tears									
1 st Degree Tears	29.0	12.9	2.9	0.6	1.8-24.0	3.1-11.0	79.0	-	9.0
2 nd Degree Tears	30.0-36.0	10.3	2.6	2.6	2.6-38.0	0.0-7.0	73.0-89.0	-	7.0-22.0
OASI	-	16.0-25.0	0-15.0	0%	25.0-45.1	3.7-7.8	57.0	32.0	-
Parity									
Primiparae	-	8.2-14.1	3.4-12.5	5.5	-	-	-	-	-
Multiparae	-	20.2	6.3	12.7	-	-	-	-	-
Episiotomy									
Non-Episiotomy	46.6	35.6	-	-	24.2	2.5	-	-	-
Episiotomy	37.5	23.6	-	-	30.2	5.4	-	-	-
Episiotomy MLE	-	-	-	-	-	-	89.5%	71.3%	VAS 6.0
Episiotomy LE	-	-	-	-	-	-	89.5%	70.4%	VAS 7.0
2nd stage Duration									
<30'	-	52.5%	53.8%	-	26.5%	3.5%	-	-	-
30' - 90'	-	41.7%	39.6%	-	-	-	-	-	-
>90'	-	85.7%	89.3%	-	28.4%	2.8%	-	-	-
Instrumental									
Vacuum	-	12.4%	11.6%	-	31.7%	2.5%	-	-	-
Forceps	-	22.1%	20.8%	-	37.8%	4.1%	-	-	-

UI=Urinary Incontinence, SUI=Stress UI, UUI=Urge UI, AI=Anal Incontinence, FI=Fecal Incontinente, OASI=Obstetric Anal Sphincter Tear, MLE=Medio-Lateral Episiotomy, LE=Lateral Episiotomy

Pooled univariate risk factors for



Table 2. Incidence of PFDs 6-14 weeks in association with the presence of DRA after Vaginal Delivery.

	UI		SUI		UUI		POP > St 2	
	DRA (%)	No DRA (%)	DRA (%)	No DRA (%)	DRA (%)	No DRA (%)	DRA (%)	No DRA (%)
Overall	13.2-37.9	8.9-42.0	21.9-27.2	29.5-37.2	17.2	16.1	4.1-24.5	15.9-21.1
Bø et al. (2017)	37.9	42.0	27.2	29.5	17.2	16.1	4.1	15.9
Wang et al. (2020)	13.2	8.9	-	-	-	-	24.5	21.1
Liu et al. (2023)	-	-	21.9	37.2	-	-	-	-

DRA=Diastasis Rectus Abdominis, UI=Urinary Incontinence, SUI=Stress UI, UUI= Urge UI, POP= Pelvic Organ Prolapse

Interpretation of results

The incidence of PFDs in the early post-natal period appears to be extremely high. Although most of these symptoms alleviate or disappear over time, should counsel and treat as appropriately each patient when necessary.