Bilaga till rapport
SBU Utvärderar: Förlossningsbristningar – diagnostik samt erfarenheter av bemötande och information, rapport nr 323 (2021)

Bilaga 4 Tabell över inkluderade kvantitativa studier/ Appendix 4 Table over included quantitative studies

Quantitative studies

Ali Masri 2018

Study aim	To explore the impact of a training intervention on obstetric anal sphincter injuries' detection rate.
Method	**Design:** Uncontrolled before and after **Country:** Palestine **Setting**: Multicentre, six secondary and tertiary maternity units
Participants	**Sample size**: 22 922 women **Population**: Primiparous 26.6% (68% delivered by obstetrician) parous women 73.4% (40% delivered by obstetrician) Maternal and fetal characteristics:

	phase 1 (mean±SD or %)	phase 2 (mean±SD or %)	phase 3 (mean±SD or %)
Age (y)	26±5.6	26±5.5	26±5.7
BMI (kg/m^2)	not reported	not reported	not reported
*Primiparous**	24.3%	28.3%	26.4%
Instrumental delivery	2.9%	2.3%	2.4%
*Episiotomy**	24.3%	26.3%	24.1%
Birth weight (g)	3237±516	3219±516	3257±514

*p<0.05

	Follow-up time: 13 weeks postintervention **Dropouts**: 16 doctors (19.5%) and 13 midwives (20.6%) in total for three of the six units. For the other three units: 11 doctors (23.9%) and 7 midwives (18.9%)
Intervention	A 2-day standard training programme consisting of educational lectures and practical training for doctors and midwives. Study included three phases: pre-clinical training observation, training-intervention, and post-intervention observation. Intervention was delivered to 66 (80.5%) doctors and 50 (79.4%) midwives in three of the six units and 35 (76.1%) doctors and 30 (81.1%) midwives in the other three units
Outcome	OASIS rates at three phases: Phase 1 - Preclinical training observation, 13 weeks Phase 2 - Training intervention, 15 weeks Phase 3 - Postintervention observation, 13 weeks

Results	OASIS rate, *primiparous* women phase 1: 0.5% phase 2: 2.8%, p<0.001 phase 3: 3.1%, p<0.001	OASIS rate, *parous* women phase 1: 0.2% phase 2: 0.6%, p=0.002 phase 3: 0.4%, p=0.071
	No significant differences were detected in the rates of severe OASIS (third-degree 3c and fourth-degree tears) between phase 1 and 2.	
	OASIS rates after compared with before the training intervention: Adjusted OR=4.3 (95% CI: 2.6 to 7.2)	
Risk of bias	Moderate	
Comments	Limitations: short follow-up, underpowered to detect changes in rates for severe OASIS, dropout rate relatively large.	

OASIS = Obstetric anal sphincter injuries

Krissi 2016

Study aim	To assess the effect of a structured hands-on workshop on the detection rate of obstetric anal sphincter injuries.
Method	**Design:** Uncontrolled before and after **Country:** Israel **Setting**: Tertiary hospital
Participants	**Sample size**: 20,484 women **Population**: singleton-pregnancy women with vertex presentation who delivered vaginally. 13,781 (67.3 %) women delivered prior to the workshop, and 6703 (32.7 %) women delivered following the workshop. Maternal and fetal characteristics:

	Before workshop (mean±SD or %)	After workshop (mean±SD or %)
Age (y)*	30.3±5.1	31.1±5.1
BMI (kg/m^2)	not reported	not reported
Primiparous	32.5%	33.2%
Instrumental delivery	9.4%	9.5%
Episiotomy	21.7%	21.5%
Birth weight (g)	3233±450	3234±442

*p<0.001

Follow-up time: 1 year

Dropouts: no information

Intervention	Workshop comprised of a series of lectures and videos demonstrating proper identification techniques of OASI followed by a hands-on training session with cadaveric anal sphincters from pigs. Intervention was delivered to all physicians attending the delivery ward
Outcome	Detection rate of OASIS
Results	Detection rate of perineal tears:

		Before (%)	After (%)	p
	Perineal tear grade 1	11.8	13.9	<0.001
	Perineal tear grade 2	18.1	14.4	<0.001
	Perineal tear grade 3	0.4	0.2	0.01
	Perineal tear grade 4	0	0	0.30
	OASI (3 and 4)	0.4	0.2	0.005
Risk of bias	Moderate			
Comments	Probably partial overlap with population in Ginath 2020			

OASIS = Obstetric anal sphincter injuries.

Baumfeld 2020

Study aim	To evaluate the long-term sustainability of the effect of a hands-on workshop on the diagnosis of obstetrical anal sphincter injuries (OASIS)
Method	**Design:** uncontrolled before and after **Country:** Israel **Setting**: University Medical Centre
Participants	**Sample size**: 55 639 women **Population:** all women who gave birth between October 2012 and January 2017 Maternal and fetal characteristics (intervention, control), mean±SD or %:

	Before workshop (mean±SD or %)	After workshop (mean±SD or %)
Age (y)*	28.63±5.78	28.62±5.79
BMI (kg/m^2)	not reported	not reported
Primiparous	26.5%	27.4%
Instrumental delivery	3.4%	3.6%
*Episiotomy**	3.1%	3.5%
Birth weight (kg)	3.2±0.51	3.2±0.52

*p=0.04

Follow-up time: 4 years

Dropouts: no information

Intervention	**Intervention**: The hands-on workshop consists of a series of lectures and videos demonstratin proper identification techniques of OASIS, followed by a hands-on training session on anal sphincters from pigs. The workshop was attended by most of the department's medical staff, including senior obstetricians and gynaecologists as well as all residents
Outcome	Detection rate of OASIS
Results	Detection rate of perineal tears:

	Before	1-year	2 years	3 years	4 years
OASIS	0.25%	0.49%	0.37%	0.20%	0.30%

Risk of bias	Moderate
Comments	Probably partial overlap with population in Ginath 2020

OASIS = Obstetric anal sphincter injuries

Ginath 2020

Study aim	to evaluate the influence of a half day, hands-on, workshop on the detection and repair of obstetric anal sphincter injuries (OASIS)
Method	**Design:** Multicentre, uncontrolled before and after **Country:** Israel **Setting**: 11 medical centres
Participants	**Sample size**: 143 279 **Population:** parturient with singleton pregnancy, vertex presentation and vaginal delivery. Pre-viable preterm gestations (< 24 weeks), birth weight < 500 g, stillborn, and those with major congenital anomalies, multifetal pregnancies, breech presentations and caesarean deliveries were excluded from the analysis Maternal and fetal characteristics of women with OASIS: Before (mean±SD or %) / After (mean±SD or %) Age (y)* 27.9±7.0 / 28.2±9.7 *BMI* (kg/m^2) 27.3±5.2 / 27.3±4.5 *Primiparous* 79.8% / 76.6% *Instrumental delivery* 30.3% / 26.2% *Episiotomy* 55.4% / 52.4% *Birth weight* (g) 3442.9±395.4 / 3453.1±428.1 **Follow-up time**: 1 year **Dropouts**: no information
Intervention	Workshop comprised of a series of lectures and videos demonstrating proper identification techniques of OASI followed by a hands-on training session with cadaveric anal sphincters from pigs.
Outcome	Detection rate of OASIS
Results	Detection rate of perineal tears: **Before** / **After** / **P** OASIS 0.35% / 0.45% / 0.003
Risk of bias	Moderate

OASIS = Obstetric anal sphincter injuries

Faltin 2000

Study aim	To determine whether anal endosonography immediately after vaginal delivery can predict subsequent fecal incontinence
Method	**Design:** DTA **Country:** Switzerland **Clinical setting**: University hospital
Participant	**Sample size:** 150 women **Population**: nulliparas who delivered vaginally and had no anal sphincter tears (third- or fourth-degree perineal tears)

	Maternal and fetal characteristics: Incontinent (mean±SD or %) / Continent (mean±SD or %) Age (y): 30.2±5.2 / 28.2±4.8 *BMI* (kg/m^2): 21.2±2.4 / 22.4±3.9 *Primiparous*: 100% / 100% *Instrumental delivery*: 50% / 37% *Episiotomy*: 46% / 56% *Birth weight** (g): 3463±468 / 3193±426 *p<0.05 **Inclusion criteria:** vaginal delivery without anal sphincter tears (third- or fourth-degree perineal tears) **Exclusion criteria:** 3rd or 4th degree perineal tears, caesarean section **Dropouts**: 4%
Index test	**Index test**: anal endosonography
Target condition and reference standard	**Target condition:** fecal incontinence **Reference test**: questionnaires on fecal continence
Flow and timing	**Time interval between index test and reference standard:** 142 days (range 103–334 days)
Results	Anal endosonography for predicting fecal Incontinence: Sensitivity 68% (95% CI, 49 to 88%) Specificity 79% (95% CI, 71 to 86%)
Risk of bias	Low

BMI=Body mass index, SD=standard deviation

Faltin 2005

Study aim	Whether diagnosis of anal sphincter tears by ultrasonography, followed by immediate surgical repair, reduces the occurrence of incontinence.
Method	**Design:** RCT **Country:** Switzerland **Setting**: University hospital
Participants	**Sample size**: 752 women **Population:** nulliparous women with a second-degree perineal tear, whether spontaneous or after episiotomy. Maternal and fetal characteristics: Incontinent (mean±SD or %) / Continent (mean±SD or %) / p Age: 28.9±4.5 / 29.2±5.0 / not reported *BMI* (kg/m^2): not reported / not reported / not reported *Primiparous*: 100% / 100% / not reported *Instrumental delivery*: 40.4% / 42.0% / not reported

	Episiotomy	51.6%	51.9%	not reported
	Birth weight (g)	not reported	not reported	
	Exclusion criteria: women with clinically diagnosed third- or fourth-degree perineal tear, women who delivered by caesarean, and those with an intact perineum or first-degree perineal tear. **Follow-up time**: 3 and 12 months **Dropouts**: • Experimental 3.2% (3 months), 9.0% (12 months) • Control 5.6% (3 months), 9.0% (12 months)			
Interventions	**Experimental**: clinical and ultrasound examination of the anal sphincter **Control**: clinical examination alone			
Outcome	Fecal incontinence			
Results	**Reported severe incontinence**			
	3 months		*1 year*	
	Experimental: 3.3%		Experimental: 3.2%	
	Control: 8.7%		Control: 6.7%	
	RR= –5.4% (95% CI, –8.9 to –2.0)		RR= –3.5 (95% CI, –6.8 to –0.03)	
	NNT=19 (95% CI, 11 to 50)		NNT=29 (95% CI, 15 to 333)	
Risk of bias	Low			

NNT = Number needed to treat; RR = Risk difference.

Bellussi 2019

Study aim	to evaluate the feasibility and accuracy of the assessment of anal sphincter contraction by dynamic 2-dimensional transperineal ultrasound imaging (TPUS) immediately after delivery and its correlation with anal incontinence at the 4-month follow-up evaluation.
Method	**Design:** DTA **Country:** Italy **Clinical setting**: University Hospital
Participant	**Sample size:** 69 **Population**: women having their first vaginal delivery Maternal and fetal characteristics: mean (± SD or % or range) Age (y): 32 (24–42) *BMI* (kg/m^2): 26 (19–34) *Primiparous*: 100% *Instrumental delivery*: 23.2% *Episiotomy*: 0% *Birth weight** (g): 3260 (2530–4240) **Inclusion criteria:** women having their first vaginal delivery **Exclusion criteria:** previous vaginal deliveries, multiple pregnancies, known anorectal diseases, and maternal age <18 years

	Dropouts: 1/69 (1.5%)
Index test	**Index test**: 2-dimensional transperineal ultrasound (TPUS)
Target condition and reference standard	**Target condition:** fecal incontinence **Reference test**: questionnaires on fecal continence
Flow and timing	**Time interval between index test and reference standard:** 4 months
Results	TPUS for predicting fecal Incontinence: Sensitivity 50 % (16 till 84 %) Specificity 85 % (73 till 93 %)
Risk of bias	Moderate

Pihl 2019

Study aim	To evaluate the relation between the AVD measured with transperineal ultrasound immediately after delivery and external anal sphincter injury
Participant	**Design:** DTA **Country:** Sweden **Clinical setting**: delivery unit in university hospital
Participant	**Sample size:** 150 women **Population**: woman with suspected second- or third-degree perineal laceration Maternal and fetal characteristics, mean±SD or %: mean±SD or % Age (y) 29.8±4.2 *BMI* (kg/m^2) 24.2±4.2 *Primiparous* 100% *Instrumental delivery* not reported *Episiotomy* 0% *Birth weight* (g) not reported **Exclusion criteria:** First- and fourth-degree perineal lacerations, inability to understand Swedish or earlier perineal surgery or trauma **Follow-up time**: **Dropouts**:
Index test	**Index test**: Measurement of AVD with TPUS
Target condition and reference standard	**Reference test**: Clinical
Flow and timing	**Time interval between index test and reference standard:**
Results	Mean AVD second-degree laceration: 17.8 mm (95 % KI, 16.9–18.7) Mean AVD external sphincter laceration: 11.6 mm (95 % KI, 9.3–13.8) MD= 6.2 mm (4.1 till 8.4) Using an AVD cut-off of > 20 mm: Sensitivity: 0.97 (0.82–1.00)

	Specificity: 0.25 (0.17–0.33)
Risk of bias	Moderate

AVD = Anovaginal distance; TPUS = Transperineal ultrasound.

Andrews 2006

Study aim	To establish the true prevalence of clinically recognisable and occult obstetric anal sphincter injuries
Method	**Design:** Cohort **Country:** UK **Clinical setting**: Busy district general hospital
Participant	**Sample size:** 241 women **Population**: Two hundred and thirty-two (96%) were nulliparous and nine (4%) had had a previous caesarean section. One hundred and seventy-three (72%) deliveries were conducted by midwives and 68 (28%) by doctors. Maternal and fetal characteristics, mean±SD or %: Age (y): not reported *BMI* (kg/m^2): not reported *Primiparous*: 100% *Instrumental delivery*: 26% *Episiotomy*: 41% *Birth weight* (g): not reported **Exclusion criteria:** **Follow-up time**: 51 days (SD=16 days) **Dropouts**: 13% at follow up
Intervention	Re-examination by a trained research fellow
Outcome	Prevalence of OASIS
Results	**Prevalence of OASIS**: Examination by midwife: 13.3% Re-examination by trained research fellow 24.5% RD=0.11 (95% CI, 0.04–0.18) RR=1.84 (95% CI, 1.27–2.68)
Risk of bias	Low

Groom 2002

Study aim	To assess if the clinical diagnosis of third-degree tears could be improved by increased vigilance in perineal assessment
Method	**Design:** controlled prospective observational study **Country:** UK **Setting**: hospital delivery unit

Participants	**Sample size**: 483 women **Population:** women undergoing their first vaginal and who sustained perineal trauma, all were nulliparous except for three women who had one previous delivery by caesarean section. Maternal and fetal characteristics (intervention, control), mean±SD or %:

	Intervention (mean±SD or %)	Control (mean±SD or %)
Age (y)	not reported	
BMI (kg/m^2)	not reported	
Primiparous	100%	
Instrumental delivery	40%	42.5%
Episiotomy	30%	51.5%
Birth weight (kg)	3.32	3.33

	Follow-up time: assessment immediately after delivery **Dropouts**: none
Intervention	**Intervention**: additional assessment **Control**: routine assessment
Outcome	Rate of detected third degree tear
Results	**Rates of perineal trauma**

Trauma	**Intervention (%)**	**Control (%)**	**p**
First degree	15	16	<0.0001
Second degree	40	25	<0.0001
Third/fourth degree	15	7.5	<0.0001
Episiotomy	30	51.5	<0.0001

RD=0.07 (95% CI, 0.01–0.14)
RR=1.99 (95% CI, 1.14–3.49)

Risk of bias	
Comments	If episiotomy extended to include the anal sphincter it was re-categorised as a third-degree tear

Van Dillen 2010

Study aim	To determine the incidence of obstetric anal sphincter injury
Method	**Design:** prospective multicentre audit **Country:** Netherlands **Setting**: 3 teaching hospitals, secondary/tertiary care
Participants	**Sample size**: 1979 deliveries during intervention, 4169 deliveries the year before **Population:** Maternal and fetal characteristics:

	1 year before intervention (mean±SD or %)	during intervention (mean±SD or %)

	Age (y)	not reported	
	BMI (kg/m^2)	not reported	
	Primiparous	100%	
	Instrumental delivery	40%	42.5%
	Episiotomy	30%	51.5%
	Birth weight (kg)	3.32	3.33
	Follow-up time: 6 months **Dropouts**: not reported		
Intervention	Another midwife or resident gynaecologist on call re-evaluated the extent of the trauma in the case of perineal muscle involvement (i.e., an injury RCOG grade≥2)		
Outcome	Rate of detected OASIS		
Results	Compared with the preceding year, there was a significant increase in the diagnosis of OASIS, from 2.0% to 2.9% in the study period		
Risk of bias	Moderate		
Comments	Intervention was performed during office hours only		

Cornell 2016

Study aim	To assess the rates of detection, management, and outcomes of OASI before and after the implementation of a new clinical practice guideline and operative pro forma			
Method	**Design:** Uncontrolled before and after **Country:** Australia **Setting**: secondary hospital			
Participants	**Sample size**: 4302 deliveries **Population:** Maternal and fetal characteristics (group 1, group 2), mean±SD or %:			
		Before (mean±SD or %)	After (mean±SD or %)	p
	Age	26.3±5.5	28.0±4.4	0.113
	BMI (kg/m^2)	not reported		
	Primiparous	81%	84%	0.805
	Instrumental delivery	not reported		
	Episiotomy	74%	66%	0.428
	Birth weight (g)	3373±85.9	3367±56.8	0.953
	Follow-up time: 2 years audit **Dropouts**: 68% compliance rate with the pro forma			
Intervention	A 12-month audit of the incidence, management, and outcomes of OASI was conducted in 2009. An operative pro forma and practice guideline were implemented in 2010 followed by a further audit undertaken between 2010 and 2012.			

Outcome	rates of detection, management, and outcomes of OASI			
Results	Distribution of the types of perineal tears:			
	Perineal tear	**Before (%)**	**After (%)**	**p**
	3a	29	39	NS
	3b	37	43	NS
	3c	19	10	No data
	4th degree	11	8	No data
	Buttonhole	4	0	No data
Risk of bias	Moderate			
Comments	There was only a 68% compliance rate with the pro forma, and while there was formal education provided to the staff initially, this was not regularly performed throughout the time of the audit.			

NS = Not significant, OASI = Obstetric anal sphincter injury

Sheng 2019

Study aim	To determine whether index finger palpatory assessment of pubovisceral (PV) muscle body integrity through the lateral vaginal wall is a reliable indicator of PV muscle tear severity diagnosed by magnetic resonance imaging (MRI)
Participant sampling	**Design:** DTA **Recruitment period:** 14 January 2004 - 1 April 2012 **Country:** USA **Clinical setting**: University hospital **Sample size:** 85 women
Participant characteristics and setting	**Population**: Maternal and fetal characteristics, mean±SD or %: mean±SD or % Age (y): 29.2±5.7 *BMI* (kg/m^2): not reported *Primiparous*: not reported *Instrumental delivery*: 8% *Episiotomy*: 20% *Birth weight* (g): 3402.9±541.7 **Inclusion criteria**: At least one risk factor for PV muscle tear, including maternal age greater than 33 years, second stage of labor longer than 150 minutes or less than 30 minutes, delivered infant weighing greater than 4000 gm, forceps or vacuum delivery, or third- or fourth-degree anal sphincter laceration. **Exclusion criteria:** prior urogynecologic surgery, unwillingness to undergo a pelvic examination, history of neurological conditions or traumatic accident injury, medical conditions
Index test	**Index test**: palpatory assessment

Target condition and reference standard	**Target condition:** PV muscle tear **Reference test**: MRI
Flow and timing	**Time interval between index test and reference standard:** unclear
Results	Odds ratio for estimating MRI results from palpatory assessment: OR=3.62 (95% CI, 1.70–7.73)
Risk of bias	Unclear

Lipschuetz 2014

Study aim	To examine the correlation of three-dimensional transperineal ultrasound (3D-TPUS) finding of LAM defects with results of clinical examination of the pelvic floor, at intermediate follow-up
Participant sampling	**Design:** DTA **Country:** Israel **Clinical setting**: University Medical Centre **Sample size:** 87
Participant characteristics and setting	**Population**: primiparous women 8.7±3.5 (range 3–21) months after delivery Maternal and fetal characteristics: Age: 27.9±5.1 (19-47) *BMI* (kg/m^2): Not reported *Primiparous*: 100% *Instrumental delivery*: Not reported *Episiotomy*: Not reported *Birth weight* (g): 3203±52.3 (1940-080) **Inclusion criteria:** primiparous women who delivered singleton babies **Exclusion criteria:** Women who were pregnant at the time of contact, or had given birth in the interim since the earlier study
Index test	**Index test**: clinical examination
Target condition and reference standard	**Target condition:** LAM defects **Reference test**: 3D-TPUS
Flow and timing	**Time interval between index test and reference standard:** concurrently
Results	Sensitivity = 63% (95% CI, 38 to 84%) Specificity = 68% (95% CI, 55 to 78%)
Risk of bias	Low

3D-TPUS = Three-dimensional transperineal ultrasound; DTA = Diagnostic Test Accuracy; LAM = Levator ani muscle.

van Delft 2015a (Does the...)

Study aim	To establish the correlation between LAM avulsion diagnosed at rest and that on contraction, using transperineal tomographic ultrasound imaging (TUI)
Method	**Design:** prospective longitudinal study

	Country: UK, Netherland **Setting**: university hospital
Participants	**Sample size**: 190 primiparae provided 380 analytical units (left and right sides analysed separately) **Population:** Maternal and fetal characteristics

	Value (mean±SD or %)
Age	30.2±5.8
BMI (kg/m^2)	25.4±5.3
Primiparous	100%
Instrumental delivery	26.9%
Episiotomy	Not reported
Birth weight (g)	Not reported

	Follow-up time: 13 (range, 10–26) weeks postpartum
Intervention	TUI at rest and contraction
Outcome	LAM avulsion
Results	Twenty-two (5.8%) cases of LAM avulsion were identified both at rest and on maximum pelvic floor muscle contraction. Fourteen (3.7%) cases of LAM avulsion (in 12 women) were diagnosed at rest only and 13 (3.4%) cases (in 11 women) were diagnosed on maximum pelvic floor muscle contraction only. The use of TUI to diagnose LAM avulsion correlates moderately for images obtained at rest and on maximum pelvic floor muscle contraction.
Risk of bias	Low
Comments	24.7% delivered by Caesarean section

LAM= levator ani muscle; TUI= transperineal tomographic ultrasound imaging

van Delft 2015b (Agreement…)

Study aim	To estimate agreement between transperineal and endovaginal ultrasound in assessing levator ani biometry and avulsion and determine agreement between levator avulsion palpation and ultrasound.
Method	**Design:** DTA **Country:** UK, USA, Netherlands **Setting**: University hospital
Participant characteristics and setting	**Sample size**: 191 primipara women **Population:** Maternal and fetal characteristics

	Value (mean±SD or %)
Age	30.2±5.8
BMI (kg/m^2)	25.4±5.3
Primiparous	100%

	Instrumental delivery	Not reported
	Episiotomy	Not reported
	Birth weight (g)	Not reported
	Inclusion criteria: nulliparous women **Exclusion criteria:** not reported **Follow-up time**: 13 weeks postpartum (range 10-26)	
Index test	**Index test**: EVUS	
Target condition and reference standard	**Target condition:** LAM defects **Reference test**: TPUS	
Flow and timing	**Time interval between index test and reference standard:** concurrently	
Results	EVUS (TPUS as reference standard): Sensitivity: 76% (95 % CI, 59 till 89 %) Specificity: 97% (95% CI, 95 till 99 %)	
Risk of bias	Low	

DTA = Diagnostic Test Accuracy; EVUS = endovaginal ultrasound; TPUS = transperineal ultrasound.

Montaguti 2019

Study aim	To evaluate the intermethod agreement between the tomographic ultrasound imaging (TUI), considered as the gold standard, and the OmniView-VCI in the diagnosis of levator ani muscle (LAM) avulsion an in the measurement of levator-urethral gap (LUG).
Participant sampling	**Design:** DTA **Country:** Italy **Clinical setting**: University hospital **Sample size:** 114 women
Participant characteristics and setting	**Population**: Maternal and fetal characteristics Value (mean±SD or %) Age: 32±7 *BMI* (kg/m^2): 23.8±4.2 *Primiparous*: 100% *Instrumental delivery*: 0% *Episiotomy*: Not reported *Birth weight* (g): Not reported **Inclusion criteria:** women following their first spontaneous delivery **Exclusion criteria:** instrumental delivery **Follow-up time:** 3 to 6 months following delivery
Index test	**Index test**: OmniView-VCI

Target condition and reference standard	**Target condition:** LAM avulsion **Reference test**: TUI
Flow and timing	**Time interval between index test and reference standard:** concurrently
Results	AUC of LUG in predicting avulsion = 0.931 (95% CI, 0.868-0.994) with 24mm showing the best sensitivity (82%) and specificity (97%)
Risk of bias	Unclear

AUC = Area under the receiver-operating characteristic (ROC) curve; DTA = Diagnostic Test Accuracy; LUG = Levator-urethral gap; TUI = Tomographic ultrasound imaging; VCI = Volume contrast Imaging.

Greenbaum 2020

Study aim	To determine an optimal cut-off value for LUG measurements in a high-risk patient population.
Participant sampling	**Design:** DTA **Recruitment period:** November 2011 and May 2018 **Country:** Israel **Clinical setting**: tertiary referral center **Sample size:** 618
Participant characteristics and setting	**Population**: Maternal and fetal characteristics Avulsion (median and IQR) / No avulsion (median and IQR) Age: 30 (26-34) / 28 (24-31) *BMI* (kg/m^2): 23 (20.9-25.9) / 23.5 (21.3-26.5) *Parity*: 1 (1-2) / 1 (1-2) *Instrumental delivery*: 33.5% / 20.8% *Episiotomy*: 59.1% / 47.7% *Birth weight* (g): 3415 (3145-3720) / 3390 (3100-3715) **Inclusion criteria:** women who have undergone pelvic floor regardless of the severity of the OASI **Exclusion criteria:** women with partial avulsion
Index test	**Index test**: a visual qualitative assessment or eyeballing
Target condition and reference standard	**Target condition:** complete avulsion **Reference test**: 2/3/4D TPUS
Flow and timing	**Time interval between index test and reference standard:** concurrently
Results	AUC 0.869 for a cutoff of 2.305 (95% confidence interval, 0.84-0.90)
Risk of bias	Unclear

AUC = Area under the receiver-operating characteristic (ROC) curve; IQR interquartile range, 2/3/4 TPUS = Two-dimensional/three-dimensional/four-dimensional transperineal ultrasound.

Vanlig

Study aim	
Method	**Design:** **Country:** **Setting**:
Participants	**Sample size**: **Population:** Maternal and fetal characteristics (intervention, control), mean±SD or %: *Age*: *BMI* (kg/m^2): *Nulliparity*: *Instrumental delivery*: *Episiotomy*: *Birth weight* (kg): **Follow-up time**: **Dropouts**:
Intervention	**Intervention**: **Control**:
Outcome	
Results	
Risk of bias	
Comments	

Diagnostik

Study aim	
Participant sampling	**Design:** **Recruitment period:** **Country:** **Clinical setting**: **Sample size:**
Participant characteristics and setting	**Population**: Maternal and fetal characteristics (,), mean±SD or %: *Age* (y): *BMI (*kg/m^2*):* *Nulliparity*: *Instrumental delivery*: *Episiotomy*: *Birth weight* (grams): **Inclusion criteria:** **Exclusion criteria:** **Dropouts**:

Index test	**Index test**:
Target condition and reference standard	**Target condition:** **Reference test**:
Flow and timing	**Time interval between index test and reference standard:**
Results	
Risk of bias	