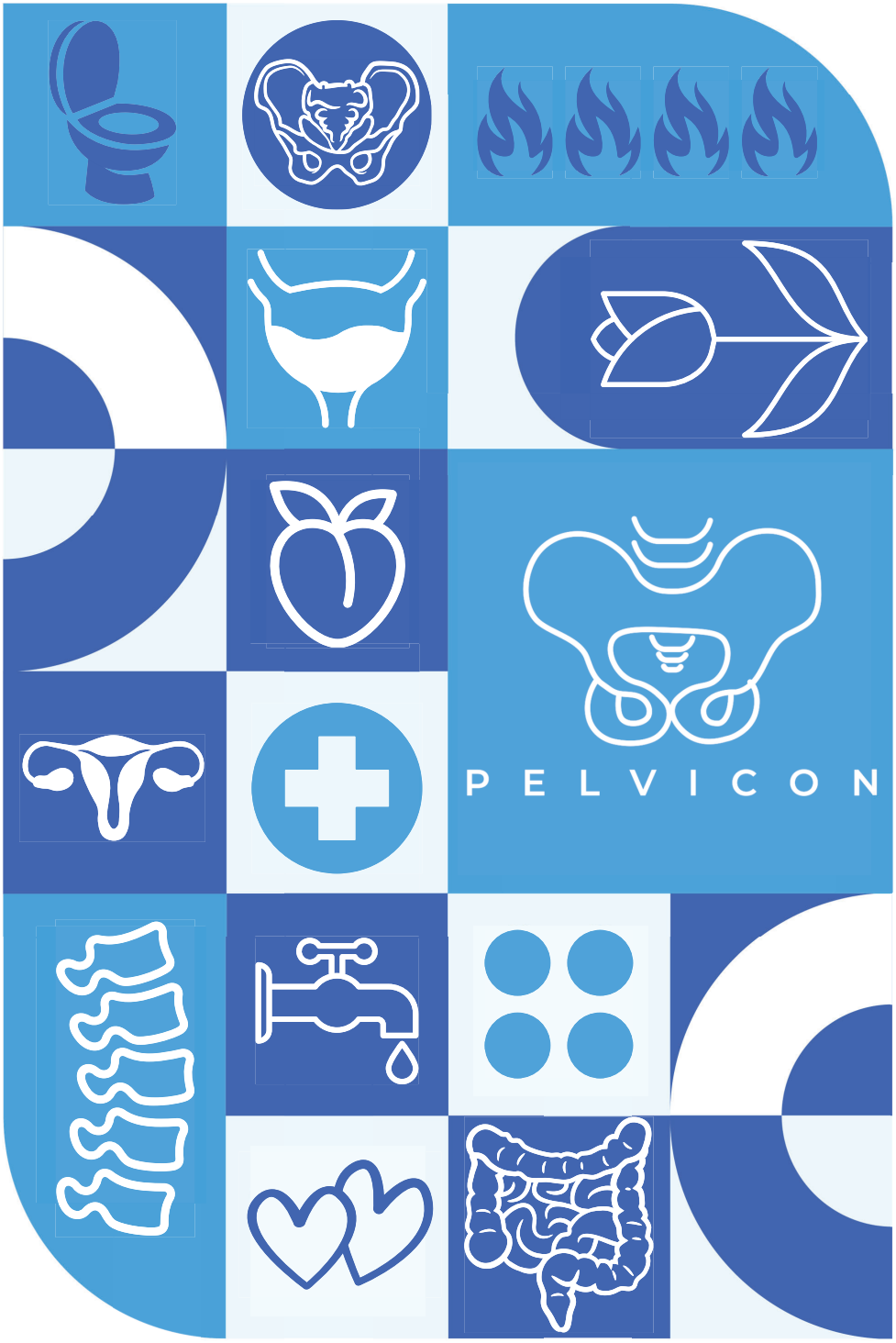
PROLAPSE



PELVICON SYMPOSIUM 2026

THE PELVICON STORY

PelviConners don't just learn. We lead.

BEING A PELVICONNER...

is more than attending a conference or an educational event. It's stepping into a movement.

- It's the promise to keep learning and never stop improving
- It's the commitment to give patients the care they deserve
- It's the courage to seek out community
- It's the vision for a long, joyful career in pelvic health
- And it's a simple truth - by continuing to learn and grow, you've become a leader in the field.

We can't do this in isolation. PelviCon is about connection.
Learning from the best in the world.
Knowing you belong.

Welcome to PelviCon Symposium 2026:
Pelvic Organ Prolapse

WHAT WE BELIEVE...

Multi-Disciplinary Symposium. Many conditions require a multi-disciplinary approach and understanding for best care. The gold standard is always going to be collaborative care - the symposium is designed to elevate our patient results.

Practical Takeaways. Not just a bunch of research and statistics, but practical takeaways you can use the next day in the treatment room.

Learn From the Best. Who you learn from matters! We bring the leading minds in pelvic health together from all over the world to share their knowledge and experience.

Connection. We're better together. Attending a PelviCon conference or symposium brings you into a community of like-minded practitioners. We're passionate about growing our skills and always providing the best possible care for our patients.

PELVICON

PELVICON 2022: “THE FIRST ONE”

We booked a small Atlanta hotel, invited a world-class lineup of pelvic health speakers, and crossed our fingers. Would anyone share the vision?

The answer came fast. **The 200 tickets sold out in just 3 minutes**. We moved hotels, added more people and the rest is history.

The energy in that first room was electric. PelviCon wasn’t just another conference. It was the movement our field had been waiting for.

PELVICON 2023: IT STARTS WITH US

The second year of PelviCon was all about leveling up. We expanded to a larger hotel, elevated the experience and brought in another world-class speaker lineup.

Our theme, *It Starts with Us*, challenged every attendee to recognize we can’t wait for someone else to move our field forward. The change begins here and now.

"It's pelvic rehab's Super Bowl! Best conference I've ever been to."
– Kathryn N.

"This conference can and will change your life."
– Sandra S.

PELVICON 2024: IGNITE!

In 2024, our theme was “Ignite.” We brought our most international lineup ever and sold out tickets in less than 5 hours on Black Friday.

The energy sparked in that room carried into practices around the world. PelviCon became the place where new ideas, new techniques, and new friendships caught fire.

PELVICON 2025: ELEVATE

Last year, we wanted to ‘elevate’ together. Elevate our skills. Our confidence. Our voices. Our impact on patients everywhere.

Tickets sold out in less than 29 minutes, and we celebrated educating more than 2,500 practitioners at a PelviCon event!

PELVICON 2026: DISRUPT

For our 5th year, we’ll be in Atlanta on September 25-26 to disrupt. We want to break out of our clinical ruts. Break through our limitations and barriers. And learn from the absolute best.

In-person tickets sold out in 4 minutes this year, and hundreds more are joining the Live Virtual + Recorded version to get all of the great material and this unique chance to learn from the leaders in the field.

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SYMPOSIUM SPEAKERS

Taryn Hallam

International pelvic PT educator translating research into practical, high-impact prolapse treatment strategies.

Dr. Shweta Desai

Urogynecologist providing insight into surgical and comprehensive prolapse care.

Gaynor Morgan

Pessary expert, inventor, and global educator training thousands in conservative prolapse management.

Kelsey Bates

Mental health specialist helping clinicians address emotional and psychological impacts of pelvic health conditions.

Dr. Lori Forner

Researcher and clinician specializing in strength training, pelvic floor function, and complex pelvic conditions.

Dr. Hans Peter Dietz

Renowned researcher whose work defines our understanding of the pelvic floor and birth injuries

PELVICON

FOUNDERS

Jessica Reale, PT, DPT, WCS

Jessica is the Founder of Southern Pelvic Health in Atlanta, GA, a multi-clinician, multi-site practice.

Jessica has a deep passion for the pelvic health rehabilitation field and loves supporting other clinicians in being the best they can for their patients.

Through the Pelvic Pro Collective, Jessica runs the Clinical Rockstar Membership, giving rehab providers access to clinical mentorship. She and her husband Andrew also provide support for business owners.

@SouthernPelvicHealth

Nicole Cozean, PT, DPT, WCS

Dedicated to changing the way we do pelvic health, Nicole founded PelvicSanity to provide exceptional care for complex pelvic patients.

Through Pelvic PT Rising, Nicole has helped 900+ pelvic rehab businesses grow and scale. Her clinical courses challenge practitioners to 'be better.'

She's the creator of the *Pelvic PT Rising* podcast (with 1M+ downloads!) for providers and authored the bestselling *IC Solution* for patients.

@NicoleCozeanDPT

PELVICON

AGENDA + TABLE OF CONTENTS

9AM MORNING SESSIONS

1:30PM AFTERNOON SESSIONS

PELVICON

Anterior vs Posterior Vaginal Wall Prolapse

- siblings of the same parent?

Taryn Hallam

PELVICON Symposium

Taryn Hallam

PELVICON Symposium

About Me

- Pelvic Health PT in Sydney, Australia (26years)
- 10 years Hospital – maternity / gynae / outpt
- 10 years Private Practice – O&G

MAIN ROLE NOW

Owner / Director / Primary Educator at Women's Health Training Associates (WHTA)

- organisation whose main goal is to facilitate clinician access to the latest clinical practice research in the area of women's health physical therapy

☺ !! EDUCATION AND TRAINING !! ☺

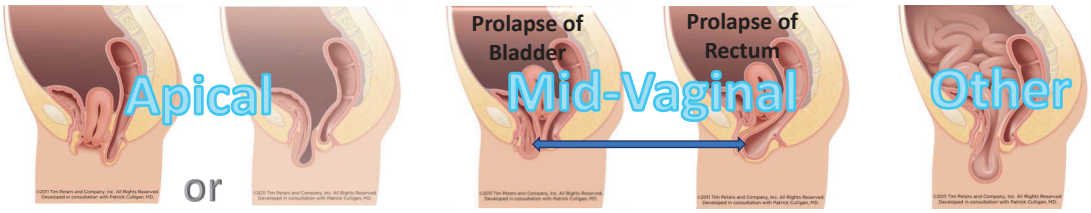
Disclosures

- No disclosures

PELVICON Symposium

Introduction

For hundreds of years, official prolapse terminology was 'organ' based:



Uterine Prolapse | **Vault Prolapse** (after hysterectomy) | **Cystocele** (bladder) | **Rectocele** (rectum) | **Enterocele** (small intestine)

As a result of it being 'organ' based

→ **each condition was seen as quite unique because they involved different organs**
ie a patient would regard cystocele as completely different to a rectocele

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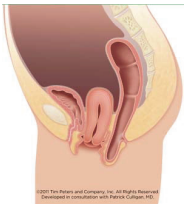
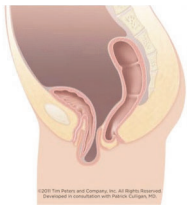
More Recent Terminology

In the late 1990s / early 2000s we saw a shift in opinion:

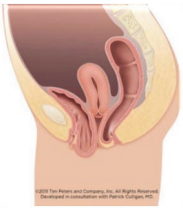


Uterine Prolapse

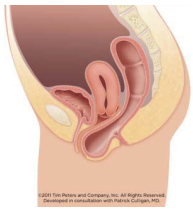


Vault Prolapse
(after hysterectomy)

TERMS FOR APICAL PROLAPSE
remained accepted terminology

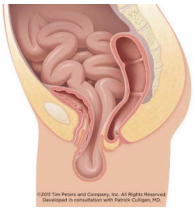


Cystocele
(bladder)



Rectocele
(rectum)

BECAME CONTROVERSIAL
With suggestion that clinicians should change to using anterior & posterior *'vaginal wall' prolapse*



Enterocele
(small intestine)

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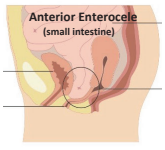
More Recent Terminology

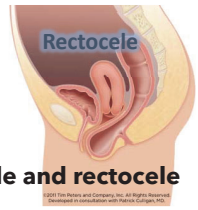
LITTLE NOTE
Whilst I acknowledge and agree this is a very valid point (that on VE we can't be certain what is behind)….

Bump et al 1996[1] explained that:

*due to the fact most prolapse is only assessed via **observation** of the **vaginal canal** (as opposed to ultrasound or MRI)…*

"use of the terms cystocele, rectocele, or urethrovesical junction… imply an unrealistic certainty as to the structures on the other side of the vaginal bulge"[1p10]

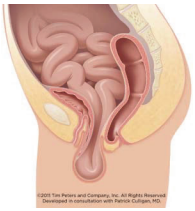




most are cystocele and rectocele

Anterior VAGINAL WALL PROLAPSE

Posterior VAGINAL WALL PROLAPSE



Enterocele
(small intestine)

WHY?

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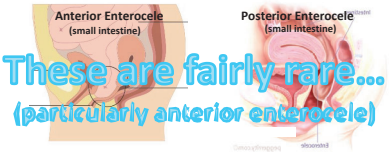
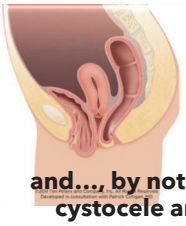
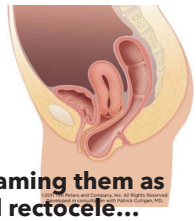


These are fairly rare…
(particularly anterior enterocele)

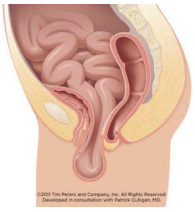


and…, by not naming them as cystocele and rectocele…

Anterior VAGINAL WALL PROLAPSE



Posterior VAGINAL WALL PROLAPSE



Enterocele
(small intestine)

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More Recent Terminology

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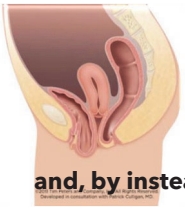
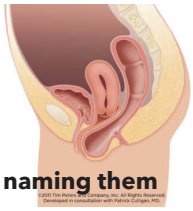
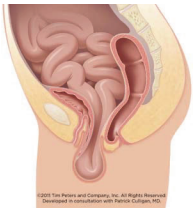


and, by instead naming them

Anterior VAGINAL WALL PROLAPSE



Posterior VAGINAL WALL PROLAPSE



Enterocele
(small intestine)

This is what we want to look at today

Are they really caused by the same thing and therefore just need similar Rx

makes them seem **very similar (both just 'vaginal wall' prolapse)**

Impression that they can probably just have the same treatment

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REMAINDER OF TODAY'S TALK…

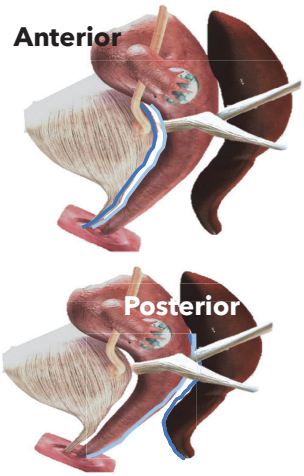
THREE MAIN GOALS

- Understand in what ways anterior and posterior vaginal wall prolapse are similar, and in what ways they are different
- Understand how their differences can impact both the approach and success rates for treatment (both conservative and surgical)
- Enable clinicians to uniquely tailor education and advice based on whether the patient is presenting with anterior vs posterior vaginal wall prolapse

PELVICON Symposium

Comparison #1: Type of Fascial Defect

BACKGROUND KNOWLEDGE

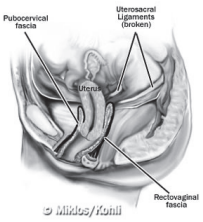


We all know that….

1. **the bladder and urethra** sit in front of the **anterior vaginal wall**
2. **the rectum and anal canal** sit behind the **posterior vaginal wall**

also that…

3. **the uterus** sits at the top of the vagina suspended by **uterosacral & cardingal lig**
4. **uterine / vault prolapse occurs due to damage to uterosacral and cardinal ligaments**



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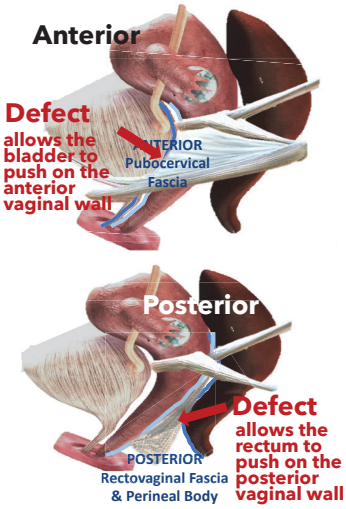
Comparison #1: Type of Fascial Defect

BACKGROUND KNOWLEDGE



We all know that….

1. **the <u>bladder and urethra</u>** sit in front of the **<u>anterior</u> vaginal wall**
2. **the <u>rectum and anal canal</u>** sit behind the **<u>posterior</u> vaginal wall**

However, we also know that between the

3. 'bladder/urethra' & anterior vagina wall is the - **<u>pubocervical fascia</u>**
4. 'rectum/anal canal' & the post. vag. wall is the - **<u>rectovaginal fascia</u>**
   - **<u>perineal body</u>**

COMPARISON #1 – SIMILARITY
In both anterior & posterior vaginal wall prolapse, it is ultimately a **<u>defect / dysfunction</u> in the respective fascia in front / behind the respective** vaginal walls that enables the organ to push on the vaginal wall

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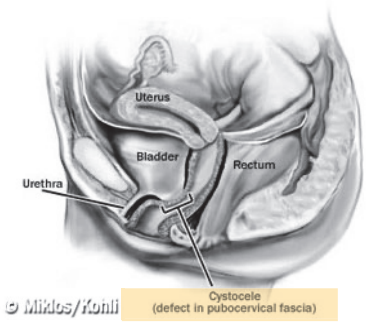
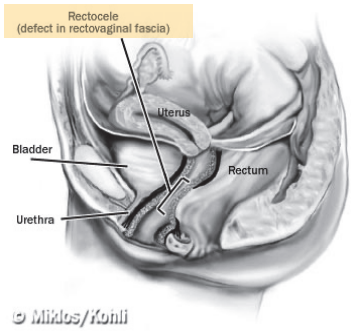
Comparison #1: Type of Fascial Defect

<u>Anterior</u> Vaginal Wall Prolapse



<u>Posterior</u> Vaginal Wall Prolapse



Because the fascial defect is almost identical…..
the usual **first line** approach to **surgical management**
is almost identical for anterior and posterior vaginal wall prolapse!!

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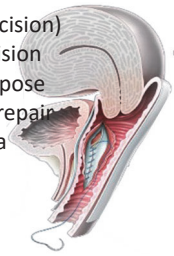
Comparison #2: First Line Surgical Approach

Anterior Vaginal Wall Prolapse

Native Tissue 'Anterior Colporrhaphy'
ie anterior repair

Vaginal procedure (no abdominal incision)
- midline **anterior vaginal wall** incision
- open vaginal mucosa / wall to expose underlying fascia with defect → repair
- re-suture to close vaginal mucosa

1-3 nights in hospital
Superficial sutures dissolve ~6wks
Maximal fibrosis by 3-5months



Posterior Vaginal Wall Prolapse

Native Tissue 'Posterior Colporrhaphy'
ie posterior repair

Vaginal procedure (no abdominal incision)
- midline **posterior vaginal wall** incision
- open vaginal mucosa / wall to expose underlying fascia with defect → repair
- re-suture to close vaginal mucosa

1-3 nights in hospital
Superficial sutures dissolve ~6wks
Maximal fibrosis by 3-5months

!! VERY SIMILAR !!
are they equally successful though?

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!! IMPORTANT NOTE !!

There are usually **two different ways to define 'success'** in vaginal wall prolapse studies

SYMPTOMATIC CURE	or	ANATOMIC CURE
Usually defined as either: Minimal / no prolapse symptoms, OR Minimal / no *bothersome* prolapse symptoms		Usually now defined as correction to **STAGE 0 or STAGE 1** ie either no descent, or descent such that the vaginal wall remains above -1 on bearing down
LITTLE NOTE The general consensus *amongst health professionals* is that symptomatic improvement is the way more important factor of the two		**HOWEVER…** there are many women who do regard it is as important to them to 'no longer see a bulge' if they look with a mirror, or feel a bulge with their hand when washing (anatomic cure for body image)

!! IMPORTANT NOTE !!

There are usually **two different ways to define 'success'** in vaginal wall prolapse studies

If we accept that anatomical cure is also important to women…

(for body image, self esteem etc)

ANATOMIC CURE

Usually now defined as correction to

STAGE 0 or STAGE 1

ie either no descent, or descent such that the vaginal wall remains above -1 on bearing down

HOWEVER…
there are many women who do regard it is as important to them to 'no longer see a bulge' if they look with a mirror, or feel a bulge with their hand when washing (anatomic cure for body image)

!! IMPORTANT NOTE !!

There are usually **two different ways to define 'success'** in vaginal wall prolapse studies

THE NEXT QUESTION….

WHY ARE WE INCLUDING STAGE 1 AS CURE?

Note: this is only for vaginal wall prolapse (not uterine)

It is now known that a small degree of movement of the anterior / posterior vaginal walls in NORMAL!!

- → 76% of randomly selected ♀ in the general population demonstrate movement of the anterior / posterior vaginal walls on VE[2]
- → ~50% of young, nulliparous, asymptomatic women have vaginal movement equal to stage 1[3,4]

PLUS movement of the anterior / posterior vaginal walls doesn't even cause any symptoms until descent reaches -0.5 (within ½ cm of entrance - stage 2)[5,6]

ANATOMIC CURE

Usually now defined as correction to

→ **STAGE 0 or STAGE 1** NORMAL!

ie either no descent, or descent such that the vaginal wall remains above -1 on bearing down

ANATOMIC FAILURE of VAG WALL SURGERY

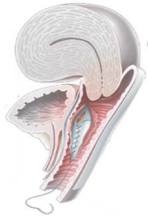
= persistent or recurrent vaginal wall prolapse ≥ stage 2 post-op

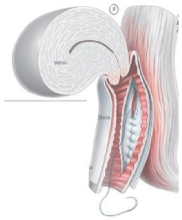
PELVICON Symposium

!! IMPORTANT NOTE !!

So now that we understand 'normal' and 'cure'

Is there a difference in surgical success rate for anterior vs posterior vaginal wall prolapse?





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#3: Success Rate of Native Tissue Repair

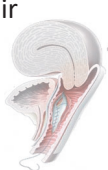
ANATOMIC SUCCESS RATE

(ie improvement to Stage 0 or 1 post-op)

Anterior Vaginal Wall Prolapse

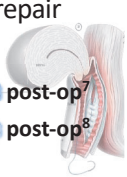
Native Tissue 'Anterior Colporrhaphy'
ie anterior repair

What about anterior repair?



Posterior Vaginal Wall Prolapse

Native Tissue 'Posterior Colporrhaphy'
ie posterior repair



ANATOMIC CURE (Stage 0 or 1)

Marino et al 2022: **~93% at 3 years post-op**[7]

Gillor et al 2019: **~80% at 5 years post-op**[8]

CLINICAL IMPLICATION

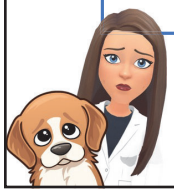
Native Tissue Posterior Repair
is a fairly simple and successful procedure in terms of anatomical correction ☺

PELVICON Symposium

#3: Success Rate of Native Tissue Repair

ANATOMIC SUCCESS RATE
(ie improvement to Stage 0 or 1 post-op)

Anterior Vaginal Wall Prolapse	**Posterior Vaginal Wall Prolapse**
Native Tissue '**Anterior Colporrhaphy**' ie anterior repair	Native Tissue '**Posterior Colporrhaphy**' ie posterior repair
ANATOMIC CURE (achieving & maintaining Stage 0 / 1)	**ANATOMIC CURE** (Stage 0 or 1)
Rudnick et al 2015: only ~40% at 3 years post-op[9]	Marino et al 2022: ~93% at 3 years post-op[7]
Dias et al 2016: only ~40% at 2 years post-op[10]	Gillor et al 2019: ~80% at 5 years post-op[8]



These are not the same

They may be almost identical procedures, but they do not have identical success rates

PELVICON Symposium

#3: Success Rate of Native Tissue Repair

ANATOMIC SUCCESS RATE
(ie improvement to Stage 0 or 1 post-op)

Anterior Vaginal Wall Prolapse	**Posterior Vaginal Wall Prolapse**
Native Tissue '**Anterior Colporrhaphy**' ie anterior repair	Native Tissue '**Posterior Colporrhaphy**' ie posterior repair
ANATOMIC CURE (achieving & maintaining Stage 0 / 1)	**ANATOMIC CURE** (Stage 0 or 1)
Dias et al 2016: ~40% at 2 years post-op[9]	Marino et al 2022: ~93% at 3 years post-op[7]
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Native Tissue Anterior Repair
Has a lot lower chance of anatomical success ☹
(however, some ♀ experience symptomatic success despite anatomic failure)

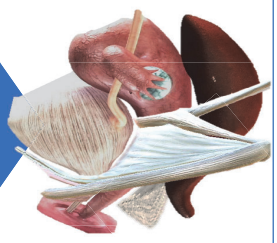
Why is it so different?

PELVICON Symposium

REMEMBER…..

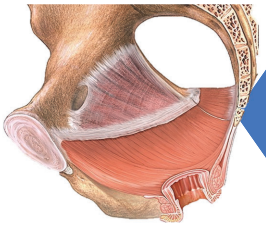
When we think about what is supporting the pelvic organs…

1. Fascial Components



and surgery only fixes this part…

+



2. Muscular Components

but this is often needed to support the surgical repair

*Both components have slightly different roles but **work together** to support the pelvic organs in the pelvic cavity*

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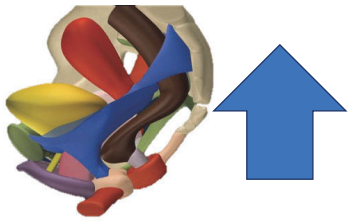
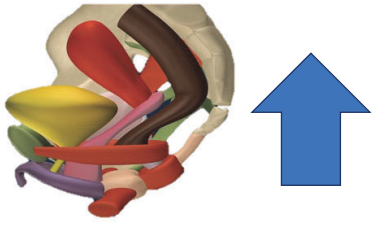
MUSCLE / FASCIA INTERPLAY



Primary organ support is

FASCIAL



but that is underpinned by

MUSCULAR SUPPORT

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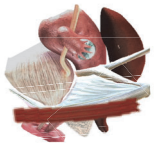
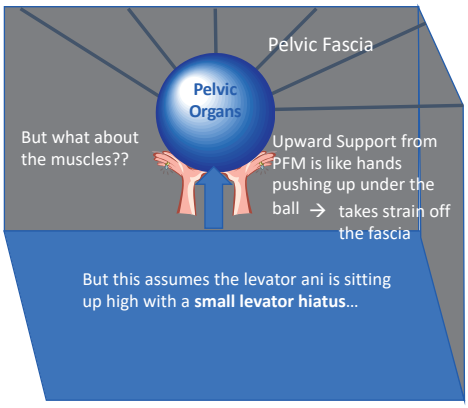
‘Ball in the Room’ Analogy





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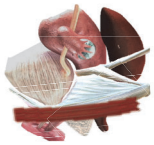
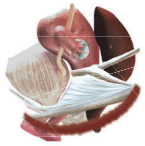
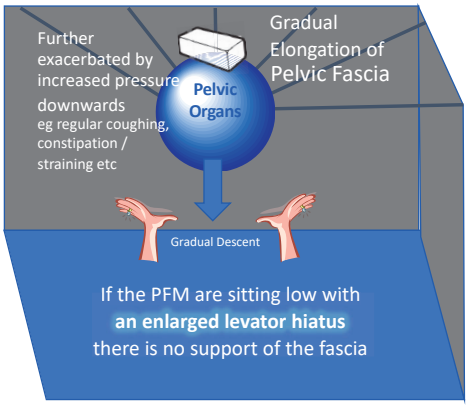
‘Ball in the Room’ Analogy







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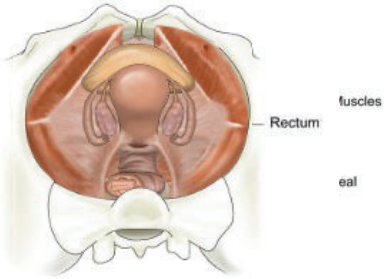
Levator Hiatus

The structure of puborectalis is such that there is a hiatus ('gap') in the deep pelvic floor along the midline (from pubis to posterior aspect of anorectal junction)

This is known as the **Levator Hiatus**



Pelvic floor image used with kind permission from Professor Chris Maher, Urogynaecologist, Australia.

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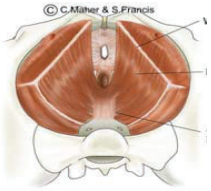
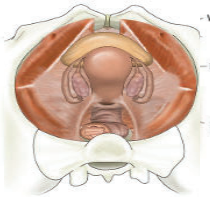
Levator Hiatus and Pelvic Organ Support

The LH size varies between women and is known to increase after vaginal birth, but temporarily reduces with a voluntary pelvic floor contraction

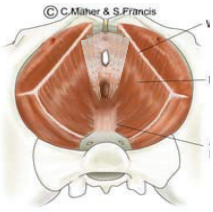


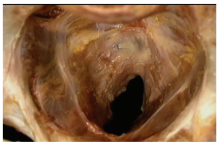
Top – Down View

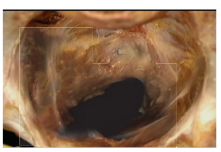
Smaller Hiatus

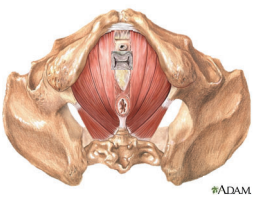


Larger Hiatus









Underneath View

The larger the levator hiatus the less support provided to the anterior compartment pelvic organs sitting on top.

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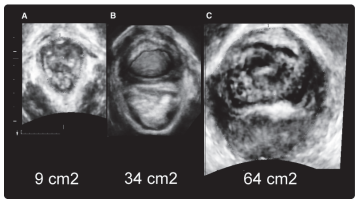
Levator Hiatus and Pelvic Organ Support

One of the original papers….

Dietz, Shek, De Leon and Steensma 2008[11]

Assessed the LH area via 3D/4D ultrasound of n = 544 ♀ with mean age 53.2yrs

LH Area on Valsalva (cm^2)	Symptoms of Prolapse	POP Stage 2+
<25	20.5%	34%
25-29.9	27.3%	64%
30.0-34.9	31.5%	72%
35-39.9	35.1%	86%
>40	41.9%	98%



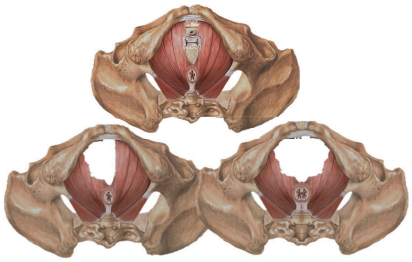
NOTE
One factor that can dramatically increase the levator hiatus (particularly anteriorly) is sustaining a **levator avulsion** during birth

Levator Avulsion

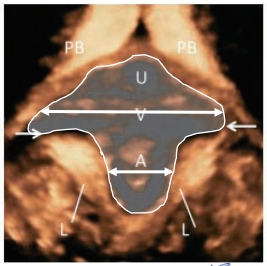
Defined as…

*'traumatic **detachment** of the puborectalis muscle off its insertion on the inferior pubic rami'* *12(p1637)*

- estimated to occur in 14-36% of women after birth
- can be unilateral or bilateral



SIGNIFICANTLY REDUCES SUPPORT FOR THE ANTERIOR COMPARTMENT



Avulsion Image:
van Delft et al. BJOG. 2014 Aug;121(9):1164-71

CLINICAL IMPLICATION
There is no evidence that LAM avulsion is linked to posterior compartment prolapse, but significantly increases the risk of anterior and apical POP due to the **widened hiatus anteriorly**

So let's now go back

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#3: Success Rate of Native Tissue Repair

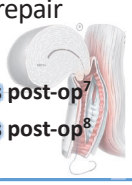
Posterior Vaginal Wall Prolapse

Native Tissue '**Posterior Colporrhaphy**'
ie posterior repair

ANATOMIC CURE (Stage 0 or 1)

Marino et al 2022: ~93% at 3 years post-op[7]

Gillor et al 2019: ~80% at 5 years post-op[8]



Surgical Success rate not really influenced by structure and function of the pelvic floor muscles

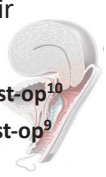
Anterior Vaginal Wall Prolapse

Native Tissue '**Anterior Colporrhaphy**'
ie anterior repair

ANATOMIC CURE (Stage 0 or 1)

Dias et al 2016: ~40% at 2 years post-op[10]

Rudnick et al 2015: ~40% at 3 years post-op[9]



Surgical success rate varies greatly based on the pelvic floor muscle morphology able to support the repair post op

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#3: Success Rate of Native Tissue Repair

Diez-Itza, Avila et al 2020 – LEV HIATUS[13]

Prospective multicenter study of 455 women with symptomatic anterior compartment prolapse undergoing primary vaginal surgery.

→ LH >25cm^2 was a significant increased risk for recurrence of both anatomical prolapse and symptoms of prolapse

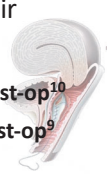
Pre-op Levator Hiatus Size	<25cm^2	>25cm^2
Anatomic Cure at 1yr	64%	**37.9%**
Symptomatic Cure at 1yr	95.8%	**88.2%**

Dietz et al 2010 – LEVATOR AVULSION[14]

Found that 69% of women with major levator avulsion prior to anterior colporrhaphy, had anatomical recurrence of ≥ Stage 2 by 6 weeks post-op!

Anterior Vaginal Wall Prolapse

Native Tissue 'Anterior Colporrhaphy'
ie anterior repair



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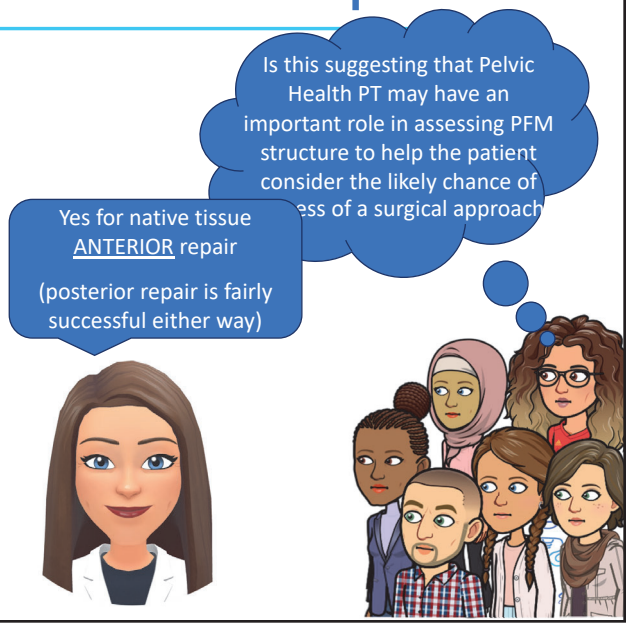

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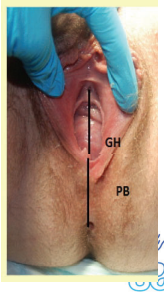
ASSESSING RISK OF FAILURE FOR ANTERIOR REPAIR

GH + PB on Valsalva

Has been found to be strongly correlated the assessment of levator hiatus area as measured on 3D/4D Ultrasound (r = 0.722, p<0.001)[15]

GH + PB[16]	US Area	Levator Avulsion
<7cm	<25	7%
7.0 – 7.99	25-29.9	10%
8.0 - 8.99	30.0-34.9	20%
9.0 - 9.99	35-39.9	37%
>10cm	>40	53%



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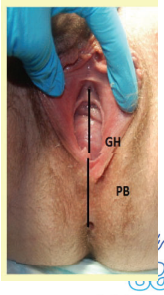

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Hypothetical Clinical Scenario

A patient presents to pelvic floor physical therapy for a second opinion regarding 'how to manage' her <u>vaginal wall prolapse</u>

Of note is that she has already seen a urogynaecologist who has offered to perform a <u>native tissue vaginal repair</u> for her if she wants

She specifically states……

She doesn't want to have surgery if she doesn't have to

Surgery requires time off work which would be hard for her to do

BUT…

She also doesn't want to pay for 3-6months of PT if it isn't going to work and she ends up having surgery anyway

AND ANOTHER CONCERN IS THAT…

She has a friend who had surgery and it came back within a year…

she doesn't want to go through surgery and waste her money if it isn't going to work long term

Hypothetical Clinical Scenario

THINKPOINT

These are all very reasonable considerations for this patient to have when trying to decide what might be the best approach for her!!

ALSO…

A PT's role should never be to **convince everyone** that they **should have** pelvic floor PT.

We should be helping our patients feel empowered to determine the best approach for them based on sociodemographic, anatomic, symptomatic and **overall outcome goal considerations**

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Hypothetical Clinical Scenario

THINKPOINT
These are all very reasonable considerations for this patient to have when trying to decide what might be the best approach for her!!

THE PATIENT'S GOALS

She doesn't want to have surgery if she doesn't have to

Surgery requires time off work which would be hard for her to do

BUT…

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Hypothetical Clinical Scenario

She doesn't want to have surgery if she doesn't have to

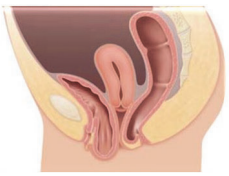
She also doesn't want to pay for 3-6months of PT if it isn't going to work and she ends up having surgery anyway

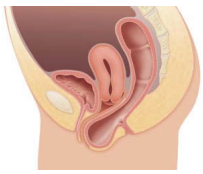
Is there a difference in whether conservative management will be successful for

ANTERIOR VAGINAL WALL PROLAPSE

vs

POSTERIOR VAGINAL WALL PROLAPSE





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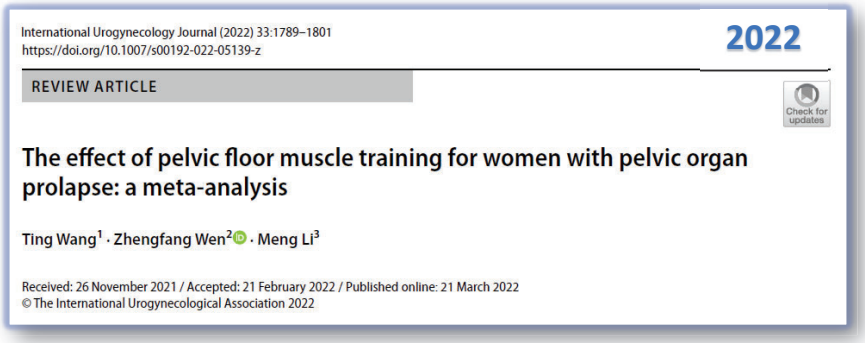
#5. PFMT – anterior vs posterior POP



International Urogynecology Journal (2022) 33:1789–1801
https://doi.org/10.1007/s00192-022-05139-z

2022

REVIEW ARTICLE

Check for updates

The effect of pelvic floor muscle training for women with pelvic organ prolapse: a meta-analysis

Ting Wang[1] · Zhengfang Wen[2] · Meng Li[3]

Received: 26 November 2021 / Accepted: 21 February 2022 / Published online: 21 March 2022
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#5. PFMT – anterior vs posterior POP

Wang et al 2022[17]

Performed a systematic review and meta-analysis on RCTs published in English with women aged 18 years and older with POP, whereby the intervention included any type of PFMT program

An initial 10,022 records were identified

→ n = 6,324 records after duplicates removed

→ n = 30 selected for full text review after review of title and abstract

→ **13 articles met criteria**

What did they find?

#5. PFMT – anterior vs posterior POP

Wang et al 2022[17]

RESULTS: **Anatomical Prolapse**

The pooled results of n = 6 trials with a total of n = 911 patients demonstrated that on average, there was a statistically significant difference in POP-Q stage compared to the control group after pelvic floor muscle training

RR 1.51, 95% CI 1.14 – 2.01, p = 0.004

ie PFMT gp was 1.51x more likely to show an improvement in POP-Q Stage than the control gp

However….. this included many different women with many different types of prolapse.

Was the success different for ANTERIOR vs POSTERIOR Vaginal wall prolapse?

#5. PFMT – anterior vs posterior POP

Wang et al 2022[17]

RESULTS: **Anatomical Prolapse**

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ANATOMICAL POP IMPROVEMENT – Split by Compartment!!!!!!

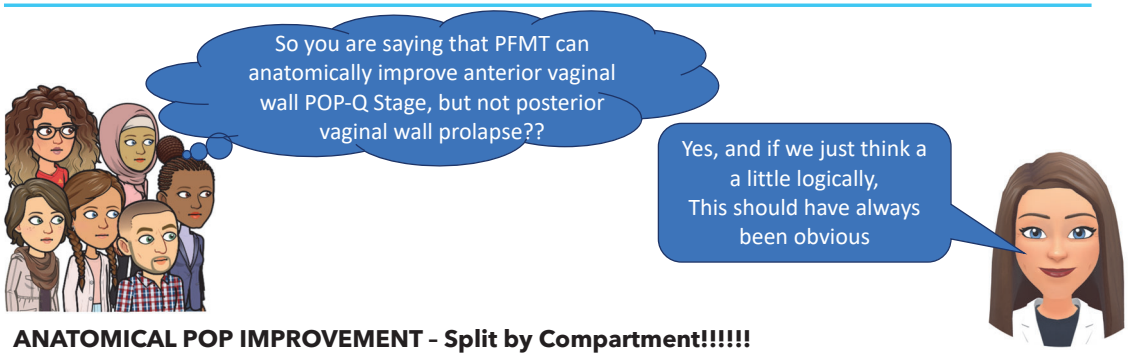
1. Anterior Compartment POP

   Statistically significant improvement — **RR 2.06 95%CI 1.44 – 2.94, p < 0.0001**

2. Posterior Compartment POP

   No statistically significant improvement — **RR 1.23 95% CI 0.66 – 2.27, p = 0.52**

#5. PFMT – anterior vs posterior POP



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2. Posterior Compartment POP
   No statistically significant improvement — **RR 1.23 95% CI 0.66 – 2.27, p = 0.52**

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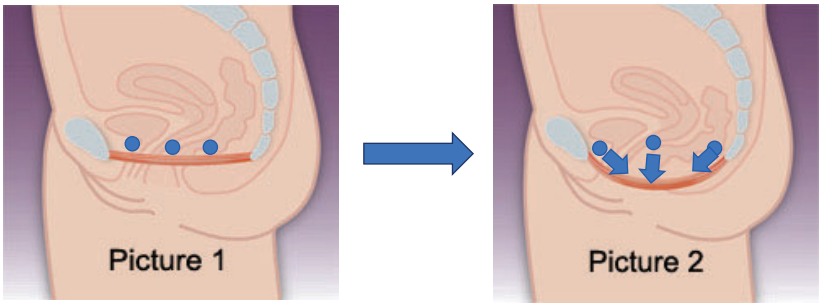
The Prolapse / PFM Descent Link

Taryn's Marble Analogy (that I use with patients)



Treatment needs to counteract the direction of the descent

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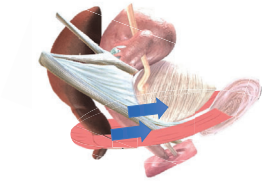
COMMON SENSE THINKPOINT

ANTERIOR VAGINAL WALL
PFMT at least makes sense for Anterior Vaginal Wall Prolapse

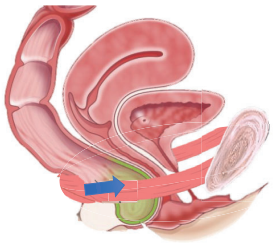


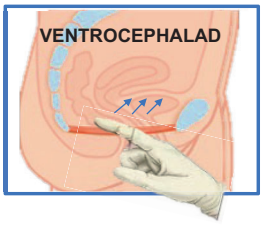
LITTLE NOTE

There is an exception though, where PFMT can help posterior vaginal wall descent…..

POSTERIOR VAGINAL WALL
Does it really make sense for Posterior Vaginal Wall Prolapse??

then people say to me…
*'but what about the '**lifting action of the** levator ani'???*





But the lift is ventro-cephalad!!

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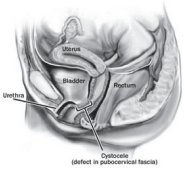
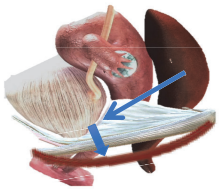
#6. Secondary Vaginal Wall Descent

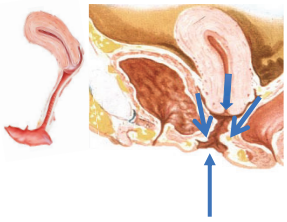
From earlier…
different POP are usually associated with compartment specific changes in connective tissue



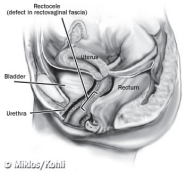
Anterior Vaginal Wall POP due to changes in Pubocervical Fascia



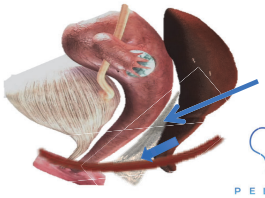
Uterine / apical POP due to changes in Uterosacral and Cardinal Ligaments



However….
Any apical descent will cause a **secondary vaginal wall descent**



Posterior Vaginal Wall POP due to changes in the Rectovaginal Fascia and / or perineal body



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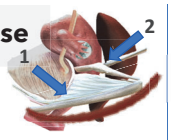
#6. Secondary Vaginal Wall Descent

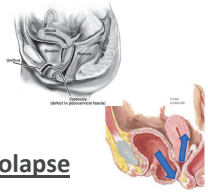
Anterior Vaginal Wall Prolapse



1. Primary Anterior Wall Defect

Defect in pubocervical fascia

Descent of anterior wall will still occur on Valsalva even when apex (cervix) is supported



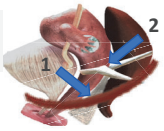
2. Secondary Anterior Wall Prolapse

Anterior wall is simply 'collapsing down' due to loss of apical support

When cervix is held in place, descent of anterior wall will not occur during bearing down

PFMT can help with both

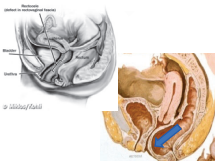
Posterior Vaginal Wall Prolapse



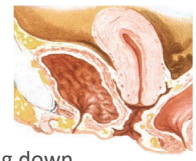
1. Primary Posterior Wall Defect

Defect in rectovaginal fascia +/- perineal body

Descent of posterior wall will still occur on Valsalva even when apex (cervix) is supported



2. Secondary Posterior Wall Prolapse



Posterior wall is simply 'collapsing down' due to loss of apical support.

When cervix is held in place, descent of posterior wall will not occur during bearing down

PFMT only helps with secondary

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One last comparison…

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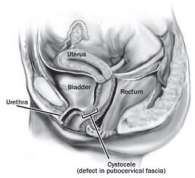
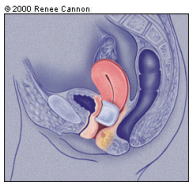
#7. Pessary Management

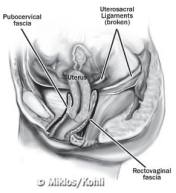
The main role of pessaries is to counteract the loss of fascial support

Pubocervical Fascial Defect
→ ANTERIOR VAGINAL WALL PROLAPSE





Uterosacral Ligament Defect
→ UTERINE PROLAPSE



As a general rule, pessaries are extremely effective for both
ANTERIOR VAGINAL WALL and **UTERINE PROLAPSE**

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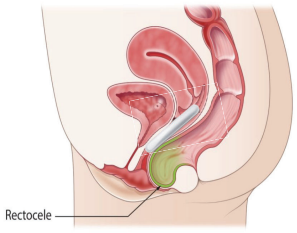
#7. Pessary Management

Unfortunately, in isolated (primary) posterior vaginal wall prolapse
→ the direction of descent cannot be supported by a ring pessary



MANZINI et al 2022[18]
isolated POSTERIOR VAGINAL WALL prolapse
associated with unsuccessful ring pessary
OR = 1.59
95%CI 1.08 – 2.35

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Takeaways to Change Your Practice

Take-away #1	Take-away #2	Take-away 3
It is easy to fall into the trap of thinking ANTERIOR VAGINAL WALL PROLAPSE and POSTERIOR VAGINAL WALL PROLAPSE are 'very similar' and therefore will have similar response to various treatments	**LH Size and Levator Ani avulsion strongly influence** ANTERIOR VAGINAL SUPPORT & THE SUCCESS OF NATIVE TISSUE ANTERIOR VAGINAL WALL REPAIR but do not seem to influence POSTERIOR VAGINAL WALL SUPPORT OR SUCCESS OF NATIVE TISSUE POSTERIOR VAGINAL WALL REPAIR	**In contrast….** Conservative managements such as PFMT and PESSARIES tend to be more successful for anterior vaginal wall prolapse Conservative management of posterior vaginal wall prolapse is likely limited to symptom management

References

1. Bump RC, Mattiasson A, Bø K, Brubaker LP, DeLancey JO, Klarskov P, Shull BL, Smith AR. The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction. *American journal of obstetrics and gynecology*. 1996 Jul 1;175(1):10-7.
2. Swift S, Woodman P, O'Boyle A, Kahn M, Vallley M, Bland D et al Pelvic Organ Support Study (POSST): the distribution, clinical definition, and epidemiologic condition of Pelvic Organ support defects. Am J Obstet Gynecol. Vol 192 (3): 795 – 806.
3. O'Boyle A, Woodman P, O' Boyle J, Davis G and Swift S 2002, Pelvic organ support in nulliparous pregnant and non-pregnant women: a case control study, Am J Obstetrics and Gynecology, vol 187 (1), 99-102.
4. Larsen & Yavorek 2006, Pelvic organ prolapse and urinary incontinence in nulliparous women at the United States Military Academy, Int Urogyn J Pelvic Floor Dysfunction, vol 17 (3), 208-210
5. Dietz HP, Mann KP. What is clinically relevant prolapse? An attempt at defining cutoffs for the clinical assessment of pelvic organ descent. Int Urogynecol J. 2014 Apr;25(4):451-5. doi: 10.1007/s00192-013-2307-4.
6. Wiegersma M, Panman CM, Kollen BJ, Berger MY, Lisman-van Leeuwen Y, Dekker JH. Is the hymen a suitable cut-off point for clinically relevant pelvic organ prolapse? Maturitas. 2017 May;99:86-91. doi: 10.1016/j.maturitas.2017.02.012.
7. Marino G, Frigerio M, Barba M, Melocchi T, De Vicari D, Braga A, Serati M, Leone Roberti Maggiore U, Ruffolo AF, Salvatore S, Uccella S, Dominoni M, Torella M. Native Tissue Posterior Compartment Repair for Isolated Posterior Vaginal Prolapse: Anatomical and Functional Outcomes. Medicina (Kaunas). 2022 Aug 25;58(9):1152. doi: 10.3390/medicina58091152.
8. Gillor M, Langer S, Dietz HP. Long-term subjective, clinical and sonographic outcomes after native-tissue and mesh-augmented posterior colporrhaphy. Int Urogynecol J. 2019 Sep;30(9):1581-1585. doi: 10.1007/s00192-019-03921-0.

References

9. Rudnick et al 2015, A 3 yr follow up after anterior Colporrhaphy compared with collagen-coated transvaginal mesh for anterior vaginal wall prolapse: a randomised controlled trial, BJOG, vol 123 (1), pp. 136 - 142

10. Dias MM, de A Castro R, Bortolini MA, Delroy CA, Martins PC, Girão MJ, Sartori MG. Two-years results of native tissue versus vaginal mesh repair in the treatment of anterior prolapse according to different success criteria: A randomized controlled trial. Neurourol Urodyn. 2016 Apr;35(4):509-14. doi: 10.1002/nau.22740.

11. Dietz HP, Shek C, De Leon J, Steensma AB. Ballooning of the levator hiatus. Ultrasound Obstet Gynecol. 2008 Jun;31(6):676-80. doi: 10.1002/uog.5355.

12. Atan IK, Lin S, Dietz HP, Herbison P, Wilson PD, ProLong Study Group. It is the first birth that does the damage: a cross-sectional study 20 years after delivery. International urogynecology journal. 2018 Nov 1;29(11):1637-43.

13. Diez-Itza I, Avila M, Uranga S, Belar M, Lekuona A, Martin A. Factors involved in prolapse recurrence one year after anterior vaginal repair. International Urogynecology Journal. 2020 Oct;31(10):2027-34..

14. Dietz, H. P., Chantarasorn, V., & Shek, K. L. (2010). Levator avulsion is a risk factor for cystocele recurrence. Ultrasound in obstetrics & gynecology, 36(1), 76-80.

15. Khunda A, Shek KL, Dietz HP. Can ballooning of the levator hiatus be determined clinically? Am J Obstet Gynecol. 2012 Mar;206(3):246.e1-4. doi: 10.1016/j.ajog.2011.10.876.

16. Gerges B, Kamisan Atan I, Shek KL, Dietz HP. How to determine "ballooning" of the levator hiatus on clinical examination: a retrospective observational study. Int Urogynecol J. 2013 Nov;24(11):1933-7. doi: 10.1007/s00192-013-2119-6.

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References

17. Wang T, Wen Z, Li M. The effect of pelvic floor muscle training for women with pelvic organ prolapse: a meta-analysis. Int Urogynecol J. 2022 Jul;33(7):1789-1801. doi: 10.1007/s00192-022-05139-z.

17. Manzini C, Morsinkhof LM, van der Vaart CH, Withagen MIJ, Grob ATM. Parameters associated with unsuccessful pessary fitting for pelvic organ prolapse up to three months follow-up: a systematic review and meta-analysis. Int Urogynecol J. 2022 Jul;33(7):1719-1763. doi: 10.1007/s00192-021-05015-2.

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Pelvic Organ Prolapse Surgery & Mesh: Where We've Been, Where We Are Now

Shweta Desai, MD

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Shweta Desai, MD

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About Me

- Urogynecologist and Reconstructive Pelvic Surgeon
- Northside Center for Urogynecology
- Atlanta, GA

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  - Obstetrics and Gynecology
  - Urogynecoloy and Reconstructive Pelvic Surgery

Disclosures

- I have no disclosures

Pre/Post-Test Questions

Please answer before we begin — same questions revisited at the end

Question 1 — True or False

"The FDA has banned ALL forms of surgical mesh, including mesh used in sacrocolpopexy and midurethral slings for stress urinary incontinence."

✓ Correct Answer: FALSE

Question 2 — True or False

"Voiding dysfunction after a midurethral sling surgery is always a sign of sling failure and requires immediate surgical revision."

✓ Correct Answer: FALSE

Learning Objectives

- Describe the landscape of surgical mesh use in POP surgery — including the FDA 2019 order on transvaginal mesh, the continued safety profile of sacrocolpopexy mesh, and midurethral slings for stress urinary incontinence.
- Identify common postoperative side effects after POP and anti-incontinence surgery (voiding dysfunction, pelvic pain, dyspareunia, nerve irritation), understand their typical clinical course, and recognize red flags warranting surgical referral.
- Apply clinical criteria to assess postoperative healing on pelvic examination, distinguish expected findings from concerning signs, and communicate effectively with the surgical team in a collaborative care model.

SECTION 1
Pelvic Organ Prolapse: Overview & Staging

Pelvic Organ Prolapse: Epidemiology & Clinical Impact

~50%	1 in 8	30%	$1B+
of parous women have some degree of POP on exam	women will require surgery for POP or SUI in their lifetime	reoperation rate without mesh augmentation at 10 years	annual economic burden of POP in the United States

Key Risk Factors

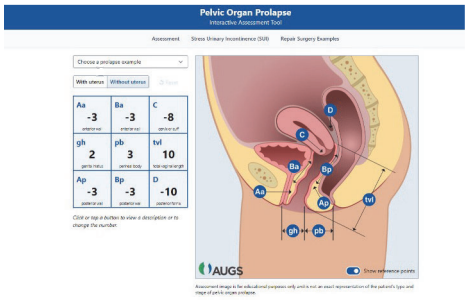
- Vaginal delivery (especially operative)
- Increasing age & menopause
- Obesity & chronic increased intra-abdominal pressure
- Connective tissue disorders (e.g., Ehlers-Danlos)
- Prior pelvic surgery
- Chronic constipation / straining

Prolapse Compartments

- Anterior: Cystocele (bladder)
- Posterior: Rectocele (rectum) / Enterocele (small bowel)
- Apical: Uterine prolapse or Vaginal vault prolapse (post-hysterectomy)
- Combined defects are most common clinically

POP-Q Staging System — The Universal Language

Pelvic Organ Prolapse Quantification | ICS Standardized System

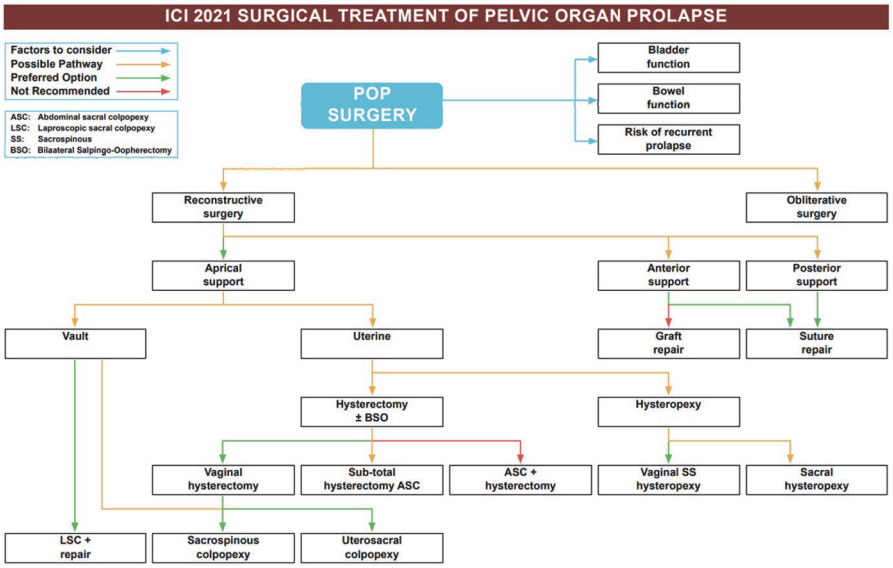


Stage	Definition	Clinical Relevance for PT
0	No prolapse; all points at normal positions	Normal exam — baseline
I	Most distal portion > 1cm above hymen	Often asymptomatic; PT-appropriate
II	Most distal portion within 1cm of hymen (± 1cm)	Symptomatic; PT often first-line
III	Most distal portion > 1cm beyond hymen	Significant; surgical candidacy
IV	Complete eversion; total procidentia	Surgical referral strongly indicated

Treatment

- Expectant Management
- Physical Therapy
- Pessary
- Surgery
  - If considering surgery:
  - Counsel on risk of de novo SUI
  - Urodynamics?

SECTION 2
Surgical Treatment of POP: An Overview



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Surgical Approaches to POP Repair

Native Tissue vs. Mesh-Augmented Repair — Understanding the Landscape

Native Tissue Repair

Anterior Colporrhaphy

Plication of pubocervical fascia for cystocele repair

Posterior Colporrhaphy

Rectocele repair via fascial plication

Apical Suspension

Uterosacral ligament suspension (ULS) or Sacrospinous ligament fixation (SSLF)

Obliterative Procedures

Colpocleisis — highly effective; not appropriate for sexually active patients

Mesh-Augmented Repair

Sacrocolpopexy (Abdominal/Robotic)

Gold standard for apical prolapse; Type I polypropylene mesh from vaginal apex to sacrum

Sacrohysteropexy

Uterus-sparing sacrocolpopexy with mesh; fertility-preserving option

Midurethral Slings (MUS)

Retropubic (TVT) or transobturator (TOT) for SUI — extensive safety data

Transvaginal Mesh ⚠

FDA BANNED for POP repair in 2019 — NOT banned for sacrocolpopexy or slings

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SECTION 3
Mesh in Pelvic Floor Surgery

Urogynecology & Reconstuctive Pelvic Surgery

FDA 2019 Order: Transvaginal Mesh for POP — The Full Story

Understanding What Was Banned and What Was NOT

- FDA Public Health Notification — Serious complications with surgical mesh
- FDA Safety Update — Complications 'not rare'; mesh procedures under scrutiny
- Transvaginal mesh reclassified as HIGH RISK (Class III) device
- FDA orders manufacturers to STOP selling mesh for transvaginal POP repair
- Sacrocolpopexy mesh & midurethral slings remain available and indicated

KEY POINT: The FDA ban applies ONLY to transvaginal mesh kits for POP. It does NOT apply to sacrocolpopexy, sacrohysteropexy, or midurethral slings.

Mesh Classification: Amid System

Understanding the Mesh Used in Pelvic Floor Surgery

Type I — Macroporous (PREFERRED)

Pore size >75 µm | Monofilament
Tissue ingrowth + macrophage access
Low infection risk — permanent structural support

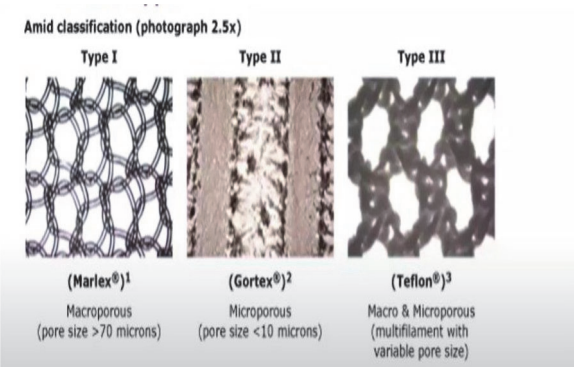
Used in: Sacrocolpopexy • Midurethral slings

Type II — Microporous

Pore size <10 µm
Higher infection risk
Rarely used today

Type III — Mixed

Macro + microporous
Multifilament component
Variable pore size



Mesh Weight: Why It Matters

Weight Classification & Clinical Implications (Askew et al., 2024)

>140 gm/m2	70–140 gm/m2	20–70 gm/m2	<20 g/m2
Heavy Weight	**Standard Weight**	**Light Weight**	**Ultra Light**
Rarely used today	Historical standard	Upsylon 25 g/m² Vertessa 20.9 g/m²	Restorelle 19 g/m² 2× failure risk ⚠

Key Clinical Takeaway (Askew et al., 2024)

Retrospective cohort comparing Light vs. Ultra Light mesh
All cases: Y-mesh configuration | Robotic sacrocolpopexy

Ultra light weight → 2× hazard of failure at 3 years
Mesh exposure: Ultra light 1.6% vs. Light weight 6.0%

Does Mesh Weight Affect Time to Failure After Sacrocolpopexy?

Askew et al. (2024) — Female Pelvic Medicine & Reconstructive Surgery

Study Design

Askew AL, Visco AG, Weidner AC, Truong T, Siddiqui NY, Bradley MS

Design: Retrospective cohort study
Comparison: Light Weight vs. Ultra Light Weight mesh
All cases: Y-mesh configuration
Procedure: Robotic-assisted laparoscopic sacrocolpopexy

Outcome: Time to surgical failure

Key Finding

Time to failure earlier in ultra light weight mesh

2× hazard of failure at 3 years

Mesh Exposure Rates

Ultra light weight mesh: 1.6%
Light weight mesh: 6.0%

Higher exposure with heavier mesh,
but heavier mesh had better durability

Sacrocolpopexy: The Gold Standard for Apical Prolapse

Abdominal, Laparoscopic, or Robotic-Assisted • Type I Polypropylene Mesh

How It Works

Vaginal apex mobilized

Dissection of anterior and posterior vaginal planes

Y-shaped mesh placed

Type I macroporous polypropylene attached to anterior and posterior vaginal walls

Mesh sutured to sacrum

Fixed to anterior longitudinal ligament at S1 level (presacral space)

Peritoneum closed over mesh

Retroperitonealization reduces mesh exposure risk

Evidence & Outcomes

- CARE Trial: 78% anatomic success at 5 years
- OPTIMAL Trial: Sacrocolpopexy superior to SSLF for apical support
- Mesh exposure rate: ~3-5% (lower with retroperitonealization)
- Dyspareunia rates comparable to native tissue repair
- Recurrence lower than native tissue repair (NNT ~5)

Mesh Classification (Type I = Preferred)

- Type I: Macroporous (>75µm) — allows tissue ingrowth, macrophage access
- Polypropylene (PP): Most studied; non-absorbable; permanent
- Biologic grafts: Porcine/bovine dermis — higher failure rates, less used
- Absorbable mesh: Not used for permanent POP repair

Sacrocolpopexy: Surgical Anatomy

CCF Medical Illustration — Y-Mesh Placement in Robotic Sacrocolpopexy

Key Surgical Steps

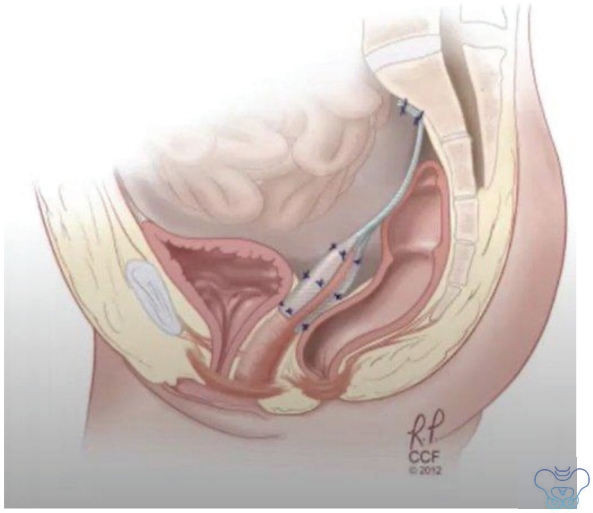
1 Vaginal apex mobilized
Dissection of anterior and posterior vaginal planes

2 Y-shaped Type I mesh placed
Attached to anterior and posterior vaginal walls

3 Mesh sutured to S1 ligament
Fixed to anterior longitudinal ligament at S1 level

4 Peritoneum closed over mesh
Retroperitonealization reduces exposure risk

78% anatomic success at 5 years (Sung et al., 2023)



Video Link

https://www.youtube.com/watch?v=5Eb-a9jrPrc

Midurethral Slings: Stress Urinary Incontinence

TVT • TOT • Single-Incision — The Most Studied Surgical Procedure for SUI

Retropubic TVT

Tension-Free Vaginal Tape

Mesh tape passes retropubically from mid-urethra through suprapubic space

✓ Advantages

- Best long-term data (>20 yrs)
- Superior for intrinsic sphincter deficiency
- 91% cure rate at 5 years

⚠ Considerations

- Bladder injury risk ~3-5%
- Voiding dysfunction ~5-15%
- Higher risk of de novo urgency

Transobturator TOT

Trans-Obturator Tape

Mesh tape passes through obturator foramen — more lateral trajectory

✓ Advantages

- Lower bladder injury risk (<1%)
- Similar short-term cure rates
- Faster recovery

⚠ Considerations

- Less effective for ISD
- Groin/thigh pain risk 5-15%
- Slightly lower long-term data

Single-Incision (Mini)

e.g., Solyx, Altis

Anchors within obturator membrane through single vaginal incision

✓ Advantages

- Least invasive
- Reduced groin/thigh pain
- Outpatient under local anesthesia

⚠ Considerations

- Less robust long-term data
- Learning curve
- May be less effective for severe SUI

ICS/IUGA Position Statement (2019): Midurethral slings remain the most extensively researched and recommended surgical treatment for SUI.

Video Link

Core Videos (2017): Placement of a Retropubic Synthetic Mid Urethral Sling Step by Step Instructions

SECTION 4
Postoperative Adverse Events & PT's Role

Common Postoperative Adverse Effects

What Your Patients May Report — And What You Should Know

Voiding Dysfunction
0–6 weeks most common

Urinary retention, weak stream, hesitancy, incomplete emptying. Most common post-sling (5–20%). Managed with timed voiding, catheterization, sling release if persistent.

Refer if: retention requiring prolonged catheter >6 weeks, UTI, worsening urge symptoms

Pelvic Pain / Dyspareunia
Weeks to months

Groin/thigh pain post-TOT (5–15%), pelvic pressure, deep dyspareunia. May reflect mesh contracture, nerve irritation, myofascial guarding, or scar tissue formation.

Refer if: severe/worsening pain at 3 months, mesh palpable or visible, new neurological symptoms

Nerve Irritation / Injury
Immediate to months

Obturator or ilioinguinal nerve (TOT), genitofemoral or lateral femoral cutaneous (sacrocolpopexy). Burning, tingling, hypersensitivity in distribution. Most resolve 3–6 months.

Refer if: progressive neurologic deficit, unilateral leg weakness, persistent symptoms >6 months

Mesh Complications
Weeks to years

Mesh exposure/erosion (~3–5% sacrocolpopexy; higher with transvaginal), mesh contraction, partner dyspareunia. May present as vaginal discharge, bleeding, pain, palpable mesh.

⚠ *ALWAYS refer: visible/palpable mesh, partner complaints, discharge, bleeding — DO NOT perform internal work over exposed mesh*

Postoperative Progression: What Is Normal vs. Concerning?

Timeline for PT Clinicians — Course of Treatment & Referral Decision Points

0–2 Weeks Acute → **2–6 Weeks Early Recovery** → **6–12 Weeks Intermediate** → **3–6 Months Late Recovery**

Phase	Expected / Normal	⚠ Concerning — Consider Referral
0–2 Weeks	Pelvic pressure, light spotting, urinary urgency, post-catheter discomfort, fatigue	Heavy bleeding, fever >38°C, acute urinary retention, severe unilateral leg pain, wound dehiscence
2–6 Weeks	Mild dyspareunia with early return to activity, occasional spotting, mild groin discomfort (TOT), voiding improvement	Persistent urinary retention, worsening pain, foul discharge, palpable vaginal mesh or granulation tissue
6–12 Weeks	Resolving dyspareunia, near-normal voiding, some residual pelvic floor hypertonicity or scar sensitivity	Nerve pain not improving, new prolapse symptoms, mesh palpable on exam, partner pain with intercourse
>3 Months	Return to full activity, minimal pelvic discomfort, healed exam, PT gains being maintained	Any worsening of symptoms, new SUI, recurrent prolapse sensation, persistent dyspareunia or pelvic pain

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Urogynecology & Reconstructive Pelvic Surgery | Pelvic Floor PT Educational Series

Mesh Exposure: Clinical Appearance

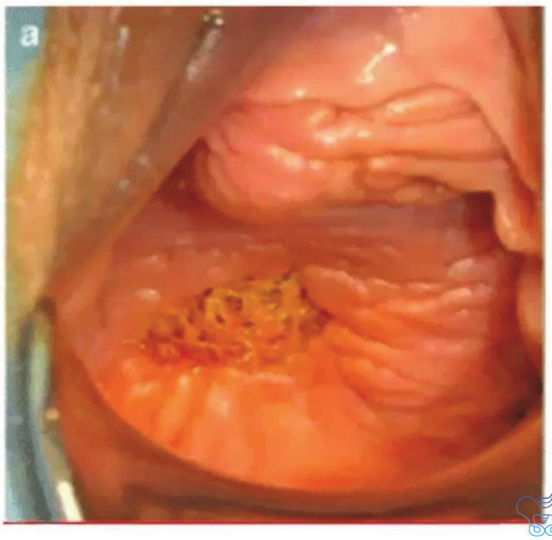
— What to Recognize and How to Respond

Clinical Presentation

Visible mesh in vaginal canal
Vaginal discharge (often malodorous)
Contact bleeding or spotting
Dyspareunia (patient and/or partner)
Palpable mesh on internal exam

PT Response — ALWAYS Refer

DO NOT perform internal work over exposed mesh
Document: location, appearance, patient symptoms
Contact surgeon before next PT session
Mesh exposure rates: ~3–5% sacrocolpopexy
(Sung et al., 2023)



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Reducing Mesh Exposure: Surgical Tips

Evidence-Based Strategies for the Operative Team

Evidence-Based Strategies

Supracervical hysterectomy
Lower exposure risk vs. total hysterectomy — preserves vaginal cuff integrity

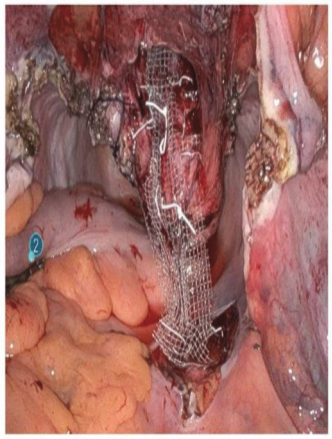
Avoid mesh over colpotomy incision
Spatial separation reduces direct mesh-wound contact

Use lightest effective mesh weight
2 separate sheets vs. Y-mesh may reduce exposure

Treat vaginal atrophy pre-operatively
Topical estrogen improves tissue integrity

Retroperitonealize the mesh
Closure over mesh significantly reduces exposure risk

(Sung et al., 2023)



Osteomyelitis: Rare but Critical

Sacral Osteomyelitis — A Post-Sacrocolpopexy Complication PTs Must Know

Clinical Presentation

Back pain — most common initial symptom (86% of cases)
Fever 35–60% | Neurologic impairment 33%
Spine tenderness <20% (often absent)
Onset: weeks to months post-sacrocolpopexy

PT Action

New or worsening back pain after sacrocolpopexy
→ Refer to surgeon immediately
MRI is the diagnostic study of choice
Do not attribute back pain to PT-related causes alone

SECTION 5
Postoperative Healing: What to Look For

Postoperative Healing: What Does 'Healed' Look Like?

For Clinicians Seeing Post-Surgical Patients on Internal Exam

✓ Signs of Normal Healing

Vaginal cuff (post-hysterectomy):

Well-approximated, pink epithelialized tissue. By 8–12 weeks should have minimal granulation.

Suture material:

Absorbable sutures (Vicryl) typically dissolve by 4–6 weeks. Small suture tags are expected.

Tender on palpation:

Mild cuff or anterior wall tenderness is expected up to 8–12 weeks. Scar remodeling ongoing.

Mild induration:

Scar tissue formation at repair sites is normal. Mobility typically improves over months.

No mesh visible/palpable:

Well-incorporated mesh should NOT be palpable through healed vaginal epithelium.

⚠ Refer Back to Surgeon

Visible mesh / granulation tissue:

Any blue/white mesh visible in vaginal canal. Persistent bright-red granulation at cuff beyond 12 weeks.

Purulent or malodorous discharge:

May indicate infection, mesh erosion, or abscess. Cultures alone are insufficient — surgeon evaluation needed.

Tender hard nodule:

Especially along anterior wall or cuff — may represent mesh erosion, foreign body, or recurrence.

Separation or opening of cuff:

Vaginal cuff dehiscence is a surgical emergency — rare but serious. Immediate referral.

Patient reports pain with your exam >3 months post-op:

Disproportionate or worsening tenderness warrants surgeon re-evaluation before continuing PT.

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Infection & Healing: Postoperative Considerations for the PT

Understanding the Surgical Perspective on Exam Findings

Infection: Types, Presentation & Management

Superficial SSI	Wound erythema, warmth, discharge — typically within 30 days. Oral antibiotics; PT can continue with communication.
Deep SSI / Abscess	Pelvic pain, fever, systemic symptoms. Requires imaging + IV antibiotics ± drainage. Pause PT.
Mesh Infection	Late presentation possible (months–years). Often polymicrobial biofilm. May require mesh excision. Pause PT — refer urgently.
Vaginal Cuff Cellulitis	Most common post-hysterectomy infection; presents days–weeks post-op. Usually responds to antibiotics.

Communication Framework: PT → Surgeon

"Is everything healed?"	Best framed as: 'Is this patient cleared for internal pelvic floor work?' Ask surgeon at each milestone: 6 wk, 3 mo, 6 mo.
Finding: Tenderness on exam	Document location, severity, change from prior visit. If new/worsening beyond 12 weeks — notify surgeon before continuing.
Finding: Palpable firm cord / suture	Likely suture or scar. Report at next visit. If patient reports significant discomfort — direct communication before continuing.
Finding: Anything unexpected	When in doubt — reach out. A 2-minute phone call protects the patient and the collaboration.

The Collaborative Care Model: Surgeon + Pelvic Floor PT

You Are Part of the Treatment Team

Urogynecologic Surgeon

Pelvic Floor Physical Therapist

PATIENT Centered Care

Primary Care / Gynecologist

Colorectal / Urology

Mental Health & Sexual Health

PT's unique role: Postoperative rehabilitation • Scar & fascial mobilization (when cleared) • Voiding/bowel retraining • Dyspareunia management • Patient education & emotional support • Return-to-activity progression

SECTION 6
Case Vignette: Putting It All Together

Case Vignette: The Post-Op Patient Who Isn't Quite Right

Meet the Patient

62-year-old woman | G3P3 | Post-menopausal | BMI 28 | **Robotic sacrocolpopexy + retropubic TVT sling** | **10 weeks ago**

Pre-op diagnosis: Stage III apical prolapse + stress urinary incontinence. Uncomplicated robotic surgery; discharged POD1.

Chief Complaint #1

Groin & Inner Thigh Pain

Left-sided burning pain radiating to inner thigh, onset 2 days post-op. Rated 4/10 at rest, 7/10 with hip adduction. No skin changes. Some improvement since surgery but still present at 10 weeks.

Chief Complaint #2

Voiding Difficulty

Weak urinary stream, intermittent hesitancy. Self-catheterizing BID with residuals of 80–120mL. Was retaining 300mL immediately post-op. No UTI symptoms currently.

Chief Complaint #3

Pelvic Pressure & Pain on Exam

Reports return of 'bulge sensation' with prolonged standing at work. On your internal exam today: significant anterior wall tenderness, mild induration at the vaginal cuff, and patient reports 6/10 pain with light palpation of the cuff.

Discussion: Which complaints concern you most? What do you do first? When do you call the surgeon?

Case Analysis: What's the Right Call?

Applying the Framework — Surgeon's Perspective on Each Finding

Groin / Thigh Pain (Left)

Obturator nerve irritation — classic TOT/TVT distribution

PT Role: Nerve gliding techniques, hip adductor stretching, myofascial release to obturator region (externally). Avoid aggressive internal work targeting sling area.

↗ Refer if: worsening, new neurologic deficit, or no improvement by 4–5 months post-op.

Voiding Dysfunction (residuals 80–120mL)

Partial bladder outlet obstruction from TVT sling — improving but incomplete resolution

PT Role: Timed voiding, double-voiding technique, pelvic floor downtraining if hypertonicity present. Bladder retraining protocol.

↗ Surgeon awareness warranted — ongoing monitoring. If no improvement or worsening by 12 weeks: surgical sling release becomes discussion.

Cuff Tenderness + Bulge Sensation

⚠ ***This needs attention: Cuff tenderness at 10 weeks can be scar formation — but 6/10 pain on light palpation is disproportionate. Return of bulge sensation raises question of early recurrence.***

PT Role: DO NOT continue aggressive internal cuff work. Document findings precisely — location, severity vs. prior visit, patient's pain rating.

⚠ ⚠ **REFER NOW: Call the surgeon before the next PT session. Describe exam findings specifically. Rule out: cuff dehiscence, mesh issue, infection, early recurrence.**

The lesson: Pattern recognition + precise documentation + low threshold to call the surgeon = best patient outcomes.

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Key Takeaways

The FDA banned transvaginal mesh for POP repair in 2019 — sacrocolpopexy mesh and midurethral slings remain safe, effective, and widely used.

Sacrocolpopexy is the gold standard for apical prolapse with the lowest recurrence rates; midurethral slings have 20+ years of safety data for SUI.

Common postoperative issues — voiding dysfunction, groin pain, dyspareunia — are expected and often PT-amenable; red flags demand immediate surgical referral.

Healing milestones: Most patients are cleared for internal PT work at 6–8 weeks. Persistent or worsening tenderness/pain beyond 12 weeks warrants surgeon communication.

You are an essential part of the care team. Open surgeon–PT communication improves outcomes, reduces complications, and empowers patients.

Thank you — Questions Welcome | Collaborative care begins with communication.

References

- Antosh, D. D. (2024). Lumbosacral discitis and osteomyelitis after sacrocolpopexy. Int Urogynecol J, 35(12), 2243-2254.
- Askew, A. L., et al. (2024). Does mesh weight affect time to failure after sacrocolpopexy. Female Pelvic Med Reconstr Surg.
- Barber, M. D., & Maher, C. (2021). Pelvic organ prolapse. N Engl J Med, 384(17), 1648-1659.
- Barber, M. D., et al. (2024). Collaborative surgical and rehabilitation care model. Obstet Gynecol, 143(2), 215-226.
- Brown, H. W., et al. (2022). Epidemiology of pelvic organ prolapse. Int Urogynecol J, 33, 173-187.
- FDA. (2019). FDA takes action to protect women's health. U.S. Food and Drug Administration.
- Ferreira, C. W. S., et al. (2022). Postoperative physiotherapy in pelvic floor reconstructive surgery. Physical Therapy, 102(5).
- ICS/IUGA. (2019). Joint report on terminology for pelvic floor dysfunction. Neurourology and Urodynamics, 38(2), 433-663.
- Jelovsek, J. E., et al. (2021). ULS vs SSLF: OPTIMAL trial 5-yr outcomes. JAMA, 325(13), 1277-1287.
- Nager, C. W., et al. (2022). Long-term outcomes of midurethral slings: 7-year results. N Engl J Med, 387, 2086-2097.
- Pacaud, A., et al. (2025). Synthetic meshes in pelvic organ prolapse. Gynecology, 6(1), 2.
- Propst, K., et al. (2024). Pelvic floor PT after POP surgery: RCT. Int Urogynecol J, 35(1), 45-54.
- Sanchez-Sanchez, B., et al. (2022). PFMT in patients with POP post-surgery. J Clin Med, 11(10), 2825.
- Sung, V. W., et al. (2023). Sacrocolpopexy mesh exposure rates. Am J Obstet Gynecol, 228(4), 390-402.

Additional Resources: AUGS (augs.org) • ICS (ics.org) • ACOG Practice Bulletin #185 (Pelvic Organ Prolapse) • FDA Mesh Safety Information (fda.gov/medical-devices)

Pessaries beyond the fitting kit

Gaynor Morgan FRSA

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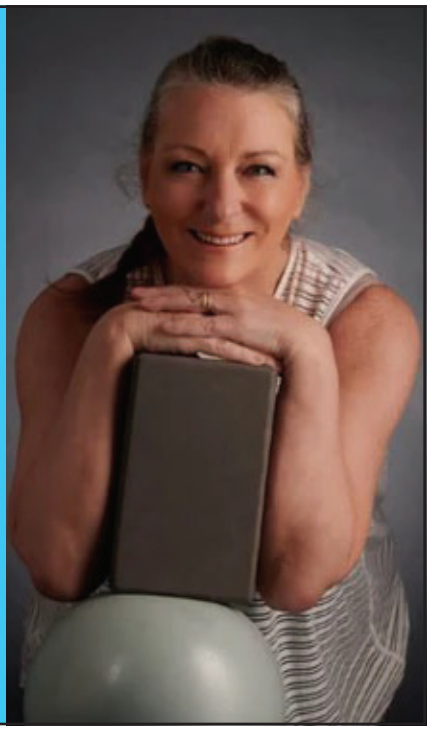

Gaynor Morgan

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About Me

- Pessary specialist, inventor, and educator with 25+ years in conservative pelvic floor management.
- Fit-pro and advanced breathwork instructor integrating pressure management, movement, and pessary optimization.
- Bridging clinical practice, the fitness industry, and lived patient experience to improve conservative pelvic health care.

Disclosures

- **Affiliate / Commission-Based Income:**
- Restore Your Core
- Oxygen Advantage
- Aria Breath
- SomaFlex*
- **Commission from SomaFlex is donated in full by Soma Therapies to Head for Change and Headway UK (2 brain injury charities). The presenter receives no personal income from this relationship.*

- **Non-Financial Interests:** None declared.

Full details available at www.pelvicangel.net/resource

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Agenda

- The Pressure Cylinder: Breath as a Management Tool
- OTC
- Support Pessaries
- Space Filling Pessaries
- Pessaries in Pregnancy
- Pessary Options
- Troubleshooting the "Three H's"
- Takeaways to Change your Practice

IUGA Clinical Practice Update on Pelvic Organ Prolapse, 2025, includes updated recommendations relevant to pessary care.

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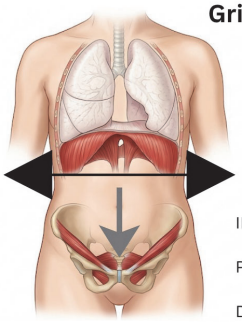
The Pressure Cylinder & The Orchestra

Measurement	Normal / Quiet Breathing	Deep / Strenuous Breathing
Diaphragmatic Excursion	3–5 cm	7–8 cm (up to 10 cm in highly conditioned)
Pelvic Floor Synergy	PFM descends slightly	PFM must lengthen & recoil

"Nonoptimal strategies for posture, movement, and/ or breathing create failed load transfer which can lead to UI [Urinary Incontinence]"

Bø, K., Driusso, P., & Jorge, C. H. (2023). *Neurourol Urodyn, 42*, 1261–1279; Dumoulin, C., et al. (2018). *Cochrane Database Syst Rev*, CD005654

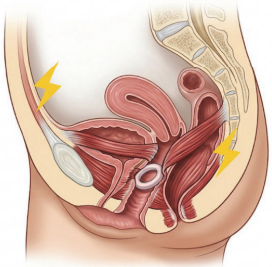
Gripping on the inhale



IPA dyscoordination

PFM over-recruitment

Dis-coordinated muscular response



AI-generated schematic for conceptual illustration. Not anatomically accurate.

KNOW YOUR PESSARIES

Evidence suggests that pessary fitting success relates more to:

- Vaginal capacity
- Introital dimensions
- Symptom profile

than POP stage alone

(Lone & Palmer, 2019)
(National Institute for Health and Care Excellence [NICE], 2024)
(UK Clinical Guideline Group, 2025)

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OTC

Primary Pathway: IUGA 2025 Update advocates for conservative management as first-line therapy

(International Urogynecological Association [IUGA], 2025)

⚠ Vaginal atrophy compromises pessary comfort

POGP-supported guidance recommends topical oestrogen first-line to optimise tissue health prior to pessary use

Prevalence and Experience of Urinary Incontinence Among Elite Female Gaelic Sports Athletes

Culleton-Quinn et al., 2024

Restifem

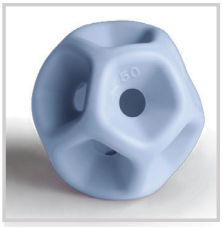
Contrelle Activgard

Efemia

Revive

Diveen

SomaFlex



Uresta

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SUPPORT PESSARIES

- Typically suited to stages I – II POP/ SUI
- Aim: Functional symptom control under load
- Dependent on levator ani tone and pubic notch support
- Generally easy to insert, remove and manage
- Commonly compatible with penetrative intercourse

Hagen et al. (2023).

Ring/support

Gehrung

Dish/knob

Shaatz

Popy

Marland/support

Hodge/support/knob

Oval

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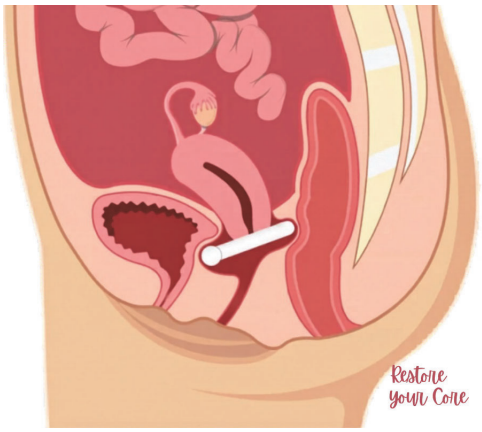
CONSIDER

- Symptoms & Load
- Vaginal capacity & 'shelf'
- Tissue health
- Voiding & bowel function

Ring with knob



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SPACE FILLING

- Typically suited to stages III -IV
- GH + PB
- Stage I prolapse when symptoms, load, or functional demands warrant space-filling support
- PFM function
- Intercourse
- Lifestyle

(Jones et al., 2008)

(Zhou et al., 2024)

Gellhorn

Shelf

T Pessary Type R

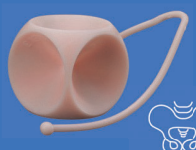
Donut

Reia

Inflatable Donut

Tandem

Cube



Pessaries in Pregnancy

Prevention of preterm birth

- Short cervix on ultrasound
- Changes Cervo-uterine angle
- May reduce cervical funnelling
- Insert : 16 – 24 weeks
- Remove: 37 weeks

(Arabin & Alfirevic, 2013)

Insertion and removal timing should always be individualised based on obstetric findings and maternal–foetal status.

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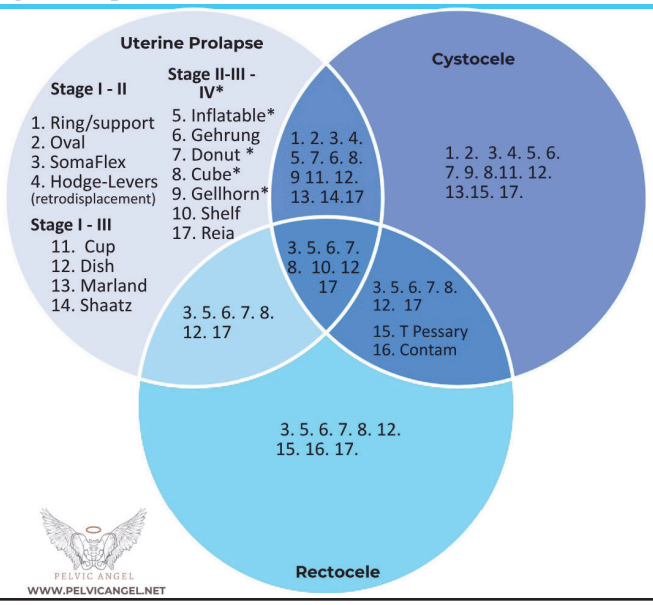
Pessary Options



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- Self Managing Pessaries
- Stacking
- Troubleshooting

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Troubleshooting 3 Hs

The 3 H's turn "it didn't work" into a plan:

Height tells you where it fails, Hole tells you what needs changing, and Habit tells you why it keeps happening.

- Height = Position fails under load
- Hole = Size or category mismatch
- Habit = Unmanaged pressure or behaviours

Takeaways to Change Your Practice

Takeaway 1	Takeaway 2	Takeaway 3
• Address pressure mechanics before choosing a device. Particularly when fitting a woman's first pessary	• Match pessary choice to lifestyle and load, not stage alone (knowledge based)	• Plan & manage pessaries proactively, using troubleshooting rather than abandonment

Third Wave CBT Tools to Help Patients Thrive with Pelvic Organ Prolapse

Kelsey Bates, LMHC, CRC

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Kelsey Bates, LMHC, CRC

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Kelsey Bates, LMHC, CRC

- Attended George Washington University
- MA Ed Rehabilitation Counseling, concentration in Clinical Mental Health Counseling
- Founded New York Women's CBT
- Niched individual and group therapy for women with chronic illness, including endometriosis, adenomyosis, chronic pelvic pain, Ehlers-Danlos Syndrome/Hypermobility Spectrum Disorder, Dysautonomia and MCAS
- Third Wave approaches: CBT, DBT, ACT

Disclosures

- No relevant disclosures.

Emotional Experience

- Fear
- Disgust
- Confusion
- Anger
- Depression
- Anxiety
- Body image issues
- Birth trauma

Medical Trauma

- Defined as “set of psychological and physiological responses to pain, injury, serious illness, medical procedures and frightening treatment experiences” (International Society for Traumatic Stress Studies, 2024).
- What does this look like with your patient?
- C-PTSD result of “repeated or chronic exposure to extremely threatening events from which escape is impossible” (Schwartz, 2021).
- Complex PTSD Framework

Increased Pain Signals

What You May See

- Pain does not match physical findings (Vij et al., 2021)
- Nervous system is in over-drive
- Pain is centralized (Harthan & Starrels, 2023)

Message to Patients

- Your pain is real.
- Pain is information.

Third Wave Tools

- Reframing alone misses the mark!
- CBT paired with mindfulness tools is an effective tool for chronic pain (Dydyk et al., 2025).
- Information about the brain and body is power.

Dialectical Behavior Therapy

- Talk to your amygdala! (Pittman, 2015)
- Window of Tolerance (Schwartz, 2021)
- Distress Tolerance tools
- Wise Mind

Message to Patients

- Down regulation comes first!
  - Yogic breathing
  - Tapping
  - Bilateral beats
  - Guided meditations
- Make a distress tolerance menu.
- Two opposing things can both be true=dialectics.

Cognitive Behavior Therapy

- CBT tools can help manage central sensitization issues (Sutton et. al, 2018).
- Cognitive distortions
- Reframing & adaptations

Message to Patients

- Your emotions matter-we don't minimize them.
- Notice when you are experiencing a cognitive distortion.
- Look for evidence that challenges stuck points.

Acceptance and Commitment Therapy

- ACT effective in treating chronic pain (Hughes et al., 2017).
- "The reality gap is the gap between what we want and what we've got." (Harris, 2018)

Message to Patients

- Radical acceptance is not giving up.
- Small steps are important committed actions.
- Committed actions=close the gap.
- Live in the bullseye.

It takes a team.

- Healing does not occur in a vacuum.
- We need both physical treatment and mental health treatment to help prolapse patients thrive.
- Who can you add to your patient's team?

Takeaways to Change Your Practice

Takeaway 1	Takeaway 2	Takeaway 3
Down regulation tools decrease pain signals.	CBT, DBT & ACT increase mental flexibility.	Multidisciplinary care supports prolapse care.

Updated thinking on POP & exercise: load and impact

Dr. Lori Forner
PhD, MPhtySt, BScH

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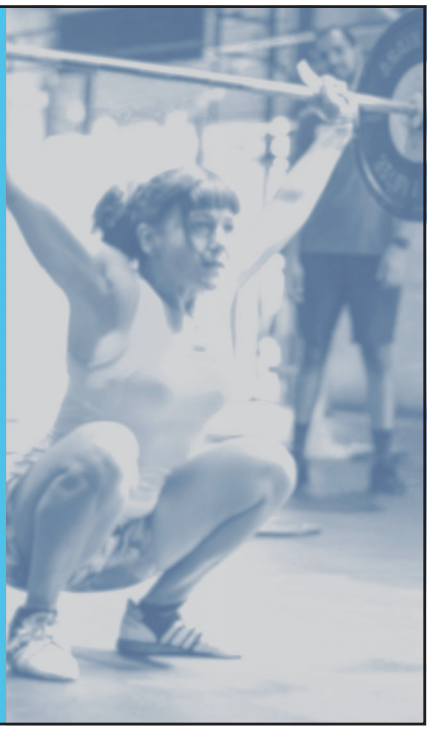

Dr. Lori Forner

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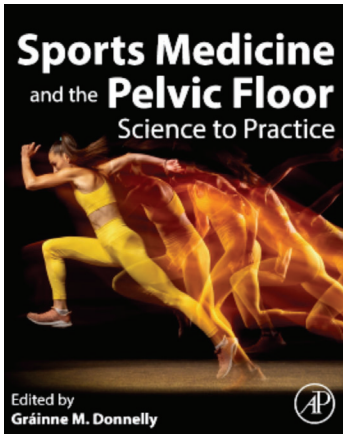
About Me

- Pelvic health physiotherapist 18 years
- Previous MSK physio, exercise physiologist
- PhD at UQ
- The Pelvic Health Podcast
- Medical O&G sonography student
- Rebel

Disclosures

- Online courses for physiotherapists
- No financial incentive from new textbook but so excited for it



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Benefits of strength training

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Impact of pop on exercise

Symptoms of POP – 37% stopped exercise

Worry, social isolation, fitness

Frustration, loss of identity, depression

Dakic JG, Cook J, Hay-Smith J, et al. Pelvic floor disorders stop women exercising: A survey of 4556 symptomatic women. J Sci Med Sport 2021;24:1411-7. https://doi.org/10.1016/j.jsams.2021.06.003.

Dakic JG, Hay-Smith J, Cook J, et al. Effect of Pelvic Floor Symptoms on Women's Participation in Exercise: A Mixed-Methods Systematic Review With Meta-analysis. J Orthop Sports Phys Ther 2021;51:345-61. https://doi.org/10.2519/jospt.2021.10200.

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Exercise and POP

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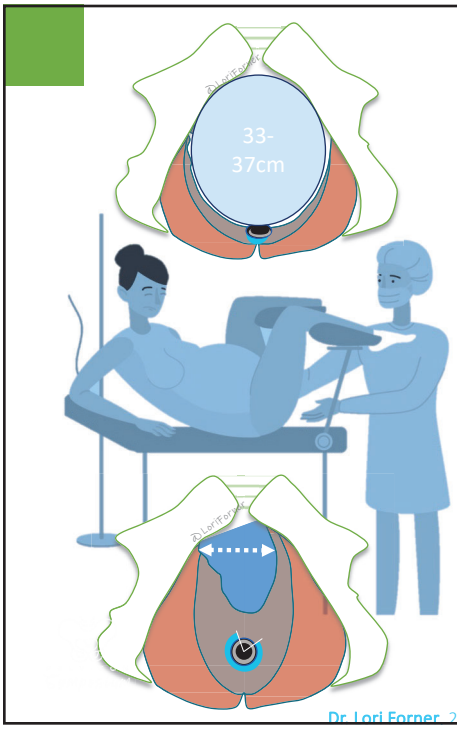

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Risk factors for pelvic floor trauma & dysfunction

Vaginal delivery	Age	First delivery	Genetics
Levator co-contraction	Length of 2nd stage	Small Pb	LHA
Forceps	Neonatal head circumference	Neonatal weight	Shoulder Distocia
OASI	Levator avulsion	Hormones	?heavy lifting

Cheng, W. *et al.* Hiatal failure: effects of pregnancy, delivery, and pelvic floor disorders on level III factors. *Int Urogynecol J* **34**, 327–343 (2023).
Shek K, Dietz H. Intrapartum risk factors for levator trauma. BJOG 2010;117:1485–1492.

https://www.aihw.gov.au/getmedia/5da3aa2f-2d03-41bc-960d-58abb87b4f0f/brief_3_per-77.pdf.aspx#:~:text=For%20a%20healthy%20full%2Dterm,33–37%20cms%20at%20birth.

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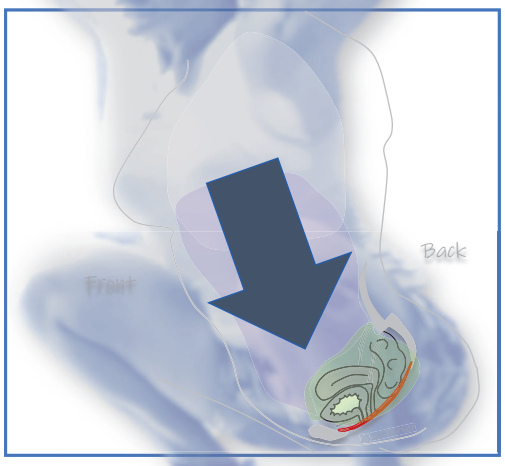
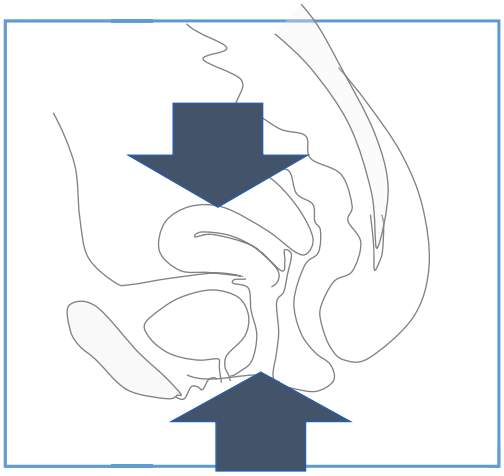
Intra-abdominal pressure
IAP





Dietze-Hermosa, Hitchcock, R., Nygaard, I. E., & Shaw, J. M. (2020). Intra-abdominal Pressure and Pelvic Floor Health: Should We Be Thinking About This Relationship Differently? *Female Pelvic Medicine & Reconstructive Surgery*, 26(7), 409–414.

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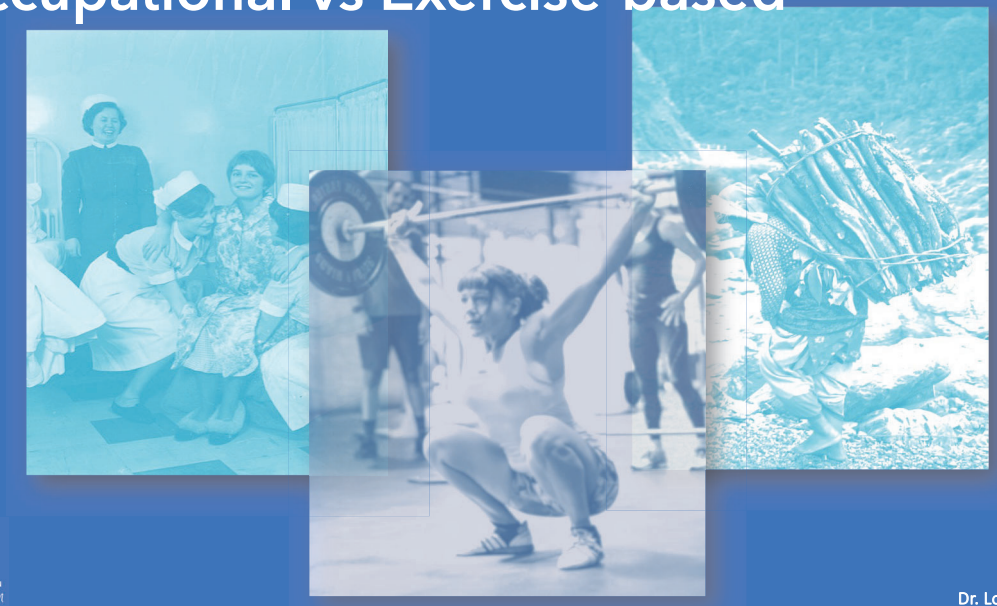
Occupational vs Exercise-based



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PROC (BAY, UNIV MED CENT)
2018;31(3):289–293
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https://doi.org/10.1080/08998280.2018.1466888

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Intraabdominal pressure in women during CrossFit exercises and the effect of age and parity

Laura Faye Gephart, MD, MBA[a], Karen M. Doersch, BS[b], Michelle Reyes, BA, MBA[c], Thomas J. Kuehl, PhD[d], and Jill M. Danford, MD[d]

[a]Department of Obstetrics and Gynecology, University of Texas, Rio Grande Valley, Rio Grande Valley, Texas; [b]Texas A&M Health Science Center College of Medicine, Temple, Texas; [c]Department of Research Administration, Scott & White Medical Center, Temple, Texas; [d]Department of Obstetrics and Gynecology, Scott & White Medical Center, Temple, Texas

n = 10, asymptomatic of POP
Null n=5, Parous n=5

Intravaginal IAP

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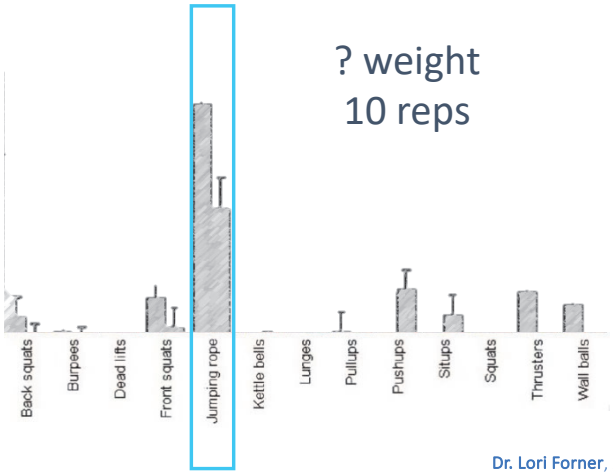
Skipping/impact greater than all lifts

Not relative IAP



? weight
10 reps

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International Urogynecology Journal
https://doi.org/10.1007/s00192-026-06540-8

ORIGINAL ARTICLE

Can Pre-Contraction of the Pelvic Floor Muscles Exceed Increases in Intra-Abdominal Pressure During Strength Exercises?

Clara Bjurulf[1] · Lingge Meng[2] · David Budgett[2] · Jennifer Kruger[2] · Kari Bø[1]

Received: 29 October 2025 / Accepted: 13 January 2026

n = 11, asymptomatic of POP
Mostly nulliparous, 18-35y

PF and IA Pressure

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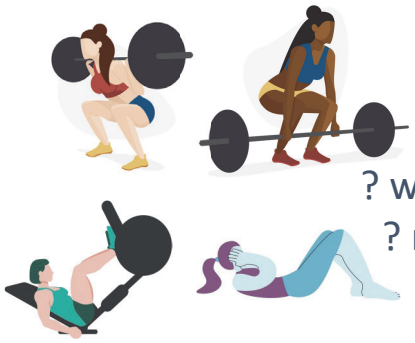
Voluntary PFM pre-contraction did not exceed the rise in IAP during any exercise



? weight
? reps

With/Without PFM pre-contraction

Dr. Lori Forner, 2026

Continence 12 (2024) 101708

Contents lists available at ScienceDirect

Continence

journal homepage: www.elsevier.com/locate/cont

Comparison of pelvic floor morphometry in supine and standing in women with and without pelvic organ prolapse: A cross-sectional exploratory study

Lori B. Forner [a], Marie-Pierre Cyr [a], Emma M. Beckman [b], Paul W. Hodges [a], Michelle D. Smith [a,*]

What happens to pelvic floor support under heavy load?

PELVICON
Symposium

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ternational Urogynecology Journal
ttps://doi.org/10.1007/s00192-019-04163-w

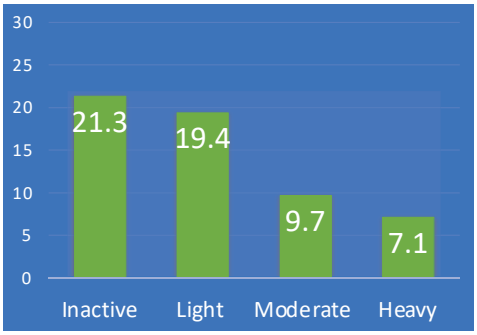
ORIGINAL ARTICLE

ymptoms of pelvic organ prolapse in women who lift heavy weights or exercise: a cross-sectional survey

ori B. Forner[1] · Emma M. Beckman[2] · Michelle D. Smith[1]

eceived: 27 August 2019 / Accepted: 20 October 2019
The International Urogynecological Association 2019

% bulge symptoms



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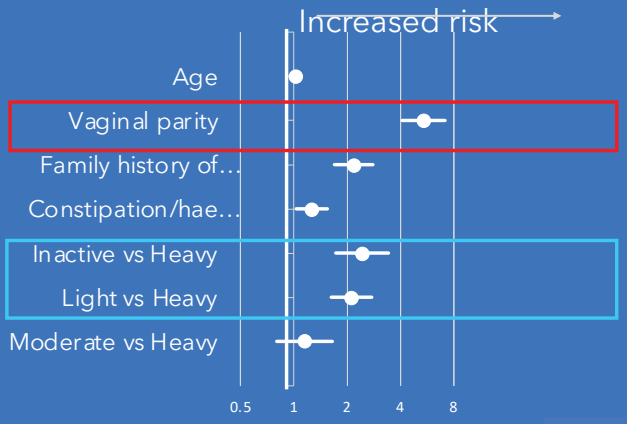
SIGNIFICANT FACTORS ASSOCIATED WITH THE PRESENCE OF A BULGE



Adjusted odds ratio (95% CI)

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International Urogynecology Journal
https://doi.org/10.1007/s00192-020-04531-x

ORIGINAL ARTICLE

Do women runners report more pelvic floor symptoms than women in CrossFit®? A cross-sectional survey

Lori B. Forner[1] · Emma M. Beckman[2] · Michelle D. Smith[1]

Received: 6 June 2020 / Accepted: 2 September 2020
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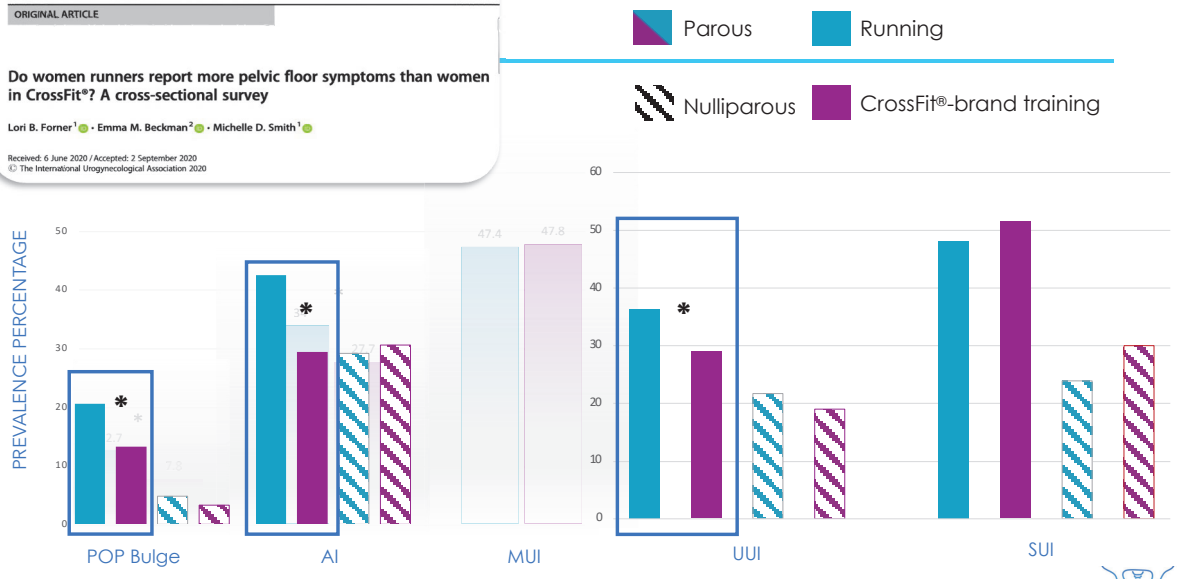

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Are heavy lifters structurally different?

Dr. Lori Forner, 2026

Original Research ajog.org

GYNECOLOGY

The impact of acute and chronic strenuous exercise on pelvic floor muscle strength and support in nulliparous healthy women

Monique L. Middlekauff, MS; Marlene J. Egger, PhD; Ingrid E. Nygaard, MD; Janet M. Shaw, PhD

n = 70, 18-35y

Nulliparous

Before/After

MVD

VRP

PFMS

No significant difference between groups

History of strenuous exercise doesn't alter resting support

Exercise decreases support regardless of strenuous/impact/load

Dr. Lori Forner, 2026

Sports Health
OnlineFirst
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https://doi.org/10.1177/19417381251388125

SageJournals

Clinical Research

Pelvic Organ Prolapse Among Female CrossFitters and Non-CrossFitters: A Cross-Sectional Study

Eliane Regina Mendoza Arbieto, MSc *, Fernanda Sayuri Fukuda, MSc, Thuane Da Roza, PhD, and Soraia Cristina Tonon da Luz, PhD

n = 36, asymptomatic

Mixed null/parous

POPQ

MVC

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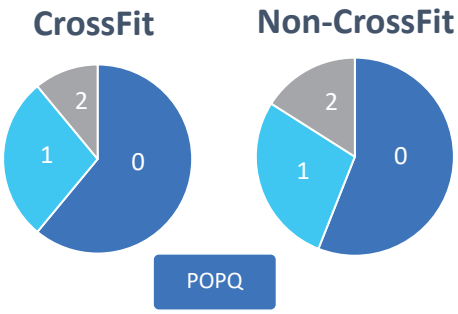
Report prevalence of POP as 38.9% CrossFit and 44.4% non-CF



No details on Stage 2 (? To hymen)

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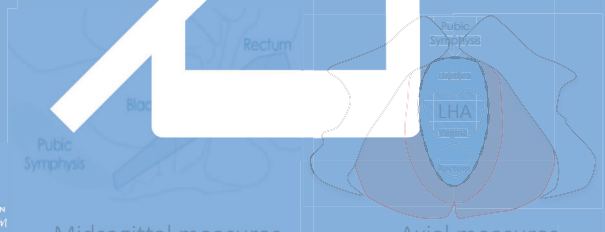
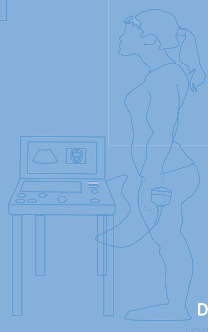
THE UNIVERSITY OF QUEENSLAND AUSTRALIA

Transperineal ultrasound measures of the female pelvic floor

Under Review





PELVICON Symposium

Midsagittal measures

Axial measures

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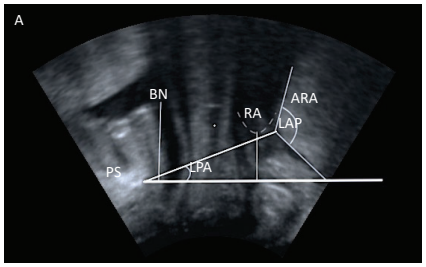
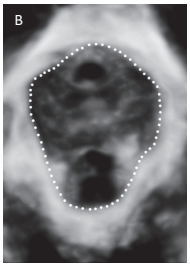
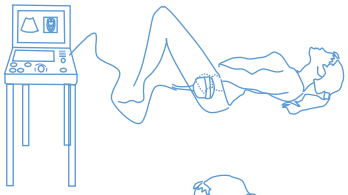
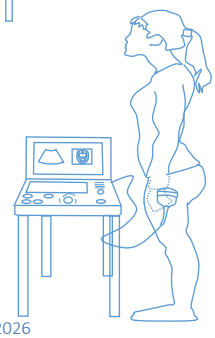
LORI FORNER 2023

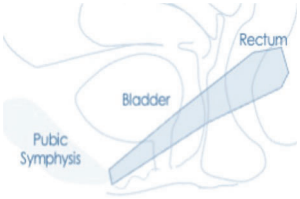
Transperineal ultrasound measures of the female pelvic floor



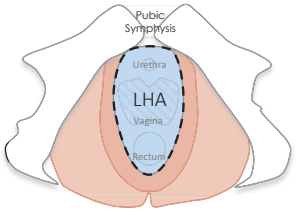








Midsagittal measures



Axial measures

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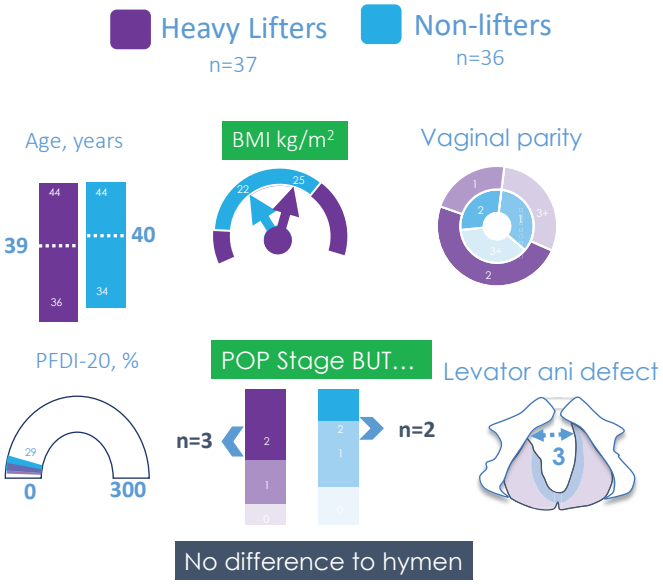
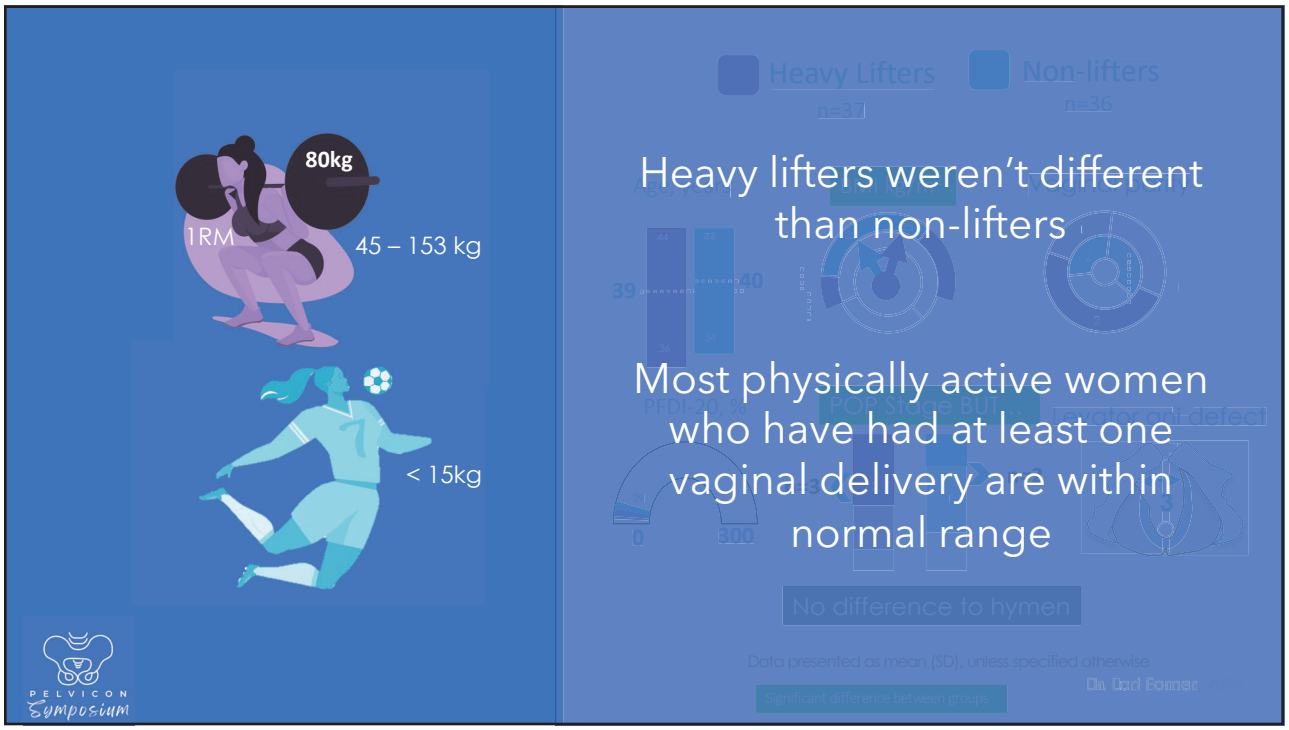


Data presented as mean (SD), unless specified otherwise

Significant difference between groups

Dr. Lori Forner, 2026


80kg
1RM
45 – 153 kg
< 15kg
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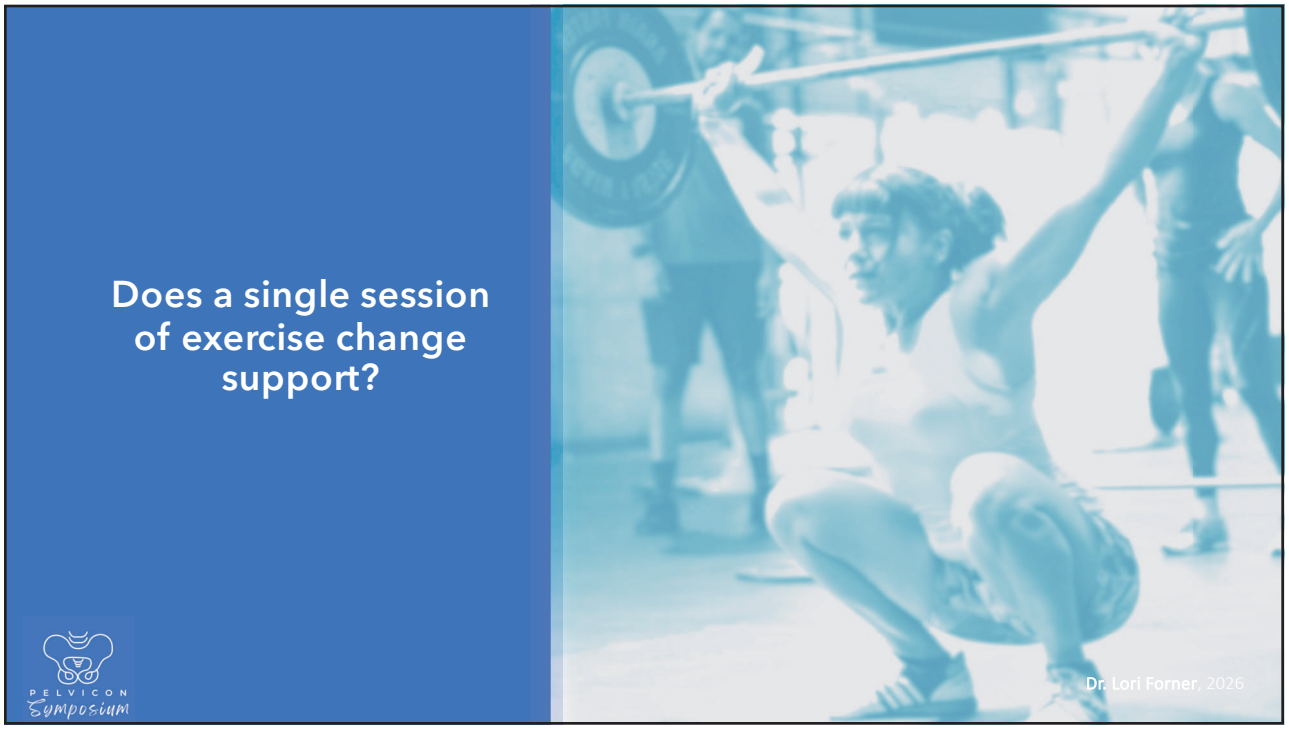
Heavy Lifters
n=37
Non-lifters
n=36
Heavy lifters weren't different than non-lifters
Most physically active women who have had at least one vaginal delivery are within normal range
No difference to hymen
Data presented as mean (SD), unless specified otherwise
Significant difference between groups
Dr. Lori Forner


Does a single session of exercise change support?
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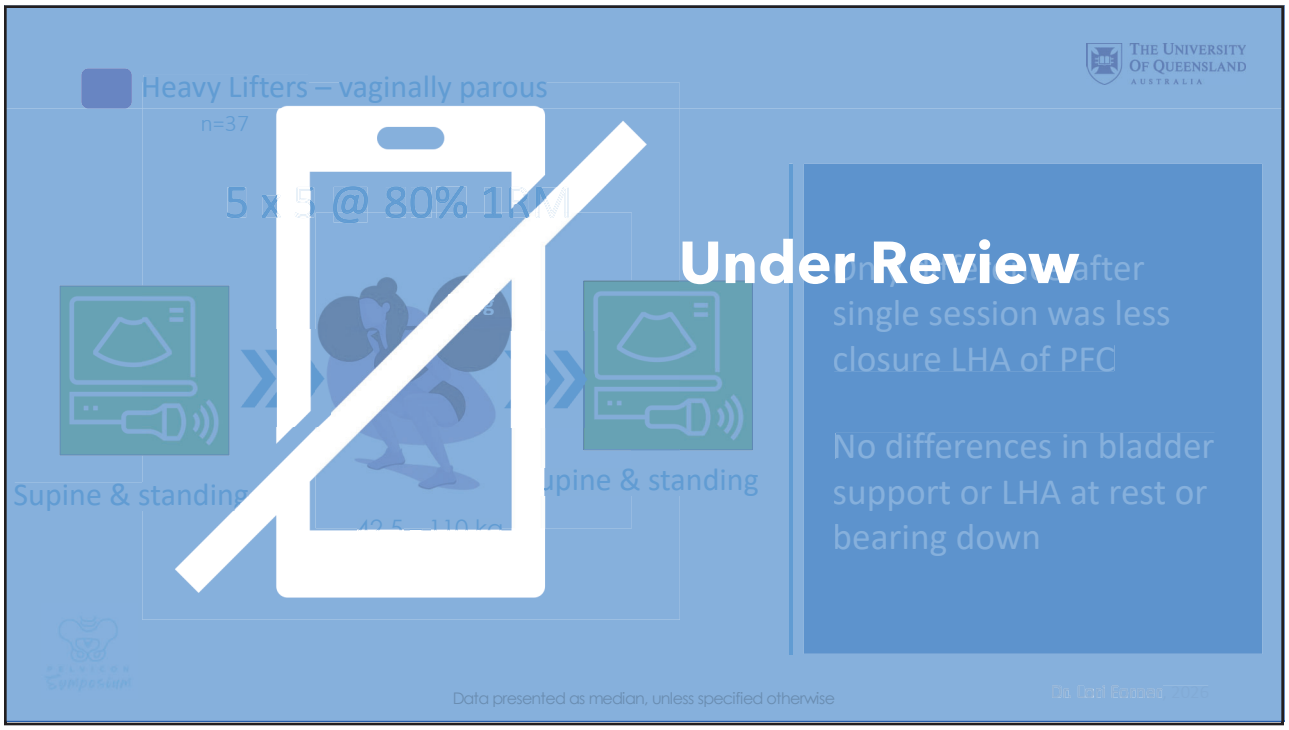


Only difference after single session was less closure LHA of PFC

No differences in bladder support or LHA at rest or bearing down

Heavy Lifters – vaginally parous
n=37

5 x 5 @ 80% 1RM

Data presented as median, unless specified otherwise

Dr. Lori Forner, 2026

BJUI Int 2025; 136: 707–718 doi:10.1111/bju.16842

BJUI International

Original Article

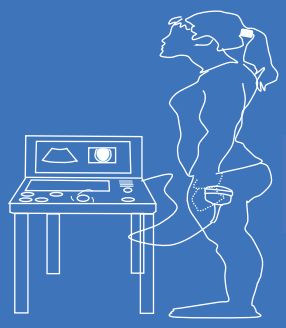
Is pelvic floor loading in female runners associated with post-run changes in pelvic floor morphometry or function?

Marie-Eve Berube[1], Stefan Niederauer[2], Ryan Graham[2], Robert Hitchcock[3] and Linda McLean[1]

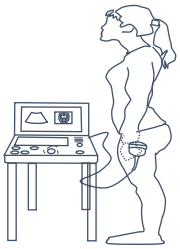
[1]School of Rehabilitation Sciences, [2]School of Human Kinetics, University of Ottawa, Ottawa, ON, Canada, and [3]Department of Bioengineering, University of Utah, Salt Lake City, UT, USA

n = 38

Parous, 45%



37 min treadmill



Larger LHA and lower BN at rest

Higher running accelerations reduced tissue stiffness without affecting PFM function

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Acute Effect of Heavy Weightlifting on the Pelvic Floor Muscles in Strength-Trained Women - An Experimental Crossover Study

Skaug, Kristina Lindquist ; Engh, Marie Ellström ; Bø, Kari

Medicine and science in sports and exercise, 2023

n = 47

Nulliparous, 18-35y

Before/After

Single session of heavy lifting did not affect PFM strength or endurance

No correlations b/w PFM strength and 1RM or relative strength

60 minutes ⟷ 60 minutes

4 x 4

@ 75-85% 1RM

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Does this change in pregnancy?

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Systematic review

Resistance training in pregnancy: systematic review and meta-analysis of pregnancy, delivery, fetal and pelvic floor outcomes and call to action

Christina Prevett,[1,2] Jessica Gingerich,[2] Allison Sivak,[3] Margie H Davenport [1]

Med Sci Sports Exerc. 2026 Feb 3. doi: 10.1249/MSS.0000000000003956.
Online ahead of print.

High-Load Resistance Training in the First Trimester, a Retrospective Survey: Implications for Exercise Professionals and Obstetrical Providers

Christina Prevett [1], Margie H Davenport

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Does this change in women with POP?

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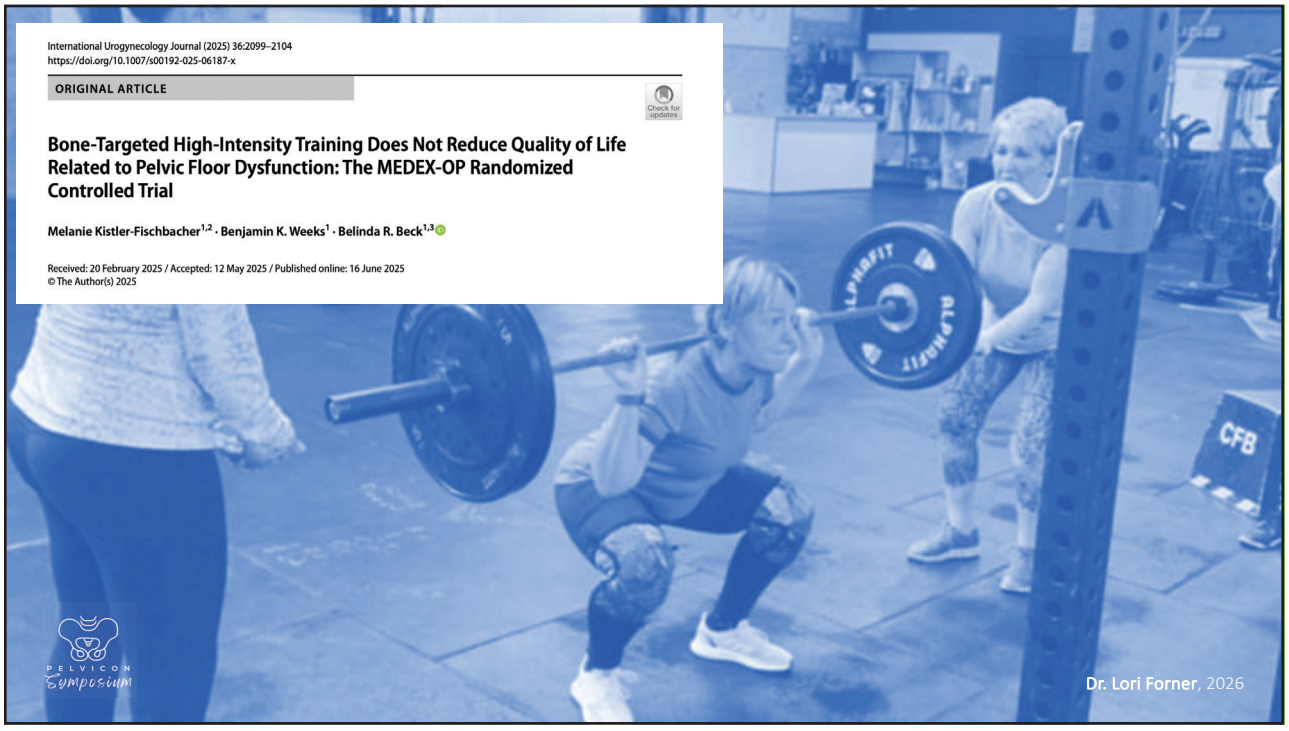
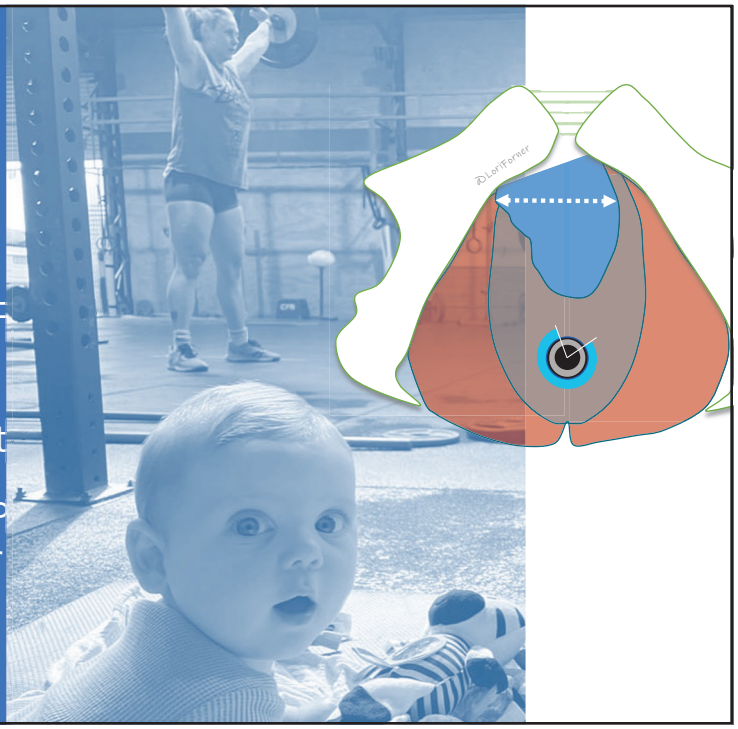


So all women can lift heavy and run/jump….?

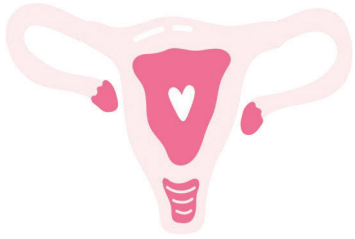
Some women will not tolerate heavy lifting

- Early postpartum
- Sedentary history
- Large LHA at rest and PF
- ?Bilat avulsion
- Weak PFM support
- Unsuccessful pessary fitt
- Pessary complications
- Moderate to severe POP
- Post-surgical POP repair



Where we need to go

Women with POP



Indigenous
Para-athletes
Longitudinal heavy lifters
Effects of pessaries on support

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Takeaways to Change Your Practice

Takeaway 1	Takeaway 2	Takeaway 3
Exercise-based heavy lifting is not universally harmful	Progress exercise gradually and monitor	Keep people doing what they love as much as you can

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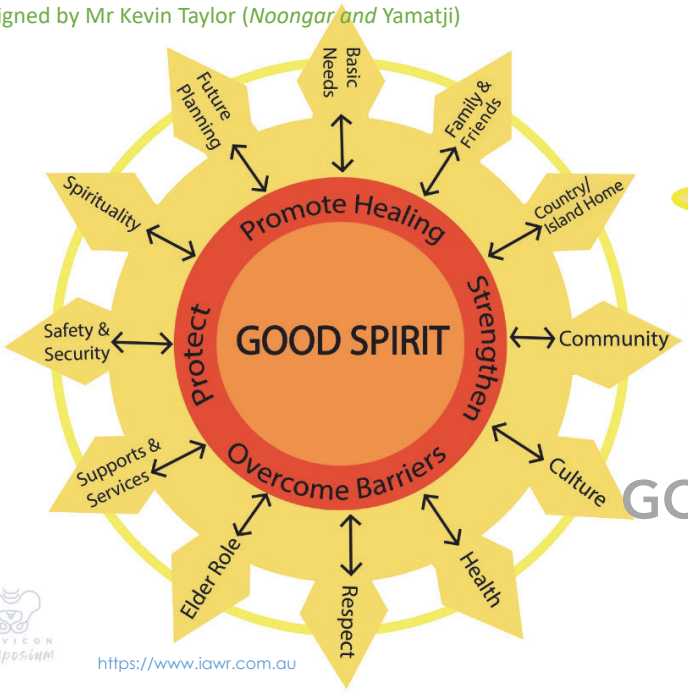
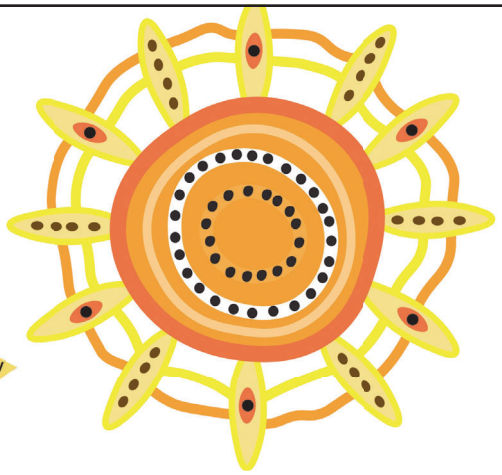
Designed by Mr Kevin Taylor (*Noongar and* Yamatji)





GOOD SPIRIT, GOOD LIFE

https://www.iawr.com.au

THANK YOU

The goal is not to protect from load and impact, it is to build capacity for it.

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Practical Strategies for Evaluation and Treatment of Pelvic Organ Prolapse

Nicole Cozean PT, DPT, WCS
& Jessica Reale PT, DPT, WCS

PELVICON Symposium

Nicole Cozean PT, DPT, WCS

PELVICON Symposium

About Dr. Nicole Cozean

- Doctor of Physical Therapy (DPT); Board-Certified Pelvic Health Specialist (WCS)
- Founder of PelvicSanity
  - Cash-based clinic in Orange County California
- Founder of Pelvic PT Rising
  - Business Coaching: coached more than 900 pelvic health rehab business owners
  - Clinical Courses: educating 2000+ clinicians
- Host of The Pelvic PT Rising Podcast
  - 1M downloads and over 600 episodes
- Expert speaker: CSM, POGP, PelviCon
- Author of *The Interstitial Cystitis Solution*
- Co-Founder of PelviCon

Jessica Reale PT, DPT, WCS

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About Dr. Jessica Reale

- Doctor of Physical Therapy (DPT) from Duke University
- Board-Certified Specialist (WCS) in pelvic health
- Founder of Southern Pelvic Health
  - Cash-based pelvic PT practice in Atlanta, GA
  - SPH for Pros
- Educator in pelvic health coursework, participating in the training of thousands of physical therapists and other health care providers across the world
- Co-founder of PelviCon
- Guest lecturer at Mercer University, Emory University, Georgia State University and the University of South Carolina, and more

Disclosures

- We have no relevant financial disclosures

PELVICON Symposium

Why are we here?

- We are all working with patients who have pelvic organ prolapse!
- Our patients NEED us – Multidisciplinary care is critical!
- Patients with prolapse are often experiencing:
  - Fear of movement & worsening prolapse

PELVICON Symposium

Why are we here?

"I'm new to all this, and awaiting an appointment to diagnose. But the bulge is undeniable. **I find myself so sad, and I just don't want to move for fear of making it worse.** It feels like it came on rather out of the blue… My daughter asked if I wanted to go for a walk today and I said no.. because I'm just scared and anxious all the time. I'm in my mid 40s and I just feel like my life is over.. like I'll never function well again." (Facebook Post, 2026)

PELVICON Symposium

Why are we here?

- We are all working with patients who have pelvic organ prolapse!
- Our patients NEED us – Multidisciplinary care is critical!
- Patients with prolapse are often experiencing:
  - Fear of movement & worsening prolapse
  - Lack of standardized care (especially in pelvic floor therapy!)
    - Confusing– multiple different diagnoses given (and treatment recommendations!)

PELVICON Symposium

😖

Why are we here?

"I have been diagnosed by serval gynecologist and some say stage 2 bladder uterus and stage 1 rectocele others say stage 3 on all 3. My recent first to urogyno said you only have prolapse if they are outside your vagina. Mine I can see a bulge when I spread my lips open. She said I was not a candidate for surgery and should not be wearing a pessary . She said I have myofascial pain dysfunction syndrome along with a high tone pelvic floor dysfunction. Gave me a referral for PT again for internal release to be done. I have already been to 3 different PT and they only gave me kegels and exercise strengthening. Only one did do some internal release which hurt when she pushed on certain areas. She said the pessary only made me worst with pressure on the inside. Who or what do I do?? I have pain and pressure all the time and feel the ring with support sometimes helps with that feeling. If anyone else has this diagnosis please get back I need help" Facebook Post, 2025

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Why are we here?

- We are all working with patients who have pelvic organ prolapse!
- Our patients NEED us – Multidisciplinary care is critical!
- Patients with prolapse are often experiencing:
  - Fear of movement & worsening prolapse
  - Lack of standardized care (especially in pelvic floor therapy!)
    - Confusing– multiple different diagnoses given (and treatment recommendations!)
  - Significant mental health impact

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😖

Why are we here?

"I had a very traumatic birth 2.5 years ago and know shortly after birth that I had a prolapse. I was dx at 3 weeks pp with bladder, vaginal wall prolapse and a rectocele. I had 2 failed rounds of pelvic floor therapy and one round that I was released from….I went to GI… had a colonoscopy…went ot Urogynecology… I get very emotional and cry alot with having to have so many different people in my vagina and rectum. As you know these exams are not short. Am I the only one that is dealing with this response? I'm doing what I need to do to get fixed but I feel like the exams by so many different people are really taking a toll on my mental health. I feel so hopeless and my dignity is gone and i'm so disgusted by this issue and having to spread my legs over and over and over again." - Facebook post, 2024

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Why are we here?

- We are all working with patients who have pelvic organ prolapse!
- Our patients NEED us – Multidisciplinary care is critical!
- Patients with prolapse are often experiencing:
  - Fear of movement & worsening prolapse
  - Lack of standardized care (especially in pelvic floor therapy!)
    - Confusing– multiple different diagnoses given (and treatment recommendations!)
  - Significant mental health impact
- We owe it to our patients to provide the highest-quality, evidence-informed, and collaborative care available

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Objectives

By the end of this session, participants will be able to:

- Identify key components of pelvic floor rehabilitation that strongly influence care for patients with POP.
- Identify aspects of care that influence nervous system upregulation, central sensitization and resiliency for patients with pelvic organ prolapse.
- Recognize the need for multidisciplinary care when treating patients with POP.

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The strategies you use to evaluate and treat your patients with pelvic organ prolapse MATTER!

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Your Pelvic Rehab Strategies Matter

- IAP Matters - And it's Not All Bad!
- Visualization Matters
- Patient Positioning Matters
- Load Matters
- Central Sensitization Matters
- Language Matters
- Constipation Matters
- Multidisciplinary Care Matters
- BUT, Prolapse is not the only thing that matters!

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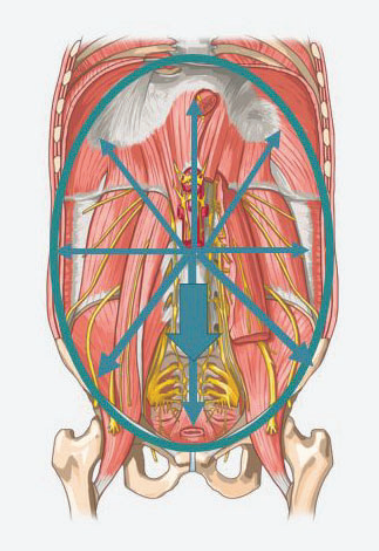
IAP Matters - And It's Not All Bad!

- Some IAP Facts:
  - Increased IAP is needed for spinal stability (Murray 2025)
  - Abdominal muscle activation decreases intraabdominal volume and can increase IAP (Sembera et al, 2023)
  - Diaphragm plays a huge role in both postural stability and modulating IAP (Seo et al., 2024)
  - PFM activity has been shown to initiate as part of an *anticipatory postural response* (and not just a stretch reflex to increasing IAP) (Hodges et. al. 2007)



Images courtesy of Pelvic PT Rising

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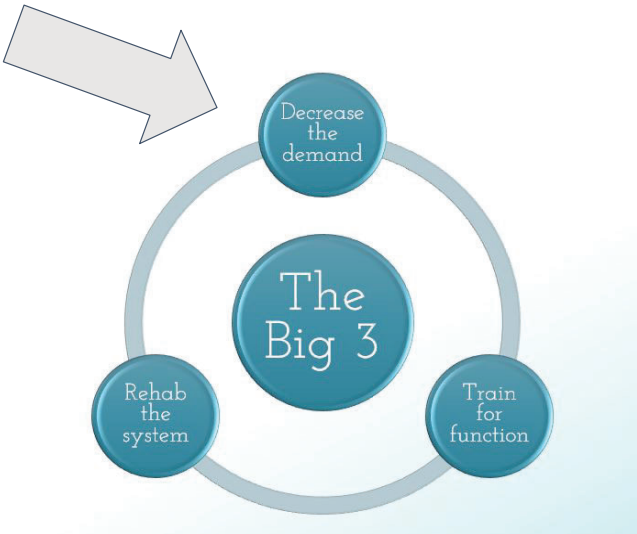
IAP Matters - And It's Not All Bad!

- POP symptoms and structure are affected by downward pressure
  - Not as simple as just IAP
  - But pressure exerted downwards does affect POP symptoms
  - Affected by the entire core cannister, the task and the individual
- Assessment and treatment of POP should include examination and treatment efforts to decrease the demand on the urogenital and pelvic floor system



Images courtesy of Pelvic PT Rising

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IAP Matters - And It's Not All Bad!

- Assessing "demand" → Shaw et. al., 2014: key findings:
  - IAP varies a lot between individuals
  - Intensity of the task matters, but check your assumptions!
  - Peak pressure is a poor judge of "harm"
  - Move beyond "high pressure" vs "low pressure" thinking
  - High-pressure activities aren't always "high risk"
  - No cutoff for "dangerous" pressure

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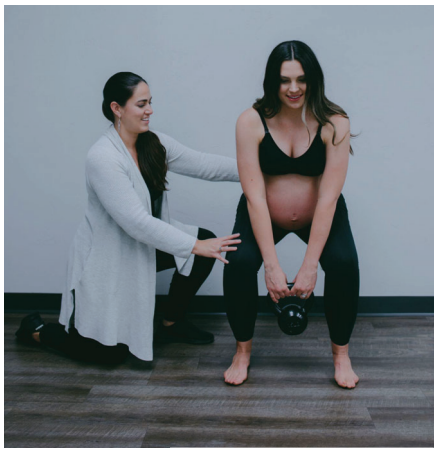
IAP Matters - And Its Not All Bad!

- For evaluation, movement analysis in symptomatic activties should be priorotized
  - Maximize for efficiency of movement
  - Don't villianize "pressure"
- For treatment, build the system's ability to tolerate all types of pressure
- IAP and POP is complex, variable and context-dependent
  - Individual response matters more than the activity itself



Images courtesy of Pelvic PT Rising

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Visualization Matters

Clearly see and visualize the **introitus** for proper evaluation and staging

Proper lighting is key

Optimal Patient Positioning

- Use the **butterfly position**
- Hips must be **fully supported**
- Hip ROM should **not** be near end-range

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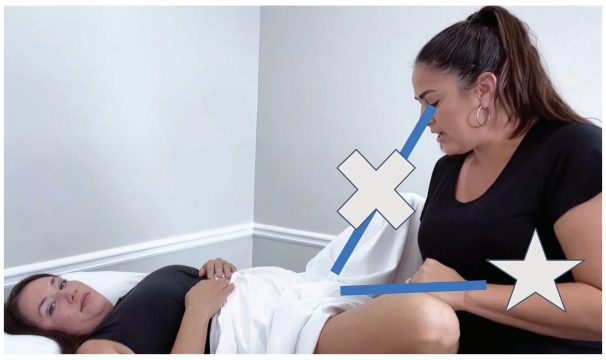
Visualization Matters

- You must be able to clearly see and visualize the introitus for proper evaluation and staging
  - Be in the appropriate sight line (not too far above!)
- Tools used:
  - Half speculum
  - Tongue depressor (in finger of glove)
- Technique
  - If/when using finger(s), consider ability to block entire vaginal wall.
    - Failure to do so can lead to poor



Images courtesy of PelviCon

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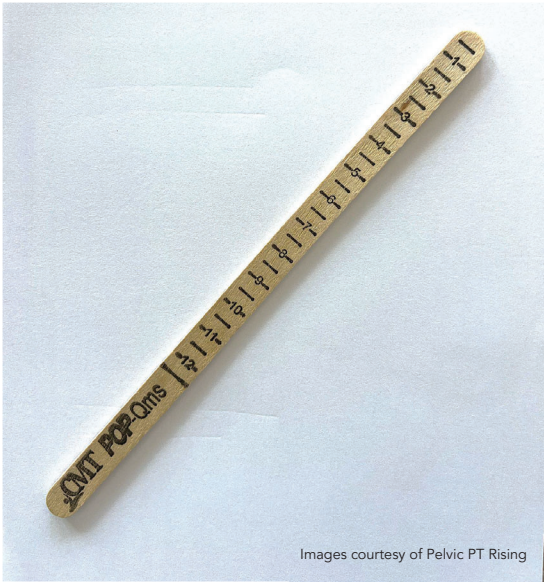
Visualization Matters

- Visualization and measurements matter
  - A full POP-Q CAN be utilized, but GH & PB measurements MUST be utilized

- GH & PB
  - Genital hiatus
  - Perineal body
  - GH + PB can estimate LH



Images courtesy of Pelvic PT Rising

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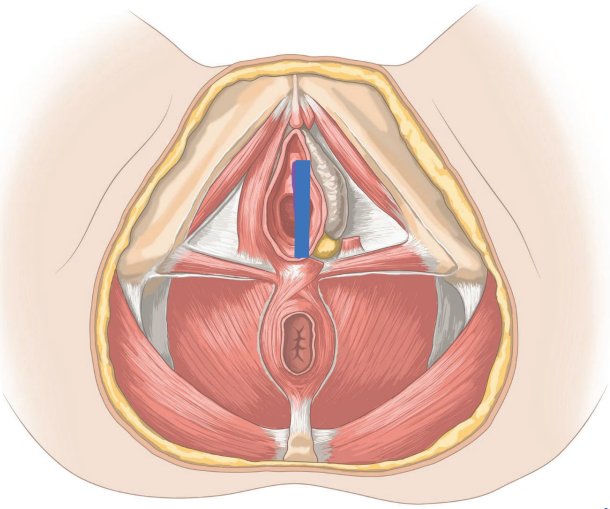
Visualization Matters

- Genital Hiatus (GH)
  - Size of GH correlated with:
    - degree of symptom bother
    - chance of developing POP in future
    - progression of prolapse with time
    - chance of ring pessary being successful and held in place



Images courtesy of Pelvic PT Rising

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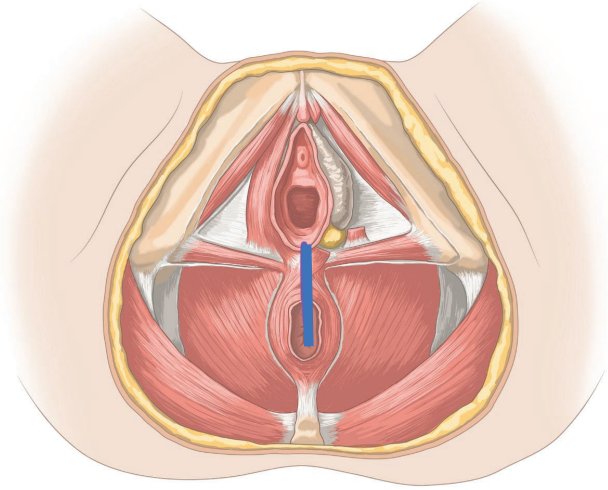
Visualization Matters

- Perineal Body (PB)
  - PB (<3cm) at rest (not valsalva) risk factor for OASI in primips
  - Add to GH to determine size of levator hiatus (LH)



Images courtesy of Pelvic PT Rising

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Patient Positioning Matters

- Evaluating in a variety of positions is necessary to get the full clinical picture
  - Supine (standard, POP-Q, visualization)
  - Standing (visualization, feel effects of gravity and system engaged)
  - Dynamic (to approximate symptomatic positions and evaluate activation patterns)

Images courtesy of Pelvic PT Rising

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Patient Positioning Matters

- For treatment, use both comfort and loading positions for a well-rounded home program
- For comfort positions, include "flare-busting" choices as well as daily positions to decrease demand on tissues and allow for recovery
- For loading positions, must challenge the system enough to obtain gains using timing, speed, perturbations, direction of load, weight in addition to training into symptomatic positions

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Patient Positioning Matters

Comfort/Relieving Positions

- Legs up a wall
- Hooklying with pillow under buttocks
- Happy baby with pillow/block under sacrum
- Quadruped
- Activation exercises in bridge position

Loading/Symptomatic Positions

- Tall or half kneeling
- Unstable surface (i.e. sitting on swiss ball)
- Quadruped
- Activation exercises with varying timing, weight, resistance, speed

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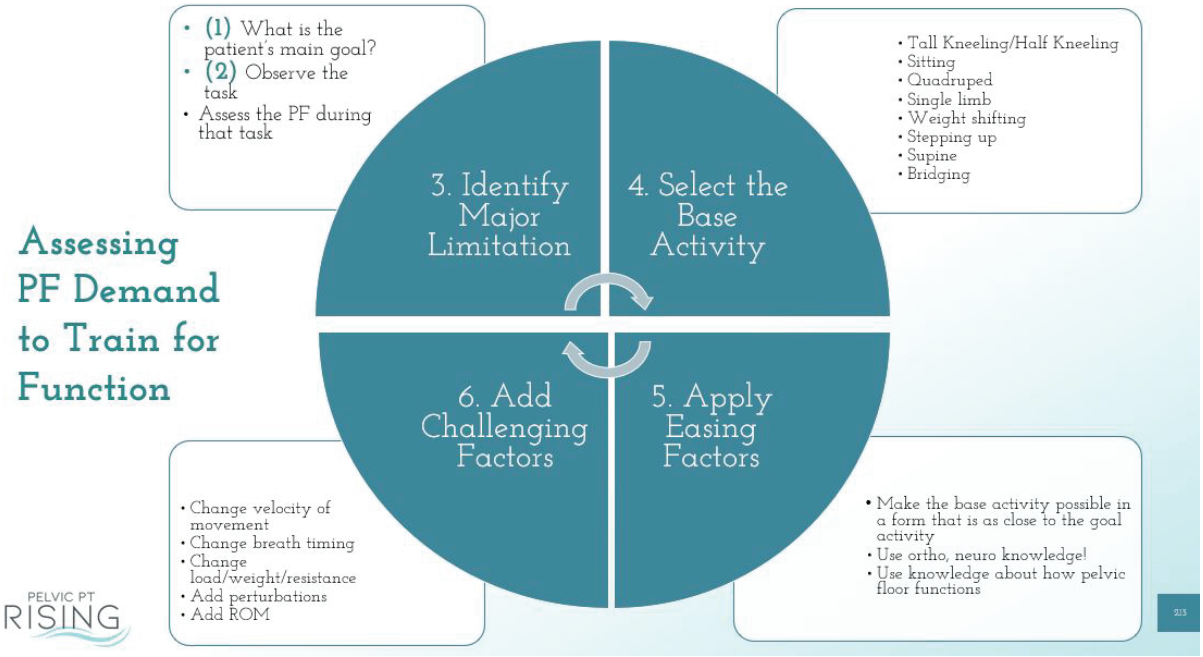
Patient Positioning Matters



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Load Matters

- Load is relative to your patient
- Typically, we think of "loading" in terms of treatment options
- But if you aren't loading your patient with prolapse in the examination, you are not actually assessing their prolapse!

Images courtesy of Pelvic PT Rising

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Load Matters

- Kari Bø et al. 2023 published a review article and found that pelvic floor support can worsen after a single bout of activity
  - Decreased pelvic floor strength (fatigue)
  - Increased vaginal decent
  - Increased POP-Q stage

Load reveals deficits that are invisible at rest.

Images courtesy of Pelvic PT Rising

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Load Matters

If you only assess at rest:

- You miss fatigue
- You miss pressure management strategies
- You miss motor control and load transfer breakdown
- You miss symptom reproduction

When you add load:

- You uncover descent that wasn't present before
- You uncover coordination and timing issues
- You uncover compensatory strategies
- You uncover other symptom triggers

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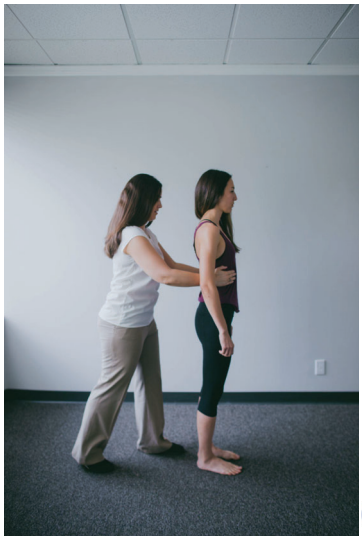
Load Matters

- Other contributors to pressure mismanagement
  - Foot mechanics
  - Breath and breath holding
  - Rib cage excursion
  - Hip mobility and strength
  - Shock attenuation
  - Poor compensatory strategies
    - Over bracing
    - Decrease in movement variability



Images courtesy of Pelvic PT Rising

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Central Sensitization Matters

- POP affects more than just the organs, fascia and pelvic floor.
- We cannot forget about the person who is experiencing the prolapse symptoms.
- Central sensitization can happen in the absence of pain.

Images courtesy of Pelvic Pro Collective

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Central Sensitization Matters

- Central sensitization has been tied to various conditions in which pain is not the primary symptom including (Neblett, 2018):
  - PTSD
  - Mutliple chemical sensitivity
  - Restless leg syndrome
  - Overactive bladder (OAB)
  - Chronic hives

- Patients who have POP symptoms *without pain* can still have signs of central sensitization contributing to their symptom presentation.

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Central Sensitization Matters

- Patients with POP *do experience pain* (Donaldson et al., 2024)
  - Prevalence of pelvic pain 42%
  - Prevalence of low back pain 46%

- Among patients with pelvic pain, 73% reported onset coinciding with POP and 81% reported worsening pelvic pain with POP. (Donaldson et al. 2024)

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Central Sensitization Matters

- Central sensitization and its associated symptoms is often related to trauma (Neblett, 2018)
  - CS is most related to physical trauma/injury
  - CS can also be related to other types of trauma:
    - Infections (i.e. Epstein Barr, Lyme, Hep C)
    - Emotional trauma
    - Childhood absue

- Childbirth-related major maternal trauma is much more common than generally assumed, and it is the primary etiological factor in POP and anal incontinence. (Dietz et al. 2016)

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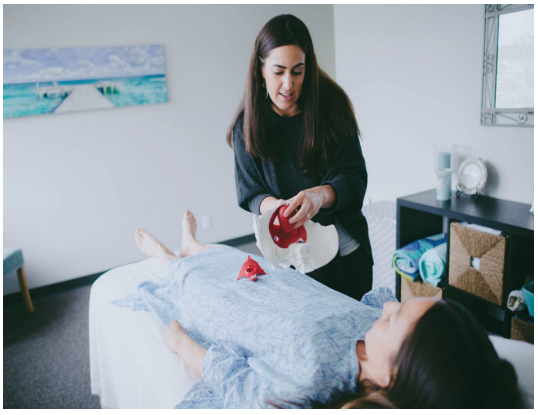
Central Sensitization Matters

- The CSI is a great tool to assess for central sensitization for your patients with POP. (Neblett, 2013)
  - Screening tool
  - High sensitivity and specificity
  - Cut-off score of 40
- Can be used to screen for CS and may then change treatment approaches for symptoms



Images courtesy of Pelvic PT Rising

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Central Sensitization Matters

- *Nervous system interventions may be appropriate for your patient with POP who shows evidence of CS*
- Patient-led techniques can include:
  - Breathing
  - Meditation/body scans
  - Self vagus nerve stimulation
  - Mindfulness
- Practitioner-led techniques can include:
  - Treating along the path of the vagus nerve
  - Visceral mobilization
  - Kinesiotaping for vagus nerve stimulation
  - Diaphragm release/mobilization

Images courtesy of Pelvic PT Rising

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Language Matters

- Women with POP often lack information and support leading to increased anxiety and poor satisfaction (Corley et al., 2022)
- Patients often feel "ashamed of their POP" and "uncomfortable speaking with anyone about it, including physicians" (Dunivan et al., 2014)
- Patients with POP show higher prevalence of depression, anxiety and insomnia vs. those without. Subjective perception augments sxs NOT objective severity. (Kalata et al., 2023)
-

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Language Matters

- Provider is often viewed as having "authoritative knowledge"
  - "Because of their construction of their condition, and the power dynamic at play, women are silenced, and their expertise about their bodies is delegitimized, limiting their active participation in seeking care for this condition." (Low & Tumbarello, 2012)
- Education to better understand bulge symptoms led to decrease in anxiety from 70% to 30% (avg. of 9-10 min) (Myers et al., 2014)

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Language Matters

- Patient-centered discussion regarding symptoms, impact, and goals is CRUCIAL.
- Often discrepancy between what patients and providers view as important (Dao et al., 2022)
  - Prolapse-specific body image & genital shame and embarrassment
  - Perception of prolapse symptoms (ie vaginal bulge)

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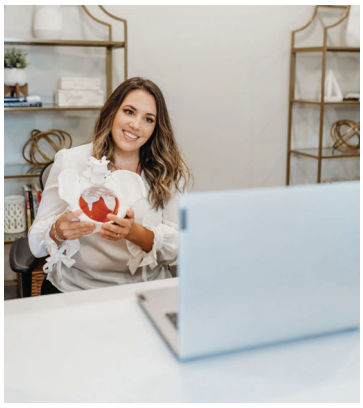
Language Matters- Tips for Pelvic Rehab!

- First seek to understand!
  - Be clear on what is truly bothering the patient.
    - ie- "I just don't like that it's there!"
    - ie- "I can't stand splinting"
- Ensure shared goals for therapy
  - Patient preference matters!
- Educate comprehensively without driving fear
- Be honest about expectations in treatment



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Constipation Matters

- Constipation is a known risk factor for POP (Fitz et al., 2023)
  - Cause vs. consequence?
- 43% prevalence of obstructed defecation in pts with POP (Tan, Geng, Tang, & Yang, 2020)
  - Correllation between OD and true rectocele
- No correlation between severity of constipation/OD and stage of posterior wall prolapse (Augusto, et al, 2017)

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Constipation Matters

- 2019 study of 107 patients with functional constipation found correlation between IBS-C, more severe constipation and worsened pelvic floor distress symptoms (PFDI-20). (Singh et al., 2019)
- 2026 study of 247 women with constipation and 898 without identified correlation between rectocele, uterine prolapse and constipation.
  - Over 2 years, worsening uterine, anterior wall and posterior wall prolapse, as well as perineal descent, identified for women with constipation. No noted change in anatomy for women without.
  - Authors suggest bidirectional relationship

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Constipation Matters

- 71% of patients with obstructive defecation and rectocele responded to medical management and biofeedback training (Hicks et al., 2014)
  - Pts with intussuseption with rectocele responded most favorably. Those who required splinting and could not expel a balloon were more likely to require surgery.
- Consensus meeting of ASCRS, ICS, IUGA, AUGS & APTA
  - "Patients with posterior vaginal wall prolapse, symptoms of ODS, and increased PFM tone or dyssynergia should be treated with pelvic floor PT to address high tone and pelvic floor coordination before surgery" (Traugott et al., 2026)
  - "Patients with symptoms of ODS, feelings of a bulge, and need to digitate in the setting of decreased pelvic floor muscle tone can be offered pelvic floor PT to address proper defecation mechanics either before or after rectocele surgery."(Traugott et al., 2026)

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Multidisciplinary Care Matters

- We have to treat the whole person!
- 2019 NICE Guidelines
  - More than one consultant with expertise in UI and POP should be involved.
  - Pelvic floor physiotherapy should be directly involved as a core member of the team.

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Multidisciplinary team approach to pelvic floor disorders (Tsai et al., 2025)

- Multidisciplinary Core Team: Colorectal surgeon, Urogynecologist, Urologist, Physiotherapist
- Other members, depending on patient: Nurse Specialists, Psychologists, Dieticians, Radiologists, Social Workers, Occupational Therapists, PMR Physicians, Internal Medicine
- Review of 24 studies regarding MDT Care:
  - Favorable outcomes overall
  - Enhanced surgical results
  - Greater symptom relief
  - Reduced recurrence
  - Lower complication rates after surgery
  - Improved treatment adherence
  - High patient satisfaction

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Prolapse is not the ONLY thing that matters

- Co-existing pelvic conditions (Patel et al., 2025)
  - In a group of 251 patients presenting at Urogynecology practices, 77% had urinary dysfunction, 61% had prolapse, 45% had bowel complaints, 54% sexual complaints and 54% pain complaints.
    - Those with pelvic pain averaged 3 complaints (vs. 1-2 complaints for those without)
- In 912 patients presenting at a pelvic floor center, 85% demonstrated pelvic floor myofascial pain. (Meister, Sutcliffe, Badu, Ghetti & Lowder, 2019)
  - Severity was correlated with subjective prolapse symptoms (pelvic pressure/heaviness) but not objective symptoms (bulge)

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Prolapse is not the ONLY thing that matters

- Can prolapse cause pain?
  - Sometimes!
  - Hypermobility at the apex of the vagina can lead to irritation at the sacral plexus and subsequent pain (Leidl, Goeschen & Durner, 2017)
- Timing of pain matters! (Micussi, Minassian, Ghandour & Miranne, 2025)
  - Onset prior to prolapse vs. after
  - Prior CPP & Central Sensitization led to less favorable postop outcomes
    - Screening for and treating CPP prior to surgery should be prioritized!

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Key Takeaways

1. Prolapse care is not just about prolapse.

2. Load, pressure and movement matter—but not always how we were initially taught!

3. HOW we evaluate, communicate and collaborate directly impacts our outcomes.

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Questions

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SYDNEY urodynamic CENTRES

Imaging of Maternal Birth Trauma

H. P. Dietz
Sydney, Australia

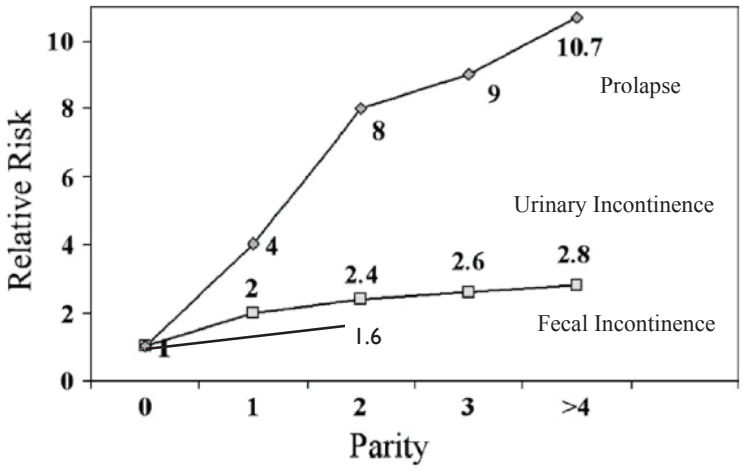
1

CURRENT OPINION

Maternal birth trauma: why should it matter to urogynaecologists?

Hans P. Dietz[a], Peter D. Wilson[b], and Ian Milsom[c]

Curr Opin Obstet Gynecol 2016, 28:441–448



DeLancey 2012

Procedures in US:

Prolapse
200.000

Urinary Incontinence
120.000

Fecal incontinence
10.000

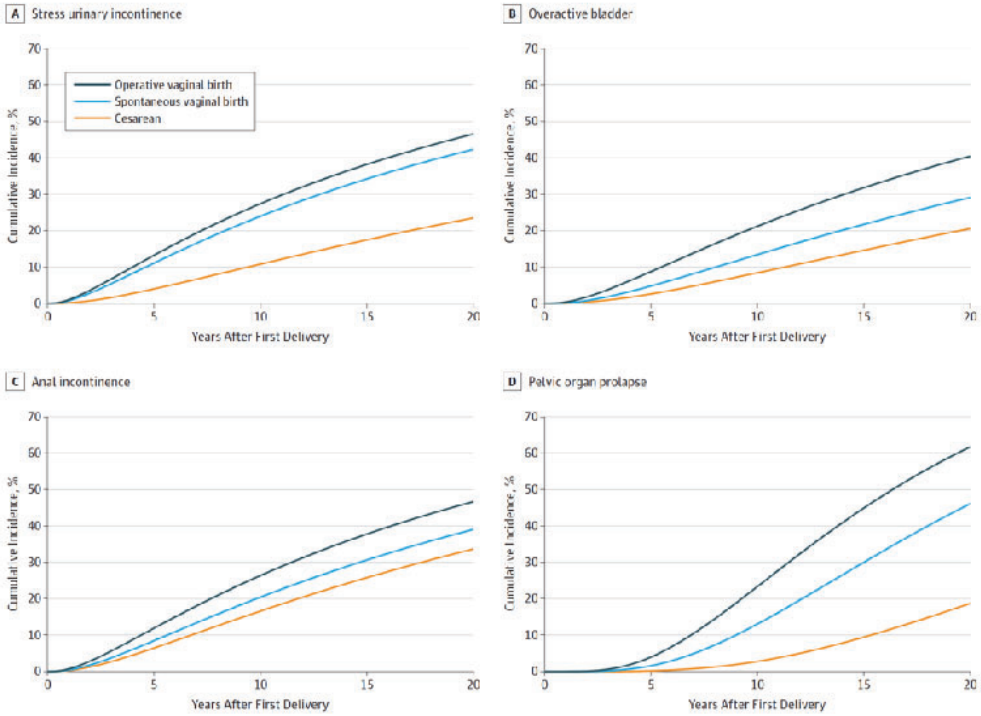
Since then: PROLONG, SWEPOP, MOAD… all showing the same .

2

Association of Delivery Mode With Pelvic Floor Disorders After Childbirth

Joan L. Blomquist, MD; Alvaro Muñoz, PhD; Megan Carroll, MS; Victoria L. Handa, MD, MHS

Figure 1. Cumulative Incidence of Pelvic Floor Disorders by Delivery Mode



Based on log-normal models (see the eTable in the Supplement). The number of events according to the delivery modes and type of pelvic floor disorder are included in Table 1.

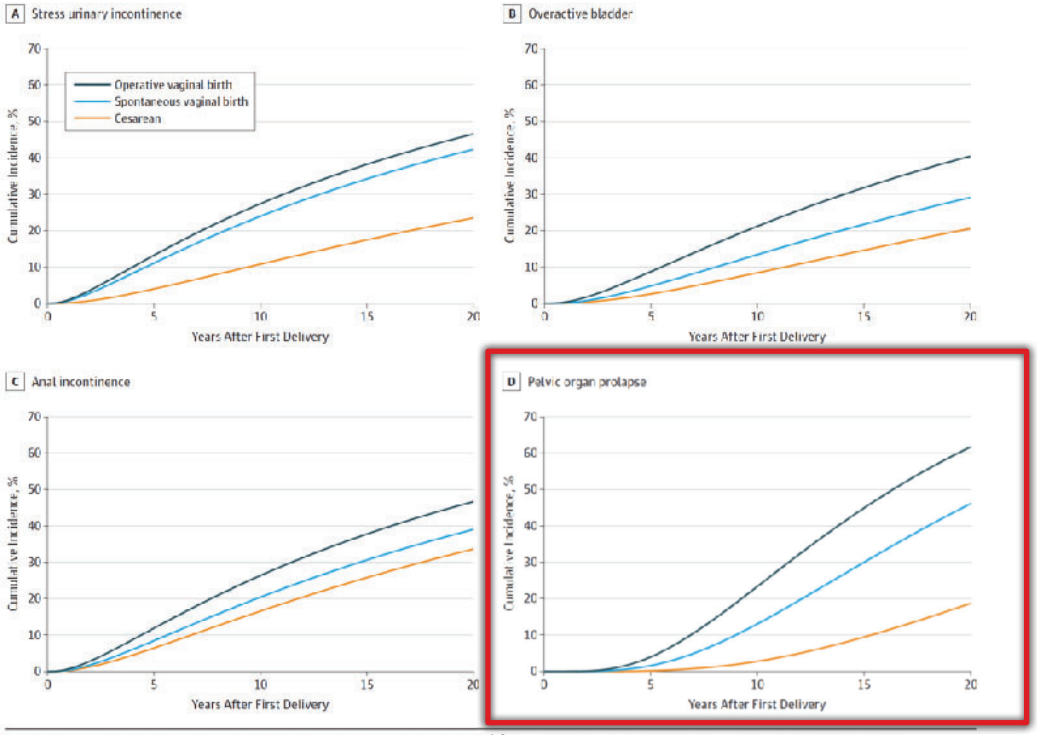
JAMA | Original Investigation

Association of Delivery Mode With Pelvic Floor Disorders After Childbirth

JAMA December 18, 2018 Volume 320, Number 23

Joan L. Blomquist, MD; Alvaro Muñoz, PhD; Megan Carroll, MS; Victoria L. Handa, MD, MHS

Figure 1. Cumulative Incidence of Pelvic Floor Disorders by Delivery Mode



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Potential pathways

Fascia
Nerves

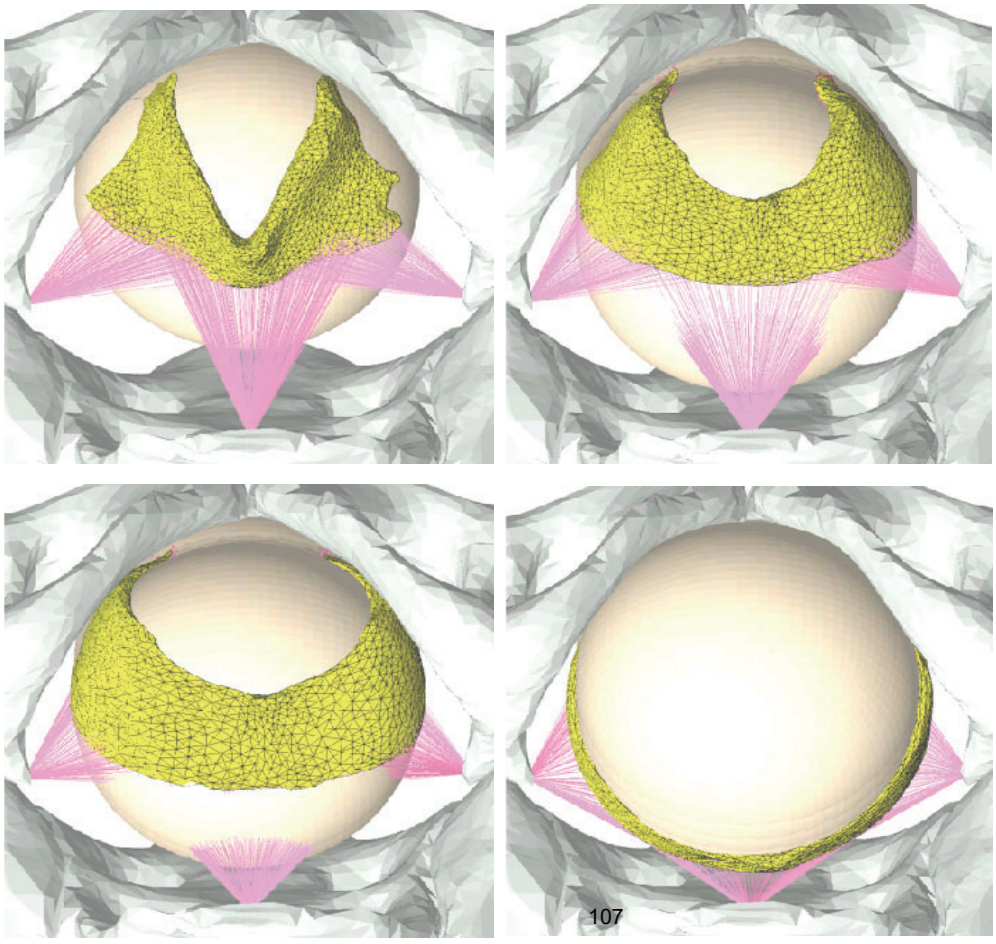
Muscle:
Levator ani and Anal sphincters

Potential pathways

Fascia
Nerves

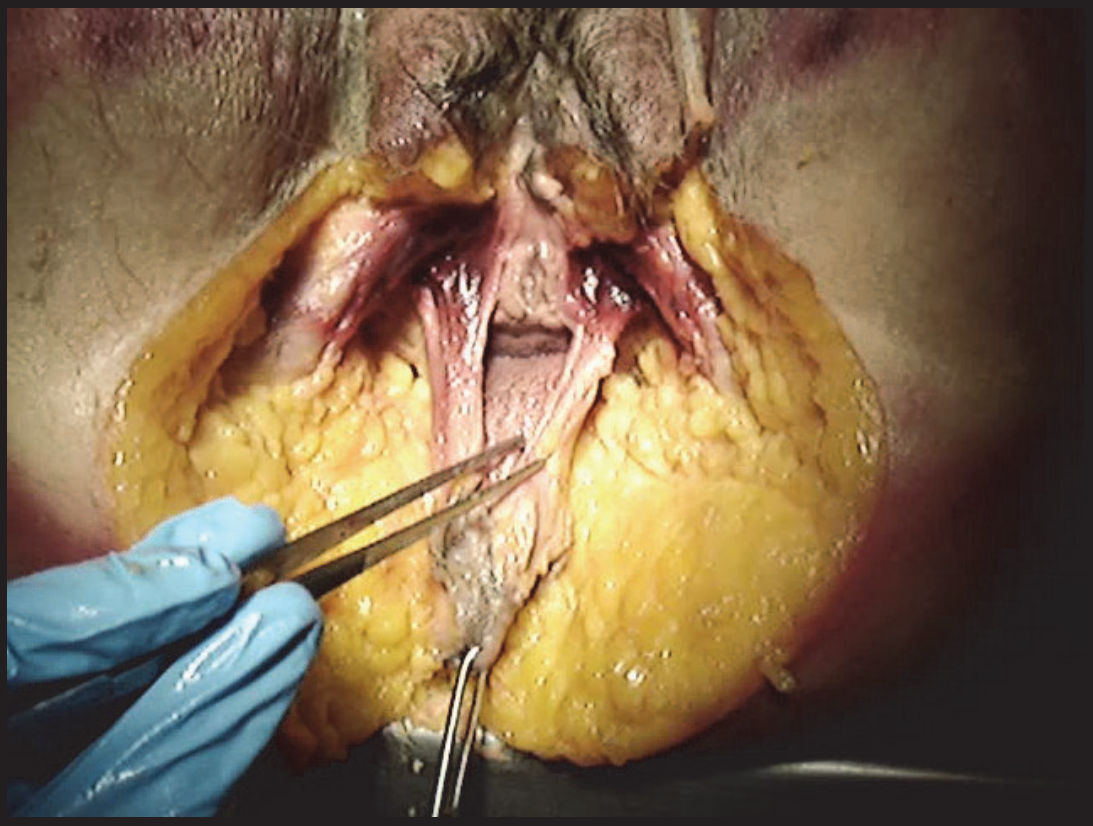
Muscle:
Levator ani and Anal sphincters

I
The Levator Ani



and this is the main reason...

Hoyte 09



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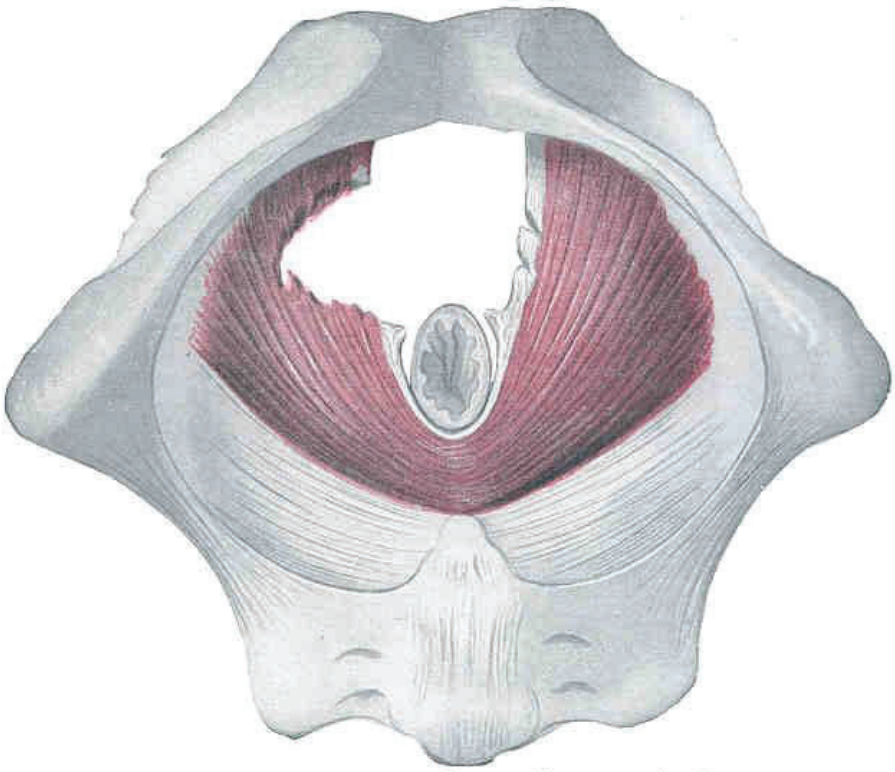


Fig. 701.—Semidiagrammatic. Levator Torn from Its Origin.
An injury to the anterior portions of the levator ani—the puborectal or pillar—due to crushing between the blade of the obstetric forceps and the ramus pubis. Very difficult to repair.

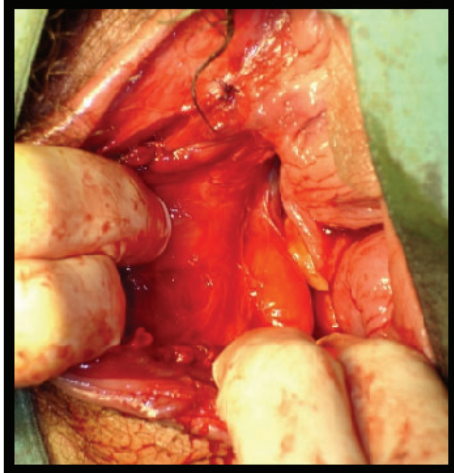
De Lee, Joseph B., A.M., M.D. The Principles and Practice of Obstetrics. 7th ed. Philadelphia: W. B. Saunders Company, 1938

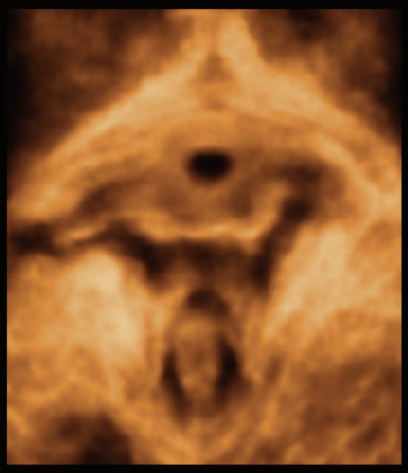
10

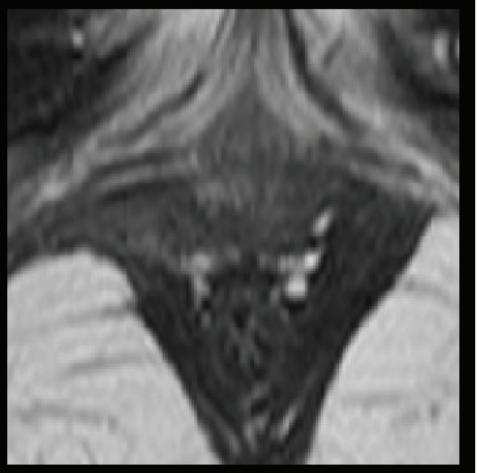
Australian and New Zealand Journal of Obstetrics and Gynaecology 2007; 47: 341–344

Avulsion of the pubovisceral muscle associated with large vaginal tear after normal vaginal delivery at term

Hans Peter DIETZ,[1] Alec V. L. GILLESPIE[1] and Pramod PHADKE[2]
[1]Department of Obstetrics and Gynaecology, and [2]Radiology Department, Nepean Hospital, Penrith, New South Wales, Australia



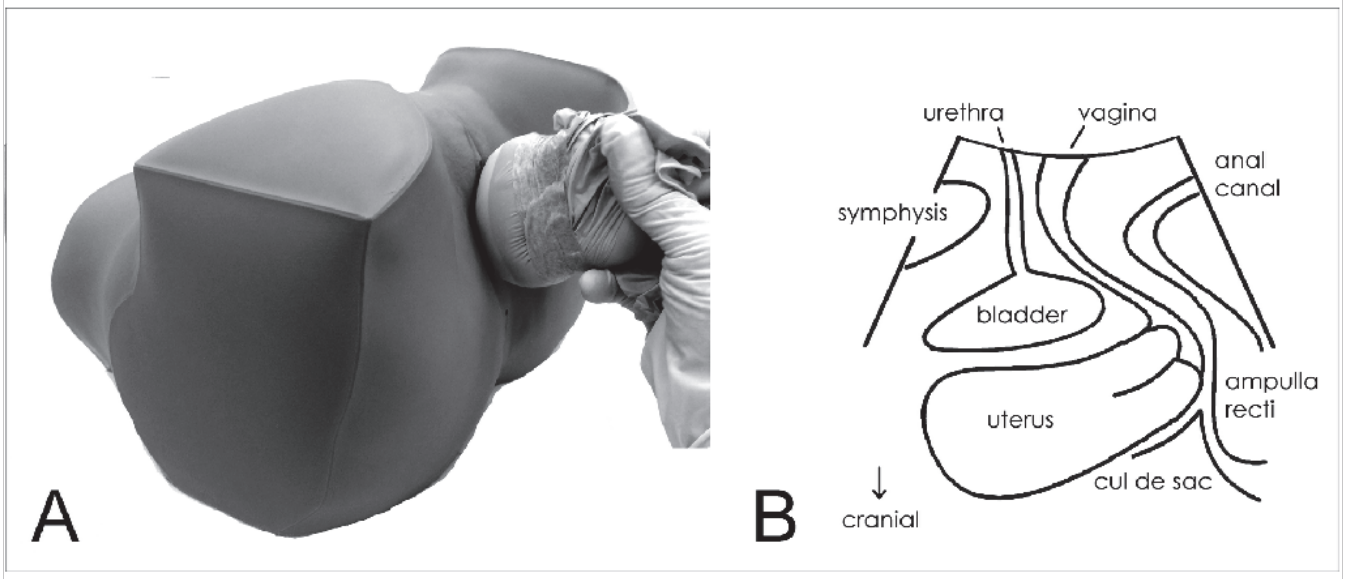




Intrapartum 3D translabial US MR Imaging

see also: Shek KL et al. Ultrasound Obstet Gynecol 2015; DOI: 10.1002/uog.14856

Translabial ultrasound

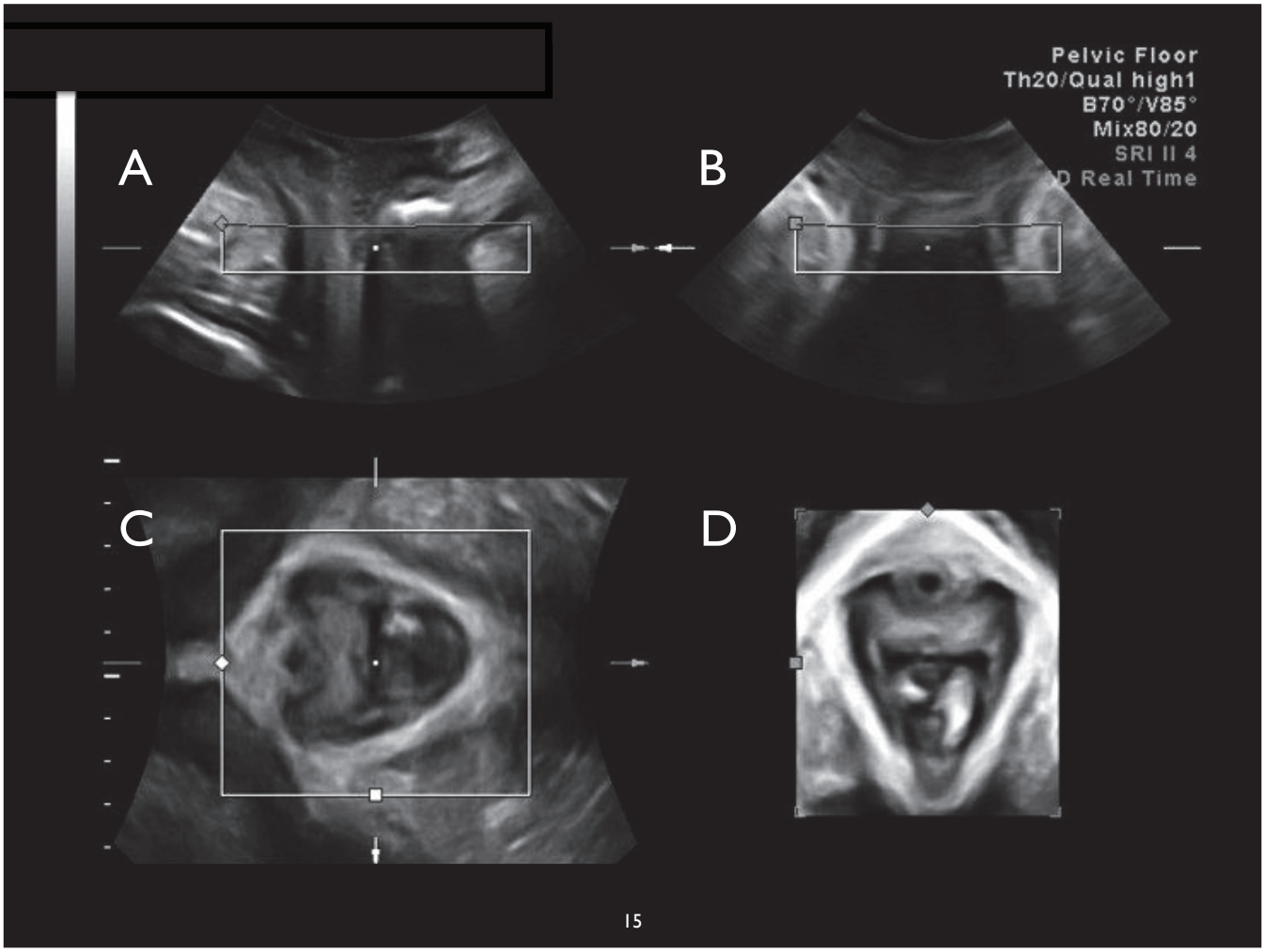


Int Urogynecol J (2009) 20:807–811
DOI 10.1007/s00192-009-0839-4

ORIGINAL ARTICLE

Levator defects can be detected by 2D translabial ultrasound

H. P. Dietz · K. L. Shek

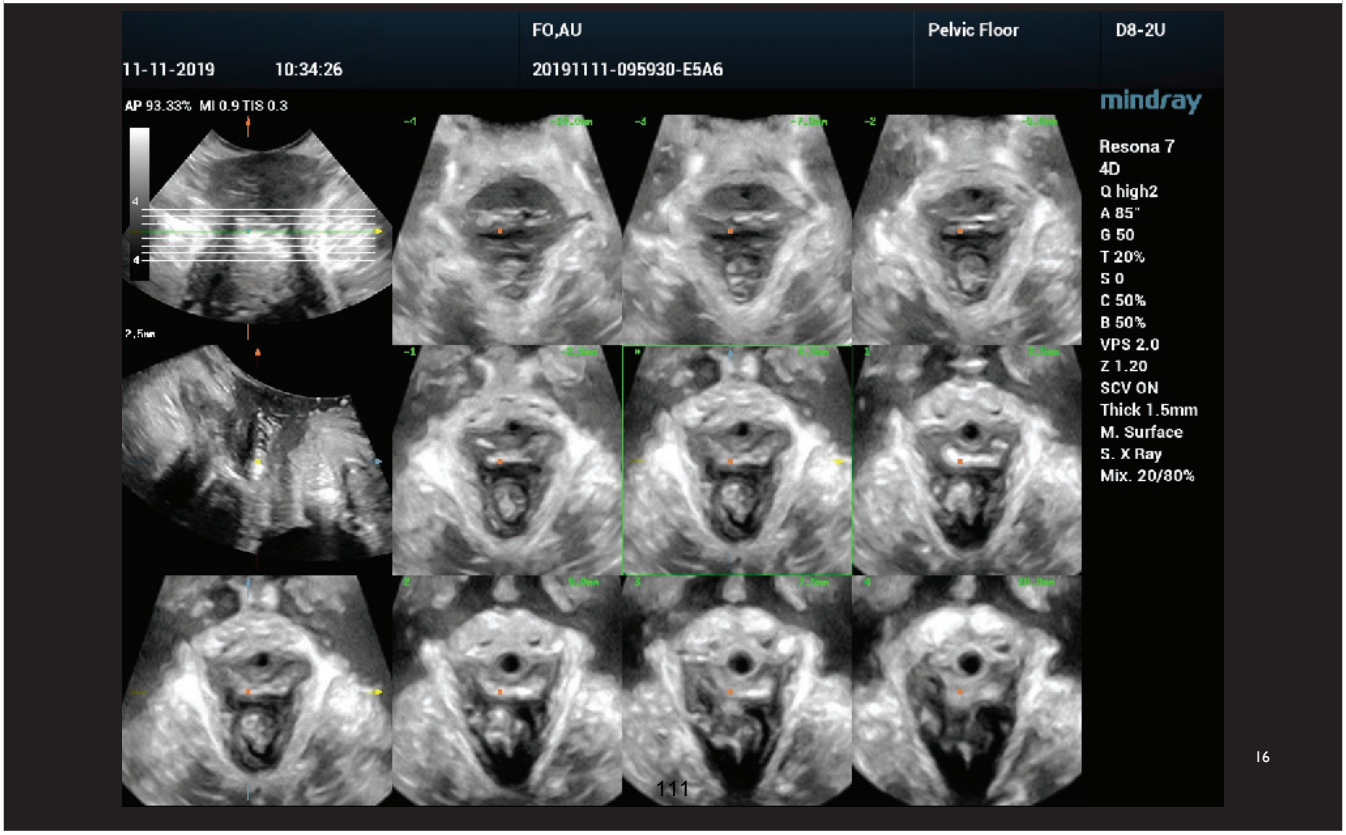


15

Ultrasound Obstet Gynecol 2007; 29: 329–334
Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/uog.3931

Quantification of major morphological abnormalities of the levator ani

H. P. DIETZ
University of Sydney, Nepean Clinical School, Penrith, Australia

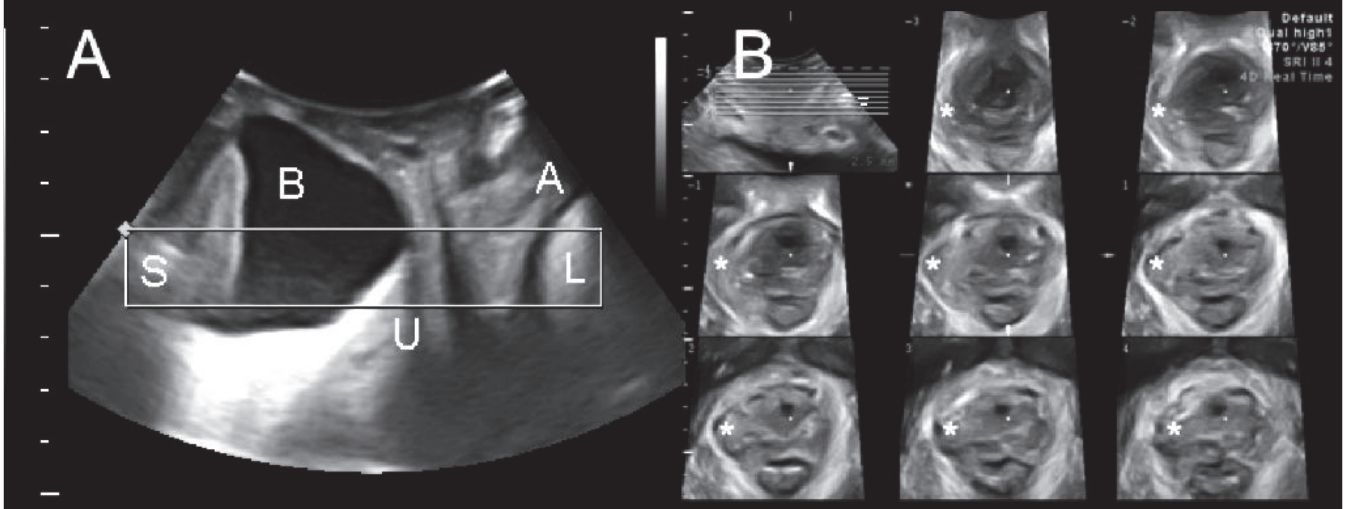


16

Levator trauma is associated with pelvic organ prolapse

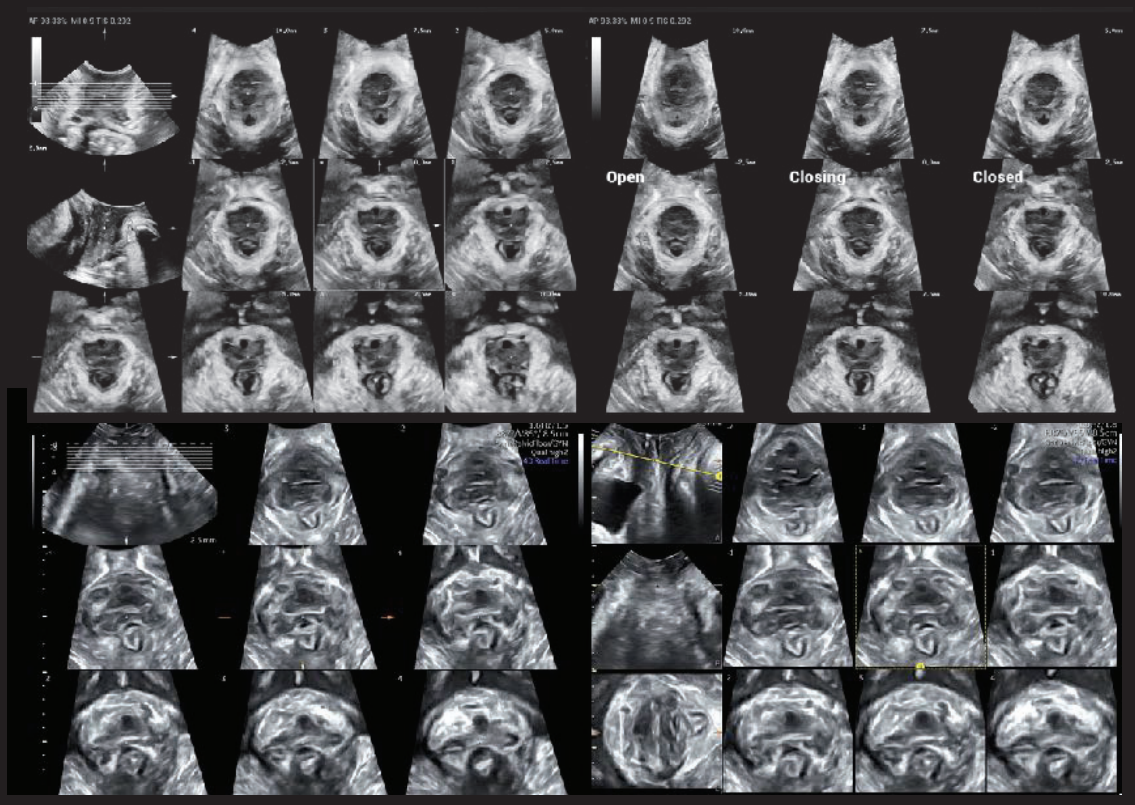
HP Dietz,[a] JM Simpson[b]

BJOG 2008;115:979–984.



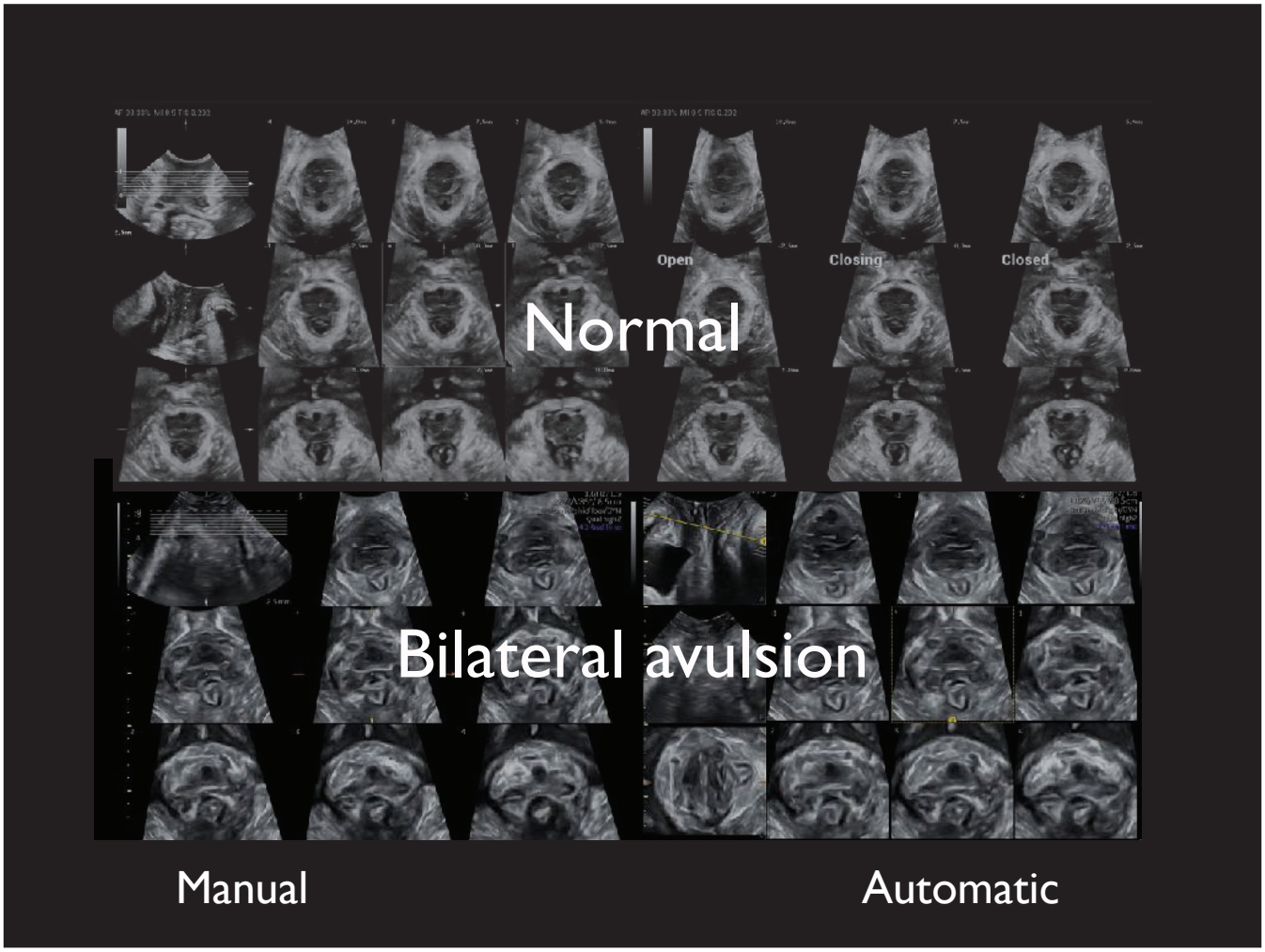
see also: Volloyhaug I, Morkved S, Salvesen KA. Int Urogynecol J 2016;27(1):39-45.

Automated tomography



Manual

Automatic



Ultrasound Obstet Gynecol 2022; 60: 693–697
Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/uog.26034

All or nothing? A second look at partial levator avulsion

H. P. DIETZ[1], K. L. SHEK[2] and G. K. LOW[3,4,5]

[1]*Sydney Urodynamic Centres, Penrith, NSW, Australia;* [2]*Western Sydney University, Liverpool, NSW, Australia;* [3]*Research Operations, Nepean Hospital, Nepean Blue Mountain Local Health District, Kingswood, NSW, Australia;* [4]*Professorial Unit, The George Institute for Global Health, University of New South Wales, Sydney, NSW, Australia;* [5]*Faculty of Medicine and Health, Sydney Medical School, University of Sydney, Sydney, NSW, Australia*

(a)

TTS	*n*	Mean	SD
0	1838	−1.046	1.586
1	135	−1.015	1.462
2	169	−0.710	1.558
3	120	−0.646	1.583
4	76	−0.461	1.935
5	59	−0.246	1.784
6	53	−0.358	1.835
7	18	−0.750	1.406
8	18	−0.667	1.111
9	9	0.500	1.714
10	7	−0.071	1.305

Ba −1.0 0.0 1.0 2.0

(b)

TTS	*n*	Mean	SD
0	1841	−2.18	18.08
1	136	−3.07	18.30
2	169	−7.36	18.25
3	121	−8.18	15.95
4	76	−6.69	17.84
5	59	−12.29	18.59
6	53	−10.35	17.11
7	18	−12.54	17.60
8	18	−14.51	20.66
9	9	−23.44	13.90
10	7	−12.20	14.17

Bladder descent 0 −10 −20 −30

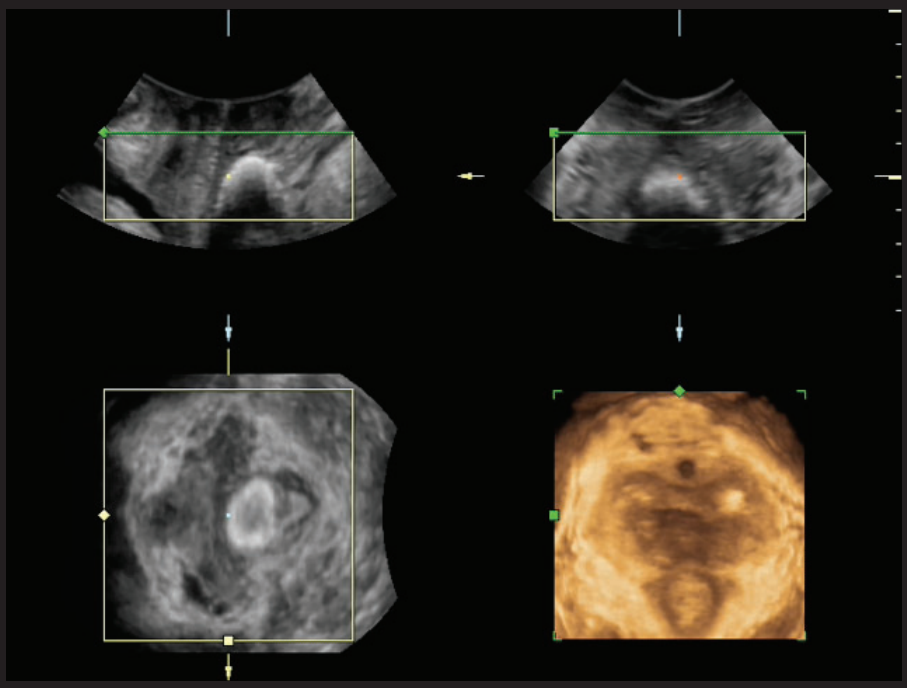
Figure 3 ANOVA graphs for association between tomographic trauma score (TTS) and anterior compartment descent, measured as pelvic organ prolapse quantification coordinate Ba on clinical examination (a) and bladder descent on translabial ultrasound (b). $P < 0.001$ for both measures.

Ultrasound Obstet Gynecol 2008; 31: 676–680

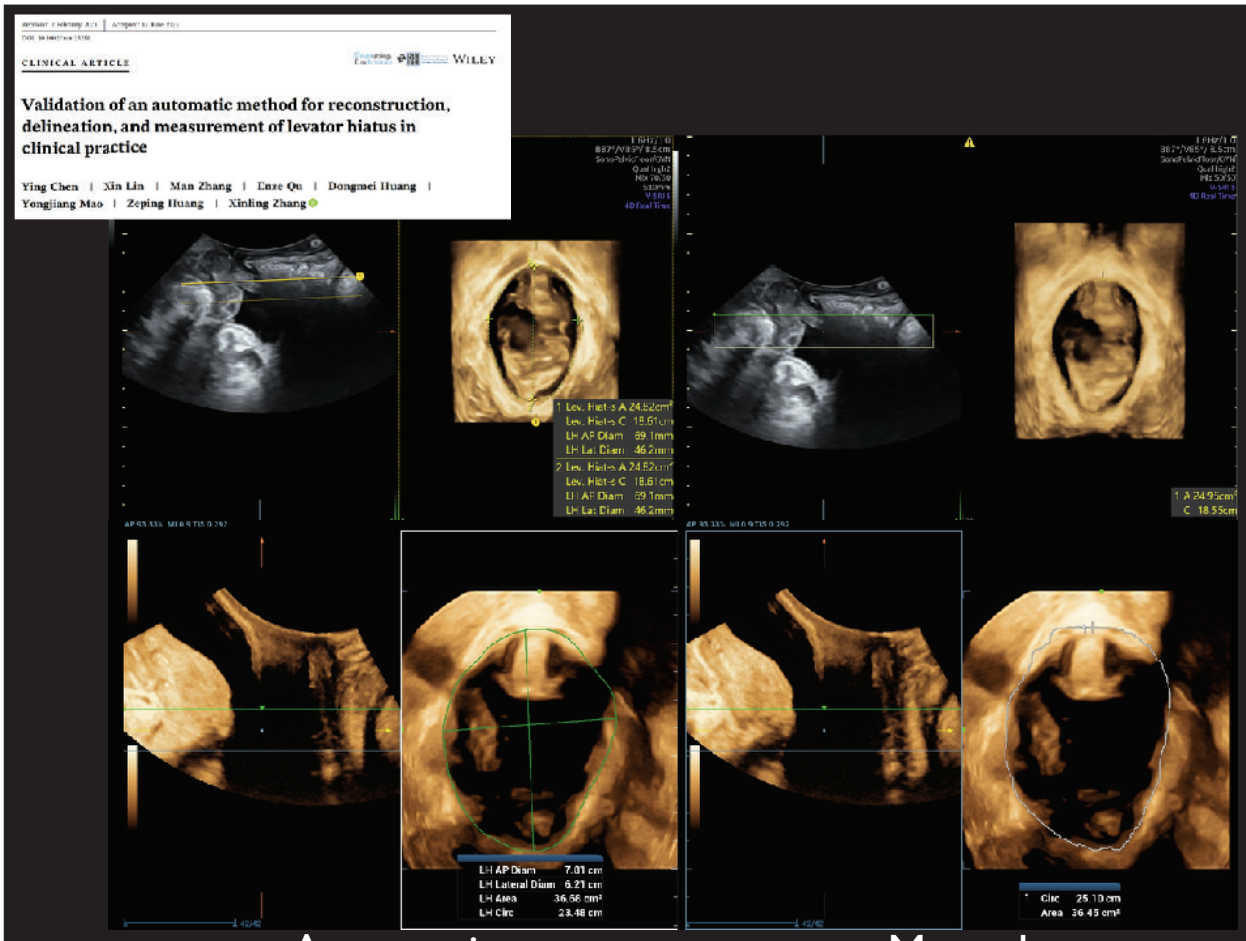
Ballooning of the levator hiatus

H. P. DIETZ*, C. SHEK*, J. DE LEON* and A. B. STEENSMA†

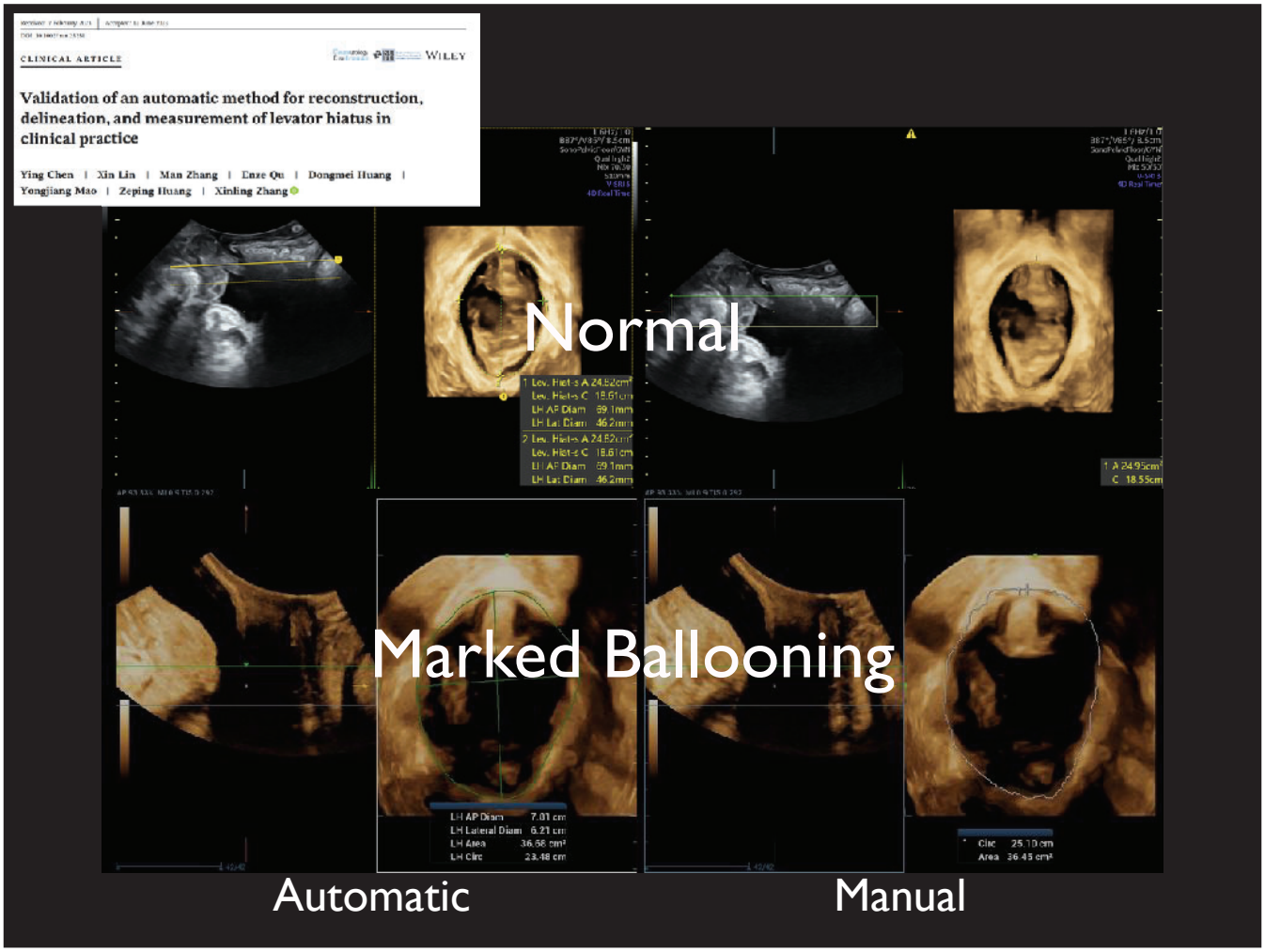
**Nepean Clinical School, University of Sydney, Penrith, Australia and †Erasmus University, Rotterdam, The Netherlands*



see also: Albrich SB, Welker K, Wolpert B, et al. Arch Gynecol Obstet. 2017;295(1):103-109.



Automatic Manual

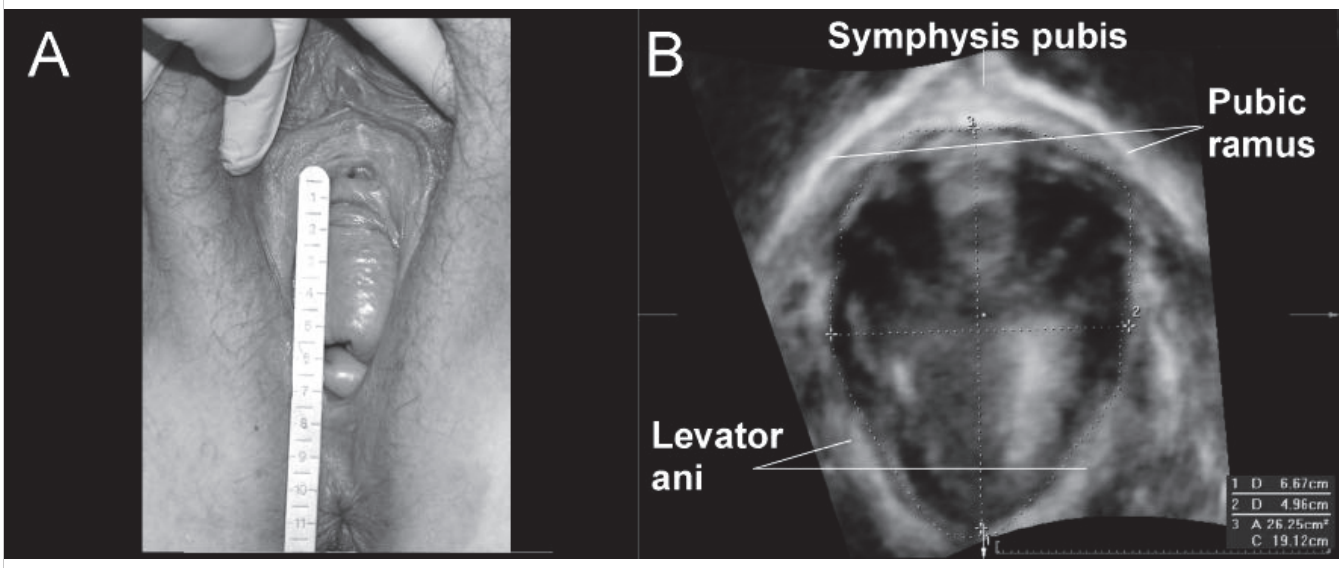

CLINICAL ARTICLE
WILEY
Validation of an automatic method for reconstruction, delineation, and measurement of levator hiatus in clinical practice
Ying Chen | Xin Lin | Man Zhang | Enze Qu | Dongmei Huang | Yongjiang Mao | Zeping Huang | Xinling Zhang
Normal
Marked Ballooning
Automatic
Manual

Int Urogynecol J
DOI 10.1007/s00192-013-2119-6

ORIGINAL ARTICLE

How to determine "ballooning" of the levator hiatus on clinical examination: a retrospective observational study

B. Gerges · I. Kamisan Atan · K. L. Shek · H. P. Dietz



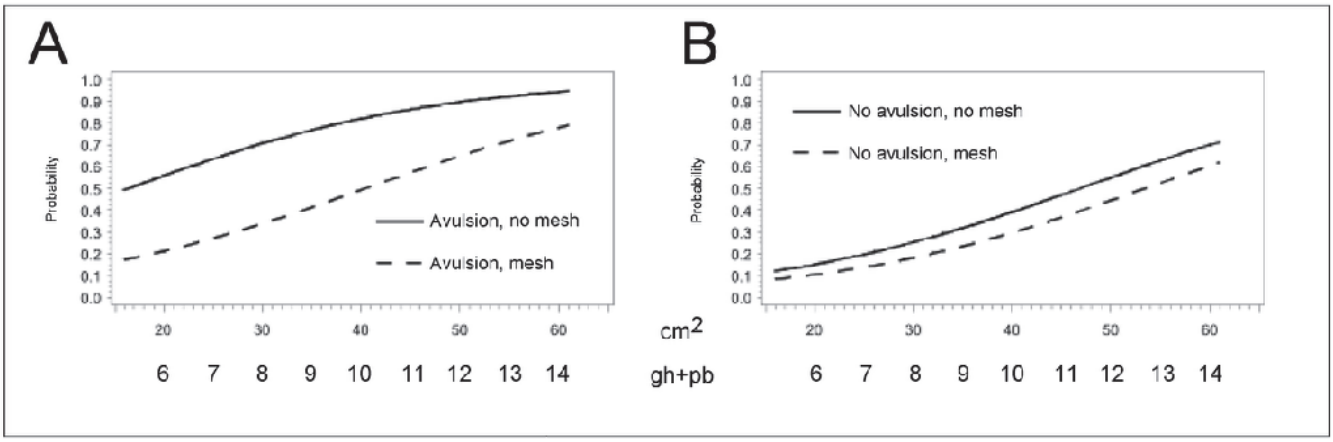
25

Australian and New Zealand Journal of Obstetrics and Gynaecology 2013 DOI: 10.1111/ajo.12171

Original Article

The use of 3-dimensional ultrasound of the pelvic floor to predict recurrence risk after pelvic reconstructive surgery

Natassia RODRIGO, Vivien WONG, Ka Lai SHEK, Andrew MARTIN and Hans Peter DIETZ*
Sydney Medical School Nepean, Penrith, New South Wales, Australia



n=334, mean f.up 2.5 years
see also: Svabik et al., UOG 2014;DOI: 10.1002/uog.13305(43):365-71.

116
26

Review Article | Published: 11 March 2021

Pregnancy, labour and delivery as risk factors for pelvic organ prolapse: a systematic review

Laura Cattani, Judit Decoene, Ann-Sophie Page, Natalie Weeg, Jan Deprest ✉ & Hans Peter Dietz

International Urogynecology Journal 32, 1623–1631 (2021) | Cite this article

Table 1 Summary of findings: associations between childbirth-related factors and prolapse and levator avulsion

	Symptoms of prolapse		Findings of prolapse		Levator avulsion	
	OR (95%CI)	*p*	OR (95%CI)	*p*	OR (95%CI)	*p*
Maternal age (per y)	1.01 (0.99 – 1.03)	0.33	1.08 (1.02 – 1.14)	0.005	1.07 (1.04 – 1.10)	< 0.00001
First vaginal delivery	2.65 (1.81 3.88)	< 0.00001	4.85 (2.15 10.94)	0.0001	41.60 (4.13 419.41)	0.002
3 or more vaginal deliveries	2.21 (1.39 – 3.51)	0.0009	0.94 (0.37 – 2.38)	0.90	1.34 (0.82 – 2.18)	0.25
Section vs. spontaneous	0.38 (0.29 – 0.51)	< 0.00001	0.28 (0.20 – 0.40)	< 0.00001	0.10 (0.03 – 0.33)	0.0002
Section vs. nulliparity	1.21 (0.85 – 1.72)	0.29	1.24 (0.80 – 1.94)	0.34	–	–
Forceps vs. spontaneous	2.51 (1.34 – 4.69)	0.007	1.69 (1.21 – 2.37)	< 0.0001	5.92 (3.75 – 9.34)	< 0.00001
Vacuum vs. spontaneous	1.06 (0.82 1.37)	0.67	1.09 (0.83 1.42)	0.40	1.55 (0.85 2.86)	0.16
Levator avulsion	1.84 (1.16 – 2.92)	0.01	3.89 (2.67 – 17.14)	< 0.00001	–	–

OR odds ratio, *CI* confidence interval, *p* p

Int Urogynecol J (2018) 29:13–21
DOI 10.1007/s00192-017-3475-4

REVIEW ARTICLE

Risk factors for prolapse recurrence: systematic review and meta-analysis

Talia Friedman[1,2] · Guy D. Eslick[3] · Hans Peter Dietz[1]

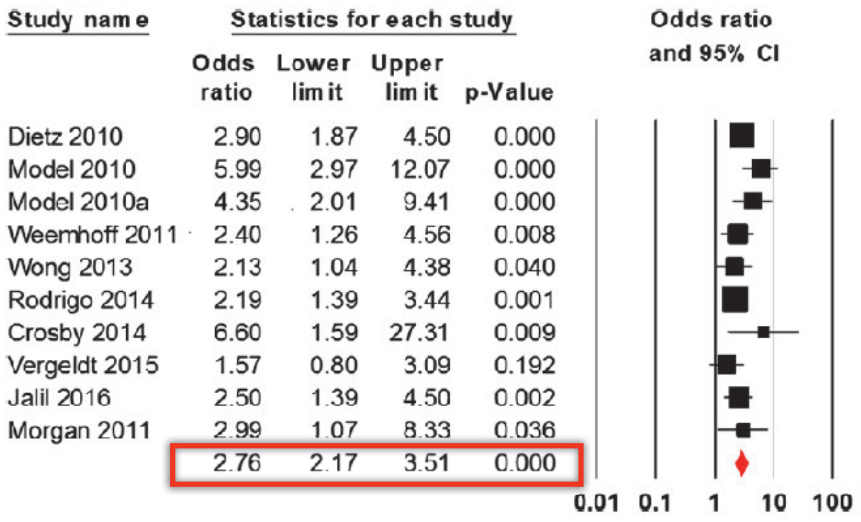


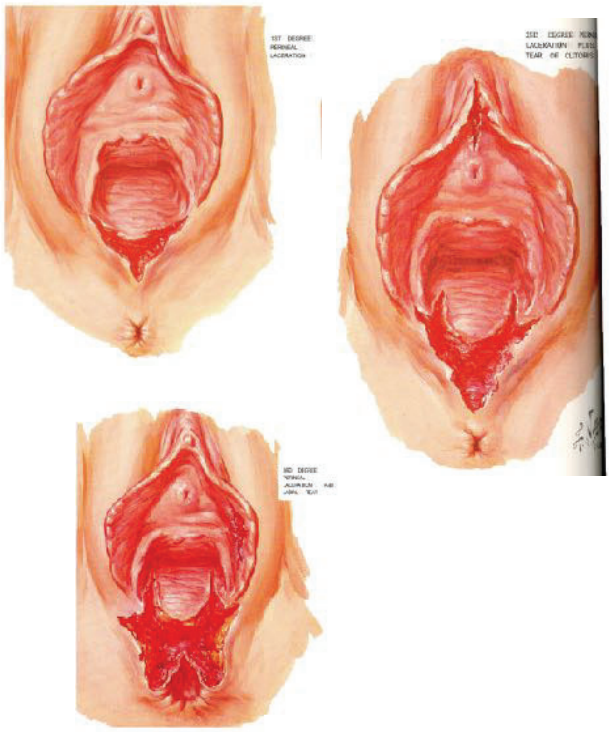
Fig. 2 Meta-analysis of association between levator muscle avulsion and pelvic organ prolapse (POP) recurrence. Test for heterogeneity $I^2 = 24.96$, $P = 0.21$. Odds ratio estimates with the corresponding 95% confidence intervals

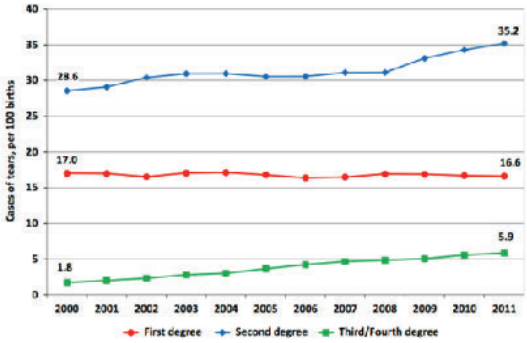
Conclusions- Avulsion

- Avulsion is common (2-25%) and the primary modifiable risk factor for pelvic organ prolapse.
- Main risk factors for avulsion are maternal age at first birth and Forceps, but prediction is difficult.
- Healing of complete avulsion is very unlikely, but partial trauma may improve through compensatory hypertrophy.
- Avulsion is the primary risk factor for prolapse recurrence. It ought to be diagnosed in clinical practice and accounted for in surgical research.
- AI will simplify data acquisition and diagnosis.

II
The Anal Sphincter

OASI



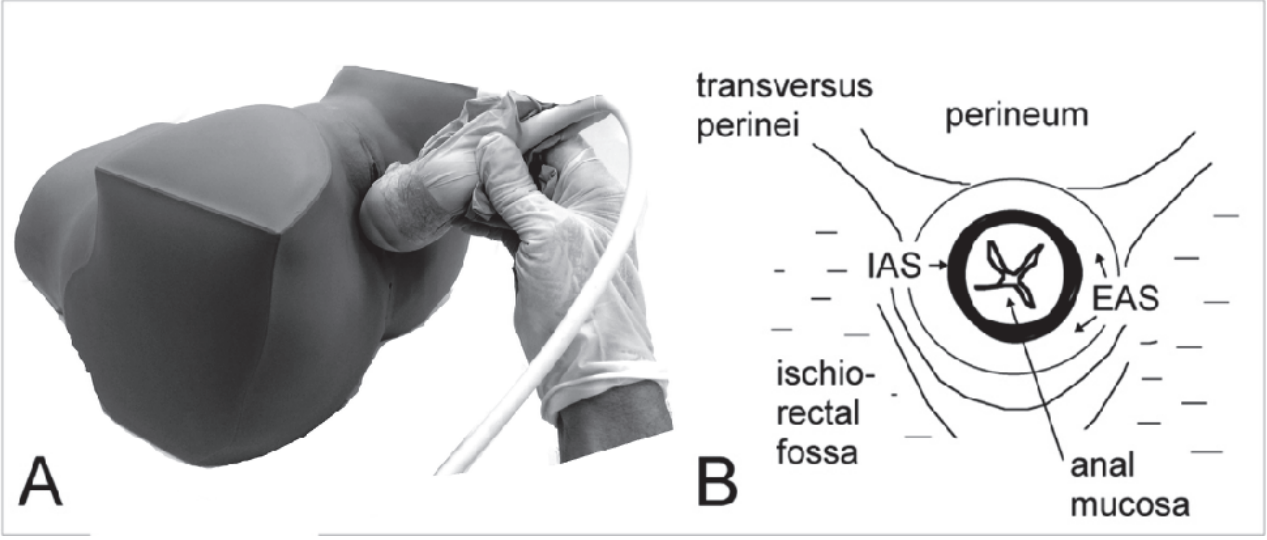


Gurol-Urganci et al, 2013

Exoanal Imaging of the Anal Sphincters

Hans Peter Dietz, MD, PhD, FRANZCOG, DDU, CU

J Ultrasound Med 2018; 37:263–280

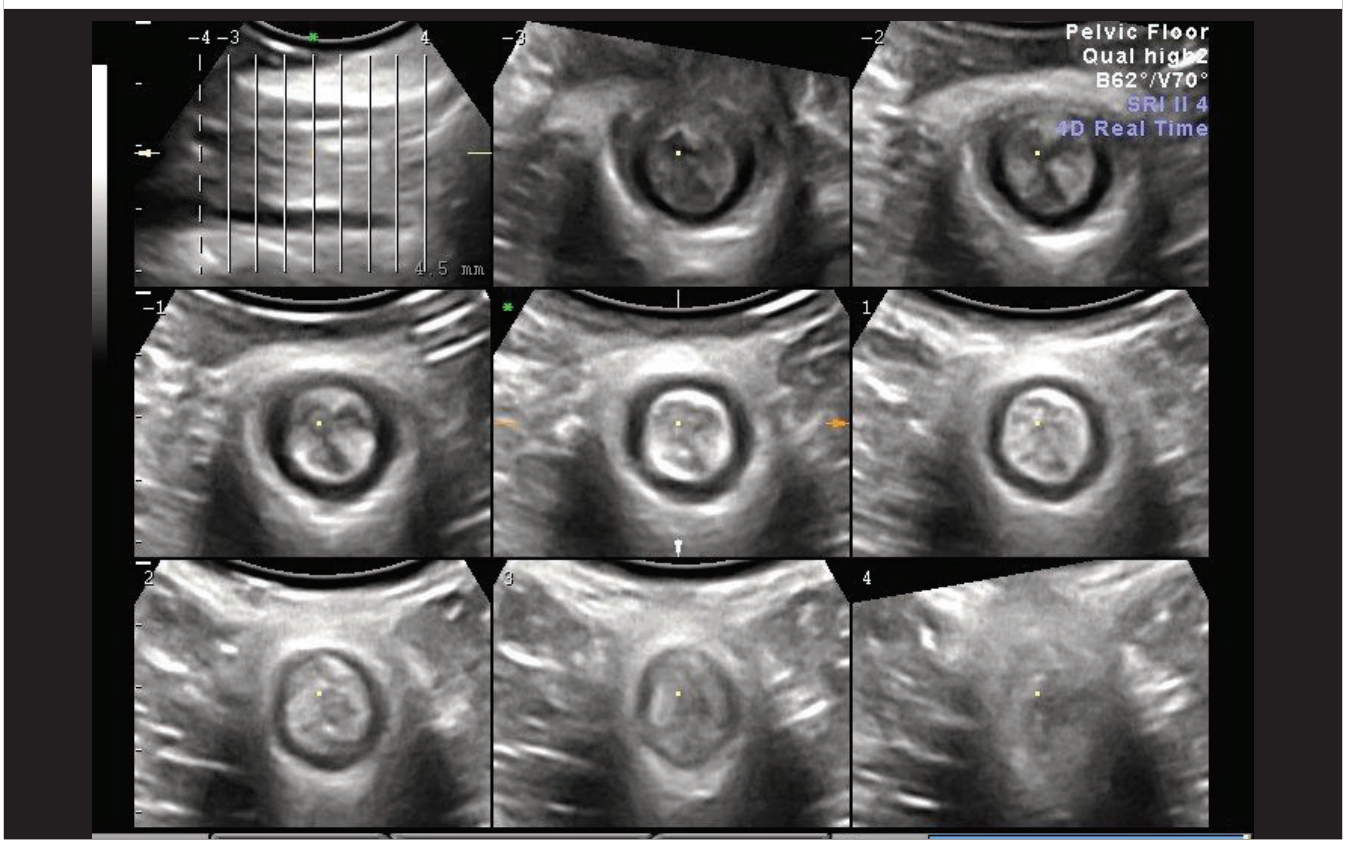


Ultrasound Obstet Gynecol 2013; 42: 461–466

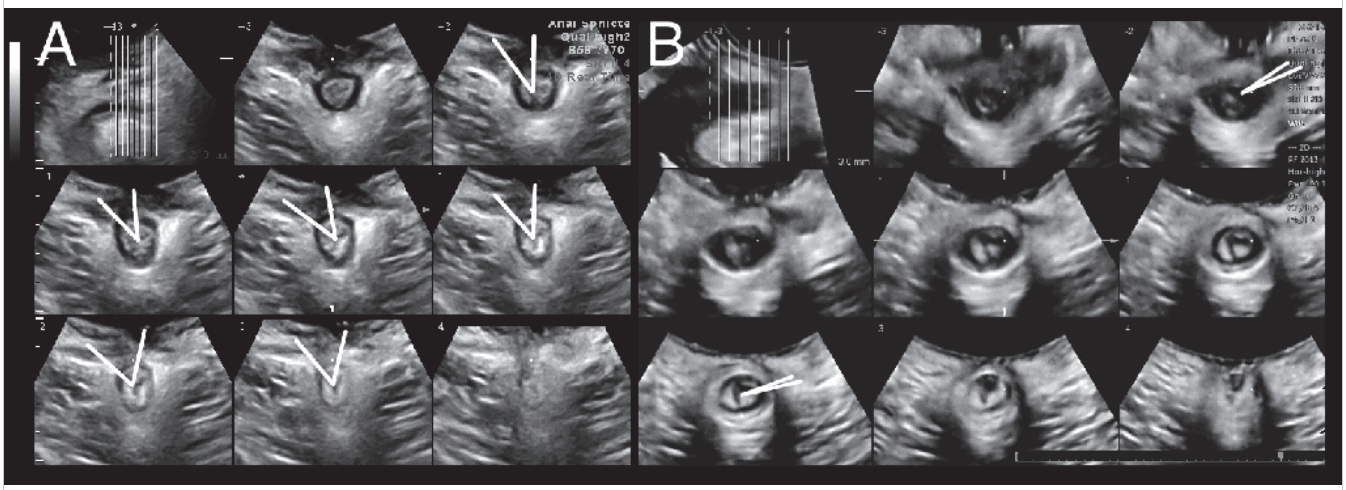
Prevalence of anal sphincter injury in primiparous women

R. A. GUZMÁN ROJAS*†, K. L. SHEK*, S. M. LANGER* and H. P. DIETZ*

Department of Obstetrics and Gynaecology, Sydney Medical School Nepean, University of Sydney, Penrith, Australia; †Departamento de Ginecología y Obstetricia, Facultad de Medicina, Clínica Alemana - Universidad del Desarrollo, Santiago, Chile



What's significant trauma? Scar or defect?
Size of defect?



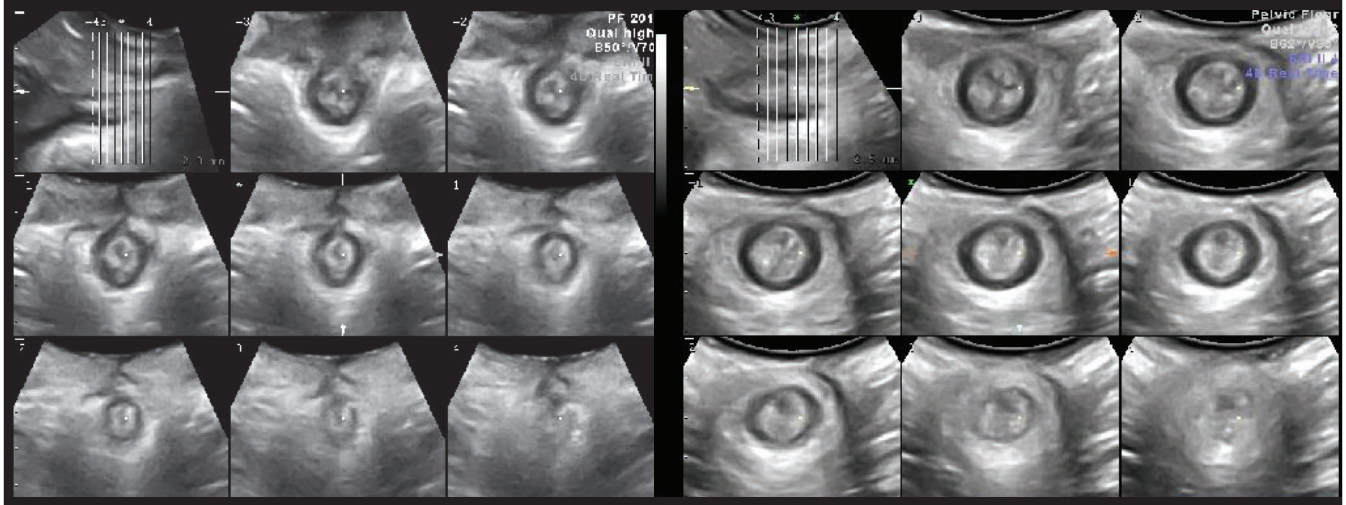
Defect angle measurements in two patients with 3b perineal tears after primary repair. In (A) there is a residual defect of well over 30 degrees in 6/6 slices. In (B) the (overlap) repair was much more effective, with defects of well below 30 degrees in only 2/6 slices.

Assessment of Perineal Scars on Translabial Pelvic Floor Ultrasound

A Pilot Study

Susanne Housmans, MD, Moshe Gillor, MD, PhD, Ka Lai Shek, MD, PhD, Hans Peter Dietz, MD, PhD

Tear or cut?



JUM Journal of Ultrasound in Medicine

aium

Original Article

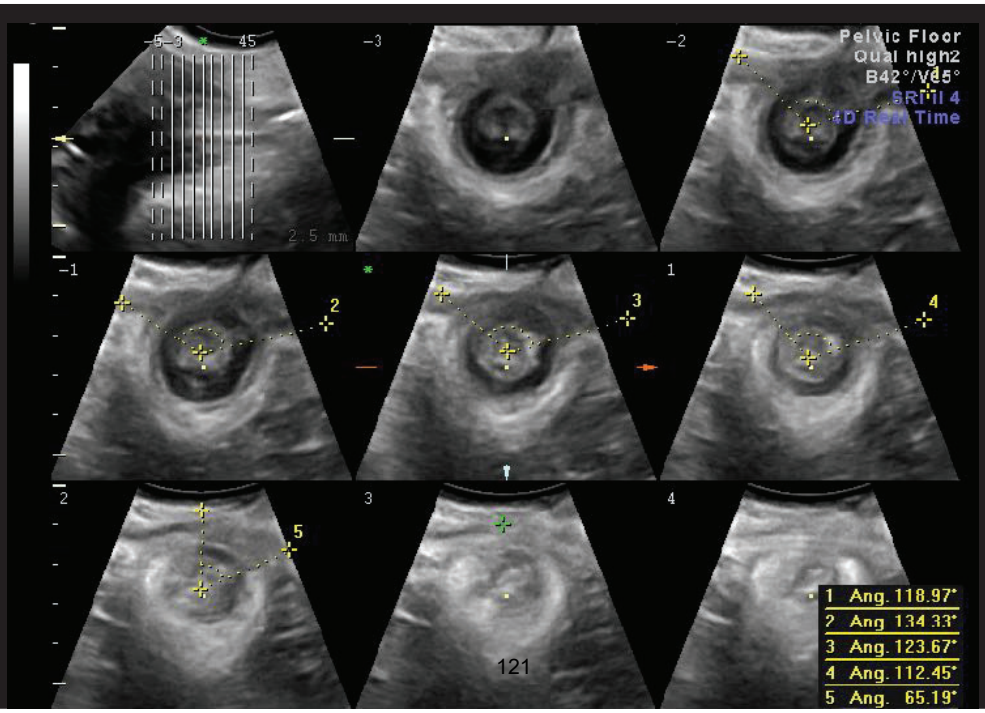
Imaging Characteristics of Episiotomy Scars on Translabial Ultrasound

An Observational Study

Nishamini Subramaniam MBBChBAO, MRCOG, Ka Lai Shek MD, PhD, FRANZCOG, Hans Peter Dietz MD, PhD, FRANZCOG ... See fewer authors

First published: 09 December 2021 | https://doi.org/10.1002/jum.15915

Adequacy of Episiotomy



Ultrasound Obstet Gynecol 2020; 0: 000–000
Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/uog.22011

How comparable is clinical grading of obstetric anal sphincter injury with that determined by four-dimensional translabial ultrasound?

•M. GILLOR •[1,2], K. L. SHEK[1,3] and H. P. DIETZ[1]

[1]*Sydney Medical School Nepean, Nepean Hospital, Penrith, NSW 2750, Australia;* [2]*Kaplan Medical Centre, Rehovot*

Grading of tears

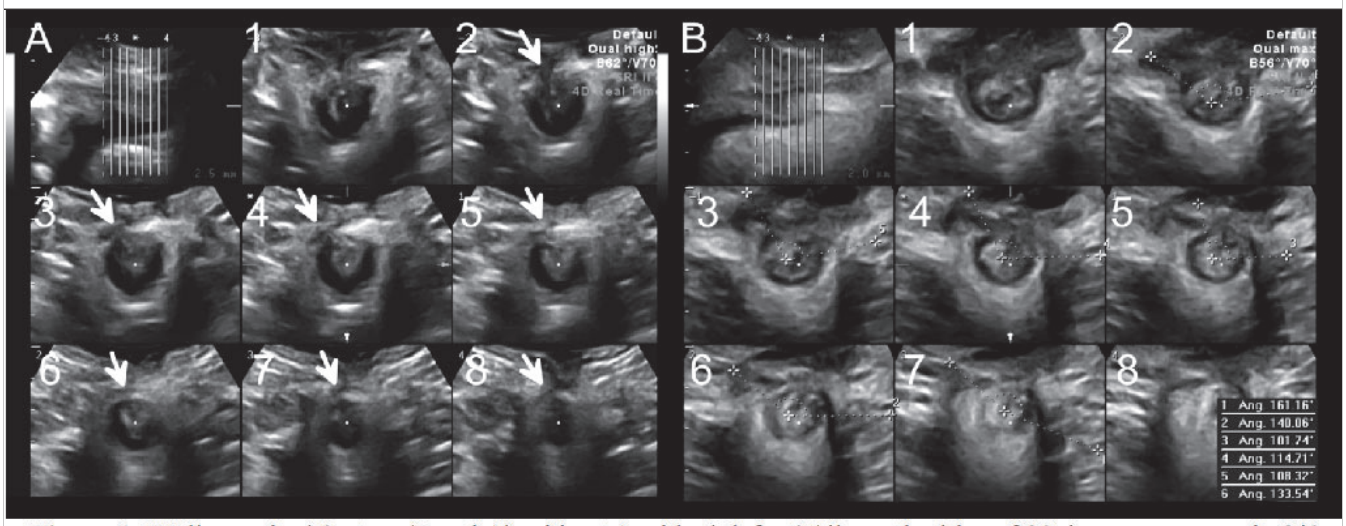


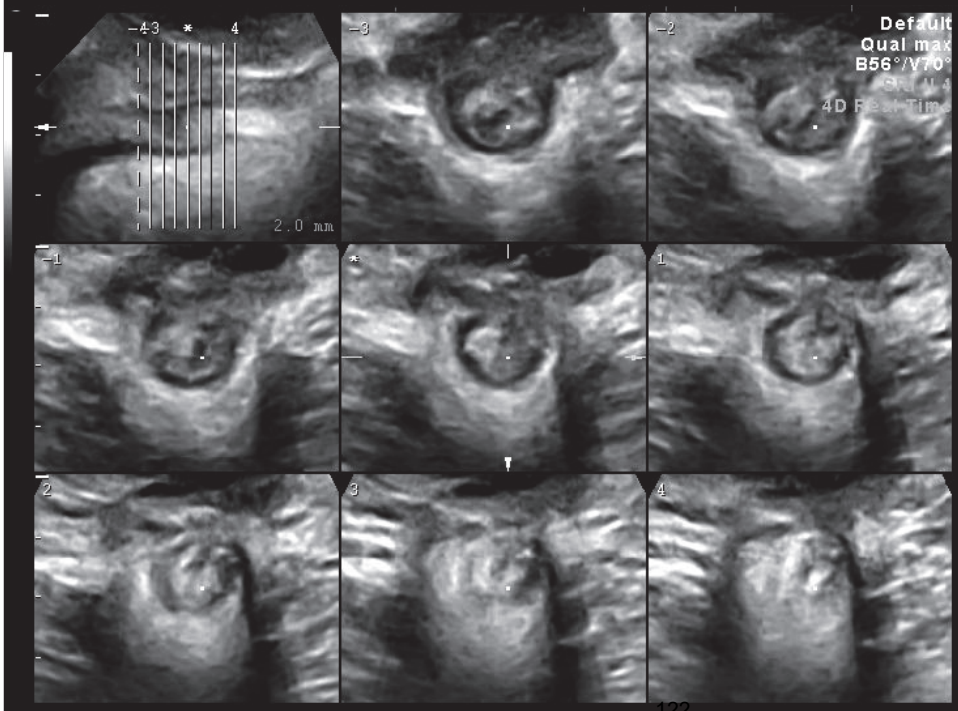
Figure 1: Well- repaired 3c tear (Panel A) without 'residual defect' (discontinuities of 30 degrees or more in 2/6 slices) and poorly repaired 3C tear (Panel B) with gaps of 30 degrees or more in all 6 slices, indicative of a 'residual defect'. The Gillor algorithm rates both as 3C, but only (B) is rated as a residual defect.

Gillor score: Grading of trauma: Scar or defect?

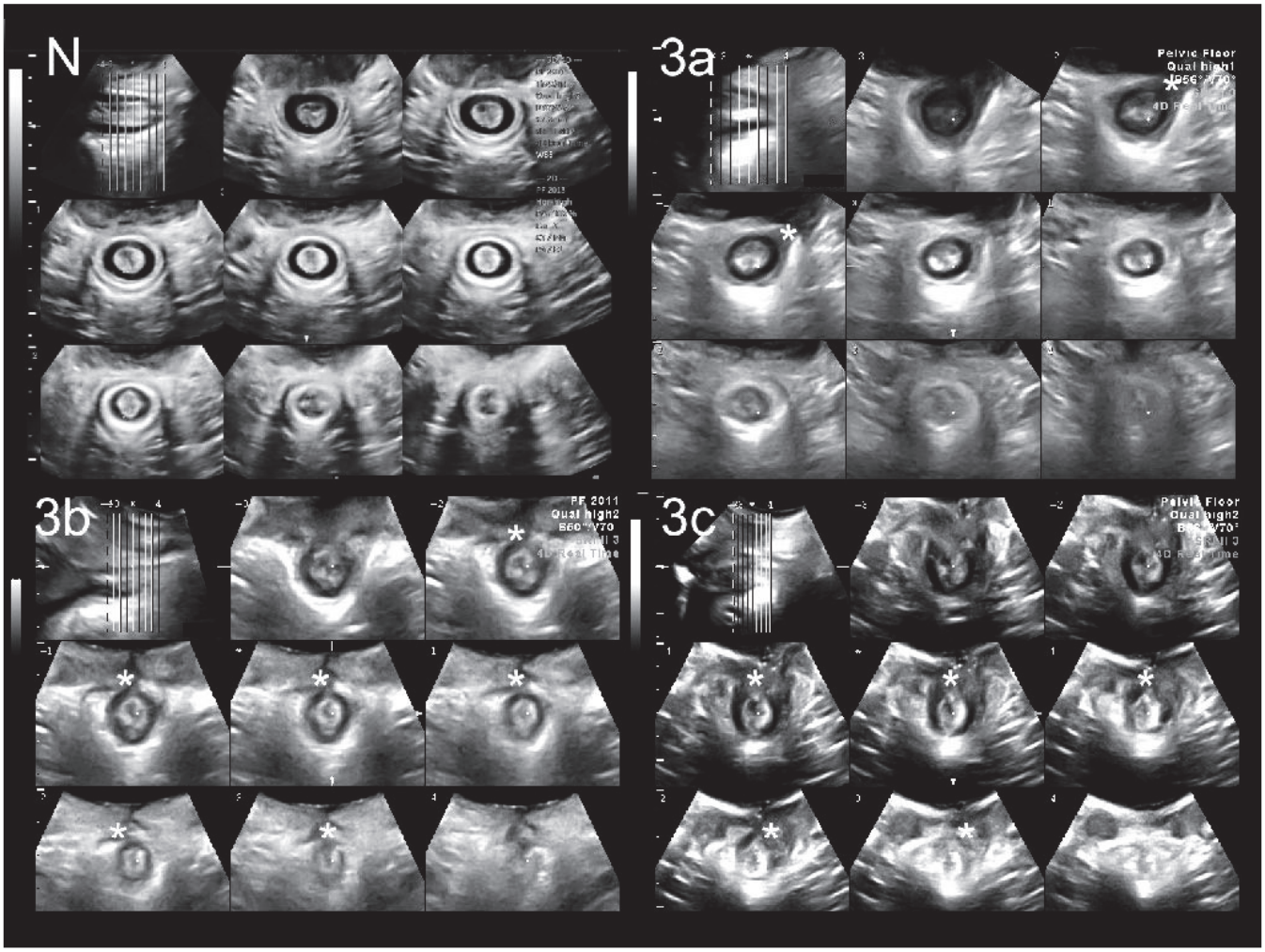
Medium- to Long-term Follow-up of Obstetric Anal Sphincter Injury

Friyan D. Turel, M.B.B.S.[1] • Susan Langer, R.N., R.M.[1] • Ka Lai Shek, M.D., Ph.D.[2]
Hans Peter Dietz, M.D., Ph.D.[1]

Dis Colon Rectum 2019; 62: 348–356
DOI: 10.1097/DCR.0000000000001297

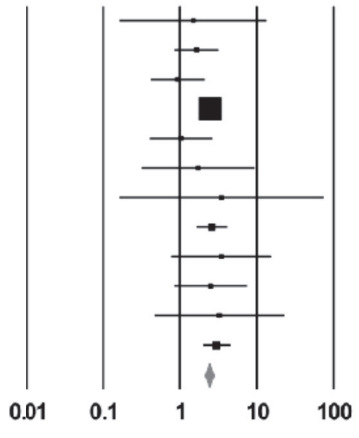


Short- versus longterm findings



Delivery Mode

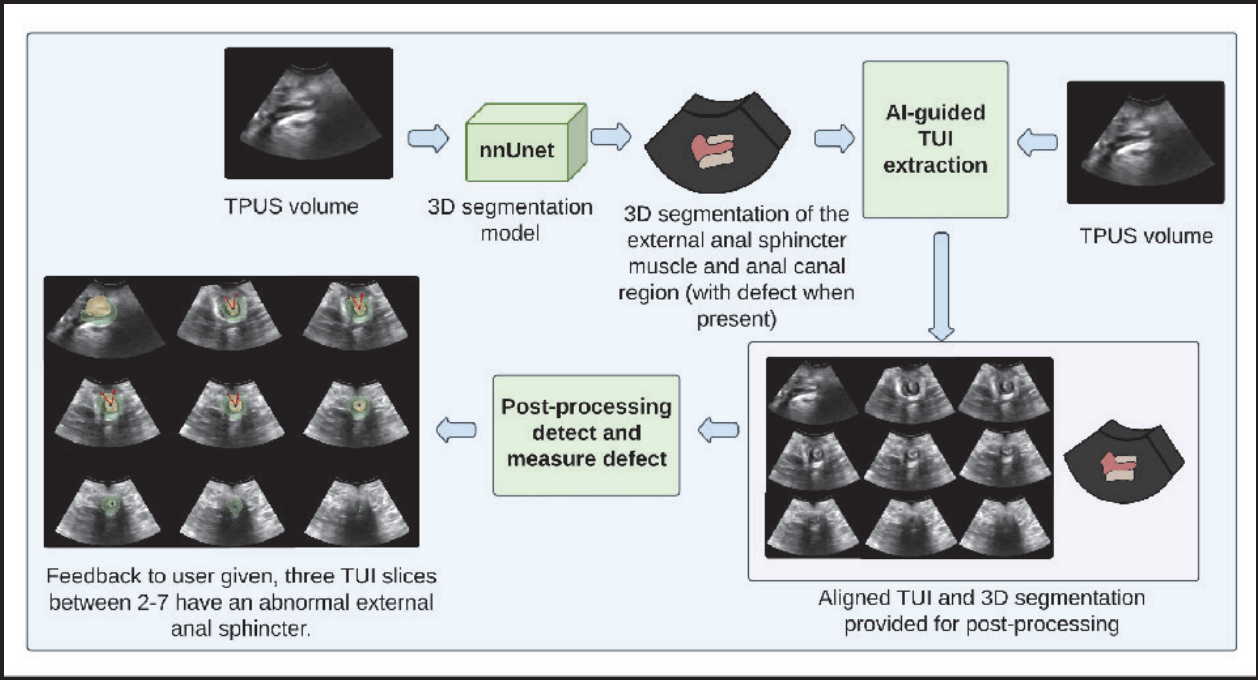
Study name	Odds ratio	Lower limit	Upper limit	p-Value
Chung 2015	1.48	0.16	13.57	0.73
Johanson 1993	1.64	0.85	3.17	0.14
Bahl 2013	0.94	0.41	2.14	0.89
Mehir 2013	2.46	2.16	2.79	0.00
Williams1991	1.04	0.40	2.69	0.94
Weerasasekera 2002	1.73	0.31	9.52	0.53
Brohi 2012	3.46	0.16	74.51	0.43
Macleod 2008	2.59	1.61	4.16	0.00
Murphy 2008	3.45	0.76	15.53	0.11
Fitzpatrick 2003	2.51	0.83	7.56	0.10
Belmonte-Montes 2000	3.25	0.46	22.92	0.24
Bofill 1996	2.99	1.97	4.54	0.00
	2.38	2.08	2.71	0.00



(n=1909439 forceps, n=11992201 vacuum)

Friedman 2016

AI for Sphincter Imaging



Williams et al, IUGA 2025

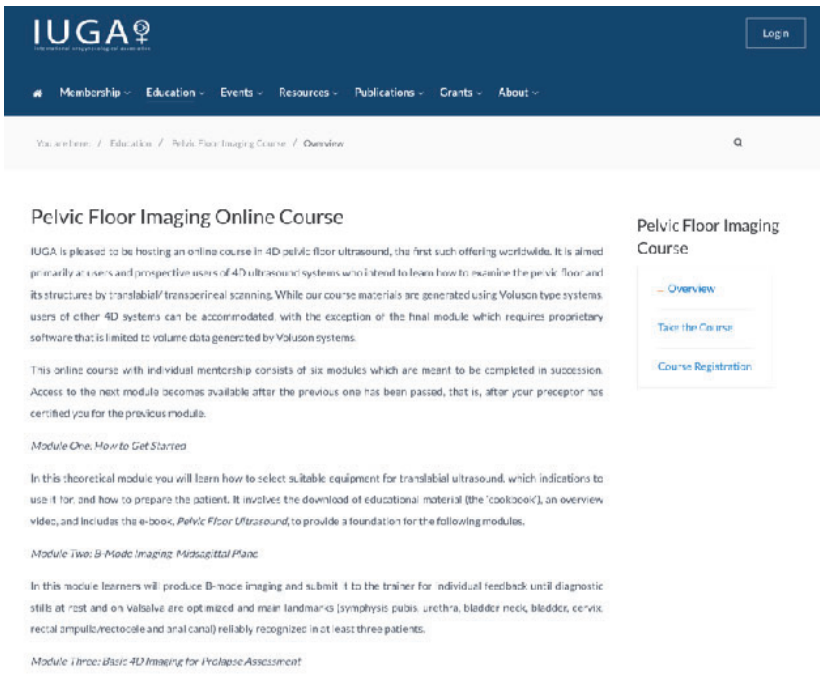
Automated tomography

Automatic

Manual

Conclusions- OASI

- OASI is the primary modifiable risk factor for faecal incontinence in women.
- Forceps is the main modifiable risk factor for OASI.
- Exo- anal tomographic ultrasound is the method of choice in diagnosing OASI and should become routine in 'perineal clinic' follow-up.
- This method shows great promise both in clinical audit and research on perineal trauma, including episiotomy.
- AI will simplify data acquisition and diagnosis



https://www.iuga.org/education/pfic/pfic-overview

Thank You!