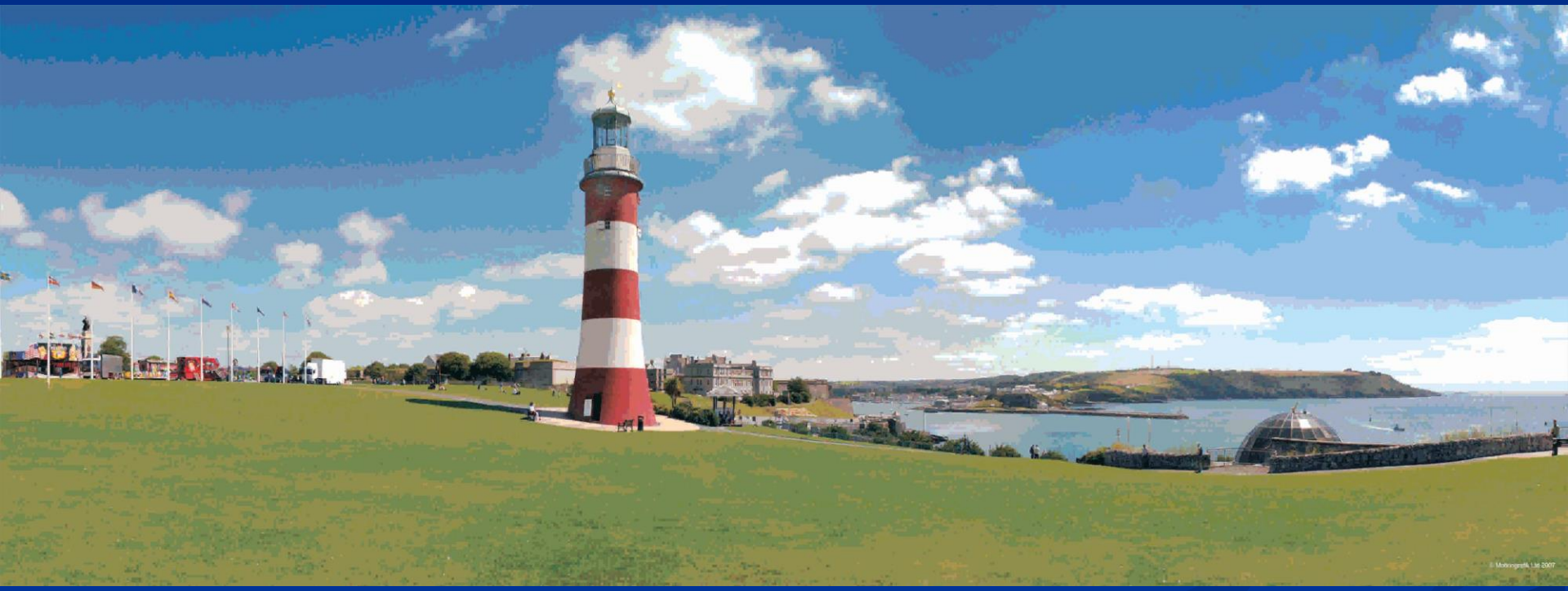
Who's At Risk of Obstetric Pelvic Floor Dysfunction (and how do we protect them?)



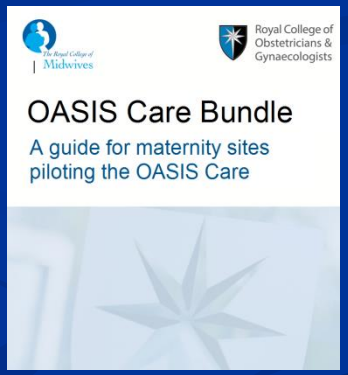
Professor Bob Freeman
Urogynaecology Unit, Plymouth UK

IUGA AHP Meeting
Mayday, Croydon
June 2019

Declaration of Interests

- Pfizer, Astellas: Speaker fees/honoraria

- Co-Inventor "Episcissors-60"



- RCOG/RCM working group on OASIS

- Past President IUGA

IUGA
international urogynecological association

Consequences of Birth Trauma: *What Women Say*

- Chronic pain
- Problems with establishing breastfeeding
- Problems bonding with their baby
- Bladder and bowel problems
- Sex and relationship difficulties (genital body image)

Iles et al 2018

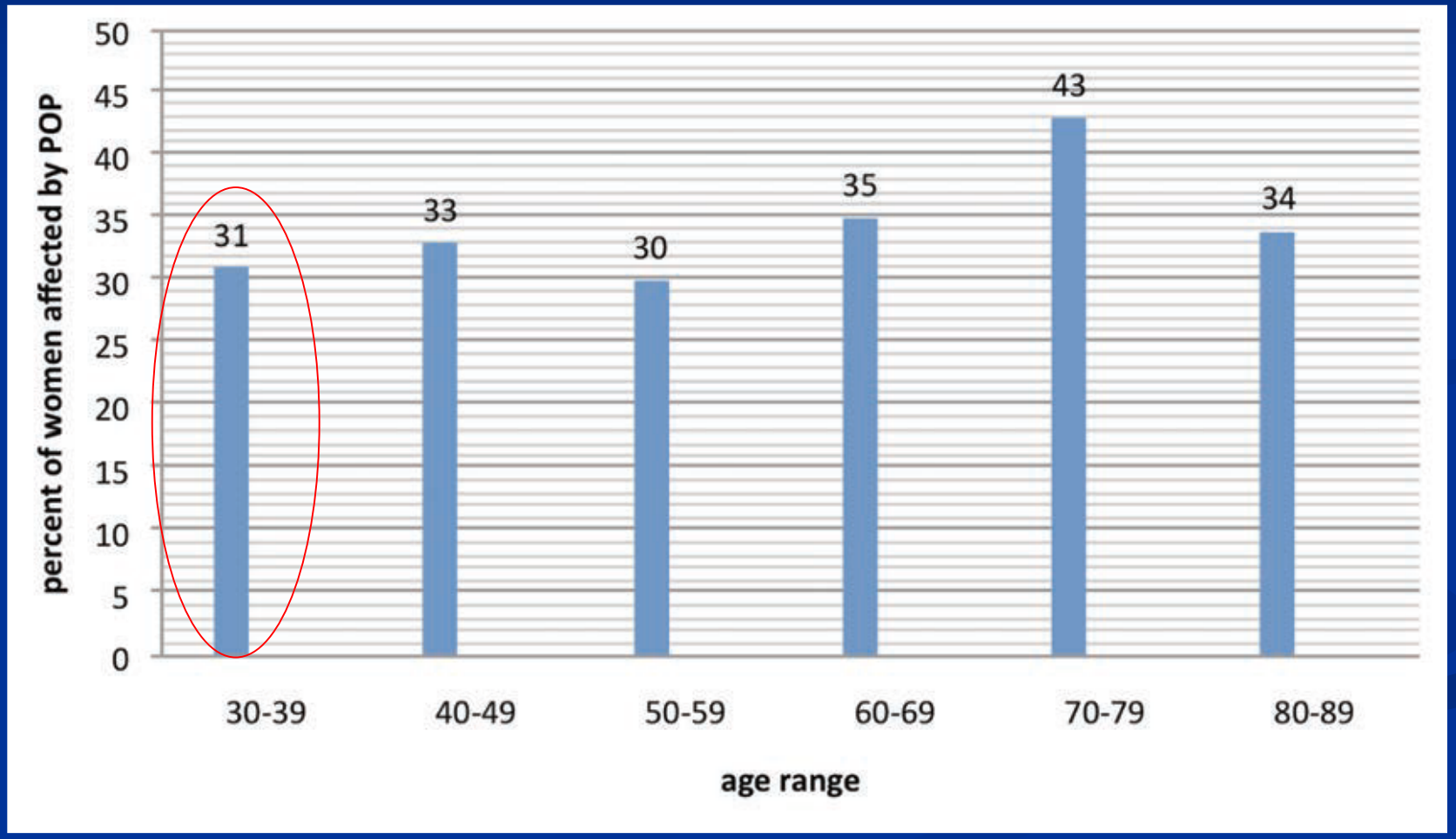
- Tokophobia ('fear of another pregnancy')
- PND and PTSD (including the partner and other relatives)

Birth Trauma Association 2017

Who's at Risk?
Maternal Birth Trauma

- How common are the symptoms?
- Why?
- What women need to know
- Identify at-risk groups
- Short maternal height, large birthweight; how do we manage them?
- Recommendations

The distribution of POP among women seeking care, US 2000 (Modified Luber 2001)



Incontinence
CMO Report on Women's Health 2014

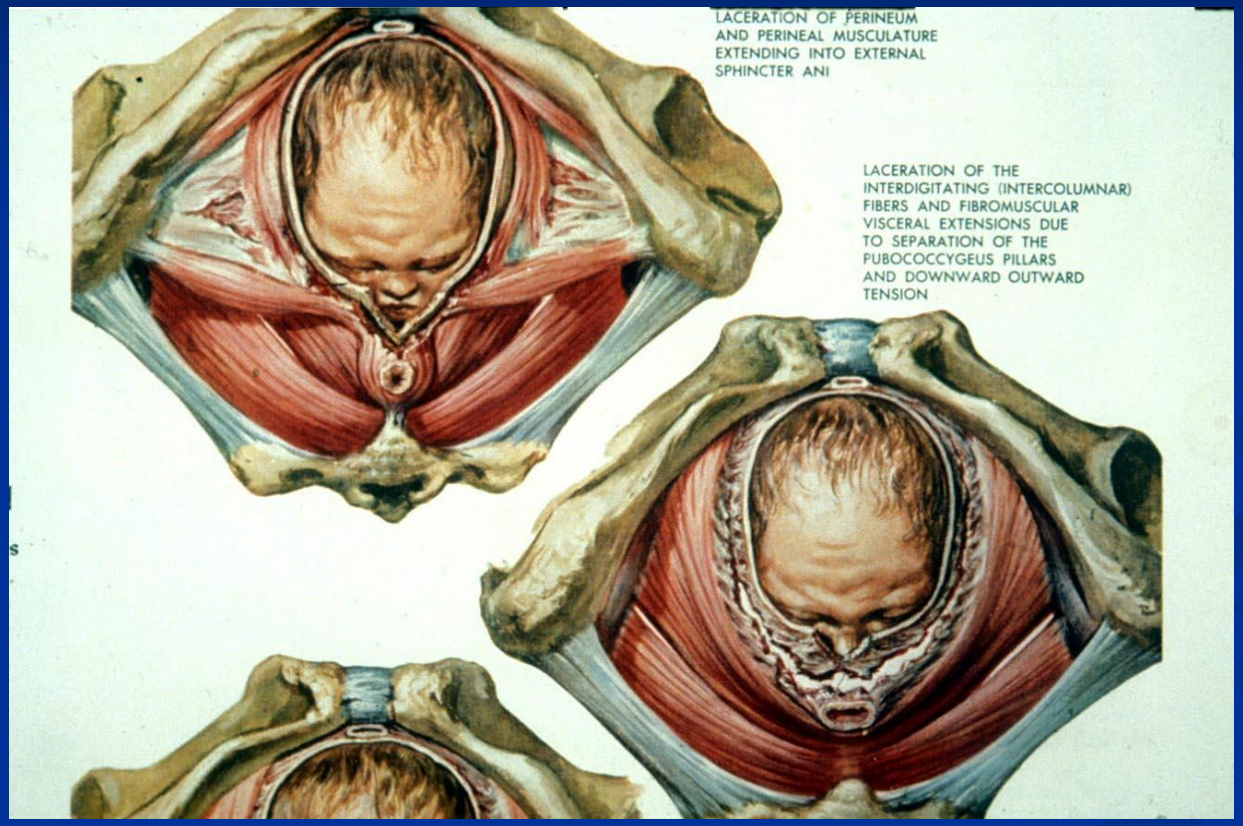
- 33% and 10% of women report urinary and faecal incontinence at 6 weeks postpartum
- 10 years later 20% still report urinary incontinence and 3% faecal incontinence.
- This is morbidity, not mortality, but the number of women affected is enormous.

Davies S 2014

Who's at Risk?
Maternal Birth Trauma

- Symptoms are common (20-40%)
- **Why?**
- What women need to know
- Identify at-risk groups
- Short maternal height, large birthweight; how do we manage them?
- Recommendations

Pelvic Floor Injury:
Reasons for failure to recover:
Forceps, Weak Collagen/Fascia



Milsom, I., Altman, D., Cartwright, R. et al 2013.
Epidemiology of urinary incontinence (UI) and other lower urinary tract symptoms (LUTS), pelvic organ prolapse (POP) and anal incontinence (AI).

In: P. Abrams, L. Cardozo, S. Khoury, A. Wein (Eds.) **5th International Consultation on Incontinence**

Delivery mode and the risk of levator muscle avulsion: a meta-analysis.

- 20 studies: 17 USS, 3 MRI
- Forceps is a strong risk factor for levator avulsion:
- OR of 6.94 (4.93-9.78) compared with NVD
- OR of 4.57 (3.21-6.51) compared with vacuum birth.

Friedman T et al IUJ 2019

Levator Ani Injuries

- Major levator injuries vs minor defects:
- Symptoms in 35% vs 15% (at 6-12 months).

  (DeLancey et al 2003, Heilbrun et al 2010, Albrich et al 2012)
- Older primips, instrumental delivery (rate is increasing)

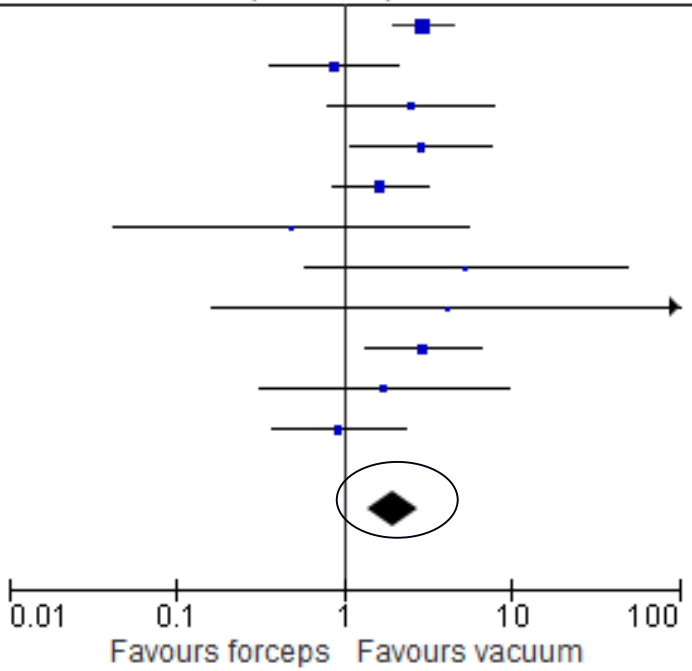
  (Liebling et al 2004, Kearney et al 2006, Rahmanou et al 2016, Quiroz et al 2017)

Instrumental delivery
Inform women of *less* OASI with Vacuum?

Study or Subgroup	Forceps Events	Forceps Total	Vacuum Events	Vacuum Total	Weight	Odds Ratio M-H, Random, 95% CI
Bofill 1996	90	315	38	322	24.4%	2.99 [1.97, 4.54]
Dell 1985	10	45	18	73	11.0%	0.87 [0.36, 2.11]
Fitzpatrick 2003	10	61	5	69	7.5%	2.51 [0.81, 7.81]
Johanson 1989	16	132	6	132	9.5%	2.90 [1.10, 7.65]
Johanson 1993	25	311	15	296	15.9%	1.64 [0.85, 3.17]
Khalid 2013	1	30	2	30	1.9%	0.48 [0.04, 5.63]
Maleckiene 1996	4	71	1	91	2.3%	5.37 [0.59, 49.18]
Mustafa 2002	1	20	0	27	1.1%	4.23 [0.16, 109.42]
Vacca 1983	24	152	9	152	12.5%	2.98 [1.34, 6.65]
Weerasekera 2002	4	238	2	204	3.7%	1.73 [0.31, 9.52]
Williams 1991	12	51	12	48	10.3%	0.92 [0.37, 2.32]
Total (95% CI)		**1426**		**1444**	**100.0%**	**1.99 [1.41, 2.82]**
Total events	197		108			

Heterogeneity: Tau² = 0.08; Chi² = 13.69, df = 10 (P = 0.19); I² = 27%

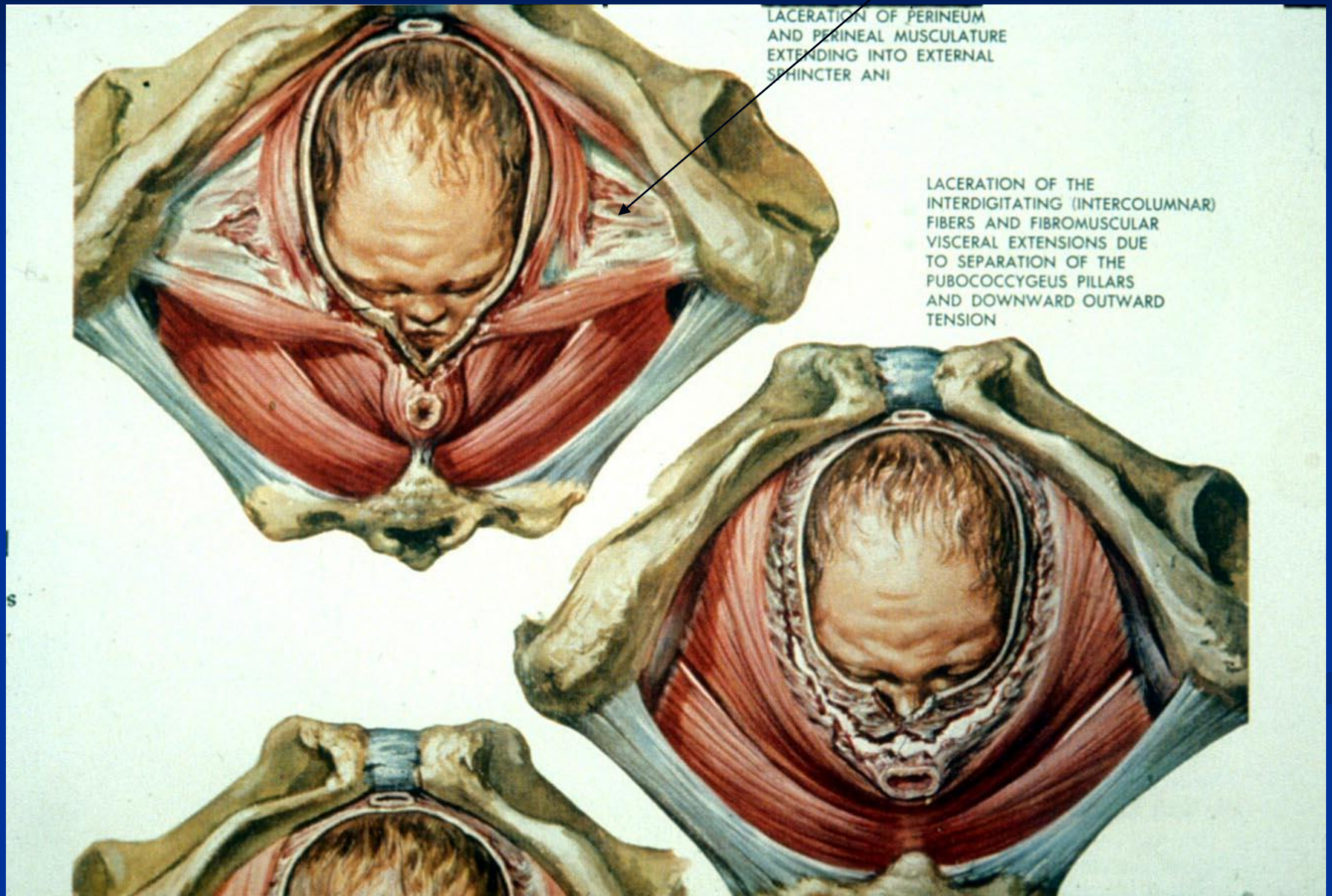
Test for overall effect: Z = 3.90 (P < 0.0001)



Who's at Risk?
Maternal Birth Trauma

- Symptoms are common (20-40%)
- Why? Forceps are a risk factor
- Women need to know about risks
- Identify at-risk groups
- Short maternal height, large birthweight; how do we manage them?
- Recommendations

Childbirth Trauma: Fascial tears
Will they repair if Collagen is weak?

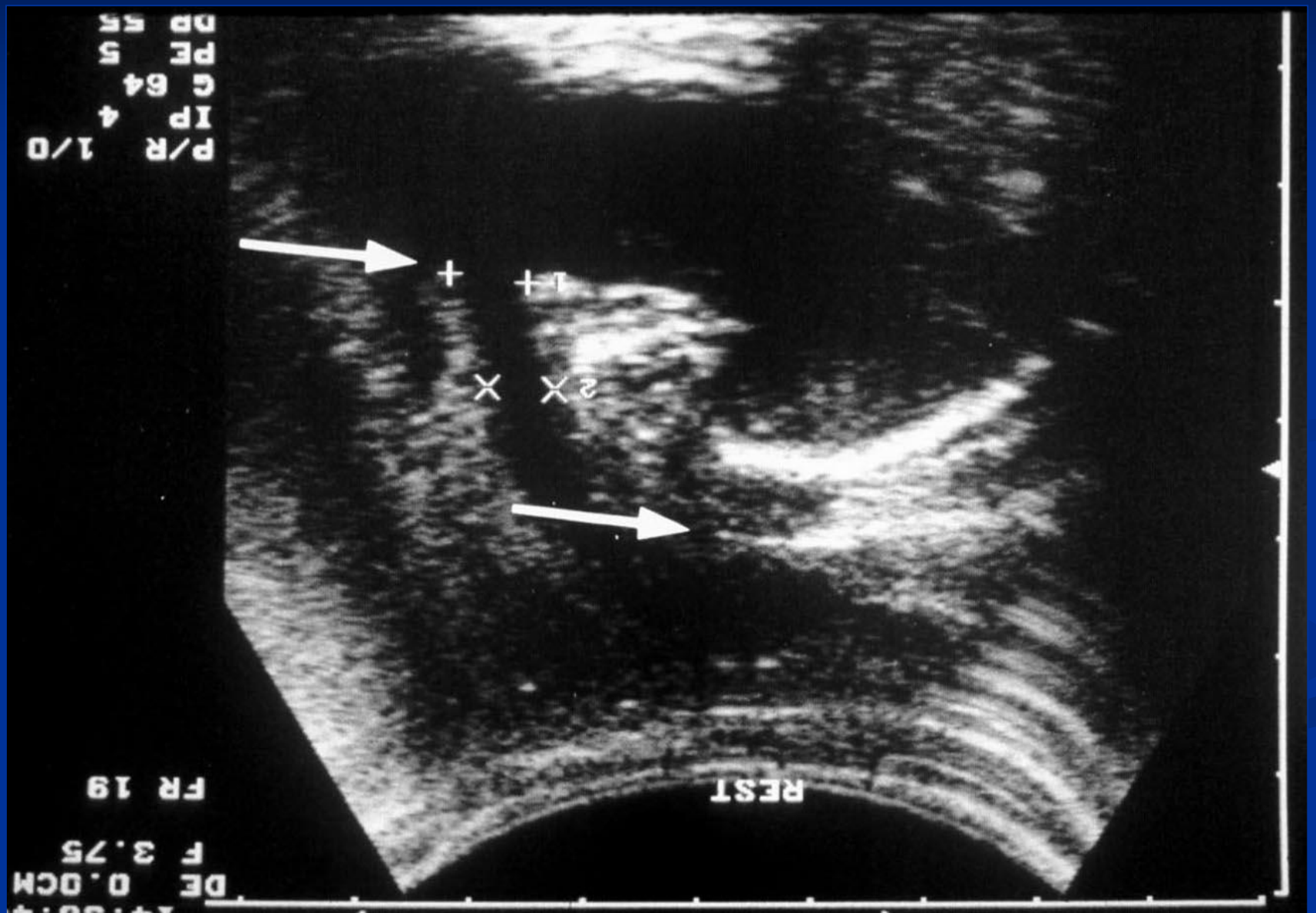


Weak Fascia/Collagen

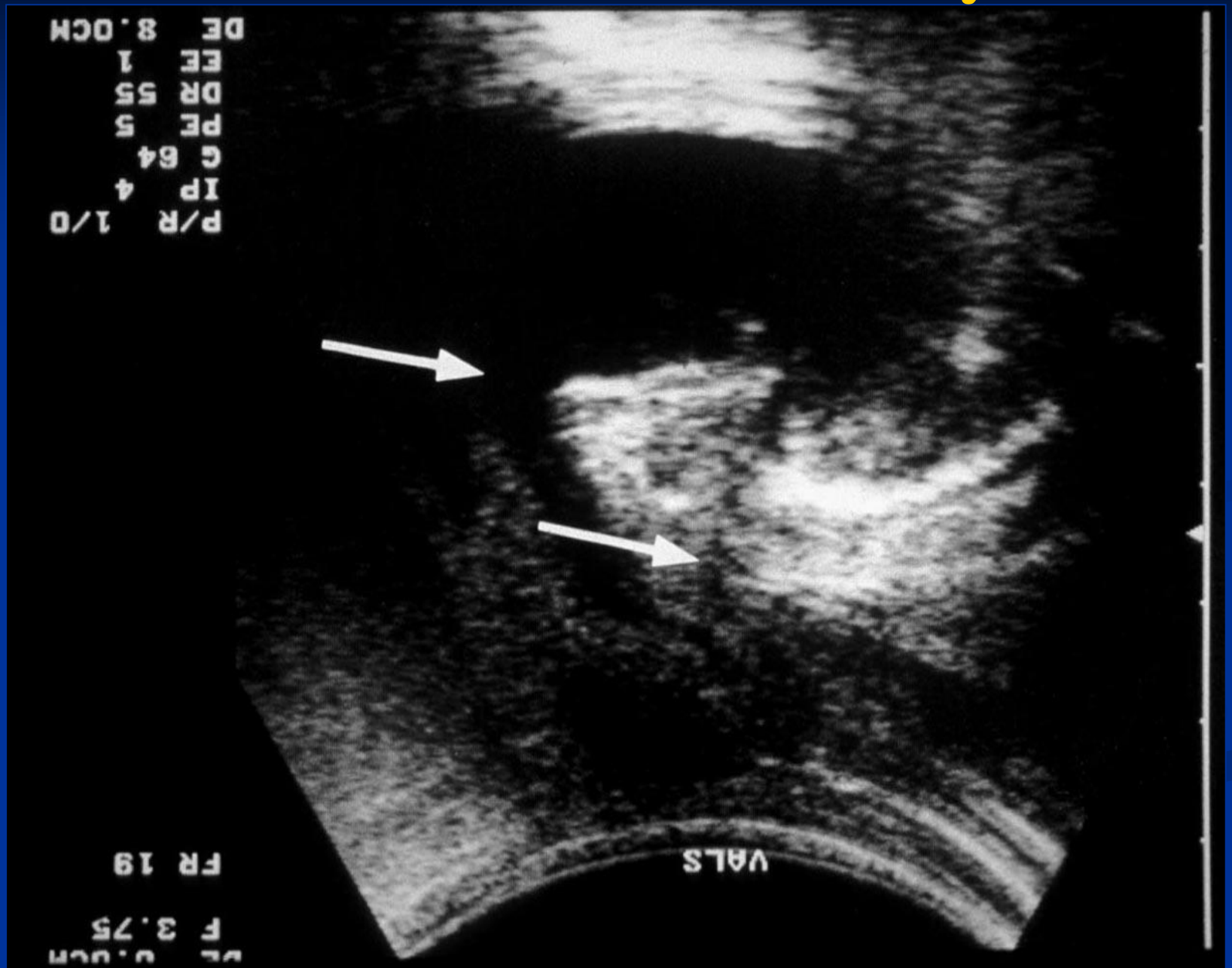
- Reduced collagen in USI and prolapse
  (Falconer et al 1994, Jackson et al 1997, Phillips et al 2006)
- 'Congenital/Genetic' weak collagen
  (Keane et al 1997, Chen&Yeh 2011, Campeau L et al 2011)
- Will it repair after vaginal delivery?
- Markers in pregnancy:
  Joint hypermobility, striae? (Chaliha et al 1999, Tincello 2002)
- Bladder neck mobility (King & Freeman 1998)

Antenatal Bladder Neck Mobility: a risk factor?

King&Freeman 1998



Bladder neck mobility



Antenatal Bladder Neck Mobility and Postpartum Stress Incontinence

King & Freeman BJOG 1998

	Continent	Incontinent
rotation < 10°	68	4
rotation > 10°	16	15

Antenatal PFMT in At-Risk Women

with bladder neck mobility

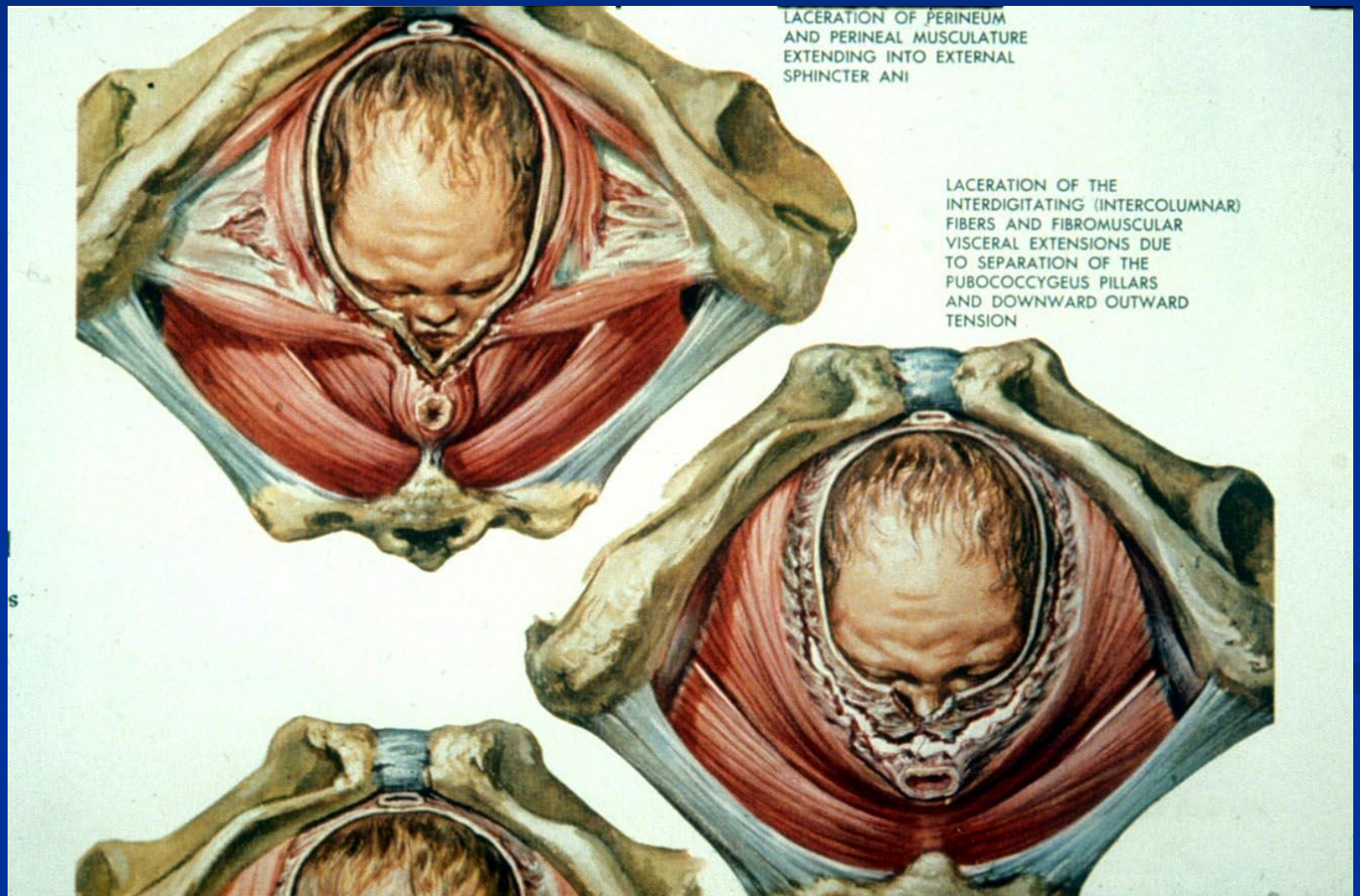
SUI at 3 months post-natal

	PFE's (n = 120)	Controls (n = 110)
Continent	80.8%	67.3%
Stress Incontinence (Mild/Moderate)	19.2%	32.7%

p = 0.023

Reilly et al BJOG 2002

Forceps Injury, Weak Collagen/Fascia: Won't Recover?



Also a Different Obstetric Population from 20yrs ago: at higher Risk?

- Older primips: delaying starting a family e.g. for career reasons
- High BMI/obesity/type 2 diabetes
- Larger birthweight babies
- All risk factors for pelvic floor dysfunction and adverse pregnancy outcomes

Who's at Risk?
Maternal Birth Trauma

- Symptoms are common (20-40%)
- Why? Forceps are a risk factor
- Women need to know if they're higher risk
- Identify at-risk groups
- Short maternal height, large birthweight; how do we manage them?
- Recommendations

Nadine Montgomery
Supreme Court Ruling 2015

New standard of care in information cases: England

Montgomery v Lanarkshire Health Board
[2015] UKSC 11 (11 March 2015)

- Claim against obstetrician for damages for injury (cerebral palsy) sustained during birth
- Alleged failure to warn of risks of vaginal birth (shoulder dystocia) and alternative of elective caesarean
- Held: Standard of care determined by Court – expert evidence not conclusive, hence rejected *Sidaway v Board of Governors of the Bethlem Royal Hospital and the Maudsley Hospital* [1985] AC 871 (expert evidence of medical practice) > aligns with *Rogers v Whitaker*
- **The courts determine what is the appropriate standard of care after giving weight to "*the paramount consideration that a person is entitled to make his own decisions about his life*".**

Montgomery vs Lanarkshire 2015
Supreme Court Ruling

- Where either mother or child is at heightened risk from vaginal delivery, doctors should volunteer the pros and cons of that option compared to a caesarean.

- We are concerned not only with risks to the baby, but also the risks to the mother.

- "Dr McLellan's view that caesareans are not in maternal interests is a value judgment"

Lady Hale: Montgomery Ruling 2015

What do we tell Women?

Provide Individual/'Bespoke' risk?

Int Urogynecol J
DOI 10.1007/s00192-014-2376-z

CLINICAL OPINION

UR-CHOICE: can we provide mothers-to-be with information about the risk of future pelvic floor dysfunction?

Don Wilson · James Dornan · Ian Milsom · Robert Freeman

Received: 13 January 2014 / Accepted: 13 March 2014

Abstract Vaginal childbirth is probably the most important factor in the aetiology of pelvic floor dysfunction (PFD) and

Keywords Pelvic floor dysfunction · Urinary inconti
Faecal incontinence · Pelvic organ prolapse · Vaginal d

UR-CHOICE: Prediction Model

- U UI before pregnancy
- R Race/ethnicity
- C Child bearing started at what age? (older primips)
- H Height (mother's height)
- O Overweight (BMI)
- I Inheritance (family history)
- C Children (number of children desired)
- E Estimated fetal weight

AJOG American Journal of Obstetrics & Gynecology

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Article in Press

Predicting risk of pelvic floor disorders 12 and 20 years after delivery

J. Eric Jelovsek, MD, Kevin Chagin, MS, Maria Gyhagen, MD, PhD, Suzanne Hagen, PhD, Don Wilson MD, Michael W. Kattan, PhD, Andrew Elders, MSc, Matthew D. Barber, MD, MHS, Björn Areskoug, PhD, Christine MacArthur, PhD, Ian Milsom, MD, PhD

PlumX Metrics

DOI: http://dx.doi.org/10.1016/j.ajog.2017.10.014

Article Info

Abstract | Full Text | Images | References

Background

Little progress has been made in the prevention of pelvic floor disorders, despite their significant health and economic impact. The identification of women who are at risk remains a key element in targeting prevention and planning health resource allocation strategies. Although events around the time of childbirth are recognized clinically as important predictors, it is difficult to counsel women and to intervene around the time of childbirth because of an inability to convey a patient's risk accurately in the presence of multiple risk factors and the long time lapse, which is often decades, between obstetric events and the onset of pelvic floor disorders later in life. Prediction models and scoring systems have been used in other areas of medicine to identify patients who are at risk for chronic diseases. Models have been developed for use before delivery that predict short-term risk of pelvic floor disorders after childbirth, but no models that predict long-term risk exist.

http://riskcalc.org/UR_CHOICE

UR-CHOICE Pelvic Floor Disorders Risk Calculator

Risk Factors

Maternal Age at Delivery

14 28 34

14 16 18 20 22 24 26 28 30 32 34

Number of Previous Births

Maternal Pre-Pregnancy Weight

(kilograms)

or

(pounds)

Maternal Height

(centimeters)

or

(feet)

(inches)

12 and 20 Year Risk of Pelvic Floor Disorders

12-Year Risk for Women with Multiple Births

Outcomes	Route of Delivery	Any	Bothersome	Treatment	Bothersome or Treatment	Average Risk of Bothersome or Treatment
Pelvic Organ Prolapse	Vaginal					9%
	C-Section					7%
Urinary Incontinence	Vaginal					38%
	C-Section					31%
Fecal Incontinence	Vaginal					5%
	C-Section					5%
Any Pelvic Floor Disorder	Vaginal					46%
	C-Section					39%
Two or More Pelvic Floor Disorders	Vaginal					8%
	C-Section					6%

Low Risk: Reassure

Outcomes	Route of Delivery	Any	Bothersome	Treatment	Bothersome or Treatment	Average Risk of Bothersome or Treatment
Pelvic Organ Prolapse	Vaginal	10%	3%	1%	4%	9%
	C-Section	3%	1%	<0.5%	1%	3%
Urinary Incontinence	Vaginal	30%	14%	2%	15%	20%
	C-Section	20%	10%	1%	10%	15%
Fecal Incontinence	Vaginal	14%	3%	1%*	2%	3%
	C-Section	10%	1%	2%*	2%	3%
Any Pelvic Floor Disorder	Vaginal	40%	18%	4%	20%	27%
	C-Section	26%	10%	2%	12%	18%
Two or More Pelvic Floor Disorders	Vaginal	13%	2%	<0.5%	2%	4%
	C-Section	6%	1%	<0.5%	1%	2%

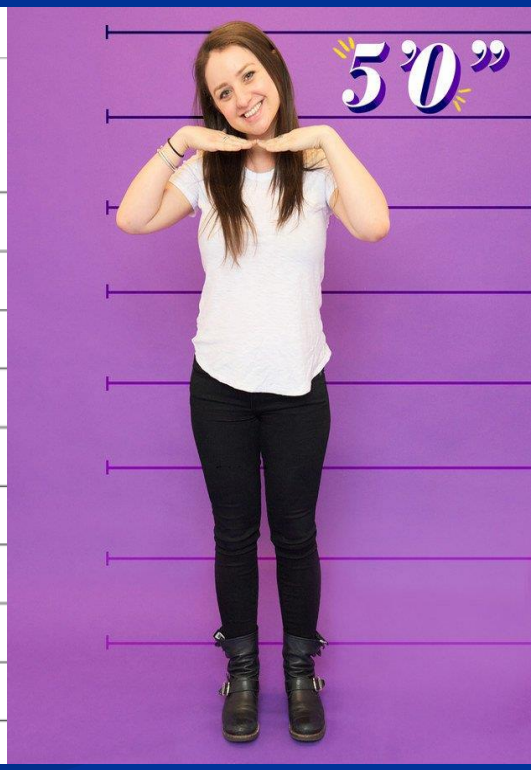
Prevention with PFMT in those at 'medium risk'

What about those at High Risk?

Primip, 28yrs, 70kg, 150cms, estimated bw and HC= 3.5kg and 34cm, family history of POP

20-Year Risk for Women with First Birth

Outcomes	Route of Delivery	Any	Bothersome	Treatment	Bothersome or Treatment	Average Risk of Bothersome or Treatment
Pelvic Organ Prolapse	Vaginal	>30%	>10%	4%	>20%	9%
	C-Section	13%	3%	4%	5%	3%
Urinary Incontinence	Vaginal	35%	8%	2%	9%	15%
	C-Section	23%	5%	1%	5%	7%
Fecal Incontinence	Vaginal	21%	3%	1%	3%	3%
	C-Section	15%	3%	1%	3%	3%
Any Pelvic Floor Disorder	Vaginal	50%	28%	7%	26%	22%
	C-Section	35%	14%	4%	14%	12%
Two or More Pelvic Floor Disorders	Vaginal	31%	4%	<0.5%	7%	4%
	C-Section	17%	2%	<0.5%	4%	2%



Aware of the Risks?
In-Labour CS

- The risk of in-labour C/S doubled for short women **(46.3%)** compared to tall women **(21.7%)** (independent of birthweight)

  Stulp G et al 2011

- High rate for in-labour CS for CPD in those<150cm

  Wongcharoenkiat N 2006

- A woman of 146cm height has a 2.5 times higher risk of intrapartum caesarean delivery (relative to another of 160 cm)

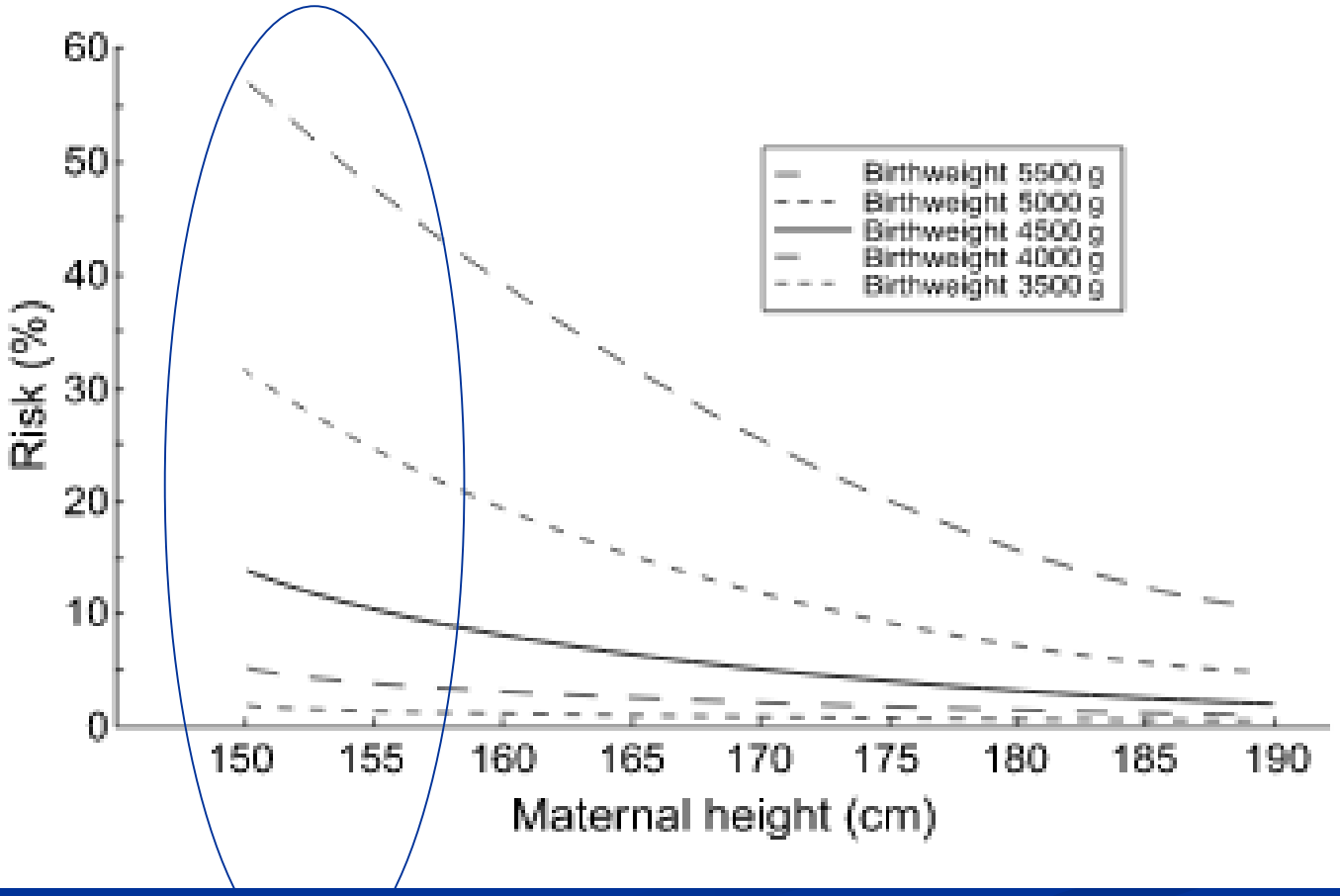
  Merchant K et al 2001

- Maternal height ≤ 154 cm OR 2.25 for in labour CS

  Wanchai Wianwiset 2011

Shoulder Dystocia

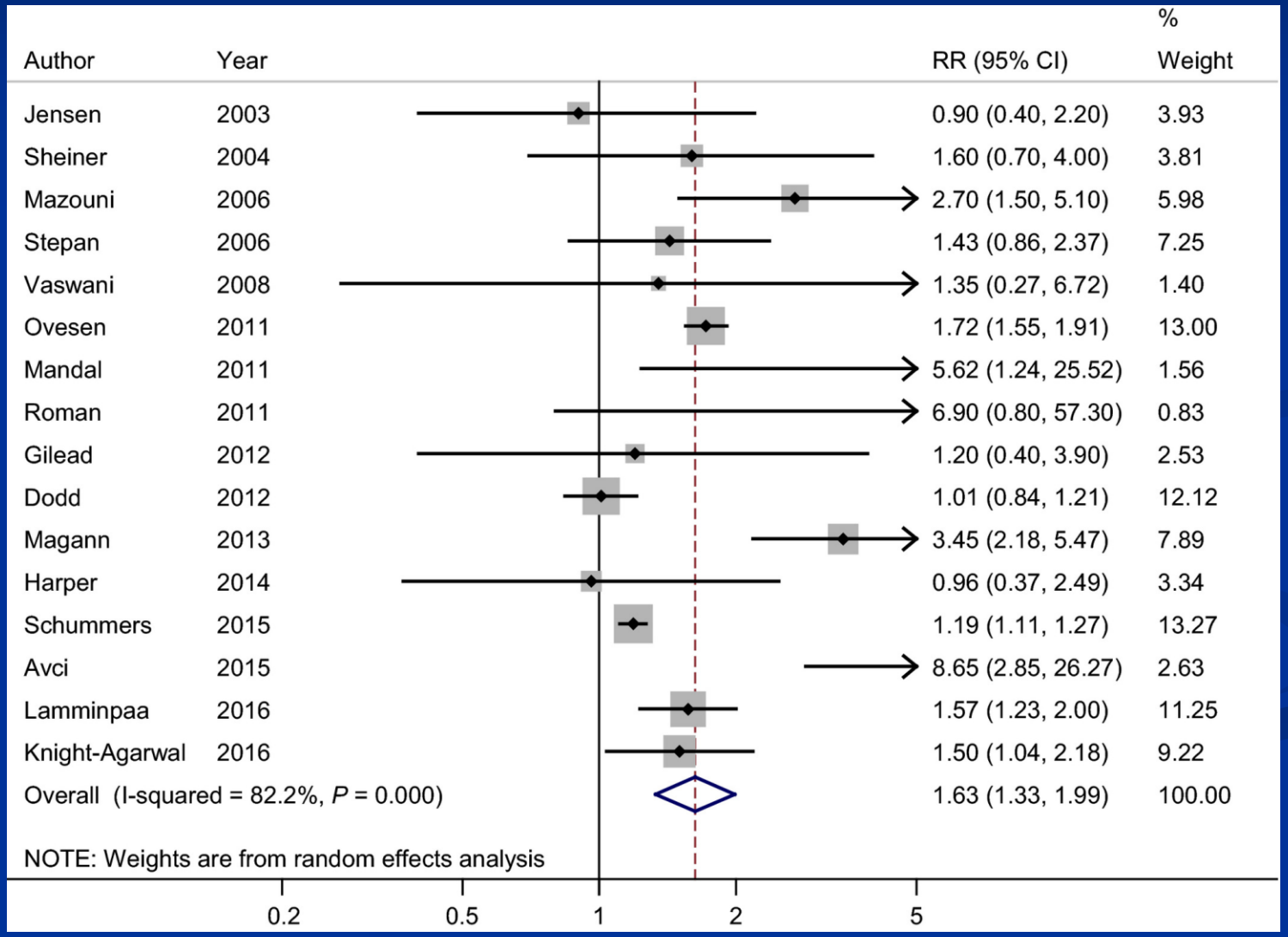
Correlation with maternal height and birthweight.



Gudmundsson S et al: BJOG. 2005 Jun;112(6):764-7.

Pre-pregnancy Obesity and the risk of Shoulder Dystocia: a meta-analysis

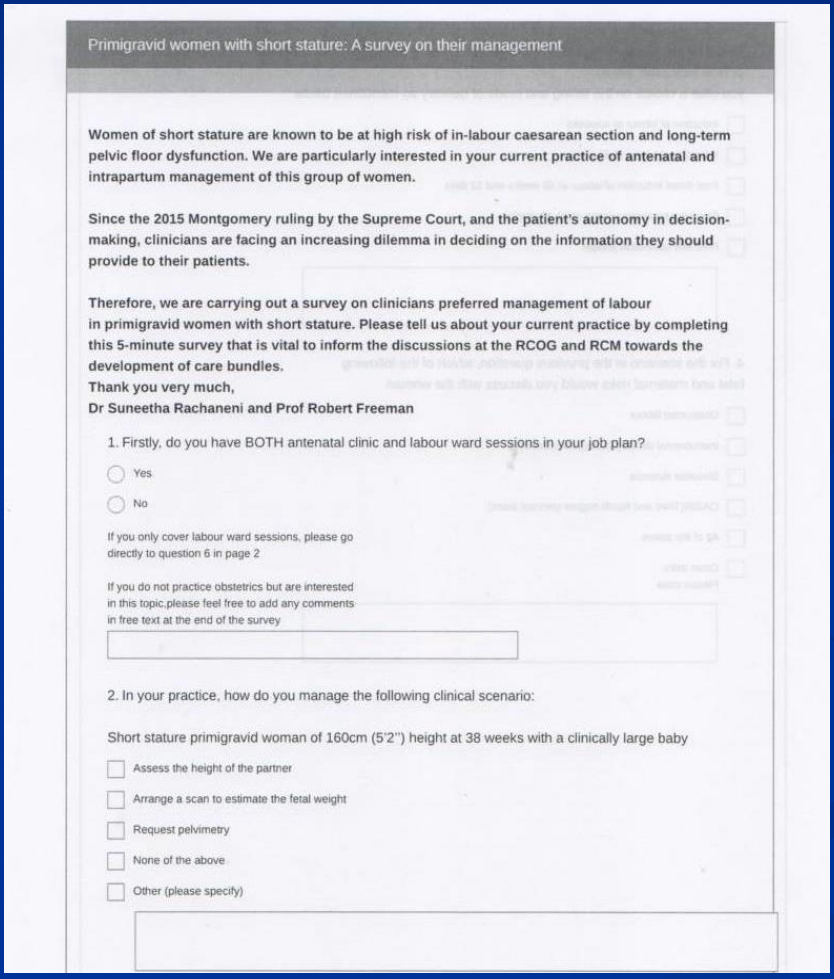
C Zhang, Y et al BJOG 2017: 25(4):407-413



Why trial of labour in at-risk women?
Have the risks been explained?
Prevention by Elective CS mentioned?

Little change in Obstetric management since Montgomery

National Survery n=423



Primigravid women with short stature: A survey on their management

Women of short stature are known to be at high risk of in-labour caesarean section and long-term pelvic floor dysfunction. We are particularly interested in your current practice of antenatal and intrapartum management of this group of women.

Since the 2015 Montgomery ruling by the Supreme Court, and the patient's autonomy in decision-making, clinicians are facing an increasing dilemma in deciding on the information they should provide to their patients.

Therefore, we are carrying out a survey on clinicians preferred management of labour in primigravid women with short stature. Please tell us about your current practice by completing this 5-minute survey that is vital to inform the discussions at the RCOG and RCM towards the development of care bundles.
Thank you very much,
Dr Suneetha Rachaneni and Prof Robert Freeman

1. Firstly, do you have BOTH antenatal clinic and labour ward sessions in your job plan?

- Yes
- No

If you only cover labour ward sessions, please go directly to question 6 in page 2

If you do not practice obstetrics but are interested in this topic,please feel free to add any comments in free text at the end of the survey

2. In your practice, how do you manage the following clinical scenario:

Short stature primigravid woman of 160cm (5'2'') height at 38 weeks with a clinically large baby

- [ ] Assess the height of the partner
- [ ] Arrange a scan to estimate the fetal weight
- [ ] Request pelvimetry
- [ ] None of the above
- [ ] Other (please specify)

Rachaneni S, Freeman R 2019 (awaiting publication)

Worst Case Scenario in an at-risk woman?

Prevent by Caesarean Section in At-Risk Women?

Evidence?
For UI and Prolapse: yes

RESEARCH ARTICLE

Long-term risks and benefits associated with cesarean delivery for mother, baby, and subsequent pregnancies: Systematic review and meta-analysis

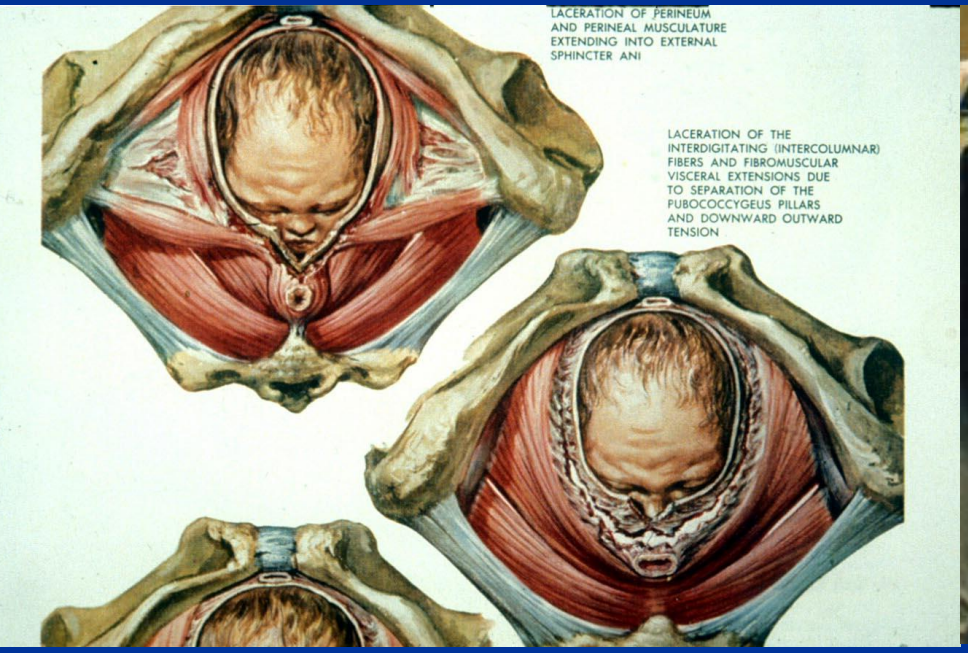
Oonagh E. Keag[1], Jane E. Norman[2], Sarah J. Stock[2,3]*

1 NHS Lothian Department of Obstetrics and Gynaecology, Simpson's Centre for Reproductive Health, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom, **2** Tommy's Centre for Maternal and Fetal Health, MRC Centre for Reproductive Health, University of Edinburgh Queen's Medical Research Institute, Edinburgh, United Kingdom, **3** School of Women's and Infants' Health, University of Western Australia, Crawley, Australia

* sarah.stock@ed.ac.uk

Abstract

High Risk Women:
Explain the Facts and Risks
'*Patient at the centre of decision-making*'



- Are the Risks *"Emphasised or Exaggerated"?*
- Statistical Associations are *not* 'Cause and Effect'

Page 19

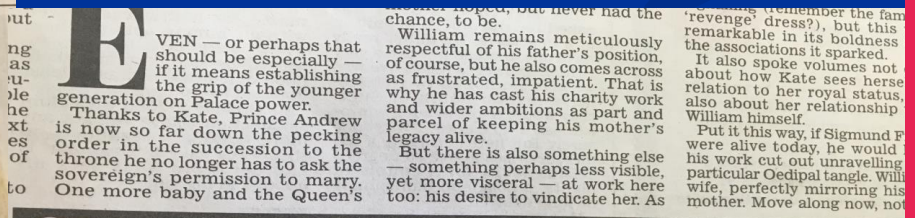
Hospitals rejecting pleas for C-sections

By **Sophie Borland** and **Rosie Taylor**

A QUARTER of hospitals are refusing to perform caesareans unless the woman has a good medical reason, an investigation has found.

Under NHS guidelines, expectant mothers are entitled to request the procedure if they are fearful of a natural labour. But out of 91 hospitals, 21 admit they do not routinely offer the procedure to women who don't have a medical reason.

And at another four hospitals



EVEN — or perhaps that should be especially — if it means establishing the grip of the younger generation on Palace power.

Thanks to Kate, Prince Andrew is now so far down the pecking order in the succession to the throne he no longer has to ask the sovereign's permission to marry. One more baby and the Queen's

chance, to be.

William remains meticulously respectful of his father's position, of course, but he also comes across as frustrated, impatient. That is why he has cast his charity work and wider ambitions as part and parcel of keeping his mother's legacy alive.

But there is also something else — something perhaps less visible, yet more visceral — at work here too: his desire to vindicate her. As

'revenge' dress?), but this remarkable in its boldness the associations it sparked.

It also spoke volumes not about how Kate sees herse relation to her royal status, also about her relationship William himself.

Put it this way, if Sigmund F were alive today, he would his work cut out unravelling particular Oedipal tangle. Will wife, perfectly mirroring his mother. Move along now, not

STOP STIGMATISING CAESAREAN BIRTH

KATE makes it look easy, but for many women a natural birth is impossible. Which is why the news that one-in-four hospitals are denying expectant mothers elective Caesareans is deeply worrying.

There are many reasons why women ask for Caesareans, from psychological trauma following a difficult previous birth to concerns about the size of their baby. Yet still society — and sections of midwifery — seeks to stigmatise them as lazy and cowardly and force them to undergo a process that may cause lasting physical and mental damage.

When women's rights have never been championed more loudly, it beggars belief that some mothers are treated this way. But that is what you get if you fail to subscribe to the fashionable view that Caesareans are unnatural and costly. The former may be true — though no one would apply the principle to fixing a broken limb.

The latter is a myth: according to the National Institute for Health and Care Excellence (NICE), the medium-term cost of a planned Caesarean is less than £100 more than for a vaginal delivery.

With childbirth, there is no right or wrong way, just what works best for the individual. Medical staff should respect that — and allow women the right to choose.

Maternal Request Caesarean

August 2018

birthrights

Protecting human rights in childbirth

Change Culture and Practice to Prevent Maternal Birth Trauma

- Raise awareness amongst HCP's and women
- Implement Montgomery, inform of risks
- Explain their individual risk e.g. UR-CHOICE
- Reassurance to the majority
- Supervised physiotherapy/PFMT
- High risk women : Discuss Caesarean Section
- Forceps vs Ventouse
- OASI: Care Bundle implementation

"Informing a woman of the risks of pelvic floor disorders, along with the other risks of childbirth, supports a woman's autonomy and her right to informed choice regarding her care in pregnancy and childbirth"

Jelovsek JE et al AJOG 2017

Other Risk Factors e.g. OASI

- **First vaginal delivery**
- **Older age** (Rhaminou et al 2016 Quiroz et al 2017)
- Birthweight ≥ 4500 g
- Instrumental deliveries (especially forceps)
- Shoulder dystocia
- OP position and midline episiotomy
- Short perineal body
- Water birth
- VBAC

Stedenfeldt M et al BJOG 2014; Jango H et al BJOG 2012; Lowder et al AJOG 2007; Baghestan et al BJOG 2012, Rhaminou et al 2016