

Epidémiologie de l'Incontinence Urinaire et du Prolapsus Génital



Master 2 ReClip 2014

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nital

De l'Incontinence d'urine. 447

§ I I.

De l'Incontinence d'urine.

Il est une Maladie à laquelle les gens de peine & de fatigue sont assez sujets sur le déclin de l'âge : cette Maladie s'appelle *incontinence d'urine*. Mais elle differe entièrement du *diabetes*, en ce que les *urines*, dans l'*incontinence d'urine*, coulent involontairement & goutte à goutte, & qu'elles n'excèdent point la quantité qu'en rendoit ordinairement le malade en état de santé. Cette Maladie est plutôt incommode que dangereuse.

(Les personnes qui sont le plus sujettes à cette incommodité, sont, comme on vient de l'observer, les gens qui s'occupent de travaux pénibles, dont on a parlé Tome I, Chap. II, § I; ensuite les enfants & les vieillards; les femmes, pendant la *grossesse*, & qui ont éprouvé des *accouchements laborieux*; les débauchés, & ceux qui sont adonnés à la malheureuse habitude de la *masturbation*.)

En quoi l'incontinence d'urine differe du diabetes.

Qui sont ceux qui y sont le plus sujets.

MÉDECINE DOMESTIQUE, O U TRAITÉ COMPLET DES MOYENS de se conserver en santé, de guérir & de prévenir les Maladies, par le régime & les remèdes simples: OUVRAGE utile aux Personnes de tous âges, & mis à la portée de tout le monde; PAR GUILLAUME BUCHAN, M. D. du Collège Royal des Médecins d'Edimbourg. FRANCHIS de l'Anglo par A. D. DEVERGIER, Docteur en Médecine de la Faculté de Montpellier, & Médecin Honoraire de deux autres Facultés Médicales, Citoyen d'Avignon. TROISIÈME ÉDITION, Révisé, corrigé & augmenté de plusieurs remarques sur le Système Édition de Londres. TOME SECOND. A PARIS, Chez FANLLET, Libraire, Font-Neuve-Denis, vis-à-vis le Quai de Gênes. M. DCC. LXXXIII. AVEC APPROBATION ET PRIVILEGE DU ROI.

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Introduction

Plan, Méthodes

- Epidémiologie de l'incontinence urinaire et du prolapsus génital
 - Prévalence
 - Incidence
 - Facteurs de risques
- Revue systématique
 - Essais randomisés (NP1)
 - Études de cohorte (NP2)
 - Enquêtes transversales, cas-témoins (NP3)
 - Études de cas (NP4)

3 *L'épidémiologie sera étudiée en fonction des principaux facteurs de risques qui sont l'âge, la parité et l'obésité. Il est important de bien distinguer les différents types d'enquête et le niveau de preuve associé*

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Rappel

Causalité en épidémiologie

- Critères de Hill (1965) :
 - L'exposition précède l'événement.
 - Il existe un gradient de risque avec l'augmentation de la durée ou de l'intensité de l'exposition.
 Une modification de la fréquence ou du niveau d'exposition entraîne une modification du risque de la maladie.
 - L'association se maintient d'une étude à une autre (Cohérence externe).
 - Il existe un effet « éviction - réintroduction » (spécificité de l'effet).
 - L'association (RR ou OR) est forte.
 - Il existe une explication physiopathologique.

The Environment and Disease: Association or Causation?
 by Sir Austin Bradford Hill CBE DSC FRCP(hon) FRS
 (Professor Emeritus of Medical Statistics,
 University of London)

4 *Le dernier critère seul est bien sur tout à fait insuffisant*

Incontinence urinaire (IU)
Incontinence urinaire d'effort (IUE)
Incontinence urinaire mixte (IUM)
Incontinence urinaire par urgenturie (IUU)



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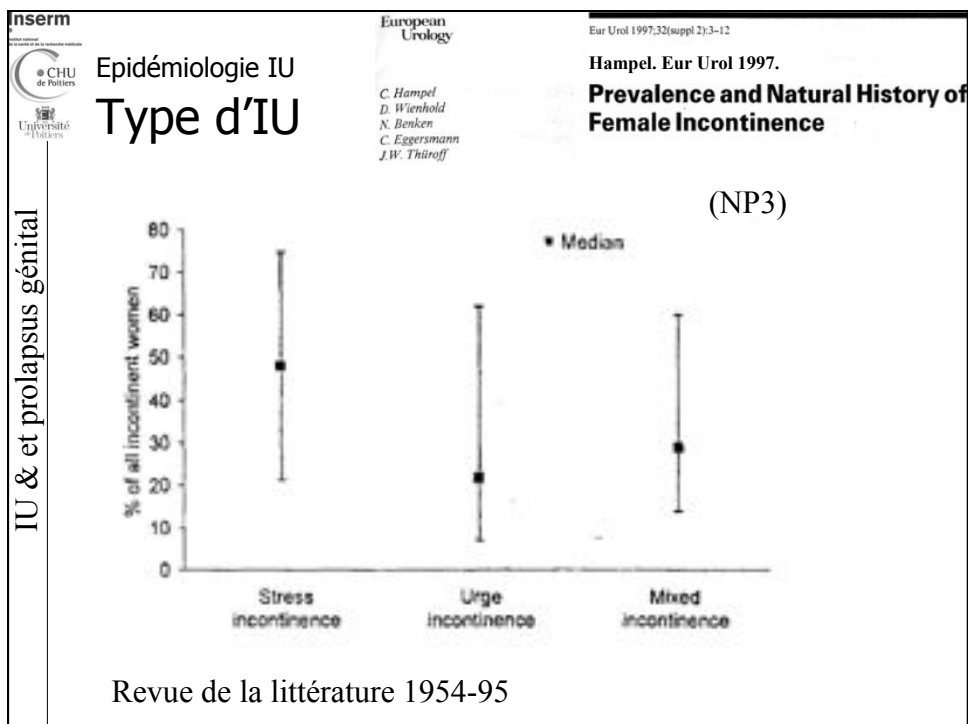
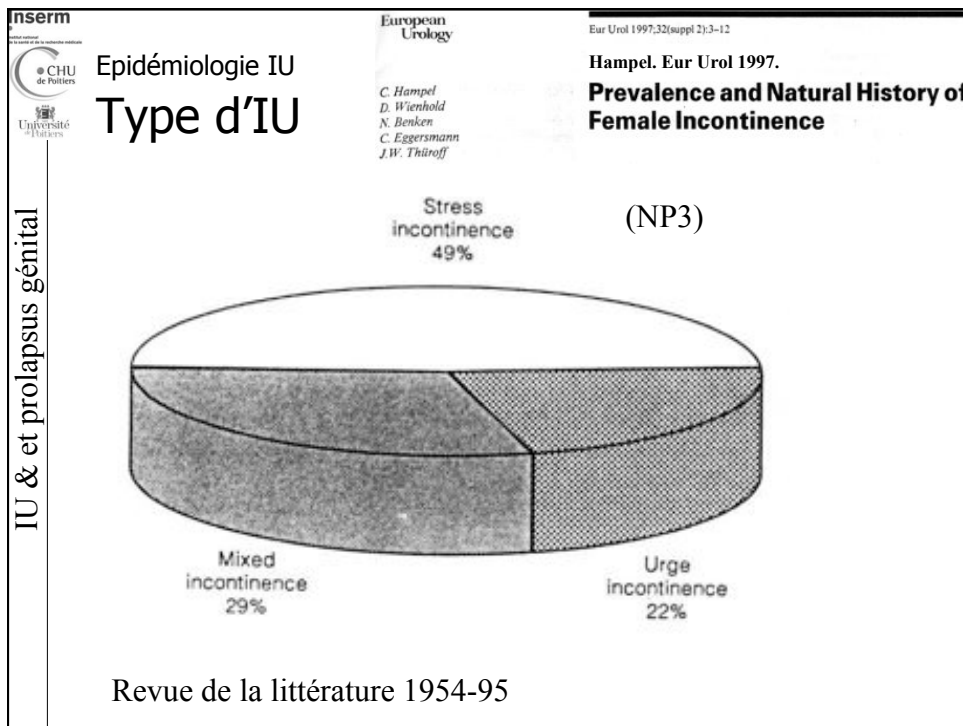
Incontinence Urinaire

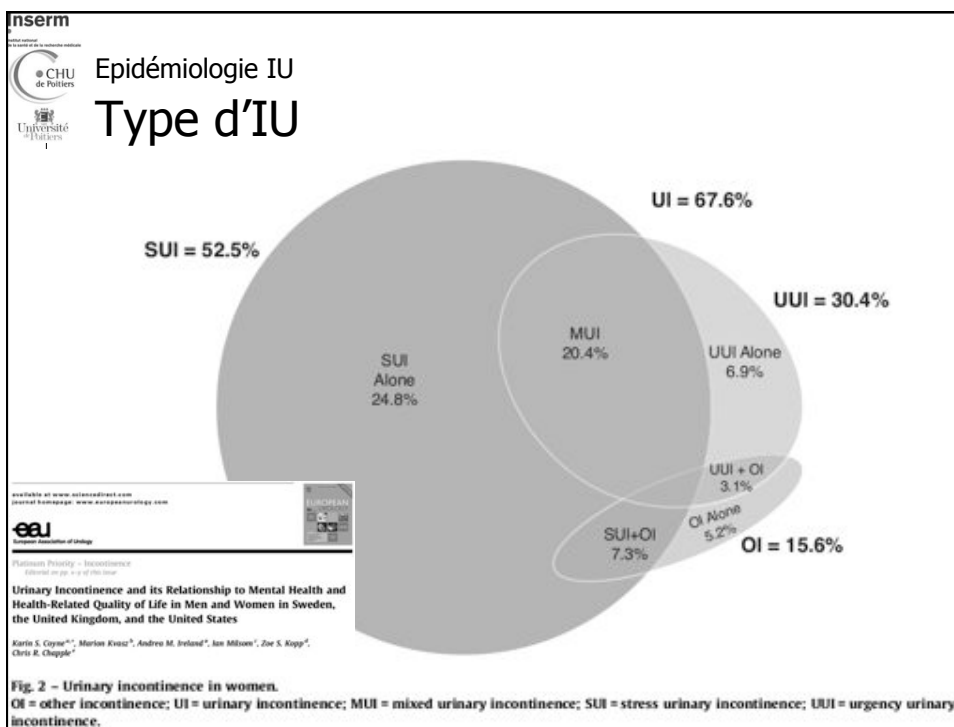
Questions ?

- Quel est la prévalence, la sévérité, et la distribution du type d'IU en fonction
 - Du vieillissement ?
 - De la grossesse ?
 - De la ménopause ?
 - De la chirurgie ?
 - De l'obésité, du diabète, ou du syndrome métabolique ?
 - Des capacités locomotrices ?
- Quel est le niveau de preuve ?
- Quelles sont les incertitudes ?

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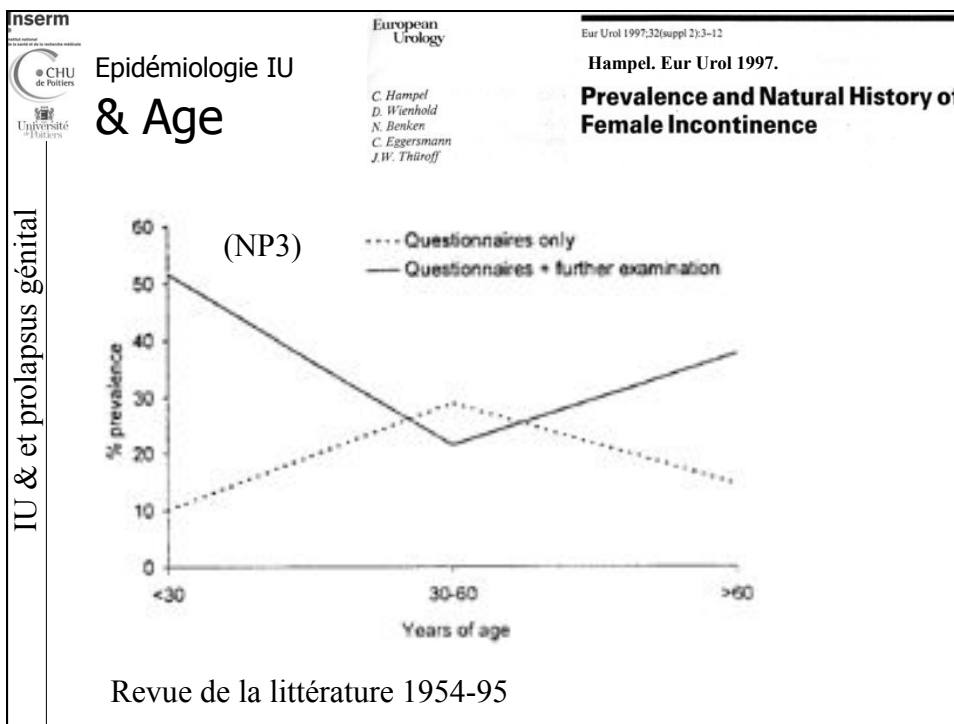
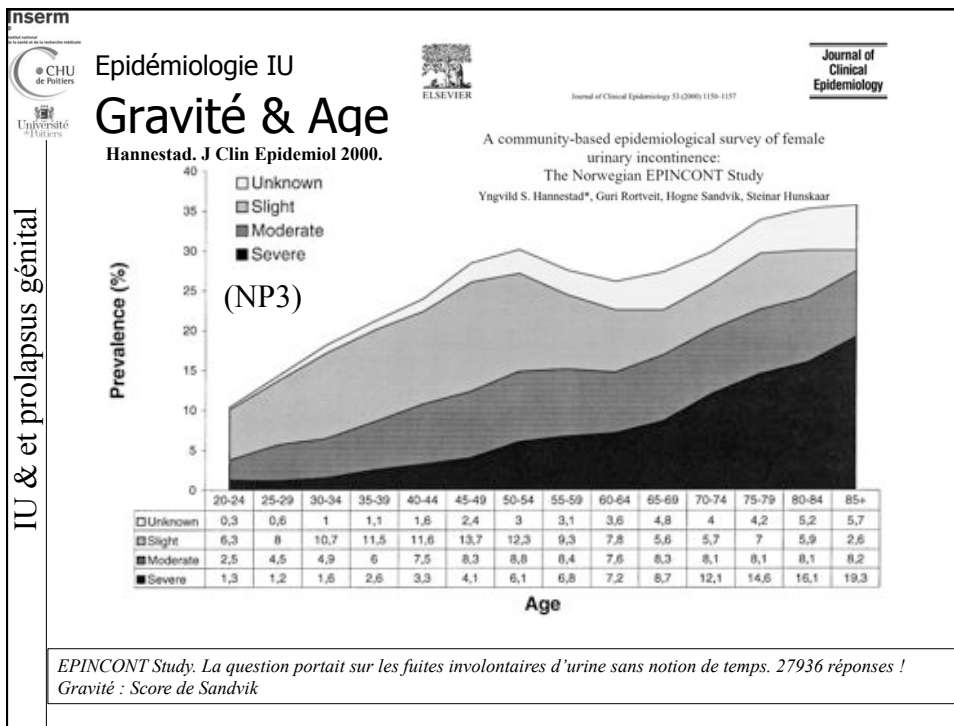


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Facteurs de Risque de l'Incontinence Urinaire
LE VIEILLISSEMENT

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Epidémiologie IU & Age

La question concernait les 30 derniers jours.

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The prevalence of urinary incontinence in women in four European countries

S. HUNSKAAR, G. LOSE, D. SYKES† and S. VOSS†
 Section for General Practice, Department of Public Health and Primary Health Care, University of Bergen, Norway, †Department of Obstetrics and Gynaecology, Glostrup University Hospital, University of Copenhagen, Denmark, and HEI Lilly and Company Limited, Lilly Research Centre, Windlesham, UK

(NP3)

Hunskaar. BJU Int 2004.

Characteristic	France
Questionnaires sent	6500
Valid responders	3881
Response rate, %	60
Mean (median)	44.8 (44) [18-88]
[range] age, years	
Prevalence of UI, n (%) [95% CI]	
Age group	
18-24	47 (27) [21-34]
25-29	142 (31) [27-35]
30-34	142 (31) [27-35]
35-39	183 (37) [33-41]
40-44	184 (44) [39-49]
45-49	169 (51) [46-56]
50-54	220 (54) [49-58]
55-59	228 (57) [52-62]
60-64	232 (55) [51-60]
65-69	152 (52) [46-58]
70-74	2 (20) [0-45]
75-79	4 (80) [45-100]
80-84	6 (86) [60-100]
85-89	3 (75) [33-100]
≥ 90	0 [NA]
Total	1714 (44) [43-46]†

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Epidémiologie IU & Age

La question concernait les 30 derniers jours.

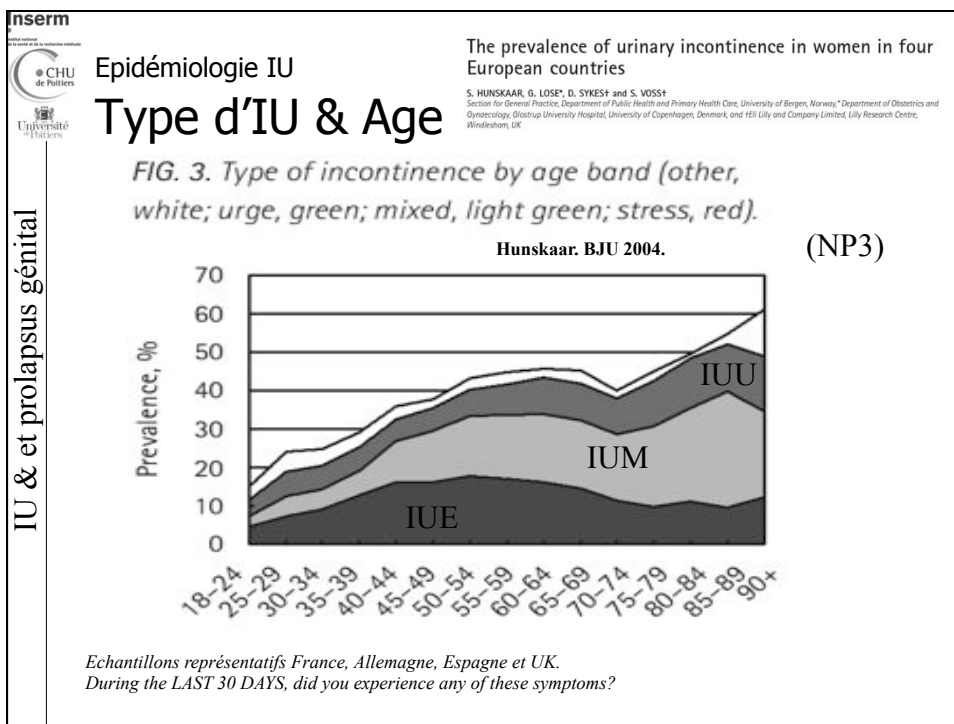
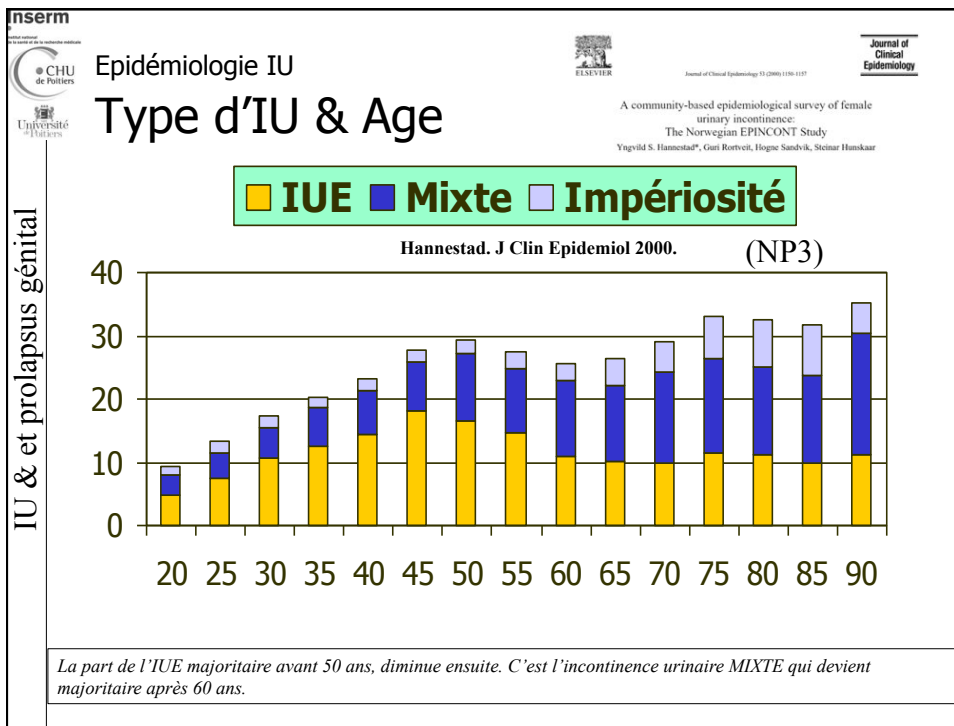
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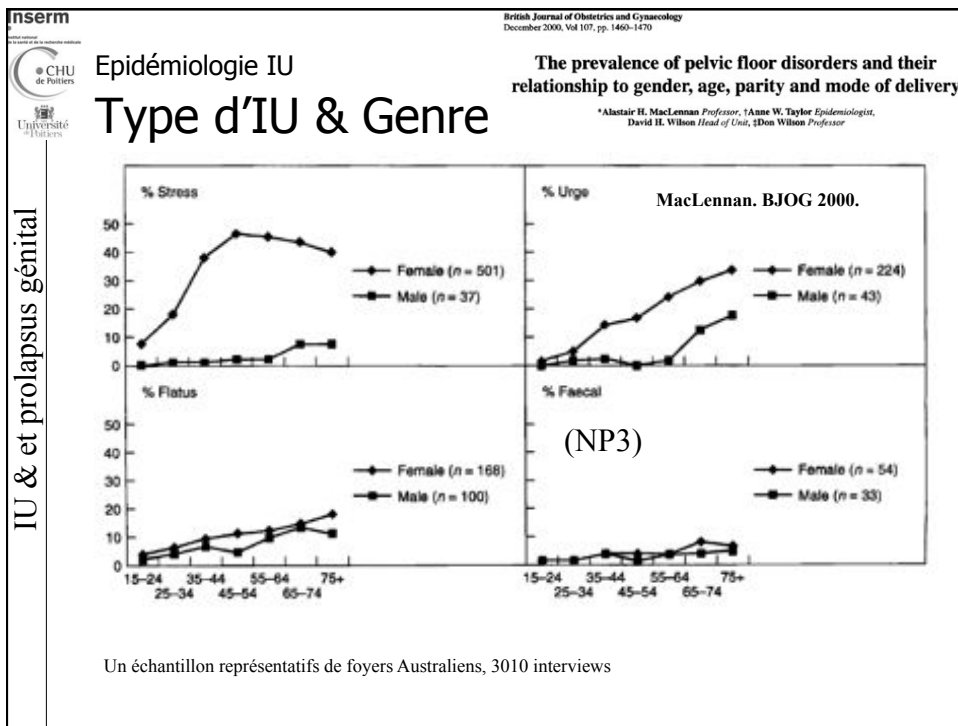
(NP3)

UI prevalence with 95% CI in all studies

Source: Data Fecond 2010, BaroSante 2010, Gazel 2010, NutriNet

Fecond et Barosanté sont des échantillons représentatifs basés sur l'ICIQ alors que Nutrinet repose sur une liste de maladies.





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Epidémiologie IU, Vieillesse
Capacités physiques / sujet âgé (NP3)

Mobility impairment is associated with urge but not stress urinary incontinence in community-dwelling older women: results from the Ossebo study
 X Fritel,*,†, Lachal,*, B Cassou,*, A Fauconnier,*,† P Dargent-Molina*

motor and balance skills tests

	ICIQ-SF score for urinary incontinence severity					P-value*
	0 (n = 1107)	1-4 (n = 215)	5-7 (n = 259)	8-11 (n = 164)	≥12 (n = 177)	
Walking 6 m (sec) (mean ± SD)	6.4 ± 1.8	6.7 ± 1.7	7.0 ± 2.4	7.5 ± 2.7	7.7 ± 2.6	<0.0001
Timed up and go (sec) (mean ± SD)	10.6 ± 2.8	11.1 ± 3.3	11.7 ± 4.5	12.3 ± 4.4	12.6 ± 4.4	<0.0001
Rising from chair without using hands (sec) (mean ± SD)	14.8 ± 4.5	15.8 ± 6.0	16.2 ± 4.8	17.1 ± 6.0	17.0 ± 5.7	<0.0001
Standing balance: 10 sec in semi-tandem (% success)	72.4	69.3	69.1	63.4	55.4	<0.0001
Walking balance: four tandem steps in line (% success)	68.2	63.3	58.3	55.5	48.0	<0.0001
Unipedal stance (sec) (mean ± SD)	10.6 ± 9.2	9.8 ± 8.6	9.5 ± 9.1	8.6 ± 8.8	6.9 ± 7.7	<0.0001

1942 community-dwelling women aged 75-85 years.

Table 3. Logistic regression analysis (adjusted for age, body mass index and study centre) for the relationship between urinary incontinence type and performance on motor and balance skills tests

		Stress UI aOR (95% CI)	Urge UI aOR (95% CI)	Mixed UI aOR (95% CI)
Walking 6 m (sec)	Quartile 1	1	1	1
	Quartile 2	1.08 (0.69-1.69)	1.26 (0.81-1.96)	1.53 (1.02-2.31)
	Quartile 3	1.30 (0.82-2.07)	1.84 (1.19-2.85)	1.78 (1.17-2.72)
	Quartile 4	1.38 (0.82-2.31)	2.17 (1.36-3.45)	2.61 (1.69-4.03)
Walking balance (able to take four tandem steps in line)	Yes	1	1	1
	No	1.04 (0.72-1.49)	1.58 (1.16-2.17)	1.10 (0.82-1.47)

Epidémiologie IU, Vieillesse

Fonctions supérieures / sujet âgé (NP3)

Weekly Incontinence

Table 2. Cognitive Decline, Physical Function Decline, and

	Number With Decline	Age-Adjusted		Multivariable-Adjusted	
			P		P
Cognitive Decline					
Cognitive Test Used					
Decline in mMMSE* (more than 1 SD decline)	883 (13.9)	1.02 (0.88-1.20)	.756	1.01 (0.86-1.18)	.938*
Decline in Trails B (more than 1 SD decline)	1,613 (25.3)	1.07 (0.96-1.19)	.243	0.93 (0.79-1.11)	.434*
Decline in DSST* (more than 1 SD decline)	2,146 (33.7)	1.00 (0.89-1.12)	.964	0.88 (0.73-1.07)	.192*
Physical function decline					
Physical test used					
Decline in walking speed (more than 1 SD decline)	978 (15.4)	1.50 (1.30-1.74)	<.001	1.31 (1.09-1.56)	.003†
Decline in chair stand speed (more than 1 SD decline)	991 (15.6)	1.69 (1.47-1.95)	<.001	1.40 (1.19-1.64)	<.001†

mMMSE, modified Mini-Mental State Examination; SD, standard deviation; DSST, Digit Symbol Substitution test.
Data are n (%) or odds ratio (95% confidence interval).
* Adjusted for age, health status, diabetes, geriatric depression score, hysterectomy, stroke, alcohol use, and baseline cognitive function.
† Adjusted for age, health status, diabetes, geriatric depression score, body mass index, stroke, alcohol use, and baseline physical function.

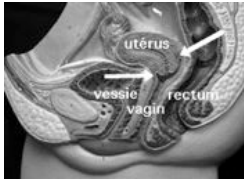
Urinary Incontinence in Older Community-Dwelling Women
The Role of Cognitive and Physical Function Decline

NS ! Lien retrouvé seulement entre déclin cognitif et l'IU qui interfère avec les activités quotidiennes, difficultés d'adaptation ?

Alison J. Huang, MD, MPH, Jeanette S. Brown, MD, David H. Thom, MD, PhD, Howard A. Fink, MD, and Kristine Yaffe, MD, for the Study of Osteoporotic Fractures Research Group

Facteurs de Risque de l'Incontinence Urinaire chez la femme

L'HYSTÉRECTOMIE



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Epidémiologie IU & Hystérectomie

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Hysterectomy and urinary incontinence: a systematic review
 Jeanette S Brown, George Sawaya, David H Thom, Deborah Grady

(NP3)

Brown. Lancet 2000.
 Méta-analyse de Brown. Il existe une association marginale entre IU et Hystérectomie OR = 1,6 après 60 ans et 1,1 avant. Le rôle du prolapsus associé n'est pas connu.

Age Group	Study	Odds Ratio (95% CI)
Age ≥60 years	Dienes, 1990	1.2 (0.8-1.8)
	Hiers, 1992	1.3 (0.9-1.9)
	Milom, 1993	1.1 (0.7-1.7)
	Olson, 1996	1.2 (0.8-1.8)
	Thom, 1997	1.4 (1.0-1.9)
Summary odds ratio		1.6 (95% CI 1.4-1.8)
Age <60 years	Leaf, 1993	1.1 (0.7-1.7)
	Pavys, 1990	1.3 (0.9-1.9)
	Griffith-Jones, 1993*	1.1 (0.7-1.7)
	Griffith-Jones, 1993†	1.1 (0.7-1.7)
	Mumman, 1993	1.1 (0.7-1.7)
	Carlson, 1994	1.1 (0.7-1.7)
	Skoner, 1994	1.1 (0.7-1.7)
Summary odds ratio		1.1 (95% CI 1.0-1.4)

Odds ratio (95% CI) of developing urinary incontinence after hysterectomy, by age-group, from 11 observational studies
 *Urgic incontinence; †Stress incontinence; ‡p=0.01 for homogeneity.

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Epidémiologie IU & Hystérectomie

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AUGS PAPERS www.AJOG.org

Impact of hysterectomy on stress urinary incontinence: an identical twin study
 Jay James R. Miller, MD, MS Sylvia M. Botros, MD, MS Jennifer L. Beaumont, MS Sarit O. Ashkenazi, MD, Tondalyn Gambile, MD, MPH Peter K. Sand, MD, Roger P. Goldberg, MD, MPH

TABLE 2
GEE analysis of effect of hysterectomy in SUI adjusted for age, parity, BMI, urinary incontinence surgery, and pelvic organ prolapse surgery

Parameter	Odds ratio	95% CI for odds ratio	P value
Hysterectomy	0.55	0.30 1.00	.05

TABLE 3
Effect of hysterectomy in SUI adjusted for age, parity, and BMI after exclusion of urinary incontinence surgery and pelvic organ prolapse surgery

(NP2)

Parameter	Odds ratio	95% CI for odds ratio	P value
Hysterectomy	0.79	0.44 1.40	.410

Etude chez 83 paires de jumelles, moins d'IUE en cas d'hystérectomie, plus de différence après exclusion de la chirurgie du prolapsus ou de l'IU

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Epidémiologie IU & Hystérectomie

Table II Prevalence of urinary symptoms among women with and without a history of vaginal hysterectomy

Prevalence (n)	Vaginal hysterectomy group (n=117)	Control group (n=116)	P value
Frequency: day > 8	23 (19.7%)	29 (16.4%)	NS
Nocturnal: day > 1	6 (5.1%)	8 (6.9%)	NS
Urgency	73 (62.4%)	63 (54.3%)	.08
Every month	43 (36.8%)	35 (30.2%)	NS
Every week	23 (19.7%)	14 (12.1%)	NS
Every day	7 (6%)	14 (12.1%)	NS
Urinary incontinence (overall)	46 (39.3%)	39 (33.6%)	.43
Use of pads	18 (15.4%)	15 (12.9%)	NS
Urge incontinence	24 (20.5%)	16 (13.8%)	.26
Every month	14 (12%)	9 (7.8%)	NS
Every week	5 (4.3%)	6 (5.2%)	NS
Every day	5 (4.3%)	1 (0.9%)	NS
Stress incontinence	43 (36.7%)	37 (31.9%)	.47
Every month	22 (18.8%)	19 (16.4%)	NS
Every week	15 (12.8%)	10 (8.6%)	NS
Every day	5 (4.3%)	4 (3.5%)	NS
Voiding difficulties	31 (26.5%)	29 (25%)	.64
Every month	15 (12.8%)	18 (15.5%)	NS
Every week	6 (5.1%)	5 (4.3%)	NS
Every day	10 (8.5%)	6 (5.2%)	NS

Risk of urge and stress urinary incontinence at long-term follow-up after vaginal hysterectomy
 Renaud de Tayrac, MD,* Nicolas Chevalier, MD, Aurélie Chauveau-Lambling, MD, Amélie Gervaise, MD, Hervé Fernandez, MD

(NP2)

HT vaginale versus Thermachoice

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Incontinence Urinaire, femme Hystérectomie

Table 3. The incidence of urinary symptoms during the last 6 months at baseline and at each follow-up after hysterectomy or insertion of LNG-IUS

Urinary symptoms during last 6 months	Hysterectomy			LNG-IUS			Difference between the groups		
	n	Total	%	n	Total	%	Odds ratio	95% CI	P-value*
Urge urinary incontinence									
Randomisation	20	117	17	20	119	17	1.03	0.52-2.04	0.93
6 months	9	114	8	12	105	11	0.66	0.27-1.65	0.38
12 months	9	127	7	7	94	7	0.95	0.34-2.64	0.92
5 years	20	153	13	9	72	13	1.05	0.45-2.44	0.91
10 years	34	153	22	11	68	16	1.48	0.70-3.13	0.30
Stress urinary incontinence									
Randomisation	42	117	36	52	119	44	0.73	0.43-1.24	0.24
6 months	37	114	32	32	105	30	1.10	0.62-1.94	0.75
12 months	39	127	31	25	94	27	1.22	0.68-2.21	0.51
5 years	58	153	38	24	72	33	1.22	0.68-2.20	0.51
10 years	74	153	48	23	68	34	1.83	1.01-3.32	0.04

(NP2)

Essai randomisé HT (164 femmes) vs DIU au lévonorgestrel (71), analyse secondaire per-protocole

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Epidémiologie IU & Hystérectomie

Hysterectomy and risk of stress-urinary-incontinence surgery: nationwide cohort study

Daniel Altman, Fredrik Granath, Sven Cnattingius, Christian Falckner

Summary
 Background Hysterectomy for benign indications has been associated with an increased risk for lower urinary tract symptoms (LUTS) and stress urinary incontinence (SUI) surgery. We investigated whether hysterectomy was associated with an increased risk for SUI surgery in a nationwide cohort study.

Table 1: Cohort characteristics with rates of stress-urinary-incontinence surgery

	Exposed cohort (n=165 260)	Unexposed cohort (n=479 506)
Follow-up time (years, mean [SD])	11.9 (7.9)	12.1 (7.9)
Person-time (years)	1 960 634	5 818 291
People with incontinence surgery (n [%])	3512 (2%)	4426 (1%)
Rate per 100 000 person-years (95% CI)	179 (173-186)	76 (73-79)

Figure: Age-specific rates of first urinary incontinence operation in women in the exposed and unexposed cohorts. Age-specific rates are shown with 95% CIs. Age intervals show attained age during follow-up period.

Table 3: Risk for stress-urinary-incontinence surgery after hysterectomy in relation to number of vaginal childbirths

	Unexposed cohort	Exposed cohort
0	1.0	4.5 (2.6-7.8)
1	2.5 (1.5-4.3)	6.0 (3.2-11.0)
2	3.9 (2.4-6.1)	9.3 (5.7-15.2)
3	4.0 (2.5-6.6)	11.4 (6.7-19.3)
>4	5.8 (3.3-10.1)	16.5 (8.7-31.3)

Conditional analysis with hazard ratio (95% CI) adjusted for age, calendar time, county, and educational level. Interaction between hysterectomy and number of vaginal childbirths, p=0.03.

Le risque de chirurgie de l'IU est augmenté après hystérectomie.
 Biais de sélection ? Les femmes qui choisissent la chirurgie pour leur troubles utérins sont celles qui choisissent la chirurgie pour leur incontinence ?

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Les bouleversements physiologiques lors de la ménopause

Facteurs de Risque de l'Incontinence Urinaire chez la femme

LA MENOPAUSE

Maturitas 14 (2013) 26-30

Contents lists available at ScienceDirect
 Maturitas
 journal homepage: www.elsevier.com/locate/maturitas

Menopause, hormone treatment and urinary incontinence at midlife
 Guillaume Legendre^{a,b,c}, Virginie Ringa^{a,b}, Arnaud Fauconnier^{d,e}, Xavier Fritel^{f,g}

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Epidémiologie IUE & Ménopause

• Pas de différence sur l'IUE sévère que la femme soit traitée ou pas ménopausée ou pas

Menopausal status	Premenopausal	15	1
Fritel. BJOG 2005.	Postmenopausal with HRT	15	1.0 (0.8-1.3)
	Postmenopausal without HRT	13	0.8 (0.6-1.1)

RJOG: an International Journal of Obstetrics and Gynecology
 December 2005, Vol. 112, pp. 1646-1651
 DOI: 10.1111/j.1471-0528.2005.00763.x

Mode of delivery and severe stress incontinence. A cross-sectional study among 2625 perimenopausal women

Xavier Fritel, Virginie Ringa, Noëlle Varnoux, Arnaud Fauconnier, Stéphanie Piau, Gérard Bréart

(NP3)

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Epidémiologie IU & Incidence à la Ménopause (NP2)

• L'incidence augmente en pré-ménopause précoce et diminue ensuite

Association Between Menopausal Transition Stages and Developing Urinary Incontinence

L. Elaine Waite, MD, Jingjing Ye, MD, Wen-Ying Feng, MS, Wesley O. Johnson, MD, Gail A. Greendale, MS, Carolyn M. Sampolle, PhD, FRC, Barbara Sternfeld, PhD, Susan D. Harlow, MD, and Ellen B. Gold, MD, for the Study of Women's Health Across the Nation (SWAN)*

(NP2)

Premenopause: no menstrual irregularities in the previous year;
 early perimenopause some menstrual irregularities in previous year;
 late perimenopause 3-11 months of amenorrhea;
 Postmenopause: 12 consecutive months of amenorrhea

Fig. 2. Incidence of any, stress, and urge urinary incontinence per 100 woman-years by menopausal status over 6 years in the Study of Women's Health Across the Nation. Any urinary incontinence: Premenopause (n=151 per 911 woman-years), early perimenopause (n=486 per 2,718 woman-years), late perimenopause (n=62 per 429 woman-years), postmenopause (n=67 per 813 woman-years). Stress urinary incontinence: Premenopause (n=109 per 972 woman-years), early perimenopause (n=376 per 3,069 woman-years), late perimenopause (n=36 per 490 woman-years), postmenopause (n=34 per 1,017 woman-years). Urge urinary incontinence: Premenopause (n=79 per 1,024 woman-years), early perimenopause (n=281 per 3,317 woman-years), late perimenopause (n=48 per 564 woman-years), postmenopause (n=43 per 1,104 woman-years).

Waite. Incontinence Development and Menopause Stage. Obstet Gynecol 2009.

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Epidémiologie IU & Incidence à la Ménopause (NP2)

Table 3. Association between women's characteristics and incidence of urinary incontinence. Multivariate analysis

Women's characteristics	HR	95% CI	P
High school diploma	1.28*	1.05-1.55	0.01*
Marital status: married, living as	1.11	0.89-1.38	0.37
Alcohol			
Occasionally	1.18	0.78-1.79	0.65
Daily	1.11	0.70-1.76	
Weight**	1.01*	1.00-1.02	0.01*
Depressive disorder (CES-D ≥ 23)**	1.31*	1.09-1.57	0.01*
NHP physical mobility > 0**	1.17	0.98-1.41	0.08
NHP social isolation > 0**	1.29*	1.04-1.60	0.02*
NHP emotional reaction > 0**	0.97	0.79-1.20	0.81
NHP pain > 0**	0.93	0.77-1.11	0.40
NHP sleep > 0**	0.93	0.78-1.11	0.42
NHP energy > 0**	1.41*	1.17-1.70	<0.01*
Nulliparity	0.61*	0.44-0.84	<0.01*
Menopause***	5.44	4.47-6.63	<0.01*
Hysterectomy***	0.81	0.66-1.01	0.06

CES-D, Center for Epidemiologic Studies Depression Scale; CI, confidence interval; HR, hazard ratio; NHP, Nottingham Health Profile.
 *P-value < 0.05.
 **Time-dependent covariate with multiple changes.
 ***Time-dependent covariate at unique change.

Incidence and remission of urinary incontinence at midlife, a cohort study

G Legendre,^{1,2,3} V Ringa,⁴ H Panjo,⁵ M Zins,⁶ X Fritel^{1,2,7}

DOI: 10.1111/1471-0528.12960
www.bjpp.org

La parité était également un facteur de risque d'IU incidente
 HR=1.64 (1.19-2.27)

IU & et prolapsus génital

Epidémiologie IU & Rémission à la Ménopause (NP2)

Table 4. Association between women's characteristics and remission of urinary incontinence. Multivariate analysis

Women's characteristics	HR	95% CI	P
Age	0.58	0.55-0.61	<0.0001*
Weight**	0.99	0.98-0.99	0.03*
Depressive disorder (CES-D ≥ 23)**	1.03	0.81-1.31	0.75
NHP physical mobility > 0**	0.90	0.69-1.17	0.45
NHP social isolation > 0**	0.91	0.68-1.22	0.52
NHP emotional reaction > 0**	0.89	0.68-1.17	0.40
NHP pain > 0**	0.89	0.69-1.15	0.37
NHP energy > 0**	1.10	0.85-1.42	0.46
High school diploma	1.26	0.97-1.64	0.08
Urban place of residence	1.09	0.83-1.44	0.52
Regular physical exercise (>1 per week)	0.86	0.68-1.09	0.22
High blood pressure	0.95	0.72-1.27	0.74
Menopause***	1.54	1.19-1.99	<0.01*

CES-D, Center for Epidemiologic Studies Depression Scale; CI, confidence interval; HR, hazard ratio; NHP, Nottingham Health Profile.
 *P-value < 0.05.
 **Time-dependent covariate with multiple changes.
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Epidémiologie IU & THM

Effects of Estrogen With and Without Progestin on Urinary Incontinence

Susan L. Hendrix, DO
 Barbara B. Cochran, RN, PhD
 Ingrid E. Nygaard, MD
 Victoria L. Handa, MD
 Vanessa M. Barabasi, MD, PhD
 Cheryl Igloria, MD
 Karen Aragona, MS
 Michelle J. Svingen, PhD
 Robert B. Wallace, MD
 S. Geor McNealey, MD

Context: Menopausal hormone therapy has long been credited with many benefits beyond the indications of relieving hot flashes, night sweats, and vaginal dryness, and it is often prescribed to treat urinary incontinence (UI).
Objective: To assess the effects of menopausal hormone therapy on the incidence and severity of symptoms of stress, urge, and mixed UI in healthy postmenopausal women.
Design, Setting, and Participants: Women's Health Initiative multicenter double-blind, placebo-controlled, randomized clinical trial of menopausal hormone therapy in 27,347 postmenopausal women aged 50 to 79 years enrolled between 1992 and 1998, for whom UI symptoms were known in 22,296 participants at baseline and 1 year.
Interventions: Women were randomized based on hysterectomy status to active treatment or placebo to either the estrogen plus progestin (E + P) or estrogen alone trials. The E + P hormones were 0.625 mg/d of conjugated equine estrogen plus 2.5 mg/d of medroxyprogesterone acetate (CEE + MPA); estrogen alone consisted of 0.625 mg/d.

Table 6. Urinary Incontinence at 1 Year in Women Symptomatic at Baseline and Stratified by Baseline Characteristics: Effect on Amount

	CEE + MPA vs Placebo		CEE Alone vs Placebo	
	RR (95% CI)	P Value*	RR (95% CI)	P Value*
Overall	1.20 (1.06-1.36)	.004	1.59 (1.39-1.82)	<.001
Age at screening, y				
50-54	0.85 (0.54-1.35)	.01	1.13 (0.74-1.73)	.004
55-59	0.88 (0.65-1.19)		1.31 (0.94-1.83)	
60-69	1.36 (1.13-1.64)		1.58 (1.29-1.94)	
70-79	1.33 (1.04-1.70)		2.04 (1.56-2.65)	

WHI Hendrix. JAMA 2005. (NP1)

En cas de THM (versus placebo) on observe une aggravation de l'incontinence à 1 an en terme de fréquence des fuites, de quantité perdue, de gêne, de limitation des activités. Impact surtout chez les femmes les plus âgées.

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Epidémiologie IU

Traitement Hormonal de la Ménopause

Table 4. Incident Urinary Incontinence at 1 Year in Women Asymptomatic at Baseline*

	No. (%) of Participants		RR (95% CI)	P Value†	No. (%) of Participants		RR (95% CI)	P Value†
	CEE + MPA (n = 2675)	Placebo (n = 2507)			CEE Alone (n = 1526)	Placebo (n = 1547)		
Stress Urinary Incontinence								
Total participants	429 (16.0)	218 (8.7)	1.87 (1.61-2.18)	<.001	266 (17.4)	131 (8.5)	2.15 (1.77-2.62)	<.001
Urge Urinary Incontinence								
Total participants	304 (11.4)	272 (10.8)	1.15 (0.99-1.34)	.06	210 (13.8)	184 (11.9)	1.32 (1.10-1.58)	.003
Mixed Urinary Incontinence								
Total participants	99 (3.7)	69 (2.8)	1.49 (1.10-2.01)	.01	76 (5.0)	50 (3.2)	1.79 (1.26-2.53)	.001

Effects of Estrogen With and Without Progestin on Urinary Incontinence

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WHI Hendrix. JAMA 2005 (NP2).

Augmentation de l'incidence de l'incontinence à 1 an pour tout les types et surtout l'IUE.

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Epidémiologie IU
IUE & THM

Postmenopausal Hormones and Incontinence: The Heart and Estrogen/Progestin Replacement Study

DEBORAH GRADY, MD, MPH, JEANETTE S. BROWN, MD, ERIC VITTINGHOFF, PhD, WILLIAM APLEGATE, MD, EDWARD VARNER, MD, AND THOMAS SNYDER, MD, FOR THE HERS RESEARCH GROUP

HER Grady. Obstet Gynecol 2001.

IU & et prolapsus génital

Change in Severity	Placebo (%)	E+P (%)
>=5 (Markedly Worsened)	~10	~15
2 to 4 (Worsened)	~15	~22
-1 to 1 (Unchanged)	~45	~40
-4 to -2 (Improved)	~15	~12
<=-5 (Markedly Improved)	~10	~8

(NP1)

Figure 1. Change in severity of urinary incontinence from baseline to follow-up (average number of incontinent episodes per week over all follow-up visits) classified as markedly improved (decrease of at least five episodes of urinary incontinence per week), improved (decrease of two to four episodes per week), unchanged (change of at most one episode per week), worsened (increase of two to four episodes per week), and markedly worsened (increase of at least five episodes per week). $P = .001$ for the overall between-group comparison by the Mantel-Haenszel χ^2 test for trend. E+P = estrogen plus progestin therapy.

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Epidémiologie IUE
Cycle & Protéines tissulaires

Hormonal Reproduction Vol.22, No.4 pp. 178A-174A, 2007
 Abstract Access publication on March 29, 2007
 doi:10.1093/hrt/dgk079

Differences in mRNA and protein expression of small proteoglycans in vaginal wall tissue from women with and without stress urinary incontinence

Y.Wen¹, Y.Y.Zhao, S.L.L.Polan and B.H.Chen

IU & et prolapsus génital

A Protein Expression of BGN, DCN and FMOD in Vaginal Wall Tissue

Small Proteoglycan	Proliferative Phase N=9 pairs	Secretory Phase N=9 pairs
BGN	No significant difference	SUI > control In 7 pairs
DCN	No significant Difference	SUI > control In 7 pairs
FMOD	SUI < control In 6 pairs	No significant difference

B

Western blot analysis showing protein expression of BGN, DCN, and FMOD in vaginal wall tissue. The blots are organized into three panels (BGN, DCN, FMOD) and three rows (Core protein, Secretory Phase, Proteoglycan form). Each panel has lanes M, C1-C9, S1-S9. Molecular weight markers are indicated on the left.

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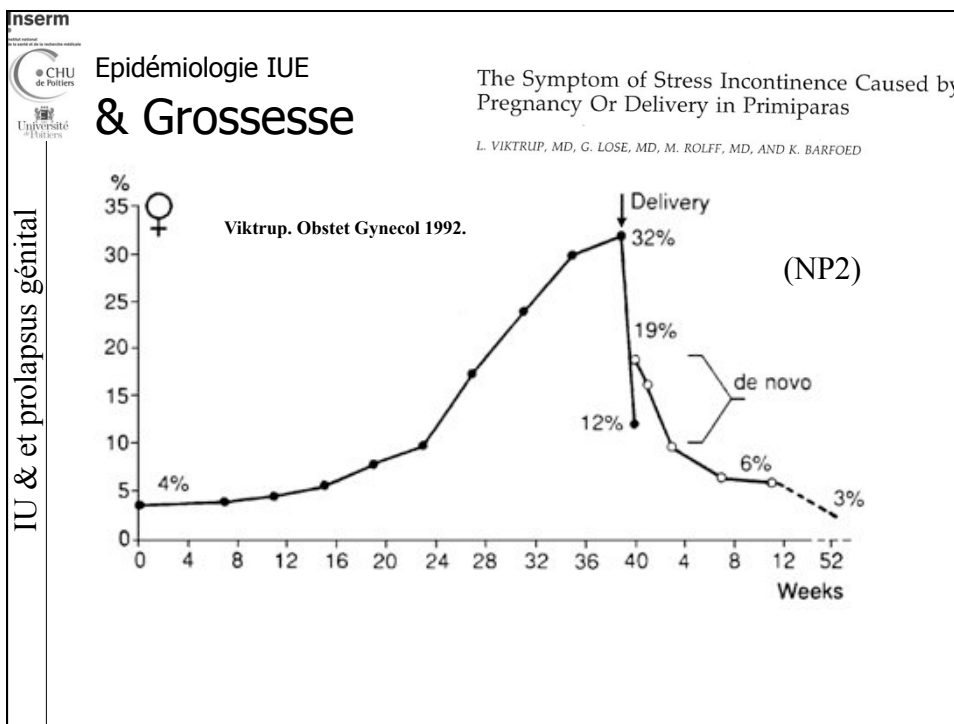
IU & et prolapsus génital

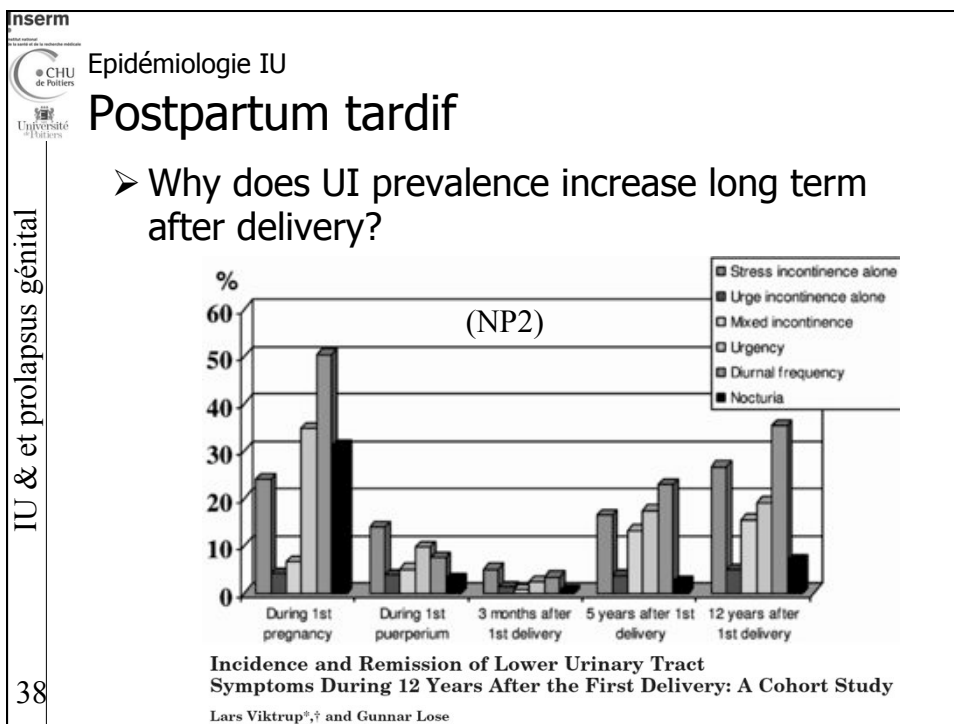
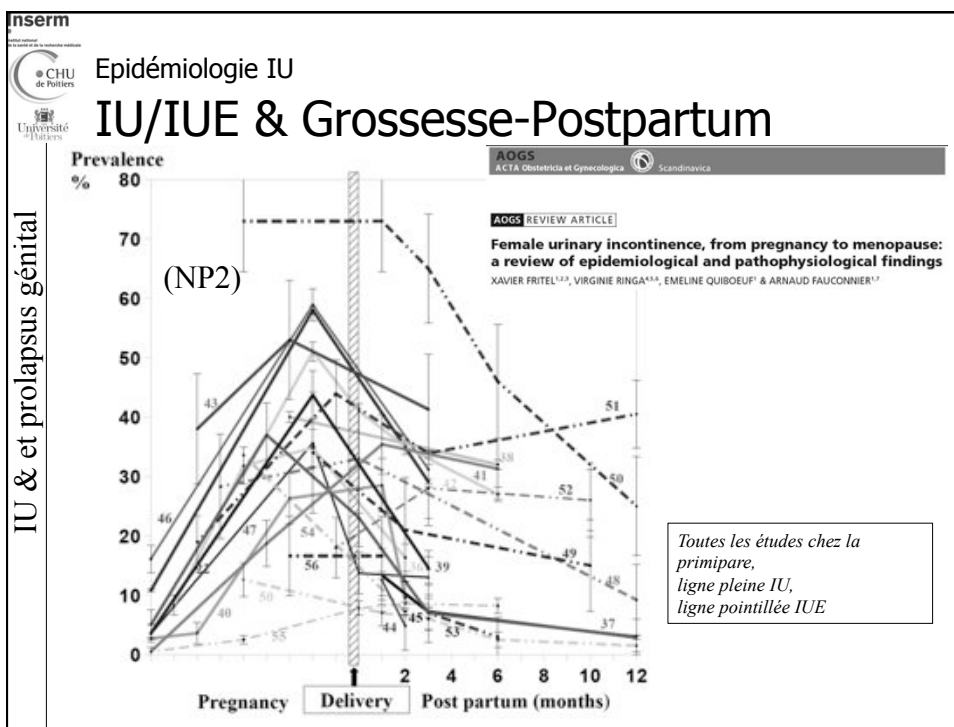


Facteurs de Risque de l'Incontinence Urinaire chez la femme

GROSSESSE & ACCOUCHEMENT

35





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Epidémiologie IU
Parité

Parity as a correlate of adult female urinary incontinence prevalence

Anders Foldspang, Søren Mommsen, Gitte Wrist Lam, Lisbeth Elving

Journal of Epidemiology and Community Health 1992; 46: 595-600

Table III Number and proportion of parous women, urinary incontinence (UI) prevalence 1987 (PUI, %) and significant^a UI prevalence odds ratios (OR) with corresponding p values, by clinical type of UI and parity in 2631 women, Aarhus, Denmark, 1988.^a

Parity	Delivered		All UI		Stress UI		Urge UI		Mixed stress and urge UI	
	n	%	PUI (%)	OR	PUI (%)	OR	PUI (%)	OR	PUI (%)	OR
Parous Yes	2059	78.3	18.6		16.5		9.0		7.7	
No	572	21.7	11.9	1.7†	8.7	2.1‡	7.0		4.9	1.6*
Parity 0	572	21.7	11.9		8.7		7.0		4.9	
1	411	15.6	17.0		14.6		8.8		7.8	
2	1015	38.6	16.3		14.4		8.6		7.3	
3	457	17.4	23.2		21.7		9.8		8.5	
4	131	5.0	22.1		18.3		11.5		9.2	
5	45	1.7	26.7	1.2‡	22.2	1.3‡	6.7		4.4	

^a p < 0.05, based on χ^2 heterogeneity tests (parous, yes/no) or logistic regression (number of childbirths).
 * p < 0.025; † p < 0.0005; ‡ p < 0.0000.

Foldspang. J Epidemiol Com Health 1992.

(NP3)

L'association entre IU et parité ne concerne que l'IUE. Pas d'association entre Incontinence par impériosité et parité.

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Epidémiologie IU
Parité

Prevalent Urinary Incontinence as a Correlate of Pregnancy, Vaginal Childbirth, and Obstetric Techniques

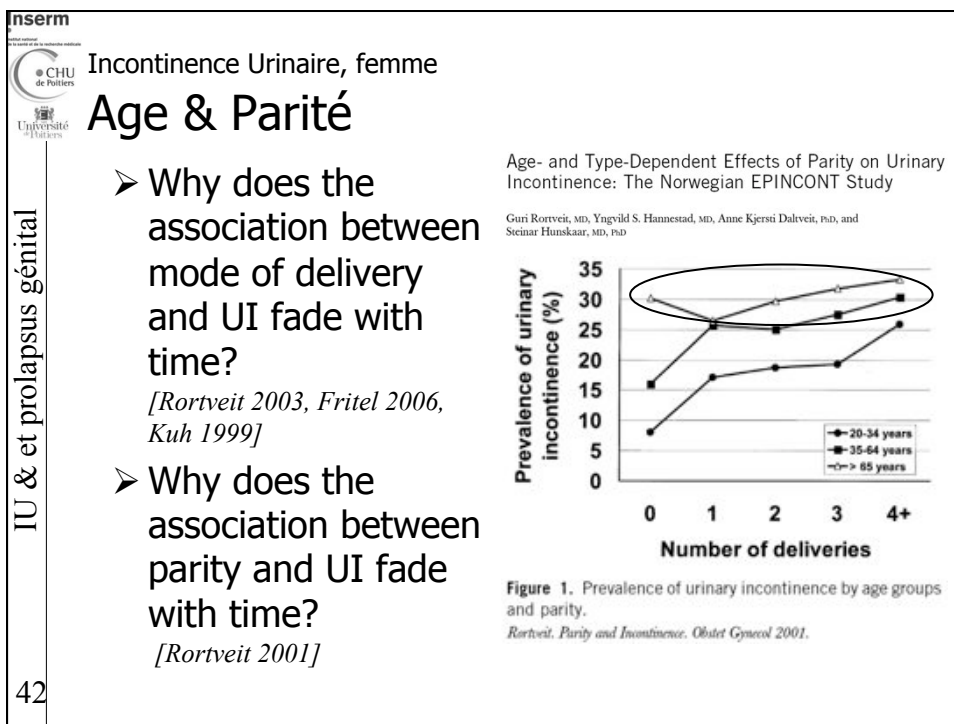
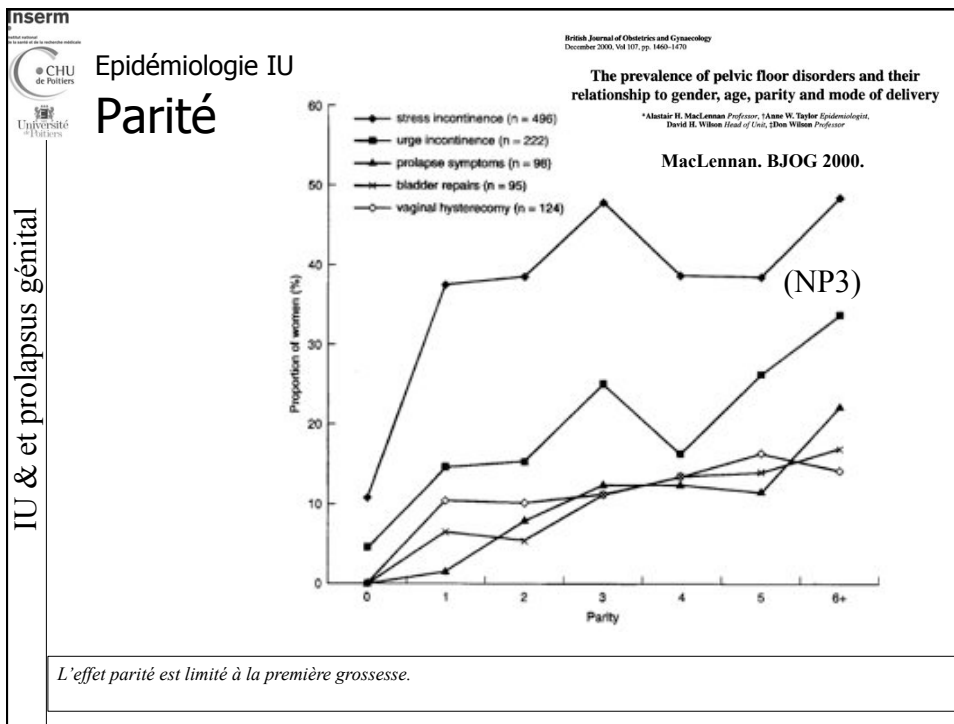
Anders Foldspang, MD, DMSc, Søren Mommsen, MD, DMSc, and Jens C. Djarhuus, MD, DMSc

(NP3)

Note. Estimated by logistic regression. Coefficients: UI during pregnancy, OR_{Year pregnancy UI} 5.15 (P < .0001), OR_{Year of VC} 1.43 per VC (P < .025); UI following VC, OR_{Year UI following VC} 4.36 (P < .0001), OR_{Year of VC} 1.36 per VC (P < .025); VC, OR_{Year VC} 2.07 (P < .0001), OR_{Year VC} 1.19 per VC (P < .005).

Foldspang. Am J Public Health 1999.

L'effet parité est surtout à la première grossesse et il est amplifié par l'IU de la grossesse ou du postpartum



Journal of Epidemiology and Community Health 1992; 46: 595-600

Epidémiologie IU Parity as a correlate of adult female urinary incontinence prevalence

Age & Parité Anders Foldspang, Soren Mommsen, Gitte Wrist Lam, Lisbeth Elving

Table II Number and proportion of parous women, urinary incontinence (UI) prevalence 1987 (P_{UI}, %), and UI prevalence odds ratios (OR) with corresponding significant p values,^a by clinical type of UI and present age in 2631 women, Aarhus, Denmark, 1988.

Age ^b (years) n	Parous %	Clinical type of UI				Mixed stress and urge UI			
		All UI P _{UI} (%)	OR	Stress UI P _{UI} (%)	OR	Urge UI P _{UI} (%)	OR	P _{UI} (%)	OR
30-34	256 61.7	10.4	4.3 [¶]	8.7	5.5 [¶]	5.1	2.8	4.3	3.2 [*]
35-39	319 76.0	16.2	1.6	13.6	2.5 [†]	8.6	1.1	6.7	1.5
40-44	415 81.7	15.6	1.7	12.6	2.4 [*]	6.7	0.9	5.3	1.0
45-49	318 86.9	24.0	1.1	21.6	1.1	12.6	1.3	0.7	1.4
50-54	369 82.9	20.0	0.9	18.0	1.0	9.4	1.0	8.1	1.0
55-59	377 82.1	17.9	1.3	15.7	1.9	10.0	1.0	8.3	1.9
Total	2054 78.6	17.1	1.6 [‡]	14.8	1.9 [§]	8.6	1.2 [‡]	7.1	1.5 ^{**}
30-44	990 73.7	14.1	2.3 [¶]	11.7	3.3 [§]	6.8	1.4	5.4	1.7
45-59	1069 82.6	20.2	1.2	18.0	1.3	10.5	1.1	8.9	1.4
Total	2054 78.6	17.1	1.6 [‡]	14.8	1.9 [§]	8.6	1.2 [‡]	7.1	1.5 ^{**}

^a p < 0.05, based on χ^2 heterogeneity tests (parous, yes/no) or logistic regression (number of childbirths).
^b Missing information on age: 18 women.
^c Corrected for age (5 year and 15 year age groups) by logistic regression.
^{*} p < 0.05; [†] p < 0.025; [‡] p < 0.001; [§] p < 0.0005; [¶] p < 0.0001.

(NP3)

L'association entre IUE et parité disparaît après 45 ans

Epidémiologie IU Obstetric Risk Factors for Stress Urinary Incontinence: A Population-Based Study

Age & Parité JAN PERSSON, MD, PÅL WØLNER-HANSEN, MD, PhD, AND HAKAN RYDHSTROEM, MD, PhD

Table 2. Odds Ratios for Later Incontinence Surgery According to Parity

No. of children	OR	95% CI
0	1.0	—
1	3.57	3.13, 4.00
2	5.26	4.76, 5.88
3	6.67	5.88, 7.14
≥4	7.14	6.67, 8.33
All parous women	5.56	5.00, 6.25

OR = odds ratio; CI = confidence interval.
 Stratification for women's year of birth. Nulliparous women are used as reference. Calculations irrespective of mode of delivery.

Persson. Obstet Gynecol 2000.

(NP3)

Cohorte constituée sur registres, Plus de 800 000 femmes ! Association entre parité et Chirurgie !

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Epidémiologie IU
Age & Parité

Neurourology and Urodynamics 26:779-782 (2007)

First Vaginal Delivery at an Older Age:
 Does It Carry an Extra Risk for the
 Development of Stress Urinary Incontinence?
 Asnat Groutz,* Limor Helpman, Ronen Gold, David Puzner,
 Joseph B. Lessing, and David Gordon

IU & et prolapsus génital

- Prévalence IUE, 1 à 2 ans après le 1^{er} accouchement, pas d'IUE avant la grossesse
 - 9,8% Si 20-29 ans et accouchement vaginal spontané
 - 38,5% Si plus 37 ans et accouchement vaginal spontané
 - 16,7% Si plus 37 ans et césarienne programmée

(NP3)

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Epidémiologie IU
Age & Parité

Neurourology and Urodynamics 28:365-366 (2009)

LETTER TO THE EDITOR

Re: First Vaginal Delivery at an Older Age: Does it Carry an Extra Risk for the Development of Stress Urinary Incontinence? Groutz A, Helpman L, Gold R, Puzner D, Lessing JB, Gordon D. 2007. NeuroUrol Urodyn 26:779-782

IU & et prolapsus génital

- Biais
 - Différence attribuable à la différence d'âge (facteur vieillissement à prendre en compte). En l'absence de nullipare impossible d'étudier cet aspect
 - Ne pas avoir de fuite avant la grossesse sélectionne une population particulière
 - Différence sur le mode d'accouchement non analysable sans un groupe jeune césarienne

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Epidémiologie IU & Mode d'accouchement
Risks of stress urinary incontinence and pelvic organ prolapse surgery in relation to mode of childbirth

Åsa Leijonhufvud, MD; Cecilia Lundholm, MSc; Sven Cnattingius, MD, PhD; Fredrik Granath, PhD; Erika Andolf, MD, PhD; Daniel Altman, MD, PhD

OBJECTIVE: To estimate the risk for stress urinary incontinence and pelvic organ prolapse surgery related to vaginal birth or cesarean delivery.

STUDY DESIGN: A cohort study of all women having their first and all subsequent deliveries by cesarean (n = 33,167), and an age-matched sample of women only having vaginal deliveries (n = 63,229) between 1973 and 1993. Hazard ratios were calculated using Cox regression models with 95% confidence intervals.

RESULTS: Women only having vaginal deliveries had increased overall risks of incontinence (hazard ratio, 2.9; 95% confidence interval, 2.4–3.6) and prolapse surgery (hazard ratio, 9.2; 95% confidence interval, 7.0–12.1) compared with women only having cesarean deliveries.

CONCLUSION: Having only vaginal childbirths was associated with a significantly increased risk of stress urinary incontinence and pelvic organ prolapse surgery later in life compared with only having cesarean deliveries.

Key words: cesarean section, delivery, incontinence, prolapse

See this article at: Leijonhufvud A, Lundholm C, Cnattingius S, et al. Risk of stress urinary incontinence and pelvic organ prolapse surgery in relation to mode of childbirth. *Am J Obstet Gynecol* 2011;204:79.e1-6.

SUI surgery

Parity	1		2		≥3		Overall	
	HR	(95% CI)	HR	(95% CI)	HR	(95% CI)	HR	(95% CI)
Cesarean delivery	1.0	(ref)	1.0	(ref)	1.0	(ref)	1.0	(ref)
Vaginal delivery ^{crude}	2.1	(1.6–3.0)	2.5	(1.8–3.4)	4.5	(2.6–7.9)	2.7	(2.2–3.2)
Vaginal delivery ^{adjusted} ^a	2.5	(1.7–3.5)	2.8	(2.0–3.9)	4.9	(2.7–8.6)	2.9	(2.4–3.6)

Cohorte constituée sur registres. Association entre mode d'accouchement et Chirurgie !

(NP3)

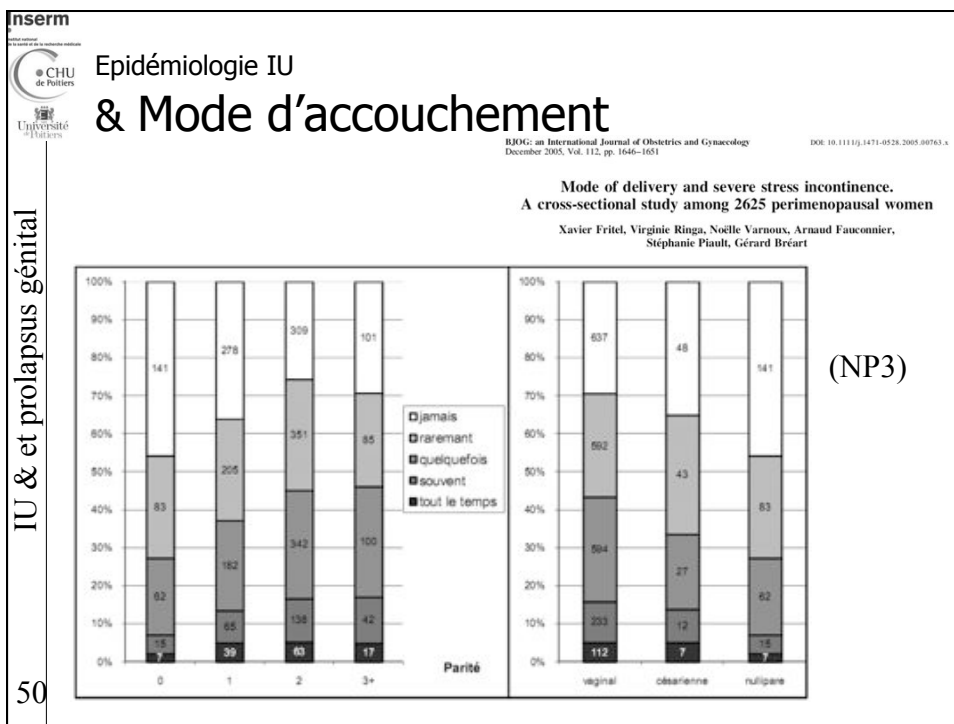
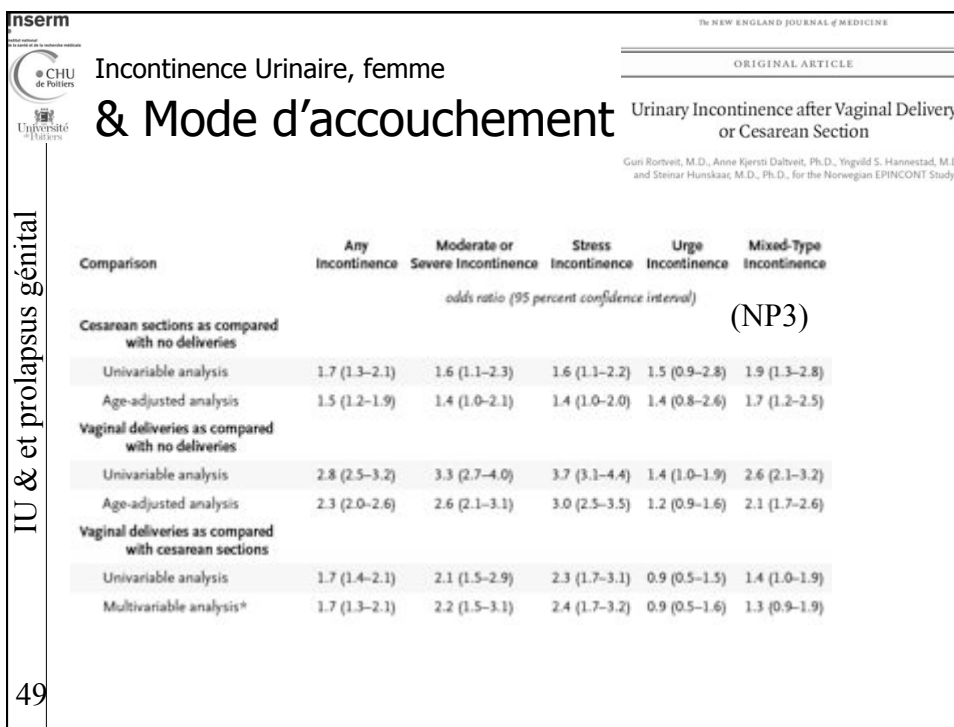
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Epidémiologie IU & Mode d'accouchement
Does Cesarean Section Reduce Postpartum Urinary Incontinence? A Systematic Review

Joshua Z. Press, MD, Michael C. Klein, MD, Janusz Kaczorowski, PhD, Robert M. Liston, MChOB, and Peter von Dederszen, MChOB, DPH

Type of Urinary Incontinence	References of Included Studies	Cesarean Section n/No. (%)	Vaginal Birth n/No. (%)	OR (95% CI) Cesarean Section vs Vaginal Birth	Number Needed to Treat for Prevention	Study	
Stress UI	Total unstratified	12, 13, 15, 16, 17, 19, 20, 21, 23	141/1,368 (10)	1,411/6,537 (22)	0.48 (0.39, 0.58)	10 (5, 13)	Cohort > 1 yr F/U Fritel et al (12)
	Stratified by						
	Elective CS only†	12, 13, 15, 20, 23	41/473 (8.7)	1,076/5,244 (21)	0.47 (0.33, 0.65)	10 (5, 16)	Groutz et al (13)
	Severe UI only	12, 15, 19, 23	9/385 (1.5)	121/3,917 (3.1)	0.99 (0.35, 1.81)	n.s.	
	Primiparous only	12, 15, 19, 20, 23	51/486 (10)	556/2,535 (22)	0.40 (0.29, 0.54)	9 (7, 11)	Hannah et al (14)
	Multiparous only	15, 19, 20, 23	63/418 (15)	749/2,897 (26)	0.58 (0.44, 0.77)	11 (5, 21)	Schytt et al (15)
	ID excluded	12, 13, 15, 16, 17, 19, 20, 23	328/1,223 (10)	1001/4,926 (20)	0.54 (0.44, 0.66)	12 (10, 17)	
	Urgent UI	12, 16, 22, 23	21/424 (5.0)	282/2,144 (13)	0.42 (0.26, 0.66)	14 (11, 25)	
	Total unstratified						
	Stratified by						
Elective CS only†	12, 23	9/90 (10)	270/1,689 (16)	0.62 (0.31, 1.20)	n.s.	Cohort < 1 year F/U Chaliha et al (16)	
Severe UI only	12, 23	2/243 (0.8)	14/1,536 (0.9)	1.19 (0.31, 4.54)	n.s.	Dimpfl et al (17)	
Primiparous only	12, 23	12/138 (8.7)	139/776 (18)	0.46 (0.25, 0.86)	11 (5, 47)	Farrell et al (18)	
Multiparous only	23	8/395 (7.7)	320/760 (16)	0.44 (0.23, 0.83)	12 (5, 30)		
ID excluded	12, 15, 17	41/199 (35)	218/1,239 (19)	0.44 (0.26, 0.72)	14 (10, 20)		
Mixed UI	23	8/212 (3.8)	110/1,260 (8.7)	0.41 (0.26, 0.65)	20 (15, 33)		
Total unstratified							
Stratified by							
Elective CS only†	23	4/87 (4.6)	114/1,385 (8.2)	0.54 (0.19, 1.49)	n.s.	Klein et al (19)	
Severe UI only	23	0/212 (0)	5/1,260 (0.4)	0.54 (0.03, 9.75)	n.s.		
Primiparous only	23	2/307 (1.9)	39/500 (7.8)	0.23 (0.05, 0.85)	17 (14, 27)		
Multiparous only	23	6/305 (5.7)	71/760 (9.3)	0.59 (0.25, 1.39)	n.s.		
ID excluded	23	8/212 (3.8)	97/1,080 (9.0)	0.40 (0.19, 0.83)	19 (14, 71)		
Unspecified UI	14, 18	113/716 (16)	84/613 (14)	0.74 (0.54, 1.01)	n.s.	Thompson et al (20)	
Total unstratified sample*							
Stratified by							
Elective CS only†	14, 18	66/428 (15)	200/890 (22)	0.60 (0.43, 0.84)	13 (9, 35)	Viktrup et al (21)	
Severe UI only	14	8/608 (1.3)	4/306 (1.3)	1.01 (0.30, 3.37)	n.s.	Viktrup et al (22)	
Primiparous only	18	11/105 (10)	34/307 (24)	0.37 (0.19, 0.73)	7 (5, 19)	Wilson et al (23)	
Multiparous only	N/A	N/A	N/A	N/A	n.s.		
ID excluded	18	11/74 (15)	50/233 (21)	0.64 (0.31, 1.30)	n.s.		

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Epidémiologie IU
& Mode d'accouchement

IU & et prolapsus génital

- Vaginal delivery is associated with postpartum UI 20 years after delivery in primiparae

The prevalence of urinary incontinence 20 years after childbirth: a national cohort study in singleton primiparae after vaginal or caesarean delivery
M Gyhagen,^a M Bullarbo,^{a,b} TF Nielsen,^{a,b} I Milsom^a

Table 3. Crude and adjusted prevalence and odds ratios of urinary incontinence, and urinary incontinence persisting for more than 10 years, in relation to mode of delivery

	Caesarean section (%)	Vaginal delivery (%)	Crude OR (95% CI)	Caesarean section (%)	Vaginal delivery (%)	Adjusted* OR (95% CI)
Urinary incontinence	30.0	40.2	1.56 (1.36–1.80)	28.8	40.3	1.67 (1.45–1.92)

(NP 2)

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Epidémiologie IU
& Mode d'accouchement

IU & et prolapsus génital

- Césarienne : Intervention après le début des troubles
- Biais d'indication: les accouchées par césarienne sont différentes des autres !

Does the SWEPOP (Swedish Pregnancy, Obesity and Pelvic Floor) study suffer from a selection bias?

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Epidémiologie IU & Mode d'accouchement

The effect of mode of delivery on pelvic floor functional anatomy
 Philip Tooz-Hobson · James Balmforth · Linda Cardon · Vik Khullar · Stavros Athanasios

• Les accouchées par césarienne sont différentes des autres :

- Antenatal levator hiatus significantly larger at Valsalva in the vaginal delivery group compared to those who subsequently delivered by caesarean (17.5 cm² vs 15.8, p <0.05)
- Antenatal bladder neck descent

Table 3 Lowest position of the bladder on Valsalva at 32-38 weeks and delivery mode (n = 135)

Delivery mode	n	Mean	SD
NVD	99	4.70	10.95
Op.vag.del.	29	10.44	12.97
CS 2nd stage	7	11.87	5.88

Means and 95% confidence intervals given by star and brackets (P = 0.024 for ANOVA). Lower means indicate a higher degree of descent as the leading edge of the organ reaches closer to the point of reference, that is, the symphysis pubis. CS, Caesarean section; NVD, normal vaginal delivery; Op.vag.del., operative vaginal delivery; SD, standard deviation.

Antenatal pelvic organ mobility is associated with delivery mode
 Hans P. DIETZ,¹ Kate H. MOORE² and Anneke B. STEENSMA¹

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Epidémiologie IU & Mode d'accouchement, Césarienne

➤ Oui, 3 mois postpartum

Outcomes	Planned Cesarean Delivery (n = 798)			Planned Vaginal Delivery (n = 798)			Relative Risk (95% Confidence Interval)	P Value
	Had Cesarean Delivery	Had Vaginal Delivery	Total	Had Cesarean Delivery	Had Vaginal Delivery	Total		
Experienced urinary incontinence [†]	27/725 (3.7)	9/73 (12.3)	36/798 (4.5)	23/341 (6.7)	35/456 (7.7)	58/797 (7.3)	0.62 (0.41-0.93)	.02
Experienced fecal incontinence [‡]	5/569 (0.9)	0/50 (0)	5/619 (0.8)	5/253 (2.0)	4/354 (1.1)	9/607 (1.5)	0.54 (0.18-1.62)	.29
Experienced incontinence of flatus [§]	61/566 (10.8)	5/50 (10.0)	66/616 (10.7)	27/253 (10.7)	32/353 (9.1)	59/606 (9.7)	1.10 (0.79-1.54)	.64

➤ Non, 2 ans postpartum (NP1)

Table III Sex, pain, subsequent pregnancies, incontinence, and depression

Outcome	Planned CS n = 457 n (%)			Planned VB n = 460 n (%)			Relative risk (95% CI)	P
	CS n = 408	VB n = 49	Total n = 457	CS n = 203	VB n = 257	Total n = 460		
Urinary incontinence* ^{†§}	65 (16.0)	16 (32.7)	81 (17.8)	37 (18.4)	63 (24.5)	100 (21.8)	0.81 (0.63-1.06)	.14
Fecal incontinence* ^{†§}	10 (2.5)	1 (2.0)	11 (2.4)	8 (4.0)	2 (0.8)	10 (2.2)	1.10 (0.47-2.58)	.83
Incontinence of flatus* ^{†§}	53 (13.0)	7 (14.3)	60 (13.1)	29 (14.4)	24 (9.3)	53 (11.5)	1.14 (0.80-1.61)	.48

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Epidémiologie IUE & Césarienne

n
 Longitudinal Changes in Overactive Bladder and Stress Incontinence Among Parous Women
 Victoria L. Handa,^{1*} Christopher B. Pierce,² Alvaro Muñoz,² and Joan L. Blomquist¹

a

age, years: 35 36 37 38 39 40 41 42

prevalence, %

years from 1st delivery: 5 6 7 8 9 10 11 12

- cesarean/non-obese
- cesarean/obese
- vaginal/non-obese
- vaginal/obese

La prévalence de l'IUE n'augmente pas en cas d'accouchement vaginal mais augmente en cas d'accouchement par césarienne de 6% par an (1.06, 95% CI 1.01-1.11) !

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Facteurs de Risque de l'Incontinence Urinaire

OBÉSITÉ, DIABÈTE, SYNDROME METABOLIQUE

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Epidémiologie IU
Diabète

Prevalence and Risk Factors for Urinary Incontinence in Women With Type 2 Diabetes and Impaired Fasting Glucose (NP3)
 Findings from the National Health and Nutrition Examination Survey (NHANES) 2001–2002

JEANETTE S. BROWN, MD¹
 Eric Vittinghoff, MD¹
 FENG LIN, MS¹

LEROY M. NIEBERG, MD, PhD²
 JOHN W. KUSKE, MD²
 AIKA M. KANAYA, MD¹

In the U.S. have diabetes, another non adults are estimated to be diabetics,* or impaired fasting

Table 1—Prevalence of urinary incontinence by glucose subgroups, NHANES 2001–2002

	Normal glucose	IFG	Diabetes	P*
n	1,051	164	246	
≥Weekly incontinence (%)	16.8	33.4	35.4	<0.001
≥Weekly urge incontinence (%)	7.7	24.6	26.4	<0.001
≥Weekly stress incontinence (%)	14.4	31.2	30.2	<0.001
Bothersome incontinence (%)†	18.2	24.7	31.3	0.01
Incontinence affect on daily activities (%)†	4.9	14.0	12.6	<0.001

*P value by modified Pearson χ^2 test; †report of "somewhat," "very much," or "greatly" versus "not at all" or "only a little," as the reference category among women with ≥weekly incontinence.

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Incontinence Urinaire, femme
Diabète type 2

(NP3)

Table 2. Type 2 diabetes and odds of urinary incontinence

	Type 2 Diabetes		p Value
	No	Yes	
Noncases	52,516	2,640	
Any incontinence:			
No. cases	3,612	318	
OR (95% CI)*	1.0 (referent)	1.2 (1.0–1.3)†	0.01
Stress incontinence:			
No. cases	1,362	94	
OR (95% CI)*	1.0 (referent)	1.1 (0.9–1.4)	0.3
Urge incontinence:			
No. cases	480	53	
OR (95% CI)*	1.0 (referent)	1.4 (1.0–1.9)†	0.03
Mixed incontinence:			
No. cases	660	51	
OR (95% CI)*	1.0 (referent)	0.9 (0.7–1.3)	0.6

Urinary incontinence was defined as urine leakage at least once per week. Results are from combined analyses of NHS and NHS II cohorts. Women who reported incident incontinence less than once per month or more than a few drops of urine were excluded from analyses since continence status was unclear (12,564).

* Adjusted for age (5-year categories), parity (0, 1 to 2, 3 or more births), BMI (less than 22, 22 to 24, 25 to 29, 30 or greater kg/m²), cigarette smoking (never, former, current), hysterectomy (yes/no), functional limitations (yes/no), menopausal status/postmenopausal hormone use (premenopausal, missing menopausal status, postmenopausal/never used hormone therapy, formerly used hormone therapy, currently use hormone therapy), use of medications that may affect continence (diuretics, calcium channel blockers and angiotensin-converting enzyme inhibitors; yes/no), cohort (NHS, NHS II).

† Values were rounded to 1 significant digit. However, lower limit of confidence interval is greater than 1.0 and odds ratio is statistically significant.

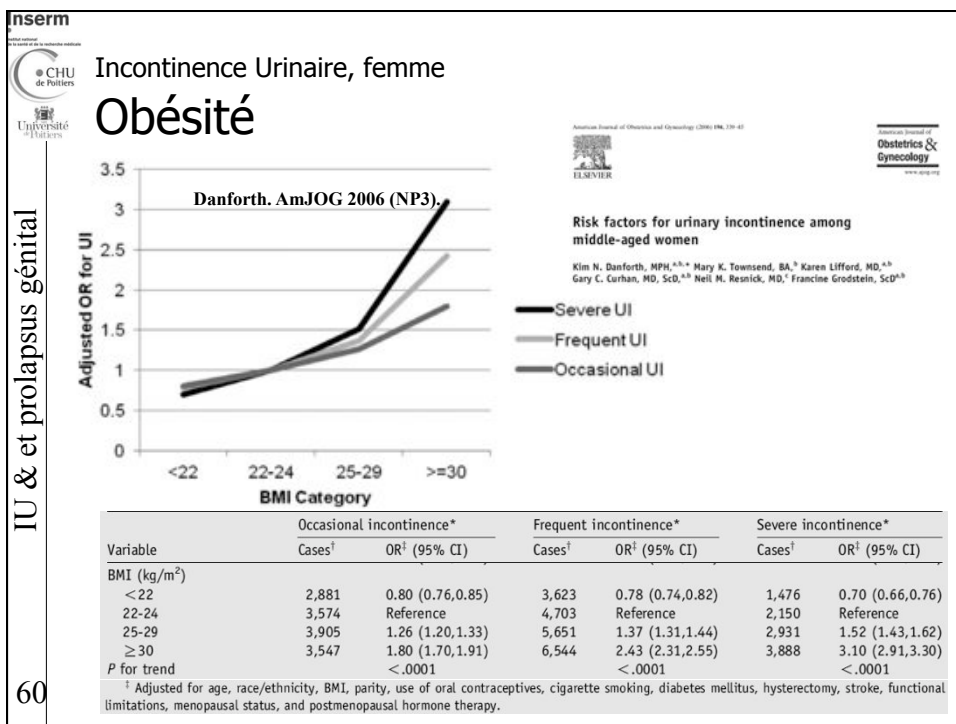
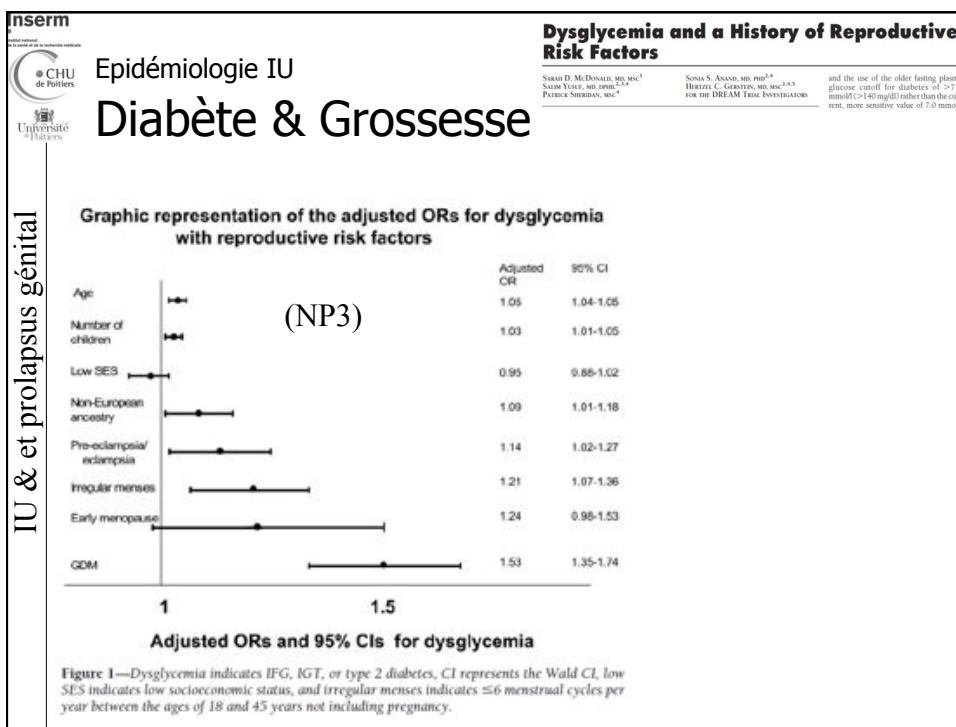
Type 2 diabetes mellitus and risk of stress, urge, and mixed urinary incontinence

Kim N. Danforth, ScD, Mary K. Townsend, ScD, Gary C. Curhan, MD, ScD, Neil M. Resnick, MD, and Francine Grodstein, ScD

71,650 women aged 37 to 79 years in the Nurses' Health Study.

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Incontinence Urinaire, femme

Obésité & type d'IU

BJOG: an International Journal of Obstetrics and Gynaecology
 March 2003, Vol. 110, pp. 247-254

Are smoking and other lifestyle factors associated with female urinary incontinence? The Norwegian EPINCONT Study
 Yngvild S. Hannestad*, Guri Rortveit, Anne Kjersti Dalveit, Steinar Hunskaar

Hannestad. BJOG 2003 (NP3).

Body mass index	Incontinence		Stress type incontinence		Mixed type incontinence		Urge type incontinence	
	All	Severe	All	Severe	All	Severe	All	Severe
<25	1	1	1	1	1	1	1	1
25-29	1.4 (1.3-1.5)	2.0 (1.7-2.3)	1.4 (1.2-1.5)	1.9 (1.5-2.4)	1.7 (1.5-1.9)	2.3 (1.9-2.8)	1.1 (0.9-1.3)	1.6 (1.1-2.4)
30-34	1.9 (1.7-2.1)	3.1 (2.6-3.7)	1.7 (1.6-2.0)	2.8 (2.1-3.6)	2.3 (2.0-2.7)	3.5 (2.8-4.3)	1.5 (1.2-1.9)	3.0 (1.9-4.6)
35-39	2.4 (2.1-2.8)	4.2 (3.3-5.3)	2.0 (1.7-2.5)	3.2 (2.1-4.8)	3.5 (2.9-4.3)	5.5 (4.1-7.4)	1.4 (0.9-2.1)	2.4 (1.2-4.9)
40+	2.7 (2.1-3.5)	5.0 (3.4-7.3)	2.4 (1.7-3.3)	4.2 (2.2-7.9)	3.7 (2.7-5.2)	6.0 (3.7-9.6)	1.8 (0.9-3.5)	3.8 (1.3-11.1)

* Adjusted for the other factors in the table in addition to age, no. of children, coughing and wheezing/dyspnoea.

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Incontinence Urinaire, femme

Obésité

THE NEW ENGLAND JOURNAL OF MEDICINE
 ORIGINAL ARTICLE

Weight Loss to Treat Urinary Incontinence in Overweight and Obese Women

Leslie L. Subak, M.D., Ross Wang, Ph.D., Orla Smith-Went, Ph.D., Frank Fragakis, M.D., Ph.D., Eric Vilijanen, Ph.D., Jennifer M. Greenlee, M.S.P.H., Holly F. Richter, Ph.D., M.D., Deborah Meier, M.D., Kathryn L. Burgin, Ph.D., Amy A. Coates, Ph.D., Judith Moore, B.Sc., John W. Kucuk, Ph.D., and Deborah Grady, M.D., M.P.H., for the PRIDE Investigators*

Subak. NEJM 2009 (NP1).

Essai randomisé

Outcome	Weight-Loss Group (N=226)	Control Group (N=112)	P Value
Body weight†			
Baseline — kg	98±17	95±16	
6 Mo — kg	90±17	94±17	
% Change (95% CI)	-8.0 (-9.0 to -7.0)	-1.6 (-2.7 to -0.4)	<0.001
Urinary-incontinence episodes‡			
Any incontinence			
Baseline — no./wk	24±18	24±16	
6 Mo — no./wk	13±15	17±19	
% Change (95% CI)	-47 (-54 to -40)	-28 (-41 to -13)	0.01
Stress incontinence			
Baseline — no./wk	9±11	10±10	
6 Mo — no./wk	4±7	7±9	
% Change (95% CI)	-58 (-67 to -46)	-33 (-50 to -9)	0.02
Urge incontinence			
Baseline — no./wk	14±14	13±15	
6 Mo — no./wk	8±11	10±15	
% Change (95% CI)	-42 (-51 to -32)	-26 (-44 to -3)	0.14

* Plus-minus values are means ±SD and were calculated with the use of multiply imputed data sets for body weight and frequency of urinary-incontinence episodes.
 † Percentage changes and P values for the comparison between the weight-loss group and the control group were calculated with the use of multiply imputed data sets and mixed linear regression models, with control for clinical site and correlation of outcomes in the intervention groups. The data sets for body weight were based on 221 women in the weight-loss group and 97 in the control group for whom data were available at baseline and 6 months.
 ‡ Percentage changes and P values for the comparison between the weight-loss and the control groups were calculated with the use of multiply imputed data sets and negative binomial models, with control for clinical site and correlation of outcomes in the intervention group. The data sets for urinary incontinence were based on 214 women in the weight-loss group and 90 in the control group for whom data were available at baseline and 6 months.

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**Epidémiologie IU
 Obésité**

IN THE NEW ENGLAND JOURNAL OF MEDICINE

ORIGINAL ARTICLE

Weight Loss to Treat Urinary Incontinence in Overweight and Obese Women

Yvette L. Subak, M.D., Erica Wang, Ph.D., Della Smith-West, Ph.D., Frank Fowler, M.D., Ph.D., Eric Stenberg, Ph.D., Jennifer M. Croswell, M.D., Ph.D., Holly E. Richter, Ph.D., M.D., Deborah Myers, M.D., Kathleen L. Burgin, Ph.D., Anna A. Garcia, Ph.D., Judith W. Miller, B.Sc., John W. Suck, Ph.D., and Deborah Grady, M.D., M.P.H., for the PRIDE Investigators*

(NP1)

Subak. NEJM 2009.

Reduction Category	Incontinence Type	Weight-loss group (%)	Control group (%)	P-value
>50	Stress	65	44	0.003
	Urge	51	34	0.006
>70	Stress	52	33	0.009
	Urge	41	29	0.04
100	Stress	27	15	0.004
	Urge	19	11	0.02

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**Incontinence Urinaire, femme
 Syndrome Métabolique**

(NP3)

**TABLE 5
 Multiple logistic regression analysis for specific pelvic floor symptoms**

Symptoms	No. of metabolic syndrome components					
	0	1-2		3-5		
	OR	OR (95% CI)	P value	OR (95% CI)	P value ^a	
Pelvic organ prolapse	1	1.5 (0.8-3.0)	.247	1.1 (0.4-3.1)	.835	
Solid fecal incontinence	1	1.0 (0.6-1.8)	.927	0.5 (0.2-1.3)	.178	
Liquid fecal incontinence	1	1.0 (0.7-1.5)	.846	1.1 (0.6-2.0)	.719	
Urgency urinary incontinence	1	1.4 (0.9-2.3)	.104	1.6 (0.9-3.2)	.115	
Stress urinary incontinence	1	1.3 (1.0-1.9)	.071	2.0 (1.3-3.3)	.003	

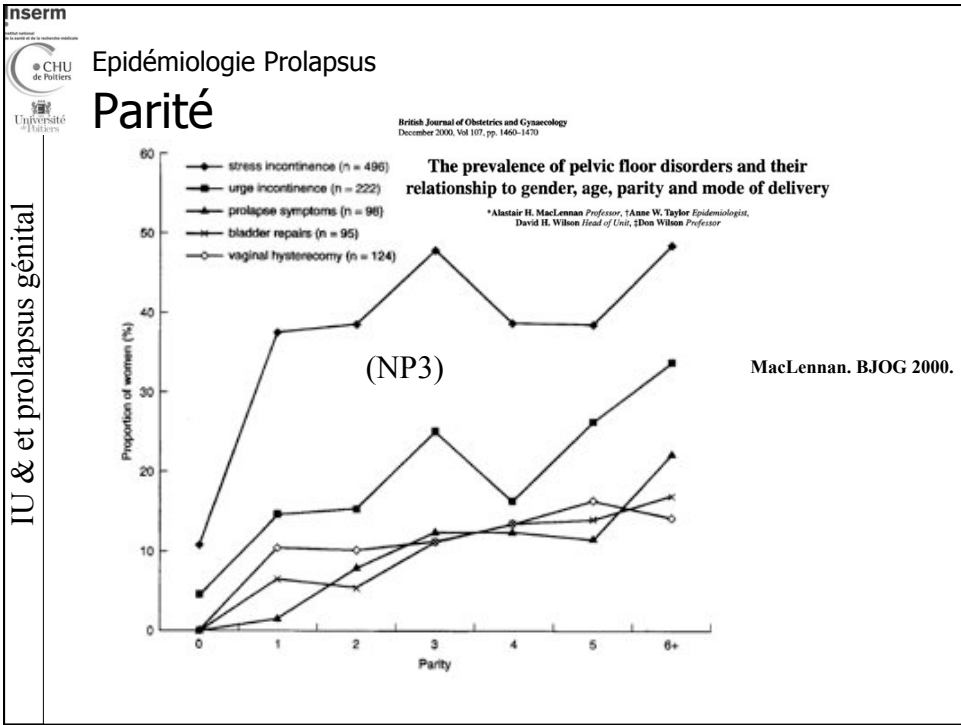
CI, confidence interval; OR, odds ratio.

^a Adjusted for age, parity, menstrual status, education, income, smoking, low-density lipoprotein cholesterol, metabolic syndrome, pelvic organ prolapse, fecal incontinence, and urinary incontinence.

Kim. Metabolic syndrome and pelvic floor dysfunction. Am J Obstet Gynecol 2011.

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Prolapsus génital (POP)



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**Epidémiologie Prolapsus
 Parité**

British Journal of Obstetrics and Gynaecology
 May 1997, Vol. 104, pp. 579-585

**Epidemiology of genital prolapse: observations from the
 Oxford Family Planning Association study**

Jonathan Mant Clinical Lecturer in Public Health Medicine, Rosemary Painter Computer Scientist,
 Martin Vessey Professor of Public Health
 Department of Public Health and Primary Care, Radcliffe Infirmary, Oxford

(a)

Parity	Relative risk
0	1.0
1	4.5
2	8.0
3	9.5
4+	10.5

Mant. BJOG 1997.

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**Epidémiologie Prolapsus
 Parité et Chirurgie**

Cesarean section and risk of pelvic organ prolapse: a nested case-control study

Christina Larsson, MD; Karin Källen, PhD; Erika Andolf, MD, PhD

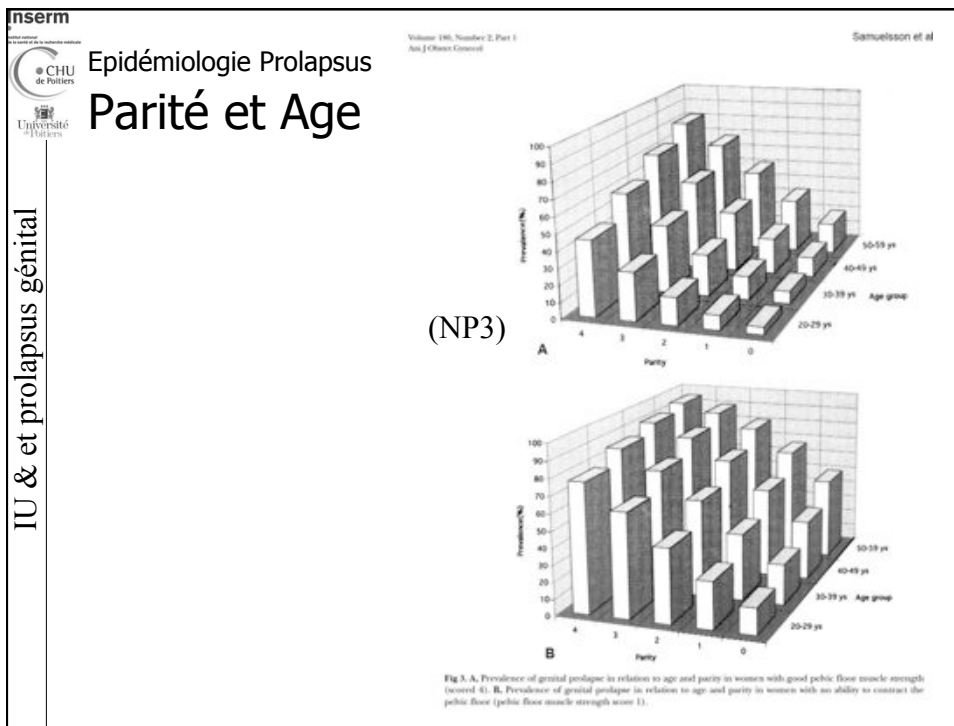
**FIGURE
 Risk of surgery for pelvic organ prolapse**

Parity	Odds Ratio
1	1.0
2	1.1
3	1.6
4+	2.1

Parity at last delivery as risk factor for pelvic organ prolapse among women with only vaginal deliveries. The odds ratios were obtained after stratification for maternal year of birth and year of last delivery. Vertical bars indicate 95% confidence intervals.

Larsson. Cesarean section and risk of pelvic organ prolapse. Am J Obstet Gynecol 2009.

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**Epidémiologie Prolapsus
 Mode d'accouchement**

• Moins de prolapsus [NP3] Larsson AmJOG 2009

TABLE 3
The relation between mode of delivery and risk of pelvic organ prolapse

Mode of delivery	Prolapse (n = 15,007) n (%)	No prolapse (n = 1,444,548) n (%)	Crude OR	Adjusted OR (95% CI)
Vaginal deliveries only	13,935 (92.9)	1,193,661 (83.5)	1.00	1.00
Vaginal and CS	791 (5.3)	108,212 (7.6)	0.63	0.75 (0.69-0.81)
CS only	281 (1.9)	127,668 (8.9)	0.19	0.18 (0.16-0.20)

The odds ratios (ORs) were obtained after stratification for maternal year of birth, year of last delivery, and parity at last delivery. CI, confidence interval; CS, cesarean section.

Larsson. Cesarean section and risk of pelvic organ prolapse. Am J Obstet Gynecol 2009.

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Epidémiologie Prolapsus
Mode d'accouchement
 Symptomatic Pelvic Organ Prolapse at Midlife, Quality of Life, and Risk Factors
 Fritel OG 2009 [NP3]

Xavier Fritel, MD, Nolle Varoux, Marie Zins, MD, Gerard Bruart, MD, PhD, and Virginie Rings, MD, PhD

Table 4. Association Between Women's Characteristics and Pelvic Organ Prolapse History (Pelvic Organ Prolapse Symptoms or Previous Pelvic Organ Prolapse Surgery)*

Women's Characteristics	POP History [% (n)]	Univariable Analysis [Crude OR (95% CI)]	Multivariable Analysis [Adjusted OR (95% CI)]
Age at questionnaire			
Younger than 55	5.6 (83)	1	Excluded
55 or older	6.4 (75)	1.19 (0.80-1.77)	
Body mass index (kg/m ²)			
Less than 25	5.2 (87)	1	1
25 or more	7.2 (65)	1.41 (1.01-1.96)	1.41 (1.01-1.97)
Occupation			
Blue-collar, clerical staff	6.9 (46)	1	Excluded
Supervisors, sales representatives	6.1 (103)	0.88 (0.61-1.26)	
Management or training	2.8 (6)	0.38 (0.16-0.91)	
High school diploma			
No	6.2 (128)	1	Excluded
Yes	4.3 (22)	0.68 (0.43-1.09)	
Menopausal status			
Premenopausal	5.1 (27)	1	Excluded
Postmenopausal with HT	6.1 (80)	1.20 (0.77-1.89)	
Postmenopausal without HT	6.2 (49)	1.20 (0.74-1.95)	
Mode of delivery			
None	2.9 (9)	1	1
1 vaginal	5.2 (40)	1.89 (0.91-3.96)	1.91 (0.91-3.98)
2 vaginal	6.8 (76)	2.49 (1.23-5.03)	2.49 (1.23-5.04)
3 or more vaginal	9.6 (30)	3.61 (1.68-7.76)	3.55 (1.65-7.62)
Cesarean only	2.2 (3)	0.75 (0.20-2.81)	0.73 (0.19-2.73)

POP, pelvic organ prolapse; OR, odds ratio; CI, confidence interval; HT, hormone therapy.
 * Univariable and multivariable analysis with logistic regression.
 † P<0.013.

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Epidémiologie Prolapsus
Evolution postnatale

DOI: 10.1111/1471-0528.12369
 www.bjog.org

Urogynaecology

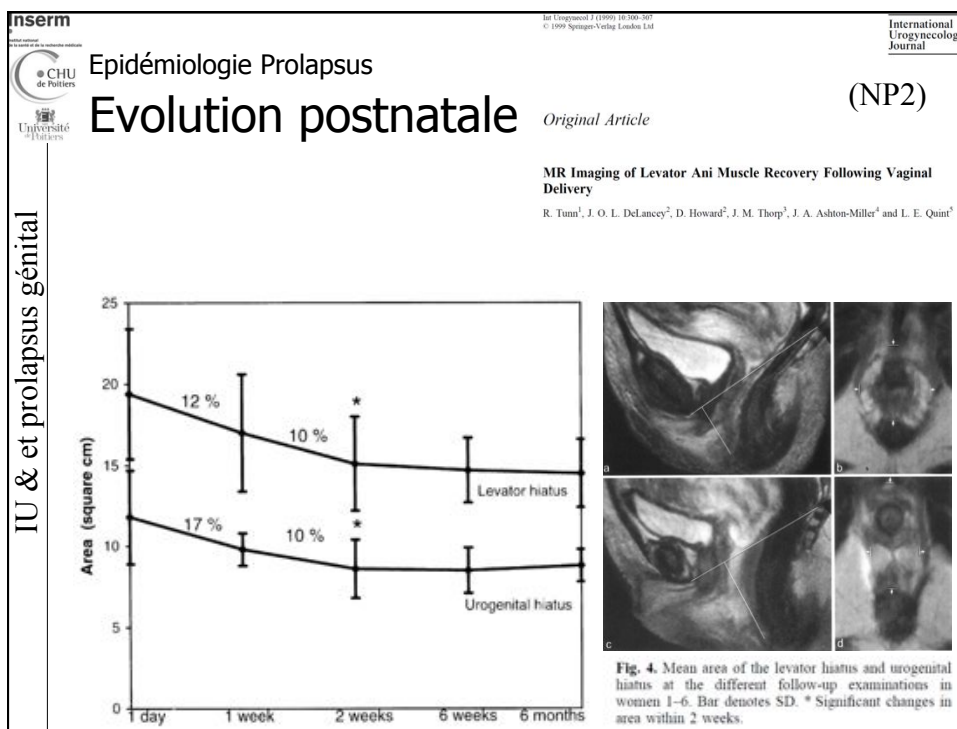
The recovery of pelvic organ support during the first year postpartum (NP2)
 Y Chen,^a F-Y Li,^b X Lin,^a J Chen,^a C Chen,^a MK Guess^c

Table 4. Generalised estimating equations approach predicting the risk to POP in UCD and subgroup of TOL who went to caesarean section

Effect	OR*	95% CI	P value
POP at 36-38 weeks of gestation	2.48	2.00-69.86	0.006
Time	1.02	0.96-1.02	0.71
UCD	0.01	0.00-0.13	0.0002
TOL	1.00	-	-
Baseline BMI	2.18	1.37-3.48	0.001
Age	1.07	0.61-1.87	0.82
NBW	0.02	0.00-0.35	0.007
Gravidity	1.26	0.30-5.29	0.75

* Adjusted for POP status at 36-38 weeks of gestation, baseline BMI, age, birthweight and gravidity.

Figure 1. Postpartum changes for POPQ measurements from both modelling prediction (close symbols and lines) and observed data (open symbols). In the graphs of Aa/Ba, Ap/Bp and C, the y-axis shows the absolute values relative to the hymen (cm). The true values of these points are negative numbers. In the graphs of perineal body (PB), genital hiatus (GH) and total vaginal length (TVL), the y-axis shows the true measurement value (cm). The x-axis shows the three time-points postpartum: 6 weeks (PP6w), 6 months (PP6m) and 1 year (PP1y) postpartum.



inserm DOI: 10.1111/1547-1626.12025
www.sagepub.com Epidemiology

CHU de Poitiers **Université de Poitiers** **Epidémiologie Prolapsus** **Evolution postnatale** **Childbirth and prolapse: long-term associations with the symptoms and objective measurement of pelvic organ prolapse**

IU & et prolapsus génital

C Glazener,¹ A Elders,² C MacArthur,³ RJ Lancashire,³ P Herbison,⁵ S Hagen,⁶ N Dean,⁷ C Bain,¹ P Toozs-Hobson,⁸ K Richardson,¹ A McDonald,⁴ G McPherson,⁹ D Wilson,¹ for the ProLong Study Group

Table 3. Ordinal logistic regression of prolapse symptoms measured using POP-SS

Variable	Number	POP-SS Mean (SD)	OR (95% CI)	P
All women	3763	2.7 (3.5)		
Age at first birth				
<25 years	1279	3.4 (4.1)	Reference	
25–29 years	1497	2.4 (3.1)	0.68 (0.60–0.78)	<0.001
30–34 years	785	2.2 (2.9)	0.63 (0.53–0.74)	<0.001
≥ 35 years	197	2.0 (2.7)	0.60 (0.46–0.80)	<0.001
Missing	5			
Number of births				
1	410	2.6 (3.2)	Reference	
2	1836	2.5 (3.2)	0.84 (0.69–1.02)	0.075
3	1016	2.6 (3.6)	0.76 (0.61–0.93)	0.010
4 or more	500	3.4 (4.1)	0.92 (0.71–1.18)	0.506
Missing	1			
Delivery mode history				
Only spontaneous vaginal delivery	1855	2.7 (3.5)	Reference	
Only caesarean section	403	2.1 (2.8)	0.84 (0.69–1.02)	0.076
Any forceps	956	2.9 (3.6)	1.20 (1.04–1.38)	0.012
Any vacuum*	248	2.4 (3.2)	0.93 (0.73–1.18)	0.547
Spontaneous vaginal delivery and caesarean section	297	2.9 (3.5)	1.13 (0.90–1.41)	0.282
Missing	7			
Current body mass index				
18.5–24.9	1843	2.3 (3.1)	Reference	
<18.5	61	3.3 (4.2)	1.36 (0.84–2.21)	0.215
25–29.9	1184	2.9 (3.6)	1.31 (1.15–1.50)	<0.001
≥ 30	675	3.3 (3.9)	1.59 (1.36–1.87)	<0.001
Missing	0			

*No forceps.

(NP3)

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Epidémiologie Prolapsus

Evolution postnatale

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Epidemiology

Childbirth and prolapse: long-term associations with the symptoms and objective measurement of pelvic organ prolapse

C Glazener,^a A Elders,^a C MacArthur,^b RJ Lancashire,^b P Herbison,^c S Hagen,^d N Dean,^e C Bain,^f P Toozs-Hobson,^g K Richardson,^h A McDonald,^g G McPherson,^g D Wilson,^g for the ProLong Study Group

A 12 ans (NP3)

Table 4. Logistic regression of prolapse staging measured using POP-Q to define leading edge of prolapse (adjusted, i.e. leading edge at hymen or beyond)

Variable	Number	Prolapse (%)	OR (95% CI)	P
All women	182/762	24		
Age at first birth (<i>P</i> = 0.099)				
≤ 24 years	40/207	19	Reference	
25–29 years	71/312	23	1.46 (0.92–2.31)	0.108
30–34 years	56/191	29	2.49 (1.49–4.18)	0.001
35+ years	15/52	29	3.08 (1.43–6.61)	0.004
Number of births (<i>P</i> = 0.048)				
1	8/73	11	Reference	
2	102/408	25	3.30 (1.49–7.32)	0.003
3	47/189	25	3.93 (1.69–9.18)	0.002
4 or more	25/92	27	5.23 (2.04–13.39)	0.001
Delivery mode history (<i>P</i> = 0.005)				
Only spontaneous vaginal delivery	107/374	29	Reference	
Only caesarean section	3/61	5	0.11 (0.03–0.38)	<0.001
Any forceps	48/217	22	0.64 (0.42–0.96)	0.031
Any vacuum*	13/51	25	0.71 (0.35–1.42)	0.338
Spontaneous vaginal delivery and caesarean section	11/59	19	0.48 (0.22–0.97)	0.041
Current BMI (<i>P</i> = 0.826)				
Normal	81/362	22	Reference	
Underweight	3/10	30	1.19 (0.28–5.01)	0.812
Overweight	64/248	26	1.33 (0.90–1.96)	0.150
Obese	34/142	24	1.48 (0.91–2.40)	0.111

*No forceps.

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Prevalence and risk factors for pelvic organ prolapse 20 years after childbirth: a national cohort study in singleton primiparae after vaginal or caesarean delivery

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A 20 ans (NP3)

Table 3. Logistic regression of risk factors for sPOP including all the variables of the full model (*n* = 4066)

	OR (95% CI)	P
Vaginal delivery (yes vs no)*	2.36 (1.76–3.17)	<0.001
Age at delivery (years)	1.01 (0.99–1.02)	0.57
Infant birthweight (0.1 kg)	1.03 (1.01–1.05)	0.02
Infant head circumference (≤35 vs >35 cm)**	0.97 (0.92–1.03)	0.34
Gestational length (weeks)	0.99 (0.92–1.06)	0.71
BMI current (kg/m ²)	1.03 (1.01–1.05)	<0.001
Hysterectomy (yes vs no)***	0.75 (0.48–1.17)	0.21
Estrogen therapy (yes vs no)****	1.36 (0.92–2.00)	0.13

References: categorical variables *caesarean section; **infant head circumference ≤35 cm; ***no hysterectomy; ****no oestrogen therapy.

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Epidémiologie Prolapsus Rachis

Lumbosacral Spine and Pelvic Inlet Changes Associated With Pelvic Organ Prolapse

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(NP2)

	Control (n = 20)	Case (n = 20)	P
Mean age (±SD)	53.4 ± 9.5	55.3 ± 9.0	.51*
Mean gravidity (±SD)	5.0 ± 2.7	5.6 ± 3.5	.65†
Mean parity (±SD)	4.5 ± 2.9	4.65 ± 3.3	.96†
Mean BMI (±SD)	28.4 ± 5.2	28.9 ± 5.6	.84†
Postmenopausal (%)‡	13 (65%)	13 (65%)	
Racial distribution			
Hispanic (%)	13 (65%)	13 (65%)	
White (%)	4 (20%)	4 (20%)	
Asian (%)	3 (15%)	3 (15%)	
Mean lumbar lordotic angle (±SD)	42.4° ± 10.9°	32.0° ± 9.8°	<.003*
Mean pelvic inlet angle (±SD)	29.5° ± 7.3°	37.5° ± 7.0°	<.001*

SD = standard deviation; BMI = body mass index.
 * Two-tailed Student *t* test.
 † Mann-Whitney *U* test.
 ‡ All postmenopausal patients received hormone replacement therapy.

Figure 1. Measurements of the angle of lumbar lordosis (A) and the angle of the pelvic inlet (B).

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Epidémiologie Prolapsus Autres Symptômes

Urinary Incontinence, Fecal Incontinence and Pelvic Organ Prolapse in a Population-Based, Racially Diverse Cohort: Prevalence and Risk Factors

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Category	Count	Percentage
Urinary Incontinence (N=602)	602	69%
Fecal Incontinence (N=116)	116	16%
Symptomatic prolapse (N=117)	117	16%
UI only	494	69%
FI only	46	6%
SP only	60	8%
UI & FI	57	8%
UI & SP	60	8%
FI & SP	44	6%
UI, FI & SP	7	1%

FIGURE 1. Overlap of the prevalence of UI, symptomatic prolapse, and FI among symptomatic women (n = 714). Urinary incontinence = leakage weekly or more; FI = leakage monthly or more.

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Evolution clinique POPQ

Female Pelvic Med Reconstr Surg. 2012 ; 18(4): 227-232. doi:10.1097/SPV.0b013e3182626294.

Longitudinal Changes in Pelvic Organ Support Among Parous Women

(NP2)

Christopher B. Pierce, MHS[†], Jennifer L. Hallock, MD[†], Joan L. Blomquist, MD[‡], and Victoria L. Handa, MD, MHS[†]

	Anterior Support (Ba): >1-cm Worsening		Posterior Support (Bp): >1-cm Worsening		Apical Support (C): >2-cm Worsening		Worsening in at Least 1 Compartment *		
	n	% (n)	n	% (n)	n	% (n)	n	% (n)	
Maternal age at enrollment									
≤40 years	376	7 (26)	0.41	<1 (3)	<0.01	5 (18)	0.34	12 (44)	0.02
>40 years	373	9 (32)		4 (15)		6 (24)		18 (66)	
Delivery status									
Cesarean only	414	6 (24)	0.03	<1 (3)	<0.01	6 (24)	0.87	12 (50)	0.03
≥1 vaginal delivery	335	10 (34)		4 (15)		5 (18)		18 (60)	
Baseline GH straining									
<2 cm	122	<1 (1)	<0.01	<1 (1)	0.33	6 (7)	0.99	7% (8)	<0.01
≥2 cm	627	9 (57)		3 (17)		6 (35)		16 (102)	

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Facteurs de Risque pour le Prolapsus Génital

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Female Pelvic Med Reconstr Surg. 2012 ; 18(5): 299–302. doi:10.1097/SPV.0b013e31826a53de.

Epidémiologie Prolapsus Hérédité

(NP2)

Etude cas-contrôle

Characterizing the Phenotype of Advanced Pelvic Organ Prolapse

Pamela J. Levin, MD¹, Anthony G. Visco, MD¹, Svati H. Shah, MD, MHS^{1,2}, Rebekah G. Fulton, BS¹, and Jennifer M. Wu, MD, MPH¹

Characteristic	Cases		P
	n=275	n=206	
Mean age, yrs	64.7±10.1	68.6±10.4	<0.001
White race	247 (89.8)	190 (92.2)	0.36
Mean BML, kg/m ²	27.9±5.1	28.9±6.7	0.07
Charlson comorbidity index	0 (0, 1)	0 (0, 1)	0.90
Constipation	60 (22.2)	34 (17.0)	0.16
Current tobacco use	18 (6.6)	9 (4.4)	0.29
Prior prolapse surgery	214 (77.8)	0 (0)	<0.001
Prior incontinence surgery	107 (39.1)	76 (36.9)	0.63
Parous	264 (96.0)	187 (90.8)	0.02
Vaginal parity	263 (96.0)	169 (82.0)	<0.001
Prolapse in mother and/or sister	86 (44.8)	26 (16.9)	<0.001
Prolapse in mother	63 (33.5)	18 (11.3)	<0.001
Prolapse in sister	40 (15.2)	9 (4.6)	<0.001
Hernia in first-degree relative	82 (34.7)	44 (26.8)	0.09

* Data are presented as n (%), mean ± SD, or median (IQR).

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Urogynaecology

Epidémiologie Prolapsus Hérédité

(NP2)

Etude cas-contrôle

Prolapse and sexual function in women with benign joint hypermobility syndrome

H Mastoroudes,^a I Giarenis,^a L Cardozo,^a S Srikrishna,^a M Vella,^a D Robinson,^b H Kazkaz,^b R Grahame^b

POP-Q Points	Study group (median)	Control group (median)	IQR study group	IQR control group	P value
Aa	0	-2	-1 to 0	-3 to +1	<0.05
Ba	0	-1	-1 to 0	-3 to -1	0.024
Ap	-1	-3	-3 to 0	-3 to -2	0.003
Bp	-1	-3	-3 to 0	-3 to -2	0.009
C	-7	-7	-8 to -6	-8 to -7	0.014
D	-9	-9	-9 to -8	-9 to -8	0.894
Genital hiatus (cm)	3	3	2-4	2-4	0.214
Perineal body (cm)	3	4	3-4	3-4	<0.001
Total vaginal length (cm)	9	9	8-9	8-9	0.053

IQR, interquartile range.
Bold values are statistically significant.

(NP2)

Figure 1. Comparison of P-QOL domain scores between study and control groups. GHP, general health perception; PI, prolapse impact; RL, role limitations; PL, physical limitations; SL, social limitations; PR, personal relations; E, emotions; SE, sleep energy; SM, severity measures.
*P > 0.05.

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Epidémiologie Prolapsus Hystérectomie

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CLINICAL ARTICLE
 Effect of prior hysterectomy on the anterior and posterior vaginal compartments of women presenting with pelvic organ prolapse
 Dara F. Shalom ^{a,*}, Stephanie N. Lin ^b, Danielle O'Shaughnessy ^c, Lawrence R. Lind ^a, Harvey A. Winkler ^a

Distribution of POP-Q points.^a

	Prior hysterectomy (n = 71)	Control (n = 71)	P value ^b
Aa	0 (-1.25 to 1)	0 (-1 to 0)	0.61
Ba	2 (0–3)	1 (0–3)	0.54
Gh	3 (3–3.5)	3 (2.5–3.5)	0.07
Pb	1.5 (1–2)	1.5 (1–2)	0.36
TVL	8 (7–8)	9 (8–9)	<0.0001
Ap	-2.25 (-3 to -1)	-3 (-3 to -2)	0.06
Bp	-2 (-3 to 2)	-3 (-3 to -2)	0.02

^a Values are given as median (interquartile range) unless otherwise indicated.
^b Wilcoxon signed rank test.

Comparison of POP-Q stage.^a

	Anterior compartment			Posterior compartment		
	Prior hysterectomy (n = 71)	Control (n = 71)	P value ^b	Prior hysterectomy (n = 71)	Control (n = 71)	P value ^b
Stage 0/1	7 (9.9)	7 (9.9)	1	38 (53.5)	53 (74.7)	0.01
Stage 2+	64 (90.1)	64 (90.1)		33 (46.5)	18 (25.3)	

^a Values are given as number (percentage) unless otherwise indicated.
^b Fisher exact test.

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Epidémiologie Prolapsus Levator ani

Urogynaecology
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 www.blackwellpublishing.com/ijog

Levator trauma is associated with pelvic organ prolapse
 HP Dietz,^a JM Simpson^b

Table 1. RR (95% CI) of each type of significant prolapse (stage II and higher) in women with levator avulsion relative to those with intact levator ani

	Cystocele (n = 781)	Uterine prolapse (n = 681)*	Rectocele (n = 781)
Unilateral avulsion	2.2 (1.9–2.7)	2.0 (1.0–4.1)	1.2 (0.9–1.7)
Bilateral avulsion	2.5 (2.1–3.0)	7.1 (4.3–11.6)	1.6 (1.2–2.1)
Any levator avulsion	2.3 (2.0–2.7)	4.0 (2.5–6.5)	1.4 (1.1–1.7)

*Excluding 100 women who had had a hysterectomy.

A Cystocele

Defect Type	0	1	2	3
No defects	~90%	~85%	~65%	~45%
Unilateral defects	~10%	~11%	~31%	~56%
Bilateral defects	0%	0%	0%	0%

B Uterine prolapse

Defect Type	0	1	2	3
No defects	~85%	~60%	~40%	~20%
Unilateral defects	~14%	~40%	~60%	~42%
Bilateral defects	0%	0%	0%	0%

C Rectocele

Defect Type	0	1	2	3
No defects	~80%	~75%	~70%	~65%
Unilateral defects	~19%	~23%	~28%	~34%
Bilateral defects	0%	0%	0%	0%

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