Traitement

Nettoyage	Hydratation	Protection
Nettoyeurs cutanés sans rinçage avec un pH acide près de celui d'une peau saine (5,0-5,9) est recommandée **Savon et débarbouillette sont à proscrire**.	Emollients (lipides) Humectants (eau) Agents occlusifs (évaporation)	Gelée de pétrole Oxyde de zinc Diméthicone (dérivé de silicone) Alternative: barrière liquide de copolymères 3 applications par semaine

\+ -Eviter au maximum les couches
-Favoriser l'air libre et les alèzes absorbantes
-traiter les mycoses (20%)

Age et incontinence urinaire

A community-based epidemiological survey of female urinary incontinence:
The Norwegian EPINCONT Study

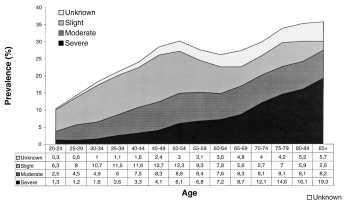
Yngvild S. Hannestad*, Guri Rortveit, Hogne Sandvik, Steinar Hunskaar
Section for General Practice, Department of Public Health and Primary Health Care, University of Bergen, Ulriksdal 8c, N-5009 Bergen, Norway
Received 9 September 1999; received in revised form 3 February 2000; accepted 25 February 2000

- Etude observationnelle cohorte HUNT
  - 27936 patientes
  - Questionnaires (symptômes)

Prevalence of involuntary leakage of urine and distribution of symptoms (n = 6792) of different types among women with any leakage*

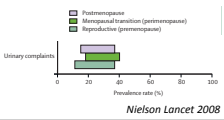
Age (years)	Respondents (n)	Incontinent women (n)	Prevalence of urinary incontinence % (95% CI)	Symptoms of stress incontinence % (95% CI)	Symptoms of urge incontinence % (95% CI)	Symptoms of mixed incontinence % (95% CI)	Incontinence type not classified† % (95% CI)
20–24	1876	194	10 (9.0–11.7)	48 (40.8–55.0)	13 (7.8–17.4)	33 (26.5–39.9)	6 (3.3–10.8)
25–29	2114	303	14 (12.8–15.8)	54 (48.2–59.5)	13 (9.2–16.8)	28 (23.2–33.3)	5 (2.8–8.1)
30–34	2494	454	18 (16.7–19.7)	59 (54.3–63.3)	10 (7.3–13.0)	27 (23.0–31.2)	4 (2.5–6.5)
35–39	2723	577	21 (19.7–22.7)	60 (55.8–63.8)	7 (5.3–9.8)	29 (25.1–32.6)	4 (2.6–6.0)
40–44	2931	702	24 (22.4–25.5)	60 (56.7–63.9)	8 (6.4–10.6)	29 (25.3–32.0)	3 (1.6–4.2)
45–49	2978	848	28 (26.9–30.1)	65 (61.5–68.0)	7 (5.1–8.5)	27 (23.5–29.5)	2 (1.3–3.4)
50–54	2775	838	30 (28.5–31.9)	55 (51.4–58.1)	7 (5.7–9.3)	36 (32.8–39.3)	2 (1.1–3.1)
55–59	2041	564	28 (25.7–29.6)	52 (48.2–56.5)	9 (7.1–12.1)	37 (32.5–40.5)	2 (0.9–3.3)
60–64	1853	486	26 (24.2–28.2)	42 (37.8–46.6)	10 (7.5–13.0)	46 (41.7–50.6)	2 (0.7–3.3)
65–69	1832	501	27 (25.3–29.4)	38 (33.2–41.8)	16 (12.5–19.0)	44 (39.9–48.7)	2 (1.3–3.3)
70–74	1797	538	30 (28.0–32.2)	33 (29.3–37.4)	16 (13.1–19.4)	48 (44.0–52.6)	2 (1.0–3.7)
75–79	1413	478	34 (31.3–36.2)	34 (29.6–38.2)	19 (15.5–22.6)	44 (39.6–48.5)	3 (1.6–4.9)
80–84	757	267	35 (31.9–38.7)	32 (26.4–37.9)	21 (15.8–25.8)	40 (34.4–46.4)	7 (3.9–10.5)
85–89	287	100	35 (30.8–41.6)	28 (18.9–37.8)	23 (15.3–33.3)	40 (30.4–51.0)	9 (3.7–16.1)
90+	65	26	40 (27.6–51.1)	28 (12.1–49.4)	12 (2.6–31.2)	48 (27.8–68.7)	12 (2.6–31.2)
Total	27936	6876	25 (24.1–25.2)	50 (49.1–51.5)	11 (10.4–11.9)	36 (34.4–36.7)	3 (2.6–3.4)

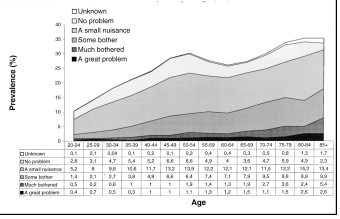
50 ans



Sévérité

Gêne





Nielson Lancet 2008

EUROPEAN UROLOGY 50 (2006) 327–332

Incidence and Remission of Female Urinary Incontinence Over 6.5 Years: Analysis of a Health Screening Project

Clemens Wehrberger[a], Christian Temml[b], Anton Ponholzer[a], Stephan Madersbacher[a,]*

Suivi 6,5 ans

Table 1 – Cumulative incidence of urinary incontinence (UI) depending on age and characteristics of incident cases

Age (yr)	No. of patients	Cumulative incidence		More than 1×/wk	
		No.	%	No.	%
20–39	54	8	14.8% (2.3%)	2	3.7% (0.6%)
40–49	70	18	25.7% (4.0%)	10	14.2% (2.2%)
50–59	92	22	23.6% (3.6%)	10	10.8% (1.7%)
60–69	46	11	23.9% (3.7%)	7	15.2% (2.3%)
70+	38	18	47.3% (7.3%)	13	34.2% (5.3%)
Total	300	77	25.6% (3.9%)	42	13.9% (2.1%)

Table 2 – Remission rates of urinary incontinence (UI) according to age, frequency, and type of UI

Age (yr)	Remission		
	No. of patients	No.	%
20–39	8	0	0% (0%)
40–49	33	9	27% (4.2%)
50–59	48	4	8.5% (1.3%)
60–69	28	6	21.4% (3.3%)
70+	25	8	32% (4.9%)
Total	141	27	19% (2.9%)

Et aux alentours de la ménopause?

Oestrogènes
- ↗trophicité cellulaire épithéliale du vagin, urètre, vessie.
- ↗vascularisation péri-urétrale (régulation PCU)
- ↗PCUM
- ↗Concentration et sensibilité des récepteurs α-adrénergiques

Ménopause = Carence en œstrogène =↗IUE?

Amélioration en cas de THM?

Aux alentours de la ménopause….

…apparition d'incontinence urinaire ?

Auteurs	Population	Age	Incidence annuelle
Mc Grother BJU 2004	108	40-59	8%
Sherburn Obstet Gynecol 2000	438	44-55	5%
Hagglund Scand J Prim Health care 2004	248	22-50	4%
Moller BMJ 2000	2860	40-60	6%
Townsend AMJOG 2007	64650	36-55	7%

…rémission d'incontinence urinaire ?

Auteurs	Population	Age	Incidence annuelle
Samuelsson AMJOG 2000	382	20-59	6%
Townsend AMJOG 2007	64650	36-55	7%
Hagglund Scand J Prim Health care 2004	248	22-50	4%
Mc Grother BJU 2004	108	40-59	25%
Moller BMJ 2000	2860	40-60	29%

Incontinence urinaire et ménopause

- Cohorte Américaine SWAN
  - 1529 patientes **sans** IU
  - Suivi sur 6 ans

	Any Incontinence*		Stress Incontinence†		Urge Incontinence‡	
Time Dependent Factors	**HR**	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**
Menopausal status in year concurrent with first report of incontinence						
Pre-menopause	Ref		Ref		Ref	
Early Peri-menopause	**1.34**	**1.07, 1.68**	1.40	0.96, 2.03	1.41	0.93, 2.14
Late Peri-menopause	**1.52**	**1.12, 2.05**	1.24	0.75, 2.05	**2.12**	**1.26, 3.56**
Postmenopause	0.88	0.63, 1.23	0.98	0.60, 1.61	0.88	0.48, 1.60

Waetgen, Obstet Gynecol 2007

- Cohorte Américaine SWAN
  - 2415 patientes **avec** UI
  - Suivi sur 6 ans

Compared with pre-menopause, peri- and post menopause were not associated with worsening incontinence; for example, early peri-menopause was associated with improvement (OR 1.19; 95% CI 1.06, 1.35) and post-menopause reduced odds of worsening (OR 0.80; 95% CI 0.66, 0.95). Meanwhile, each pound of weight gain increased odds of worsening (OR 1.04; 95% CI 1.03, 1.05) and reduced odds of improving (OR 0.97; 95% CI 0.96, 0.98) incontinence.

Waetgen, Obstet Gynecol 2008

Incontinence urinaire et ménopause

OBJECTIVE—To investigate the effect of menopausal transition and age on symptoms of urinary incontinence in midlife.

SUBJECTS AND METHODS—The study included a nationally representative cohort of 1211 women followed up since their birth in 1946 and annually from 48–54 years; their menopausal transition status and symptoms of stress, urge, and severe urinary incontinence (UI) at 7 consecutive years from ages 48–54 were assessed.

RESULTS—From Generalized Estimating Equations, women who became perimenopausal ('pre-peri') or those experiencing perimenopause for >1 year ('peri-peri') were more likely to have symptoms of stress UI than were postmenopausal women; the odds ratio (95% confidence interval) was: pre-peri 1.39 (1.11–1.73); and peri-peri 1.39 (1.4–1.71). Menopausal transition status was not associated with urge or severe UI. These relationships were not explained by age, childhood enuresis, reproductive factors, previous health status, body mass index and educational qualifications.

CONCLUSION—This study is unique in being able to disentangle the effects of age, menopausal transitions, and other life-long risk factors on UI. Menopausal transition was only related to stress UI, while increasing age was related to both stress and urge UI. This study suggests that there are both shared and distinct aetiological pathways leading to each type of UI.

Mishra BJU int 2010

Impact du traitement hormonal substitutif

- RCT WHI
  - 27 347 patientes
  - E2 + P vs E2 vs Placebo par voie <u>systémique</u>

Patientes indemnes d'IU à l'inclusion

Frequency of Urinary Incontinence at Baseline and 1 Year	Relative Risk (95% Confidence Interval)	
	CEE + MPA vs Placebo	CEE Alone vs Placebo
Stress		
Within last year	1.87 (1.61-2.18)	2.15 (1.77-2.62)
>1/mo but <1/wk	1.93 (1.67-2.23)	2.21 (1.85-2.65)
≥1/wk but <1/d	2.28 (1.91-2.73)	2.59 (2.10-3.18)
Daily	2.48 (1.84-3.33)	2.39 (1.75-3.27)
Urge		
Within last year	1.15 (0.99-1.34)	1.32 (1.10-1.58)
>1/mo but <1/wk	1.12 (0.97-1.30)	1.36 (1.15-1.61)
≥1/wk but <1/d	1.02 (0.87-1.20)	1.31 (1.08-1.59)
Daily	1.12 (0.84-1.49)	1.36 (1.01-1.83)
Mixed		
Within last year	1.49 (1.10-2.01)	1.79 (1.26-2.53)
>1/mo but <1/wk	1.69 (1.35-2.11)	1.83 (1.42-2.36)
≥1/wk but <1/d	1.72 (1.40-2.12)	1.99 (1.58-2.50)
Daily	1.73 (1.33-2.24)	2.17 (1.66-2.85)

Abbreviations: CEE, conjugated equine estrogen; MPA, medroxyprogesterone acetate.

Hendrix, JAMA 2005

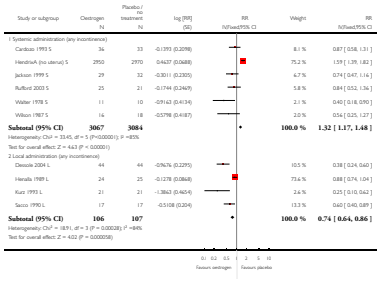
Patientes souffrant d'IU

	No. (%) of Participants				No. (%) of Participants			
	CEE + MPA (n = 2675)	Placebo (n = 2507)	RR (95% CI)	*P* Value†	CEE Alone (n = 1526)	Placebo (n = 1547)	RR (95% CI)	*P* Value†
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
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
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

	E2+P vs Placebo		E2 vs Placebo	
	RR	p	RR	p
Volume fuites	1.20 (1.06-1.36)	.004	1.59 (1.39-1.82)	<.001
Degrés de gêne	1.22 (1.13-1.32)	<.001	1.50 (1.37-1.65)	<.001
Fréquence des symptômes	1.38 (1.28-1.49)	<.001	1.47 (1.35-1.61)	<.001
Liberté de mouvement	1.18 (1.06-1.32)	.002	1.29 (1.15-1.45)	<.001

CCL: L'hormonothérapie systémique semble délétère pour l'IU quelque soit le type…

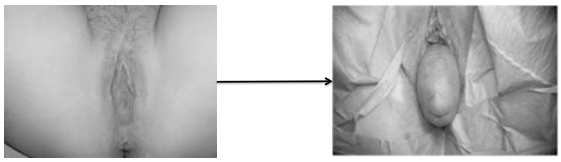
Impact des œstrogène sur des patientes incontinentes



Oestrogènes locaux
- ↘2 fuites/24 heures
- ↘urgenturie
- ↘nocturie
- ↘bacteriurie

Cody, Cochrane 2008

Age et prolapsus



Mais que s'est-il passé?
Est-ce l'âge?

Age et prolapsus

- Etude observationnelle tout âge confondu
  - 427 patientes
  - Consultation en gynécologie
  - Examen POP-Q systématique

Age (y)	*Stage 0*	*Stage 1*	*Stage 2*	*Stage 3*
18-29 (n = 66)	22.7%	50.0%	27.3%	—
30-39 (n = 116)	6.9%	50.9%	41.4%	0.9%
40-49 (n = 154)	2.6%	44.2%	51.9%	1.3%
50-59 (n = 95)	3.2%	38.9%	55.8%	2.1%
60-69 (n = 47)	4.3%	27.7%	59.6%	8.5%
≥70 (n = 19)	—	26.3%	52.6%	21.1%

Swift SE, AMJOG 2000

Age et prolapsus

- Cohorte NHANES : étude observationnelle tout âge confondu
  - 1961 patientes
  - Interrogatoire (symptômes)

Nygaard, JAMA 2008

		Weighted Prevalence, % (95% Confidence Interval)			
Variable	**No. of Women**	**Urinary Incontinence (n = 331)**	**Fecal Incontinence (n = 176)**	**Pelvic Organ Prolapse (n = 58)**	**Pelvic Floor Disorder (n = 470)**
Overall	1961	15.7 (13.2–18.2)	9.0 (7.3–10.7)	2.9 (2.1–3.7)	23.7 (21.2–26.2)
Age, y					
20–39	641	6.9 (4.9–9.0)	2.9 (1.9–3.9)	1.6 (0.6–2.6)	9.7 (7.8–11.7)
40–59	668	17.2 (13.9–20.5)	9.9 (7.4–12.5)	3.8 (2.0–5.7)	26.5 (23.0–29.9)
60–79	488	23.3 (17.0–29.7)	14.4 (10.4–18.3)	3.0 (0.9–5.1)[b]	36.8 (32.0–41.6)
≥80	150	31.7 (22.3–41.2)	21.6 (12.8–30.4)	4.1 (1.1–7.1)[b]	49.7 (40.3–59.1)
P value		<.001	<.001	.14	<.001

- Cohorte POSST : étude observationnelle tout âge confondu
  - 1004 patientes (18 à 83 ans)
  - Interrogatoire (symptômes) + examen clinique (POP-Q)

Factor	Odds ratio (95% CI)
Age (per 10-y)	1.38 (1.09-1.75)

Swift Obstet Gynecol 2005

Age et prolapsus

- Cohorte PMISG : étude observationnelle en péri-ménopause
  - 21449 patientes non hystérectomisées, 5.5% de prolapsus utérin
  - Examen clinique (Baden et Walker)

Distribution of study subjects' according to presence and degree of uterine prolapse and selected characteristics

	Genital prolapse				*OR* (95% *CI*)*		
	NO	YES					
		Total	I Degree	II≥II Degree	Total	I Degree	II≥II Degree
	No. (%)	No. (%)	No. (%)	No. (%)			
Age (years)							
≤51	8065 (39.8)	329 (27.8)	241 (31.2)	88 (21.5)	1†	1†	1†
52–55	5782 (28.5)	318 (26.9)	217 (28.1)	101 (24.6)	1.3 (1.1–1.5)	1.2 (1.0–1.4)	1.5 (1.1–2.0)
≥56	6252 (30.9)	526 (44.5)	308 (39.9)	218 (53.2)	1.7 (1.5–2.0)	1.4 (1.2–1.7)	2.6 (2.0–3.4)

PMISG, Euro J Obst Gyn 2000

- Cohorte WHI : étude observationnelle après la ménopause
  - 27342 patientes
  - Examen clinique POP-Q

	*Uterine prolapse**		*Rectocele**		*Cystocele**	
Effect	*OR*	*95% CI*	*OR*	*95% CI*	*OR*	*95% CI*
Age compared with 50-59 (y)						
60-69	1.16	1.03-1.30	1.09	1.00-1.19	1.26	1.18-1.35
70-79	1.36	1.19-1.56	1.18	1.07-1.30	1.35	1.25-1.47

Hendrix, AMJOG 2002

Age et prolapsus

- Etude observationnelle
  - 1110 → 971 patientes (antécédent de chirurgie du prolapsus ou IU)
  - Questionnaires de symptômes, examen clinique, échographie

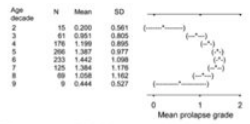


Figure 2 ANOVA of clinical prolapse grading (cystocele) versus age ($n = 954$). SD, standard deviation.

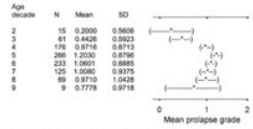


Figure 4 ANOVA of clinical prolapse grading (rectocele) versus age ($n = 954$). SD, standard deviation.

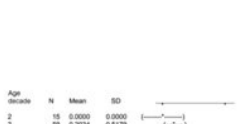
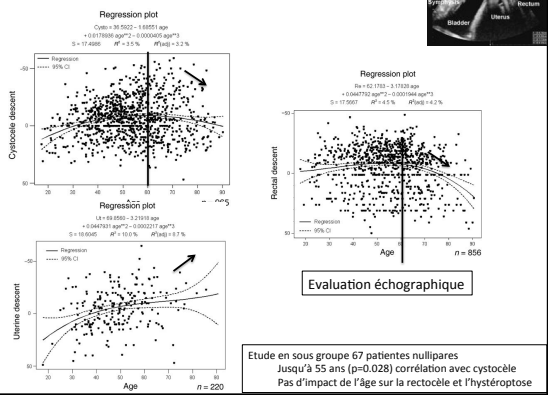


Figure 3 ANOVA of clinical prolapse grading (uterine descent) versus age ($n = 814$). SD, standard deviation.

Evaluation clinique

Dietz, Aust NZ JOG 2008

Age et prolapsus



Evaluation échographique

Etude en sous groupe 67 patientes nullipares
Jusqu'à 55 ans (p=0.028) corrélation avec cystocèle
Pas d'impact de l'âge sur la rectocèle et l'hystéroptose

suivi dans le temps…

Neurourology and Urodynamics 32:383–386 (2013)

Outcomes of Observation as Therapy for Pelvic Organ Prolapse: A Study in the Natural History of Pelvic Organ Prolapse

Alienor S. Gilchrist,[1] William Campbell,[2] Hannah Steele,[2] Hema Brazell,[2] Jonathon Foote,[2] and Steven Swift[2]*
[1]Department of Urology, Medical University of South Carolina, Charleston, South Carolina
[2]Department of Obstetrics and Gynecology, Medical University of South Carolina, Charleston, South Carolina

408 patientes → 212 patientes → 64 patientes incluses

196 patientes
2ème avis
port de pessaires

158 patientes
Désir de pessaire
Désir de chirurgie

Age médian 65 ans, 88% ménopausées, 18% HT

Critère de jugement Mesure ≥ de 2cm

Examen à l'inclusion POP-Q → Suivi: 16 mois (6-91) → Examen à l'inclusion POP-Q Questionnaires

TABLE V. Initial and Final POP-Q Prolapse in Patients Undergoing Observation

Prolapse stage of observation group	Initial exam (%)	Final exam (%)
Stage 1	2	0
Stage 2	48	44
Stage 3	48	55
Stage 4	2	2

Symptoms	Continued observation (%)
Better/same	83
Worse	18

TABLE II. Multivariate Analysis of Clinical Parameters Affecting Worsening of Leading Edge

Variable	*P*-value
Length of follow-up	0.09
Age	0.4
Gravidity	0.7
Parity	0.7
Initial POP-Q stage	0.2
Leading edge type	0.7
Prior hysterectomy	0.3
Prior pelvic surgery	0.7
HRT usage	0.8
Menopausal	0.6
Presence of bulge symptoms	0.9
Presence of bladder symptoms	0.2
Presence of bowel complaints	0.7

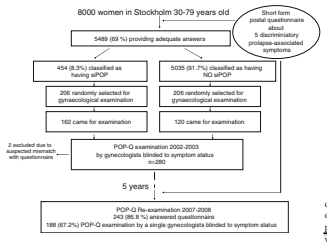
-Progression prolapsus: 19%
-Régression prolapsus: 3%
-Stabilisation prolapsus: 78%

Int Urogynecol J (2011) 22:461–468
DOI 10.1007/s00192-010-1305-z

ORIGINAL ARTICLE

Short-term natural history in women with symptoms indicative of pelvic organ prolapse

Ann Miedel · Marion Ek · Gunilla Tegerstedt · Marianne Mahle-Schmidt · Olof Nyrén · Margareta Hammarström



Age moyen 56 ans

older and postmenopausal. A simple cross-sectional view on our data at entry clearly indicated that there was a strong positive association between age and POP-Q stage, women with stage 0 or I were considerably younger and those with stage III and IV substantially older than women with stage II.

-Régression du prolapsus : 40%
-Progression du prolapsus: 13%
-Stabilisation du prolapsus: 47%

Table 3 Changes in distributions of POP-Q stages between the first examination in 2002 and second examination in 2008 among 116 women initially classified as having symptoms indicative of pelvic organ prolapse (siPOP) and 72 women without symptoms indicative of prolapse

POP-Q stage	siPOP in 2002		No siPOP in 2002	
	2002	2008	2002	2008
0	2 (1.7)	24 (20.7)	22 (30.6)	32 (44.4)
I	25 (21.6)	23 (19.8)	37 (51.4)	18 (25.0)
II	72 (62.1)	54 (46.6)	13 (18.1)	19 (26.4)
III	13 (11.2)	15 (12.9)	0	3 (4.2)
IV	4 (3.5)	0	0	0

10% opérées d'un POP

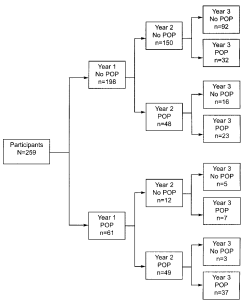
Mais….

Absence de modification des symptômes entre les groupes

Vaginal bulding (p=0.314)
Vaginal discomfort (p=0.153)
Stress urinary incontinence (p=0.773)
Urge incontinence (p=0.199)
Need for manual reduction (p=0.611)

Natural History of Pelvic Organ Prolapse in Postmenopausal Women

*Catherine S. Bradley, MD, MSCE, M. Bridget Zimmerman, PhD, Yingwei Qi, MS, and Ingrid E. Nygaard, MD, MS, for the Women's Health Initiative (WHI)**



Etude prospective incluant des patientes de la WHI

Mesure POP-Q

2007

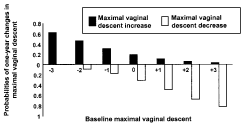


Fig. 2. Probabilities of 1-year progression and regression (1 cm or greater change) of the maximal vaginal descent, based on the level of maximal vaginal descent at the baseline examination.

Bradley, Natural History of Pelvic Organ Prolapse. Obstet Gynecol 2007.

FDR de prolapsus: Parité, BMI

ual women. Overall 1-year and 3-year prolapse incidences were 26% (95% confidence interval [CI] 20–33%) and 40% (95% CI 26–56%); 1-year and 3-year prolapse resolution risks were 21% (95% CI 11–33%) and 19% (95% CI 7–39%). Rates of any change in maximal vaginal descent over time varied depending on baseline measurements. Over 3 years, the maximal vaginal descent increased by at least 2 cm in 11.0% (95% CI 4.9–20.5%) of the women and decreased by at least 2 cm in 2.7% (95% CI 0.3–9.5%). Increasing body mass index and grand

sion and regression of the maximal vaginal descent. A waist circumference of more than 80 cm, compared with 80 cm or less, increased the risk of vaginal descent progression (OR 2.77, 95% CI 1.58–4.86) and decreased the risk of vaginal descent regression (OR 0.39, 95% CI 0.21–0.72).

1 patiente opérée sur 3 ans, 4 pessaires utilisés

American Journal of Obstetrics and Gynecology (2004) **190**, 27–32

Progression and remission of pelvic organ prolapse: A longitudinal study of menopausal women

Victoria L. Handa, MD,[a,*] Elizabeth Garrett, PhD,[b] Susan Hendrix, DO,[c] Ellen Gold, PhD,[d] John Robbins, MD[e]

Departments of Gynecology and Obstetrics[a] and Oncology,[b] Johns Hopkins University, Baltimore, Md, the Department of Obstetrics and Gynecology, Wayne State University,[c] and the Departments of Epidemiology and Preventive Medicine[d] and Medicine,[e] University of California, Davis, Sacramento, Calif

AMERICAN JOURNAL of OBSTETRICS and GYNECOLOGY
www.elsevier.com/locate/ajog

412 patientes des patientes de la cohorte WHI E-Plus-P trial (27342 patientes)

Suivi médian 5.7 ans

Table I Baseline prevalence and average annual incidence of POP (n = 412 women)

	Baseline prevalence (%)	Average annual incidence (cases per 100 women-years)
Cystocele	24.6	9.3
Grade 1	14.4	
Grade 2	9.5	
Grade 3	0.7	
Rectocele	12.9	5.7
Grade 1	7.8	
Grade 2	5.1	
Uterine prolapse	3.8	1.5
Grade 1	3.3	
Grade 2	0.6	

Table II The probabilities of progression and regression of prolapse over 1 year of observation

	Transition	Probability	95% CI
Cystocele	Grade 1 to 0	.235	0.19–0.28
	Grade 1 to 2-3	.095	0.07–0.13
	Grade 0 to 2-3	.012	0.006–0.019
	Grade 2-3 to 0	.093	0.05–0.14
Rectocele	Grade 1 to 0	.22	0.16–0.28
	Grade 1 to 2-3	.135	0.09–0.19
	Grade 0 to 2-3	.0135	0.008–0.02
	Grade 2-3 to 0	.033	0.011–0.075
Uterine prolapse	Grade 1 to 0	.48	0.34–0.62
	Grade 1 to 2-3	.019	0.0005–0.099
	Grade 0 to 2-3	.0006	<0.0001–0.0036
	Grade 2-3 to 0	0	0–0.37

Sur 281 patientes sans prolapsus à l'inclusion…

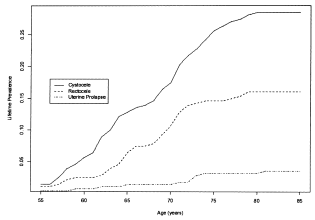
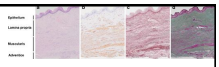


Figure Lifetime cumulative prevalence for cystocele, rectocele, and uterine prolapse among women who entered the study without prolapse (n = 281 women). *Lifetime cumulative prevalence* is defined as any prolapse that is observed at any time during the follow-up period.



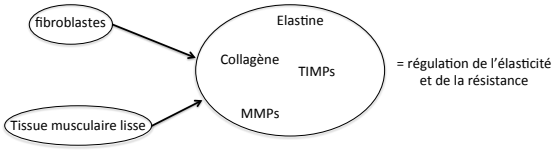
Impact du vieillissement sur l'histologie périnéale

- Ménopause ➔ ↘1.2% collagène/an (œstrogène régulent la synthèse du collagène)

  Brincat Obstet Gynecol 1987
- Dans les 20 premières années post ménopause ➔ ↘2.1 % collagène/an

  Stevenson Clin Interv Aging 2007

Composant de la matrice extracellulaire



= régulation de l'élasticité et de la résistance

Modifications histologiques: le collagène

American Journal of Obstetrics and Gynecology (2004) **190**, 620–7

Impact of menopause on collagen subtypes in the arcus tendineous fasciae pelvis

P. A. Moalli, MD, PhD,[a,*] L. C. Talarico, BS,[a] V. W. Sung, MD,[a] W. L. Klingensmith, BS,[a] S. H. Shand, BS,[b] L. A. Meyn, MS,[a] S. C. Watkins, PhD[b]

AMERICAN JOURNAL of OBSTETRICS and GYNECOLOGY
www.elsevier.com/locate/ajog

-Collagène (84%)
- type 1 } Responsable de la résistance
- type 3 } se polymérise avec les fibres de type 1 ➔ ↘ résistance
- type 5 }

R= type 1 /(type 3 + type 5) ➔ élevé ➔ forte résistance / faible ➔ faible résistance

-Elastine (13%)

-Tissu musculaire lisse (3%)

10 patientes pré ménopauses

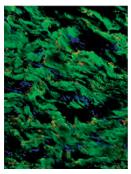
12 patientes post ménopauses THM

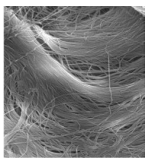
5 patientes post ménopauses

Biopsie Arc tendineux fascia pelvien

Analyse fluorographie

Analyse MET





Vert : 3
Rouge: 1
Bleu: 5

Résultats

Table II Comparison of the total amount of collagen, smooth muscle and elastin in the ATFP of premenopausal, postmenopausal and postmenopausal on hormone therapy (HT+)

Component	No.	Median	*P* value*
Collagen			.1
Premenopausal	10	6699	
Postmenopausal, HT−	5	6410	
Postmenopausal, HT+	12	8966	
Overall	27	8032	
Elastin			.9
Premenopausal	10	986	
Postmenopausal, HT−	5	859	
Postmenopausal, HT+	12	1321	
Overall	27	1046	
Smooth muscle			.8
Premenopausal	10	248	
Postmenopausal, HT−	5	478	
Postmenopausal, HT+	12	255	
Overall	27	274	

Overall values from the three groups of women combined are shown.
* *P* value from Kruskal-Wallis test.
Data represented as voxel intensity per area squared.

Table III Comparison of amount of total collagen (type I + III + V), the absolute amounts of collagens I, III, and V, and ratio of collagen I/(III + V) in the ATFP of premenopausal, postmenopausal, and postmenopausal women on HT

Collagen	No.	Median	*P* value*
Total collagen			.2
Premenopausal	9	13032†	
Postmenopausal, HRT−	5	9092	
Postmenopausal, HRT+	12	10631	
Overall	26	9966	
Collagen I			.046
Premenopausal	9	1370	
Postmenopausal, HRT−	5	338	
Postmenopausal, HRT+	12	1856	
Overall	26	1472	
Collagen III			.2
Premenopausal	9	11472	
Postmenopausal, HRT−	5	6905	
Postmenopausal, HRT+	12	8054	
Overall	26	8621	
Collagen V			.9
Premenopausal	9	410	
Postmenopausal, HRT−	5	287	
Postmenopausal, HRT+	12	462	
Overall	26	423	
Ratio I/(III + V)			.04
Premenopausal	9	0.14	
Postmenopausal, HRT−	5	0.04	
Postmenopausal, HRT+	12	0.25	
Overall	26	0.15	

Overall values for the three groups combined are also shown.
* *P* value from Kruskal-Wallis test.
† Data represented as voxel intensity per area squared.

Conclusion : il existe probablement une altération conjonctive corrigée par un traitement hormonal de la ménopause

Am J Obstet Gynecol 2003;189:1597-600.

Collagen content of nonsupport tissue in pelvic organ prolapse and stress urinary incontinence

Michael Y. Wong, MD, PhD,[a] Ozgur H. Harmanli, MD,[a] Mehmet Agar, MD,[a] Vani Dandolu, MD,[a] and M. H. Terry Grody, MD[b]
Philadelphia, Pa, and Camden, NJ

17 patientes contrôles hystérectomisées

14 patientes avec prolapsus ou SUI

Biopsies du col utérin

Test à l'hydroxyproline

Demographic	*POP/SUI* (n = 14)†*	*Control (n = 17)*	*P value*
Age (y)	55.79 ± 17.31	47.65 ± 7.89	NS‡
Parity (n)	3.43 ± 2.31	2.41 ± 1.23	NS
BMI (kg/m²)	26.86 ± 5.07	29.5 ± 6.94	NS
Tobacco use (%)	42.86	47.06	NS
Collagen content (%)	8.1 ± 3.44	12.35 ± 4.72	.0104

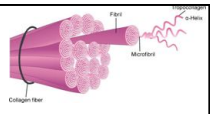
Intérêt : biopsie cervicale systématique pour définir le risque de prolapsus

Table 1 Collagen analysis by histology in biopsy specimens from vaginal tissue in patients with prolapse or without prolapse

Study	Target population and sample size	Menopausal status	Mean age (years)	Parity	Biopsy localization	Histological localization	Analytical methods	Findings: patients with POP compared with controls	
[12]	10 women with POP 10 controls	Not described	60.1 47.3	Not described	Anterior precervical vaginal fascia	Not described	Histology with HE, Weigert Van Gieson, PAS and Gomori	Increased collagen fibers and decreased amount of fibroblasts	↗
[16]	34 women with SUI and POP 32 women with POP 28 controls	16 pre- and 18 post-menopausal 15 pre- and 17 post-menopausal 10 pre- and 18 post-menopausal	54.4±7.1 55.4±7.4 53.6±6.7	2.4±1.2 2.5±1.1 2.3±1.0	Anterior paravaginal fascia at the level of the bladder neck	Not described	Immunohistochemistry	Decreased collagen III in women with SUI and prolapse, no significant difference in women with prolapse alone compared with controls	↘
[13]	24 women with POP 21 controls	Premenopausal Premenopausal	44.4±5.2 45.6±4	3.0±1.1 2.9±0.8	Precervical vaginal fascia	Not described	Histology with HE, Gomori's trichrome	Increased total collagen, (subtypes not assessed)	↗
[14]	45 women with POP 10 controls	22 premenopausal 23 postmenopausal Premenopausal	42.7 (35–49) 65.6 (47–85) 41.9 (32–50)	Not described	Fragments of vaginal apex	Not described	Histology with Picrosirius	No statistically significant difference in total collagen between the groups	=
[17]	29 patients with POP (15 with SUI and 14 without SUI)	Postmenopausal	61.9 (49–74)	Not described	Periurethral vaginal fascia	Mucosa	Immunohistochemistry	Decreased collagen I, III, and VI in women with SUI. No difference in collagen IV and V	↘
[19]	37 patients with POP 11 controls	11 premenopausal 13 postmenopausal (no HT) 13 postmenopausal (on HT) Premenopausal	42.7±7.1 68.1±9.4 64.4±8.6 39.7±7.1	2 (1.4) 3 (2.4) 3 (2.4) 3 (1.4)	Full-thickness vaginal apex at one of the lateral fornices	Subepithelium and muscularis	Histology, laser scanning confocal microscopy and immunofluorescence	Increased collagen III with no difference in collagens I and V	↗
[15]	6 women with POP 6 controls	Postmenopausal Not described	Not described Not described	Not described	Fragments of vaginal apex	Mucosa	Picrosirius polarization staining method	Collagen fiber disorganization	=
[18]	23 women with POP 15 controls	8 pre- and 15 post-menopausal 13 pre- and 2 post-menopausal	57.4±15.1 47.1±15.5	4 (2–12) 3 (0–7)	Full-thickness precervical anterior vaginal wall	Not described	Immunohistochemistry	Decreased collagen III, collagen I and III had significant positive correlations with ageing	↘
[21]	20 women with POP	Not described	61	1–4	Full-thickness "redundant" and non-prolapsed vaginal tissue	All Layers	Histology with HE, Masson's trichrome, Verhoeff Van Gieson, and immunohistochemistry	No significant differences in collagen content between prolapsed and nonprolapsed tissues	=

POP pelvic organ prolapse, *SUI* stress urinary incontinence, *HE* hematoxylin and eosin, *PAS* periodic acid-Schiff

De Landsheere IUJ 2013



Au total, modification variable du collagène selon les études

De temps en temps corrélé à l'âge

De temps en temps corrélé à la ménopause

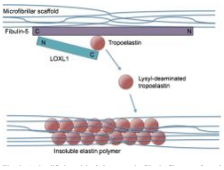
De temps en temps indépendant....

De temps en temps augmenté en cas de POP

De temps en temps diminué en cas de POP

Modifications histologiques: l'élastine

Responsable de la rétraction et de l'extensibilité des tissus



FBN 1 et 2 (marfan, cutis laxa)

LOX 1-4

LOXL 1-2

Fibuline 1-5

Synthèse de l'élastine pendant la gestation puis arrêt à l'âge adulte

LOXL-1 et fibulin 5 ➔ Synthèse pour la réparation d'une altération tissulaire

Acta Obstetricia et Gynecologica. 2008; 87: 111–115

Decreased endopelvic fascia elastin content in uterine prolapse

JOHN KLUTKE[1], QING JI[1], JOSEPH CAMPEAU[1], BARRY STARCHER[2], JUAN CARLOS FELIX[3], FRANK Z. STANCZYK[1] & CARL KLUTKE[4]

[1]*Department of Obstetrics and Gynecology, USC-Keck School of Medicine, Women's and Children's Hospital, Los Angeles, CA, USA,* [2]*Department of Biochemistry, University of Texas Health Center at Tyler, Tyler, TX, USA,* [3]*Department of Pathology, USC-Keck School of Medicine, Women's and Children's Hospital, Los Angeles, CA, USA,* and [4]*Division of Urology, Washington University School of Medicine, St. Louis, MO, USA*

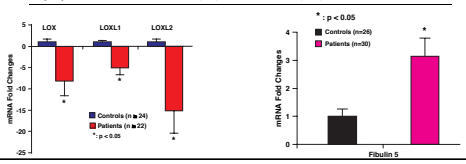
31 patientes avec POP
47 ans

Biopsie US

29 patientes contrôles
54 ans

Desmosine (pmoles/mg protein)

	Prolapse group	Control group	*p* Value
All subjects	103.3±59.3 ($n=26$)	120.5±47.4 ($n=29$)	0.194
Parity 0–2	110.8±55.0 ($n=8$)	102.9±47.5 ($n=12$)	0.728
Parity >2	99.9±60.7 ($n=18$)	133.0±44.0 ($n=17$)	<0.05
Complete procidentia	50.6±25.8 ($n=8$)	127.1±42.2 ($n=12$)	<0.05



Study	Target population and sample size	Menopausal status	Mean age (years)	Parity	Biopsy localisation	Histological localization	Analytical methods	Findings: patients with POP compared with controls
[13]]	24 women with POP 21 controls	Premenopausal Premenopausal	44.4±5.2 45.6±4	3.0±1.1 2.9±0.8	Precervical vaginal fascia	Not described	Histology with Verhoeff Van Gieson elastic stains	No statistically significant difference in elastin content
[18]	23 women with POP 15 controls	8 pre- and 15 post-menopausal 13 pre- and 2 post-menopausal	57.4±15.1 47.1±15.5	4 (2–12) 3 (0–7)	Full-thickness precervical anterior vaginal wall	Not described	Immunohistochemistry	No statistically significant difference in elastin content
[22]	33 women with POP 10 controls	Postmenopausal Postmenopausal	70.5 (62–78) 70.5 (56–76)	2.5 (2–4) 3 (1.2–3)	Full-thickness upper lateral anterior vaginal wall	Muscularis	Immunohistochemistry	↘ Decreased elastin content and fiber width
[28]	12 women with POP 10 controls	8 pre- and 4 post-menopausal 5 pre- and 5 post-menopausal	54±7 49±4	2 (1–6) 2 (0–5)	Full-thickness precervical anterior vaginal wall	Not described	Immunohistochemistry	↘ Decrease staining intensity for fibulin-5
[31]	20 women with POP in prolapsed and nonprolapsed localization	Not described	61	1–4	Full-thickness "redundant" and nonprolapsed vaginal tissue	All layers	Histology with Verhoeff Van Gieson elastic stains	No significant differences in elastin content between prolapsed and nonprolapsed tissues

De Landsheere IUJ 2013

Modifications histologiques : muscles lisses/ muscles striés

Study	Target population and sample size	Menopausal status	Mean age (years)	Parity	Biopsy localisation	Histological localisation	Analytical methods	Findings: patients with POP compared with controls
[25]	13 women with POP 5 women undergoing hysterectomy 13 women undergoing radical hysterectomy	2 pre- and 11 post-menopausal (8 on HRT and 3 no HRT) Not described Not described	66±11 Not described Not described	3.7±1.2	Full-thickness vagina at the leading edge of the enterocele	All layers	Histology with Movat's pentachrome	Increased muscularis thickness, no statistically significant difference in the vaginal wall thickness among the three groups
[6]	28 women with POP 12 controls	14 pre- and 14 post-menopausal (5 on HRT and 9 no HRT) Premenopausal	49.3±2.6 39.5±1.5	3.6±0.3 2.4±0.4	Full-thickness anterior vaginal apex	Muscularis	Immunohistochemistry (A-SMA)	↘ Decreased fraction of nonvascular smooth muscle
[26]	15 women with POP 8 controls	11 pre- and 4 post-menopausal (4 on HRT) Premenopausal	45.6±3.0 38.5±2.8	3 (0–6) 2 (0–3)	Full-thickness posterior vaginal apex	Muscularis	Immunohistochemistry (A-SMA)	↘ Decreased fraction of nonvascular smooth muscle
[27]	11 women with POP 8 controls	Postmenopausal (3 on HRT) 9 pre- and 2 post-menopausal (1 on HRT)	68.4±7.8 45.3±8.0	2.5±1.1 2.0±1.2	Full-thickness anterior vaginal apex	Muscularis	Immunohistochemistry (A-SMA)	↘ Decreased fraction of nonvascular smooth muscle
[28]	6 women with POP 6 controls	Postmenopausal 1 pre- and 4 post-menopausal	61±3 46±5	1 (1–4) 1 (0–5)	Full-thickness anterior vaginal apex	Muscularis	Immunohistochemistry (A-SMA)	↘ Decreased fraction of nonvascular smooth muscle
[32]	31 women with POP	18 Premenopausal 13 Postmenopausal	35.67±4.29 53.64±5.36	4.7±1.54 2.8±0.81	Full-thickness anterior and posterior vaginal wall	All layers	Histology with Masson's trichrome	Increased muscularis thickness and total vaginal thickness in the postmenopausal group ↘
[29]	49 women with POP 40 controls	20 pre- and 29 post-menopausal (9 on HRT) 32 pre- and 8 post-menopausal (7 on HRT)	53.94±10.4 46.5±4.03	3 (1–9) 2 (1–4)	Full-thickness anterior middle portion (Aa) of the vagina	All layers	Immunohistochemistry (A-SMA)	Decreased smooth muscle content in the muscularis, increased thickening of the subepithelium ↘
[30]	37 women with POP 47 controls	11 pre- and 26 post-menopausal 41 pre- and 6 post-menopausal	59±1.09 46.40±5.92	4 (1–9) 2 (0–5)	Full-thickness anterior vaginal apex	All layers	Immunohistochemistry (A-SMA)	No statistically significant difference in smooth muscle content, increased thickening of the subepithelium
[31]	20 women with POP in prolapsed and nonprolapsed localization	Not described	61	1–4	Full-thickness "redundant" and nonprolapsed vaginal tissue	All Layers	Immunohistochemistry (A-SMA)	No significant differences in smooth muscle content

Modifications métaboliques

Muscles du plancher pelvien

pubococcygiens antérieurs : 66 - 82% de type 1
pubococcygiens postérieurs : 90 % de type 1
Iliococcygiens: 68 à 69 % de type 1

→ + de type 2 dans la région périanale et périuretrale

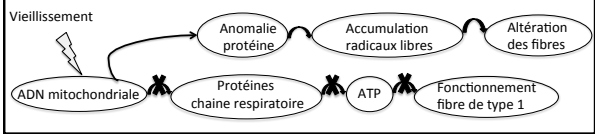
Fibres de type 1
contraction lente, mécanisme oxydatif, activité tonique

Soutient+++

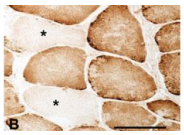
Fibres de type 2
contraction rapide, fatigable

Adaptation rapide+++

Gilpin SA, Br J Obstet Gynaecol 1989



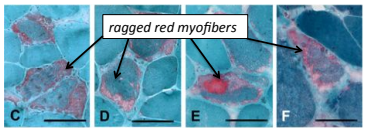
Modifications métaboliques



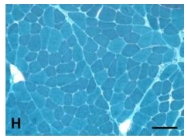
Coloration de COX

Cox = reflet de la chaine oxydation
Si - : diminution de la production d'ATP

Coloration de Gomori et Masson



Biopsie de muscles releveur de l'anus



Biopsie de deltoide

Yiou R, Eur Urol 2009

Modifications histologiques

Hypothèses

Altération métabolisme oxydatif

Altération ou diminution du collagène
Modification du type de collagène

Détérioration physique des fibres

+ sensible à l 'étirement
- adaptable aux contraintes

Altération ou diminution de l'élastine

Apparition de prolapsus?

Conclusion

- Modifications histologiques et fragilité cutanée
- Probable impact sur la statique pelvienne mais controversé
  → Beaucoup de facteurs confondants
- Impact certains de l'âge sur la continence urinaire