Diagnosi e trattamento dell'incontinenza urinaria dalla gravidanza alla menopausa

PD Dr.med. ANDREA BRAGA

Medico Capo Servizio
Ente Ospedaliero Cantonale
U.O. Ginecologia e Ostetricia
Ospedale Beata Vergine di Mendrisio – CH
Università della Svizzera Italiana

Simposio REHA TICINO
Giovedì 27 aprile 2023, dalle 13.00 alle 17.30

L'importanza di un approccio interdisciplinare nella presa in carico delle disfunzioni pelvi perineali: la nostra esperienza

REHA TICINO
un passo oltre le aspettative

rehaticino.ch


I think he was bombarded with a little too much information!
FRAN
www.emprana.co.uk

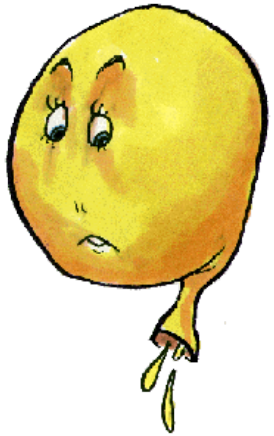
Urinary Incontinence

THE LANCET

Urinary incontinence in women

Peggy Norton, Linda Brubaker

More than **200 million** people worldwide live with incontinence



The yearly direct cost of urinary incontinence in the USA alone is **US$ 16·3 billion**, of which **3/4 is for the management of women** who have the condition

Urinary Incontinence

THE LANCET

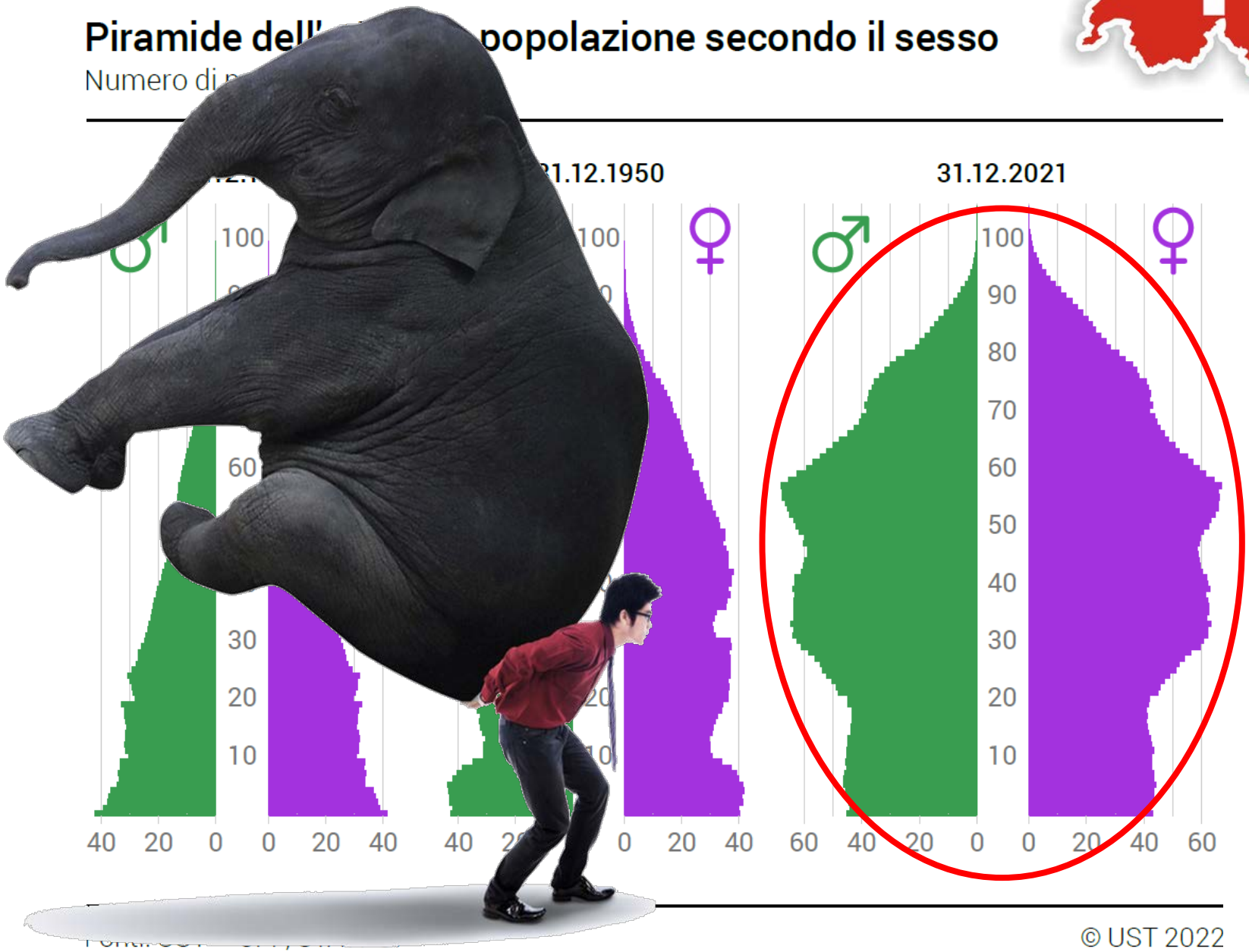
Urinary incontinence in women

Peggy Norton, Linda Brubaker

…15% of the women aged 20–29 years reported having symptoms of UI…

…this percentage increased to 21% for women older than 70 years…

Urinary Incontinence



Urinary Incontinence

Analects of Confucius

def·i·ni·tion
defəˈniSH(ə)n

noun
a statement of the exact meaning of a word, especially in a dictionary.

Words are important. Name are important.

"If names be not correct, language is not in accordance with the truth of things. If language be not in accordance with the truth of things, affairs cannot be carried out on to success."

Urinary Incontinence: Definition

Neurourology and Urodynamics

An International Urogynecological Association (IUGA)/International Continence Society (ICS) Joint Report on the Terminology for Female Pelvic Floor Dysfunction

Bernard T. Haylen,[1*,†,§] Dirk de Ridder,[2,‡,§] Robert M. Freeman,[3†,‡,§] Steven E. Swift,[4†,§] Bary Berghmans,[5‡,§] Joseph Lee,[6†] Ash Monga,[7‡,§] Eckhard Petri,[8†] Diaa E. Rizk,[9†] Peter K. Sand,[10†,‡,§] and Gabriel N. Schaer[11†]

…the complaint of any type of involuntary loss of urine…

Urinary Incontinence: Definition

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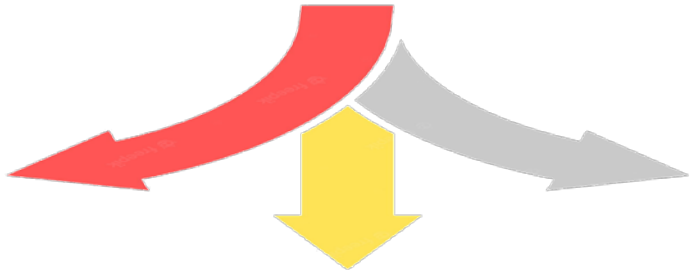

STRESS INCONTINENCE

MIXED INCONTINENCE

URGE INCONTINENCE

Urinary Incontinence: Definition

Neurourology and Urodynamics

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OVERACTIVE BLADDER

Overactive bladder (OAB, urgency) syndrome: urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection or other obvious pathology.

Urgency: the key to defining the overactive bladder

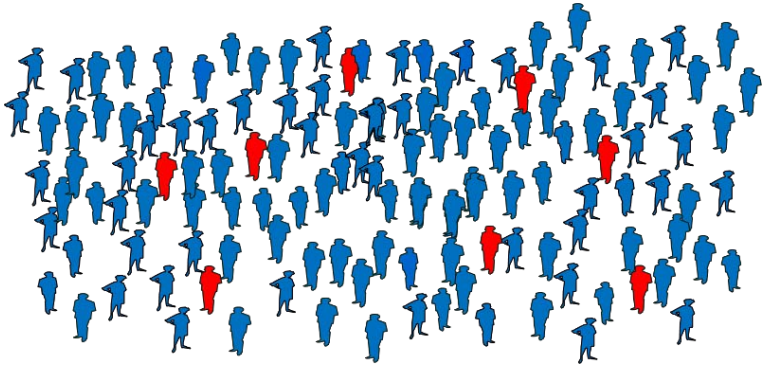
PAUL ABRAMS
Bristol Urological Institute, Southmead Hospital, Bristol, UK

Urgency:

"a sudden compelling desire to pass urine, which is difficult to defer"

"the **only symptom** a patient must have to be described as having OAB"

Urinary Incontinence



PREVALENCE OF ANY INCONTINENCE

ELSEVIER

Journal of Clinical Epidemiology

A c… male

Abstract

Objectives: The aim was to … of any urinary leakage in an unselected female population in Norway, and to estimate the prevalence of significant incontinence. Methods: The EPINCONT Study is part of a large survey (HUNT 2) performed in a county in Norway during 1995–97. Everyone aged 20 years or more was invited. 27,936 (80%) of 34,755 community-dwelling women answered a questionnaire. A validated severity index was used to assess severity. *Results:* Twenty-five percent of the participating women had … leakage. Nearly 7% had significant incontinence, defined as moderate or severe incontinence that was experienced … prevalence of incontinence increased with increasing age. Half of the incontinence was of stress type … continence. *Conclusions:* Urinary leakage is highly prevalent. Seven percent have signific… tential patients. © 2000 Elsevier Science Inc. All rights reserved. © 200…

Keywords: Epidemiology; Community-based; Female; Preval…

1. Int…

Uri… women… do, how… partly be… continen… and variat… ing preval…

In 1998… nence recor… struments fo… community s… involuntary l… and duration […

The EPINC… County of Nor… dance with these… survey performe… Screening Servic… largest epidemiol… tinence. In this arti…

* Corresponding auth…

E-mail address: yngvi…

0895-4356/00/$ – see front…

PII: S0895-4356(00)002…

International Journal of Gynecology and Obstetrics 82 (2003) 327–338

www.elsevier.com/locate/ijgo

International Journal of GYNECOLOGY & OBSTETRICS

Urinary incontinence as a worldwide problem

V.A. Minassian*, H.P. Drutz, A. Al-Badr

Division of Urogynecology and Reconstructive Pelvic Surgery, Department of Obstetrics and Gynecology, University of Toronto, Mount Sinai Hospital, Toronto, Ontario, Canada

Received 11 December 2002; received in revised form 6 January 2003; accepted 10 January 2003

Abstract

Objectives: This paper reviews the literature on the prevalence of urinary incontinence (UI) and demonstrates its impact as a worldwide problem. *Methods:* A MEDLINE search was performed to review population-based studies in English. Studies were grouped according to demographic variables and type of incontinence. Risk factors, help-seeking behavior, and quality of life measures were analyzed. *Results:* The median prevalence of female UI was 27.6% (range: 4.8–58.4%) and prevalence of significant incontinence increased with age. The commonest cause of UI was stress (50%), then mixed (32%) and finally urge (14%). Risk factors included parity, obesity, chronic cough, depression, poor health, lower urinary tract symptoms, previous hysterectomy, and stroke. Although quality of life was affected, most patients did not seek help. *Conclusion:* UI is a prevalent cross-cultural condition. Future studies should rely on universally accepted standardized definitions to produce meaningful evidence-based conclusions, as … the costs of this global healthcare problem.

… Federation of Gynecology and Obstetrics. Published by Elsevier Science Ireland Ltd. All rights …

6-72%

25%

EPINCONT 2000

Large epidemiological study performed in Norway 27,936 (80%) of 34,755 women aged 20 years or more

27.6%

MINIASSAN et al. 2003

Meta-analysis to review population-based studies

Urinary Incontinence: Epidemiology

PREVALENCE UNDERREPORTED

WHAT YOU KNOW IS NOTHING COMPARED TO ALL THERE IS TO KNOW. WHAT YOU KNOW IS JUST...

THE TIP OF THE ICEBERG

Embarrassment

Belief that urinary incontinence is a

Normal inevitable part of aging

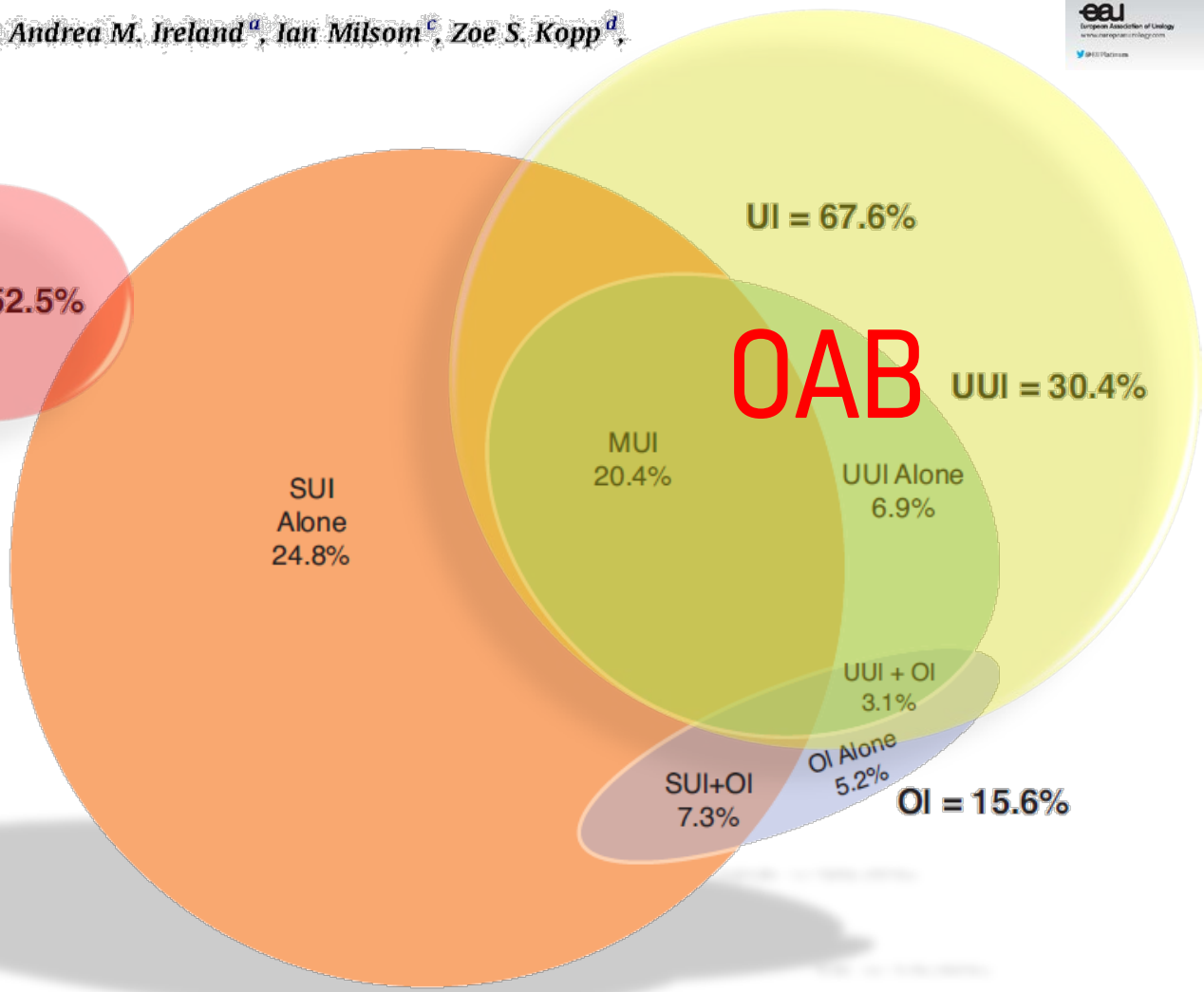
Lack of knowledge about treatment options

Urinary incontinence in women ; Wood LN , Anger JT BMJ 2014

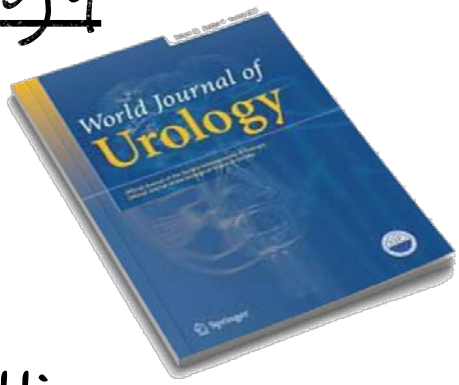
Urinary Incontinence: Epidemiology

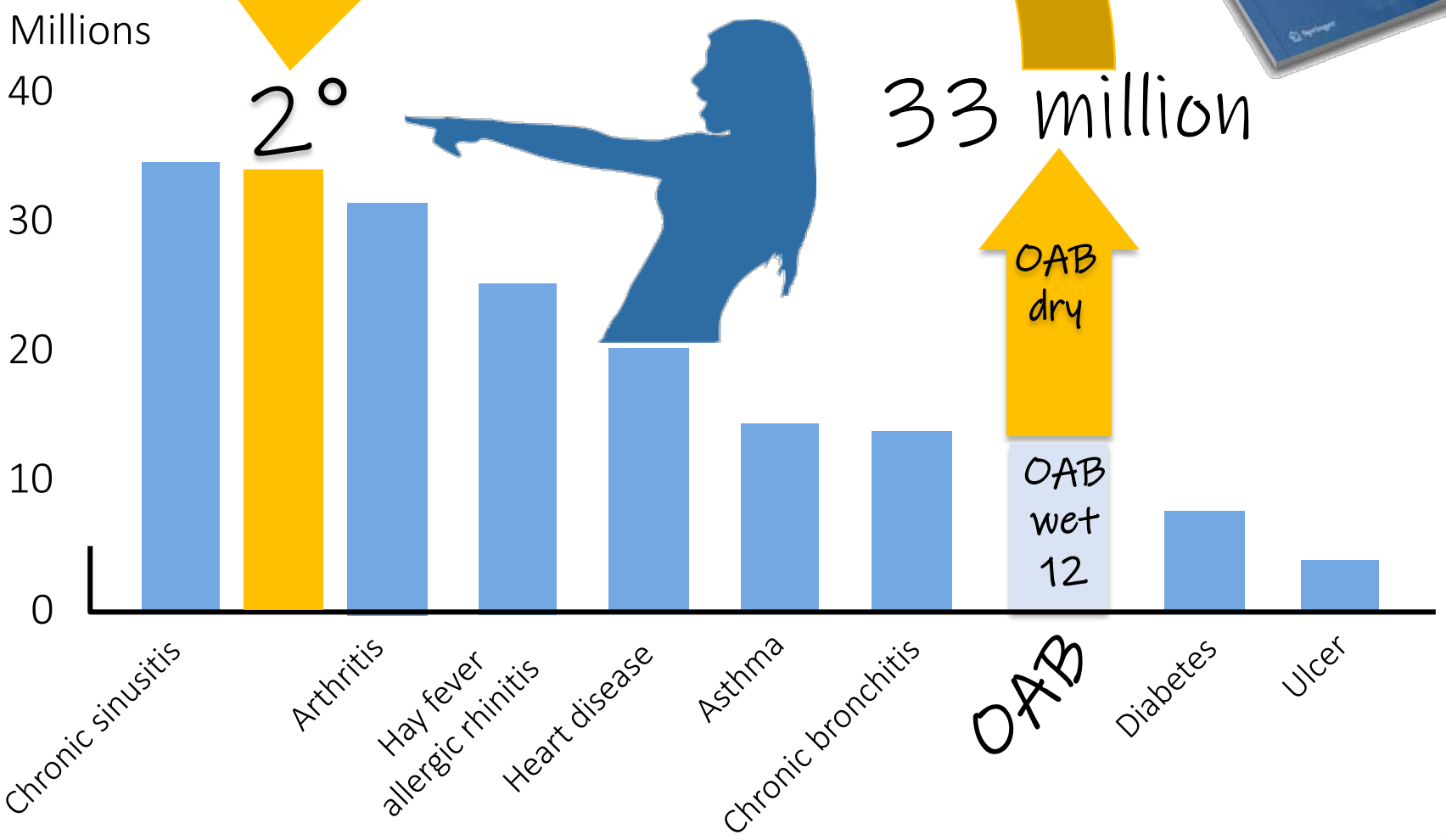
Urinary Incontinence and its Relationship to Mental Health and Health-Related Quality of Life in Men and Women in Sweden, the United Kingdom, and the United States

Karin S. Coyne [a,], Marion Kvasz [b], Andrea M. Ireland [a], Ian Milsom [c], Zoe S. Kopp [d], Chris R. Chapple [e]*



Urinary Incontinence: Epidemiology





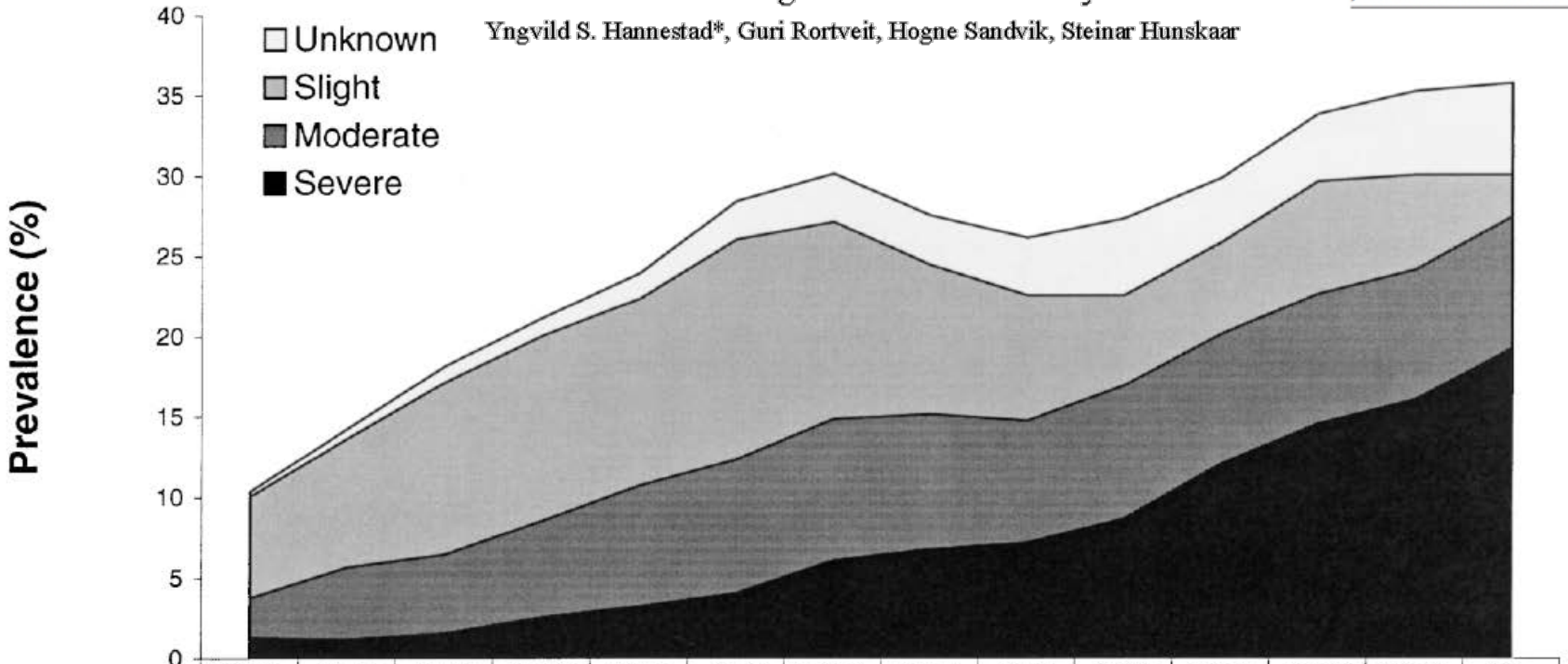
Based on results of NOBLE study – Stewart WF, et al. World J Urol 2003;20:327–33

Urinary Incontinence: Epidemiology

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

Yngvild S. Hannestad*, Guri Rortveit, Hogne Sandvik, Steinar Hunskaar

JCE
JOURNAL OF CLINICAL EPIDEMIOLOGY



	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Unknown	0,3	0,6	1	1,1	1,6	2,4	3	3,1	3,6	4,8	4	4,2	5,2	5,7
Slight	6,3	8	10,7	11,5	11,6	13,7	12,3	9,3	7,8	5,6	5,7	7	5,9	2,6
Moderate	2,5	4,5	4,9	6	7,5	8,3	8,8	8,4	7,6	8,3	8,1	8,1	8,1	8,2
Severe	1,3	1,2	1,6	2,6	3,3	4,1	6,1	6,8	7,2	8,7	12,1	14,6	16,1	19,3

Fig. 1. Prevalence of urinary incontinence by age group and severity.

Urinary Incontinence: Epidemiology

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

Yngvild S. Hannestad*, Guri Rortveit, Hogne Sandvik, Steinar Hunskaar

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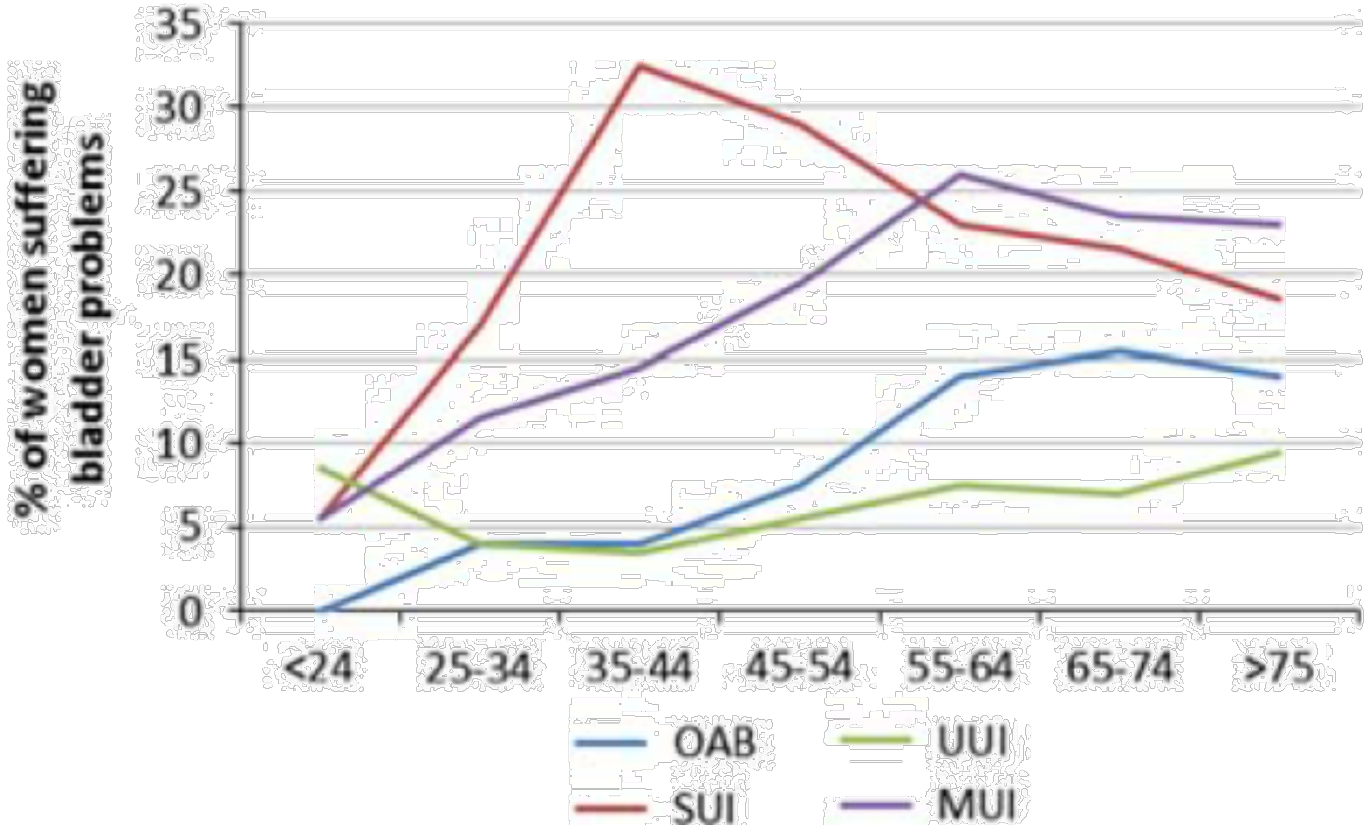
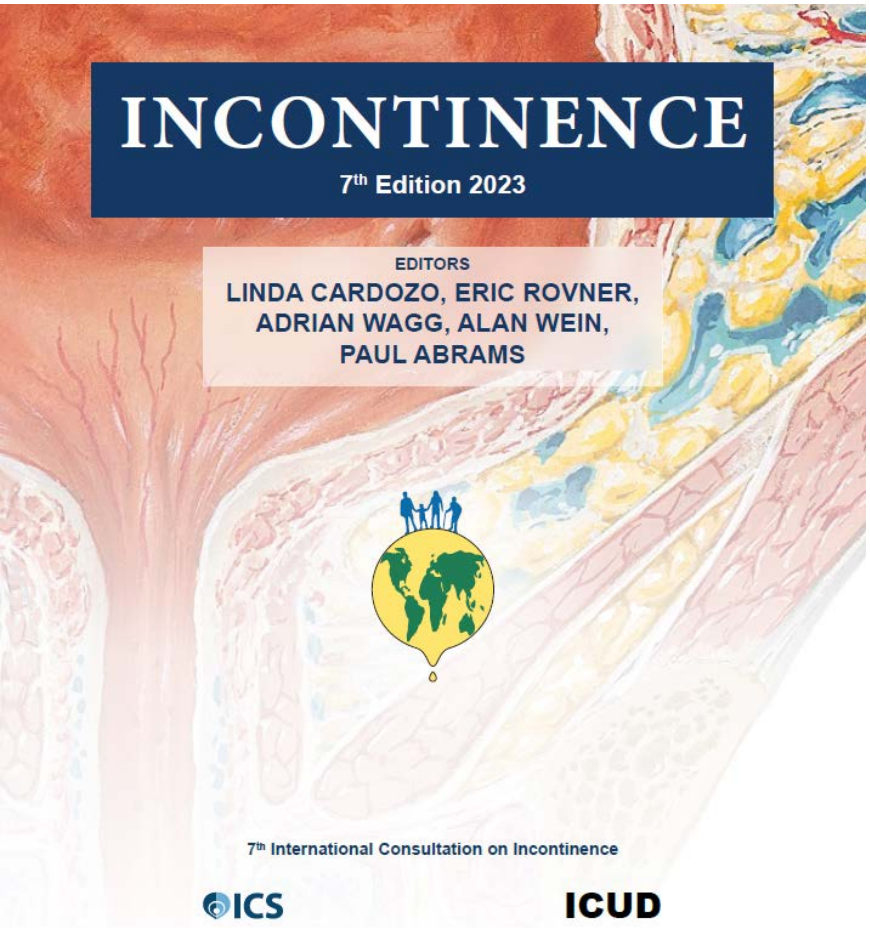


Urinary Incontienence: Pathophysiology



COMMITTEE 3

PATHOPHYSIOLOGY OF URINARY INCONTINENCE, PELVIC ORGAN PROLAPSE AND FAECAL INCONTINENCE

Co-Chairs

Finazzi Agrò, Enrico (Italy)
Salvatore, Stefano (Italy)

Members

Braga, Andrea (switzerland)
DeLancey, John (United States)
Fernando, Ruwan (United Kingdom)
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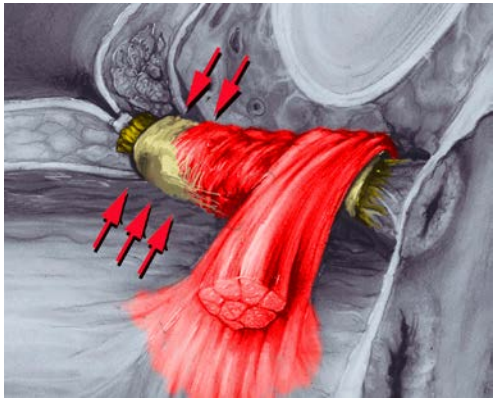
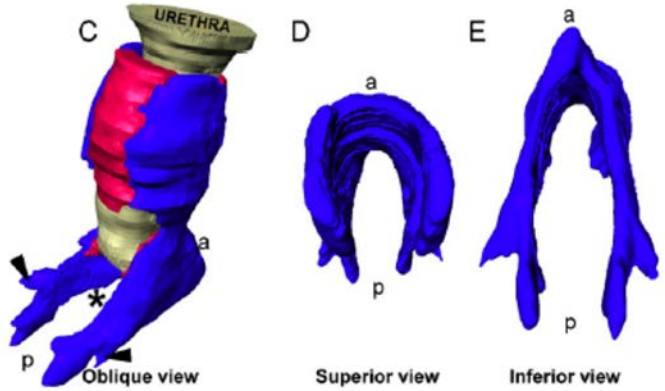
Laterza, Rosa (Austria)
Lowry, Ann (United States)
Serati, Maurizio (Italy)
Sievert, Karl-Dietrich (Germany)

Stress Incontinence: Pathophysiology

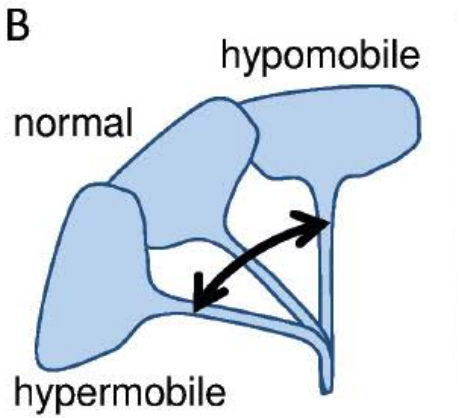
THEORIES:

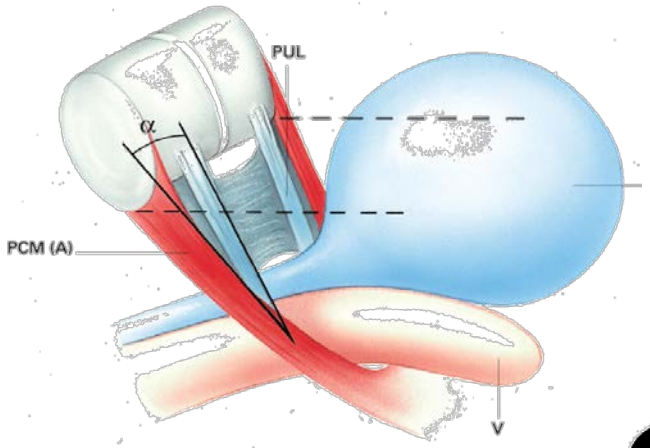
1. INTRINSIC SPHINCTER DEFICIENCY





2. URETHRAL HYPERMOBILITY





Stress Incontinence: Pathophysiology

Childbirth

Royal College of Obstetricians and Gynaecologists

Guideline No. 23

Revised June 2004

…In the UK, it is estimated that over 85% of women who have a vaginal birth will sustain some degree of perineal trauma and of these

60-70% will experience suturing…

Stress Incontinence: Pathophysiology

Pelvic floor assessment after delivery: how should women be

Marco Soligo[a,*], Stefania Livio[a], Elena De Ponti[b], Ileana Sceb
Maurizio Serati[c], Enrico Ferrazzi[a]

PELVIC FLOOR DYSFUNCTIONS 34.7%

ejog
European Journal of Obstetrics & Gynecology and Reproductive Biology

- Urinary incontinence: 18.7%
- Anal incontinence: 5.4%
- POP: 0.6%
- Pain/Dyspareunia: 8.0%
- Muscle dysfunctions.: 14.2%

Women at age of 45 experience PFDs

8-times more than men at same age

Stress Incontinence: Pathophysiology

The Effect of Childbirth on Pelvic Organ Mobility

H. P. Dietz, MD (Heidelberg), FRANZCOG, and M. J. Bennett, MD (UCT), FRANZCOG

AJOG American Journal of Obstetrics & Gynecology
The Gray Journal
Founded 1869

- Age
- BMI
- Race/Ethnicity
- Inheritance
- Several perineal tears
- Duration II stage of labour
- Instrumental delivery
- Macrosomy
- Epidural analgesia
- Multiparity

Stress Incontinence: Pathophysiology

The Effect of Childbirth on Pelvic Organ Mobility

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The Gray Journal
Founded 1869

- Age
- BMI
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- **Several perineal tears**
- **Duration II stage of labour**
- **Instrumental delivery**
- Macrosomy
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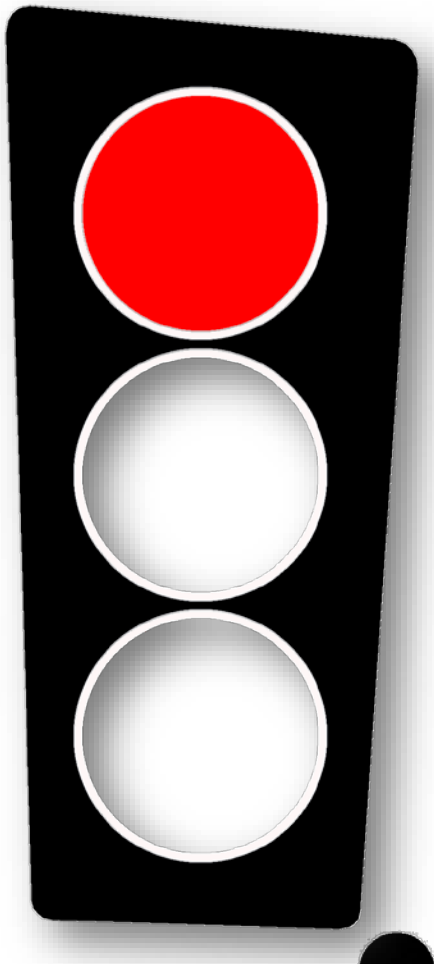
- Multiparity



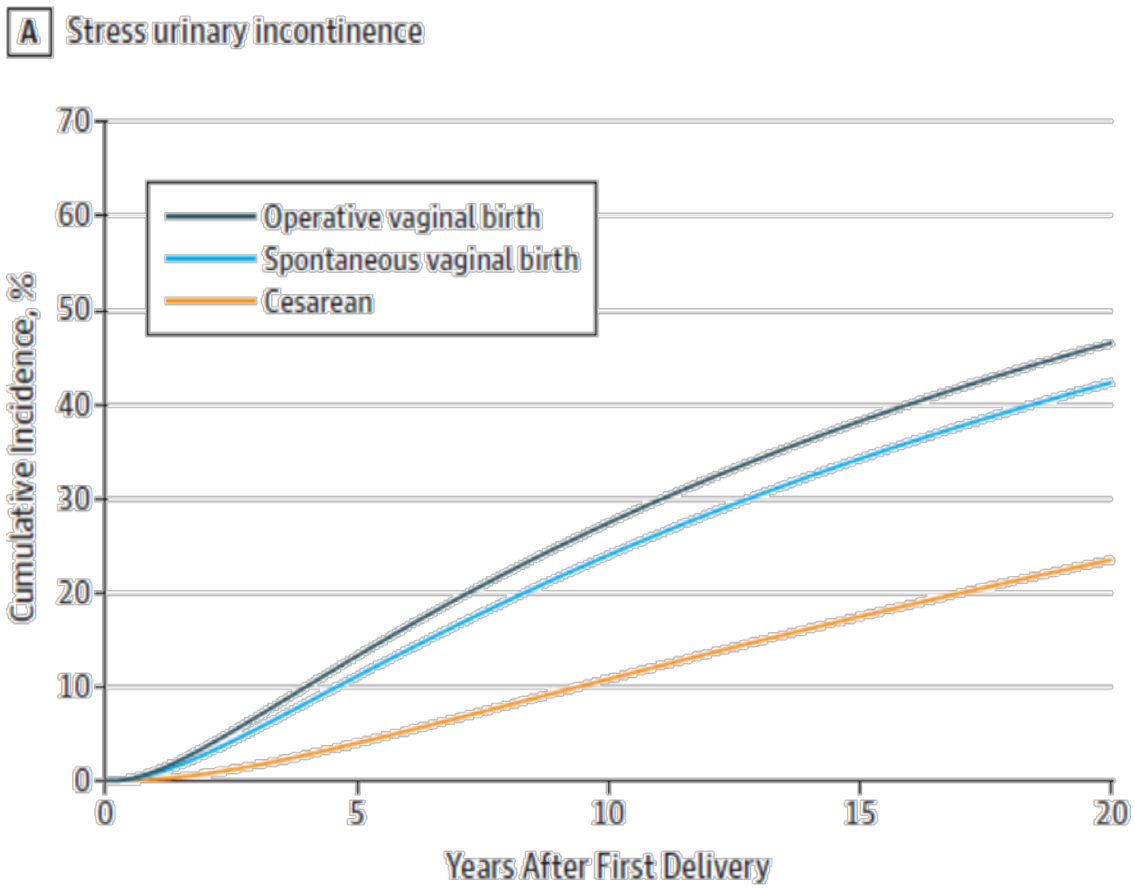
Stress Incontinence: Pathophysiology

JAMA | Original Investigation

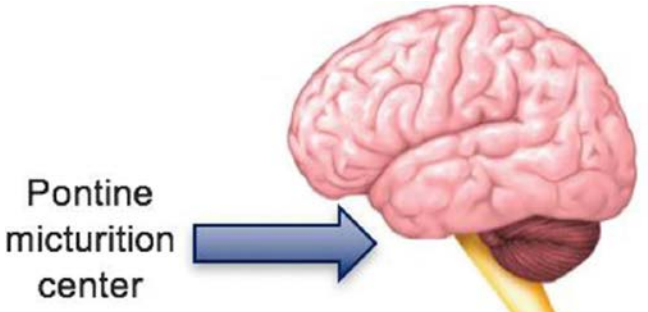
Association of Delivery Mode With Pelvic Floor Disorders After Childbirth

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

JAMA®
The Journal of the American Medical Association



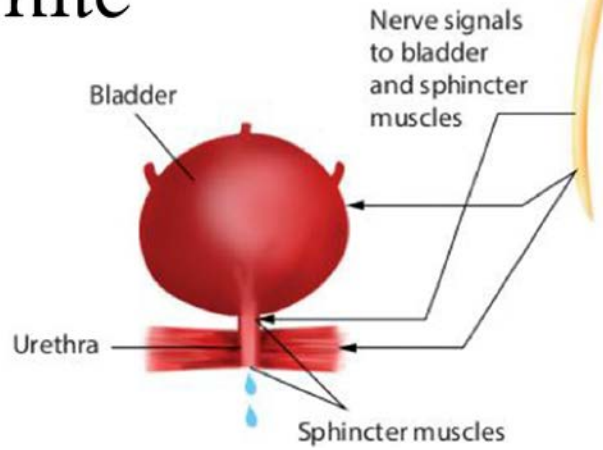
Urge Iincontinence: Pathophysiology



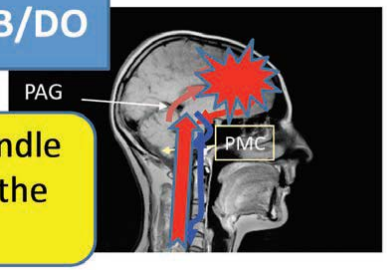
black

vs

white

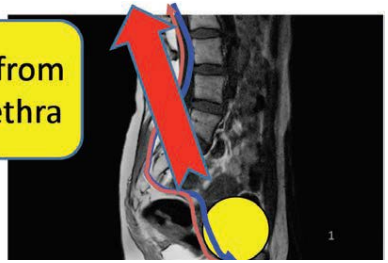


Pathophysiology of OAB/DO



Decreased capacity to handle the afferent signals in the brain

Increased afferent signals from the bladder and /or urethra



Salvatore S. et al. Pathophysiology Of Urinary Incontinence, Faecal Incontinence And Pelvic Organ Prolapse

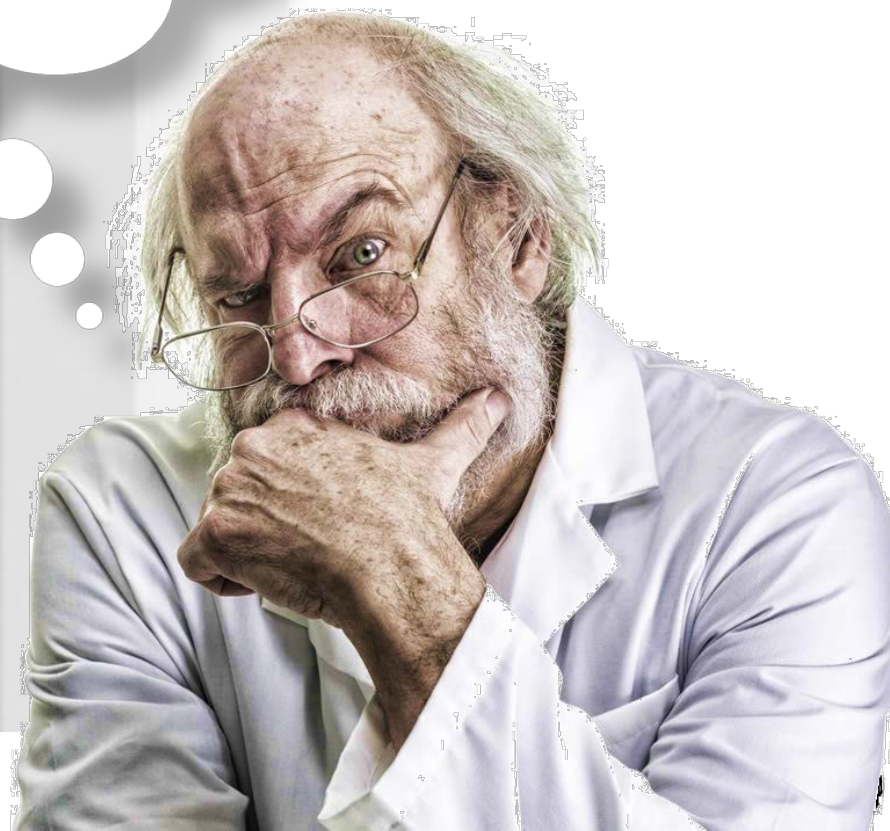
Urge Iincontinence: Pathophysiology

A Comprehensive Review of Overactive Bladder Pathophysiology: On the Way to Tailored Treatment

Benoit Peyronnet [a,], Emma Mir… Matthias Oelke [d], Roger Dmoch… …rby [h], Frank Van Der Aa [i], Jean-Ni…*

EUROPEAN UROLOGY

OAB...a single syndrome?



Urge Iincontinence: Pathophysiology

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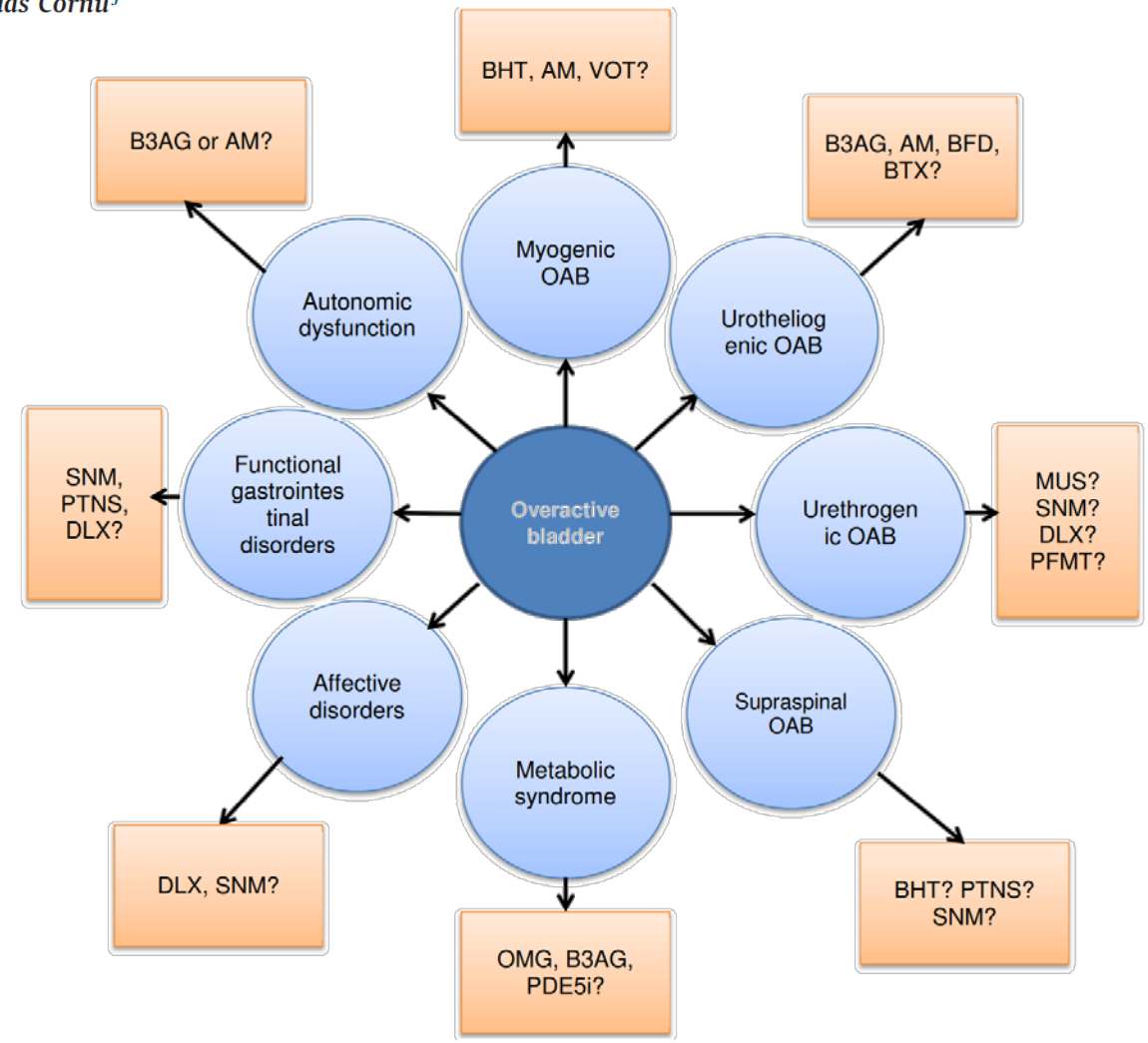
Benoit Peyronnet[a,], Emma Mironska[b], Christopher Chapple[b], Linda Cardozo[c], Matthias Oelke[d], Roger Dmochowski[e], Gérard Amarenco[f], Xavier Gamé[g], Roger Kirby[h], Frank Van Der Aa[i], Jean-Nicolas Cornu[j]*

EUROPEAN UROLOGY



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EUROPEAN UROLOGY

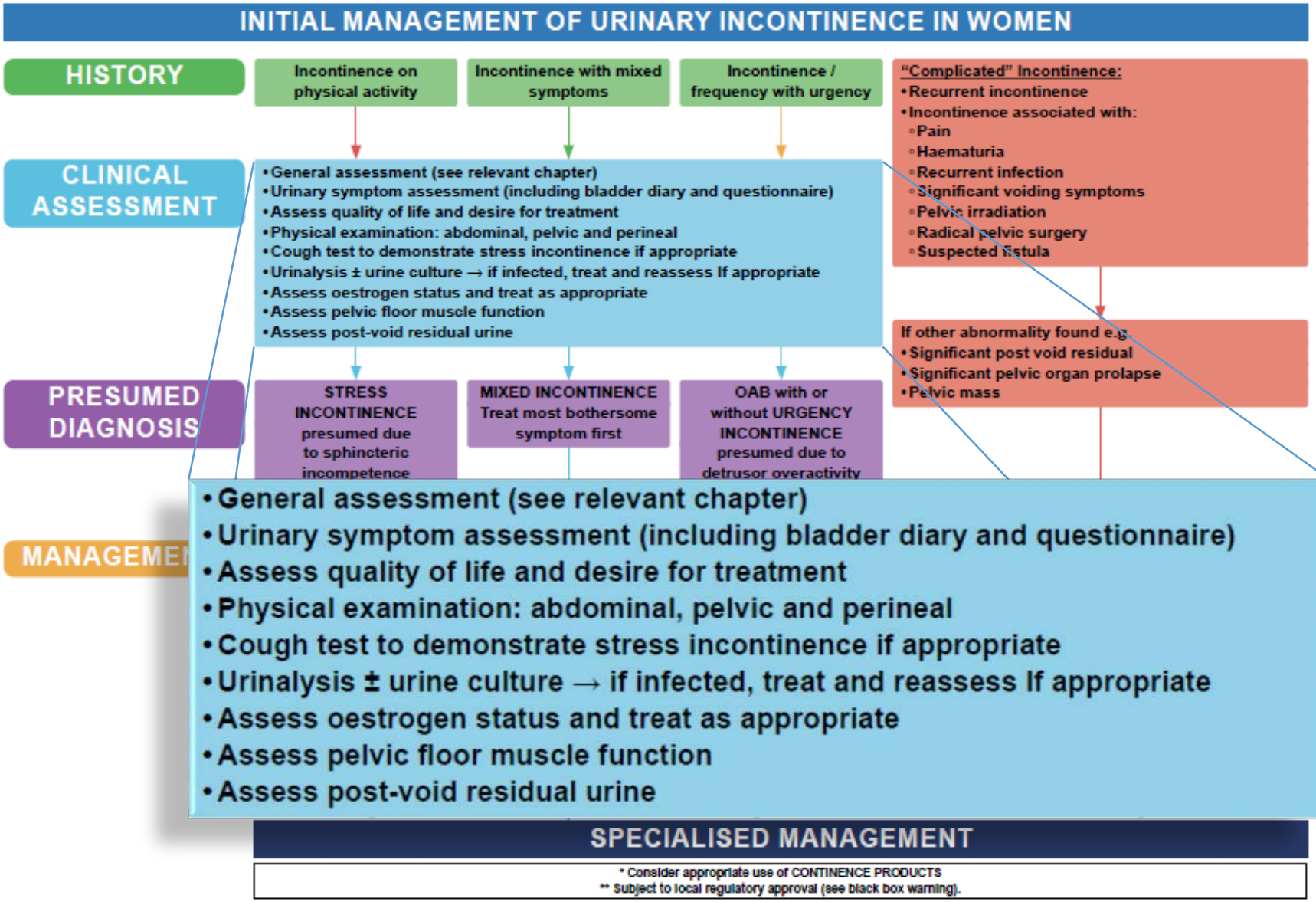
Table 1 – Possible OAB phenotypes

Phenotyping according to pathophysiological factors	Phenotyping according to urodynamic demonstration of detrusor overactivity
Metabolic syndrome	Myogenic
Affective disorders	Urotheliogenic
Sex hormone deficiency	Urethrogenic
Urinary microbiota	Supraspinal
Functional gastrointestinal disorders	Urotheliomyogenic: detrusor underactivity
Autonomic nervous system dysfunction	

OAB = overactive bladder.

Urinary Iincontinence

Urinary Iincontinence: Diagnosis



7th recommendations 2023

Urinary Iincontinence: Diagnosis

Recommendation

DIAGNOSIS - GENERAL

History and physical examination

Patient questionnaires

Bladder diaries

Urinalysis

Post-void residual volume

Strength rating

Strong

EAU Guidelines on

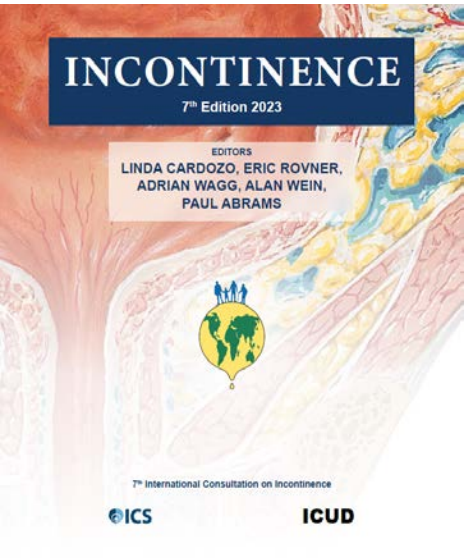
Management of Non-Neurogenic Female Lower Urinary Tract Symptoms

eau European Association of Urology

Urinary Iincontinence: Diagnosis

III. URINARY INCONTINENCE IN WOMEN

B SPECIALISED MANAGEMENT



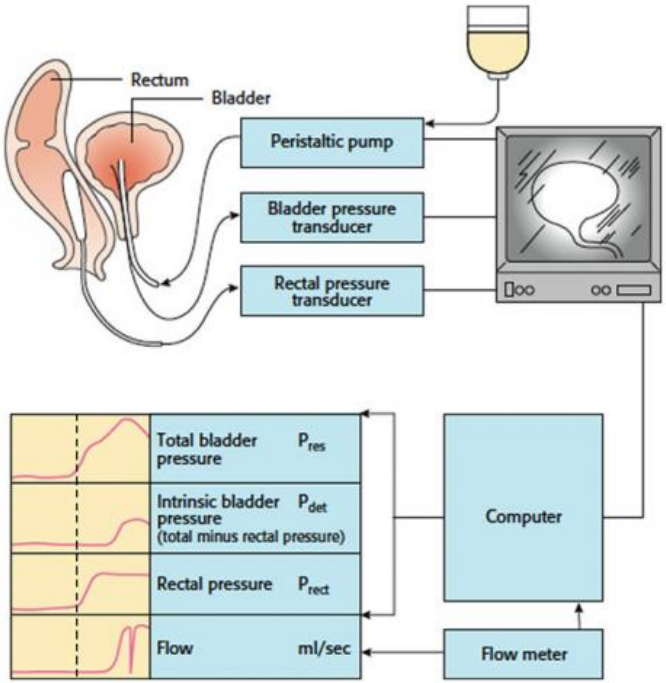
"Complicated" Incontinence:

- Recurrent incontinence
- Incontinence associated with:
  - Pain
  - Haematuria
  - Recurrent infection
  - Significant voiding symptoms
  - Pelvic irradiation
  - Radical pelvic surgery
  - Suspected fistula

Women who have **"complicated" incontinence** (see initial algorithm) may need to have additional tests such as cytology, urodynamics, cystourethroscopy or urinary tract imaging. If these tests are normal, then they should be treated for incontinence by the initial or specialised management options as appropriate.

Urinary Iincontinence: Diagnosis

Urodynamic study



Those women with persistent symptoms despite **initial management** and whose quality of life is impaired are likely to request further treatment. If initial management has been given an adequate trial, then **interventional therapy may be desired**. When the results of urodynamic testing may change management, we highly recommend testing prior to intervention to diagnose the incontinence type and, therefore, inform the management plan. Urethral function testing by urethral pressure profile or leak point pressure is optional.

7th recommendations 2023

Urinary Incontinence: TREATMENT

Urinary Iincontinence: Treatment

INITIAL MANAGEMENT OF URINARY INCONTINENCE IN WOMEN

MANAGEMENT*

- Lifestyle interventions.
- Pelvic floor muscle training for SUI, MUI, or OAB (A)
- Bladder retraining for OAB (A)
- Transcutaneous posterior tibial nerve stimulation for OAB (B)
- Antimuscarinics/beta 3 agonist OAB ± urgency incontinence (A) or Duloxetine** for SUI (B)

- Other adjuncts, such as biofeedback and electrical stimulation for those with reduced proprioreceptioin
- vaginal devices e.g., cones, pessary (B)

7th recommendations 2023

Urinary Iincontinence: Treatment

MANAGEMENT*

INCONTINENCE
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Life style interventions

- Reducing fluid intake (in particular coffee and alcool)

European Association of Urology

Reduction in fluid intake by 25% may help improve symptoms of OAB but not urinary incontinence (UI).	1b
Reduction of caffeine intake may reduce symptoms of frequency and urgency.	2

- Avoiding some foods (f.e. liquid with gas or peppers)
- Not smoking (LE3)

7th recommendations 2023

Urinary Iincontinence: Treatment

MANAGEMENT*

INCONTINENCE
7th Edition 2023

Life style interventions

- Weight loss

→ each 5-unit decrease in BMI is associated with a 20–70% decrease in the risk of UI

Obesity is a risk factor for UI in women, but the relationship to other OAB symptoms remains unclear. | 1b

OAB: Metabolic Syndrome

SYSTEMATIC REVIEW

THE INTERNATIONAL JOURNAL OF CLINICAL PRACTICE

Editor's Choice

Is there a link between overactive bladder and the metabolic syndrome in women? A systematic review of observational studies

F. Bunn,[1] M. Kirby,[2] E. Pinkney,[1] L. Cardozo,[3] C. Chapple,[1] K. Chester,[4] F. Cruz,[5] F. Haab,[6] C. Kelleher,[7] I. Milsom,[8] K. D. Sievart,[9] A. Tubaro,[10] A. Wagg[11]

- Systematic Review
- Link between MS and OAB
- 27 observational studies (only 3 link MS and OAB)
- Heterogeneus studies
- Limited literature / poor quality

Risk factor for LUTS/OAB

Obesity

Urinary Incontinence: Treatment

MANAGEMENT*

INCONTINENCE
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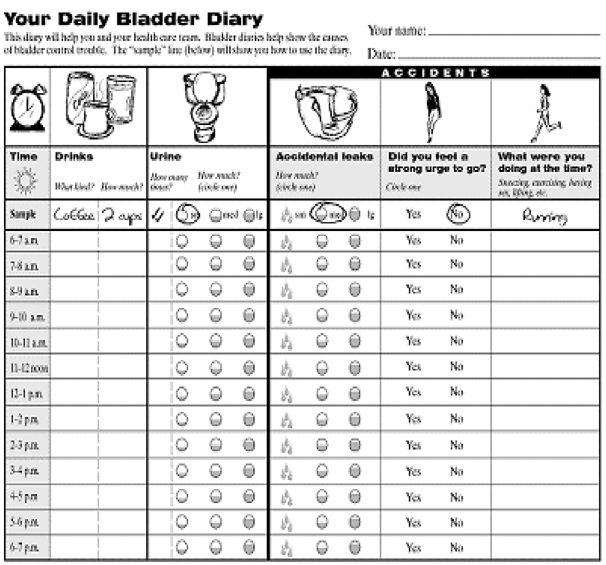

Your Daily Bladder Diary

This diary will help you and your health care team. Bladder diaries help show the causes of bladder control trouble. The "sample" line (below) will show you how to use the diary.

Your name: ______
Date: ______

Time	Drinks: What kind?	Drinks: How much?	Urine: How many times?	Urine: How much? (circle one)	ACCIDENTS: Accidental leaks. How much? (circle one)	ACCIDENTS: Did you feel a strong urge to go? Circle one	ACCIDENTS: What were you doing at the time? Sneezing, exercising, having sex, lifting, etc.
Sample	Coffee	2 cups	✓✓	sm / med / lg	sm / med / lg	Yes No	Running
6-7 a.m.						Yes No	
7-8 a.m.						Yes No	
8-9 a.m.						Yes No	
9-10 a.m.						Yes No	
10-11 a.m.						Yes No	
11-12 noon						Yes No	
12-1 p.m.						Yes No	
1-2 p.m.						Yes No	
2-3 p.m.						Yes No	
3-4 p.m.						Yes No	
4-5 p.m.						Yes No	
5-6 p.m.						Yes No	
6-7 p.m.						Yes No	

Bladder Training

The patients have to progressively increase the time between two micturitions

European Association of Urology

Bladder training is effective for improvement of urge urinary incontinence (UUI) in women but efficacy appears to be lower than that of pharmacotherapy.	1b

Urinary Iincontinence: Treatment

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ICS Continence Society International

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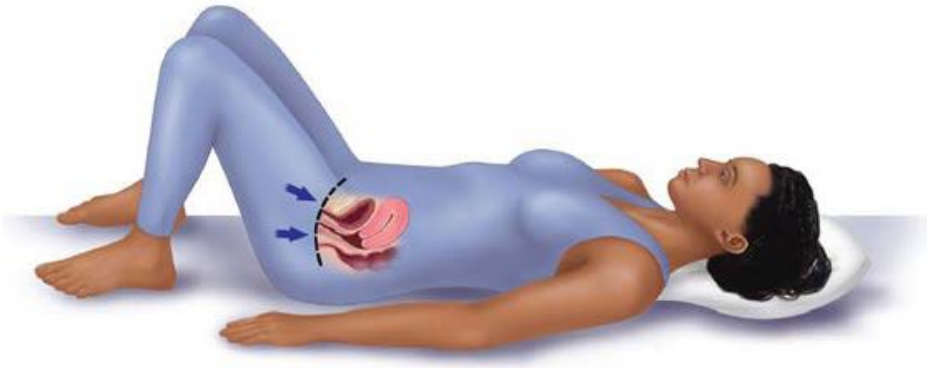
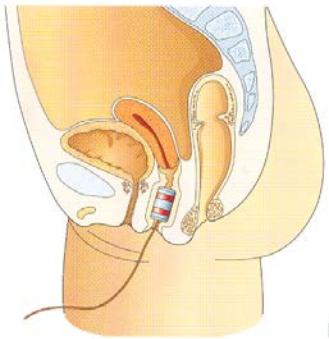
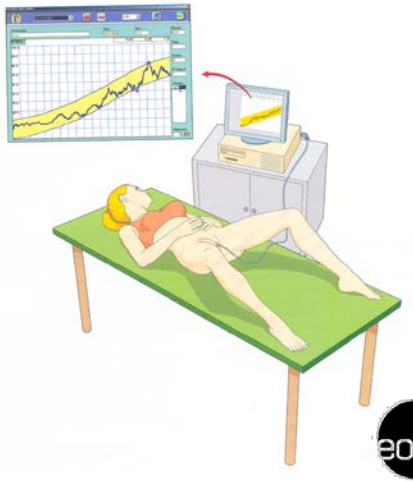
Pelvic Floor Muscle Training



Functional Electrical Stimulation



Biofeedback



7th recommendations 2023

Urinary Iincontinence: Treatment

Article

Efficacy of 3 Tesla Functional Magnetic Stimulation for the Treatment of Female Urinary Incontinence

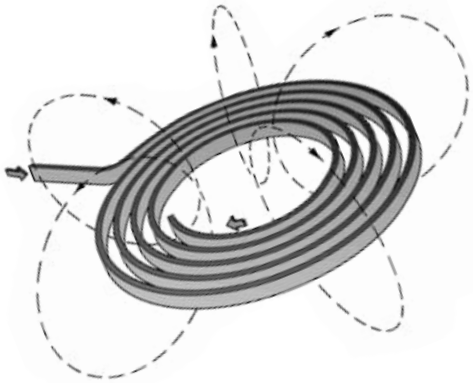
Andrea Braga [1,2,*], Fabiana Castronovo [1], Giorgio Caccia [1], Andrea Papadia [2,3], Luca Regusci [4], Marco Torella [5], Stefano Salvatore [6], Chiara Scancarello [7], Fabio Ghezzi [7] and Maurizio Serati [7]

Journal of *Clinical Medicine*

Induzione Elettromagnetica

GENERATORE

APPLICATORE FMS

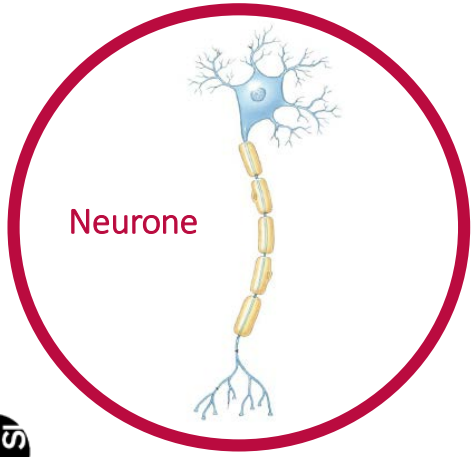


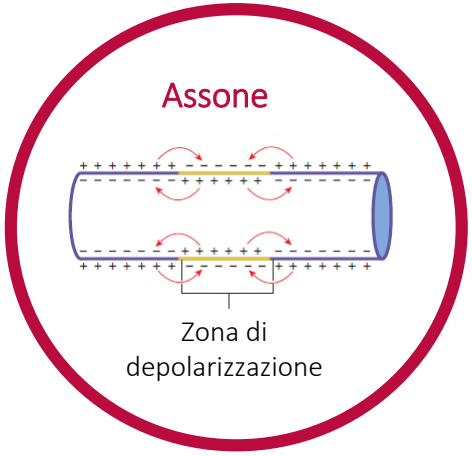
CAMPO MAGNETICO AD ALTA INTENSITÀ PULSATO

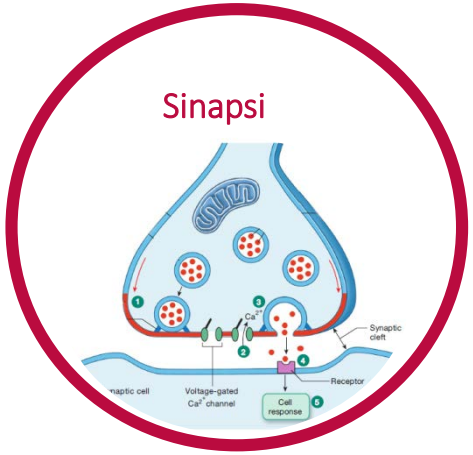
I rapidi cambiamenti nell'intensità del campo magnetico generano corrente elettrica nei neuroni

Quando questa corrente raggiunge un certo valore, si genera il cosiddetto potenziale d'azione

La cellula neuronale si depolarizza e rilascia un segnale all'unità neuromotoria, inducendo una contrazione muscolare.







Urinary Iincontinence: Treatment

Article

Efficacy of 3 Tesla Functional Magnetic Stimulation for the Treatment of Female Urinary Incontinence

Journal of *Clinical Medicine*

Andrea Braga [1,2,*], Fabiana Castronovo [1], Giorgio Caccia [1], Andrea Papadia [2,3], Luca Regusci [4], Marco Torella [5], Stefano Salvatore [6], Chiara Scancarello [7], Fabio Ghezzi [7] and Maurizio Serati [7]

All women who complained of pure SUI and OAB symptoms, completed the following questionnaires before and after treatment:

- Urogenital Distress Inventory Short Form **(UDI-6);**
- Incontinence Impact Questionnaire Short Form **(IIQ-7)**;
- International Consultation on Incontinence Questionnaire Short Form **(ICIQ-SF);**
- OAB-questionnaire Short Form **(OAB-q SF);**

2 times / week

VAS ≥ 8

(Visual Analogue Scale)

PGI-I ≤2

(Patient Global Impression of Improvement)

8 weeks

Urinary Iincontinence: Treatment

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Table 3. Cure and Improvement rate at 2 months follow-up.

Patients Symptoms	Cure Rate % (*n*/*n*)	Cure and Improvement Rate % (*n*/*n*)
SUI	47 (28/60)	68.3 (41/60)
OAB	50 (20/40)	70 (28/40)
	p value 0.84	*p* value 1.00

Table 4. Changes in patients reported outcomes at 2 months follow-up.

Questionnaire	SUI pre (m/IQR)	SUI post (m/IQR)	p value	OAB pre (m/IQR)	OAB post (m/IQR)	p value
ICI-Q SF	9 (9-14)	5 (5-8)	0.001	11 (10-13)	6 (6-9)	0.001
UDI-6 SF	46 (46-54)	41 (41-46)	0.001	50 (50-54)	38 (38-42)	0.001
IIQ-7 SF	17 (17-24)	6 (5-17)	0.001	17 (17-33)	11 (11-17)	0.001
OAB-q SF	-	-		48 (28-55)	38 (38-53)	0.001

Urinary Iincontinence: Treatment

Article

Efficacy of 3 Tesla Functional Magnetic Stimulation for the Treatment of Female Urinary Incontinence

Journal of *Clinical Medicine*

Andrea Braga [1,2,*], Fabiana Castronovo [1], Giorgio Caccia [1], Andrea Papadia [2,3], Luca Regusci [4], Marco Torella [5], Stefano Salvatore [6], Chiara Scancarello [7], Fabio Ghezzi [7] and Maurizio Serati [7]

Conclusion

FMS might be an effective and safe procedure for the treatment of SUI and OAB symptoms with great patients acceptance.

The treatment is painless and the patients were seated comfortably on the chair and fully clothed. This characteristic represent an advantage especially for elderly population

Effective

Safe and Painless

Non-invasive

Urinary Iincontinence: Treatment

MANAGEMENT*

ICS International Continence Society

INCONTINENCE
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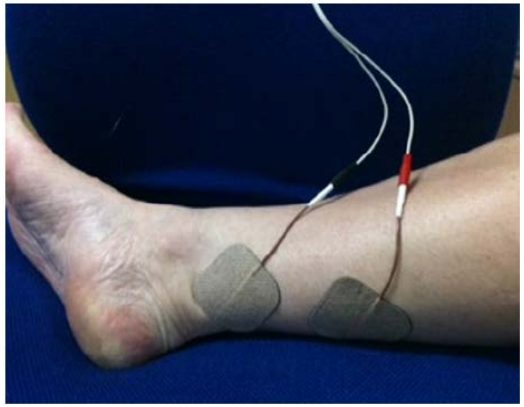
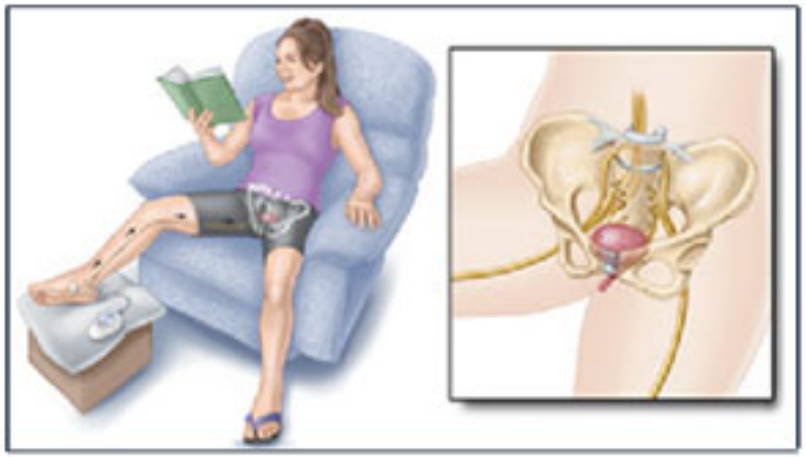
Tibial Nerve Stimulation



Recommendations

For women with UUI or OAB, TNS could be considered as its use may be more effective than no active treatment in symptom control. **(Grade of recommendation: C)**

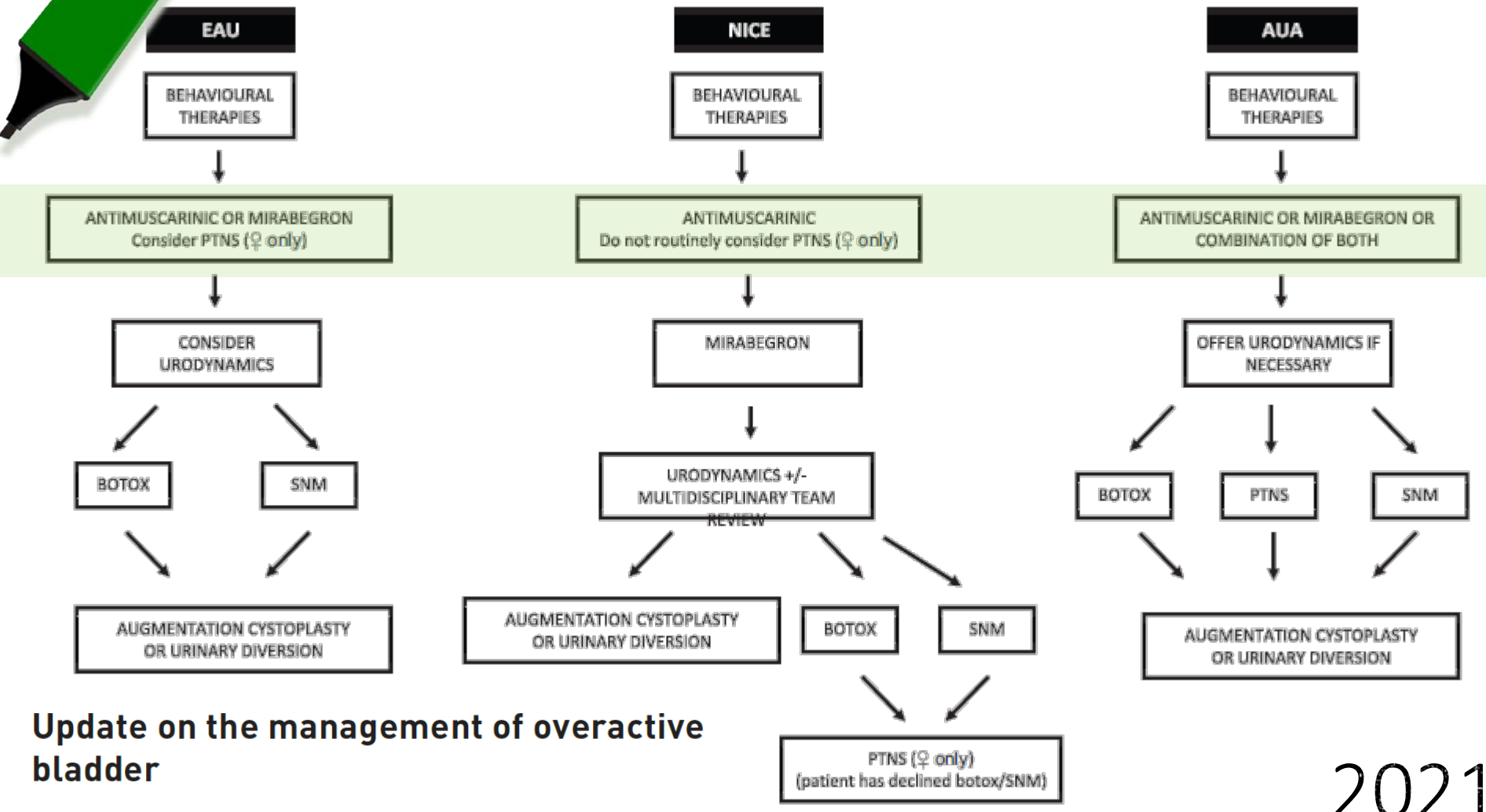


Posterior tibial nerve stimulation (PTNS) is more effective than antimuscarinics in reducing UUI episodes but with no difference in improving other OAB symptoms	1a
A maintenance programme of percutaneous-PTNS (P-PTNS) has been shown to be effective for up to 3 years.	2a
Transcutaneous-PTNS appears to be effective in reducing OAB symptoms compared to sham treatment.	1a
Transcutaneous-PTNS is not inferior to P-PTNS with regards to improvement in urinary urgency, frequency and quality of life scores.	1a

eau European Association of Urology

Urge Iincontinence: Treatment

Pharmacological Treatment



Update on the management of overactive bladder

Christina Fontaine, Emma Papworth, John Pascoe and Hashim Hashim

2021

Therapeutic Advances in Urology

Urge Iincontinence: Treatment

Antimuscarinics

International Menopause Society
Climacteric
The Journal of Adult Women's Health and Medicine
Editor-in-Chief: Rodney J. Baber

Managing overactive bladder

D. Robinson and L. Cardozo

2019

Table 1. Antimuscarinic drugs used in the treatment of overactive bladder.

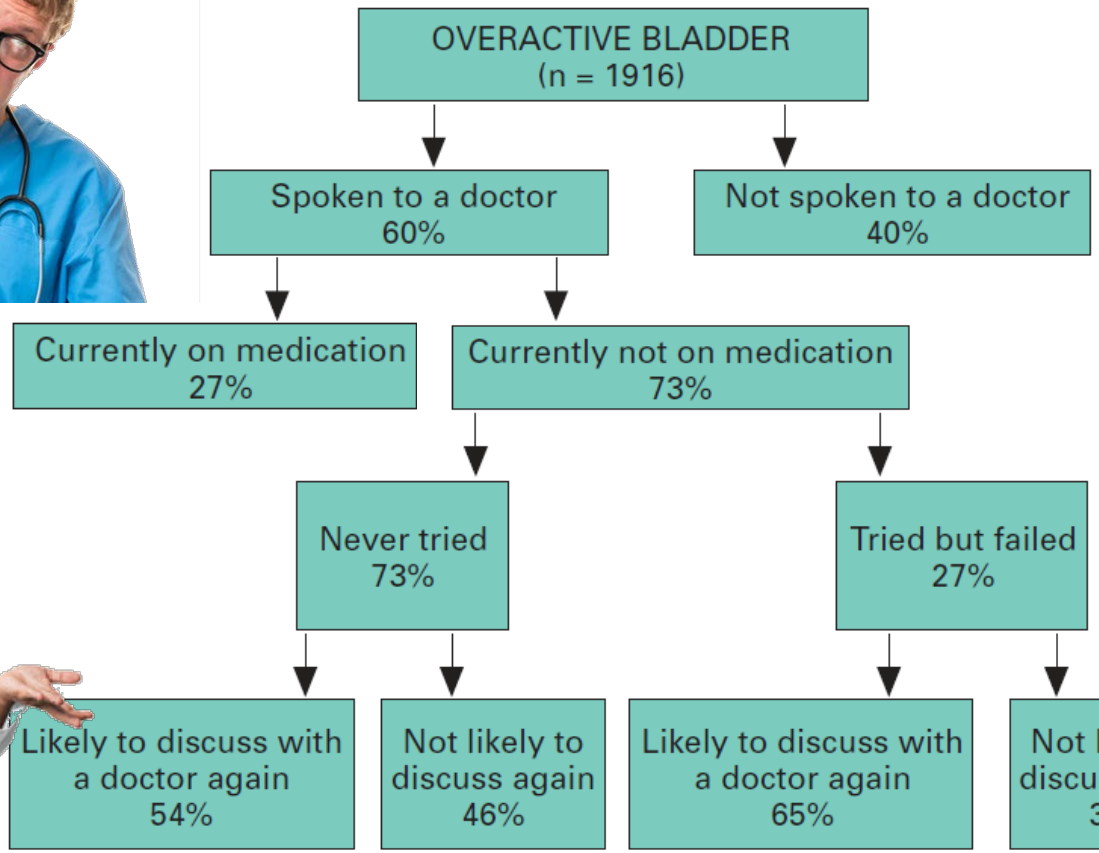
Antimuscarinic drug	*Level of evidence*	*Grade of recommendation*
Darifenacin	1	A
Fesoterodine	1	A
Oxybutynin	1	A
Propiverine	1	A
Solifenacin	1	A
Tolterodine	1	A
Trospium	1	A

Urge Incontinence: Treatment

How widespread are the symptoms of an overactive bladder and how are they managed? A population-based prevalence study

I. MILSOM, P. ABRAMS*, L. CARDOZO†, R.G. ROBERTS‡, J. THÜROFF§ and A.J. WEIN¶

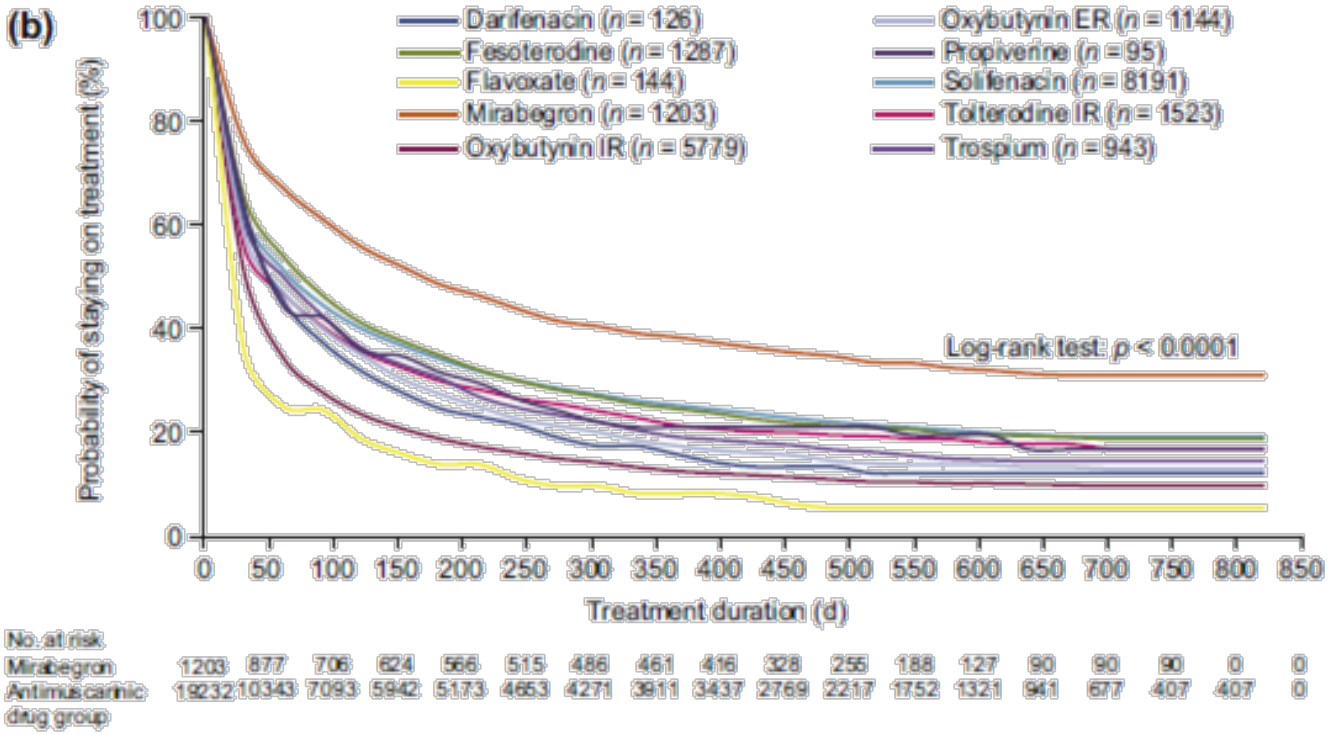
BJOG



Urge Iincontinence: Treatment

Persistence and Adherence with Mirabegron versus Antimuscarinic Agents in Patients with Overactive Bladder: A Retrospective Observational Study in UK Clinical Practice

Christopher R. Chapple[a,], Jameel Nazir[b], Zalmai Hakimi[c], Sally Bowditch[b], Francis Fatoye[d], Florent Guelfucci[e], Amine Khemiri[f], Emad Siddiqui[b], Adrian Wagg[g]*



2017

The median time to discontinuation was significantly longer with mirabegron (169 d) than with other antimuscarinics (30–78 d)

Urge Iincontinence: Treatment

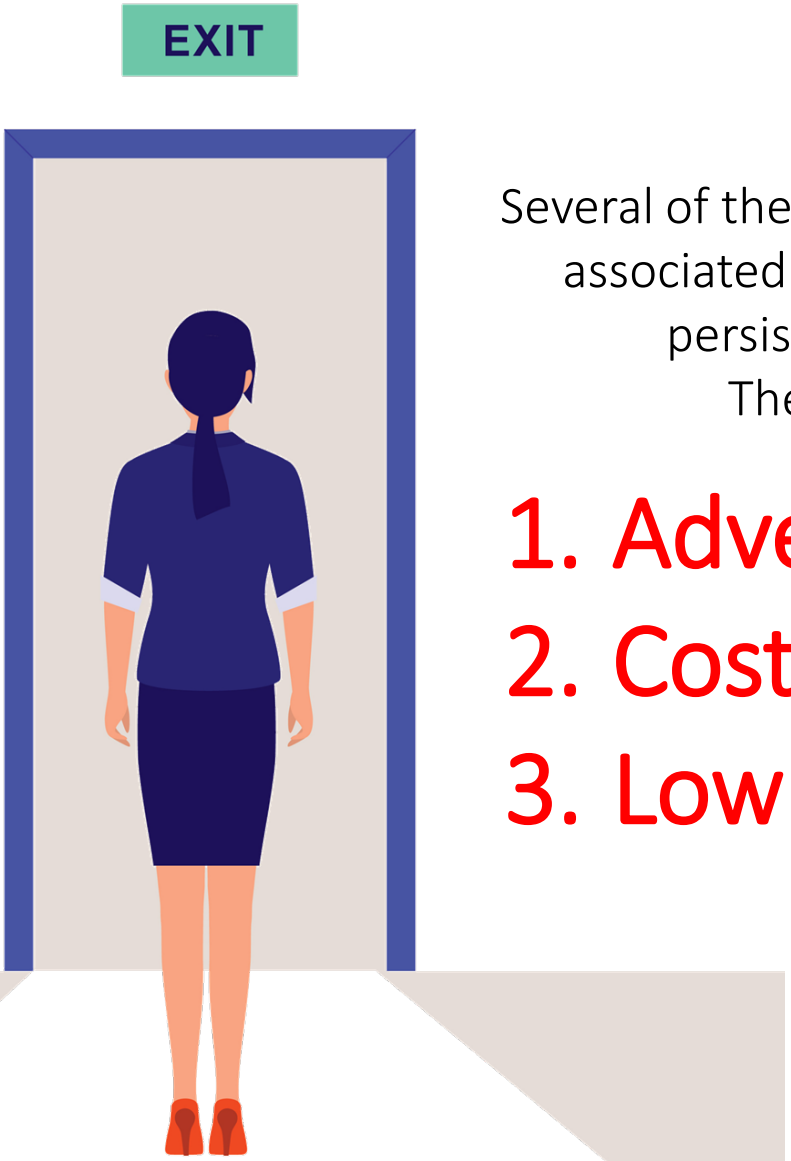
Antimuscarinic Treatment

...Why???

Antimuascrinics

European Association of Urology

2023



Several of the RCTs tried to identify the factors associated with low/lower, adherence or persistence of antimuscarinics.
These were identified as:

1. Adverse events
2. Costs
3. Low level of efficacy

Antimuscarinics: adverse events

Update on the management of overactive bladder

Christina Fontaine, Emma Papworth, John Pascoe and Hashim Hashim

Therapeutic Advances in Urology 2021

Drug		Dose	Uroselective?*	Number needed to treat to achieve cure of urinary incontinence[22]	Relative risk of discontinuation (95% CI)[22]	Adverse events[12,23]
Oxybutynin	Oral	5–15 mg/day	No			Dry mouth (68%) Constipation (10%)
	Transdermal	3.9 mg twice weekly				Dry mouth (7%) Constipation (2.1%) Erythaema at site (8%)
Solifenacin		5–10 mg/day	Yes			Dry mouth (26%) Constipation (12%) Blurred vision (5%)
Darifenacin		7.5–15 mg/day	Yes			Dry mouth (35%) Constipation (21%)
Tolterodine		2 mg twice daily	No			Dry mouth (23%) Constipation (6%) Dry eyes (4%)
Trospium		20 mg twice daily	No			Dry mouth (22.8%) Constipation (9.5%) Abdominal pain (3.1%)
Fesoterodine		4–8 mg once daily	No			Dry mouth (87%) Constipation (87%)

β_3 Adrenergics

European Association of Urology

EAU Guidelines on Management of Non-Neurogenic Female Lower Urinary Tract Symptoms

Summary of evidence	LE
Mirabegron and vibegron are better than placebo for improvement of overactive bladder (OAB)/urge urinary incontinence symptoms.	1a
Adverse event rates with mirabegron and vibegron are similar to those of placebo.	1a
Beta-3 agonists are as effective as antimuscarinics in the management of OAB but with lower dry mouth rates.	1a
Patients inadequately treated with solifenacin 5 mg may benefit more from the addition of mirabegron rather than dose escalation of solifenacin.	1b

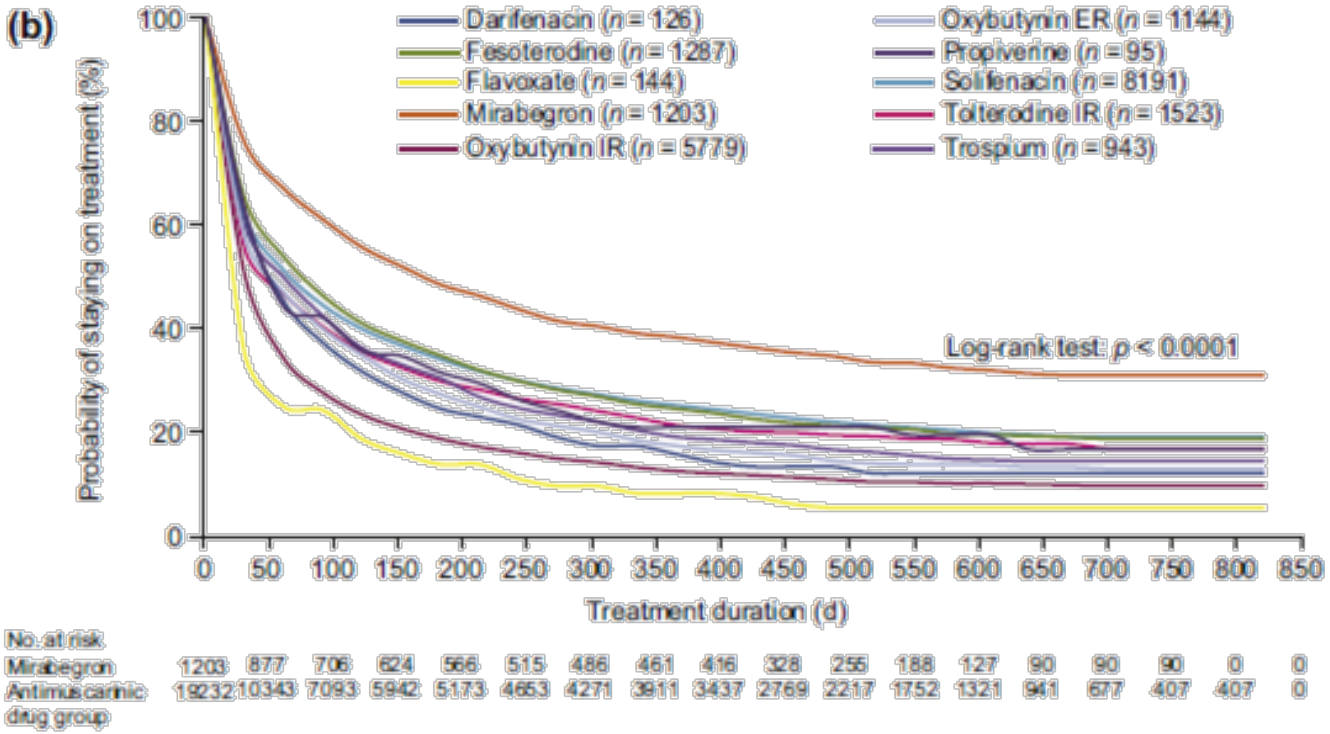
APPROVED

Recommendations	Strength rating
Offer beta-3 agonists as an alternative to anticholinergics to women with overactive bladder who fail conservative treatment.	Strong
Offer mirabegron as an additional therapy in patients who are inadequately treated with solifenacin 5mg.	Weak

Urge Iincontinence: Treatment

Persistence and Adherence with Mirabegron versus Antimuscarinic Agents in Patients with Overactive Bladder: A Retrospective Observational Study in UK Clinical Practice

Christopher R. Chapple [a,], Jameel Nazir [b], Zalmai Hakimi [c], Sally Bowditch [b], Francis Fatoye [d], Florent Guelfucci [e], Amine Khemiri [f], Emad Siddiqui [b], Adrian Wagg [g]*



2017

Persistence at 12 mo was also significantly greater with **mirabegron (38%)** than with other **antimuscarinics (range 8.3–25%);** $p < 0.0001$ for all agents).

β_3 Adrenergics

Systematic review and meta-analysis on the efficacy and tolerability of mirabegron for the treatment of storage lower urinary tract symptoms/overactive bladder: Comparison with placebo and tolterodine

Arcangelo Sebastianelli,[1] Giorgio I Russo,[2] Steven A Kaplan,[3] Kevin T McVary,[4] Ignacio Moncada,[5] Stavros Gravas,[6] Christopher Chapple,[7] Giuseppe Morgia,[2] Sergio Serni[1] and Mauro Gacci[1]

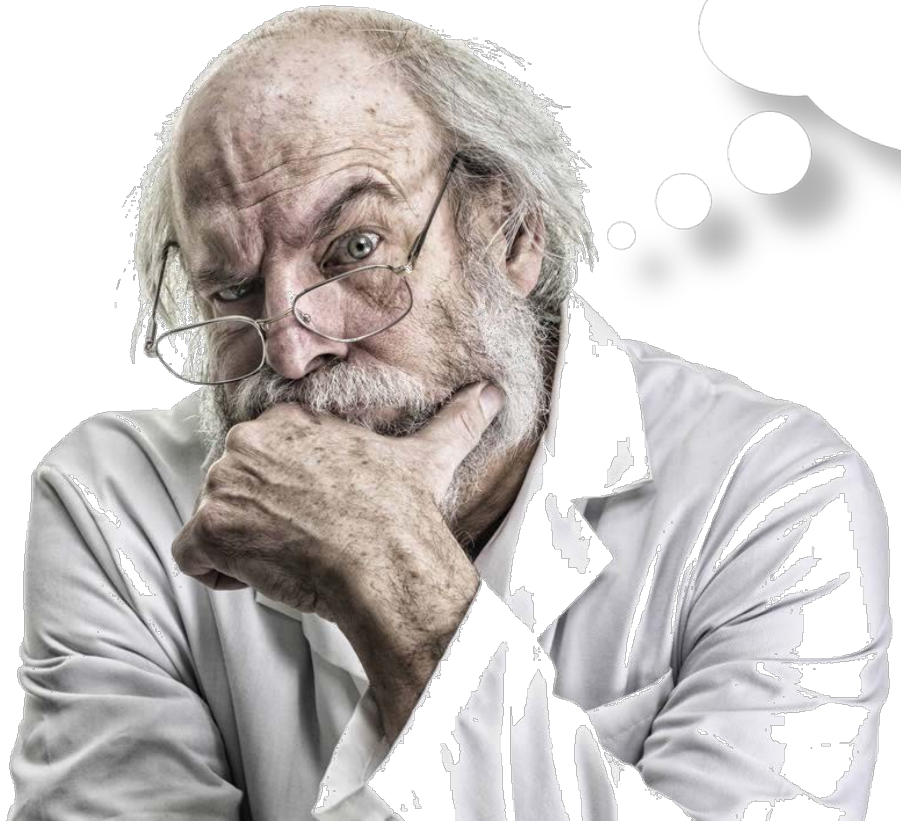
2018

Table 1 Characteristics of the included studies

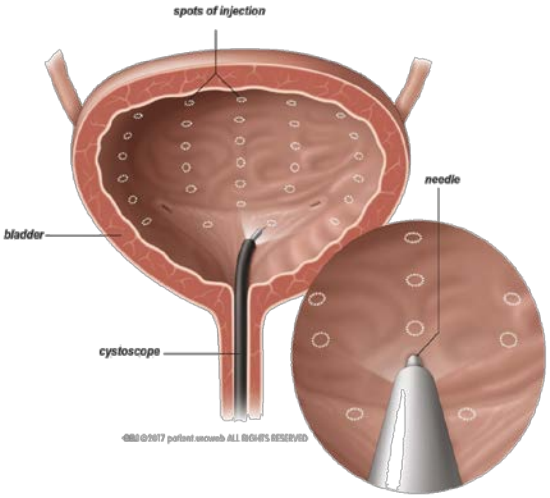
	JADAD score	Patients (*n*)	Age (mean)	Men (%)	Follow up (weeks)	Mir 25 mg (*n*)	Mir 50 mg (*n*)	Mir 100 mg (*n*)	Placebo (*n*)	Tol 4 mg (*n*)
Khullar *et al.* SCORPIO[25]	5	1978	59.1	28.0	12		493	496	494	495
Herschorn *et al.* CAPRICORN[17]	5	1305	59	31.0	12	433	440		433	
Chapple *et al.* DRAGO	3	919	57.1	11.0	12	167	167	168	16	
Chappl TA	5	2452	59.6	25.9	48		815	824		
Ni	3	200	62.9	100	12		70	65		
	5	1328	60.1	25.7	12		442	433	453	
	chi *et al.*[27] 5	1105	58.2	16.3	12		369		368	
	al.[26] 5	1126	54.6	29.1	12		372		377	377

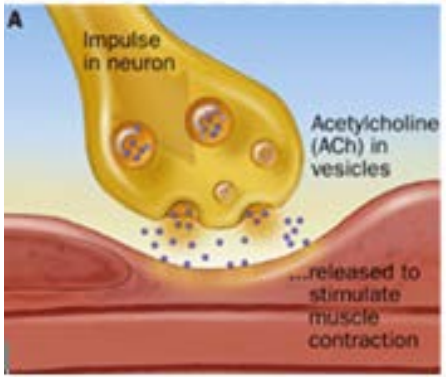
Mirabegron 50 mg and mirabegron 100 mg shared the same risk of overall treatment-emergent adverse events rate with the placebo. Otherwise, tolterodine 4 mg was associated with a significantly greater risk than the placebo. However, mirabegron 100 mg showed a slight trend toward an increased risk of hypertension (odds ratio 1.41; $P = 0.08$) and cardiac arrhythmia (odds ratio 2.18; $P = 0.06$). Mirabegron is an effective treatment for patients with

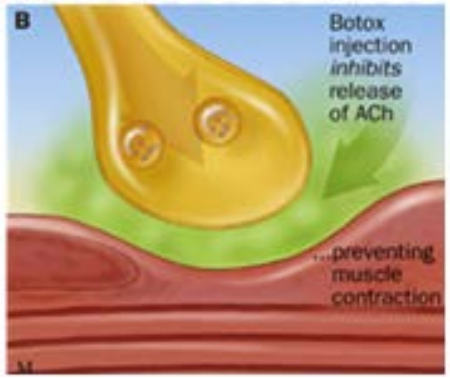
Which is the best treatment?



Onabotulinumtoxin A







European Association of Urology

Recommendations	Strength rating
Offer bladder wall injections of onabotulinumtoxinA (100 U) to patients with overactive bladder / urge urinary incontinence refractory to conservative therapy or drug treatment.	Strong
Warn patients of the limited duration of response, risk of urinary tract infection and possible prolonged need for clean intermittent self-catheterisation prior to offering treatment with onabotulinumtoxinA.	Strong

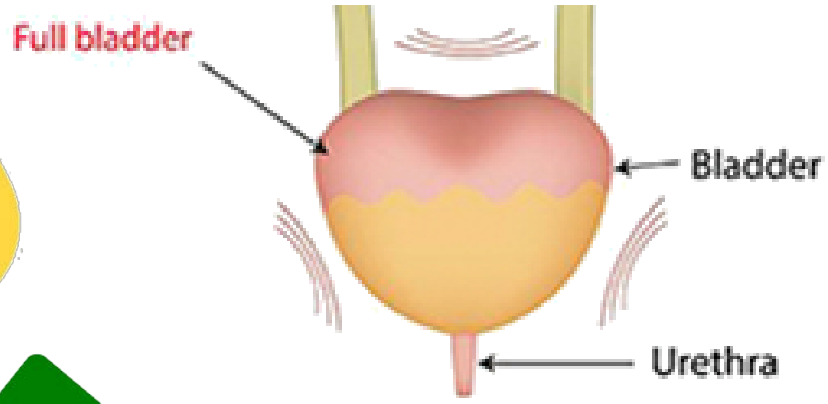
Onabotulinumtoxin A

STATE OF THE ART REVIEW

thebmj

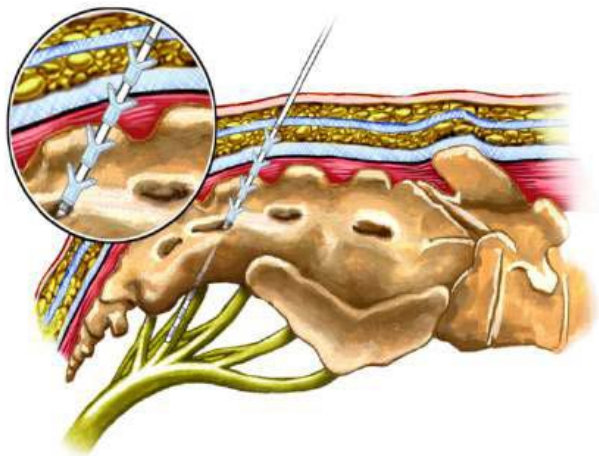
Urinary incontinence in women

Lauren N Wood,[1] Jennifer T Anger[2]



nee elf catheterize temporarily. Patients treated with o ulinumtoxinA have a nearly ninefold increased risk o post-void residual complication, such as urinary retention.[65] When a dose of only 100 U is used, retention requiring catheterization is about 5%.[67]

Sacral Neuromodulation

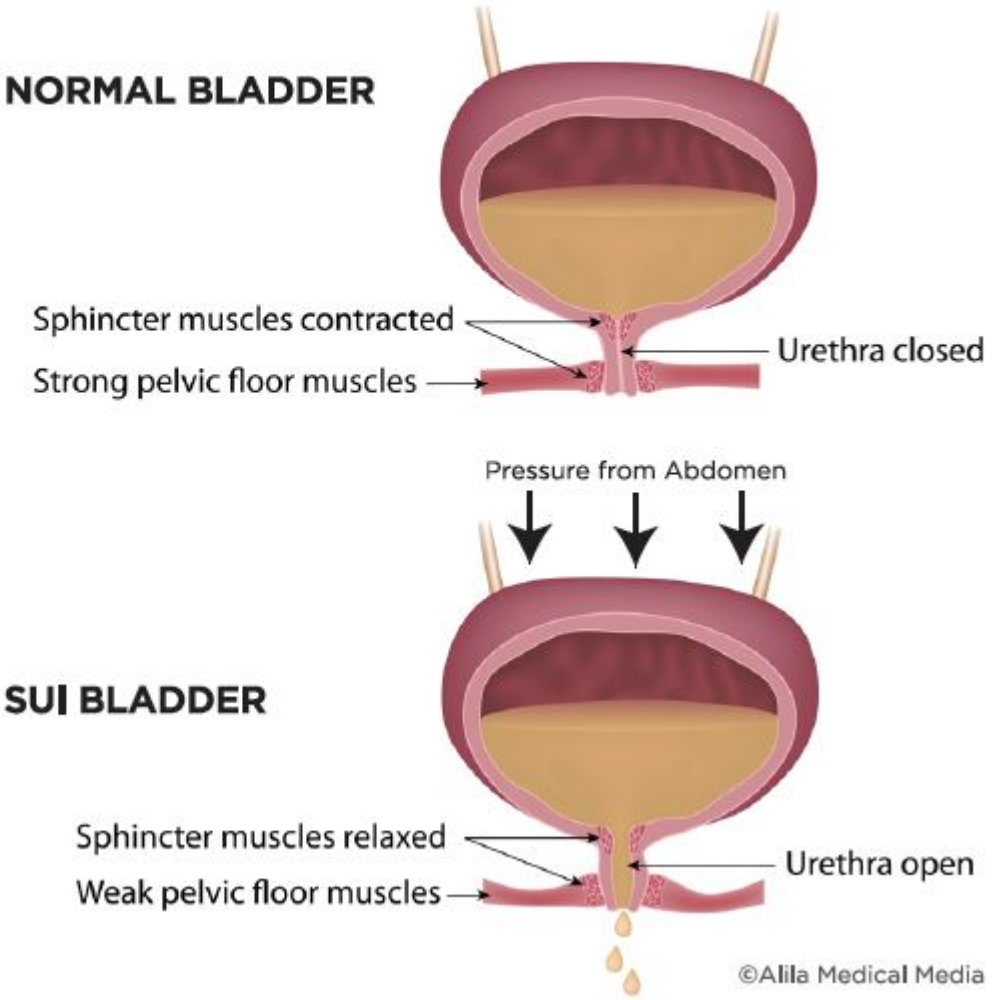


Summary of evidence	LE
Sacral Nerve Stimulation (SNS) is more effective than continuation of failed conservative treatment for overactive bladder/urge urinary incontinence (UUI), but no sham controls have been used.	1b
Sacral nerve stimulation is as effective as onabotulinumtoxinA 200 U detrusor injection at 24 months.	1b
In patients who have been implanted, 50% improvement of UUI is maintained in ≥ 50% of patients and 15% may remain cured at 4 years.	3

European Association of Urology

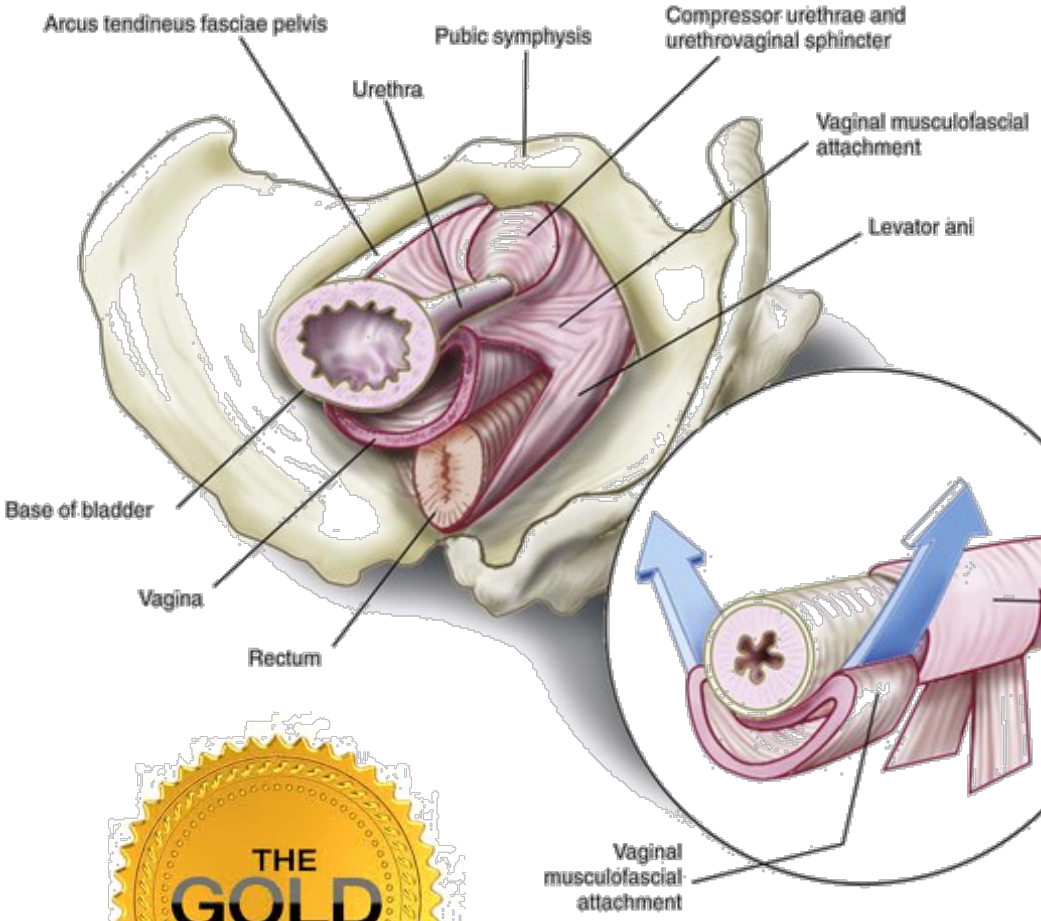
Recommendation	Strength rating
Offer sacral nerve stimulation to patients who have overactive bladder/urge urinary incontinence refractory to anticholinergic therapy.	Strong

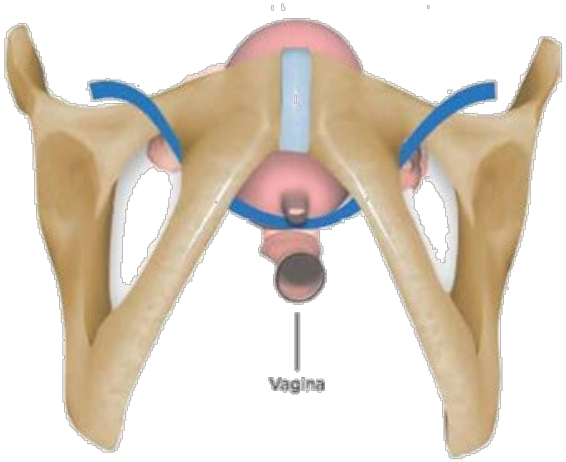
Stress Iincontinence: Treatment

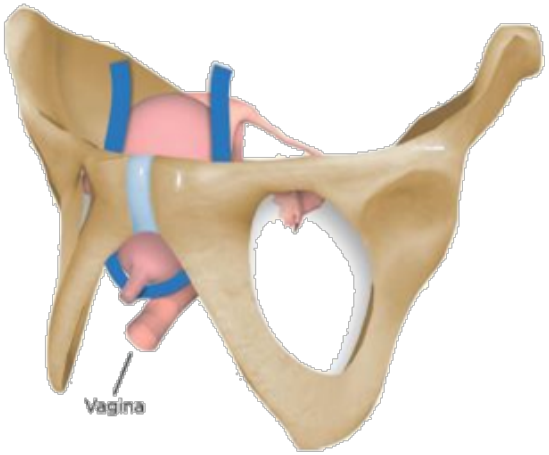


Stress Iincontinence: Treatment

Mid-Urethral Slings



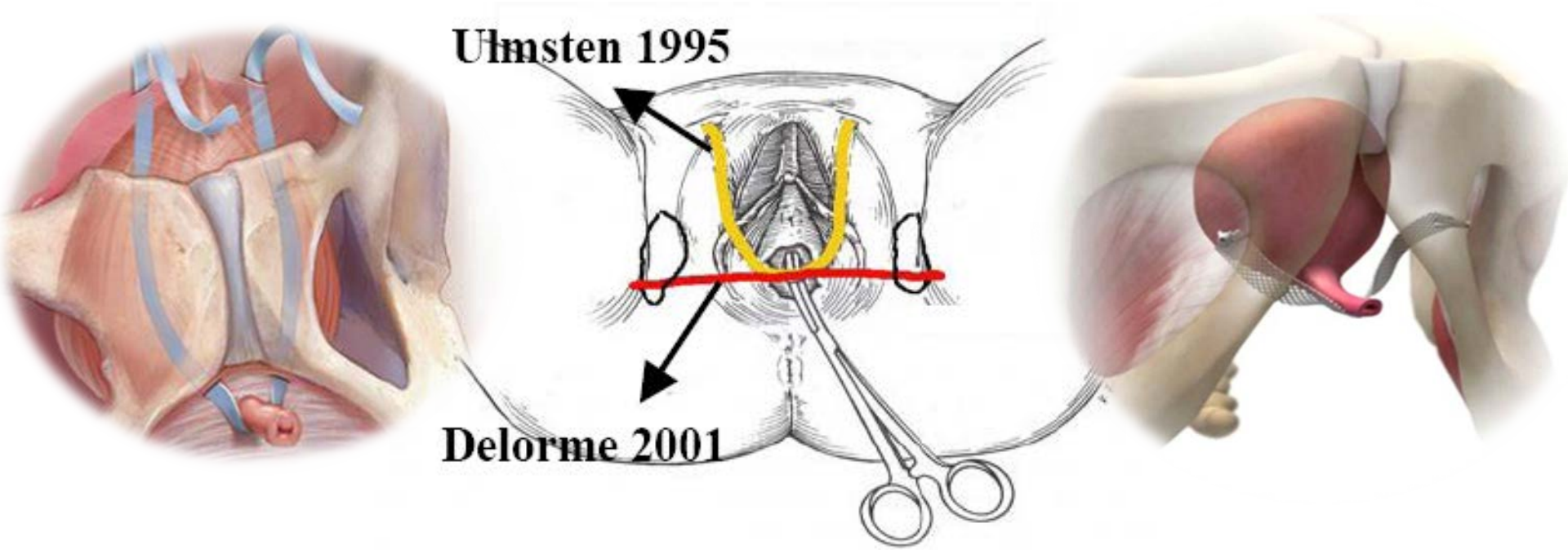




Stress Iincontinence: Treatment

Mid-Urethral Slings: Tension-free Vaginal Tape

Retropubic TVT



Trans-obturator TVT

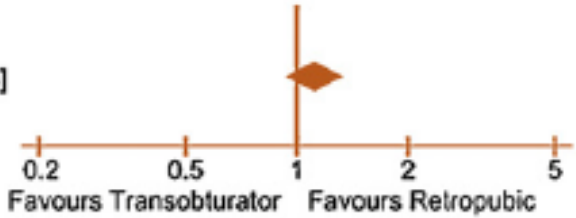
Stress Iincontinence: Treatment

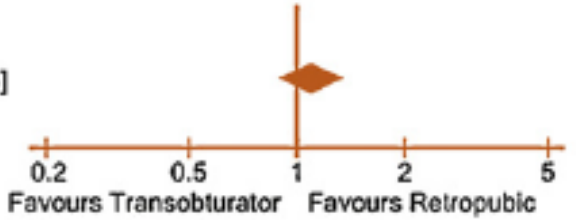
Mid-Urethral Slings: TVT or TVT-O

EAU Guidelines on Surgical Treatment of Urinary Incontinence

Malcolm G. Lucas [a,], Ruud J.L. Bosch [b], Fiona C. Burkhard [c], Francisco Cruz [d], Thomas B. Madden [e], Arjun K. Nambiar [a], Andreas Neisius [f], Dirk J.M.K. de Ridder [g], Andrea Tubaro [h], William H. Turner [i], Robert S. Pickard [j]*

Study or Subgroup	Retropubic Events	Retropubic Total	Transobturator Events	Transobturator Total	Weight	Odds Ratio M-H, Fixed, 95% CI
Objective cure						
Total (95% CI)		2014		2061	100.0%	1.12 [0.94–1.33]
Total events	1713		1734			
Heterogeneity: chi-square = 13.11, df = 23 (p = 0.95); I^2 = 0%						
Test for overall effect: Z = 1.22 (p = 0.22)						
Subjective cure						
Total (95% CI)		1068		1056	100.0%	1.10 [0.89–1.36]
Total events	813		785			
Heterogeneity: chi-square = 4.87, df = 11 (p = 0.94); I^2 = 0%						
Test for overall effect: Z = 0.89 (p = 0.38)						





Stress Iincontinence: Treatment

Mid-Urethral Slings: TVT or TVT-O

EAU Guidelines on Surgical Treatment of Urinary Incontinence

Malcolm G. Lucas [a,], Ruud J.L. Bosch [b], Fiona C. Burkhard [c], Francisco Cruz [d], Thomas B. Madden [e], Arjun K. Nambiar [a], Andreas Neisius [f], Dirk J.M.K. de Ridder [g], Andrea Tubaro [h], William H. Turner [i], Robert S. Pickard [j]*

Bladder or urethral perforation

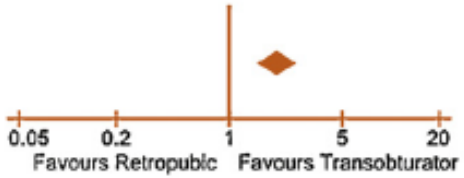
Total (95% CI)	2507	2535	100.0%	7.37 [4.48–12.12]
Total events	114	5		

Heterogeneity: chi-square = 10.17, df = 28 (p = 1.00); I^2 = 0%
Test for overall effect: Z = 7.86 (p < 0.00001)

Voiding dysfunction

Total (95% CI)	2344	2322	100.0%	1.99 [1.53–2.59]
Total events	171	89		

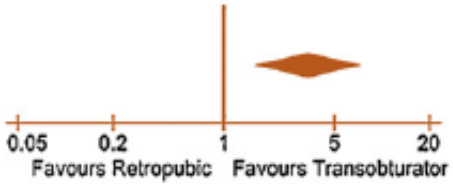
Heterogeneity: chi-square = 23.63, df = 28 (p = 0.42); I^2 = 3%
Test for overall effect: Z = 5.12 (p < 0.00001)



Haematoma

Total (95% CI)	995	948	100.0%	3.46 [1.60–7.47]
Total events	25	4		

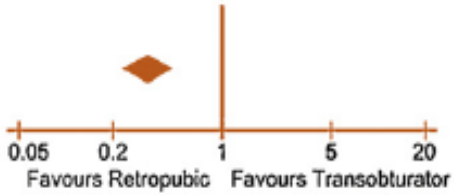
Heterogeneity: chi-square = 3.53, df = 10 (p = 0.97); I^2 = 0%
Test for overall effect: Z = 3.16 (p = 0.002)



Chronic pain

Total (95% CI)	1565	1554	100.0%	0.34 [0.23–0.49]
Total events	35	103		

Heterogeneity: chi-square = 17.94, df = 18 (p = 0.46); I^2 = 0%
Test for overall effect: Z = 5.64 (p < 0.00001)



Stress Iincontinence: Treatment

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European Association of Urology

SAFETY + EFFICACY

Incontinence

Tension-free Vaginal Tape–Obturator for Treatment of Pure Urodynamic Stress Urinary Incontinence: Efficacy and Adverse Effects at 10-year Follow-up

Maurizio Serati[a,*], *Andrea Braga*[b], *Stavros Athanasiou*[c], *Giovanni A.*
Giorgio Caccia[b], *Marco Torella*[e], *Fabio Ghezzi*[a], *Stefano*

[a] *Department of Obstetrics and Gynecology, University of Insubria*
Mendrisio, Switzerland; [c] *First Department of Obst*
Obstetrics and Gynecology, Universi
[f] *Obstetrics and Gynecology*

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Tension-free vaginal tape-obturator
TVT-O
Urinary incontinence

Tension-free vaginal tape for treatment of pure urodynamic stress urinary incontinence: efficacy and adverse effects at 17-year follow-up

Andrea Braga*, Giorgio Caccia*, Paola Sorice†, Simona Cantaluppi‡, Anna Chiara Coluccia‡, Maria Carmela Di Dedda‡, Luca Regusci*, Fabio Ghezzi‡, Stefano Uccella§ and Maurizio Serati‡

*Department of Obstetrics and Gynecology, EOC – Beata Vergine Hospital, Mendrisio, Switzerland, †Department of Obstetrics and Gynecology, G. Fornaroli Hospital, Magenta, Italy, ‡Department of Obstetrics and Gynecology, University of Insubria, Varese, Italy, and §Department of Woman and Child Health, Fondazione Policlinico Gemelli, Rome, Italy

Objective

…y and safety of retropubic tension-free …implantation for the …ence (SUI).

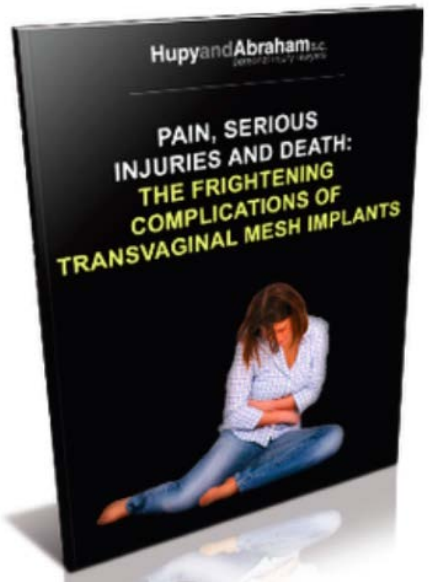
evaluation. We did not find any significant change in surgical outcomes during this time. At 17 years after surgery, 41 of 46 women (89.1%) declared themselves cured ($P = 0.98$). Similarly, at 17-year evaluation, 42 of 46 women (91.4%) were objectively cured. No significant deterioration in …ctive cure rates was observed over time (P for trend 0.50). …analysis did not find any risk factor … recurrence of SUI. Of the 46 … two overactive

which doubts?

FDA U.S. FOOD & DRUG ADMINISTRATION

FDA NEWS RELEASE

FDA takes action to protect women's health, orders manufacturers of surgical mesh intended for transvaginal repair of pelvic organ prolapse to stop selling all devices



British Government has announced a national 'pause' in the use of surgical mesh/tape to treat stress urinary incontinence and for urogynaecological prolapse

21 Aug 2018

which doubts?

International Journal of GYNECOLOGY & OBSTETRICS

FIGO review of statements on use of synthetic mesh for pelvic organ prolapse and stress urinary incontinence

Aiste Ugianskiene[1] | G. Willy Davila[2,*] | Tsung-Hsien Su[3] | for the FIGO Urogynecology and Pelvic Floor Committee

AUGS, AUA, CUA, RANZCOG, UGSA, Scottish review, RCOG, Canadian Government, SCENIHR, FDA, ACOG, FEBRASGO, Japan, NAFC, NICE, IUGA, SGS, ICS, SUFU, EAU, EUA

Extensive data support the use of synthetic polypropylene suburethral mesh for the treatment of female SUI


Long-Term

Stress Iincontinence: Treatment

Mid-Urethral Slings: Retropubic TVT

The subjective and objective very long-term outcomes of TVT in the COVID era: A 20-year follow-up

Andrea Braga[1,2] · Giorgio Caccia[1] · Andrea Papadia[2,3] · Fabiana Castronovo[1] · Stefano Salvatore[4] · Chiara Scancarello[5] · Marco Torella[6] · Fabio Ghezzi[5] · Maurizio Serati[5]

Table 2 Cure rates at the 1-, 5-, 10-, 15-, 17- and 20-year follow-up visits

	1 yr	5 yr	10 yr	15 yr	17 yr	20 yr	*p* value
Subjective outcomes Satisfied (N)	92% (46/50)	92% (46/50)	89.3% (42/47)	89.1% (41/46)	89.1% (41/46)	88.8% (32/36)	0.98 [a] 0.50 [b]
Objectively cured Objectively cured (at stress test)	94% (47/50)	94% (47/50)	93.6% (44/47)	91.3% (42/46)	91.3% (42/46)	91.7% (33/36)	0.98 [a] 0.48 [b]
De novo overactive bladder Onset of OAB	12% (6/50)	12% (6/50)	19.1% (9/47)	23.9% (11/46)	32.6% (15/46)	41.6% (15/36)	0.004 [a]

[a]Chi-square test; [b]chi square test for trend

The null hypothesis is that there is no association between the cure rate of TVT and the time

Stress Iincontinence: Treatment

Mid-Urethral Slings: Retropubic TVT

The subjective and objective very long-term outcomes of TVT in the COVID era: A 20-year follow-up

Andrea Braga[1,2] · Giorgio Caccia[1] · Andrea Papadia[2,3] · Fabiana Castronovo[1] · Stefano Salvatore[4] · Chiara Scancarello[5] · Marco Torella[6] · Fabio Ghezzi[5] · Maurizio Serati[5]

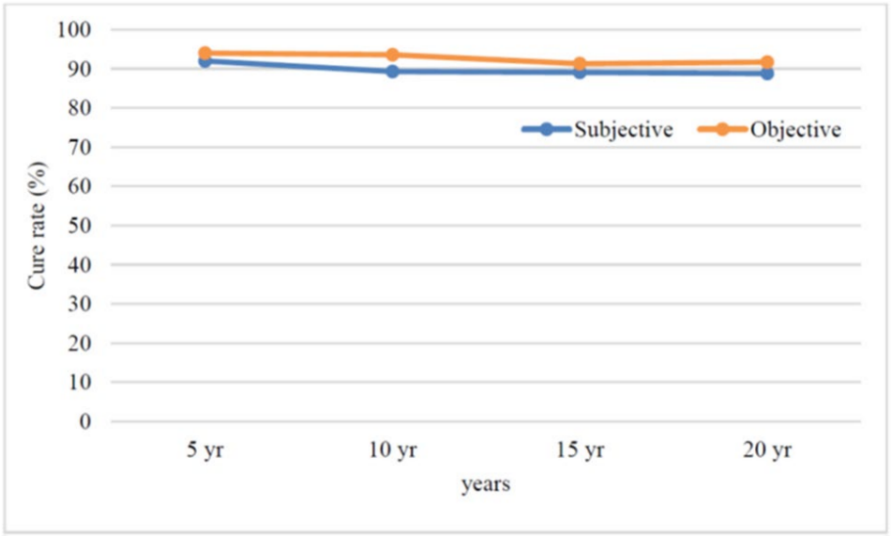


Table 4 Clavien-Dindo classification of long-term complications

Complication	*N* = 36	Action
Clavien I		
Persistence of voiding dysfunction	2 (3.8%)	Observation
Clavien II		
De novo OAB	15 (41.6%)	Antimuscarinics/ β-agonists
Recurrent UTIs	2 (3.8%)	Antimicrobial prophylaxis or therapy

Data are expressed as an absolute number (%)

Stress Iincontinence: Treatment

Mid-Urethral Slings: Trans-Obturator TVT

TVT-O for treatment of pure urodynamic stress urinary incontinence: Efficacy and adverse effects at 13-years follow-up

Maurizio Serati MD[1] | Andrea Braga MD[2] | Giorgio Caccia MD[2] | Marco Torella MD[3] | Fabio Ghezzi MD[1] | Stefano Salvatore MD[4] | Stavros Athanasiou MD[5]

	1 y	5 y	10 y	13 y	*P* value
Objective outcomes					
Women objectively cured with data available at 1, 5, 10, and 13, y	157/165 95%	149/161 91%	148/160 92%	141/157 90%	.34[a] .10[b]
Subjective outcomes					
Women subjectively cured with data available at 1, 5, 10, and 13, y	157/165 95%	155/161 95%	155/160 97%	150/157 95%	0.86[a] 0.78[b]

Stress Iincontinence: Treatment

Mid-Urethral Slings: Trans-Obturator TVT

TVT-O for treatment of pure urodynamic stress urinary incontinence: Efficacy and adverse effects at 13-years follow-up

Maurizio Serati MD[1] | Andrea Braga MD[2] | Giorgio Caccia MD[2] | Marco Torella MD[3] | Fabio Ghezzi MD[1] | Stefano Salvatore MD[4] | Stavros Athanasiou MD[5]

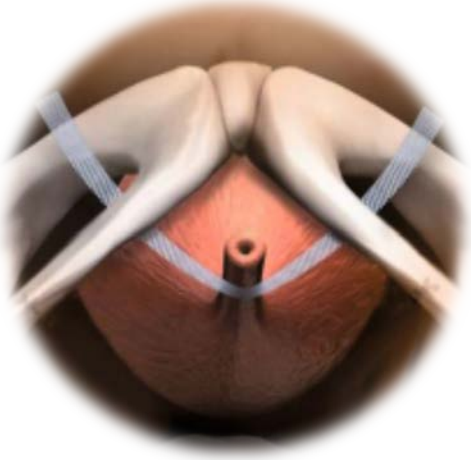
TABLE 4 Clavien-Dindo classification of long-term complications

Complication	N = 157	Action
CLAVIEN I		
Persistence of groin pain no (%)	1 (0.6%)	Observation
Persistence of voiding dysfunction	2 (1.3%)	Observation
CLAVIEN II		
De novo overactive bladder, no. (%)	25 (15.6%)	Antimuscarinics
De novo dyspareunia, no. (%)	4/91* (4.4%)	Local estrogenic therapy
CLAVIEN IIIa		
Tape exposure, no. (%)	4 (2.5%)	Partial removal and resuture

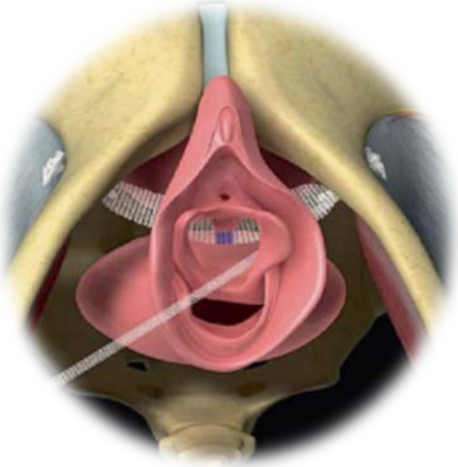
Stress Iincontinence: Treatment

TVT

TOT



SIS



1995

2001

2006

Bladder injury
Vascular injury
Bowel injury

Obturator nerve injury
Obturator vascular injury
Adductor muscle injury

Stress Iincontinence: Treatment

Miniarc®

Ajust®

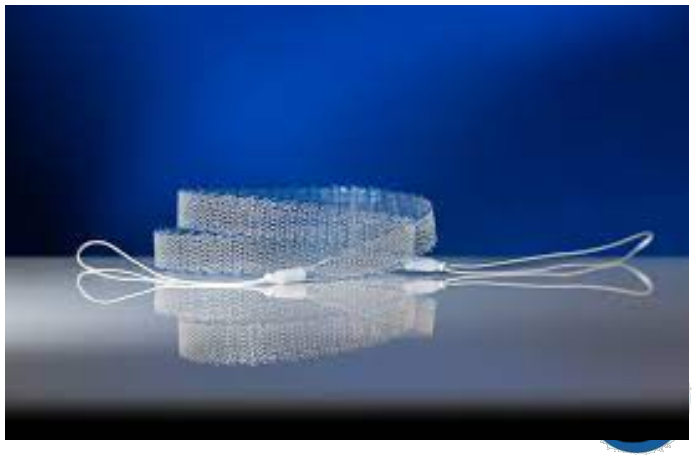
Ophira®

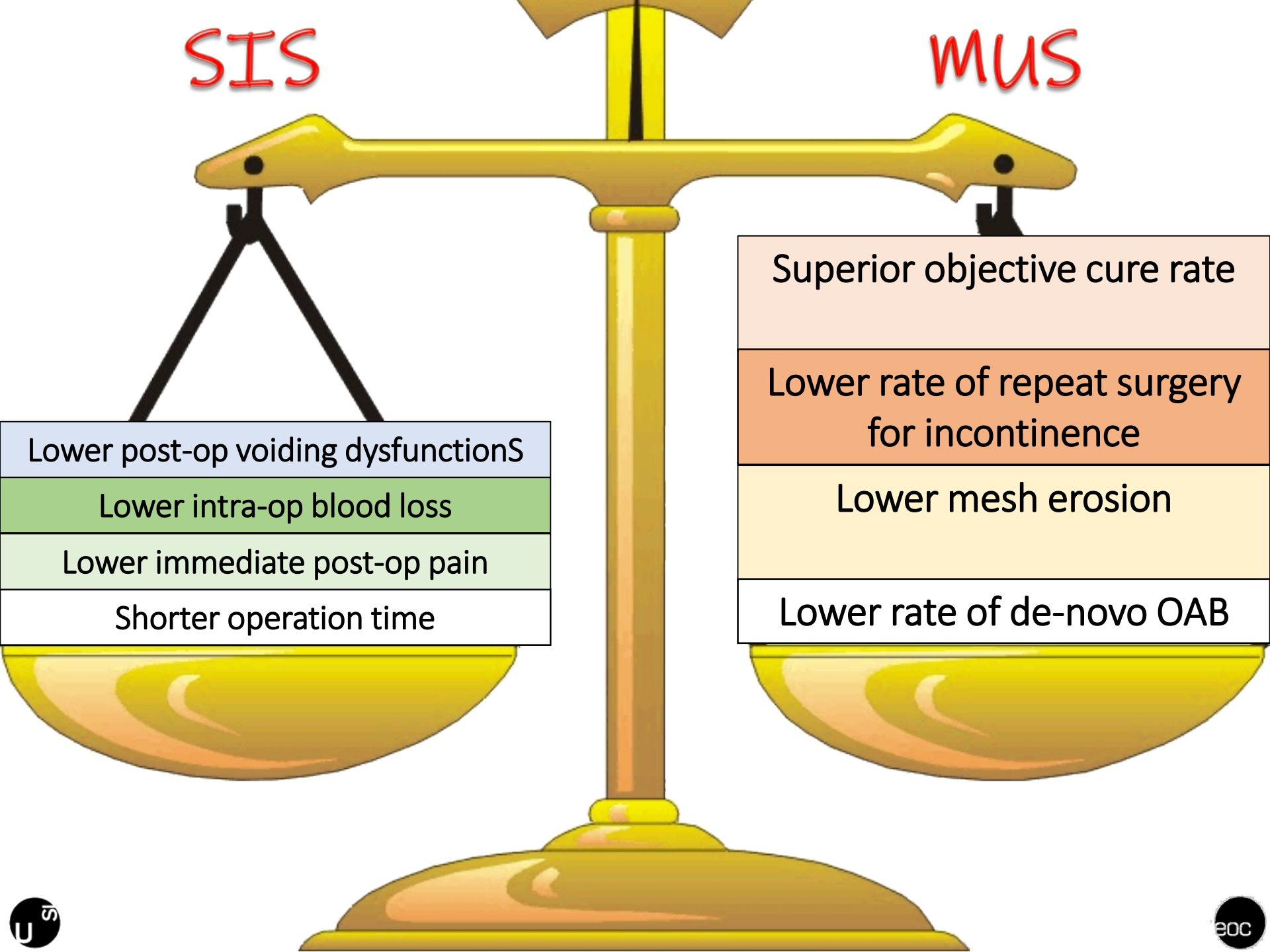
Solyx®

Altis®

TVT S®

Contasure needleless®




SIS
MUS
Lower post-op voiding dysfunctionS
Lower intra-op blood loss
Lower immediate post-op pain
Shorter operation time
Superior objective cure rate
Lower rate of repeat surgery for incontinence
Lower mesh erosion
Lower rate of de-novo OAB

Stress Iincontinence: Treatment

Article

Medium Term Outcomes of TVT-Abbrevo for the Treatment of Stress Urinary Incontinence: Efficacy and Safety at 5-Year Follow-Up

medicina

Andrea Braga [1,2,*], Fabiana Castronovo [1], Anna Ottone [1], Marco Torella [3], Stefano Salvatore [4], Alessandro Ferdinando Ruffolo [4], Matteo Frigerio [5], Chiara Scancarello [6], Andrea De Rosa [6], Fabio Ghezzi [6], Andrea Papadia [2,7], Giorgio Caccia [1] and Maurizio Serati [6]

Table 2. Analysis of cure rates across the study period.

	1 Year	2 Year	3 Year	5 Year	*p* Value
Subjectively cured, no. (%)	48/50 (96)	46/50 (92)	44/49 (89.8)	38/45 (84.4)	0.27 a 0.05 b
Objectively cured, no. (%)	49/50 (98)	48/50 (96)	45/49 (91.8)	40/45 (88.9)	0.25 a 0.04 b
De novo OAB, no. (%)	2/50 (4)	3/50 (6)	7/49 (14.2)	10/45 (22.2)	0.02 a 0.002 b

OAB: overactive bladder; a: chi-squared test; b: chi-squared test for trend.

Table 4. Groin–thigh pain after TVT-A procedure.

	Day 0	Day 1	1 Month	5 Year	*p* Value
Patients with pain, no. (%)	31/50 (62)	12/50 (24)	0/49 (0)	0/45 (0)	<0.0001 a <0.0001 b
Pain, VAS score, median (IQR)	2 (0–8)	1 (0–7)	0 (0)	0 (0)	0.04 *
Patients with pain VAS $\geq$ 5, no. (%)	4/50 (8)	3/50 (6)	0/49 (0)	0/45 (0)	0.06 a 0.01 b

VAS: Visual Analogue Scale; a: chi-squared test; b: chi-squared test for trend. * One-way ANOVA.

Stress Iincontinence: Treatment

Article

Medium Term Outcomes of TVT-Abbrevo for the Treatment of Stress Urinary Incontinence: Efficacy and Safety at 5-Year Follow-Up

Andrea Braga [1,2,*], Fabiana Castronovo [1], Anna Ottone [1], Marco Torella [3], Stefano Salvatore [4], Alessandro Ferdinando Ruffolo [4], Matteo Frigerio [5], Chiara Scancarello [6], Andrea De Rosa [6], Fabio Ghezzi [6], Andrea Papadia [2,7], Giorgio Caccia [1] and Maurizio Serati [6]

Table 5. Clavien–Dindo classification of long-term complications.

Complication
Clav
Clavi
Clavie
exposu
Sy

International Urogynecology Journal
https://doi.org/10.1007/s00192-019-04159-6

ORIGINAL ARTICLE

Check for updates

Mid-urethral sling in a day surgery setting: is it possible?

Andrea Braga[1] · Giorgio Caccia[1] · Luca Regusci[1] · Stefano Salvatore[2] · Andrea Papadia[3] · Maurizio Serati[4]

Received: 26 June 2019 / Accepted: 16 October 2019

Abstract
Introduction and hypothesis Several studies have shown that immediate catheter removal following pelvic surgery is associated with several advantages. The aim of this case–control study is to compare immediate versus delayed catheter removal following mid-urethral sling surgery, to determine if indwelling catheterisation is necessary after this procedure. The secondary outcomes were subjective and objective cure rate after at least a 1-year follow-up.
were defined as all the women who underwent a TVT Abbrevo for urodynamically proven stress incontinence. In
the surgeon at the end of the procedure. A voided volume >200 ml with a post-void
successfully completed the voiding trial and who did
cohort of women who

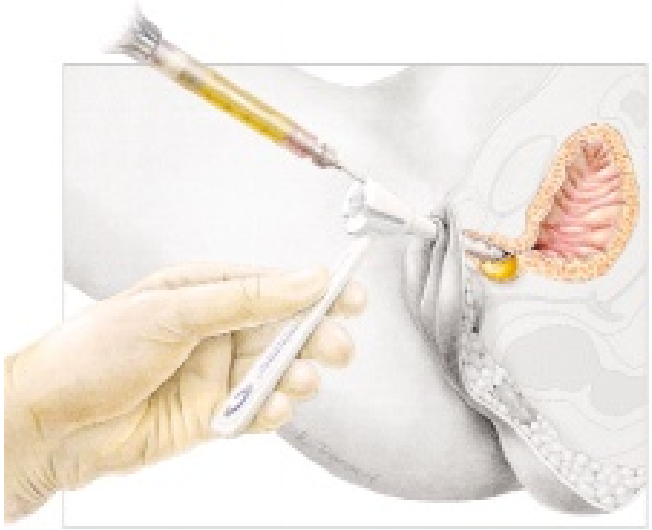
Stress Iincontinence: Treatment

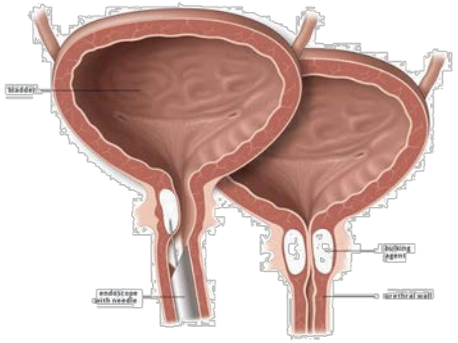
Bulking agents

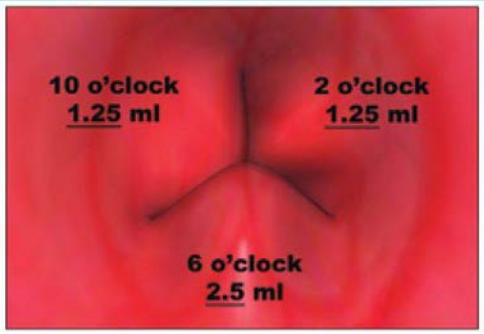
Urethral bulking agents versus other surgical procedures for the treatment of female stress urinary incontinence: a systematic review and meta-analysis

Umberto Leone Roberti Maggiore [a], Giorgio Bogani [b], Michele Meschia [c], Paola Sorice [b], Andrea Braga [b], Stefano Salvatore [a], Fabio Ghezzi [b], Maurizio Serati [b,*]

- Minimally invasive
- Well tolerated
- Easy to perform
- Ambulatory office procedure
- Local anaesthetic technique







Particularly in special conditions:
patients who are fragile, in those who do not wish to have surgery, or in whom surgical options are restricted (postoperatively, after irradiation).

Stress Iincontinence: Treatment

Bulking agents

BJUI
BJU International

Efficacy and safety of polydimethylsiloxane injection (Macroplastique®) for the treatment of female stress urinary incontinence: results of a series of 85 patients with ≥3 years of follow-up

Maurizio Serati*, Marco Soligo†, Andrea Braga‡, Simona Cantaluppi*, Anna C. Coluccia*, Maria C. Di Dedda*, Stefano Salvatore§, Irene Cetin†, Fabio Ghezzi* and On behalf of Publication Committee of the Italian Society of Urodynamics

Cured at 3-months, % (*n*/*N*)	Cured at 1-year, % (*n*/*N*)	Cured at 2-years, % (*n*/*N*)	Cured at 3-years, % (*n*/*N*)	Cured at last follow-up (≥3 years), % (*n*/*N*)	*P*
Objective outcomes					
53 (45/85)	51 (43/85)	48 (41/85)	47 (40/85)	47 (40/85)	0.9* HR (95% CI) 1.3 (0.7–2.3) 0.4†
Subjective outcomes					
53 (45/85)	51 (43/85)	51 (43/85)	51 (43/85)	49 (42/85)	0.67* HR (95% CI) 1.1 (0.6–2.0) 0.44†

**Chi-squared test; †Chi-squared test for trend.*

Clavien–Dindo complication grade	*N* (%)(*N* = 85)	Action
Grade I		
Voiding dysfunction	1 (1.2%)	Observation
Grade II		
De novo OAB	1 (1.2%)	Antimuscarinics
Urethral pain	1 (1.2%)	Analgesic drugs.

Stress Iincontinence: Treatment

Bulking agents

Contents lists available at ScienceDirect

Maturitas

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

Review article

Urethral bulking agents for the treatment of recurrent stress urinary incontinence: A systematic review and meta-analysis

Andrea Braga [a,b,*], Giorgio Caccia [a], Andrea Papadia [b,c], Giorgio Treglia [b,d,e], Fabiana Castronovo [a], Stefano Salvatore [f], Marco Torella [g], Fabio Ghezzi [h], Maurizio Serati [h,i]

Table 4
Subgroup meta-analysis.

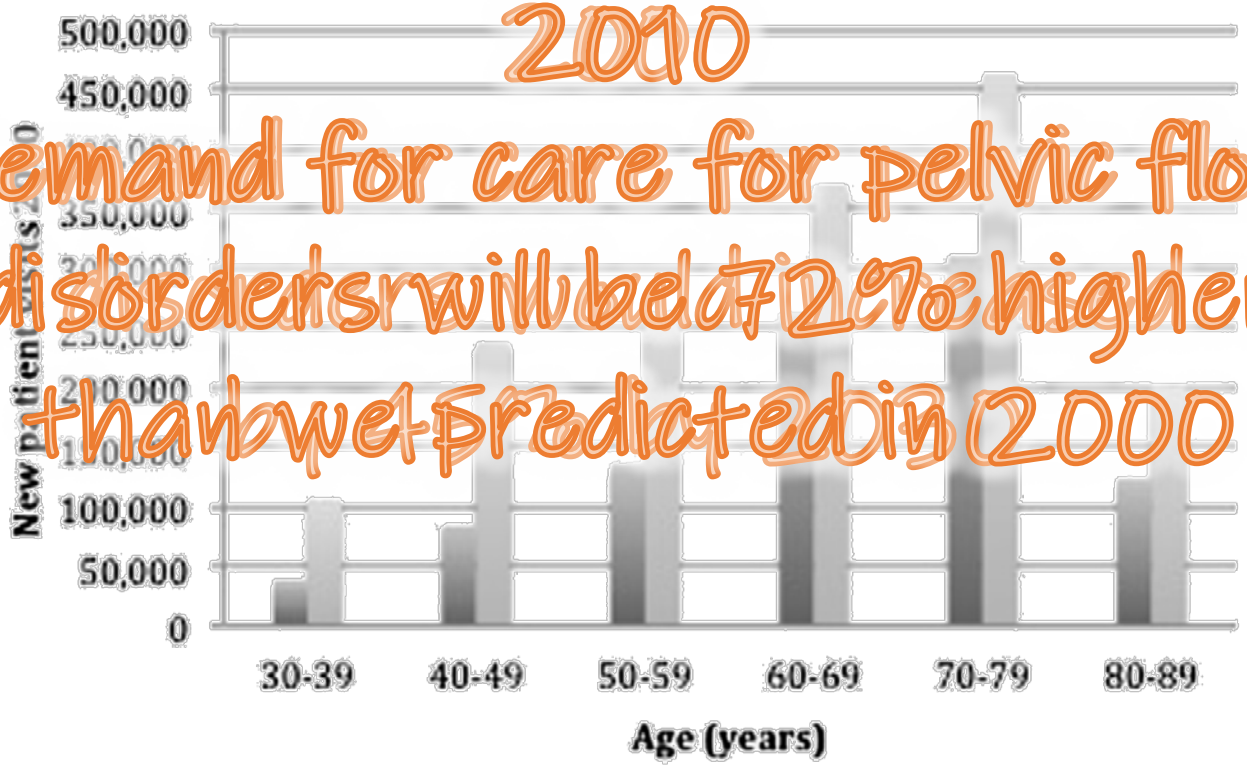
Bulking agent	Cure and Improvement rate	Failure rate	Re-operation rate
Macroplastique .	0.84 (95%CI: 0.77–0.90) $I^2 = 0\%$	0.40 (95%CI: 0.19–0.63) $I^2 = 80\%$	0.31 (95%CI: 0.20–0.43) $I^2 = 33\%$
Bulkamid	0.80 (95%CI: 0.74–0.85) $I^2 = 5\%$	0.20 (95%CI: 0.14–0.26) $I^2 = 14\%$	0.24 (95%CI: 0.13–0.37) $I^2 = 46\%$


CONCLUSION

In conclusion...

An update on the current and future demand for care of pelvic floor disorders in the United States; Kirby AC, Luber KM, Menefee SA AJOG 2010

FIGURE 5
Projected annual new patient visits for PFDs in 2030



Dark gray bar. based on 2000 data (n = 954,351). *Light gray bar.* based on 2010 data (n = 1,644,807).

PFD, pelvic floor disorder.

2010
Demand for care for pelvic floor disorders will be 47% higher than we predicted in 2000

In conclusion...

"Hello,

Incontinence helpline,

Can you hold?"

PREVENTION WORKS!

WE CAN DO IT
GIPHY


Quality of Life

Città di
Mendrisio

Grazie...