

# Urinary incontinence in women

## Epidemiology

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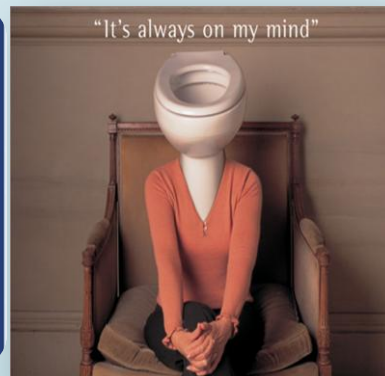
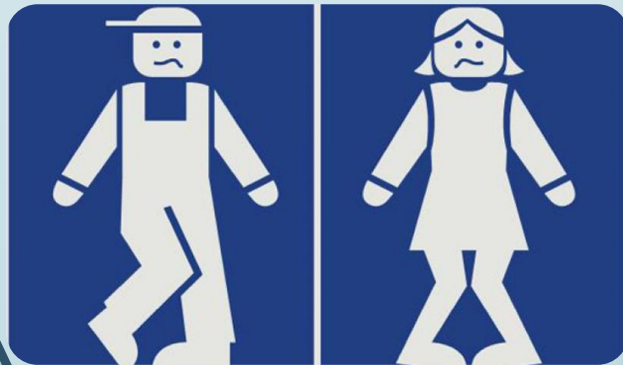
**Tabriz University of Medical Sciences**



# Definition

*Urinary incontinence:*

***Involuntary loss of urine***



# Main Types of Incontinence

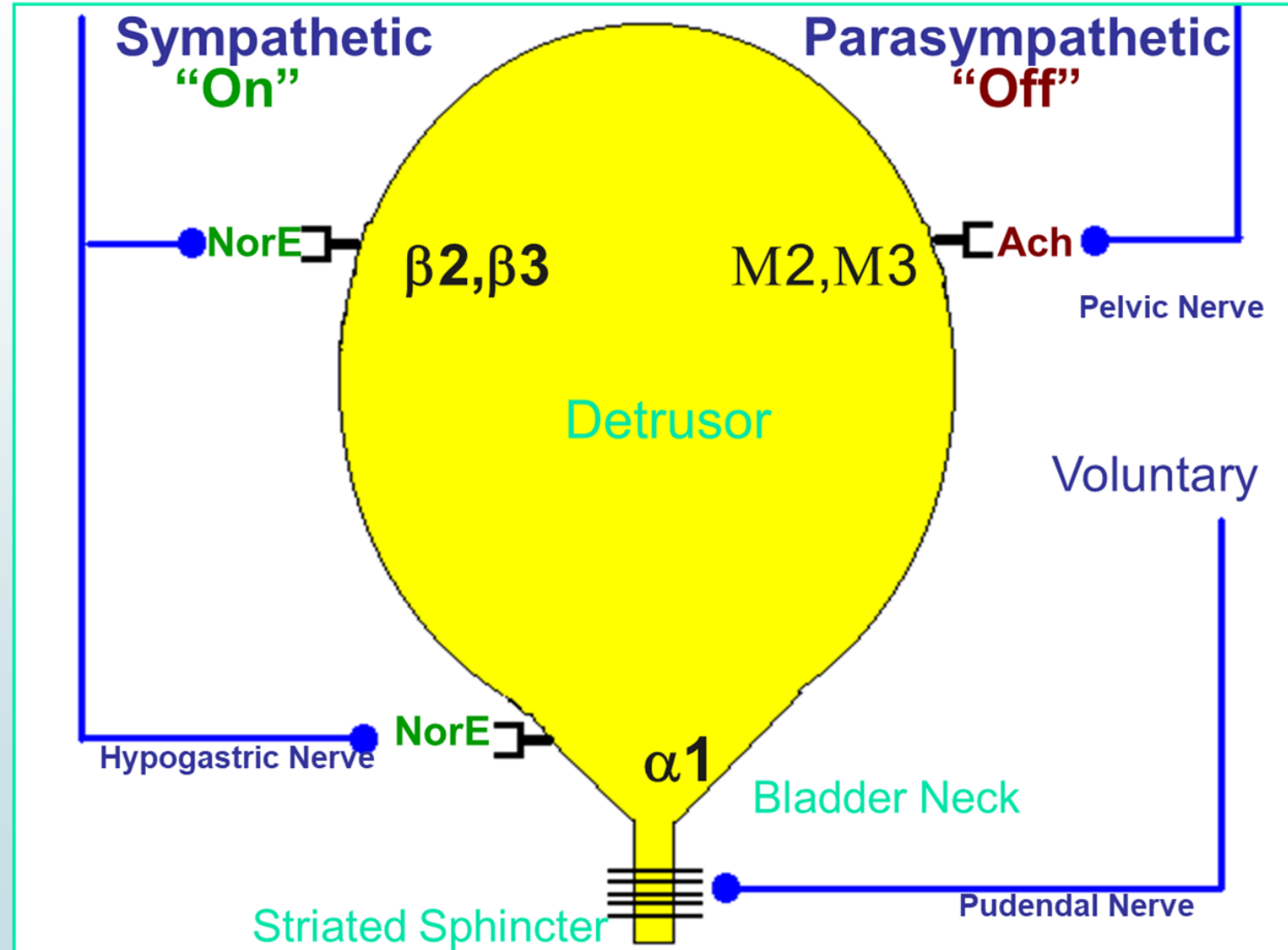
- **Stress incontinence:** Loss of urine with exertion or sneezing or coughing.
- **Urgency incontinence:** Leakage accompanied by or immediately preceded by urinary urgency.
- **Mixed incontinence:** Loss of urine associated with urgency and also with exertion, effort, sneezing, or coughing.
- **Overflow incontinence:** Leakage of urine associated with urinary retention.
- **Continuous incontinence:** Is the complaint of a continuous leakage.

# What is Needed for Normal Bladder Function?

- **Filling** - Efficient and low pressure
- **Storage** - Low pressure, with perfect continence
- **Emptying** - Periodic complete urine expulsion, at low pressure, when convenient
- **Bladder innervation**
  - **Sympathetic** (Hypogastric nerve)
  - **Parasympathetic** (Pelvic Nerve)
  - **Somatic** (Pudendal Nerve)

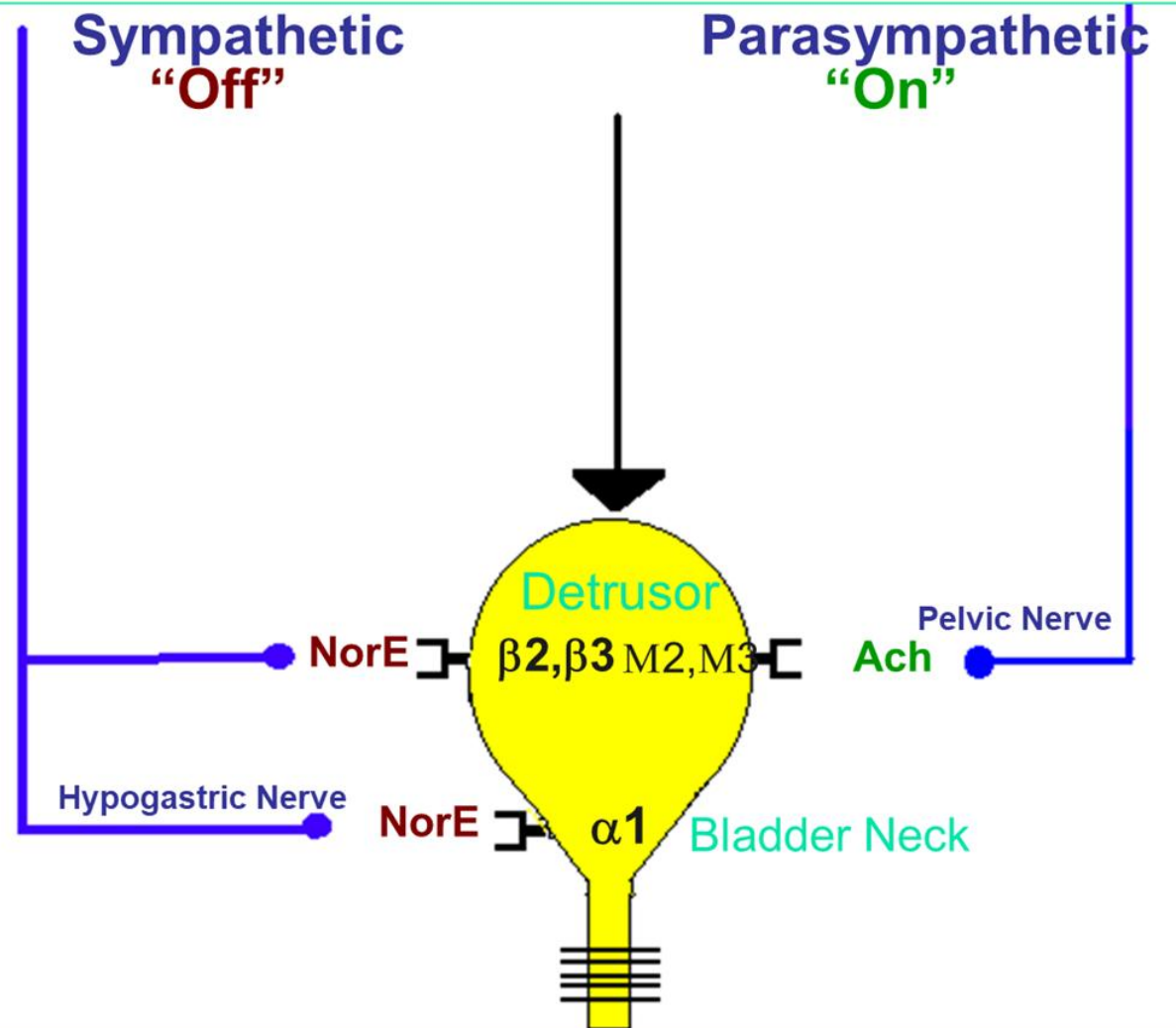
# Storage Phase

## Normal Bladder Function: Bladder Filling



# Voiding Phase

## Normal Bladder Function: Bladder Emptying



# Lower Urinary Symptoms

	storage	voiding	Post micturition
<b>Dysfunction</b>	Overactivity Decreased compliance Hypersensitivity Underactivity Stress urinary incontinence Combination fistula	Underactivity outlet obstruction Functional disorders Combination	Post- void dribble incomplete emptying
<b>symptoms</b>	Urgency Frequency Nocturia incontinence	Hesitancy Intermittency Slow stream Splitting or spraying Terminal dribble	Post- void dribble Feeling of incomplete emptying

# Terminology



## ► OVERACTIVE BLADDER (ABRAMS ET AL. 2002)

The International Continence Society (ICS) defined overactive bladder (OAB) syndrome as **“urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence (UUI), in the absence of urinary tract infection (UTI) or other obvious pathology”**

## ► OAB

**Wet:** urgency ,frequency with incontinence

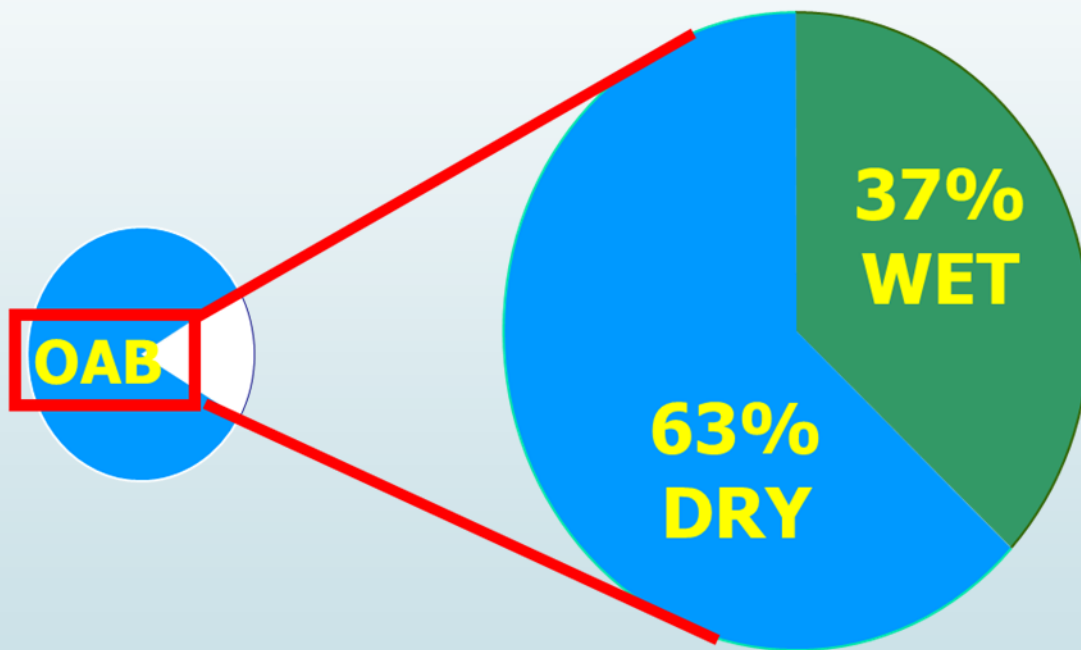
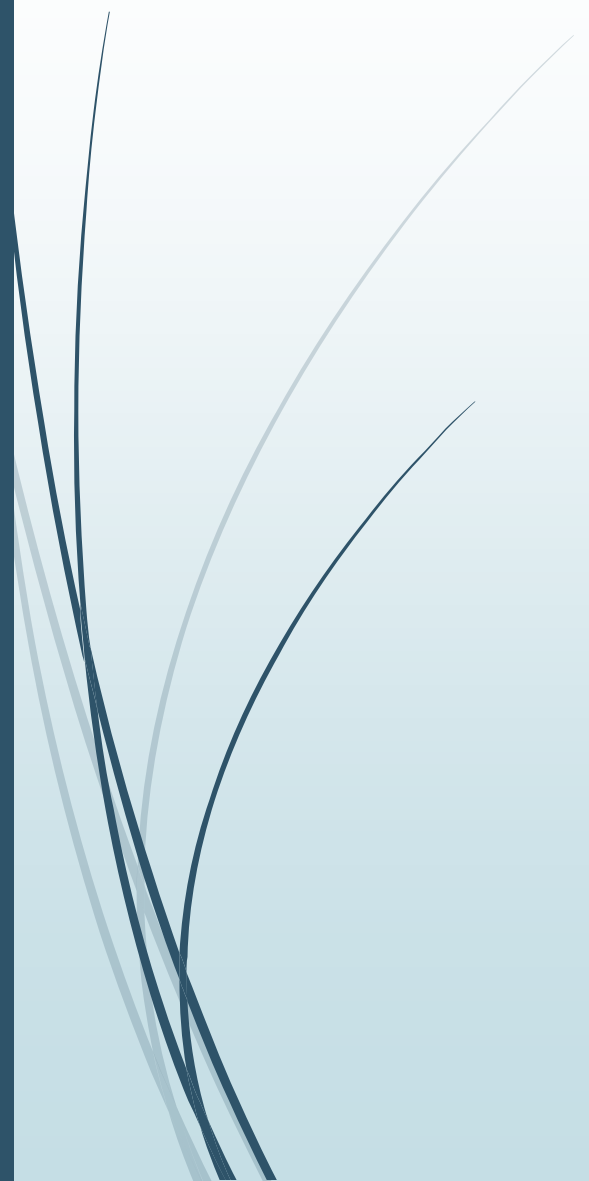
**Dry:** urgency ,frequency without incontinence

## ► URGENCY (HAYLEN ET AL. 2010)

**Sudden, compelling desire to void which is difficult to defer.**







## Standardized Terminology and Definitions to Describe Lower Urinary Tract Dysfunction Related to Overactive Bladder

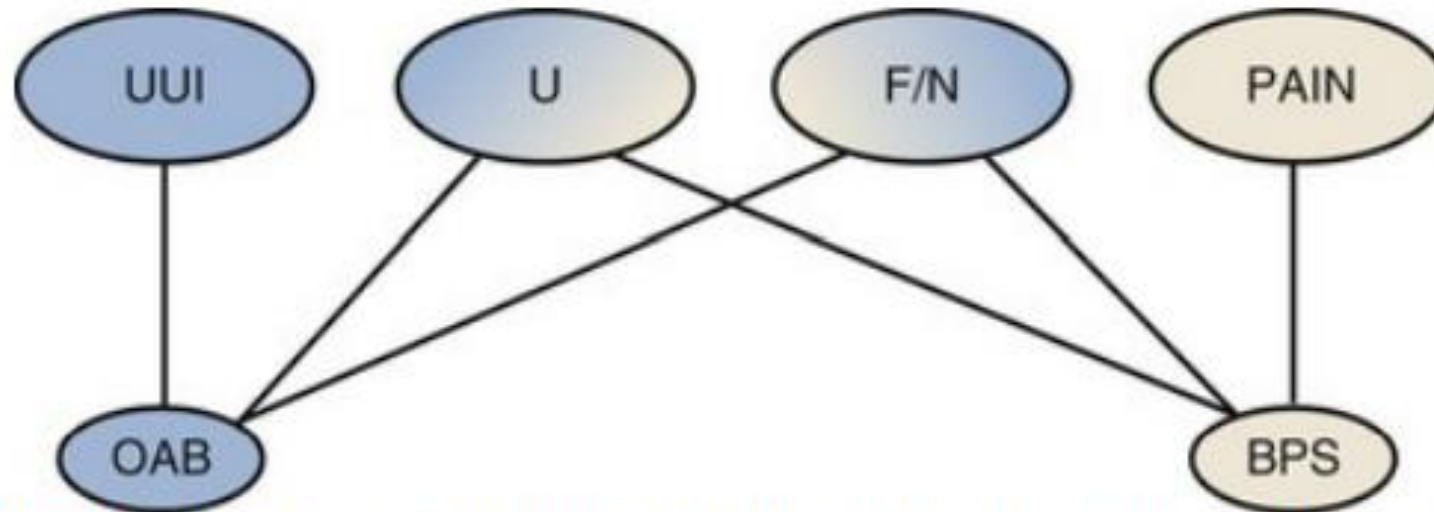
TERMINOLOGY	DEFINITION	REFERENCE
Overactive bladder syndrome	Urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection (UTI) or other obvious pathology	Haylen et al., 2010
Increased daytime urinary frequency	Complaint by the patient who considers that he/she voids too often by day <sup>a</sup> (seven voids upper limit of normal <sup>b</sup> )	Abrams et al., 2002; Haylen et al., 2010
Nocturia	Complaint of interruption of sleep one or more times because of the need to micturate. Each void is preceded and followed by sleep.	Haylen et al., 2010
Urgency	Complaint of a sudden, compelling desire to void that is difficult to defer	Haylen et al., 2010
Urgency (urinary) incontinence	Complaint of involuntary loss of urine associated with urgency	Haylen et al., 2010

<sup>a</sup>Abrams et al., 2002.



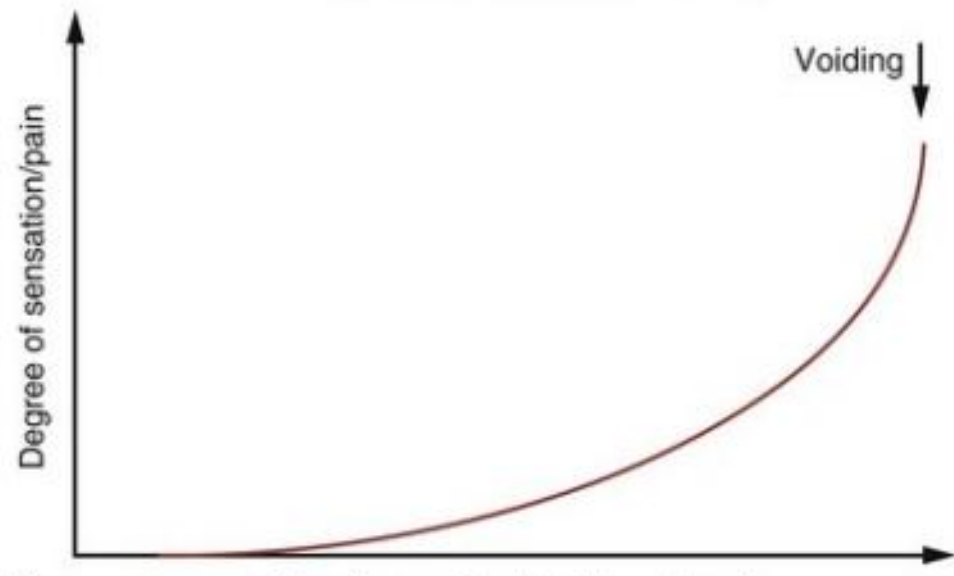
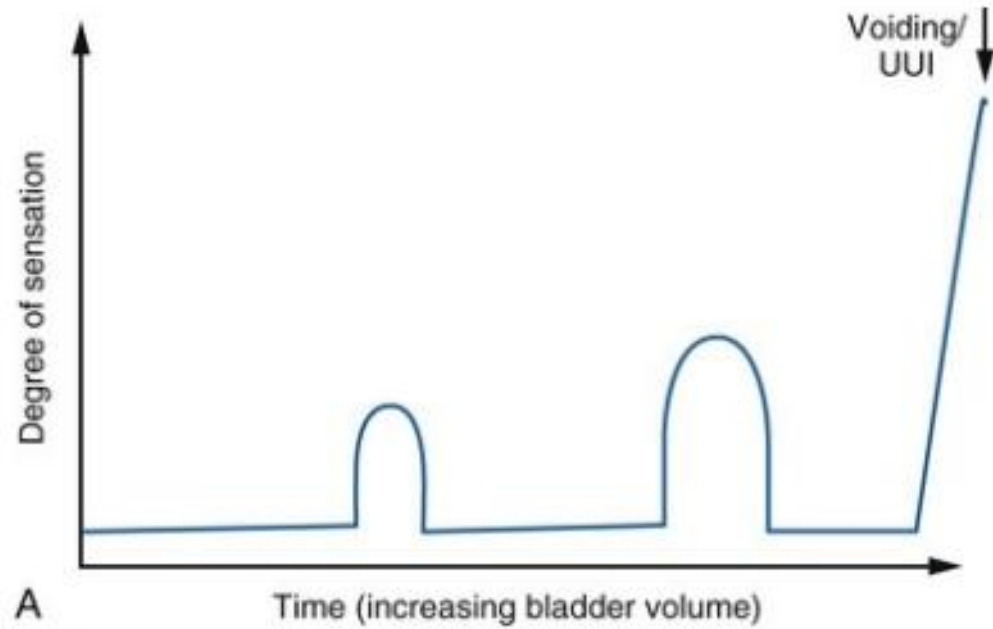
- ▶ Urge incontinence → **Urgency Incontinence**
- ▶ The syndrome of OAB is based on **symptoms**; in contrast, detrusor overactivity (DO) is a **urodynamic observation**, characterized by involuntary detrusor contractions during the filling phase, which may be spontaneous or provoked.
- ▶ **Mixed urinary incontinence (MUI)** is the “*complaint of involuntary loss of urine associated with urgency and also with effort or physical exertion or on sneezing or coughing*” (Haylen et al., 2010).

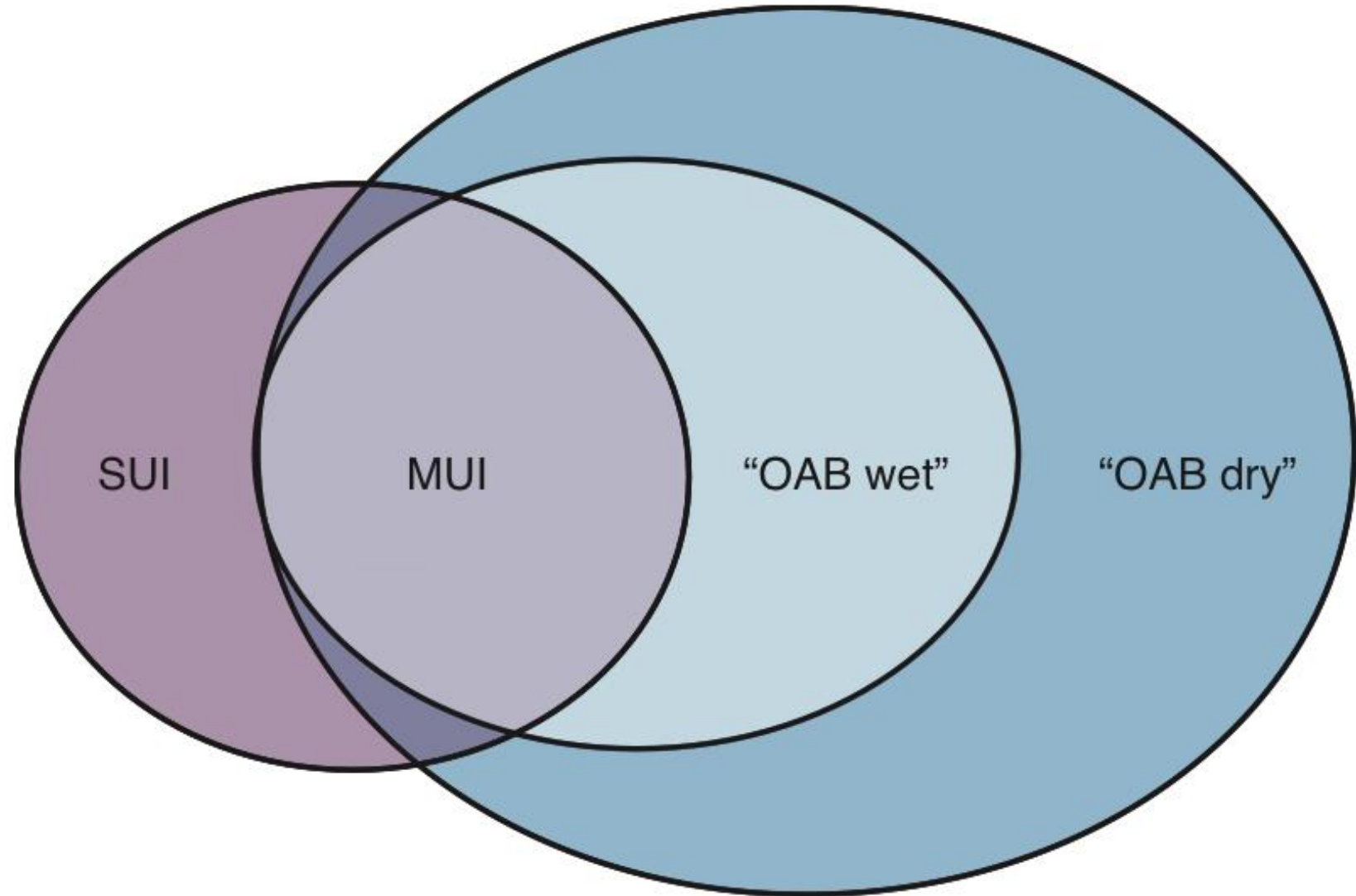
# Distinguishing Overactive Bladder From Bladder Pain Syndrome



**FIG. 117.2** Overactive bladder (OAB) and bladder pain syndrome (BPS) give rise to urgency (U), frequency (F), and nocturia (N); pain, but not urgency urinary incontinence (UUI), is seen in BPS.

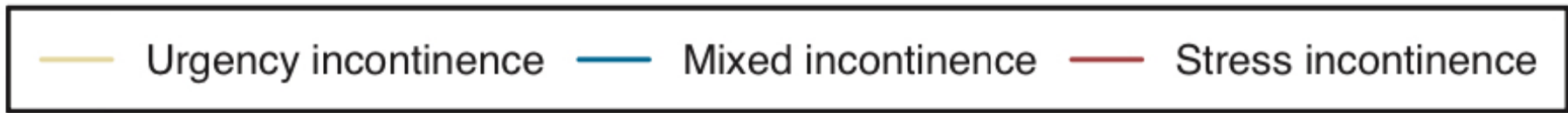
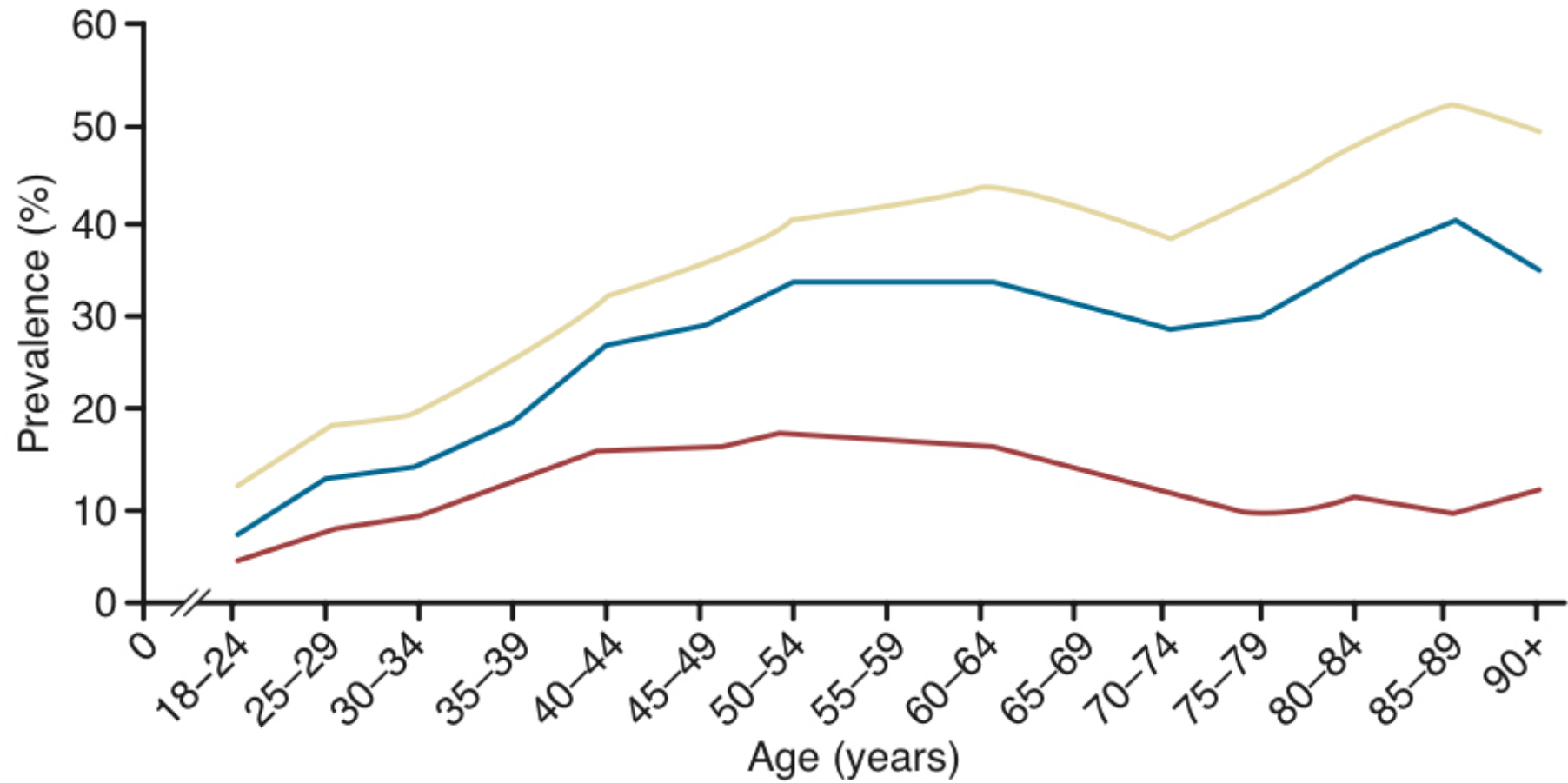
# Urge vs Pain





# Epidemiology

- **OAB** is common in men and women but tends to disparately affect women.
- Most epidemiologic studies report a prevalence of OAB in women of approximately **1.5 to 2 times** that of men and rates of UUI of 2 to 3 times those in men.
- Although in the National Overactive Bladder Evaluation Study (NOBLE), the incidence of OAB was similar at **16.9% in women** and **16.0% in men**
- **7.6%** of women reported **UUI** versus just **2.6%** of men
- The prevalence of symptoms of OAB increases with aging , appearing to increase in women in their 40s and men in their 50s and 60s.





# Economics



- ▶ in the United States, including direct costs (i.e., medical and nonmedical) and indirect costs (i.e., lost productivity), approached **\$65.9 billion in 2007**, with projected increases to **\$76.2 billion** and **\$82.6 billion in 2015 and 2020**.

Clinical articles

## Prevalence of and attitude toward urinary incontinence in postmenopausal women

Ching-Hung Hsieh, Tsung-Hsien Su, Shao-Tung Chang, Shu-Hui Lin, Meng-Chih Lee ✉, Mei Yu Lee

First published: 31 October 2007 | <https://doi.org/10.1016/j.ijgo.2007.08.013> | Citations: 15

- ▶ A total of 485 (29.8%) women reported urinary incontinence; 250 (69.9%) urinary incontinent women experienced symptoms less than once a month.
- ▶ Regarding knowledge, attitudes, and practices, 822 (**54.3%**) of the women surveyed knew the meaning of urinary incontinence, and 147 (30.3%) with urinary incontinence had visited a doctor.
- ▶ *The main reason given for not seeking medical help was shyness*

# Prevalence of female urinary incontinence in the developing world: A systematic review and meta-analysis—A Report from the Developing World Committee of the International Continence Society and Iranian Research Center for Evidence Based Medicine

Hadi Mostafaei, Homayoun Sadeghi-Bazargani, Sakineh Hajebrahimi ✉, Hanieh Salehi-Pourmehr, Morteza Ghojazadeh, Rahmi Onur, Riyad T. Al Mousa, Matthias Oelke

First published: 03 April 2020 | <https://doi.org/10.1002/nau.24342> | Citations: 1

## Results

In total, 54 studies with 138,722 women aged 10 to 90 years were included in this meta-analysis. Prevalence of UI ranged from 2.8% in Nigeria to 57.7% in Iran. The total prevalence of UI was 25.7% (95% CI: 22.3-29.5) and the prevalence rates for stress, urgency, and mixed UI were 12.6% (95% CI: 10.3-15.4), 5.3% (95% CI: 3.4-8.3), and 9.1% (95% CI: 7.0-11.8), respectively. When we excluded the elderly population, UI prevalence only slightly changed (26.2%; 95% CI: 22.6-30.2). Prevalence rates varied considerably during different recall periods, **ranging from 15.6% for UI during the last 12 months to 41.2% for UI during the last 3 months.** However, the study quality and use of validated vs nonvalidated questionnaires only had a minor impact on the prevalence rates.

# Negative Impacts of OAB

- Social isolation
- Depression
- Embarrassment or shame of UI
- Discontinue activities(physical, social, sexual...)
- Skin irritation
- disturbed sleep
- decreased self-esteem
- missed workdays
- Falls and fractures
- Reduce happiness
- Negative effects on health-related quality of life (HRQoL)



1 in 8 women experience  
**DEPRESSION**  
in their lifetime; twice the  
rate as men.



# Pathophysiology of OAB

- ▶ Myogenic
- ▶ Neurogenic
- ▶ Urethrogenic
- ▶ Ischemic
- ▶ Obstruction
- ▶ Mucosal

# Transient Urinary Incontinence

- **D**—delirium, dementia or both
- **I** — infection
- **A**— atrophic urethritis or vaginitis
- **P** —pharmaceuticals or polypharmacy
- **P** —psychological factors, especially depression
- **E**— excessive urine output
- **R**— restricted mobility
- **S**— stool impaction



**RULE OUT**

- لطفاً این روز نگار مثانه 3 روزه را تکمیل نمایید. هر کدام از موارد زیر را در ستون مربوطه، روبروی زمانها یادداشت کنید. در صورت نیاز می‌توانید زمانهای مشخص شده را تغییر دهید. در ستون مربوط به ساعتها، در هنگام خوابیدن کلمه "خواب" و هنگام بیدار شدن کلمه "بیدار" را بنویسید.

**نوشیدنی‌ها:** در قسمت مربوط به نوشیدنی‌ها مقدار و نوع نوشیدنی‌های مصرفی خود را یادداشت کنید.

**میزان ادرار دفعی:** در ستون مربوط به میزان ادرار دفعی، حجم ادرار دفع شده در شب و روز را برحسب میلی‌لیتر یادداشت نمایید. برای اندازه‌گیری حجم می‌توانید از هر ظرفی استفاده کنید. در صورتی که نتوانستید میزان ادرار دفعی را اندازه‌گیری نمایید، در این ستون فقط تیک بزنید. زمانهایی را که دچار نشت ادراری می‌شوید با قید کلمه **نشت ادرار** در این ستون مشخص کنید.

**حس مثانه:** جهت توصیف حس مثانه در زمان مراجعه به دستشویی برای تخلیه ادرار، از کدهای زیر استفاده نمایید

**0-** در صورتیکه هیچ احساس نیازی به ادرار کردن نداشتید و فقط بخاطر مسائل اجتماعی مثلاً هنگام بیرون رفتن از خانه یا اینکه نمی‌دانید دستشویی بعدی کجا خواهد بود به توالت رفتید.

**1-** اگر حس نیاز به ادرار کردن طبیعی بود و احساس "اضطرار در دفع" (عجله) نداشتید.

اضطرار ادراری حسی متفاوت از حالت طبیعی است و به احساس نیاز شدید برای دفع ادرار گفته می‌شود که به تاخیر انداختن آن ممکن است مشکل‌ساز شود.

**2-** اگر شما اضطراب در دفع ادرار دارید ولی قبل از رسیدن به دستشویی رفع می‌شود.

**3-** اگر شما اضطراب در دفع ادرار دارید و به هر نحو ممکن خود را به دستشویی می‌رسانید و ادرار نشت نمی‌کند.

**4-** اگر شما اضطراب در دفع ادرار دارید و نمی‌توانید خود را به دستشویی برسانید و ادرار نشت میکند.

**پد (پوشک):** اگر از پد استفاده می‌کنید یا آن را عوض می‌کنید در ستون مربوطه علامت بزنید.

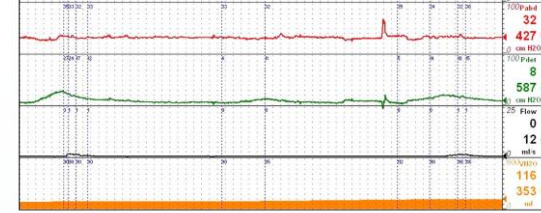
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زمان	نوشیدنی		برون ده ادراری (میلی لیتر)	حس مثانه	پد
	میزان	نوع			
6 صبح					
7 صبح					
8 صبح					
9 صبح					
10 صبح					
11 صبح					
12 ظهر					
1 بعد از ظهر					
2 بعد از ظهر					
3 بعد از ظهر					
4 بعد از ظهر					
5 عصر					
6 عصر					
7 عصر					
8 شب					
9 شب					
10 شب					
11 شب					
12 نیمه شب					
1 صبح					
2 صبح					
3 صبح					
4 صبح					
5 صبح					

در اینجا نمونه‌ای از نحوه تکمیل این فرم آورده شده است.

زمان	نوشیدنی		برون ده ادراری (میلی لیتر)	حس مثانه	پد
	میزان	نوع			
6 صبح بیدار			350	2	
7 صبح	300 میلی	چای			
8 صبح			✓	2	
9 صبح					
10 صبح	فنجان	آب	نشت ادرار	3	✓



# Urodynamic Study



- Urodynamic testing is widely used as an adjunct to clinical diagnosis, in the belief that it may help to provide or confirm diagnosis, predict treatment outcome, or facilitate discussion during counselling.
- For all these reasons, urodynamics is often performed prior to invasive treatment for UI.
- The two main urodynamic diagnoses associated with OAB are **DO** and early and/or exaggerated **filling sensation**.

Recommendations (NB: Concerning only neurologically intact adults with UI)	Strength rating
When performing urodynamics in patients with UI adhere to 'Good Urodynamic Practice' standards as described by the International Continence Society [73]: <ul style="list-style-type: none"> <li>• attempt to replicate the patient's symptoms;</li> <li>• check recordings for quality control;</li> <li>• interpret results in the context of the clinical problem;</li> <li>• remember there may be physiological variability within the same individual.</li> </ul>	Strong
Do not routinely carry out urodynamics when offering treatment for uncomplicated SUI.	Strong

2020 EAU Guide line



# Take-Home Massage

- OAB is common condition in both men and women
- **Urgency urinary incontinence is the most common type of incontinence**
- History, Ph/E, urine analysis , PVR , bladder diary should be performed for all patient with OAB syndrome and incontinent .
- **Treatment should begin with conservative treatment (behavioral therapy , physiotherapy , pharmacotherapy)**
- Antimuscarins are used for overactive bladder
- **Surgical management should be used when other treatment will not bring positive results**
- Topical estrogen has positive effect in incontinence and surgical outcomes

Thank you

