

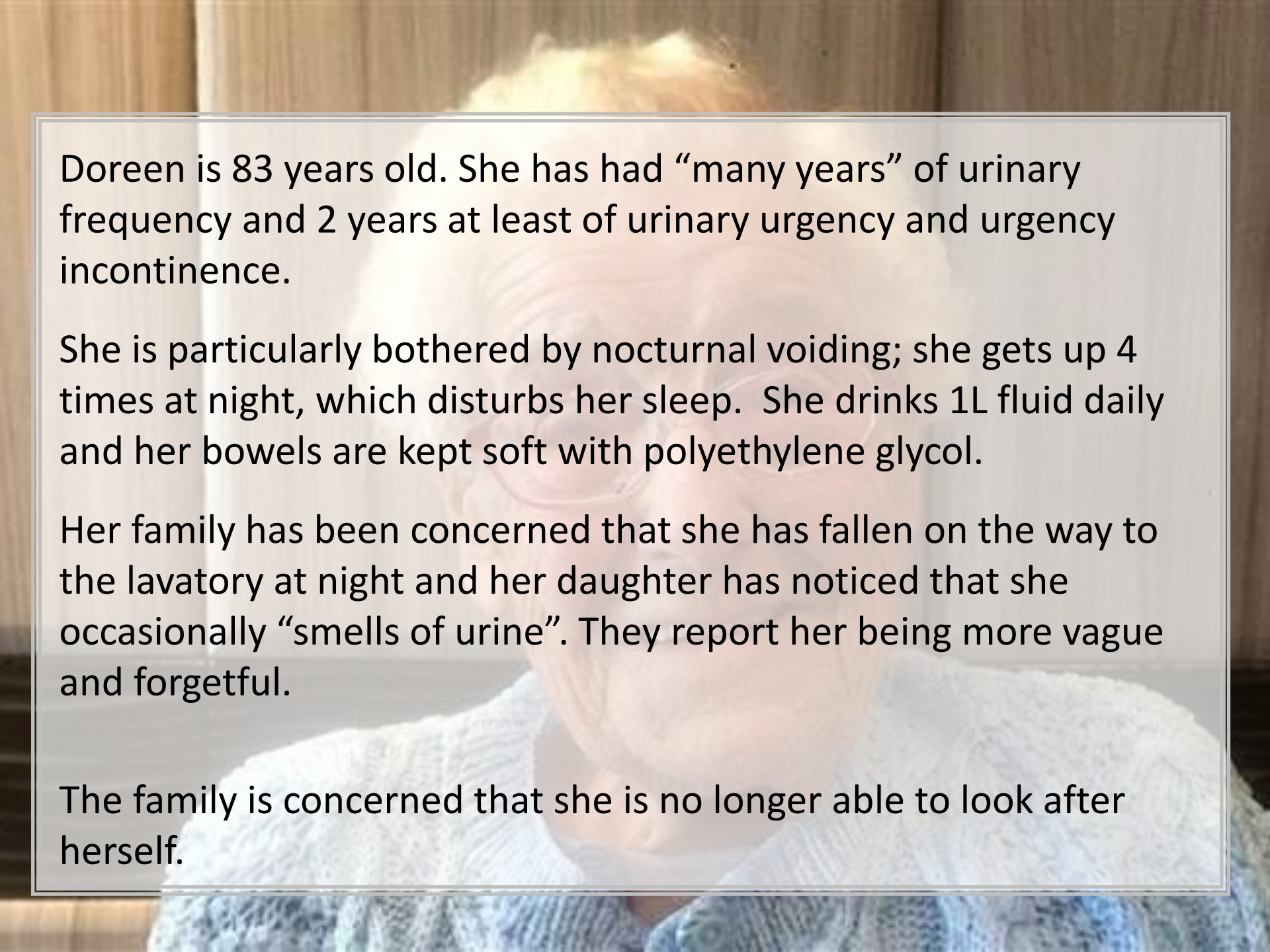


# Co-morbid conditions that matter

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Adrian Wagg  
AHS Chair in Healthy  
Aging

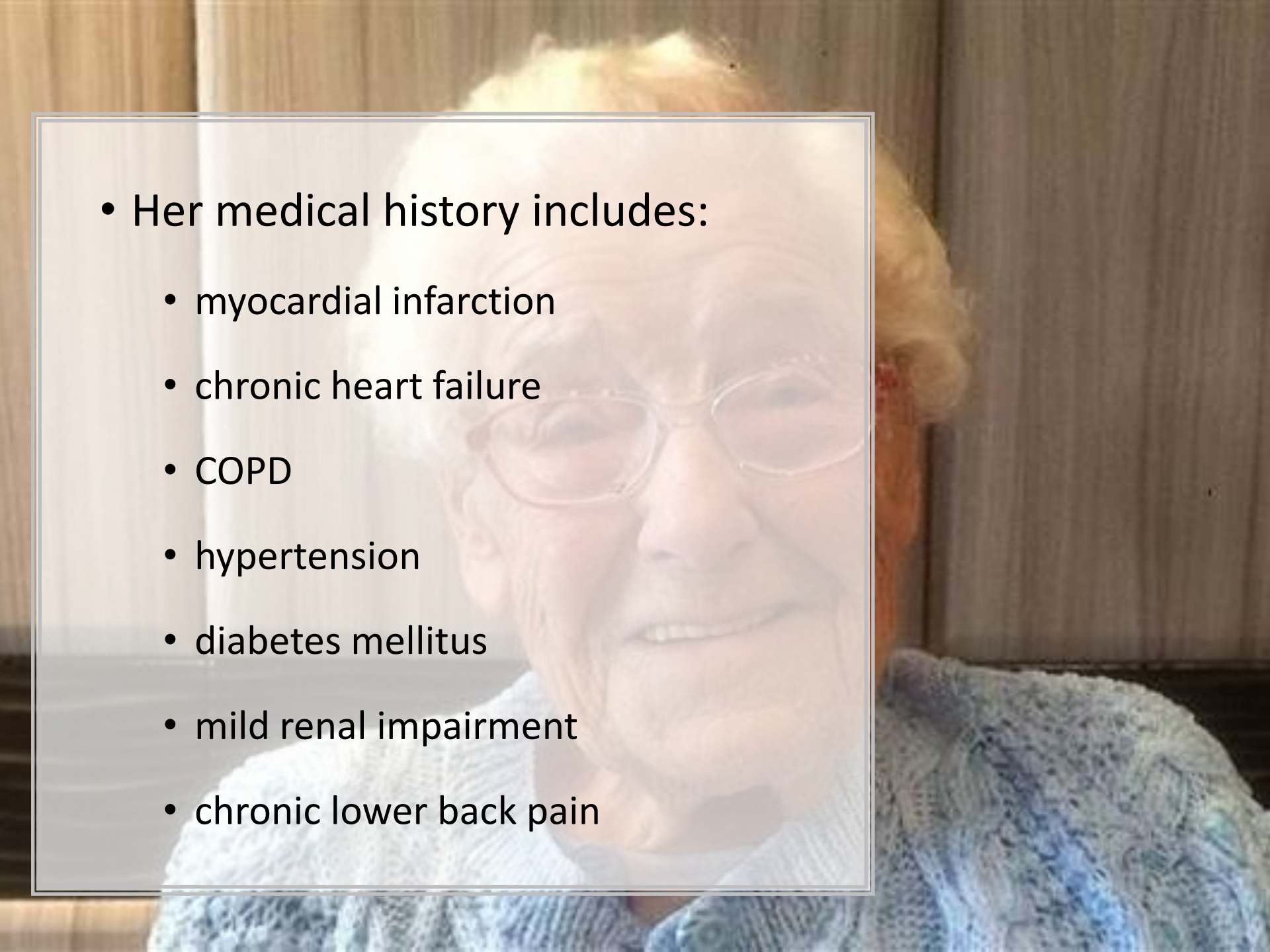


Doreen is 83 years old. She has had “many years” of urinary frequency and 2 years at least of urinary urgency and urgency incontinence.

She is particularly bothered by nocturnal voiding; she gets up 4 times at night, which disturbs her sleep. She drinks 1L fluid daily and her bowels are kept soft with polyethylene glycol.

Her family has been concerned that she has fallen on the way to the lavatory at night and her daughter has noticed that she occasionally “smells of urine”. They report her being more vague and forgetful.

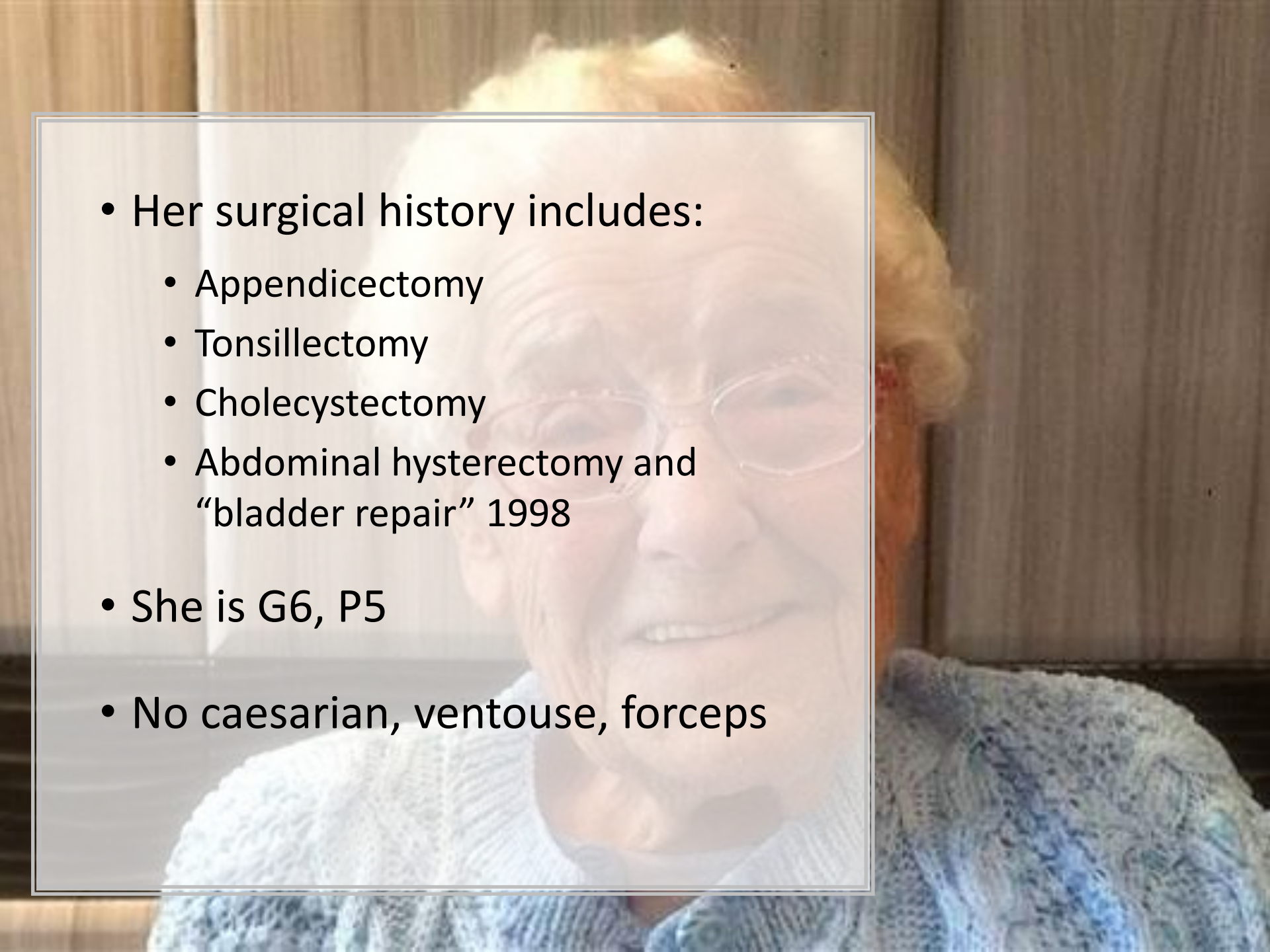
The family is concerned that she is no longer able to look after herself.



- Her medical history includes:

- myocardial infarction
- chronic heart failure
- COPD
- hypertension
- diabetes mellitus
- mild renal impairment
- chronic lower back pain



- 
- Her surgical history includes:
    - Appendicectomy
    - Tonsillectomy
    - Cholecystectomy
    - Abdominal hysterectomy and “bladder repair” 1998
  - She is G6, P5
  - No caesarian, ventouse, forceps

# UI in frail older women

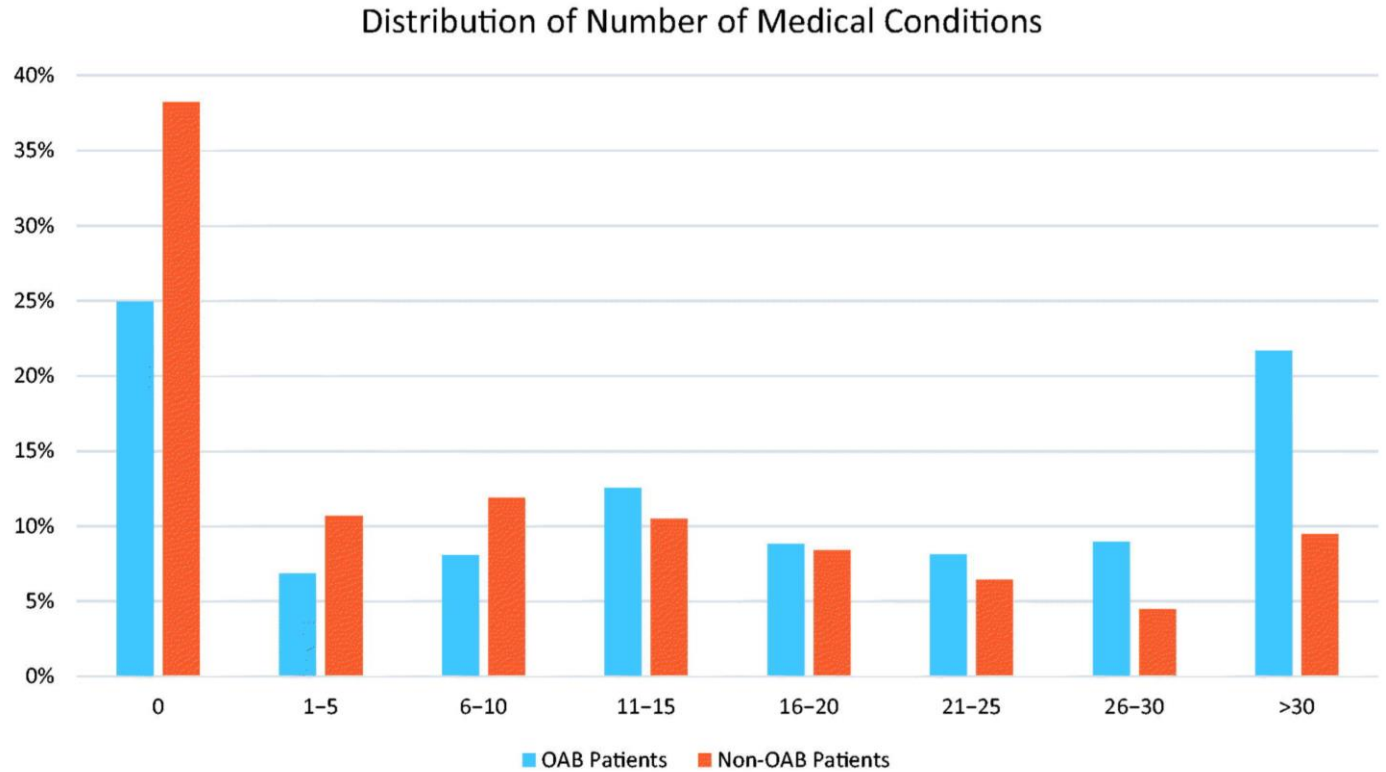
Variable	Non-frail		Pre-frail		Frail		P
	n = 159	%	n = 191	%	n = 35	%	
Heart diseases	15	9.4	24	12.6	9	25.7	0.09
Hypertension	70	44.0	91	47.6	17	48.6	0.81
Stroke	0	0	5	2.6	2	8.6	0.02
Diabetes	15	9.4	11	5.8	4	11.4	0.001
Cancer	3	1.9	2	1.1	1	2.9	0.02
Arthritis	22	13.8	32	16.7	9	26	0.51
Depression	8	5.0	12	6.3	6	17.1	0.10
Respiratory diseases	27	17.0	34	17.8	12	34.3	0.14
Osteoporosis	26	16.4	41	21.5	15	42.9	0.007
Urinary incontinence	33	20.8	71	37.2	15	42.9	0.001
Fecal incontinence	2	1.3	4	2.1	4	11.4	0.002
Number of medications per day							
0	25	15.7	18	9.4	2	5.7	0.54
1	36	22.7	25	13.1	5	14.3	
2	26	16.3	31	16.2	6	17.2	
3	23	14.5	30	15.7	4	11.4	
4+	49	30.8	87	45.6	18	51.4	
Number of doctor visits over the last 12 months							
0	18	11.3	15	7.9	0	0	0.03
1 to 4	101	63.5	115	60.2	18	51.4	
5 or more	40	25.2	61	31.9	17	48.6	
Hospitalization over the last 12 months							
Yes	22	13.8	37	19.4	15	42.8	< 0.001
No	137	86.2	154	80.6	20	57.2	

20.8%

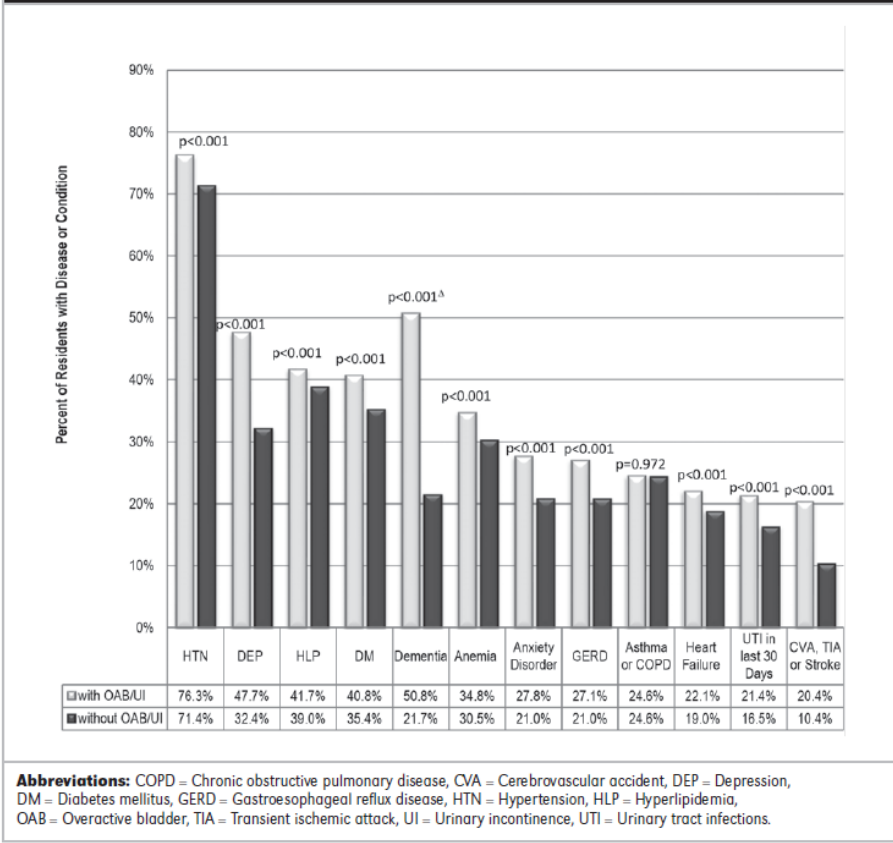
37.2%

42.9%

OAB, N=415  
Non-OAB, N=6,868



# Prevalent disease in residents with UI/ OAB compared with a matched cohort without UI/OAB



# and are more impaired in ADL

**Table 1.** Baseline demographic characteristics and functional impairment measures, MCBS respondents, by OAB status.

	OAB Patients (Unweighted N = 415, Weighted N = 1,019,946)	Non-OAB patients (Unweighted N = 6868, Weighted N = 17,768,956)	P Value
Age, years	78.5 (0.4)	76.9 (0.1)	<.01
Age Group, %			<.01
<75 years	34.6	46.1	
≥75 years	65.4	53.9	
Sex, %			<.01
Female	71.2	61.7	
Male	28.9	38.3	
Race, %			0.87
White	75.9	75.8	
Black	8.2	9.0	
Hispanic	10.2	10.2	
Other/Unknown	5.8	5.0	
Activities of Daily Living Limitations, %			<.01
0 items	56.0	67.4	
1–2 items	20.5	18.7	
≥3 items	22.4	13.3	
Missing	1.0	0.7	
Instrumental Activities of Daily Living Limitations, %			<.01
0 items	46.7	60.2	
1–2 items	25.1	21.3	
≥3 items	16.0	11.9	
Missing	12.2	6.6	
Physical Functioning Limitations, %			<.01
0 items	9.8	18.6	
1–2 items	27.5	37.2	
≥3 items	50.4	37.4	
Missing	12.4	6.8	
VES-13 Score	5.9 (0.15)	4.7 (0.05)	<.01
VES-13 Score <3	22.7	37.4	<.01
VES-13 Score ≥3	77.3	62.6	

Data presented are the means (standard error of the mean) or percentages.

MCBS, Medicare Current Beneficiary Survey; OAB, overactive bladder; VES; Vulnerable Elders Survey.



# Associated conditions and UI

- peripheral vascular disease
- diabetes mellitus
- congestive heart failure
- venous insufficiency
- chronic lung disease
- falls and contractures
- Sleep disordered breathing
- stroke

Dementia

Diffuse Lewy body disease

Parkinson's disease

Normal Pressure Hydrocephalus

recurrent infection

Constipation

Obesity

Ouslander, J.G. and J.F. Schnelle, *Incontinence in the nursing home*. Ann Intern Med, 1995. 122(6): p. 438-49. McGrother C, Donaldson M. Continence in Health Care Needs Assessment [http://www.hcna.bham.ac.uk/documents/02\\_HCNA3\\_D3.pdf](http://www.hcna.bham.ac.uk/documents/02_HCNA3_D3.pdf)

# Associated conditions and UI

- peripheral vascular disease
- diabetes mellitus
- congestive heart failure
- venous insufficiency
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Parkinson's disease

Normal Pressure Hydrocephalus

recurrent infection

Constipation

Obesity ✓

**What other history do  
we want to gather?**



# Bowels

BO: 4/ week

Formed / hard, followed by “soft stuff”

No faecal urgency

No flatus or stool incontinence


Occasional use of prunes to “help out”



# Medication

- Atorvastatin 80 mg OD
- Ramipril 10 mg OD
- Metformin 1000 mg BID
- Dapagliflozin 10 mg OD
- Furosemide 40 mg OM
- Bisoprolol 5 mg OD
- Tiotropium bromide 18 mcg OD
- Amitriptyline 25 mg nocte
- Vitamin D 1000 IU OD
- Calcium carbonate 500 mg OD
- Alendronic acid 70 mg weekly
- Salbutamol 200 mcg prn inh
- Aspirin 75 mg OD
- PEG 3350, 17g OD
- Clopidogrel 75 mg OD





**What medications  
might be relevant here?**



# Functional history

She is dependent upon a walking aid in and out of doors.

She can't get into her washroom if she uses it.

She has an electrically operated chair to assist her in standing, but she doesn't use it.

Her walking speed is slower than six months ago.




**What environmental factors might be relevant?**



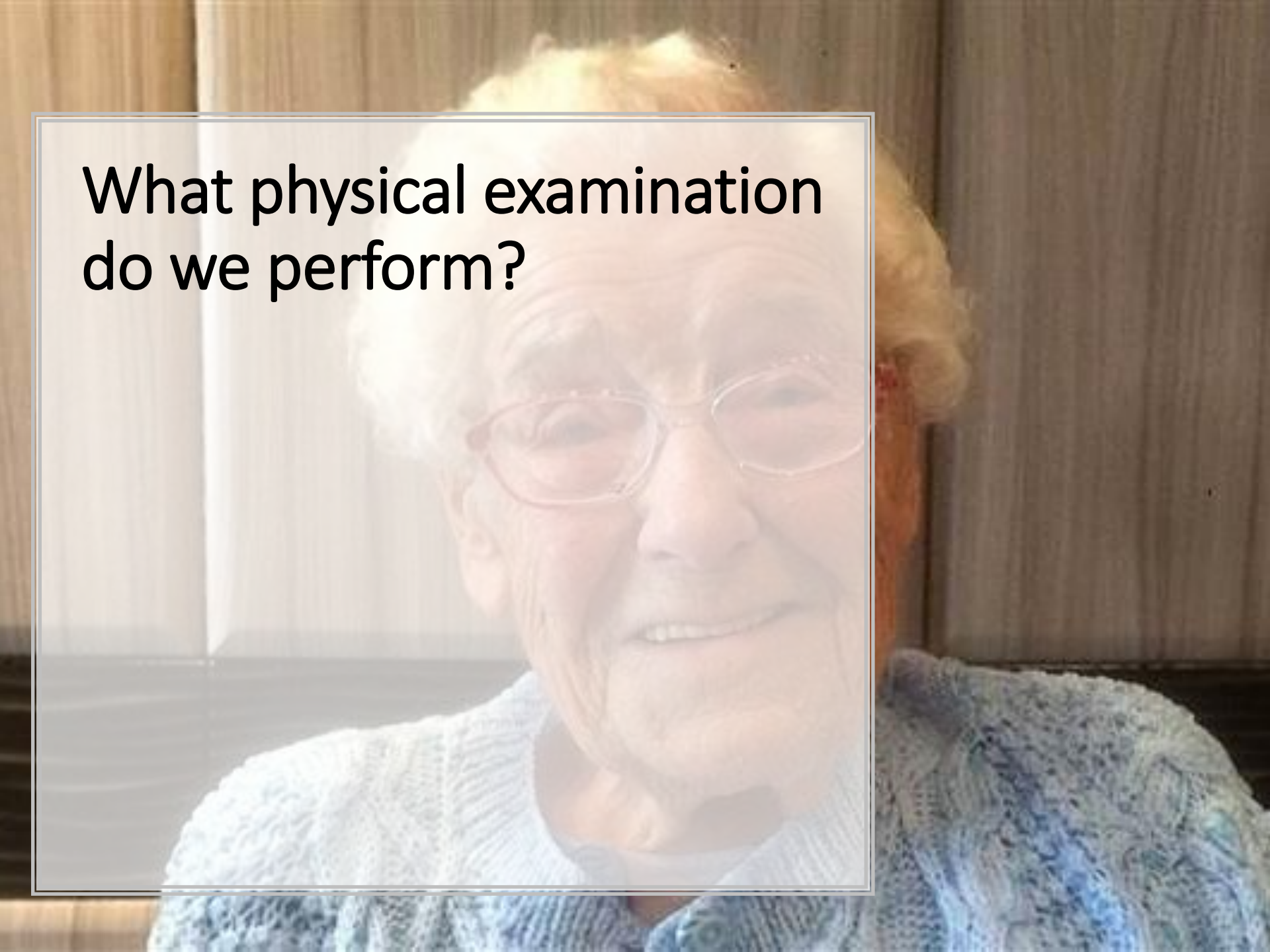
# Containment

- She uses panty liners to help her incontinence by day
- She uses larger pull ups by night
- She uses lavatory paper in her pants in addition to the liner by day
- Her pads leak – she reports soreness “down below, Doctor.”



**What do we know about  
containment that might  
help?**





**What physical examination  
do we perform?**

# Examination

On examination she has:

- A grade 1 posterior compartment prolapse
- A post-void residual volume of 35mL
- Moderate urogenital atrophy



# Examination

She experiences a small leak on vigorous coughing

A pelvic floor squeeze is pretty non-existent

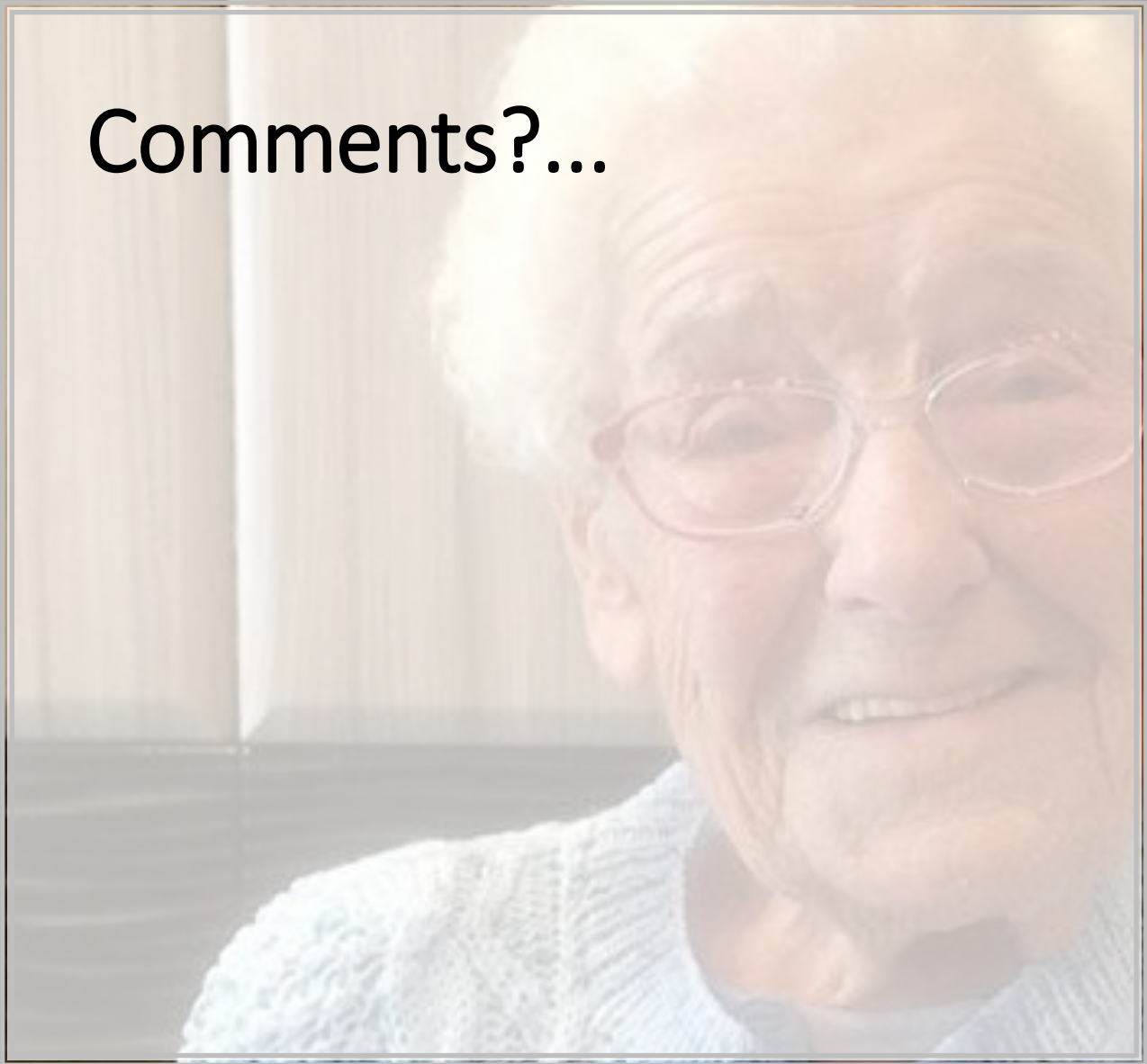


# Examination

She has:

- trouble transferring from a clinic chair
- a urinalysis positive for glucose ++, nitrites +, SG 1.005
- Her urine smells
- Her pad is wet
- Her skin is erythematous with some maceration

Comments?...





**Bladder diary?...**












What's the  
diagnosis(es)?...

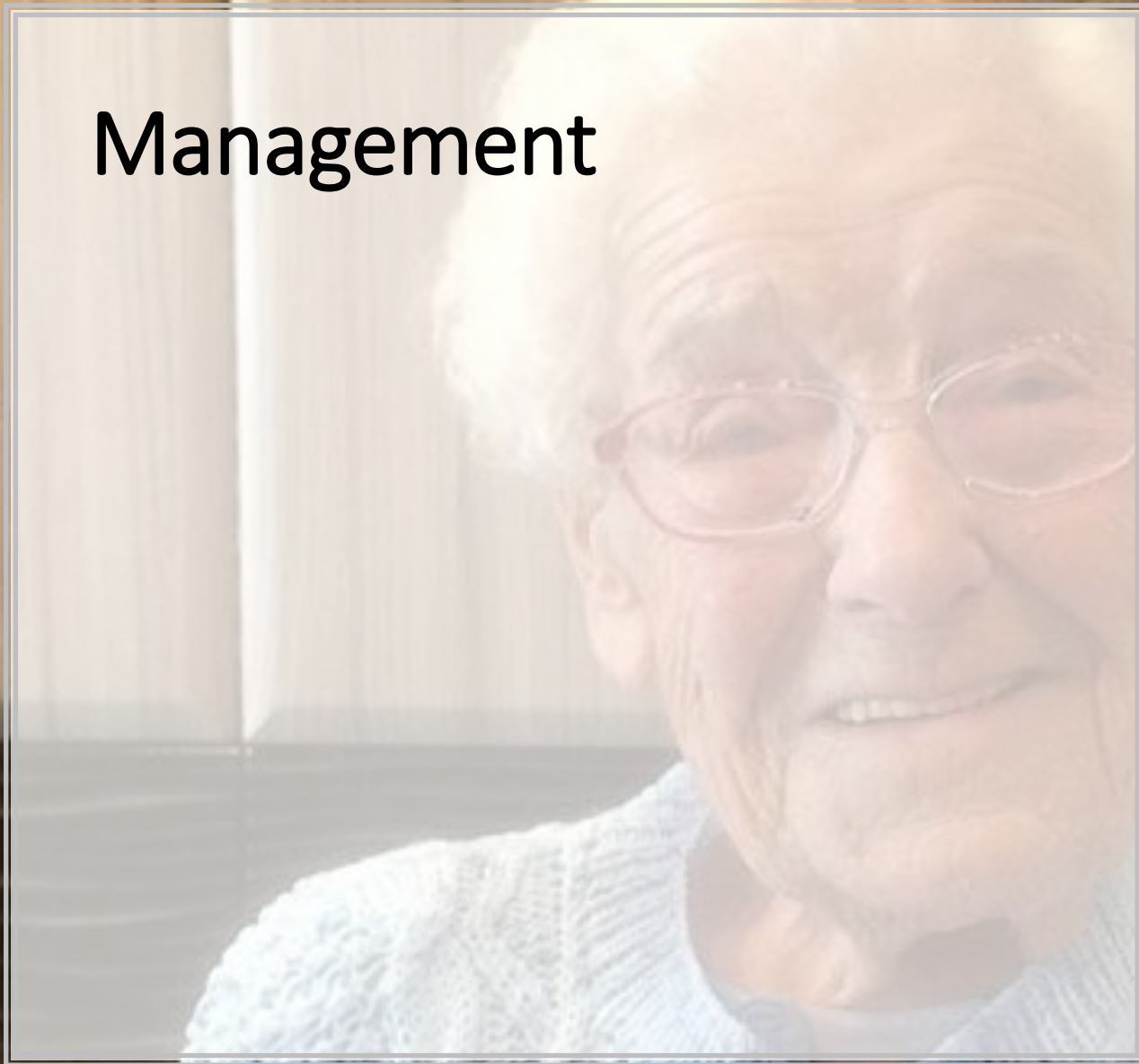






**What are the  
contributing factors?**


# Management






**What conservative or  
lifestyle modifications  
might we make?**






**What bladder related  
treatments might we  
employ?**



**What non-bladder  
management options  
might we employ?**

- 
- Bedside commode
  - Low level night time lighting
  - Home care support  
(example – emptying commode in AM)
  - Incontinence products  
<http://www.continenceproductadvisor.org/>



# Medication management



# Medication management

Review medications which might compromise successful toileting and potentially add to anticholinergic load

- Anticholinergic load (amitriptyline, tiotropium, furosemide)<sup>1,2</sup>
- Impaired emptying (amitriptyline, tiotropium)<sup>2,3</sup>
- Polyuria (dapagliflozin,<sup>4</sup> furosemide<sup>5</sup>)

1. Aging Brain Care. *Anticholinergic Cognitive Burden Scale* 2008, 2012 Update.
2. Tiotropium Summary of Product Characteristics. 2016.
3. Amitriptyline Summary of Product Characteristics. 2016.
4. Dapagliflozin Summary of Product Characteristics. 2017.
5. Furosemide Summary of Product Characteristics. 2016.

**When to treat a positive  
urinalysis?**





## What are the options for management (and the limitations)?

- Limiting fluid consumption<sup>1</sup>
- Limiting consumption of caffeine and alcohol<sup>1</sup>
- Bladder training – urgency suppression techniques<sup>1</sup>
- Pelvic floor muscle training<sup>1</sup>
- Managing constipation<sup>1</sup>
- Smoking cessation (where relevant)<sup>2</sup>
- Consider vaginal oestrogen<sup>1</sup>
- Weight reduction<sup>1</sup>

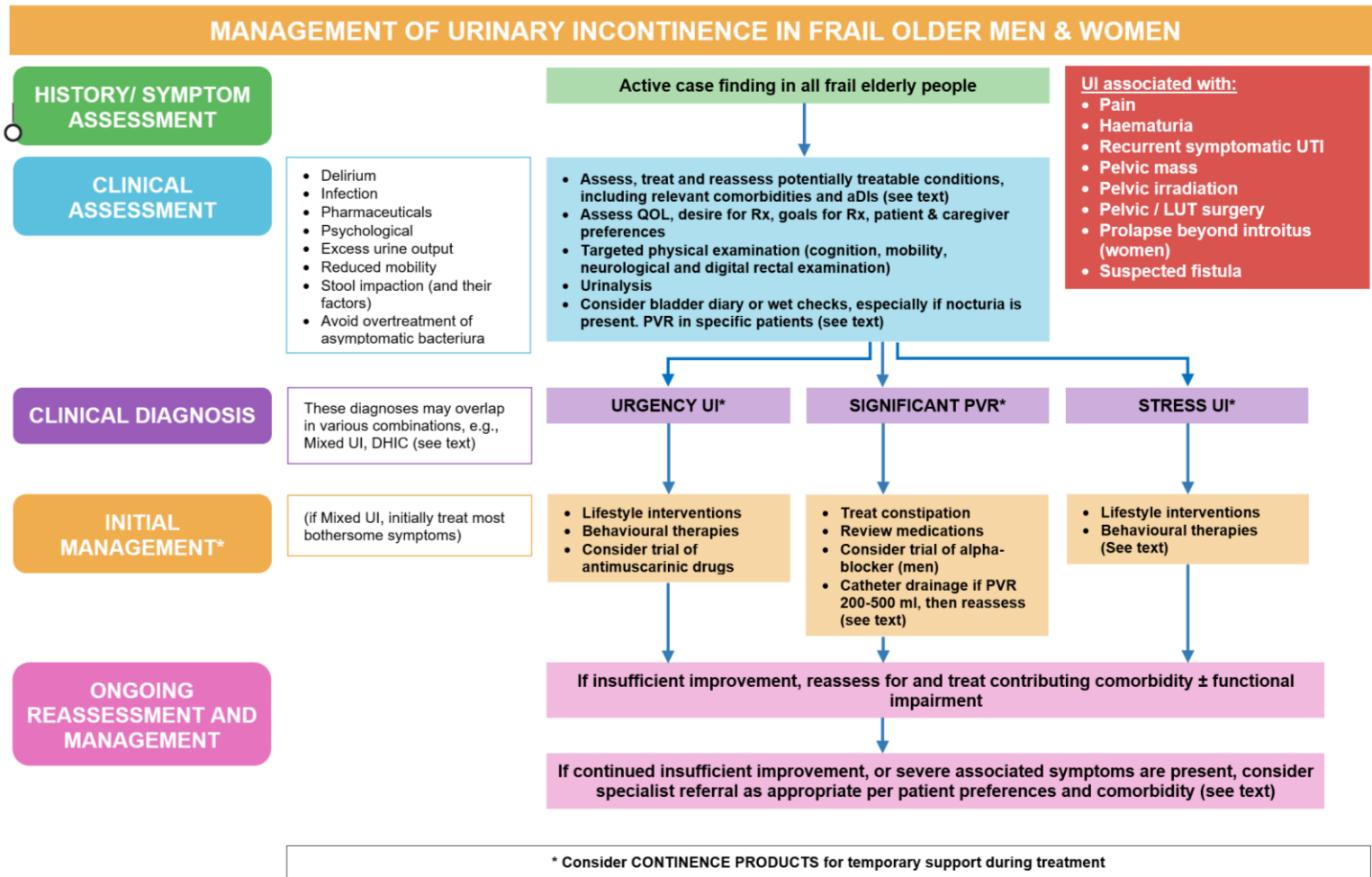
1. NICE. Urinary Incontinence in Women – Management. Clinical guidelines. Available at <https://www.nice.org.uk/guidance/cg171/resources/urinary-incontinence-in-women-management-35109747194821> (accessed February 2017).

2. EAU Guidelines on Urinary Incontinence. European Association of Urology. 2016.



**What are the options for  
pharmacological management?**

**What are the limitations of the  
data?**





# INCONTINENCE

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6<sup>th</sup> International Consultation on Incontinence,  
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