# From wet to dry in primary care

**A case based workshop**

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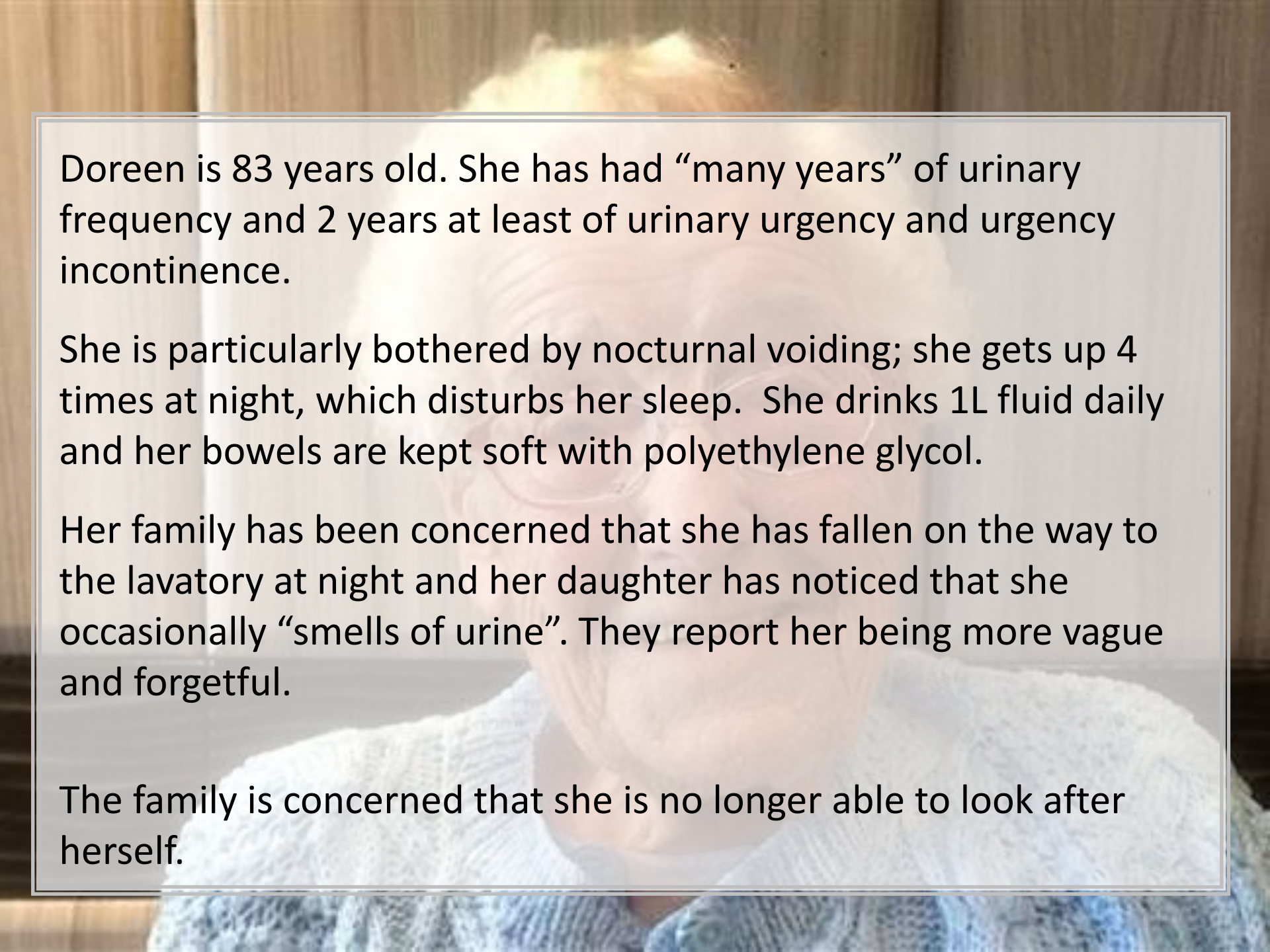
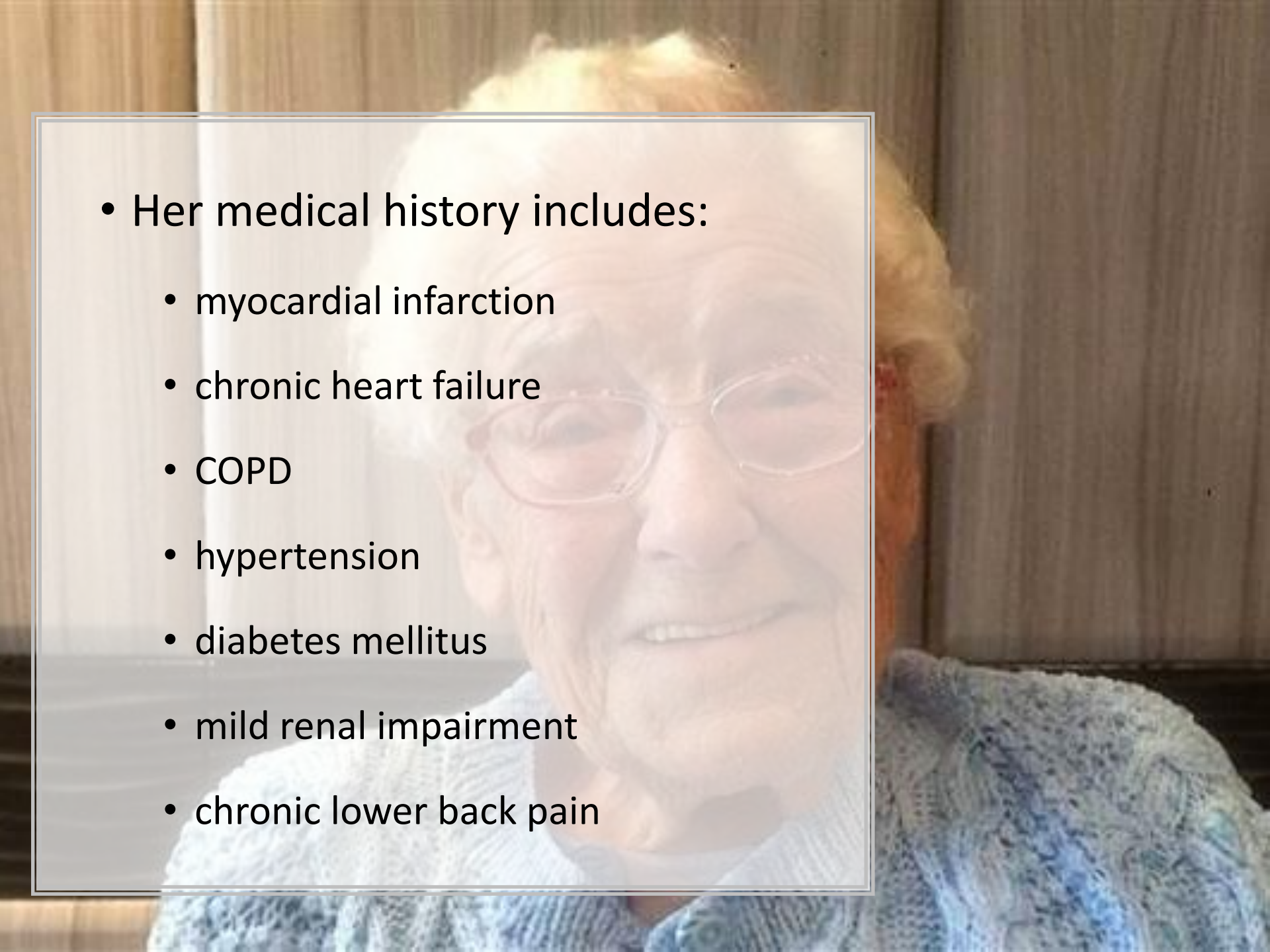


Doreen is 83 years old. She has had “many years” of urinary frequency and 2 years at least of urinary urgency and urgency incontinence.

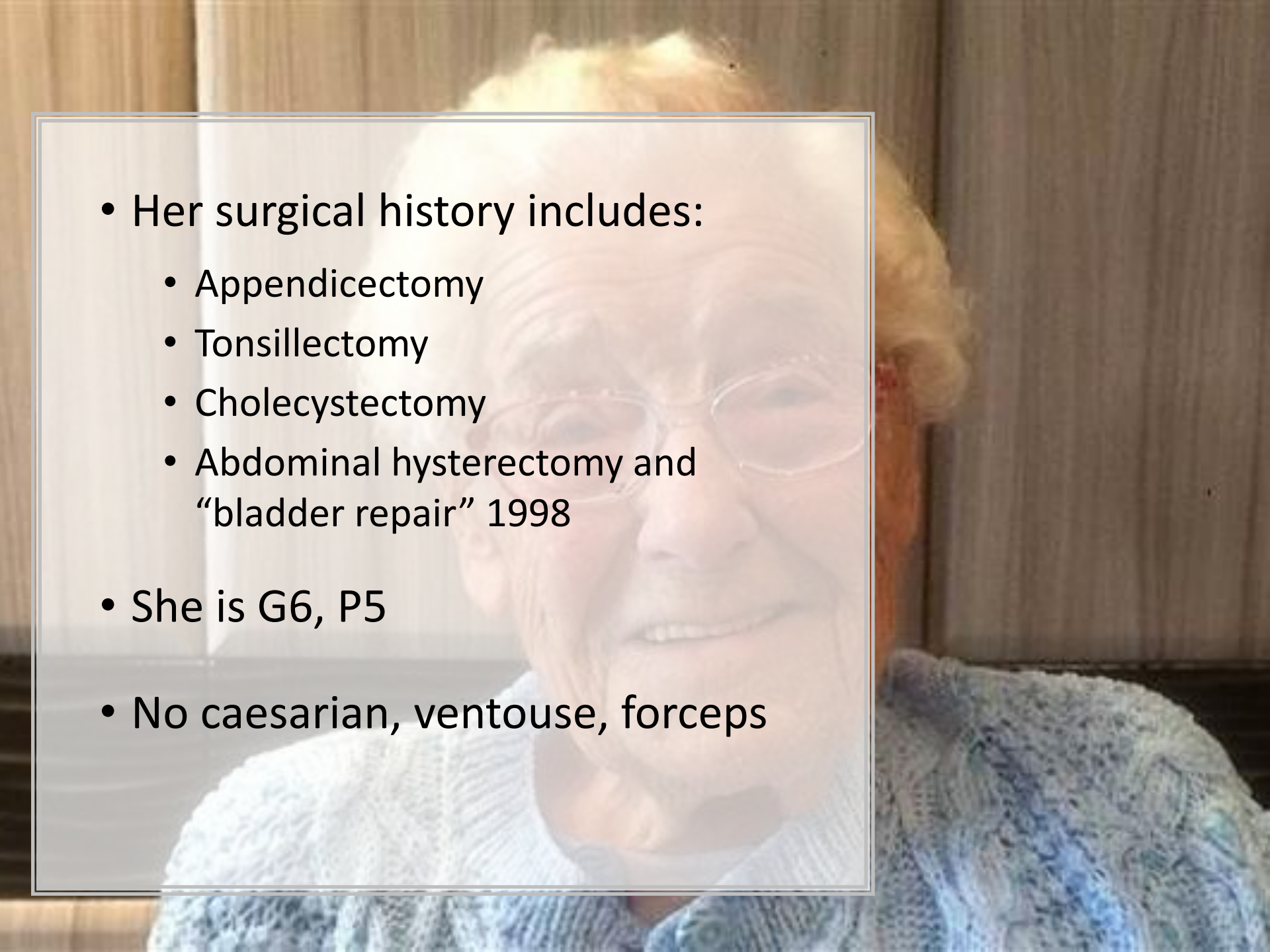
She is particularly bothered by nocturnal voiding; she gets up 4 times at night, which disturbs her sleep. She drinks 1L fluid daily and her bowels are kept soft with polyethylene glycol.

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


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?

| Medication class | Prevalence n (%) |
|---|---|
| Any medication class | 236 (60.5%) |
| Calcium channel blockers | 85 (21.8%) |
| Benzodiazepines | 68 (17.4%) |
| Other centrally active agents* | 65 (16.7%) |
| ACE inhibitors | 56 (14.4%) |
| Oral estrogens | 50 (12.8%) |
| Oral estrogen + progesterone | 12 (3.1%) |
| NSAIDS | 38 (9.7%) |
| GABAergic analgesics | 11 (2.8%) |
| Loop diuretics | 7 (1.8%) |
| Thiazolinedione hypoglycemic agents | 3 (0.8%) |
| Alpha blocking antihypertensives | 1 (0.3%) |

*Antidepressants, antipsychotics and narcotics were combined.

# Distribution of medications potentially contributing to urinary symptoms in 390 older patients seeking healthcare for their UI

BMC Geriatr. 2013; 13: 57.

| Predictor | Crude odds ratio (95% CI) | Adjusted odds ratio* (95% CI) |
|---|---|---|
| Age | 1.0 (1.0 - 1.1) | 1.0 (1.0 - 1.1) |
| Sex | 1.5 (0.7 - 3.0) | 1.1 (0.5 - 2.3) |
| Polypharmacy (≥ 5 drugs) | 5.3 (3.4 – 8.2) | 4.9 (3.1 – 7.9) |
| Multimorbidity (≥ 3) | 2.0 (1.2 - 3.3) | 1.2 (0.6 – 2.03) |
| Depression | 1.1 (0.7 - 1.67) | 0.7 (0.4 - 1.2) |
| Cardiovascular disease | 2.0 (1.3 - 3.0) | 1.4 (0.8 - 2.3) |
| Hypertension | 2.2 (1.4 - 3.5) | 1.5 (0.9 - 2.7) |
| Respiratory disease | 1.7 (1.0 - 3.1) | 1.4 (0.7 - 2.9) |
| Gastrointestinal disorders | 1.5 (1.0 - 2.2) | 1.1 (0.6 - 1.9) |
| Dyslipidemia | 1.6 (1.1 - 2.4) | 0.9 (0.5 - 1.5) |
| Renal failure | 1.6 (0.6 - 4.1) | 0.7 (0.2 - 2.1) |
| Musculoskeletal disorders | 1.3 (1.0 - 1.6) | 0.9 (0.6 - 1.2) |
| Diabetes | 1.4 (0.9 - 2.3) | 0.9 (0.5 - 1.7) |

*Adjusted for age, sex, polypharmacy and multimorbidity.

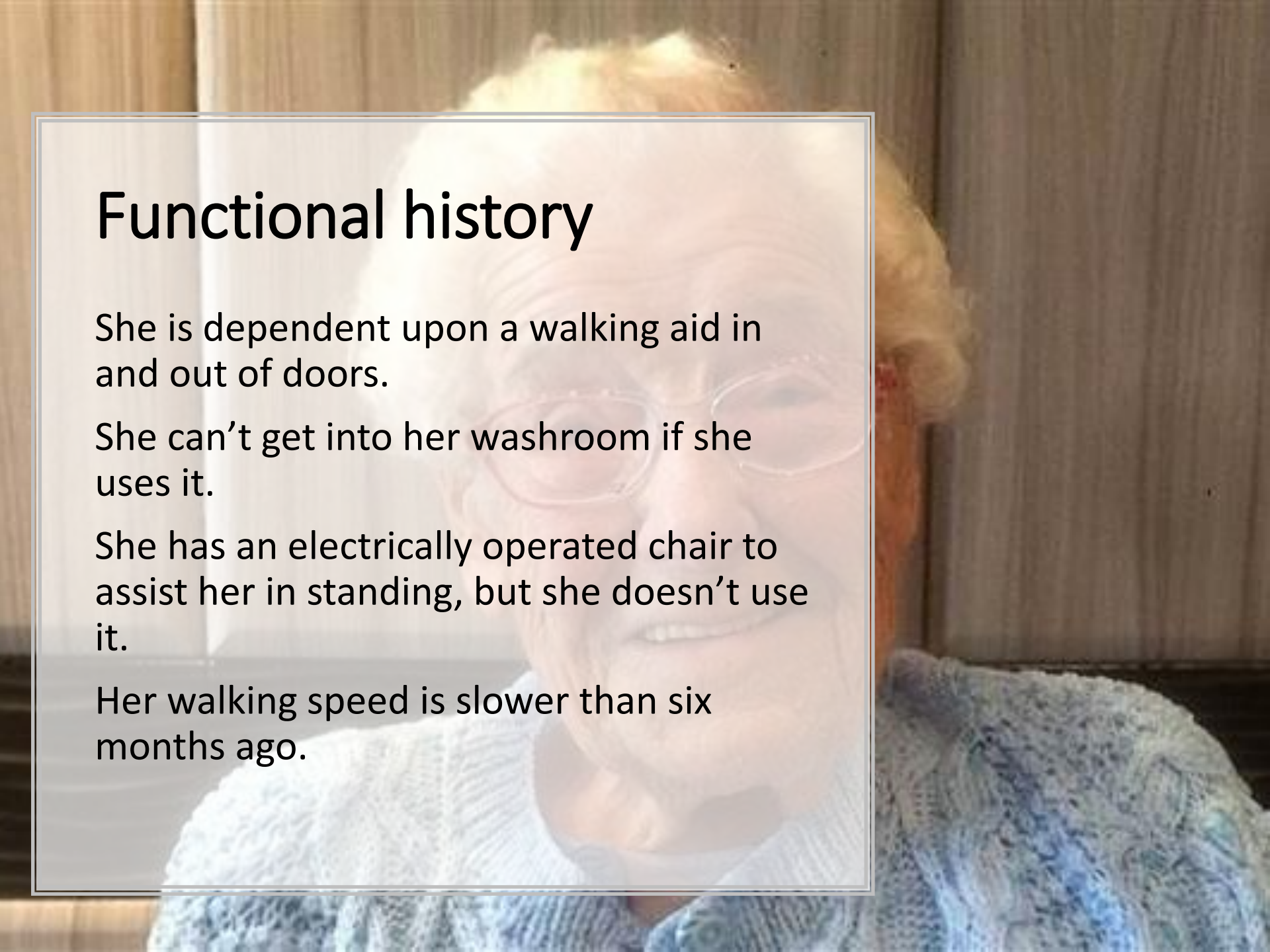
Individuals consuming 5 or more drugs were almost 5 times more likely to be taking a medication contributing to urinary symptoms, when adjusting for age, sex and comorbidity (OR = 4.9, 95% CI = 3.1-7.9)

No associations were found between age or sex and the use of medications potentially contributing to urinary symptoms

No association between between the class of medication and the type or severity of incontinence in multivariate models

| Medications | Effects on Continence |
|---|---|
| Alpha adrenergic agonists | Increase smooth muscle tone in urethra and prostatic capsule and may precipitate obstruction, urinary retention, and related symptoms |
| Alpha adrenergic antagonists | Decrease smooth muscle tone in the urethra and may precipitate stress urinary incontinence in women |
| Angiotensin converting enzyme inhibitors | Cause cough that can exacerbate UI |
| Anticholinergics | May cause impaired emptying, urinary retention, and constipation that can contribute to UI. May cause cognitive impairment and reduce effective toileting ability. |
| Antidepressants | Associative studies identify link in addition to that with specific groups |
| Calcium channel blockers | May cause impaired emptying, urinary retention, and constipation that can contribute to UI.<br>May cause dependent ooedema which can contribute to nocturnal polyuria |
| Cholinesterase inhibitors | Increase bladder contractility and may precipitate urgency UI |
| Diuretics | Cause diuresis and precipitate UI |
| Lithium | Polyuria due to diabetes insipidus |
| Opioid analgesics | May cause urinary retention, constipation, confusion, and immobility, all of which can contribute to UI |
| Psychotropic drugs<br>Sedatives<br>Hypnotics<br>Antipsychotics<br>Histamine$_1$ receptor antagonists | <br>May cause confusion and impaired mobility and precipitate UI<br>Anticholinergic effects<br>Confusion |
| Selective serotonin re-uptake inhibitors | Increase cholinergic transmission and may lead to urinary UI |
| Others<br>Gabapentin<br>Glitazones<br>Non-steroidal anti-inflammatory agents | <br>Can cause ooedema, which can lead to nocturnal polyuria and cause nocturia and night-time UI |

Wagg, A et al "Incontinence in Frail Older Persons" in "Incontinence, 6th Edition, 2017, Abrams, P., Cardozo, L, Wagg, A., Wein, A. (Eds.) International Continence Society, Bristol, UK.



# 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.

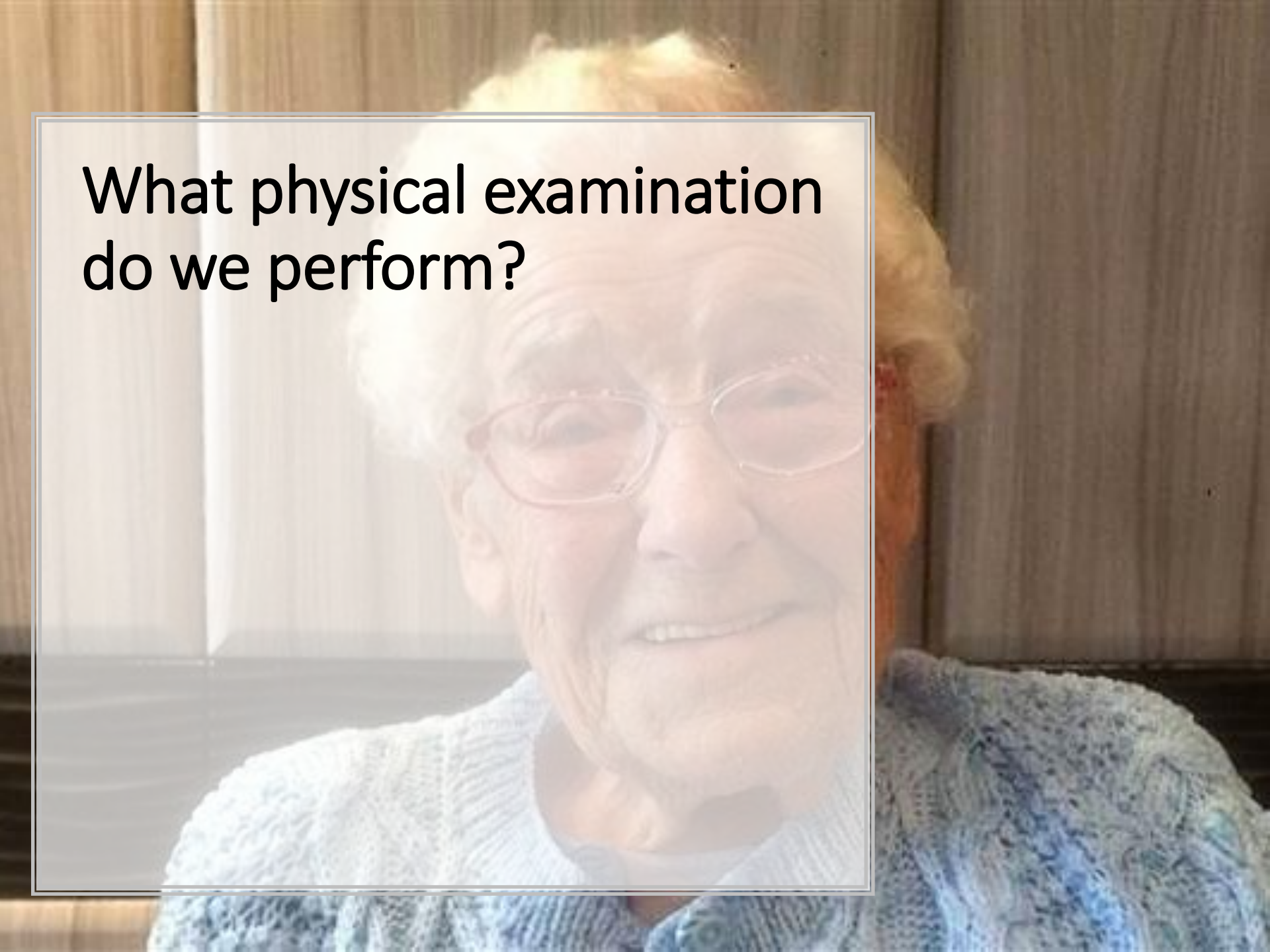
Her walking speed is slower than six months ago.


What environmental factors might be relevant?

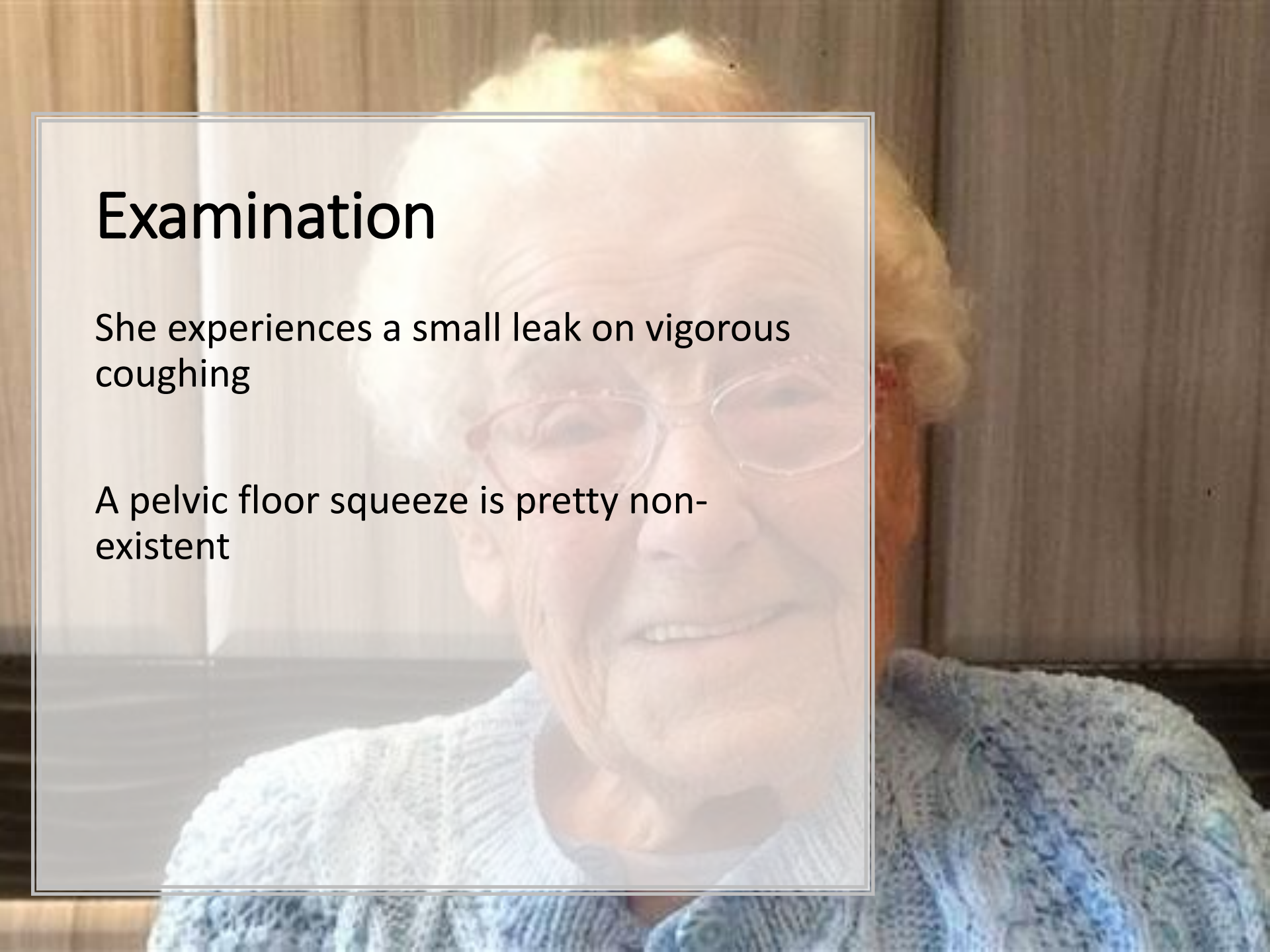
# Containment

- 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?



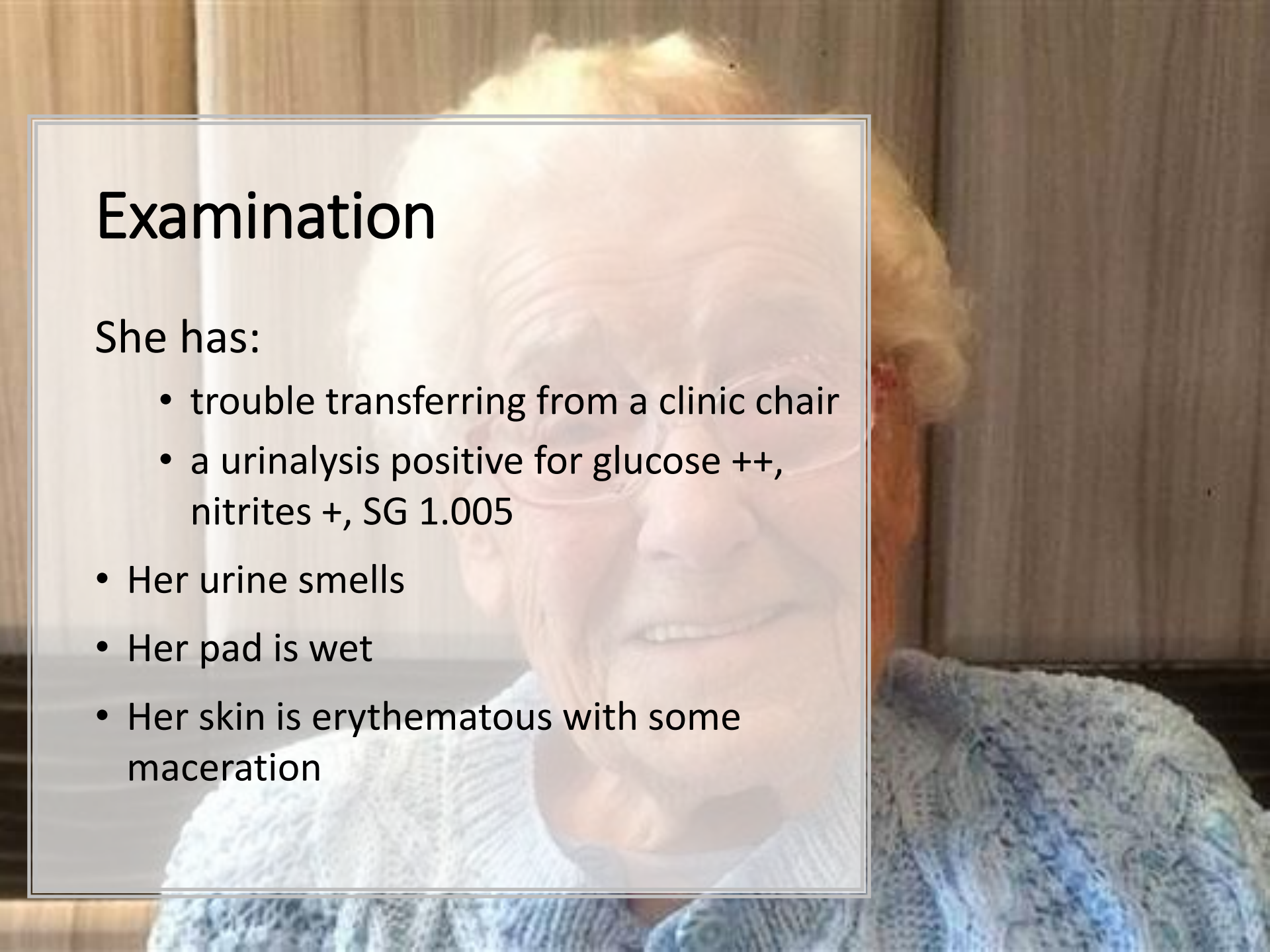
# What physical examination do we perform?



# Examination

She experiences a small leak on vigorous coughing

A pelvic floor squeeze is pretty non-existent

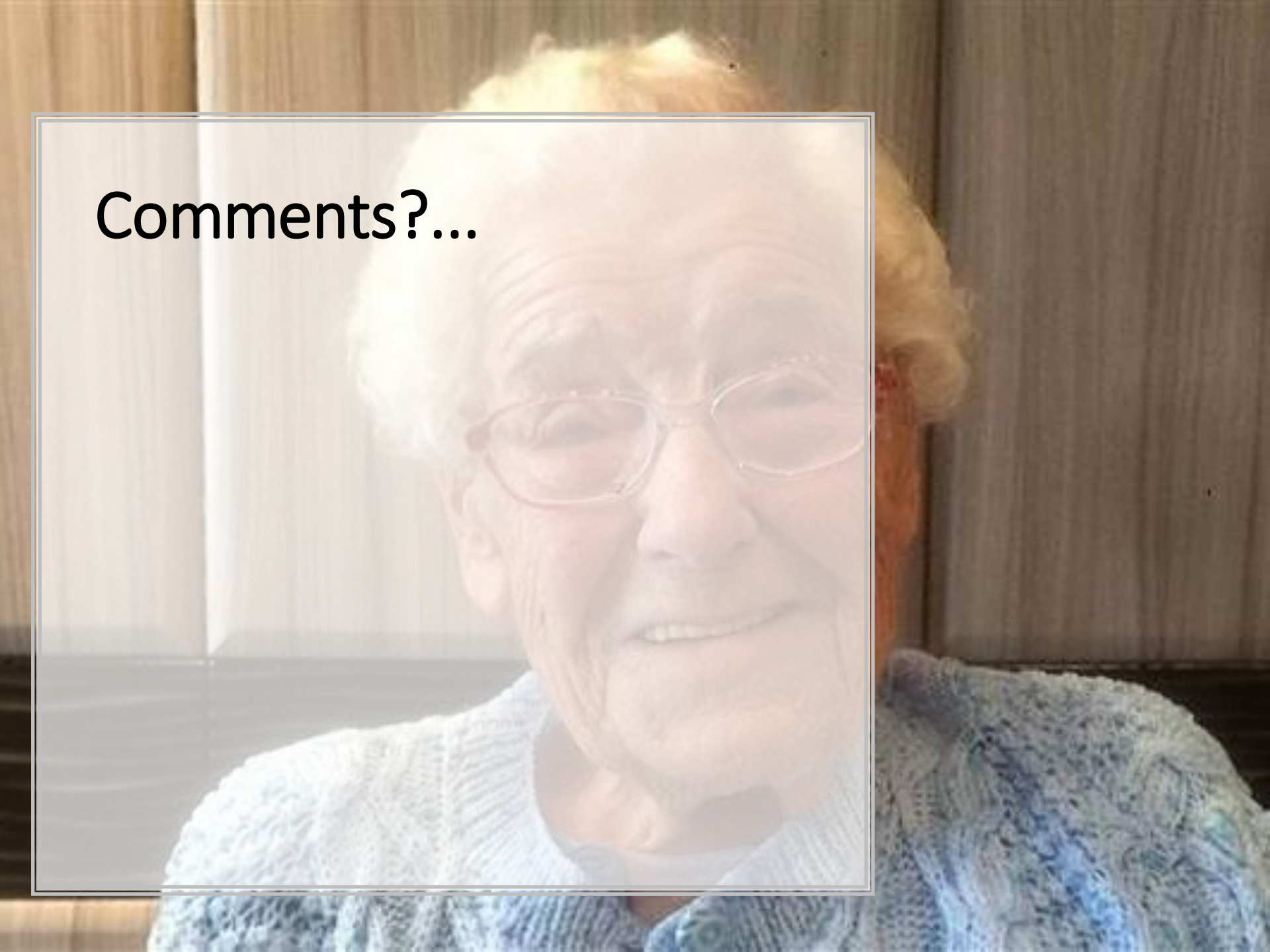


# Examination

She has:

- trouble transferring from a clinic chair
- a urinalysis positive for glucose ++, nitrites +, SG 1.005

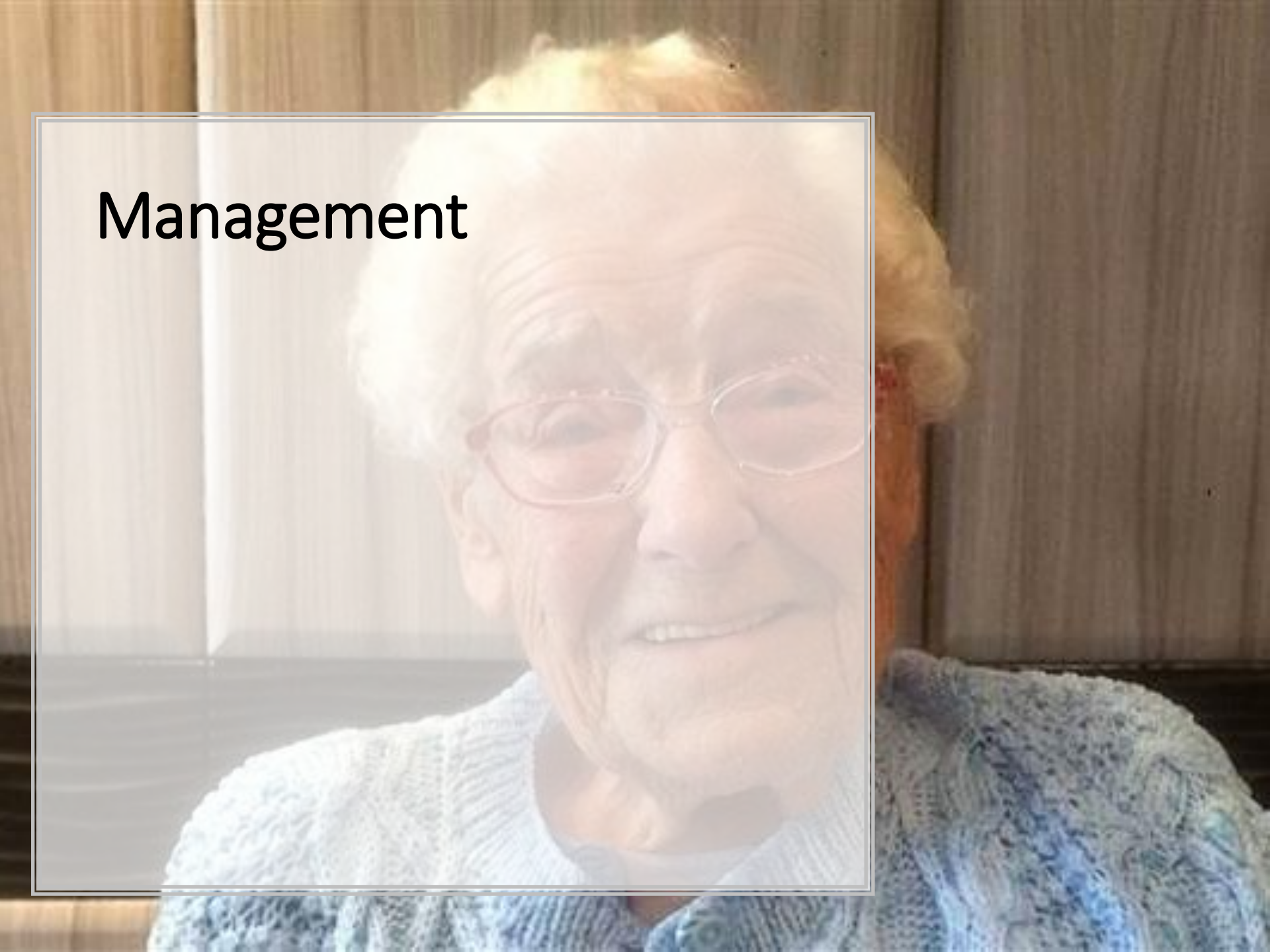
- Her urine smells
- Her pad is wet
- Her skin is erythematous with some maceration


Comments?...


Bladder diary?...

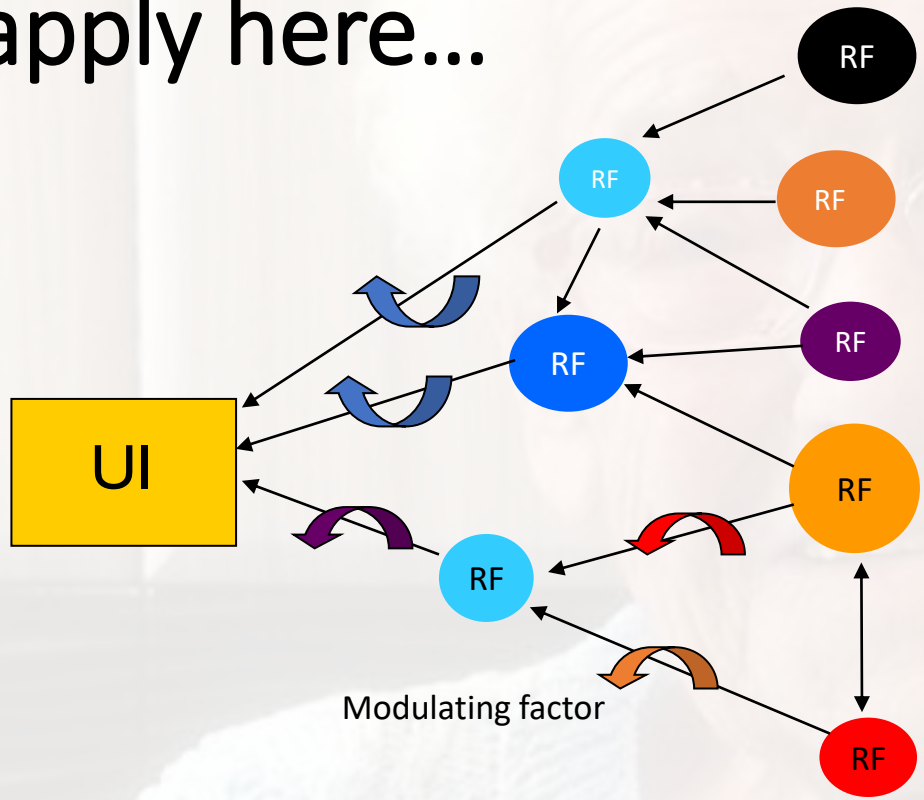

What’s the diagnosis(es)?...


What are the
contributing factors?



# Management

# Geriatric syndrome rules apply here…




Tinetti ME, *et al. JAMA.* 1995;273:1348–53.
Inouye SK, *et al. J Am Geriatr Soc.* 2007;55:780-91.


What conservative or lifestyle modifications might we make?

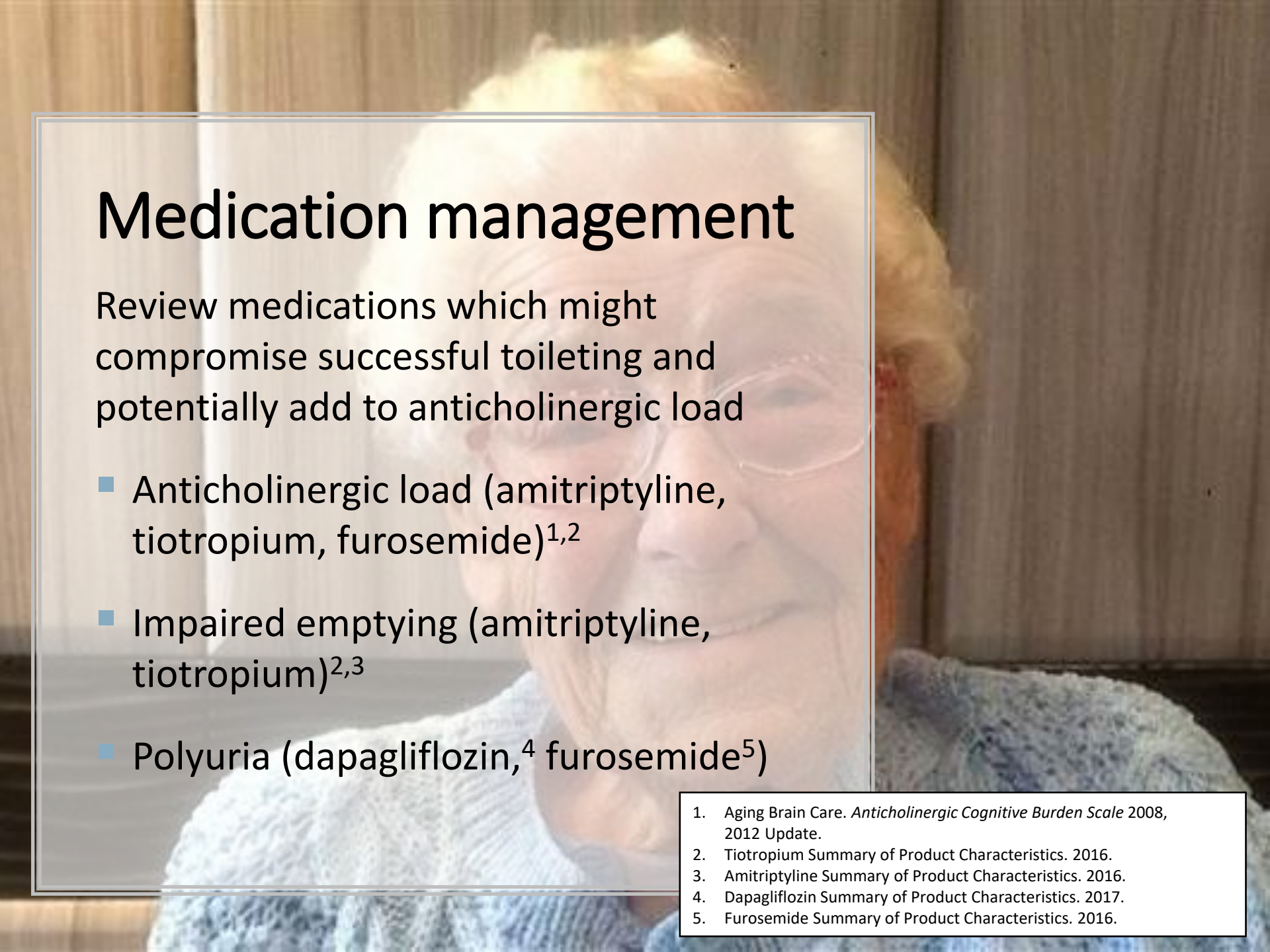

What bladder related treatments might we employ?


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)[1,2]
- Impaired emptying (amitriptyline, tiotropium)[2,3]
- Polyuria (dapagliflozin,[4] furosemide[5])


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.

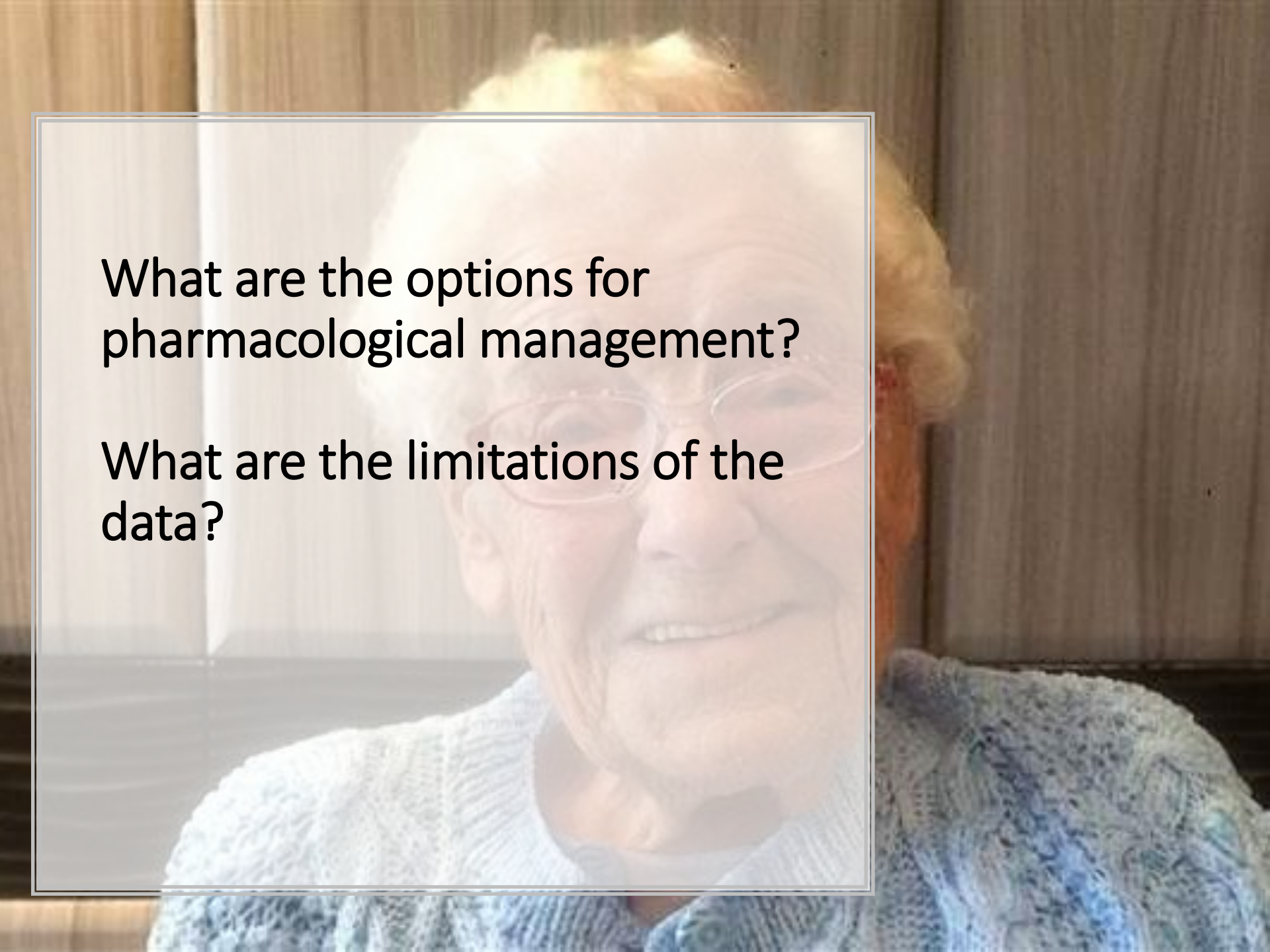
# When to treat a positive urinalysis?

# Acute UTI and older people

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

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

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?

# Options for pharmacological management?

There are data supporting the efficacy of antimuscarinic drugs in community-dwelling older people (>65y, >75y)[1-5]

From studies planned *a priori* to investigate efficacy in the elderly:

- darifenacin[1]
- fesoterodine[2,3] (incl. medically complex elderly)
- oxybutynin[4]
- propiverine (primarily safety)[5]


1. Chapple C, *et al*. *Curr Med Res Opin* 2007; 23: 2347-58.
2. Wagg A, *et al. JAGS*. 2013;61:185-193.
3. Dubeau CE, *et al*. *J Urol*. 2014;191:395-404.
4. Szonyi G, *et al*. *Age Ageing.* 1995; 24:287-91.
5. Dorschner W, *et al*. *Aktuel Urol.* 2003; 34:102-8.

Efficacy data from pre-planned studies in older nursing home residents:

- oxybutynin[1]
- oxybutynin ER[2]

From pooled *post-hoc* analyses of community dwelling older people (65+y):

- fesoterodine[3]
- oxybutynin ER[2]
- oxybutynin transdermal patch[4]
- tolterodine[5]
- solifenacin[6]
- trospium chloride[7]


1. Ouslander JG, *et al. J Am Geriatr Soc* 1995; 43: 610-17.
2. Lackner TE, *et al*. *J Am Med Dir Assoc* 2011; 12: 639-47.
3. Kraus S, *et al. Urology* 2010; 76: 1350-57.
4. Newman DK. *Director* 2008; 16: 21-4.
5. Malone-Lee J, *et al*. *J Am Geriatr Soc* 2001; 49: 700-5.
6. Wagg A, *et al. Am J Geriatr Pharmacother* 2006; 4: 14-24.
7. Sand PK, *et al. BJU Int* 2011; 107: 612-20.

# Beta-3- agonist: mirabegron

Pooled analysis of >65 and >75 cohort from registration trials

for 12/52-weeks efficacy and 52/52-weeks safety[1]

Mirabegron is contraindicated in patients with severe uncontrolled hypertension (defined as systolic blood pressure ≥180 mm Hg and/or diastolic blood pressure ≥110 mm Hg). Blood pressure should be measured at baseline and periodically during treatment with mirabegron, especially in hypertensive patients.[2]

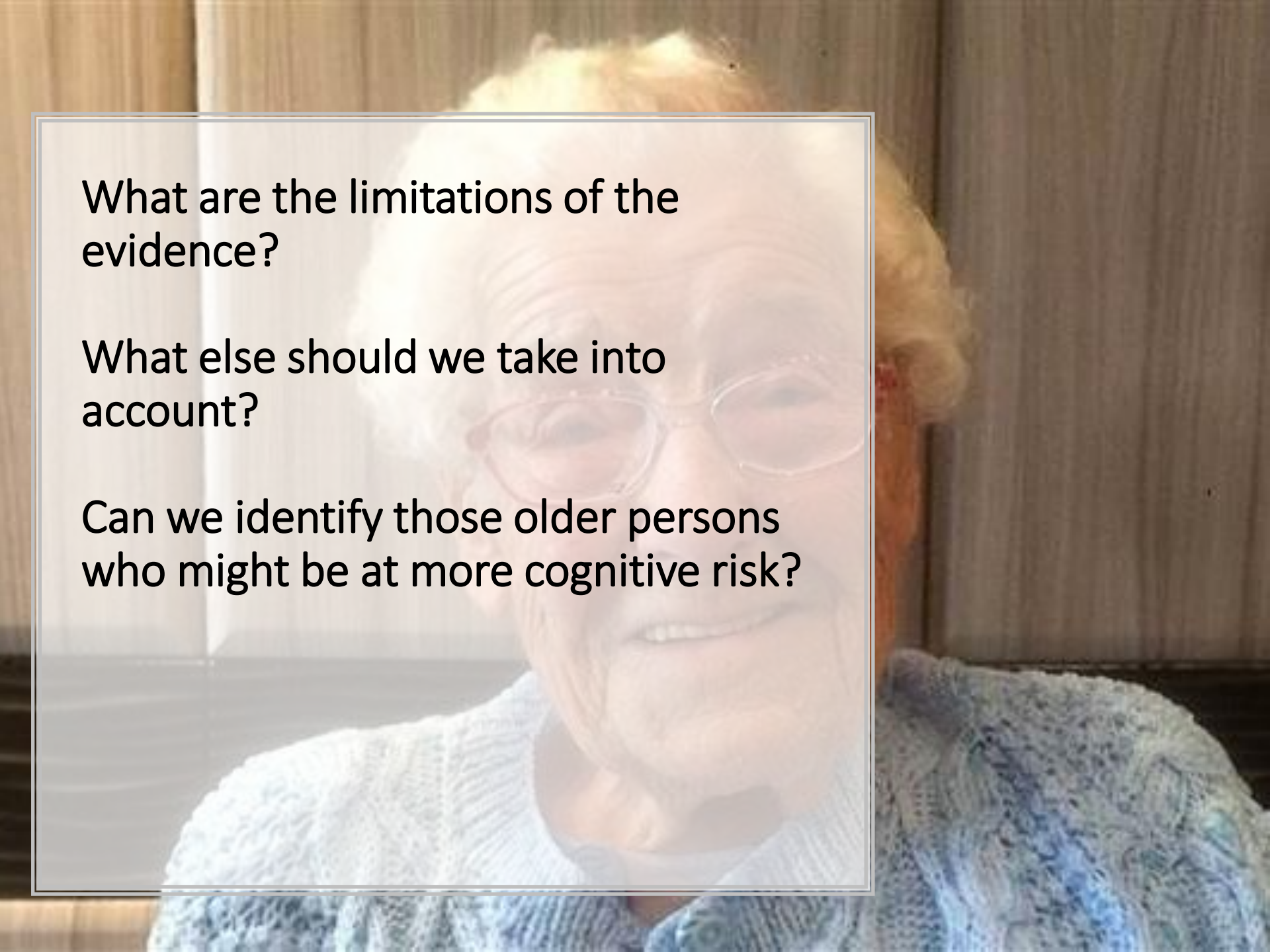

1. Wagg A. *et al. Age and ageing.* 2014; 43:666-75.
2. Betmiga Summary of Product Characteristics. 2016.

# Antimuscarinics and cognition

- Data exist for the following drugs in cognitively intact older adults
  - darifenacin[1]
  - solifenacin[2]
  - oxybutynin transdermal gel[3]
  - tolterodine[4]
  - trospium chloride[5]
  - Fesoterodine[6]
- In older adults with mild cognitive impairment
  - Solifenacin[7]

Trials of fesoterodine[8,9] and propiverine[10] have monitored MMSE scores and found no change over 12/52 therapy


1. Kay G, *et al. Eur Urol*. 2006; 50:317-26.
2. Wesnes KA, *et al. Expert Opin Drug Saf*. 2009; 8(6):1-12.
3. Kay G, *et al. Neurourol Urodyn.* 2009;28;711-712, ICS2009.
4. Kay G, *et al. ICS* 2006:Abstr 87.
5. Staskin D, *et al. Int J Clin Pract.* 2010; 64:1294-300.
6. Kay GG, *et al. Postgrad Med*. 2012; 124:7-15.
7. Wagg A, *et al. Eur Urol*. 2013; 64:74-81.
8. Wagg A, *et al. JAGS*. 2013;61:185-193.
9. . Dubeau CE, *et al*. *J Urol*. 2014;191:395-404.
10. https://www.ics.org/abstracts/publish/180/000201_poster.pdf



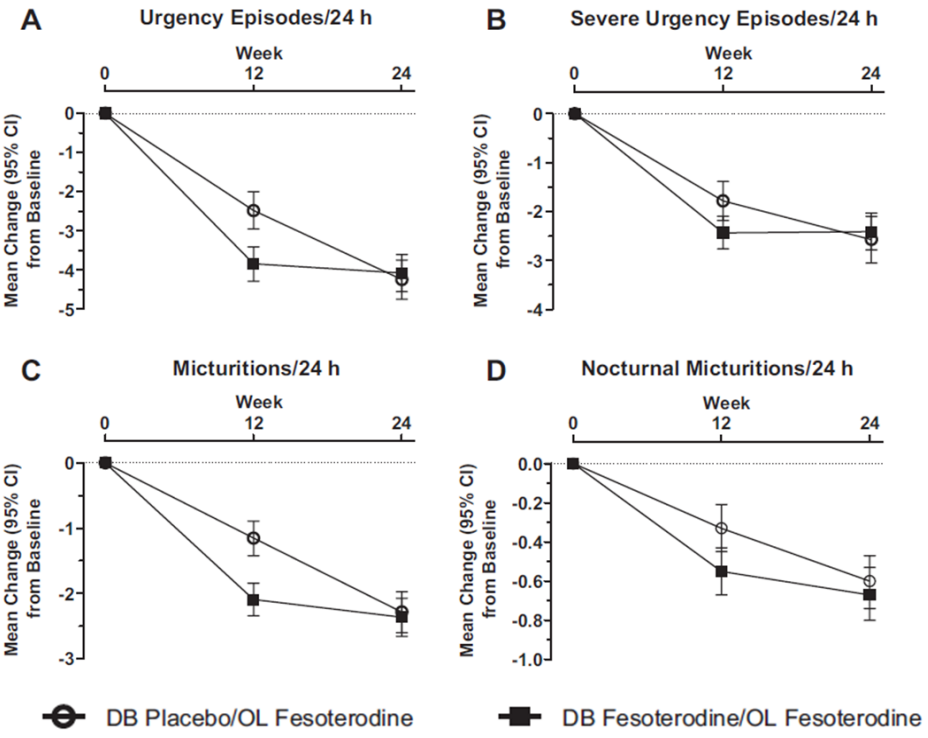
What are the limitations of the evidence?

What else should we take into account?

Can we identify those older persons who might be at more cognitive risk?

# Follow up

When should we follow up on Doreen's progress?




DB, double blind; OL, open label.

1. Wagg A, *et al. Neurourol Urodyn*. 2014; 33:106-14.