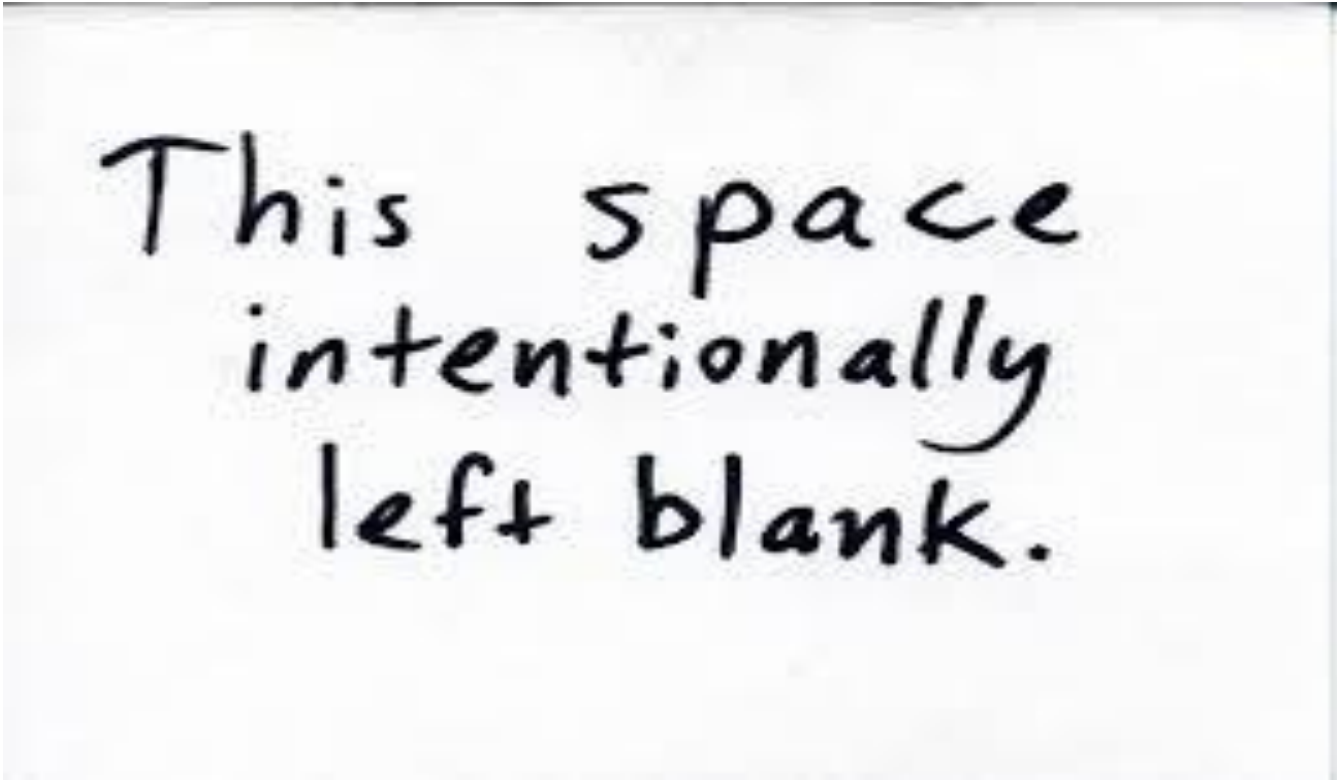


Drugs, Dreams, and Delirium

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Disclosures



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left blank.

Learning Objectives

- Decrease the use of harmful medications in the elderly.
- Increase recognition and management of frailty, urinary incontinence, and falls.
- Identify patients at increased risk of post-op delirium and take steps to reduce risk/ educate patients and their caregivers.

Physicians pour drugs of which they know little, to cure diseases of which they know less, into humans of which they know nothing.

-Voltaire (1694-1778)



Rethinking prescribing

- More than 10% of people in the US are prescribed 5 or more medications, which perhaps not coincidentally is approximately the same proportion of those who seek care in the ED annually.
- It is virtually impossible to take 5 medications exactly as directed, and only an estimated 50% of patients take their medications as prescribed, regardless of the number of medications.

Kessler C, Ward MJ, McNaughton CD. Reducing adverse drug events: the need to rethink outpatient prescribing. JAMA. 2016; 316(20):2092-2093.

Case: Nortriptyline

- Nellie is a 74 y/o woman with a history of migraines, pain-predominant irritable bowel syndrome, chronic insomnia, and mild neuropathic pain from diabetes. You consider prescribing her low-dose nortriptyline. But then you remember – nortriptyline . . .
 - A. Increases her chances of falls and fractures
 - B. Increases her chances of memory loss
 - C. Increases her risk of constipation
 - D. Is on the list of Drugs to Avoid in the Elderly
 - E. All of the above

Beers List

American Geriatrics Society 2015
Beers Criteria Update Expert
Panel. American Geriatrics Society
2015 updated Beers criteria for
potentially inappropriate
medication use in older adults.

J Am Geriatr Soc. 2015;63(11):2227-46



Beers List: Drugs to avoid in the elderly

- Antihistamines, sedating
- Antispasmodics
- Nitrofurantoin, long-term
- Tricyclic Antidepressants
- Paroxetine (other SSRIs are okay)
- Benzodiazepines
- NSAIDs long term
- Skeletal muscle relaxers
- HRT for both men and women
- Dessicated thyroid
- Glyburide
- PPIs, long-term, if not needed
- H2Bs, in people with dementia/delirium
- Metoclopramide
- Z-drugs

Drugs to Avoid in the Elderly (DAE) and NCQA

- **Nortriptyline added to the list of meds to be avoided in the elderly**
- **Why?** Mounting evidence that **anticholinergic burden** in elderly patients is linked to an increased **risk of cognitive problems**
- The DAE measure looks at the first fill of a high risk medication, but it also measures patients who get a second fill of the same medication, so there is ***incentive to try to get those patients off of harmful medications even after filling once.***

Anticholinergic Burden

The cumulative effect of taking multiple medicines with anticholinergic properties, termed “anticholinergic burden” can adversely impact cognition, physical function and increase the risk of mortality.

A number of studies have reported on the adverse effects associated with higher anticholinergic burden.

Mohammed SS, Duffill SB, Nishtala PS. Burden quantified by anticholinergic risk scales and adverse outcomes in older people: a systematic review. BMC Geriatr. 2015; 15: 31.

Alternatives to Nortriptyline:



- Alternatives for neuropathic pain
- Alternatives for migraine prevention
- Alternatives for irritable bowel syndrome
- Alternatives for insomnia

Case: Benzodiazepines

A 64 y/o woman has been taking clonazepam 2 mg QHS for many years for insomnia and anxiety; this has worked quite well for her in her opinion and she denies any side effects. She requests her usual refill. What do you do next?

1. Refill the medication, no need to start this painful discussion until she turns 65.
2. Outreach to her to have a conversation about tapering her off of the clonazepam and consider safer options for her insomnia and anxiety.

Stopping Benzodiazepines

- It can be difficult to convince people who have been taking benzodiazepines to discontinue use, but it's not impossible.
- Discussing harms and gradual taper off the drug results in nearly ½ of patients successfully discontinuing the benzodiazepine (NNT = 3)

Vicens C, Bejarano F, Sempere E, et al. Comparative efficacy of two interventions to discontinue long-term benzodiazepine use: cluster randomized controlled trial in primary care. Br J Psychiatry 2014;204(6): 471-479.

Clinical Momentum

The overwhelming tendency to continue current medications.

Be the external force.

Always ask yourself, “Could a drug be causing or aggravating this person’s problems?”



Dreams



I prefer insomnia
to anaesthesia.

-Antonio Tabucchi

Case: Insomnia

TG is a 75 year old man seeing you for annual wellness visit, who reports as one of his main concerns insomnia for many years. Falls asleep easily but wakes up after 2 or 3 hours, and then tosses and turns the rest of the night. Typically falls asleep around 11 pm after watching TV in bed, and gets out of bed between 5 to 6 am. Retired. Participates in usual activities during the day, with some fatigue mid-afternoon, tries to avoid napping. No depression or anxiety symptoms. Mini-cog normal. Etoh: glass of wine most evenings with dinner, and several nights a week, a “nightcap” of scotch.

What do you do for TG?

1. Prescribe medication
2. Encourage cognitive behavioral therapy for insomnia
3. Reassure him this is normal

Insomnia in older adults

- Prevalence of insomnia increases with age. In one study of elderly people, only 12% reported normal sleep.
- Late life insomnia is often persistent and may prompt self-medication with OTC sleep aids or alcohol.

Foley DJ, Monjan AA, Brown SL et al. Sleep complaints among elderly persons: an epidemiologic study of three communities. *Sleep* 1995;18:425.

Insomnia in older adults

Remember the following when prescribing sedative-hypnotics in your older patients:

- NNT = 13 (for an extra 25 minutes of sleep)
- NNH = 6

Glass, J, Lanctot KL, Herrmann N, et al. Sedative hypnotics in older people with insomnia: meta-analysis of risks and benefits. BMJ 2005;331:1169 .

Chronic Insomnia Clinical Practice Guideline

- The American College of Physicians recommends that all adult patients receive cognitive behavioral therapy for insomnia (CBT-i) as the initial treatment for chronic insomnia. **Grade: strong recommendation, moderate-quality evidence.**
- The American College of Physicians recommends that physicians use a shared-decision making approach, including a discussion of the benefits, harms, and costs of **short-term** pharmacological therapy in adults with chronic insomnia in whom CBT-i alone was unsuccessful. **Grade: weak recommendation, low-quality evidence.**

Qaseem A, Kansagara D, Forciea MA et al. Management of chronic insomnia disorder in adults: A clinical practice guideline from the American College of Physicians. Ann Intern Med. 2016;165:125-133.

Pharmacologic Treatment of Insomnia

- “Evidence is insufficient to evaluate the balance of the benefits and harms of long-term use of pharmacologic treatments in adults with chronic insomnia disorder. The FDA has approved pharmacologic therapy for short-term use (4-5 weeks), and **patients should not continue using the drugs for extended periods.**”
- “If, after a trial of CBT-i, a shared decision is made to continue medications for longer than 4 to 5 weeks, clinicians should revisit the need for medication continuation at periodic intervals.”
- “Older adults can be more sensitive to medications and their adverse effects and should be monitored closely when treated with pharmacologic agents.”

Treatment of insomnia in older adults

- Treat underlying depression, anxiety, sleep apnea, or restless legs if that is primary cause of insomnia.
- Cognitive behavioral therapy is SUPERIOR to drugs for chronic insomnia.
- Apps: CBT-i and Sleepio

And medications?

- Really no good evidence on long-term options using medications for insomnia.
- Currently, melatonin, trazodone, and mirtazapine are NOT on Drugs to Avoid in Elderly list . . . but hard to know if this will remain the case down the road.

Aging is a triumph, not a disease.



The Giants of Geriatrics

Incontinence

Instability

Immobility

Intellectual Impairment



Case: Frailty

MM is a 91 year old woman, native of Chicago, widowed for 20 years, with 1 remaining child. She's not managing well on her own, so her son and his wife moved her in with them. She has a long history of avoiding medical care; her last visit with a doctor in Chicago was for treatment of a wrist fracture. She has had no health screenings, is on no prescription medications, and has no self-reported concerns. She is seeing you for a "meet and greet."

Case: Frailty

- MM has a BMI of 16. Her blood pressure is 148/62. Her pulse is 72. Her SLUMS is 16/30. She is unable to raise up from a chair without using her arms, and her gait is slow and unsteady.
- What does evidence suggest is most helpful for you to do?
 1. Start donepezil
 2. Start an anti-hypertensive
 3. Order a mammogram
 4. Encourage an exercise program
 5. Order a bone density test

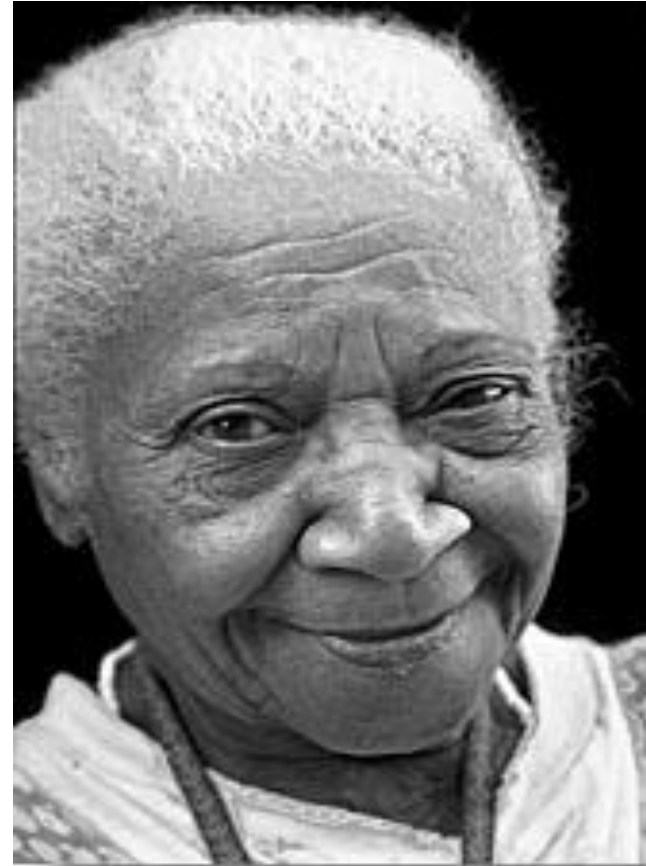
Van Halen, Brown m&m's, and Geriatrics

☐ Gait Speed

☐ Sock on, sock off

☐ Toenails

Schwarz AW. What Van Halen can teach us about the care of older patients. JAMA Intern Med. 2017; 177(3): 309.



Frailty

- Definition: Decreased functional reserve that results in increased vulnerability to stressors.
- Result: Increased risk for functional decline and death
- Prevalence: 7% of community-dwelling older adults. Increasing prevalence with:
 - Advancing age (30% by age 80)
 - Being a woman
 - Being African-American

Frailty

- Frailty Wheel: Age, Assistance with meds, Assistance with bathing, and “Do health conditions interfere with function?”
- SOF (Study of Osteoporotic Fracture Index): Presence of at least 2 of 3:
 - Weight loss of 5% or more in the past year
 - Inability to rise from chair 5 times without using arms
 - A “no” response to “Do you feel full of energy?”

Does frailty matter?

- Frailty increases mortality risk
- Frailty predicts surgical/procedural risks
- Frailty predicts risk of hip fractures, disability, and hospitalization.

Woods NF. J Am Geriatr Soc. 2005;53:1321.

Cawthon PM. J Am Geriatr Soc. 2007;55:1216.

Theou O. J Am Geriatr Soc. 2013;61:1537.

Makery MA. J Am Coll Surg. 2010;210:901.

Garonzik-Wang JM. Arch Surg. 2012;147:190.

Kim DH. Ann Intern Med. 2016;165:650.

Treatment of DM in frail adults

- Large RCTs that examine the effects of glycemic control on outcomes have excluded frail older persons.
- Tight glycemic control in this group results in significant burdens without reaching long-term benefits.
- There appears to be a mortality benefit to higher Hgb A1C levels among the most frail patients in observational studies.

Lee SI et al. JAMA 2011;305(13):1350.

Consensus Opinions on HbA1C Target in Frail Elderly

- ADA: “less stringent goals”
- VA: 8-9%
- AGS: Glycemic targets should reflect patient goals, health status, and life expectancy:
 - 7 to 7.5% in healthy older adults with long life expectancy
 - 7.5% to 8% in those with moderate co-morbidities and a life expectancy of less than 10 years
 - 8-9% in those with multiple morbidities and shorter life expectancy

- A recent study of 1288 older adults with DM evaluated health status and A1C control. Overall, 61.5% had an A1C less than 7%. This proportion did not differ across health status categories (healthy to complex/intermediate health to very complex/poor health).
- Of the older adults with an A1C less than 7%, 55% were treated with insulin or sulfonylureas; this proportion did not differ across health categories.
- Diabetes performance measures have encouraged a culture of intensification that has led some physicians to ignore the evolving health status of the individual patient.

Lipska KJ et al, Potential overtreatment of diabetes mellitus in older adults with tight glycemic control. JAMA Intern Med. 2015

What do we do with frail patients?

- Practice medical minimization
- Set appropriate, gentle, A1C targets
- **Recommend exercise: *The only intervention that has been shown to have a positive impact on even the frailest older adults.***

Appropriate screenings to consider in the frail elderly

- Advance Care Planning/ MDPOA
- Functional status/ home safety
- Med review
- Vision and hearing
- Urinary Incontinence
- Malnutrition/ Food Insecurity
- Falls/ Fracture risk
- Depression
- Cognitive impairment/ driving assessment

Case: Falls

- EG is a 74 year old woman seeing you for an annual wellness visit. She screens positive for falls, and you ask her about this. She had a fall 2 months ago while walking her dog (no major injury) and admits that her balance “isn’t what it used to be.” She finds herself a bit afraid of falling. Her gait is normal but cautious. What is most likely to help her?
 1. Check a vitamin D level
 2. Check a vitamin B12 level
 3. A walker or cane
 4. Regular physical activity

Falls

- Falls are common: between 30-40% of community-dwelling people over the age of 65 years falls each year (50% for those 80+)
- For people aged 65 and older, falls are the leading cause of both fatal and nonfatal injuries and can have devastating effects.
- A fall is often a life-changing event, the start of a downward spiral of increasing frailty, dependency, and loss of self-worth.

Larson EB. JAMA 2017;318(17):1659.

For many, Happiness = Independence

People value independence more than life itself:

80% of older women prefer death to a “bad” hip fracture that would result in a nursing home admission.

Salkeld G et al, BMJ 2000.

Assessment in patients who fall

- History: can be pretty brief
- Medication review: remember to ask about OTCs
- Physical exam: 2 key pieces – watch people walk and check orthostatics
- Labs: nothing specific, consider B12 and vitamin D (if not already taking a supplement)
- Treatment: Exercise. Individual PT if needed. Vitamin D 800 to 1000 IU daily.

Falls

The single best thing you can do for your patient who falls is get them into the habit of regular physical activity.

Tricco AC et al. JAMA 2017;318(17):1687.

Exercise

Always encourage exercise.

It is better than any pill that will ever be invented.

*To get back my youth, I would do anything in the world,
except take exercise, get up early, or be respectable.*

-Oscar Wilde, dead at age 46

Case: Urinary Incontinence

- DK is an 81 y/o woman seeing you for her family caregiver concerns of increasing nocturia and urge incontinence, causing insomnia (for DK and her caregiver), worsening for the last 3 months. Review of medications shows that donepezil was started 3 months ago.
- Your next step:
 1. Prescribe oxybutynin
 2. Refer for bladder training instruction
 3. Discontinue donepezil
 4. Prescribe trospium

Urinary Incontinence

- Common: 30% community-dwelling older women and 15-28% men; over 60% in long term care facilities
- Greatly reduces quality of life: Decreases physical self-rated health by 5.1 points (comparable to CHF – 4 points and hip/knee OA – 5.7 points)
- ***Not*** a normal part of aging

. . . and mostly fixable

Urinary Incontinence

- High prevalence, but underdiagnosed and undertreated.
- Only 25% of affected women seek care, and of those, less than 50% receive treatment.
- Urinary Incontinence is associated with falls and fractures, sleep disturbances, depression, and urinary tract infections.

Lukacz ES, Santiago-Lastra Y, Albo ME, et al. JAMA. 2017;318(16):1592.

Urinary Incontinence: Work up

- History to determine type of incontinence
- Medication review
- Gynecological/ prostate exam
- Check UA, consider bladder ultrasound for PVR

Urinary Incontinence: Treatment

- Behavioral treatments (bladder training, pelvic floor exercises) are very effective and should be considered **first-line** for urge/stress/mixed urinary incontinence for both women and men.
- Medications (including STOPPING medications, and with care to avoid starting anticholinergics)
- Gynecology referral for pessary fitting or surgical options
- Urogynecology for options

By the time you're 80 years old, you've learned everything. You only have to remember it.

-George Burns



Dementia Diagnosis

- Patients are now living long enough to enjoy the benefit of superior medical care: Alzheimer's Disease.
- Too often, this diagnosis is followed with the message:
“You have a bad disease that will get worse. We have ineffective medications you can try. Have a nice day.”

Jeff Klingman, neurologist TPMG

How common is dementia?

Dementia:

- 7% of those over 65
- 30% over 80

Mild Cognitive Impairment (MCI):

- 10-20% of persons over age 65
- Cognitive decline greater than expected for an individual's age, but does not interfere notably with daily life.
- More than half of MCI patients progress to dementia within 5 years.

Gauthier S, Reisberg B, Zaudig M, et al. Mild cognitive impairment. *Lancet* 2006;367:1262–70

Cognitive impairment screening

Mini-cog: 3 word recall and clock draw – great for screening

Sensitivity 91%

Specificity 86%

SLUMS if Mini-cog is abnormal

Dementia Diagnosis

- Dementia and Mild Cognitive Impairment are under-recognized, and underdiagnosed.
- Our patients and their caregivers deserve:
 - A diagnosis, delivered with compassion
 - What to expect
 - Where to go for help

Cognitive Impairment: Essential things to do over time

- ☐ HIPAA/ MDPOA documentation
- ☐ Advance Care Planning while patient can still participate
- ☐ Driving evaluation/ firearm/ home safety issues
- ☐ Provide caregivers with skills/education
- ☐ Minimize medications, understand goals of care
- ☐ Plans if something goes wrong - avoiding ED/ hospital if possible, and back-up caregiving options

Delirium



“They go home and don’t have the language to describe what’s happened to them. Some patients have very striking delusional memories that are very clear distortions of what happened: patients who were catheterized who think they were sexually assaulted and patients undergoing MRIs convinced they were fed into a giant oven.”

-James C. Jackson, Vanderbilt’s ICU Recovery Center, as quoted in Kaiser Health News June 2, 2015: For many patients, delirium is a surprising side effect of being in the hospital. Sandra G. Boodman.

Case: Delirium

RJ is a 75 year old man who comes in with his wife for a “meet and greet.” Scheduled for total hip arthroplasty in a month. His wife does all the talking, while he stares vacantly. He seems comfortable, not in any obvious pain. No dementia mentioned in his past medical records and no SLUMS testing in the chart. His wife reports he’s had dementia for years now and she helps with all of his ADLs. SLUMS today 5/30. Should he go to surgery for his hip replacement?

1. Yes
2. No

Delirium = “Acute Brain Failure”

- Delirium is the final common pathway of multiple mechanisms, similar to acute heart failure
- Features of delirium:
 - Acute
 - Disturbance in attention and awareness
 - Tends to fluctuate

Delirium is common

- Delirium is extremely common in hospitalized older adults:
 - 1/3 of general medical patients who are 70 or older have delirium
- Delirium is the most common surgical complication among older adults, with an incidence of:
 - 15-25% after major elective surgery
 - 50% after high-risk procedures (hip fracture repair and cardiac surgery)
- Hyperactive delirium represents only ¼ of cases, with the others having hypoactive (“quiet”) delirium

Marcantonio ER. NEJM; 377(15):1456.

Risk factors for delirium

- **Cognitive impairment**

- **Age**

Dementia is the leading risk factor for delirium, and fully 2/3 of cases of delirium occur in patients with dementia.

- Functional impairment
- Sensory impairment
- Dehydration/ malnutrition
- Drugs
- Comorbidities

Inouye SK. NEJM. 2006;354:1157-1165.

For 80% of patients, some
symptoms persist at > 6
months.

McCusker J J Gen Int Med 2003;18:696-704.

One year mortality is 35-40% . . .

2 year survival may be as low as 33%.

Inouye SK NEJM 2006;354:1157-1165.

The mortality rate is higher than acute heart disease, influenza, and pneumonia.

Inouye SK NEJM 2006;354:1157-1165.



Adjusted average annual costs were 2.5 times higher for patients with delirium.

Leslie DL et al. Arch Intern Med 2008;168:27-32.

National burden of delirium:
\$40 to \$150 billion
per year.

Leslie DL et al. Arch Intern Med 2008;168:27-32.



Prevention by reducing factors that may trigger delirium in high risk patients is the key therapeutic strategy.

30-40% of cases are likely preventable.

Inouye SK. NEJM. 2006;354:1157-1165.

Preventing Delirium

- Prevention: the most effective strategy for reducing frequency and complications of delirium.
- Document baseline cognitive status before elective surgery in older patients.
- Educate patients and caregivers about delirium

Preventing Delirium

- Reorientation
- Non-pharmacologic sleep protocol (quiet hours)
- Encourage early mobilization
- Ensure glasses/hearing aids are available and used
- Liberal oral intake

Inouye SK. NEJM. 2006;354:1157-1165.

Preventing Delirium

- Round-the-clock acetaminophen and local pain management instead of opioids
- Discontinue standing orders for sleeping pills

Marcantonio ER. NEJM; 377(15):1456.

*Ultimately, life is disease, death, and oblivion.
It's still better than high school.*
-Dan Savage

