The Geriatric Assessment

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Geriatric Assessment

- The number of elderly Americans older than 65 yrs of age could increase from 34 million in 1998 to approximately 69 million in 2030.
- Approximately one-half of the ambulatory primary care for adults older than 65 years is provided by family physicians.
- It is estimated that older adults will comprise at least 30 percent of patients in typical family medicine outpatient practices, 60 percent in hospital practices, and 95 percent in nursing home and home care practices.

Similarities and differences from standard medical evaluation ?

- Incorporates all facets of a conventional medical history: The approach being more specific to older persons.
- Including non-medical domains
- Emphasis on functional capacity and quality of life
- Incorporating a multidisciplinary team

Tailored practice to meet busy clinical demands!

- Less comprehensive and more problem-directed.
- Incorporation of various tools and survey instruments in the assessments.
- Patient-driven assessment instruments which are time efficient.

Is this compromising patient care ?

Structured Approach

Multidimensional

- Functional ability
- Physical health (pharmacy)
- Cognition
- Mental health
- Socio-environmental

Multidisciplinary

- Physician
- Social worker
- Nutritionist
- Physical therapist
- Occupational therapist
- Family

Functional Ability

- Functional status refers to a person's ability to perform tasks that are required for living.
- Two key divisions of functional ability:
- Activities of daily living (ADL)
- Instrumental activities of daily living (IADL).

ADL

- ADL : self-care activities that a person performs daily

  (e.g., eating, dressing, bathing, transferring between the bed and a chair, using the toilet, controlling bladder and bowel functions).

Katz Index of Independence in Activities of Daily Living

Activities Points (1 or 0)	**Independence** (1 Point) NO supervision, direction or personal assistance	**Dependence** (0 Points) WITH supervision, direction, personal assistance or total care
BATHING Points: _____	(1 POINT) Bathes self completely or needs help in bathing only a single part of the body such as the back, genital area or disabled extremity	(0 POINTS) Need help with bathing more than one part of the body, getting in or out of the tub or shower. Requires total bathing
DRESSING Points: _____	(1 POINT) Get clothes from closets and drawers and puts on clothes and outer garments complete with fasteners. May have help tying shoes.	(0 POINTS) Needs help with dressing self or needs to be completely dressed.
TOILETING Points: _____	(1 POINT) Goes to toilet, gets on and off, arranges clothes, cleans genital area without help.	(0 POINTS) Needs help transferring to the toilet, cleaning self or uses bedpan or commode.
TRANSFERRING Points: _____	(1 POINT) Moves in and out of bed or chair unassisted. Mechanical transfer aids are acceptable	(0 POINTS)Needs help in moving from bed to chair or requires a complete transfer.
CONTINENCE Points: _____	(1 POINT) Exercises complete self control over urination and defecation.	(0 POINTS) Is partially or totally incontinent of bowel or bladder
FEEDING Points: _____	(1 POINT) Gets food from plate into mouth without help. Preparation of food may be done by another person.	(0 POINTS) Needs partial or total help with feeding or requires parenteral feeding.

Total Points: _____

Score of 6 = High, Patient is independent.
Score of 0 = Low, patient is very dependent.

IADL

- IADL are activities that are needed to live independently
- (e.g., doing housework, preparing meals, taking medications properly, managing finances, using a telephone)

Lawton Instrumental Activities of Daily Living Scale

- This tool is used for evaluating patients with early-stage disease to assess the patient's ability to perform a variety of self-care activities.
- For each area of functions listed, circle description that applies. When completed, list the total score.

A. Ability to Use Telephone

1. Operates telephone on own initiative -- looks up and dials numbers, etc.
2. Dials a few well-known numbers
3. Answers telephone but does not dial
4. Does not use telephone at all

B. Shopping

1. Takes care of all shopping needs independently
2. Shops independently for small purchases
3. Needs to be accompanied on any shopping trip
4. Completely unable to shop

C. Food Preparation

1. Plans, prepares, and serves adequate meals independently
2. Prepares adequate meals if supplied with ingredients
3. Heats and serves prepared meals, or prepares meals but does not maintain adequate diet
4. Needs to have meals prepared and served

D. Housekeeping

1. Maintains house alone or with occasional assistance (eg, "heavy work" or "domestic help")
2. Performs light daily tasks such as dishwashing, bed making
3. Performs light daily tasks but cannot maintain acceptable level of cleanliness
4. Needs help with all home maintenance tasks
5. Does not participate in any housekeeping tasks

E. Laundry

1. Does personal laundry completely
2. Launders small items -- rinses socks, stockings, etc.
3. All laundry must be done by others

F. Transportation

1. Travels independently on public transportation or drives own car
2. Arranges own travel via taxi, but does not otherwise use public transportation
3. Travels on public transportation when assisted or accompanied by another
4. Travel limited to taxi or automobile with assistance of another
5. Does not travel at all

G. Responsibility for Own Medication

1. Is responsible for taking medication in correct dosages at correct times
2. Takes responsibility if medication is prepared in advance in separated dosages
3. Is not capable of dispensing own medication

H. Ability to Handle Finances

1. Manages financial matters independently (budgets, writes checks, pays bills, goes to bank), collects and keeps track of income

2. Manages financial day-to-day purchases, but needs help with banking, major purchases, etc.

3. Incapable of handling money

Total Score: _____

Physical Health

- Incorporates all facets of a conventional medical history: However the approach should be specific to older persons.

Specific topics include:

- Nutrition
- Vision
- Hearing
- Fecal and urinary continence
- Balance and fall prevention, osteoporosis
- Polypharmacy

Vital signs		
Blood pressure	Hypertension	Adverse effects from medication, autonomic dysfunction
	Orthostatic hypotension	Adverse effects from medication, atherosclerosis, coronary artery disease
Heart rate	Bradycardia	Adverse effects from medication, heart block
	Irregularly irregular heart rate	Atrial fibrillation
Respiratory rate	Increased respiratory rate greater than 24 breaths per minute	Chronic obstructive pulmonary disease, congestive heart failure, pneumonia
Temperature	Hyperthermia, hypothermia	Hyper- and hypothyroidism, infection

Signs		
Cardiac	Fourth heart sound (S4) Systolic ejection, regurgitant murmurs	Left ventricular thickening Valvular arteriosclerosis
Pulmonary	Barrel chest	Emphysema
	Shortness of breath	Asthma, cardiomyopathy, chronic obstructive pulmonary disease, congestive heart failure
Breasts	Masses	Cancer, fibroadenoma
Abdomen	Pulsatile mass	Aortic aneurysm
Gastrointestinal, genital/rectal	Atrophy of the vaginal mucosa	Estrogen deficiency
	Constipation	Adverse effects from medication, colorectal cancer, dehydration, hypothyroidism, inactivity, no fibre
	Fecal incontinence	Fecal impaction, rectal cancer, rectal prolapse
	Prostate enlargement	Benign prostatic hypertrophy
	Prostate nodules	Prostate cancer
	Rectal mass, occult blood	Colorectal cancer
	Urinary incontinence	Bladder or uterine prolapse, detrusor instability, estrogen deficiency

Extremities	Abnormalities of the feet	Bunions, onychomycosis
	Diminished or absent lower extremity pulses	Peripheral vascular disease, venous insufficiency
	Heberden nodes	Osteoarthritis
Muscular/skeletal	Diminished range of motion, pain	Arthritis, fracture
	Dorsal kyphosis, vertebral tenderness, back pain	Cancer, compression fracture, osteoporosis
	Gait disturbances	Adverse effects from medication, arthritis, deconditioning, foot abnormalities, Parkinson disease, stroke
	Leg pain	Intermittent claudication ,neuropathy, OA radiculopathy, venous insufficiency
	Muscle wasting	Atrophy, malnutrition
	Proximal muscle pain and weakness	Polymyalgia rheumatica
Skin	Erythema, ulceration over pressure points, unexplained bruises	Anticoagulant use, elder abuse, idiopathic thrombocytopenic purpura
	Premalignant or malignant lesions	Actinic keratoses, BCC, malignant melanoma, pressure ulcer, squamous cell

Nutrition :Four components specific to the geriatric assessment

- Nutritional history performed with a nutritional health checklist
- Record of a patient's usual food intake based on 24-hour dietary recall
- Physical examination with particular attention to signs associated with inadequate nutrition or overconsumption and
- Select laboratory tests, if applicable

Vision

- The U.S. Preventive Services Task Force (USPSTF) : found insufficient evidence to recommend for or against screening with ophthalmoscope in asymptomatic older patients.

- Common causes of vision impairment : presbyopia, glaucoma, diabetic retinopathy, cataracts, and ARMD

Hearing

Updated USPSTF recommendations since 1996:

- Recommends screening older patients for hearing impairment by periodically questioning them about their hearing.
- Audioscope examination, otoscopic examination, and the whispered voice test are also recommended.

Hearing Handicap Inventory for the Elderly

Question	Yes (4 points)	Sometimes (2 points)	No (0 points)
Does a hearing problem cause you to feel embarrassed when you meet new people?	_____	_____	_____
Does a hearing problem cause you to feel frustrated when talking to members of your family?	_____	_____	_____
Do you have difficulty hearing when someone speaks in a whisper?	_____	_____	_____
Do you feel impaired by a hearing problem?	_____	_____	_____
Does a hearing problem cause you difficulty when visiting friends, relatives, or neighbors?	_____	_____	_____
Does a hearing problem cause you to attend religious services less often than you would like?	_____	_____	_____
Does a hearing problem cause you to have arguments with family members?	_____	_____	_____
Does a hearing problem cause you difficulty when listening to the television or radio?	_____	_____	_____
Do you feel that any difficulty with your hearing limits or hampers your personal or social life?	_____	_____	_____
Does a hearing problem cause you difficulty when in a restaurant with relatives or friends?	_____	_____	-------

Interpretation

- A raw score of 0 to 8 = 13 percent probability of hearing impairment (no handicap/no referral)
- 10 to 24 = 50 percent probability of hearing impairment (mild to moderate handicap/referral)
- 26 to 40 = 84 percent probability of hearing impairment (severe handicap/referral).
- Potentially ototoxic drugs.
- Failure of screening tests should be referred to an otolaryngologist.
- Treatment of choice - Hearing aids
- To minimize hearing loss and improve daily functioning.

Urinary Continence

- Complications: decubitus ulcers, sepsis, renal failure, urinary tract infections, and increased mortality.
- Psychosocial implications : loss of self-esteem, restriction of social and sexual activities, and depression.
- Key deciding factor: Nursing home placement.

Questions to ask?

Urge incontinence :

- “Do you have a strong and sudden urge to void that makes you leak before reaching the toilet?”

Stress incontinence :

- “Is your incontinence caused by coughing, sneezing, lifting, walking, or running?”

Balance and Fall Prevention

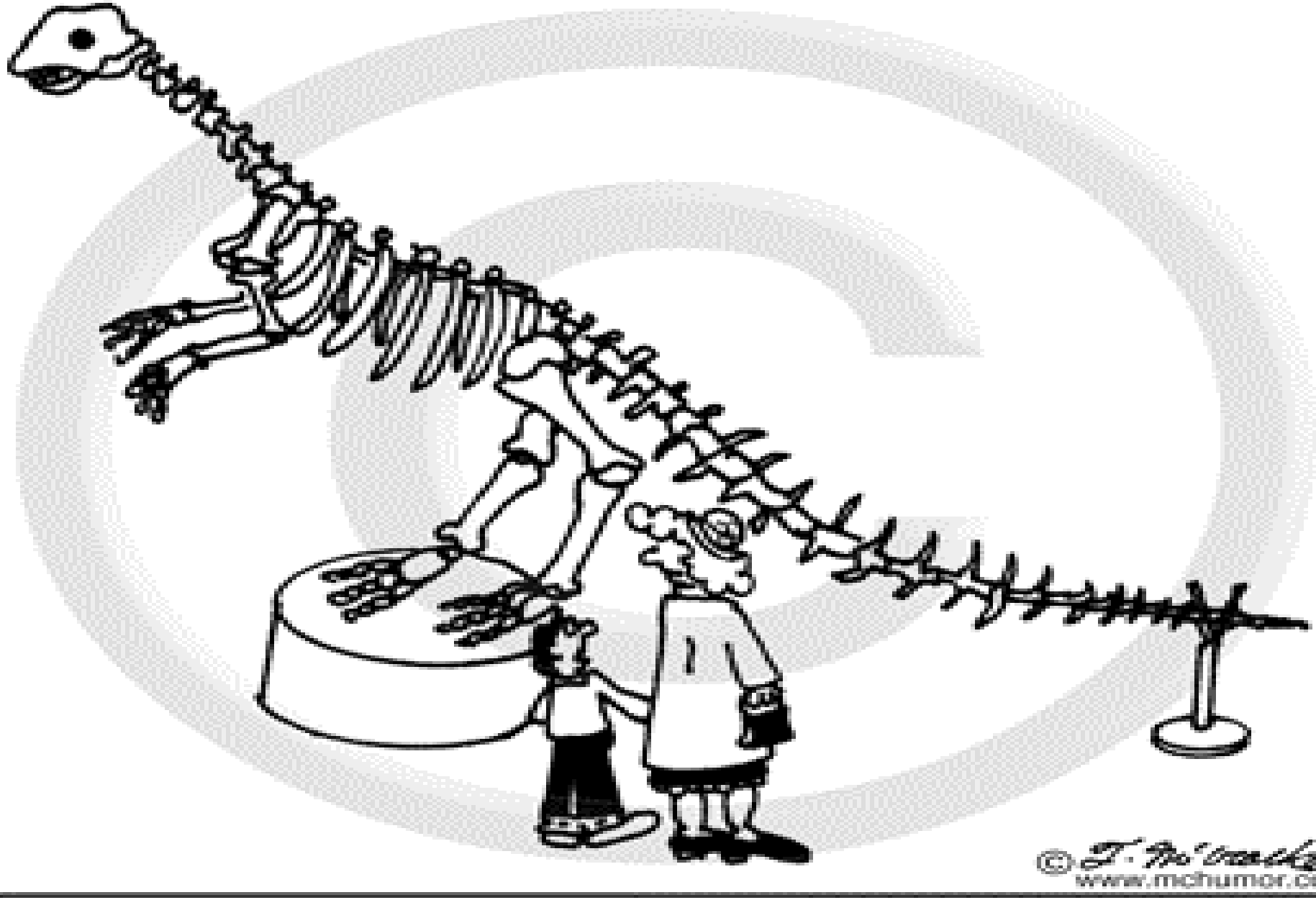
- Leading cause of hospitalization and injury-related death in persons 75 years and older.
- Tool to assess a patient's fall risk- 16 seconds

The Tinetti Balance and Gait Evaluation:

- This test involves observing as a patient gets up from a chair without using his or her arms, walks 10 ft, turns around, walks back, and returns to a seated position.
- Failure or difficulty to perform the test : increased risk of falling and need further evaluation.

Interpretation Of Test

- 7 -10 secs : Normal time
- 10-19 secs : Fairly mobile
- 20-29 secs : Variable mobility
- 30 sec or more : Functionally dependent in balance and mobility



"What kind of calcium supplements did she take, Grandma?"

Osteoporosis

- Osteoporosis may result in low-impact or spontaneous fragility fractures, which can lead to a fall.
- Dual-Energy X-ray Absorptiometry
- (Total hip, femoral neck, or lumbar spine, with a T-score of –2.5 or below)
- USPSTF recommendations:
- Routine screening of women 65 years and older for osteoporosis with DEXA of the femoral neck.

Polypharmacy

- Multiple medications or the administration of more medications than clinically indicated.
- 30 percent of hospital admissions and many preventable problems: are 2/2 to adverse drug effects.
- The Centers for Medicare and Medicaid Services encourages the use of the Beers criteria, as part of medication assessment to reduce adverse effects

Clinical recommendation	Evidence rating
The U.S. Preventive Services Task Force found insufficient evidence to recommend for or against screening with ophthalmoscopy in asymptomatic older patients.	C
Patients with chronic otitis media or sudden hearing loss, or who fail any hearing screening tests should be referred to an otolaryngologist.	C
Hearing aids are the treatment of choice for older patients with hearing impairment, because they minimize hearing loss and improve daily functioning.	A
The U.S. Preventive Services Task Force has advised routinely screening women 65 years and older for osteoporosis with dual-energy x-ray absorptiometry of the femoral neck.	A
The Centers for Medicare and Medicaid Services encourages the use of the Beers criteria as part of an older patient's medication assessment to reduce adverse effects.	C

2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults

Organ System/ Therapeutic Category/Drug(s)	Rationale	Recommendation	Quality of Evidence	Strength
Anticholinergics (excludes TCAs)				
First-generation antihistamines (as single agent or as part of combination products) Chlorpheniramine Cyproheptadine Diphenhydramine (oral) **Hydroxyzine** **Promethazine**	Highly anticholinergic; clearance reduced with advanced age, and tolerance develops when used as hypnotic; increased risk of confusion, dry mouth, constipation, and other anticholinergic effects/toxicity. Use of diphenhydramine in special situations such as acute treatment of severe allergic reaction may be appropriate.	Avoid	Hydroxyzine and promethazine: high; All others: moderate	Strong
Antiparkinson agents Benztropine (oral) Trihexyphenidyl	Not recommended for prevention of extrapyramidal symptoms with antipsychotics; more effective agents available for treatment of Parkinson disease.	Avoid	Moderate	Strong
Antithrombotics				
Dipyridamole, oral short-acting* (does not apply to the extended-release combination with aspirin)	May cause orthostatic hypotension; more effective alternatives available; IV form acceptable for use in cardiac stress testing.	Avoid	Moderate	Strong
Ticlopidine*	Safer, effective alternatives available.	Avoid	Moderate	Strong

DRUG	Rationale	Recommendation	Quality of evidence	Strength of recommendation
Alpha1 blockers Doxazosin Prazosin Terazosin	High risk of **orthostatic hypotension;** not recommended as routine treatment for hypertension; alternative agents have superior risk/benefit profile.	Avoid use as an antihypertensive.	Moderate	Strong
Alpha blockers, central Clonidine Methyldopa	High risk of adverse CNS effects; may cause **bradycardia and orthostatic hypotension;** not recommended as routine treatment for hypertension.	Avoid clonidine as a first-line antihypertensive.	Low	Strong
Antiarrhythmic drugs (Class Ia, Ic, III) Amiodarone Flecainide Procainamide Sotalol	Data suggest that rate control yields better balance of benefits and harms than rhythm control for most older adults. **Amiodarone** is associated with multiple toxicities, including thyroid disease, pulmonary disorders, and QT interval prolongation.	Avoid antiarrhythmic drugs as first-line treatment of atrial fibrillation.	High	Strong
Digoxin >0.125 mg/day	In heart failure, higher dosages associated with **no additional benefit** and may increase risk of toxicity; decreased renal clearance and increased risk of toxic effects.	Avoid	Moderate	Strong
Nifedipine, immediate release*	Potential for **hypotension;** risk of precipitating myocardial ischemia.	Avoid	High	Strong
Spironolactone >25 mg/day	In heart failure, the risk of **hyperkalemia** is higher in older adults if taking >25 mg/day.	Avoid in patients with heart failure or with a CrCl <30 mL/min.	Moderate	Strong

DRUG	Rationale	Recommendation	Quality Of evidence	
Tertiary TCAs, alone or in combination: Amitriptyline Chlordiazepoxide-amitriptyline Clomipramine Doxepin >6 mg/day Imipramine	Highly anticholinergic, sedating, and cause orthostatic hypotension; the safety profile of low-dose doxepin (≤6 mg/day) is comparable to that of placebo.	Avoid	High	Strong
Antipsychotics, first- (conventional) and second- (atypical) generation (see **Table 8** for full list)	Increased risk of cerebrovascular accident (stroke) and mortality in persons with dementia.	Avoid use for behavioral problems of dementia unless non-pharmacologic options have failed and patient is threat	High	Strong
Barbiturates Pentobarbital* Phenobarbital	High rate of physical dependence; tolerance to sleep benefits; greater risk of overdose at low dosages.	Avoid	High	Strong
Benzodiazepines *Short- and intermediate-acting:* Alprazolam Lorazepam Oxazepam Temazepam *Long-acting:* Chlordiazepoxide Clonazepam Diazepam	Older adults have increased sensitivity to benzodiazepines and decreased metabolism of long-acting agents. In general, all benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle accidents in older adults. May be appropriate for seizure disorders, rapid eye movement sleep disorders, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, periprocedural anesthesia, end-of-life care.	Avoid benzodiazepines (any type) for treatment of insomnia, agitation, or delirium.	High	Strong

Drug	Rationale	Recommendation	Quality of evidence	Strength of rec
Estrogens with or without progestins	Evidence of carcinogenic potential (breast and endometrium); lack of cardioprotective effect and cognitive protection in older women. Evidence that vaginal estrogens for treatment of vaginal dryness is safe and effective in women with breast cancer, especially at dosages of estradiol <25 mcg twice weekly.	Avoid oral and topical patch. Topical vaginal cream: Acceptable to use low-dose intravaginal estrogen for the management of dyspareunia, lower urinary tract infections, and other vaginal symptoms.	Oral and patch: high Topical: moderate	Oral and patch: strong Topical: weak
Insulin, sliding scale	Higher risk of hypoglycemia without improvement in hyperglycemia management regardless of care setting.	Avoid	Moderate	Strong
Sulfonylureas, long-duration Chlorpropamide Glyburide	**Chlorpropamide:** prolonged half-life in older adults; can cause prolonged hypoglycemia; causes SIADH **Glyburide**: higher risk of severe prolonged hypoglycemia in elderly	Avoid	High	Strong
Pioglitazone, rosiglitazone	Potential to promote fluid retention and/or exacerbate heart failure.	Avoid	High	Strong

Drug	Rationale	Recommendation	Quality of evidence	Strength
Non–COX-selective NSAIDs, oral Aspirin >325 mg/day Diclofenac Ibuprofen Ketoprofen Mefenamic acid Meloxicam Naproxen Piroxicam Sulindac Tolmetin	Increases risk of GI bleeding/peptic ulcer disease in high-risk groups, including those >75 years old or taking oral or parenteral corticosteroids, anticoagulants, or antiplatelet agents. Use of proton pump inhibitor or misoprostol reduces but does not eliminate risk. Upper GI ulcers, gross bleeding, or perforation caused by NSAIDs occur in approximately 1% of patients treated for 3–6 months, and in about 2%–4% of patients treated for 1 year. These trends continue with longer duration of use.	Avoid chronic use unless other alternatives are not effective and patient can take gastroprotective agent (proton-pump inhibitor or misoprostol).	All others: moderate	Strong
Indomethacin Ketorolac, includes parenteral	Increases risk of GI bleeding/peptic ulcer disease in high-risk groups (See above Non-COX selective NSAIDs) Of all the NSAIDs, indomethacin has most adverse effects.	Avoid	Indomethacin: moderate Ketorolac: high;	Strong
Pentazocine*	Opioid analgesic that causes CNS adverse effects, including confusion and hallucinations, more commonly than other narcotic drugs; is also a mixed agonist and antagonist; safer alternatives available.	Avoid	Low	Strong
Skeletal muscle relaxants Carisoprodol Chlorzoxazone Cyclobenzaprine Metaxalone Methocarbamol	Most muscle relaxants poorly tolerated by older adults, because of anticholinergic adverse effects, sedation, increased risk of fractures; effectiveness at	Avoid	Moderate	Strong

2012 AGS Beers Criteria for Potentially Inappropriate Medications to Be Used with Caution

Drug	Rationale	Recommendation	Quality of evidence	Strength
Aspirin for primary prevention of cardiac events	Lack of evidence of benefit versus risk in individuals ≥80 years old.	Use with caution in adults ≥80 years old.	Low	Weak
Dabigatran	Increased risk of bleeding compared with warfarin in adults ≥75 years old; lack of evidence for efficacy and safety in patients with CrCl <30 mL/min	Use with caution in adults ≥75 years old or if CrCl <30 mL/min.	Moderate	Weak
Prasugrel	Increased risk of bleeding in older adults; risk may be offset by benefit in highest-risk older patients (eg, those with prior myocardial infarction or diabetes).	Use with caution in adults ≥75 years old.	Moderate	Weak
Antipsychotics Carbamazepine Mirtazapine **SNRIs** **SSRIs** **TCAs**	May exacerbate or cause SIADH or hyponatremia; need to monitor sodium level closely when starting or changing dosages in older adults due to increased risk.	Use with caution.	Moderate	Strong
Vasodilators	May exacerbate episodes of syncope in individuals with history of syncope.	Use with caution.	Moderate	Weak

Cognition and Mental Health (Depression and Dementia)

- USPSTF screening recommends for Depression:
  Screen all adults for depression if systems of care are in place
- Geriatric Depression Scale : Hamilton Depression Scale
- Simple two-question screening tool (as effective as longer scales)
- “During the past month, have you been bothered by feelings of sadness, depression, or hopelessness?”
- “Have you often been bothered by a lack of interest or pleasure in doing things?”
- Positive screening test :Responding in the affirmative to one or both of these questions , that requires further evaluation.

Dementia

- As few as 50 percent of dementia cases are diagnosed by physicians
- Early diagnosis of dementia allows patients timely access to medications and prepares families for the future
- Mini-Cognitive Assessment Instrument is the preferred test for the family physician because of its speed.

Mini-Cognitive Assessment Instrument

- Step 1. Ask the patient to repeat three unrelated words, such as “ball,” “dog,” and “window.”
- Step 2. Ask the patient to draw a simple clock set to 10 minutes after eleven o'clock (11:10). A correct response is drawing of a circle with the numbers placed in approximately the correct positions, with the hands pointing to the 11 and 2.
- Step 3. Ask the patient to recall the three words from Step 1. One point is given for each item that is recalled correctly.

Mini-Cognitive Assessment Interpretation

Number of items correctly recalled	Clock drawing test result	Interpretation of screen for dementia
0	Normal	Positive
0	Abnormal	Positive
1	Normal	Negative
1	Abnormal	Positive
2	Normal	Negative
2	Abnormal	Positive
3	Normal	Negative
3	Abnormal	Negative