



Older Adults and Diabetes

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2022



Coach Bev has no conflict of interest

- ▶ Not on any speaker's bureau
- ▶ Does not invest in pharmaceutical or device companies
- ▶ Gathers information from reading package inserts, research and standards



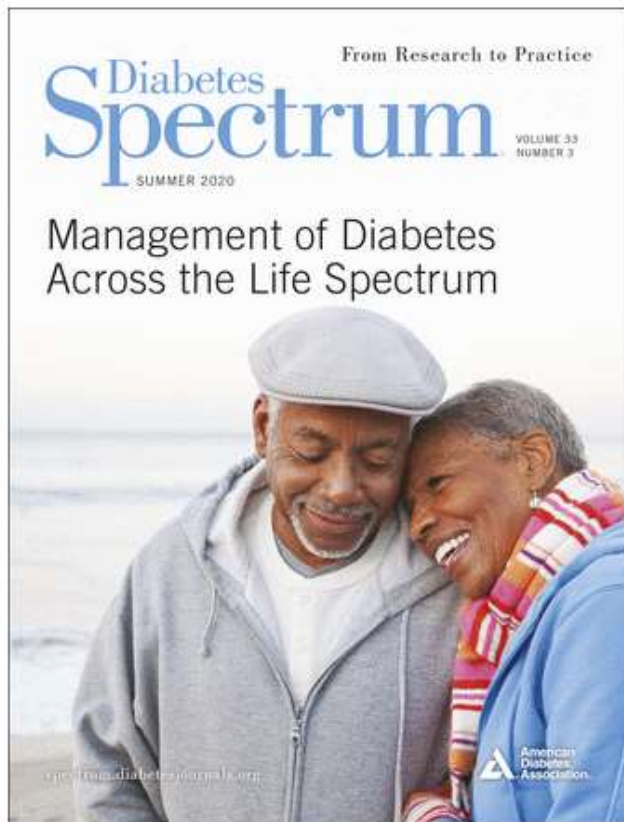
Older Adults

► Objectives:

1. Self-management considerations for older individuals
2. Strategies to prevent complications and maintain optimal quality of life
3. Determine targets and therapeutic approaches
4. Approaches to providing individualized care
5. Discuss the role of the Diabetes Educator as advocate



References



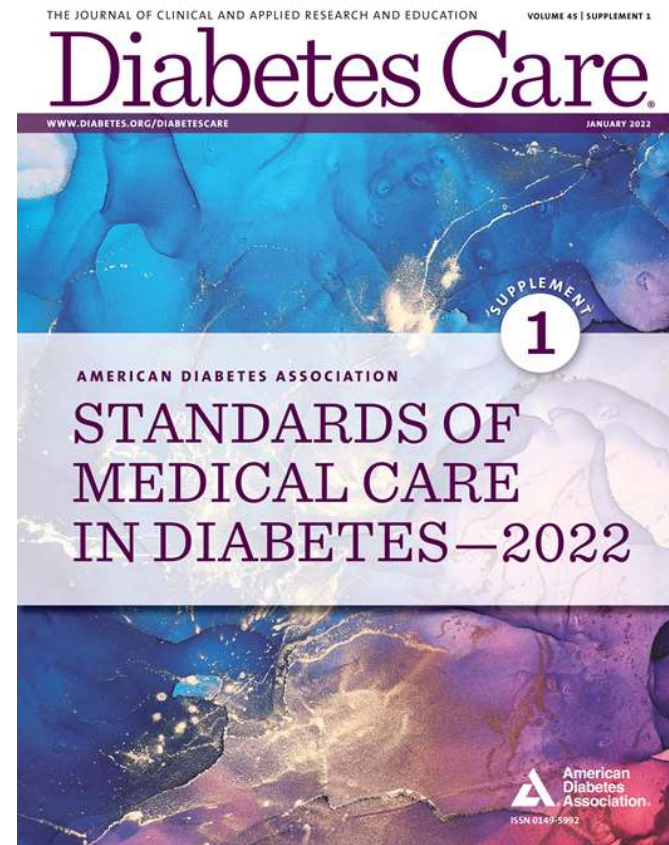
Challenges and Strategies for Diabetes Management in Community-Living Older Adults

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Diabetes Spectrum 2020 Aug; 33(3): 217-227.

<https://doi.org/10.2337/ds20-0013>



13. Older Adults: *Standards of Medical Care in Diabetes—2022* FREE

American Diabetes Association Professional Practice Committee



Diabetes Care 2022;45(Supplement_1):S195–S207

<https://doi.org/10.2337/dc22-S013>

When does old age start?



When Does Old Age Start?

- ▶ "The aging process is a biological reality which has its own dynamic, largely beyond human control.
- ▶ Age is also subject to the constructs of each society. (WHO)
- ▶ In the developed world, 60 or 65, is said to be the beginning of old age (retirement)
- ▶ In developing world, old age is seen to begin at the point when active contribution is no longer possible." (Gorman, 2000).



What is the best term for 65+?

Old

Older

Elderly

Aged

Senior

Seasoned
Citizen

Elder

Retiree

Geriatric

Aging: 3 Aspects

- ▶ Biological age
 - ▶ “present position of the individual relative to their life span” (ie telomeres)
 - ▶ Biological age closely related to chronological age, but the two are not identical
- ▶ Psychological age
 - ▶ Adaptive capacities and subjective reactions relative to their group in society



<https://www.encyclopedia.com/medicine/anatomy-and-physiology/anatomy-and-physiology/aging>

Aging: 3 Aspects

▶ Social Age

- ▶ Social habits and roles of the individual
- ▶ Societies hold age-status systems that lead to expectations of how an individual should behave in relation to others



Millie Bailey skydiving at 102 years old

Grandma

Taiwanese grandparents become Instagram sensations modelling abandoned clothes

The couple from the Houli district of Taiwan began modelling clothes left behind in their laundrette.



Hsu Sho-er, 84, and her husband Chang Wan-ji, 83, have been operating a laundry in the Houli district of Taiwan for the past 70 years.

What does the future hold?

Each person undertakes their own unique path



Poll Question 1

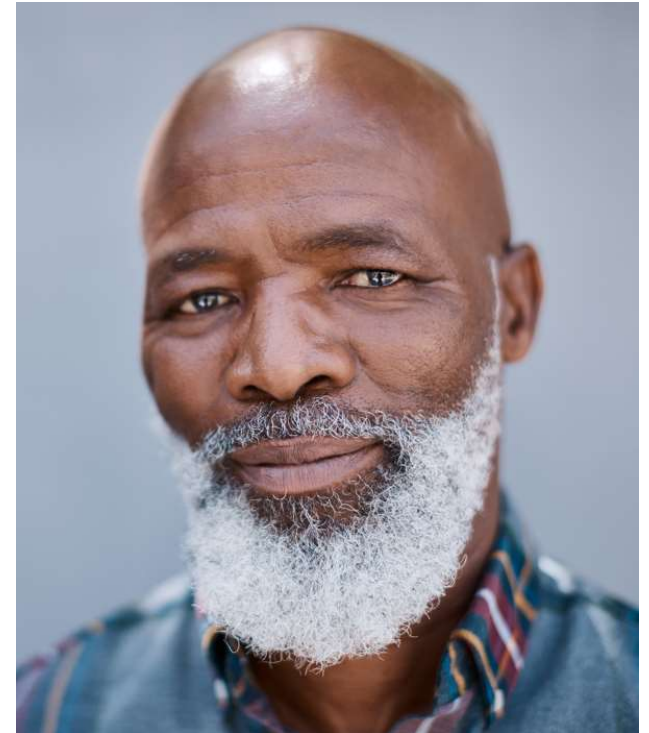
▶ What percent of the population over the age of 65 has type 2 diabetes?

- A. 26%
- B. 9.3%
- C. 18%
- D. 34%



Older People and Diabetes Stats

- ▶ 26% of Americans age 65 or older have diabetes (11.8 million seniors)
- ▶ 50% of people with diabetes, 65 yrs plus
- ▶ 50% of older adults have prediabetes
- ▶ Rate of older population with diabetes growing rapidly due to increasing life expectancy.
- ▶ Diabetes prevalence to double in next 20 years, in part due to the aging population



Fried Frailty Index – “Compromised energetics”

Frailty

Meeting 3 out of 5 phenotypic criteria

- ▶ low grip strength,
- ▶ low energy,
- ▶ slowed walking speed,
- ▶ low physical activity, and/or
- ▶ unintentional weight loss

Pre-Frail Stage

- ▶ 1 or 2 criteria are present
- ▶ Identifies a subset at high risk of progressing to frailty



3 Categories of Diabetes Complications in Older Adults – Reciprocal & Synergistic Relationships

Mental Dysfunction

- Dementia
- Depression
- Behavioral & anxiety disorders

Physical & Neuropathic Complications

- Sarcopenia
- Frailty
- Proximal motor neuropathy



Vascular Disease

- Microvascular
- Retinopathy
- Nephropathy
- Sensory neuropathy
- Lower extremity complications
- Macrovascular
- Cardiovascular
- Cerebrovascular
- Peripheral vascular



Disability

- Visual loss
- Immobility
- Falls
- 12 months of daily mental health symptoms

Challenges and Strategies for Diabetes Management in Community-Living Older Adults

Diabetes Spectrum
2020 Aug; 33(3):
217-227.

What can we do?



Early assessment plus



Timely intervention



May delay adverse outcomes.



RT, 72 & living with Type 2

- ▶ Lives by self
- ▶ Recently lost his twin brother
- ▶ Had his phone turned off because forgot to pay bill
- ▶ Kids want to him to move to “old folks' home”



Diabetes Management includes:

- Metformin 1000 mg BID
- 70/30 insulin 30 units BID



Individualize Goals of Care



Preserve autonomy



Preserve independence



Preserve quality of life at the heart of care plans

▶ **A1c individualized**

- 6.5 - 8%

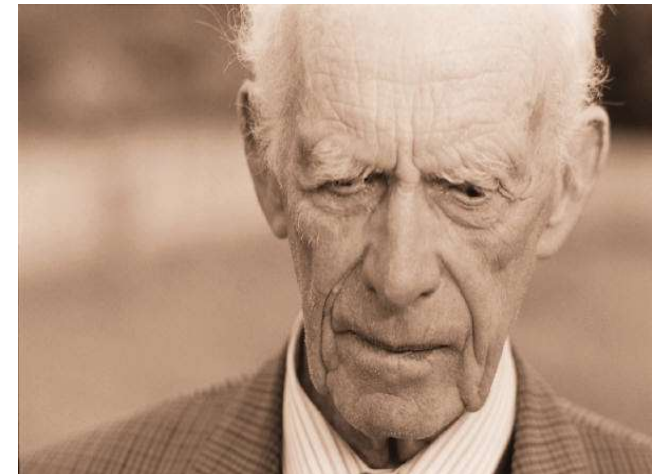
▶ **Glucose goals**

- Before meals 100-130
- After meals < 180



Older Adults – Psychological Assessment

- ▶ Social support
 - ▶ Who do they live with?
 - ▶ Anyone helping with self-care?
- ▶ Feelings
- ▶ Finances
 - ▶ Housing, food, transportation
- ▶ Activity, Nutrition



RT, 72 & living with Type 2

- ▶ Lives by self
- ▶ No one outside of diabetes team helps with diabetes care
- ▶ Attends support group
- ▶ Admits to feeling depressed and angry
- ▶ House paid off but has limited income for food and medicine
- ▶ Can still drive and shop, but often forgets appointments
- ▶ Likes to have a few drinks in the evening to relax



Diabetes Medications

- Metformin 1000 mg BID
- 70/30 insulin 30 units BID



Psychosocial Issues “Integrity vs. Despair”

- ▶ 15-20% of older adults with diabetes live with depression
- ▶ Assess other factors that may impact QOL
 - ▶ lack of income
 - ▶ isolation
 - ▶ loss of partner, family, friends
 - ▶ limited mobility
 - ▶ alcohol or substance use



Older adults Substance Use Disorder (SUD)

- ▶ 1 million adults, 65+ live with SUD
- ▶ Admission for SUD increased from 3.4% to 7.0% from 2001 to 2012



- ▶ Alcohol is most used drug for 65+
- ▶ 65% report high risk drinking (exceeding guidelines at least weekly).
- ▶ 10% report binge drinking (4-5 drinks at one time)

<https://www.drugabuse.gov/publications/substance-use-in-older-adults-drugfacts-2020>



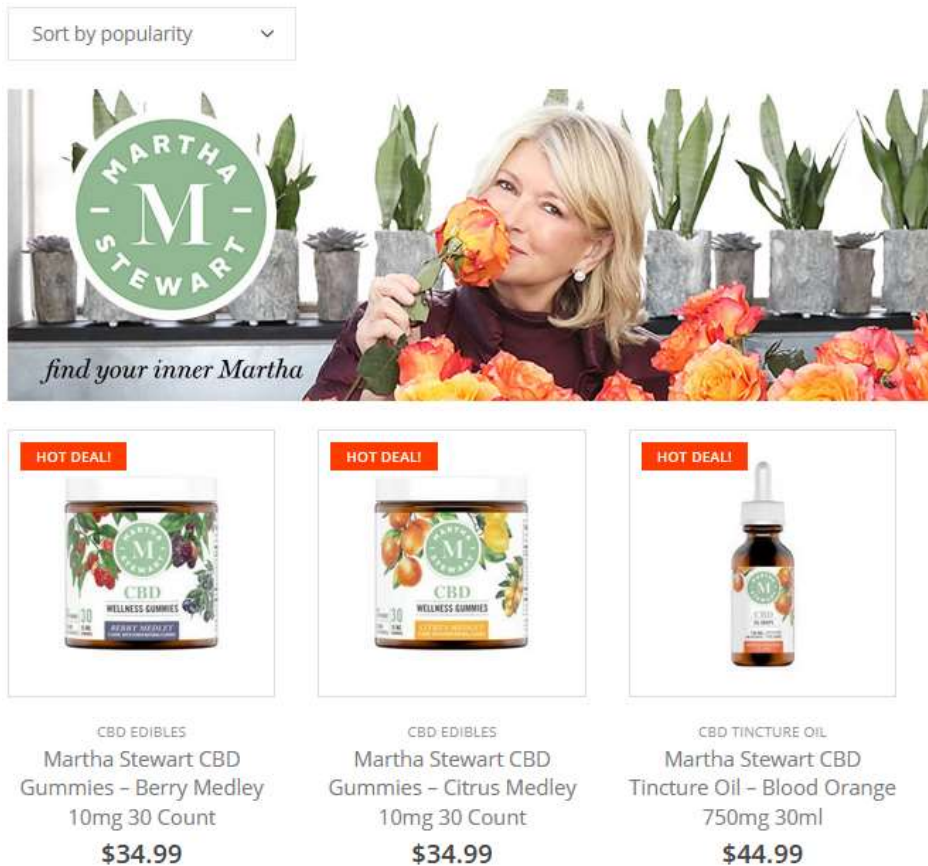
Alcohol Use Disorder Accounts for most admission to treatment centers for older adults

- ▶ One study documented a 107% increase from 2001 to 2013.
- ▶ Alcohol increases risk of:
 - ▶ pancreatitis (hyperglycemia)
 - ▶ high blood pressure, triglycerides
 - ▶ hypoglycemia, malnutrition
 - ▶ liver and bone problems
 - ▶ neuropathic pain
 - ▶ memory issues and mood disorders.



Older Adults Substance Use Disorder (SUD)

Sort by popularity ▾



find your inner Martha

Product Name	Price
Martha Stewart CBD Gummies – Berry Medley 10mg 30 Count	\$34.99
Martha Stewart CBD Gummies – Citrus Medley 10mg 30 Count	\$34.99
Martha Stewart CBD Tincture Oil – Blood Orange 750mg 30ml	\$44.99

The image shows a promotional banner for Martha Stewart CBD products. At the top, there is a dropdown menu set to 'Sort by popularity'. Below it is a photograph of Martha Stewart holding a rose, with a circular logo that says 'MARTHA STEWART' and 'M'. Underneath the photo is the tagline 'find your inner Martha'. Below the banner are three product listings, each with a 'HOT DEAL!' badge. The first is 'Martha Stewart CBD Gummies – Berry Medley 10mg 30 Count' for \$34.99. The second is 'Martha Stewart CBD Gummies – Citrus Medley 10mg 30 Count' for \$34.99. The third is 'Martha Stewart CBD Tincture Oil – Blood Orange 750mg 30ml' for \$44.99.

- ▶ Cannabis use is on the rise
- ▶ Opioid and heroin use on the rise
- ▶ About 8-10% of adults smoke cigarettes

<https://www.drugabuse.gov/publications/substance-use-in-older-adults-drugfacts-2020>



Poll question 2

- ▶ Which of the following is true about diabetes and depression in older adults?
 - ▶ A. Most older adults with diabetes are depressed.
 - ▶ B. Older adults with diabetes are at low risk for depression.
 - ▶ C. Older adults need regular evaluation for depression
 - ▶ D. Alcoholism is the most common symptom of depression in older adults



ADA Recommendations - Depression

- ▶ Older Adults (65 years of age) with diabetes should be considered a high-priority population for depression screening and treatment.

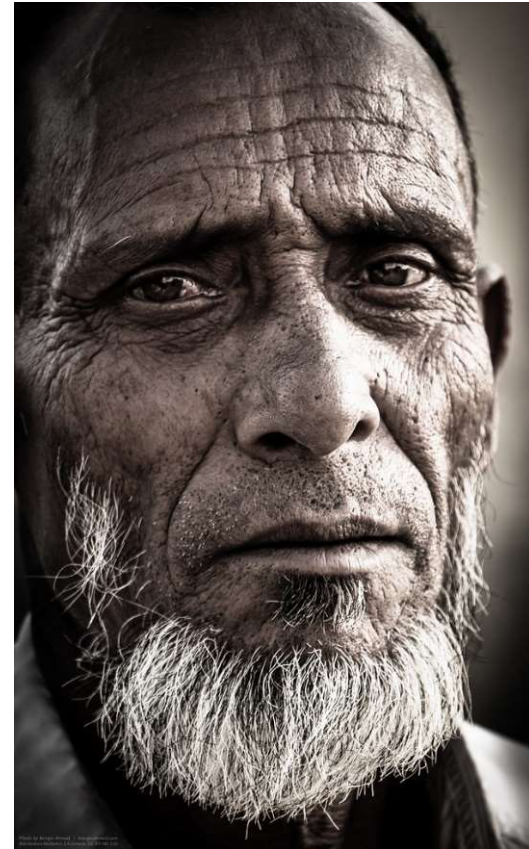


Depression Assessment

▶ Depression:

- Over the last 2 weeks, have you felt down, depressed or hopeless?
- Over the last 2 weeks, have you felt little pleasure in doing things?

If they say yes to either of these, action is required.



If say yes to screening question

Patient Health Questionnaire – Depression Screen PHQ-9

Over the last 2 weeks, how often have you been bothered by any of the following problems?
(use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself	0	1	2	3

add columns

+ +

Quick Depression Assessment

- ▶ If there are at least four 3s in the shaded section (including Questions #1 and #2), consider a depressive disorder. Add score to determine severity.
- ▶ Consider Major Depressive Disorder - if there are at least five 3s in the shaded section (one of which corresponds to Question #1 or #2)
- ▶ Consider Other Depressive Disorder - if there are two to four 3s in the shaded section (one of which corresponds to Question #1 or #2)

RT, 76 & living with Type 2

- ▶ PHQ-9 – had 3 checks in shaded area
- ▶ Scored 2 on the Mini-Cog
- ▶ Ran out of insulin a week ago
- ▶ Forgot to check blood glucose levels
- ▶ Blood sugar “high”



Diabetes Medications

- Metformin 1000 mg BID
- 70/30 insulin 30 units BID

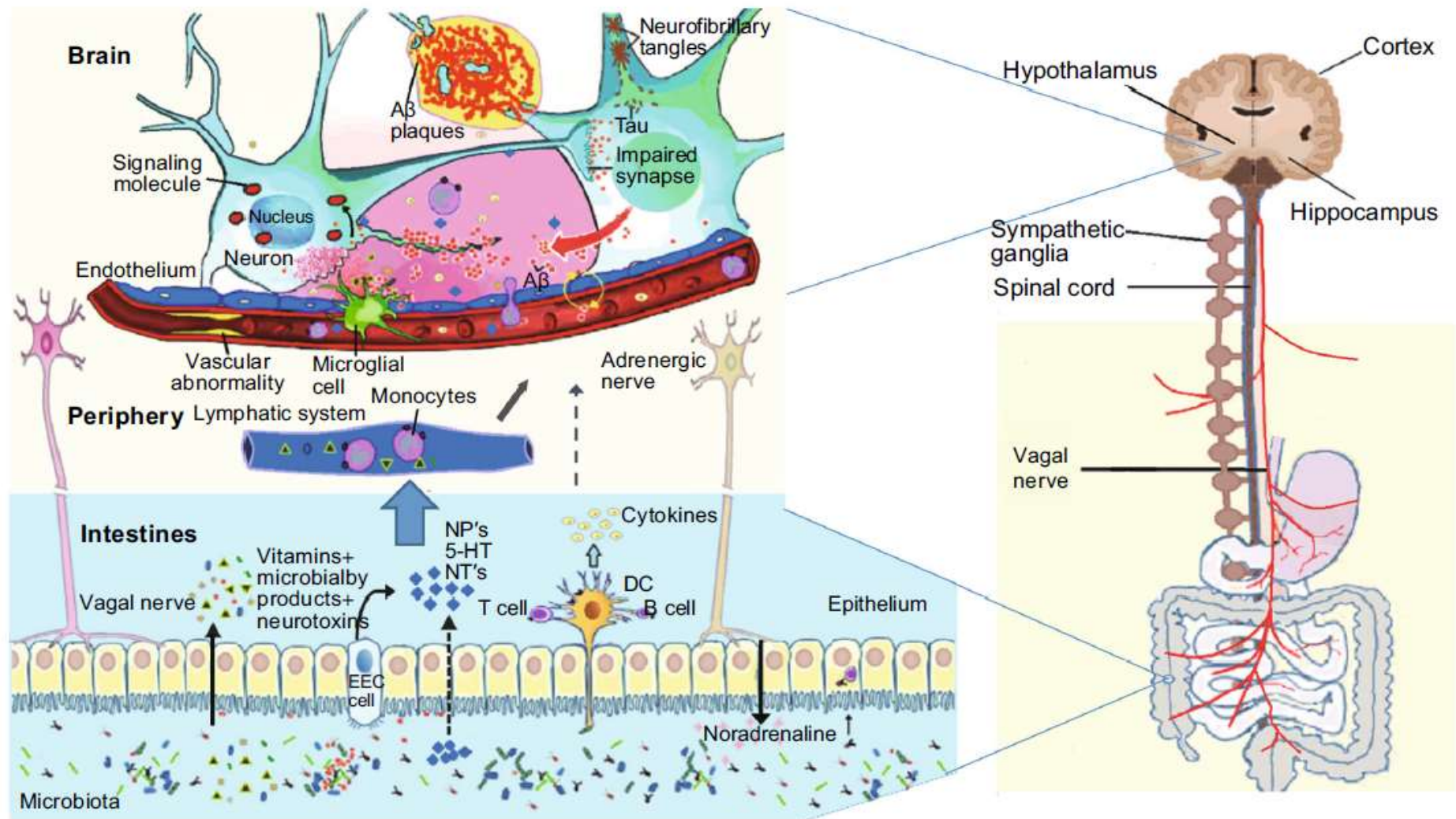


NeuroCognitive Function

- ▶ Hyperglycemia is associated with cognitive function decline
- ▶ Longer duration of diabetes worsens cognitive function
 - ▶ Vascular Dementia
 - ▶ Alzheimer's
- ▶ Perform annual cognition screen
- ▶ Treatment:
 - ▶ Refer to specialist for assessment
 - ▶ Achieve optimal BG control
 - ▶ Pharmacist to evaluate drug safety and potential drug interactions
- ▶ Keep physically active



Link Between Gut and Brain



Human gut microbiota: the links with dementia development. Protein & Cell
2017 Alkasir, Li, Li, Jin, Zhu



Cognitive Issues

Persistent hypo and hyperglycemia can double risk of cognitive dysfunction and dementia

Diabetes increases risk of incident depression by 27%

Diabetes + Dementia + Depression a pathway to mental disability

- Self care gets compromised
- Less able to detect and treat hypoglycemia
- Dementia decreases communication ability
- Safety becomes an issue



Cognitive Screening - Mini-Cog

- ▶ “I am going to say three words that I want you to remember now and later.
 - ▶ The words are banana, sunrise, chair.
 - ▶ Please say them now.” Give the person three tries to repeat the words.
 - ▶ You may repeat the words to them for each try.
 - ▶ If they are unable to repeat the words back to you after three tries, go directly to the clock drawing.
- ▶ Next, ask them to draw a clock



<https://mini-cog.com/mini-cog-instrument/standardized-mini-cog-instrument/>

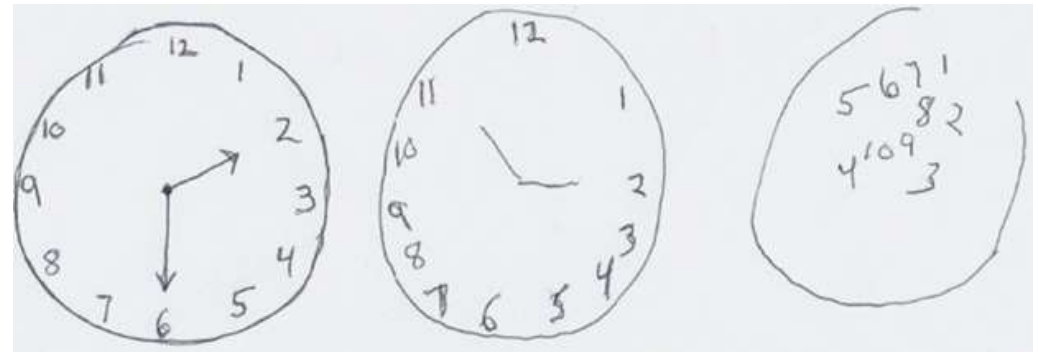


Cognitive Screening – Mini-Cog

- ▶ Tasks - “Please draw a clock in the circle.”
- ▶ “Put all the numbers in the circle”
- ▶ “Now set the hand to show ten past eleven.”

- ▶ Recall the 3 items
banana, sunrise, chair.

- ▶ Score 1 for each task performed and for each item
- ▶ A score less 3 of the 5 items defines cognitive impairment



Example of the same person drawing a clock over time with increasing dementia

Action Needed for RT

- ▶ Let provider know about PHQ and Mini-Cog Test
 - ▶ Referral to Gerontologist
- ▶ Not taking insulin
 - ▶ Found free service where volunteers would call every day to remind to check glucose and take insulin
 - ▶ RT to check in with Diabetes Educator weekly
 - ▶ Bought extra 70/30 insulin from Walmart, \$25 a vial



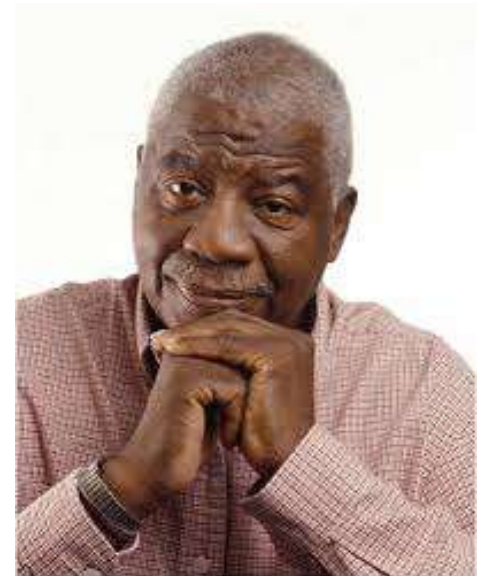
Older Adults (≥ 65 years) with diabetes

- ▶ Annual screening for early detection of mild cognitive impairment or dementia
- ▶ High priority population for depression screening and treatment
- ▶ Avoid hypoglycemia in this high risk group
 - ▶ Prevent hypo by adjusting glycemic targets and adjusting pharmacologic interventions



Consider the Individual

- ▶ **Start with a thorough assessment**
During the initial interview, ask questions to reveal medical, functional, mental and social domains.
- ▶ This will help to provide a framework to determine realistic targets and best treatment approaches.



Consider the Individual

- ▶ Eval ability to afford diabetes medication, food and shelter.
- ▶ Well phrased questions can provide opportunities for sharing and collaborative problem solving



Poll Question 3

- ▶ A daughter of an 83-year-old with diabetes asks you about what particular issues to watch for with her mother? Which of the following is most important to monitor for her older mother with diabetes?
 - ▶ A. Hypoglycemia
 - ▶ B. Ability to send an urgent text
 - ▶ C. Keeping morning BG 80-130
 - ▶ D. Making sure she has a 30gm snack at night



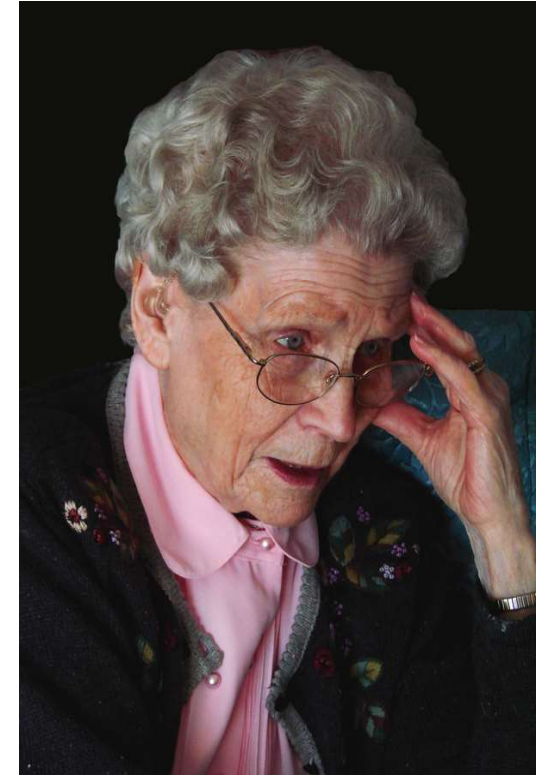
Avoid Hypoglycemia in Older Adults

- ▶ Associated with
 - ▶ Cognitive decline
 - ▶ Falls
 - ▶ Arrhythmias.
- ▶ Screen for hypo on regular basis
- ▶ Prevent and determine cause
- ▶ Make needed med /food adjustment
- ▶ For those with type 1, encourage use of CGM



Reducing Risk of Hypo

- ▶ Evaluate Kidney function
 - ▶ If creat >1.4 , GFR < 60
 - ▶ Give long acting insulin in morning
 - ▶ Made need lower dinner bolus insulin
 - ▶ Avoid long acting sulfonylureas –
- glipizide best choice in am
- ▶ Evaluation Hypoglycemia awareness and action
 - ▶ Assess food access and timing
 - ▶ Ongoing monitoring and problem solving



Older People with diabetes

- ▶ Are often
 - ▶ Under Treated and
 - ▶ Over Treated



Functional Considerations – Older Adults with Diabetes

- ▶ Peripheral Neuropathy in 50-70%
 - ▶ Postural instability which limits physical activity
- ▶ Falls and Fractures –higher risk w/ diabetes
 - ▶ Women at risk for hip and humeral fractures
 - ▶ Consider physical therapy, balance practice
- ▶ Polypharmacy – 6 or more drugs daily
 - ▶ Affordability, interactions, increased risk of falling
- ▶ Visual impairment in 20%
- ▶ Hearing impairment twice as common



Treatment Goals based on:

- ▶ Length of time living with diabetes (new onset, undiagnosed for many years or longer history)
- ▶ Presence or absence of complications
- ▶ Comorbidities
- ▶ Degree of frailty
- ▶ Cognitive function
- ▶ Life expectancy (often longer than expected)
- ▶ Functional status



Poll Question 4

- ▶ RT, is a healthy 74-year-old who is on metformin 1000mg BID. He has had diabetes for 11 years. His latest A1c was 7.3% What is your response?
- ▶ A. Good job, let's get the A1c less than 7%
- ▶ B. Have you been snacking more than usual?
- ▶ C. What do you think about your A1c level?
- ▶ D. Let's add on another medication to get your A1c to target.



Healthy & Intact Functional Status

- ▶ Set more intensive goals if:
 - ▶ Intact cognitive and physical function
 - ▶ Expected to live long enough to reap benefits of intensive management,
- ▶ Ongoing follow-up to eval safety, CV risk reduction and hypoglycemia frequency
- ▶ **Goals:**
 - ▶ Reasonable A1c goal $<7.0 - 7.5\%$,
 - ▶ Fasting BG 80 – 130
 - ▶ Bedtime Glucose 80-180
 - ▶ Blood Pressure $< 140/90$
 - ▶ Statin unless contraindicated or not tolerated



Poll Question 5

- ▶ HR is a 78 year old with a stroke and limited cognition. She has had diabetes for 8 years and is on intensive insulin therapy: Humalog coverage at meals and Lantus at night. Her A1c is 6.2%. She has a part time care taker. What do you suggest?
- ▶ A. Evaluate food intake
- ▶ B. Discuss de-intensifying insulin regimen
- ▶ C. Move Lantus to morning
- ▶ D. Stop insulin and start on oral medications



Patients with Complications and Reduced Functionality - Less Intense Goals

- ▶ For older adults with
 - ▶ advanced diabetes complications,
 - ▶ life-limiting illnesses
 - ▶ substantial cognitive, functional impairment.
- ▶ Less likely to benefit from reduced risk of microvascular complications
- ▶ At higher risk of hypoglycemia, hypotension and adverse effects from polypharmacy



Older Adults with Complications and Reduced Functionality - Less Intense Goals

- ▶ Intermediate remaining life expectancy, high treatment burden, hypo and fall risk.
- ▶ Consider DE-Intensification
- ▶ Goals:
 - ▶ Reasonable A1c goal <8.0%
 - ▶ Fasting BG 90 – 150
 - ▶ Bedtime BG 100-180
 - ▶ Blood Pressure < 140/90
 - ▶ Statin unless contraindicated or not tolerated



Very Complex Pts with Poor Health

- ▶ For people with:
 - ▶ limited life expectancy and end stage chronic illnesses, benefit uncertain
- ▶ Focus on quality of life and avoidance of hypo & hyperglycemic crisis.
- ▶ Goals:
 - ▶ No A1C target, avoid hypo and hyperglycemia for comfort
 - ▶ Fasting BG 100 – 180
 - ▶ Bedtime BG 110-200
 - ▶ Blood Pressure < 150/90
 - ▶ Consider likely benefit of statin unless contraindicated or not tolerated



ADA Recommendations – End of Life

- ▶ Overall comfort, prevention of distressing symptoms, and preservation of quality of life and dignity are primary goals for diabetes management at the end of life.



ADA Recommendations – Long Term Care Facilities

- ▶ Provide diabetes education to staff.
- ▶ People with diabetes residing in long-term care facilities need:
 - ▶ careful assessment to establish glycemic goals
 - ▶ make appropriate choices of glucose-lowering agents based on their clinical and functional status.
 - ▶ Evaluation of frequency of BGM



Long Term Care Consideration

- ▶ Staff training - to increase knowledge of diabetes and promote individualized care
- ▶ Nutrition – at high risk for under-nutrition.
 - ▶ Tailor diet to culture, preferences and personal goals, swallowing issues
- ▶ Hypoglycemia – more vulnerable to hypo
 - ▶ Due to multiple comorbidities
- ▶ Ongoing eval
 - ▶ Federal guidelines – MD must assess pt every 30 days for 1st 90 days, then once every 60 days
 - ▶ Monitor if resident may be experiencing hypo/hyper and encourage treatment change



Poll Question 6

- ▶ When should the long term care staff contact the provider about medication change assessment?
- ▶ A. If blood sugars are above 180 twice a week.
- ▶ C. If morning blood sugars are consistently 100-130.
- ▶ B. If blood sugars go below 70 one time.
- ▶ D. If post meal sugar goes above 300 once



When to Contact Provider – Long term Care Hypo/Hyper Guidelines:

- ▶ Hypoglycemia indicates TOO MUCH Diabetes Medication
- 1. **Call provider immediately** for low blood glucose levels <70 mg/dL
- 2. **Call as soon as possible when**
 - ▶ glucose values are 70–100 mg/dL (regimen may need to be adjusted),
 - ▶ glucose values are consistently >250 within a 24-h period
 - ▶ glucose values are consistently >300 over 2 consecutive days
 - ▶ any reading is too high for glucose monitoring device, or
 - ▶ the resident is sick, with vomiting, symptomatic hyperglycemia, or poor oral intake.

Shared Decision Making

- ▶ For all these situations, a patient-centered approach and shared decision making can help establish goals and treatment strategies that are reasonable for the patient, family and provider.



CV Risk Reduction – Older Adults

- ▶ When treating Cardiovascular risk factors consider time frame of benefit and the individual patient.
- ▶ Hypertension treatment is indicated in virtually all older adults
- ▶ Lipid-lowering and aspirin therapy may benefit those with longer life expectancy



Goals – Keeping it in Perspective

- ▶ Greater reductions in death and complications may result from CV risk factor reduction than tight BG control alone
- ▶ Strong evidence to treat HTN
- ▶ Less evidence for lipid lowering and aspirin therapies
- ▶ Research ongoing



Older Adults and Medications

- ▶ In older **adults** at increased risk of hypoglycemia, meds with low risk of hypoglycemia are preferred.
- ▶ Overtreatment of diabetes is common in older adults and should be avoided.
- ▶ Deintensification (or simplification) of complex regimens is recommended
- ▶ Consider cost of care and insurance coverage



Individualize regimen for older people

- ▶ Match regimen complexity to the self-management ability of the individuals and their available social and medical support.
- ▶ Intensive glycemic control with insulin and sulfonylureas in those with complex medical conditions are considered
 - ▶ **overtreatment**
 - ▶ found to be very common in clinical practice



RT, 76 & living with Type 2

- ▶ Updated info
 - ▶ A1C 8.9%
 - ▶ GFR 49, UACR 221
 - ▶ No hypoglycemia
 - ▶ Checks BG a few times a week.
 - ▶ Very sedentary
- ▶ Is this the right medication regimen for RT?



Diabetes Medications

- Metformin 1000 mg BID
- 70/30 insulin 30 units BID



Medications – Biguanides

- ▶ Metformin – one of 1st line agent in older adults
 - ▶ Use caution in those with impaired renal or hepatic function or CHF on diuretics.
 - ▶ Temporarily hold during acute illness, procedures which may compromise renal and liver function.
 - ▶ Use long-acting version to decrease N/V



For those on long term metformin therapy, consider monitoring B12 levels.



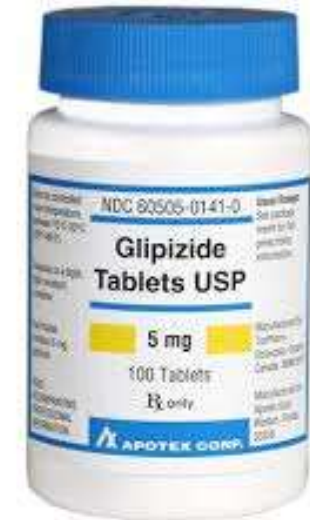
Poll Question 7

- ▶ JT has an A1c of 7.4, GFR 42, UACR is 219 mg/g. Tried to get blood glucose down through exercise and diet. What med is ADA recommended to get A1c to target and protect renal function?
- ▶ A. sitagliptin (Januvia)
- ▶ B. canagliflozin (Invokana)
- ▶ C. glyburide (Diabeta)
- ▶ D. metformin (Glucophage)



Older Adults - Secretagogues

- ▶ Sulfonylureas
 - ▶ Glipizide or glimepiride preferred
 - ▶ Cause hypo, use cautiously
 - ▶ Review signs of hypo, treatment and follow-up
 - ▶ Associated with 5-7 lb wt gain
 - ▶ Glyburide contraindicated (hypo)
- ▶ BG monitoring helpful
- ▶ If experiencing hypo, contact provider to decrease dose



Caution with TZDs

- ▶ Use thiazolidinediones very cautiously for those on
 - ▶ insulin therapy or at risk for
 - ▶ heart failure, osteoporosis, falls or fractures, and/or macular edema.
- ▶ Lower doses of a thiazolidinedione in combination therapy may mitigate these side effects.



American Diabetes Association Professional Practice Committee; 13. Older Adults: *Standards of Medical Care in Diabetes—2022*. *Diabetes Care* 1 January 2022; 45 (Supplement_1): S195–S207. <https://doi.org/10.2337/dc22-S013>



Older Adults – SGLT-2 Inhibitors

- ▶ Benefits of these “Glucoretics”
 - ▶ Can lower weight / BP. No hypoglycemia
 - ▶ Reduces risk of CVD, Heart failure and preserves long term kidney function
 - ▶ Consider empagliflozin, dapagliflozin, canagliflozin

▶ Considerations

- ▶ Cost may be a barrier
- ▶ Monitor GFR, weight loss
- ▶ Hypotension, dehydration, electrolyte imbalances
- ▶ Increased risk of genital infections, dehydration



Older Adults: DPP-IVs

- ▶ DPP-IV Inhibitors
 - ▶ Few side effects, no hypo
 - ▶ Cost may be barrier
 - ▶ A1c drop about 0.6%
 - ▶ Increased risk of heart failure risk with saxagliptin and alogliptin

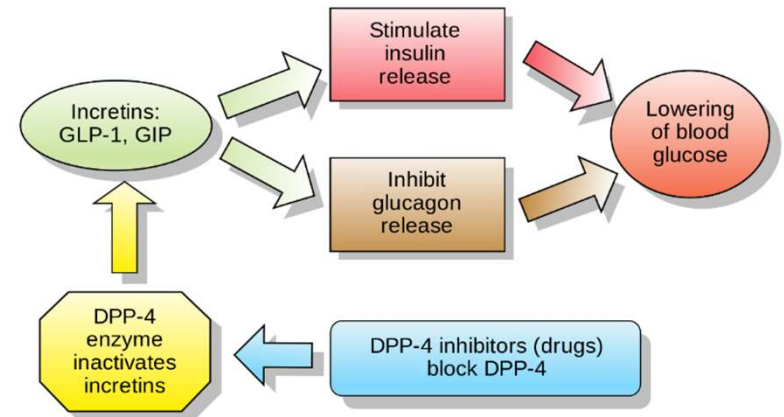


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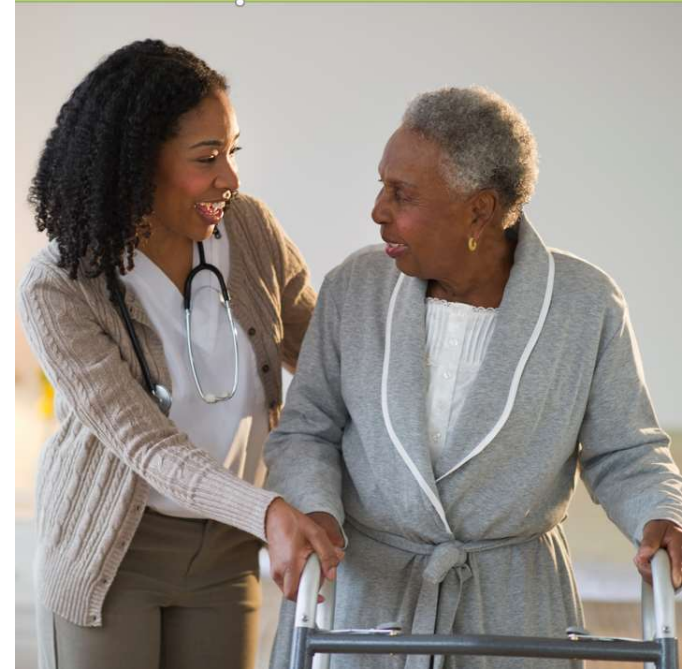
Older Adult Consideration: GLP-1s

- ▶ GLP-1 Receptor Agonists
- ▶ reduce major adverse cardiovascular events,
 - ▶ cardiovascular deaths
 - ▶ stroke, and myocardial infarction for people over age 65 (and younger too)
 - ▶ Injections may require more visual, cognitive and motor coordination.
 - ▶ Can cause N/V and lead to weight loss
 - ▶ Can be costly



Insulin Therapy

- ▶ Evaluate ability to safely use, inject and afford.
- ▶ May need to simplify.
- ▶ Eval if oral meds can be increased and insulin decreased.
- ▶ If type 1, able to self-manage or is support needed?
- ▶ Hypoglycemia awareness and knowledge how to treat?



Simplification of Complex Insulin Therapy

Patient on basal (long- or intermediate-acting) and/or prandial (short- or rapid-acting) insulins^{¶*}

Patient on premixed insulin[§]

Basal insulin

Prandial insulin

Use 70% of total dose as basal only in the morning

Change timing from bedtime to morning

Titrate dose of basal insulin based on fasting fingerstick glucose test results over a week
Fasting Goal: 90–150 mg/dL (5.0–8.3 mmol/L)
• May change goal based on overall health and goals of care**

If 50% of the fasting fingerstick glucose values are over the goal:
• ↑ dose by 2 units
If >2 fasting fingerstick values/week are <80 mg/dL (4.4 mmol/L):
• ↓ dose by 2 units

If prandial insulin >10 units/dose:
• ↓ dose by 50% and add noninsulin agent
Titrate prandial insulin doses down as noninsulin agent doses are increased with aim to discontinue prandial insulin

If mealtime insulin ≤10 units/dose:
• Discontinue prandial insulin and add noninsulin agent(s)

Add noninsulin agents:
• If eGFR is ≥45 mg/dL, start metformin 500 mg daily and increase dose every 2 weeks, as tolerated
• If eGFR is <45 mg/dL, patient is already taking metformin, or metformin is not tolerated, proceed to second-line agent

American Diabetes Association Professional Practice Committee; 13. Older Adults: *Standards of Medical Care in Diabetes—2022. Diabetes Care* 1 January 2022; 45 (Supplement_1): S195–S207. <https://doi.org/10.2337/dc22-S013>

Additional Tips

- Do not use rapid- and short-acting insulin at bedtime
- While adjusting prandial insulin, may use simplified sliding scale, for example:
 - Premeal glucose >250 mg/dL (13.9 mmol/L), give 2 units of short- or rapid-acting insulin
 - Premeal glucose >350 mg/dL (19.4 mmol/L), give 4 units of short- or rapid-acting insulin
- Stop sliding scale when not needed daily

Using patient and drug characteristics to guide decision-making, as depicted in Fig. 9.3 and Table 9.2, select additional agent(s) as needed:

- Every 2 weeks, adjust insulin dose and/or add glucose-lowering agents based on fingerstick glucose testing performed before lunch and before dinner
- Goal: 90–150 mg/dL (5.0–8.3 mmol/L) before meals; may change goal based on overall health and goals of care**
- If 50% of premeal fingerstick values over 2 weeks are above goal, increase the dose or add another agent
- If >2 premeal fingerstick values/week are <90 mg/dL (5.0 mmol/L), decrease the dose of medication

Poll Question 8

For older adults with diabetes on insulin, which of the following is the most accurate statement.

- A. Older adults are at greater risk of hypoglycemia than younger adults.
- B. Due to cognitive decline, continuous glucose monitoring is not recommended.
- C. Divide basal insulin into two separate doses to enhance absorption.
- D. Give insulin after meals to prevent hypoglycemia



Medication Factors to Consider

- ▶ Construct a tailored care plan – focus on safety
- ▶ Social difficulties and living situation
- ▶ Assess affordability
- ▶ Get meds from one pharmacy
 - ▶ Consult with pharmacist
 - ▶ Medication reconciliation
- ▶ Keep list of meds on hands



Physical Activity Benefits for Older Adults

- ▶ Lower overall mortality.
- ▶ Lower risk of
 - ▶ coronary heart disease.
 - ▶ colon cancer.
 - ▶ diabetes.
 - ▶ high blood pressure
 - ▶ obesity.
 - ▶ falls and injury
 - ▶ Alzheimer's
- ▶ Improves
 - ▶ Mood, relieves depression
 - ▶ Improved QOL / function
 - ▶ Function in persons with arthritis
 - ▶ Mental clarity



National Institute on Aging



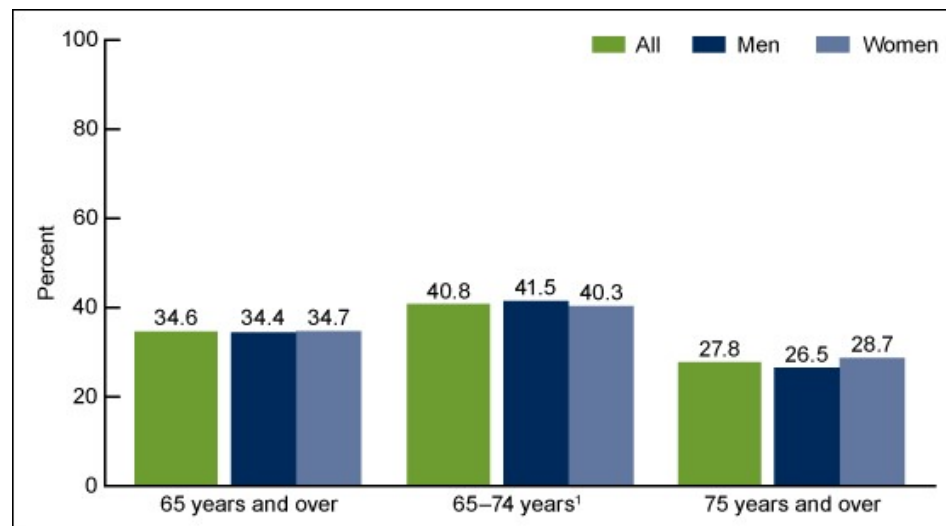
Diabetes Education
SERVICES

- ▶ Google Go4Life
- ▶ Exercise ideas
- ▶ Videos
- ▶ Resources



Weight and Older Adults

- ▶ Refer to RD
- ▶ Elevated BMI prevalent
- ▶ Increases decline in physical function
- ▶ Increases frailty
- ▶ Encourage strategies that combine physical activity, nutrition therapy to promote wt loss
- ▶ Prevalence of BMI 30+ among adults aged 65 and over, by sex: U.S., 2007–2010. CDC



Nutrition Considerations for Older Adults



- ▶ Asses for underweight
- ▶ Smaller more frequent meals
- ▶ Fortify usual foods
- ▶ Adding liquid nutrition supplement
- ▶ Identifying community resources (meals on wheels, Senior Centers, etc.)
- ▶ Encourage fluid intake
- ▶ Snacks as needed
- ▶ Cultural preferences and palatability



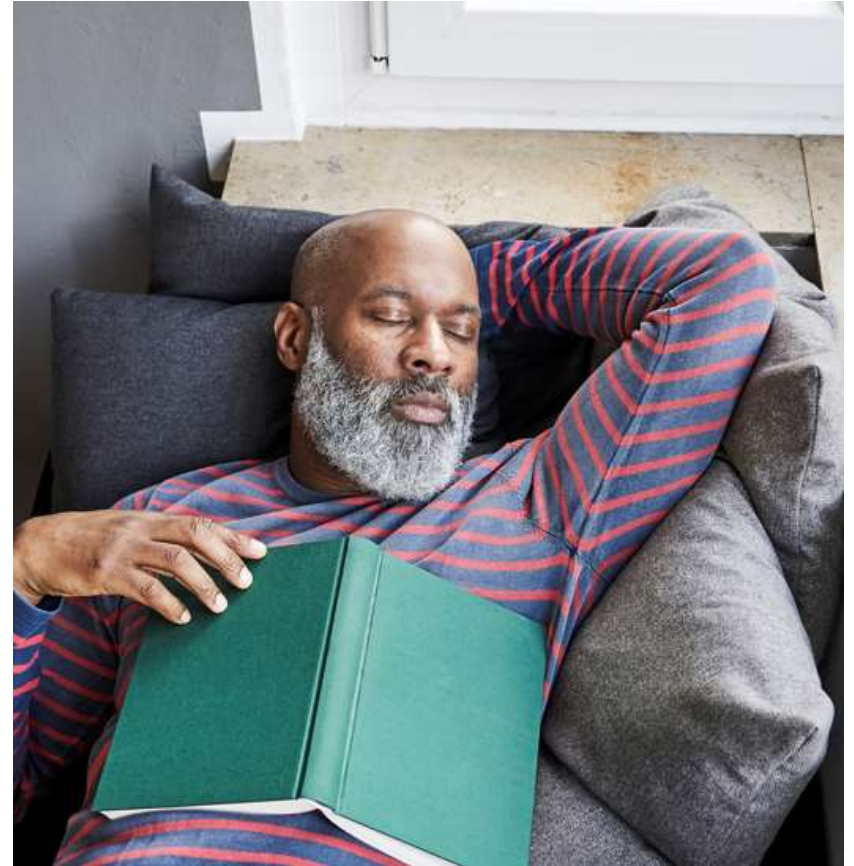
Older Adults at Risk for Malnutrition

- ▶ Due to:
 - ▶ Altered taste and smell
 - ▶ Swallowing difficulties
 - ▶ Oral/dental issues
 - ▶ Functional difficulties shopping for/preparing food
 - ▶ Anorexia
 - ▶ Overly restrictive eating patterns - carb deprivation
 - ▶ Self-imposed or provider/partner directed



Sleep

- ▶ Poor sleep associated with higher glucose levels.
- ▶ People with dementia may sleep more or have disrupted sleeping patterns.
- ▶ How much sleep are you getting a night?
- ▶ Do you wake up well rested?
- ▶ Have you had a sleep study?



Oral Hygiene

- ▶ Oral health affects blood glucose and vascular inflammation.
- ▶ Gums swollen?
- ▶ Brushing frequency
- ▶ Flossing frequency
- ▶ Dental visits
- ▶ Tooth abscess?
- ▶ Dentures fitting?



Social Connectedness

- ▶ Is key to healthy aging.
- ▶ Studies have shown that older people who have close connections and relationships not only live longer, but also cope better with health conditions and experience less depression.
- ▶ Weekly groups
- ▶ Volunteering
- ▶ Social Media Connections
- ▶ Family nearby
- ▶ Places of worship
- ▶ Pets

<https://www.healthinaging.org/blog/social-connectedness-a-key-to-healthy-aging/>



INDIVIDUALIZE – The Best Strategy for All Ages

- ▶ Consider the individual
- ▶ Identify polypharmacy/ financial problems
- ▶ Promote diabetes self-management training
- ▶ Recognize emotional distress
- ▶ Emotional support – Support Groups
- ▶ Realistic goal setting
- ▶ Follow-up and resources



Hope: Our Best Gift



Thank You



Questions:

We are here to help.

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