

Aging Well with Diabetes

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Diabetes Management in Older Adults

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Presenter Disclosure Information

Consultant:

Sanofi, Medtronic, Abbot

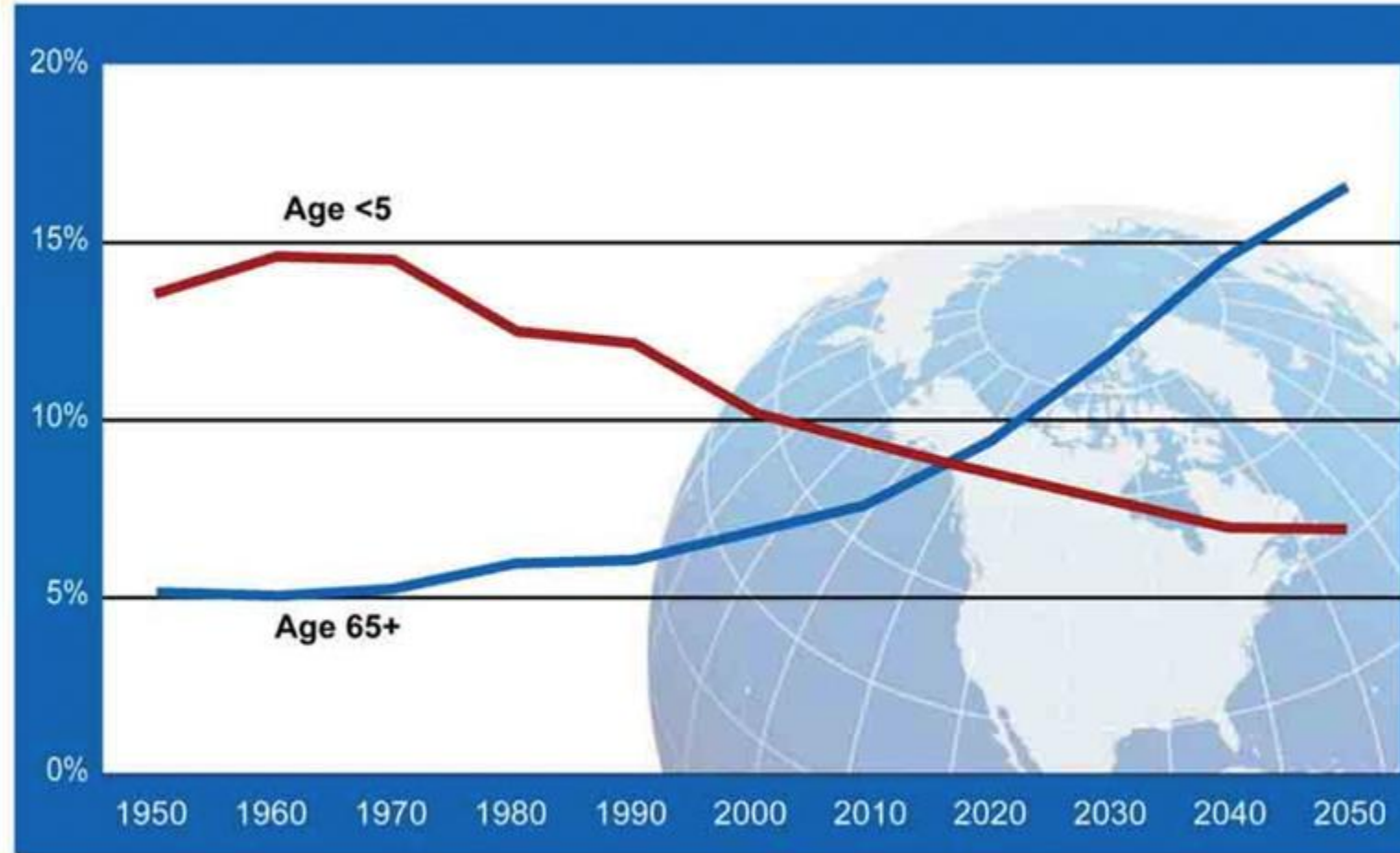
Research grant support

Dexcom

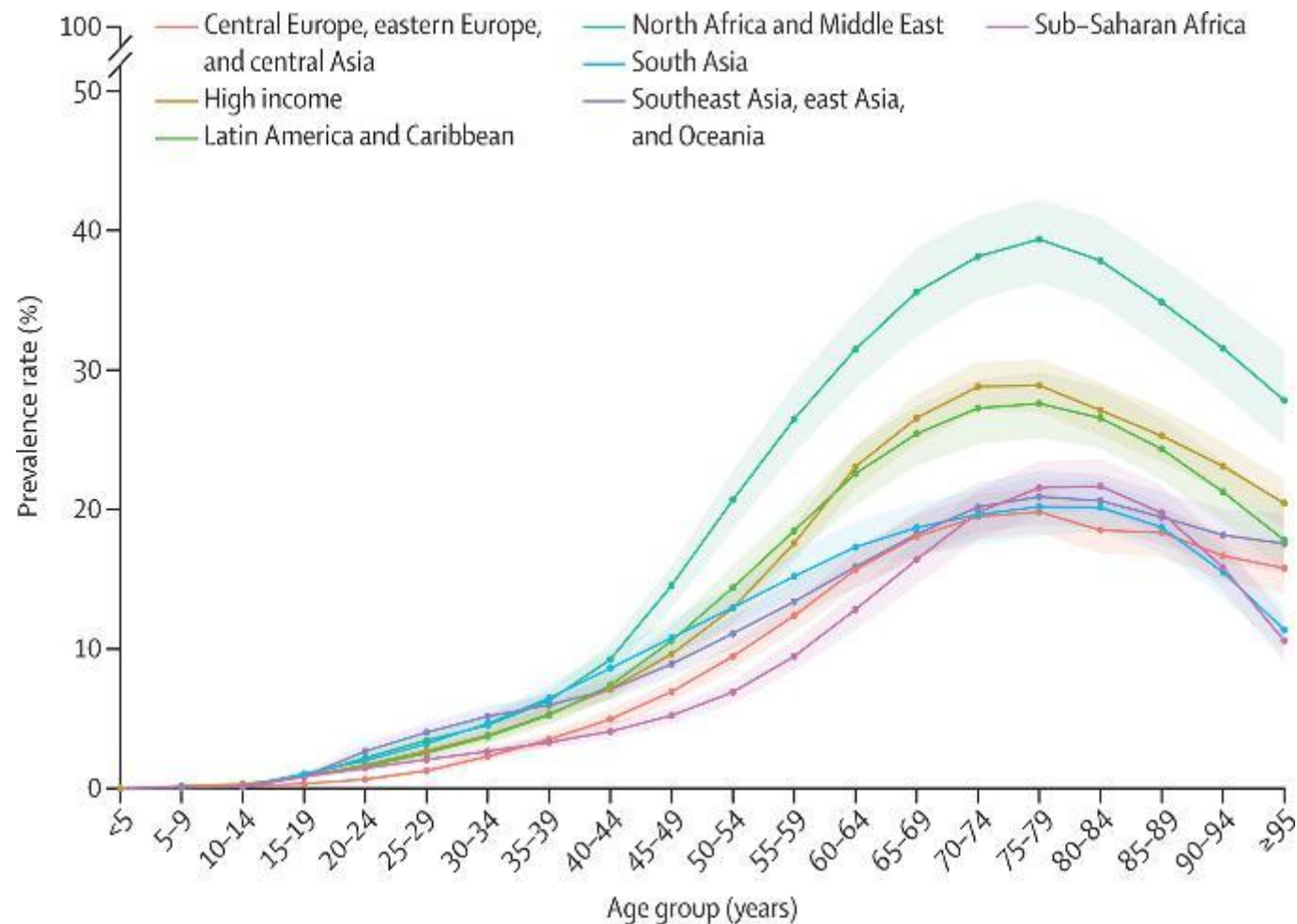
Objectives

- What are the unique characteristics of older adults with diabetes?
- How do we define goals in older adults with diabetes?
- How do we personalized treatment **strategies** that work better for older adults?

Young children and older people as percentage of global population: 1950-2050



Global Prevalence of Diabetes by Age

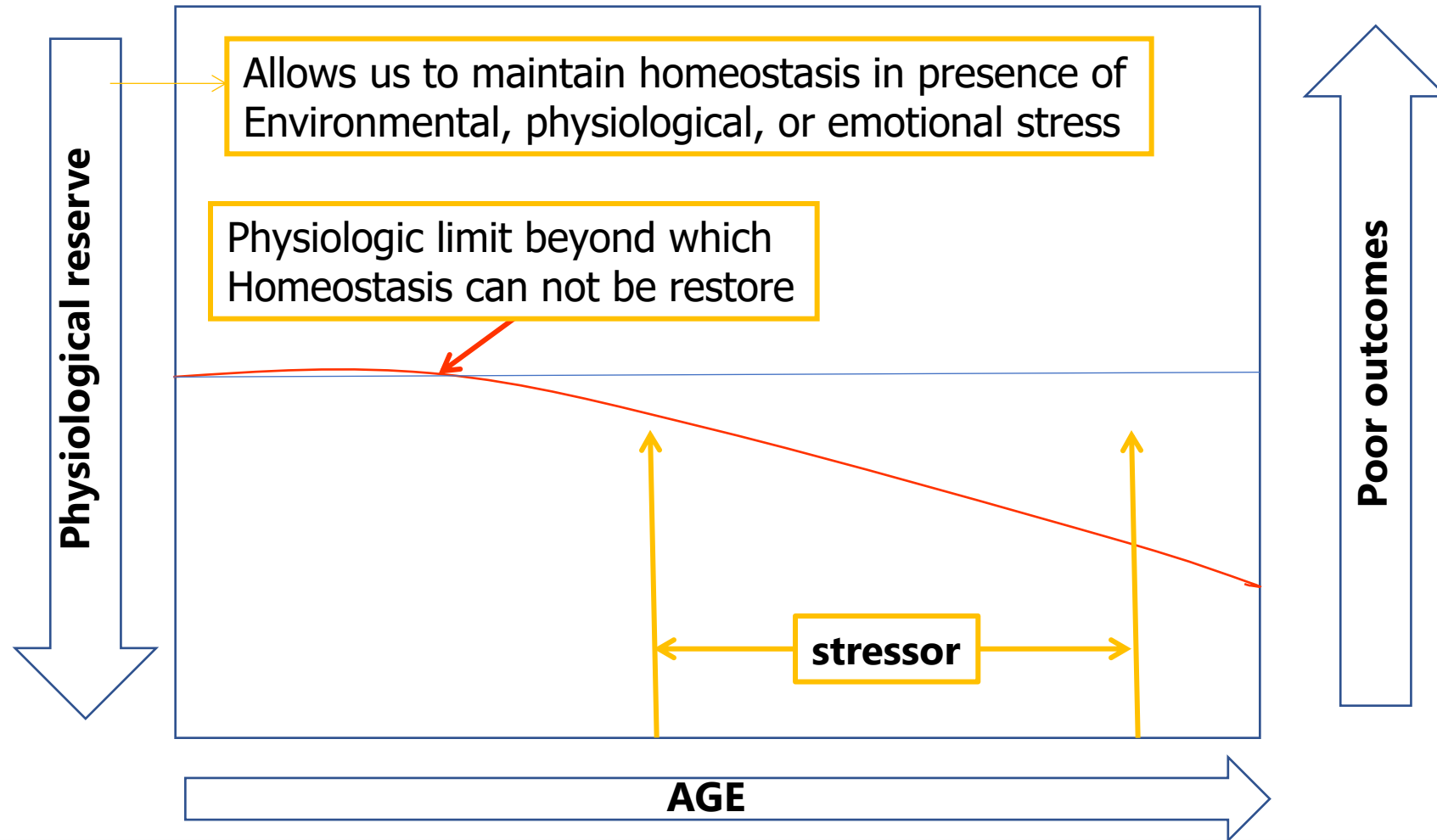


Who is an older adult?



Homeostenosis

Progressive constriction of homeostatic reserve



Where do you t





Community Dwelling Older Adult



Considerations for Care

- Frequent education
- Complex medications
- Acute illness can result in cognitive and/or physical impairments



Residing in Assisted Living Facility



Considerations for Care

- Control over meal content
- Assistance with administration of insulin and/or glucose monitoring
- Acute illness ↑ likelihood of patients failing to take medications as prescribed



Residing in Short-Term Rehabilitation Center



Considerations for Care

- Patients may require tighter glycemic control to facilitate wound healing
- Patients may benefit from self-management education



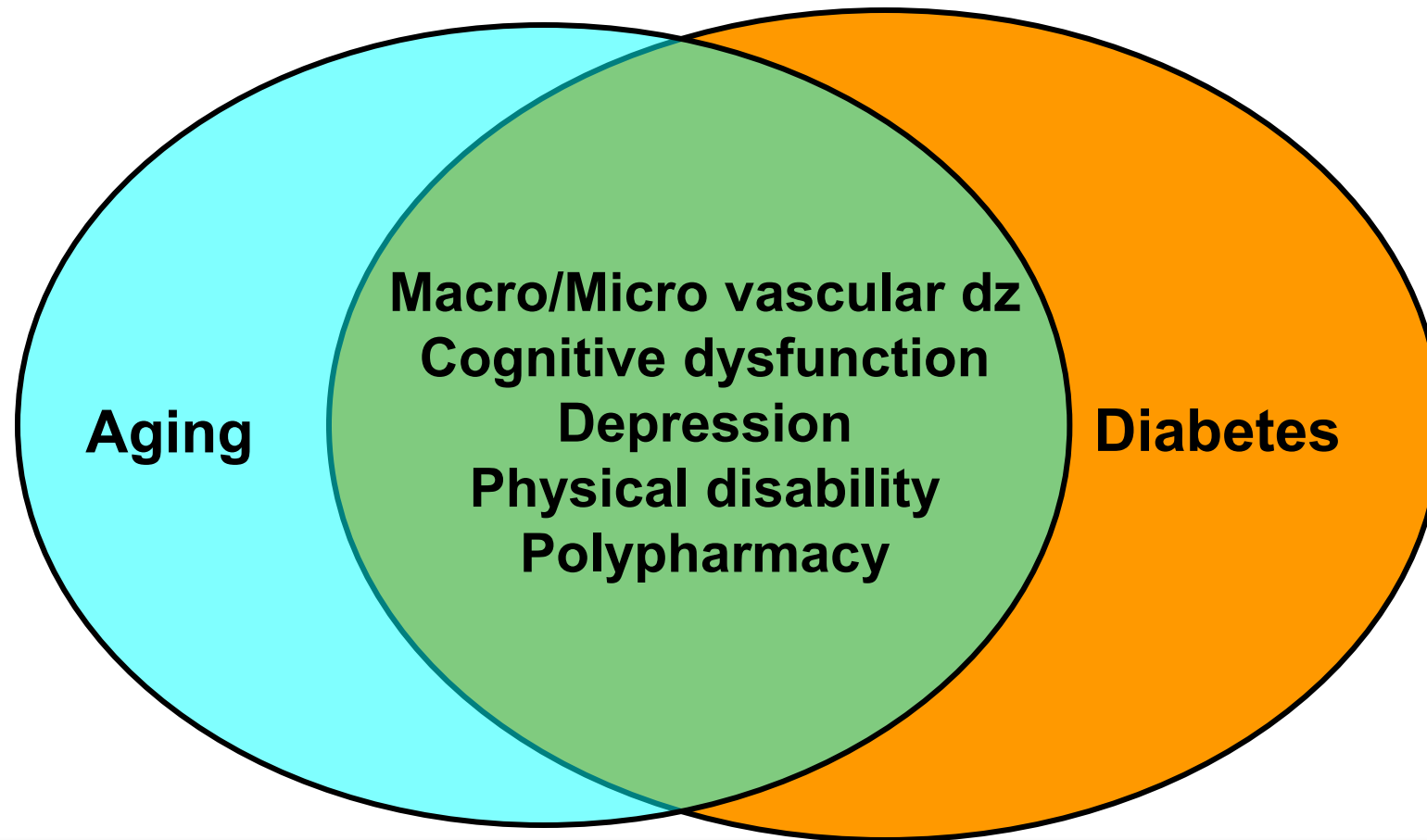
Residing in Nursing Home



Considerations for Care

- Patients have no control over meal content or timing
- ↑ risk for medication side effects
- ↑ risk of acute illness, anorexia, and/or cognitive impairment
- ADL/IADLs facilitated by nursing home staff

Co-morbidities in Aging and Diabetes



Management of Diabetes in Older Adults

- **Screening for barriers**
 - **Clinical / functional / psychosocial**
- Management of hyperglycemia
 - Medications
 - Diet
 - Exercise / physical activity
- Management of risk factors
 - BP control
 - LDL cholesterol
 - Cessation of cigarette smoking
 - Low-dose aspirin therapy
 - Yearly screening for microalbuminuria (ACE inhibitors), retinopathy, foot examination

Glycemic Targets

Tight Glycemic Control

Prevention
Of
Long-term
complications

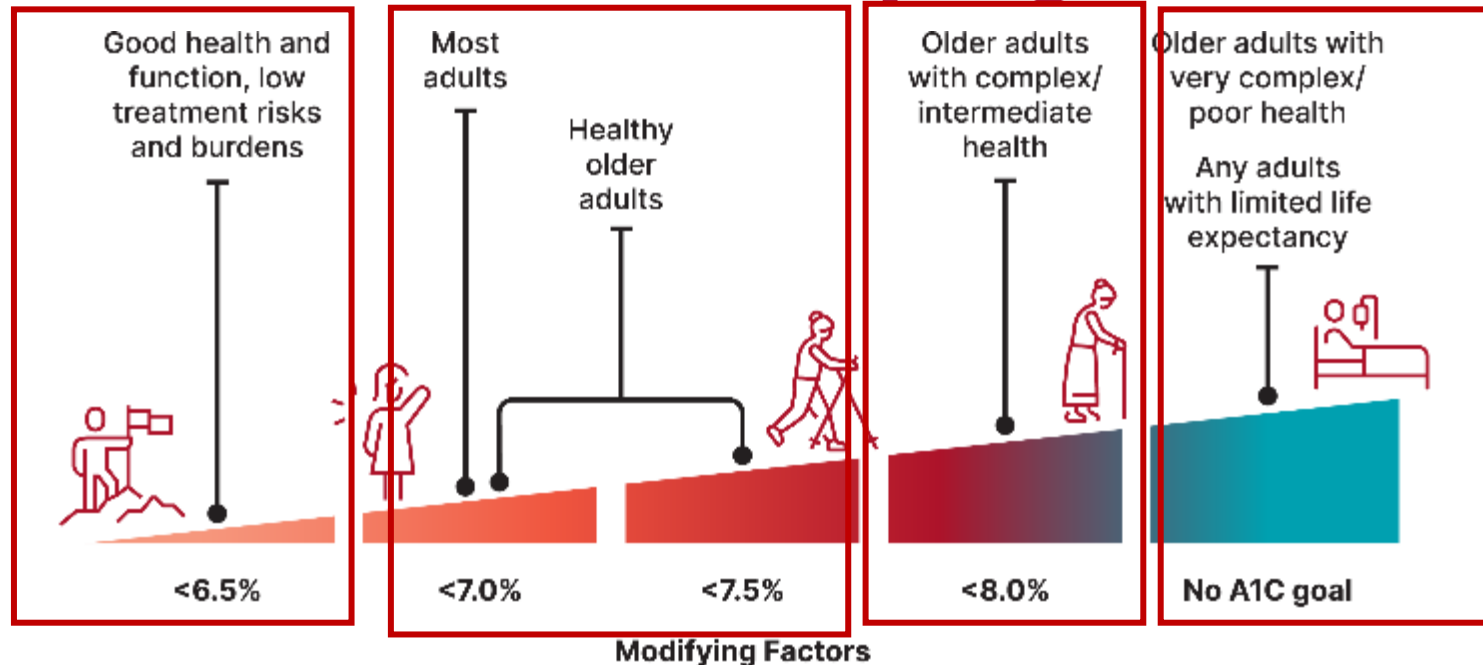
BENEFIT

RISK

Immediate
Complications
Of
Hypoglycemia
(falls, fractures,
Cognitive decline)



Glycemic Goals in Non-pregnant Adults



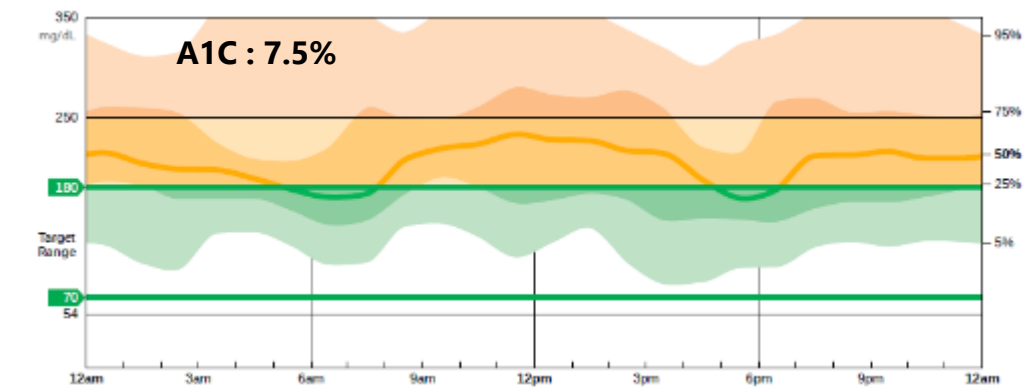
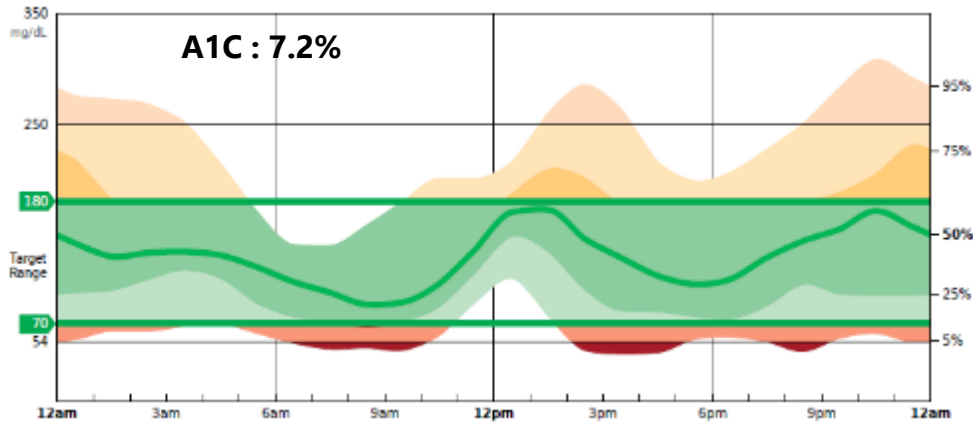
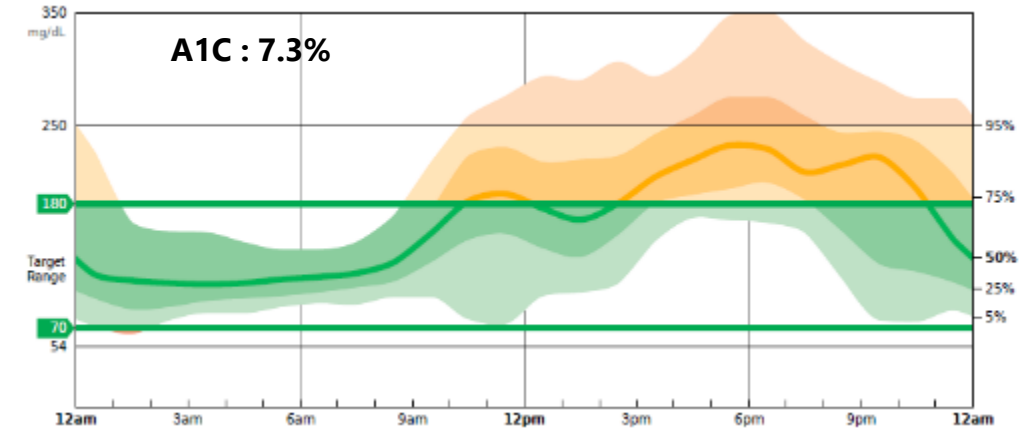
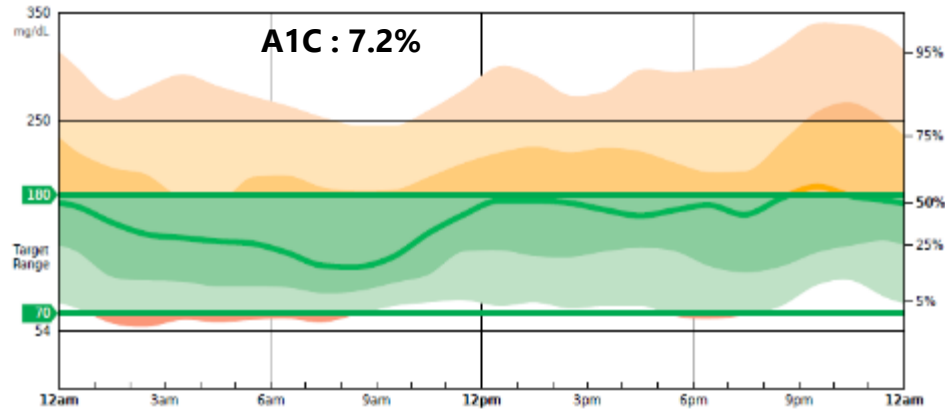
Favor more stringent goal	Favor less stringent goal
Short diabetes duration	Long diabetes duration
Low hypoglycemia risk	High hypoglycemia risk
Low treatment risks and burdens	High treatment risks and burdens
Pharmacotherapy with cardiovascular, kidney, weight, or other benefits	Pharmacotherapy without nonglycemic benefits
No cardiovascular complications	Established cardiovascular complications
Few or minor comorbidities	Severe, life-limiting comorbidities

Fallibility of A1C as a dependable marker of glycemia in older adults

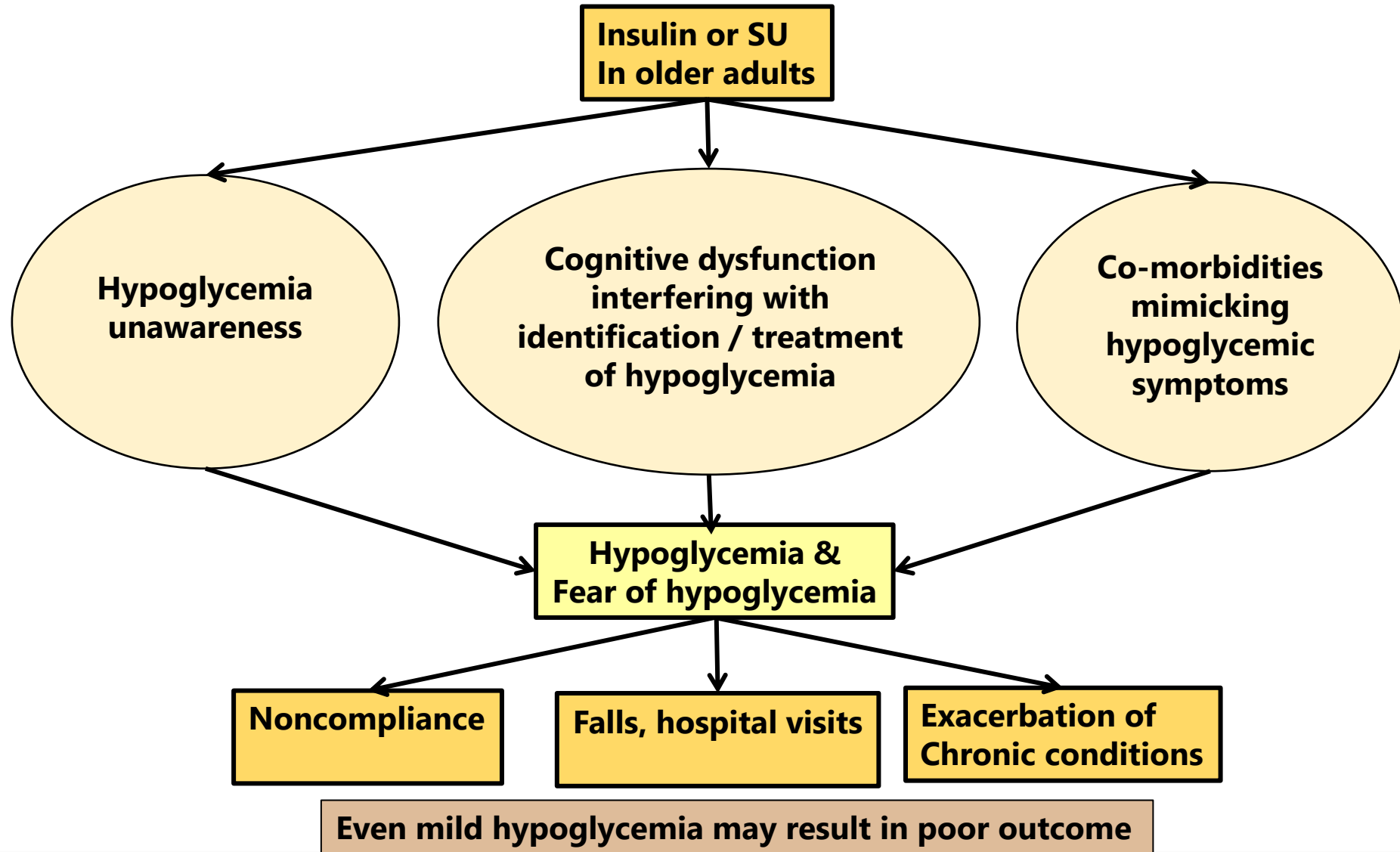
Conditions commonly seen in elderly that may affect A1C levels

Conditions	Possible mechanisms	Change in A1C
Age	Unknown/ ↑ insulin resistance	↑
Race – AA / Hispanic	unknown	↑
Iron deficiency anemia	↓ RBC turnover	↑
Recent infection	Insulin resistance	↑
Transfusion	↑ RBC turnover	↓
Hemodialysis	↓ RBC life span	↓
Erythropoietin therapy	↑ young RBC/↓ RBC life span	↓
Metabolic acidosis / uremia	Carbamylation of hemoglobin	↓ ↔ ↑
Anemia of chronic diseases	Unknown	↑ ↔ ↓

HbA1C does not reflect risk of hypoglycemia or glycemic excursions



Hypoglycemia in Older Adults



Frequent Hypoglycemic Episodes Detected by Continuous Glucose Monitoring (CGM) age > 70 yrs; A1C > 8%; n = 40

Patients with hypoglycemia n = 26 (65 %)

Patients with A1C 8-9 % 14 (54 %)

Patients with A1C > 9 % 12 (46 %)

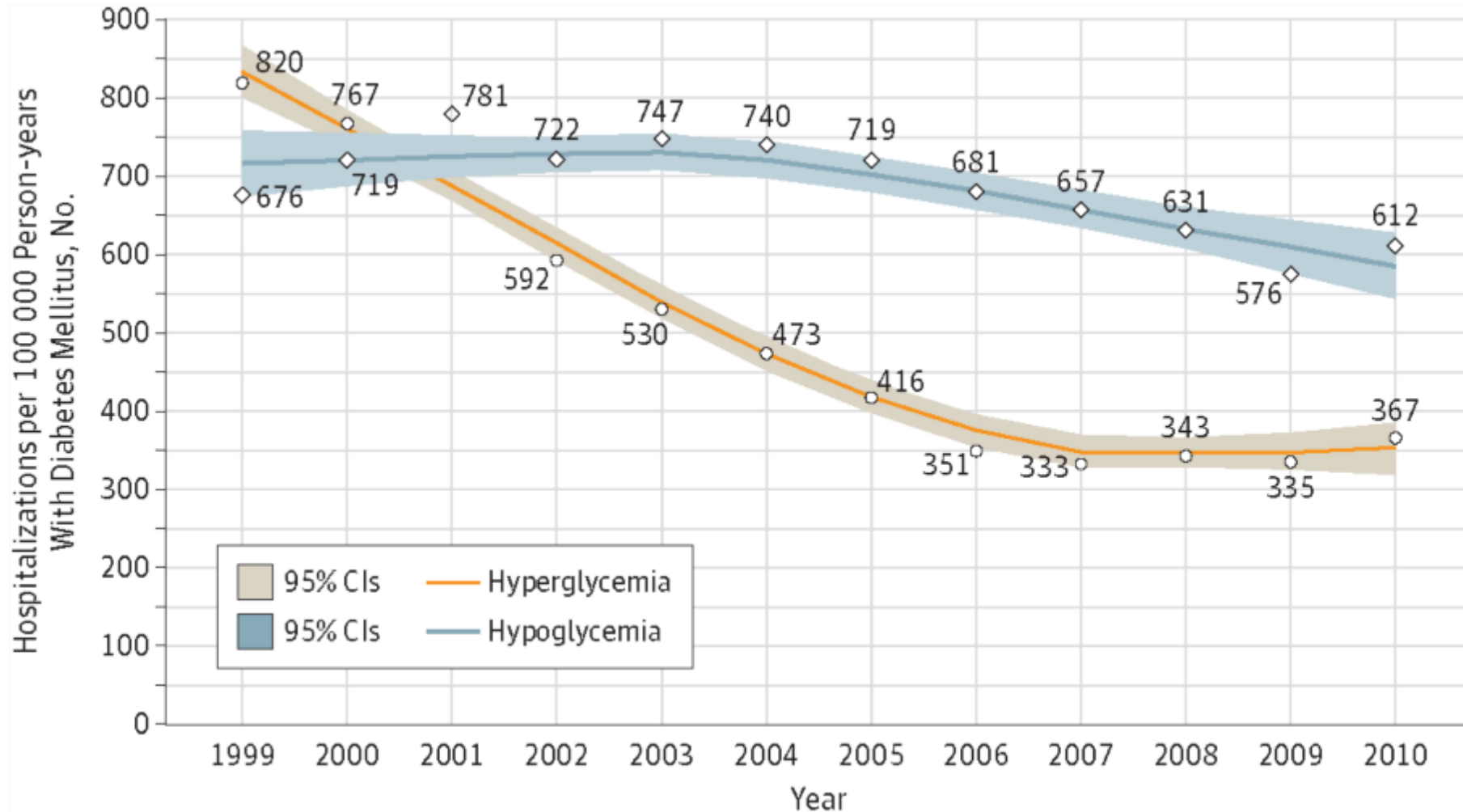
Severity of hypoglycemic episodes

60-69 mg/dl 100 %

50-59 mg/dl 73 %

< 50 mg/dl 46 %

National Trends in US Hospital Admissions for Hyper/Hypoglycemia Medicare Beneficiaries 1999-2011



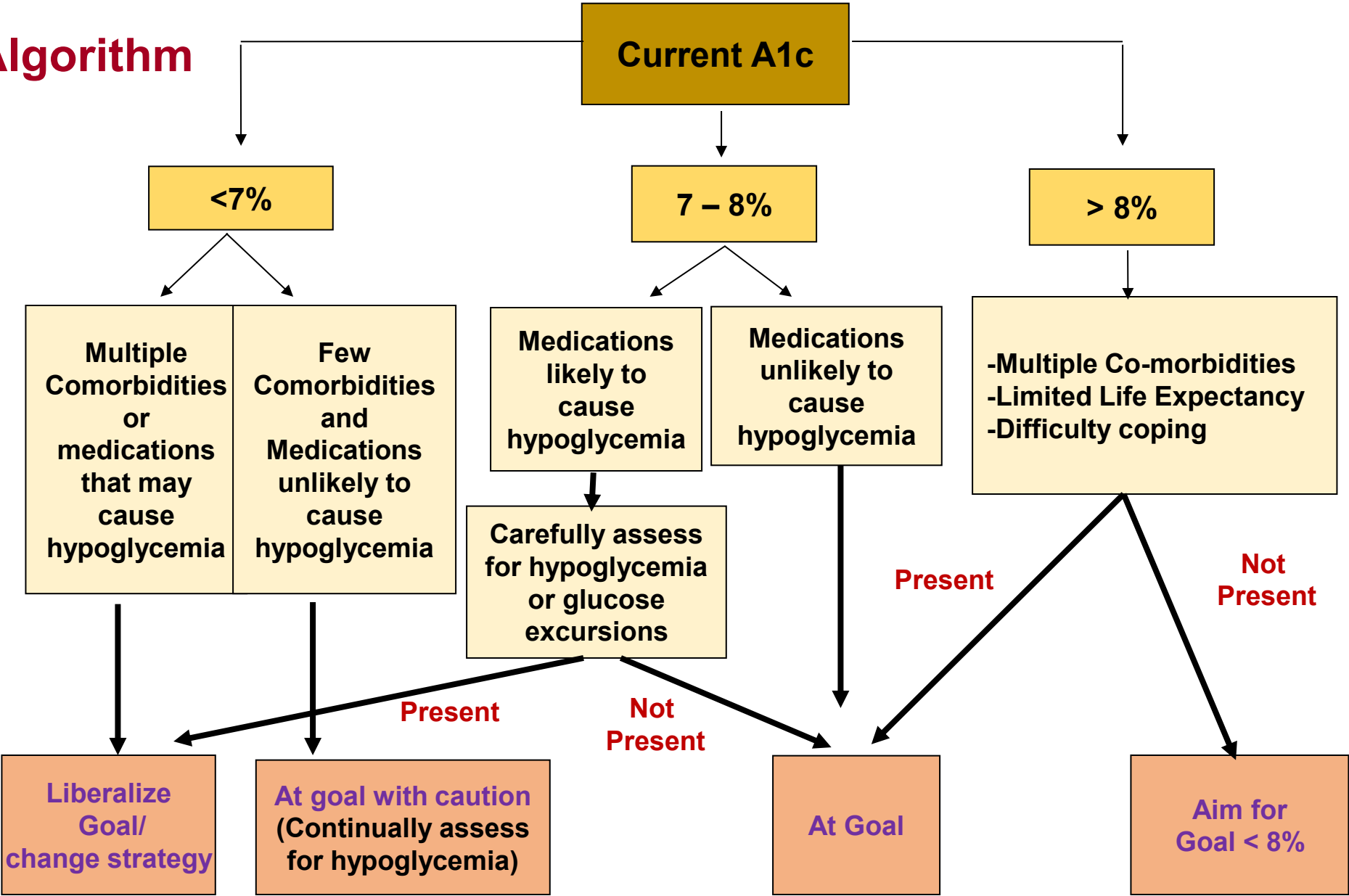
A Framework for Goals: Consensus report(ADA)

Patient characteristics /health status	Rational	A1C	BP	Lipids
Healthy - few co-existing illnesses - intact cognitive status - intact functional status	Longer life expectancy	<7.5%	<140/80	Statins unless not tolerated
Complex/Intermediate - Multiple co-existing illnesses - Mild-moderate cognitive impairment - 2+ IADL dependency	Intermediate life expectancy High treatment burden Hypo vulnerability Fall risk	<8%	<140/80	Statins unless not tolerated
Very Complex/Poor Health - LTC care residents - end-stage chronic illnesses - Moderate-severe cognitive impairment - 2+ ADL dependencies	Limited life expectancy Benefits uncertain	<8.5%	<150/90	Consider risks and benefits

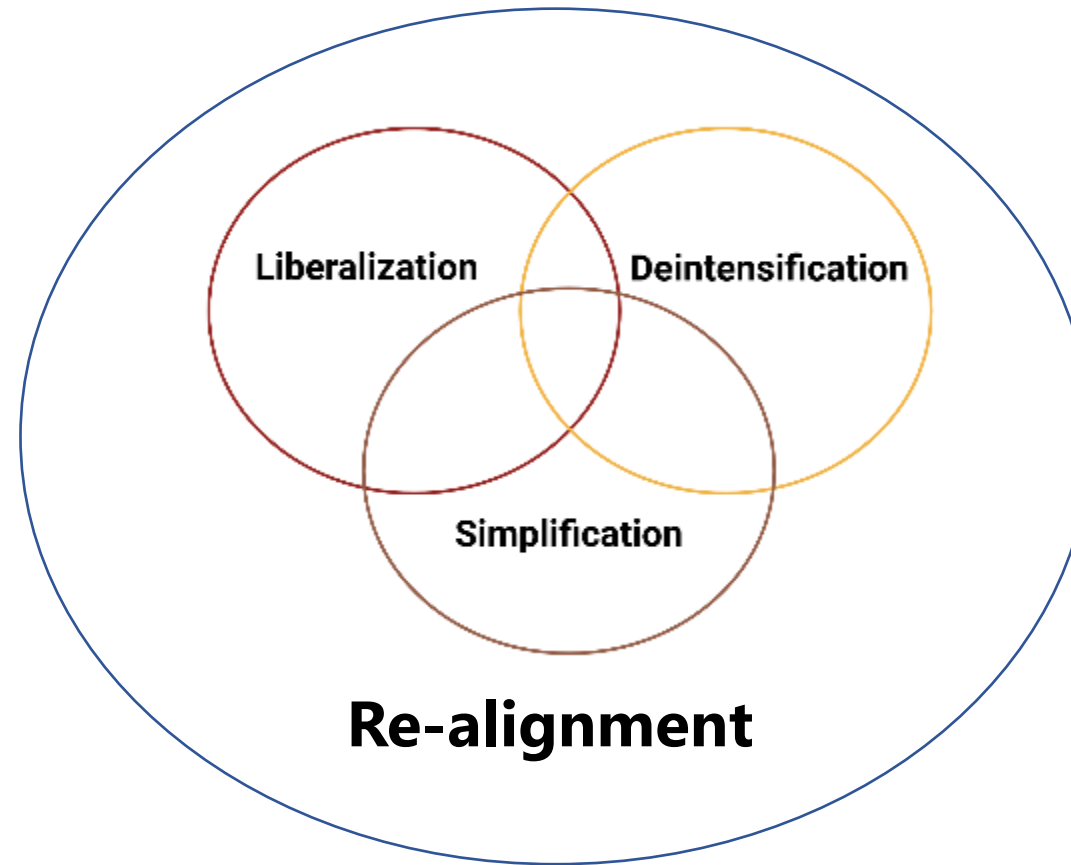
Goals in LTC Facilities (position statement ADA)

Patient characteristics	Rational	A1C	BG range mg/dl	BG monitoring
SNF(Rehab) -Rehab potential -Goals to d/C home	-Need optimal BS control for after acute illness	Avoid A1c reliance	100-200	Based on complexity of regimen
Nursing home -Limited life expectancy -Frequent fluctuations in health status impacting BG	-Limited benefits of tight control -Focus on better quality of life	<8.5% -A1C may not be reliable due to comorbidities	100-200	Based on complexity and risk of hypoglycemia
End-of-life care -Avoid invasive diagnostic or therapeutic procedures	-No benefits of glycemic control -Avoid symptomatic hyperglycemia	-No role of A1C	Avoid severe hypo and hyperglycemia	Periodically to avoid severe hypo or hyperglycemia

Goal-setting Algorithm in Elderly



When Older Adults are Unable to Keep up with Complex Regimen



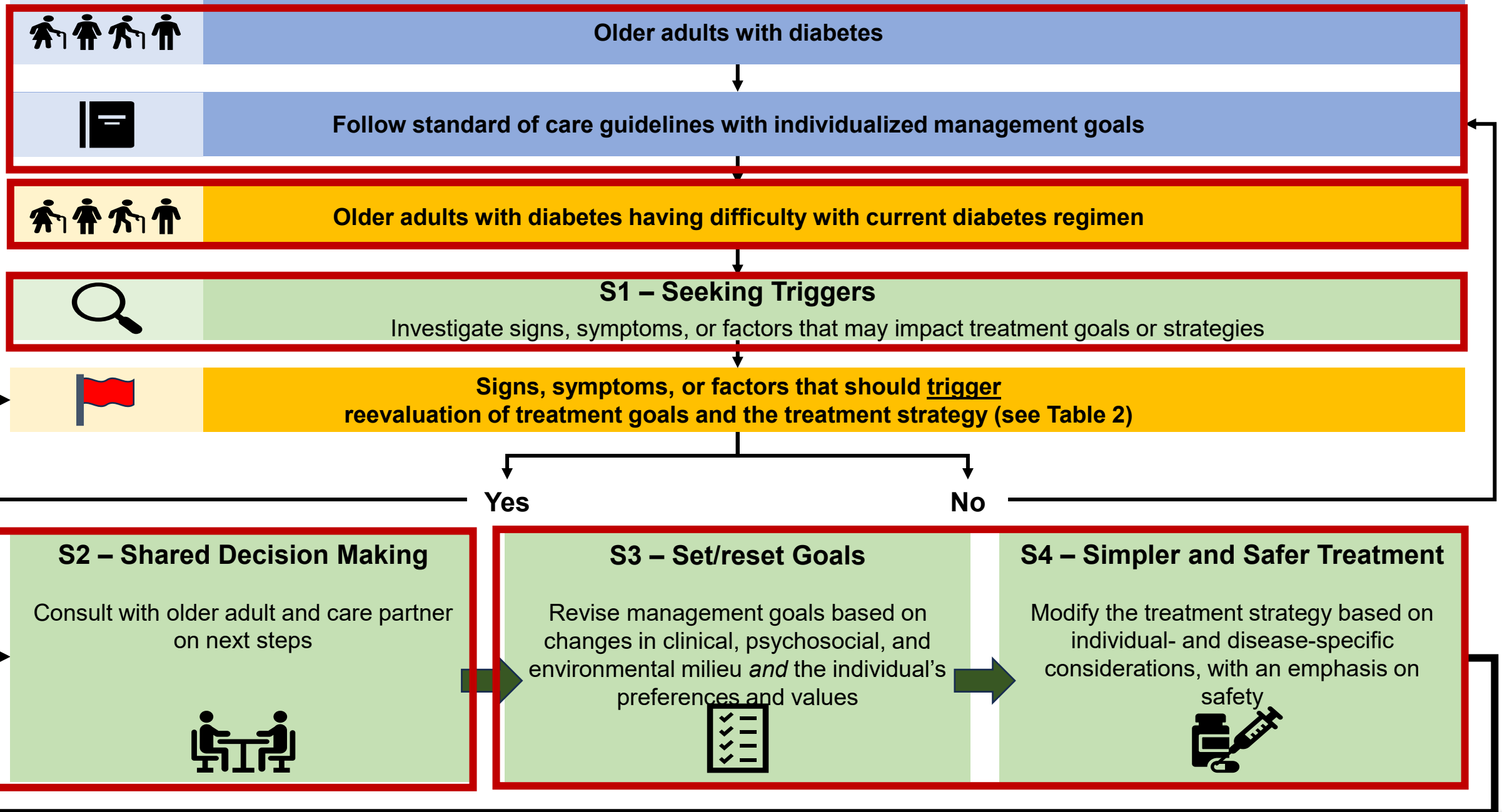
THE LANCET

Diabetes & Endocrinology

REVIEW · [Online first](#), February 17, 2025

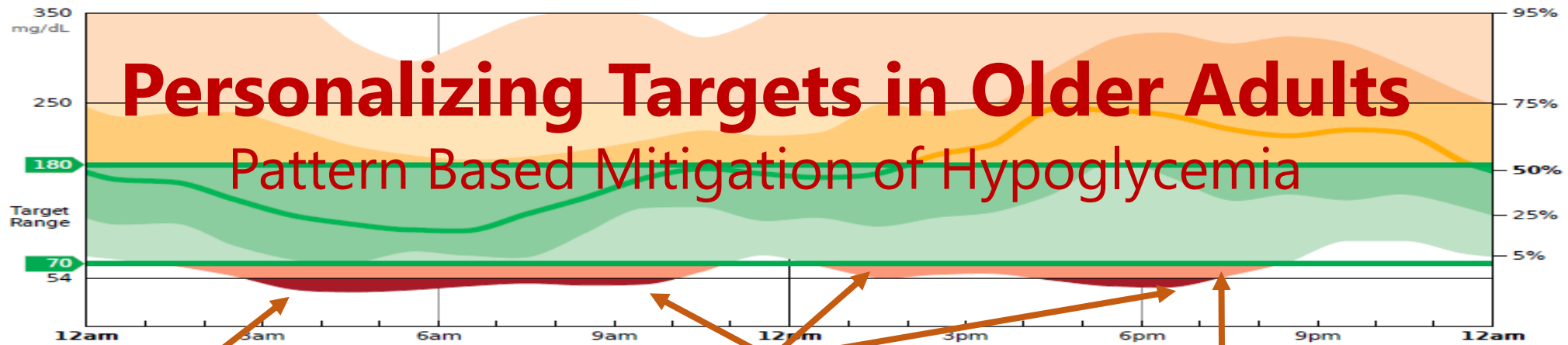
Realigning diabetes regimens in older adults: a 4S Pathway to guide simplification and deprescribing strategies

[Prof Medha Munshi, MD](#)  ^a  · [Anna R Kahkoska, MD PhD](#) ^b · [Prof Joshua J Neumiller, PharmD, CDCES](#) ^c
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Personalizing Targets in Older Adults

Pattern Based Mitigation of Hypoglycemia



Hypoglycemia is recurring overnight

Hypoglycemia is occurring after meals

Hypoglycemia is recurring after periods of hyperglycemia

Any hypoglycemia

If (Context)

Patient reports taking rapid-acting insulin before bed

Patient is not taking rapid-acting insulin before bed

Patient is taking meal-time insulin

Patient is skipping meals

Patient is taking correction doses for hyperglycemia

Patient is using CGM

Then (Action)

Reduce or stop bedtime rapid-acting insulin
Reduce basal insulin

Reduce basal rate/basal dose
If taking intermediate or basal at night, change to morning

Use fixed reduced mealtime doses or stop mealtime insulin

Reinforce importance of matching insulin with meals

Stop using correction dosing or only use conservative dosing if glucose >300 mg/dL, and no more frequently than every 3-4 hours

Integrate CGM feature so care partners can follow glucose levels
Assess relationship with physical activity

Keep Eyes on the Goal

Aging Successfully



Dr. Joslin age 91



Dr. Joslin age 90

Advancing Healthy Aging Through Community-Based Diabetes Prevention Programs

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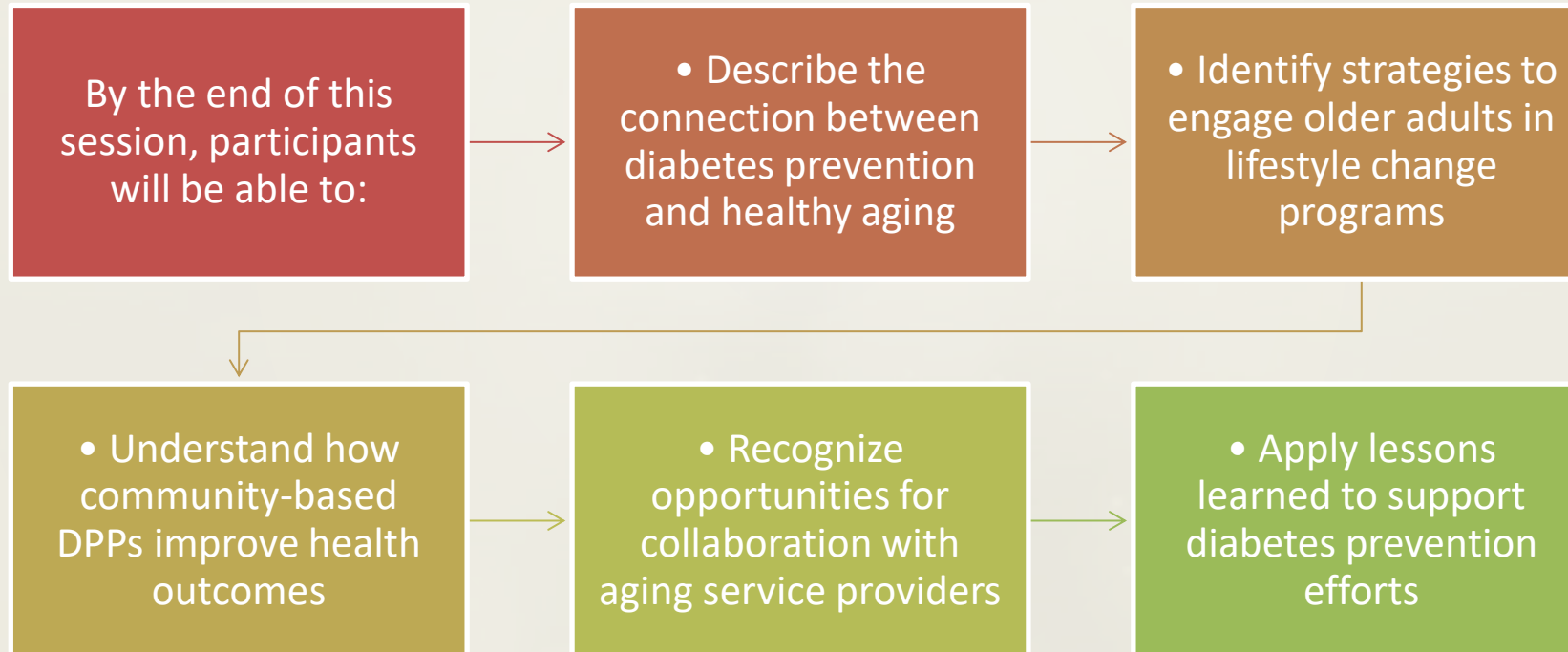
Presenter: Sara Tan

Organization : Enhance Asian Community
on Health

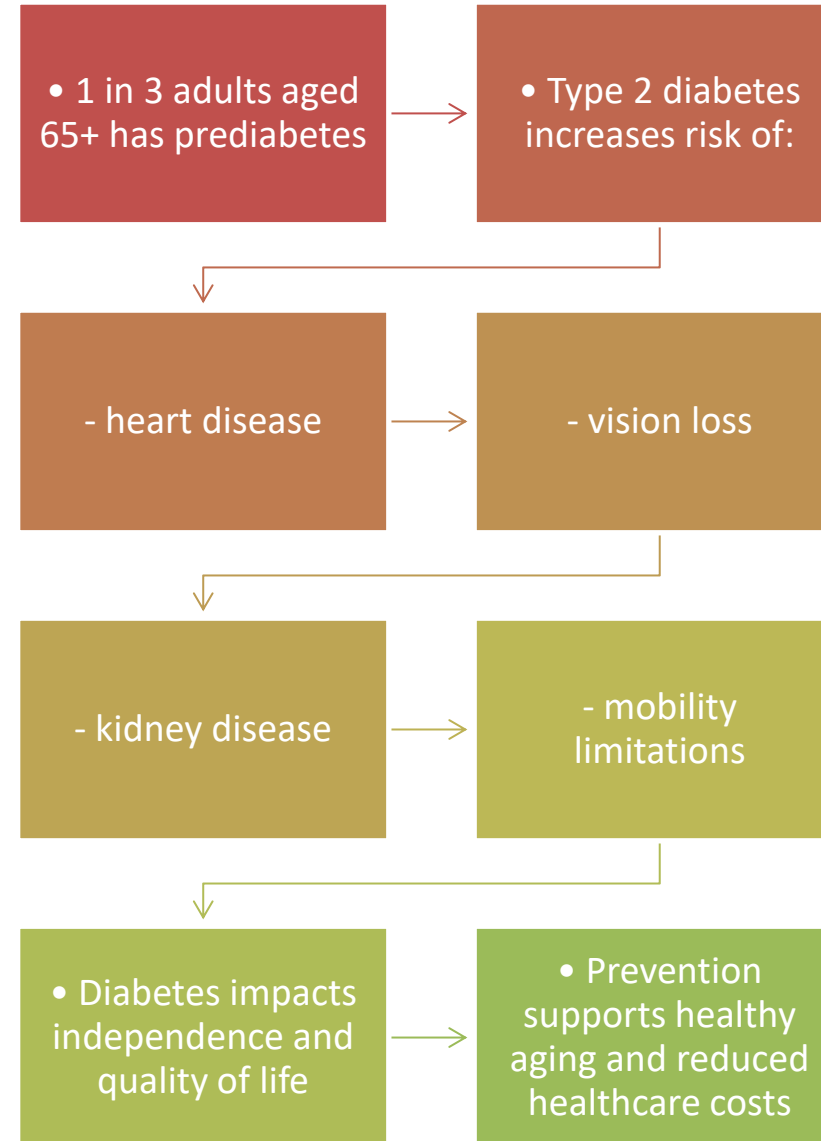
Conference: Aging Well with Diabetes

Date: April 1, 2026

Session Objectives



Why Focus on Diabetes Prevention for Older Adults?



What is the National Diabetes Prevention Program (National DPP)?

CDC-recognized lifestyle change program

Focus areas:

- Healthy eating
- Physical activity
- Stress management
- Problem solving
- Social support

Goal:

- Reduce risk of type 2 diabetes
- Support sustainable lifestyle changes



About Our Organization

Mission

- Promote health equity and wellness in the community

Who We Serve

- Older adults
- Underserved communities
- Individuals at risk for chronic disease

Our Role

- CDC-recognized DPP provider
- Trusted community partner
- Bridge between healthcare and community services

Our DPP Model for Older Adults

Program Features

- Group-based lifestyle coaching
- Evidence-based curriculum
- Virtual, in-person, or hybrid options
- Culturally responsive approach
- Language access support
- Social connection focus

How We Engage Older Adults

Successful engagement strategies

- Partnerships with senior centers and housing sites
-
- Collaboration with healthcare providers
-
- Outreach through community events
-
- Peer support environment
-
- Flexible scheduling
-
- Address transportation barriers



Addressing Barriers to Participation

Common challenges:

- Technology access
- Transportation
- Caregiving responsibilities
- Health literacy
- Motivation and confidence

Solutions:

- Technical support
- Reminder calls
- Simple, practical curriculum delivery
- Supportive group environment

Outcomes and Impact

- 95% participants achieving 5–7% weight loss

- 95% increase in weekly physical activity

- 90 % Program retention rate

- 100% Participant satisfaction

Participant feedback:

"I feel more confident managing my health and staying active."

Success Story

Example participant:

- 68-year-old participant
- Improved physical activity
- Reduced diabetes risk factors
- Increased confidence and social connection

Focus:

- Empowerment
- Lifestyle change
- Quality of life improvements

The Value of Community- Based DPPs

Community organizations are uniquely positioned to:

- Build trust
- Provide culturally responsive programs
- Address social determinants of health
- Reach underserved populations
- Provide ongoing support

Partnership Opportunities

Potential collaborators:

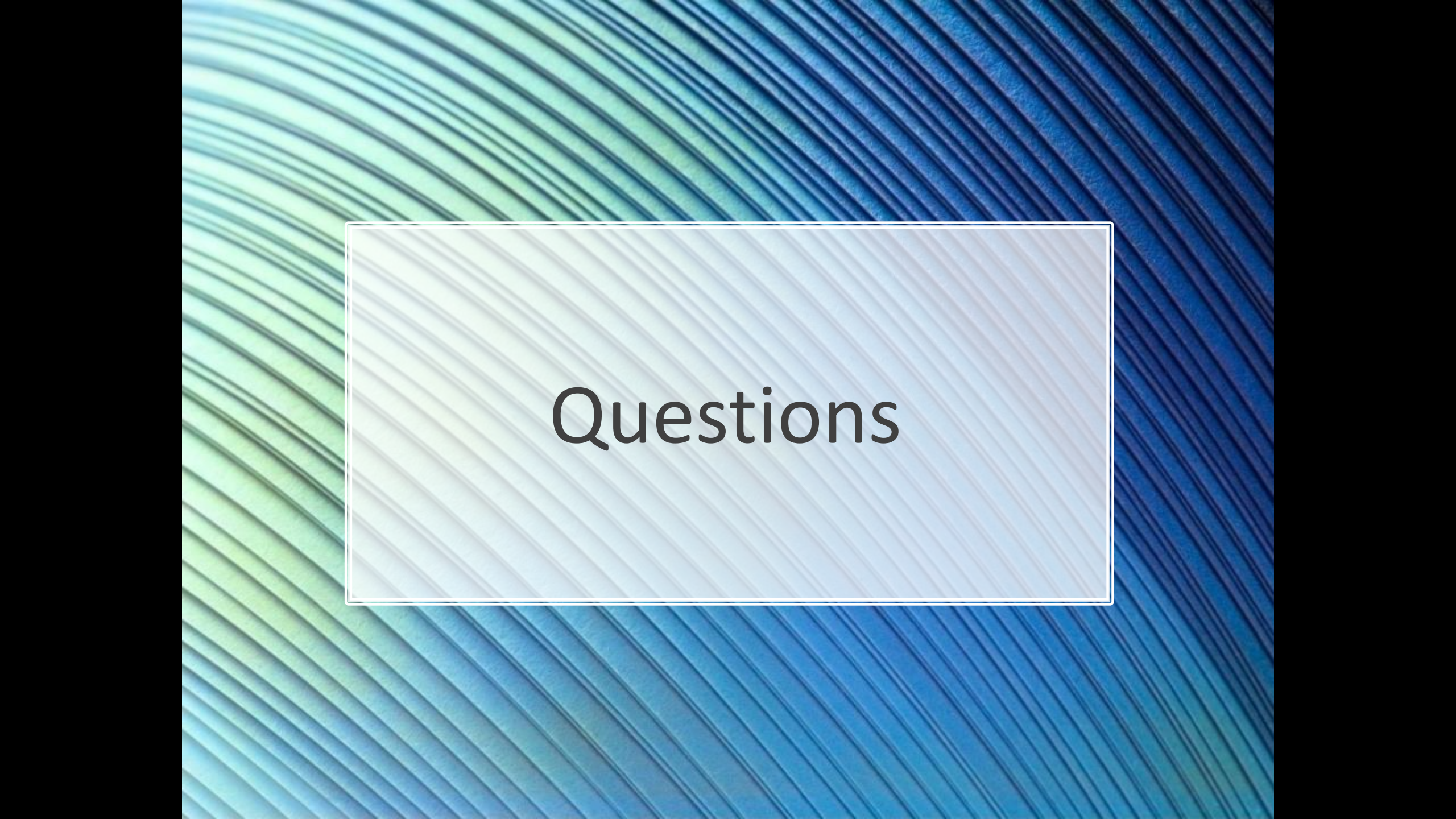
- Aging service providers
- Senior centers
- Healthcare organizations
- Community health workers
- Public health agencies
- Housing organizations

Working together improves reach and impact.

Recommendations for the Field

To support healthy aging through prevention:

- Integrate DPP into aging services
- Increase referral pathways
- Invest in community-based programs
- Prioritize culturally responsive approaches
- Support sustainable funding



Questions

Continuous Glucose Monitoring & Older Adults

Emily Schilling, RD, LDN, CDCES

Learning Objectives

1. List 3 potential benefits of CGM use in older adults
1. Describe the special considerations for recommending and using CGM in older adults

Continuous Glucose Monitoring (CGM)

- Small sensor uses enzymatic activity to monitor interstitial glucose levels
- Readings sent to smartphone app or reader device
- 10-15 day sensor life



Potential Benefits of CGM

- Reduce A1c
- Improve time in range (70-180mg/dL)
- Reduce hypoglycemia risk
- Can guide medication adjustments
- Can guide nutrition and lifestyle recommendations/ counseling
- Improve self-efficacy, empowerment
- Creates sense of accountability
- Decreased need for fingersticks

Medicare Coverage

2004	2017	2021	April 16, 2023
FDA approved CGM	Medicare began coverage for CGM (with strict requirements)	Medicare eliminated the requirement for 4+ times per day glucose monitoring for CGM coverage; expanded to those using inhaled insulin	Expanded coverage for people with diabetes who are insulin-treated OR those with problematic hypoglycemia

Standards of Care in Diabetes 2026

- Recommends CGM at diabetes onset and anytime thereafter for people on insulin, on non-insulin therapy that may cause hypoglycemia, and **any diabetes treatment where CGM helps**

Standards of Care in Diabetes – 2026 Older Adults

- Recommends CGM for older adults with type 1 diabetes and type 2 diabetes on insulin therapy to improve glycemic outcomes, reduce hypoglycemia, and reduce treatment burden
- CGM may be beneficial for older adults with cognitive and/or physical impairments, especially if relying on caregivers
- May take longer to learn new technology

Special Considerations for Older Adults

- Financial
- Glycemic goals
- Function limitations
- Cognitive impairment
- Ability to learn new skills
- Caregivers and supports

Glycemic Goals

- Glycemic goals may be liberalized in older adults
- Hypoglycemia affects ~22% of older adults with T2DM (Al-Azayzih, 2024)
 - Falls
 - Hospitalizations
 - Cognitive decline
 - Hypoglycemia Unawareness
 - Dementia
 - Autonomic nervous system deficits

- 76 years old
- Lives alone
- Basal insulin
- Metformin
- GLP1

GLUCOSE STATISTICS AND TARGETS

March 12, 2025 - March 25, 2025

14 Days

Time CGM Active:

89%

Ranges And Targets For	Type 1 or Type 2 Diabetes
Glucose Ranges	Targets % of Readings (Time/Day)
Target Range 70-180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)
Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.	

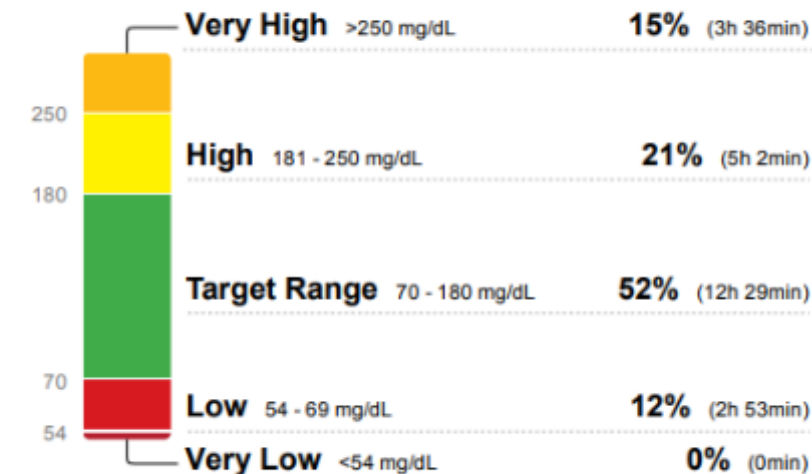
Average Glucose 158 mg/dL

Glucose Management Indicator (GMI) 7.1%

Glucose Variability 50.5%

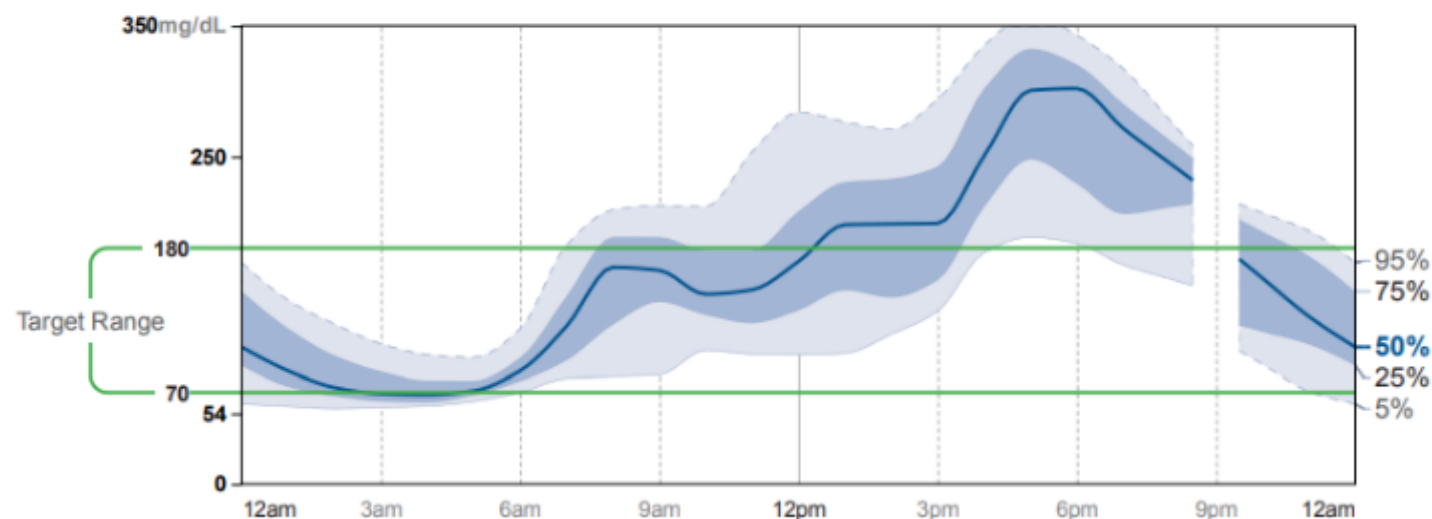
Defined as percent coefficient of variation (%CV); target ≤36%

TIME IN RANGES



AMBULATORY GLUCOSE PROFILE (AGP)

AGP is a summary of glucose values from the report period, with median (50%) and other percentiles shown as if occurring in a single day.

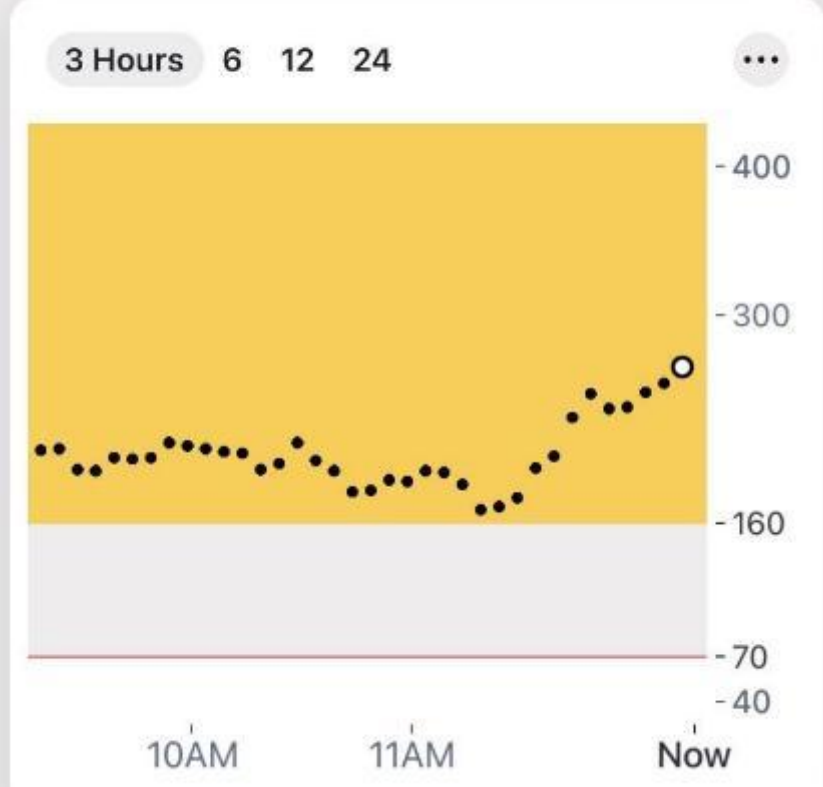
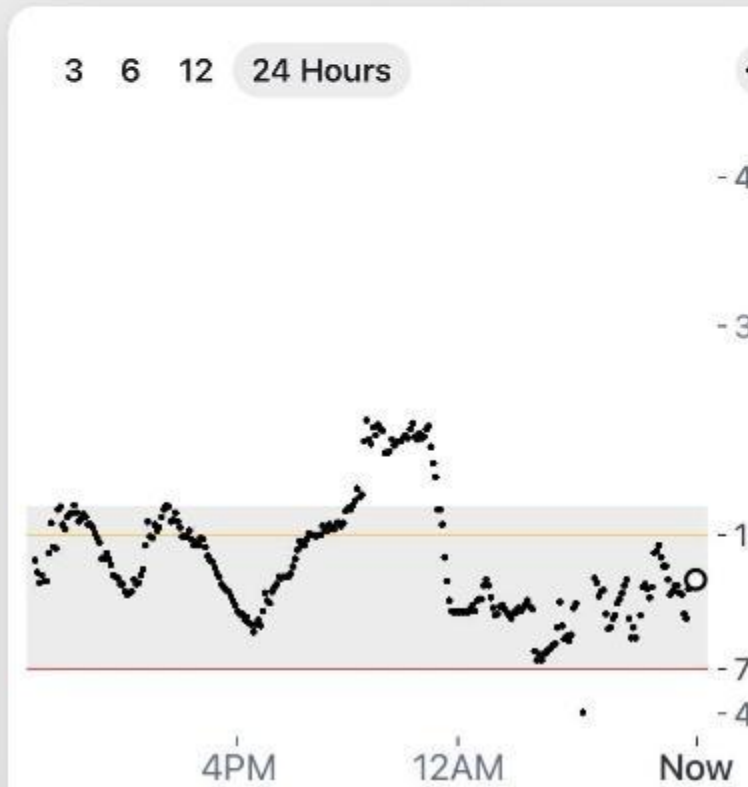
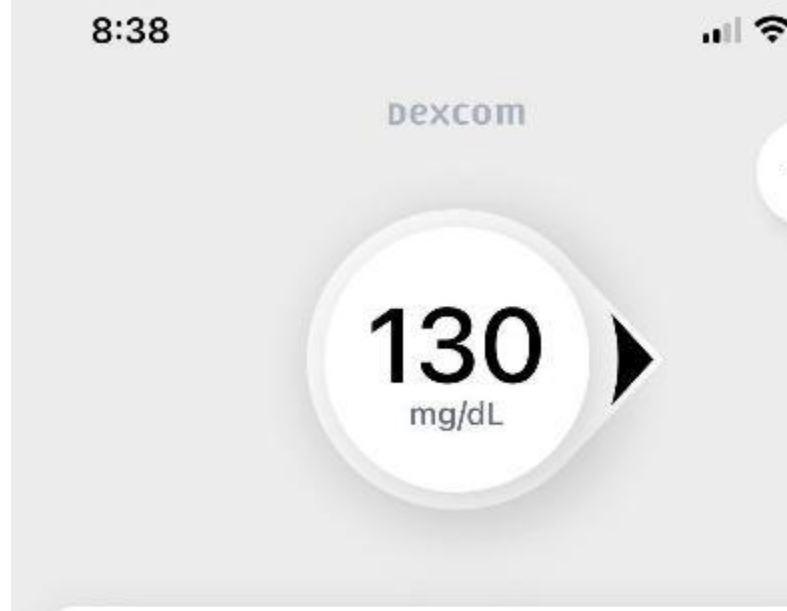
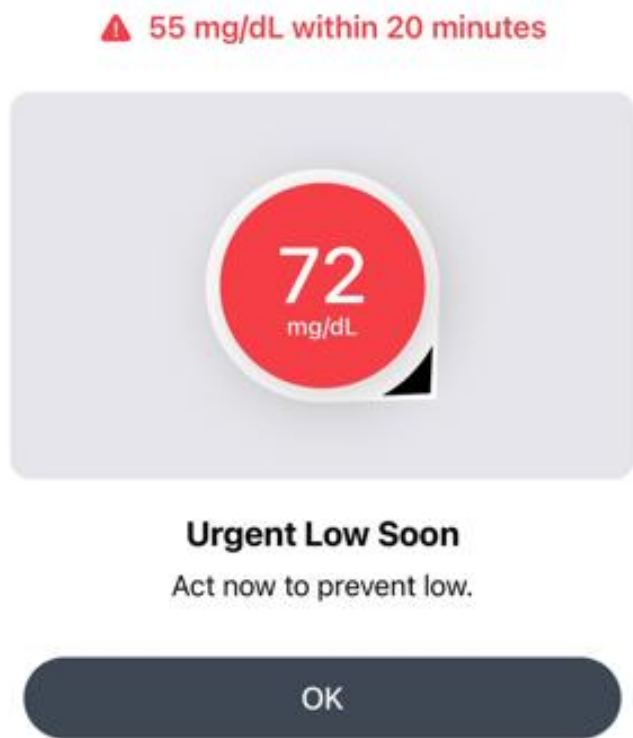


Consider Functional Limitations

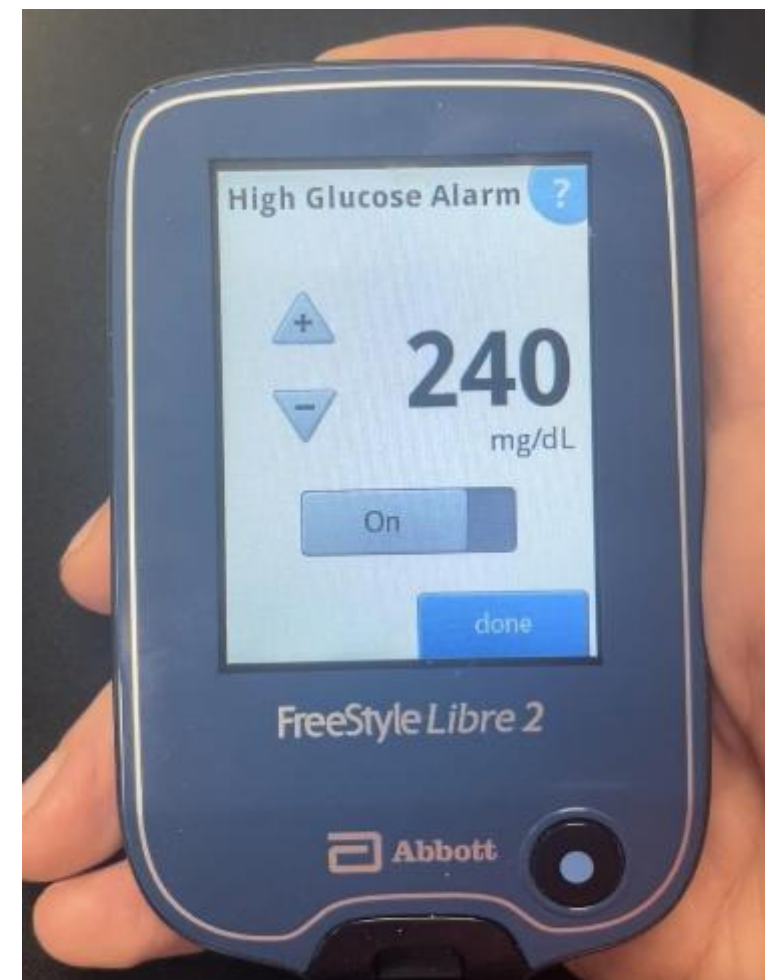
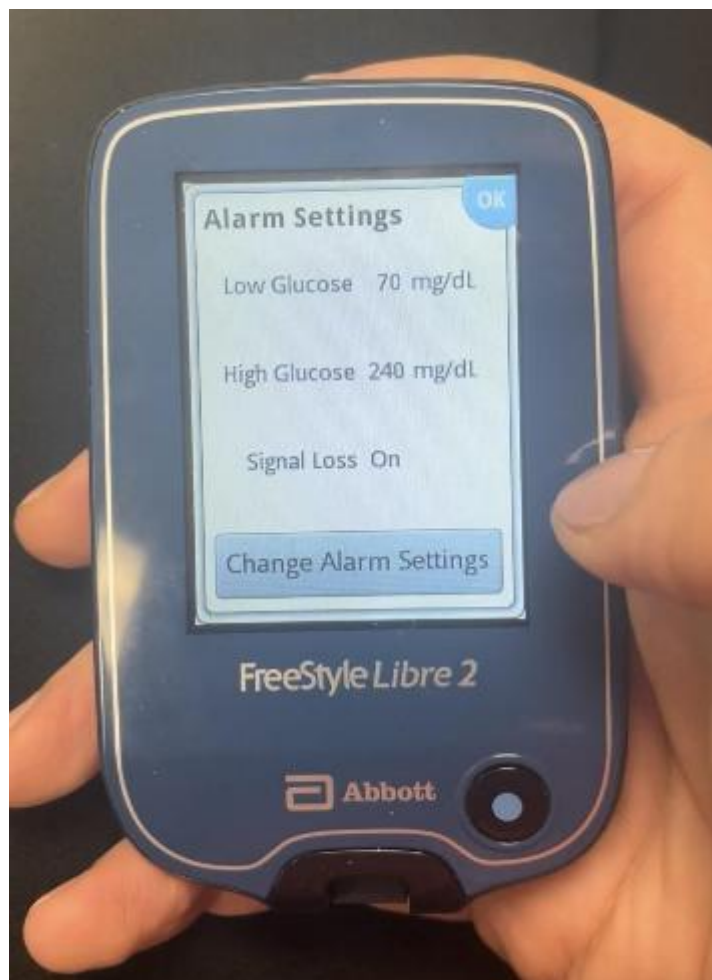
- Neuropathy
- Post-stroke hemiplegia
- Fine-motor deficits
- Visual impairment
- Hearing impairment



*Is the individual able to apply/ use CGM independently, or do they need help?



Alarm Settings - *customize to individual goals*



CGM and Dementia

- Qualitative study found CGM **helpful for caregivers** managing diabetes in older adults (mean age 85 years) with cognitive impairment or dementia (Mattishent, 2019)
- CGM decreased rates of hospitalization, hypoglycemia hospitalization, and mortality in older adults with Alzheimer's disease and DM compared to SMBG (Kotecha, 2025)



Training

- Older adults need ~41 minutes *more* training/support on CGM in the first month of use to feel comfortable (Weinstock, 2024)
- Include caregivers/ support system when appropriate



Summary

- Determine pros/cons of CGM on an individualized basis
- Consider cognitive and functional status
- Include caregivers and other supports in education as needed
- Understand more training/ time may be needed
- Periodically reassess if CGM is still beneficial and in line with goals of care

References

1. Al-Azayzih A, Kanaan RJ, Altawalbeh SM, Alzoubi KH, Kharaba Z, Jarab A. Prevalence and predictors of hypoglycemia in older outpatients with type 2 diabetes mellitus. *PLoS One*. 2024 Aug 29;19(8):e0309618. doi: 10.1371/journal.pone.0309618. PMID: 39208059; PMCID: PMC11361436.
2. American Diabetes Association Professional Practice Committee. 7. Diabetes technology: Standards of Care in Diabetes—2026. *Diabetes Care*. 2026;49(Suppl 1):S150-S165. doi:10.2337/dc26-S007
3. American Diabetes Association Professional Practice Committee for Diabetes*; 13. Older Adults: Standards of Care in Diabetes—2026. *Diabetes Care* 1 January 2026; 49 (Supplement_1): S277–S296.
4. Kotecha P, Smith SM, Donahoo WT, DeKosky ST, Bian J, Guo J. Continuous Glucose Monitoring in Insulin-Treated Older Adults With Diabetes and Alzheimer Disease and Related Dementias. *JAMA Netw Open*. 2025;8(12):e2541939. doi:10.1001/jamanetworkopen.2025.41939
5. Mattishent K, Lane K, Salter C, *et al*. Continuous glucose monitoring in older people with diabetes and memory problems: a mixed-methods feasibility study in the UK *BMJ Open* 2019;9:e032037. doi: 10.1136/bmjopen-2019-032037
6. Weinstock RS, Raghinaru D, Gal RL, Bergenstal RM, Bradshaw A, Cushman T, Kollman C, Kruger D, Johnson ML, McArthur T, Olson BA, Oser SM, Oser TK, Beck RW, Hood K, Aleppo G. Older Adults Benefit From Virtual Support for Continuous Glucose Monitor Use But Require Longer Visits. *J Diabetes Sci Technol*. 2024 Nov 2:19322968241294250. doi: 10.1177/19322968241294250. Epub ahead of print. PMID: 39487727; PMCID: PMC11571625.

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