

Helping with Diabetes – Avoiding Harm

May 2, 2019
Carol Greenlee MD FACP



Disclosures

- I have no relevant financial relationships with the manufacturers(s) of any commercial products(s) and/or provider of commercial services discussed in this CME activity.
- I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.

A few things to think about with diabetes...

How can we help our patients with diabetes avoid the *harms* of diabetes?

What does the A1c tell you?

Why do my patients with diabetes always seem to get worse over time?

How do I get my patients with diabetes to do what I tell them?

Our main focus – Avoid harm of *hyperglycemia*

Major Complications of Diabetes

Microvascular

Eye

High blood glucose and high blood pressure can damage eye blood vessels, causing retinopathy, cataracts and glaucoma



Kidney

High blood pressure damages small blood vessels and excess blood glucose overworks the kidneys, resulting in nephropathy.



Neuropathy

Hyperglycemia damages nerves in the peripheral nervous system. This may result in pain and/or numbness. Feet wounds may go undetected, get infected and lead to gangrene.



Macrovascular

Brain

Increased risk of stroke and cerebrovascular disease, including transient ischemic attack, cognitive impairment, etc.



Heart

High blood pressure and insulin resistance increase risk of coronary heart disease



Extremities

Peripheral vascular disease results from narrowing of blood vessels increasing the risk for reduced or lack of blood flow in legs. Feet wounds are likely to heal slowly contributing to gangrene and other complications.

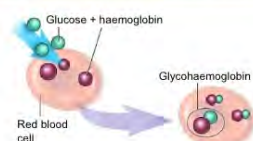


From: <https://pdb101.rcsb.org/global-health/diabetes-mellitus/monitoring/complications>

Hyperglycemia defines Diabetes

- Currently main focus in diabetes care is on reducing hyperglycemic acute & chronic complications
 - Can take up to 9 to 20 years to develop chronic complications of hyperglycemia (youth < elderly)
 - Metabolic memory (“Legacy Effect”) – a finite period of intensive control provided benefits that extended for decades after that control ended
 - Tight (“intensive”) glycaemic control advocated to prevent the complications from hyperglycemia
 - ADA Standards of Care: “A reasonable **A1c goal** for many nonpregnant adults is <7%.”

HbA1c is Glycosylated Haemoglobin



Hemoglobin inside RBC
The average RBC
life span is 3 months

The HbA1c test reports the amount of HbA1c as a proportion of the total haemoglobin



7%



9%



14%

A1c (%)	eAG (mg/dL) Estimated Average Glucose
6.0	126
6.5	140
7.0	154
7.5	169
8.0	183
8.5	197
9.0	212
9.5	226
10.0	240

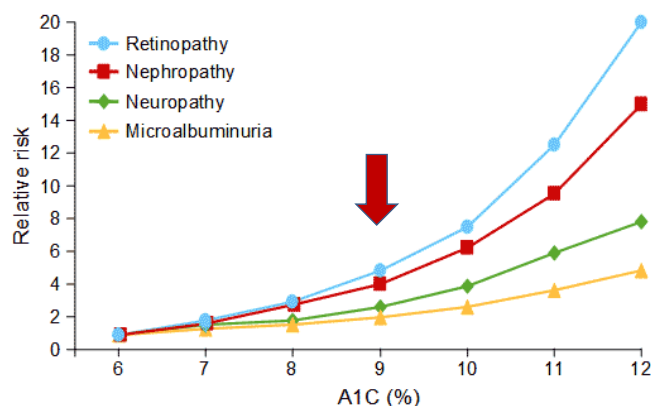
American Diabetes Association, www.diabetes.org/pressroom/AG

1976 paper → “The Memory Test”

“The Cheat Test”

From: <https://www.slideshare.net/PeninsulaEndocrine/new-hb-a1c-numbers-presentation>

A1c correlates with & predicts complications



A 1% point reduction lowers the risk of serious complications by 40-50%

A good population metric

From: <http://resourcehub.practiceinnovationco.org/wp-content/uploads/2019/01/Diabetes-Dealing-with-RMHP-Dec-2018-x.pdf>

Some caveats for A1c for *individual* patients

- Assay Accuracy (how accurately reflects actual average glucose)
 - Anything that lengthens or shortens the RBC lifespan or alters glycosylation rate or interferes with assay
 - Interfering substances/conditions
 - Age and ethnic/race difference – A1c higher for average BG
- Assay Precision (how precise or reproducible is the result)
 - Having a target *range* is probably better than a cut-point
- Glucose Variability (daily ups & downs) not represented
- Short-term change in glucose control not reflected
 - Start prednisone or atypical anti-psychotic med that raise BGs
 - Start new diet, exercise or medication that lowers glucose levels
- Need for individualized targets
 - Based on benefits vs risk of tight control

Accuracy Issues with A1c assays

- **Assay accuracy** (how well the A1c result represents actual glycemia (blood glucose levels))
 - RBC life span
 - Iron deficiency (increased RBC lifespan - increased A1c)
 - Sickle Cell trait (reduced RBC lifespan - lower A1c)
 - Altered glycosylation rates
 - Other genetic or environmental factors
 - Interfering substances/conditions
 - Abnormal Hemoglobin molecules
 - Uremia
 - Age and ethnic/race difference
 - Different alignment with “estimated glucose”
 - African American: A1c ~0.4 higher for same level of blood sugars
 - Elderly reported to have higher A1c as well

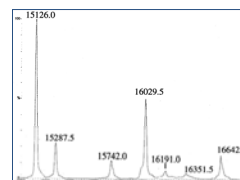


Image from:
<http://clinchem.aaccjnls.org/content/44/9/1951>

Conditions Associated with Falsely Elevated or Lowered A1c

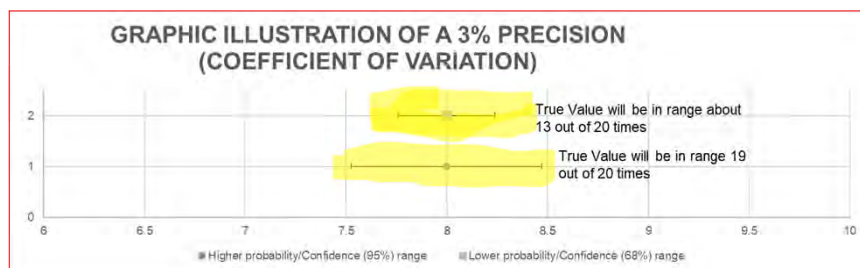
Condition	Effect on A1c	Comments
Anemias associated with decreased red cell turnover	False Increase	I.e., iron deficiency, vitamin B-12, folate deficiency anemias
Asplenia	False Increase	Increased erythrocyte lifespan
Uremia	False Increase	Formation and detection of carbamyl-hemoglobin
Severe hypertriglyceridemia	False Increase	When level >1,750 mg/dL
Severe hyperbilirubinemia	False Increase	When level >20 mg/dL
Chronic alcohol consumption	False Increase	Formation of acetaldehyde-HbA1 compound
Chronic salicylate ingestion	False Increase	Mechanism uncertain, may interfere with assay
Chronic opioid ingestion	False Increase	Mechanism uncertain
Lead poisoning	False Increase	Mechanism uncertain
Anemia from acute or chronic blood loss	False Decrease	Includes hemolytic anemia
Splénomegaly	False Decrease	Decreased erythrocyte lifespan
Pregnancy*	False Decrease	Decreased erythrocyte lifespan
Vitamin E ingestion	False Decrease	Reduced glycation
Ribavirin and interferon-alpha	False Decrease	Possibly due to hemolytic anemia
Red blood cell transfusion†	False Increase or False Decrease	High glucose concentration in storage medium (False Increase) Dilutional effect (False Decrease)
Hemoglobin variants	False Increase or False Decrease	Depends on method and assay used

*Expect falsely low A1c values through the 2nd trimester, but may rise during the 3rd trimester

†Typically reported to falsely elevate A1c, but may also result in false decrease

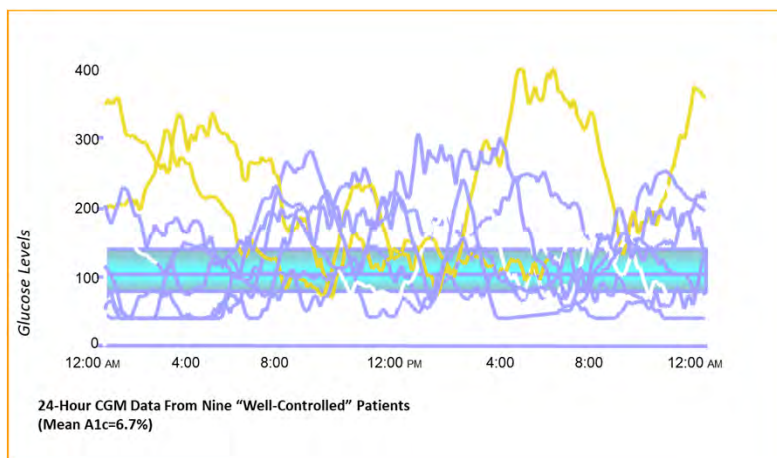
From: J Gen Intern Med. 2014 Feb; 29(2): 388–394.

Assay Precision



From: <https://slideplayer.com/slide/15740866/>

Glucose Variability



From: <https://www.aace.com/files/position-statements/outpatient-glucose-monitoring-consensus-statement-appendix.pdf>

Help from Technology

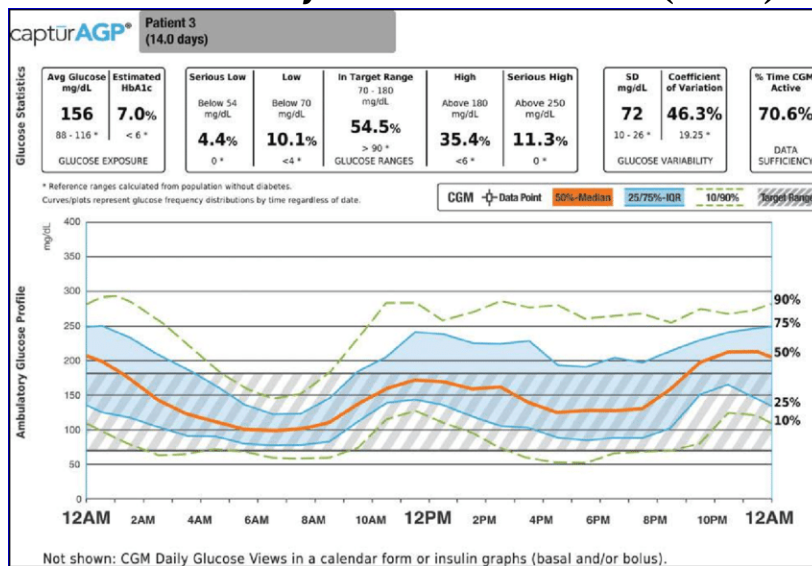
- “Artificial Pancreas”
 - Continuous Subcutaneous Insulin Infusion (CSII)
 - Insulin pumps
 - Continuous Glucose Monitoring (Sensor) (CGM)
- CGM for T2DM & T1DM
 - Example – Freestyle Libre
 - “Flash” glucose monitoring



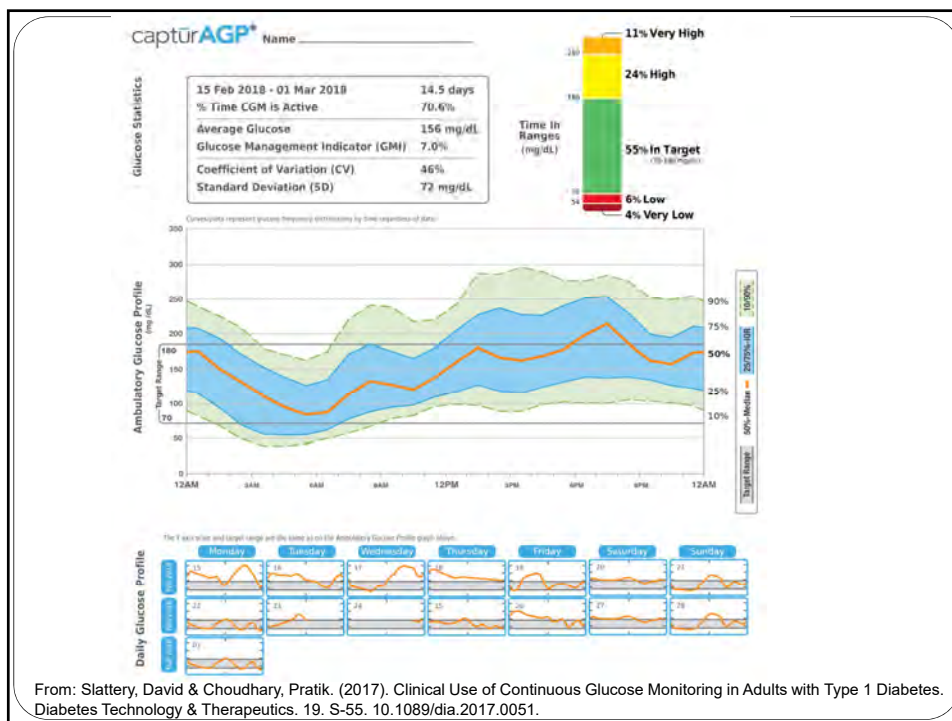
Can provide a more accurate & complete picture

From: <https://www.niddk.nih.gov/health-information/diabetes/overview/managing-diabetes/continuous-glucose-monitoring>
 And <https://www.freestylelibre.us/>

Ambulatory Glucose Profile (AGP)



From: Slattery, David & Choudhary, Pratik. (2017). Clinical Use of Continuous Glucose Monitoring in Adults with Type 1 Diabetes. Diabetes Technology & Therapeutics. 19. S-55. 10.1089/dia.2017.0051.



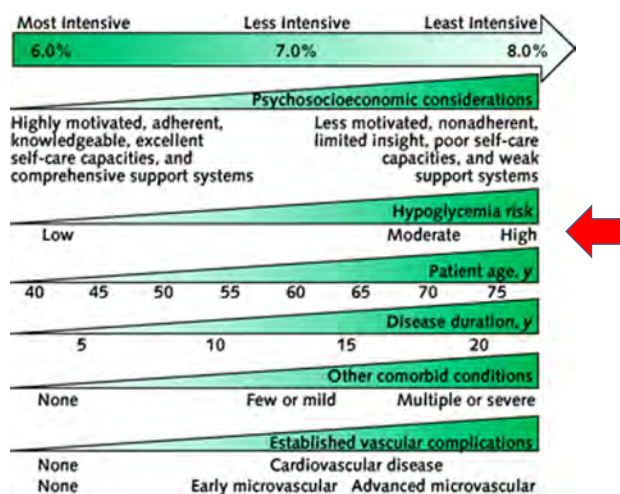
Need for Individualized Targets – Clinical Equipoise in setting glycemic goals

**No single HbA1c level is
appropriate for all patients...**

- “we should **abandon the notion that HbA1c levels $\leq 7\%$ are well controlled and levels $> 7\%$ are uncontrolled.**”
- This arbitrary dichotomy does not adequately portray whether we are optimizing
 - **the benefits of treatment,**
 - **quality of life, and**
 - **value for individuals**



Individualized glucose targets



From: Ismail-Beigi, Faramarzi, et al. "Individualizing glycemic targets in type 2 diabetes mellitus: implications of recent clinical trials." *Annals of internal medicine* 154.8 (2011): 554-559.

Hypoglycemia Stats

- **Leading cause of ED & Hospital Admissions for people with diabetes** – (*T2DM*, not just *T1DM*)
 - ~300,000 ED visits annually for Hypoglycemic events for *T1DM* and *T2DM*
 - >30,000 Hospitalizations per year
 - Hospitalization as a result of hypoglycemia is associated with
 - 18.1% 30-day **readmission rate** and
 - 5% 30-day **mortality rate** (up to 30% in elderly patients)
 - In the elderly → 105/100,000 person-years admissions for *hypoglycemia* vs 70/100,000 person-years for *hyperglycemia*
 - **Second leading Adverse Drug Event concern**
 - Patients on **insulin** experience on average of **24 hypoglycemic episodes** per year, ranging from mild to severe

Hospital Admissions for Hypoglycemia Now Exceed Those for Hyperglycemia in Medicare Beneficiaries

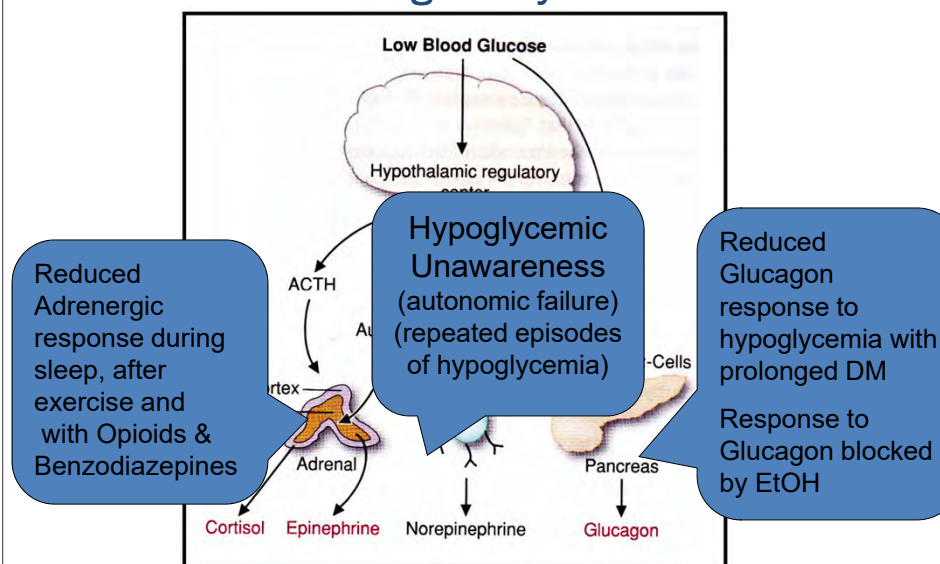
Rita F. Redberg, MD, MSc JAMAInternMed.2014;174(7):1125

...From 1999 to 2011 rates of hospital admissions for hypoglycemia have risen by 11.7% in US Medicare beneficiaries.

- There were **40% more admissions for hypoglycemia than for hyperglycemia** over the 12-year period.
- The **1-year mortality rate** after a **hypoglycemia admission was higher (22.6%)** than **the rate after a hyperglycemia admission (17.6%)** in 2010.

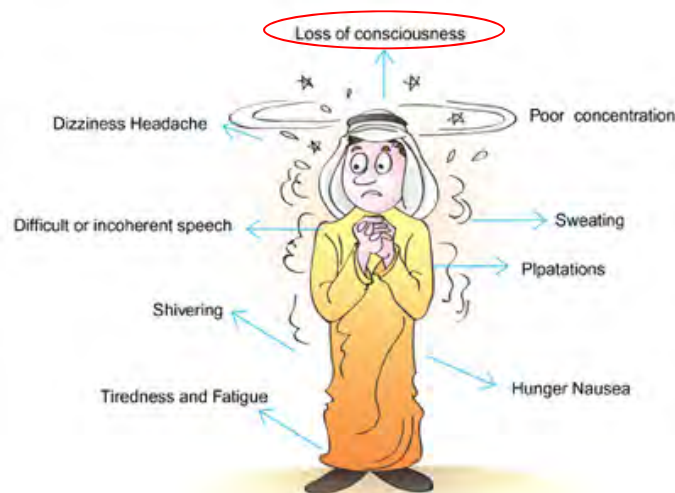
Our patients are now more likely to experience adverse events related to overtreatment of diabetes mellitus. Striving for too low a hemoglobin A1c target level puts patients at risk for this dangerous adverse effect.

Defense against Hypoglycemia Counter-Regulatory Hormones



From: Tesfaye, Nolawit, and Elizabeth R. Seaquist. "Neuroendocrine responses to hypoglycemia." *Annals of the New York Academy of Sciences* 1212.1 (2010): 12-28.

Neurogenic response → Neuroglycopenia



From: https://www.ihg.gov/diabetes/includes/themes/newhsttheme/display_objects/documents/training_seminars/Handout_Hypoglycemia.pdf

Hypoglycemia in Patients with Diabetes

Hypoglycemia defined as blood glucose <70 for people with diabetes = “Low Blood Sugar” – recommended classification:

- **Level 1 Hypoglycemia:** measured glucose <70 but >54 mg/dl
- **Level 2 Hypoglycemia:** glucose < 54 mg/dl
- **Level 3 (Severe) Hypoglycemia:** a severe event characterized by altered mental and/or physical status requiring assistance
- **Asymptomatic Hypoglycemia -Hypoglycemic Unawareness** defined as not getting the adrenergic & cholinergic warning symptoms of hypoglycemia
- **Relative or Pseudo-Hypoglycemia** - Some patients, especially with T2DM & poorly controlled DM, get symptoms of hypoglycemia with a blood sugar >70
- **Fear of Hypoglycemia** – can be cause for high blood sugars and/or roller-coaster blood sugars

Hypoglycemic Effects

- Neurocognitive effects
 - cognitive effects & impairment, coma, seizures, brain dead, dementia
- Increased falls and trauma
 - Impaired driving/ accidents
 - Fractures, lacerations, Traumatic Brain Injury
- Increased CVD and Mortality
 - Acute Ischemia
 - Atherogenic effects
 - Pro-inflammatory/ Pro-coagulant
 - Greater at BG 50 than BG 200;
 - Elevated for >7-8 days after event
 - Arrhythmogenic effects
 - “Dead in bed”



From: <https://www.murphey-law.com/bike-accidents/>

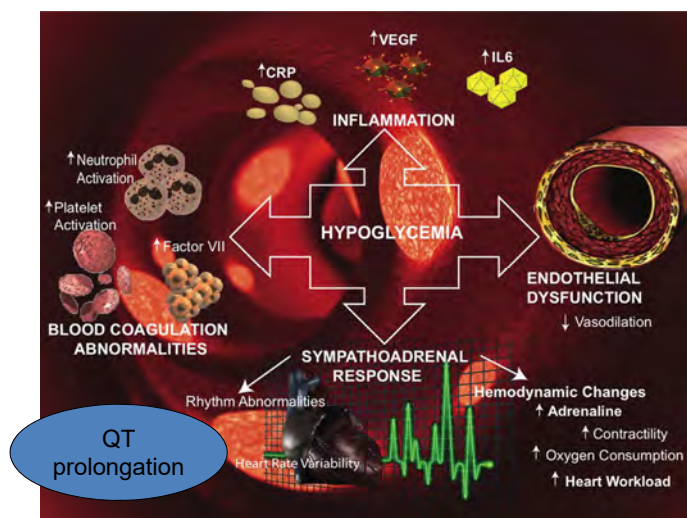


From: <https://www.top10homeremedies.com/home-remedies/home-remedies-clogged-arteries.html>



From: <https://geekymedics.com/how-to-read-an-ecg/>

Mechanisms by which hypoglycemia may affect cardiovascular events.



Desouza C V et al. Dia Care 2010;33:1389-1394

Hypoglycemia Risk

-in patients taking *Insulin & Insulin secretagogues*



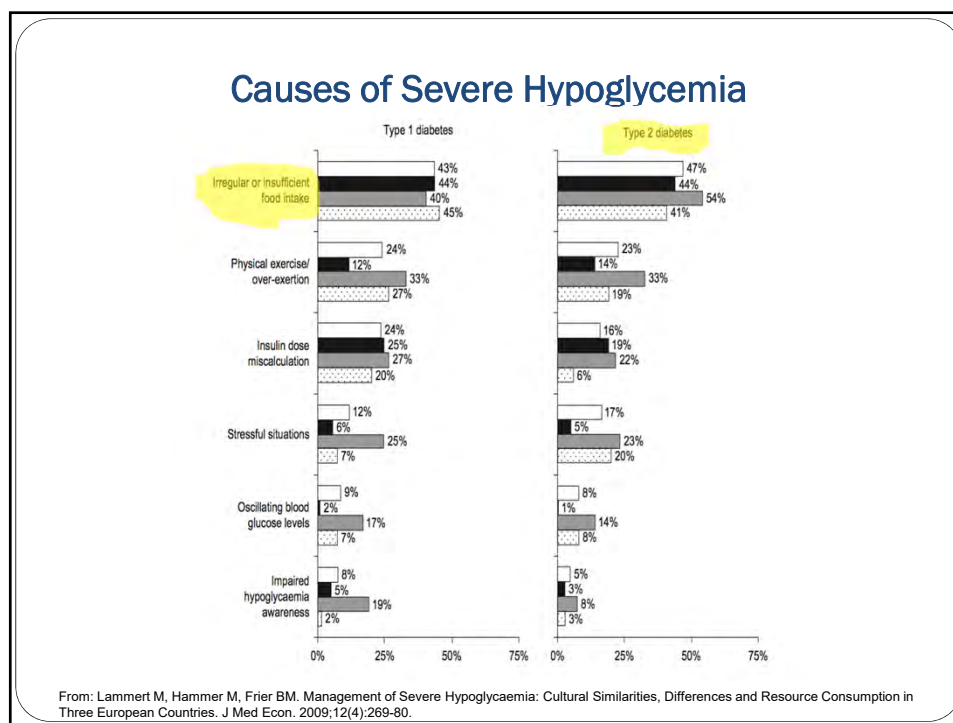
- Intensive or tight control & targets
 - Risk in T2DM: in ACCORD trial highest risk with A1c >9%
- Risk higher with longer duration of diabetes
- Increased in the elderly
 - especially if cognitive impairment (*vicious cycle*)
- Renal and/or Hepatic Impairment
 - Prolonged t 1/2 and reduced Gluconeogenesis (GNG)
- Medication errors & safety
 - literacy, numeracy, lack of education
- Missed / irregular meals
 - food insufficiency
- EtOH (alcohol), opioids, benzodiazepines
 - Reduced counter-regulatory responses
 - EtOH blocks Hepatic glucose output
- Exercise / Increased activity
 - Increased glucose utilization and insulin sensitivity (3days)
 - Blunted counter-regulatory response (autonomic failure)



Strongest Risk Factor?

- In patients with T2DM on insulin and/or sulfonylurea meds (glyburide, glipizide, Amaryl -glimepiride) –
what do you think is the leading risk factor for hypoglycemia (low blood sugar)?

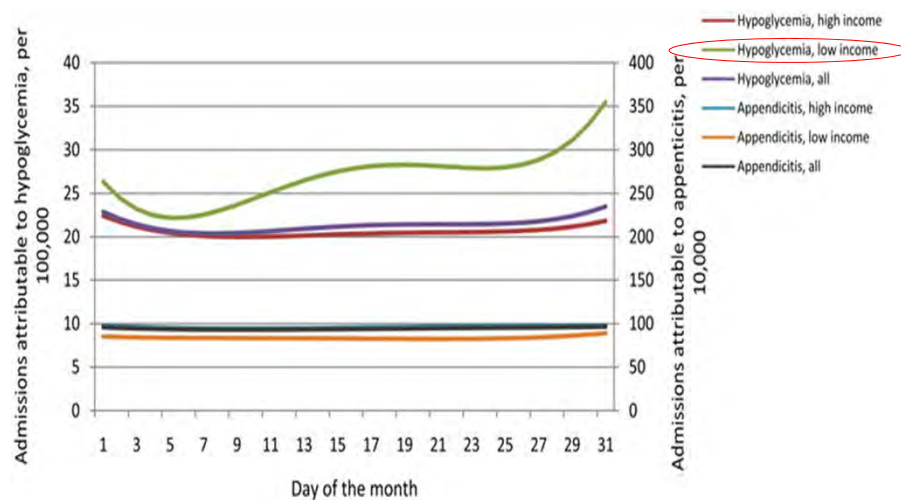




Irregular or Insufficient Food Intake

- Missed / Delayed / Reduced Meals
 - Job demands, travel, meetings, etc.
 - Fasting for tests or procedures
 - Illness (eat less or unable to eat or vomiting)
 - Lack of nutritional knowledge (carbs) (eggs & bacon)
 - Struggles with numeracy (carb counting & insulin dose)
 - Reduced ability to shop for or prepare meals
 - Aging, widower, loss of vision, amputations, etc.
 - Lack of food (food insecurity)
 - Insufficient money or SNAP funds for purchasing food

Hypoglycemia and food Insecurity



From: Seligman HK, et al. Health Affairs. 2014; 33(1): 116–123

Does your care team have an approach to help prevent harm from hypoglycemia?

Clinician & Care Team Education

- Awareness that people with T2DM can have serious hypoglycemic & harm from hypoglycemia
- Symptoms and consequences
 - How to recognize hypoglycemia
 - When to think about it and ask about it
- How to treat hypoglycemia
- How to teach patients & families / caregivers about hypoglycemia
- Appropriate targets (risk vs benefit)
- Medication management

ADA standards of care for Hypoglycemia

- Recommendation - Individuals at risk for hypoglycemia should be *asked* about symptomatic and asymptomatic hypoglycemia at each encounter
 - *patients on insulin or sulfonylurea/glinide medications*

Symptoms of Hypoglycemia

Early “mild” symptoms (adrenergic/cholinergic):

- Sudden moodiness or confusion
- Dizziness
- Feeling shaky or trembling
- Hunger
- Headaches
- Irritability
- Pounding heart; racing pulse
- Skin turning pale
- Sweating or clammy
- Weakness
- Anxiety

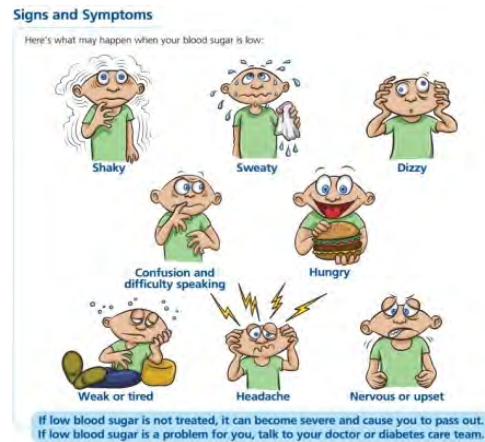
Late severe symptoms (neurocognitive):

- Poor coordination
- Poor concentration or confusion
- Difficulty speaking or slurred speech
- Numbness around mouth & lips or other localized neurologic symptoms
- Seizures or convulsions
- Passing out
- Coma
- Death

Symptoms of Hypoglycemia

Nighttime symptoms:

- Damp sheets or bed clothes due to perspiration
- Nightmares or bad dreams
- Tiredness
- Irritability, headache or confusion upon waking
- Not waking up



From: <https://www.novomedlink.com/diabetes-patient-support/disease-education/low-blood-sugar.html>

ADA standards of care for Hypoglycemia

- Recommendation - Counsel patients to treat hypoglycemia with fast-acting carbohydrate
 - **Pure Glucose (15-20 g) is the preferred treatment** for the conscious individual with hypoglycemia (glucose alert value of <70) although any form of carbohydrate that contains glucose may be used.
 - Fifteen minutes after the treatment, if SMBG shows continued hypoglycemia, the treatment should be **repeated**.
 - Once SMBG returns to normal, the individual should consume a **meal or snack** to prevent recurrence of hypoglycemia – *ongoing insulin activity or insulin secretagogues*

Sources of Carb (want “rapid” Carbs for fast absorption)

- **Great Sources of Carbohydrate for a Low Blood Sugar**

- *Glucose gels (cake gels) (absorbed from lining of mouth)*

Glucose tabs

Smarties

Pixie Sticks



From: <https://diabetesexpress.ca/products/insta-glucose-liquid-40-single>

- These are all dextrose and glucose and are broken down and in your system within 10 minutes. Dextrose is very similar to glucose in terms of its molecular structure, which makes it a fast source of carbohydrate for a low.

- **Pretty Good Sources of Carbohydrate for a Low Blood Sugar**

- *Juice box*

Soda

Dried fruit

Jelly beans

- These sources can take at least 20 minutes to break down and get into your bloodstream (e.g. Jelly beans have a lot of additives and fillers, which your body has to break down first, before digesting the carbohydrates)

- **Not-So-Great Sources of Carbohydrate for a Low Blood Sugar**

- *Milk*

Peanut Butter Sandwiches

Chocolate bars

Cookies

Ice cream

- These sources of carbohydrates are loaded with fats and proteins, which will slow down the digestion process and delay your body's ability to get that glucose into your bloodstream. * in **T2DM protein** can further **increase insulin** release

ADA standards of care for Hypoglycemia

- Recommendation

- **Glucagon** should be prescribed for all individuals at increased risk of clinically significant hypoglycemia, (defined as blood glucose <54) so that it is available should it be needed.
- *Caregivers, school personnel, or family members of these individuals should know where it is and when and how to administer it.*
- Glucagon administration is not limited to health care professionals

Joslin Diabetes Center Patient Guide



From: <http://www.stickwithsugar.com/wp-content/uploads/2013/12/photo1.jpg>

If you pass out [from low blood sugar]

- If ... you do not take care of low blood glucose, you may pass out.
- If you do, a drug called **glucagon** should be injected into your skin, like you do with insulin.
- This can be done by a family member or friend who has been taught how to do it.
- Since glucagon may cause you to vomit, you should be placed on your side when the injection is given.
- If no one knows how to give the injection, you should be taken to a hospital.
- You need a prescription for a glucagon kit.
- You should awaken about 10 minutes after the glucagon is injected. If you do not, you should be taken at once to a hospital.

Patient Education

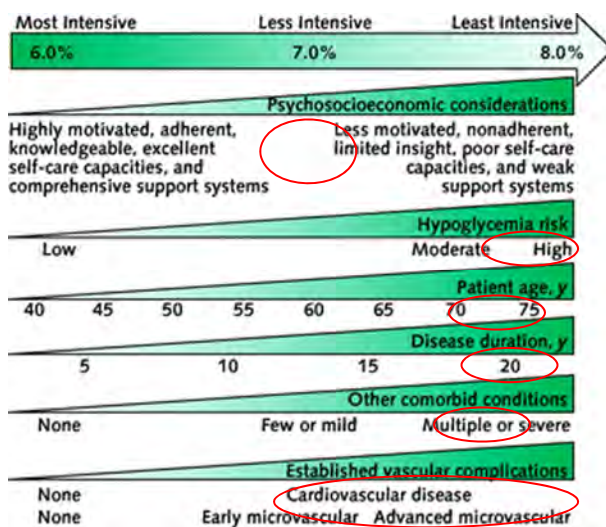
- What is low blood sugar
 - Why is it dangerous
- What are the symptoms
- How do you treat
- Sick day rules
- Prevention
 - Snacking for extra physical activity (or reduce insulin)
 - Carry rapid glucose on person
 - Mealtime insulin guides (don't take if don't eat)
- Call care team if experience low blood sugar, especially if unexplained

Individualized glucose targets

- Consideration of more *intensive treatment* only if the *potential absolute benefits outweigh the harms*
 - ...with a thorough understanding of the
 - patient's risks
 - prognosis (i.e. age, comorbidities, and functional status)
 - socio-personal context (e.g. lifestyle, social support, workload capacity)
 - perceived or experienced treatment burden
 - values and preferences for care

Framework to assist in determining

Glycemic Treatment Targets in patients with Type 2 Diabetes



Ismail-Beigi F et al. Ann Intern Med 2011;154:554-559

©2011 by American College of Physicians

Annals of Internal Medicine

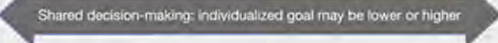
VA/ DOD 2017 Guidelines

“We recommend setting an HbA1c target *RANGE* based on absolute risk reduction of significant microvascular complications, life expectancy, patient preferences and social determinants of health.”

Major Comorbidities or Physiologic Age	Microvascular Complications		
	Absent or Mild	Moderate	Advanced
Absent >10-15 years life expectancy	6.0-7.0%	7.0-8.0%	7.5-8.5%
Present 5-10 years of life expectancy	7.0-8.0%	7.5-8.5%	7.5-8.5%
Marked <5 years of life expectancy	8.0-9.0%	8.0-9.0%	8.0-9.0%

From: <https://annals.org/aim/fullarticle/2659342/synopsis-2017-u-s-department-veterans-affairs-u-s-department>

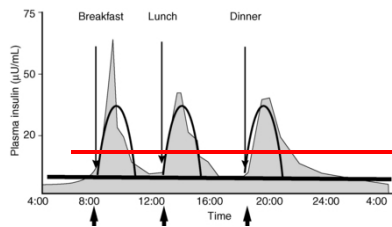
Diabetes in Older Adults - Endocrine Society Guidelines 2019

Overall Health Category	Group 1: Good Health	Group 2: Intermediate Health	Group 3: Poor Health	
Patient characteristics	No comorbidities or 1-2 non-diabetes chronic illnesses* and No ADL [†] impairments and ≤1 IADL impairment	3 or more non-diabetes chronic illnesses* and/or Any one of the following: mild cognitive impairment or early dementia ≥2 IADL impairments	Any one of the following: End-stage medical condition(s)** Moderate to severe dementia ≥2 ADL impairments Residence in a long-term nursing facility	
Reasonable glucose target ranges and HbA1c by group  Shared decision-making: individualized goal may be lower or higher				
Use of drugs that may cause hypoglycemia (e.g., insulin, sulfonylurea, glinides)	No	Fasting: 90-130 mg/dL Bedtime: 90-150 mg/dL <7.5%	Fasting: 90-150 mg/dL Bedtime: 100-180 mg/dL <8%	Fasting: 100-180 mg/dL Bedtime: 110-200 mg/dL <8.5%*
	Yes [‡]	Fasting: 90-150 mg/dL Bedtime: 100-180 mg/dL ≥7.0 and <7.5%	Fasting: 100-150 mg/dL Bedtime: 150-180 mg/dL ≥7.5 and <8.0%	Fasting: 100-180 mg/dL Bedtime: 150-250 mg/dL ≥8.0 and <8.5%*

From: <https://www.endocrine.org/guidelines-and-clinical-practice/clinical-practice-guidelines/diabetes-in-older-adults>

Medication adjustment

- Our patients change & diabetes changes
 - May just need to reduce/ adjust for these changes (renal, hepatic, cognitive, weight, etc.)
- Common insulin issues
 - Too much basal insulin
 - “blanket insulin”



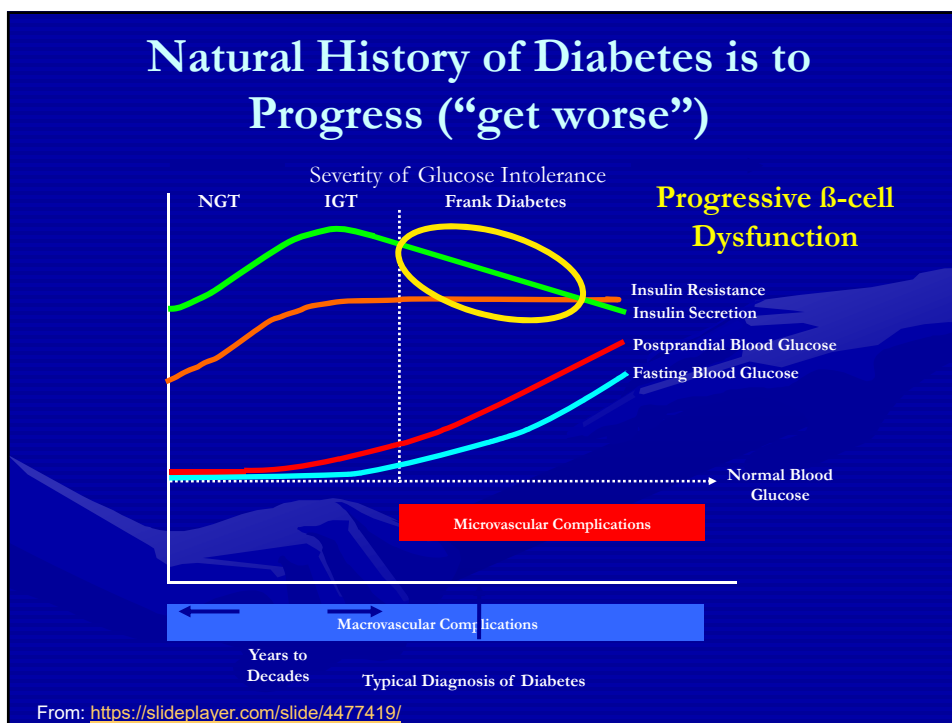
From: <https://www.ncbi.nlm.nih.gov/books/NBK279114/>

- Adding pre-meal insulin, especially at supper meal and not reducing overnight basal insulin

A few things to think about with diabetes...

Why do my patients with diabetes always seem to get worse over time?

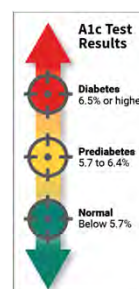
How do I get my patients with diabetes to do what I tell them?



Disease Progression is *not* “the Patient’s Fault”

Researchers looking for the “Holy Grail”...

- To find something to halt the progressive worsening of diabetes following diagnosis
 - Reduce loss of beta cells
 - T1DM – immune modulators
 - T2DM- trials looking at treatment *durability*
- The earlier the better – prevention

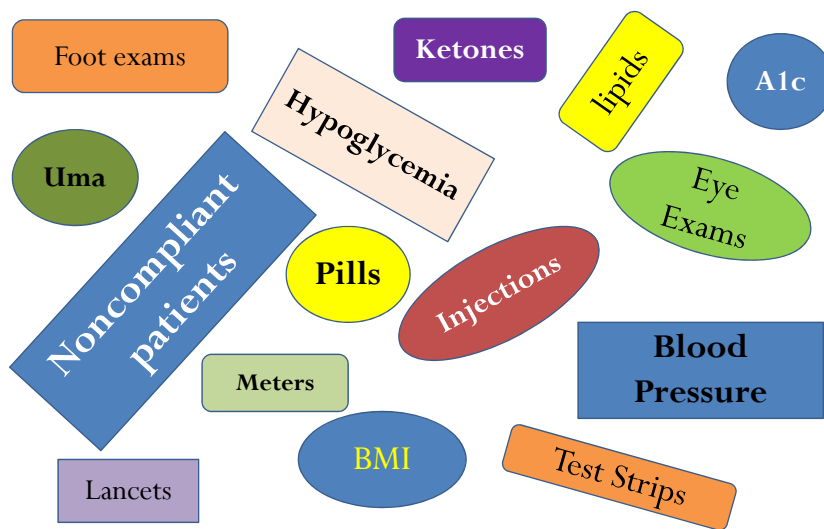


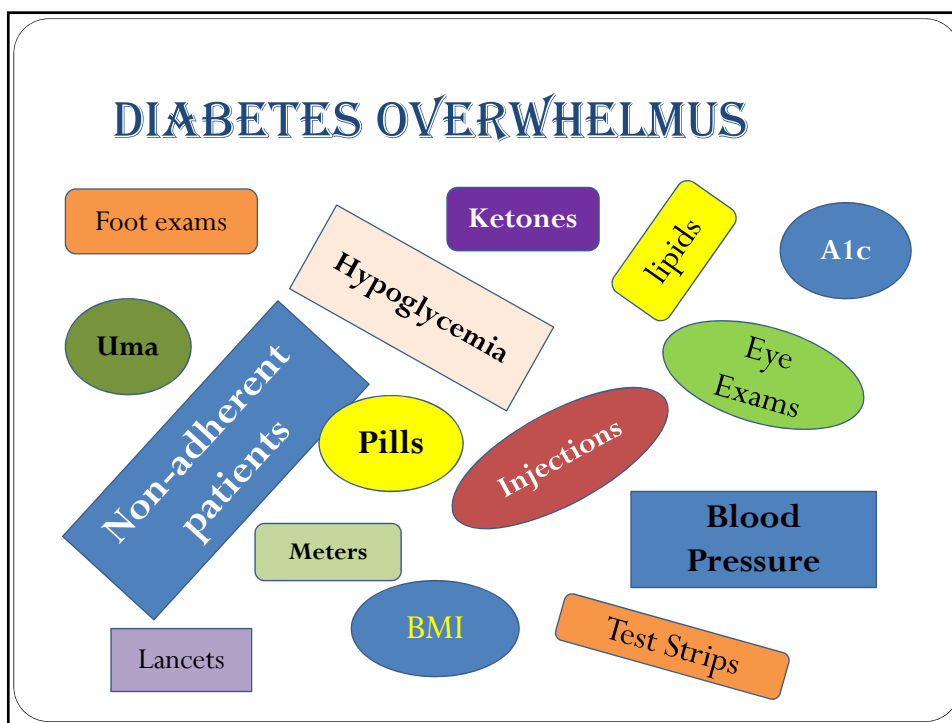
From: <https://www.webmd.com/diabetes/guide/glycated-hemoglobin-test-hba1c>

Current T2DM Care Paradigm

- 90% of patients with T2DM cared for in primary care setting
 - <25% referred to specialists
 - Major reason for referral: initiation of / difficulty with Insulin therapy
 - PCP serves as primary provider of diabetes *education*
 - Low use of Certified Diabetes Educator (CDE) resources
 - <25% of patients counseled by CDE annually
 - 24% have no access to CDE in geographic region
 - **Major obstacles to optimal diabetes care cited by PCPs**
 - **Insufficient time / Insufficient staff & Patient adherence**
- Endocrine Practice Dec 2011; Beaser et al
- Pressure to meet performance metrics (A1c <7%, <8%, >9%)

DIABETES OVERWHELMUS





Non-adherence

(not doing what the *doctor* wants you to do)

Obligation to be a “good” patient. Fear of being labeled a difficult patient

Threat of being expelled if fail to comply (“If you don’t ----, I can’t take care of you any more”)

From: <https://www.gettyimages.co.uk/detail/photo/court-judge-holding-gavel-and-bible-close-high-res-stock-photography/886836-001>

Words Matter : Study shows importance of language choices in diabetes care

- Health care providers who use "**negative terms**," such as "*nonadherent*" or "*noncompliant*" may create a disconnect leading to **negative health outcomes** for diabetes patients
 - Stereotypes or language choices that place **blame** can cause patients to *disengage* with health services and develop *diabetes-related distress* and *sub-optimal diabetes self-management*
- Carefully chosen language can have a positive effect
 - Researchers recommend using more appropriate language in clinical settings to support patients' diabetes self-management and psychosocial well-being.

Ditch the "IC" word

Example:

- Lonnie has diabetes. Lonnie has lived with diabetes for ten years.

Instead of

- Lonnie is *a diabetic*. Lonnie has been *a diabetic* for ten years.

“Focus on the person, not the diagnosis. You’ll treat both more effectively that way.”

Expectations Stigma

From Health Care professionals:

- *“I have no patience for people who cause themselves to become ill, lose limbs, and disregard their medication / diet regimen.”*
- *“... many of those who have diabetes are noncompliant and don't take care of themselves.”*

Patients influenced by stigma (expectations impact behavior):

Guilt, shame, blame, embarrassment, isolation

Higher BMI

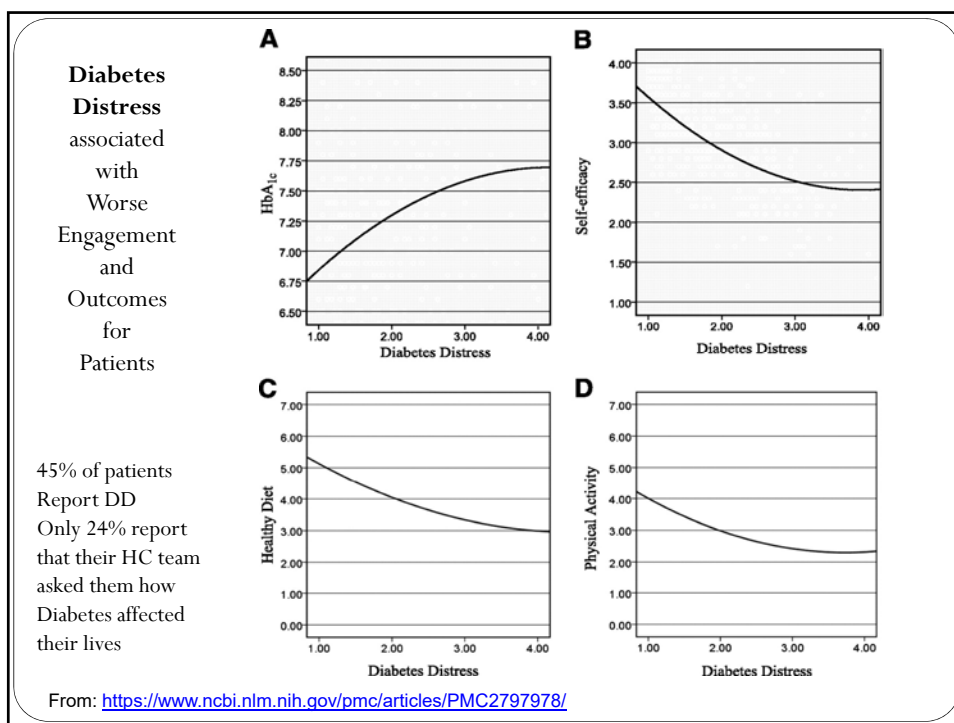
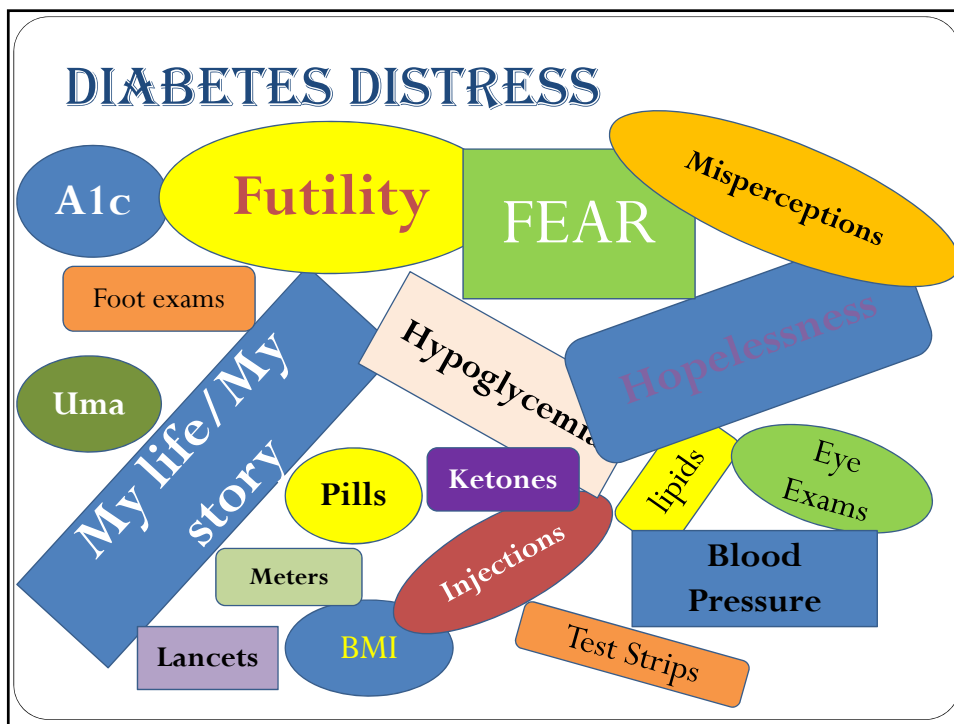
Higher A1C

Self-reported blood glucose variability

Why doesn't my patient follow the treatment plan/ take control?

Points from *the Behavioral Diabetes Institute*

- **Perceived Worthlessness**
 - Pointlessness (*what good does it do?*)
 - *Hopelessness*
- **Too Many Personal Obstacles**
 - Depression/ *Diabetes Distress*
 - Medication Misperceptions/Fears
 - Lack of education and Self management skills
 - Environmental(Patient Context / “Needs & Circumstances”) (LIFE)
- **The Absence of Support & Resources**
 - Diabetes slips to the background (serious but not urgent)
 - Infrequent supportive interaction with HCP (dialogue)



The 7 major sources of Diabetes Distress

- **1. Powerlessness**
- Feeling that one's blood sugar numbers have a life of their own; e.g., "feeling that no matter how hard I try with my diabetes, it will never be good enough." (**Hopelessness- pointless**)
- **2. Negative Social Perceptions**
- Concerns about the possible **negative judgments of others**; e.g., "I have to hide my diabetes from other people."
- **3. Physician Distress**
- *Disappointment with current health care professionals; e.g., "feeling that I don't get help I really need from my diabetes doctor."*
- **4. Friend/Family Distress**
- There is too much or too little attention paid to diabetes amongst loved one; e.g., "my family and friends make a bigger deal out of diabetes than they should."
- **5. Hypoglycemia Distress**
- Concerns about severe hypoglycemic events; e.g., "I can't ever be safe from the possibility of a serious hypoglycemic event."
- **6. Management Distress**
- Disappointment with one's own self-care efforts; e.g., "I don't give my diabetes as much attention as I probably should."
- **7. Eating Distress**
- Concerns that one's eating is out of control; e.g., "thoughts about food and eating control my life."

True or False

Diabetes is the leading cause of adult blindness, amputations and kidney failure.

False

Poorly Controlled Diabetes is the leading cause of adult blindness, amputations and kidney failure.

Well Controlled Diabetes is the leading cause of... *Nothing*.

Need to Provide:

- **Evidence-Based HOPE** WHP
 - *“With good care, odds are pretty good you can live a long and healthy life with diabetes”*

Fear of Complications → large contributor to Diabetes Distress

The Language of Diabetes Complications: Communication and Framing of Risk

- Messages in North American and Australasian *Diabetes-Specific Media* (from American Diabetes Association, Canadian Diabetes Association, etc.)
- Linda J. Beeney and Elizabeth J. Fynes-Clinton – *Clinical Diabetes* 2018

- Majority had **loss-framing** (e.g. “*having diabetes is the leading cause of blindness*”) with few if any **risk reduction strategies** offered → **hopelessness**

vs

- **Gain-framing** (“*early diagnosis & treatment of diabetic retinopathy can prevent up to 98% of severe vision loss*”) plus **strategies** - “get annual eye exam” → **more effective** (evidence based)

Need to Provide: (WHP)

- **Evidence-Based HOPE ... and strategies**
 - “*With good care, odds are pretty good you can live a long and healthy life with diabetes*”

- **Tangible Sense that their efforts make a difference**
 - Establish *Treatment Efficacy*
 - *Discovery Learning (structured BG testing or professional CGM study)*

Knowledge, skills & confidence - first line of defense against Diabetes Distress

- Start with focused *diabetes education (DSME)* for areas of concern –
 - Show the evidence
 - Teach the strategies
 - May be lacking in some educational materials
 - Ensure Self-management knowledge & skills → Know-How & confidence (*teach back, “show me how you..”*)
- Refer to *Behavioral Health* if education efforts fail to improve the Diabetes Distress

What's the Answer – *Diabetes is Hard*

How can we help our patients with diabetes avoid the harms of diabetes? – *Individualize care & targets and avoid stigma*

What does the A1c tell you? – *Not the whole story of glycemia*

Why do my patients with diabetes always seem to get worse over time? – *Don't blame the patient - the diabetes gets worse over time - progressive loss of beta cells (insulin secretion)*

How do I get my patients with diabetes to do what I tell them? – *Don't “tell them what to do” → be in it all-together with them & provide hope, evidence and strategies*

Idea Sharing



cgreenlee@westslopeendo.com