MEET THE EXPERT:

HOW DO I TREAT DIABETES

Professor Tint Swe Latt

Meet the Expert/Zifam/Signature Restaurant/Feb 16, 2020

GUIDING PRINCIPLES:

Quality Care

Quality Chasm

- *Between the health care that we have and the health care that we could have lies not just a gap, but a chasm.*

(Institute of Medicine, Crossing the Quality Chasm, *2001)*

Crossing the global quality chasm

- Even though the knowledge for proper treatment exists, providers are not reliably absorbing and using it for the right patients at the right time.

  (National Academy of Science, 2018)

Six Domains for Quality Care

1. **Safety:** Avoiding harm to patients from the care that is intended to help them.
2. **Effectiveness:** Providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit (that is, avoiding both overuse of inap- propriate care and underuse of effective care).
3. **Person-centeredness:** Providing care that is respectful of and re- sponsive to individual preferences, needs, and values and ensuring that people's values guide all clinical decisions. Care transitions and coordination should not be centered on health care providers, but on recipients.

Six Domains for Quality Care

4. **Accessibility, Timeliness, Affordability:** Reducing unwanted waits and harmful delays for both those who receive and those who give care; reducing access barriers and financial risk for patients, fami- lies, and communities; and promoting care that is affordable for the system.
5. **Efficiency:** Avoiding waste, including waste of equipment, supplies, ideas, and energy, and including waste resulting from poor manage- ment, fraud, corruption, and abusive practices. Existing resources should be leveraged to the greatest degree possible to finance services.
6. **Equity:** Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, race, geographic location, and socioeconomic status.

CONCEPTUAL FRAMEWORK

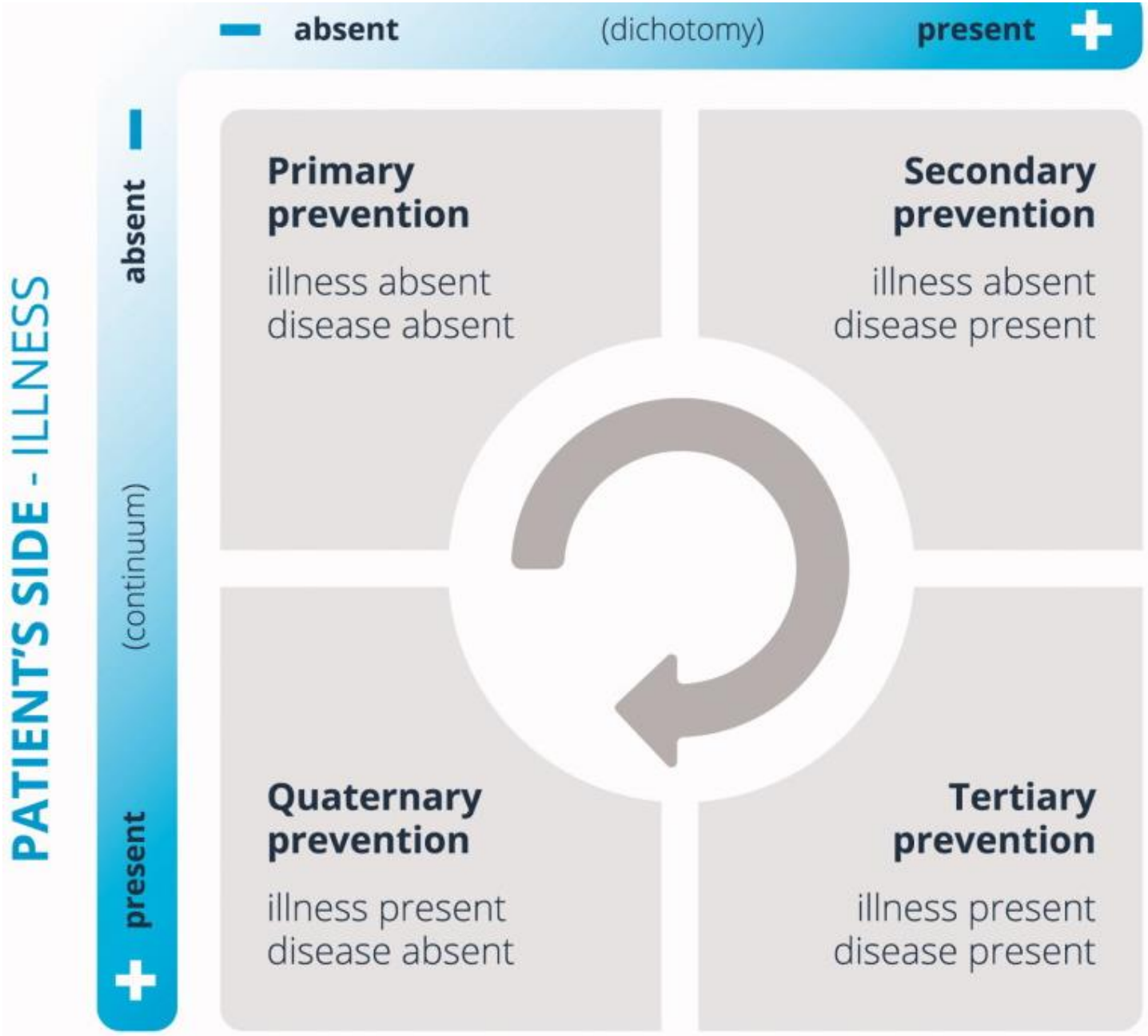
Preventive Diabetology: Novel Concept

Rationale and Premises

- Prevention is better than cure (Desiderius Erasmus)
- Prevention is feasible (DPP etc)
- Remission of diabetes is feasible (DIRECT Trial)
- Diabetes do not necessarily mean disabled and premature death

Different Level of Prevention

- Primordial prevention
- Primary prevention
- Secondary prevention
- Tertiary prevention
- Quaternary prevention


PATIENT'S SIDE - ILLNESS
absent
(dichotomy)
present
absent
(continuum)
present
Primary prevention
illness absent
disease absent
Secondary prevention
illness absent
disease present
Quaternary prevention
illness present
disease absent
Tertiary prevention
illness present
disease present

Definitions

- **The current Wonca International Dictionary definition**

'Action taken to identify patient at risk of overmedicalization, to protect him from new medical invasion, and to suggest to him interventions, which are ethically acceptable.'

- **The new definition**

'Action taken to protect individuals (persons/patients) from medical interventions that are likely to cause more harm than good.'

Approach

Approach

- Patient centered approach
  - Patient-centered care defined as care that considers individual patient co-morbidites and prognoses; is respectful of responsive to patient preferences, needs and values; and ensures the patient values guides all clinical decisions
- Person centered approach

DECISION CYCLE FOR PATIENT-CENTERED GLYCEMIC MANAGEMENT IN TYPE 2 DIABETES

REVIEW AND AGREE ON MANAGEMENT PLAN

- Review management plan
- Mutual agreement on changes
- Ensure agreed modification of therapy is implemented in a timely fashion to avoid clinical inertia
- Decision cycle undertaken regularly (at least once/twice a year)

ASSESS KEY PATIENT CHARACTERISTICS

- Current lifestyle
- Comorbidities, i.e., ASCVD, CKD, HF
- Clinical characteristics, i.e., age, HbA_{1c}, weight
- Issues such as motivation and depression
- Cultural and socioeconomic context

CONSIDER SPECIFIC FACTORS THAT IMPACT CHOICE OF TREATMENT

- Individualized HbA_{1c} target
- Impact on weight and hypoglycemia
- Side effect profile of medication
- Complexity of regimen, i.e., frequency, mode of administration
- Choose regimen to optimize adherence and persistence
- Access, cost, and availability of medication

SHARED DECISION MAKING TO CREATE A MANAGEMENT PLAN

- Involves an educated and informed patient (and their family/caregiver)
- Seeks patient preferences
- Effective consultation includes motivational interviewing, goal setting, and shared decision making
- Empowers the patient
- Ensures access to DSMES

AGREE ON MANAGEMENT PLAN

- Specify SMART goals:
  - Specific
  - Measurable
  - Achievable
  - Realistic
  - Time limited

IMPLEMENT MANAGEMENT PLAN

- Patients not meeting goals generally should be seen at least every 3 months as long as progress is being made; more frequent contact initially is often desirable for DSMES

ONGOING MONITORING AND SUPPORT INCLUDING:

- Emotional well-being
- Check tolerability of medication
- Monitor glycemic status
- Biofeedback including SMBG, weight, step count, HbA_{1c}, blood pressure, lipids

ASCVD = Atherosclerotic Cardiovascular Disease
CKD = Chronic Kidney Disease
HF = Heart Failure
DSMES = Diabetes Self-Management Education and Support
SMBG = Self-Monitored Blood Glucose

Practice

- *“Knowing is not enough; we must apply. Willing is not enough; we must do.”*

Goethe

Practice

1. Correct Diagnosis
2. Correct Education-DSME
3. Correct Glycemic Targets
4. Correct Choice of Pharmacological Agents
5. Correct Approach to Risk Factors Management
6. Consideration on Psychosocial issues

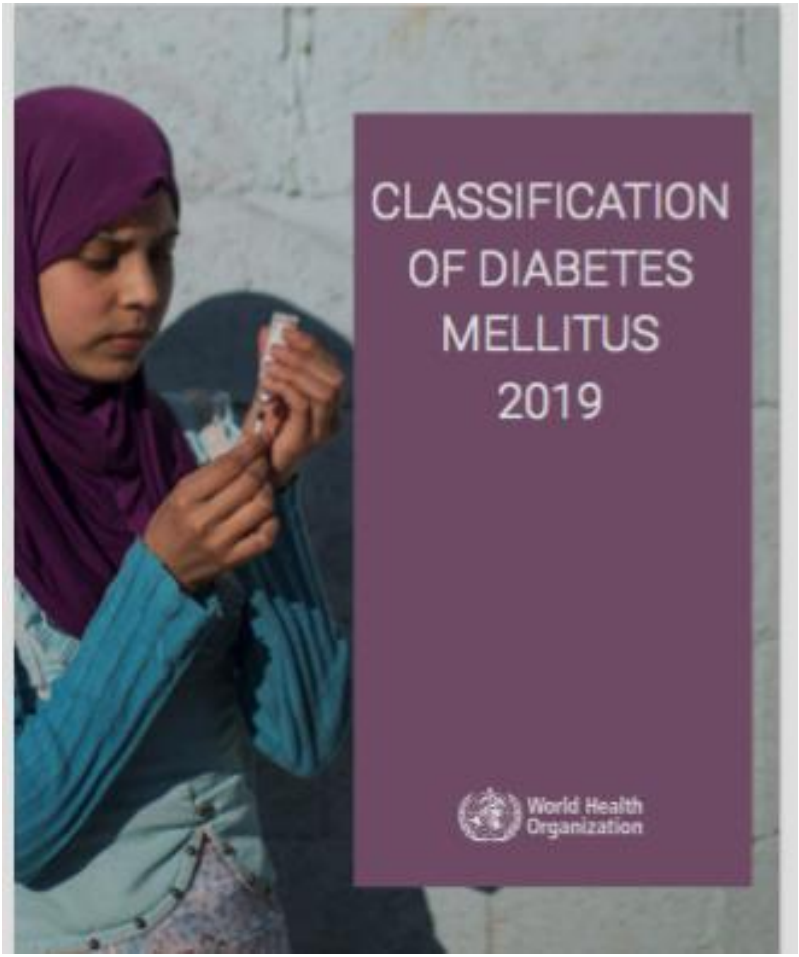
1. Correct Diagnosis

Correct Diagnosis is the Essential First Step

- Correct classification

- Correct application of diagnostic tools

Changing landscape in the diagnosis of Diabetes



WHO 2019 New Classification

Table 1 : Types of diabetes

Type of diabetes	Brief description	Change from previous classification
Type 1 diabetes	β-cell destruction (mostly immune-mediated) and absolute insulin deficiency; onset most common in childhood and early adulthood	Type 1 sub-classes removed
Type 2 diabetes	Most common type, various degrees of β-cell dysfunction and insulin resistance; commonly associated with overweight and obesity	Type 2 sub-classes removed
Hybrid forms of diabetes		New type of diabetes
Slowly evolving, immune-mediated diabetes of adults	Similar to slowly evolving type 1 in adults but more often has features of the metabolic syndrome, a single GAD autoantibody and retains greater β-cell function	Nomenclature changed – previously referred to as latent autoimmune diabetes of adults (LADA)
Ketosis-prone type 2 diabetes	Presents with ketosis and insulin deficiency but later does not require insulin; common episodes of ketosis, not immune-mediated	No change

WHO 2019 New Classification

Other specific types		
Monogenic diabetes - Monogenic defects of β-cell function	Caused by specific gene mutations, has several clinical manifestations requiring different treatment, some occurring in the neonatal period, others by early adulthood	Updated nomenclature for specific genetic defects
- Monogenic defects in insulin action	Caused by specific gene mutations; has features of severe insulin resistance without obesity; diabetes develops when β-cells do not compensate for insulin resistance	
Diseases of the exocrine pancreas	Various conditions that affect the pancreas can result in hyperglycaemia (trauma, tumor, inflammation, etc.)	No change
Endocrine disorders	Occurs in diseases with excess secretion of hormones that are insulin antagonists	No change
Drug- or chemical-induced	Some medicines and chemicals impair insulin secretion or action, some can destroy β-cells	No change
Infection-related diabetes	Some viruses have been associated with direct β-cell destruction	No change
Uncommon specific forms of immune-mediated diabetes	Associated with rare immune-mediated diseases	No change
Other genetic syndromes sometimes associated with diabetes	Many genetic disorders and chromosomal abnormalities increase the risk of diabetes	No change

WHO 2019 New Classification

Unclassified diabetes	Used to describe diabetes that does not clearly fit into other categories. This category should be used temporarily when there is not a clear diagnostic category especially close to the time of diagnosis	New types of diabetes
Hyperglycaemia first detected during pregnancy		
Diabetes mellitus in pregnancy	Type 1 or type 2 diabetes first diagnosed during pregnancy	No change
Gestational diabetes mellitus	Hyperglycaemia below diagnostic thresholds for diabetes in pregnancy	Defined by 2013 diagnostic criteria
Diagnostic criteria for diabetes: fasting plasma glucose ≥ 7.0 mmol/L or 2-hour post-load plasma glucose ≥ 11.1 mmol/L or Hba1c ≥ 48 mmol/mol **Diagnostic criteria for gestational diabetes**: fasting plasma glucose 5.1–6.9 mmol/L or 1-hour post-load plasma glucose ≥ 10.0 mmol/L or 2-hour post-load plasma glucose 8.5–11.0 mmol/L		

Novel subgroups of adult-onset diabetes and their association with outcomes: a data-driven cluster analysis of six variables

Emma Ahlqvist, Petter Storm, Annemari Käräjämäki, Mats Martinell*, Mozhgan Dorkhan, Annelie Carlsson, Petter Vikman, Rashmi B Prasad, Dina Mansour Aly, Peter Almgren, Ylva Wessman, Nael Shaat, Peter Spégel, Hindrik Mulder, Eero Lindholm, Olle Melander, Ola Hansson, Ulf Malmqvist, Åke Lernmark, Kaj Lahti, Tom Forsén, Tiinamaija Tuomi, Anders H Rosengren, Leif Groop*

Six variables

1. GAD Antibodies
2. Age at diagnosis
3. BMI
4. HbA1c
5. HOMA2 (Beta cell function)
6. HOMA 2 (Insulin resistance)

Related to – development of complications and

Prescriptions of medications

5 Clusters

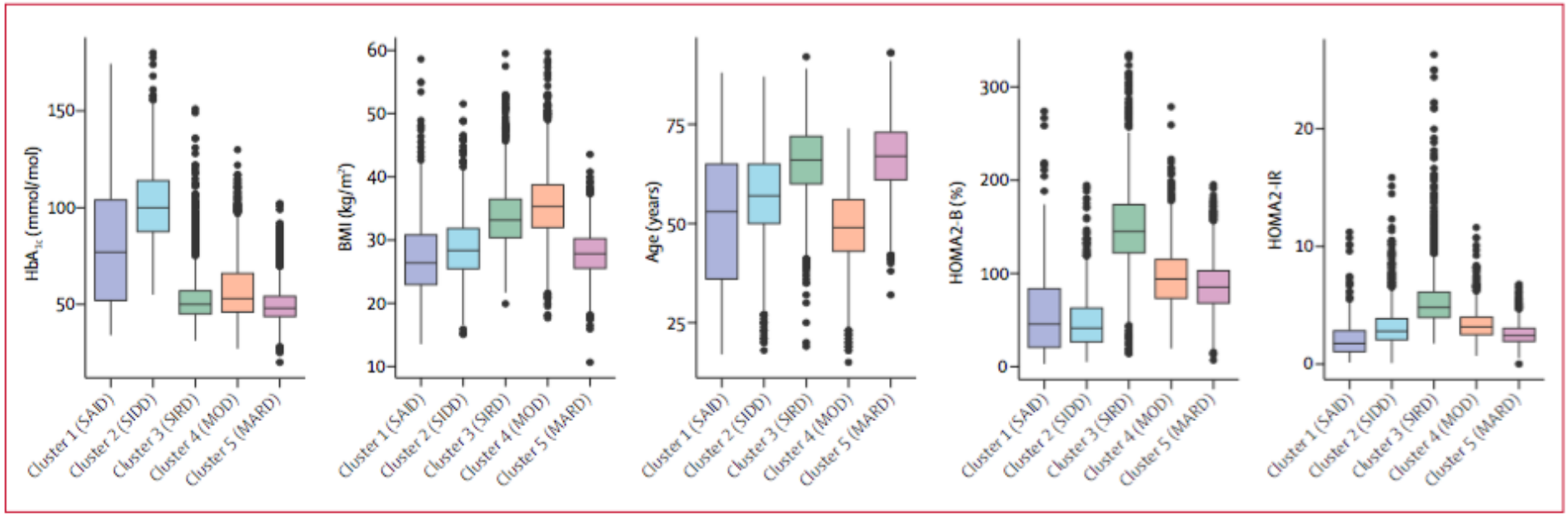


Figure 2: **Cluster characteristics in the ANDIS cohort**

Distributions of HbA_{1c} and age at diagnosis, and BMI, HOMA2-B, and HOMA2-IR at registration, in the ANDIS cohort for each cluster. k-means clustering was done separately for men and women; pooled data are shown here for clusters 2–5. SAID=severe autoimmune diabetes. SIDD=severe insulin-deficient diabetes. SIRD=severe insulin-resistant diabetes. MOD=mild obesity-related diabetes. MARD=mild age-related diabetes. HOMA2-B=homoeostatic model assessment 2 estimates of β-cell function. HOMA2-IR=homoeostatic model assessment 2 estimates of insulin resistance. ANDIS=All New Diabetics in Scania.

SAID = Severe Autoimmune Diabetes
SIDD = Severe Insulin-deficient Diabetes
SIRD = Severe Insulin-resistant Diabetes
MOD = Mild Obesity related Diabetes
MARD = Mild Age-related Diabetes

Table 1: Identified Diabetes Clusters

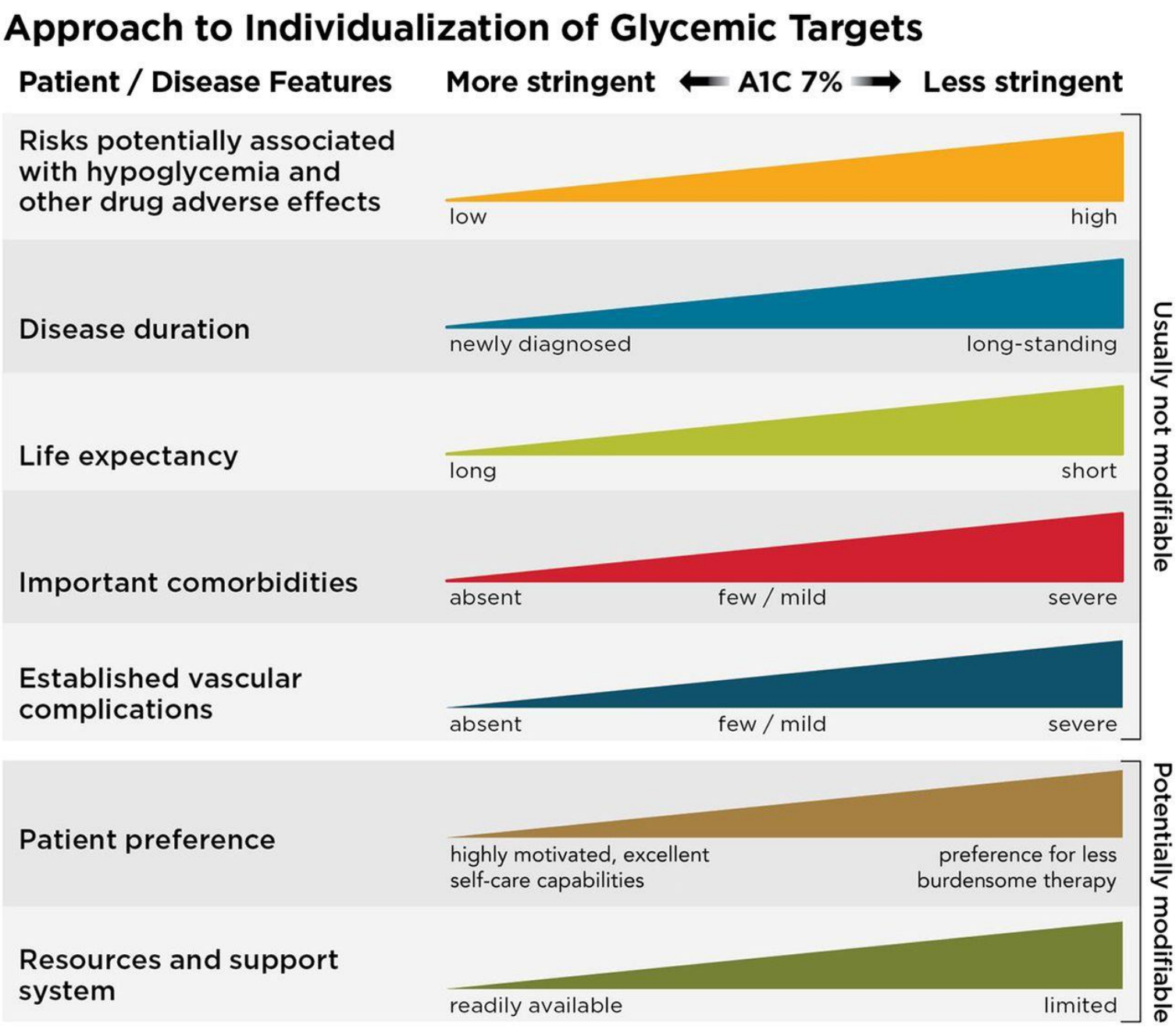
Cluster	Description	% of Research Participants	
1	• Autoimmune disease individuals with insulin deficiency • Positive for glutamate decarboxylase antibodies	6%	SIAD
2	• Young insulin-deficient individuals with impaired insulin secretion and moderate insulin resistance • Negative for glutamate decarboxylase antibodies • Significant proportion of individuals had diabetic retinopathy	18%	SIDD
3	• Obese/high BMI individuals with severe insulin resistance • Significant proportion of individuals had kidney damage/higher risk of end-stage renal disease	15%	SIRD
4	• Obese/high BMI individuals without insulin resistance and mild diabetes at a young age	22%	MOD
5	• Older individuals with mild diabetes	39%	MARD

2. Correct Education-DSME

- AADE7 Self-Care Behaviors

1. Healthy eating
2. Being active
3. Monitoring
4. Taking medication
5. Problem solving
6. Healthy coping
7. Reducing risks

3. Correct Glycemic Targets



Glycemic Targets:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1): S66-S76

Table 6.3—Summary of glycemic recommendations for many nonpregnant adults with diabetes

A1C	<7.0% (53 mmol/mol)*
Preprandial capillary plasma glucose	80–130 mg/dL* (4.4–7.2 mmol/L)
Peak postprandial capillary plasma glucose†	<180 mg/dL* (10.0 mmol/L)

*More or less stringent glycemic goals may be appropriate for individual patients. Goals should be individualized based on duration of diabetes, age/life expectancy, comorbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations. †Postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals. Postprandial glucose measurements should be made 1–2 h after the beginning of the meal, generally peak levels in patients with diabetes.

Glycemic Targets:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1): S66-S76

Estimated Average Glucose

Table 6.1—Estimated average glucose (eAG)

A1C (%)	mg/dL*	mmol/L
5	97 (76–120)	5.4 (4.2–6.7)
6	126 (100–152)	7.0 (5.5–8.5)
7	154 (123–185)	8.6 (6.8–10.3)
8	183 (147–217)	10.2 (8.1–12.1)
9	212 (170–249)	11.8 (9.4–13.9)
10	240 (193–282)	13.4 (10.7–15.7)
11	269 (217–314)	14.9 (12.0–17.5)
12	298 (240–347)	16.5 (13.3–19.3)

Data in parentheses are 95% CI. A calculator for converting A1C results into eAG, in either mg/dL or mmol/L, is available at professional.diabetes.org/eAG. *These estimates are based on ADAG data of ~2,700 glucose measurements over 3 months per A1C measurement in 507 adults with type 1, type 2, or no diabetes. The correlation between A1C and average glucose was 0.92 (6,7). Adapted from Nathan et al. (6).

Glycemic Targets:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1):S66-S76

Glycemic Target in Management of Diabetes in Pregnancy

- Fasting glucose = <95mg/dl
- One hour postprandial glucose = <140 mg/dl
- Tow hour postprandial glucose = <120 mg/dl

Glycemic Targets in Hospitalized Patients

15.4 Insulin therapy should be initiated for treatment of persistent hyperglycemia starting at a threshold ≥180 mg/dL (10.0 mmol/L). Once insulin therapy is started, a target glucose range of 140–180 mg/dL (7.8–10.0 mmol/L) is recommended for the majority of critically ill patients and noncritically ill patients. A

15.5 More stringent goals, such as 110–140 mg/dL (6.1–7.8 mmol/L), may be appropriate for selected patients if they can be achieved without significant hypoglycemia. C

4. Correct Choice of Pharmacological Agents

Caveats in Choice of Pharmaceutical Agents

1. Correct Agents for Correct Types of Patients
2. Correct Combination of Pharmaceutical Agents
3. Correct Dosage
4. Correct Timing of the Day
5. Correct Relationship with Meals

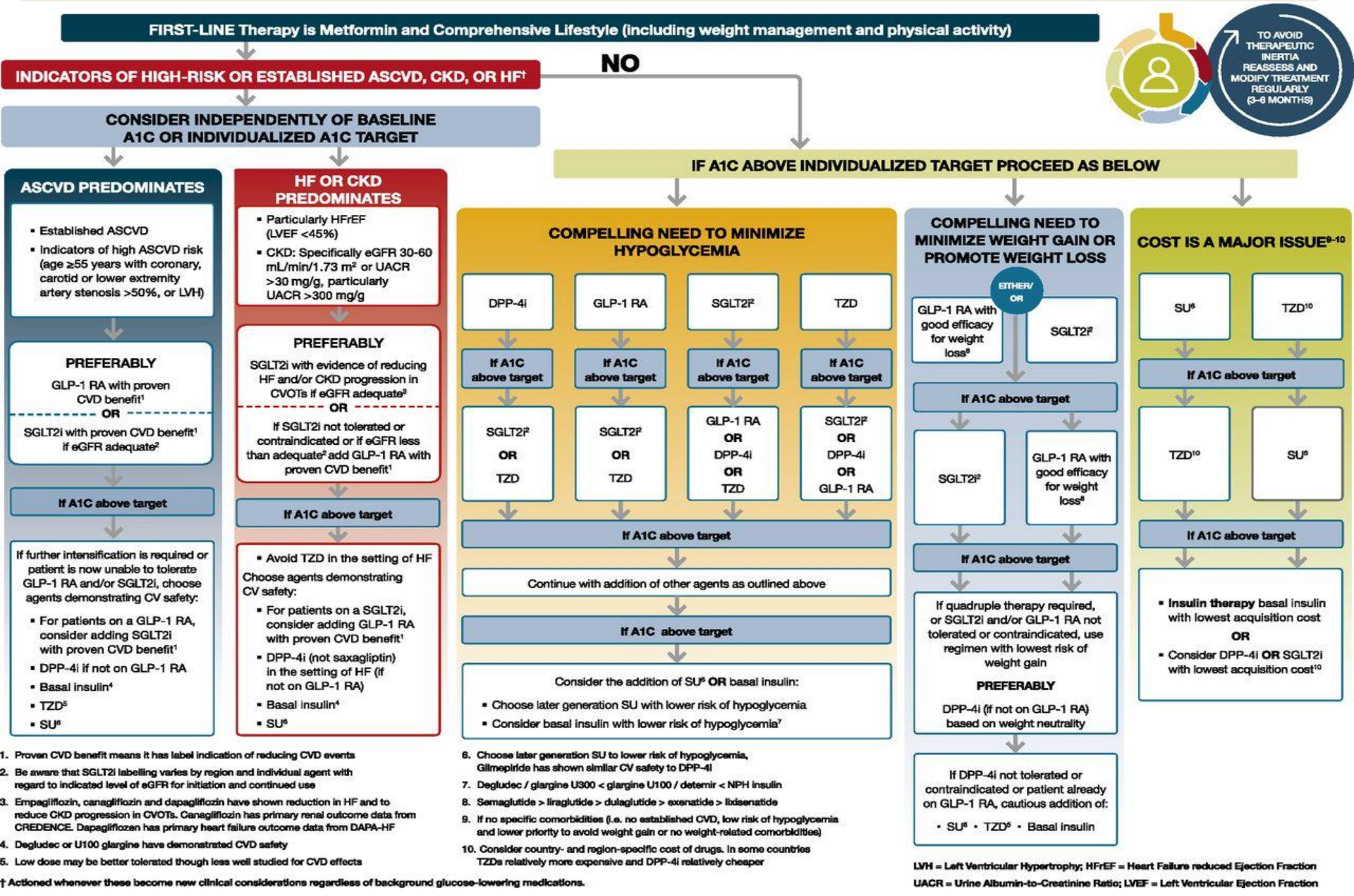
Table 9.1—Drug-specific and patient factors to consider when selecting antihyperglycemic treatment in adults with type 2 diabetes

	Efficacy	Hypoglycemia	Weight change	CV effects		Cost	Oral/SQ	Renal effects		Additional considerations
				ASCVD	HF			Progression of DKD	Dosing/use considerations*	
Metformin	High	No	Neutral (potential for modest loss)	Potential benefit	Neutral	Low	Oral	Neutral	• Contraindicated with eGFR <30 mL/min/1.73 m²	• Gastrointestinal side effects common (diarrhea, nausea) • Potential for B12 deficiency
SGLT-2 Inhibitors	Intermediate	No	Loss	Benefit: empagliflozin†, canagliflozin	Benefit: empagliflozin†, canagliflozin, dapagliflozin‡	High	Oral	Benefit: canagliflozin§, empagliflozin, dapagliflozin	• Renal dose adjustment required (canagliflozin, dapagliflozin, empagliflozin, ertugliflozin)	• **FDA Black Box:** Risk of amputation (**canagliflozin**) • Risk of bone fractures (canagliflozin) • DKA risk (all agents, rare in T2DM) • Genitourinary infections • Risk of volume depletion, hypotension • ↑LDL cholesterol • Risk of Fournier's gangrene
GLP-1 RAs	High	No	Loss	Neutral: lixisenatide Benefit: See label indication of reducing CVD events	Neutral	High	SQ; oral (semaglutide)	Benefit: liraglutide	• Renal dose adjustment required (exenatide, lixisenatide) • Caution when initiating or increasing dose due to potential risk of acute kidney injury	• **FDA Black Box:** Risk of thyroid C-cell tumors (**liraglutide, albiglutide, dulaglutide, exenatide extended release**) • Gastrointestinal side effects common (nausea, vomiting, diarrhea) • Injection site reactions • ?Acute pancreatitis risk
DPP-4 Inhibitors	Intermediate	No	Neutral	Neutral	Potential risk: saxagliptin	High	Oral	Neutral	• Renal dose adjustment required (sitagliptin, saxagliptin, alogliptin); can be used in renal impairment • No dose adjustment required for linagliptin	• Potential risk of acute pancreatitis • Joint pain
Thiazolidinediones	High	No	Gain	Potential benefit: pioglitazone	Increased risk	Low	Oral	Neutral	• No dose adjustment required • Generally not recommended in renal impairment due to potential for fluid retention	• **FDA Black Box:** Congestive heart failure (**pioglitazone, rosiglitazone**) • Fluid retention (edema; heart failure) • Benefit in NASH • Risk of bone fractures • Bladder cancer (pioglitazone) • ↑LDL cholesterol (rosiglitazone)
Sulfonylureas (2nd generation)	High	Yes	Gain	Neutral	Neutral	Low	Oral	Neutral	• Glyburide: not recommended • Glipizide and glimepiride: initiate conservatively to avoid hypoglycemia	• FDA Special Warning on increased risk of cardiovascular mortality based on studies of an older sulfonylurea (tolbutamide)
Insulin — Human insulin	Highest	Yes	Gain	Neutral	Neutral	Low	SQ; inhaled	Neutral	• Lower insulin doses required with a decrease in eGFR; titrate per clinical response	• Injection site reactions • Higher risk of hypoglycemia with human insulin (NPH or premixed formulations) vs. analogs
Insulin — Analogs						High	SQ			

*For agent-specific dosing recommendations, please refer to the manufacturers' prescribing information. †FDA approved for CVD benefit. ‡FDA-approved for heart failure indication; §FDA-approved for CKD indication. CV, cardiovascular; DPP-4, dipeptidyl peptidase 4; DKA, diabetic ketoacidosis; DKD, diabetic kidney disease; GLP-1 RAs, glucagon-like peptide 1 receptor agonists; HF, heart failure; NASH, nonalcoholic steatohepatitis; SGLT2, sodium–glucose cotransporter 2; SQ, subcutaneous; T2DM, type 2 diabetes.

Pharmacologic Approaches to Glycemic Management:
Standards of Medical Care in Diabetes - 2020. Diabetes Care 2020;43(Suppl. 1):S98-S110

Glucose-lowering Medication in Type 2 Diabetes: Overall Approach



1. Proven CVD benefit means it has label indication of reducing CVD events
2. Be aware that SGLT2i labelling varies by region and individual agent with regard to indicated level of eGFR for initiation and continued use
3. Empagliflozin, canagliflozin and dapagliflozin have shown reduction in HF and to reduce CKD progression in CVOTs. Canagliflozin has primary renal outcome data from CREDENCE. Dapagliflozen has primary heart failure outcome data from DAPA-HF
4. Degludec or U100 glargine have demonstrated CVD safety
5. Low dose may be better tolerated though less well studied for CVD effects
6. Choose later generation SU to lower risk of hypoglycemia, Glimepiride has shown similar CV safety to DPP-4i
7. Degludec / glargine U300 < glargine U100 / detemir < NPH insulin
8. Semaglutide > liraglutide > dulaglutide > exenatide > lixisenatide
9. If no specific comorbidities (i.e. no established CVD, low risk of hypoglycemia and lower priority to avoid weight gain or no weight-related comorbidities)
10. Consider country- and region-specific cost of drugs. In some countries TZDs relatively more expensive and DPP-4i relatively cheaper

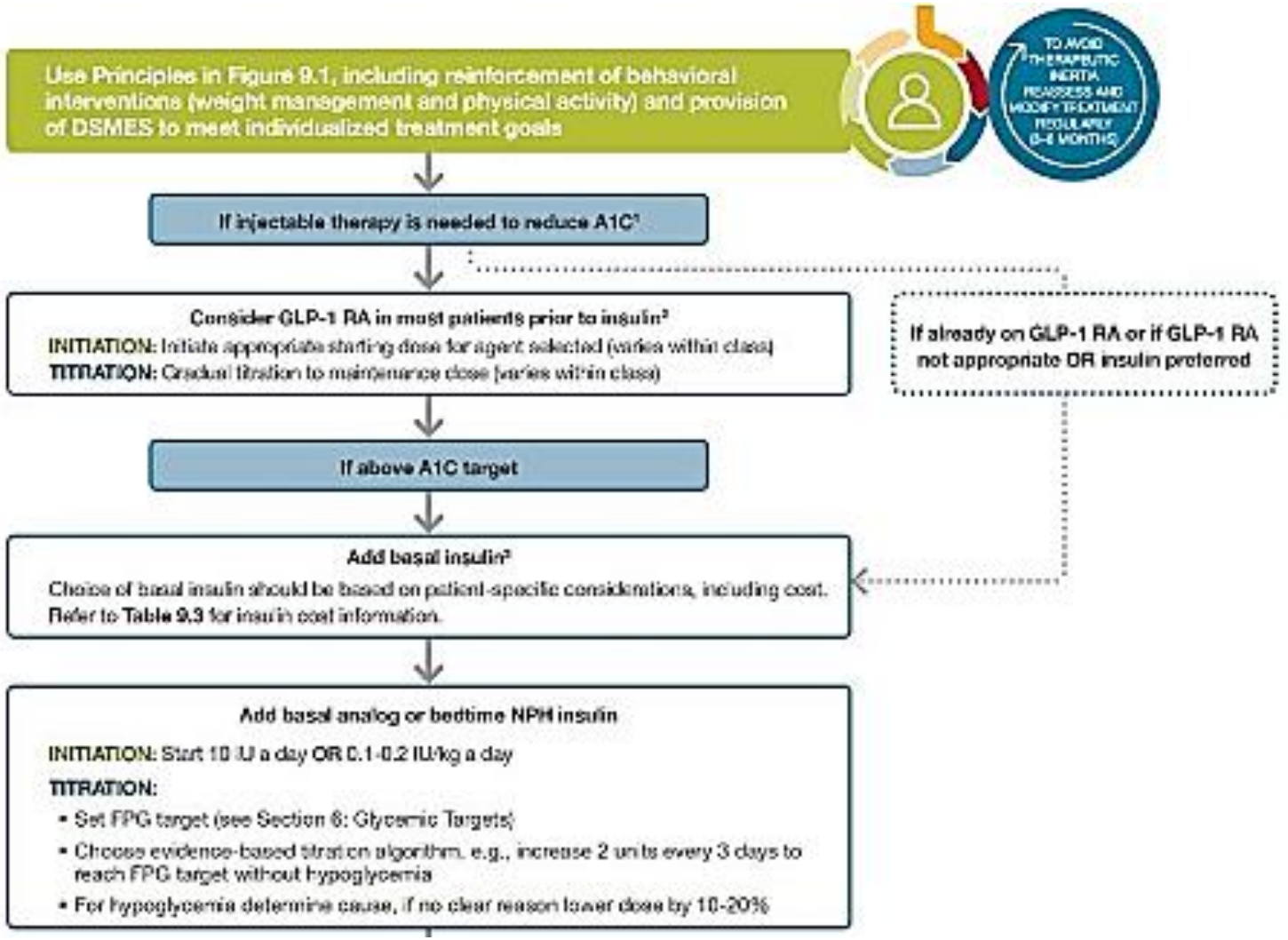
† Actioned whenever these become new clinical considerations regardless of background glucose-lowering medications.

LVH = Left Ventricular Hypertrophy; HFrEF = Heart Failure reduced Ejection Fraction
UACR = Urine Albumin-to-Crestinine Ratio; LVEF = Left Ventricular Ejection Fraction

Pharmacologic Approaches to Glycemic Management: *Standards of Medical Care in Diabetes - 2020*. *Diabetes Care* 2020;43(Suppl. 1):S98-S110

Intensifying to injectable therapies

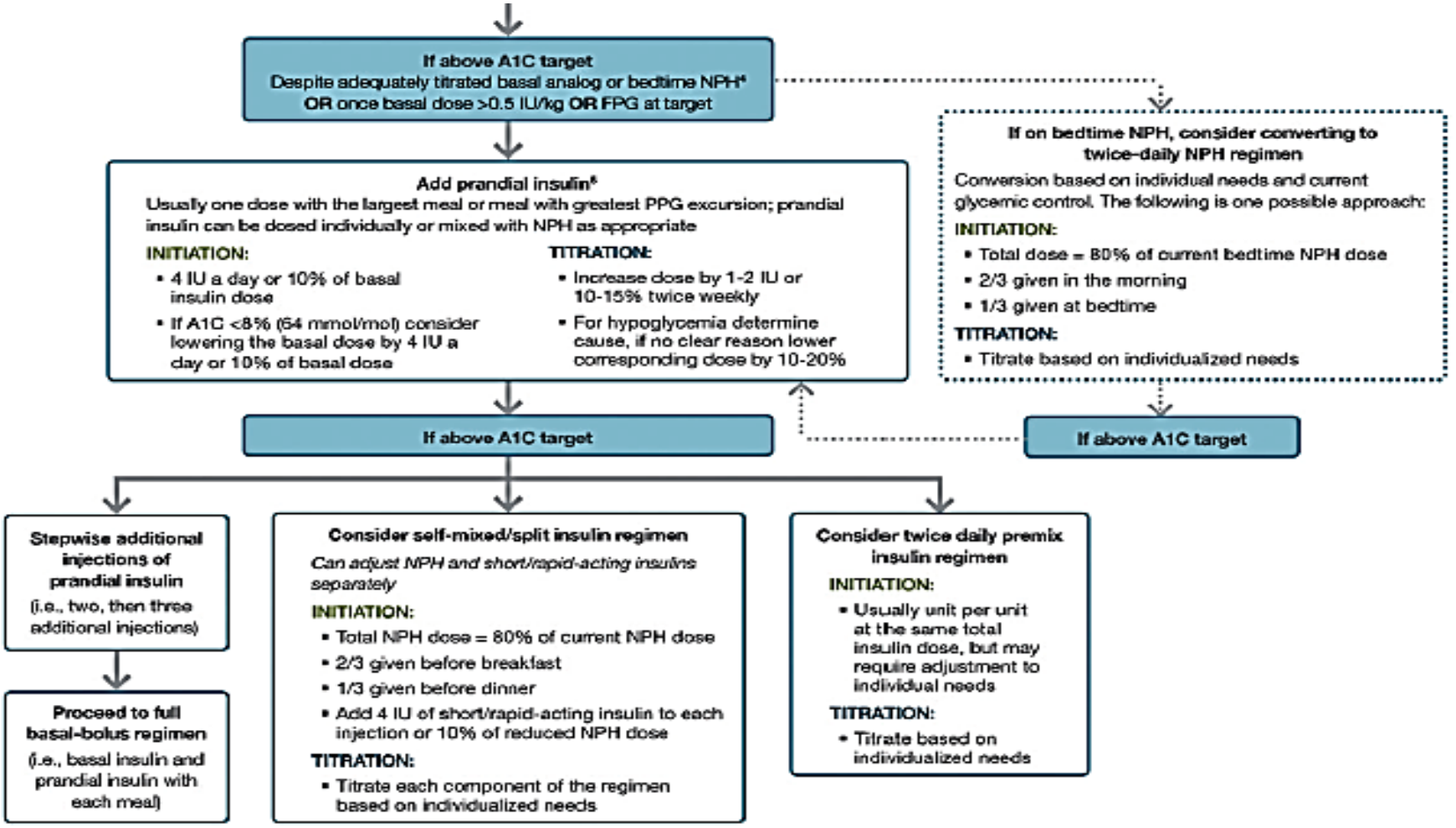
PHARMACOLOGIC APPROACHES TO GLYCEMIC TREATMENT



Pharmacologic Approaches to Glycemic Management:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1):S98-S110

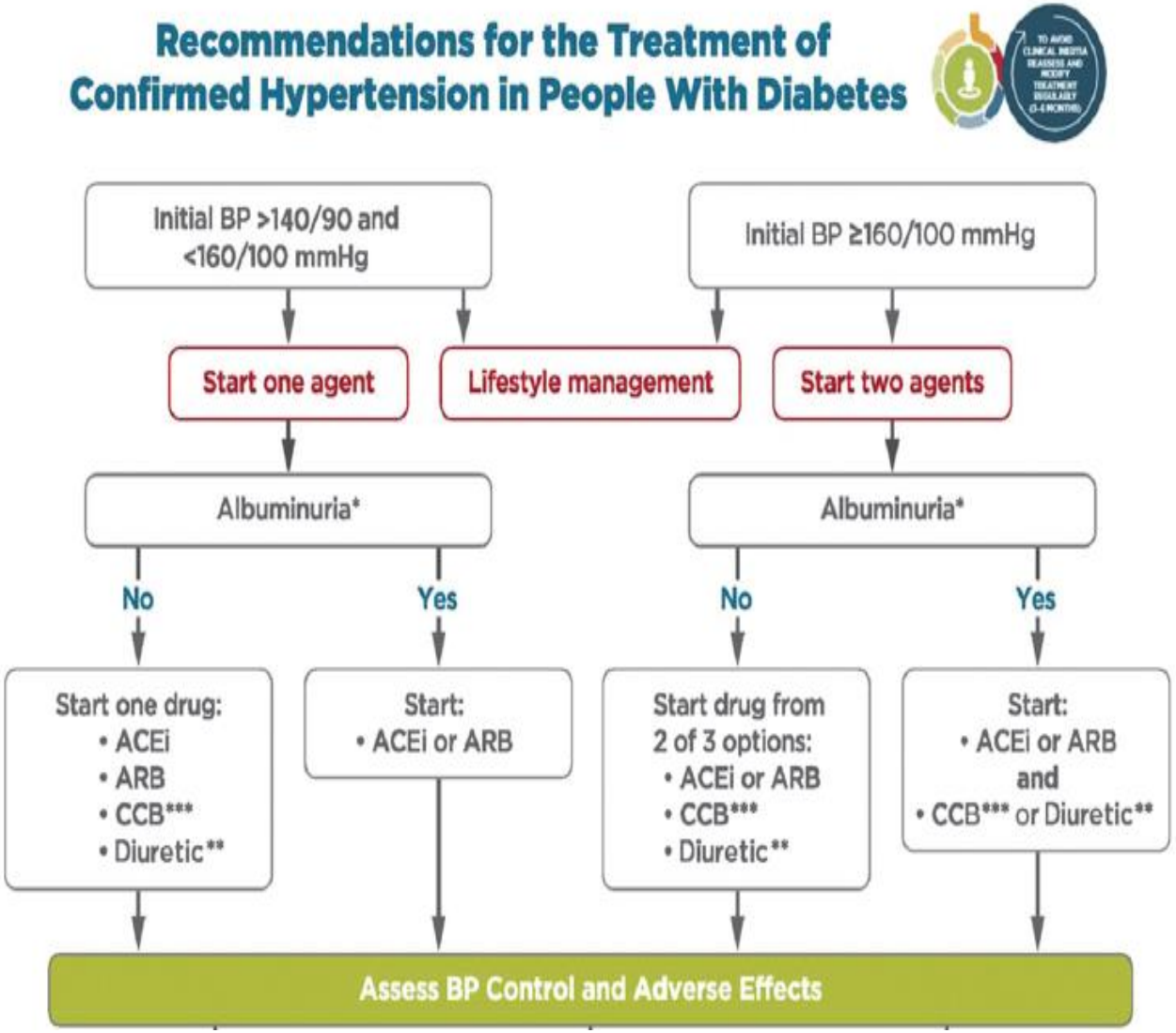
INTENSIFYING TO INJECTABLE THERAPIES

PHARMACOLOGIC APPROACHES TO GLYCEMIC TREATMENT



Pharmacologic Approaches to Glycemic Management:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1):S98-S110

5. Correct Approach to Risk Factors Management



Recommendations for the Treatment of Confirmed Hypertension in People with Diabetes (1 of 2)

Cardiovascular Disease and Risk Management:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1):S111-S134

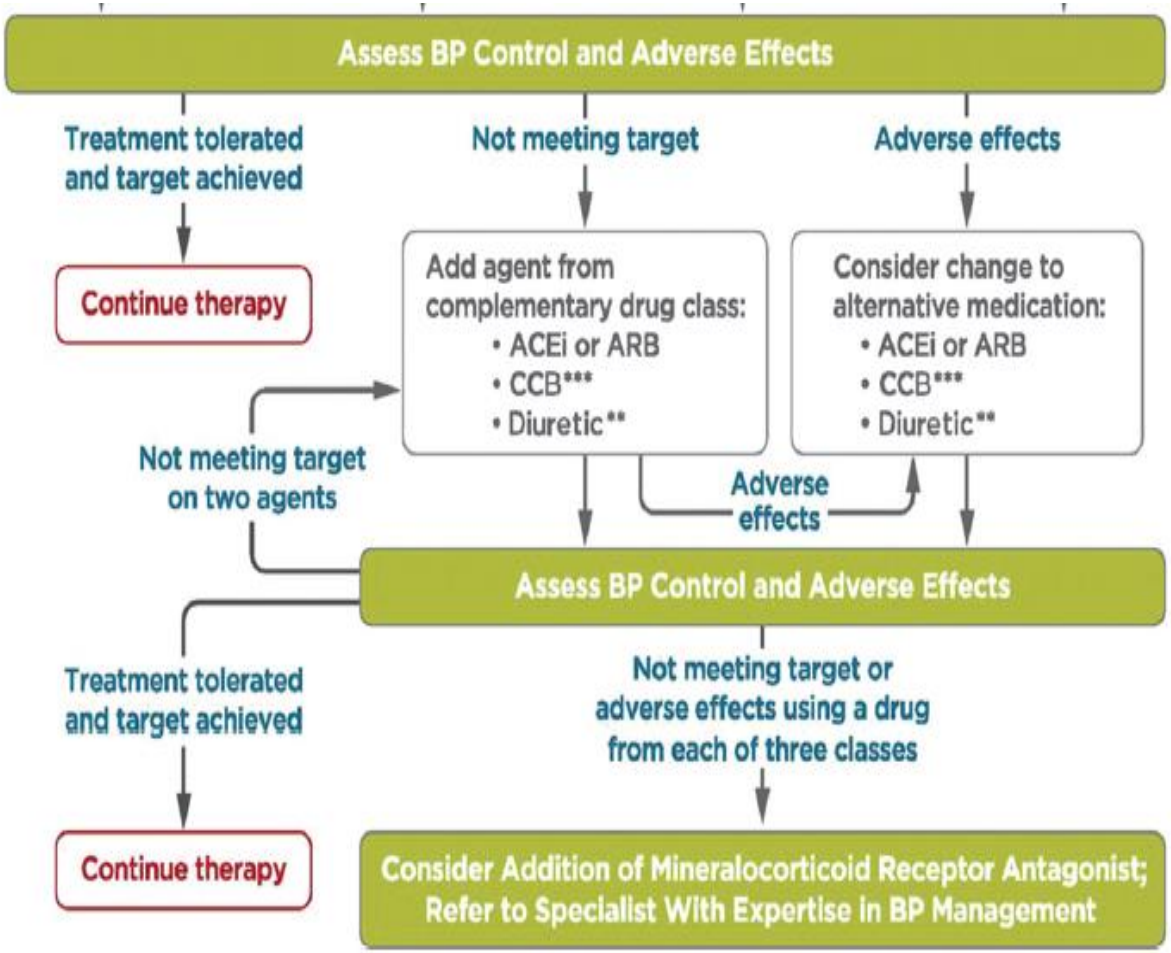


Figure 10.1—Recommendations for the treatment of confirmed hypertension in people with diabetes. *An ACE inhibitor (ACEi) or angiotensin receptor blocker (ARB) is suggested to treat hypertension for patients with urine albumin-to-creatinine ratio 30–299 mg/g creatinine and strongly recommended for patients with urine albumin-to-creatinine ratio ≥300 mg/g creatinine. **Thiazide-like diuretic; long-acting agents shown to reduce cardiovascular events, such as chlorthalidone and indapamide, are preferred. ***Dihydropyridine calcium channel blocker (CCB). BP, blood pressure. Adapted from de Boer et al. (17).

Recommendations for the Treatment of Confirmed Hypertension in People with Diabetes (2 of 2)

Cardiovascular Disease and Risk Management:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1):S111-S134

Table 10.2—High-intensity and moderate-intensity statin therapy*

High-intensity statin therapy (lowers LDL cholesterol by ≥50%)	Moderate-intensity statin therapy (lowers LDL cholesterol by 30–49%)
Atorvastatin 40–80 mg	Atorvastatin 10–20 mg
Rosuvastatin 20–40 mg	Rosuvastatin 5–10 mg
	Simvastatin 20–40 mg
	Pravastatin 40–80 mg
	Lovastatin 40 mg
	Fluvastatin XL 80 mg
	Pitavastatin 1–4 mg

*Once-daily dosing. XL, extended release.

Cardiovascular Disease and Risk Management:
Standards of Medical Care in Diabetes - 2020. *Diabetes Care* 2020;43(Suppl. 1):S111-S134

Antiplatelet Agents

10.34 Use aspirin therapy (75–162 mg/day) as a secondary prevention strategy in those with diabetes and a history of atherosclerotic cardiovascular disease. A

10.35 For patients with atherosclerotic cardiovascular disease and documented aspirin allergy, clopidogrel (75 mg/day) should be used. B

10.36 Dual antiplatelet therapy (with low-dose aspirin and a P2Y12 inhibitor) is reasonable for a year after an acute coronary syndrome A and may have benefits beyond this period. B

10.37 Aspirin therapy (75–162 mg/day) may be considered as a primary prevention strategy in those with diabetes who are at increased cardiovascular risk, after a comprehensive discussion with the patient on the benefits versus the comparable increased risk of bleeding. A

6. Consideration on Psychosocial issues

1. Diabetes distress syndrome
2. Anxiety disorders
3. Depression
4. Disordered eating behavior
5. Severe mental illness

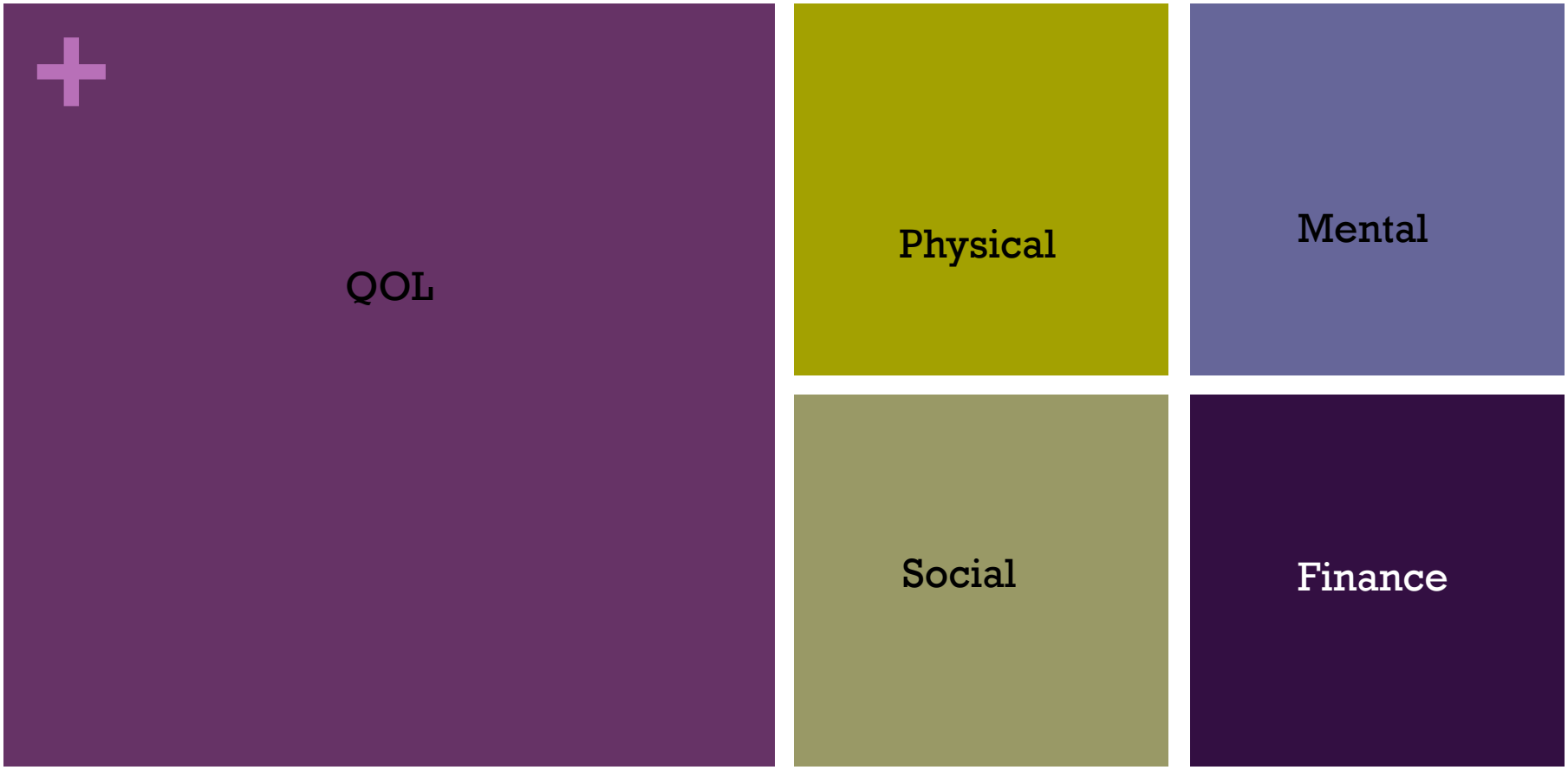
6. Consideration on Psychosocial issues

Table 5.2—Situations that warrant referral of a person with diabetes to a mental health provider for evaluation and treatment

- If self-care remains impaired in a person with diabetes distress after tailored diabetes education
- If a person has a positive screen on a validated screening tool for depressive symptoms
- In the presence of symptoms or suspicions of disordered eating behavior, an eating disorder, or disrupted patterns of eating
- If intentional omission of insulin or oral medication to cause weight loss is identified
- If a person has a positive screen for anxiety or fear of hypoglycemia
- If a serious mental illness is suspected
- In youth and families with behavioral self-care difficulties, repeated hospitalizations for diabetic ketoacidosis, or significant distress
- If a person screens positive for cognitive impairment
- Declining or impaired ability to perform diabetes self-care behaviors
- Before undergoing bariatric or metabolic surgery and after surgery if assessment reveals an ongoing need for adjustment support

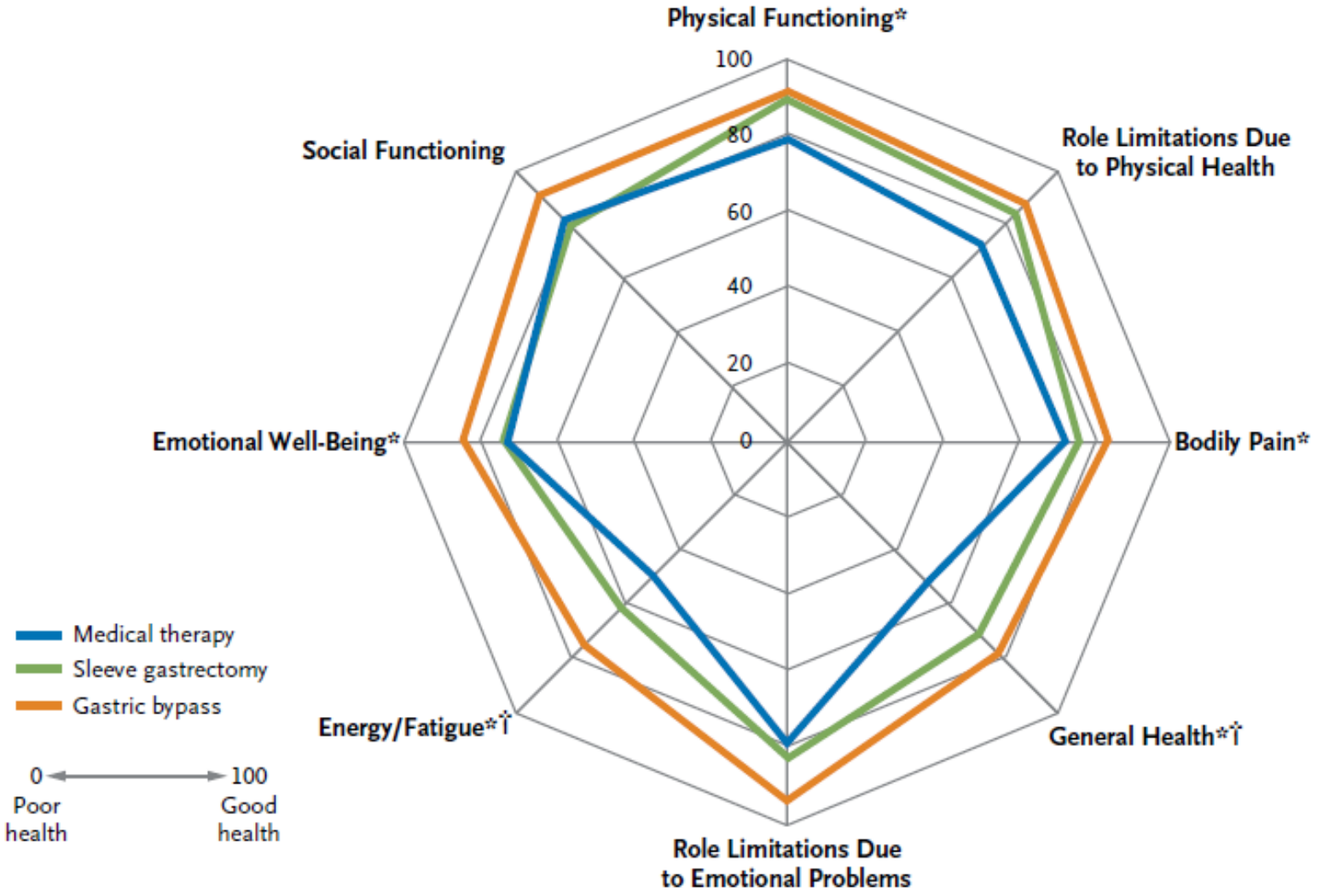
Outcome

1. Prevention of Diabetes
2. Remission of Diabetes
3. Reversal of Complications
4. Prevention of Disabilities and Premature Death



Living with Diabetes

Change in Quality of Life




Thank You