RBC Cardinal Health DENVER

JULY 9-12, 2025

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Don’t Miss a Beat: 2025 Cardiovascular Guidelines Update

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Pharmacist Learning Objectives

1. Summarize pertinent guideline updates for cardiovascular diseases including hyperlipidemia, hypertension, and cardiometabolic disease.
2. Review strategies for screening and educating patients on cardiovascular disease.
3. Discuss best practices for communicating with patients about cardiovascular diseases.
4. Analyze case studies to identify opportunities for improving patient outcomes utilizing both preventive care and therapeutic strategies.

Technician Learning Objectives

1. Summarize pertinent guideline updates for cardiovascular diseases including hyperlipidemia, hypertension, and cardiometabolic disease.
2. Review cardiovascular diseases screenings and communication strategies for promoting them.
3. Analyze case studies to identify patients eligible for cardiovascular screenings and education on cardiovascular therapeutics.

Agenda

- Cardiovascular Landscape
- Guideline Refreshers and Updates
  - Hyperlipidemia
  - Hypertension
  - Other Cardiometabolic Considerations
- Published Evidence
- Strategies for Patient Care
- Putting it to Practice with Cases

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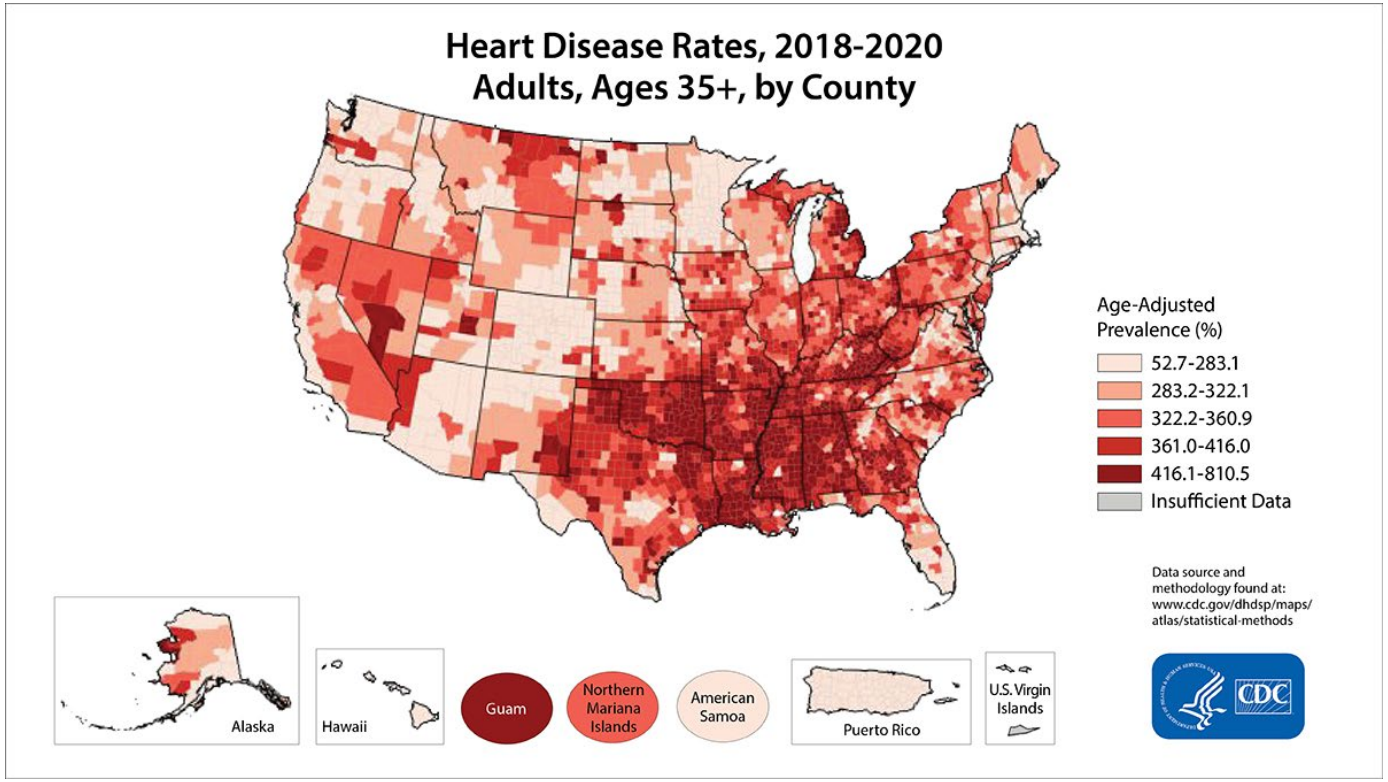
Cardiovascular (CV) Landscape


00:33
00:00

CV Significance

- One person dies every 33 seconds
- Leading cause of death (1 in every 5)
- In 2022, 702,880 deaths due to heart disease
- Between 1999 and 2018 cardiometabolic health has been worsening



Multifaceted

- Cardiometabolic Diabetes
- Cardiometabolic Obesity
- Dyslipidemia
- Hypertension (HTN)

- Starting at 115/75 mmHg, cardiovascular risk doubles with every 20/10 mmHg increase in blood pressure
- Estimated 3 million ASCVD events could be averted over 10 years with achieving a blood pressure of <130/80 mmHg
- 685,875 deaths attributed to HTN (2022)
- Almost half of adults >20yoa have HTN (48.1%, 119.9 million)
- 2 out of 3 adults with HTN are not at target blood pressure

Hypertension (HTN)

LDL-C – Low density lipoprotein cholesterol; https://www.cdc.gov/nchs/fastats/hypertension.htm Lewington S. Age specific relevance of usual blood pressure to vascular mortality. Lancet; 2002;360(9349):1903-13; Zhou D. Uncontrolled hypertension increases risk of all-cause and cardiovascular disease mortality in US adults: the NHANES III linked mortality study. Sci Rep. 2018;8:9418; ASCVD: atherosclerotic cv disease

Dyslipidemia

- LDL-C ≥160 mg/dL associated with 50% increase relative risk of CVD mortality, almost a 2-fold increased risk
- Lowering of LDL-C by 1% provides 1% reduction in risk of ASCVD
- Only 54.5% of people who would benefit from lipid lower therapy are taking it
- 2/3 of US adults have had their cholesterol checked within the last 5 years
- Prevalence of high total cholesterol is highest in the 40-59 age group

LDL-C – Low density lipoprotein cholesterol; https://www.cdc.gov/nchs/fastats/hypertension.htm; https://www.cdc.gov/nchs/products/databriefs/db363.htm ; Abdullah SM. Copper Center Longitudinal Study. Circulation. 2018;138(21).

- Heart disease deaths attributed to obesity increased by 180% between 1999 and 2020
- Weight reduction of ≥5% may reduce triglyceride levels and increase HDL-C, weight reduction >10-15% can reduce CVD risk
- Obesity prevalence for ≥20yoa is 41.9% and severe obesity 9.2% (>122 million people), doubled from 2000 to 2020
- 58% of US adults with obesity have HTN
- 30-53% of US adults with obesity develop diabetes

Obesity

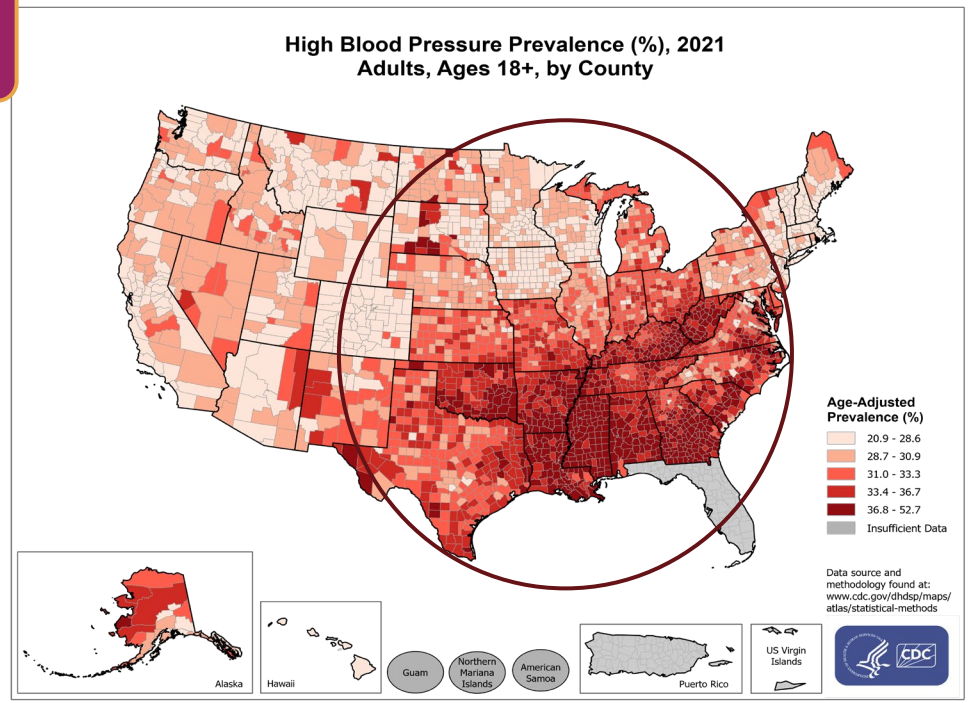
https://www.cdc.gov/obesity/adult-obesity-facts/index.html; https://newsroom.heart.org/news/obesity-related-heart-disease-deaths-increased-in-the-u-s-over-the-past-two-decades; A joint expert review from the Obesity Medicine Association and the National Lipid Association 2024; Obesity Pillars

Diabetes

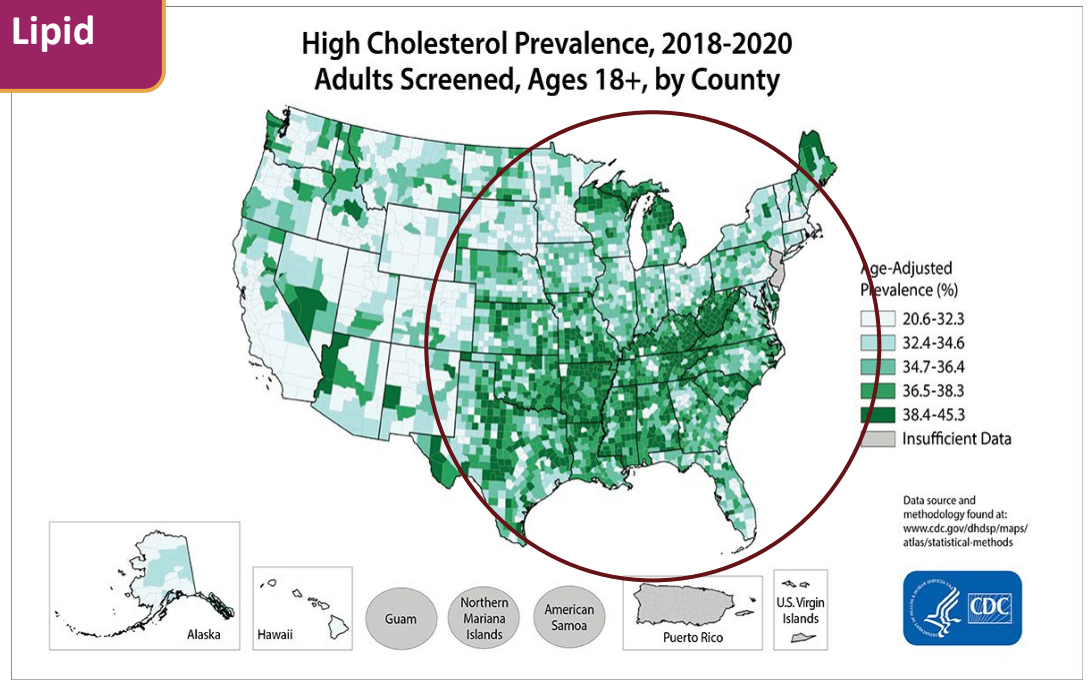
- Adults with diabetes have 2- 4-fold increased risk of CVD with risk increasing with worsening glycemic control
- 11.6% of US population has diabetes (38.4 million, 2021)
- 8th leading cause of death
- 26.9% were overweight
- 62.8% were obese or severely obese
- 36.8% met all four: A1c <8%, blood pressure <140/90 mmHg, non-HDL cholesterol <160 mg/dL, and nonsmoker
- 57.8% between 40-75yoa were on a statin

https://www.cdc.gov/diabetes/php/data-research/index.html; Canto E. Diabetes as a CV risk factor. Eur J Prev Cardiol. 2019;26(2):25.

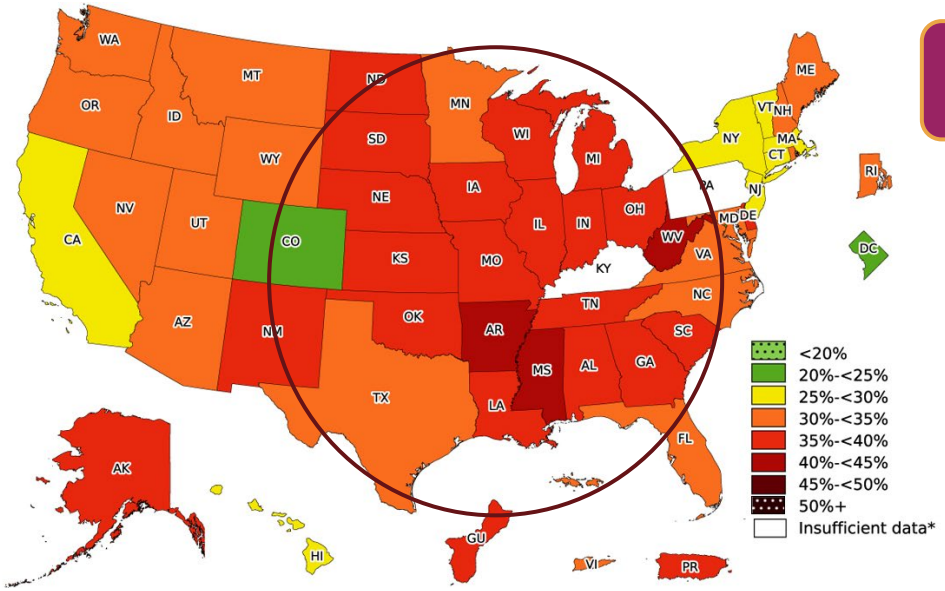
HTN



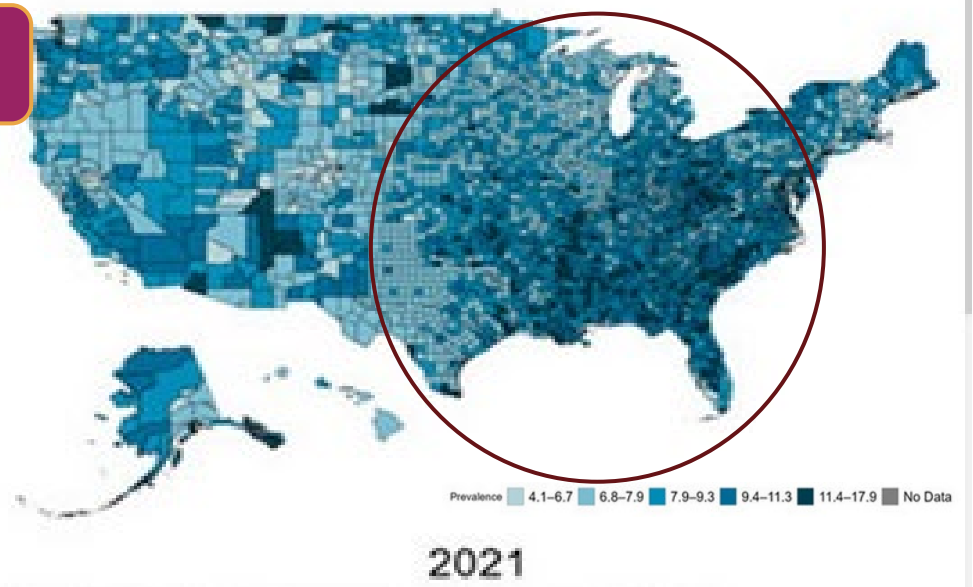
Lipid



Obesity



Diabetes



https://www.cdc.gov/high-blood-pressure/data-research/facts-stats/index.html; https://www.cdc.gov/cholesterol/data-research/facts-stats/index.html; https://www.cdc.gov/obesity/data-and-statistics/adult-obesity-prevalence-maps.html

Hypertension (HTN)

Dyslipidemia

Cardiometabolic Obesity

Cardiometabolic Diabetes

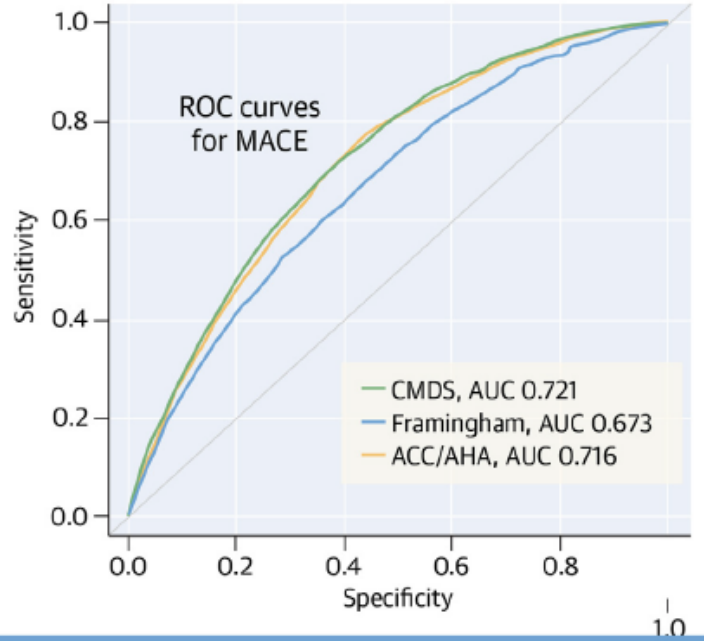
Cardiometabolic Disease Staging (CMDS) Model and Prediction of 10-Year Onset of MACE

20,234 REGARDS study participants

Clinical Parameters in the modified CMDS

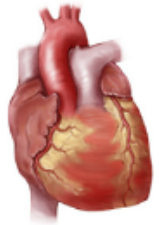
Glucose
BMI
BBP
SBP
HDL-c
Non-HLD-c
Triglycerides
Smoking
Diabetes
Hypertension medication

Cardiometabolic Disease Staging Model: Compared to the Pooled Cohort Risk Equation and the Framingham 10-Year Risk Score



Conclusion

- The CMDS, originally developed to predict diabetes onset, predicts risk for 10-year MACE
- CMDS performed similarly or better than 2 commonly known CVD prediction risk tools: the Pooled Cohort Risk Equation and the Framingham Risk score



Howell CR. Cardiometabolic disease staging and MACE. JACC Adv. 2024;3(4).

Preventing Cardiovascular Disease

1. Lifestyle changes
2. Control of risk factors
3. Timely, effective treatment

cdc.gov: cardiovascular disease. https://www.cdc.gov/cdi/indicator-definitions/cardiovascular-disease.html

Guideline Refreshers and Updates

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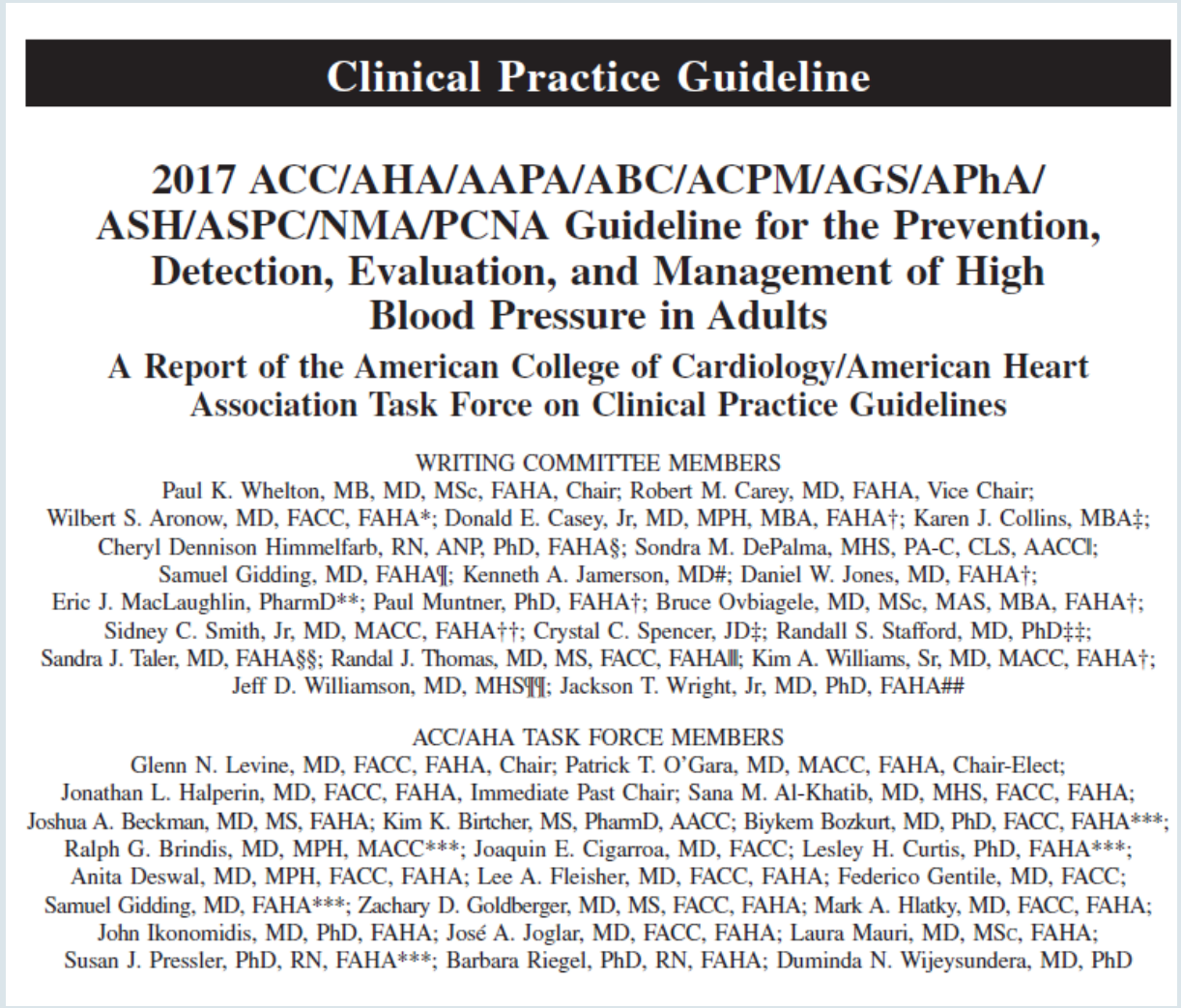
Hypertension



Clinical Practice Guideline

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults

A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines

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Blood Pressure (BP) Categories

BP Category	Systolic		Diastolic
Normal	<120 mmHg	And	<80 mmHg
Elevated	120-129 mmHg	And	<80 mmHg
Hypertension			
Stage 1	130-139 mmHg	Or	80-89 mmHg
Stage 2	≥140 mmHg	Or	≥90 mmHg

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248

SPRINT Trial

	Randomized, controlled, open-label trial across 102 clinical sites
Purpose	Identify blood pressure target to reduce cardiovascular morbidity and mortality
Participants	9,361 individuals age ≥50, systolic blood pressure 130-150 mmHg and increased risk of cardiovascular events without diabetes
Method	Intensive treatment target <120 mmHg or standard treatment <140 mmHg
Results	Trial stopped early after 3.26 years
	Significant 25% reduction in composite outcomes of myocardial infarction, acute coronary syndrome, stroke, acute decompensated heart failure or death from cardiovascular causes (P<0.001)
	Significant 27% reduction in all-cause mortality (P=0.003)
Clinical Application	For individuals with high cardiovascular risk, a systolic target of <u><120 mmHg</u> results in lower of rates of fatal and nonfatal major cardiovascular events and death from any cause

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248

STEP Trial

	Randomized, controlled trial across 102 clinical sites
Purpose	Identify blood pressure target to reduce cardiovascular risk in older patients
Participants	8,511 individuals age 60-80 with hypertension
Method	Intensive treatment target 110-129 mmHg or standard treatment 130-149 mmHg
Results	Mean systolic blood pressures were 127.5 mmHg and 135.3 mmHg
	Significant 26% reduction in composite outcomes of stroke, acute coronary syndrome, acute decompensated heart failure, coronary revascularization, atrial fibrillation, or death from CV causes (P=0.007)
Clinical Application	For older patients with hypertension, a systolic target of 110-129 mmHg lowered the incidence of CV events

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248

Blood Pressure Goal

< 130/80 mmHg

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248

Risk Factors

MODIFIABLE

- Cigarette Smoking
- Diabetes
- Dyslipidemia
- Overweight / Obesity
- Physical Inactivity / low fitness
- Unhealthy Diet

NONMODIFIABLE

- Chronic kidney disease
- Family history
- Increased age
- Low socioeconomic status / educational status
- Male sex
- Obstructive sleep apnea
- Psychosocial stress

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248

Nonpharmacologic Treatment

Intervention	Recommendation	Impact on SBP with hypertension	…SBP with normotension
Weight loss	1 kg reduction in body weight	-5 mmHg	-2/3 mmHg
DASH diet	Fruits, vegetables, whole grains, and low-fat dairy	-11 mmHg	-3 mmHg
Dietary sodium	<1500 mg/day	-5/6 mmHg	-2/3 mmHg
Dietary potassium	3500-5000 mg/day	-4/5 mmHg	-2 mmHg
Aerobic physical activity	90-150 min/week, 65-75% heart rate reserve	-5/8 mmHg	-2/4 mmHg
Dynamic resistance physical activity	90-150 min/week, 50-80% 1 rep maximum, 6 exercises, 3 sets/exercise, 10 repetitions/set	-4 mmHg	-2 mmHg
Isometric resistance physical activity	4 x 2 min (hand grip), 30-40% max voluntary contraction, 3 sessions/week	-5 mmHg	-4 mmHg
Moderate alcohol consumption	Men: ≤2 drinks/day	-4 mmHg	-3 mmHg

SBP: Systolic blood pressure

Pharmacological Treatment

Thiazide Diuretics

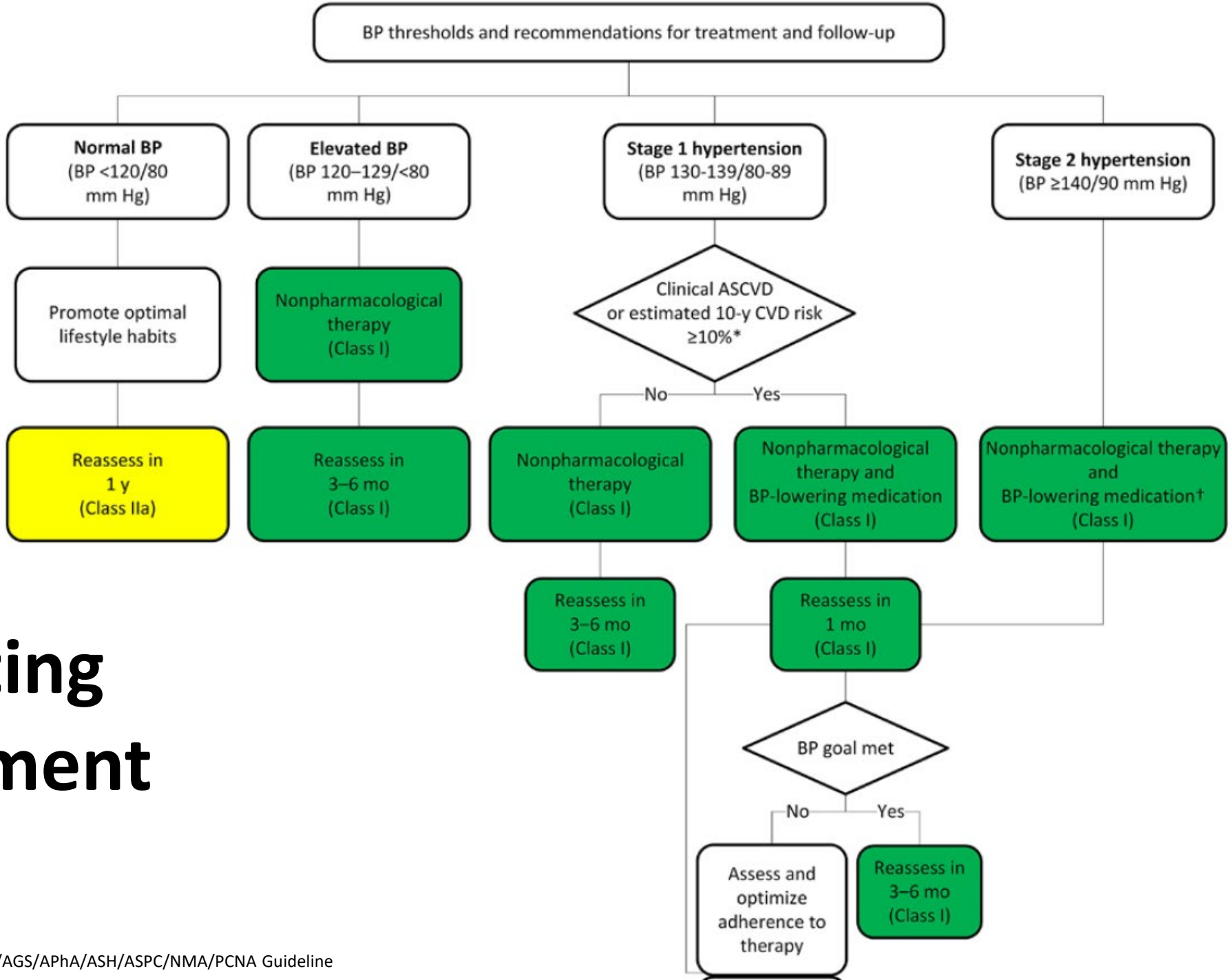
Calcium Channel Blockers (CCB)

Angiotensin-converting Enzyme Inhibitors (ACEi)

Angiotensin-receptor Blockers (ARB)

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248

Initiating Treatment



Clinical Pearls

- Beta blockers are only indicated with initial therapy if there is another comorbid condition such as heart failure or myocardial infarction
- Thiazide-diuretics and CCB are preferred as first line in black patients (except in chronic kidney disease or heart failure, ACEi / ARB preferred)
- Beginning treatment with 2 drugs is recommended when blood pressure is ≥20/10 mmHg above goal
- No difference in cardiovascular outcomes with chlorthalidone vs. hydrochlorothiazide

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248

Dyslipidemia

Circulation

CHOLESTEROL CLINICAL PRACTICE GUIDELINES

2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol

A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines

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ACC/AHA Task Force Members, see page e1123

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EXPERT CONSENSUS DECISION PATHWAY

2022 ACC Expert Consensus Decision Pathway on the Role of Nonstatin Therapies for LDL-Cholesterol Lowering in the Management of Atherosclerotic Cardiovascular Disease Risk

A Report of the American College of Cardiology Solution Set Oversight Committee

Endorsed by the National Lipid Association

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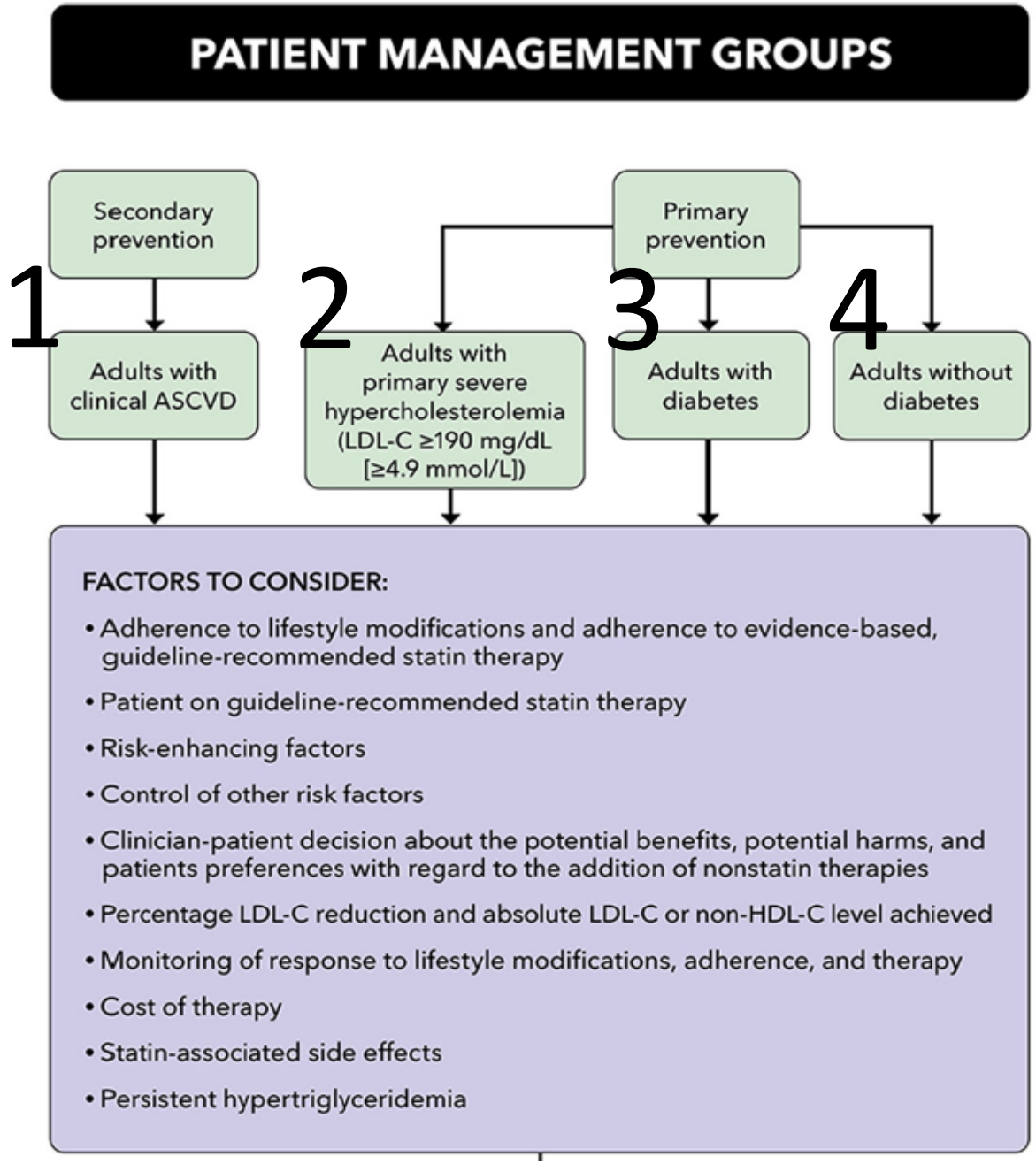
4 Main Statin Groups



AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

High Risk of ASCVD Event

- Age ≥65 years
- Heterozygous familial hypercholesterolemia
- History of prior coronary artery bypass surgery of percutaneous coronary intervention outside of the major ASCVD event(s)
  - Recent acute coronary syndrome in past year, history of myocardial infarction, history of ischemic stroke, symptomatic peripheral artery disease
- **Diabetes**
- **Hypertension**
- Chronic kidney disease
- Current Smoking
- Persistently **elevated LDL-C** ≥100 mg/dL despite maximally tolerated statin therapy and ezetimibe
- History of congestive heart failure

AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

Statin Chart

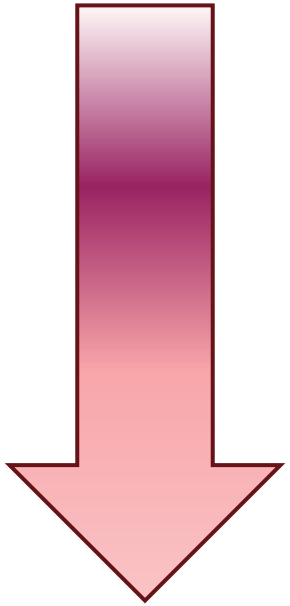
Table 10.1—High-intensity and moderate-intensity statin therapy

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.

AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14). ADA 2025 Standards of Care.

Other Add-on Lipid Lowering Therapy



- Ezetimibe (Cholesterol absorption inhibitor)
- Alirocumab / Evolocumab (PCSK9 inhibitor)
- Bempedoic acid (Adenosine triphosphate-citrate lyase (ACL) inhibitor)
- Inclisiran (Proprotein convertase subtilisin kexin type 9 (PCSK9)-interfering mRNA)
- Cholestyramine, colestipol, and colesevelam (Bile acid sequestrants)

AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

Lifestyle Therapy

Dietary Habits

- Increase vegetables, fruits, whole grains, legumes, healthy proteins, and nontropical vegetable oils
- Limit sweets, sugar-sweetened beverages and red meat

Physical Activity

- Aerobic physical activity 3-4 times per week lasting an average of 40 minutes per session and is moderate-to-vigorous-intensity

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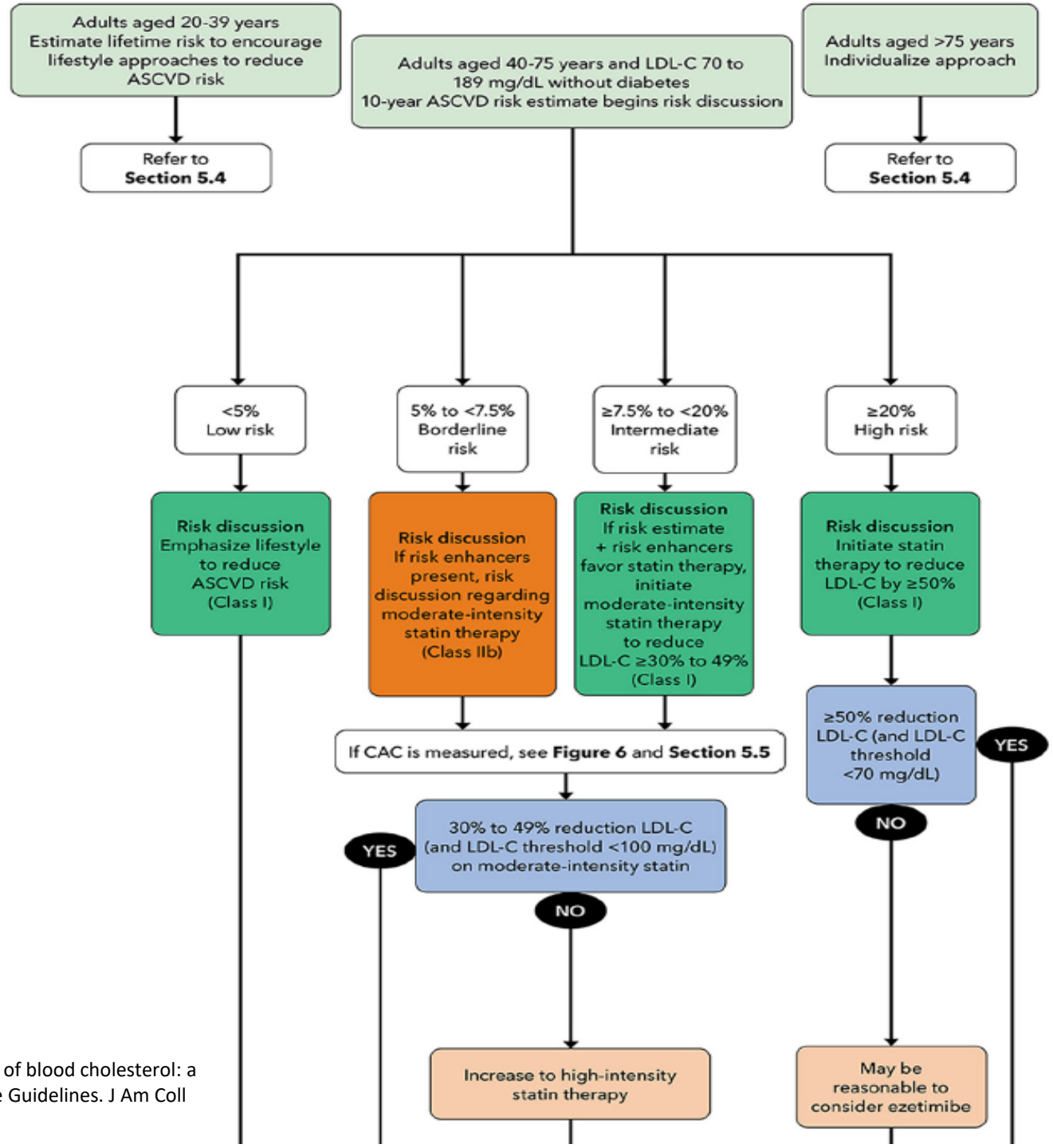
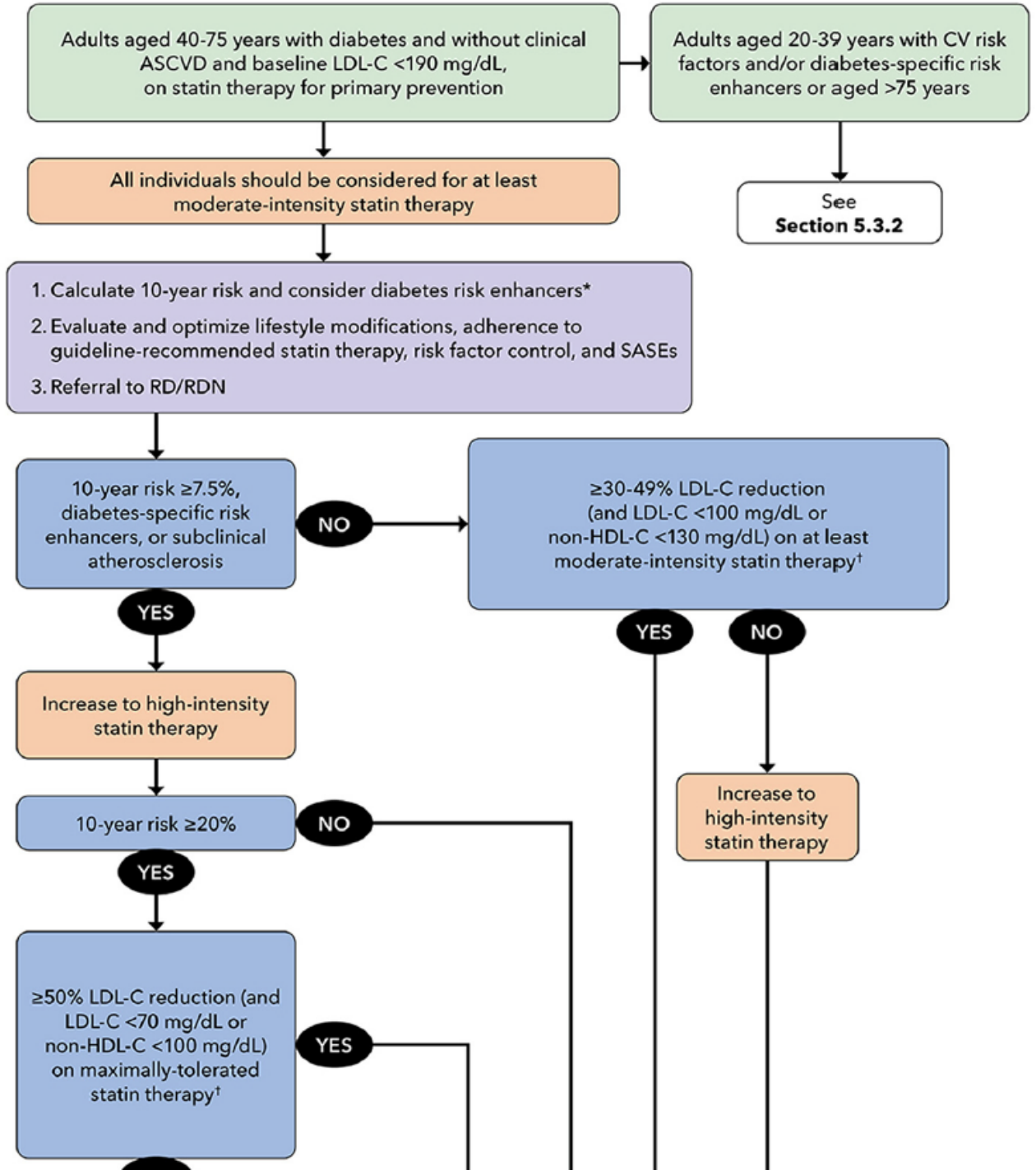
General Population

Recommendations for Older Adults Referenced studies that support recommendations are summarized in Online Data Supplements 18 and 19.		
COR	**LOE**	**Recommendations**
IIb	B-R	1. In adults 75 years of age or older with an LDL-C level of 70 to 189 mg/dL (1.7 to 4.8 mmol/L), initiating a moderate-intensity statin may be reasonable[S4.4.4.1-1–S4.4.4.1-8]
IIb	B-R	2. In adults 75 years of age or older, it may be reasonable to stop statin therapy when functional decline (physical or cognitive), multimorbidity, frailty, or reduced life-expectancy limits the potential benefits of statin therapy.[S4.4.4.1-9]
IIb	B-R	3. In adults 76 to 80 years of age with an LDL-C level of 70 to 189 mg/dL (1.7 to 4.8 mmol/L), it may be reasonable to measure CAC to reclassify those with a CAC score of zero to avoid statin therapy.[S4.4.4.1-10,S4.4.4.1-11]



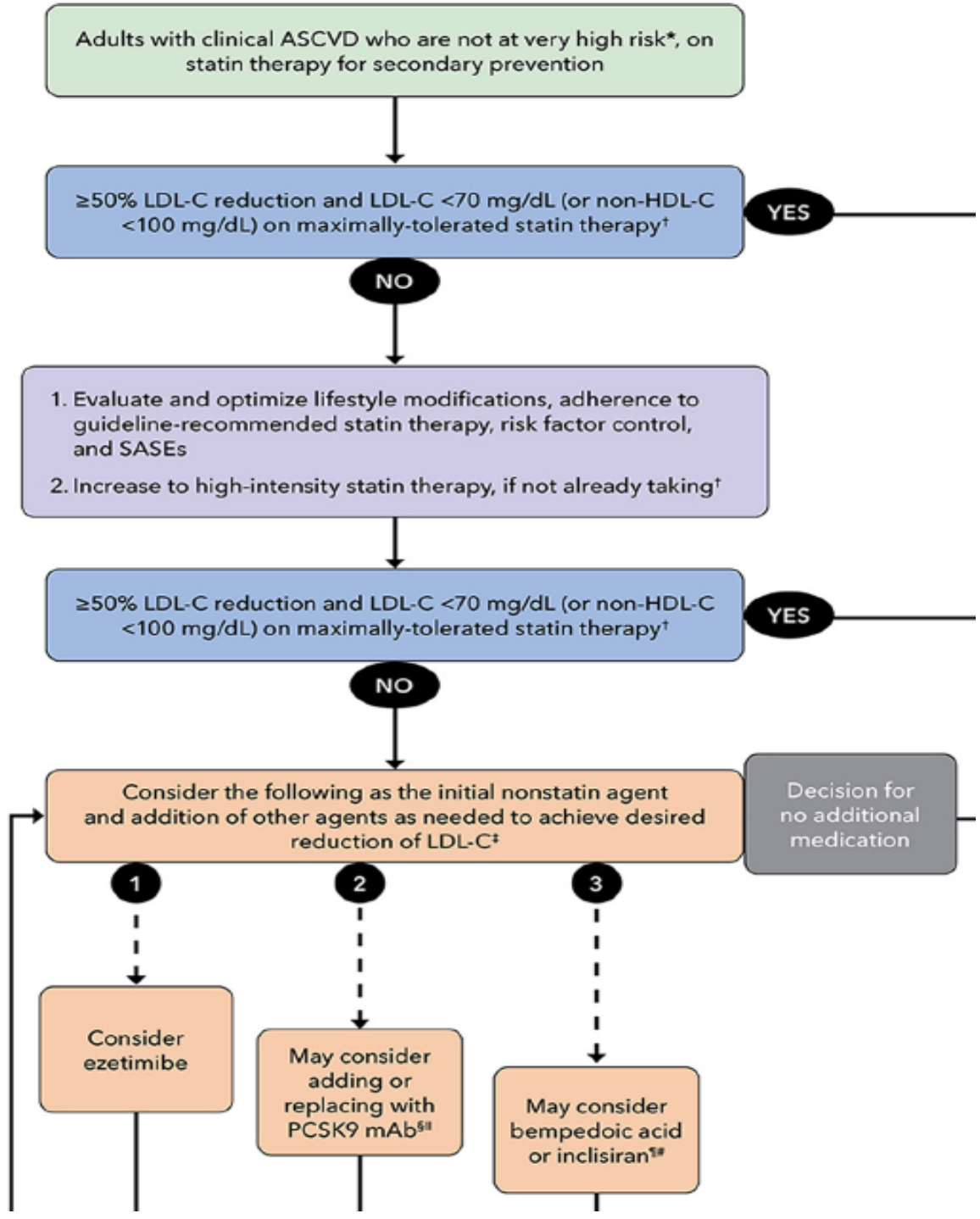
AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

People with Diabetes



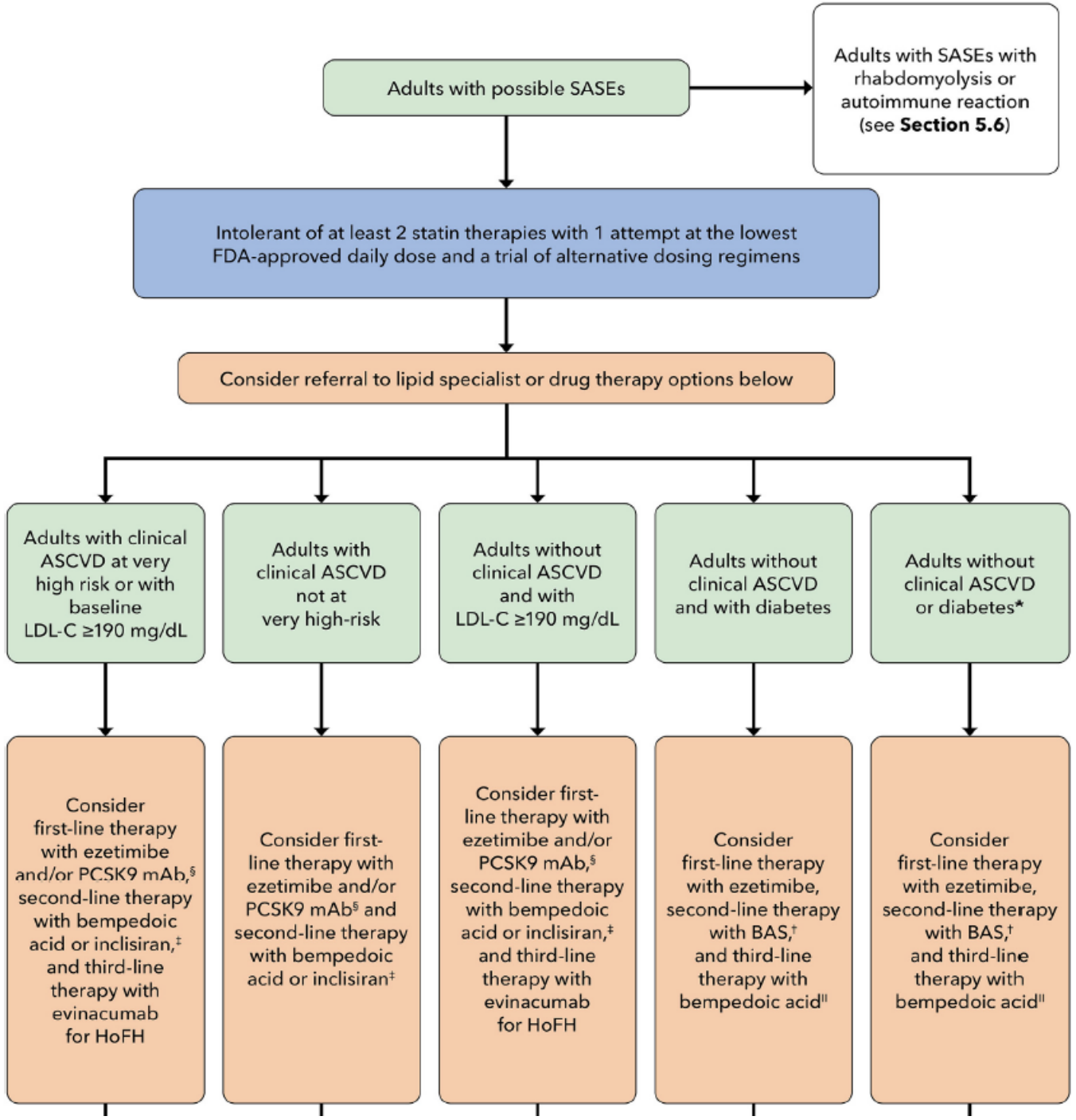
AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

Secondary Prevention



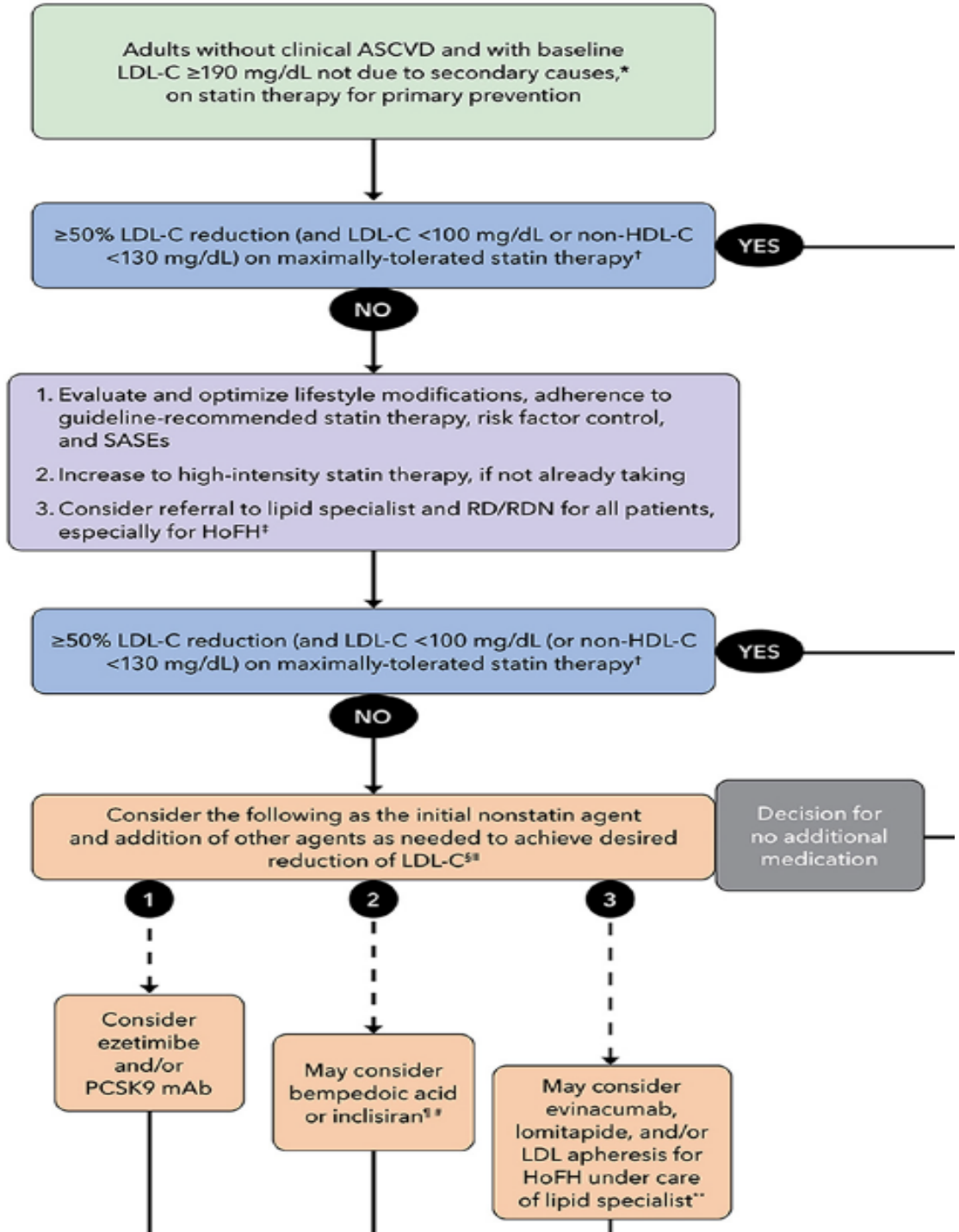
AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

Managing Intolerance to Statins



AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

LDL-C ≥190 mg/dL



AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14).

Clinical Pearls

- Statin therapy during pregnancy should be individualized based on risks. Choose hydrophilic statins if needed (pravastatin, rosuvastatin)
- Over-the-counter product CholestOff (plant stanols and sterols) has been studied in clinical trials and demonstrated 1.5 to 3g/day lowers LDL-C by 7.5% to 12%

AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardio. 2022; 80(14). Trautwein E. LDL-C Lowering of plant stanols. Nutrients. 2018

Obesity

AACE/ACE Guidelines

AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS AND AMERICAN COLLEGE OF ENDOCRINOLOGY CLINICAL PRACTICE GUIDELINES FOR COMPREHENSIVE MEDICAL CARE OF PATIENTS WITH OBESITY – EXECUTIVE SUMMARY

*W. Timothy Garvey, MD, FACE; Jeffrey I. Mechanick, MD, FACP, FACE, FACN, ECNU; Elise M. Brett, MD, FACE, CNSC, ECNU; Alan J. Garber, MD, PhD, FACE; Daniel L. Hurley, MD, FACE; Ania M. Jastreboff, MD, PhD; Karl Nadolsky, DO; Rachel Pessah-Pollack, MD; Raymond Plodkowski, MD; and Reviewers of the AACE/ACE Obesity Clinical Practice Guidelines**

Keywords: bariatric surgery; best practice guidelines; clinical practice guidelines; evidence-based medicine; lifestyle medicine; metabolic syndrome; obesity; obesity-related complication; overweight; weight-loss medications

Gastroenterology 2022;163:1198–1225

GUIDELINES

AGA Clinical Practice Guideline on Pharmacological Interventions for Adults With Obesity

Eduardo Grunvald,[1,*] **Raj Shah**,[2,*] **Ruben Hernaez**,[3,4,5,*] Apoorva Krishna Chandar,[6] Octavia Pickett-Blakely,[7] Levi M. Teigen,[8] Tasma Harindhanavudhi,[9] Shahnaz Sultan,[10] Siddharth Singh,[11] and Perica Davitkov,[6,12] on behalf of the AGA Clinical Guidelines Committee

[1]Department of Medicine, University of California San Diego, La Jolla, California; [2]Division of Gastroenterology, Hepatology, and Endoscopy, Department of Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts; [3]Division of Gastroenterology and Hepatology, Department of Medicine, Michael E. DeBakey Veterans Affairs Medical Center, Houston, Texas; [4]Center for Innovations in Quality, Effectiveness and Safety, Michael E. DeBakey Veterans Affairs Medical Center, Houston, Texas; [5]Division of Gastroenterology and Hepatology, Department of Medicine, Baylor College of Medicine, Houston, Texas; [6]Department of Medicine, Case Western Reserve University, Cleveland, Ohio; [7]Division of Gastroenterology and Hepatology, Department of Medicine, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania; [8]Division of Gastroenterology, Hepatology and Nutrition, Department of Medicine, University of Minnesota, Minneapolis, Minnesota; [9]Division of Diabetes, Endocrinology and Metabolism, Department of Medicine, University of Minnesota, Minneapolis, Minnesota; [10]Division of Gastroenterology, Hepatology, and Nutrition, Department of Medicine, University of Minnesota, Minneapolis Veterans Affairs Healthcare System, Minneapolis, Minnesota; [11]Division of Gastroenterology and Hepatology, Department of Medicine, University of California San Diego, La Jolla, California; and [12]Division of Gastroenterology, Louis Stokes Cleveland Veterans Affairs Medical Center, Cleveland, Ohio

Body Mass Index (BMI) Categories

Table 6. Classification of Overweight and Obesity by BMI and Waist Circumference (31 [EL 4; NE])				
Classification	BMI		Waist	
	BMI (kg/m^2)	Comorbidity Risk	Waist Circumference and Comorbidity Risk	
			Men ≤40 in (102 cm) Women ≤35 in (88 cm)	Men >40 in (102 cm) Women >35 in (88 cm)
Underweight	<18.5	Low but other problems		
Normal weight	18.5–24.9	Average		
Overweight	25–29.9	Increased	Increased	High
Obese class I	30–34.9	Moderate	High	Very high
Obese class II	35–39.9	Severe	Very high	Very high
Obese class III	≥40	Very severe	Extremely high	Extremely high
Abbreviations: BMI = body mass index; in = inches.				

AACE/ACE Clinical Practice Guidelines for Comprehensive Medical Care of Patients with Obesity. 2016

Risk Factors

- Lack of physical activity
- Unhealthy eating patterns
- Not enough sleep or poor sleep quality
- Too much TV, computer, video games, and other screen time
- Stress
- Health conditions (e.g., Cushing Syndrome)
- Medications (e.g., steroids)
- Genes (e.g., Prader-Willi Syndrome)
- Environment

https://www.cdc.gov/obesity/risk-factors/risk-factors.html

Lifestyle Therapy

Figure 4. Lifestyle Therapy

Evidence-based lifestyle therapy for treatment of obesity should include 3 components
Recommendations: R64 through R75

Meal Plan (R64, R65, R66)	Physical Activity (R64, R67, R68, R69, R70, R71)	Behavior (R64, R72, R73, R74, R75)
• Reduced-calorie healthy meal plan • ~500–750 kcal daily deficit • Individualize based on personal and cultural preferences • Meal plans can include: Mediterranean, DASH, low-carb, low-fat, volumetric, high protein, vegetarian • Meal replacements • Very low-calorie diet is an option in selected patients and requires medical supervision Team member or expertise: dietitian, health educator	• Voluntary aerobic physical activity progressing to >150 minutes/week performed on 3–5 separate days per week • Resistance exercise: single-set repetitions involving major muscle groups, 2–3 times per week • Reduce sedentary behavior • Individualize program based on preferences and take into account physical limitations Team member or expertise: exercise trainer, physical activity coach, physical/occupational therapist	An interventional package that includes any number of the following: • Self-monitoring (food intake, exercise, weight) • Goal setting • Education (face-to-face meetings, group sessions, remote technologies) • Problem-solving strategies • Stimulus control • Behavioral contracting • Stress reduction • Psychological evaluation, counseling, and treatment when needed • Cognitive restructuring • Motivational interviewing • Mobilization of social support structures Team member or expertise: health educator, behaviorist, clinical psychologist, psychiatrist

Indications for Therapy

- Failure to achieve weight loss of ≥5% of baseline weight after 6 months of lifestyle interventions **AND**

- BMI ≥30 kg/m^2 **OR**
- BMI ≥27 kg/m^2 with ≥1 weight-related complications (type 2 diabetes, hypertension, high cholesterol, or sleep apnea)

AGA Clinical Practice Guideline on Pharmacological Interventions for Adults with Obesity. Gastroenterology. 2022;163:1198-1225

Pharmacotherapy

Choose therapy based on safety, co-morbidities, desired weight loss

Name (Trade Names)	Year Approved	Mechanism of Action / Clinical Effect	Average placebo-subtracted weight loss (%)	Achieved ≥5% Weight Loss, Intervention vs. placebo (%)
*Approved for short-term use**				
Phentermine (Adipex, Lomaira) (41)	1959	Sympathomimetic / Suppresses appetite	4.4 at 28 wks	49 vs.16 at 28 wks
Diethylpropion (42)	197 1979	Sympathomimetic / Suppresses appetite	6.6 at 6 months	67.6 vs. 25.0
Approved for long-term use				
Orlistat (Alli, Xenical) (43)	1999	Intestinal lipase inhibitor / Reduces fat absorption by up to 30%	3.8	50.5 vs. 30.7
Phentermine-topiramate (Qsymia) (26)	2012	Combination sympathomimetic and carbonic anhydrase inhibitor / Decreases appetite and binge eating behaviors	8.6	70 vs. 21
Bupropion-naltrexone (Contrave) (44)	2014	Combination of a dopamine and norepinephrine re-uptake inhibitor and mu-opioid receptor antagonist / Decreases appetite and cravings	4.8	48 vs. 16
Liraglutide 3.0mg (Saxenda) (28)	2014	GLP-1 receptor agonist / Decreases appetite, increases fullness, increases satiety	5.4	63.2 vs. 27.1
Gelesis100 (Plenity) (45)	2019	Superabsorbent hydrogel particles of a cellulose-citric acid matrix / Increases fullness. Considered a medical device but functions as a medication.	2.0 at 6 months	58.6 vs. 42.2
Setmelanotide (Imciveree)	2020	Melanocortin-4-receptor agonist / Decreases appetite	Not applicable 12.5-25.6†	Not applicable 64-90†
Semaglutide 2.4 mg (Wegovy)	2021	GLP-1 receptor agonist / Decreases appetite, increases fullness, increases satiety	12.4	86.4 vs. 31.5
Tirzepatide (Zepbound)	2023	GLP-1 and GIP receptor agonist / Decreases appetite, increases fullness, increases satiety	17.8	91 vs 35

Tohang BG. Pharamacologic Treatment of Overweight and Obesity in Adults. Endotext. 2024. AGA Clinical Practice Guideline on Pharmacological Interventions for Adults with Obesity. Gastroenterology. 2022;163:1198-1225

AGA Recommendations to Consider When Choosing Therapy

Medication	Preferred Scenarios	Avoid
Semaglutide (Wegovy)	1st Line	Medullary thyroid cancer, MEN2*
Liraglutide (Saxenda)	Diabetes	Medullary thyroid cancer, MEN2
Phentermine-topiramate ER	Migraines	CV disease, uncontrolled HTN
Naltrexone-bupropion ER	Smoking cessation, Depression	Seizure disorders, opiate use

*MEN2: Multiple endocrine neoplasia syndrome type 2; AGA Clinical Practice Guideline on Pharmacological Interventions for Adults with Obesity. Gastroenterology. 2022;163:1198-1225

Semaglutide Dosing

Dosing Pearls

- Titrate every 4 weeks to reduce GI symptoms
- Can titrate slower than 4 weeks to minimize GI symptoms and build up tolerance
- Titration differs from T2DM
- Titrate to target dose of 2.4mg weekly
- Can take missed dose up to 5 days late
- Discontinue if < 5% weight loss within 3 months

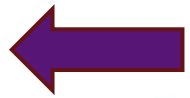
Week 1-4
0.25mg weekly

Week 5-8
0.50mg weekly

Week 9-12
1.0mg weekly

Week 13-16
1.7mg weekly

Week 17
2.4mg weekly



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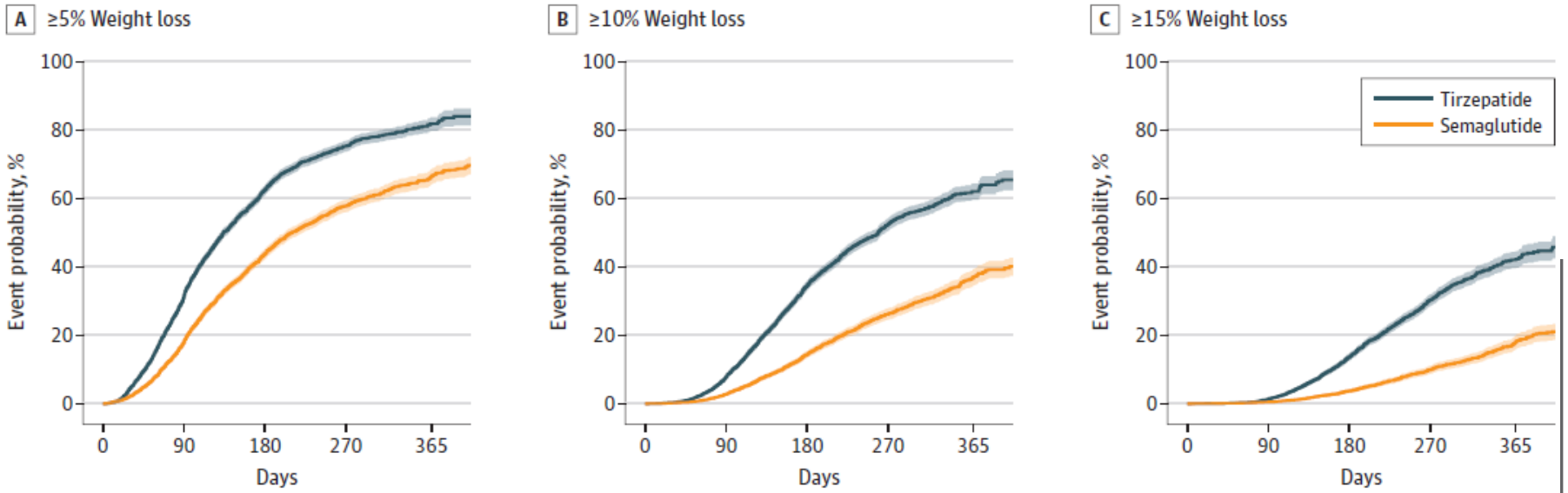
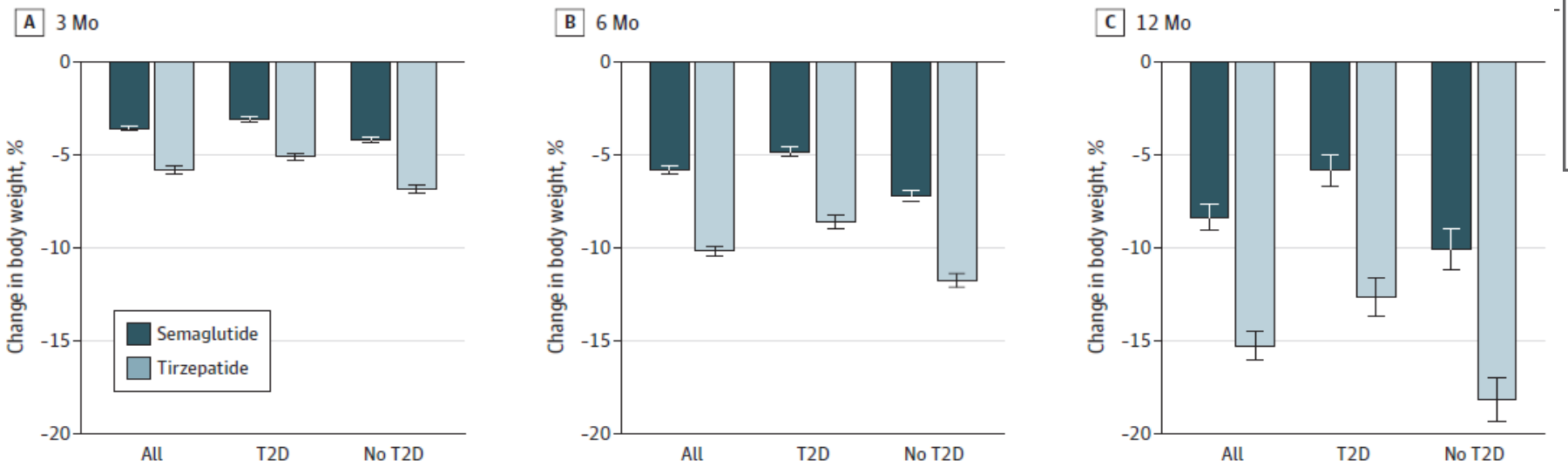
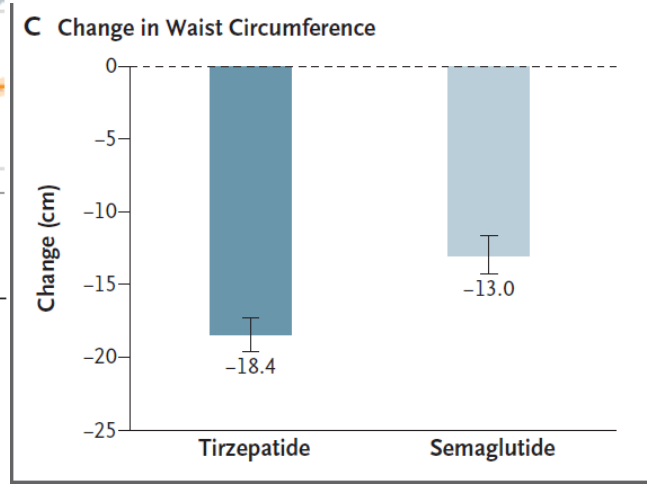
RBC Cardinal Health DENVER JULY 9-12, 2025

Semaglutide. In: Lexi-drugs online. 2023.

Semaglutide vs. Tirzepatide: Weight Loss







Rodriquez PJ. Semaglutide vs Tirzepatide for Weight Loss in Adults with Overweight or Obesity. JAMA. 2024; SURMOUNT-5. NEJM. 2025

Semaglutide vs. Tirzepatide: CVD

Semaglutide (Wegovy)

- FDA labeled for risk reduction of major adverse cardiovascular events in adults with established CVD and either obesity or overweight
- 6.16 mmHg drop in systolic BP and 2.83 mmHg drop in diastolic BP (STEP 1 Trial)
- 24% reduction in onset of kidney failure (FLOW Trial)
- Heart failure with preserved ejection fraction, improvement in quality of life (STEP HFpEF Trial)
- Reduction in NASH 59% 0.4mg dose

Tirzepatide (Zepbound)

- FDA labeled for moderate to severe obstructive sleep apnea (SURMOUNT-OSA Trial)
- 5-7 mmHg drop in systolic BP (SURMOUNT-1-3 Trials)
- Reduction of triglycerides 33% (SURMOUNT-4 Trial)
- Reduction in MASH 62% with 15mg dose (SYNERGY-NASH)

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MASH: metabolic-associated steatohepatitis; Tohang BG. Pharamacologic Treatment of Overweight and Obesity in Adults. Endotext. 2024.

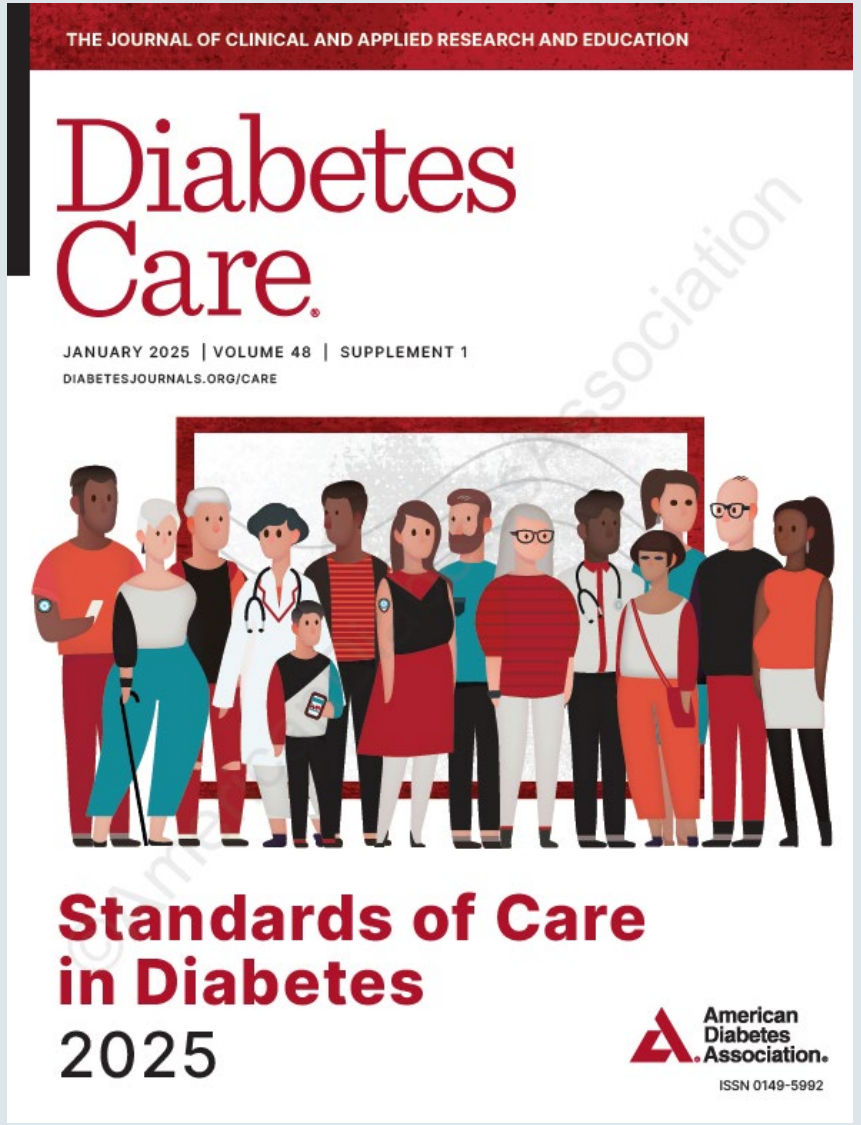
RBC Cardinal Health DENVER JULY 9-12, 2025

Impact of Weight Loss Drugs on Lipids and Weight

Intervention	Change TG[a]	Change HDL-C[a]	Change LDL-C[a]	Change weight[a]
Anti-obesity medications				
Orlistat	−0.09 mmol (−8 mg/dL)	−0.034 mmol/L (−1.3 mg/dL)	−0.27 mmol/L (−10.44 mg/dL)	−2.12 kg
Phentermine/topiramate	−13.38%	+4.62%	−0.96%	−7.73 kg
Naltrexone/bupropion	−11 to −15 mg/dL	+3 to +5 mg/dL	−1 to −4 mg/dL	
Liraglutide	−23 mg/dL	−0.4 mg/dL	−4.6 mg/dL	−2.38 kg
Semaglutide	−15.64%	+4.24%	−2.18%	−8.51%
Tirzepatide	−20.3 mg/dL	+8.8 mg/dL	−4.2%	−17.8% with 15-mg dose
Pharmacotherapy in general	−1.25 mg/dL per one kg weight reduction	+0.37 mg/dL per one kg weight reduction	−1.67 mg/dL per one kg weight reduction	NA
Bariatric surgery				
Gastric bypass	−36 to −63%	+23 to +39%	−17 to −31%	−35%
Sleeve gastrectomy	−35 to −42%	+19 to +28%	−12 to −23%	−34%
Bariatric surgery in general	−2.47 mg/dL per one kg weight reduction	+0.42 mg/dL per one kg weight reduction	−0.33 mg/dL per one kg weight reduction	NA

Joint expert review from the Obesity Medicine Association and National Lipid Association. Obesity Pillars. 2024.

Diabetes



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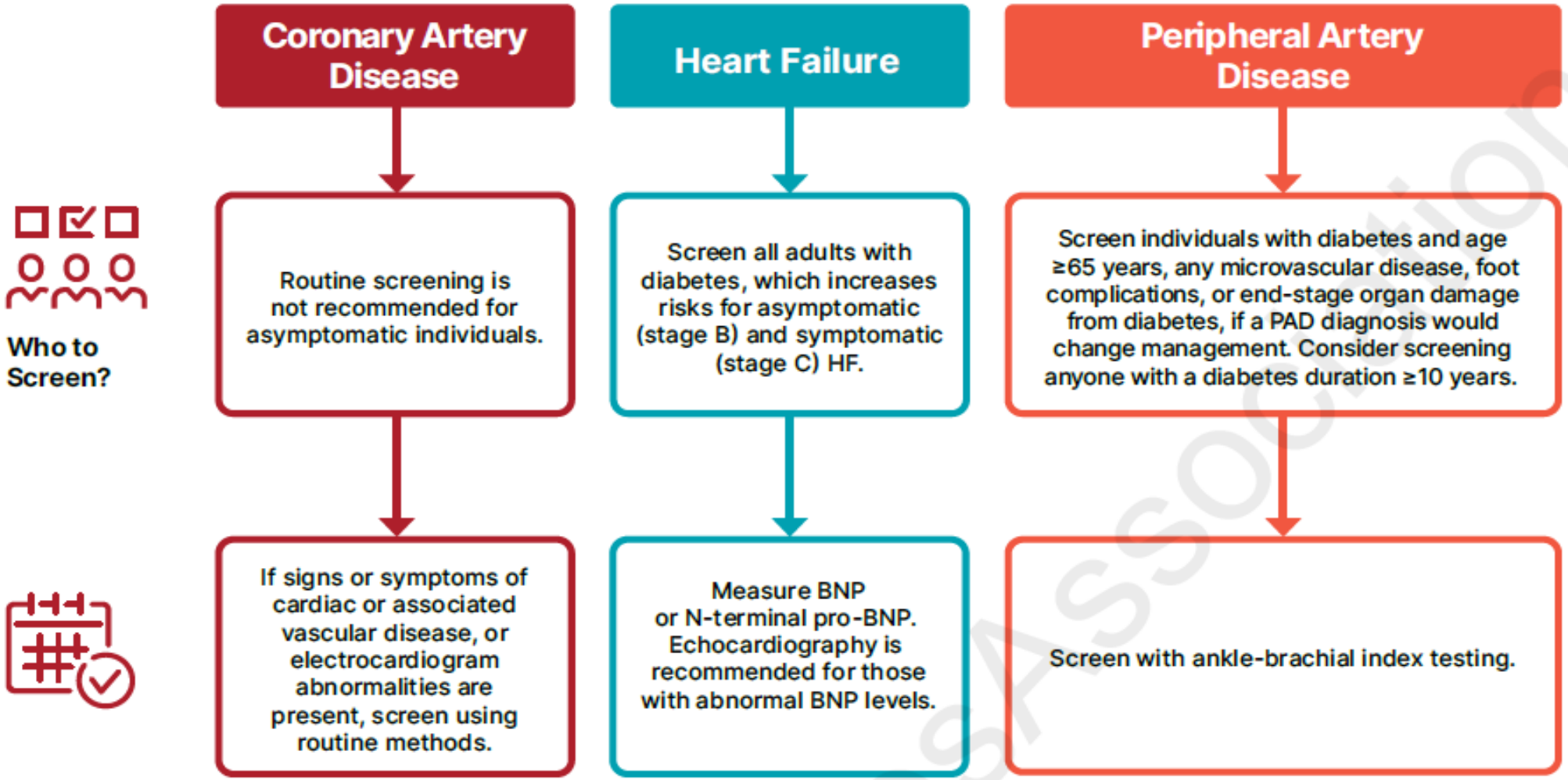
Risk Factors

1. Testing should be considered in adults with overweight or obesity (BMI ≥25 kg/m^2 or ≥23 kg/m^2 in individuals of Asian ancestry) who have one or more of the following risk factors:
   - First-degree relative with diabetes
   - High-risk race, ethnicity, and ancestry (e.g., African American, Latino, Native American, Asian American)
   - History of cardiovascular disease
   - Hypertension (≥130/80 mmHg or on therapy for hypertension)
   - HDL cholesterol level <35 mg/dL (<0.9 mmol/L) and/or triglyceride level >250 mg/dL (>2.8 mmol/L)
   - Individuals with polycystic ovary syndrome
   - Physical inactivity
   - Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans, metabolic dysfunction–associated steatotic liver disease)
2. People with prediabetes (A1C ≥5.7% [≥39 mmol/mol], IGT, or IFG) should be tested yearly.
3. People who were diagnosed with GDM should have testing at least every 1–3 years.
4. For all other people, testing should begin at age 35 years.
5. If results are normal, testing should be repeated at a minimum of 3-year intervals, with consideration of more frequent testing depending on initial results and risk status.
6. Individuals in other high-risk groups (e.g., people with HIV, exposure to high-risk medicines, evidence of periodontal disease, history of pancreatitis) should also be closely monitored

ADA 2025 Standards of Care Table 2.5

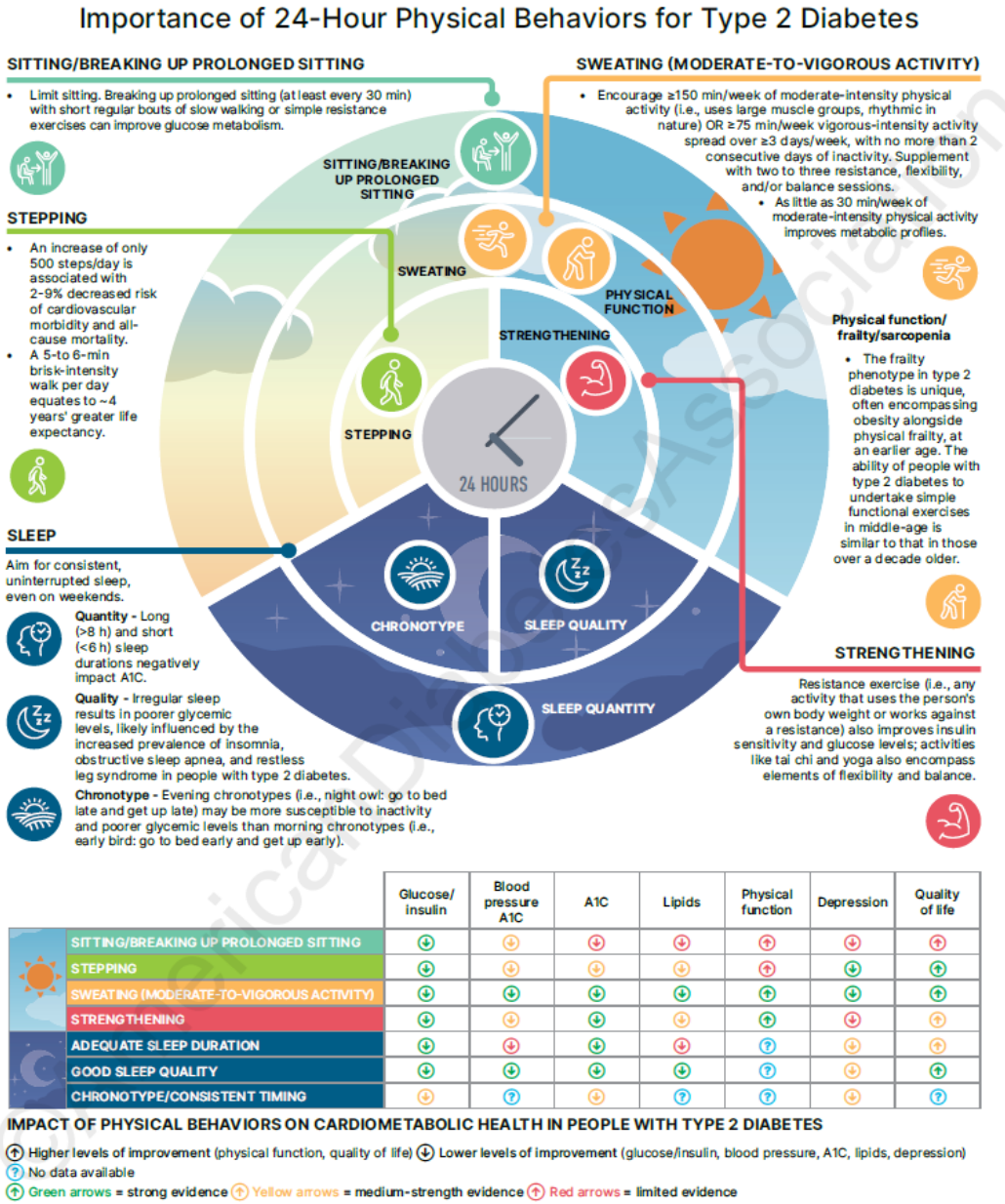
Screening for CVD

Screening for Undiagnosed Cardiovascular Disease



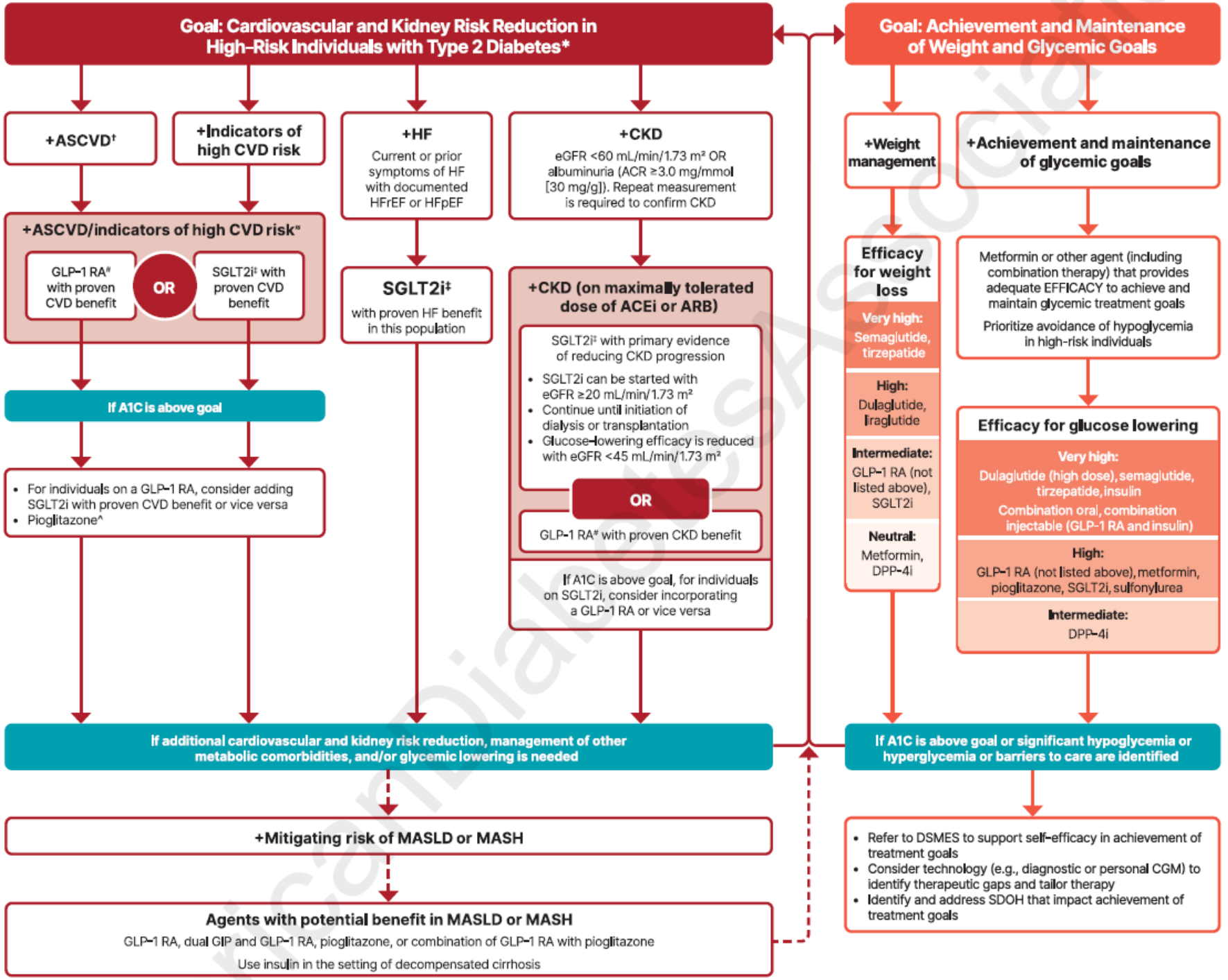
ADA 2025 Standards of Care Figure 10.5

Lifestyle Considerations



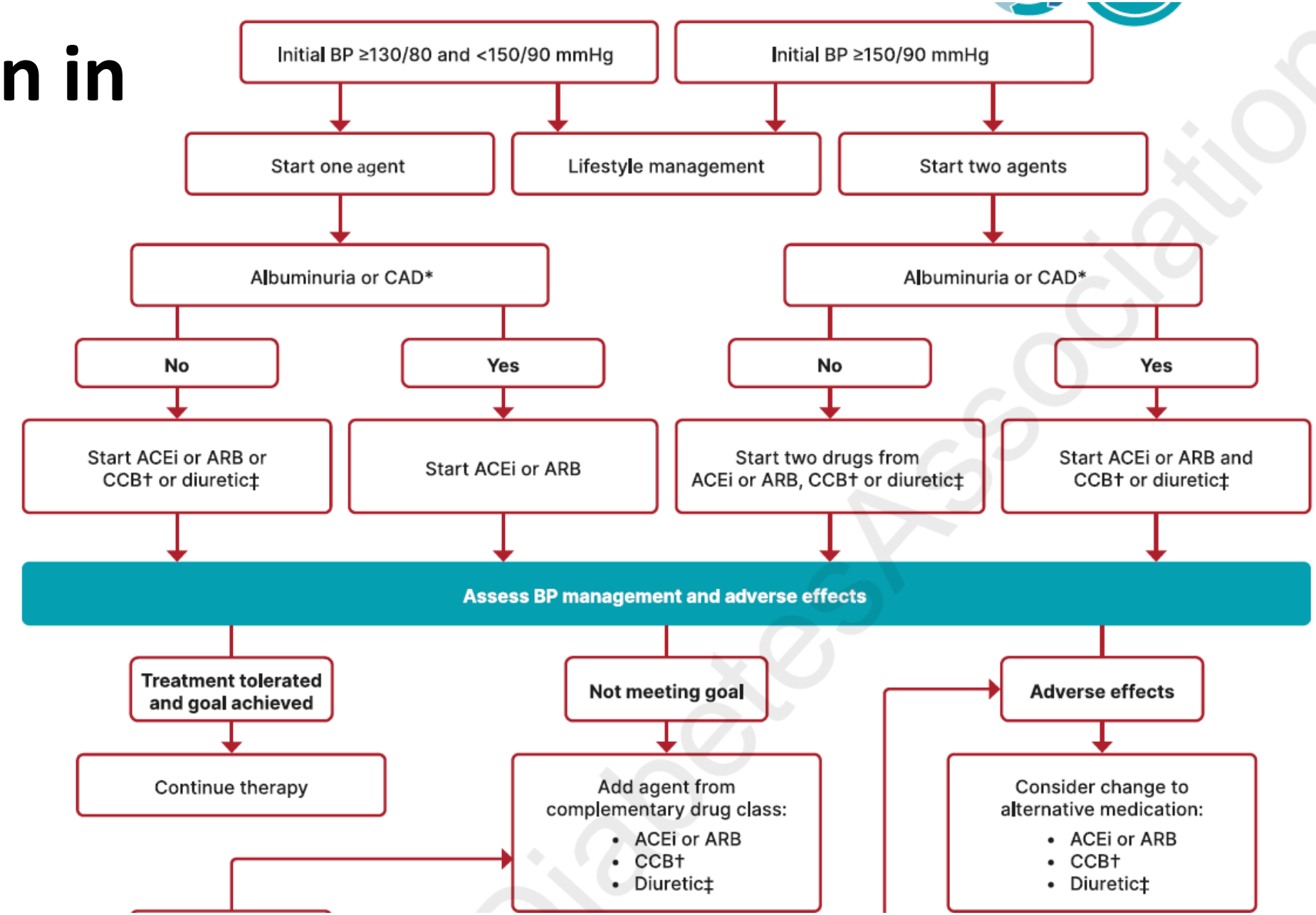
ADA 2025 Standards of Care Figure 5.2

Treatment



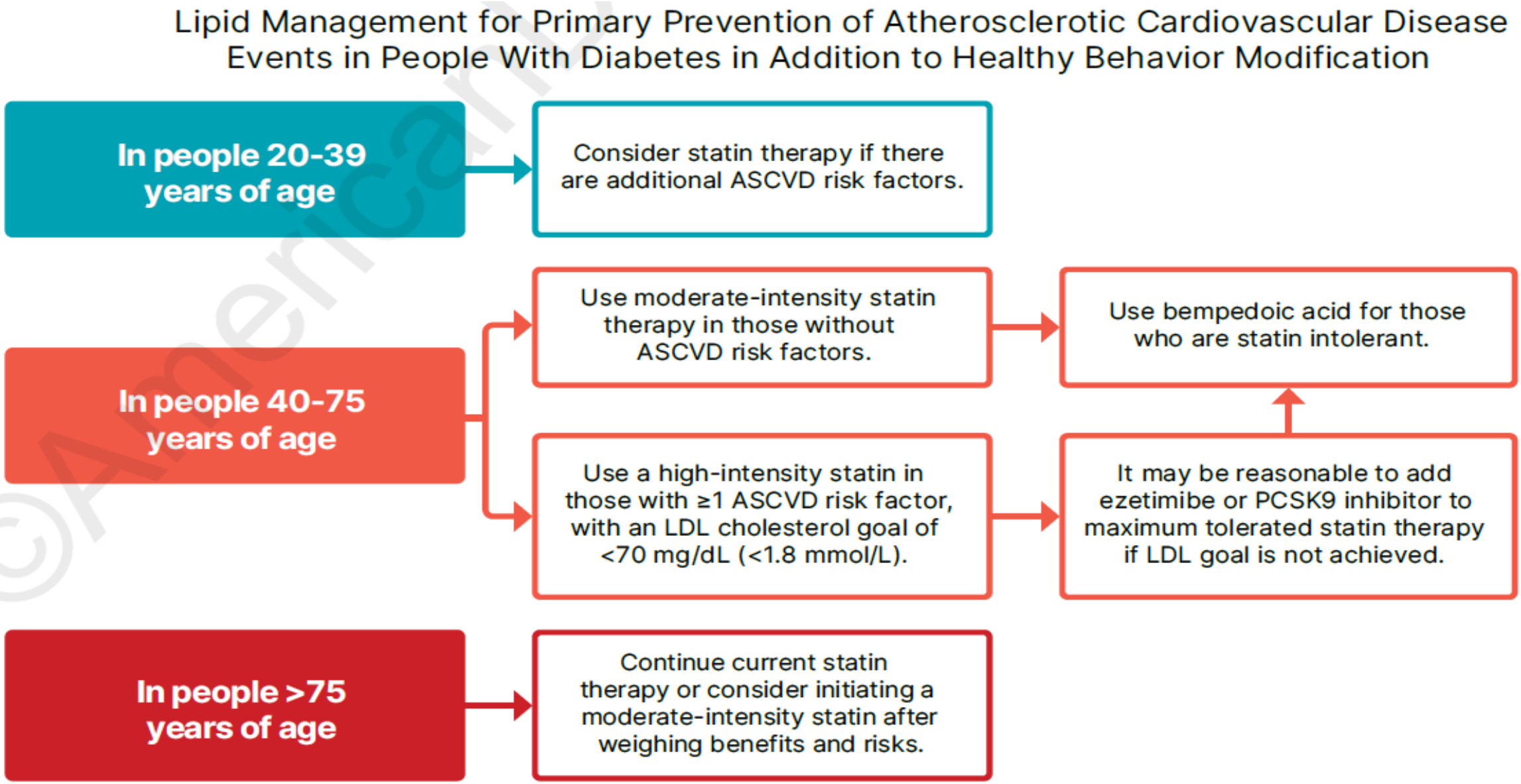
ADA 2025 Standards of Care Figure 9.3

Hypertension in Diabetes



ADA 2025 Standards of Care Figure 10.2

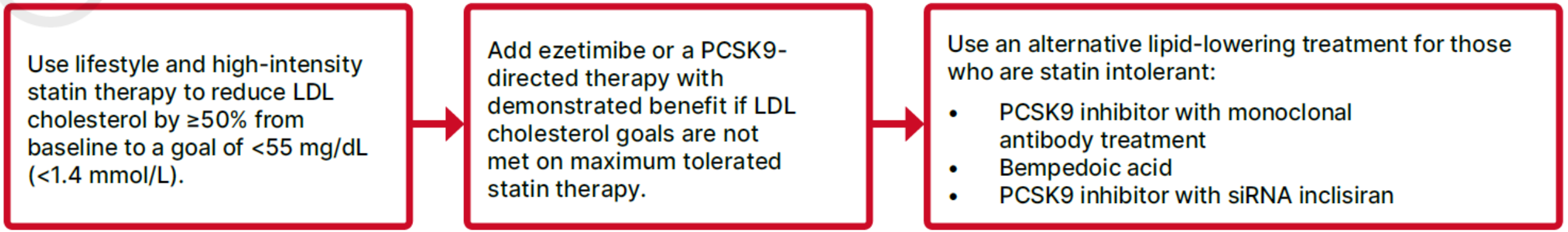
Lipid Management in Diabetes



ADA 2025 Standards of Care Figure 10.3

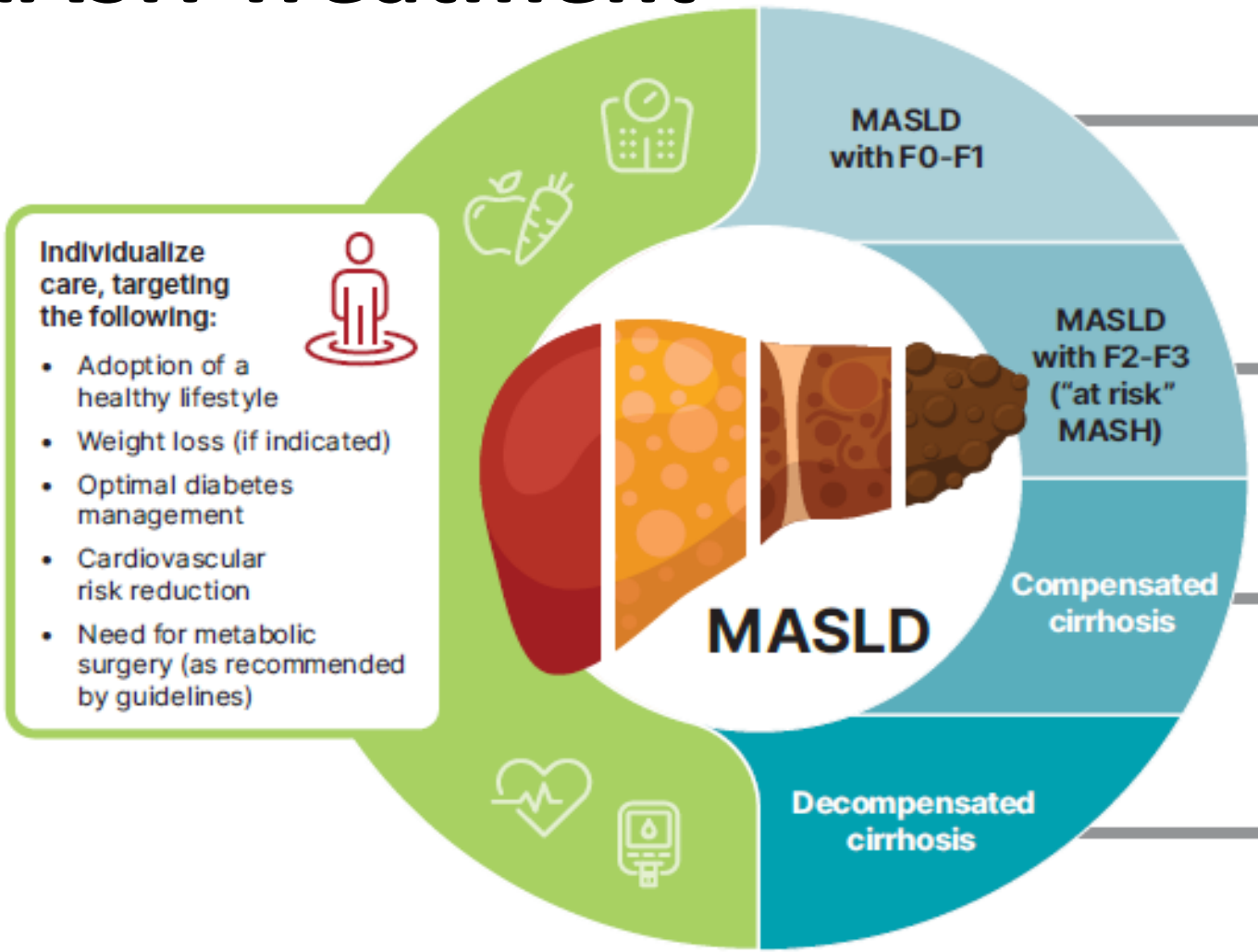
Lipid Management in Diabetes – Secondary Prevention

Lipid Management for Secondary Prevention of Atherosclerotic Cardiovascular Disease Events in People With Diabetes



ADA 2025 Standards of Care Figure 10.4

MASH Treatment



Obesity pharmacotherapy	Diabetes pharmacotherapy	MASH pharmacotherapy
Prefer GLP-1 RA, dual GIP and GLP-1 RA	Prefer GLP-1 RA, dual GIP and GLP-1 RA, pioglitazone, SGLT2i	Not indicated

Obesity pharmacotherapy	Diabetes pharmacotherapy	MASH pharmacotherapy
Prefer GLP-1 RA, dual GIP and GLP-1 RA	Prefer GLP-1 RA, dual GIP and GLP-1 RA, pioglitazone	Resmetirom

Obesity pharmacotherapy	Diabetes pharmacotherapy	MASH pharmacotherapy
As with F2-F3 with caution*	As with F2-F3 with caution*	ⓘ AVOID

Obesity pharmacotherapy	Diabetes pharmacotherapy	MASH pharmacotherapy
ⓘ AVOID	Only use insulin	ⓘ AVOID

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MASH: Metabolic Associated Steatotic Liver Disease; ADA 2025 Standards of Care Figure 4.3

RBC Cardinal Health DENVER JULY 9-12, 2025

New or In Development Medications

- **Hypertension**
  - Aprocitentan (Tryvio) – NEW class, endothelin receptor antagonist
    - Indicated for resistant hypertension
  - Lorundrostat (phase 2b trials) – aldosterone antagonist
- **Weight Loss**
  - Retatrutide (phase 2 trial) – GLP-1, GIP and glucagon agonists
  - Arforglipron (phase 2 trial) – GLP1 agonists
  - Bimagrimab (phase 2 trial) – Activin type 2 receptor antagonists on skeletal myloblasts
- **Diabetes**
  - Retatrutide (phase 2 trial) – GLP-1, GIP and glucagon agonists
  - Petralintide + CT388 (phase 2 trials) – Amylin analogue with GLP1, GIP
  - Dapiglutide (phase 2 trial) – GLP-1 and GIP agonists

https://www.flipthepharmacy.com/hypertension. https://www.snomed.org. https://www.pharmacyhit.org

Published Evidence

Learners, Payment, Clinical Services, and Advancing Technicians

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Pharmacy Students!

Purpose	Assess the clinical impact of a community IPPE focused on health and wellness by P2 students
Participants	147 students at 89 community pharmacies (38 independent, 33 chain and 18 grocery)
Method	1-week 40 hour IPPE with three categories of activities: immunizations, health screenings, and patient counseling
Results	985 blood pressure measurements performed
Clinical Application	Pharmacy students were able to add value added pharmacy services to the pharmacy, help the surrounding community, and gain needed clinical experiences

McDowell L. Clinical impact of a community pharmacy-based health and wellness introductory pharmacy practice experience. JAPhA. 2022;62:63.

Flying Solo!

Purpose	Describe the implementation and effectiveness of a self-measured blood pressure program in a community pharmacy
Participants	1 independent pharmacy (L and S Pharmacy) in rural southeast Missouri. Collaboration with the University of Missouri-Kansas City, Mississippi County Health Department, and CPESN-Missouri
Method	Pharmacist provided medication therapy management, adherence monitoring, immunizations and reimbursed clinical services. Participants had 4 sessions. SNOMED codes used 3915509 (hypertension education), 50723001 (education), and 135840009 (monitoring)
Results	20 participants with all patients being satisfied with service
	Program took 63 minutes of staff time per patient
	Systolic blood pressure decreased by 17 mmHg (P=0.001) and diastolic 12 mmHg (P<0.001)
	Labor cost estimated to be $63.59 per patient. Reasonable request for $174/patient

Jarvis H. Implementation of a self-measured blood program in a community pharmacy: a pilot study. JAPhA. 2022;62:S41.

Willingness to Pay

Purpose	Identify the demographics and willingness to pay preferences on point of care services
Participants	188 participants across the US
Method	Third-party surveying firm administered online survey using Qualtrics
Results	75% of participants who preferred the community pharmacy for point of care services indicated they would pay $50 or more
	79% of the total survey respondents indicated they would pay $50 or less
	Largest demographic was 20-34 years of age

Hohmeier K. Consumer perceptions of and willingness-to-pay for point-of-care testing in the community pharmacy. RSAP. 2018;14:360

Disease Management Programs

Purpose	Identify components within the disease management program that would be billable and generate revenue to each pharmacy and estimate the revenue amount that could be generated
Participants	12 rural Colorado pharmacies
Method	Diabetes self-management education, MTM services, and improvements in Medicare Star ratings
Results	Estimated net profit of $60,023 over 3 years; Diabetes self-management $55 for individual / 30 minutes and $15 for group / 30 minutes; MTM Comprehensive Medication Review $35-75 per review

Nuffer W. Estimated potential financial impact of pharmacist-delivered disease management services across a network of pharmacies in rural Colorado. J Manag Care Spec Pharm. 2019; 25(9):984

Meta-analysis of Pharmaceutical Care Services in the Community

Purpose	Describe community pharmacy led interventions on clinical, economic, humanistic and behavioral outcomes
Participants	29 published studies between 1999 and Oct 2023 (started with 310 abstracts)
Method	Interventions include medication reviews, education, resolving drug related problems, and collaborating with physician
Results	Improvement in knowledge regarding condition, improvement in clinical outcomes, and reduction in hospitalizations and ER visits

Fares R. The outcomes of pharmacist-led pharmaceutical care within community pharmacies. RSAP. 2025;21:332.

ASHP Statement

Table 2. Advanced pharmacy technician responsibilities in community pharmacy.

Patient care responsibilities	Operational responsibilities
• Administer immunizations and promote vaccine confidence. • Collect medication history. • Conduct point-of-care tests. • Identify and resolve barriers to medication access or care. • Enroll patients in patient assistance programs. • Serve as patient advocate. • Assist with patient adherence efforts. • Leverage patient relationships to promote preventive and essential health services. • Obtain additional training (e.g., as a community health worker).	• Engage in technician product verification and tech-check-tech programs. • Coordinate 340B activities. • Manage billing, prior authorizations, and financial affairs. • Manage pharmacist schedules and consultations. • Supervise ancillary staff. • Provide peer education and training. • Gather data and generate metrics and reports. • Oversee medication inventory and surveillance. • Assist in pharmacy workflow optimization. • Contribute to continuous quality improvement and patient safety efforts.

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Ortega M, et al. ASHP Statement on the Community Pharmacist's Role in the Care Continuum. 2024

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Pharmacy Technicians as Community Health Workers (CHW)

Purpose	Quantify and report the CHW services provided by certified pharmacy technicians (CPhT) in an underserved population and provide initial framework for implementation of CHW services in community pharmacies
Participants	3 independent pharmacies and 3 trained technicians
Method	CPhT-CHW's conducted monthly patient visits by phone, patient's home, or pharmacy
Results	198 patient visits which included 351 services and 51 referrals. Average time spent per visit was 15.5, 68.9, and 30.6 minutes (phone, home, and pharmacy)

Service type	Phone (n = 241), n (%)	Patient home (n = 63), n (%)	Pharmacy (n = 47), n (%)	Total (n = 351), n (%)
Pharmacy-related services	139 (58%)	31 (49%)	9 (19%)	179 (51%)
Social services	7 (3%)	20 (32%)	0	27 (8%)
Medication cost reduction	77 (32%)	4 (6%)	36 (77%)	118 (33%)
Preventative health services/Health promotion	18 (7%)	8 (13%)	2 (4%)	27 (8%)

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Yoon H, et al. Pharmacy technicians trained as community health workers. JAPhA. 2024.64:47-54.

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Patient Care

- Hypertension
- Dyslipidemia
- Weight Loss
- Diabetes
- CV Risk Reduction

Preventing Cardiovascular Disease

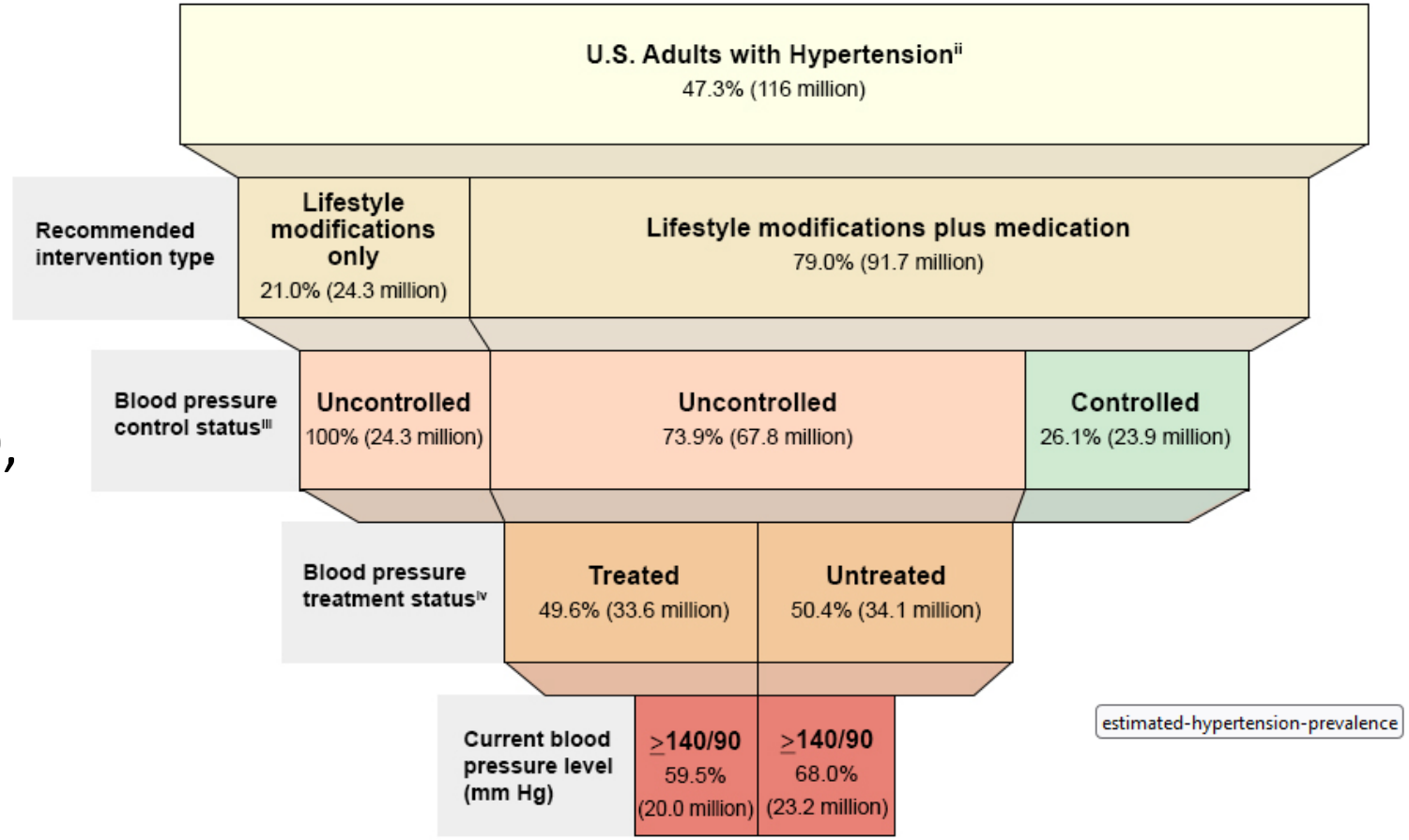
1. Lifestyle changes
2. Control of risk factors
3. Timely, effective treatment

cdc.gov: cardiovascular disease. https://www.cdc.gov/cdi/indicator-definitions/cardiovascular-disease.html

Screening

Medication Synchronization Benefits

- Program that aligns the refill dates for two or more prescriptions (e.g., Simplify My Meds, StarWellness)
- Meta-analysis of 9 studies found that med sync is associated with greater odds of adherence (OR 2.29, CI 1.99-2.64)
- 25% do not fill initial antihypertensive prescription after 1st year with medication possession ratio 50%



Selection and Placement of BP Cuff

- Use a validated device www.validatebp.org
- Position the middle of the cuff on the upper arm at the level of the right atrium
- Cuff bladder length should be ≥80% of arm circumference
- Cuff bladder width should be ≥40% of arm circumference

Arm Circumference	Usual Cuff Size
22-26 cm	Small adult (12 x 22 cm)
27-34 cm	Adult (16 x 30 cm)
35-44 cm	Large adult (16 x 36 cm)
45-52 cm	Adult thigh (16 x 42 cm)

Technique

1. No talking while obtaining blood pressure
2. Have patient sit in a comfortable chair with back supported for at least 5 minutes and relaxed
3. Have both feet flat on the ground and legs uncrossed
4. Support or rest arm with cuff on a table at chest height
5. Cuff should be on bare skin
6. Inflate cuff to 20-30 mmHg above expected
7. Deflate cuff 2 mmHg per second
8. Record systolic as first Korotkoff sound and diastolic as the disappearance of the Korotkoff sound

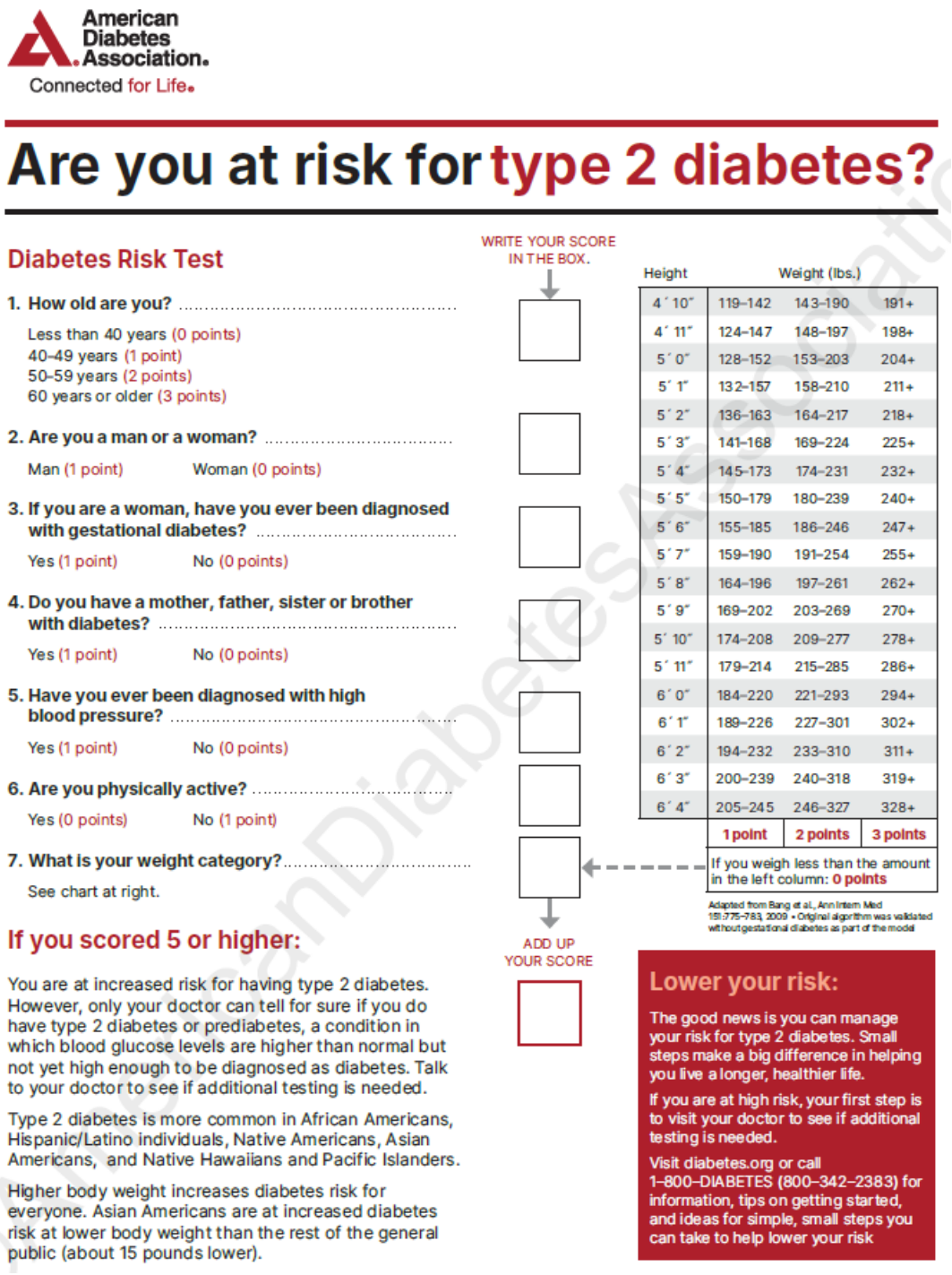
Factor	BP Change Systolic/Diastolic mmHg
Talking	+ 10 / 10
Cuff over clothing	+ 5-50 /
Cuff too small	+ 10 / 2-8
Smoking within 30 minutes	+ 6-20 /
Back unsupported	+ 6-10 /
Arm unsupported, sitting	+ 6-8 /

Table 8 from 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol.* 2018; 71:e127-e248.
https://CDC.gov/bloodpressure/measure.htm; Table 1: Handler J. The importance of accurate blood pressure measurement. Permanente Journal. 2009;13(3):51-54

Diabetes Screening

Pre-Diabetes A1c 5.7-6.4%

Fasting Blood Sugar 100-125 mg/dL



American Diabetes Association.
Connected for Life.

Are you at risk for type 2 diabetes?

Diabetes Risk Test

WRITE YOUR SCORE IN THE BOX.

1. How old are you?

Less than 40 years (0 points)
40–49 years (1 point)
50–59 years (2 points)
60 years or older (3 points)

2. Are you a man or a woman?

Man (1 point) Woman (0 points)

3. If you are a woman, have you ever been diagnosed with gestational diabetes?

Yes (1 point) No (0 points)

4. Do you have a mother, father, sister or brother with diabetes?

Yes (1 point) No (0 points)

5. Have you ever been diagnosed with high blood pressure?

Yes (1 point) No (0 points)

6. Are you physically active?

Yes (0 points) No (1 point)

7. What is your weight category?

See chart at right.

Height	Weight (lbs.)		
4′ 10″	119–142	143–190	191+
4′ 11″	124–147	148–197	198+
5′ 0″	128–152	153–203	204+
5′ 1″	132–157	158–210	211+
5′ 2″	136–163	164–217	218+
5′ 3″	141–168	169–224	225+
5′ 4″	145–173	174–231	232+
5′ 5″	150–179	180–239	240+
5′ 6″	155–185	186–246	247+
5′ 7″	159–190	191–254	255+
5′ 8″	164–196	197–261	262+
5′ 9″	169–202	203–269	270+
5′ 10″	174–208	209–277	278+
5′ 11″	179–214	215–285	286+
6′ 0″	184–220	221–293	294+
6′ 1″	189–226	227–301	302+
6′ 2″	194–232	233–310	311+
6′ 3″	200–239	240–318	319+
6′ 4″	205–245	246–327	328+
	1 point	2 points	3 points

If you weigh less than the amount in the left column: **0 points**

ADD UP YOUR SCORE

Adapted from Bang et al., Ann Intern Med 151:775–783, 2009 • Original algorithm was validated without gestational diabetes as part of the model

If you scored 5 or higher:

You are at increased risk for having type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes, a condition in which blood glucose levels are higher than normal but not yet high enough to be diagnosed as diabetes. Talk to your doctor to see if additional testing is needed.

Type 2 diabetes is more common in African Americans, Hispanic/Latino individuals, Native Americans, Asian Americans, and Native Hawaiians and Pacific Islanders.

Higher body weight increases diabetes risk for everyone. Asian Americans are at increased diabetes risk at lower body weight than the rest of the general public (about 15 pounds lower).

Lower your risk:

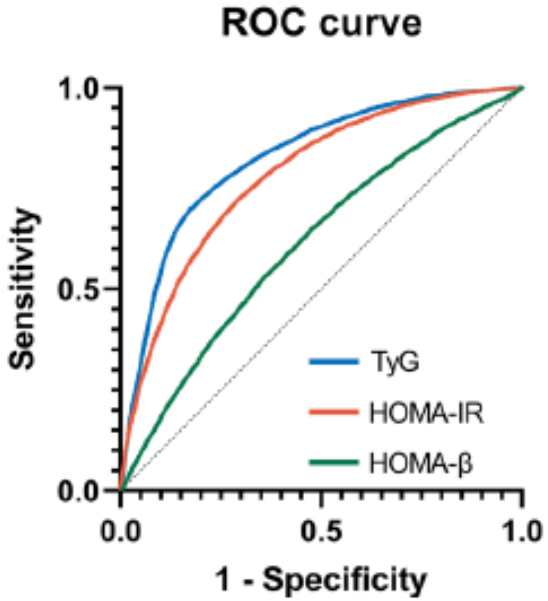
The good news is you can manage your risk for type 2 diabetes. Small steps make a big difference in helping you live a longer, healthier life.

If you are at high risk, your first step is to visit your doctor to see if additional testing is needed.

Visit diabetes.org or call 1–800–DIABETES (800–342–2383) for information, tips on getting started, and ideas for simple, small steps you can take to help lower your risk

TyG Index for CVD

- Marker for insulin resistance predictive of type 2 diabetes, CVD risk, and CV events
- Implemented with existing CardioChek PA and other lipid or glucose analyzers
- Steps to obtain TyG Index:
  - Patient must be fasting for 12 hours before test
  - Calculate TyG index = Ln(fasting triglyceride X fasting glucose)/2
- Values higher than 4.68 indicate increase risk for CV complications



Compare	P-value
TyG vs HOMA-IR	<0.01
TyG vs HOMA-β	<0.01
HOMA-IR vs HOMA-β	<0.01

Pile T. Emerging Biomarker for Detecting Cardiometabolic Risk in Community Pharmacies. US Pharmacist. 2025;50(2); Wan H. Superiority of the TyG Index. Nature. 2024.14:15499

Cardiometabolic – Healthy Weight

- Body fat analysis
- BMI calculations
- Waist circumference

Image from: https://www.fresnomedicalcenter.org/weight-loss-clinics

Education and Communication Principles

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What Does this Mean?

- The revocation by these Regulations of a saving on the previous revocation of a provision does not affect the operation of the saving in so far as it is not specifically reproduced in these Regulations but remains capable of having effect.

Statutory Instrument 1991 No 2680, The Public Works Contracts Regulations 1991, Part 1, 2.4, page 4

Health Literacy

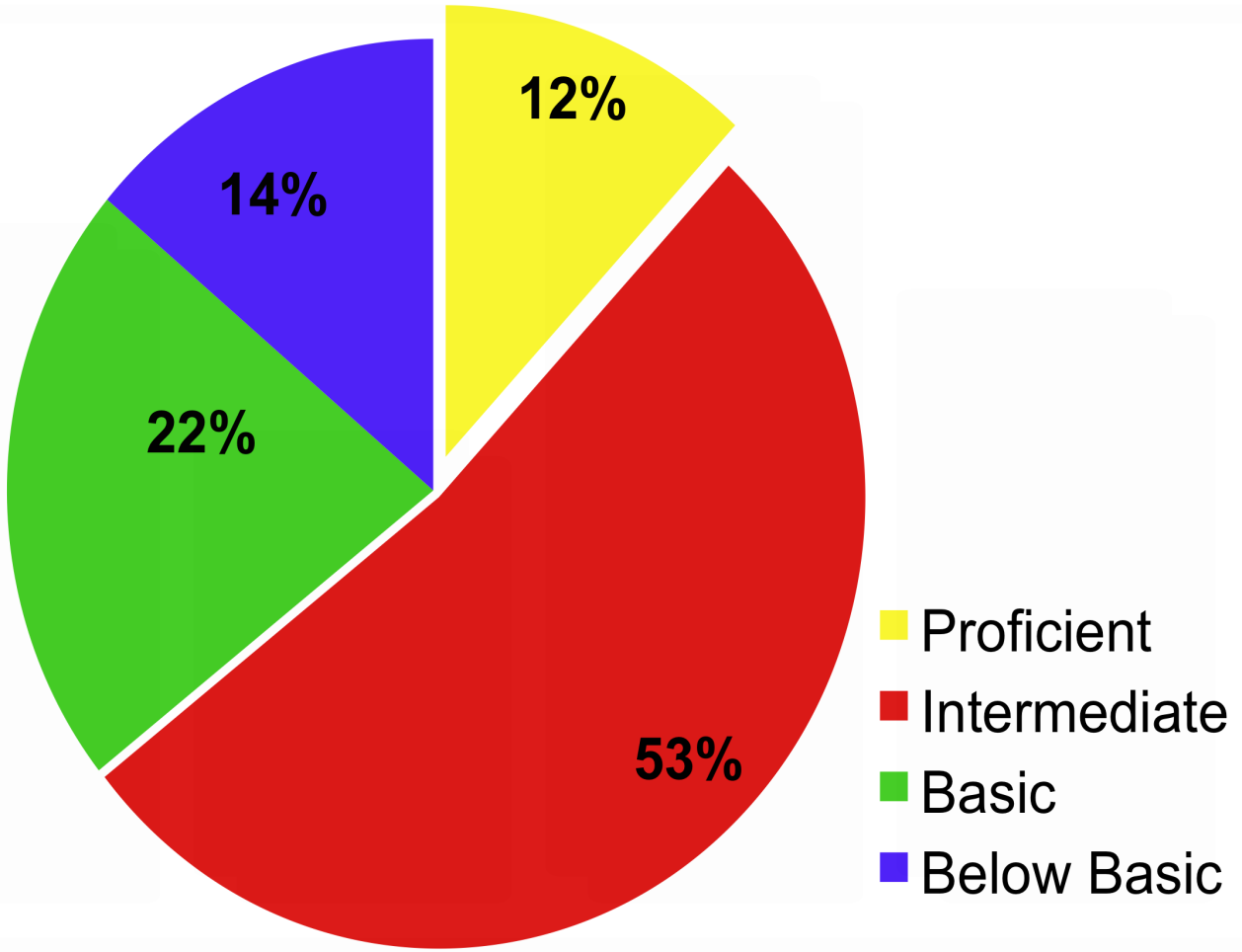
The degree to which individuals have the ability to **find**, **understand**, and **use** information and services to inform health-related decisions and actions for themselves and others.

CDC Health People 2030

Health Literacy Proficiency of Adults

Signs of Low Health Literacy:

1) Doesn't ask questions
2) Identifies medication by color
3) Doesn't know the purpose of the medication
4) Offers excuses when asked to read something



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Nielsen-Bohlman L. Health Literacy: A prescription to end confusion, 2004

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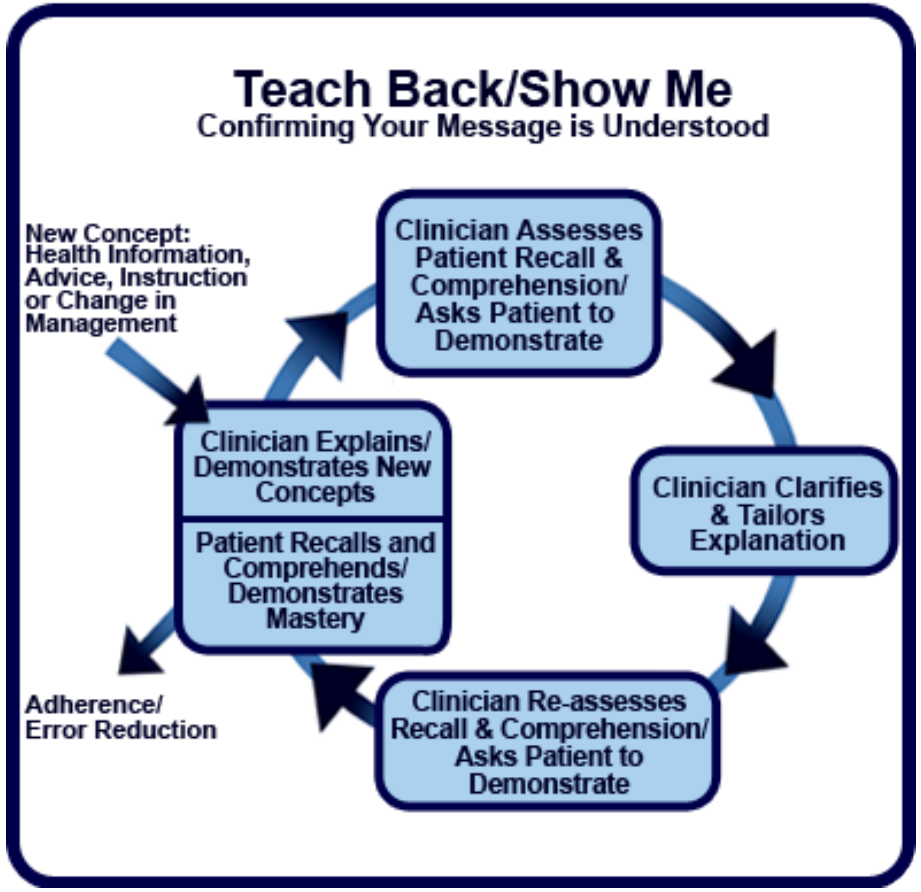
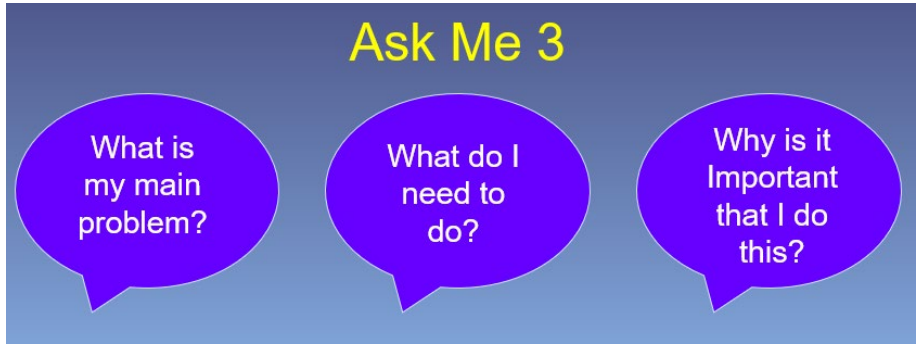
General Tips for Communication

- Make a positive connection
- Demonstrate active listening
- Establish a shared agenda
- Use open-ended questions
- Use plain language
- Provide clear explanations and consider using analogies and visuals
- Reinforce all discussions using principles like teach back and Ask Me 3





Voogt S. Patient Communication: Practical Strategies for Better Interactions. Fam Pract Manag. 2022;29(2):12; WHO. Adherence to Long-Term Therapies, evidence for action, 2003. American College of Preventive Medicine: Medication Adherence

Communicate WITH the Patient

- Establish trust….greet by name, shake hands
- In the last week (or month) how many doses of your medicine have you missed?
- How are you taking your medicine?
- What keeps your from taking your medicine?
- What helps you remember to take your medicine?
- What can I do to help you remember to take your medicine?

Lin E, et al. Working with patients to enhance medication adherence. Clinical Diabetes, 2008.

Person-Centered Strategies for Conversations about Weight

	Instead of This	Try This	Why It Matters
Free from stigma & person-first	▪ Overweight ▪ Obese ▪ Fat	Ask the patient what language they prefer to use: "How do you prefer to talk about your body size/shape?" "What words do you use or at home?" Some examples: ▪ BMI is X ▪ Larger body ▪ Higher weight ▪ Plus size	Medical terms including overweight and obesity are often not preferred and can be viewed as very charged terms. Using these terms could result in medical avoidance, defensiveness, and a strong desire/urge to exit the conversation.[1]
Neutral, non-judgmental, and based on facts, actions, or physiology/biology	▪ Ideal weight ▪ Goal weight ▪ "Your preferred weight is..." ▪ "Your ideal weight is..."	▪ "Your weight is..." ▪ "Your BMI is X" ▪ "Your BMI is higher than X..."	Terms like "ideal weight", "goal weight", etc. are judgmental and convey a false belief that there is a single, universal weight that prevents illness. It does not account for the individual's personal or health goals. Instead, consider focusing on specific habits/behaviors over which the patient does have control rather than making goals about weight. Focusing only on weight can result in feelings of failure when the patient is unable to meet weight goals despite significant efforts. Many behaviors result in improved health markers regardless of weight change.[2]
Avoids unintended consequences or mixed messages	Unsolicited comments on body size or body changes, either observed or measured. ▪ "Wow, you're looking great!" ▪ "Look at how much weight you've lost! I'm so proud of you!" ▪ "You're getting so big!"	▪ "If any, what are some concerns about your weight?" ▪ "How do you view or feel about your body?" ▪ "Have you experienced any significant weight changes?" ▪ If yes: ○ "How do you feel about that?" ○ "What do you think might be going on?"	Fear of comments about body size can result in feelings of shame, self-consciousness, and medical avoidance. Comments on body size, even if intended as a compliment, could trigger disordered eating, which is associated with negative health outcomes.[3] This could result in mixed messages if the weight loss is a result of hyperglycemia/glucosuria.

Adapted from ADCES

Person-Centered Strategies for Conversations about Diabetes

- Neutral, nonjudgmental and based on facts, actions, physiology, or biology
- Free from stigma
- Strengths based, respectful, inclusive and imparts hope
- Fosters collaboration between patients and providers
- Is person centered

Diabetes

Language With Potentially Negative Connotations	Suggested Replacement Language	Rationale
Compliant/compliance/noncompliant/ noncompliance Adherent/nonadherent/adherence/ nonadherence	"He takes his medication about half the time." "She takes insulin whenever she can afford it." "He eats fruits and veggies a few times per week." Engagement Participation Involvement Medication taking	The words listed in the first column are inappropriate and dysfunctional concepts in diabetes care and education. Compliance and adherence imply doing what someone else wants (ie, taking orders about personal care as if a child). In diabetes care and education, people make choices and perform self-care/ self-management. Focus on people's strengths—what are they doing or doing well and how can we build on that? Focus on facts rather than judgments.
Control (as a verb or an adjective)		
Controlled/uncontrolled, well controlled/ poorly controlled	Manage "She is checking blood glucose levels a few times per week." "He is taking sulfonylureas, and they are not bringing his blood glucose levels down enough."	Control is virtually impossible to achieve in a disease where the body no longer does what it is supposed to do. Use words/phrases that focus on what the person is doing or doing well. Focus on intent and good faith efforts, rather than on "passing" or "failing." Focus on physiology/biology and use neutral words that don't judge, shame, or blame.
Control (as a noun)		
Glycemic control, glucose control, poor control, good control, bad control, tight control	A1C Blood glucose levels Blood glucose targets Glycemic target/goal Glycemic stability Glycemic variability	Focus on neutral words and physiology/ biology. Define what "good control" means in factual terms and use that instead.

Dickinson J. The use of language in diabetes care and education.

Imperatives		
Can/can't, should/shouldn't, do/don't, have to, need to, must/must not	"Have you tried . . ." "What about . . ." "May I make a suggestion . . ." "May I tell you what has worked for other people . . ." "What is your plan for . . ." "Would you like to consider . . ."	Words and statements that are directives make people with diabetes feel as if they are being ordered around like children. They can inflict judgment, guilt, shame, and blame.
Regimen, rules	Plan Choices	Use words that empower people, rather than words that restrict or limit them.
Words/phrases that focus on the provider		
"I got him/her to . . ." "I want you to . . ." "Let people . . ."	"He started taking insulin . . ." "She lost 25 pounds . . . " "May we make a plan for . . ." "May I make a suggestion . . ."	Give the person with diabetes credit for what they accomplished. Make it about the person with diabetes and choices, rather than making it about the provider.
Setting goals for . . .	Facilitating identified goals and creating a plan with . . . Self-directed goals	
"What did you do?"	"Tell me about . . ." "May I make a suggestion?"	The idea is to encourage the person to move away from "why?" to "what now?" Discussion of successful responses can be a more effective teaching tool than pointing out mistakes and erratic numbers.
Cheating, sneaking	Making choices/decisions	Use strengths-based language.
Good/bad/poor	Numbers Choices Food Safe/unsafe	Good and bad are value judgments. Focus on physiology/biology and tasks/actions using neutral words.

Dickinson J. The use of language in diabetes care and education.

Case Studies

Case #1

MS is a 68yo patient that regularly uses your pharmacy's MTM services. Today, he voices concerns that the last few times he has checked his blood pressure with his home monitor that the top number is always higher than 150.

Check of BP in the pharmacy reads 151/84 mmHg. You check his weight and it is 254 lbs, calculate his BMI at 38. Pharmacy records show his only medication is: HCTZ 12.5mg daily

- What do you recommend for BP control?
- What do you recommend initiating for healthy weight?
- What do you recommend for CVD screening considerations?
- What other conversations could you have regarding risk factors and lifestyle?

Case #2

MS returns to the pharmacy for a follow-up. He followed your recommendations for BP and BP is now well controlled averaging 126/77 mmHg. He has not been successful with lifestyle changes and his weight remains elevated at 257 lbs today. Other than his BP medications, he takes metformin 1000mg twice daily. Point of care testing for A1c results in 7.5% and for cholesterol total 251 mg/dL, HDL 35 mg/dL, Triglycerides 325 mg/dL and LDL 143 mg/dL.

- What do you recommend starting for weight loss pharmacotherapy?
- What do you recommend initiating for cholesterol?
- What do you recommend for diabetes?
- What other conversations could you have for risk factors and lifestyle?

Key Takeaways

1. Use existing resources to identify services and screen your patients
2. Dyslipidemia, Hypertension, Diabetes and Obesity are all related
3. Integrate the entire pharmacy team (including learners) to increase success

And...It Takes a Village!

TEAM: Use all staff to review pharmacy management system to review prescription history, advertise for patient self-identification, physician referral, or recruit after point-of-care testing

RECRUIT: Staff calls patient to schedule an appointment

TRIAGE: Tech or learner obtains & documents patients blood pressure, weight, obtain point-of-care testing, administers immunizations, and does med reconciliation

Tech enrolls patients in medication synchronization program

Pharmacists or learner provides counseling on labs, conditions, lifestyle measures, and treatment

eCare plan submitted to patient's primary care physician with recommendations

Document SNOMED codes and bill for services

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Livet M. Screening and referral programs for diabetes and CVD: Can community pharmacists bridge the care gap. Explor Res Clin Soc Pharm. 2025;17

Questions?

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Supplemental Information

Helpful Resources

Target BP

- Targetbp.org initiative with American Heart Association and American Medical Association providing resources for BP control

Lilly Disease Education Materials

- https://medical.lilly.com/us/diseases/disease-education-resources/obesity/obesity?gad_source=1&gad_campaignid=21197479173&gclid=Cj0KCQjwlYHBBhD9ARIsALRu09pOWRhVkFsxwOx8UBRFEoHP9ONMKyxxAtMwcMVgNnRpO50YvoDlJZMaAkGtEALw_wcB

Link to example documentation forms and SNOMED CT descriptions

- https://www.snomed.org

Diabetes Education Accreditation Program

- https://www.adces.org/diabetes-education-dsmes/diabetes-education-accreditation-program

Flip The Pharmacy - Hypertension

- **Key features:**
  - Appointment based model
  - Medication synchronization
  - Utilizing non-pharmacy staff (collect information, take blood pressure)
  - Follow-up (community health worker, lifestyle coaching)
- **Resources:**
  - Care team coordination
  - Guidelines
  - eCare plan documentation and SNOMED codes (full case examples on website)
  - Workflow

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https://www.flipthepharmacy.com/hypertension

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