

## ACC SCIENTIFIC STATEMENT

# Management of Peripheral Artery Disease in Adults With Diabetes: 2025 ACC Scientific Statement

A Report of the American College of Cardiology

## Writing Committee Members

Sandeep R. Das, MD, MPH, FACC, *Chair*  
Marc P. Bonaca, MD, MPH, FACC  
Mark A. Creager, MD, FACC

Nisa Maruthur, MD  
Joakim Nordanstig, MD  
Rodica Pop-Busui, MD, PhD  
Francisco Ujueta, MD, FACC

## ABSTRACT

Peripheral artery disease (PAD) is prevalent among people with diabetes, and the combination is associated with high risk of cardiovascular events and adverse limb outcomes. Greater attention to this population is needed to mitigate the adverse consequences of this severe manifestation of atherosclerotic cardiovascular disease. Accordingly, the diagnosis and management of PAD in people with diabetes is an important public health concern, especially among vulnerable populations. Many people with diabetes do not experience typical symptoms of PAD, and PAD may go undetected at earlier stages in those with diabetes. The diagnosis is therefore often delayed until PAD is advanced to chronic limb-threatening ischemia. As a result, the rates of amputation are disproportionately high in this population. In addition, guideline-directed medical therapies for treatment of PAD in people with diabetes are underutilized. To address these concerns, this scientific statement provides an overview of current recommendations for screening, diagnosis, and management, including consensus recommendations that underscore evidence-based treatments. This scientific statement also outlines promising areas for future research, including use of electronic health records to support more timely diagnosis, optimal timing and methods for screening, and standardization of clinical trial endpoints.

## INTRODUCTION

The American College of Cardiology (ACC) has a long history of developing documents to complement clinical practice guidelines. Among these documents, scientific statements represent a novel approach to inform clinicians about areas where the scientific evidence is new and evolving or where sufficient data are more limited. To accomplish this work, the ACC constituted a writing committee that convened in

September 2025 via a confidential conference call attended only by writing committee members and ACC staff. A review of seminal publications and outstanding questions was facilitated. Writing assignments were configured according to each committee member's area of expertise. Email correspondence was used to provide critical review of contributed content. Differences were resolved by consensus among the writing committee. The committee's work was supported only by the ACC without any commercial input. Writing

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committee members were all unpaid volunteers. In accordance with ACC's policy on Relationships With Industry and Other Entities, relevant disclosures for the writing committee and comprehensive disclosures for external peer reviewers can be found in [Appendixes 1 and 2](#).

The intersection of diabetes and peripheral artery disease (PAD) has gained significant attention because of high rates of adverse limb outcomes including amputation, as well as its potential to reveal cardiovascular disease in people with diabetes. The 2024 ACC/American Heart Association (AHA) Guidelines on Lower Peripheral Artery Disease<sup>1</sup> provide a comprehensive overview of PAD diagnosis and management, but the section on PAD in people with diabetes is brief, as this specific context was outside of the document's scope. This scientific statement is intended to improve clinicians' understanding of the epidemiology, pathobiology, diagnosis, and management of PAD in individuals with diabetes. It emphasizes a modern, evidence-based approach to care ([Table 1](#)).

## DEFINITIONS AND CLASSIFICATIONS

**Acute limb ischemia (ALI):** A sudden decrease of limb perfusion due to artery occlusion, of  $\leq 2$  weeks' duration, characterized by pain, pallor, pulselessness, poikilothermia, paresthesias, paralysis, or a combination of these.<sup>1</sup>

**Chronic limb-threatening ischemia (CLTI):** Chronic ( $>2$  weeks) ischemic rest pain, nonhealing wounds or ulcers, or gangrene attributable to objectively proven occlusive PAD.

**Diabetes mellitus:** A disease of insulin deficiency or insulin resistance, diagnosed by any of these: hemoglobin A1C level of  $\geq 6.5\%$  (48 mmol/mol); fasting plasma glucose level of  $\geq 126$  mg/dL (7.0 mmol/L); 2-h plasma glucose level of  $\geq 200$  mg/dL (11.1 mmol/L) during a 75-g oral glucose tolerance test; or random plasma glucose level of  $\geq 200$  mg/dL with classic symptoms. In this scientific statement, the term "diabetes" is used in place of "diabetes mellitus."<sup>8</sup>

**Diabetic foot care:** This includes daily hygiene, nail care, proper footwear (avoiding bare feet or open-toed shoes), regular evaluation by the individual or caregiver, and at least an annual comprehensive foot examination.<sup>9</sup>

**Intermittent claudication:** Fatigue, cramping, aching, pain, or other discomfort of vascular origin in the muscles of the legs, induced by walking and relieved by rest.

**TABLE 1** Table of Consensus Recommendations

### Screening for PAD in people with diabetes

- Screening for PAD is reasonable in asymptomatic adults with diabetes and risk-enhancing factors.\*†
- The ABI is a simple, inexpensive measure to detect PAD ( $\leq 0.90$ ), but its sensitivity is limited in individuals with vascular calcification. If the ABI is indicative of noncompressible arteries ( $>1.40$ ), the TBI is the preferred alternative measure (abnormal TBI is  $<0.70$ ).
- Measurement of the ABI immediately after treadmill exercise may better capture the presence of PAD in people with diabetes and exertional leg symptoms with a normal or borderline resting ABI.
- No data are available on an optimal frequency for serial screening.

### Clinical profiles

- Routine evaluation with hemoglobin A1C testing and assessment for diabetic retinopathy, diabetic kidney disease, diabetic neuropathy, and other forms of ASCVD offers opportunities for refinement of treatment course and identification of appropriate intervals for follow up.
- Daily foot inspections by the patient or caregiver are recommended.‡
- People with diabetes should have at least 1 annual comprehensive foot evaluation by a qualified clinician. More frequent assessments are recommended for those at high risk for foot complications.‡

### Lifestyle and exercise

- Recommend smoking cessation,‡ physical activity,‡ and a plant-forward, lower fat, whole food based dietary pattern<sup>10</sup> for all people with diabetes and PAD.
- SET has a strong evidence base for improving functional status and quality of life in people with symptomatic PAD. If SET access is limited, a structured home-based program is a reasonable alternative.

### Medical management

- Because of medical complexity, people with diabetes may benefit from multidisciplinary care teams as clinically indicated, including cardiology, endocrinology, podiatry, primary care, vascular medicine, and vascular surgery.
- Evidence-based medications proven to improve cardiorenal and limb outcomes, functional status, and quality of life should be used in accordance with existing clinical practice guidelines.†,‡
- SGLT2 inhibitors and GLP-1RA should be prioritized because of the broad cardio-kidney-metabolic benefit.‡ One GLP-1RA, semaglutide, has specifically been shown to improve functional capacity, symptoms, and quality of life in people with symptomatic PAD.<sup>3</sup>
- Treatment of LDL-C to a target reduction  $\geq 50\%$ ‡ and goal  $<55$  mg/dL<sup>4,5</sup> is recommended, using therapies with proven cardiovascular benefit.
- High blood pressure should be treated to a goal of  $<130/80$  mm Hg, ideally SBP  $<120$  mm Hg if it can be safely achieved.<sup>6</sup>
- Rivaroxaban 2.5 mg bid and aspirin 75-100 mg daily should be used to reduce MACE and MALE, except in people who are at high risk of bleeding.\*†† The second line option is monotherapy with aspirin 75-100 mg or clopidogrel 75 mg daily, which reduces MACE but has not been shown to reduce MALE.

### Surgical and interventional management

- Before amputation, every person with diabetes and CLTI should be evaluated by a limb salvage team.‡
- Revascularization should be pursued on an urgent basis in individuals with diabetes and PAD who have evidence of foot infection and tissue loss.
- Optimal periprocedural blood glucose management and effective infection treatment is essential to maximizing outcomes.<sup>7</sup>

\*Age  $\geq 65$  y, smoking, diabetes duration  $\geq 10$  years, any microvascular disease, foot complications, or other end-organ damage.

†Class 2a/2b recommendation from 2024 ACC/AHA Guideline on Management of Lower Extremity PAD.<sup>1</sup>

‡Class 1 recommendation from 2024 ACC/AHA Guideline on Lower Extremity PAD.<sup>1</sup>

\*\*Patients with coronary artery disease, documentation of atherosclerosis involving at least two vascular beds, diabetes, chronic kidney disease, and/or those who smoke.

ABI = ankle-brachial index; ASCVD = atherosclerotic cardiovascular disease; CLTI = chronic limb-threatening ischemia; GLP-1RA = glucagon-like peptide-1 receptor agonist; LDL-C = low-density lipoprotein cholesterol; MACE = major adverse cardiac events; MALE = major adverse limb events; PAD = peripheral artery disease; SBP = systolic blood pressure; SET = supervised exercise therapy; SGLT2 = sodium-glucose cotransporter-2; TBI = toe-brachial index.

Intermittent claudication is recognized as a manifestation of chronic symptomatic PAD.

**Major adverse cardiac events (MACE):** Cardiovascular death and life-threatening episodes including acute coronary syndrome, myocardial infarction, stroke, or any of these.

**Major adverse limb events (MALE):** Episodes that threaten significant amounts of limb tissue, pose considerable risk of amputation, or both. This includes ALI and CLTI.

**Prediabetes:** Intermediate hyperglycemia, defined as hemoglobin A1C level of 5.7% to 6.4%, fasting plasma glucose level of 100 to 125 mg/dL (5.6-6.9 mmol/L), or 2-h glucose level of 140 to 199 mg/dL (7.8-11.0 mmol/L).

**Type 1 diabetes:** An autoimmune disorder characterized by T-cell-mediated destruction of pancreatic  $\beta$ -cells, eventually resulting in absolute insulin deficiency. Onset can occur at any age, often with rapid progression and risk of ketoacidosis. Disease-modifying immunotherapies (eg, anti-CD3) can preserve  $\beta$ -cell function near diagnosis, underscoring the central autoimmune pathobiology.<sup>11</sup>

**Type 2 diabetes:** Insulin resistance with varying degrees of a nonautoimmune progressive loss of adequate  $\beta$ -cell insulin secretion; heterogeneous in mechanism and clinical course and increasingly presents at younger ages with higher lifetime complication burden. Weight gain, ectopic fat, and metabolic inflammation contribute to impaired insulin action and secretion.

**Wifi:** A staging system for assessing the severity of CLTI, graded on the extent of wound, ischemia, and foot infection<sup>12</sup>

## ABBREVIATIONS

Abbreviation	Meaning/Phrase
ALI	acute limb ischemia
CLTI	chronic limb-threatening ischemia
GLP-1RA	glucagon-like peptide-1 receptor agonist
MACE	major adverse cardiac events
MALE	major adverse limb events
PAD	peripheral artery disease
SGLT2	sodium-glucose cotransporter-2
SET	supervised exercise therapy
Wifi	wound, ischemia, and foot infection

## BACKGROUND

### Epidemiology

PAD is a highly prevalent and morbid condition, particularly in people living with type 1 or type 2 diabetes.<sup>13-15</sup>

Although uncommon before age 50 years, PAD has been reported in approximately 25% of people with diabetes aged  $\geq 65$  years.<sup>16,17</sup> Most people with diabetes and PAD do not report classic symptoms of intermittent claudication, illustrating how PAD may easily go unrecognized. Even among people with diabetes who are recognized to be at increased risk for PAD, testing for detection of PAD is inconsistent, and among those who have PAD, use of guideline-directed medical therapies is infrequent.<sup>15</sup> The prevalence of PAD increases with age, diabetes duration, cigarette smoking, high blood pressure, dyslipidemia, chronic kidney disease, and is present at higher rates in vulnerable populations, including racial and ethnic minorities and those with lower socioeconomic status. Women, especially older women, have higher PAD prevalence than men,<sup>18</sup> and specific vulnerable populations have been shown to bear substantially higher lifetime PAD risk.<sup>19</sup> The higher disease burden in these populations is especially concerning because it carries with it higher rates of amputation. Diagnosing PAD and modifying its disease course and sequelae are important public health concerns.<sup>1</sup> The benefit of addressing PAD at the population level has broad health equity implications.

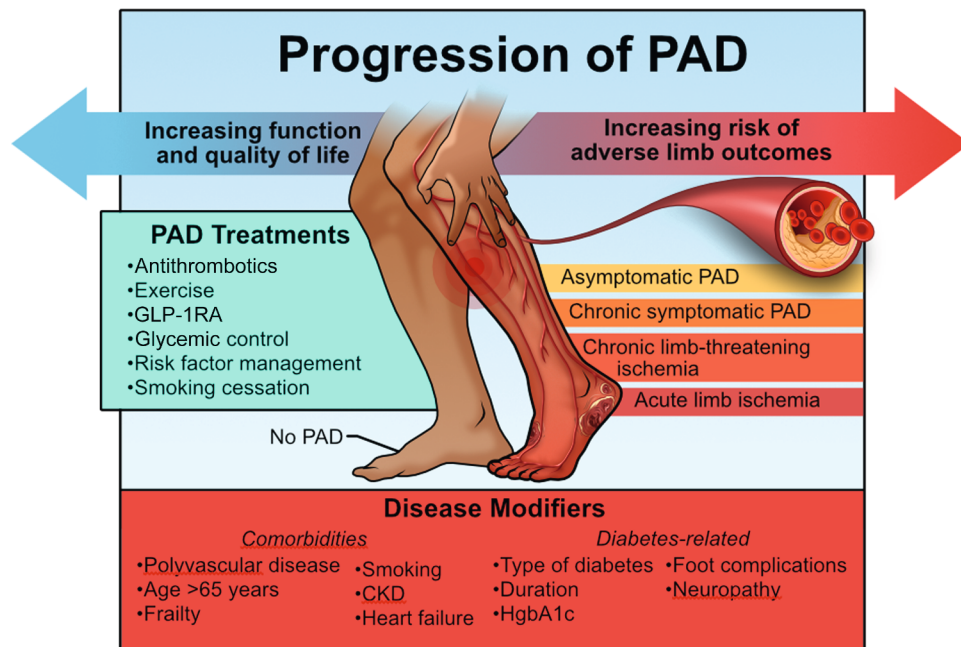
### Pathobiology of PAD

The pathoanatomic manifestation of PAD in patients with diabetes ranges from atherosclerotic disease of the iliac and femoropopliteal arterial segments to more distal disease affecting the tibial and peroneal arteries. The extensive involvement of limb arteries, particularly arteries below the knee, increases the risk of CLTI, and the need for revascularization. Unfortunately, revascularization is often technically challenging in the setting of disease below the knee and often unsuccessful, or not feasible, and amputation may result.

Arterial medial calcification is also common and linked to higher risks of foot ulcers and amputation.<sup>20</sup> Additionally, microvascular disease in patients with diabetes is likely to affect arterioles of the foot and toes and is often comorbid with neuropathy.<sup>21</sup> This contributes to CLTI, poor wound healing, and amputation. Infections such as cellulitis and osteomyelitis, often polymicrobial, are common in patients with PAD and diabetes, and also amplify the risk for amputation.<sup>22,23</sup>

### Clinical burden

People with diabetes and PAD have higher rates of MALE and MACE than do people with diabetes and no PAD.<sup>1</sup> People with PAD experience pain and decreased quality of life and have higher health care utilization.<sup>24</sup> Complications include increased rates of limb revascularization and amputation, as well as an increased incidence of myocardial infarction, stroke, and death (Figure 1).

**FIGURE 1** Risk Assessment and Management of People With PAD and Diabetes

CKD = chronic kidney disease; GLP-1RA = glucagon-like peptide-1 receptor agonist; HgbA1c = hemoglobin A1c; PAD = peripheral artery disease.

## DETECTION AND MANAGEMENT

The detection of PAD may be challenging in people with diabetes. Targeted screening for PAD is a Class 2a recommendation in the 2024 ACC/AHA Guideline for the Management of Lower Extremity PAD.<sup>1,25</sup> Risk factor management should be optimized, including smoking cessation, glycemic control, blood pressure, lipid-lowering treatment, and foot care. Aerobic and resistance exercise in accordance with current clinical practice guidelines is important for all people with diabetes.<sup>1,26</sup> Supervised exercise programs and structured coach-supported home programs significantly improve functional status in people with diabetes and symptomatic PAD and are therefore recommended for people with diabetes and symptomatic PAD. CLTI remains a frequent and highly morbid event with a need for prompt revascularization to mitigate tissue loss and infection risk.<sup>27,28</sup> Limb salvage over amputation is well established as the goal of modern care and ideally involves a multidisciplinary care team.

### Systems of care

From risk-based screening thresholds to clinical workflows in people with diabetes, many efforts are underway

to improve outcomes at the population level.<sup>27</sup> Health care system level approaches offer potential pathways to benefit, such as leveraging the electronic health record to identify patients and to drive care delivery implemented by multidisciplinary teams to address all aspects of treatment and prevention and carefully monitored over time to gauge success. Remote coaching, optimizing adherence to lipid- and blood pressure-lowering medications and medications with directly proven limb, cardiovascular, and functional outcomes benefits in people with PAD and diabetes will comprise the evidence-based, personalized PAD program. In this scientific statement, aligned with the 2024 ACC/AHA PAD guideline<sup>1</sup> and the 2025 American Diabetes Association Standards of Care,<sup>9,25,26</sup> we outline the current state of the art for optimal PAD diagnosis and management in people living with diabetes.

### Evaluation, diagnosis, and risk assessment

PAD is underdiagnosed in people with diabetes, leading to missed opportunities to implement intensive preventive therapies to reduce the risk of adverse outcomes. Careful foot examination and palpation for pulses should be consistently performed in routine care.<sup>29</sup> An effective method to identify PAD, even before clinical

**TABLE 2** Professional Society Screening Recommendations for PAD in People With Diabetes

Society/Organization	Recommendation
American Diabetes Association	In asymptomatic individuals with diabetes and age $\geq 65$ y, microvascular disease in any location, or foot complications or any end-organ damage from diabetes, screening for PAD with ABI testing is recommended if a PAD diagnosis would change management. In individuals with diabetes duration $\geq 10$ y and high cardiovascular risk, screening for PAD should be considered.
American College of Cardiology/American Heart Association	In patients at increased risk of PAD,* screening for PAD with the resting ABI, with or without ankle PVR and/or Doppler waveforms, is reasonable.
Society for Vascular Surgery/American Podiatric Medical Association/Society for Vascular Medicine	Patients with diabetes should have ABI measurements performed when they reach age 50 y.
European Society of Cardiology	In patients aged $\geq 65$ y with cardiovascular risk factors,† screening for PAD by ABI or TBI should be considered. In patients with diabetes or chronic kidney disease and normal resting ABI, TBI measurement should be considered.
European Society for Vascular Surgery	For clinically asymptomatic individuals at increased risk of lower limb PAD,‡ focused screening for PAD with ABI measurements based on the lowest recorded ankle pressure may be considered to support secondary prevention strategies.
U.S. Preventive Services Task Force	The evidence is insufficient to assess the balance of benefits and harms of screening for PAD and ASCVD risk with the ABI in asymptomatic adults.

\*Age 50–64 y, with risk factors for ASCVD (eg, diabetes, history of smoking, dyslipidemia, hypertension), chronic kidney disease, or family history of PAD; age  $<50$  y, with diabetes and 1 additional risk factor for atherosclerosis.

†Including diabetes.

‡Individuals aged  $\geq 65$  y; individuals aged 50–64 y with risk factors for atherosclerosis (diabetes, history of smoking, hyperlipidemia, hypertension, chronic kidney disease, or family history of PAD); individuals aged  $<50$  y with diabetes and 1 other risk factor for atherosclerosis; or those with known atherosclerotic disease in another vascular bed.

ABI = ankle-brachial index; ASCVD = atherosclerotic cardiovascular disease; PAD = peripheral artery disease; PVR = pulse volume recording; TBI = toe-brachial index.

manifestations develop, is measurement of the ankle-brachial index (ABI). The ABI is a noninvasive test in which the systolic pressure of the dorsalis pedis and posterior tibial arteries are measured at each ankle using a blood pressure cuff and Doppler device, and at each brachial artery; the ratio of the ankle pressure to the highest brachial artery constitutes the ABI. The sensitivity of ABI is limited in patients with vascular calcification in whom the arteries are noncompressible, causing falsely elevated readings. An ABI is considered abnormal  $\leq 0.9$ , borderline at 0.91 to 0.99, normal at 1.00 to 1.4, and noncompressible (uninterpretable) at  $>1.40$ . In the latter situation, the toe-brachial index (abnormal  $<0.7$ ),<sup>30</sup> pulse volume recordings, and transcutaneous oxygen pressure (TcPO<sub>2</sub>) provide more reliable assessments of distal perfusion. In addition, exercise treadmill ABI is a useful test to investigate exertional leg symptoms with normal or borderline resting ABI and may identify a low exercise ABI.

Professional organizations have developed clinical practice guideline and standard of care recommendations for screening for PAD in people with diabetes. The American Diabetes Association, the ACC/AHA, the Society for Vascular Surgery/American Podiatric Medical Association/Society for Vascular Medicine, the European Society of Cardiology and the European Society for Vascular Surgery recommendations are in general agreement, although they vary somewhat in the specifics and level of advocacy for PAD screening in patients with diabetes (Table 2).<sup>1,25,31,32</sup> The U.S. Preventive Services

Task Force states that insufficient evidence are available to recommend universal screening with ABI in asymptomatic individuals, but its recommendation does not specifically address high-risk subgroups, such as people with diabetes.

#### Consensus recommendations: evaluation, diagnosis, and risk assessment

- Screening for PAD is reasonable in asymptomatic adults with diabetes and risk enhancing factors (age  $\geq 65$  y, smoking, diabetes duration  $\geq 10$  y, any microvascular disease, foot complications, or other end-organ damage).
- The ABI is a noninvasive measure to detect PAD ( $\leq 0.90$ ), but its sensitivity is limited in individuals with vascular calcification. If the ABI is indicative of noncompressible arteries ( $>1.40$ ), the TBI is the preferred alternative measure (abnormal TBI is  $<0.70$ ).
- Measurement of the ABI immediately after treadmill exercise may better capture the presence of PAD in people with diabetes and exertional leg symptoms with a normal or borderline resting ABI.
- No data are available on an optimal frequency for serial screening.

#### Clinical profiles: Diabetes and PAD

PAD may be the most frequent first manifestation of cardiovascular disease in patients with diabetes.<sup>33</sup> Although lower-extremity PAD is defined by occlusive



**TABLE 3** Wifl Staging System

Grade	Wound	Ischemia			Foot Infection
		ABI	Ankle SBP	TP, TcPO <sub>2</sub>	
0	No ulcer or gangrene (ischemic pain at rest)	≥0.80	>100 mm Hg	≥60 mm Hg	Uninfected
1	Small or superficial ulcer on leg or foot, without gangrene (SDA or SC)	0.6-0.79	70-100 mm Hg	40-59 mm Hg	Mild local infection, involving only the skin and subcutaneous tissue, erythema >0.5 to ≤2 cm
2	Deep ulcer with exposed bone, joint, or tendon ± gangrene limited to digits (MDA or standard TMA ± SC)	0.4-0.59	50-70 mm Hg	30-39 mm Hg	Moderate local infection, with erythema >2 cm or involving deeper structures
3	Deep, extensive ulcer involving forefoot and/or midfoot ± calcaneal involvement ± extensive gangrene (CR of the foot or nontraditional TMA)	≤0.39	<50 mm Hg	<30 mm Hg	Severe local infection with signs of SIRS

ABI = ankle-brachial index; CR = complex reconstruction; MDA = multiple digital amputations; SBP = systolic blood pressure; SC = skin coverage; SDA = simple digital amputation; SIRS = systemic inflammatory response system; TcPO<sub>2</sub> = transcutaneous oxygen pressure; TMA = transmetatarsal amputation; TP = toe pressure, Wifl = wound, ischemia, and foot infection.

disease of the large arteries, its manifestation in the presence of diabetes also includes small vessel disease, below the knee, as well as microvascular disease. Other markers of microvascular disease such as diabetic kidney disease, diabetic neuropathy, and diabetic retinopathy are strongly associated with adverse outcomes in people with PAD and diabetes.<sup>22</sup> The frequent coexistence of these disorders means that optimal care for the person with PAD and diabetes requires characterization of all potential manifestations of microvascular disease.<sup>1</sup>

The 2024 ACC/AHA PAD guidelines<sup>1</sup> define clinical subsets, or stages, of PAD including asymptomatic disease, chronic symptomatic disease, CLTI, and ALI. Defining the stage of PAD is important in determining the extent of disability and risk of adverse limb events. Functional limitation is often present in people with PAD and diabetes,<sup>34</sup> even if they do not report typical claudication, which may represent “symptomatic disease” and should prompt appropriate testing. Patients with evidence of atherosclerosis on imaging of the lower-extremity arteries but with minimal occlusion and normal ABIs are a distinct category, and optimal therapy for this group has not been defined. CLTI encompasses a multifactorial syndrome of ischemia, foot wounds, and infection. Patients with diabetes are at high risk for CLTI, particularly in the presence of neuropathy.<sup>35</sup> Characterization of patients with CLTI can be made using the wound, ischemia, and foot infection (Wifl) construct<sup>12</sup> (Table 3) to consider the multifactorial process and optimal pathways for treatment. People with PAD and diabetes suffer high rates of amputations below the ankle, traditionally labeled “minor” because of the smaller loss of tissue.

Optimal care for people with PAD and diabetes requires careful characterization of metabolic disease including the type of diabetes (which may impact selection of therapies), duration of diagnosis, presence of

complications such as microvascular disease, and measurement of other risk factors such as lipids and blood pressure. Clinicians caring for people with PAD and diabetes should use current American Diabetes Association Standards of Care including hemoglobin A1C testing, and screening for retinopathy, neuropathy, diabetic kidney disease, and other forms of ASCVD.<sup>2,25</sup> Recommendations around foot care are particularly important and include daily foot inspections by the patient or caregiver and comprehensive foot evaluation at least annually in those at high risk for foot complications.

#### Microvascular complications of diabetes: Overview and links to PAD

Microvascular disease intersects with PAD by amplifying tissue ischemia risk, impairing wound healing, and increasing infection and amputation rates. Chronic hyperglycemia, glycemic variability, hypertension, dyslipidemia, smoking, and diabetes duration drive microvascular injury in the retina, kidney, and peripheral nerves through pathways including advanced glycation, oxidative stress, inflammation, endothelial dysfunction, and impaired neurovascular coupling.<sup>36,37</sup> Intensive risk factor management reduces incidence and progression.<sup>8</sup> Diabetic kidney disease manifests as persistent albuminuria, reduced estimated glomerular filtration rate, or both, and is a major cause of end-stage kidney disease and MACE. Because diabetic kidney disease is linked to an increased risk of undiagnosed PAD and has important implications for medication selection, annual assessment of urine albumin-to-creatinine ratio and estimated glomerular filtration rate is recommended in the American Diabetes Association Standards of Care.<sup>2</sup> Intensive medical therapy including glycemic and blood pressure control, renin-angiotensin system blockade, use of sodium-glucose cotransporter-2 (SGLT2) inhibitors, some glucagon-like peptide-1 receptor agonists (GLP-1RA), and

nonsteroidal mineralocorticoid receptor antagonists, where appropriate, slows diabetic kidney disease progression and improves cardiorenal outcomes.<sup>8</sup>

Diabetic neuropathy encompasses a spectrum of most commonly distal symmetric polyneuropathy with length-dependent sensory loss, pain, and gait instability; autonomic neuropathies (cardiovascular, gastrointestinal, genitourinary, sudomotor) are also prevalent.<sup>36</sup> Early distal symmetric polyneuropathy detection through annual symptom inquiry and bedside examination (eg, vibration, pinprick, monofilament) is recommended by the American Diabetes Association for diabetic foot ulcer prevention.<sup>38</sup> Pain management uses clinical practice guideline-supported agents (eg, duloxetine, pregabalin, tricyclic drugs)<sup>39</sup> individualized to comorbidities and tolerability; no approved disease-modifying therapy exists, highlighting the essential role of prevention via glycemic optimization and risk factor control.<sup>9</sup> Vision impairment (retinopathy), sensory loss and autonomic dysregulation (neuropathy), and kidney dysfunction (diabetic kidney disease) compound barriers to self-care, mobility, and procedural outcomes.

#### Consensus recommendations: clinical profiles

- Routine evaluation with hemoglobin A1C testing and assessment for diabetic retinopathy, diabetic kidney disease, diabetic neuropathy, and other forms of atherosclerotic cardiovascular disease (ASCVD) offers opportunities for refinement of treatment course and identification of appropriate intervals for follow up.
- Daily foot inspections by the patient or caregiver are recommended.
- People with diabetes should have at least 1 annual comprehensive foot evaluation by a qualified clinician. More frequent assessments are recommended for those at high risk for foot complications.
- Aggressive, clinical practice guideline-based risk factor modification is recommended for all patients with comorbid diabetes and PAD.

#### Management of PAD in people with diabetes

##### Considerations for management

Specific comorbidities and social drivers of health should be considered for risk stratification or prioritization of therapies. This includes people with PAD and atherosclerotic vascular disease in other territories, defined as “polyvascular disease.” Polyvascular disease is associated with a higher risk of MACE.<sup>40</sup> Patients who have had lower-extremity revascularization or have history of amputation are at high risk of recurrent MACE. Functional limitation is associated with worse outcomes and should be assessed. Patients with PAD frequently have comorbid heart failure, chronic kidney disease, or both

and may benefit differentially from specific therapies such as sodium-glucose SGLT2 inhibitors, GLP-1RA, or mineralocorticoid receptor antagonists. Finally, age and frailty are common comorbidities and may be associated with sarcopenia, functional limitation, and increased risk of adverse limb events.

##### Lifestyle

Avoidance of cigarettes and other tobacco products is recommended for all people with PAD and diabetes, because smoking substantially increases the risk of both microvascular and macrovascular complications.<sup>26</sup> This risk extends to secondhand smoke exposure. Unfortunately, the prevalence of tobacco use among people with diabetes remains high.<sup>26</sup> Because of the importance of tobacco use as a risk factor for complications in diabetes, the American Diabetes Association recommends routine screening about use of tobacco products, ideally at each visit. Tobacco cessation reduces the risk of development of PAD and the risk of limb ischemia or amputation and death.<sup>1</sup> Both counseling and pharmacologic interventions are effective for smoking cessation. Diabetes self-management education and support can have an important role in tobacco cessation efforts among patients with diabetes.<sup>26</sup> In addition, pharmacologic therapy including varenicline, bupropion replacement, nicotine replacement, or both is an important modality of treatment for tobacco cessation.<sup>41</sup>

The American Diabetes Association, AHA, and ACC recommend at least 150 minutes per week of moderate- to vigorous-intensity activity, resistance activity 2 to 3 days per week, and avoidance of sedentary behavior.<sup>1,26</sup> In addition to general recommendations for activity, supervised exercise therapy (SET) is recommended for people with symptomatic PAD and has the strongest evidence base for improving functional status and quality of life, but structured community-based exercise programs can also be helpful in the management of symptomatic PAD. These types of programs can be as effective as revascularization with regard to functional improvements. SET involves supervision by a qualified health care professional (eg, exercise physiologist) in a clinical setting with the primary activity being walking on a treadmill; sessions typically occur at least 3 times per week for at least 12 weeks. SET is a covered benefit for Medicare and many other insurance plans. Structured community-based programs take place in a community setting such as the home and involve prescription of a specific exercise regimen by a health care professional but are ultimately self-directed by the person with PAD. Isolated advice by a health care provider to walk has not been shown to be effective at changing PAD outcomes. Although contraindications exist to exercise, generally, many barriers (eg, amputation, wheelchair use) can be

**TABLE 4** Management of PAD in Diabetes: First-line, Evidence-based Therapies

Treatment	Medications	Relevant Trials	Cardiovascular Benefit	Limb Benefit	Clinical Considerations
Antithrombotic agents	Aspirin 81 mg OR clopidogrel 75 mg	CAPRIE <sup>42</sup>	Reduces MACE	No proven benefit	Increased bleeding risk
	Aspirin daily + rivaroxaban 2.5 mg twice daily	COMPASS <sup>43</sup> VOYAGER-PAD <sup>44</sup>	Reduces MACE	Reduces MALE	Greater absolute benefit in people with PAD and diabetes
SGLT2 inhibitors with proven cardiovascular benefit	Empagliflozin	EMPA-REG <sup>45</sup>	Reduces MACE	No proven benefit	Also reduce heart failure, cardiovascular death, and kidney complication Not indicated for routine use in people with type 1 diabetes
	Dapagliflozin	DECLARE-TIMI 58 <sup>22</sup>			
	Canagliflozin	CANVAS <sup>46</sup>			
GLP-1RA with proven cardiovascular benefit	Oral or subcutaneous semaglutide	SUSTAIN-6 <sup>47</sup>	Reduces MACE	Reduces MALE	Also indicated for symptomatic claudication Not indicated for routine use in people with type 1 diabetes
		STRIDE <sup>3</sup>	Reduces MACE	Reduces MALE Improves symptoms and function	
		SOUL <sup>48</sup>	Reduces MACE	Reduces MALE Improves symptoms and function	
LDL-C lowering	Statins	Association of Statin Dose With Amputation and Survival in Patients With Peripheral Artery Disease <sup>49</sup>	Reduces MACE	No proven benefit*	Goal for LDL-C is $\leq 55$ mg/dL
	PCSK9 inhibitors	FOURIER <sup>4</sup> ODYSSEY-OUTCOMES <sup>5</sup>	Reduces MACE	Reduces MALE	Adjunct therapies for people on maximally tolerated statin with LDL-C $>70$ mg/dL Check lipoprotein(a) levels at least once
	Ezetimibe	RACING <sup>50</sup>	Reduces MACE	Reduces MALE	
	Bempedoic acid	CLEAR Outcomes <sup>51</sup>	Reduces MACE	Reduces MALE	
Smoking cessation	Varenicline Bupropion Nicotine replacement therapy	Effectiveness of a Smoking Cessation Program for Peripheral Artery Disease Patients: A Randomized Controlled Trial <sup>52</sup> Bupropion SR for Smoking Cessation in Smokers with Cardiovascular Disease <sup>53</sup>	Reduces MACE	Reduces MALE	Higher rates of success with counseling in addition to medications <sup>41</sup>
SET	None	SILC <sup>54</sup> PROPEL <sup>55</sup>	Not used as an endpoint in RCTs	Reduces MALE	Can be modified for patients with mobility challenges

\*Observational data suggest reduced amputations with statin use.

CANVAS = Canagliflozin and Cardiovascular and Renal Events in Type 2 Diabetes; CAPRIE = A randomised, blinded, trial of clopidogrel versus aspirin in patients at risk of ischaemic events; CLEAR Outcomes = Bempedoic Acid and Cardiovascular Outcomes in Statin-Intolerant Patients; COMPASS = Cardiovascular Outcomes for People Using Anticoagulation Strategies; DECLARE-TIMI 58 = Dapagliflozin and Cardiovascular Outcomes in Type 2 Diabetes; EMPA-REG = Empagliflozin Cardiovascular Outcome Event Trial in Type 2 Diabetes Mellitus Patients; FOURIER = Further Cardiovascular Outcomes Research With PCSK9 Inhibition in Subjects With Elevated Risk; GLP-1RA = glucagon-like peptide-1 receptor agonists; LDL-C = low-density lipoprotein cholesterol; MACE = major adverse cardiac events; MALE = major adverse limb events; ODYSSEY-OUTCOMES = Evaluation of Cardiovascular Outcomes After an Acute Coronary Syndrome During Treatment With Alirocumab; PAD = peripheral artery disease; PROPEL = Progenitor Cell Release plus Exercise to Improve Functional Performance in Peripheral Artery Disease; RACING = Randomized Comparison of Efficacy and Safety of Lipid Lowering With Statin Monotherapy Versus Statin-Ezetimibe Combination for High-Risk Cardiovascular Disease; RCT = randomized clinical trial; SET = supervised exercise therapy; SGLT2 = sodium-glucose cotransporter-2; SILC = Study to Improve Leg Circulation; SOUL = Semaglutide Cardiovascular Outcomes Trial; SR = sustained release; STRIDE = Semaglutide and walking capacity in people with symptomatic peripheral artery disease and type 2 diabetes; SUSTAIN-6 = Trial to Evaluate Cardiovascular and Other Long-term Outcomes With Semaglutide in Subjects With Type 2 Diabetes; VOYAGER-PAD = Efficacy and Safety of Rivaroxaban in Reducing the Risk of Major Thrombotic Vascular Events in Subjects With Symptomatic Peripheral Artery Disease Undergoing Peripheral Revascularization Procedures of the Lower Extremities.

addressed by activity alternatives to walking (eg, arm ergometry). Unfortunately, benefits from exercise are generally not durable and thus continued reinforcement and maintenance are necessary to sustain functional improvement.

Healthy dietary patterns are important as described in ADA and AHA guidance. Malnutrition, especially among older people with PAD, is a key factor to consider in the management of PAD. Malnutrition overall is associated with earlier death in people with

PAD. Nutrition is especially important in the setting of wound care in CLTI.

#### Consensus recommendations: lifestyle and exercise

- Recommend smoking cessation, physical activity, and healthy nutrition for all people with diabetes and PAD.
- SET has a strong evidence base for improving functional status and quality of life in people with symptomatic PAD. If SET access is limited, a structured home-based program is a reasonable alternative.



### Pharmacologic management

The 2024 ACC/AHA PAD guidelines recommend comprehensive medical therapy to reduce risk and improve symptoms in patients with PAD.<sup>1</sup> In addition to SET and smoking cessation, medical treatment is indicated to reduce the risk of MALE, MACE, and other cardio-kidney-metabolic complications and to improve function (Table 4). Recommended medications generally fall into the categories of antiplatelet/antithrombotic, blood pressure and lipid lowering, and glycemic control. However, specific medications have proven outcomes that benefit people with PAD and should be used if not contraindicated.

### Antithrombotic therapy

Dual pathway inhibition consisting of the combination of rivaroxaban 2.5 mg twice daily and low-dose aspirin once daily reduces MACE and MALE in patients with chronic symptomatic PAD and after peripheral revascularization. A greater absolute risk reduction and a more favorable benefit-risk profile was observed in patients with comorbid diabetes. In patients at high bleeding risk as defined by the Academic Research Consortium for High Bleeding Risk<sup>56</sup> or who are otherwise not candidates for dual pathway inhibition, antiplatelet monotherapy with low-dose aspirin or clopidogrel is recommended to decrease MACE in patients with chronic symptomatic PAD. However, antiplatelet monotherapy also increases the risk of bleeding and does not reduce MALE. Studies of aspirin in asymptomatic patients PAD with marginal ABI, including those with diabetes, have shown no benefit.<sup>57</sup> Thus, antithrombotic therapy should be considered in the context of shared decision-making and comorbidities.<sup>57</sup> The available evidence does not support the efficacy of dual antiplatelet therapy to reduce MACE or MALE in patients with PAD and diabetes unless being used for a separate coronary or cerebrovascular indication.

### Antihypertensive therapy

Antihypertensive therapy is recommended for all patients with PAD and hypertension to achieve a blood pressure goal of <130/80 mm Hg, in alignment with the 2025 Guidelines for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults.<sup>6</sup> A preference for angiotensin-converting enzyme inhibitors and angiotensin receptor blockers is specified on the basis of results for MACE benefit in the HOPE (Heart Outcomes Prevention Evaluation)<sup>58</sup> and ONTARGET (Telmisartan, Ramipril, or Both in Patients at High Risk for Vascular Events) trials<sup>59</sup>; however, individuals with PAD and diabetes should also receive angiotensin-converting enzyme inhibitors or angiotensin receptor blockers for renal and ASCVD protection

regardless of blood pressure. Patients with comorbid heart failure have an indication for sacubitril-valsartan, and clinicians should avoid therapeutic duplication of angiotensin receptor blockers in these patients.

### Low-density lipoprotein-lowering therapies

LDL-C lowering therapies include statins, ezetimibe, bempedoic acid, and PCSK9 inhibitors that reduce MACE in patients with ASCVD, including those with PAD. PCSK9 inhibitors and bempedoic acid also reduce MALE.<sup>1,60</sup> Measuring LDL-C should be a priority for all people with PAD and diabetes, and intensive treatment to achieve  $\geq 50\%$  reduction in LDL to  $\leq 55$  mg/dL should be initiated as per clinical practice guidelines. Emerging data suggest that remnant cholesterol may be important in the pathogenesis of PAD. Exploratory analyses of the FIELD (Effect of Fenofibrate on Amputation Events in People with Type 2 Diabetes)<sup>4,61</sup> and PROMINENT (Pemafibrate to Reduce Cardiovascular Outcomes by Reducing Triglycerides in Patients With Diabetes)<sup>5,62</sup> trials suggested that fibrates may lower rates of diabetic foot ulcer and minor amputation in patients with PAD and diabetes; however, these observations require prospective validation. Lipoprotein(a) is associated with PAD onset and with adverse limb outcomes, and several clinical trials are underway to determine whether medications targeting lipoprotein(a) will also be effective in reducing MACE in patients with atherosclerosis.

### Diabetes treatment

Management of diabetes in patients with PAD includes risk factor modification and treatment of hyperglycemia. Intensive control of blood glucose improves microvascular outcomes, such as nephropathy and retinopathy, but does not reduce incidence of myocardial infarction or stroke.<sup>63</sup> The ACCORD (Action to Control Cardiovascular Risk in Diabetes) trial<sup>64</sup> found that an intensive management strategy for glucose control, which used multiple medications available at the time, did not reduce myocardial infarction, stroke, or cardiovascular death but did increase total death rate. However, in the ACCORD study, intensive glucose control reduced the risk of amputation and microvascular complications.<sup>64</sup> The ADVANCE (Action in Diabetes and Vascular Disease: Preterax and Diamicron Modified Release Controlled Evaluation) trial,<sup>63</sup> which had a similar design, showed no increase in the death rate with intensive glucose control while also reporting a reduced risk for microvascular complications. The reduction in amputation with improved glycemic control is thus likely due to microvascular benefits and associated lower risk of complications such as neuropathy, ulceration, infection, diabetic kidney disease, and diabetic retinopathy.

Clinical practice guidelines for management of PAD recommend both SGLT2 inhibitors and GLP-1RA for people with PAD and type 2 diabetes for their broader cardiovascular and kidney benefits.<sup>65</sup> Trials of SGLT2 inhibitors have shown benefits for reducing heart failure, cardiovascular death, and kidney complications in patients with diabetes. An early concern for risk of amputation with canagliflozin was not confirmed in subsequent studies<sup>22</sup> and has not been reported for other SGLT2 inhibitors. However, closer attention to amputation risk may have introduced bias into who was enrolled in those later studies. To date, no study has shown that SGLT2 inhibitors reduce MALE or improve function in patients with PAD. Trials of GLP-1RA, including liraglutide, injectable semaglutide, tirzepatide, and oral semaglutide, have found that these reduce MACE.<sup>66,67</sup> Additional trials of GLP-1RA have shown that they have broader benefits, including reducing kidney complications and cardiovascular risk in those with comorbid kidney disease, as well as improved heart failure symptoms and outcomes in patients with heart failure and preserved ejection fraction.<sup>68,69</sup> Benefits of semaglutide for reducing major adverse limb events were confirmed in the SOUL (Semaglutide Cardiovascular Outcomes Trial), where hospitalization for acute or chronic limb ischemia was reduced by approximately 30%.<sup>48</sup> In addition, use of GLP-1RA also causes weight reduction, improves glycemic control and blood pressure, and decreases inflammation.<sup>66</sup>

#### Treatments for functional impairment

Few therapies are available for functional impairment in those with PAD and diabetes.<sup>1</sup> Cilostazol improves walking function in patients with intermittent claudication, irrespective of diabetes. It is contraindicated in patients with heart failure and has a high incidence of gastrointestinal adverse effects. Nonetheless, it should be considered for eligible patients with PAD and diabetes with intermittent claudication. Recently, the STRIDE (Research Study to Compare a Medicine Called Semaglutide Against Placebo in People with Peripheral Arterial Disease and Type 2 Diabetes) trial demonstrated that semaglutide improved walking function, symptoms, quality of life, as well as ABI in patients with symptomatic PAD and diabetes.<sup>3</sup> An exploratory analysis of STRIDE showed lower rates of adverse limb events and rescue revascularizations.

#### Consensus recommendations: medical management

- Because of medical complexity, people with diabetes may benefit from multidisciplinary care teams as clinically indicated, including cardiology, endocrinology, podiatry, primary care, vascular medicine, and vascular surgery.
- Evidence-based medications proven to improve cardiorenal and limb outcomes, functional status, and quality of life should be used in accordance with existing clinical practice guidelines.<sup>1,2</sup>
- SGLT2 inhibitors and GLP-1RA should be prioritized because of the broad cardio-kidney-metabolic benefit. One GLP-1RA, semaglutide, has specifically been shown to improve functional capacity, symptoms, and quality of life in people with symptomatic PAD.<sup>3</sup>
- Treatment of LDL-C to a target reduction  $\geq 50\%$ <sup>1</sup> and goal  $<55$  mg/dL<sup>4,5</sup> is recommended, using therapies with proven cardiovascular benefit.
- High blood pressure should be treated to a goal of  $<130/80$  mm Hg, ideally SBP  $<120$  mm Hg if it can be safely achieved.<sup>6</sup>
- Rivaroxaban 2.5 mg bid and aspirin 75-100 mg daily should be used to reduce MACE and MALE, except in people who are at high risk of bleeding.<sup>1</sup> The second line option is monotherapy with aspirin 75-100 mg or clopidogrel 75 mg daily, which reduces MACE but has not been shown to reduce MALE.

#### Surgical and Interventional Management

##### Role of revascularization

Lower-limb revascularization in diabetes is indicated for CLTI and may be considered for disabling claudication when conservative therapy fails. In the latter setting, intervention should be reserved for patients with suitable target lesions that offer durable long-term outcomes and can be treated with an acceptably low procedural risk. The clinical trajectory of PAD often differs in people with diabetes versus without diabetes. Neuropathy may enable silent progression from an asymptomatic state directly to CLTI, often without preceding claudication. Loss of pain perception and of other protective sensations, microcirculatory impairment, and heightened vulnerability to acute and chronic foot infection accelerate tissue loss, rendering the course unpredictable and sometimes abrupt. Prompt lower-limb revascularization is therefore central to limb salvage strategies in people with diabetes and CLTI.<sup>70</sup> The WIfI system, which grades limb perfusion, wound size, and infection, helps guide treatment priorities.<sup>12</sup>

Atherosclerotic disease in people with diabetes is characteristically distal, with relative preservation of the femoropopliteal segment, but extensive infrapopliteal involvement, reduced collateralization, and frequent disease of the profunda femoris.<sup>71</sup> Medial arterial calcification, particularly below the knee, is common and complicates intervention. These anatomic features support management in centers that offer the full spectrum of endovascular, hybrid, and open revascularization techniques. Except in rare circumstances—such as in fully

bedridden patients or in the setting of life-threatening sepsis clearly originating from the limb—amputation should always be preceded by comprehensive assessment of revascularization potential by a vascular specialist, ideally with the support of a multidisciplinary team skilled in wound management, infection control, and reconstructive foot care. Conversely, lower-limb revascularization is not indicated in clinically asymptomatic patients, and current evidence does not support its use to prevent subsequent CLTI.<sup>72</sup>

#### Periprocedural glycemic targets

In patients with PAD undergoing lower-extremity revascularization, periprocedural glycemic control has emerged as a critical determinant of outcomes. Elevated blood glucose levels in the periprocedural period have been associated with systemic inflammation, reflected by an increase in C-reactive protein and interleukin-6 levels.<sup>73</sup> This proinflammatory state may accelerate vascular injury, impair endothelial function, and compromise procedural success. Although a consensus blood glucose target has not been determined, a mean blood glucose  $\geq 144$  mg/dL has been associated with lower graft patency and increased MALE in patients undergoing infrapopliteal revascularization.<sup>74</sup> These findings stress the importance of acute glucose management during intervention because elevated blood glucose levels exert a greater influence on outcomes than chronic glycemic burden.<sup>75</sup> Hemoglobin A1C, a marker of chronic glucose control, has not demonstrated an association with outcomes after lower-extremity revascularization.<sup>76</sup> However, the increasingly wide use of continuous glucose monitoring devices in people with diabetes means that additional measures of glucose control, such as time in range or glucose variability, have emerged as potentially more sensitive indicators of glucose control.

#### Wound care and preventive foot care

Wound and foot care are vitally important in patients with diabetes and PAD, who have an increased risk for nonhealing ulcers, infection, and tissue loss. Individuals with diabetes should inspect their extremities daily, wear proper footwear at all times, and identify early wounds to reduce complications.<sup>77</sup> A multidisciplinary team approach, which includes specialists in podiatry, vascular surgery, and infectious diseases, is recommended by the American Diabetes Association<sup>9</sup> and AHA/ACC<sup>1</sup> to improve healing and limb outcomes. Debridement, off-loading, and properly guided antibiotic therapy are essential in the treatment of lower extremity wounds in patients with diabetes and PAD.

#### Decisions surrounding revascularization: Endovascular versus surgical approach

Lower-limb revascularization in people with PAD and diabetes hinges on disease stage. In patients with CLTI, the priority is prompt restoration of direct inline flow to the foot or wound while minimizing procedural risks.<sup>78</sup> The ultimate choice of technique is less critical than timely, durable reperfusion. Complex, heavily calcified infrapopliteal lesions have poorer patency regardless of modality; high-quality single segment autologous vein bypass often yields superior outcomes but carries higher perioperative risk.<sup>28</sup> Ultrasound mapping of the great saphenous vein should therefore be integrated in the preoperative workflow in patients with more complex lesions. Endovascular options often suffice for less complex disease and are an option for frail patients also with complex lesions when surgery is unsuitable. Endovascular approaches offer lower risk to the patient because of their minimally invasive nature. Care should be individualized in centers offering both modalities, with revascularization decisions shaped by multidisciplinary evaluation to optimize limb salvage rates.<sup>79</sup>

#### Consensus recommendations: surgical and interventional management

- Before amputation, every person with diabetes and CLTI should be evaluated by a limb salvage team.
- Revascularization should be pursued on an urgent basis in individuals with diabetes and PAD who have evidence of foot infection and tissue loss.
- Optimal periprocedural blood glucose management and effective infection treatment is essential to maximizing outcomes.<sup>7</sup>

#### Management: Monitoring and follow-up

The optimal timing of follow-up is unproven but should be tailored according to symptom severity, risk of future adverse outcomes, and need to optimize guideline-directed medical therapy. Routine assessment of symptoms is essential and should include formal evaluation of functional capacity and quality of life to elicit the presence of undiagnosed disease in patients who may be self-limiting. Wifl scores should be regularly calculated in patients with foot wounds to monitor amputation risk. Ongoing management of risk factors is recommended, and guideline-directed medical therapy should be optimized. Relevant factors such as medication adherence and affordability should be routinely readdressed. Participation in SET or structured home-based exercise should be reinforced. Periprocedural “stop rules” for relevant diabetes medications, such as SGLT2 inhibitors or GLP-1RA, lack consistent guidance, and decisions should be tailored to the individual patient. In patients

with new or worsening symptoms, TBI and exercise ABI remain valuable tools.

Patients who are postrevascularization should have periodic clinical evaluation of lower extremity symptoms and pulse and foot assessment. Patients who have had infrainguinal surgical revascularization with autogenous saphenous vein and without new symptoms should have ABI and TBI measurements and duplex ultrasound at 1 to 3 months, 6 months, 12 months, and then annually. In patients with prosthetic bypass, as well as in those who underwent endovascular therapy, the benefit of routine duplex is uncertain. An ABI measurement is recommended for patients who have undergone either surgical or endovascular revascularization and have new lower extremity signs or symptoms. A decrease in ABI of  $>0.15$  is concerning for revascularization failure, and early reintervention can improve patency. New rest pain, tissue loss, infection, duplex evidence of severe restenosis, or rapid marked decline in functional capacity should prompt urgent clinical review; WIFI stage can help prioritize management.

#### Evidence gaps and future directions

Important evidence gaps limit our ability to provide optimal care for patients with PAD and diabetes. These begin with screening algorithms, which are complicated in people with diabetes due to the lower sensitivity of ABI. Comparisons of ABI plus TBI, exercise TBI, or the addition of biomarkers or imaging to guide risk stratification and therapeutic intensification are needed. Novel agents that target tissue-level perfusion and myopathy are also needed. The COMPASS, FOURIER, STRIDE, and SOUL trials highlight the need for dedicated trials across medication classes using MALE and functional status as primary outcomes. Regarding exercise therapy, trials should identify the most effective protocols, especially for home-based programs. The role of telehealth or hybrid programs also warrants further study. For revascularization, prediction of functional improvement and limb preservation are the top priorities. More research on surgical and endovascular strategies for infrapopliteal or multivessel disease is needed, including definition of the most appropriate revascularization devices and device combinations as well as optimal postprocedural surveillance intervals. Research on microvascular disease is another priority, including how it may drive amputation risk and how it relates to other microvascular markers of disease like retinopathy. Optimal periprocedural glycemic targets also require study. For trial endpoints, a major advance would be standardization of key endpoints: MALE, functional capacity, and quality of life. These should be harmonized across studies to facilitate comparisons. At the health care system level, implementation of screening and management should be

assessed. Cost-effectiveness studies of medications, testing, and SET would inform payer coverage decisions. PAD registries, ideally linked to electronic health records, could capture phenotypes, patient reported outcomes, MACE, and MALE.

#### CONCLUSION

PAD in people with diabetes is common, underrecognized, and drives higher rates of MALE and MACE. Women, several racial and ethnic groups, and people with lower socioeconomic status face greater lifetime risk of complications, underscoring an equity imperative. Lack of awareness and underdiagnosis need to be addressed. Despite modest differences across specialty society clinical practice guidelines, broad consensus is that risk-based screening is standard of care. Systematic pulse and foot examinations with appropriate physiologic testing, coupled with smoking cessation, physical activity, and nutrition counseling, are the most direct levers to mitigate adverse outcomes. SET has robust evidence for efficacy for chronic symptomatic PAD, with structured home-based programs reasonable when SET access is limited.

High-intensity statins, reinforced by ezetimibe, PCSK9 inhibitors, or bempedoic acid as needed, effectively reduce cardiovascular and limb risk. Blood pressure targets per diabetes clinical practice guidelines further improve outcomes. Dual-pathway inhibition with low-dose rivaroxaban plus aspirin should be used in high-risk patients without indications for full anticoagulation or dual antiplatelet therapy and with acceptable bleeding risk; evidence for dual antiplatelet therapy to improve limb outcomes is lacking. SGLT2 inhibitors and GLP-1RA are appropriate for most people with diabetes at elevated cardiovascular risk, including those with PAD; semaglutide has data supporting functional improvement and quality-of-life gains in PAD.

Rapid recognition of CLTI and ALI, early involvement of multidisciplinary teams, and timely revascularization are central to limb preservation. These interventions are best delivered at experienced centers that offer the full spectrum of endovascular and surgical options. Periprocedural glycemic management and structured postrevascularization follow-up are also critical. Scaling improvement requires systems of care: electronic health record-driven workflows, team-based management, and remote coaching to increase uptake of proven therapies. Key knowledge gaps persist in optimal screening cadence and implementation, standardized clinical endpoints, and cost-effectiveness needed to align incentives. Implementing these evidence-based strategies through equitable pathways is the best way to prevent limb loss and cardiovascular events in people with diabetes and PAD.

## PRESIDENT AND STAFF

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Marc Bonaca, MD, MPH, FACC  
Bonnie Ky, MD, FACC  
James Januzzi, MD, FACC

## REFERENCES

- Writing Committee Members, Gornik HL, Aronow HD, et al. 2024 ACC/AHA/AACVPR/APMA/ABC/SCAI/SVM/SVN/SVS/SIR/VESS guideline for the management of lower extremity peripheral artery disease: a report of the american college of cardiology/american heart association joint committee on clinical practice guidelines. *J Am Coll Cardiol*. 2024;83:2497-2604.
- American Diabetes Association Professional Practice Committee. 11. Chronic kidney disease and risk management: standards of care in diabetes-2025. *Diabetes Care*. 2025;48:S239-S251.
- Bonaca MP, Catarig A-M, Houliand K, et al. Semaglutide and walking capacity in people with symptomatic peripheral artery disease and type 2 diabetes (STRIDE): a phase 3b, double-blind, randomised, placebo-controlled trial. *Lancet Lond Engl*. 2025;405:1580-1593.
- Bonaca MP, Nault P, Giugliano RP, et al. Low-density lipoprotein cholesterol lowering with evolocumab and outcomes in patients with peripheral artery disease: insights from the FOURIER trial (further cardiovascular outcomes research with PCSK9 inhibition in subjects with elevated risk). *Circulation*. 2018;137:338-350.
- Schwartz GG, Steg PG, Szarek M, et al. Peripheral artery disease and venous thromboembolic events after acute coronary syndrome: role of lipoprotein(a) and modification by alirocumab: prespecified analysis of the ODYSSEY OUTCOMES randomized clinical trial. *Circulation*. 2020;141:1608-1617.
- Jones DW, Ferdinand KC, Taler SJ, et al. 2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM 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 joint committee on clinical practice guidelines. *J Am Coll Cardiol*. 2025. S0735-1097(25)06480-0.
- Twine CP, Kakkos SK, Aboyans V, et al. Editor's Choice: European Society for Vascular Surgery (ESVS) 2023 clinical practice guidelines on antithrombotic therapy for vascular diseases. *Eur J Vasc Endovasc Surg Off J Eur Soc Vasc Surg*. 2023;65:627-689.
- American Diabetes Association Professional Practice Committee. 2. Diagnosis and classification of diabetes: standards of care in diabetes-2025. *Diabetes Care*. 2025;48:S27-S49.
- American Diabetes Association Professional Practice Committee. 12. Retinopathy, neuropathy, and foot care: standards of care in diabetes-2025. *Diabetes Care*. 2025;48:S252-S265.
- Arnett DK, Blumenthal RS, Albert MA, et al. 2019 ACC/AHA Guideline on the primary prevention of cardiovascular disease. *JACC*. 2019;74:e177-e232.
- Ramos EL, Dayan CM, Chatenoud L, et al. Teplizumab and  $\beta$ -cell function in newly diagnosed type 1 diabetes. *N Engl J Med*. 2023;389:2151-2161.
- Mills JL, Conte MS, Armstrong DG, et al. The society for vascular surgery lower extremity threatened limb classification system: risk stratification based on wound, ischemia, and foot infection (WIFI). *J Vasc Surg*. 2014;59:220234. e1-2.
- Kou T, Qian X, Liu Y, et al. Global, regional, and national burden of peripheral artery disease: a systematic analysis of prevalence, incidence, deaths, and DALYs with projections for the next 15 years. *Nutr Metab Cardiovasc Dis NMCD*. 2025;35:104226.
- Søgaard M, Nielsen PB, Eldrup N, et al. Epidemiological trends and projections of incidence, prevalence, and disease related mortality associated with peripheral arterial disease: observations using nationwide Danish data. *Eur J Vasc Endovasc Surg Off J Eur Soc Vasc Surg*. 2023;66:662-669.
- Criqui MH, Matsushita K, Aboyans V, et al. Lower extremity peripheral artery disease: contemporary epidemiology, management gaps, and future directions: a scientific statement from the American Heart Association. *Circulation*. 2021;144:e171-e191.
- Lange S, Diehm C, Darius H, et al. High prevalence of peripheral arterial disease and low treatment rates in elderly primary care patients with diabetes. *Exp Clin Endocrinol Diabetes Off J Ger Soc Endocrinol Ger Diabetes Assoc*. 2004;112:566-573.
- Hirsch AT, Criqui MH, Treat-Jacobson D, et al. Peripheral arterial disease detection, awareness, and treatment in primary care. *JAMA*. 2001;286:1317-1324.
- Chen X, Wang W, Dong S, et al. Trends of the burden, risk factors, and future projections of peripheral artery disease in the elderly. *BMC Geriatr*. 2025;25:589.
- Allison MA, Armstrong DG, Goodney PP, et al. Health disparities in peripheral artery disease: a scientific statement from the American Heart Association. *Circulation*. 2023;148:286-296.
- Stabley JN, Towler DA. Arterial calcification in diabetes mellitus: preclinical models and translational implications. *Arterioscler Thromb Vasc Biol*. 2017;37:205-217.
- Beckman JA, Duncan MS, Damrauer SM, et al. Microvascular disease, peripheral artery disease, and amputation. *Circulation*. 2019;140:449-458.
- Bonaca MP, Wiviott SD, Zelniker TA, et al. Dapaflizotin and cardiac, kidney, and limb outcomes in patients with and without peripheral artery disease in DECLARE-TIMI 58. *Circulation*. 2020;142:734-747.
- Govsyeyev N, Nehler MR, Low Wang CC, et al. Etiology and outcomes of amputation in patients with peripheral artery disease in the EUCLID trial. *J Vasc Surg*. 2022;75:660670. e3.
- Smolderen KG, Alabi O, Collins TC, et al. Advancing peripheral artery disease quality of care and outcomes through patient-reported health status assessment: a scientific statement from the American Heart Association. *Circulation*. 2022;146:e286-e297.
- American Diabetes Association Professional Practice Committee. 10. Cardiovascular disease and risk management: standards of care in diabetes-2025. *Diabetes Care*. 2025;48:S207-S238.
- American Diabetes Association Professional Practice Committee. 5. Facilitating positive health behaviors and well-being to improve health outcomes: standards of care in diabetes-2025. *Diabetes Care*. 2025;48:S86-S127.
- Creager MA, Matsushita K, Arya S, et al. Reducing nontraumatic lower-extremity amputations by 20% by 2030: time to get to our feet: a policy statement from the American Heart Association. *Circulation*. 2021;143:e875-e891.
- Farber A, Menard MT, Conte MS, et al. Surgery or endovascular therapy for chronic limb-threatening ischemia. *N Engl J Med*. 2022;387:2305-2316.
- Anon. Peripheral matters | peripheral artery disease: moving from awareness to action. Am Coll Cardiol. Accessed September 18, 2025. <https://www.acc.org/latest-in-cardiology/articles/2023/09/01/01/42/http%3a%2f%2fwww.acc.org%2fatest-in-cardiology%2farticles%2f2023%2f09%2f01%2f42%2fperipheral-matters-peripheral-artery-disease-moving-from-awareness-to-action>
- Aboyans V, Criqui MH, Abraham P, et al. Measurement and interpretation of the ankle-brachial index: a scientific statement from the American Heart Association. *Circulation*. 2012;126:2890-2909.
- Hingorani A, LaMuraglia GM, Henke P, et al. The management of diabetic foot: a clinical practice guideline by the Society for Vascular Surgery in collaboration with the American Podiatric Medical Association and the Society for Vascular Medicine. *J Vasc Surg*. 2016;63:3S-21S.
- Nordanstig J, Behrendt C-A, Baumgartner I, et al. Editor's choice: European Society for Vascular Surgery (ESVS) 2024 clinical practice guidelines on the management of asymptomatic lower limb peripheral arterial disease and intermittent claudication. *Eur J Vasc Endovasc Surg Off J Eur Soc Vasc Surg*. 2024;67:9-96.



33. Shah AD, Langenberg C, Rapsomaniki E, et al. Type 2 diabetes and incidence of cardiovascular diseases: a cohort study in 1.9 million people. *Lancet Diabetes Endocrinol.* 2015;3:105-113.
34. McDermott MM, Guralnik JM, Tian L, et al. Associations of borderline and low normal ankle-brachial index values with functional decline at 5-year follow-up: the WALCS (Walking and Leg Circulation Study). *J Am Coll Cardiol.* 2009;53:1056-1062.
35. Rösenapf G, Abilmona N, Morbach S, Sigl M. Peripheral arterial disease and the diabetic foot syndrome: neuropathy makes the difference! A narrative review. *J Clin Med.* 2024;13:2141.
36. Pop-Busui R, Boulton AJM, Feldman EL, et al. Diabetic neuropathy: a position statement by the American Diabetes Association. *Diabetes Care.* 2017;40:136-154.
37. Armstrong DG, Boulton AJM, Bus SA. Diabetic foot ulcers and their recurrence. *N Engl J Med.* 2017;376:2367-2375.
38. ElSayed NA, Aleppo G, Aroda VR, et al. 12. Retinopathy, neuropathy, and foot care: standards of care in diabetes-2023. *Diabetes Care.* 2023;46:S203-S215.
39. Smolderen KG, Ujueta F, Buckley Behan D, et al. Understanding the pain experience and treatment considerations along the spectrum of peripheral artery disease: a scientific statement from the American Heart Association. *Circ Cardiovasc Qual Outcomes.* 2025;18:e000135.
40. Berger A, Simpson A, Bhagnani T, et al. Incidence and cost of major adverse cardiovascular events and major adverse limb events in patients with chronic coronary artery disease or peripheral artery disease. *Am J Cardiol.* 2019;123:1893-1899.
41. Mir H, Eisenberg MJ, Benowitz NL, et al. Canadian Cardiovascular Society clinical practice update on contemporary approaches to smoking cessation. *Can J Cardiol.* 2025;41:797-812.
42. CAPRIE Steering Committee. A randomised, blinded, trial of clopidogrel versus aspirin in patients at risk of ischaemic events (CAPRIE). CAPRIE Steering Committee. *Lancet Lond Engl.* 1996;348:1329-1339.
43. Anand SS, Caron F, Eikelboom JW, et al. Major adverse limb events and mortality in patients with peripheral artery disease: the COMPASS trial. *J Am Coll Cardiol.* 2018;71:2306-2315.
44. Bonaca MP, Bauersachs RM, Anand SS, et al. Rivaroxaban in peripheral artery disease after revascularization. *N Engl J Med.* 2020;382:1994-2004.
45. Zinman B, Wanner C, Lachin JM, et al. Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. *N Engl J Med.* 2015;373:2117-2128.
46. Neal B, Perkovic V, Mahaffey KW, et al. Canagliflozin and cardiovascular and renal events in type 2 diabetes. *N Engl J Med.* 2017;377:644-657.
47. Marso SP, Bain SC, Consoli A, et al. Semaglutide and cardiovascular outcomes in patients with type 2 diabetes. *N Engl J Med.* 2016;375:1834-1844.
48. McGuire DK, Marx N, Mulvagh SL, et al. Oral semaglutide and cardiovascular outcomes in high-risk type 2 diabetes. *N Engl J Med.* 2025;392:2001-2012.
49. Arya S, Khakharia A, Binney ZO, et al. Association of statin dose with amputation and survival in patients with peripheral artery disease. *Circulation.* 2018;137:1435-1446.
50. Lee Y-J, Cho JY, You SC, et al. Moderate-intensity statin with ezetimibe vs. high-intensity statin in patients with diabetes and atherosclerotic cardiovascular disease in the RACING trial. *Eur Heart J.* 2023;44:972-983.
51. Nissen SE, Lincoff AM, Brennan D, et al. Bempedoic acid and cardiovascular outcomes in statin-intolerant patients. *N Engl J Med.* 2023;388:1353-1364.
52. Hennrikus D, Joseph AM, Lando HA, et al. Effectiveness of a smoking cessation program for peripheral artery disease patients: a randomized controlled trial. *J Am Coll Cardiol.* 2010;56:2105-2112.
53. Tonstad S, Farsang C, Klaene G, et al. Bupropion SR for smoking cessation in smokers with cardiovascular disease: a multicentre, randomised study. *Eur Heart J.* 2003;24:946-955.
54. McDermott MM, Ades P, Guralnik JM, et al. Treadmill exercise and resistance training in patients with peripheral arterial disease with and without intermittent claudication: a randomized controlled trial. *JAMA.* 2009;301:165-174.
55. Domanchuk K, Ferrucci L, Guralnik JM, et al. Progenitor cell release plus exercise to improve functional performance in peripheral artery disease: the PROPEL Study. *Contemp Clin Trials.* 2013;36:502-509.
56. Urban P, Mehran R, Collieran R, et al. Defining high bleeding risk in patients undergoing percutaneous coronary intervention. *Circulation.* 2019;140:240-261.
57. Belch J, MacCuish A, Campbell I, et al. The prevention of progression of arterial disease and diabetes (POPADAD) trial: factorial randomised placebo controlled trial of aspirin and antioxidants in patients with diabetes and asymptomatic peripheral arterial disease. *BMJ.* 2008;337:a1840.
58. Heart Outcomes Prevention Evaluation Study Investigators, Yusuf S, Sleight P, et al. Effects of an angiotensin-converting-enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients. *N Engl J Med.* 2000;342:145-153.
59. Investigators ONTARGET, Yusuf S, Teo KK, et al. Telmisartan, ramipril, or both in patients at high risk for vascular events. *N Engl J Med.* 2008;358:1547-1559.
60. Nissen SE, Menon V, Nicholls SJ, et al. Bempedoic acid for primary prevention of cardiovascular events in statin-intolerant patients. *JAMA.* 2023;330:131-140.
61. Rajamani K, Colman PG, Li LP, et al. Effect of fenofibrate on amputation events in people with type 2 diabetes mellitus (FIELD study): a prespecified analysis of a randomised controlled trial. *Lancet Lond Engl.* 2009;373:1780-1788.
62. Marinho LL, Everett BM, Aday AW, et al. Effect of pemaflibrate on diabetic foot ulceration and gangrene: an exploratory analysis from PROMINENT. *J Am Coll Cardiol.* 2024;84:408-410.
63. ADVANCE Collaborative Group, Patel A, MacMahon S, et al. Intensive blood glucose control and vascular outcomes in patients with type 2 diabetes. *N Engl J Med.* 2008;358:2560-2572.
64. Action to Control Cardiovascular Risk in Diabetes Study Group, Gerstein HC, Miller ME, et al. Effects of intensive glucose lowering in type 2 diabetes. *N Engl J Med.* 2008;358:2545-2559.
65. Usman MS, Bhatt DL, Hameed I, et al. Effect of SGLT2 inhibitors on heart failure outcomes and cardiovascular death across the cardiometabolic disease spectrum: a systematic review and meta-analysis. *Lancet Diabetes Endocrinol.* 2024;12:447-461.
66. Lee MMY, Sattar N, Pop-Busui R, et al. Cardiovascular and kidney outcomes and mortality with long-acting injectable and oral glucagon-like peptide 1 receptor agonists in individuals with type 2 diabetes: a systematic review and meta-analysis of randomized trials. *Diabetes Care.* 2025;48:846-859.
67. Packer M, Zile MR, Kramer CM, et al. Tirzepatide for heart failure with preserved ejection fraction and obesity. *N Engl J Med.* 2025;392:427-437.
68. Perkovic V, Tuttle KR, Rossing P, et al. Effects of semaglutide on chronic kidney disease in patients with type 2 diabetes. *N Engl J Med.* 2024;391:109-121.
69. Kosiborod MN, Petrie MC, Borlaug BA, et al. Semaglutide in patients with obesity-related heart failure and type 2 diabetes. *N Engl J Med.* 2024;390:1394-1407.
70. Elgzyri T, Larsson J, Nyberg P, Thörne J, Eriksson K-F, Apelqvist J. Early revascularization after admittance to a diabetic foot center affects the healing probability of ischemic foot ulcer in patients with diabetes. *Eur J Vasc Endovasc Surg Off J Eur Soc Vasc Surg.* 2014;48:440-446.
71. Jude EB, Oyibo SO, Chalmers N, Boulton AJ. Peripheral arterial disease in diabetic and nondiabetic patients: a comparison of severity and outcome. *Diabetes Care.* 2001;24:1433-1437.
72. Mazzolai L, Teixido-Tura G, Lanzi S, et al. 2024 ESC Guidelines for the management of peripheral arterial and aortic diseases. *Eur Heart J.* 2024;45:3538-3700.
73. Ujueta F, Weiss EN, Sedlis SP, Shah B. Glycemic control in coronary revascularization. *Curr Treat Options Cardiovasc Med.* 2016;18:12.
74. Singh S, Armstrong EJ, Sherif W, et al. Association of elevated fasting glucose with lower patency and increased major adverse limb events among patients with diabetes undergoing infrapopliteal balloon angioplasty. *Vasc Med Lond Engl.* 2014;19:307-314.
75. Yap T, Sillicks J, Weerakkody R, et al. Predictors of outcome in diabetic patients undergoing infrapopliteal endovascular revascularization for chronic limb-threatening ischemia. *J Vasc Surg.* 2022;75:618-624.
76. Buelter J, Smith JB, Carel ZA, et al. Preoperative HbA1c and outcomes following lower extremity vascular procedures. *Ann Vasc Surg.* 2022;83:298-304.
77. Conte MS, Bradbury AW, Kolh P, et al. Global vascular guidelines on the management of chronic limb-threatening ischemia. *J Vasc Surg.* 2019;69:3S-12SS.e40.
78. Chuter V, Schaper N, Mills J, et al. Effectiveness of revascularisation for the ulcerated foot in patients with diabetes and peripheral artery disease: a systematic review. *Diabetes Metab Res Rev.* 2024;40:e3700.
79. Jones DW, Farber A, Armstrong DG, et al. Characteristics of multidisciplinary limb preservation teams and their impact on outcomes in the BEST-CLI trial. *J Vasc Surg.* 2025. S0741-5214(25)01660-X.

**KEY WORDS** ACC Scientific Statement, peripheral artery disease, diabetes, major adverse limb events, prevention, atherosclerotic vascular disease



**APPENDIX 1. AUTHOR RELATIONSHIPS WITH INDUSTRY AND OTHER ENTITIES (RELEVANT)—MANAGEMENT OF PERIPHERAL ARTERY DISEASE IN ADULTS WITH DIABETES: 2025 ACC SCIENTIFIC STATEMENT**

Committee Member	Employment	Consultant	Speakers Bureau	Ownership/ Partnership/ Principal	Personal Research	Institutional, Organizational, or Other Financial Benefit	Expert Witness
Sandeep Das, <i>Chair</i>	University of Texas SouthWestern—Professor of Cardiology	None	None	None	None	None	None
Marc P. Bonaca	Colorado Prevention Center, University of Colorado Anschutz—Director, Vascular Research; Professor of Medicine	None	None	None	<ul style="list-style-type: none"> <li>■ Abbott*</li> <li>■ Amgen*</li> <li>■ AstraZeneca</li> <li>■ Bayer*</li> <li>■ Bristol-Myers Squibb Co.*</li> <li>■ Esperion*</li> <li>■ Fortress Biotech*</li> <li>■ Janssen Pharmaceuticals*</li> <li>■ Kowa Research*</li> <li>■ Lexicon*</li> <li>■ Merck &amp; Co.*</li> <li>■ Novo Nordisk*</li> <li>■ Pfizer Inc*</li> <li>■ PhaseBio*</li> <li>■ Regeneron</li> <li>■ Regio Biosciences</li> <li>■ Sanifit*</li> <li>■ Sanofi Aventis*</li> </ul>	<ul style="list-style-type: none"> <li>■ Anthos Therapeutics*</li> <li>■ Epizon Pharma*</li> <li>■ Novartis*</li> <li>■ Silence Therapeutics*</li> <li>■ Thrombosis Research Institute*</li> <li>■ VarmX*</li> </ul>	None
Mark A. Creager	Dartmouth Hitchcock Medical Center—Emeritus Director of the Heart and Vascular Center; Professor of Medicine; Director, Center for Rural Health Care Delivery Science	None	None	None	None	None	None
Nisa Maruthur	Johns Hopkins University—Associate Professor, School of Medicine, School of Epidemiology; Director, General Internal Medicine Fellowship Program	None	None	None	None	None	None
Joakim Nordanstig	University of Gothenburg—Professor and Senior Lecturer, Vascular Surgery	<ul style="list-style-type: none"> <li>■ AstraZeneca</li> <li>■ Novo Nordisk</li> </ul>	None	None	<ul style="list-style-type: none"> <li>■ Novo Nordisk†</li> </ul>	None	None
Rodica Pop-Busui	University of Oregon—Professor of Medicine; Chief of the Division of Endocrinology, Diabetes and Clinical Nutrition; Director of the Harold Schnitzer Diabetes Health Center	<ul style="list-style-type: none"> <li>■ Averitas</li> <li>■ Lexicon Pharma*</li> <li>■ Nevro</li> <li>■ Novo Nordisk</li> <li>■ Roche</li> <li>■ Viatris*</li> </ul>	None	None	<ul style="list-style-type: none"> <li>■ Bayer*</li> <li>■ Breakthrough T1D*</li> <li>■ NIDDK (2)*</li> <li>■ Novo Nordisk*</li> </ul>	<ul style="list-style-type: none"> <li>■ ADA (Officer, Trustee)†</li> </ul>	None
Francisco Ujueta	Vanderbilt University—Assistant Professor of Medicine	None	None	None	None	None	None

This table represents the relationships of committee members with industry and other entities that were determined to be relevant to this document. These relationships were reviewed and updated in conjunction with all meetings and/or conference calls of the writing committee during the document development process. The table does not necessarily reflect relationships with industry at the time of publication. A person is deemed to have a significant interest in a business if the interest represents ownership of  $\geq 5\%$  of the voting stock or share of the business entity or ownership of  $\geq \$5,000$  of the fair market value of the business entity; or if funds received by the person from the business entity exceed 5% of the person's gross income for the previous year. Relationships that exist with no financial benefit are also included for the purpose of transparency. Relationships in this table are modest unless otherwise noted. According to the ACC, a person has a relevant relationship IF: (a) the relationship or interest relates to the same or similar subject matter, intellectual property or asset, topic, or issue addressed in the document; (b) the company/entity (with whom the relationship exists) makes a drug, drug class, or device addressed in the document or makes a competing drug or device addressed in the document; or (c) the person or a member of the person's household has a reasonable potential for financial, professional, or other personal gain or loss as a result of the issues/content addressed in the document. For the purposes of full transparency, the authors' comprehensive disclosure information is available in a [Supplemental Appendix](#).

\*Significant relationship.

†No financial benefit.

ACC = American College of Cardiology; ADA = American Diabetes Association.

**APPENDIX 2. PEER REVIEWER RELATIONSHIPS WITH INDUSTRY AND OTHER ENTITIES  
(COMPREHENSIVE)—MANAGEMENT OF PERIPHERAL ARTERY DISEASE IN ADULTS WITH DIABETES:  
2025 ACC SCIENTIFIC STATEMENT**

Reviewer	Employment	Consultant	Speakers Bureau	Ownership/ Partnership/ Principal	Personal Research	Institutional, Organizational, or Other Financial Benefit	Expert Witness
Vanita Aroda	Director of Diabetes Clinical Research, Brigham and Women's Hospital; Associate Professor of Medicine, Harvard Medical School	<ul style="list-style-type: none"> <li>Mediflix</li> <li>Sanofi*</li> </ul>	None	<ul style="list-style-type: none"> <li>Aditum Bio†</li> <li>Flagship Pioneering†</li> </ul>	None	<ul style="list-style-type: none"> <li>American Diabetes Association‡</li> </ul>	None
Joshua Beckman	Chief of Vascular Medicine; Gayle and Paul Stoffel Distinguished Chair in Cardiology, UT Southwestern Medical Center	<ul style="list-style-type: none"> <li>JanOne</li> <li>Medtronic</li> <li>Merck</li> <li>MingSight</li> <li>Novartis*</li> <li>Novo Nordisk</li> <li>Regeneron</li> <li>Tourmaline</li> </ul>	None	<ul style="list-style-type: none"> <li>JanaCare‡</li> </ul>	None	<ul style="list-style-type: none"> <li>Vascular Interventional Advances*</li> </ul>	None
Marianne Brodmann	Head of Division of Angiology Head of Clinical Research, Division of Angiology Medical University of Graz	<ul style="list-style-type: none"> <li>Angiodynamics</li> <li>BD Bard</li> <li>Biotronik</li> <li>Boston Scientific</li> <li>Cook</li> <li>Medtronic</li> <li>Penumbra</li> <li>R3 Vascular‡</li> <li>Reflow</li> <li>Shockwave</li> </ul>	None	None	None	<ul style="list-style-type: none"> <li>Abbott§</li> <li>Acotec§</li> <li>CIRSE§</li> <li>Cordis§</li> </ul>	None

\*Significant relationship.

†Spouse relationship.

‡No financial benefit.

§Clinical Trial Enroller. Relationship with this company is limited to enrolling patients in clinical trials. This disclosure was entered under the Clinical Trial Enroller category in the ACC's disclosure system. To appear in this category, the author acknowledges that there is no direct or institutional relationship with the trial sponsor as defined in the ACC/AHA Disclosure Policy for Writing Committees.)

ACC = American College of Cardiology; AHA = American Heart Association.