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SOCIETAL STATEMENT

2024 Lower Extremity Peripheral Artery Disease Guideline-at-a-Glance

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INTRODUCTION

The 2024 ACC/AHA/AACVPR/APMA/ABC/SCAI/SVM/SVN/SIR/VESS Guideline for the Management of Lower Extremity Peripheral Artery Disease (ACC/AHA/Multisociety PAD Guideline)[1] highlights the importance of peripheral artery disease (PAD) as a public health issue that is often overlooked and underserved in many communities and is associated with increased risk of amputation, major cardiovascular events, impaired quality of life (QOL), and poor functional status. The recommendations emphasize the importance of assessing for PAD-related risk amplifiers and evidence of health disparities, as well as utilization of effective medical therapies and lifestyle interventions when developing patient-centered treatment plans. This Guideline-at-a-Glance highlights practice-changing recommendations from the guideline to accelerate adoption into clinical practice.

ACC guideline dissemination is an organization-wide effort overseen by the Solution Set Oversight Committee, whose goal is to ensure the integration of guideline content throughout ACC's clinical policy, education, registry, membership, and advocacy efforts. For each guideline, an ACC Guideline Dissemination Workgroup is created to influence dissemination strategy and to create tools to facilitate the implementation of key changes in practice. These tools include the *JACC* **Central Illustration**, as well as tables highlighting updates in the 2024 ACC/AHA/Multisociety PAD Guideline and comparisons to the 2017 European Society of Cardiology (ESC) PAD Guideline.[2]

TOP 10 TAKE-HOME MESSAGES

The following Top 10 Take-Home Messages are taken directly from the ACC/AHA/Multisociety PAD Guideline. The ACC PAD Guideline Dissemination Workgroup selected 3 of the Top 10 Take-Home Messages (in bold) as key themes for this Guideline-at-a-Glance as they represent the most impactful recommendation changes compared to previous guidelines and address known gaps in clinical practice.

1. **Peripheral artery disease is a common cardiovascular disease associated with increased risk of amputation, myocardial infarction, stroke, and death, as well as impaired QOL, walking performance, and functional status.**
2. This guideline defines 4 clinical subsets of PAD: asymptomatic PAD (may have functional impairment), chronic symptomatic PAD (including claudication), chronic limb-threatening ischemia, and acute limb ischemia.
3. Detection of PAD in most patients is accomplished through the history, physical examination, and the resting ankle-brachial index.
4. **Health disparities in PAD are associated with poor limb and cardiovascular outcomes and must be addressed at the individual patient and population levels, with interventions coordinated between multiple stakeholders across the cardiovascular community and public health infrastructure.**
5. **Effective medical therapies for patients with PAD should be prescribed to prevent major adverse cardiovascular events and major adverse limb events for patients with PAD, including antiplatelet (generally single antiplatelet) and antithrombotic therapy, lipid-lowering (ie, high-intensity statin) and antihypertensive therapy, management of diabetes, and smoking cessation. Rivaroxaban (2.5 mg twice daily) combined with low-dose aspirin (81 mg daily) is effective to**

*On behalf of the ACC Solution Set Oversight Committee.

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CENTRAL ILLUSTRATION **2024 ACC/AHA/Multisociety PAD Guideline**

Talk to your patients about

Peripheral Artery Disease (PAD) Health Risks & Disparities

10 to 12 Million people in the U.S. over age 40 have PAD

Who may be more impacted by PAD?

1 in 5 Hispanic & non-Hispanic White adults have a lifetime risk of PAD

1 in 3 Black adults have a lifetime risk of PAD

About 77% higher risk of amputation vs revascularization for Black patients when compared to White patients

Think about **contributors to health disparities** that put your patient at risk:

- Race & Ethnicity
- Geography
- Structural Racism & Implicit Bias
- Social Determinants of Health

Does your patient have these **PAD risk amplifiers?**

Diabetes | Smoking | Older Age | Depression

What can you do?

Ask your patients if they have any difficulty walking or leg symptoms.

For more information, visit *ACC.org/Diversity* and *CardioSmart.org/DiscussionGuidePAD*

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ACC = American College of Cardiology; AHA = American Heart Association; PAD = peripheral artery disease.

TABLE 1 Select Differences Between the 2016 and the 2024 ACC/AHA/Multisociety PAD Guidelines

	2016[3]	2024[1]
Health disparities (Top 10 Take-Home Message 4)	No corresponding guideline recommendation.	Clinicians and health care systems should actively pursue evidence of health disparities in diagnosis, treatment, and outcomes for patients with PAD and use efforts to limit the impact of these disparities on clinical outcomes (COR 1).
Effective medical therapies for patients with PAD (Top 10 Take-Home Message 5)	In asymptomatic patients with PAD **(ABI ≤0.90)**, antiplatelet therapy is reasonable to reduce the risk of MI, stroke, or vascular death (COR 2a).	In patients with asymptomatic PAD, single antiplatelet therapy is reasonable to reduce the risk of MACE (COR 2a).
	In asymptomatic patients with borderline **ABI (0.91-0.99),** the usefulness of antiplatelet therapy to reduce the risk of MI, stroke, or vascular death is uncertain (COR 2b).	No corresponding guideline recommendation.
	No corresponding guideline recommendation.	In patients with symptomatic PAD, low-dose rivaroxaban (2.5 mg twice daily) combined with low-dose aspirin is effective to reduce the risk of MACE and MALE (COR 1).
	No corresponding guideline recommendation.	After endovascular or surgical revascularization for PAD, low-dose rivaroxaban (2.5 mg twice daily) combined with low-dose aspirin is recommended to reduce the risk of MACE and MALE (COR 1).
	DAPT (aspirin and clopidogrel) may be reasonable to reduce the risk of limb-related events in patients with symptomatic PAD after lower extremity revascularization (COR 2b).	After endovascular revascularization for PAD, dual antiplatelet therapy with a P2Y12 antagonist and low-dose aspirin is reasonable for at least 1 to 6 months (COR 2a).
	No corresponding guideline recommendation.	After endovascular or surgical revascularization in patients with PAD who require full-intensity anticoagulation for another indication and are not at high risk of bleeding, adding single antiplatelet therapy is reasonable (COR 2a).
	No corresponding guideline recommendation.	After surgical revascularization for PAD with a prosthetic graft, dual antiplatelet therapy with a P2Y12 antagonist and low-dose aspirin may be reasonable for at least 1 month (COR 2b).
	No corresponding guideline recommendation.	In patients with PAD who are on maximally tolerated statin therapy who have an LDL-C level of ≥70 mg/dL, it is reasonable to add PCSK9 inhibitor therapy (COR 2a).
	No corresponding guideline recommendation.	In patients with PAD who are on maximally tolerated statin therapy and have an LDL-C level of ≥70 mg/dL, it is reasonable to add ezetimibe therapy (COR 2a).

Colors in the table align with the classification system found in Table 3, "Applying American College of Cardiology/American Heart Association Class of Recommendation and Level of Evidence to Clinical Strategies, Interventions, Treatments, or Diagnostic Testing in Patient Care" in the 2024 ACC/AHA/Multisociety PAD Guideline.[1]

ABI = ankle-brachial index; ACC = American College of Cardiology; AHA = American Heart Association; COR = Class of Recommendation; DAPT = dual antiplatelet therapy; LDL-C = low-density lipoprotein-cholesterol; MACE = major adverse cardiovascular events; MALE = major adverse limb events; MI = myocardial infarction; PAD = peripheral artery disease.

prevent major adverse cardiovascular events and major adverse limb events in patients with PAD who are not at increased risk of bleeding.

6. Structured exercise is a core component of care for patients with PAD. It includes supervised exercise therapy and community-based (including structured home-based) programs.
7. Revascularization (endovascular, surgical, or hybrid) should be used to prevent limb loss in those with chronic limb-threatening ischemia and can be used to improve QOL and functional status in patients with claudication not responsive to medical therapy and structured exercise.
8. Care for patients with PAD, and especially those with chronic limb-threatening ischemia, is optimized when delivered by a multispecialty care team.
9. Foot care is crucial for patients with PAD across all clinical subsets and ranges from preventive care and patient education to advanced care in the setting of chronic limb-threatening ischemia. Podiatrists and other specialists with expertise in foot care, wound-healing therapies, and foot surgery are important members of the multispecialty care team.
10. The PAD National Action Plan outlines 6 strategic goals to improve awareness, detection, and treatment of PAD nationwide. Implementation of this action plan is recognized as a top advocacy priority by the writing committee.

JACC ILLUSTRATION

Central Illustration: Talk to Your Patients About Peripheral Artery Disease Health Risks and Disparities

The 2024 PAD guideline recognizes the intricate relationship between PAD and health disparities. In

TABLE 2 Select Comparison of AHA/ACC/Multisociety PAD Guideline and ESC PAD Guideline

	ESC Guideline[2]	ACC/AHA/Multisociety Guideline[1]
Health disparities (Top 10 Take-Home Message 4)	No corresponding guideline recommendation.	Clinicians and health care systems should actively pursue evidence of health disparities in diagnosis, treatment, and outcomes for patients with PAD and use efforts to limit the impact of these disparities on clinical outcomes (COR 1).
Effective medical therapies for patients with PAD (Top 10 Take-Home Message 5)	Because of lack of proven benefit, **antiplatelet therapy is not routinely** indicated in patients with isolated asymptomatic LEAD (COR 3).	In patients with asymptomatic PAD **single antiplatelet therapy is reasonable** to reduce the risk of MACE (COR 2a).
	In patients requiring antiplatelet therapy, clopidogrel may be preferred over aspirin (COR 2b).	No corresponding guideline recommendation.
	No corresponding guideline recommendation.	In patients with symptomatic PAD, low-dose rivaroxaban (2.5 mg twice daily) combined with low-dose aspirin is effective to reduce the risk of MACE and MALE (COR 1).
	No corresponding guideline recommendation.	After endovascular or surgical revascularization for PAD, low-dose rivaroxaban (2.5 mg twice daily) combined with low-dose aspirin is recommended to reduce the risk of MACE and MALE (COR 1).
	DAPT with aspirin and clopidogrel **for at least 1 month** should be considered following **infra-inguinal stent** implantation (COR 2a).	After **endovascular revascularization** for PAD, dual antiplatelet therapy with a P2Y12 antagonist and low-dose aspirin is reasonable **for at least 1 to 6 months** (COR 2a).
	No corresponding guideline recommendation.	In patients with symptomatic PAD without recent revascularization, the benefit of dual antiplatelet therapy is uncertain (COR 2b).
	No corresponding guideline recommendation.	After endovascular or surgical revascularization in patients with PAD who require full-intensity anticoagulation for another indication and are not at high risk of bleeding, adding single antiplatelet therapy is reasonable (COR 2a).
	DAPT with aspirin and clopidogrel may be considered in below-the-knee-bypass with a **prosthetic graft** (COR 2b).	After surgical revascularization for PAD with **a prosthetic graft, dual antiplatelet therapy with a P2Y12 antagonist and low-dose aspirin may be reasonable for at least 1 month**. (COR 2b).
	No corresponding guideline recommendation.	In patients with PAD who are on maximally tolerated statin therapy who have an LDL-C level of ≥70 mg/dL, it is reasonable to add PCSK9 inhibitor therapy (COR 2a).
	No corresponding guideline recommendation.	In patients with PAD who are on maximally tolerated statin therapy and have an LDL-C level of ≥70 mg/dL, it is reasonable to add ezetimibe therapy (COR 2a).

Colors in the table align with the classification system found in Table 3, "Applying American College of Cardiology/American Heart Association Class of Recommendation and Level of Evidence to Clinical Strategies, Interventions, Treatments, or Diagnostic Testing in Patient Care" in the 2024 ACC/AHA/Multisociety PAD Guideline.[1]

ACC = American College of Cardiology; AHA = American Heart Association; COR = Class of Recommendation; DAPT = dual antiplatelet therapy; ESC = European Society of Cardiology; LDL-C = low-density lipoprotein-cholesterol; LEAD = lower extremity artery disease; MACE = major adverse cardiovascular events; MALE = major adverse limb events; PAD = peripheral artery disease.

the previous guideline, health disparities and their impact on diagnosis, treatment, and patient outcomes were not examined.[3] The 2024 guideline emphasizes that risk-amplifying comorbidities do not fully explain the association of poor PAD outcomes. Rather, it is the intersection of social determinants of health and PAD-related inequities across race, ethnicity, and the power of resources that increase the rate of amputation among patients of color compared to their White counterparts.[1]

The *JACC* **Central Illustration** for the ACC/AHA/Multisociety PAD guideline places emphasis on health disparities, and the importance of discussing these disparities with at-risk patients. The aim of the illustration is to encourage dialogue between clinicians and patients to create proactive and patient-centered care plans and ensure that vascular interventions are administered with equal opportunity. Visit ACC's Diversity and Inclusion site (ACC.org/Diversity) and Cardiosmart (CardioSmart.org/DiscussionGuidePAD) for more information on improving heart health for patients with diverse backgrounds and perspectives.

This clinician tool focuses on Top 10 Take-Home Message 4. For additional information, see Section 4.2. "Health Disparities in PAD."[1] The **Central Illustration** includes data from the AHA 2023 Health Disparities in PAD Scientific Statement[4] and 3 additional studies.[5-7]

COMPARISON TO PREVIOUS ACC/AHA GUIDELINE

The ACC/AHA/Multisociety PAD Guideline includes and updates content previously covered in the 2016 PAD guideline.[3] **Table 1** outlines changes in medical therapies between the 2016 and the 2024 ACC/AHA/Multisociety PAD guidelines and includes new information on health disparities. The comparison focuses on Top 10 Take-Home Messages 4 and 5.

For further details, refer to the corresponding sections of the 2024 ACC/AHA/Multisociety PAD Guideline[1]:

- Section 4.2. "Health Disparities in PAD";
- Section 5.1. "Antiplatelet and Antithrombotic Therapy for PAD";
- Section 5.2. "Lipid-Lowering Therapy for PAD."

COMPARISON OF ACC/AHA/MULTISOCIETY PAD GUIDELINE TO ESC PAD GUIDELINE

The ESC clinical practice guideline on peripheral arterial disease was released in 2017. **Table 2** compares the recommendations for PAD management between the 2024 ACC/AHA/Multisociety Guideline[1] and the 2017 ESC Guideline, highlighting subtle differences. The comparison focuses on Top 10 Take-Home Messages 4 and 5.

For further details, refer to the corresponding section of the 2017 ESC PAD Guideline[2]:

- Section 5.4. "Antithrombotic Therapy After Endovascular Therapy in Other Territories."

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