Burns & Trauma, 2026, **14**, tkag003
https://doi.org/10.1093/burnst/tkag003
Advance access publication date 12 January 2026
Commentary

Forecasting the global burden of peripheral artery disease: implications for wound healing and healthcare systems

Seungkuk Ahn[1] **and Min He**[2,*]

[1]UCD Charles Institute of Dermatology, School of Medicine, University College Dublin, Belfield, Dublin 4 D04V1W8, Ireland
[2]Department of Endocrinology, Chongqing University Central Hospital, School of Medicine, Chongqing University; Department of General Practice, Southwest Hospital, Army Medical University, Chongqing 400014, China

*Corresponding author. Min He, Department of Endocrinology, Chongqing University Central Hospital, School of Medicine, Chongqing University; Department of General Practice, Southwest Hospital, Army Medical University, Chongqing 400014, China. E-mail: 314876972@qq.com

Keywords: Peripheral artery disease; Wound healing; Global burden

Peripheral artery disease (PAD) is rapidly emerging as one of the most pressing global health challenges, with far-reaching implications for both vascular health and wound healing. Closely linked to metabolic diseases like diabetes and hypertension, PAD is forecasted to dramatically increase in prevalence in the coming decades. A new population-based study, titled "Forecasting the Global Burden of Peripheral Artery Disease from 2021 to 2050," sheds light on the anticipated rise in PAD cases and the critical intersection of this condition with chronic wound healing challenges [1].

The study's projections suggest that the number of PAD cases worldwide will increase by 220% by 2050, affecting an estimated 360 million people globally. This rise will put tremendous strain on healthcare systems, particularly in regions with already limited resources. PAD is particularly devastating due to its impact on wound healing, as the condition leads to reduced blood flow, significantly impairing the body's ability to repair tissue and heal wounds. As PAD progresses, patients may experience chronic nonhealing delayed wounds, ulcers, and an increased risk of amputations, all of which can contribute to disability, diminished quality of life, and even premature death [2]. This leads to not only physiological consequences but also emotional, psychological, and financial burdens.

The forecasted rise in disability-adjusted life years (DALYs) related to PAD—expected to jump from 19.7 to 33.1 per 100 000 people—underscores the growing economic hardship on healthcare systems and the importance of addressing the PAD-mediated wound healing market. Nonhealing ulcers, particularly in the lower extremities, are a common and serious consequence of PAD, often resulting in prolonged hospitalization and increased costs due to the lack of effective treatments [3].

The study highlights a sharp rise in PAD prevalence among individuals aged 65 and older, with a particularly high burden in women. Aging populations, especially in high-income countries (HICs), will contribute significantly to the increase in PAD cases. However, the rise of metabolic diseases—especially diabetes—is expected to play a dominant role in driving the growth of PAD. Diabetes not only accelerates the progression of PAD but also impairs wound healing due to the chronic hyperglycemia associated with the disease. As diabetes become more prevalent globally due to the modern diet and lifestyle, the interaction between PAD and diabetes will represent a critical challenge, particularly in the context of wound care.

In diabetic patients with PAD, the reduced blood flow hampers the delivery of oxygen and nutrients necessary for tissue repair, leading to the persistence of ulcers and slow healing [4]. This creates a vicious cycle where PAD exacerbates the complications of diabetes, and poor wound healing, in turn, worsens the quality of life and increases the risk of infections and amputations.

An alarming trend highlighted in the study is that over 50% of the global PAD burden will be borne by low- and middle-income countries (LMICs) by 2050. These regions are already grappling with limited healthcare resources, which will only be further strained by the growing prevalence of noncommunicable diseases like PAD. As urbanization, lifestyle changes, the incidence of PAD—and its associated complications, such as non-healing wounds—is expected to rise sharply.

In LMICs, limited access to advanced wound care, treatment for metabolic diseases like diabetes, and resources for PAD management could worsen outcomes. These countries may face increased rates of infections, gangrene, and amputations, as wounds take longer to heal and become more susceptible to complications. Addressing PAD and its impact on wound healing in these settings will require innovative, cost-effective strategies (e.g. plant-based regenerative wound dressings) for prevention and management [5].

The study offers a hopeful perspective by showing that proactive management of metabolic risk factors could significantly reduce the global burden of PAD and its asso-

Received: November 16, 2025. **Accepted:** January 3, 2026
© The Author(s) 2026. Published by Oxford University Press.
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (https://creativecommons.org/licenses/by-nc/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact reprints@oup.com for reprints and translation rights for reprints. All other permissions can be obtained through our RightsLink service via the Permissions link on the article page on our site—for further information please contact journals.permissions@oup.com.

Downloaded from academic.oup.com/burnstrauma/article/doi/10.1093/burnst/tkag003/8422768 by guest on 12 October 2026

ciated impact on wound healing. Effective management of diabetes and hypertension, alongside early interventions for PAD, could reduce age-standardized PAD prevalence by 36%, mortality by 17%, and DALYs by 10%.

Early identification and targeted management of risk factors, such as improving blood flow, controlling blood sugar levels, and promoting healthy lifestyles, could improve the body's ability to heal wounds. Additionally, advanced wound care treatments, including the use of skin substitutes, negative pressure therapy, and infection control measures, could significantly enhance the healing process in PAD patients, reducing the need for amputations and improving overall patient outcomes.

As the global burden of PAD continues to rise, the implications for wound healing become an increasingly critical aspect of healthcare. The interplay between aging populations, metabolic diseases, and PAD's impact on wound healing underscores the need for comprehensive healthcare strategies that address both vascular health and wound care. Proactive risk management, early detection, and improved access to treatments for metabolic diseases will be crucial in mitigating the rising burden of PAD and its associated complications, including chronic wounds and amputations [6].

This study serves as a call to action for clinicians, policymakers, and researchers to prioritize PAD and wound healing within the broader context of vascular diseases and noncommunicable diseases. By acting now—through prevention, early intervention, and innovative wound care strategies—we can reduce the global burden of PAD and significantly improve the quality of life for millions of individuals worldwide.

Author contributions

Seungkuk Ahn (Conceptualization [equal], Writing—original draft [lead]) and Min He (Writing—original draft [lead], Writing—review & editing [lead]).

Conflict of interest

There are no conflicts of interest to declare.

Funding

None declared.

References

1. Deng L, Du C, Liu L, Wang Y, Gu H, Armstrong DG. *et al.* Forecasting the global burden of peripheral artery disease from 2021 to 2050: a population-based study. *Research (Wash D C)* 2025;**8**: 0702. https://doi.org/10.34133/research.0702.
2. Armstrong DG, Tan TW, Boulton AJM, Bus SA. Diabetic foot ulcers: a review. *JAMA* 2023;**330**:62–75. https://doi.org/10.1001/jama.2023.10578.
3. Gornik HL, Aronow HD, Goodney PP, Arya S, Brewster LP, Byrd L. *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. *Circulation* 2024;**149**:e1313–410. https://doi.org/10.1161/cir.0000000000001251.
4. Rui S, Xiao F, Li Q, Yang M, Dai L, Yu S. *et al.* Peroxisome proliferator-activated receptors-mediated diabetic wound healing regulates endothelial cells' mitochondrial function via sonic hedgehog signaling. *Burns Trauma*. 2025;**13**:tkaf063. https://doi.org/10.1093/burnst/tkaf063
5. Ahn S, Chantre CO, Gannon AR, Lind JU, Campbell PH, Grevesse T. *et al.* Soy protein/cellulose nanofiber scaffolds mimicking skin extracellular matrix for enhanced wound healing. *Adv Healthc Mater* 2018;**7**:e1701175. https://doi.org/10.1002/adhm.201701175.
6. Wang H, Yu X, Guo J, Ma S, Liu Y, Hu Y. *et al.* Burden of cardiovascular disease among the Western Pacific region and its association with human resources for health, 1990-2021: a systematic analysis of the global burden of disease study 2021. *Lancet Reg Health West Pac* 2024;**51**:101195. https://doi.org/10.1016/j.lanwpc.2024.101195.

Downloaded from academic.oup.com/burnstrauma/article/doi/10.1093/burnst/tkag003/8422768 by guest on 12 October 2026

© The Author(s) 2026. Published by Oxford University Press. This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (https://creativecommons.org/licenses/by-nc/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact reprints@oup.com for reprints and translation rights for reprints. All other permissions can be obtained through our RightsLink service via the Permissions link on the article page on our site—for further information please contact journals.permissions@oup.com.
Burns & Trauma, 2026, 14, tkag003
https://doi.org/10.1093/burnst/tkag003
Commentary