ISSN: 2833-4353

Research Article

Archives of Epidemiology & Public Health Research

Plant-Based Diets: The Future of Medicine in the Age of Climate Crisis, Economic Strain, and AI-Driven Awareness

Dasaad Mulijono[1,2,3*]

[1]*Department of Cardiology, Bethsaida Hospital, Tangerang, Indonesia*

[2]*Indonesian College of Lifestyle Medicine, Indonesia*

[3]*Department of Cardiology, Faculty of Medicine, Prima University, Medan, Indonesia*

[*]Corresponding Author
Dasaad Mulijono, Department of Cardiology, Bethsaida Hospital, Indonesia.

Submitted: 2025, Jun 01; **Accepted:** 2025, Jun 30; **Published:** 2025, Jul 03

Citation: Mulijono, D. (2025). Plant-Based Diets: The Future of Medicine in the Age of Climate Crisis, Economic Strain, and AI-Driven Awareness. *Arch Epidemiol Pub Health Res, 4*(2), 01-04.

Abstract

The world is facing a triple crisis: a relentless rise in chronic diseases, an accelerating climate emergency, and unsustainable healthcare expenditures. These converging forces demand urgent, cost-effective, and evidence-based solutions. Among the most promising is the adoption of plant-based diets (PBDs), which were once seen as an alternative but are now strongly supported by robust clinical and epidemiological evidence. PBDs have been shown to prevent, halt, and even reverse major non-communicable diseases—including coronary artery disease (CAD), type 2 diabetes (T2D), hypertension, dyslipidaemia, obesity, and certain cancers.

At Bethsaida Hospital in Indonesia, pioneered by Prof. Dasaad Mulijono, the clinical integration of a structured PBD has yielded transformational outcomes. Patients with advanced cardiovascular and metabolic conditions have experienced dramatic improvements, often reducing or discontinuing medications altogether. Notably, among patients undergoing drug-coated balloon (DCB) interventions, restenosis rates have plummeted to just 2%, compared to the typical 10- 20% reported at other centres. In many cases, coronary atherosclerosis has regressed, suggesting that nutritional therapy may not only stop disease progression but reverse it. This experience reveals a powerful synergy between advanced interventional cardiology and aggressive dietary medicine.

Artificial intelligence (AI) amplifies the potential of this approach. AI enables real-time, personalized dietary guidance, enhancing adherence and accelerating results. As real-world data accumulate, we propose that PBDs will soon be recognized in international medical guidelines as a Class I-A therapeutic intervention for managing chronic diseases.

Beyond the science, a more profound wisdom echoes from antiquity. The original dietary prescription in Genesis 1:29—"I give you every seed-bearing plant… they will be yours for food"—underscores a divine design rooted in plant-based nourishment, harmonious with human health and the natural world. The modern resurgence of PBDs is not merely a health trend but a return to these foundational truths. Ecclesiastes 1:9 reminds us, "What has been will be again… there is nothing new under the sun." The revival of plant-based healing is, in essence, a rediscovery of ancient wisdom that industrialized, ultra-processed diets have obscured.

We stand at the threshold of a new paradigm in healthcare—one where food, especially PBDs, becomes central to healing, prevention, and sustainability. The experience at Bethsaida Hospital affirms that chronic disease is not an irreversible fate. Food can genuinely become a form of medicine when guided by science, empowered by AI, and aligned with timeless wisdom. The future of healthcare will be high-tech, high-fibre, high-impact, and rooted in high wisdom.

Keywords: Plant-based diet, Chronic disease reversal, Drug-coated balloon, Restenosis, Bethsaida hospital, Prof. Dasaad Mulijono, Lifestyle medicine, Artificial intelligence in healthcare, Atherosclerosis regression, Preventive cardiology, Health economics, Clinical guidelines

1. Introduction

As the global health community grapples with rising chronic disease rates [1-4], the growing threat of climate change, and unsustainable healthcare spending, a transformative solution is emerging—one rooted not in advanced pharmaceuticals or novel procedures, but in the power of food. The PBD, long overlooked in clinical medicine, is rapidly gaining traction as a core therapeutic modality [5-10].

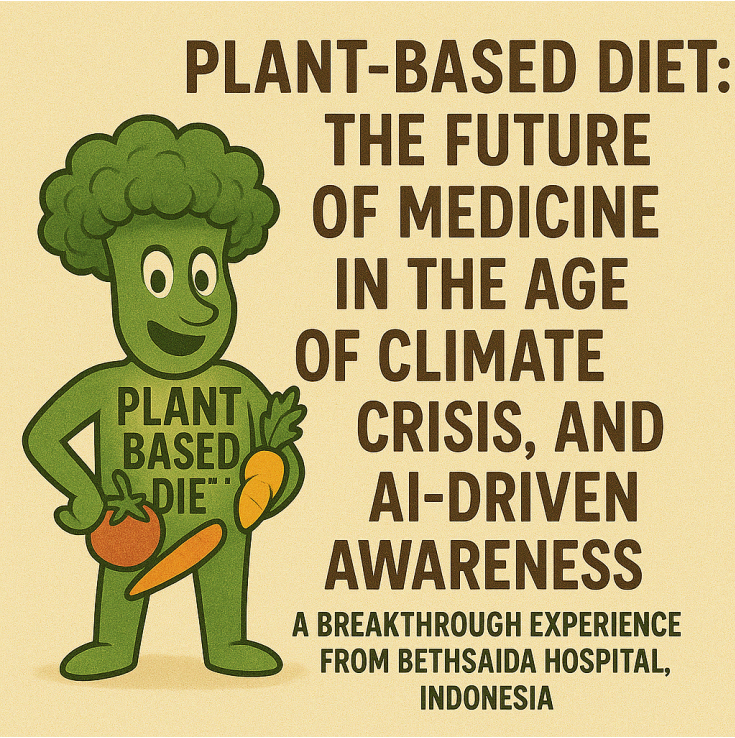
We have implemented a pioneering PBD program at Bethsaida Hospital in Indonesia, yielding remarkable clinical outcomes, particularly in reversing atherosclerotic cardiovascular disease. Our data, alongside mounting international evidence, strongly support the inevitable integration of PBDs into global clinical guidelines as first-line, Class I-A interventions for chronic illness.

2. Climate Change and the Push Toward Sustainable Nutrition

With animal agriculture driving a significant share of greenhouse gas emissions, deforestation, and water use, dietary change is now recognized as essential to planetary survival. Governments and international health agencies increasingly recommend sustainable, PBDs to combat climate change, making nutrition a central part of environmental and public health policy [11-15].

3. Medical Budget Strain and the Need for Cost-Effective Interventions

Non-communicable diseases such as CAD, T2D, obesity, and cancer consume the lion's share of healthcare budgets, yet they are largely preventable and reversible. In low- and middle-income countries, the need for low-cost, high-efficacy interventions is urgent. A PBD meets this need precisely, offering high clinical impact with minimal financial burden [16-20].



4. Real-World Success: The Bethsaida Hospital Experience

At Bethsaida Hospital, a comprehensive, physician-led lifestyle program centred on a PBD has been successfully implemented for patients with severe chronic illnesses. Over the past seven years, we have documented:

- Remission and reversal of CAD, T2D, hypertension, hyperlipidaemia, and obesity.
- Significant reductions in polypharmacy, hospitalization rates, and healthcare costs.
- Dramatic improvement in patients' quality of life and functional capacity.

Most notably, in our interventional cardiology program, patients undergoing DCB therapy for coronary stenosis experienced a remarkable reduction in restenosis rates to just 2%, compared to around 10-20% in other centres. We attribute this breakthrough to intensive pre- and post-intervention nutritional support based on PBD principles, suggesting that atherosclerosis is manageable and potentially reversible with the proper dietary foundation.

5. AI as a Catalyst for Personalized Nutrition

AI-driven health platforms empower patients and clinicians to understand and monitor the effects of dietary interventions. From wearable devices that track metabolic responses to AI systems that optimize nutritional plans, integrating AI with PBDs enables highly personalized, scalable, and effective interventions [21,22]. Bethsaida is exploring AI-enhanced dietary algorithms to tailor nutrition plans to individual patient profiles.

6. Growing Medical Acceptance and the Evolution of Clinical Guidelines

Despite initial resistance, the medical community is increasingly recognizing the central role of nutrition in preventing and reversing disease. Leading academic institutions and health organizations are acknowledging PBDs in their guidelines, although often in a conservative manner [5, 16, 17, 19, 23-32].

However, with emerging global research and compelling clinical results from programs like ours at Bethsaida Hospital, it is only a matter of time before international guidelines begin to include PBDs Class I-A indications for managing:

- CAD and restenosis
- T2D
- Hyperlipidaemia
- Hypertension
- Obesity
- Cancer prevention and as an adjunctive treatment

7. Conclusion: A Philosophy Behind the PBD Movement and a Paradigm Shift in Medicine

From a theological and historical perspective, it is noteworthy that God's original dietary prescription in the creation narrative, as recorded in Genesis 1:29, was entirely plant-based: “I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food.” This divine provision suggests an intended harmony between human health, the natural world, and a diet rooted in whole plant foods.

In light of the modern epidemic of chronic, non-communicable diseases—many of which are strongly linked to the overconsumption of animal products and ultra-processed foods—a growing body of evidence supports the restoration of dietary patterns aligned with the original design. The resurgence of PBDs can thus be seen not merely as a health trend but as a return to foundational principles embedded in creation and wisdom literature.

This perspective is powerfully echoed in Ecclesiastes 1:9: “What has been will be again, what has been done will be done again; there is nothing new under the sun.” The revival of PBDs in contemporary preventive and therapeutic medicine reflects a cyclical return to divine wisdom that has long existed but was obscured by industrial and cultural dietary shifts. We now stand at the dawn of a new era in healthcare—one in which food, particularly PBDs, becomes a central element of medical intervention. The experience at Bethsaida Hospital demonstrates that chronic diseases are not irreversible; when a PBD is adequately implemented, it can restore health, prevent relapse, and significantly reduce healthcare costs.

As climate change accelerates, economic pressures mount, and AI democratizes access to medical knowledge, PBDs are poised to become an inescapable pillar of modern medicine. The future of healthcare will not be defined by high technology alone, but also by high fibre and a return to high wisdom.

References

1. Turzáková, J., Kohanová, D., Solgajová, A., & Sollár, T. (2024). Association between climate change and patient health outcomes: a mixed-methods systematic review. *BMC nursing, 23*(1), 900.
2. Hacker, K. (2024). The burden of chronic disease. *Mayo Clinic Proceedings: Innovations, Quality & Outcomes, 8*(1), 112-119.
3. National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health. Community Health and Economic Prosperity: Engaging Businesses as Stewards and Stakeholders—A Report of the Surgeon General [Internet]. Washington (DC): US Department of Health and Human Services; 2021 Jan. CHAPTER 1, The U.S. Health Disadvantage and Why It Matters to Business. Available from: https://www.ncbi.nlm.nih.gov/books/NBK568874/
4. Holman, H. R. (2020). The relation of the chronic disease epidemic to the health care crisis. *ACR open rheumatology, 2*(3), 167-173.
5. Craig, W. J., Mangels, A. R., Fresán, U., Marsh, K., Miles, F. L., Saunders, A. V., ... & Orlich, M. (2021). The safe and effective use of plant-based diets with guidelines for health professionals. *Nutrients, 13*(11), 4144.
6. Katz, D. L. (2019). Plant-based diets for reversing disease and saving the planet: past, present, and future. *Advances in Nutrition, 10*, S304-S307.
7. Liang, J., Wen, Y., Yin, J., Zhu, G., & Wang, T. (2024). Utilization of plant-based foods for effective prevention of chronic diseases: a longitudinal cohort study. *npj Science of Food, 8*(1), 113.
8. Thompson, A. S., Tresserra-Rimbau, A., Karavasiloglou, N., Jennings, A., Cantwell, M., Hill, C., ... & Kühn, T. (2023). Association of healthful plant-based diet adherence with risk of mortality and major chronic diseases among adults in the UK. *JAMA Network Open, 6*(3), e234714-e234714.
9. Bansal, S., Connolly, M., & Harder, T. (2022). Impact of a whole-foods, plant-based nutrition intervention on patients living with chronic disease in an underserved community. *American Journal of Lifestyle Medicine, 16*(3), 382-389.
10. Almuntashiri, S. A., Alsubaie, F. F., & Alotaybi, M. (2025). Plant-Based Diets and Their Role in Preventive Medicine: A Systematic Review of Evidence-Based Insights for Reducing Disease Risk. *Cureus, 17*(2).
11. Aleksandrowicz, L., Green, R., Joy, E. J., Smith, P., & Haines, A. (2016). The impacts of dietary change on greenhouse gas emissions, land use, water use, and health: a systematic

review. *PloS one, 11*(11), e0165797.
12. Shivanna, K. R. (2022). Climate change and its impact on biodiversity and human welfare. *Proceedings of the Indian National Science Academy, 88*(2), 160-171.
13. Feigin, S. V., Wiebers, D. O., Blumstein, D. T., Knight, A., Eshel, G., Lueddeke, G., ... & Winkler, A. S. (2025). Solving climate change requires changing our food systems. Oxford Open Climate Change, 5(1), kgae024.
14. Fletcher, C., Ripple, W. J., Newsome, T., Barnard, P., Beamer, K., Behl, A., ... & Wilson, M. (2024). Earth at risk: An urgent call to end the age of destruction and forge a just and sustainable future. *PNAS nexus, 3*(4), pgae106.
15. Gibbs, J., & Cappuccio, F. P. (2022). Plant-based dietary patterns for human and planetary health. *Nutrients, 14*(8), 1614.
16. Viroli, G., Kalmpourtzidou, A., & Cena, H. (2023). Exploring benefits and barriers of plant-based diets: Health, environmental impact, food accessibility and acceptability. *Nutrients, 15*(22), 4723.
17. Tuso, P. J., Ismail, M. H., Ha, B. P., & Bartolotto, C. (2013). Nutritional update for physicians: plant-based diets. *The Permanente Journal, 17*(2), 61.
18. Toumpanakis, A., Turnbull, T., & Alba-Barba, I. (2018). Effectiveness of plant-based diets in promoting well-being in the management of type 2 diabetes: a systematic review. *BMJ open diabetes research & care, 6*(1).
19. Saldivar, B., Al-Turk, B., Brown, M., & Aggarwal, M. (2022). Successful incorporation of a plant-based menu into a large academic hospital. *American Journal of Lifestyle Medicine, 16*(3), 311-317.
20. Sterling, S. R., & Bowen, S. A. (2019). The potential for plant-based diets to promote health among blacks living in the United States. *Nutrients, 11*(12), 2915.
21. Shajari, S., Kuruvinashetti, K., Komeili, A., & Sundararaj, U. (2023). The emergence of AI-based wearable sensors for digital health technology: a review. *Sensors, 23*(23), 9498.
22. Kassem, H., Beevi, A. A., Basheer, S., Lutfi, G., Cheikh Ismail, L., & Papandreou, D. (2025). Investigation and Assessment of AI's Role in Nutrition—An Updated Narrative Review of the Evidence. *Nutrients, 17*(1), 190.
23. Esselstyn, C. B. (2017). A plant-based diet and coronary artery disease: a mandate for effective therapy. *Journal of geriatric cardiology: JGC, 14*(5), 317.
24. Morgenstern, S., Redwood, M., & Herby, A. (2025). An innovative program for hospital nutrition. *American Journal of Lifestyle Medicine, 19*(2), 320-323.
25. Hever, J., & Cronise, R. J. (2017). Plant-based nutrition for healthcare professionals: implementing diet as a primary modality in the prevention and treatment of chronic disease. *Journal of geriatric cardiology: JGC, 14*(5), 355.
26. Morton, K. F., Pantalos, D. C., Ziegler, C., & Patel, P. D. (2022). Whole-foods, plant-based diet perceptions of medical trainees compared to their patients: a cross-sectional pilot study. American journal of lifestyle medicine, 16(3), 318-333.
27. Kalwaney, S., & Cerceo, E. (2024). Plant-based diets: a vital component of graduate medical education programs on climate and health. *Journal of Graduate Medical Education, 16*(6s), 40-44.
28. Klapp, A. L., Feil, N., & Risius, A. (2022). A global analysis of national dietary guidelines on plant-based diets and substitutions for animal-based foods. *Current Developments in Nutrition, 6*(11), nzac144.
29. Lawson, I., Wood, C., Syam, N., Rippin, H., Dagless, S., Wickramasinghe, K., ... & Papier, K. (2024). Assessing Performance of Contemporary Plant-Based Diets against the UK Dietary Guidelines: Findings from the Feeding the Future (FEED) Study. *Nutrients, 16*(9), 1336.
30. Lippman, D., Stump, M., Veazey, E., Guimarães, S. T., Rosenfeld, R., Kelly, J. H., ... & Katz, D. L. (2024). Foundations of lifestyle medicine and its evolution. *Mayo Clinic Proceedings: Innovations, Quality & Outcomes, 8*(1), 97-111.
31. Rippe, J. M. (2024). The Academic Basis of Lifestyle Medicine. *American Journal of Lifestyle Medicine, 18*(4), 497-511.
32. Landry, M. J., & Ward, C. P. (2024). Health benefits of a plant-based dietary pattern and implementation in healthcare and clinical practice. *American Journal of Lifestyle Medicine, 18*(5), 657-665.