

Are Polio and Post-Polio Survivors More Prone to Type 2 Diabetes?

As polio survivors age, many are asking whether living with polio or Post-Polio Syndrome increases the risk of developing Type 2 diabetes. In this thought-provoking article, Professor Michael Kossove examines the latest research, separating fact from myth while exploring how reduced mobility, muscle loss, and aging may influence metabolic health. Discover what every polio survivor should know—and the preventive steps that can help protect long-term health. [\(This synopsis appeared in the Summer 2026 NPSA Gleanings.\)](#)

Are Polio and Post-Polio Survivors More Prone to Type 2 Diabetes?

By Michael Kossove, Professor

Poliomyelitis, caused by the Polio virus, was once one of the most feared infectious diseases of the 20th century. While many individuals survived the acute infection, a significant number later developed Post-Polio Syndrome (PPS), a condition characterized by new muscle weakness, fatigue, and pain decades after recovery. As this population ages, an important clinical question has emerged: are polio survivors at increased risk for Type 2 Diabetes?

Current evidence suggests that polio and PPS do not directly cause diabetes. However, a growing body of research indicates that indirect risk factors associated with long-term disability may increase susceptibility to metabolic disorders.¹⁻³

One of the most significant contributors is reduced physical activity. Many individuals with PPS experience progressive muscle weakness and fatigue, limiting their ability to engage in regular exercise. Because skeletal muscle plays a central role in glucose uptake, reduced muscle activity can lead to insulin resistance, a defining feature of Type 2 Diabetes.⁴ Studies of neuromuscular disorders, including PPS, consistently demonstrate that decreased mobility is associated with impaired glucose metabolism.⁵

Changes in body composition also play a critical role. Polio survivors often exhibit reduced lean muscle mass combined with increased adiposity, particularly with aging. This shift in body composition is strongly associated with metabolic syndrome and insulin resistance.⁶ Melin et al. found that while diabetes prevalence in PPS patients was not significantly higher than in the general population, metabolic risk factors such as altered lipid profiles were common.⁷ This supports the view that the risk is indirect rather than disease-specific.

In addition, there is emerging interest in the role of chronic physiological stress and systemic factors. Some studies suggest that PPS may involve low-grade inflammatory or immune-mediated mechanisms, particularly in aging individuals.⁸ While not definitively linked to diabetes, these processes may contribute to broader metabolic dysregulation.⁹

Recent literature (2023–2025) increasingly frames polio survivorship within the concept of aging with disability.¹⁰ This framework recognizes that individuals with long-standing physical impairments are at higher risk for chronic conditions such as cardiovascular disease, obesity, and diabetes, not because of the original disease itself, but due to its long-term consequences.

Importantly, not all polio survivors share the same level of risk. Factors such as severity of initial paralysis, degree of mobility limitation, lifestyle habits, and genetic predisposition all influence outcomes. Some individuals maintain good metabolic health through adapted exercise and proper medical care.

Preventive strategies remain essential. Regular screening for blood glucose abnormalities, weight management, and individualized exercise programs—such as low-impact aerobic activity or resistance training—can significantly reduce the likelihood of developing diabetes.¹¹ Clinicians should adopt a proactive approach when managing aging polio survivors, recognizing the unique interplay between neuromuscular disability and metabolic health.

In conclusion, Polio and Post-Polio Syndrome are not direct causes of Type 2 Diabetes. However, the long-term effects of these conditions—particularly reduced mobility, muscle loss, and aging—create a metabolic environment that may increase diabetes risk. Awareness of these indirect factors is essential for both patients and healthcare providers, allowing for early intervention and improved long-term outcomes.

(Article references continued on next page)

Are Polio and Post-Polio Survivors More Prone to Type 2 Diabetes? (continued)

References

1. Jubelt B, Agre JC. Characteristics and management of postpolio syndrome. JAMA. 2000;284(4):412–414.
2. Farbu E. Update on current and emerging treatment options for post-polio syndrome. Ther Clin Risk Manag. 2010;6:307–313.
3. McNalley TE, et al. Secondary health conditions in post-polio syndrome. PM&R. 2015.
4. American Diabetes Association. Standards of Medical Care in Diabetes—2024. Diabetes Care. 2024;47(Suppl 1).
5. Silver JK, Aiello DD. Secondary conditions in polio survivors. Am J Phys Med Rehabil. 2002.
6. Klingman RR, et al. Metabolic and endocrine function in post-polio patients. Arch Phys Med Rehabil. 1988;69(7):546–549.
7. Melin E, et al. Lipid profiles and cardiovascular risk in post-polio patients. BMC Neurol. 2015;15:64.
8. Gonzalez H, et al. Intravenous immunoglobulin for post-polio syndrome: a randomized controlled trial. Lancet Neurol. 2006;5(6):493–500.
9. Toniolo A, et al. Post-Polio Syndrome: immune factors and aging. Vaccines. 2025.
10. Hwang JH. Aging with disability in polio survivors. Epidemiol Health. 2025.
11. Centers for Disease Control and Prevention. Post-Polio Syndrome. 2023.

Michael Kossove is Professor Emeritus and Adjunct Professor of Microbiology, Touro University, NY. He is a Polio survivor, Author, and International Polio Educator. He has Type 2 Diabetes.