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# Mat Pilates as an Adjunct Therapy for Cardiometabolic Risk Management and Oxidative Stress in Diabetic Population: A Narrative Review

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## ABSTRACT

Diabetes, a multifactorial metabolic disorder is typified by hyperglycaemia and is linked with increased oxidative stress and cardiometabolic risk. These factors ominously contribute to the advancement of cardiovascular disorders, systemic inflammation and microvascular impediments. Although pharmacological therapies remain the mainstay for diabetic management, physical therapy and other exercise based complimentary therapies have been shown to be of pivotal value not only in management but in delaying progression of the disorder. Mat Pilates, a low-impact workout programme that emphasises flexibility, core stability, and controlled breathing, has gained attention as a possible adjuvant therapy for diabetics with oxidative imbalances and cardiometabolic dysfunction. This review paper aimed at finding out the effect of mat Pilates on cardiometabolic risk factors and oxidative stress in diabetic adults. An exhaustive search was carried out using MeSH terms like “Pilates”, “diabetes mellitus”, “cardiometabolic risk factors”, “oxidative stress”, “blood pressure”, “adiponectin” and “insulin sensitivity” from databases including PubMed, Pedro, Google Scholar, Ovid etc. Articles published in last 10 years were included as per inclusion and exclusion criteria. With this review it was found that Pilates reduced systolic and diastolic blood pressure, triglycerides, adiponectin, and glycated haemoglobin, while also lowering Malondialdehyde (MDA) and Tumour Necrosis Factor-alpha (TNF-α). levels. Frequent Pilates practice improves blood pressure, lipid profiles, and insulin sensitivity, all of which improve glycaemic management and metabolic health in general. Additionally, it lessens oxidative stress by raising antioxidant defences like Nitric Oxide (NO) and Superoxide Dismutase (SOD) and decreasing indicators like MDA and TNF-α. These findings suggest that Pilates is a promising, low-impact approach for managing diabetes and preventing complications, such as cardiovascular issues and neuropathy, by improving cardiometabolic health and lowering oxidative stress.

**Keywords:** Cardiometabolic risk factors, Oxidative imbalance, Microvascular.