

# DOES TIBIAL NERVE STIMULATION HAVE AN IMPACT ON INCONTINENCE IN PEOPLE DIAGNOSED WITH MULTIPLE SCLEROSIS? A SYSTEMATIC REVIEW OF THE LITERATURE

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## ABSTRACT

**BACKGROUND:** The efficacy of posterior tibial nerve stimulation (PTNS) is being examined as a treatment for urinary incontinence in patients with Multiple Sclerosis (MS). Some systematic reviews have explored other treatment options for urinary incontinence (UI) in patients with MS; however, there are currently no systematic reviews focusing on the effects of PTNS on UI in people with MS. **PURPOSE:** The purpose of this study is to evaluate the current evidence of tibial nerve stimulation as a treatment for urinary incontinence in people diagnosed with MS. **METHODS:** PubMed and Embase databases were searched with a variety of search terms for PTNS, MS, and urinary incontinence. Following the screening process, a total of seven articles were included in this systematic review. All articles had a moderate risk for bias with use of The Quality Assessment Tool for Before-After Studies With No Control Group. Cohen's d effect sizes were calculated with a 95% confidence interval (CI) for all articles reporting results in mean (standard deviation). **RESULTS:** The studies indicate both acute and chronic, or maintenance, PTNS have a significant impact on different measurements of incontinence. **DISCUSSION:** Limitations of this study include lack of available research specific to this patient population and treatment modality, and the lack of high-quality evidence available. Additional research is needed to determine the clinical implications for use of chronic PTNS on UI in patients with MS. Future research should also assess the onset and duration of the effects of PTNS treatments following both acute and maintenance protocols.

**Keywords:** Multiple Sclerosis, Urinary Incontinence, Electrical Stimulation

## INTRODUCTION

Multiple Sclerosis (MS) is an autoimmune disease of unknown origin that targets oligodendrocytes and results in demyelination of the central nervous system [1]. This demyelination results in a disruption in the communication between the brain and spinal cord, and along with heat intolerance, fatigue, and visual deficits, lower urinary tract symptoms (LUTS) are commonly present in people that have been diagnosed with MS. Urinary incontinence (UI), or the unintentional voiding of the urinary bladder, is one of these LUTS, and an estimated 80% of those diagnosed with MS will experience some type of UI [2], whether it be stress, urge, or overflow incontinence. Unfortunately, many people who suffer from UI will never seek treatment [3] due to the embarrassment that often accompanies such a condition. Many people who carry a diagnosis of MS have tried and failed to find success with common first line interventions such as muscle training of the pelvic floor and pharmacological treatment [4]. This trial and error rollercoaster has led to a desire by these patients, their families, and their healthcare teams to find an alternative treatment for LUTS that is both safe and effective. Types of electrical stimulation that have been assessed in the treatment of incontinence include penile, sacral, and vaginal, among others, but are rarely used due to the