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Applications and Efficacy of Russian Current Therapy in Musculoskeletal Rehabilitation: A Narrative Review

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ABSTRACT

Russian current is a medium-frequency sinusoidal alternating current with a frequency of 2500 Hz. Initially developed for athletic training, it has been integrated into physiotherapy for musculoskeletal conditions as its characteristic feature is increasing muscle strength. Its use has been integrated into physiotherapy for other conditions, including osteoarthritis, post-surgical recovery, and injury rehabilitation. A narrative review was conducted by searching databases like PubMed, and Scopus for articles published between 2010 and 2024. The review summarises findings from five randomised controlled trials and one case study. Inclusion criteria were studies focussing on Russian current application of quadriceps muscle strengthening, clinical efficacy, and comparative outcomes like Hand-held Dynamometer (HHD). Findings were then synthesised qualitatively. The review revealed that Russian current therapy enhances quadriceps strength, reduces pain, and improves functional mobility in various musculoskeletal conditions. Comparative studies indicate that combining Russian current with isometric or dynamic exercises yields exceptional results. However, variability in parameters such as duty cycle, amplitude, and session duration impact the comparability of results across studies. Russian current therapy demonstrates significant benefits in musculoskeletal rehabilitation, particularly for improving muscle strength and reducing pain. While the modality shows potential for improving muscle strength and endurance, inconsistent treatment protocols limit its widespread clinical application. Standardised protocols and long-term outcome studies are needed to optimise its clinical application.

Keywords: Clinical protocol, Musculoskeletal disorders, Muscle strength, Osteoarthritis, Pain.