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Impact of Swiss Ball Exercises on Enhancing Core Stability and Physical Fitness in Athletes: A Narrative Review

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ABSTRACT

Swiss ball exercises have gained popularity in physical education and therapy because they improve core stability, muscular strength, flexibility, endurance, and balance. The Swiss ball is a multipurpose training and therapy item that enhances proprioception and engages a variety of muscle groups due to its dynamic and unstable nature. This review was conducted to investigate the uses of Swiss ball exercises in athletic training and rehabilitation, as well as their impact on physical fitness measures like core strength, agility, balance, flexibility, and endurance. A literature search was conducted across multiple databases, including PubMed, Scopus, and Web of Science, focussing on studies published between 2020 to 2024.This review summarises study including quasi-experimental and randomised controlled trials exploring the impact of Swiss ball exercises. The studies included male participants, primarily aged 18–25 years, comprising students, untrained individuals, and athletes. Pre- and post-intervention assessments measured physical fitness parameters, including core strength (McGill's core endurance tests), agility (Illinois Agility Test), flexibility (sit-and-reach test), muscular strength, and endurance (dynamometry, push-ups, and crunches). Results were compared against control groups or traditional exercise regimens.Swiss ball activities, as opposed to conventional exercises or control groups, markedly increased muscular endurance, flexibility, balance, agility, and core strength. There was no improvement in leg strength, but there were noticeable gains in back strength. Circuit training combined with Swiss ball workouts produced further improvements in endurance and flexibility. These exercises improved proprioception and neuromuscular coordination by demonstrating superior stabilising muscle engagement. Exercises using Swiss balls are a great way to improve several aspects of physical fitness, including balance and core strength. Their ability to train proprioception and neuromuscular coordination makes them very promising for enhancing athletic performance and preventing injuries.

Keywords: Athletes, Athletic performance, Balance, Core stability, Physical fitness, Swiss ball