

Title: A Scoping Review For Published Dual Energy X-ray Absorptiometry Protocols For Athletes

Introduction: Dual energy x-ray absorptiometry (DXA) is widely known for its utility in diagnosing a patient with osteopenia or osteoporosis; however, it's utility in evaluation of body composition and potential athletic performance was previously, routinely overlooked. In recent years, athletic programs have begun employing this equipment during athlete screening. However, it is currently unknown how athletic programs are utilizing this information to guide an athlete's training and health.

Methods: PubMed and Google Scholar databases was searched for this brief review. A focus was placed on articles within the past 10 years that discussed DXA protocols within athletic populations. 14 articles were included in this brief literature review.

Results: Quality assurance scans with a phantom calibration block as well as athlete pre-screening condition and activity standardization was routinely recommended. However, only one study reported a specific DXA protocol for athletes while only one study described guidelines for how to report DXA results in athletic populations suggesting it is plausible yet difficult due to the small detectable changes.

Discussion: Due to the limited literature as well as lack of reference values for specific, athletic populations, the authors of this review recommend using the current Nana et al (2015) DXA protocol for performing DXA scans in the athletic population as well as current Hind et al. guidelines for distributing the information.

Significance/Clinical Relevance: The purpose of this review is to summarize available literature for DXA protocols for measuring athlete body composition as well as guidelines for utilizing its results for athlete safety, injury prevention, and training.