

Auditing the Representation of Female Athletes in Sports Medicine Research: Achilles Repair

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INTRODUCTION: Efforts have been made to promote awareness of female athlete differences from their male counterparts as well as minimize discrepancies in their wages and publicity. However, a critical component has been overlooked: establishing evidence-based recommendations specific to female athletes. Smith et al. notes that “female-targeted research related to sports science/sports medicine has failed to mirror the increase in participation and popularity of women’s sport.” (Smith et al., 2022) Achilles tendon rupture is one of the most common musculoskeletal injuries, occurring in 15 – 55 per 100,000 people annually. (Huttunen et al., 2014) Differences in injury rate and complications could be due hormonal effects, as estrogen receptors have been identified in lower limb tendons along with decreased Achilles tendon strain based on oral contraceptive use. (Bridgeman et al., 2010; Bryant et al., 2008; Liu et al., 1996) The primary purpose of this study is to audit the representation of female athletes in the literature regarding Achilles tendon repair.

METHODS: An electronic search was performed using PubMed to identify articles related to Achilles repair using the standardized protocol by Smith et al. to assess female representation in research. (Smith et al., 2022) Studies were assessed by population, size, athletic caliber, study impact, research theme, and menstrual status.

RESULTS SECTION: Female representation across all studies was 1783/10673 subjects (16.71%). Composition of included studies was predominantly mixed sex cohorts with 131/169 (77.51%) included studies. Within mixed sex cohort studies, the total representation of female athletes was 1651/8741 participants (18.89%). 32 studies were male only cohorts constituting 1540 participants while 3 studies were female only cohort studies comprised of 86 athletes. Importantly, the disparity between male and female representation worsened as the athletic caliber of the study population increased with 4.96% female representation in studies with professional athletes. No study collected data related to menstrual status and its potential relationship to Achilles rupture or post operative outcomes.

DISCUSSION: To our knowledge, this is the first review auditing the representation of female athletes in research related to Achilles rupture and repair. Mixed sex cohort studies underrepresented female athletes and male only cohort studies were more common than female only studies. These findings indicate a need for increased representation of female athletes in research related to Achilles repair. Future studies should focus on equal representation of female athletes and data collection related to sex specific hormones and menstrual status to improve recommendations and treatment of Achilles tendon ruptures for female athletes.

SIGNIFICANCE/CLINICAL RELEVANCE: This study highlights the need for improved female athlete representation and study methodology to include menstrual status in the setting of investigating Achilles repair to improve clinical recommendations and patient outcomes.

