

A new meta-analysis has shown that women athletes, of reproductive age, who take iron supplements, experience a significant improvement in exercise performance.

Impact of iron deficiency on exercise performance in women of reproductive age

Iron deficiency anemia is a common form of anemia and is a health risk for many women of reproductive age. Iron is an important component of hemoglobin in red blood cells necessary to transport oxygen to tissues throughout the body. Iron deficiency occurs when iron requirements or losses exceed iron intake resulting in reduced tissue levels and deficient iron stores. Without adequate iron, blood is unable to efficiently transport oxygen contributing to fatigue, lethargy, and poor physical functioning.

Female athletes have a higher risk of this type of anemia due to dietary deficiencies, losses from blood and other bodily fluids, and reduced absorption due to exercised induced inflammation. Previous studies have suggested that low iron levels may impair exercise performance.

A study published in the *Journal of Nutrition* has found that women athletes of childbearing age with iron deficient anemia who supplement with iron experience a marked improved in exercise performance. Researchers performed a systematic review and analysis of the effect of iron supplementation and exercise performance of women in childbearing years utilizing randomized controlled trials that measured exercise outcomes to daily oral iron supplementation vs. control.

Iron supplementation improved women's exercise performance, in terms of both the highest level they could achieve at 100% exertion (maximal capacity) and their exercise efficiency at a submaximal exertion. Anemic and iron deficient women who received iron were better able to perform a given exercise using a lower heart rate and at a higher efficiency than women who were not taking an iron supplement.

This study helps establish evidence that iron deficiency impairs exercise performance in women and may help better establish the beneficial effects of iron supplementation on exercise performance in women, and the general health and well-being of women in the general population. However, additional studies/ evidence may be required to further clarify the effects of iron on other exercise variables, and for other functional outcomes, such as work performance, productivity, and potential adverse effects.

Pasricha SR, Low M, Thompson J, Farrell A, De-Regil LM. Iron Supplementation Benefits Physical Performance in Women of Reproductive Age: A Systematic Review and Meta-Analysis. *Journal of Nutrition*, 2014; DOI: 10.3945/jn.113.189589