

## **Serum Cholesterol Levels and Risk of Tendon Injury in Professional Baseball Players**

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There may be a link between metabolic parameters and subsequent tendon injury. Prior studies have implicated elevated cholesterol levels as a risk factor for tendon rupture, specifically in the rotator cuff and Achilles tendons. Professional baseball players place a high stress load on tendons, which is an additional known risk factor for tendon injury. To our knowledge, no studies have evaluated for a correlation between elevated cholesterol and tendon injury in this population to see if these risk factors are additive. **PURPOSE:** To assess for a correlation between elevated cholesterol levels and tendon injury in professional baseball players. **METHODS:** At the report to Spring Training, all members of the Philadelphia Phillies organization receive a yearly physical exam, ECG, and laboratory studies including a fasting lipid panel (FLP). The FLP measures total cholesterol (TC), triglycerides (TG), high-density lipoprotein (HDL), low-density lipoprotein (LDL), and TC/HDL ratio. Injury data was collected retrospectively from [www.baseballprospectus.com](http://www.baseballprospectus.com) for every player who received at least one FLP between 2008 and 2013. Tendon injuries were identified and grouped into two categories: (1) All tendon injuries, and (2) Tendon injuries requiring surgical intervention. These groups were compared to athletes with no reported tendon injury. FLPs were compiled from 2008 to 2013 and each individual's average FLP was calculated. Individual averages were used to calculate group FLP averages for each injury category and the uninjured group. Statistical analysis was performed using 1-tailed two sample unequal variance T test to assess for correlation between tendon injury and FLP. **RESULTS:** There was no difference in average TC in the uninjured group vs. all tendon injuries group (TC=178.74 vs. 184.41, p=0.25). There was no difference in average TC in the tendon injuries requiring surgery group vs. all tendon injuries group (TC=189.02 vs. 178.78, p=0.17). There was no correlation between triglycerides, HDL, LDL, or Cholesterol/HDL ratio in athletes with or without tendon injuries or tendon injuries requiring surgery. **CONCLUSION:** In this five year retrospective review, we found no correlation between TC, TG, HDL, LDL, or TC/HDL ratio and tendon injury in these professional baseball players.