

The Correlation Between Foot Type and Shin Splints in NCAA Division II Collegiate Athletes. Harris K, Wasmer T. Southwest Baptist University. kmharris11@yahoo.com, Wazzy820@yahoo.com

PURPOSE: The purpose of this study is to investigate if a relationship exists between foot type (pes planus, pes cavus, or normal) and shin splints (anterior lower leg pain) in athletes. The investigators hypothesize there is a correlation of shin splints to pes planus and pes cavus. Studies indicate that pes cavus and pes planus can both lead to lower leg pain. **SUBJECTS:** NCAA Division II collegiate athletes were used as subjects in the research process. The experimental group consisted of 15 individuals with signs and symptoms of shin splints. Only the symptomatic foot of the subjects was included in the study. The comparison group consisted of ten athletes with no past medical history of shin splints. **METHODS AND MATERIALS:** Each subject signed an informed consent prior to the research process. A single-leg weight bearing view of the plantar surface of the foot was obtained podoscopically and captured on a digital camera. This podoscopic image allowed an arch index to be calculated and foot type to be determined. The classification based on arch index is as follows: pes planus $\geq .26$, pes cavus $\leq .21$, and normal $\geq .21$ to $\leq .26$. Materials used included a podoscope which allowed the investigators to retrieve a view of the plantar surface of the foot with a digital camera. The surface area of each foot was calculated using a computer and geometric computer software called Sketchpad. **RESULTS:** The foot type results of the participants with shin splints were pes cavus = 7, pes planus = 4, and normal = 9. The foot types of the comparison group, which included subjects that did not have reports of pain, were pes cavus = 7, pes planus = 2, and normal = 11. No correlation was found between shin splints and foot type. The statistical measurement used was a 2 way analysis of variance (2 x 3) to determine if there were differences between groups for each foot type. Alpha was set at apriori 0.05. **CONCLUSION:** The study revealed there was no significant correlation between arch index and shin splints/lower leg pain based on the analysis of data. Although healthcare providers use foot alignment and foot biomechanics to screen and make intervention decisions the study found no correlation between the arch index and shin splints. This leads to the belief that more research is needed to provide information about the cause and treatment of lower leg pathologies.

Funding: No funding was provided by an outside source for this project.