

Rachel Bird

### Capstone Reflective Critique

I was overall very happy with my capstone and the outcome of the research. I feel that my methods were strong, as I followed protocol that the research equipment suggested. This included placement of electrodes and how to instruct each participant to walk across the force plate. Since I did a very similar project last year, I was already very comfortable with the procedures and with cooperating in a professional but comfortable fashion with my mentor. We also made sure that my mentor, Dr. Sallee, was always the one doing the arch taping, and I was always the one placing electrodes in order to increase reliability of intertrial variables. A weakness of the methods is that we did not follow the exact protocols for placing the electrodes on the lower legs. To ensure the most accurate results, we are supposed to shave the hair in the spot of placement, rub the area with an alcohol swab, abrade the skin with a sandpaper-like material, and then wipe it with alcohol again before placement. We decided that for the purposes of our study, that was a little too invasive and we feared that we may not get much, if any, participation since it would be very uncomfortable for the subjects. Our EMG muscle activation came out fine, but it most likely would have been a little more accurate if the exact protocol had been followed. Another variable that we did not account for was walking speed when gathering the muscle activation data. Some participants walked very slowly, and others very fast. This may have skewed the muscle activation data some as well. This research fit into the existing body of knowledge by exploring what, to our findings, hasn't been looked at before. When looking at existing research to form a background, I found that most studies dealing with arch taping were comparing different types of tape and their usefulness. A few studies looked at how arch taping can be used to treat plantar fasciitis or Sever's disease, but nothing on simply what arch taping does to the feet when applied in the average person. I decided that it was probably not heavily researched because everyone thinks they know what it does, it supports the taped arch, right? We found that that certainly is not always the case. More often

than not it changes the mechanics in the untreated foot. Unfortunately, we did not find any strong muscular evidence that the lower leg muscles are causing this change, but with further research, I think someone will be able to find what exactly causes this unexpected outcome. Overall, I loved my research, and I learned so much more about the body and how to professionally conduct a research project, which is such a valuable skill as an undergraduate.