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Abstract 1

Biomedical Engineering 531

**Background**

The hip is a complex structure and is incredibly important to our understanding of many biomechanical aspects of the body. It is tasked with transferring body weight to the lower extremities and keeping the body stable in this process. The ball and socket joint appears simple in its tasks but is one of the most interesting parts of our body.

**Introduction**

In this presentation, I will focus on understanding and discussing the overall anatomy and structures of the hip joint. We will dive into the movements the hip is able to do, due to being a ball and socket there are many. While reviewing the movements along with the anatomy and structure of our hips, I wanted to explore injuries that happen and what typically causes them. In the exploration of injuries, we will specifically review hip labral tears and a few quick tips on how to limit potential injuries to our hips. Finally, we will review a few clinical implications for the hip utilizing biomechanics.

**Discussion**

In the section on biomechanics and the hip we will be able to see different ways we can adjust the joint reaction force experienced by the hip. We can take different approaches to increase or decrease the force on this joint. The hip is also an incredibly flexible and impressive joint; understanding the movements it can perform while seeing the structure is a valuable part of this presentation.

**Conclusion**

This research has found and will report to the class insights into the structure of the hip along with its anatomy to create a strong base of knowledge as we continue to explore our topics this semester. The applications of this structural understanding to movement profiles and biomechanical forces will also provide a strong base for the future studies this fall.