

The Redesign of a Ski Plate to Reduce Knee Injuries

Reporting Period

Week 8: Wednesday, March 13th through Tuesday, March 19th, 2002

Week 9: Wednesday, March 20th through Tuesday, March 26th, 2002

Week 10: Wednesday, March 27th through Tuesday, April 2nd, 2002

Problem Statement

Over the past two decades, a number of advances in ski equipment technology have led to a significant decrease in the incidence of ski-related ankle and foot injuries.

Unfortunately, a number of these same advances have led to an increase in the incidence of knee injuries.

The current design project seeks to redesign one of the components of the ski binding, the ski plate, in a manner that should lead to a reduction in ski-related knee injuries. This may be accomplished by designing a ski plate system that allows some degree of rotation, thereby transferring torque that would normally be placed on the knee, to the ski plate.

Restatement of Team Goals

- Further knee mechanics research
- Continue researching patents to make sure ours is unique
- Get intricacies of design finished
- Presentation for class
- Presentation for outreach

Summary of Accomplishments

- Gave midsemester presentation
- Gave outreach presentation--it went well
- Met w/ Dr. Vanderby
- Figured out mechanism for locking mesoplate--have almost decided on design
- Furthering details of business model
- Have basically decided what needs to be done for knee failure data

Statement of Team Goals

- Finish design in detail by Monday
- Send design to prototyper/manufacturer
- Design tests for prototype
- Start working on paper
- Decide limits for knee failure

Project Schedule

-Refer to Gantt Chart on the website: <http://www.cae.wisc.edu/~skibind>

Difficulties

Finding good knee data for living people. Correlating knee data to binding. Figuring out proper springs/materials to use in binding.