



Upping the Game for Injury Prevention



For more than ten years, the Department of Sports Medicine and Nutrition (SMN), through grants from the Department of Defense, has been working with elite branches of the U.S. military collecting and tracking data that relates to strengthening, conditioning, and ultimately, injury prevention during high-risk maneuvers on land and at sea.

Now SMN researchers are using the same model to achieve results closer to home.

The University of Pittsburgh Injury Prevention Initiative (IPI) is designed to help University of Pittsburgh athletes and their athletic trainers and coaches understand more about what injuries are likely to occur and how to prevent them.

“Athletic injuries can be devastating, both physically and psychologically,” observes SMN associate professor and project coordinator Timothy Sell. “Many athletes derive their identities from their sport. Injuries not only keep them off the playing field, but may prevent them from enjoying life now and in the years to come.”

“The Injury Prevention Initiative will augment the high standard of care established by the University for its student athletes,” affirms Sell.

Michelle Varnell is a doctoral student in the Rehabilitation Science program in SMN who helped to develop the protocols for each sport. She collaborates with her colleague, doctoral student Mallory Sell (MS ’13), to coordinate the projects and conduct data collection and analysis.

Varnell cites many benefits to the student athletes. “We establish strength, flexibility, and balance profiles for each sport,” she explains. “We also identify risk factors for injury that will give clinicians the ability to identify suboptimal characteristics in each athlete early on, and implement sport-specific preventive measures that will decrease the number of injuries.”

“By testing each athlete prior to their competitive season, we’re able to establish a baseline,” points out Mallory Sell. “We can then track that student for the duration of his or her athletic career.”

“The information each student gains allows them the opportunity to play an active role in injury prevention, rehabilitation, and performance enhancement,” she adds.

Since the project began in 2011, more than 250 athletes from four different sports – baseball, softball, and men’s and women’s soccer – have participated in IPI. Their testing is performed at the Neuromuscular Research Laboratory (NMRL), the same lab that houses the Warrior Human Performance Research Center for military testing.

A portable version of the lab, which Dr. Sell calls the “injury prevention toolbox,” is used on athletic fields to test student athletes in their sporting environment and at their convenience.

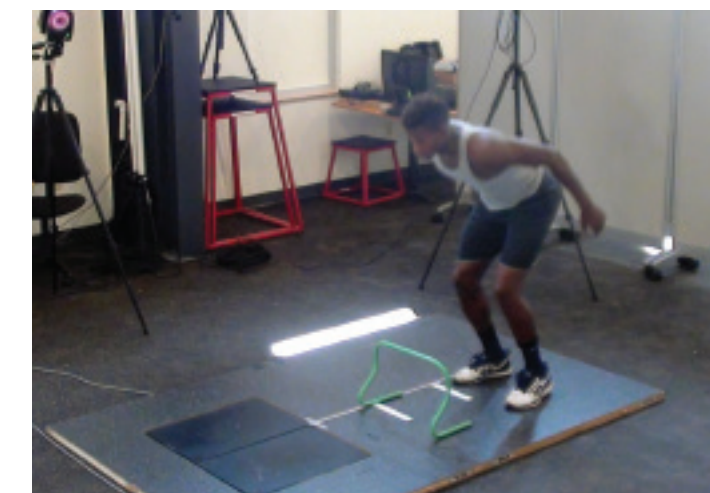
Athletic Trainer Jennifer Csonka (BS ’00) is directly responsible for the health and well-being of the women’s soccer team, but also supports the IPI graduate assistants in their work with the baseball, softball, and men’s soccer teams.

“We’re working collaboratively to prevent injuries that keep the student athlete out of their sport,” reports Csonka. “When injuries do occur, we evaluate the student athlete to diagnose the problem and then design an appropriate treatment and rehabilitation program for recovery.”

The Pitt IPI has collected four years of data on athletes in the baseball and softball programs, and three years of data on soccer players. This pleases Dr. Sell. “If we can show the student athletes that they are stronger when they leave here, then our project has been a success,” he states.

Feedback from the athletes has been positive. “They are very interested in their own data and how their information can be used to improve performance,” reports Varnell.

“The student athletes have also told us that the testing is fun and engaging because it gives them a chance to compete against one another as they compare their results to the team and other position players,” Mallory Sell adds. “This aligns perfectly with each of the athletes’ strong drive to compete.”



The Pitt women’s volleyball team and the 120-member football team recently joined the initiative. Sport-specific criteria were established and baseline testing of the student athletes began in July.

According to Head Football Coach Pat Narduzzi, the Pitt Injury Prevention Initiative is a great opportunity to enhance the overall health and success of his athletes.

“Undergoing the same testing that the Navy SEALs complete gives us a snapshot of where we match up with some other great athletes,” Narduzzi explains. “The information we are gaining is invaluable to the improvement of each individual over the course of his or her career.” ■