



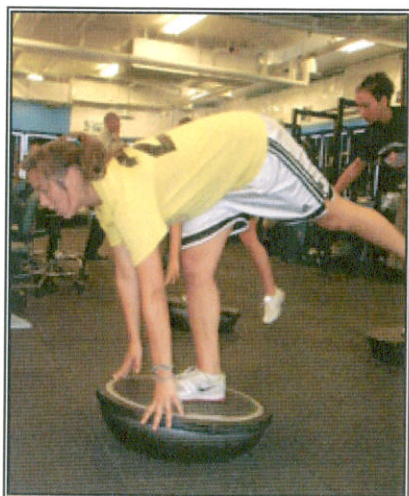
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Your Health

Training May Curb Some Sports Injuries In Women

by Allison Aubrey

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Chelsea Vandedrink for NPR

A training session at the Sports Medicine Biodynamics Center at the Cincinnati Children's Hospital Medical Center.

"Last year, the Madeira soccer team had at least three, maybe it was four, girls go down with ACL tears just in the one season. ... That's just uncalled for. That shouldn't happen."

Sue Landgrebe, mother of a female athlete

Morning Edition, September 4, 2008 · Women are more prone than their male counterparts to specific injuries — namely knee injuries like tears of the ACL, or anterior cruciate ligament.

A prevention program at the University of Cincinnati is aiming to curb these injuries in women.

Victory And Defeat

High school soccer player Katie Landgrebe recalls a moment on the field a few years ago, after scoring the winning goal in a tournament game, when the thrill of victory and the agony of defeat coincided.

"I was on a break-away with a keeper, and we were tied 1-to-1," she says.

Just as the ball went into the goal, she collided with a member of the opposing team, breaking her femur bone.

"I fell down and everyone cheered," Landgrebe says. "And then everyone was like, 'Oh-no, what happened?' It was pretty disappointing. I think everyone was shocked."

In the course of her rehabilitation at Cincinnati Children's Hospital Medical Center, Landgrebe started training with researchers from the University of Cincinnati. These researchers were working to figure out exactly why female athletes are more prone to knee injuries.

The Culprit: Muscle Development

Tim Hewett, of the Sports Medicine Biodynamics Center at Cincinnati Children's Hospital, says that just after boys go through puberty, they tend to get a big power burst.

"They get much bigger gluteal muscles," he says, "and much bigger hamstring muscles."

But with girls, there's not as much of an overall power spurt. Growth during this stage, for girls, is concentrated in only a few muscles.

"Women tend to be very front dominant," Hewett says. "They use their quadriceps, the big thick muscles in the front of the legs."

This means that women's bodies don't fully activate the muscles on the back side, namely the hamstrings and the glutes.

On the soccer field or basketball court, Hewett says, this is a problem. First, the imbalance of muscle use — something Hewett calls a "muscle turn-on pattern" — ends up putting stress on the ACL.

The ACL is a major ligament that runs through the center of the knee, linking the upper leg bone with the lower one. Tearing an ACL, which female athletes are up to six times more likely to do than men, is brutal. It's an injury that can keep players out of their sports for an entire season.

Adjusting The Training Regimen

The good news is, through training, women can learn how to activate and strengthen their under-used muscles, says Hewett. But this doesn't happen in one or two sessions.

Katie Landgrebe's mom, Sue Landgrebe, says she nudged Katie's entire high school team to participate in Hewett's training.

"Last year, the Madeira [High School] soccer team had at least three, maybe it was four, girls go down with ACL tears just in the one season," says Sue Landgrebe. "And that's just uncalled for. That shouldn't happen."

Since this understanding about gender differences is fairly recent, it is only now that evidence-based prevention programs are being developed.

Hewett has had the Madeira High School girls' soccer team in training eight weeks this summer. In order to change the way these girls jump, land and kick on the field, he says they need a lot of repetition.

"ACL injuries don't happen when you have your knee flexed deep," he says. "So [I'm] teaching them to get in deep, flexed position, turning on all the muscles on the back side of the leg, and at the same time, controlling or stiffening their core."

The strengthening of the core muscles is very important, explains Hewett, and the players spent a lot of time on exercises that focused on abdominals and other trunk muscles as well.

'Ready To Play'

The heavy demands of the training match the stepped up demands these girls face on the field playing competitive soccer.

It's still early in the season, but so far, Landgrebe and her team are undefeated and injury free.

"I feel like I'm definitely stronger and more ready to play," she says.

The first injury of her soccer career has made her much more aware of how to prevent a more serious one.

Now, hopefully, her whole team will benefit.

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