

# Run a mile in their shoes

*I coach my kids' U-6 and U-10 soccer teams in Georgia. Our league asked all teams to begin practicing using sneakers or indoor shoes instead of normal outdoor soccer cleats in an effort to reduce wear and tear on their fields. (Players will be allowed to use regular cleats during games.) In our first couple of practices, I've had two players slip and injure themselves while wearing sneakers (plant foot slipping and a collision because they could not stop). The grass is still dormant and has not been cut in a while. The fields have been pretty wet. As you can imagine, parents are not thrilled about buying regular cleats for games and indoor cleats for practices. I as a coach and parent, I don't want kids getting hurt by slipping on wet fields.*

*I think the simple solution would be to have all recreation teams begin using the indoor type shoes for both practice and games. Before I suggest this however, I was hoping to find documentation in regards to the impact on fields due to the types of cleats used by players using the fields (specifically soccer if possible). For all I know, regular cleats may not be all that damaging compared to indoor cleats or sneakers. Also can you explain how turf is damaged and the leading cause of dead grass on athletic fields?*

**I** have several perspectives I will share with you. First, understand that traction itself is a little difficult to quantify. Traction is influenced by: soil conditions, soil hardness, soil moisture, surface moisture, surface roughness, turf density, turf growth habit, overseeding, shoe design, weight of athlete, and shoe-to-turf interface. Observations lead me and others to believe that the athlete has one of the single greatest impacts on traction. Someone once told me that the good athletes rarely ever slip unless the turf tears, suggesting that their balance and control was superior to other athletes. Combining the athletes, shoes, and surface conditions into one study makes for an almost impossible research project. At best studies can only simulate some of the parameters and try to predict what may happen from the results.

Studies were conducted at University of Florida to determine the effect of five cleat designs on turf damage and traction. Cleat designs evaluated included 6-stud replaceable, standard (12-cleat round) molded, 13-cleat non-round molded, 25-cleat hard-ground molded, and trainer cleat (indoor type). The 6-stud replaceable cleat, which is the most aggressive cleat design, has the best traction. The standard molded cleat and the 13 cleat non-round cleat had similar traction. The 25-cleat hard-ground shoe had less traction than the other molded cleats and the trainer cleat had the least traction. The ranking of traction values was not surprising, but the amount of damage caused by each shoe indicated that these shoes cause different types of turf damage.



Some shoes were more destructive to turf from a side impact (cutting); whereas, others were more destructive to turf from a forward impact (plant without directional change). Turf recovery was also dependent on the shoes and the shoe impact direction. The trainer shoe caused the least amount of damage and it healed the quickest (about 75 percent faster than the standard shoe). Hard-ground shoe damage healed quickly from a front impact but similar to others for a side impact.

In terms of damage, the trainer shoe produced 37 percent less damage than the standard shoe and 31 percent less damage than

the non-round molded shoe. The 6-stud replacement cleat was 34 percent more damaging than the standard shoe. The numbers are more relative than absolute, which is why they are presented as percentages. In terms of traction on Bermudagrass that had been overseeded with perennial ryegrass, the trainer shoe required 47 percent less force to break traction than the standard shoe and 53 percent less force than the non-round molded shoe.

To answer your second question, damage can be a number of things from abrasion damage (which Bermudagrass heals from pretty quickly) to turf tearing, to shearing of stolons and rhizomes (lateral stems above and below ground, respectively), to root disruption. Damage can be just to the plant or to the plant and the soil surface (including plant roots). All can result in turf loss, but Bermudagrass can recover from some more quickly than others. The leading cause of dead grass is over-use resulting in turf wear and soil compaction.

In summary, shoes with more smaller cleats or "indoor cleats," will cause less wear and compaction damage (more cleats displace weight better) than more traditional "outdoor cleats." But the biggest damaging factor (generally) is too many of those feet on the turf before it can recover. Keep in mind that a team can do more damage wearing indoor cleats on a rainy day than a team wearing regular cleats with the soil at field capacity soil moisture. So depending on the situation, shoes may only be a contributing factor to turf damage as well as the traction issue.

In discussing this issue with colleagues, Trey Rogers of Michigan State said, "I can't see why anyone under age 10 would not be allowed to wear any cleat they wanted." For the love of the game, I tend to agree. **ST**

## Have Questions?

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