



*This is the sixth in a series of articles, prepared by Chevy Chase citizens using public sources, that address the growing risks associated with artificial turf playing fields. Hazards of excessive heat and increased injury have long been documented. New findings on the extreme toxicity of PFAS in artificial turf call into serious question its continued use. Maret School plans to install nearly four acres of artificial turf for its field development at the Episcopal Center for Children at Utah and Nebraska Avenues.*

## 6. Injuries

Many athletes, coaches, and health professionals have called attention to the higher incidence of injuries from playing sports on plastic turf vs natural grass. These injuries also tend to be more severe.

The NFL Players Association (NFLPA) analyzed league injury data from 2012-2018. They compared injuries that occurred on plastic turf to those that occurred while playing on natural grass. Over seven seasons, there were 28% more non-contact lower extremity injuries on plastic turf, 32% more non-contact knee injuries, and 69% more non-contact foot or ankle injuries. Focus is on non-contact injuries because these are considered to be more likely to be affected by the playing surface. The NFLPA has called for the elimination of plastic fields, and NFL athletes like George Kittle, Will Levis, Bryan Bresee, and David Bakhtiari have joined a petition to demand the replacement of all plastic fields in the NFL with natural grass. In the face of resistance by owners, the NFLPA has continued to collect data on non-contact injuries, and except for an outlier year in 2021, every season has supported their contention that players are more likely to get injured on artificial turf. The issue is heading to arbitration. Currently, 16 NFL teams play on grass, and 14 play on plastic. After installing a plastic field in 2003, in 2016 the Baltimore Ravens ripped up their plastic turf and reinstalled natural grass.

The same higher incidence of injuries is true at the high school level. In one study, the University Hospital in Cleveland, Ohio, analyzed injury reports from the medical trainers of 26 local high schools. "They found athletes were 58 percent more likely to sustain an injury during athletic activity on artificial turf. Injury rates were significantly higher for football, girls and boys soccer, and rugby athletes. Lower extremity, upper extremity, and torso injuries were also found to occur with a higher incidence on artificial turf." <https://www.uhhospitals.org/for-clinicians/articles-and-news/articles/2019/08/artificial-turf-versus-natural-grass>

Some proponents of artificial turf argue that new generation turf has eliminated any issues with increased injuries. Many studies have been performed on the incidence of injuries on artificial turf vs. natural grass, at various age levels and on both older and new generation turf. In a recent survey published in May 2023 in *The American Journal of Sports Medicine*, an abstract of which is available on the NIH library site <https://pubmed.ncbi.nlm.nih.gov/35593739/>, the authors analyzed the results of 53 recent studies. Their conclusion?

The available body of literature suggests a higher rate of foot and ankle injuries on artificial turf, both old-generation and new-generation turf, compared with natural grass. High-quality studies also suggest that the rates of knee injuries and hip injuries are similar between playing surfaces, although elite-level football athletes may be more predisposed to knee injuries on artificial turf compared with natural grass. Only a few articles in the literature reported a higher overall injury rate on natural grass compared with artificial turf, and all of these studies received financial support from the artificial turf industry.

Only four Major League Baseball teams still play on plastic turf. The National League plays entirely on grass. When, in 2015 the Women's World Cup was played on artificial turf, while the men played on grass, it was widely viewed as a sign of disrespect to women's sport. Both US National Soccer teams now refuse to play on plastic turf. The English Football League and the Premier League both play on natural grass. With increased awareness of injuries and other issues the tide is turning on turf.

Knowing what we know now, why would we allow our children to play on plastic turf? A natural grass field may mean an occasional game or practice is delayed. A plastic field may mean missing weeks or months to recover from unnecessary injuries.

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