More than one million high school students participate in tackle football programs at their schools, during which they each sustain hundreds of violent blows to the head over the course of a season. According to our analysis, the cumulative effect of rattling this many brains this many times is that each year roughly 264,000 high school students suffer traumatic brain injury and cognitive impairment that diminishes their ability to think, learn and succeed in school. We know this from studies that have correlated the patterns of players’ head blows with traumatic brain injury and cognitive impairment, using helmet sensors, functional MRI brain scans and tests of working memory.

The biomedical engineering professor Thomas Talavage presented these findings on behalf of the Purdue Neurotrauma Group at a White House summit on sports injuries in 2014. He explained that concussed and non-concussed players alike demonstrate decreased activity in the portions of the brain most vulnerable to impact and have greater difficulty with basic cognitive tasks over the course of a single high school season. About half of the linemen studied and one-quarter of players overall exhibit these symptoms.

As clinical evidence of the risks associated with playing tackle football mounts, professional players and sportscasters have begun to abandon the game. Notably, former NFL linebacker Joshua Perry retired this year after just two seasons, citing concerns over his mounting number of concussions. Some school districts — such as the districts of Maplewood, Missouri, and Marshall, Texas — have even begun reducing or canceling tackle football programs. Nevertheless, the many high school students who will continue to play football in the coming school year present school leaders with some serious ethical questions.

Is sponsoring an activity that causes disabling brain injury compatible with educators’ responsibilities to students? Are there compensating educational benefits of playing tackle football that justify the risks? Does the putative consent of players or their parents relieve educators and administrators of their duty to protect students from harm? The answers to these questions are clearly no, no and no.

Schools should not sponsor activities known to cause cognitive impairment in a significant percentage of participants. Nor should schools sponsor, facilitate or encourage activities that directly undermine their educational aims. For a quarter of football players, what happens on the field diminishes their capacity to benefit from what happens in the classroom.

Beyond cognitive impairment, repeated blows to the head often cause concussions, with symptoms that include headaches, memory loss, insomnia and mood disorders. According to the Centers for Disease Control and Prevention, the aggregate economic costs of TBI ran approximately $76.5 billion annually as of 2010. Moreover, the younger children are when they start playing tackle football, the more likely they are to develop degenerative brain disorders later in life.

It is important to recognize that players risk cognitive impairment even if they do not suffer a concussion and regardless of whether they tackle with their heads up or down. Helmets help to prevent skull fractures, but they do nothing to stop the brain from smashing into the skull each time a player collides with another player or the ground. Such collisions are inherent to tackle football.
played according to the rules.

Are there compensating educational benefits that justify these risks? Many claim that playing football builds character, but there is no evidence that it is distinctive or cost-effective in this respect. Good judgment is a key aspect of good character, and studies show improved judgment in students who participate in music, theater and community service programs, but not in students who participate in sports. The cognitive impairment caused by collision sports is scarcely favorable to making good decisions. Even if there were solid evidence that football is a more effective vehicle for character building than the alternatives, that would not justify expensive tackle football for a few. It would justify safer and more affordable club sports for all students. Given what we know, the risks of tackle football cannot be justified on the basis of character development.

What about the benefits to students who think they have a chance at a career in professional football? Should schools provide that opportunity? The answer is, once again, no. According to NCAA estimates, only 6.9 percent of high school football players made it onto an NCAA team in the 2016-17 season. Of these, only 253 were subsequently drafted by the NFL or another major league, representing just 0.0239 percent of the original pool of high school players. By contrast, about 25 percent of the original pool — 264,345 high school players — would have suffered traumatic brain injury and cognitive impairment. In other words, a high school football player is about 1,000 times more likely to be impaired in pursuing an education and other career paths than to have a career in professional football. Those are not odds that could possibly justify the risk to students.

What ethical or legal significance do student and parental consent have? In negligence suits filed when students are injured while participating in school activities, school districts routinely appeal to the doctrines of consent and assumption of risk. But legal minors have a limited capacity to foresee and assess the consequences of their actions and cannot give consent that would legally or ethically release coaches, teachers and other school authorities from their prior responsibilities to protect students' interests. In the context of football, the limited capacity of minors to give meaningful consent may be further diminished by unrecognized concussive symptoms and intense psychological pressure from coaches and peers. The legal and ethical significance of parental consent is also limited in this context. Educators and school officials have duties to protect students from foreseeable harm in the custodial and tutelary environment of the public school, and consent offered by students and parents does not release them from these duties.

In sum, there is no justification for continuing to expose students to the inherent hazards of tackle football, however popular it may be. The responsibility for harm to students arising from these hazards falls primarily on school officials, and it is they who can eliminate the hazards by terminating the programs.

What do you think of this argument? What was the most convincing piece of evidence?