

UC Irvine study taps high school brains

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Christian LaBow left Servite High's spring football practice early on a recent afternoon to undergo a brain scan.

The 17-year-old varsity center wasn't injured. He was contributing to the growing body of research on <u>football</u> and neurological health.

LaBow joined a novel UC Irvine study last month that is looking for evidence of microscopic brain bleeds among high school football players. MRI results from 100 teen players will be compared with brain scans from a control group of male students who don't play the sport.

"I was like, 'Oh that's kinda cool to see how my brain works,'" said LaBow, who lives in Huntington Beach, Calif. "I was thinking I should probably do this because I use my head a lot."

In March, the NFL publicly acknowledged for the first time that football is connected to the <u>degenerative brain disease</u> found in nearly 100 former professional players. Beyond those well-publicized cases, far less is known about how blows to the head affect the still-developing adolescent brain. A 2013 report by the Institute of Medicine found that high school football players suffer more concussions than college players but drew no conclusions on whether the injuries lead to long-term damage.

Dr. Mark Fisher, a UCI neurologist - and a football fan - wants to find out how early evidence of trauma might show up in young players.



"There's great concern regarding the relationship between playing organized football and head injuries and the brain changes that may result," Fisher said. "We have the opportunity of either providing some reassurance for the safety of the activity or to determine whether there are any red flags."

Radiologists will review the scans for cerebral microbleeds, which are small areas where bleeding has occurred. Microbleeds would not normally be seen in teens unless they had suffered a significant head injury, Fisher said. They are also a possible risk factor for chronic traumatic encephalopathy, or CTE, which has been diagnosed by autopsy in players including, most recently, former Oakland Raiders quarterback Ken Stabler.

Dr. Robert Cantu, a Boston neurosurgeon and author of "Concussions and Our Kids," said the UCI study sounds worthwhile, noting that earlystage CTE has been found in the brains of deceased <u>high school football</u> players. CTE symptoms include memory loss, impaired judgment and depression.

But Cantu said there's no medical consensus on what should be done if microbleeds are found, particularly if the player is asymptomatic. He said he wouldn't want parents to assume that the absence of microbleeds means their child won't have neurological problems in the future, or that microbleeds automatically mean he will.

"Right now, we can't correlate the two," Cantu said. "It is true you might one day be able to, and you only will if you start following players."

Chaz Kekipi, head athletic trainer at Servite, said the Anaheim private school's involvement in the study promotes the kind of transparency that the sport has lacked in the past, which has led to declining participation. He said the program was also among the first in the state to implement



return-to-play concussion protocols for player safety.

"I like the fact that we're contributing to greater awareness and greater education and hopefully better research on how to handle some of these brain injuries and lingering issues that student athletes have," Kekipi said. "Hopefully this research will help us continue to better manage these concussion episodes so we're really tailoring each protocol to the athlete."

UCI will share any abnormal results with the students and their parents. Before the scan, players provide a health history, including any past symptoms of concussion. Fisher, who is still recruiting players, plans to publish his findings after the study is completed at the end of the year.

Jimmy Russell, 17, who plays with LaBow on the varsity team, enrolled at the suggestion of his mother, Laura Russell. He wore a black Servite football T-shirt for his scan and dozed during the 40-minute procedure that flashed colorful images of his brain on a computer monitor.

"I was intrigued since I've never had a concussion," Russell said. "I want to see if it's actually taken a toll."

Laura Russell of Long Beach, Calif., said she worries about the possibility of head injuries. She said the MRI will serve as a good baseline measure of her son's health.

"We try to keep him with the best helmet," she said. "And pray."

Some helmet manufacturers are introducing sensors to monitor head impacts in real time; Virginia Tech provides independent safety rankings on which helmets best reduce concussion risks.

Even without any results, the UCI study has spurred interesting



conversations between the athletes and their parents.

On the way to the Toshiba scanning facility in Irvine, LaBow and his mother, Heather LaBow, talked about what they would do with the findings.

"I was saying that if the results came back and it showed there was something that could be detrimental to his health down the road, that we'd have to re-evaluate and possibly give up football," Heather LaBow said.

Her son, who aspires to play professionally, felt differently. He describes the feeling of winning like fireworks in his heart.

"I would find ways to keep myself safe," he said. "I wouldn't quit football because of a lone little problem."

LaBow's parents did not allow him to play tackle football until he started <u>high school</u> because of their concern about concussions. Heather LaBow said they were glad to participate in research that can help inform the decisions of younger players and their families.

"It's a really important topic, and it's hot right now," she said. "It's exciting to be a part of something that can make a difference in the future."

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