CWSF 2017 - Regina, Saskatchewan

Deandre Baker, Tanish Wadhwa

Smart Helmet which measures acceleration to detect minor & major brain damage

Challenge: Innovation
Category: Intermediate
Region: Peel
City: Brampton, ON
School: Chingacousy S.S.

Abstract: Our Innovation is a helmet which ensures that any athlete with a concussion/brain damage is not left untreated. The G-Shield measures the rate of change in velocity to detect minor and major brain damage using an accelerometer and arduino technology. When it comes in contact with a large amount of acceleration, it detects the amount of g-force that has been accelerated towards it.

Biographies
Deandre - We came up with the idea of a brain damage indicating helmet because of our involvement in sports. I am a martial artist and i do where a sparring helmet, but I must always be careful of strong blows to the head and knockout strikes that can damage my brain, even if I feel fine. So with our invention, it would be easier for me to know if my brain is at risk for developing further injury, and I can seek medical treatment right away. Now, we have to investigate more accurate methods of calculating minor brain damage, and come up with newer and more effective ways to indicate the user of the possibility of minor brain damage. Some advice I would... Tanish - I am a grade 10 student who is apart of the SciTech (Science and Technology) Regional Program. I have always had a strong passion for the sciences since a very young age which is shown by my extra curricular's and volunteer work. I am apart of the Science and Innovation club and also volunteer at the Brampton Civic Hospital. I got inspired to create my innovation after I heard about the story of my Grandfather who had been diagnosed with Parkinson's. He was an athlete and had received a concussion which he did not treat as of the high cost of medical care. This turned into permanent damage which is what inspired me to create a helmet that det...

Awards	Value
Excellence Award - Intermediate - Bronze Medal Sponsor: Youth Science Canada	
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$1 000