Praesidium 1

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To diagnose a concussion or other traumatic brain injury, a physician will have to conduct a MRI, CT scan, or an EEG, all of which are lengthy processes. Many careers have come to a halt due to brain injuries, and most of the time the player only receives evaluation if they choose to report the symptoms. The purpose of this unique invention and design is to detect high amounts of force applied to a players head that could potentially cause cerebrovascular damage. This can help physicians with their diagnosis process, and has the potential to save many athletes' careers and more importantly maintain a healthy lifestyle. For this project, a special, shock absorbent expanded polypropylene foam was divided based on the specific dimensions of the prototype. Holes were carved of the major focus points, which is where the paintballs could fit in, and was then sealed by a thinner piece of the foam. Incisions were then made on the bottom, which would allow the exploded paint to drip through. Lastly, clear, durable plastic coating was applied along the external parts of the padding, which allowed the paint that dripped through the incision to be noticed. Praesidium 1 was prosperous in being able to display the amount of force it takes for a player to develop a concussion or other traumatic brain injury, and when the forces were not equivalent to a concussive force were applied the paint did not explode, which was the overall goal. This has the potential to save many careers as well as mental and physical agony. If this experiment is pursued further, it can help rush and simplify the diagnosing process. Instead of patiently waiting hours or even days, a player can be easily and simply be instantly diagnosed based on the color displayed by the new padding.

Awards Won: