

## The Challenge

Brain Sentry is a revolutionary helmet-mounted sensor that flashes red when an athlete suffers an unusually rapid acceleration of the head. The Brain Sentry Impact Sensor helps coaches, parents and safety monitors identify players that should be evaluated for a concussion. Earlier iterations of the product were not robust enough to adequately withstand direct impact on the device. The high force impacts were causing too much flex throughout the sensor assembly causing it to present inaccurate results.

## The Solution

Simple solution, make it stronger and redistribute the load around the internal electrical components. By adding mechanical strengthening features and redesigning the placement of internal electrical components we were able to lower the chance that the internal components would not be damaged while maintaining full functionality in the sensor.



### Summary and Metrics:

- The exterior curvature was adjusted as well and the injection molding parting line to better displace impact force throughout the device.
- The sensor was strengthened using internal mechanical features including ribs and other bosses.
- Because the internal components were rearranged, the exterior features were adjusted to match.