Concussions in athletes are a significant issue, with approximately 3.8 million cases occurring annually in the US from sports-related activities. These injuries, while less severe than other forms of TBI (Traumatic Brain Injuries), can result in headaches and vertigo in the short term and lead to long-term complications such as memory loss, cognitive impairment, and emotional disturbances. Although one concussion is typically not life-threatening, experiencing multiple concussions or suffering a new concussion before recovering from a previous one can cause irreversible brain damage. This project aimed to embed electronics into a bicycle helmet to detect acceleration, deceleration, and signs of abnormal brain activity, thereby determining the likelihood of a concussion. Since concussions are often caused by forces ranging from 50G to 60G, the system was designed to detect these impacts and notify the user and their family, enabling them to seek emergency assistance if needed. The helmet system consisted of a Raspberry Pi Zero 2W, an ADXL375 accelerometer, a Muse 2 EEG headset, and a 32GB SD card, with an overall cost of approximately $264. The ADXL375 accelerometer was connected to the Raspberry Pi’s GPIO pins, with SDA and SCL linked to the board’s corresponding pins and VCC and GND connected to 5V and GND. The Muse 2 headset was paired via Bluetooth to stream EEG data when impacts exceeding 60G were detected. The completed system successfully detected high-impact forces and analyzed EEG data for abnormal patterns, accurately determining the likelihood of a concussion and providing timely alerts to the user and their emergency contacts.