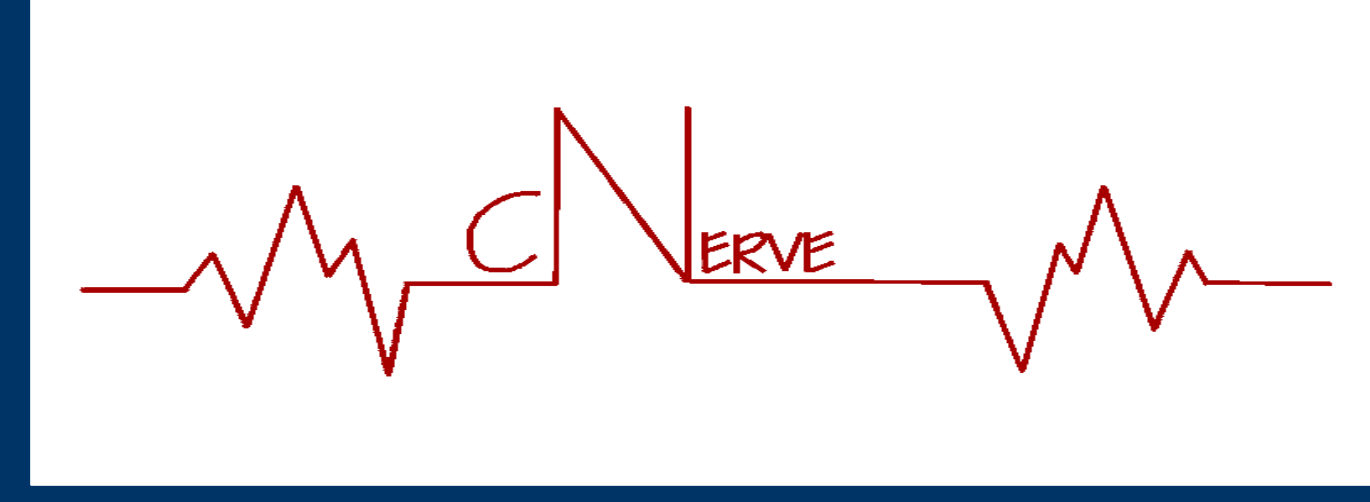


Measuring the Effect of Sports-Related Repetitive Head Impacts on Memory Processes with the Auditory Oddball Task

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Purpose of Research

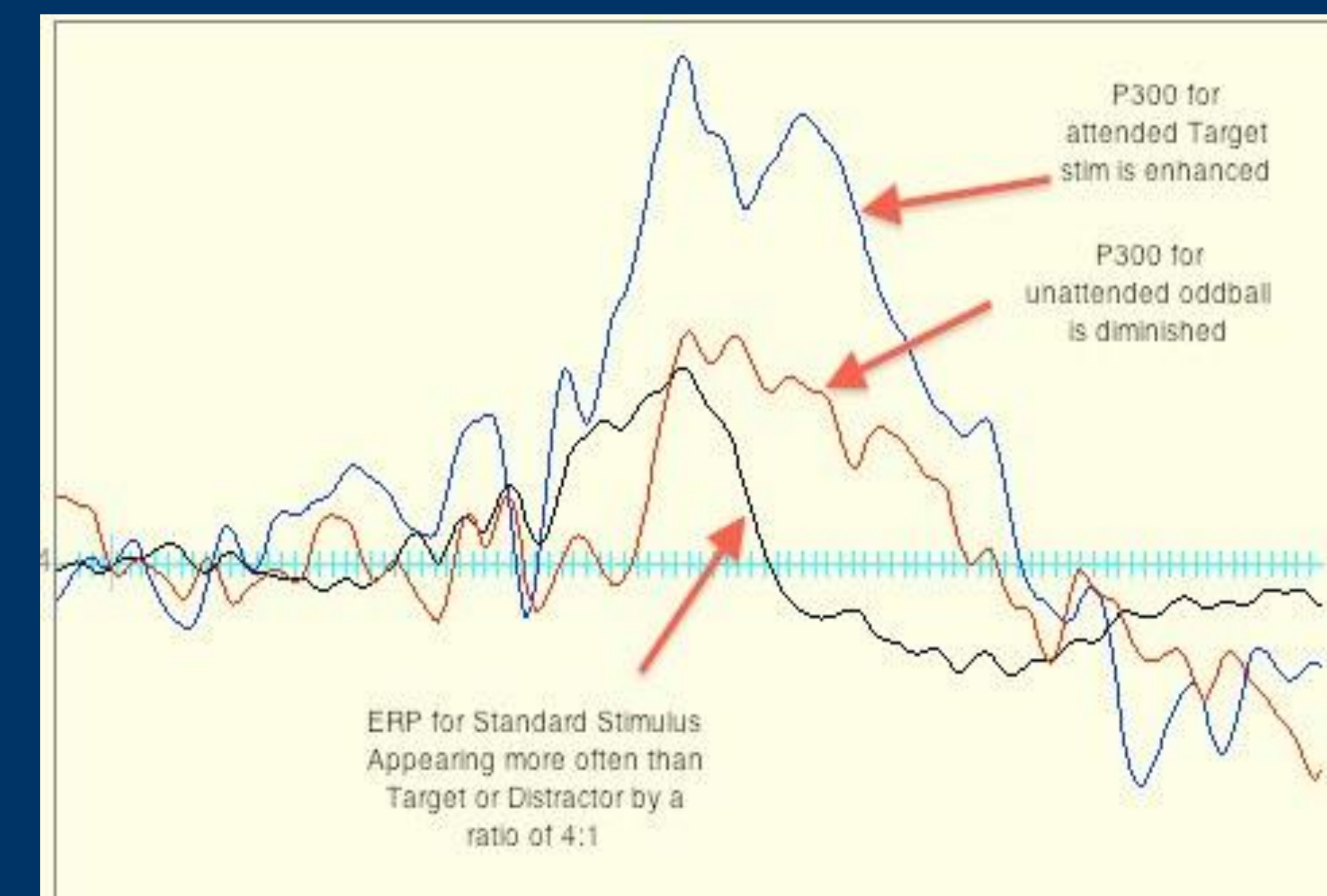
- Studies show that detrimental cognitive effects of sports-related concussions can last up to 30 years. However, very few studies have assessed the effects of non-concussive repetitive head impacts on cognitive functions.
- This study compares cognitive functions of college students with high school experience in high-impacts sports, such as football, to those who participated in non-impact sports, such as cross country.

Methods

- Participants
 - Football = (N=3)
 - Control = (N=2)
- Auditory Oddball Test
 - 400 Trials with Tones
 - 100 Trials/Block
 - 80% = Standard Tone
 - 10% = Distracter Tone
 - 10% = Target Tone
- Participants were asked to push a key on a keyboard whenever the Target Tone is heard.
- The study will look at brain activity levels in the Parietal Lobe during the experiment using a 64 sensor electrode net.



P300 Levels



Expected Results

- We expect to find attenuated P300 levels within the group that participated in high school football versus the group who participated in cross country.
- It has been shown that concussions will affect the P300 levels by elevating them, however little research has been done to see exactly what the effects are in people who have played contact sports, but never received a concussion.
- The P300 is an electrical event that takes place in the brain in reaction to a certain stimulus, in this case an auditory oddball task, and is measured with the electrode net.

