Introduction to Traumatic Brain Injury
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Field Site:
- Traumatic Brain Injury Clinical Research Team
- Works to understand TBI both psychologically and neurologically
- Attempts to identify biomarkers of TBI
- Aims to develop and implement treatments for symptoms and injury associated with traumatic impact

Learning Objectives
- Develop an understanding of types, causes, and symptoms of TBI
- Understand methods of imaging TBI and their pros/cons
- Become familiar with cutting edge treatments for TBI
- Gain experience with clinical research methods and practices

What is TBI?
- Injury due to a mechanical or inertial head impact, either external or penetrating
- Results in structural and functional damage to impacted brain region
- Can result in loss of consciousness, coma, or death
- Long term consequences include:
  - Poor cognitive functioning
  - Mood and personality changes
  - Memory and sleep problems
- Mild, often repetitive TBI (concussion) is the most common form

The Study:
CVR in Football
- Applies imaging techniques of brain blood flow, or cerebrovascular reactivity (CVR), to those with head injury from football using a non-invasive CO₂ - O₂ intake regulation challenge (hypercapnia)
- Evaluates cognitive, physical, and psychological ramifications of repetitive mild TBI (rmTBI) and their relationships to CVR
- Tests viability of sildenafil citrate, a vasoregulator drug, in treating rmTBI and its symptoms over a 5 week drug trial

My Role
- Built a data entry site through an online program called RedCap
- Scored assessments and entered data for previous patients
- Assisted in data collection and hypercapnia MRI procedures
- Began descriptive and statistical data analysis for future manuscripts and grant applications

References:

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