# Plan Overview

*A Data Management Plan created using DMPonline*

**Title:** (2026) UEFA - The impact of ball pressure on cognition within current IFAB guidelines

**Creator:**Daniel Walker

**Principal Investigator:** Daniel Walker

**Data Manager:** Daniel Walker

**Project Administrator:** Daniel Walker

**Affiliation:** University of Bradford

**Template:** DCC Template

**ORCID iD:** 0000-0002-9369-6953

**Project abstract:**

IFAB guidelines state that footballs must be between 8.5psi and 15.6 psi at kick off. This discrepancy in ball pressure has a negligible effect on the weight of the ball which must remain between 410-450g, but it can affect the force the brain is exposed to when heading the football due to the hardness of the ball's exterior.

Sport-related concussion (SRC) impairs cognition (Walker et al., 2023) which is a vital ability for optimal performance in football (Huijgen et al., 2015). Heading the football has been found to have similar effects specifically to short- and long-term memory (Di Virgilio et al., 2016). Additionally, ball-to-head impacts are the most common reason for SRC in other sports like volleyball superseding player-to-player collisions and ground impacts (Chandran et al., 2021), so routinely and intentionally heading footballs should be a research priority.

Ensuring we maintain an appropriate level of cognition can safeguard players from consequences like performance decline as well as issues in later life such as neurodegeneration.

This experiment aims to investigate cognition pre- and post- heading the football to test level of impairment using low-, medium-, and high-pressure footballs that fall within the current IFAB guidelines.

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# (2026) UEFA - The impact of ball pressure on cognition within current IFAB guidelines

## Data Collection

### What data will you collect or create?

All participants will begin by completing the general demographic questionnaire to obtain demographic variables. This survey will include a participant information sheet explaining the study to them, a consent form, and then the general demographic questionnaire that will obtain information regarding their age, biological sex, how long they have played football, what levels they have/do play football at etc. This will also save time face-to-face on the training ground when heading trials can take place with consent and demographic information already obtained.

When visiting the training ground for the heading trials, the researcher will begin by measuring the height and weight of participants. Next, they will complete the initial cognitive battery (i) on an iPad which will provide an indication on their baseline cognitive levels. Participants will then be randomly allocated to one of three conditions for the heading trials. A third of the male participants (n = 27) will head a ball at 9psi, a third at 12psi, and a third at 15psi. This will be replicated with female footballers, totalling 162 participants. As mentioned above, these ball pressure values reflect lower, middle, and upper boundaries recommended by IFAB and are “legal” within the current laws of the game. Participants will be unaware of the ball pressure condition they have been assigned to. They will then be directed to a 2m x 2m square marked out by cones, 25 metres away from the ball launcher set up by the researcher and instructed that the heading trials are about to begin.

The researcher will feed ten balls, one at a time, through the ball launcher towards the player with the players’ task simply to head the balls straight back to the researcher. Once the heading trial is over, the researcher will hand the player back the iPad and instruct them to complete the cognitive battery for a second time (cognitive battery (ii).

Following this, the final part of the study involves players completing the football questionnaire asking them questions about the ball they have been heading in the study.

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## Documentation and Metadata

### What documentation and metadata will accompany the data?

I will supply a glossary and instructions on how to use and interpret the data alongside the dataset when uploading to Open Science Framework.

## Ethics and Legal Compliance

### How will you manage any ethical issues?

Participant data will remain confidential and will be stored safely in the researcher's OneDrive in a password protected folder.
Participant data will also be identified using a code that the participants create themselves. Only the participant and researcher will be aware of these codes.

### How will you manage copyright and Intellectual Property Rights (IPR) issues?

The data will be the intellectual property of both the University of Bradford and UEFA.

## Storage and Backup

### How will the data be stored and backed up during the research?

The data will be stored safely on the researchers' university OneDrive account.

### How will you manage access and security?

Only the researcher will have access to the data and this will be behind a password protected folder.

## Selection and Preservation

### Which data are of long-term value and should be retained, shared, and/or preserved?

This data will have strong implications for the pressure of the football from grassroots to the elite level. Therefore, the data should be retained and preserved so it is useable in subsequent studies as secondary data.

### What is the long-term preservation plan for the dataset?

This data will be available on Open Science Framework, where researchers will have access to it.

## Data Sharing

### How will you share the data?

This data will be available on Open Science Framework, where researchers will have access to it.

### Are any restrictions on data sharing required?

n/a

## Responsibilities and Resources

### Who will be responsible for data management?

The lead researcher.

### What resources will you require to deliver your plan?

n/a