

TEACHER GUIDE

Journal Club: Concussions

OVERVIEW

Scientists and doctors often have regular meetings to discuss research articles or scientific papers as a way of staying up to date in their field of work. These meetings are often referred to as “journal clubs.”

The Next Step Science Journal Club materials aim to enable you to use the journal club format to introduce students to scientific content and increase their ability to comprehend and communicate scientific concepts.

The Journal Club can be used in class or to start an after-school, or lunch period, club of interested students. For each topic, students should read the related article and answer the writing prompt before the meeting. The meeting offers the opportunity to discuss what students read and wrote. The materials provided herein also provide an opportunity to hear subject matter experts discuss the topic and answer questions raised by students from the Children’s Hospital of Philadelphia Research Internship for Scholars and Emerging Scientists (CHOP-RISES) high school summer program. Although typically journal clubs do not include a writing or video aspect, these additional resources aim to enhance students’ experiences with this series.

OBJECTIVES

The Journal Club activities are designed to:

- Increase students’ awareness of how data advances scientific knowledge and the ongoing generation of new or more expansive information about scientific topics
- Provide an ongoing opportunity for students to read scientific writing, identify central concepts, and practice summarizing scientific information
- Enable students to critically analyze scientific findings by articulating the strengths and weaknesses as well as consider the importance of the information in the field at large

LESSON

The lesson progression outlined below is for one 45-minute class, or lunch period. An after-school club can be expanded to an hour by including the writing prompt or lengthening the opportunity for discussion.

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The reading and writing portions are suggested to be assigned in advance, so students have read the information by the start of class or the meeting and have started to think about discussion points through the writing prompt. Students can view the article online or you can offer printed copies.

Concussion-related content

- **Reading assignment**

Before meeting: Have students read the article, *Athletes' head injuries can provoke surprisingly long-lasting harm*, before the class or meeting discussion. It can be accessed here: <https://www.sciencenewsforstudents.org/article/athletes-head-injuries-can-provoke-surprisingly-long-lasting-harm>

- **Writing assignment**

Before meeting: Have students write a minimum of 100 words related to the below prompt:

Many athletic organizations and schools are considering limiting the level of aggressive play in younger players, over concerns about head injuries. If you were an athletic director, for a school district in your state or nation, at what age would you allow body checking in hockey or tackling in football? Explain your reasoning referring to data from the article.

- **Group discussion**

Time: 30 minutes

Discuss what students learned from the reading, using the writing prompt or present one of these questions to engage students in the discussion:

- What one thing that you read surprised you?
- What did the studies find out about how the brain functions in athletes that experienced head trauma?
- How is technology being used to study concussions?
- If you were a researcher studying concussions, what research question would you want to answer in your experiment?
- What position did you take in your writing prompt and why?

- **Watch the Video**

Time: 10 minutes

Journal Club Expert Answers: Concussions: <https://vimeo.com/380492298>

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- **Wrap up**

Time: 5 minutes

If time allows, provide an opportunity for students to share any new or additional thoughts that the video may have generated. Summarize any take-away messages.

ADDITIONAL RESOURCES

- More resources on the topic of concussions
 - Minds Matter: Concussion Care for Kids www.chop.edu/concussion
 - Centers for Disease Control and Prevention HEADS UP brain injury website <https://www.cdc.gov/headsup/index.html>
 - Video: What happens when you have a concussion? - Clifford Robbins <https://www.youtube.com/watch?v=xvjK-4NXRsM&feature=youtu.be>
- General journal club resources
 - Science Journal for Kids and Teens: <https://sciencejournalforkids.org>
 - The Journal of Emerging Investigators - Research by middle and high school scientists: <https://www.emerginginvestigators.org>
 - Additional VMP Journal Club topics can be found at vaccinemakers.org/next-step-science.