

Please answer the following questions to the best of your ability. Your responses will help us to understand how you evaluate online articles that provide scientific evidence after working with sInvestigator this semester.

Will my responses be graded?

No. Your responses will be used by our research team to understand how you think critically about online evidence.

Will my results be confidential?

The professors and researchers on our team will compile your responses for our project; no one outside of our team will have access to your responses.

If you encounter problems or have questions while you are completing this posttest, please raise your hand and a member of the research team will assist you.

Key Terms

Author competence refers to the extent to which we can believe that the author of an article is an expert in the subject matter of that article.

Author objectivity refers to the extent to which we can believe that the author's claims have a scientific basis and are not influenced by non-scientific factors.

Article credibility refers to the extent to which we can believe what an article is telling us.

1. Please enter your first name and last name. We will use this information for matching with previous surveys; your name will be removed prior to the analysis of the responses.

You may answer the questions about the following three articles in any order, and you may change your responses at any time.

Article #1	Article #2	Article #3
<p>Title</p> <p>Energy Drinks' Effects on Student-Athletes and Implications for Athletic Departments</p> <p>Publisher</p> <p>The Sports Journal</p>	<p>Title</p> <p>Improved time to exhaustion following ingestion of the energy drink Amino Impact™</p> <p>Publisher</p> <p>Journal of International Society of Sports Nutrition</p>	<p>Title</p> <p>Do Energy Drinks Improve Sports Performance?</p> <p>Publisher</p> <p><u>TeamSnap</u></p>

2. You need to write a paper about the effect of energy drinks on sports performance. A Google search leads you to the three articles listed in the table above. Which article are you *most likely* to use as a reference?

- Energy Drinks' Effects on Student-Athletes and Implications for Athletic Departments
- Improved Time to Exhaustion Following Ingestion of the Energy Drink Amino Impact™
- Do Energy Drinks Improve Sports Performance?

Evaluate Article #1

Here is more detailed information about the first article.

The screenshot shows the homepage of The Sport Journal. On the left is a navigation sidebar with social media icons (Facebook, Twitter, Google+, YouTube, LinkedIn, RSS) and a search icon. The main content area features the journal's logo, a search bar, and the article title "Energy Drinks' Effects on Student-Athletes and Implications for Athletic Departments". Below the title is the journal's description, ISSN (1543-9518), and publication details (October 7, 2008). The article abstract is visible, starting with "Worldwide, the market for so-called energy drinks has grown exponentially in the last decade...". On the right side, there are two promotional banners: "SUBMIT YOUR PAPER ONLINE!" and "High quality and convenient online degrees in sports".

The following text is an excerpt from the article.

Does ingestion of an energy drink really boost athletic performance? Caffeine is the only ingredient in energy drinks that has been studied in depth and that shows proven effects; short- and long-term effects of high doses of taurine and glucuronolactone require additional study. Athletes have long used caffeine prior to training sessions and competitions, but most nevertheless do not well understand how the drug works, for example that, as a diuretic, caffeine is capable of aggravating the dehydration athletes may experience during competition. The scientific literature itself provides mixed messages about caffeine's performance-enhancing capability and its value prior to exercise. Fornicola (2007) stated that no real need exists to use energy drinks for performance advantage and that that quick caffeine fix is not a very intelligent strategy. In contrast, the website of the Sports Medicine Council of Manitoba reports that endurance athletes might gain some advantage by exploiting caffeine to derive energy from fat early in a competition, thereby leaving more muscle glycogen available to provide energy later on (Caffeine—Performance, n.d., p. 1). However, the website also advises athletes that "4% dehydration equals 20% of performance lost" (p. 1).

3. Assuming that the above text is true, is it relevant to your question about the effects of energy drinks?

- | | |
|---------------------------------------------------|-------------------------------------------------------|
| <input type="radio"/> Certainly relevant | <input type="radio"/> Likely not relevant |
| <input type="radio"/> Very likely relevant | <input type="radio"/> Very likely not relevant |
| <input type="radio"/> Likely relevant | <input type="radio"/> Certainly not relevant |

Please examine the screenshot of the above website before responding to Questions 4-8.

If you would like more information, you may visit the website by clicking on the following link:

<http://thesportjournal.org/article/energy-drinks-effects-on-student-athletes-and-implications-for-athletic-departments/>

You are also welcome to visit other websites to support your evidence evaluation.

4. What is the reputation of the publisher of this article?

- | | | |
|---------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly reputable | <input type="radio"/> Likely not reputable | <input type="radio"/> I have no basis by which to evaluate the publisher's reputation. |
| <input type="radio"/> Very likely reputable | <input type="radio"/> Very likely not reputable | |
| <input type="radio"/> Likely reputable | <input type="radio"/> Certainly not reputable | |

5. What is the competence of the author of this article?

- | | | |
|---------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly competent | <input type="radio"/> Likely not competent | <input type="radio"/> I have no basis by which to evaluate the author's competence. |
| <input type="radio"/> Very likely competent | <input type="radio"/> Very likely not competent | |
| <input type="radio"/> Likely competent | <input type="radio"/> Certainly not competent | |

6. What is the objectivity of the author of this article?

- | | | |
|---------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly objective | <input type="radio"/> Likely not objective | <input type="radio"/> I have no basis by which to evaluate the author's objectivity. |
| <input type="radio"/> Very likely objective | <input type="radio"/> Very likely not objective | |
| <input type="radio"/> Likely objective | <input type="radio"/> Certainly not objective | |

7. What is the credibility of this article?

- | | | |
|--------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly credible | <input type="radio"/> Likely not credible | <input type="radio"/> I have no basis by which to evaluate the credibility of the article. |
| <input type="radio"/> Very likely credible | <input type="radio"/> Very likely not credible | |
| <input type="radio"/> Likely credible | <input type="radio"/> Certainly not credible | |

8. Would you use the article as a reference for your paper?

Justify your response in 2 or 3 sentences.

Evaluate Article #2

Here is more detailed information about the second article.

The screenshot shows a PubMed article page. At the top, there is a navigation bar with 'NCBI Resources' and 'How To' links, and a search bar containing 'PMC'. Below the navigation bar, the article title 'Improved time to exhaustion following ingestion of the energy drink Amino Impact™' is prominently displayed. The authors listed are Allyson L. Walsh, Adam M. Gonzalez, Nicholas A. Ratamess, Jie Kang, and Jay R. Hoffman. The article is from the 'Journal of International Society of Sports Nutrition' (J Int Soc Sports Nutr), volume 7, issue 14, published online on April 15, 2010. The PMCID is 2861014. On the right side of the page, there are options for 'Formats' (Article, PubReader, ePub, PDF, Citation), 'Share' (Facebook, Twitter, Google+), 'Save items' (Add to Favorites), and 'Similar articles in PubMed'.

The following text is an excerpt from the article.

Background

The purpose of this study was to examine the effect of a commercially available energy drink on time to exhaustion during treadmill exercise. In addition, subjective measures of energy, focus, and fatigue were examined

Methods

Fifteen subjects (9 men and 6 women; 20.9 ± 1.0 y; 172.1 ± 9.1 cm; 71.0 ± 9.4 kg; 16.9 ± 9.7% body fat) underwent two testing sessions administered in a randomized, double-blind fashion. Subjects reported to the laboratory in a 3-hr post-absorptive state and were provided either the supplement (SUP; commercially marketed as Amino Impact™) or placebo (P). During each laboratory visit subjects performed a treadmill run (70% VO2 max) to exhaustion. Mean VO2 was measured during each endurance exercise protocol. Subjects were required to complete visual analog scales for subjective measures of energy, focus and fatigue at the onset of exercise (PRE), 10-min into their run (EX10) and immediately post-exercise (IP).

Results

Time to exhaustion was significantly greater (p = 0.012) during SUP than P. Subjects consuming the supplement were able to run 12.5% longer than during the placebo treatment. Subjects consuming SUP reported significantly greater focus (p = 0.031), energy (p = 0.016), and less fatigue (p = 0.005) at PRE. Significant differences between groups were seen at EX10 for focus (p = 0.026) and energy (p = 0.004), but not fatigue (p = 0.123). No differences were seen at IP for either focus (p = 0.215), energy (p = 0.717) or fatigue (p = 0.430).

Conclusions

Results of this study indicate that the supplement Amino Impact™ can significantly increase time to exhaustion during a moderate intensity endurance run and improve subjective feelings of focus, energy and fatigue

9. Assuming that the above text is true, is it relevant to your question about the effects of energy drinks?

Certainly relevant

Likely not relevant

Very likely relevant

Very likely not relevant

Likely relevant

Certainly not relevant

Please examine the screenshot of the above website before responding to Questions 10 - 14.

If you would like more information, you may visit the website by clicking on the following link:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2861014/>

You are also welcome to visit other websites to support your evaluation.

10. What is the reputation of the publisher of this article?

Certainly reputable

Likely not reputable

I have no basis by which to evaluate the publisher's reputation.

Very likely reputable

Very likely not reputable

Likely reputable

Certainly not reputable

11. What is the competence of the author of this article?

Certainly competent

Likely not competent

I have no basis by which to evaluate the author's competence.

Very likely competent

Very likely not competent

Likely competent

Certainly not competent

12. What is the objectivity of the author of this article?

Certainly objective

Likely not objective

I have no basis by which to evaluate the author's objectivity.

Very likely objective

Very likely not objective

Likely objective

Certainly not objective

13. What is the credibility of this article?

Certainly credible

Likely not credible

I have no basis by which to evaluate the credibility of the article.

Very likely credible

Very likely not credible

Likely credible

Certainly not credible

14. Would you use the article as a reference for your paper?

Justify your response in 2 or 3 sentences.

Evaluate Article #3

Here is more detailed information about the third article.

TLC Sports Summit 2017, December 11. Don't miss out on this master clinic featuring some of the biggest names in tournament, league and club management. [Register today!](#)

teamsnap TEAMS CLUBS & LEAGUES TOURNAMENTS COMMUNITY ABOUT CONTACT HELP LOG IN SIGN UP

Community Time Management Sports Science Sports Photography Skills & Drills Podcasts Help & Support Concussions Blog

Sports Science
Sports Nutrition

Do Energy Drinks Boost Sports Performance?

f 217 t G+ in e + 2

15 Million Customers
1 Million Teams
196 Countries Worldwide Help

The following text is an excerpt from the article.

So, what are the actual pros and cons of energy drinks for athletes? While there is no actual “energy” in the ingredients (~40 kcal/100 ml of product) compared to regular soda, does the effect of additional caffeine and carbs boost performance? Researchers at Madrid’s Camilo José Cela University (UCJC) tested 90 experienced athletes over four years who were not already consuming a large amount of caffeine.

Just before a sports competition, some of the athletes, including soccer, basketball, rugby, tennis and hockey players drank the equivalent of three cans of energy drink. The rest consumed the same amount of a placebo drink that they were told was an energy drink.

Using GPS, dynamometers, and potentiometers to measure distance and speed travelled along with muscle performance, the researchers found that athletes amped up on energy drinks did perform 3-7% better than the placebo group.

15. Assuming that the above text is true, is it relevant to your question about the effects of energy drinks?

- | | |
|---------------------------------------------------|-------------------------------------------------------|
| <input type="radio"/> Certainly relevant | <input type="radio"/> Likely not relevant |
| <input type="radio"/> Very likely relevant | <input type="radio"/> Very likely not relevant |
| <input type="radio"/> Likely relevant | <input type="radio"/> Certainly not relevant |

Please examine the screenshot of the above website before responding to Questions 16-20.

If you would like more information, you may visit the website by clicking on the following link:

<https://www.teamsnap.com/community/sports-science/sports-nutrition/do-energy-drinks-boost-sports-performance> You are also welcome to visit other websites to support your evaluation.

16. What is the reputation of the publisher of this article?

- | | | |
|----------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly reputable | <input type="radio"/> Likely not reputable | <input type="radio"/> I have no basis by which to evaluate the publisher's reputation. |
| <input type="radio"/> Very likely reputable | <input type="radio"/> Very likely not reputable | |
| <input type="radio"/> Likely reputable | <input type="radio"/> Certainly not reputable | |

17. What is the competence of the author of this article?

- | | | |
|----------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly competent | <input type="radio"/> Likely not competent | <input type="radio"/> I have no basis by which to evaluate the author's competence. |
| <input type="radio"/> Very likely competent | <input type="radio"/> Very likely not competent | |
| <input type="radio"/> Likely competent | <input type="radio"/> Certainly not competent | |

18. What is the objectivity of the author of this article?

- | | | |
|----------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly objective | <input type="radio"/> Likely not objective | <input type="radio"/> I have no basis by which to evaluate the author's objectivity. |
| <input type="radio"/> Very likely objective | <input type="radio"/> Very likely not objective | |
| <input type="radio"/> Likely objective | <input type="radio"/> Certainly not objective | |

19. What is the credibility of this article?

- | | | |
|---------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <input type="radio"/> Certainly credible | <input type="radio"/> Likely not credible | <input type="radio"/> I have no basis by which to evaluate the credibility of the article. |
| <input type="radio"/> Very likely credible | <input type="radio"/> Very likely not credible | |
| <input type="radio"/> Likely credible | <input type="radio"/> Certainly not credible | |

20. Would you use the article as a reference for your paper?

Justify your response in 2 or 3 sentences.

Think about your three experiences with sInvestigator this semester as you respond to the Questions 21-23.

1) Wind Power Generation

Building an Argument and Evaluating Evidence

2) Geocentric and Heliocentric Models of the Universe

Finding and Evaluating Evidence

3) Evolution

Finding and Evaluating Evidence

21. How have the ways in which you talk about science changed?

22. How have the ways in which you evaluate the credibility of evidence changed?

23. How did sInvestigator help you to learn about the course topics?

Thank you for completing this post-assessment.

If you have further questions about the study, please email Dr. Nancy Holincheck in the Graduate School of Education at GMU, nholinch@gmu.edu