

Essay on nutrition article critique

[Health & Medicine](#), [Obesity](#)



“ Certain Type of Fat Could Help Humans Lose Weight”

1. Briefly state the main idea of this article.

The article published Oct 2 2013 in Science Daily refers to research conducted recently by nutrition scientists at Texas Tech University, and published in The Journal of Lipid Research. According to the article, the findings of the research “ could lead to supplements and a diet regime that will increase metabolism and decrease muscle fatigue in humans.” The findings of the research could allow us to take a supplement to encourage human muscles to burn off surplus energy instead of storing it as fat. The researchers noted that whilst that ability to store fat contributed to the survivability of our ancestors, in today’s society it can lead to obesity and its associated health issues.

2. I evaluate the language used in the publication as follows:

I find the language of the article to be informative without sensationalism, although because it refers to research by others that has been conducted on mice and has yet to be translated into actual effects on human subjects, it is rightly (in my view) somewhat tentative in tone; i. e. cautiously suggests the effects that “ could” be beneficial to humans.

3. List three important facts that the author uses to support the main idea.

- a) The fact that by removing the restrictions on the production of the subject enzyme, it was produced continuously, altering the hypermetabolic rate of the test animals;
- b) The enzyme is only produced in muscle tissue in obese subjects or in muscle tissue that is extensively exercised;
- c) Test animals showed much greater capacity for exercise.

4. What information or ideas discussed in this article are also discussed in your textbook (from the complete textbook from front to back) List all the textbook chapters and all page numbers.

Chapter 7: Pages 208-225

Chapter 9: Pages 273-276

5. List any examples of bias or faulty reasoning that you found in the article.

The obvious weakness in the findings of the research is that what happens in the case of mice may not relate to humans. While the findings could be of great significance they could also be meaningless if it is subsequently found that the effects on humans simply are not the same.

6. The methods used to obtain the results were:

This experiment was a laboratory study, as was clearly stated in the article. The research was carried out on genetically modified mice. For those reasons (as mentioned earlier) the findings must be considered at this stage to be of limited value to nutritional science.

7. The results of the article apply to the following populations:

At present, the results of the experiments have little relevance to the nutrition of humans, although that could change. If the experiment could eventually result in a diet supplement for humans (as suggested in the article), that would make it highly relevant to our nutritional picture.

8. To a reader without extensive nutritional background, the results of a article may be misleading. This report might mislead by:

I don't think an uninformed reader would be misled by this article; it clearly describes the experiment as being on genetically-modified mice, and simply suggests no more than a possibility of it being of value to human nutrition.

9. What is your opinion of this article?

I found it informative and interesting – particularly the idea that this research could lead to something that could help humans in the developed countries with the increasing problem of obesity and the health issues that come with it. Whilst the experiments with mice are at best the beginning of what could be a long road towards the possibility of an over-the-counter dietary supplement becoming available, even the promise of such a thing is encouraging.

10. Do you believe the information in this article? Why or why not

Yes, I believe the article to be factual. It comes from a reputable source and the research has been published in a peer-reviewed journal. Although the language of the article is somewhat tentative (using the word “ could”) that is the normal protocol for research findings not yet corroborated by other independent research on the same topic.

Works Cited:

“ Certain Type of Fat Could Help Humans Lose Weight.” (Oct 2, 2013).

Science Daily. Web. Accessed 6 October 2013.

Rolfes, S., R., Pinna, K., & Whitney, E. (2012). “ Understanding normal and clinical nutrition. Chapter 1: An Overview of Nutrition: Nutrition Information and Misinformation – On the Net and in the News (pp. 28-33).” Wadsworth, Belmont, California. Print.

The Original Article

<http://www.sciencedaily.com/releases/2013/10/131002185245.htm>

ScienceDaily. Retrieved October 6, 2013, from <http://www.sciencedaily.com/releases/2013/10/131002185245.htm>

<https://assignbuster.com/essay-on-nutrition-article-critique/>

Science News

Certain Type of Fat Could Help Humans Lose Weight

Oct. 2, 2013 — A diet high in a certain type of fat may actually increase metabolism, according to recent research by Texas Tech University nutrition scientists.

After studying genetically modified mice, the discovery could lead to supplements and a diet regime that will increase metabolism and decrease muscle fatigue in humans. The research was published in the peer reviewed journal, *The Journal of Lipid Research*.

Chad Paton, an assistant professor of nutritional biochemistry in the Department of Nutrition, Hospitality and Retailing, said he and colleagues were curious why skeletal muscles of obese people contained a certain type of enzyme that breaks down saturated fats. To test what that enzyme did, Paton's lab and colleagues from the University of Wisconsin -- Madison genetically modified mice so that their muscles would constantly produce the enzyme.

" We used a transgenic mouse model, and we took the gene that makes the enzyme that's not normally expressed and took away it's regulation to make it active all the time," Paton said. " What we found in those animals is they had a hypermetabolic rate compared to the wild mice, increased energy consumption and greatly increased these animals' exercise capacity."

The enzyme, called SCD1, converts saturated fat into monounsaturated fat, which is easier to metabolize. The liver will produce this enzyme depending on the fat content of the food consumed, he said. Fatty adipose tissue produces it all the time as a way of regulating itself.

Only in heavily exercised muscle tissue or in the case of obesity does skeletal muscle produce the enzyme, he said.

After looking at skeletal muscles of the genetically modified mice compared to that of the wild mice, Paton and his team discovered higher levels of polyunsaturated fats, particularly linoleic acid, gotten only through diet. Higher levels of linoleic acid could only mean one thing -- the modified mice were eating more food. But Paton's team found that the modified mice weighed less than the wild mice. On top of that, their ability to exercise increased.

" We found in the genetically modified animals that they had a hypermetabolic rate," he said. " They were increasing their energy consumption, and they experienced greatly increased exercise capacity. For example, on the exercise wheels, normal mice fatigue after 7 to 10 minutes. These genetically modified animals wouldn't fatigue for about 70 minutes. So they were running a lot longer. Sedentary mice looked more like exercise-trained mice. That really made us look in a lot more detail what was happening in the skeletal muscle." By looking at the muscle tissues, Paton and his team members discovered a trend.

More of the SCD1 enzyme and a greater appetite by the mice meant more linoleic acid in the tissues. The linoleic acid switched on part of the muscle cell's DNA that encouraged the cells to make more mitochondria and to turn on a protein that encouraged the cell to burn off excess energy from the extra food as heat -- a process called uncoupling.

Humans store unused energy as fat, Paton said. And while that helped our ancestors survive, it can lead to obesity for some people in today's world of

plentiful food.

While genetically modifying humans isn't an option, Paton said this experiment could hold useful information for supplementing human diets to achieve the same results.

" That's where we have taken our research from this," he said. " You can't change the human genome, but that gives us insight if you could activate the same part of the DNA in human in skeletal muscles that burn off excess energy as heat instead of storing it. Perhaps it's a supplement people could take that will turn on the cells' metabolic machinery burn off energy and increase mitochondria."