LifeSci 2N03 Assignment #1:

Nutrition In The News – Visual Storytelling

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LifeSci 2N03: Human Nutrition For Life Science

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October 7th, 2021

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Jatin Chowdhary is a student at McMaster University

I have no conflicts of interest to disclose

I sincerely apologize for the late submission

Summary

From the dawn of civilization, humans have always fallen to the fallacy of fad nutrition. In the stone age, fortune-tellers sold magical potions to the rich; they wrongfully believed that the concoction would make them live longer. In today's world of science and technology, not much has changed – in fact, misinformation has only gotten worse. Today, health gurus with no qualifications disguise themselves as doctors and experts (Wansink, Position of the American Dietetic Association: Food and Nutrition Misinformation 2016). Their social media channels amass millions of views and followers. To make matters worse, large multi-national conglomerates jump on every opportunity they can to turn a profit (Mozaffarian, Conflict of Interest and the Role of the Food Industry in Nutrition Research 2017). Hence, the nutrition field is a multi-billion dollar industry (Rasouli et al., Potential Long-Term Consequences of Fad Diets on Health, Cancer, and Longevity: Lessons Learned from Model Organism Studies 2007), and it's closely related cousin, the medical field, is a multi-trillion dollar industry (Mozaffarian, 2017). Yet, with all of this funding and scientific research more people suffer from health issues than ever before (Lawsin & Bonita, Do Depressive Symptoms Increase the Risk for the Onset of Coronary Disease? A Systematic Quantitative Review 2003). Debunking junk science and nutrition myths are essential for improving health and wellbeing of society.

The low-carb (fad) diet has been purported multiple times in the mainstream media. Appendix A refers to a news article, published by CNN, about the benefits of a low-carb diet for weight loss. To summarize, the article states that "the best way to maintain weight loss [is] to change your diet to one in low carbohydrates" (Thomas, Low-carb diets might be best for maintaining weight loss 2018). The article goes on to cite a scientific article published in the BMJ; refer to Appendix B. Throughout the news piece the scientific article is referenced, and more information about the study is provided; such as how the study was conducted. In addition, the news article includes a quote from the principal investigator of the study, David Ludwig. Dr. Ludwig believes that, "restricting carbohydrates may be a better strategy than restricting calories for long-term success" (Thomas, 2018). The rest of the news article quotes professors from different organizations that are skeptical of the results of the study. For example, Dr. Naveed Sattar states that he, "would be highly cautious as the interpretation of the results seem quite incorrect" (Thomas, 2018).

From a scientific perspective, the news article does not effectively convey the results presented by the scientific study. In fact, the news article is very misleading; starting from the title, and down to the last sentence. In the pursuit of maximizing views and clicks, the title is extremely misleading, and can easily spread misinformation (Wansink, 2016). In addition, a lot of important information is left out of the title in favour of buzzwords. For instance, the title mentions nothing about how the scientific study analyzes energy expenditure on a low carbohydrate diet. In fact, the entire news article doesn't mention this key piece of information at all. Energy expenditure and maintaining weight loss are completely different; the product of equating the two is junk science. Furthermore, the news article does not properly emphasize the findings of the scientific study; the study found that the observed "metabolic effect may improve the success of obesity treatment, especially among [cases] with high insulin secretion" (Ebbeling et al., Effects of a low carbohydrate diet on energy expenditure during weight loss maintenance: Randomized trial 2018). However, the news article fails to mention this vital information. The average reader, that does not suffer from obesity or high insulin secretion, will be wrongfully mislead into adopting a low-carb (fad) diet, on the basis of misinformation. In reality, carbohydrates are an essential macronutrient for optimal human health, and limiting carbohydrates leads to a shorter lifespan (Seidelmann et al., Dietary carbohydrate intake and mortality: a prospective cohort study and meta-analysis 2018). But, the news article does not state this anywhere, in any paragraph. The only plus point of the CNN news article is that it quotes two reputable professors who discuss the results of the study with skepticism.

The news article can be greatly improved. For starters, it needs to be less catchy and more scientific (Wansink, 2016). To facilitate this change, the title needs to be revamped to include more relevant information. For instance, the title needs to state that the results of the scientific study apply to obese individuals with high insulin secretion. At the very least, the article can recommend a temporary low-carb diet, but it should urge readers to not cut healthy carbohydrates, because they are essential for human health (Seidelmann et al., 2018). Finally, the news article should mention that refined carbohydrates and sugar are the main culprits of weight gain (Liu, Intake of refined carbohydrates and whole grain foods in relation to risk of type 2 diabetes mellitus and coronary heart disease 2013); and cutting these artificial ingredients can greatly aid in losing weight (Drewnowski, The Real Contribution of Added Sugars and Fats to Obesity 2007).

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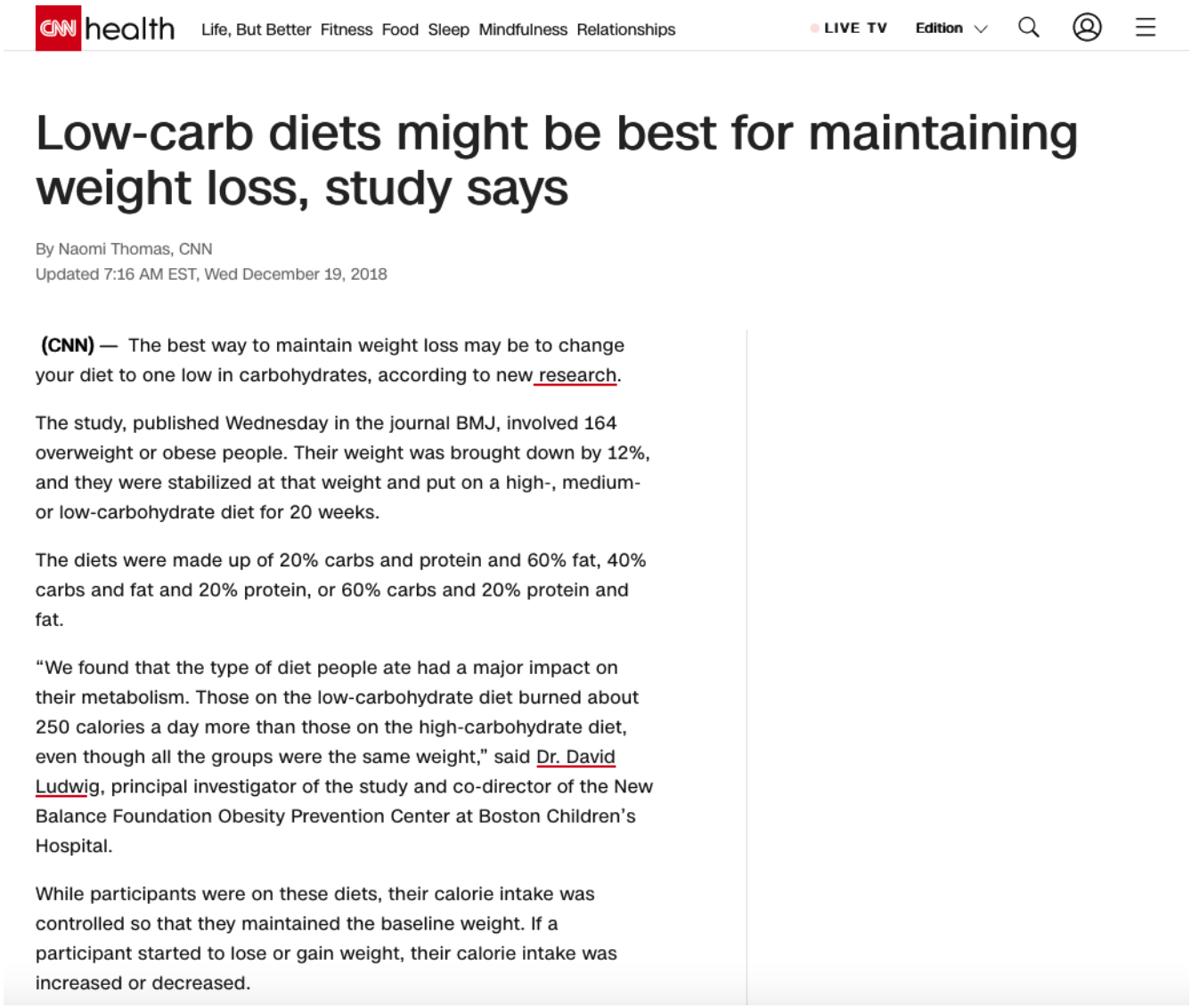
Appendix



CNN health Life, But Better Fitness Food Sleep Mindfulness Relationships LIVE TV Edition

Low-carb diets might be best for maintaining weight loss, study says

By Naomi Thomas, CNN
Updated 7:16 AM EST, Wed December 19, 2018

(CNN) — The best way to maintain weight loss may be to change your diet to one low in carbohydrates, according to new research.

The study, published Wednesday in the journal BMJ, involved 164 overweight or obese people. Their weight was brought down by 12%, and they were stabilized at that weight and put on a high-, medium- or low-carbohydrate diet for 20 weeks.

The diets were made up of 20% carbs and protein and 60% fat, 40% carbs and fat and 20% protein, or 60% carbs and 20% protein and fat.

"We found that the type of diet people ate had a major impact on their metabolism. Those on the low-carbohydrate diet burned about 250 calories a day more than those on the high-carbohydrate diet, even though all the groups were the same weight," said Dr. David Ludwig, principal investigator of the study and co-director of the New Balance Foundation Obesity Prevention Center at Boston Children's Hospital.

While participants were on these diets, their calorie intake was controlled so that they maintained the baseline weight. If a participant started to lose or gain weight, their calorie intake was increased or decreased.

Appendix A: Mainstream News Article

Randomized Controlled Trial > BMJ. 2018 Nov 14;363:k4583. doi: 10.1136/bmj.k4583.

Effects of a low carbohydrate diet on energy expenditure during weight loss maintenance: randomized trial

Cara B Ebbeling [1 2], Henry A Feldman [2 3], Gloria L Klein [1], Julia M W Wong [1 2], Lisa Bielak [1], Sarah K Steltz [1], Patricia K Luoto [4], Robert R Wolfe [5], William W Wong [6], David S Ludwig [7 2]

Affiliations + expand

PMID: 30429127 PMCID: PMC6233655 DOI: 10.1136/bmj.k4583

Free PMC article

Erratum in

Effects of a low carbohydrate diet on energy expenditure during weight loss maintenance: randomized trial.

[No authors listed]

BMJ. 2020 Nov 3;371:m4264. doi: 10.1136/bmj.m4264.

PMID: 33144344 Free PMC article. No abstract available.

Abstract

Objective: To determine the effects of diets varying in carbohydrate to fat ratio on total energy expenditure.

Appendix B: Scientific Article In PubMed

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Carbohydrates

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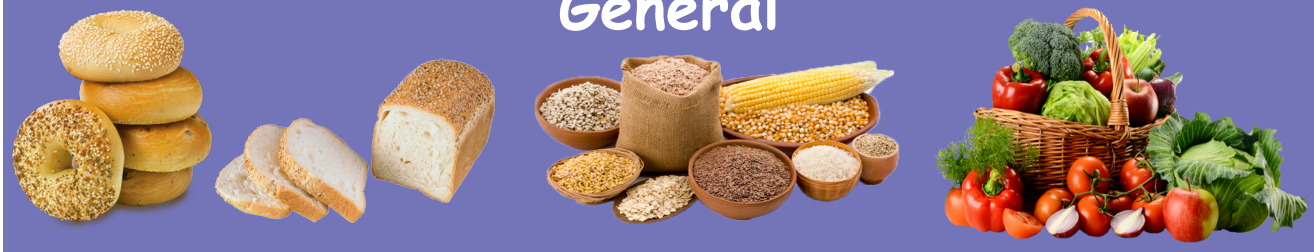
General



Fascinating

Carbohydrates are a quick source of energy; the body converts carbs to fuel quicker than fat or protein [4]

The brain is the only carbohydrate-dependent organ in the body; it exclusively uses glucose [3]

Myths

All forms of carbohydrates are bad and should be avoided → Refined carbohydrates are bad, and whole-grains are healthy [1]

Carbohydrates do not contain any nutritional content → Whole-grains contain essential B-vitamins, fibre, etc. [2]

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