

## Nutrition Perspectives

For the Nutrition Perspectives research paper, I opted to watch one of the listed documentaries, and after comparing the summaries for several different films, I decided on That Sugar Film. That Sugar Film is a highly polished and engaging 2014 documentary that details a two-month-long experiment in eating “healthy” foods with a certain amount of added sugars. It was written and directed by Damon Gameau, an Australian actor, who also stars in the film and is the subject of the experiment. The film explains the biological effects sugar has on the body using high-quality animations and engaging cameos by famous actors such as Hugh Jackman and Stephen Fry. Gameau does not have a professional nutrition background.

I was drawn to a documentary about sugar because of my own history with sugar consumption. When I was younger, soda was my main beverage of choice, and I ate candy and desserts without restraint. My teeth were in bad shape and I rapidly gained weight when I hit puberty. When I entered my 20s, I stopped drinking soda, and began to cut out candy and juices. However, it wasn’t until I began a workout routine where I was heavily focused on eating the proper amount of macronutrients that I started to seriously look at added sugar in foods and begin opting out of the calories provided by sweeteners so I could eat higher amounts of protein or fat instead.

When the documentary begins, it explains the experiment that Gameau will be undertaking for 60 days: He is to eat 40 teaspoons of added sugar (about 160 grams) a day, consuming not overt junk food such as soda, chocolate, candy, or desserts, but regular food that is normally marketed as “healthy”. Since glucose and lactose are naturally occurring sugars present in foods such as dairy and fruit, he won’t count those sugars towards his goal and will instead be targeting sucrose and fructose for his 160-gram limit. He must pick low-fat options

when available, and most importantly, he must maintain the same level of exercise he had prior to the start of the experiment.

Prior to starting the experiment, Gameau's daily caloric intake was approximately 2300 calories a day, split into 50% fat, 26% protein, and 24% carbohydrates. He did not consume any refined sugar. His weight was 76 kilograms (167 pounds) and his waist circumference was 84 centimeters. Just 12 days into the experiment, Gameau's weight had shot up to 79.3kg (175lbs). A mere 18 days after starting to eat added sugars, Gameau had a blood test done that said he had a large increase in ALT levels in his liver (ALT is an enzyme that helps catalyze chemical reactions). Because these increased levels were found in his bloodwork, it was a sign that cells in his liver were being damaged or dying. The doctor reviewing his blood work said that these are precursor symptoms to fatty liver disease, and he was shocked and impressed that these symptoms could develop over the course of two or three weeks.

During the experiment, Gameau travels to an Aboriginal town to showcase the Westernization of native diets and discuss the insidious effect sugar has on whole cultures. He explains that a foreign grass was introduced to the area and quickly spread throughout the region, affecting people's ability to farm and forage for food. There is one grocery store in the area, and for a time this region had the highest per-capita consumption of Coca-Cola in the entire world. For a time, there was a publicly funded education program designed to inform residents of healthy food choices, and in response to the program the local people requested that Coca-Cola no longer be sold in the grocery store. While health improved under this program, the government decided to stop funding it, and the locals' health once again declined.

After this, Gameau then flies to the United States to speak with various health and nutrition experts. He notes that sugary foods and drinks are even easier to obtain in the States than Australia, and foods that advertise themselves as healthy sometimes have even more sugar added than soda. Halfway into the experiment, Gameau's weight has increased to 81.2kg (179lbs) and his waist circumference to 91cm.

During a stop in rural Kentucky, Gameau meets with a local dentist who shares that oral health in the region is heavily suffering, with children as young as five having severe tooth decay, and it being common for teenagers and young adults to have a full mouth of rotted teeth get pulled. The dentist shares that parents will fill baby bottles full of Mountain Dew and most kids can't even remember when they started drinking soda. A teenager who is visiting the dentist to extract all of his teeth says that he drinks a 12-pack of soda daily, and his younger cousins are also drinking several bottles per day.

At this point, the audience is introduced to the concept of the "bliss point". This is a term used in the food industry to describe the optimal amount of sweetness in a product to maximize consumer satisfaction, neither too sweet nor not sweet enough. After this sweet spot was discovered, the first soda released that purportedly hit the bliss point was Dr. Pepper.

The documentary briefly touches on reasons why processed sugar is so insidious, and it suggests that the power and influence of soda companies could have been part of the reason that fat was so heavily demonized while sugar was exonerated. Even today there are studies being done on food and nutrition that are being fully funded by Coca-Cola. While certain scientists decry the act of accepting funding from the very institution whose products you are trying to research as unethical and a conflict of interest, sometimes that's the only way research is able to obtain funding.

Sixty days into the experiment, Gameau reveals his final results: His liver ALT levels have gone from 20 below the safety line to 20 above the safety line. His triglycerides have gone from 0.8 to 1.5, which is the risk point. He gained 8.5kg (almost 19lbs) and added 7% body fat. His waist circumference increased by 10cm. Most importantly, during these two months, Gameau's caloric intake did *not* increase, he merely replaced calories that were mostly natural fats with calories from processed sugars.

I think that the theme from this documentary is still very applicable today. Many of us were raised with the message that fat is bad while being exposed to heavy advertising for soda

and other sugary foods. Science showing that fats, especially polyunsaturated ones, are healthy and beneficial is slowly being popularized, but I think we also need to emphasize that refined sugars are unhealthy and should be avoided. Gameau's original diet in the film was quite a bit different than what is recommended in this course's textbook. He was eating 50% fat, 25% protein, and 25% carbohydrates versus the textbook's recommendation to eat 20-35% fat, 10-35% protein, and 45-65% carbohydrates. However, his calories were still coming from fresh fruit and vegetables, lean protein, dairy, nuts, and no refined sugar, which are all recommendations that the book does make in regards to food choices. The documentary also discusses the differences between good and bad cholesterol and states that refined food and sugar tends to increase bad cholesterol while healthy fats can increase good cholesterol without contributing to an increase in bad cholesterol, a fact that is shared in the textbook.

The most shocking thing that I learned was that it was possible to lose or gain weight based on the contents of calories consumed and not the calorie number alone. I have followed a CICO (calories in, calories out) mindset for weight gain and loss for a number of years, which states that the number of calories consumed and burned are the only contributing factors to body weight (excluding water weight.) I was also surprised to learn that sugar forms a physical dependency and that by the nature of its short energy boosts it can cause mood swings.

The themes in this documentary reinforced ideas I've had about food and sugar for several years, especially the idea that eating naturally occurring fats and sugars is not nearly as dangerous as eating their processed counterparts. I think moving forward I will be extra careful to read food labels and not fall into the trap of eating added sugars in foods that seem otherwise healthy. Knowing about the addictive properties of sugar will also help me to avoid eating patterns that could lead to a future dependency.

Sources:

Gameau, D. (Director). (2014). *That Sugar Film* [Film]. Madman Entertainment.

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