

Research Statement

As a teenager with a chronic disease, I was limited to the food I could eat at night - especially high caloric food. This motivated me to learn more about how certain food can lead to chronic diseases. My interest in chronic diseases in the teenage population has aroused my curiosity about food consumption, and how the nutrients affect their mental health and stress. This shaped my research question into what is the correlation between sugar consumption and mental health/stress in young adults?

My experience with chronic disease has inspired me to learn more about different types of chronic diseases in other individuals. I'm specifically interested not in genetically transmitted illnesses, but the chronic conditions that develop from distinct causes - maybe from something we have to do daily. This made me think about diets, how important it is in one's life, and how it varies on each person. It made me think about high caloric food, and how high consumption of it can lead to obesity, which can cause several diseases like diabetes, hypertension, and gallbladder disease. What are the common causes of obesity, and of poor diets?

Research shows people tend to eat during late hours, thus eating more meals in a day than they should be. Nighttime food consumption then leads to one's diet being a huge factor as a leading cause of chronic diseases, because a diet impacts how healthy a body will be in the present and future. Elderly people are often focused on questions of chronic illness, so I decided to look into teen health, the promotion of health, and the consumption of fast foods. Commercials for sugary drinks target a young audience, which pushes them to depend on it every day.

Though the persuasion is an emotional one, sugary drinks are certainly not needed for wellness. In fact, in my research, I found the correlation of poor diet to poor mental health. A poor diet can also lead to chronic diseases, such as obesity, which also has an impact on one's mental health. When I analyzed some articles, the connection between sugar consumption and mental health does not have one-way causality, but rather two ways: mental health can lead to emotional eating, and certain sugary food can influence our mental health. However, data has shown more of the stronger correlation of poor diet leading to mental health. Overconsumption

of food with high sugar content drives the person to have poor decision-making and a loss of control. This can make it challenging for overweight people to control their diet. The desire to eat is controlled by the hypothalamus, and it is connected with the limbic system, which is responsible for the modulation of emotions.

There's a strong link between nutrition and mental health. One study of college-attending young adults in the Appalachian area indicates that they have risk factors to have weak mental health and food insecurity. They don't have consistent access to healthy food, which can make them have a poor diet. The hypothesis shows that food-insecure individuals would demonstrate an increased propensity for depression and anxiety. Identifying the areas that have food insecurity is essential to inform interventions. When they have access to affordable healthy food, it can improve the rates of mental health disorders in young adults.

In the beginning, I wanted to know a particular question that I always had in mind: the effect of high caloric food consumption on teenagers. I was very excited to discover the explanation that I was looking for a long time. But I felt like it was missing something in my question, I wanted to connect it with diseases, but what kind of diseases? Then I thought about myself: I am young, and I have a chronic illness, so why not research about that condition to explore the different types of illnesses. I would always hear that it's not healthy for older adults to eat late at night because they tend to get chronic conditions easier. Therefore I wanted to find out more about how it influences young adults. This research pushes me to communicate my ideas with others and to analyze articles independently from different sources. Through my research this summer, I gained a deeper understanding of scientific data collection.

Draft must:

- Focus on the research you want to pursue, while demonstrating the new concepts and terms you have learned this summer in your field of interest
- Be written for a scientific audience, e.g. a future professor or a research fellowship application
- Be between 500 and 750 words

Audience: Main Focus

- Explain your journey
- What is the goal of your research → what are you trying to achieve/convey

List: POOR DIET -> POOR MENTAL HEALTH & POOR DIET -> CHRONIC DISEASE

- Chronic diseases: what motivated you to choose this topic
- High caloric food: started to think about what some ways chronic diseases are developed from non-genetic causes. Caused by poor diet. Made me think about how high caloric food can lead to obesity for example which can then lead to diabetes. For example (mention some evidence)
- Night food consumption: Well what contributes to obesity? People eating during late hours and thus eating more meals in a day than should be
- Diet: which then leads to one's diet is a huge factor as a leading cause of chronic diseases because your diet impacts how healthy your body will be in the present and future
- Teenagers' health: What are the statistics of people who are usually obese? Teenagers, so I decided to look into teen health and the promotion of health and consumption (example marketing of fast food and consumption targetted to appeal to teens)
- Sugar consumption: Commercials of sugary drinks many commercials target a young audience

I wonder if a poor diet can impact one's mental health?

- Mental health: (find articles that relate poor diet being correlated to mental health give examples)
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 - Correlation of poor diet to poor mental health
 - A poor diet can also lead to chronic diseases such as obesity which also has an impact on one's mental health
- Similarly, low levels of mental health can lead to a poor diet HOWEVER data has shown more of the stronger correlation of poor diet leading to mental health
- Stress

Paragraph Structure:

- Introduction
 - Mentioned what lead to your final research question
 - Last sentence: Introduction your research question
- 2nd Paragraph:
 - Use the list to help you structure how you went about looking into your research question
 - Chronic diseases, high caloric food, etc, etc
 - **METHODS, STUDIES YOU LEARNED, JARGON, STATISTICS, input information that you learned in journal articles**
- 3 Paragraph? (or make one big 2nd paragraph)
 - Relate it back to your personal interest
 - Then focus on impact, why do you want to do this?
- Conclusion
 - Wrap everything neatly in a nice statement :)

In the beginning, I wanted to know a very specific question that I always had in mind: the effect of high caloric food consumption on teenagers. I was very excited to discover the explanation that I was looking for a long time. But I felt like it was missing something in my question, I wanted to connect it with diseases, but what kind of diseases? Then I thought about myself, I am young and I have a chronic disease so why not research about that condition to explore the different types of illness. I would always hear that it's not healthy for elderly to eat late at night because they tend to get chronic conditions easier. Therefore I wanted to find out more about how it affects teenagers.

The desire to eat is controlled by brain areas also called the feeding centers
-overconsumption of sugar can lead to brain adaptations involving many different neural systems, molecular substrates, and subsequent changes in behavior.

A reliable strong research question is the root of a solid research paper. On Wednesdays, I would do my independent research to find articles about my question. Each article that I found had a broader question, I kept questioning myself if my question was too specific but I kept looking for more, however, it was challenging to find specific articles to my question. Plus, it didn't show results for teenagers with chronic diseases so I decided to work on it with my TA, to make it general. I found interesting the fact that when I was reading some articles, most of them talked about food consumption and it attracted me, so I craved for more. An article informed me about how nutrients affect health. That's when I decided that I should maybe change my research question because it would still be about both food consumption and health plus what I was looking for in the "teenage" population. After I informed my TA that I changed my question, I didn't just stop there, I kept researching using the list of websites given like Google scholar, Pubmed, etc I needed to get my question more specific and precise. I began by typing something very general like "relation between food consumption and health", then "the impact of food consumption on mental health in young adults ". It was like the more I saw articles I was curious about the more I found my final research question. The last question I typed to find articles was " what is the connection of sugar consumption on mental health in young adults", I liked the topic and the articles I obtained because they resulted from different countries of the world so that gave me the chance to compare them all and have a better

understanding of my question. Mental health always fascinated me, because I want to learn more about how the brain works. After all, it looks challenging. Especially this year, the pandemic has changed many things, remote learning has become difficult for many students, like me. I was very anxious because of all the stress from school but I knew how to manage it with meditations. This is why I want to know about how it influences our body, us young adults in high school, and college and find solutions in tough times. And with the combination of sugar/food consumption which I included since the beginning, I thought to myself that this is the best research question for me to explore my interest and my personal health.