

Introduction

- Celiac Disease (CD) is an autoimmune disease of the small intestine. When gluten is ingested the small intestine is attacked by the body's immune system.¹
- The attack on the small intestine causes the villi to become flat rather than elongated. It is important for the villi to have a healthy architecture as it increases the surface area for nutrient absorption.¹
- The gluten free diet is the only treatment for celiac disease.
- It has been observed that many foods that are gluten free (processed) have a higher cost than some gluten containing foods in some places in Canada. However, no data is available for Alberta.
- There has been an increasing amount of gluten free foods (particularly processed foods) on the market but they are often more expensive than gluten containing foods. This could become a financial burden on families with members diagnosed with CD.
- The study is focused on determining the overall cost of processed gluten free foods and to make comparisons with the costs of processed foods containing gluten.
- This study is part of a larger, cross country, study examining food costs, economic burden, dietary intake and overall quality of life in youth with Celiac Disease and their families. .

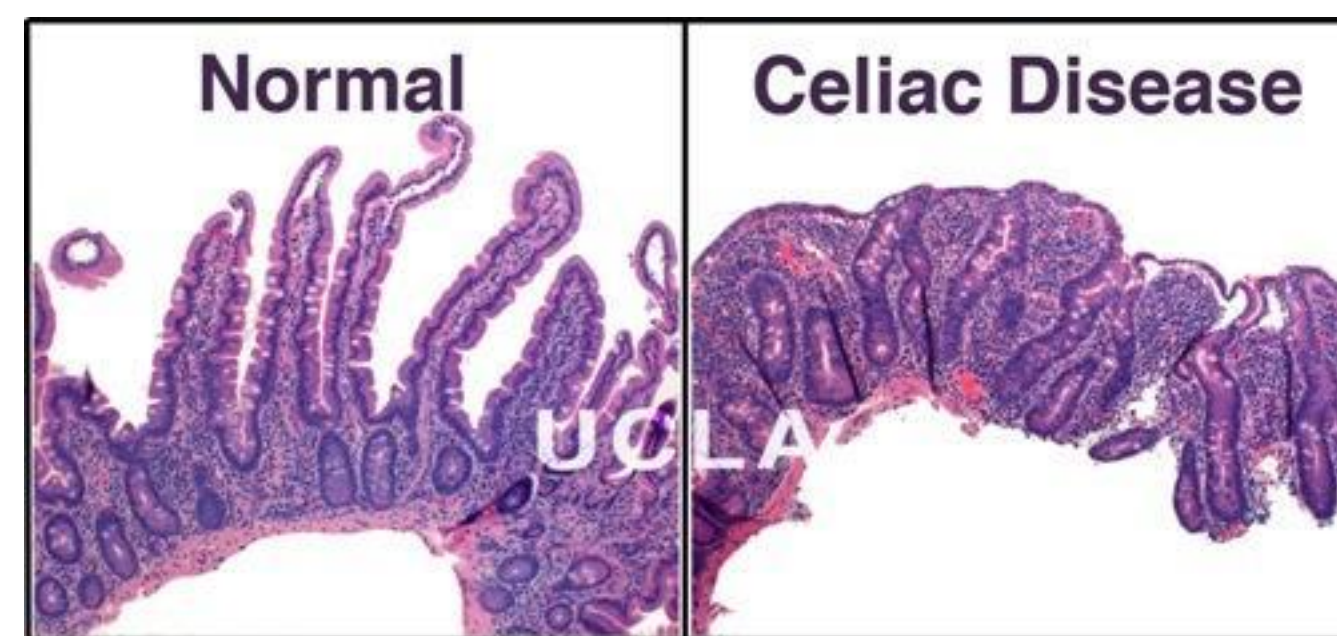


Figure 1: On the left is the normal villi in the small intestine while the right side shows the villi after eating gluten with celiac disease. Retrieved from <https://celiac2051.wordpress.com/cause/>. (August 6,2016)

Methods

- To collect the data required for this project we went out to different grocery stores to record the difference in prices of the two different categories of food.
- The main category of foods looked at were grains, pasta, cereals, rice, flour and snacks.
- The foods looked at were processed foods and foods that do not contain gluten naturally.



Figure 2: A photograph of me at a store collecting data for the study. (July 27, 2016.)

Methods

- Another method used to collect data was to ask participants with celiac disease to send food receipts from the past month to the lab (data not shown).

Results

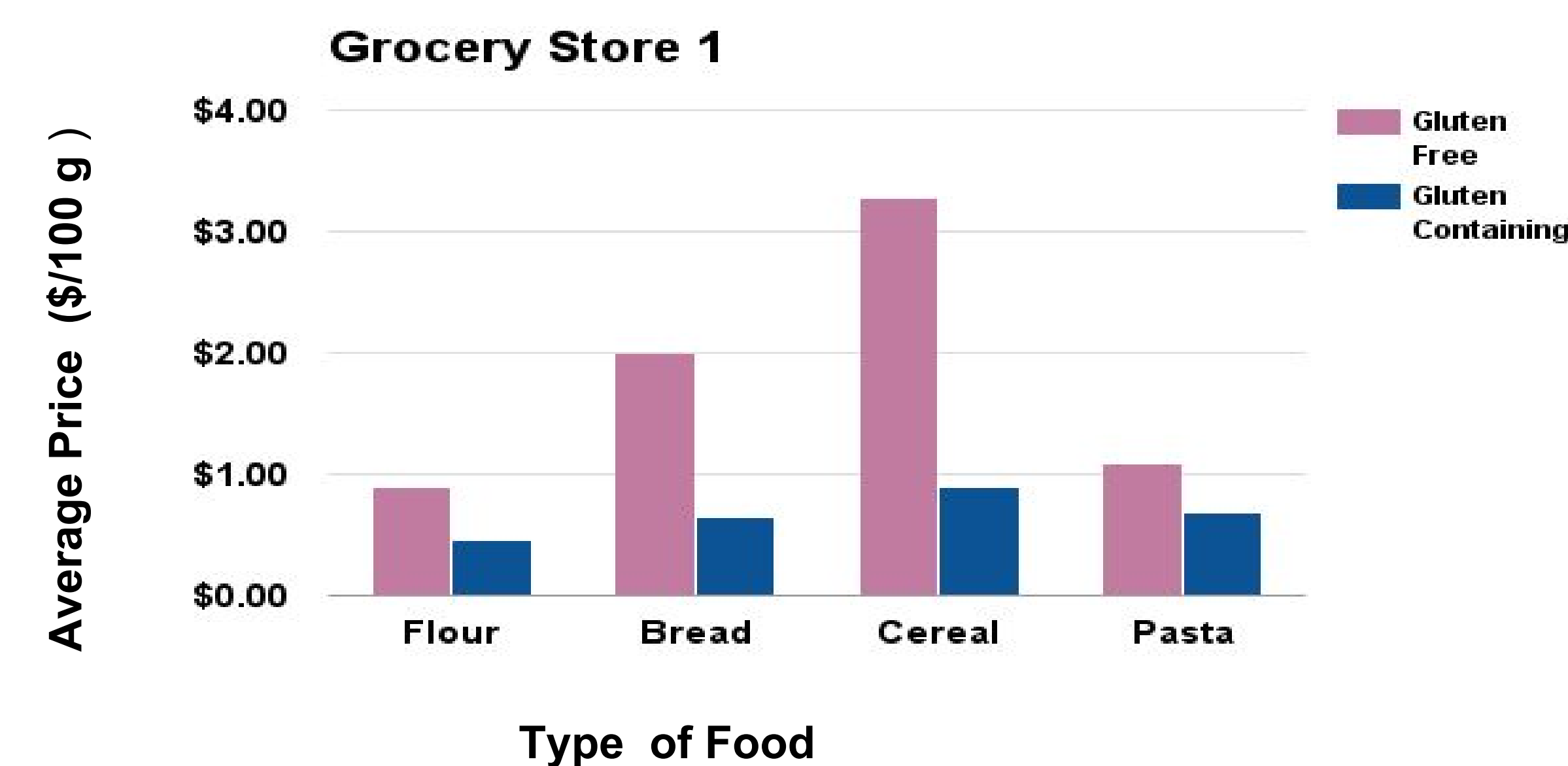


Figure 3: This graph shows the price difference between gluten free and gluten containing foods in the four main types of foods. The data presented was collected from a local grocery store.

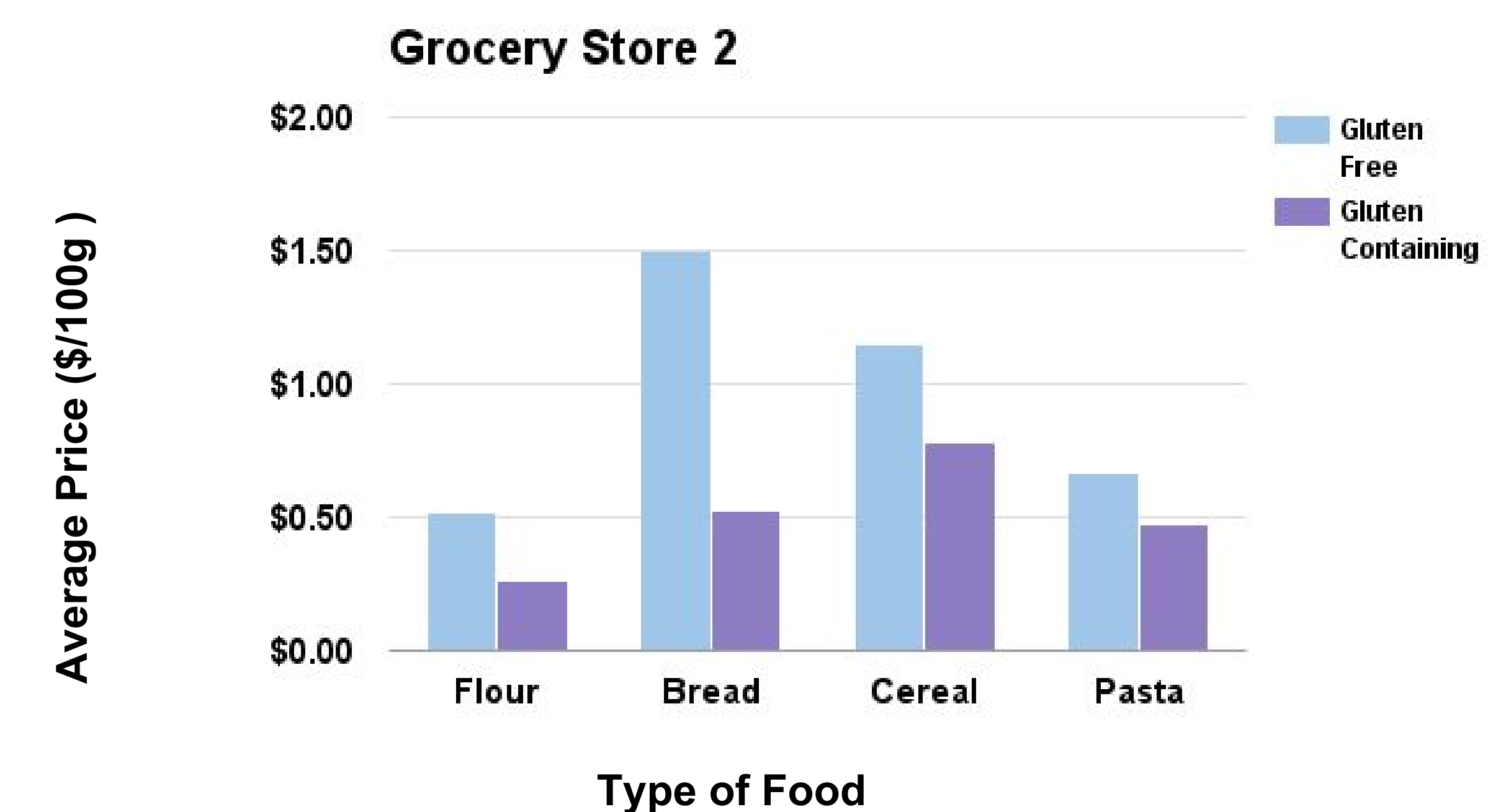


Figure 4: This graph shows the price difference between gluten free and gluten containing foods in the four main types of foods. The data presented was collected from a local grocery store.

Conclusions

- After analysis of the data collected it has become clear that the price of gluten free foods, particularly processed foods, compared to gluten containing foods is more expensive.
- The price difference between gluten containing and gluten free varies based on the different stores.

Conclusions

Type of Food	Average Price Difference in Gluten-free versus gluten containing (\$/100 g)
Flour	\$0.35
Bread	\$1.16
Cereal	\$1.38
Pasta	\$0.30

Table 1 : This table shows the average price difference per type of food between the gluten free and gluten containing foods per 100 g. These averages are based on the data collected from the two local grocery stores.

- On average gluten free foods are \$0.80 more expensive than gluten containing foods.
- The difference between gluten free and gluten containing food also is seen to be different according to the different types of foods.
- This information is important to understand because this price difference is a financial burden on the families who need to follow a gluten free diet due to health reasons.
- This data collected will be useful in my team's research because it will help them understand the impact of celiac disease on the person's quality of life and the socio-economic burden influencing families with children with Celiac Disease..
- This study and the data collected is very important to know because 1 in every 100 Canadians are diagnosed with celiac disease.

Acknowledgements

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- Thank you to my sponsors and the WISEST team for giving me the opportunity to be able to get this experience and explore the different career areas.

Literature Cited

¹Alzaben, A. S., & Turner, J., & Shirton, L., & Samuel, T.M., & Persad, R., & Mager, D. (2015). Assessing Nutritional Quality and Adherence to the Gluten-free Diet in Children and Adolescents with Celiac Disease. *Canadian Journal of Dietetic Practice and Research*, Volume 76, 56-63