Added Sugar

An information and UI/UX design project.

Topic Description

Sugar is a dangerous additive to many of the foods people consume on a regular basis. 74% of packaged foods from grocery stores contain added sugar (SugarScience, 2018).

Despite some large companies like Coca-Cola denying that added sugar has anything to do with weight gain and other health problems, research has shown that the consumption of added sugar is linked to a multitude of health problems such as obesity, type 2 diabetes, and metabolic syndrome (Mikstas, 2017). With its over 60 names (SugarScience, 2018), sugar can also be a difficult ingredient to spot on product labels, making it hard for people to know how much added sugar they are actually consuming.

Added sugar is particularly problematic as it hides in places we wouldn't necessarily suspect. It is common knowledge that added sugar is in sweet treats like cakes, cookies, and ice cream, but few people are aware that it is also in store bought tomato sauce, BBQ sauce, salad dressing, ketchup, peanut butter, granola bars, yogurt, and many more surprising places (Nordqvist, 2018, West, 2016). Furthermore, many people aren't aware of the maximum amount of added sugar they can safely consume within a day, so they may not be able to accurately gauge if their consumption of added sugar is dangerous or relatively safe.

One of the biggest issues with added sugar in today's world is how readily available it has become to us. Furthermore, food manufacturers relentlessly market their sweet treats and sugary beverages through a multitude

of advertisements. Due to all of this marketing, it is no surprise that children are the biggest consumers of sugar within our society, the worst offenders being teens aged 14-18 who consume an average of 34tsp (144g) of added sugar per day (Hutton, 2018). Children aged 4–8 years rank second, averaging 21tsp of added sugar per day (Hutton, 2018), and children aged 1-3 years consume around 12tsp of added sugar per day (Hutton, 2018). These numbers are shocking as children aged 4-6 should have no more than 4.5tsp (19g) of added sugar per day (Torrens, 2017), and children aged 7-10 should have no more than 6tsp (24g) of added sugar per day (Torrens, 2017). In summary, children are consuming far more added sugar than they should.

When it comes to children, it is really the responsibility of the parents to ensure that they are eating properly. This is much easier said than done for a variety of reasons, some of which are obvious such as children opting for pizza instead of salad for lunch at school, or going out with their friends for a slushy at the local convenience store. But aside from these more obvious problems in controlling a child's added sugar intake, there are a variety of less obvious ways parents can help reduce their child's added sugar consumption.

One of the best strategies for reducing added sugar intake is learning how to make sense of food labelling. Food manufacturers use a variety of tricks to hide added sugar within their products, ranging from encoding sugar with one of its 60 alternate names (SugarScience, 2018) to creating health halos (Egan, 2018) that

market products as healthier than they are. Learning to spot added sugar in its less obvious hiding places can greatly reduce the amount of added sugar that you and your family are consuming.

Another distinction many parents might not be familiar with is defining the difference between added sugar and natural sugar. This becomes particularly important when it comes to children, as many parents start feeding their children fruit juice with "no added sugar" from a very young age, under the belief that it is healthy.

The issue with fruit juice is that it contains all of the sugar in the fruit, with none of the fibre (Gearing, McArdel, 2015). Consider a glass of orange juice—it holds the juice of approximately four or five oranges. If four or five oranges had been consumed, the body would have worked much longer to break down the fibrous tissue of the orange to get to the sugar inside, causing a slow, safe release of the sugar. In the case of orange juice, the fibre has been removed causing the body to receive all of the energy immediately. Upon consumption, the sugar hits the blood stream, causing a dangerous spike in blood sugar (Gearing, McArdel, 2015). The body burns this sugar incredibly quickly, so soon after it will be hungry again, leaving the consumer looking for more sugar.

In the case of fruit juice, the sugar may be from natural sources, but it is not in its natural state. To put this into perspective, a 12oz glass of Minute Maid orange juice holds 10tsp (41g) of sugar (Harvard, 2018.) Though the sugar is

derived from natural sources, it is not natural sugar because the body consumes it in the same way as it would consume added sugar—all at once and very quickly, causing a spike in blood sugar.

Though many people (with parents among them) know that added sugar is bad, they may not realize just how common it is, and the horrifying amounts of it that we consume. Having a better understanding of how to spot added sugar in food, and drawing attention to where added sugar is hiding would greatly improve the abilities of people to make informed decisions about what to eat, and what to feed their children. Furthermore, better understanding the addictive properties of sugar and the health concerns associated with overconsuming added sugar might inspire parents to work hard at setting their children up for a future low in added sugar.

Position Statement

Headline

How parents can decrease the amount of added sugar their children are consuming.

Summary Statement

People of all age groups need to have a better understanding of how dangerous added sugar can be and understand how to spot less obvious food products in which it is hiding. Parents need to be particularly conscious of limiting the amount of added sugar in their children's diets in order to set them up for good health in the future.

The Issue

According to recent data, children consume an average of 33tsp (nearly 139g) of sugar per day (McGinn, 2017). This is more than 10 times the recommended maximum amount. Since sugar has been linked to a variety of health issues one of which being obesity, it is not surprising that obesity rates in Canadian children aged 2-17 have tripled in the last 30 years (McGinn, 2017).

For parents, it isn't as simple as just not feeding children candy—sugar is hiding in many other less obvious places. Added sugar seems to turn up almost everywhere—it is even in baby food (McGinn, 2017). Many children's snack foods also contain added sugar (McGinn, 2017).

To make matters worse, children are bombarded with ads for sweetened foods and over time they get accustomed to eating added sugar in their food, making them less likely to enjoy food that does not contain added sugar (McGinn, 2017). Furthermore, it has been proven that sugar causes changes in peoples brains similar to those who are addicted to drugs like cocaine and alcohol (SugarScience, 2018).

Action Needed

People need to start reading the labels of ALL of the food products they are consuming to check for added sugar. Parents need to pay particular attention to how much added sugar is in the food products their children are consuming.

The Advocate

SugarScience is an online resource focused on disseminating current information about the effects of added sugar consumption on health. SugarScience is run by a group of scientists at the University of California San Francisco. Their goal is to provide information about added sugar and health for the public, instead of keeping it hidden inside of medical journals.

Research

Research Documentation

For this project I conducted extensive research. I compiled my notes into a 45 page document. If you are interested in viewing this document, please contact me and I would be happy to share it with you.

Works Cited

"Adult Obesity Rates by Age and Education Level, 2008." Statistics Canada, Government of Canada, trends.collegeboard.org/education-pays/figures-tables/adult-obesity-ratesage-and-education-level-2008.

Obesity rates by age and education level in 2008.

"Body Mass Index, Changes between 1994/1995 and 2006/2007, 2008/2009 and 2010/2011." Statistics Canada, Government of Canada, www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1310044301.

Changes in body mass index from 1994/1995 to 2008/2009 in Canadians.

Bray, Karina. "Sneaky Sugar in Everyday Supermarket Foods." CHOICE, CHOICE Australia, 8 Aug. 2018, www.choice.com.au/ food-and-drink/nutrition/sugar/articles/ sugar-in-processed-foods. This article from CHOICE magazine shows a variety of foods that contain sugar that you may not expect to. Additionally, it contains a few tips and tricks to help with shopping for foods that are low in sugar.

Ducharme, Jamie. "The Case Against Juice Is Stronger Than Ever." TIME, TIME Health, 23 Jan. 2018, time.com/5072703/ drinking-juice-unhealthy-disadvantages/.

TIME magazine discusses fruit and vegetable juice consumption along with the trendy "juice cleanse" with representatives from the Mayo Clinic. This article articulates exactly why juice cleanses are not healthy in the long run, and alternative strategies for weight loss.

Egan, Sophie. "How to Read a Food Label." The New York Times, www.nytimes.com/guides/ well/how-to-read-a-food-label.

In this New York Times article, Sophie Egan discusses what is written on the back of a packaged food box as opposed to what is written on the front. The front of the box presents what the company wants you to see, the back tells you what you're actually buying.

"Figuring Out Food Labels." Edited by Steven Dowshen, KidsHealth, The Nemours Foundation, June 2018, kidshealth.org/en/kids/labels.html. This Kids Health article discusses the down-sides of food labels when it comes to choosing foods to buy for your kids. These negative aspects about food labels should be considered by parents when they are shopping and checking labels in order to make decisions about what to buy.

Gearing, Mary E, and Shanon McArdel. "Natural and Added Sugars: Two Sides of the Same Coin." Harvard University, Science in the News, 5 Oct. 2015, sitn.hms.harvard.edu/flash/2015/natural-and-added-sugars-two-sides-of-the-same-coin/.

This Harvard article describes the difference between added sugar and natural sugar, and the way the body processes them. It is argued that natural sugar is not harmful as it releases sugar gradually into the blood stream, unlike added sugar, which releases sugar into the blood stream immediately causing a blood sugar spike.

"Healthline Survey Reveals Most Americans Know the Dangers of Sugar." Healthline, Healthline Media, www.healthline.com/health/ sugar/healthline-survey-results#1.

This Healthline article shows the results of a study on sugar knowledge of over 3000 Americans from across the country. Participants were asked about their sugar consumption habits, and their knowledge about added sugar in food. This source provides a variety of statistics and infographics that break down exactly how much Americans know about the dangers of added sugar.

Henley, Jon. "Interview: Michael Pollan." The Guardian, Guardian News and Media, 1 July 2010, www.theguardian.com/lifeandstyle/2010/jul/01/interview-michael-pollan.

Michael Pollan describes in this article from The Guardian how not all low-fat foods are actually low fat. In other words, they may still cause weight gain due to added sugar than makes up for the fat that was removed from the food.

"Measured Adult Body Mass Index (BMI) (World Health Organization Classification), by Age Group and Sex, Canada and Provinces, Canadian Community Health Survey - Nutrition." Statistics Canada, Government of Canada, www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310079401&pickMembers[0]=1.1&pickMembers[1]=2.1&pickMembers[2]=3.1&pickMembers[3]=5.5.

Data on body mass index in Canadian adults for 2015.

"Measured Children and Youth Body Mass Index (BMI) (Cole Classification), by Age Group and Sex, Canada and Provinces, Canadian Community Health Survey -Nutrition." Statistics Canada, Government of Canada, www150.statcan.gc.ca/t1/tbl1/en/ cv.action?pid=1310079701.

Body mass index in Canadian children ages 2-17 years in 2004 and 2015.

"Measured Children and Youth Body Mass Index (BMI) (World Health Organization Classification), by Age Group and Sex, Canada and Provinces, Canadian Community Health Survey - Nutrition." Statistics Canada, Government of Canada, www150.statcan. gc.ca/t1/tbl1/en/tv.action?pid=1310079501.

Data on body mass index in Canadian children and youth for 2015.

"How Much Sugar Is in...?" Rethink Sugary Drink, www.rethinksugarydrink.org.au/http://www.rethinksugarydrink.org.au/how-much-sugar.

This website describes how frozen drinks choose not to advertise how much added sugar is in them. It also shows a table that categorizes specific soft drinks, energy drinks, sports drinks, and other drinks that are particularly high in added sugar.

"How Sweet Is It?" The Nutrition Source, Harvard School of Public Health, 15 Mar. 2018, www.hsph. harvard.edu/nutritionsource/healthy-drinks/sugary-drinks/how-sweet-is-it/.

A Harvard article presenting two tables which show how much sugar is found in a variety of drinks under different categories. It also isolates which beverages to stay away from, and beverages that are less harmful to consume regularly.

Hutton, Lindsay. "Are We Too Sweet? Our Kids' Addiction to Sugar." Familyeducation, www.familyeducation.com/life/sugar/are-we-too-sweet-our-kids-addiction-sugar.

This article covers the new AHA guidelines limiting the amount of sugar that is acceptable for a healthy diet, how much sugar a child can eat in a day without it being dangerous, and how to plan a healthy diet for your child that limits their consumption of added sugar.

"Infant Formula Could Change Gut Bacteria, Contribute to Childhood Obesity: Study." ABC News, 6 June 2018, 4:57, https://abcnews.go.com/Health/ infant-formula-change-gut-bacteria-contribute-childhood-obesity/ story?id=55632397.

This article from ABC News expresses how infant formula could change gut bacteria and influence child obesity. Breastfeeding is activated for, and consumption of healthy oligosaccharides (complex sugars found in breast milk) is recommended for babies.

Jhaveri, Anisha. "15 'Healthy' Foods You Won't Believe Are Full of Added Sugar." Greatist, 8 Dec. 2017, greatist.com/eat/foods-that-sneak-in-added-sugars.

This article contains 15 foods people may consider healthy that contain added sugar.

"Latest SugarScience Research." SugarScience, University of California, San Francisco, 31 Oct. 2014, sugarscience.ucsf.edu/latest-sugarscience-research.html#.W6jw7y8ZNbV.

SugarScience was created by a team of health scientists at the University of California, San Francisco (UCSF) in order to deliver the latest information about sugar into the hands of the public straight from reputable medical journals. SugarScience contains several sections, informing people on topics such as sugar sweetened beverages, hidden sugar, the toxicity of sugar, and how much sugar is too much sugar. The site contains a variety of facts and statistics, while providing a good general understanding of sugar.

Lockhart, Emily. "Deconstructing Food Labels in 8 Easy Steps." ActiveBeat, 11 Mar. 2018, www. activebeat.com/diet-nutrition/deconstructing-food-labels-in-8-easy-steps/8/.

This article proposes 8 steps to help people understand food labels, and provides things to consider when making decisions about which food products you want to purchase.

McGinn, Dave. "Canadian Children Are Consuming Five Times More Sugar than They Should." The Globe and Mail, 6 June 2017, www. theglobeandmail.com/life/health-and-fitness/health/canadian-children-are-consuming-five-times-more-sugar-than-they-should/article35207835/.

In this article from The Globe and Mail, McGinn expresses how difficult it is to limit how much sugar your child consumes. With the bombardment of advertisements for junk food that children see every day, the temptation to consume added sugar is larger than ever. McGinn suggests ways to help your child avoid sugar, and the dangers caused by how much sugar Canadian children are consuming.

Mikstas, Christine. "Surprising Sources of Hidden Sugar." WebMD, 19 June 2017, www.webmd.com/diet/ss/hidden-sugar-slideshow.

Lists a variety of foods you may not suspect would contain added sugar, but actually do.

Nordqvist, Joseph. "How Much Sugar Is in Your Food and Drink?" Medical News Today, MediLexicon International, 14 Feb. 2018, www. medicalnewstoday.com/articles/262978.php.

Discusses how despite our bodies running off sugar, too much can negatively impact our health. Provides examples of categories of packaged foods such as chocolate bars, soft drinks and cereals, and compares sugar

content of different products within each category.

Painter, Kim. "Scary' Prediction for U.S. Kids: 57% Could Be Obese by Age 35." USA Today, 29 Nov. 2017, 5:00pm, www.usatoday.com/story/news/2017/11/29/scary-prediction-u-s-kids-57-could-obese-age-35/906474001/.

USA Today explores which children will be at the highest risk of being obese at age 35.

Steen, Juliette. "How Much Natural Sugar Should We Eat A Day?" HuffPost Australia, Edition AU, 14 Sept. 2017, www.huffingtonpost. com.au/2017/09/14/how-much-natural-sugarshould-we-eat-a-day_a_23208377/.

This article from Huffington Post describes the difference between natural and added sugar, and how your body processes them. It also explains what a healthy amount of fruit is to consume in a day, and that the sugar found in whole fruit is not a health concern.

"Sugars." Government of Canada, 9 Feb. 2018, www.canada.ca/en/health-canada/services/nutrients/sugars.html.

The Government of Canada outlines the specifics of the new nutrition facts labels that will be mandatory for all packaged foods by 2022. It also covers some tips that can be used in the meantime for reading the current nutrition facts labels.

"Sugary Drinks." The Nutrition Source, Harvard School of Public Health, 15 Mar. 2018, www.hsph. harvard.edu/nutritionsource/healthy-drinks/sugary-drinks/.

This Harvard article discusses the results of a number of studies, showing some of the negative effects of soft drink consumption on health. Additionally, it defines the term "soft drink" and what items fall under this category.

"Tables and Figures." Statistics Canada, Government of Canada, 21 Sept. 2011, www150. statcan.gc.ca/n1/pub/82-003-x/2011003/article/11540/tbl-eng.htm.

Provides a variety of tables showing information related to sugar intake within different age groups.

"The Sweet Danger of Sugar." Harvard Health Blog, Harvard Health Publishing, May 2017, www.health.harvard.edu/heart-health/ the-sweet-danger-of-sugar.

Discusses the risks of added sugar, particularly in relation to cardiovascular disease, and how people can work on minimizing their sugar consumption.

"Toddlers Are Eating More Sugar Than What's Recommended for Some Adults." Healthline, www.healthline.com/health-news/toddlers-eating-more-sugar-than-recommended-for-adults#1.

In this Healthline article, sugar intake in American toddlers is examined. General statistics are given surrounding this issue. How parents can set their child up to like unsweetened, whole foods from a young age is discussed.

Torrens, Kerry. "The Truth about Sugar." BBC Good Food, BBC, 25 July 2017, www.bbcgoodfood.com/howto/guide/truth-about-sugar.

In this BBC article, Torrens describes why sugar is bad for you and what is the recommended daily allowance for sugar. Torrens explains hidden sources of sugar, and easy ways for people to cut back on the amount of added sugar they are consuming.

USDA Food Composition Databases, ndb.nal. usda.gov/ndb/search/list?qlookup=12119.

This resource can be used to find the amount of sugar found in different juices and drinks, cereals, jams, and many other food products.

"Understanding the Nutrition Label."
Canadian Diabetes Association, www.
diabetes.ca/diabetes-and-you/
healthy-living-resources/diet-nutrition/
understanding-the-nutrition-label.

The Canadian Diabetes Association provides tips in this article for understanding nutrition labels, as well as some common labeling language to help the general public understand what nutrition labels are really communicating.

West, Helen. "18 Foods and Drinks That Are Surprisingly High in Sugar." Healthline, Healthline Media, 18 July 2016, www.healthline.com/ nutrition/18-surprising-foods-high-in-sugar.

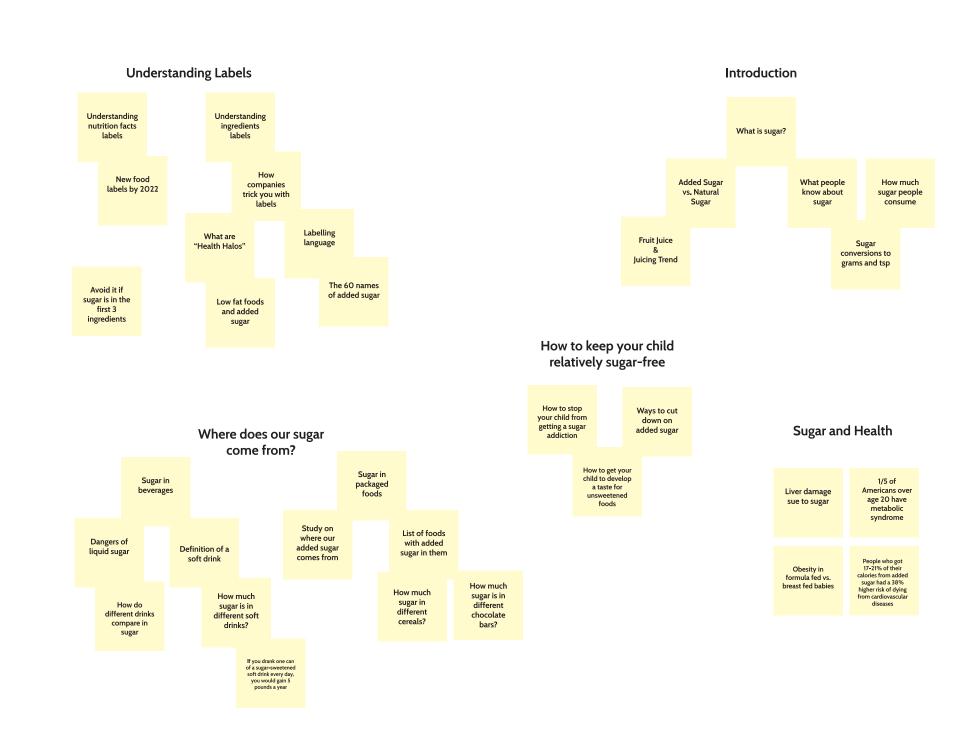
A Healthline article that suggests 18 foods that are surprisingly high in added sugar.

White, Dana Angelo. "Ask the Dietitian: What's the Difference Between Added and Natural Sugar?" Healthyeats, Food Network, www.foodnetwork.com/healthyeats/2013/06/ask-the-dietitian-whats-the-difference-between-added-and-natural-sugar.

This Food Network article discusses the benefits of fruit and milk, despite the natural sugar they both contain. It also explains how to spot the difference between added sugar and natural sugar on nutrition facts tables.

Sequencing Strategy

I began by making a detailed list of information that should be included the pamphlet, and started chunking this information into sections. This helped me organize my thinking before beginning more detailed sketches of each part of the pamphlet.



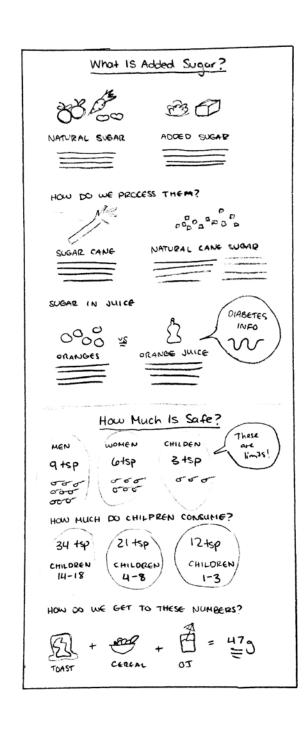
Sketches

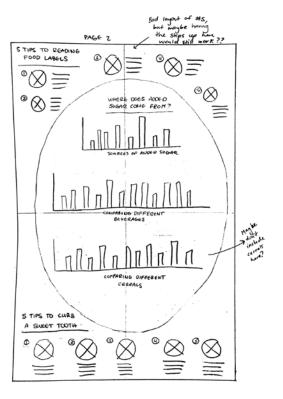
I wanted to make sure to include a solid overview of the issues surrounding sugar in the first section of the pamphlet, and clearly explain exactly what sugar is, how the body processes it, and how much is safe to consume.

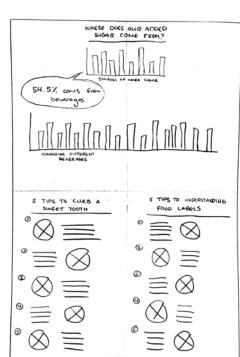
In the next section of the pamphlet I wanted to include further depth of information about the issues surrounding sugar. I also wanted to include some tips on how to reduce sugar in your family's diet to offer a solution to the issue.

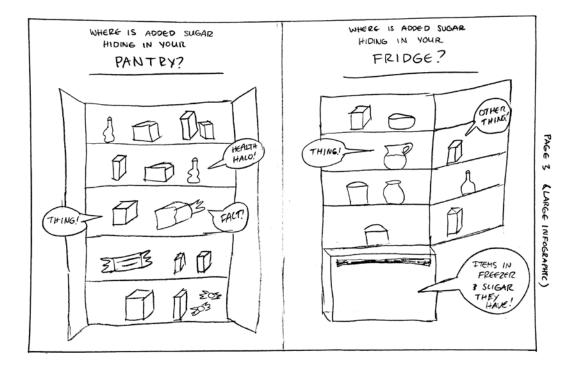
I examined a couple different arrangements for the information in this section. I considered placing emphasis on the bar graphs by placing them in the center, and by placing the tips to reduce sugar around the outside edges.

Lastly, I explored a few options for the large scale infographic on the back of the pamphlet. I decided to illustrate several food items that might surprise people with how much added sugar they contain.



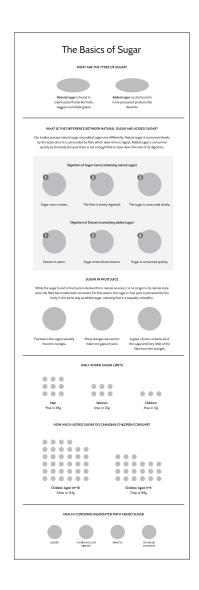


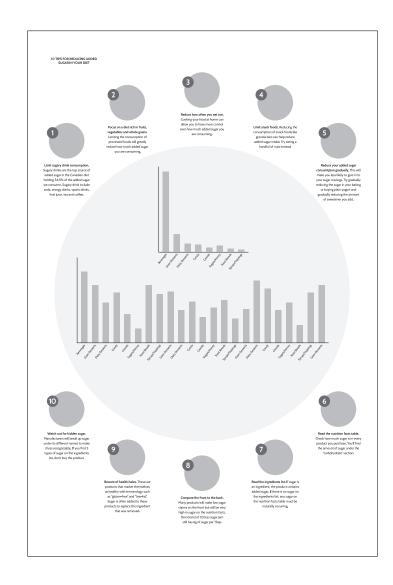


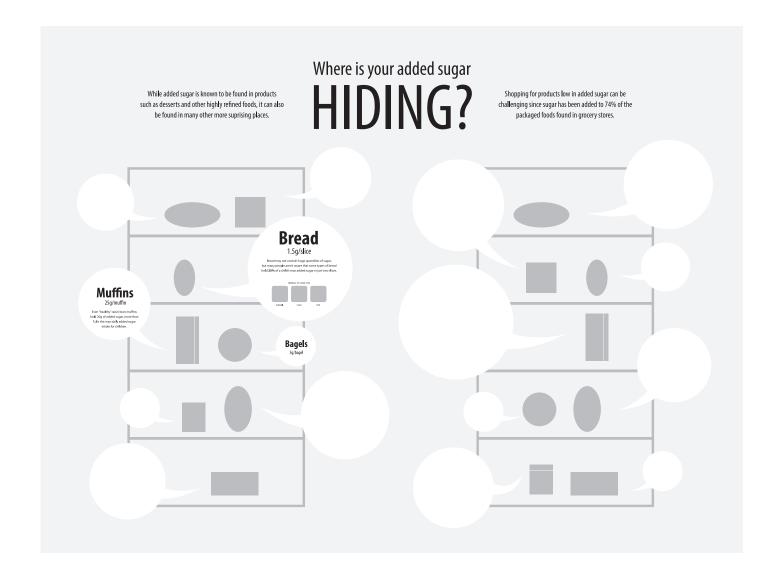


Digital Compositions

I then translated my sketches into more refined digital wireframs. Which were critiqued extensively prior to further reminement.

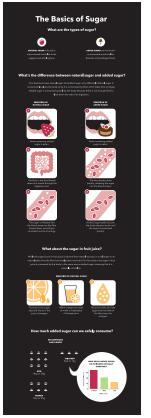




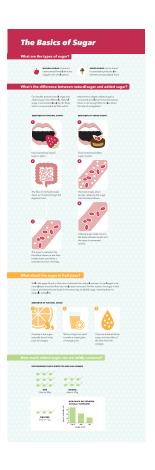


Colour & Layout Experiments

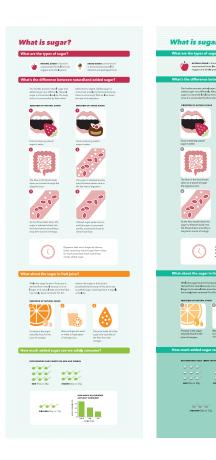
Initial Ideas

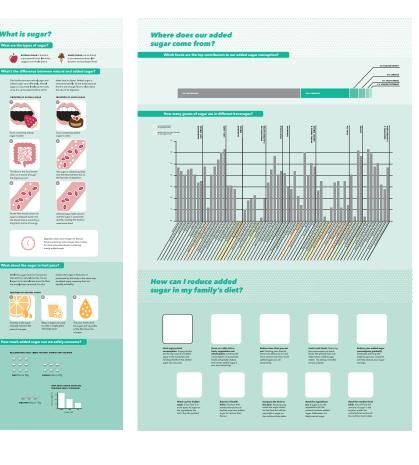




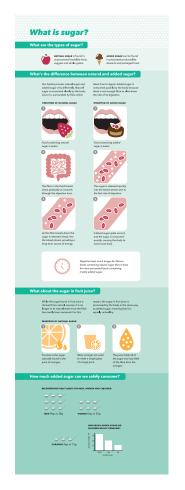


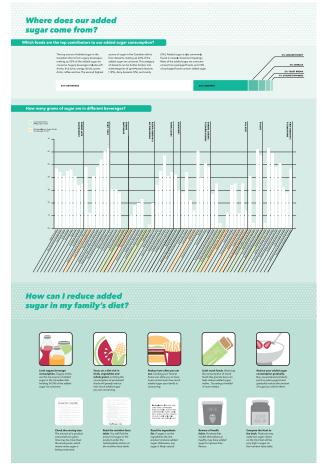


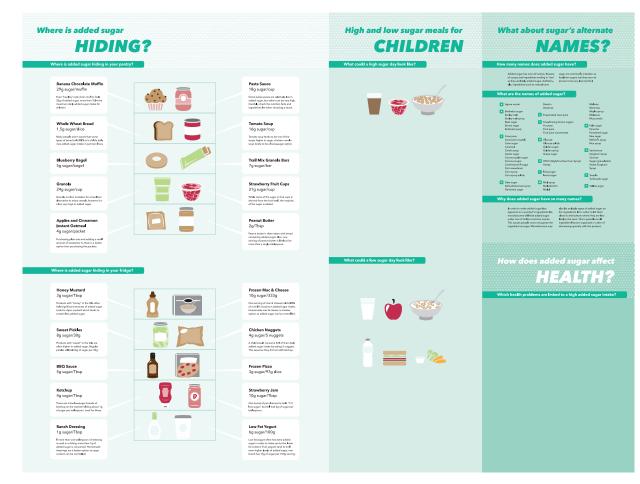




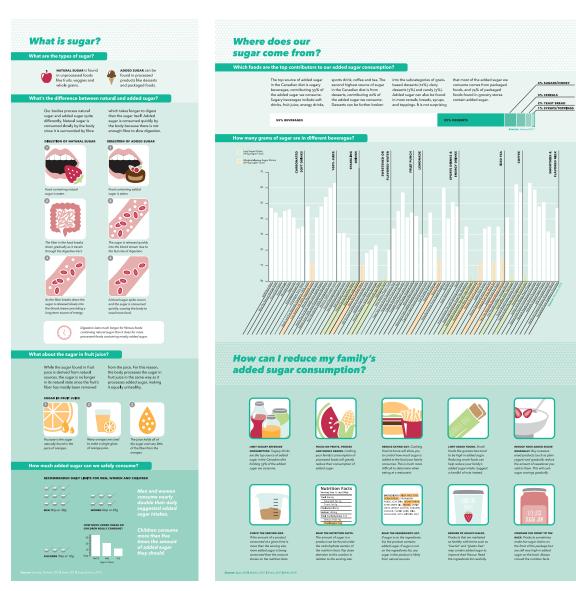
Refined Ideas

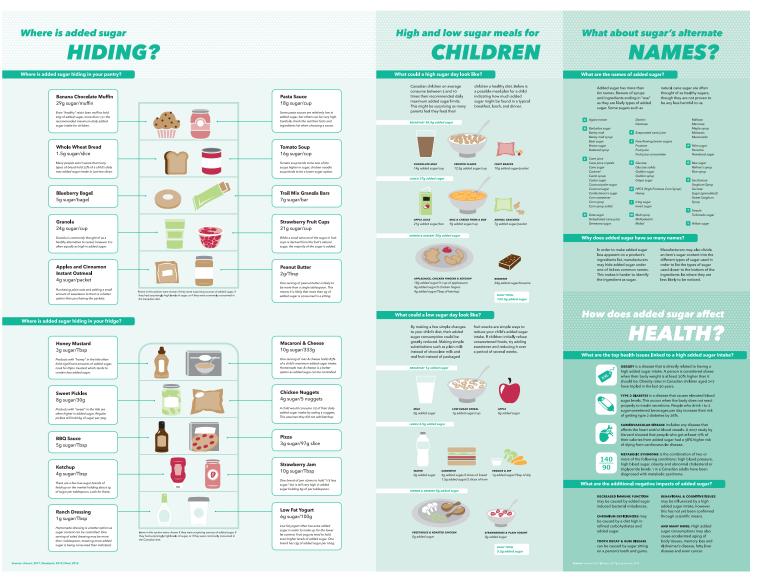






Final Pamphlet Sections





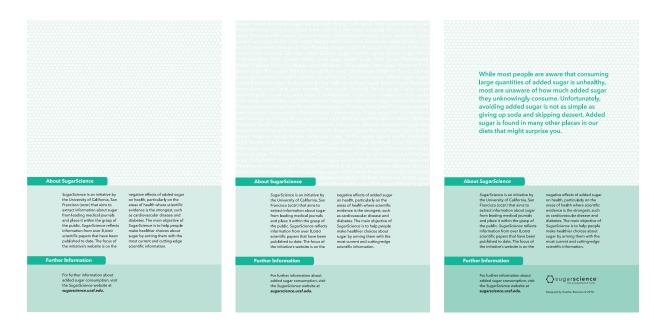
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Third page.

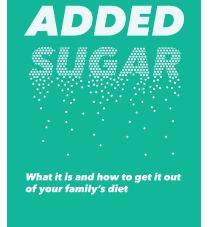
Front & Back Cover





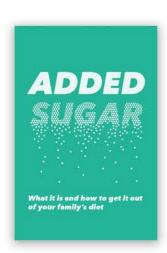
Back cover layouts.



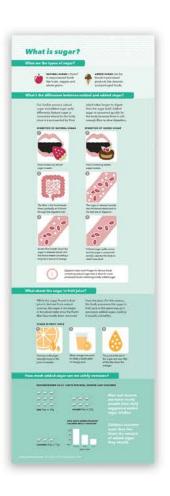


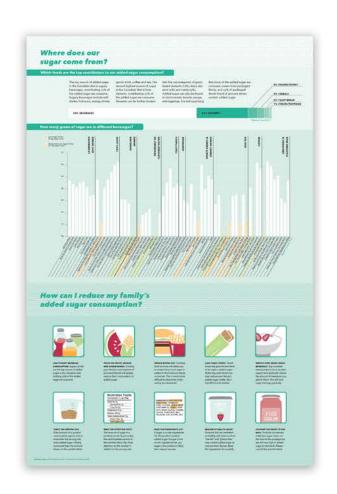
Front cover layouts.

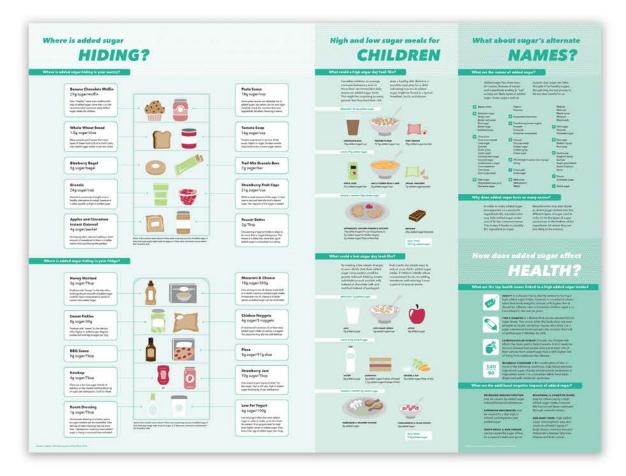
Final Pamphlet Design





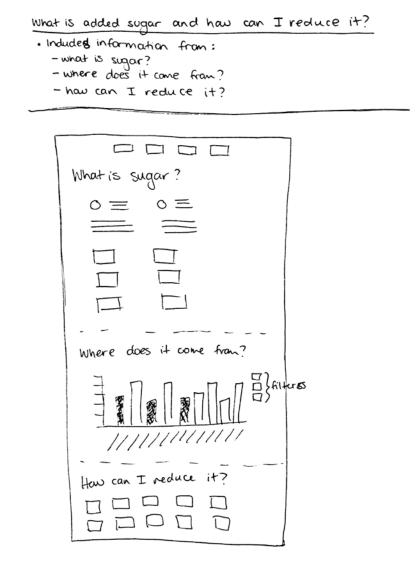


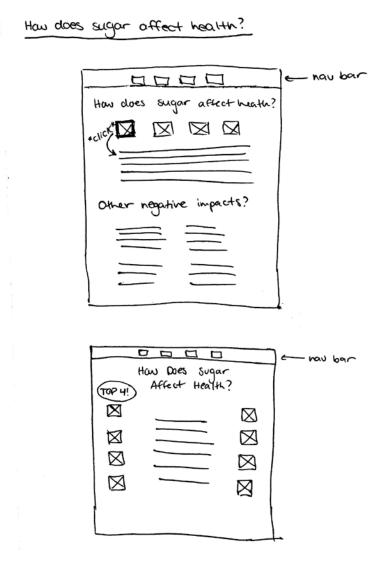


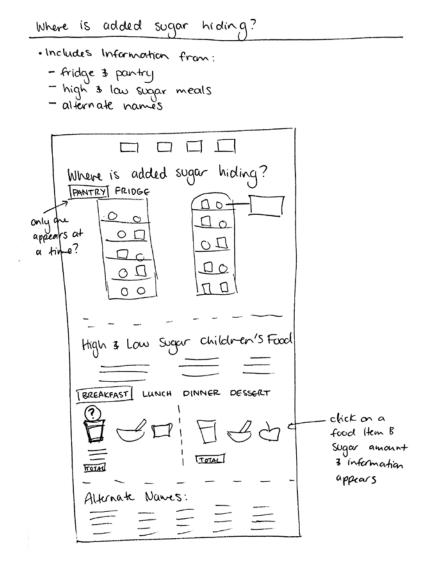


Digital iPad Publication

In order to create a digital version of the pamphlet, I restructured some of the information to take advantage of the interactivity opportunities provided by the digital format. My sketches for restructuring the content are shown here. A video of the final iPad publication in use can be viewed on my website.







Thank you!

Email me anytime at heatherboorsma@gmail.com