A Comparison of Fat Content in Original Processed Foods and their Low-Fat Alternatives

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Abstract

Consumers rely on the Nutrients Facts table (NFt) to gain information on the nutrient profile of the foods they purchase. Presenting precise information on NFts is essential when considering the rise of non-communicable diseases (NCDs) due to high-fat diets. The objective of this study was to gauge the accuracy of "low fat" marketing statements in processed foods in comparison to their brand-matched high fat alternatives. This was done by measuring fat content by solvent extraction in four high and low-fat food pairs from the same brand (Breton crackers, Quaker granola, Lays chips, and Wheat Thins crackers) consisting of three replicates each. We hypothesized that if a food is labelled as "low fat," then it should contain less fat content than the original band-matched product following solvent extraction. The original Lays chips ($p = 0.007$), Quaker granola ($p = 0.027$), and Wheat Thins ($p = 0.013$) had significantly higher fat content than their low-fat labelled counterparts. We found no significant difference in fat content in the Breton cracker pair ($p = 0.136$). While the results seen in the Lays, Quaker, and Wheat Thins may reflect the accuracy of the products' NFts and marketing labels, the lack of significance in the Breton crackers may be due to a low fat extraction efficiency.

Introduction

The Nutrients Facts table (NFt) in Canada provides information on calories and 13 nutrients, such as fats, on nearly all processed foods and beverages ("Regulations and Compliance - Nutritional Labelling"). These labels were made mandatory in 2003 by the Canadian Government in an effort to provide consumers with the resources to make informed decisions about their diets. However, the Canadian Food Inspection Agency (CFIA) allows for a variance up to 20% for nutritional information on NFts ("Regulations and compliance - Nutritional Labelling"). This variance in accuracy accounts for natural variability in ingredients, and/or potential deviations in testing equipment. However, a media report in 2011 revealed that

of 621 food products tested by the CFIA between 2006 and 2010, 360 did not meet the 20% accuracy interval for nutritional information listed on NFt's (Schmidt). This report suggests that there may be substantial inaccuracies in Canadian nutritional labels.

The increased availability of processed foods have contributed to poor dietary habits in Canada and around the world (Borgmeier and Westenhoefer 2). Therefore, significant inaccuracies in NFts could have implications on consumers' ability to make decisions about their dietary choices. Inaccuracies in NFts may also increase the prevalence of non-communicable diseases (NCDs) such as cardiovascular disease, diabetes, and cancers, which are responsible for 41 million deaths worldwide and 88% of all deaths in Canada ("Non-Communicable Diseases"). Consumption of foods high in saturated fatty acids and trans fatty acids in particular are believed to cause 40 % of all NCD-related deaths worldwide (Beane et al. 992).

Terms such as "reduced fat" and "low fat" fall in the top three most commonly used nutrition marketing statements, and are often found on foods that are originally high in saturated fat, sodium and/or sugar (Colby 92). Consumers are frequently presented with these foods claiming to be healthier alternatives to their high-fat counterparts. However, considering the marked increase in obesity rates and NCDs across the globe, these marketing practices have sparked a worldwide debate regarding legal labelling policies and food industry responsibility (Colby 92). The primary purpose of our study is to investigate the accuracy of "low fat" marketing claims in four commonly consumed processed food brands. Fat will be extracted from these low-fat foods and their high-fat counterparts, so the accuracy of the reduced-fat claims can be assessed. We hypothesize that if a food is labelled as "low fat," then it should contain less fat content measured in grams than the original band-matched product, following solvent extraction.

The results of this experiment may shed further light on the validity of Canadian NFt labels and "low fat" marketing statements in processed snacks.

Methods

Preparing Samples

This experiment was conducted on the following four original and "low fat" food pairings: (1a) Lays Original Potato Chips, (1b) Lays Original Baked Chips (65% Less Fat); (2a) Harvest Crunch Original Granola Cereal, (2b) Harvest Crunch Granola Cereal Light (30% Less Fat); (3a) Wheat Thins Original Crackers, (3b) Wheat Thins (37% Less Fat); (4a) Brenton Brand Crackers, and (4b) Brenton Brand Crackers (35% Less Fat). The remainder of materials required to conduct this experiment can be found in the "Materials" section of the Science Buddies website ("How Much Fat is in Your Food?"). Household cups were used as a vessel for the fat extraction process. Twelve cups were prepared since there were three replicates per food, and were labelled with the product name and the term "Extraction." These cups were used in the solvent extraction cycle. Another series of 12 cups were cleaned and labelled with the term "Acetone," and were used to contain the extracted acetone and fat solution. The weight of every cup labelled with "Acetone" was determined using an Accuweight Digital Food Scale and recorded (Supplementary Table 1). Ten grams of each food replicate were crushed in individual ziplock bags as a way to increase the surface area for fat extraction, and weighed. The "Acetone" labelled cups containing the crushed foods were weighed once more and their masses were recorded (Supplementary Table 1).

Extracting Fats from Foods

Crushed food inside the "Acetone" cups were transferred into their corresponding "Extraction" cups, and 20 mL of acetone was poured over the food. This cup was swirled for five minutes to help extract the fat into the acetone solvent. After five minutes, the food was given time to settle before the acetone-fat solution was carefully strained into the original "Acetone" cup. Any food stuck in the strainer was gently tapped back into the extraction cup. The extraction process was repeated three times for each replicate to maximize the amount of fat extracted. The cups containing the fat-solvent solution were placed in a safe location on our kitchen counters for 24 hours to allow for the acetone to evaporate, leaving the fat. The wafting technique was used to determine if any acetone remained following the 24 hours. Cups without an underlying acetone odor indicated that the solvent had fully evaporated. All replicates had complete acetone evaporation by the 48 hour mark.

Figure 1: Original Lays Chips "Acetone" cup containing the acetone-fat solution extracted from 10 g of chips. This image shows the extracted fat droplets floating on top of the solvent used. The fat extracted in this replicate was 2.9 g with an extraction efficiency of 82.9 %.

Data Collection & Analysis

Once all of the acetone contents had evaporated from the samples, the cups were weighed once more. This mass was subtracted from the mass of the empty "Acetone" cups, which yielded the weight of the fat extracted from the food (Supplementary Table 1). The expected fat content for 10 g of each food based on the NFt was also calculated (Equation 2a), along with the extraction efficiency for each replicate (Equation 2b). Sample calculations for both these values

are shown below for the third replicate of the Original Lays Chips, which contain 18g of fat/50g of food (36 Chips)

Equation 2a

$$\frac{18\ g}{50\ g}\ X\ \frac{x}{10\ g}$$

$$x = \frac{180\ g}{50\ g} = 3.60\ g\ of\ fat\ found\ in\ 10\ g\ of\ Original\ Lays\ Chips$$

Equation 2b

$$\frac{Amount\ of\ Extracted\ Fat\ in\ Experiment}{Actual\ Fat\ Content\ in\ 10\ g\ of\ Sample\ (Based\ on\ NFt)}\ X\ 100\ \%$$

$$\frac{2.9\ g}{3.6\ g}\ X\ 100\ \% = 80.6\%\ extraction\ efficiency$$

The expected fat/10 g of food and extraction efficiency for each replicate are shown in Supplementary Table 2. We analyzed our data using the XLSTAT software version 2021.1. Fat content was averaged for each food brand. The Shapiro-Wilks test for normality revealed that the data followed a normal distribution ($p = 0.78$). A two-sample t-test was then conducted for each of the four food pairings to determine whether there was any significant difference in fat content. An alpha value of 0.05 (5%) was set as the significance level for our data analysis. Although a smaller alpha value would help avoid a Type 1 error (false positive result), it would increase the likelihood of making a Type II error (false negative result) (“Consequences of Errors and Significance (Article)”).

Results

We took the average of the fat content found from the three replicates for each of the food types, and compared the means of each high fat/low fat pairing (Table 1). Table 1 also displays the standard deviation of the mean fat content for each food. The results of the two-sample t-test revealed that there was no significant difference between the Breton crackers ($p = 0.084$) (Figure 2). However, there was a significant difference between the Lays ($p = 0.007$), Quaker granola ($p = 0.027$), and Wheat Thins crackers ($p = 0.013$) pairs, in which the low-fat labelled foods had less fat content (Figure 2). In addition to this, we calculated the individual fat extraction efficiency for each food replicate (Supplementary Table 2) and the average efficiency for each food product (Table 1). The average extraction efficiency for the entire experiment was 87%.

The fats extracted from the foods were analyzed for their color, texture, odor and viscosity (Supplementary Table 3). Fat color varied in most of our foods and ranged from an orange tone in the Breton crackers to various shades of yellow and white/beige in the Lays, Quaker and Wheat Thins. The fats extracted from the Breton, Quakers, and Lays pairings appeared to be oily to the touch at room temperature (about 22°C). In contrast, the fat from the Quaker granola was solid and soft to the touch at 22°C. The fats extracted from both types of Lays chips had a light potato chip odor, while the remaining foods had odorless fats.

Table 1. Average fat content (g), standard deviation (g), and extraction efficiency (%) for each food product. Values were calculated from the three replicates (N = 3) per food.

Food	Average fat content (g)	Standard Deviation (g)	Average extraction efficiency (%)
Breton Original	0.87	0.42	44.7
Breton Low Fat	0.30	0.10	53.6
Lays Original	3.4	0.50	94.4
Lays Low Fat	1.73	0.25	145.9
Quaker Original	1.63	0.25	90.7
Quaker Low Fat	1.10	0.10	100.0
Wheat Thins Original	1.47	0.15	73.3
Wheat Thins Low Fat	1.10	0.06	85.3

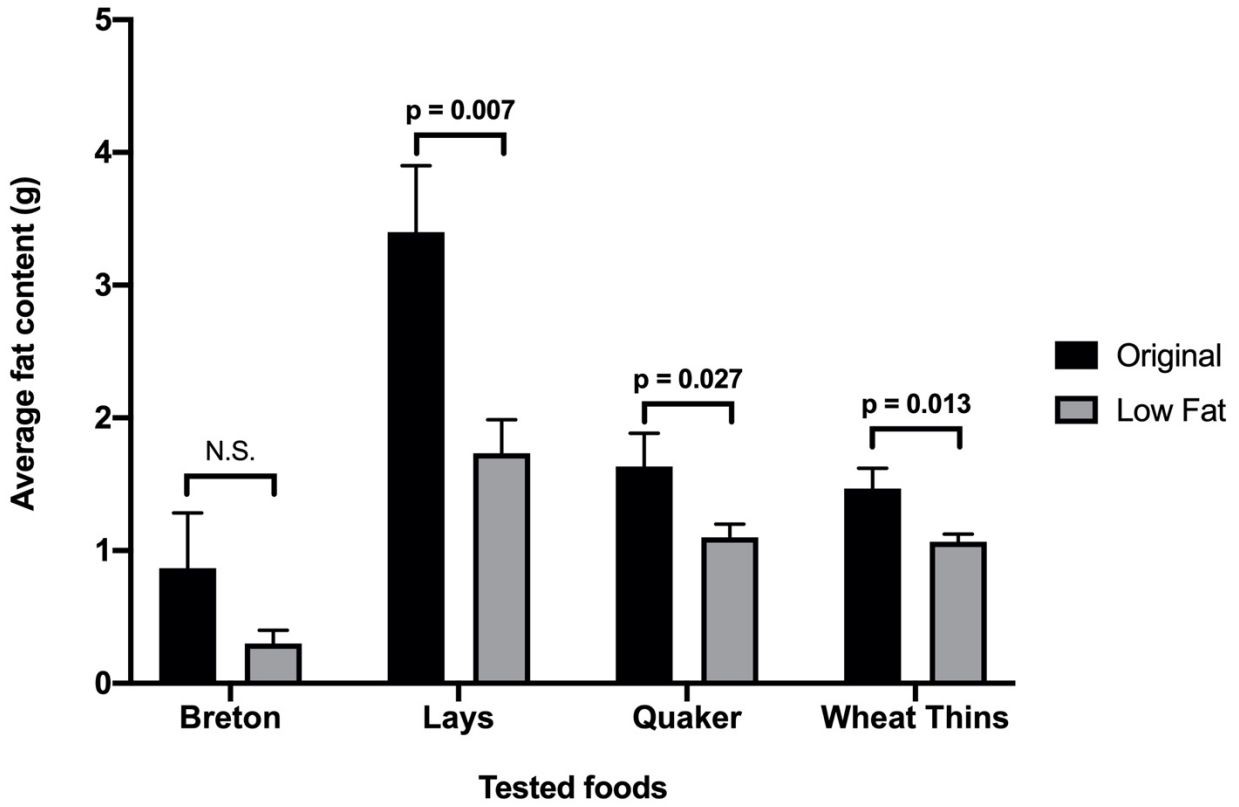

Figure 2: Average fat content (g) extracted in each food. The dark and light bars represent the average fat content of the replicates (N = 3) in each of the high fat and low fat foods respectively. The error bars represent the standard deviation. Original and low fat food pairs were compared using a two-sample t-test. There was a significant difference in fat content (g) between the food pairs in Lays chips ($p = 0.007$), Quaker granola ($p = 0.027$), and Wheat Thin crackers ($p=0.013$). There was no significant difference in fat content (g) between the Breton cracker pair ($p = 0.136$).

Discussion

The objective of our study was to determine the accuracy of low-fat marketing statements in processed foods in comparison to their high-fat alternatives. We found that the Lays Baked chips, low-fat Quaker Granola, and Wheat Thins crackers had significantly lower fat content compared to their original counterparts (Figure 2). This finding supports our hypothesis, which stated that if a food is labelled as “reduced fat,” then it should contain less fat than the original brand-matched product following solvent extraction. These results may reflect the accuracy of

the low-fat branding on these products in relation to their higher-fat alternatives. While the low-fat labelled Breton crackers seemed to contain less fat than the original product, the difference was not significant, which does not support the hypothesis (Figure 2).

In general, our findings were in line with previous studies that have measured the accuracy of fats listed in NFts. Both Fitzpatrick et al. (3333) and Pantazopolous et al. (313) found no significant difference between the fat listed in NFts of various processed foods such as cookies, crackers, and granola bars, and laboratory extracted fat content. However, these studies did not compare the fat values listed in low/high fat food pairs, as was done in our study.

Breton's reduced-fat crackers did not seem to meet the low-fat claims marketed on their respective packaging, in contrast to the other snacks. This may indicate that the NFt and marketing statements are inaccurate, and do not reflect the true fat content found in these foods. However, this is unlikely as the aforementioned studies have found a degree of accuracy in listed fat values in multiple processed foods. An alternate explanation for a lack of significant difference in fat content between the Breton pairs could be the low extraction efficiency. Although the average fat extraction efficiency across all food replicates was 87%, this value seems to be driven by the Lays and Quaker pairs which had comparatively high efficiencies (Supplementary Table 2). The low extraction efficiencies for the Breton crackers indicates that only a fraction of the fat present in the foods was extracted.

Similarly, high extraction efficiencies for the Quaker and Lays pairs may also be an indicator of extraction error. For instance, the extraction efficiency for five of the 6 combined replicates in these foods exceeded 100 % (Table 1). One explanation for these exorbitant efficiencies may be that the fat content labelled on the NFts is inaccurate, and that there is more

fat available to extract than the listed/expected amount. Another possibility for the high efficiency is that food particles may have entered the acetone cup, artificially inflating the final efficiency calculations. The third potential explanation is related to the location of fats in these foods. A large proportion of fats in snacks like potato chips are found in the form of a thin film on the food's surface (Dhital et al. 17). The availability of fat on the surface may aid in extracting fat more readily in foods like chips, leading to a higher extraction efficiency compared to the Breton crackers. Ultimately, it is possible that a combination of these factors may be influencing the efficiency.

Certain steps can be taken to reduce the sources of error in this experiment, and to achieve an accurate extraction efficiency. An added step that can be taken to enhance efficiency is oven drying the samples to remove water molecules prior to extraction. This is because many organic solvents like acetone are immiscible with water and cannot readily penetrate foods which contain water, resulting in inefficient extraction (Hewavitharana et al. 6866). In addition, a combination of two or three solvents can also be utilized, since extraction efficiency depends on the polarity of the lipid and solvent (Hewavitharana et al. 6866). For example, polar lipids such as glycolipids are more soluble in polar solvents like acetone, while non-polar lipids like triacylglycerols are soluble in non-polar solvents like hexane. Using a combination of solvents may have improved the efficiency, particularly for the Breton crackers. Finally, filtration with mesh strainers can be complemented by coffee paper filters, which can prevent the movement of food particles into the acetone cup. This can prevent erroneous and inflated fat content measurements, as likely seen in the Lays and Quaker products.

Conclusion

Our experiment revealed that the Lays Baked Potato Chips (65% Less Fat), Quaker Harvest Crunch Granola Light (30% Less Fat), and Wheat Thins (37% Less Fat) contained significantly less fat than their original brand-matched counterparts. This supports our hypothesis which suggested that foods marketed as “low fat” should contain less fat than the original product following solvent extraction. There was no significant difference in fat content between the Breton (35% Less Fat) and original product, which may be due to a low extraction efficiency.

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References

Beane, Chelsey R., Suzanne H. Hobbs, and Harsha Thirumurthy. "Exploring the Potential for using Results-Based Financing to Address Non- Communicable Diseases in Low- and Middle-Income Countries." *BMC Public Health*, vol. 13, no. 1, 2013, pp. 92-92.

Borgmeier, Ingrid, and Joachim Westenhoefer. "Impact of Different Food Label Formats on Healthiness Evaluation and Food Choice of Consumers: A Randomized-Controlled Study." *BMC Public Health*, vol. 9, no. 1, 2009, pp. 2-12.

Canadian nutrition label claims often wildly misleading, tests show, Global News, 20 Apr. 2012,https://globalnews.ca/news/236395/canadian-nutrition-label-claims-often-wildly-misleading-tests-show/. Accessed 6 April 2020.

Colby, Sarah E., PhD, RD, et al. "Nutrition Marketing on Food Labels." *Journal of Nutrition Education and Behavior,* vol. 42, no. 2, 2010, pp. 92-98.

"Consequences of Errors and Significance (Article)." *Khan Academy,* 2021, https://www.khanacademy.org/math/ap-statistics/tests-significance-ap/error-probabilities-power/a/consequences-errors-significance#:~:text=A%20Type%20I%20error%20is,a%20low%20value%20for%20%CE%B1.Accessed 4 April 2020.

Dhital, Sushil, et al. "Microstructural Properties of Potato Chips." *Food Structure*, vol. 16, 2018, pp. 17-26.

Fitzpatrick, Laura, et al. "Accuracy of Canadian Food Labels for Sodium Content of Food." *Nutrients*, vol. 6, no. 8, 2014, pp. 3326-3335.

Hewavitharana, Geeth G., et al. "Extraction Methods of Fat from Food Samples and Preparation of Fatty Acid Methyl Esters for Gas Chromatography: A Review." *Arabian Journal of Chemistry*, vol. 13, no. 8, 2020, pp. 6865-6875.

How Much Fat is in Your Food? *Science Buddies*, 23 June 2020, https://www.sciencebuddies.org/science-fair-projects/project-ideas/FoodSci_p077/cooking-food-science/how-much-fat-is-in-your-food?fbclid=IwAR20mhfbDM7_wCeYmkuMOIJ6MeS8PDhgg3uZJ3bzxg7R3uwXDKEwxS3qVqQ#materials. Accessed 3 April 2020.

Non Communicable Diseases. World Health Organization, 1 June 2018, www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases. Accessed 6 April 2020.

Pantazopoulos, Peter, et al. "Trans and Saturated Fat on Food Labels in Canada: Fact Or Fiction?" *Canadian Journal of Public Health*, vol. 102, no. 4, 2011, pp. 313-316.

Regulations and Compliance - Nutrition Labelling - Canada.ca, Government of Canada, 2 Feb. 2021, www.canada.ca/en/health-canada/services/food-nutrition/food-labelling/nutrition-labelling/regulations-compliance.html. Accessed 4 April 2020.

Schmidt, Sarah. “Canadian nutrition label claims often wildly misleading, tests show.” *Global News, 20 April 2012,* https://globalnews.ca/news/236395/canadian-nutrition-label-claims-often-wildly-misleading-tests-show/?fbclid=IwAR1XGPQQbiEr7BB_AlLMFBeZ7xGnfrud21GBzj7QnWq5FZLVcBUAiaCWMwY. Accessed 6 April 2020.

Appendix

Supplementary Equation 1. Sample equation used to calculate the mass of fat extracted in 10 g of Original Lays Chips. The values used are taken from the third replicate of this experiment (Supplementary Table 1).

Mass of "Acetone" cup after extraction – Mass of empty "Acetone" cup = Mass of extracted fat

333.3 g – 330.4 = 2.9 g of fat extracted from 10 g of Original Lays Chips (3rd replicate)

Supplementary Table 1: Table displays the mass of each "Acetone" cup before and after the crushed food was added and the fat content in grams per 10 g of food. The difference in cup mass before and after extraction denotes the fat content. There were three (N = 3) replicates per food.

Food	Replicate	Mass of cups before crushed food is added (g)	Mass of cups + crushed food before extraction (g)	Mass of crushed food (g)	Mass of cup after extraction (g)	Fat content in 10 g food sample (mass difference before and after extraction) (g)
Breton Brand Original Crackers	1	147.1	157.1	10.0	148.1	1.0
	2	148.0	158.0	10.0	149.2	1.2
	3	150.0	160.0	10.0	150.4	0.4
Breton Brand Crackers with Reduced Fat (35% Less Fat)	1	144.0	154.0	10.0	144.3	0.3
	2	311.6	321.6	10.0	312.0	0.4
	3	312.0	322.0	10.0	312.2	0.2
Lays Original Potato Chips	1	200.0	210.0	10.0	203.9	3.9

Lays Original Potato Chips	2	295.0	305.0	10.0	298.4	3.4
	3	330.4	340.4	10.0	333.3	2.9
Lays Baked Potato Chips (65 % Less Fat)	1	415.0	425.0	10.0	417.0	2.0
	2	245.1	255.1	10.0	246.6	1.5
	3	335.2	345.2	10.0	336.9	1.7
Quaker Harvest Crunch Original Granola Cereal	1	205.1	215.1	10.0	207.0	1.9
	2	210.3	220.3	10.0	211.9	1.6
	3	210.0	220.0	10.0	211.4	1.4
Quaker Harvest Crunch Granola Light (30% Less Fat)	1	285.2	295.2	10.0	286.4	1.2
	2	285.1	295.1	10.0	286.2	1.1
	3	270.0	280.0	10.0	271.0	1.0
Wheat Thins Original Crackers	1	183.1	193.1	10.0	184.7	1.6
	2	181.4	191.4	10.0	182.9	1.5
	3	182.0	192.0	10.0	183.3	1.3
Wheat Thins (37% Less Fat)	1	147.2	157.2	10.0	148.3	1.1
	2	148.3	158.3	10.0	149.3	1.0
	3	148.0	158.0	10.0	149.1	1.1

Supplementary Table 1 (Continued).

Supplementary Table 2: Table denotes the extracted fat content for each replicate in relation to the expected fat content per 10 g of food (based on the listed amount in the NFt). The fat extraction efficiency for each replicate is also shown. There were three (N = 3) replicates per food.

Food	Replicate	Fat content in 10 g food sample (g)	Expected fat content per 10g according to NFt (g)	Extraction efficiency (%)
Breton Brand Original Crackers	1	1.0	1.94	51.5
	2	1.2		61.9
	3	0.4		20.6
Breton Brand Crackers with Reduced Fat (35% Less Fat)	1	0.3	0.56	53.6
	2	0.4		71.4
	3	0.2		35.7
Lays Original Potato Chips	1	3.9	3.60	108.3
	2	3.4		94.4
	3	2.9		80.6
Lays Baked Potato Chips (65% Less Fat)	1	2.0	1.25	166.7
	2	1.5		125
	3	1.7		141.7
Quaker Harvest Crunch Original Granola Cereal	1	1.9	1.8	105.5
	2	1.6		88.8

Supplementary Table 2 (Continued).

Quaker Harvest Crunch Original Granola Cereal	3	1.4	1.8	77.8
Quaker Harvest Crunch Granola Light (30% Less Fat)	1	1.2	1.11	109.1
	2	1.1		100
	3	1.0		90.9
Wheat Thins Original Crackers	1	1.6	2.0	80.0
	2	1.5		75.0
	3	1.3		65.0
Wheat Thins (37% Less Fat than Original Wheat Thins Crackers)	1	1.1	1.25	88.0
	2	1.0		80.0
	3	1.1		88.0

Supplementary Table 3: Table displays the qualitative observations made during the extraction process. The color, texture, odor, viscosity and percentage of liquid fat for each replicate was recorded. There were three (N = 3) replicates per food.

Food	Replicate	Color	Texture	Odor	Viscosity	Percentage of Liquid Fat
Breton Brand Original Crackers	1	Orange	Light and oily	No odor	Thin and oily liquid at room temperature	100
	2	Orange	Light and oily	No odor	Thin and oily liquid at room temperature	100
	3	Orange	Light and oily	No odor	Thin and oily liquid at room temperature	100
Breton Brand Crackers with Reduced Fat (35% Less Fat)	1	Orange	Light and oily	No odor	Thin and oily liquid at room temperature	100
	2	Orange	Light and oily	No odor	Thin and oily liquid at room temperature	100
	3	Orange	Light and oily	No odor	Thin and oily liquid at room temperature	100
Lays Original Potato Chips	1	Light yellow	Light and oily	Light potato chip odor	Thin and oily liquid at room temperature	100
	2	Light yellow	Light and oily	Light potato chip odor	Thin and oily liquid at room temperature	100
	3	Light yellow	Light and oily	Light potato chip odor	Thin and oily liquid at room temperature	100

Supplementary Table 3 (Continued).

Lays Baked Potato Chips (65% Less Fat)	1	Medium yellow	Light and oily	No odor	Thin and oily liquid at room temperature	1000
	2	Medium yellow	Light and oily	No odor	Thin and oily liquid at room temperature	1000
	3	Medium yellow	Light and oily	No odor	Thin and oily liquid at room temperature	1000
Quaker Harvest Crunch Original Granola Cereal	1	Light beige	Soft and melts into oil when touched	No odor	Solid at room temperature and soft when touched	0
	2	Light beige	Soft and melts into oil when touched	No odor	Solid at room temperature and soft when touched	0
	3	Light beige	Soft and melts into oil when touched	No odor	Solid at room temperature and soft when touched	0
Quaker Harvest Crunch Granola Light (30% Less Fat)	1	Light beige	Soft and melts into oil when touched	No odor	Solid at room temperature and soft when touched	0
	2	Light beige	Soft and melts into oil when touched	No odor	Solid at room temperature and soft when touched	0
	3	Light beige	Soft and melts into oil when touched	No odor	Solid at room temperature and soft when touched	0
Wheat Thins Original Crackers	1	White	Light and oily	No odor	Thin and oily liquid at room temperature	1000

	2	White	Light and oily	No odor	Thin and oily liquid at room temperature	100

Wheat Thins Original Crackers	3	White	Light and oily	No odor	Thin and oily liquid at room temperature	100
Wheat Thins (37% Less Fat than Original Wheat Thins Crackers)	1	White	Light and oily	No odor	Thin and oily liquid at room temperature	100
	2	White	Light and oily	No odor	Thin and oily liquid at room temperature	100
	3	White	Light and oily	No odor	Thin and oily liquid at room temperature	100

Supplementary Table 3 (Continued).