

High Fructose Corn Syrup in Sweetened Beverages

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Introduction

- Nonalcoholic fatty liver disease (NAFLD) is a continuous spectrum of liver disease.
- NAFLD causes the liver to swell; swollen liver may cause scarring (cirrhosis) over time and lead to liver cancer/failure.
- Some individuals with NAFLD face abdominal pain, fatigue, and dark discoloration (acanthosis nigricans) around neck and underarm area.
- Children with fatty liver disease have diets high in fructose and their lifestyle features may contribute to liver damage.
- Greater intake of fructose in children with fatty liver has been associated with greater waist-to height ratio and lower regulation of glucose levels.
- The purpose of this study is to determine the amount of sweetened beverages in a sample of the Canadian food supply that contain high fructose corn syrup (HFCS), fructose, and other added sugars.

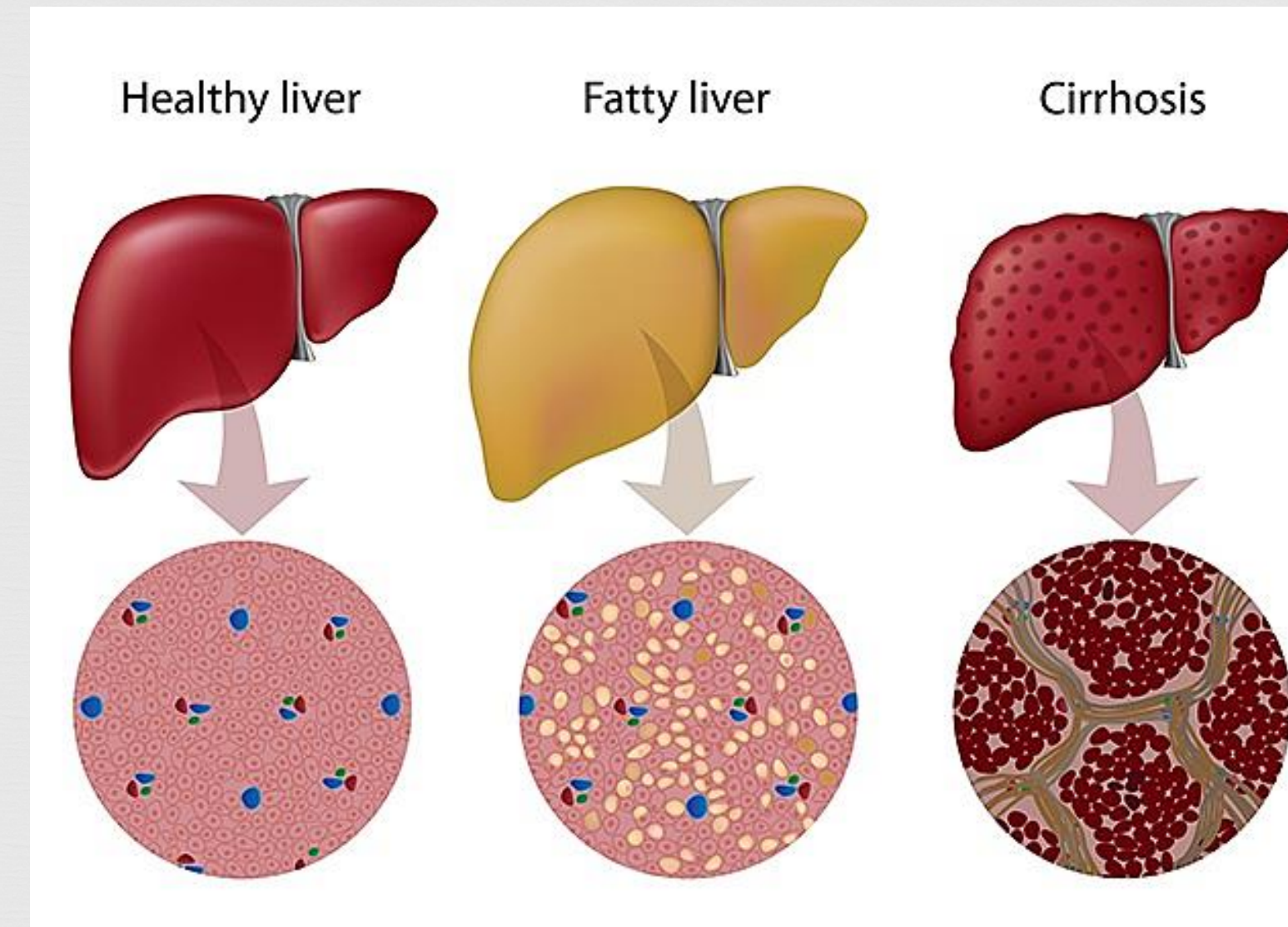


Figure 1: The stages of NAFLD: fatty liver, NASH, and cirrhosis⁵.



Figure 2: Dark discoloration (acanthosis nigricans) on a person's neck⁶.

Methods

- Took pictures of ingredient labels at two local grocery chains within Edmonton, AB (one as a web-based search).
- Collected information from ingredient labels of sweetened beverages, including whether product contained HFCS, fructose, or other added sugars.
- Divided beverages (excluding diet beverages) into seven categories: flavoured milks, soft drinks, fruit drinks, 100% juice, sport drinks and other (coffee flavoured drinks).



Figure 3: WISEST student researcher collecting data at a grocery store.

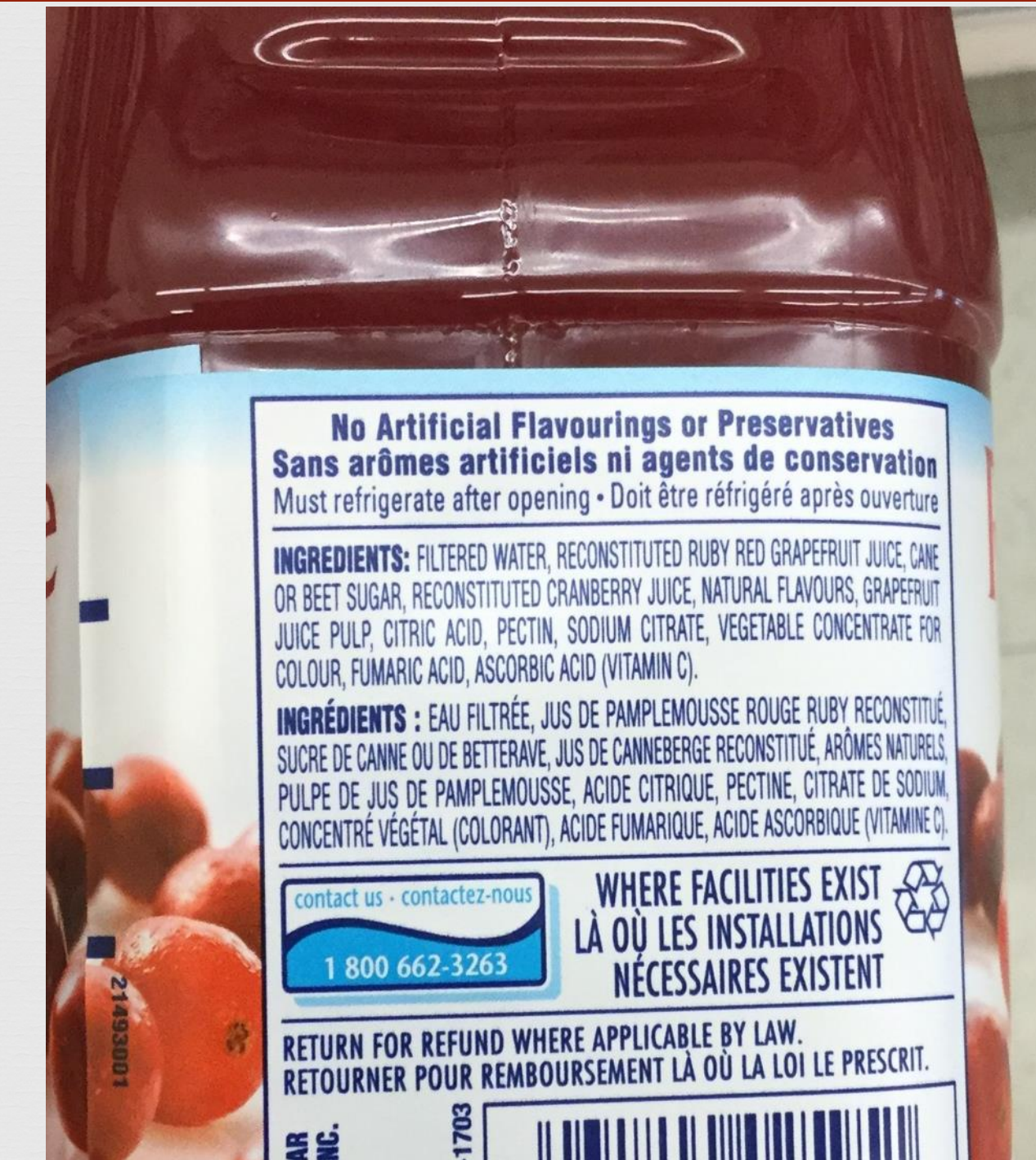


Figure 4: Nutritional information of a fruit drink found in a grocery store.

Results

Beverage Type	Number of Products
Soft Drinks	30
Flavoured Milks	27
Fruit Drinks	116
100% Juice	8
Energy Drinks	33
Sport Drinks	10
Other	1

Table 1: 225 sweetened beverages divided into respective categories in which they were studied.

HFCS in Sweetened Beverages

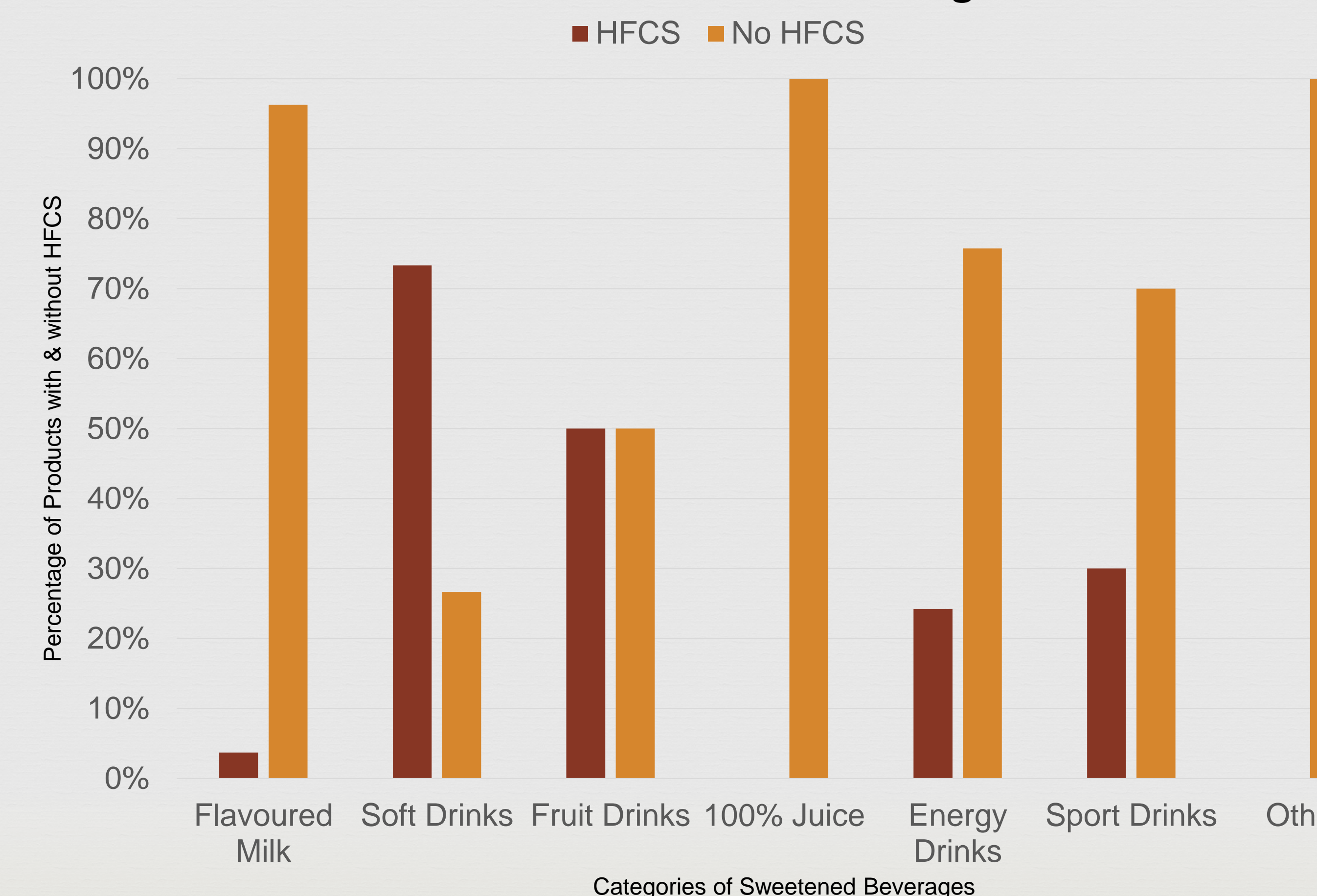


Figure 5: Amount of products with & without HFCS in different sweetened beverage categories.

Added Sugars in Sweetened Beverages

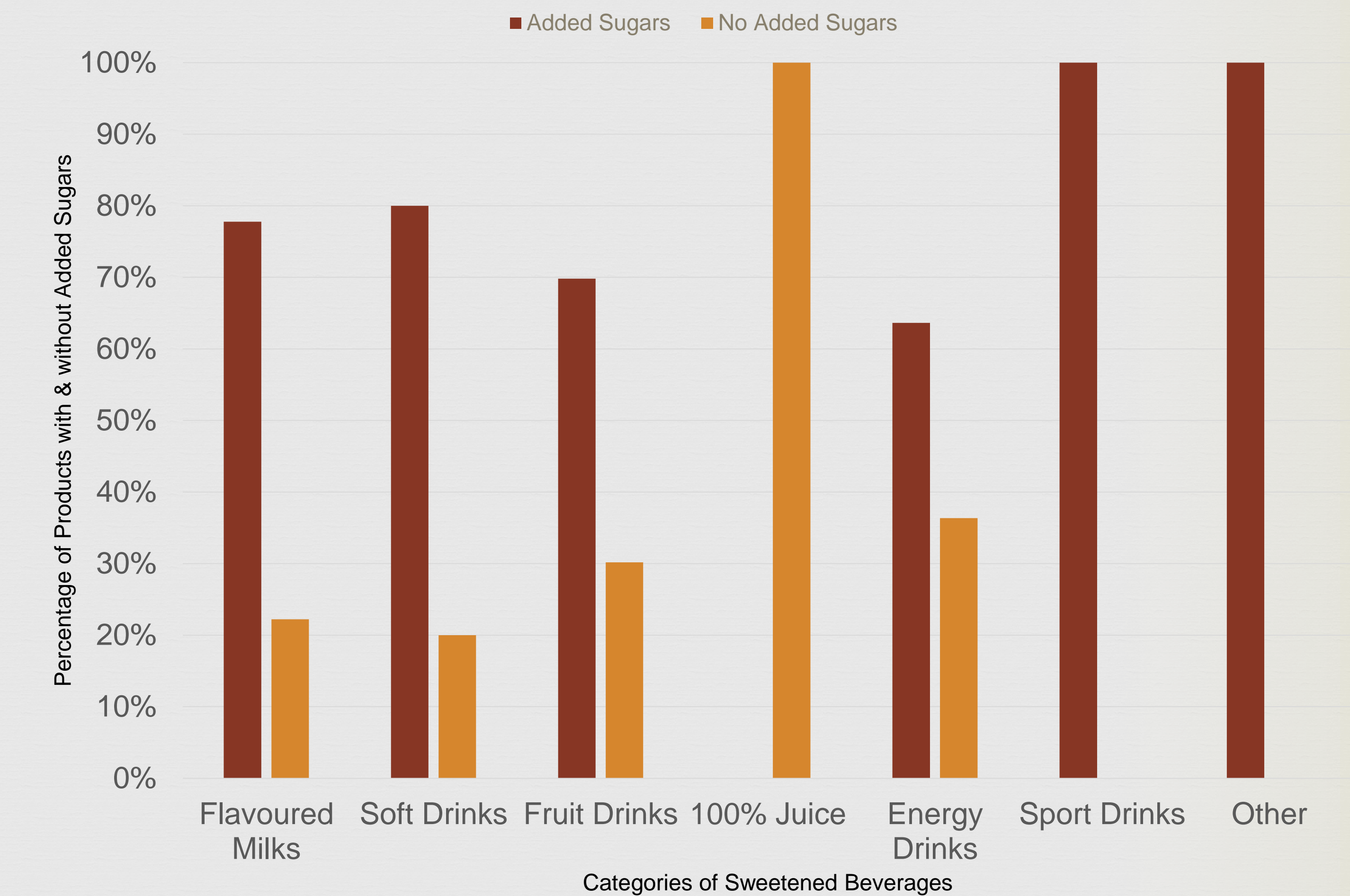


Figure 6: Amount of products with & without added sugars in different sweetened beverage categories where fruit juice concentrate was not considered an added sugar.

- 4/225 sweetened beverages contained fructose; all four were fruit drinks.

Conclusions

- Results show that 100% juice and unsweetened dairy beverages are a better option over other sweetened beverages because they contain no HFCS or added sugars, however, consumption of whole fruits is the best option for consumers and those with NAFLD for its higher fibre and nutrient content.
- Soft drink and fruit drink categories contain a significant amount of products with HFCS, indicating they should be avoided. Some soft drinks and fruit drinks did not contain HFCS or added sugars, but are instead sweetened with alternative sweeteners.
- Data collected contributes to improved knowledge about HFCS, fructose, and added sugar content in sweetened beverages.

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