



EISENHOWER HEALTH

Dietary Sugar in a California Public High School Meal Program: Are We Contributing to Lifelong Obesity?

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Introduction

The standard American school diet is heavily concentrated around refined sugars, the primary driver of weight gain among children. Obesity is an epidemic threatening the future of public health. It is linked to multiple chronic diseases such as metabolic syndrome and type II diabetes mellitus that ultimately affect quality of life and lifespan. The Coachella Valley (CV) of California has among the highest rates of childhood obesity in the state¹, especially among children of the lowest socioeconomic status. Unfortunately, our federal school meal programs are based on antiquated nutritional recommendations centered around processed carbohydrates as the main source of calories. The 2015 WHO nutritional guidelines recommend less than 10% of total energy intake from "free sugars", which is equivalent to 50g for a person of a healthy body weight consuming about 2000 calories per day².

Hypothesis

The purpose of this study is to investigate a U.S. government funded food program at multiple high schools within one of three school districts in the CV and evaluate its macronutrient content. We hypothesize these children are being fed a proportion of calories heavily skewed towards excess carbohydrates linked with promoting childhood obesity and multiple metabolic disorders.

Methods

The school district's nutrition director provided nutritional facts with macronutrient breakdown accounting for a 5-day school week in mid-January 2018 (Table 1). This included breakfast, lunch, and afternoon snack options. Some information was gathered through the manufacturers' website.

Results

The 5-day data collected from this government subsidized program shows that a typical student in a Southern California high school receives an average of 230g of carbohydrates per day. Of that, at least 65% (150g) of the carbohydrates are comprised mostly of refined or "free" sugars (Figure 3). This is approximately 750 grams of carbohydrates in one school week. This further equates to 61 pounds or 28 kg (Figure 1) of sugar in one school year. Over the course of four years in high school, a student could potentially consume 244 pounds or 111 kg (Figure 2) of processed sugar following this school meal program.

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	TOTAL
Total Fats	23 g	51 g	77 g	34 g	69 g	254 g
Total Carbs	145 g	266 g	314 g	187 g	238 g	1,150 g
*Glucose	101 g	193 g	229 g	116 g	181 g	820 g
*Fructose	44 g	73 g	85 g	71 g	57 g	330 g
Proteins	44 g	70 g	146 g	60 g	105 g	425 g

Table 1. The macronutrient intake in the food program at the high school for one week



FIG 2.
Sugar in 4
years of
high
school
(~244 lbs)



FIG 1.
Sugar in 1
school year
(~61 lbs)

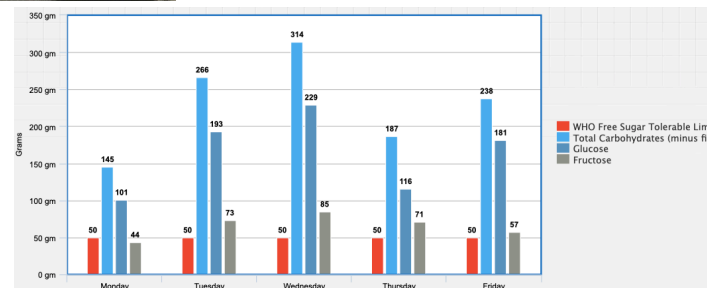


FIG 3. Sugar Content in Food of High School Subsidized Meal Program

Discussion

62% of CV children live at or below the 200% federal poverty level¹, which is 19% more than the rest of California at 43%³. Children in the CV suffer from 30% obesity rates¹, nearly double the national average of 18.5%⁴. Based on our data, CV high school children are consuming at least 3 times the daily recommended amount of sugar per day. This does not include meals consumed at home. Children are being fed excess calories in the form of processed sugars, which is contributing to an increase in obesity rates among out nation's youth. This is one of many government funded meal programs, which promotes obesity and subsequently a lifetime struggle with obesity-related diseases. While meals provided at school are only one contributor to the childhood obesity epidemic in this country, it is an area that needs improvement via advocacy and public policy.

References

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