Do We Eat Too Much Sugar?

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Due Date: 4th September

School: Southport State High Independent Public School

Aim: To determine if we consume too many processed sugars

Hypothesis: If a group of year 7 students are offered the choice to eat a piece of food with natural sugars or processed sugars, THEN they will choose the food with the processed sugars, BECAUSE we as humans enjoy the taste and pleasure of eating foods which contain processed sugar.

Materials and Equipment:
- 2 apples
- 2 mandarins
- Punnet of strawberries
- 2 packets of lollies
- 2 blocks of chocolate
- 3 plastic plates
- 1 plastic knife
- 45 year 7 students (male & female)

Method
1. Cut apples into 8th’s, cut the strawberries in half and peel and separate mandarin segments. Then break apart the chocolate into singular squares.

2. Place the foods with the processed sugars (chocolate, jelly babies and banana lollies) on one plate, and the foods with the natural sugars (apples, mandarins, strawberries) on the other.

3. Go around to year 7 classrooms and select a random group of students from each class, and give them the choice of one piece of food from either plate.

4. Record findings in data table
Table of results

Preferred Choices Of Year 7 Students

<table>
<thead>
<tr>
<th>Food option</th>
<th>Number of students that picked this option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>3</td>
</tr>
<tr>
<td>Mandarin</td>
<td>2</td>
</tr>
<tr>
<td>Strawberry</td>
<td>9</td>
</tr>
<tr>
<td>Chocolate</td>
<td>24</td>
</tr>
<tr>
<td>Jelly Baby</td>
<td>5</td>
</tr>
<tr>
<td>Banana Lolly</td>
<td>2</td>
</tr>
</tbody>
</table>

Food choices of Year 7 students

- **Foods With Processed Sugars**: 69%
- **Foods With Natural Sugars**: 31%
Overall the results of this experiment weren't exactly surprising, although there were a couple of anomalies that surfaced. Of these 45 year seven students, 14 chose the natural sugars and 31 chose the processed sugars. The graph showed that, as predicted, processed sugars were overwhelmingly favoured by the students. A conclusive 69% of the people tested chose the unhealthy processed sugar foods, with only 31% choosing the healthier choice. Out of the processed sugars chocolate was by far the most popular with 24 students choosing it. The two food items which were the least most popular were the mandarins and the banana lollies. What came as a surprise was that at one point during the observations, natural sugars and processed sugars were tied, however in the end processed sugars were still by far the most popular. This wasn't terribly surprising, but what question now remains is why?

Extensive research shows that there are actually a number of contestable reasons for our sugar cravings. Some scientists argue that it is because sugar is an 'addictive drug'. They say that there are 'clear similarities between pathological obesity that involves over eating and addictions', however, just because people chose chocolate and lollies over fruit, doesn't mean that they are addicted to sugar. It could just be because they prefer the taste, or simply, just don't like fruit.

Another observation made during this experiment, was that although the foods with processed sugars were a more popular choice with the students than the fruits with natural sugars, a lot of people still chose the fruit over the lollies. A reason that may be the cause of this, was the temperature on the day that the test was conducted. It was around 27 degrees Celsius when the test subjects were asked to chose what they prefer, which may have caused them to want more refreshing types of food, whereas if the temperature was lower, they may have wanted something more indulgent such as the foods with the processed sugars.

To make this test a little bit more fair, students could have been tested some place where the temperature wouldn't have affected their choice. This would've guaranteed that their choices were completely based on taste and what people enjoy in general. Another thing that could have been done, was to make sure that all test subjects were the same age, to prevent anything to do with their age changing their choice. Other than that it was a fair test, because one thing was changed, one thing was measured, and everything else was kept the same.
How will this experiment influence scientific studies?
One of the major problems that the human race will face in the future is diabetes. Already in 2015 280 Australians develop diabetes EVERY DAY, that's one person every FIVE MINUTES. By doing this experiment, governments are being informed why people have a desire for sugar, which means people can be influenced about how to stop themselves from being diagnosed. It is absolutely horrific how many people have to suffer just because of their need for sugar. Type 1 diabetes accounts for 10% of all diabetes and is increasing, and type 2 diabetes accounts for 85% of all diabetes and is increasing. That is something that needs to be addressed by society. Another startling fact is that in 1915 the national average sugar intake was 15-20 pounds per person but now the average person consumes his/her body weight in sugar.

Overall, the hypothesis was accepted because it turned out to be correct in saying that the students tested would pick the processed sugars over the natural sugars, however we cannot be sure whether it is because they enjoy the taste of it, or something else....