CHILDHOOD OBESITY – A Growing Public Health Concern
84th UWI/BAMP CME Conference November 17-18, 2018

Professor Alafia Samuels
Director, George Alleyne Chronic Disease Research Centre, CAIHR, UWI
BURDEN OF CHILDHOOD OBESITY
% Childhood Obesity (> +2SD from median BMI) by gender: from Global School Health Survey (2009-2013)
Childhood Obesity

INCREASING NUMBER OF OVERWEIGHT CHILDREN AROUND THE WORLD

Percentage overweight

- England
- Scotland
- Australia
- Chile
- Germany
- Japan
- Iceland
- USA

SOURCE: Government Office for Science
Childhood Obesity Hypertension

Percentage of Overweight Children With BP in 95th Percentile

- Boys
- Girls

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 5</td>
<td>7.8%</td>
<td>7.9%</td>
</tr>
<tr>
<td>6 - 10</td>
<td>10.8%</td>
<td>11.2%</td>
</tr>
<tr>
<td>11 - 15</td>
<td>20.0%</td>
<td>19.8%</td>
</tr>
<tr>
<td>16 - 19</td>
<td>18.5%</td>
<td>20.8%</td>
</tr>
</tbody>
</table>

Note: Based on a retrospective study of 18,618 patients.
Source: Dr. Rappaport
Barbadian Children 9 and 10 years in 2010

• Prev overweight/obese among 9-10 year old 8% in 1981 of 33% in 2010
• 12% had high blood pressure (4,000+ children)
• Blood pressure was related to body size
• Children were almost 3 times more likely to be OWOB if annual household income <BBD 9000

RED FLAG

• Premature deaths from obesity and overweight, 2nd only to tobacco-related deaths in USA.

• Obesity would surpass tobacco as the leading cause of death worldwide in the next decade.

• Obesity is the leading cause of premature death in Barbados
EAT LIKE YOUR LIFE DEPENDS ON IT, BECAUSE IT DOES
IN ALL AGE GROUPS
OBESITY HAS LEFT ITS MARK

Nutrition & Death in the Caribbean

Heart disease
Cancer
Diabetes
Hypertension
Stroke

57% mortality is nutrition related
PAY THE FARMER NOW

OR PAY PHARMA LATER
DRIVERS OF CHILDHOOD OBESITY
Social determinants of child obesity

- childcare
- school environment
- agricultural law
- trade
- food systems
- enforcement
- built environment
- fiscal measures
% Physical activity for 60 minutes/day during last 5/7 days from GSHS (2007-2013)

Antigua & Barbuda
Trinidad & Tobago
Barbados
British Virgin Islands
Belize
Suriname
St. Kitts
Dominica
Bahamas
Guyana
Montserrat
St. Vincent & Grenadines
St. Lucia

Physical Activity (%F)    Physical Activity (%M)
Myth v. Truth

• **Myth**: just exercise more and eat what you want.

• **Truth**: exercise alone generally won’t work (it takes 2 hours of brisk walking to burn off 500 calories – small chocolate and small pack of chips).
COMMERCIAL DETERMINANTS OF CHILDHOOD OBESITY
Corporate sector determining health of populations

• “Commercial determinants of health” defined as “strategies and approaches used by the private sector to promote products and choices that are detrimental to health”. (Lancet December 2016)
Commercial determinants of health

- Multinational food and beverage companies promote overconsumption of highly processed, unhealthy food and sugary drinks for profit
- Like tobacco, marketing is shifting from high income countries to developing countries, including in the Caribbean


Marketing to Children

• Nestle and others still promoting breast milk substitutes and depressing breast feeding rates
• Chefette and others in Barbados branding blackboards, calendars school supplies in primary schools
• Marketing influences childrens’ preferences, requests, consumption
• Result: 30% childrens calories from sweets, drinks, salt snacks, fast food
Born to buy: How advertising targets young consumers

Dr Emma Boyland

Biopsychology Research Group
Liverpool Obesity Research Network
University of Liverpool
Television and film

Programme sponsorship

Product Placement
Internet advergaming
Event sponsorship
Promotional Characters

Licensed characters

Nestle Mud & Worms

Licensed characters
Premium offers/giveaways
EFFECTS OF FOOD ADVERTISING
Television and energy intake

• Television viewing has been associated with:
  • Increased meal frequency (Stroebele & Castro, 2004).
  • Fast food consumption (Taveras et al., 2006).
  • Snacking (Snoek et al., 2006; Thomson et al., 2006).
  • Increased intake of dietary fat (Epstein et al., 2005; Miller et al., 2008).
  • Lower intake of fruit and vegetables (Boynton-Jarrett et al., 2003).

6 months: Forming mental images of corporate logos and mascots.

2 years: Children may already have beliefs about specific brands.

3 years: Already making specific requests for brand name products. Can identify brand names & logos especially with cartoon characters.

Lifetime: A lifetime consumer in the US is worth an estimated $100,000 to a retailer.

Children start to express self-care activities including food choice between ages of 3-8 and these are stable by 9-11 years (Kennedy, 2000).

Brand-building must therefore start in toddler-hood (Story & French, 2004).
St. Phillip Primary School Tour
TRANSITION TO PROCESSED FOODS
Corporations Control Almost Everything You Buy—This Chart Shows How
Figure 12. Food imports into CARICOM countries, 1990-2011 (US$ million)

Source: FAOSTAT, 2015.
Obesity (%) and the caloric share (%) of ultra-processed products

![Graph showing the relationship between obesity and the share of ultra-processed products, with data points for Mexico, UK, Chile, Canada, Colombia, and Brasil. The graph includes the regression line equation $y = 0.2701x + 9.7782$ and the coefficient of determination $R^2 = 0.6582$.](image-url)
This is what real food looks like
ADDED SUGAR
Trends in sweetened drink consumption

Stuckler and Nestle 2013
The Caribbean has been estimated to have the highest SSB consumption in the world with an estimated 2 SSB/person/day (Jou & Techakehakij 2012).
% Drank carbonated soft drinks during the past 30 days from GSHS (2009-2013)
The Glycemic Index

From the Psychology Dept. website at Vanderbilt University 9.24.2007
Glycemic Index

- way of classifying food according to their ability to raise blood glucose
- High glycemic index = rapid, immediate rise in blood sugar

<table>
<thead>
<tr>
<th>Glycemic Index of commonly consumed foods</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Based on Glucose as a level of 100</td>
<td></td>
</tr>
<tr>
<td>55-100+ is considered high</td>
<td></td>
</tr>
<tr>
<td>Maltose (as used in beer)</td>
<td>105</td>
</tr>
<tr>
<td>Glucose</td>
<td>100</td>
</tr>
<tr>
<td>White bread</td>
<td>95</td>
</tr>
<tr>
<td>Baked potatoes</td>
<td>95</td>
</tr>
<tr>
<td>Carrots (cooked)</td>
<td>85</td>
</tr>
<tr>
<td>carrots (juiced)</td>
<td>80</td>
</tr>
<tr>
<td>Rice cakes</td>
<td>80</td>
</tr>
<tr>
<td>Honey</td>
<td>75</td>
</tr>
<tr>
<td>Refined sugar</td>
<td>75</td>
</tr>
<tr>
<td>Corn (cooked)</td>
<td>75</td>
</tr>
<tr>
<td>Puffed Wheat</td>
<td>75</td>
</tr>
<tr>
<td>Cornflakes</td>
<td>75</td>
</tr>
<tr>
<td>White rice</td>
<td>70</td>
</tr>
<tr>
<td>Shredded wheat</td>
<td>70</td>
</tr>
<tr>
<td>Millet</td>
<td>70</td>
</tr>
<tr>
<td>Raisins (seedless)</td>
<td>65</td>
</tr>
<tr>
<td>Pasta</td>
<td>65</td>
</tr>
<tr>
<td>Bananas</td>
<td>60</td>
</tr>
<tr>
<td>Couscous</td>
<td>60</td>
</tr>
<tr>
<td>Basmati Rice</td>
<td>60</td>
</tr>
<tr>
<td>Spaghetti, white</td>
<td>60</td>
</tr>
<tr>
<td>Rye Sourdough</td>
<td>55</td>
</tr>
<tr>
<td>Wild rice</td>
<td>55</td>
</tr>
<tr>
<td>Brown rice</td>
<td>55</td>
</tr>
<tr>
<td>Popcorn</td>
<td>55</td>
</tr>
<tr>
<td>Kiwi, Grape, Mango</td>
<td>50</td>
</tr>
<tr>
<td>Whole-grain pasta</td>
<td>45</td>
</tr>
<tr>
<td>Plum, Apple, Orange</td>
<td>40</td>
</tr>
<tr>
<td>Lentils &amp; Peas</td>
<td>40</td>
</tr>
<tr>
<td>Chick Peas</td>
<td>35</td>
</tr>
<tr>
<td>Apricot, dried</td>
<td>30</td>
</tr>
<tr>
<td>Milk</td>
<td>30</td>
</tr>
<tr>
<td>Nuts</td>
<td>15-30</td>
</tr>
<tr>
<td>Hempseed</td>
<td>15</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>15</td>
</tr>
<tr>
<td>Soy beans</td>
<td>15</td>
</tr>
<tr>
<td>Green Vegetables</td>
<td>0-15</td>
</tr>
</tbody>
</table>
Added sugar in drinks

• Calories from simple sugars added to drinks do not satisfy hunger, there is no feeling of fullness
  – *Wasted calories*

• Sugar in SSBs contain no nutrients
  – *Empty calories*

• Sugar in SSBs have very high glycemic index causing a spike in blood sugar and in insulin
  – *Dangerous calories*
Obesity and SSBs

• The association between SSB consumption and weight gain is stronger than for any other food or beverage (Lavin, Timpson 2013)

• SSB is the leading cause of obesity, diabetes and heart disease in both adults and children


The connection between sugar and obesity
Two sodas a day DOUBLE the risk of heart disease, study warns

A 2014 study published in the JAMA Internal Medicine found people who consumed 25 percent of more of their daily calories as added sugar were more than twice as likely to die from heart disease as those whose diets included less than 10 percent added sugar.

A report published by Harvard University in 2013 revealed that about 180,000 obesity-related deaths worldwide were associated with the consumption of sugary drinks.
CONFRONTING THE OBESITY EPIDEMIC
San Francisco: Warning Labels

WARNING: Drinking beverages with added sugar(s) contributes to obesity, diabetes, and tooth decay. This is a message from the City and County of San Francisco.
Political leadership

Former President of Chile, Michelle Bachelet, a pediatrician and former political prisoner served twice, from 2006 to 2010 and from 2014 to 2018
Objectives:
1) Protection of boys and girls.
2) Promotion of informed food selection.
3) Reduced consumption of food containing high levels of calories, saturated fats, sugar and sodium.

- Front of the package warning labeling about "high in" content of calories, saturated fats, sugar and sodium.
- Advertising of food "high in" certain ingredients restricted for children under the age of 14.
- Education, nutrition and the promotion of physical activity.
- Restricted sale of food "high in" certain ingredients (preschool, elementary school and high school).
APPROVAL OF A NEW FOOD ACT IN CHILE:
PROCESS SUMMARY
Entry into force: June 2016
Chile’s childhood obesity programme

- 2014: 8% tax on SSBs
- 2006: Start process for 4 point package
- 2016: 4 point package
- 2018: 6 am – 10 pm ban on television ads for unhealthy foods
Chile Results

• High compliance of industry with labelling
• Reformulation by industry to reduce sodium, sugar, saturated fats and calories to avoid labels
• Reduction in advertisements of unhealthy foods
• Cartoon and brand characters removed from packaging
• Consumers understand logos and able to distinguish healthy from unhealthy foods
• HUGE reduction in consumption of SSBs
Barbados implements tax on sugar sweetened beverages: $5.70 vs $6.10
Barbados SSB tax

• 10% SSB tax (6% passed to consumers) associated with
  o 4% decrease in the sales of SSBs
  o 8% increase in the sales of water

IMPACT VERY SIMILAR TO MEXICO

10% SSB tax (10% passed to consumers)
  o 6% decrease in the sales of SSBs
“FRIENDLY” PROFITABLE PRIVATE SECTOR
PRIVATE SECTOR RESPONSE

- Frozen food products Jamaica, St Vincent, Trinidad
- Red Stripe experience – Jamaica
- Bakery sector – (Purity Bakeries) Barbados, (Village Bakery) Grenada, Guyana, (National) Jamaica, (Mannee’s Bakery) St Lucia, (Ems Bakery – Trinidad)
- Health Food/ Specialty Foods – Cassava flour pasta (Slim down – Trinidad); cassava muffin (small entrepreneur – Barbados)
- Tobago Cassava Products Limited – Tobago (cassava punch, fruit cake, blended bread, farine)
- Indigenous community
  - Cassava porridge – Suriname; Farine – OECS andn Guyana
- Overall increase in production and processing
Friendly private sector: Island Grill Jamaica
Answering the question: Well what should we eat?

Island Grill launches Supaah Foods

Widely perceived as the healthiest quick service restaurant (QSR) chain in Jamaica, Island Grill has taken their philosophy a step further, with the launch of their “Supaah Food” menu. The menu consists of locally grown foods that are...
Jamaica: Are you drinking yourself sick?
Thank You