UWI

The George Alleyne Chronic Disease Research Centre

Caribbean Institute for Health Research

CHILDHOOD OBESITY – A Growing Public Health Concern

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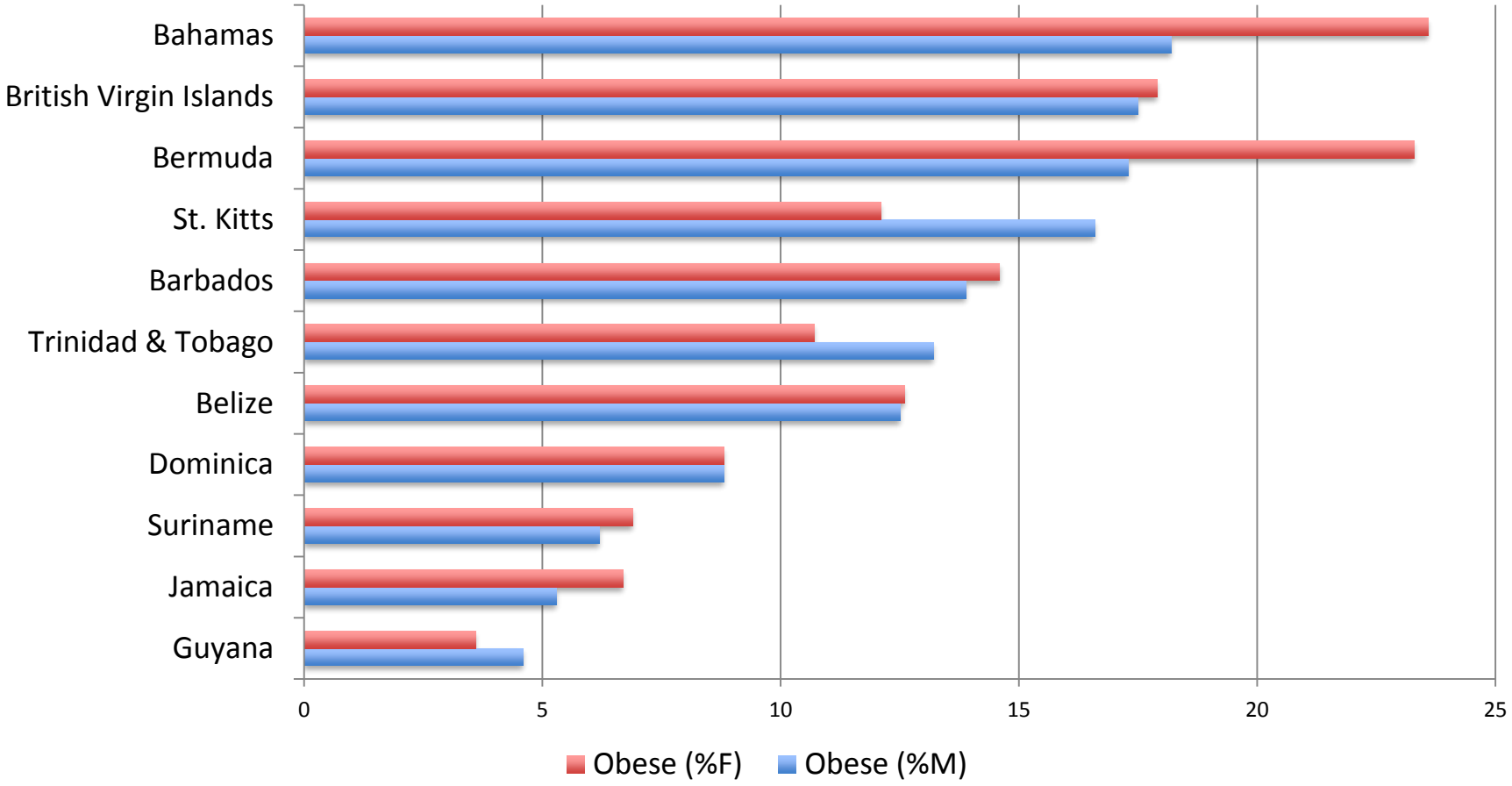
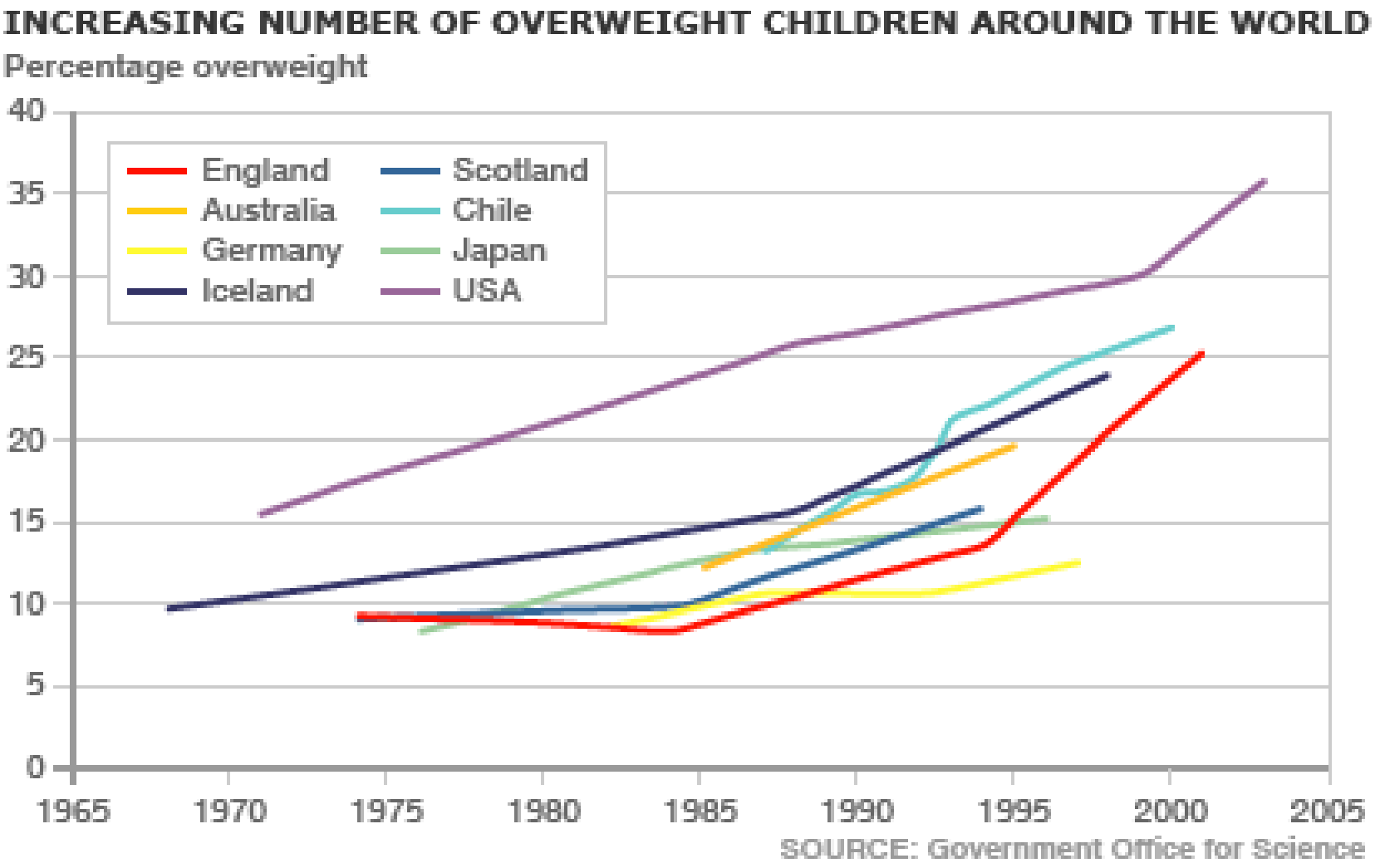
BURDEN OF CHILDHOOD OBESITY

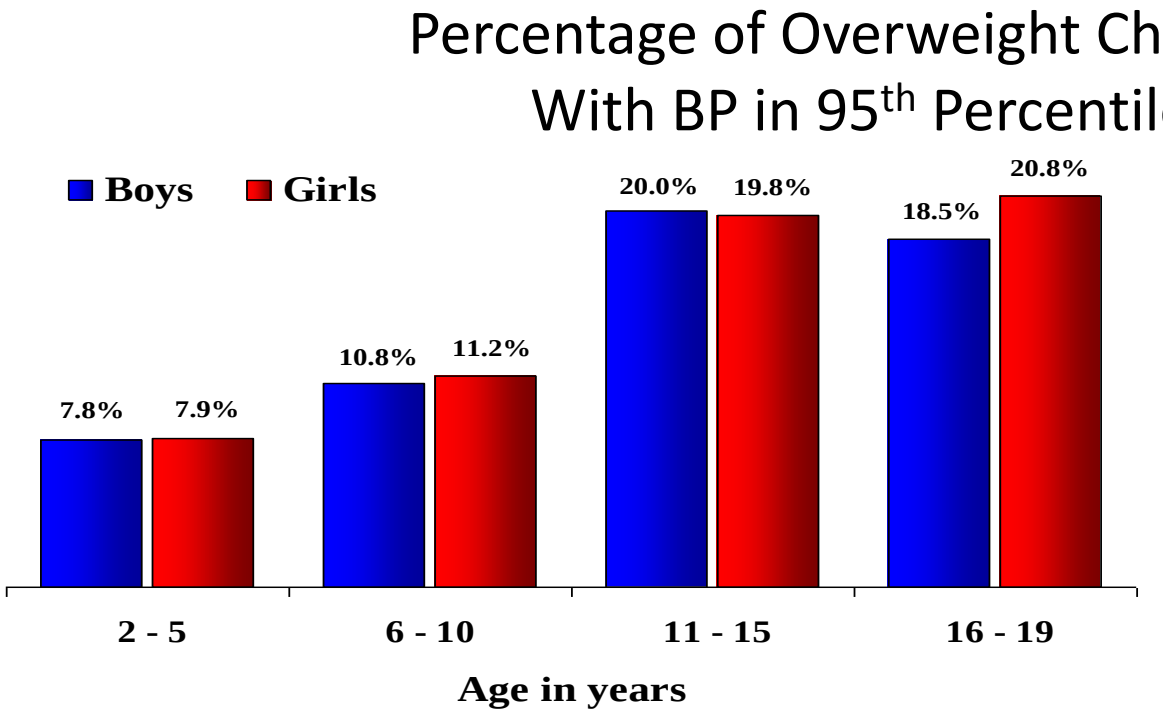
% Childhood Obesity (> +2SD from median BMI) by gender: from Global School Health Survey (2009-2013)



Childhood Obesity



Childhood Obesity Hypertension



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

- Ref: Fernandez MA, Kubow S, Gray-Donald K, Knight J, Gaskin PS. Drastic increases in overweight and obesity from 1981 to 2010 and related risk factors: results from the Barbados Children's Health and Nutrition Study. Public Health Nutr. 2015 Dec;18(17):3070-7.

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

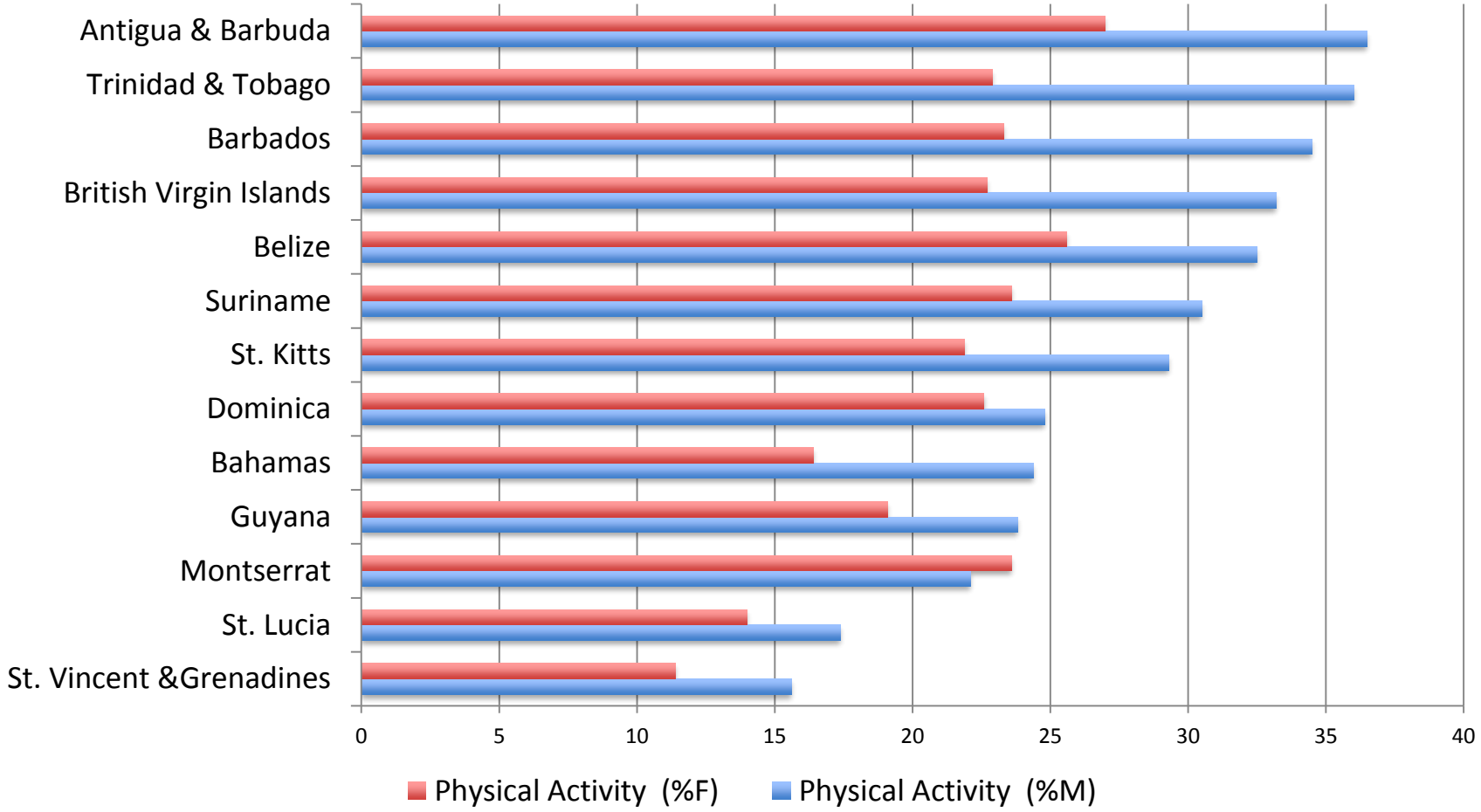
PAY THE FARMER NOW
OR PAY PHARMA LATER

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)



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

Moodie R., Stuckler, D., Monteiro, C., Sheron, N., Nea,l B., Thamarangsi, T., et al. (2013). Profits and pandemics: prevention of harmful effects of tobacco, alcohol, and ultra-processed food and drink industries. *Lancet, 381(9867), 670-679.*

Stuckler D, McKee M, Ebrahim S, Basu S. Manufacturing epidemics: the role of global producers in increased consumption of unhealthy commodities including processed foods, alcohol, and tobacco. PLoS medicine. 2012;9(6):e1001235.

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

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Television and film

Programme sponsorship

Product Placement

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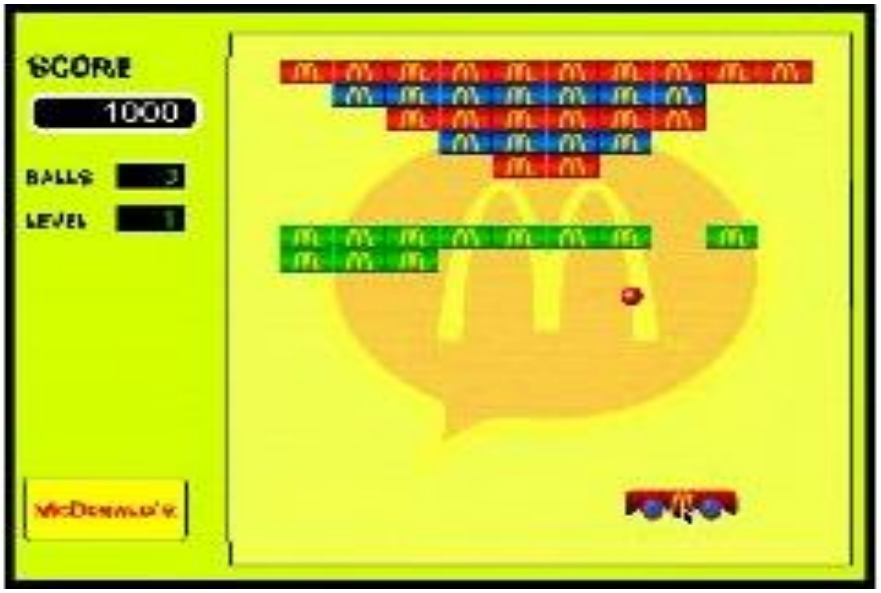
Internet advergaming



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Event sponsorship

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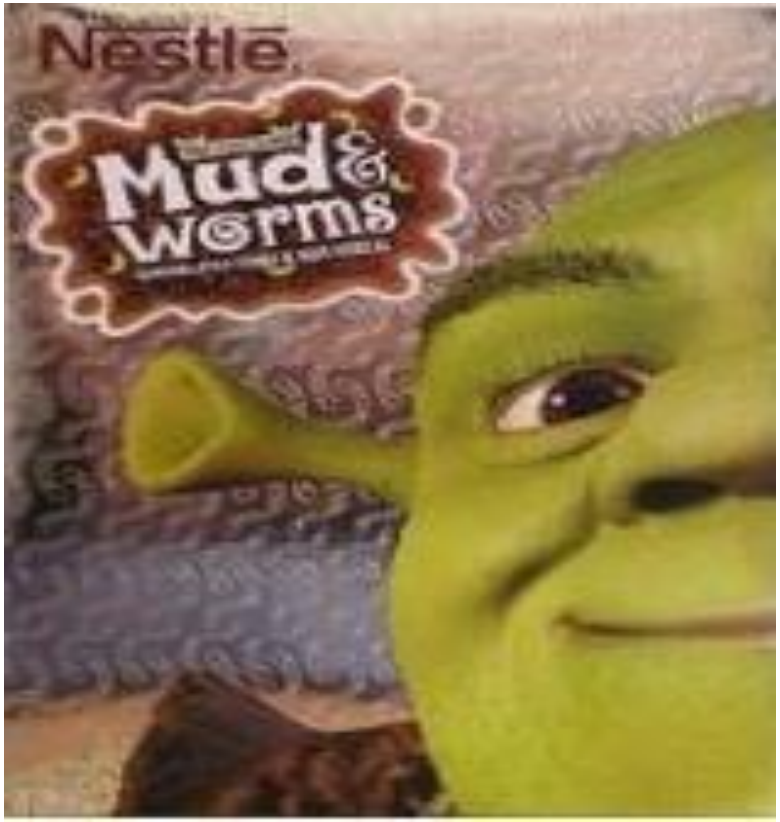
Promotional Characters

Licensed characters



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Premium offers/giveaways

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EFFECTS OF FOOD ADVERTISING

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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).

Creating Brand Preference in Children (Consumer International, 2004)

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).

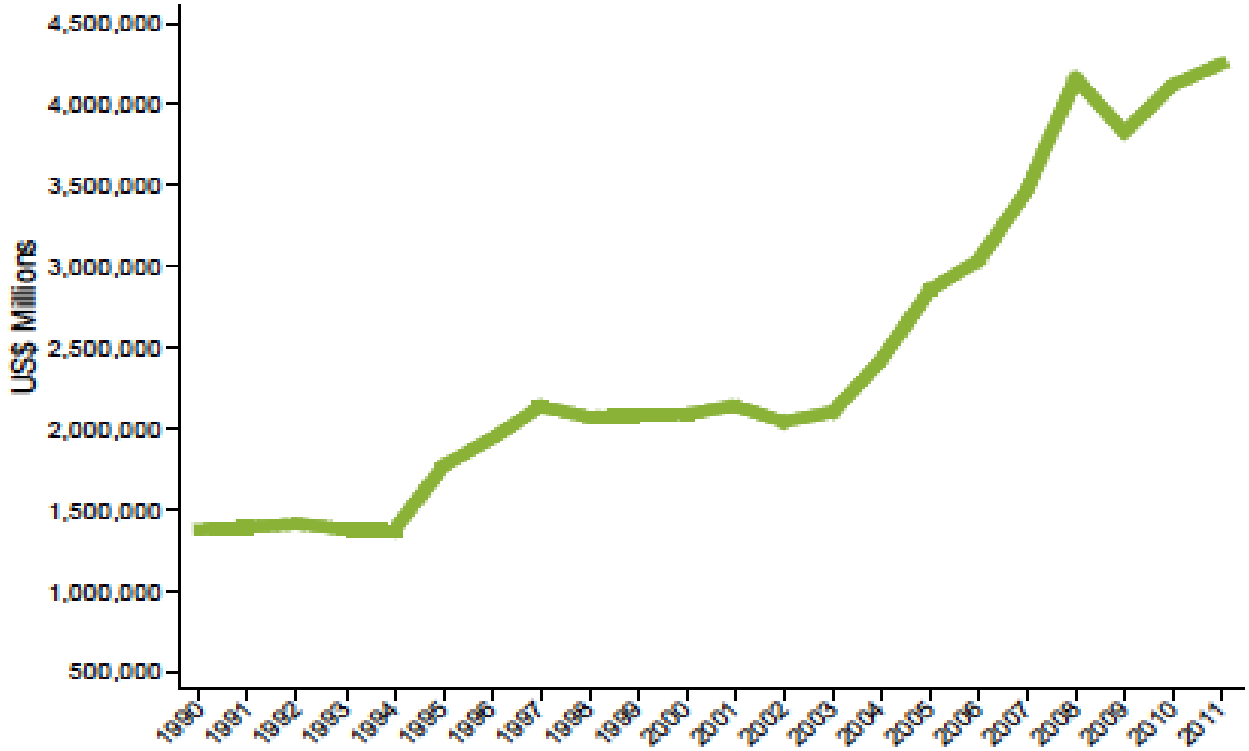
Chefette
Chefette
SPEED
Speed Team Girls
Chefette
Name:
Class:
Subject:
www.chefette.com
www.chefette.com
BBQ
MIKEY
2Mile Hill

St. Phillip Primary School Tour

TRANSITION TO PROCESSED FOODS

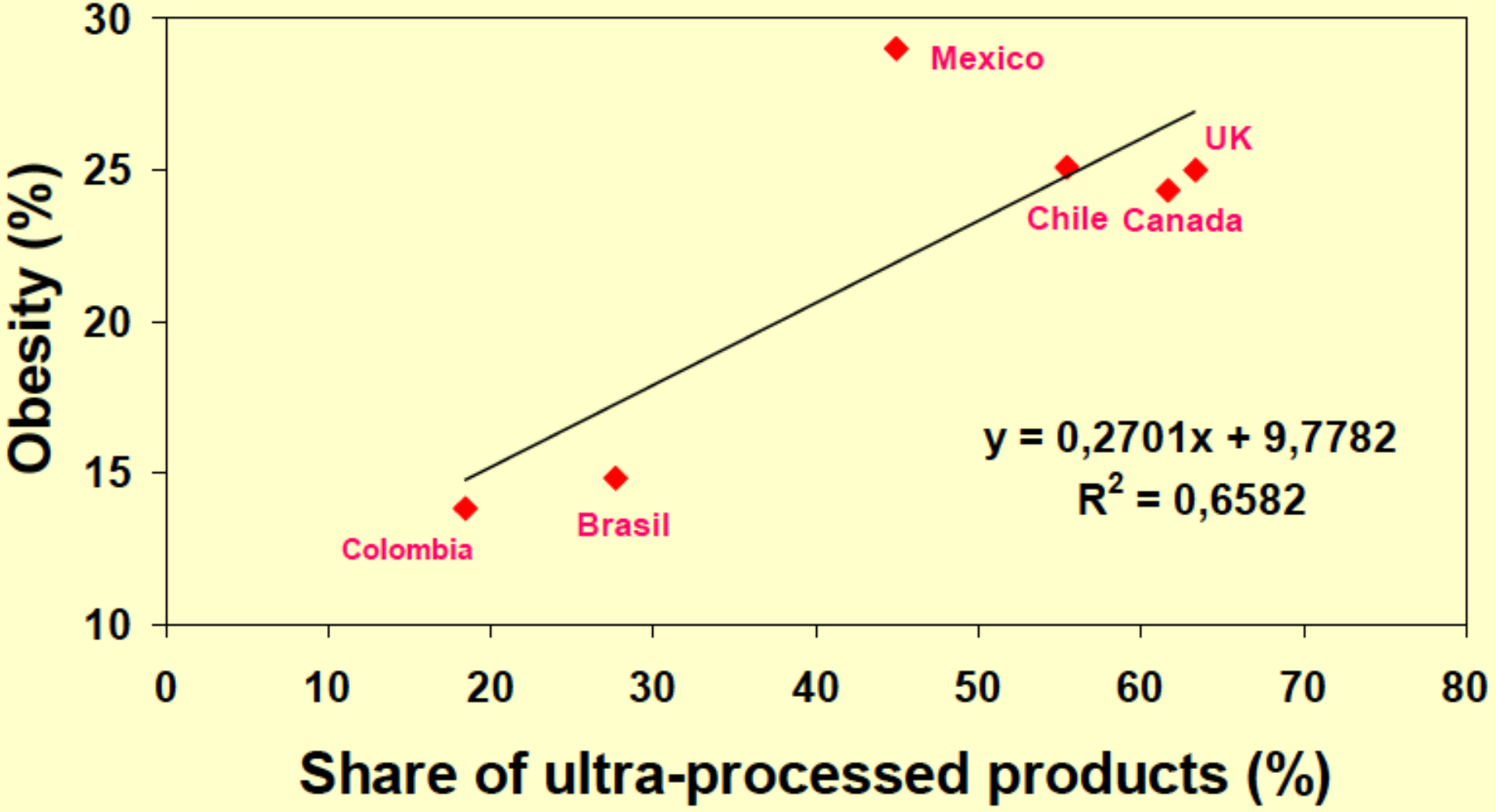
KRAFT
Coca-Cola
PEPSICO
Kellogg's
MARS
Nestlé
P&G
Johnson&Johnson
Unilever
WRIGLEY
GLACÉAU
Yum!
QUAKER
Spin-off
$$$

Figure 12. ***Food imports into CARICOM countries, 1990-2011 (US$ million)***



Source: FAOSTAT, 2015.

Obesity (%) and the caloric share (%) of ultra-processed products

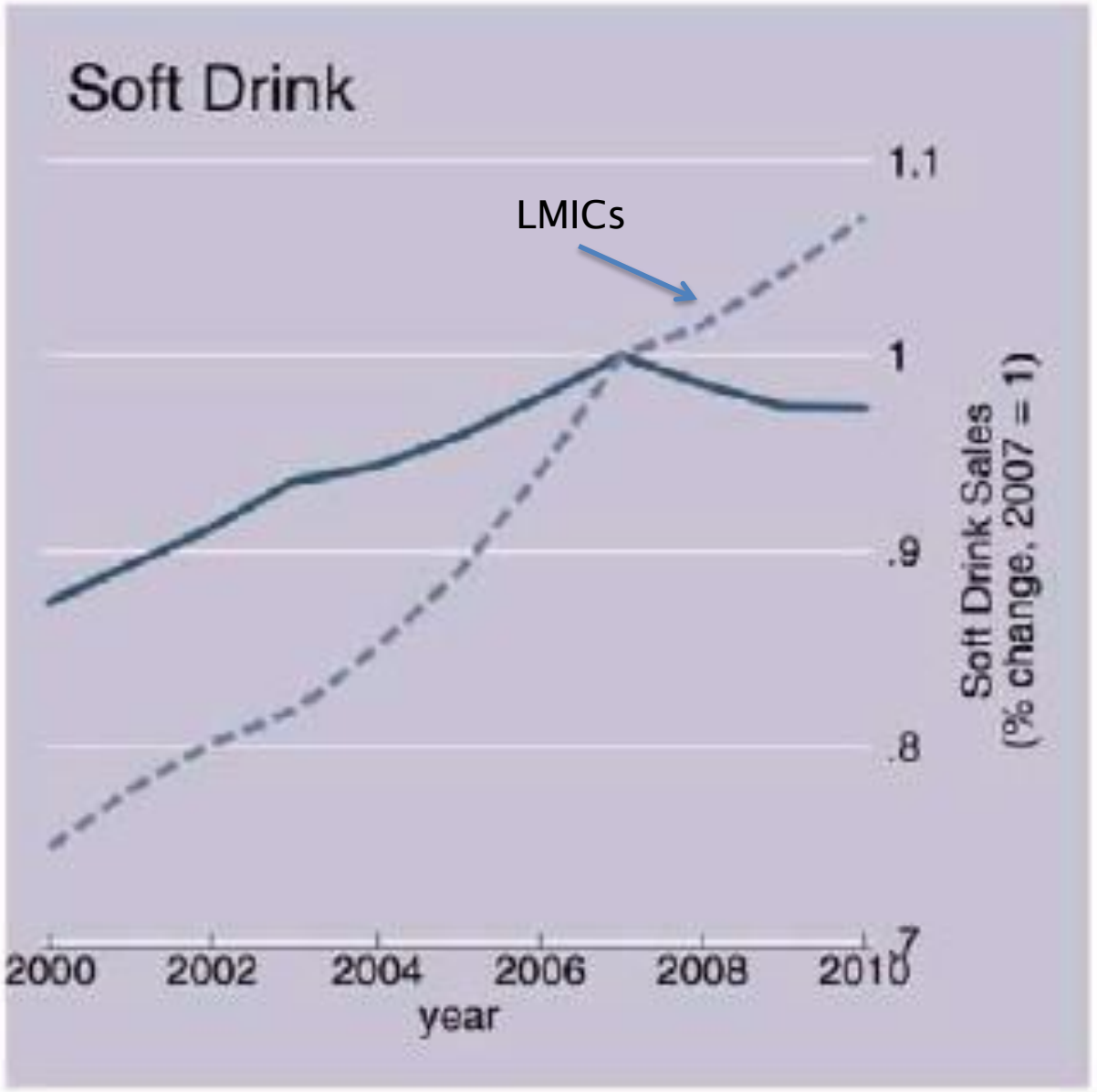


This is what
real food
looks like

ADDED SUGAR

Trends in sweetened drink consump-tion

Stuckler and Nestle 2013

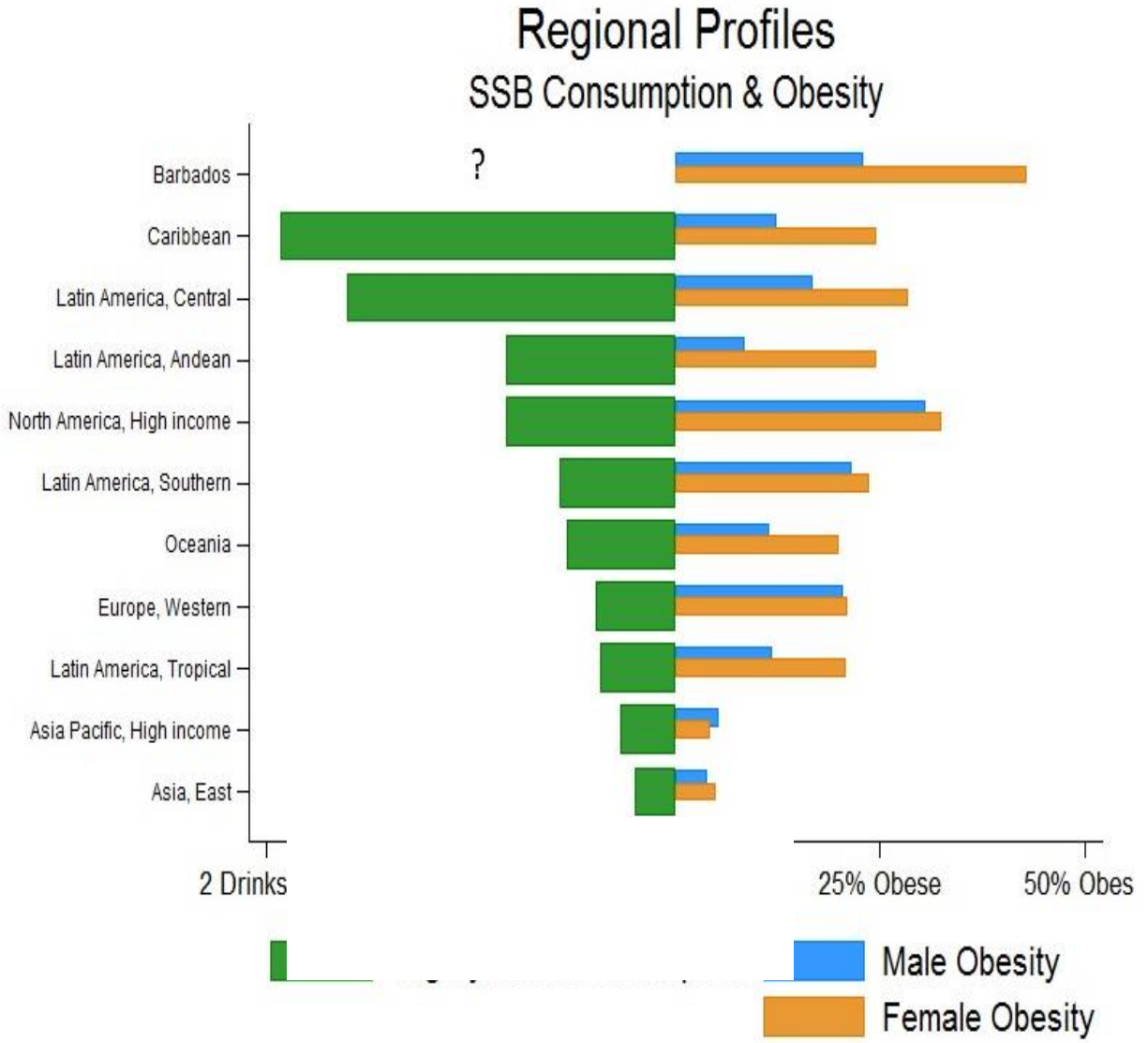


Sugary drink consumption levels

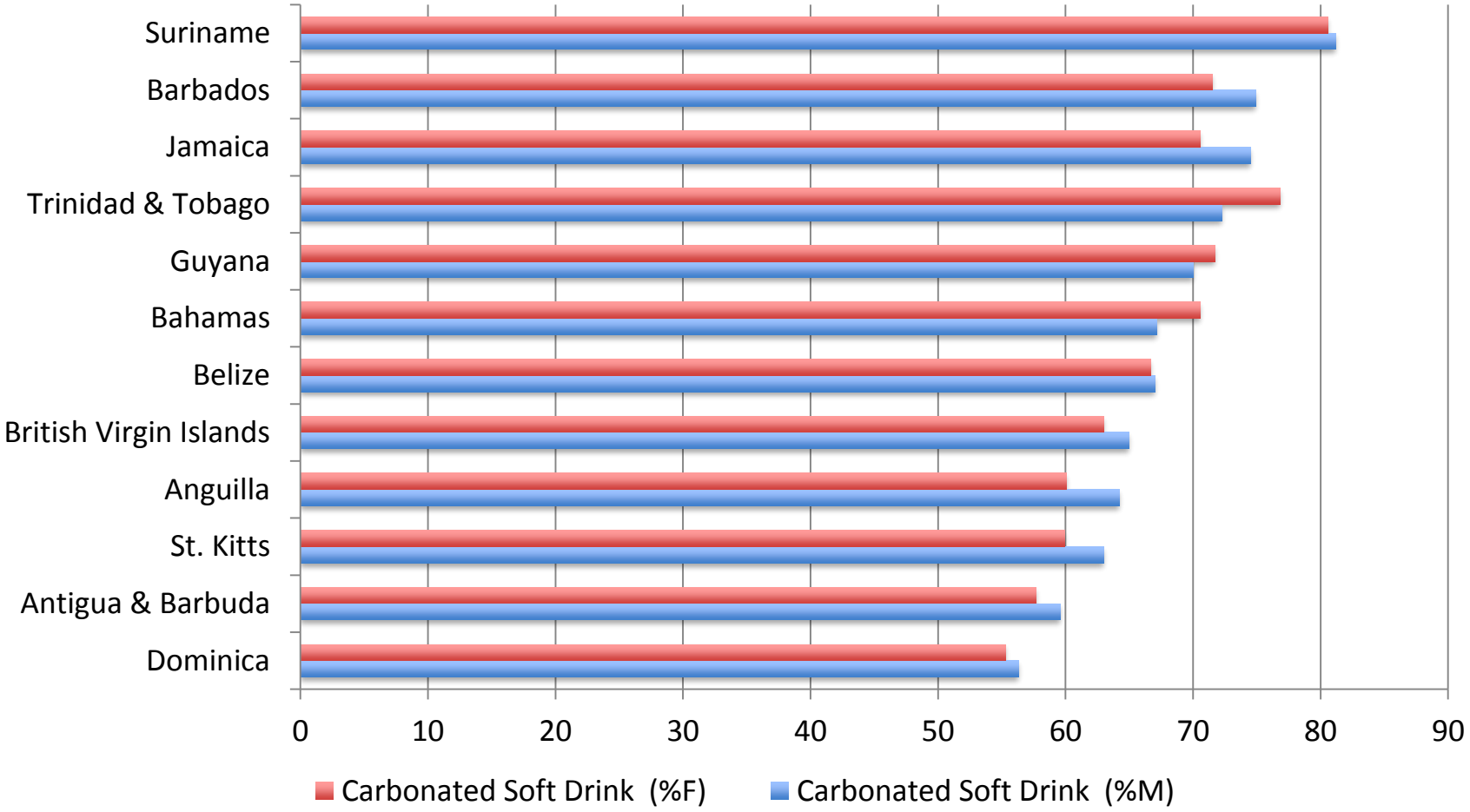
The Caribbean has been estimated to have the highest SSB consumption in the world with an estimated

2 SSB/person / day

(Jou & Techakehakij 2012)

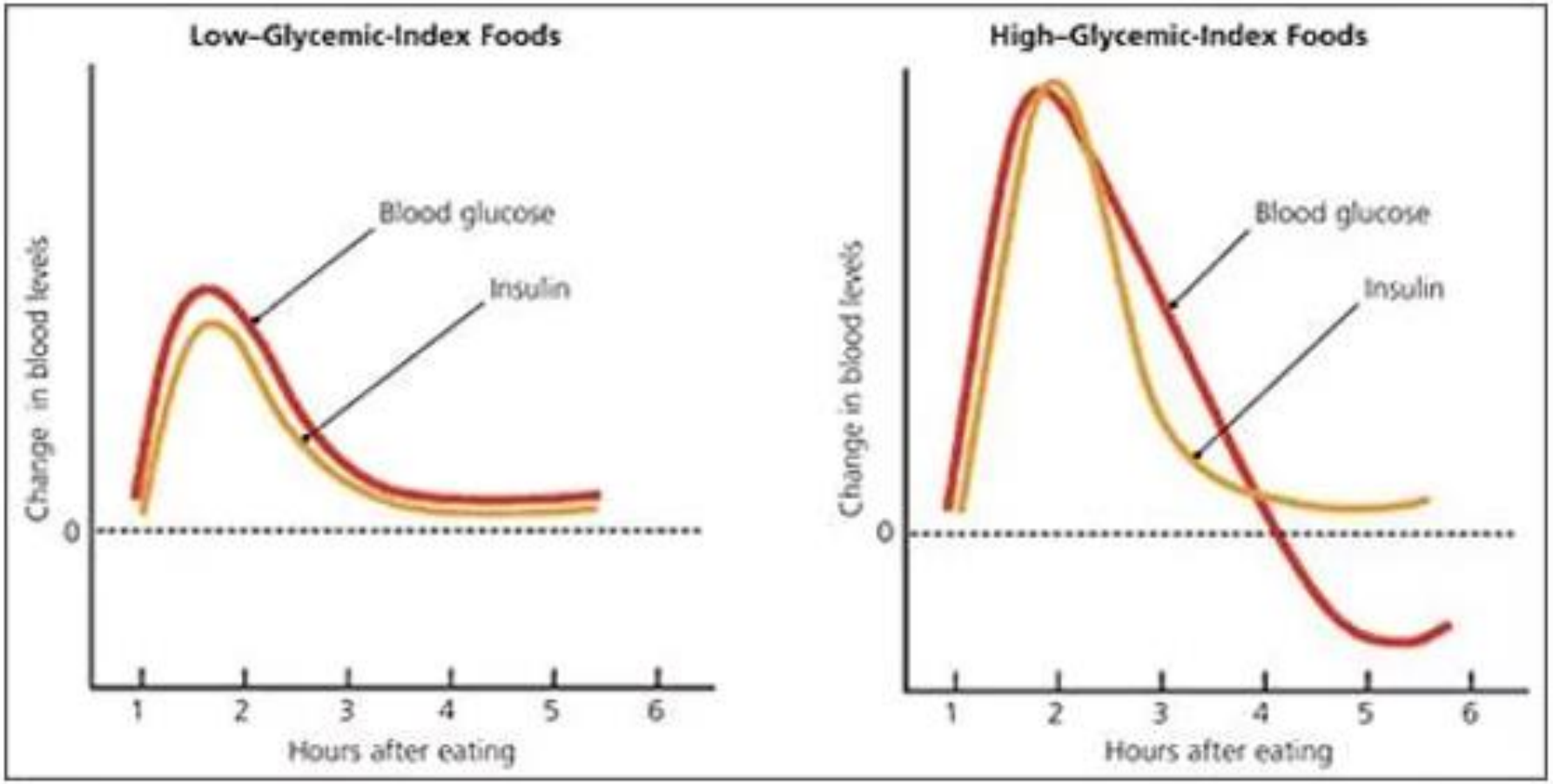


% Drank carbonated soft drinks during the past 30 days from GSHS (2009-2013)



WEST INDIES
SWISS MISS
HOT COCOA MIX
MARSHMALLOW
3 IN 1
Swiss Miss Marshmallow
1 pack (1 serving)
= 17 g of sugar (4.25 tsp)
= 0.4175 g of salt
Turbo Plus (Fruit Punch)
1 pack (5 servings)
= 31.15g of sugar
= 0.29g of salt
TURBO
Plus
Coca-Cola
1 bottle (1 serving)
= 53 g of sugar (13 tsp)
PINEHILL
fruit punch
FROM CONCENTRATE
250ml (8.45 fl.oz)
Pinehill Fruit Punch
1 juice box (1 serving)
= 40 g of sugar (10 tsp)
Coca-Cola
500 mL
SUN SWEET
CONDENSED MILK
Sun Sweet Condensed Milk
1 can (10 servings)
= 220 g of sugar (55 tsp)
=0.875 g of salt

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

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

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

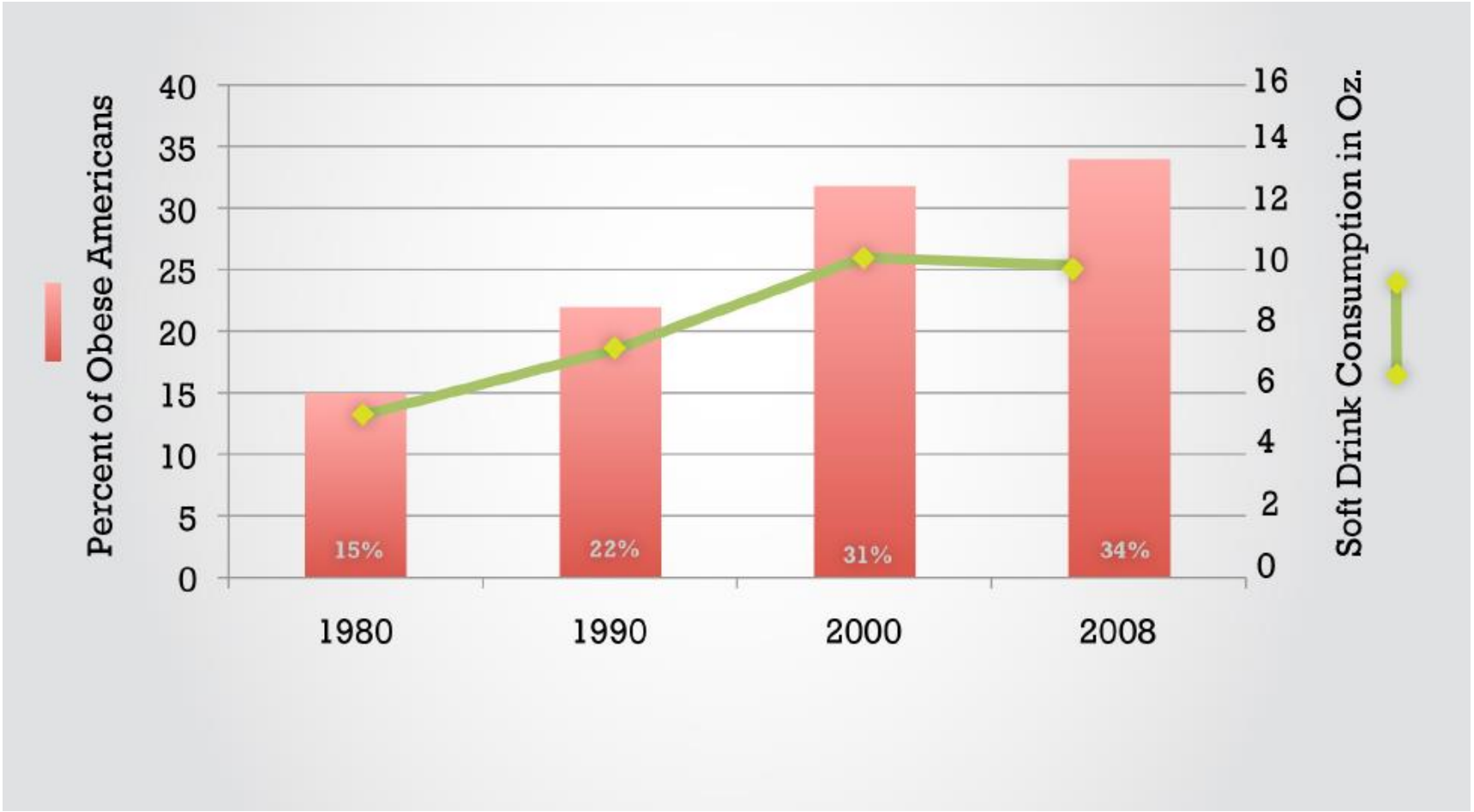
- The association between SSB consumption and weight gain is stronger than for any other food or beverage (Lavin, Timpson 2013)
- SSB is the leading cause of obesity, diabetes and heart disease in both adults and children

Stuckler D, McKee M, Ebrahim S, Basu S. Manufacturing epidemics: the role of global producers in increased consumption of unhealthy commodities including processed foods, alcohol, and tobacco. PLoS medicine. 2012;9(6):e1001235

World Health Organization. (2015). Interim Report of the Commission on Ending Childhood Obesity Geneva, Switzerland. Available from: http://www.who.int/end-childhood-obesity/interim-report-for-comment/en/.

Popkin, B. M., & Hawkes, C. (2016). The sweetening of the global diet, particularly beverages: patterns, trends and policy responses for diabetes prevention. *The Lancet. Diabetes & Endocrinology, 4(2), 174–186. http://doi.org/10.1016/S2213-8587(15)00419-2.*.

The connection between sugar and obesity



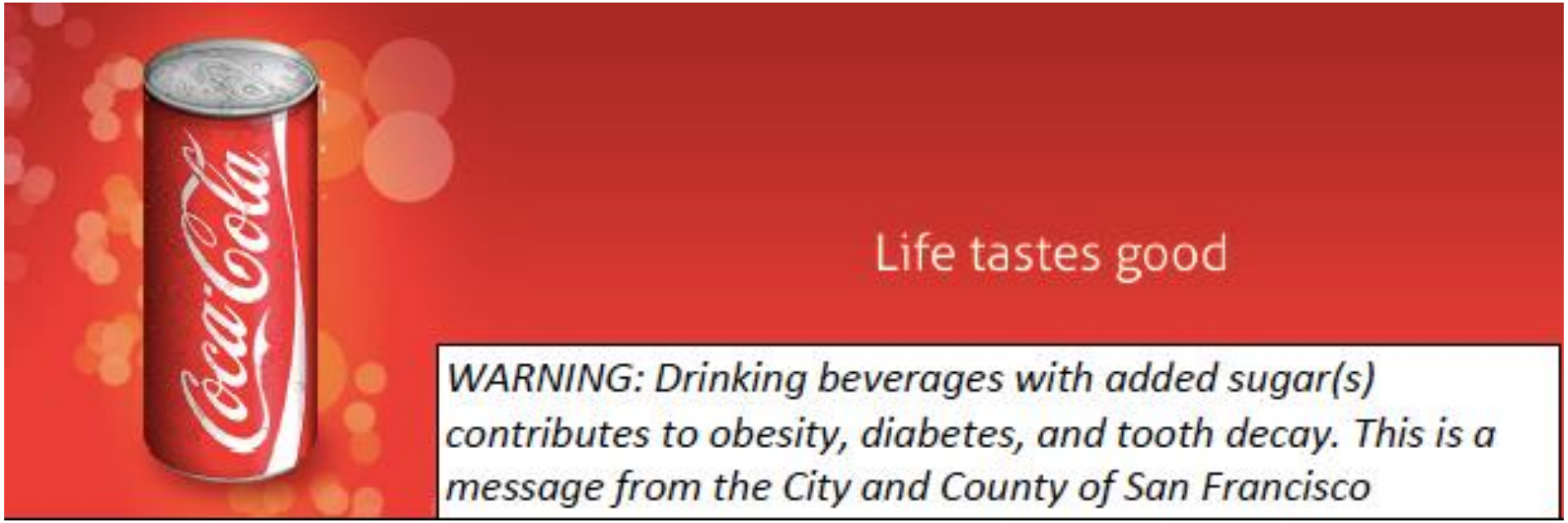
Two sodas a day DOUBLE the risk of heart disease, study warns

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



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

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
Objectives:
1) Protection of boy and girls.
2) Promotion of informed food selection.
3) Reduced consumption of food containing high levels of calories, saturated fats, sugar and sodium
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
  - **4% decrease** in the sales of SSBs
  - **8% increase** in the sales of water

IMPACT VERY SIMILAR TO MEXICO

10% SSB tax (10% passed to consumers)

- **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

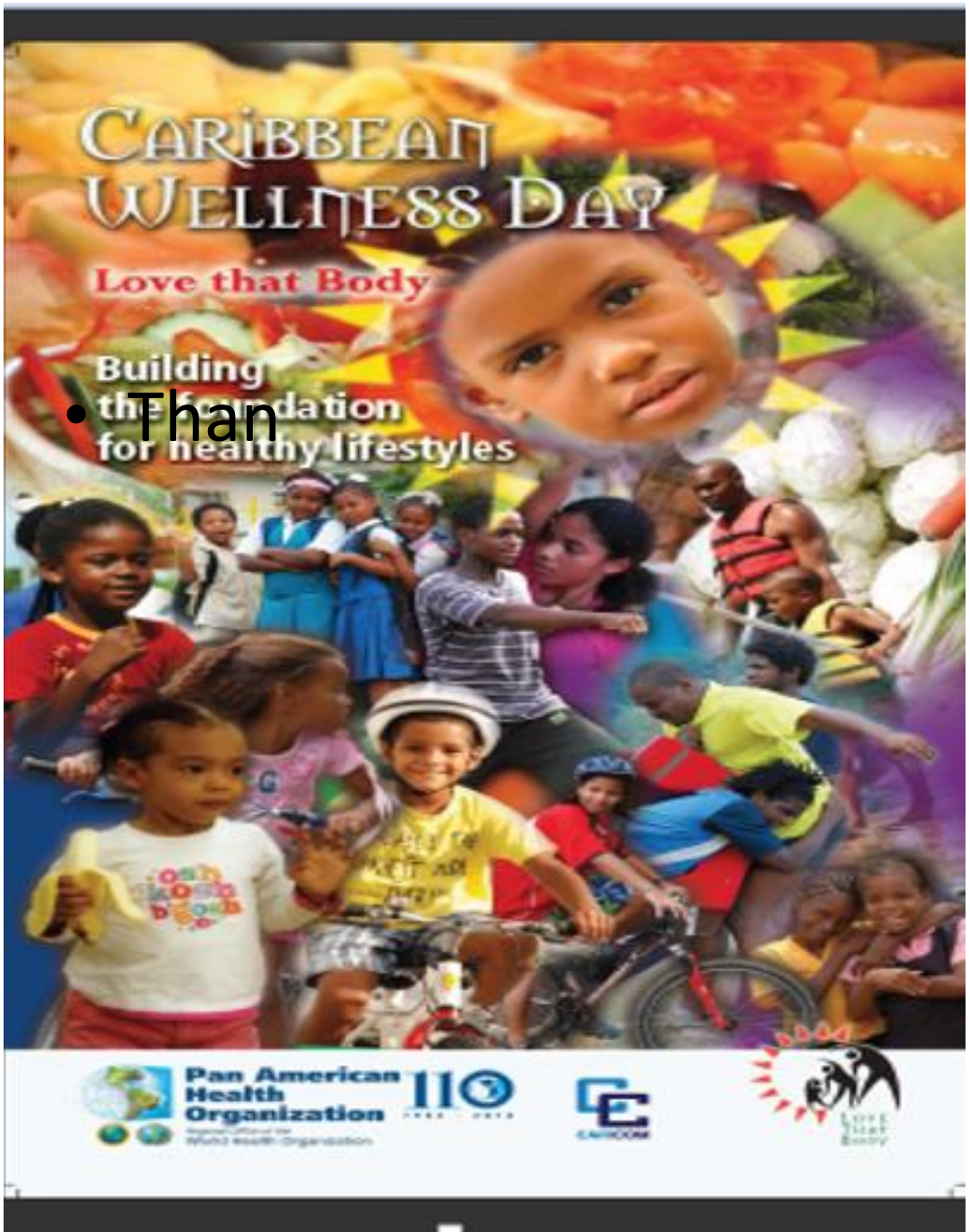
Answering the question: Well what should we eat?

Jamaica: Are you drinking yourself sick?

Caribbean Unity in Health

Love That Body

Thank You



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