MINISTRY OF HEALTH & WELLNESS

EPIDEMIOLOGY

# *Nutrition at a Glance:*
## *The Case for Healthy Eating*

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Nutrition at a Glance: The Case for Healthy Eating
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# The Magnitude of Malnutrition

The World Health Organization defines malnutrition to include **undernutrition, inadequate vitamins or minerals, overweight, obesity, and resulting diet-related non-communicable diseases**. Based on this definition and using available data from the Jamaica Health and Lifestyle Survey on underweight, overweight and anaemia  greater than 1.5 million Jamaicans aged 15 years and older are malnourished.


Source: Malnutrition. World Health Organization.(2024/04/26). https://www.who.int/news-room/fact-sheets/detail/malnutrition

# The Ideals of a Healthy Diet

Source: Image from www.freepik.com

# The Ideals of a Healthy Diet

## What is a Healthy Diet?

- **What is a healthy diet?**
  - The World Health Organization (WHO) indicates that 'a healthy diet is a foundation for health, well-being, optimal growth and development[1].
  - It protects against all forms of malnutrition
  - Evidence shows the health benefits of a diet high in whole grains, vegetables, fruit, legumes and nuts, and low in salt, free sugars and fats particularly saturated and trans fats[1].
  - A healthy diet starts early in life with adequate breastfeeding'.

- **Health along the life course**
  - The Centres for Disease Control and Prevention (CDC) indicates that 'the life course approach considers health as an evolving capacity that develops dynamically over time and across generations.
  - Nutrition plays a significant role at all stages of the life course. This involves the special nutritional needs, physiology, and health concerns of pregnant and lactating women, infants, children, adolescents and older adults[2].
  - A poor nutritional start at the beginning of the course can influence poor health and chronic diseases in later stages of the life span[2].'


Source:

1. Healthy Diet. Overview. World Health Organization (2024/04/29). https://www.who.int/health-topics/healthy-diet#tab=tab_1
2. Healthy Life Course. Pan American Health Organization (2024/04/29). https://www.paho.org/en/topics/healthy-life-course

# The Ideals of a Healthy Diet

## Dietary Ideal: Food Based Dietary Guidelines for Jamaica

In Jamaica, there is a standard for a healthy diet, which promotes the dietary ideals previously mentioned. The Ministry of Health and Wellness has published a Food Based Dietary Guidelines to help combat the double burden of under and over nutrition. The purpose of the Food Based Dietary Guidelines is to help the population aged two year and older to make healthy choices.


Source: Food Based Dietary Guidelines for Jamaica 2015. Healthy Eating and Active Living. Ministry of Health and Wellness, Jamaica.

# The Ideals of a Healthy Diet

Dietary Ideal: Food Based Dietary Guidelines for Jamaica

## Food Based Dietary Guidelines for Jamaica

Eat a variety of foods from all food groups daily

Eat a variety of fruits daily

Eat a variety of vegetables daily

Include peas, beans and nuts in your daily meals

Reduce intake of salty and processed foods

Reduce intake of fats and oils

Reduce intake of sugary foods and drinks

Make physical activity a part of your daily routine

Source: Food Based Dietary Guidelines for Jamaica 2015. Healthy Eating and Active Living. Ministry of Health and Wellness, Jamaica.

# The Ideals of a Healthy Diet

## Foods to Reduce or Avoid

While the many facets of a healthy diet are promoted globally and locally, here is a list of foods to reduce or avoid:

| Indicator | Examples | Health/Other Risks | Recommended Intake |
|---|---|---|---|
| Sugar sweetened beverages (SSBs) | ▪ Any form of liquids sweetened with various forms of added sugars including sodas, fruit drinks, sports drinks, energy drinks, sweetened waters, coffee and tea drinks | ▪ Associated with childhood overweight/obesity, type 2 diabetes, tooth decay, cavities, and gout | ▪ WHO recommends the intake of free sugars to less than 10% of total intake |
| High sodium foods | ▪ Breads, meat products, bakery products, instant noodles, salted, preserved foods, milk and dairy products, condiments | ▪ Associated with cardiovascular diseases (heart disease, heart failure, hypertension), renal disease, cancers (e.g. gastric or stomach cancer) | ▪ WHO recommends < 2000 mg/day sodium (equivalent to < 5g/day salt) |
| Excess red/processed meat consumption | ▪ Red meat: beef, mutton or pork<br>▪ Processed meat: sausages, bacon, deli meats (bologna, salami), corned beef, luncheon meat and other canned meats | ▪ Excess consumption is associated with NCDs, including cancers, cardiovascular disease and type 2 diabetes | ▪ There are no definitive quantitative recommendations, but the WHO suggests that intake should be limited to between 98 to 500 g (<1/4 lb to 1lb)/week |

# The Ideals of a Healthy Diet

## Foods to Reduce or Avoid

| Indicator | Examples | Health/Other Risks | Recommended Intake |
|---|---|---|---|
| Trans Fats | ▪ Trans fats are unsaturated fatty acids that come from industrial or natural sources and are found in margarine, vegetable shortening, ghee, fried foods, baked goods (crackers, biscuits and pies) | ▪ Among other dietary factors, high intake of trans fat increases the risk of death from any cause by 34%, coronary heart disease deaths by 28%, and coronary heart disease by 21%. Trans fat has no known health benefits. | ▪ WHO recommends that consumption be limited to less than 1% of total energy intake or less than 2.2 g/day (1/2 tsp/day) for a 2000 calorie diet |
| Saturated Fats | ▪ Saturated fatty acids are found in fatty meats, dairy foods and hard fats such as butter, ghee and coconut oil | ▪ Associated with increased risk of heart disease | ▪ Saturated fats should be replaced with other types of fats in the diets<br>▪ WHO recommends that saturated fatty acids should be reduced to less than 10% of total fat intake |


Sources:

1) Reducing consumption of sugar sweetened beverages to reduce the risk of childhood overweight and obesity. E-Library of evidence for Nutrition Actions (eLENA). https://www.who.int/tools/elena/commentary/ssbs-childhood-obesity
2) Reducing consumption of sugar sweetened beverages to reduce the risk of unhealthy weight gain in adults. World Health Organization. https://www.who.int/tools/elena/interventions/ssbs-adult-weight
3) Get the Facts: Sugar-sweetened beverages and consumption. Centers for Disease Control and Prevention. https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-intake.html
4) Sodium reduction. World Health Organization. https://www.who.int/news-room/fact-sheets/detail/salt-reduction
5) Red and processed meat in the context of health and the environment: many shades of red and green. Information brief. World Health Organization. 2023. https://iris.who.int/bitstream/handle/10665/370775/9789240074828-eng.pdf?sequence=1
6) Red meat and the risk of bowel cancer. National Health Service. https://www.nhs.uk/live-well/eat-well/food-guidelines-and-food-labels/red-meat-and-the-risk-of-bowel-cancer/#:~:text=Recommendations%20for%20red%20and%20processed%20meat&text=If%20you%20eat%20more%20than,or%20swapping%20them%20for%20alternatives.
7) Trans fat. World Health Organization. https://www.who.int/news-room/fact-sheets/detail/trans-fat#:~:text=Among%20other%20dietary%20factors%2C%20high,has%20no%20known%20health%20benefits.
8) WHO updates guidelines on fats and carbohydrates. https://www.who.int/news/item/17-07-2023-who-updates-guidelines-on-fats-and-carbohydrates

# The Transition

Source: Image from www.canva.com

# The Transition

## The Evolution of the Western Diet

Global diets have changed over time. Our human ancestors ate minimally processed foods. Advances in technology have led to a modern diet, which has introduced new types of foods to our bodies. Consumption of these foods have negative health consequences including the promotion of non-communicable diseases and their risk factors.

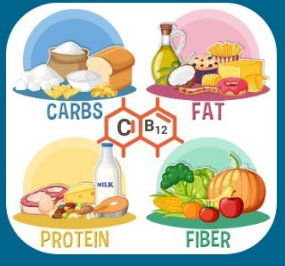
### HUMAN ANCESTORS

**Minimally Processed wild plant and animal foods**

### INTRODUCTION OF NEW FOODS


- **Dairy products**
- **Refined Cereals**
- **Refined sugars, e.g.** High fructose corn syrup
- **Refined vegetable oils**
- **Alcohol**
- **Salt**
- **Fatty domestic meats**

### RAMIFICATIONS




- Consumption of
  - o **high glycemic load** foods
  - o **trans and saturated fats**
  - o **low micronutrient density** foods
  - o **acid producing** foods
  - o Low fibre foods
- Changes in **macronutrient composition**

Source: Cordain L. et. al. Origins and evolution of the Western diet: health implications for the 21st century. *Am J Clin Nutr* 2005;81:341–54.

# The Transition

## The Epidemiological Transition Theory

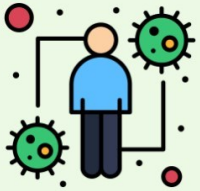
Jamaica has experienced a number of transitions. Firstly, the Epidemiological transition describes an increase in non-communicable diseases and their risk factors

**Epidemiological transition – changing patterns of mortality, fertility, life expectancy and leading causes of death**

**Two MAJOR Components:**

Changes in population growth and composition resulting in a shift from younger to older

Changes in the patterns of mortality and reordering of the relative importance of the leading causes of death (from communicable to non-communicable)



Source: McKeown R. The Epidemiologic Transition: Changing Patterns of Mortality and Population Dynamics. Am J Lifestyle Med. 2009 July 1; 3(1 Suppl): 19S–26S. doi:10.1177/1559827609335350, Images from www.freepik.com

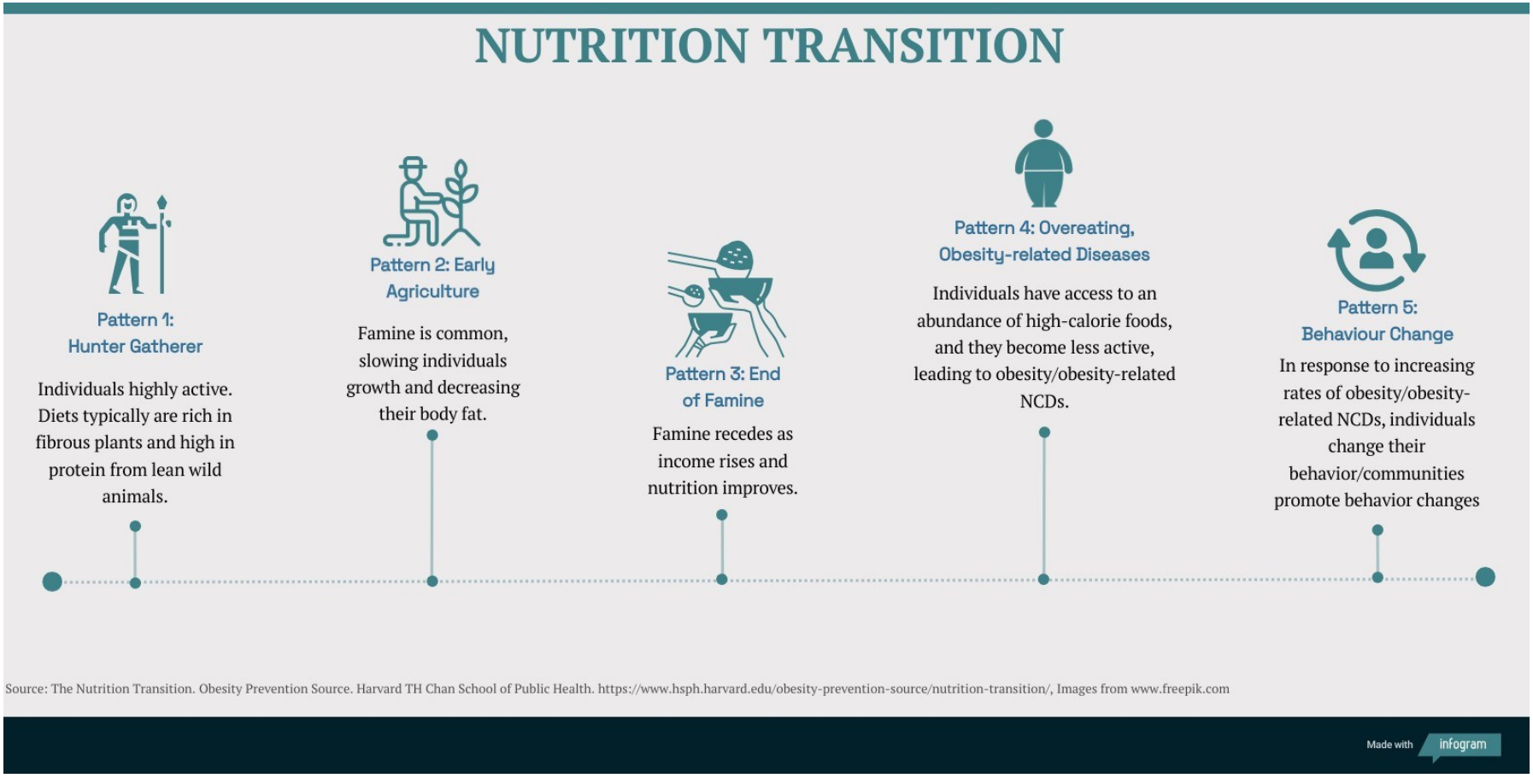


Sources:
Omran A. The Epidemiological Transition: A Theory of the Epidemiology of Population Change. Milbank Q. 2005 Dec; 83(4): 731–757
McKeown RE. The Epidemiological Transition. Changing Patterns of Mortality and Population Dynamics. Am J Lifestyle Med. 2009 Jul 1; 3(1 Suppl): 19S–26S.
Whadan MH. The epidemiological transition. Eastern Mediterranean Health Journal. https://www.emro.who.int/emhj-volume-2-1996/volume-2-issue-1/article2.html

# The Transition

## The Nutrition Transition Theory

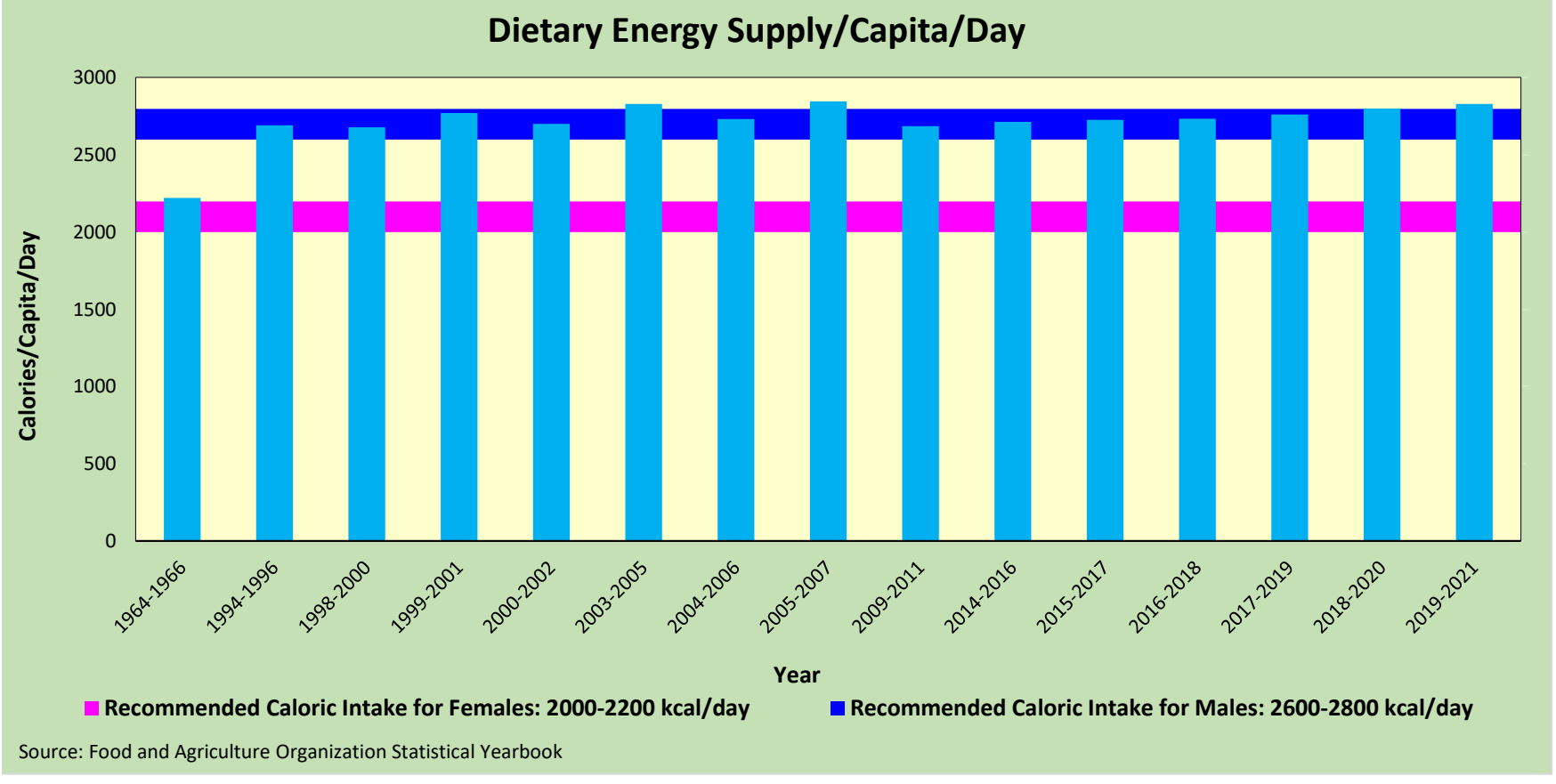
Secondly, the nutrition transition defines a shift in diet due to modernization, urbanization, economic development and increased wealth. There are five patterns in the transition.



# The Transition

## Dietary Energy Supply

Data from the Food and Agriculture Organization indicates that average calorie intake per capita per day has increased over time and has exceeded the recommended calories to be consumed in a day.




Source: Food and Agriculture Organization Statistical Yearbook

# Nutrition of Jamaicans

# Nutrition of Jamaicans
# Prevalence (%) of Nutrition Indicators

## Infant and Young Child (0-23 months)

WHO Recommends That Children Be **Exclusively Breastfed** for the **First Six Months of Life**

**33%** Exclusive Breastfeeding[1]

**Exclusive Breastfeeding** also includes expressed milk

**62%**
Minimum Meal Frequency[1]

The **Minimum Meal Frequency** is defined as the percentage of **children aged 6-23 months** who received solid, semi-solid or soft food (and milk feeds for non-breastfeeding children) the minimum times or more during the previous day

## Childhood/Adolescence (13-17 years)

**13.6%**
Do not eat vegetables[2]

**17.8%**
Do not eat fruits[2]

**45.6%**
Drink carbonated/sugar sweetened beverages two or more times per day[2]

**34.3%**
Eat fast food two or more times per day[2]

Source: 1. Jamaica. Multiple Indicator Cluster Survey 2022: Final Report. Kingston, Jamaica: STATIN and UNICEF,
2. Global School Health Survey, 2017. National Council on Drug Abuse, 3. Images from www.freepik.com

# Nutrition of Jamaicans

## Working Age and the Elderly

### Working Age: 18 to 59 years

| Condition | Prevalence (%) | | |
|---|---|---|---|
| | Male | Female | Total |
| Persons with Anaemia* | 6.6 | 28.4 | 18.3 |
| Persons who ate vegetables < Once per day | 51.5 | 52.6 | **52.0** |
| Persons who ate fruit < Once per day | 48.3 | 53.1 | **50.8** |
| Persons who consumed sugar sweetened beverages > Once per day | 20.5 | 23.3 | **21.9** |

### Elderly: 60 years and older

| Condition | Prevalence (%) | | |
|---|---|---|---|
| | Male | Female | Total |
| Persons with Anaemia* | 19.7 | 17.7 | 18.6 |
| Persons who ate vegetables < Once per day | 49.9 | 46.9 | **48.3** |
| Persons who ate fruit < Once per day | 41.8 | 44.7 | **43.4** |
| Persons who consumed sugar sweetened beverages > Once per day | 11.5 | 8.7 | **10.0** |

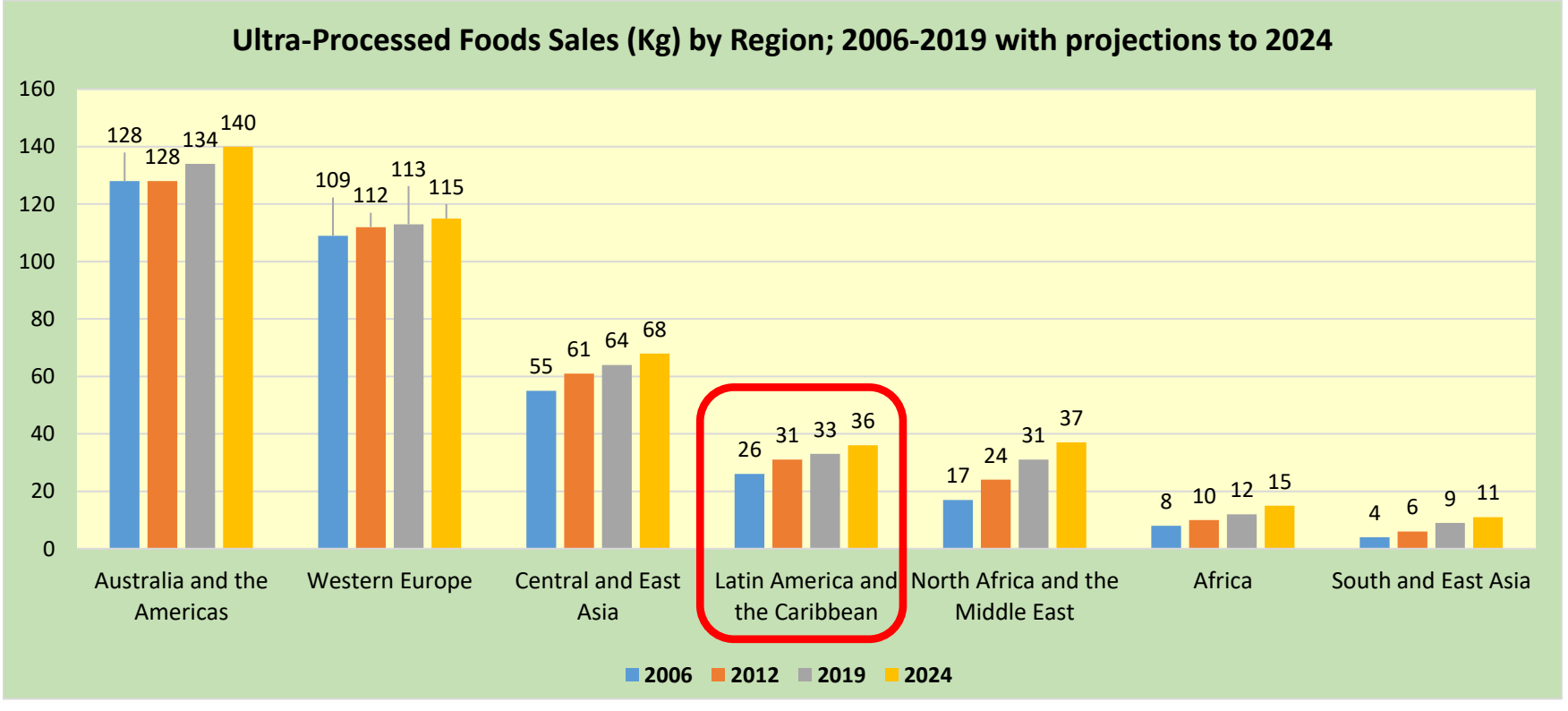
As we continue along the life course, poor patterns of eating behaviours continue into adulthood with low fruit and vegetable consumption, as well as the intake of sugar sweetened beverages. In addition, approximately one in 5 adults in both the working age (18-59 years) and the elderly were anaemic.

Source: Jamaica Health and Lifestyle Survey III (JHLSIII) 2017. Images from www.freepik.com

# Nutrition of Jamaicans

## Ultra-processed Foods

While there is limited data from Jamaica, a paper by Baker et. al (2020) has reported that the sale of ultra-processed foods has increased in Latin America and the Caribbean and this is projected to increase to 2024.

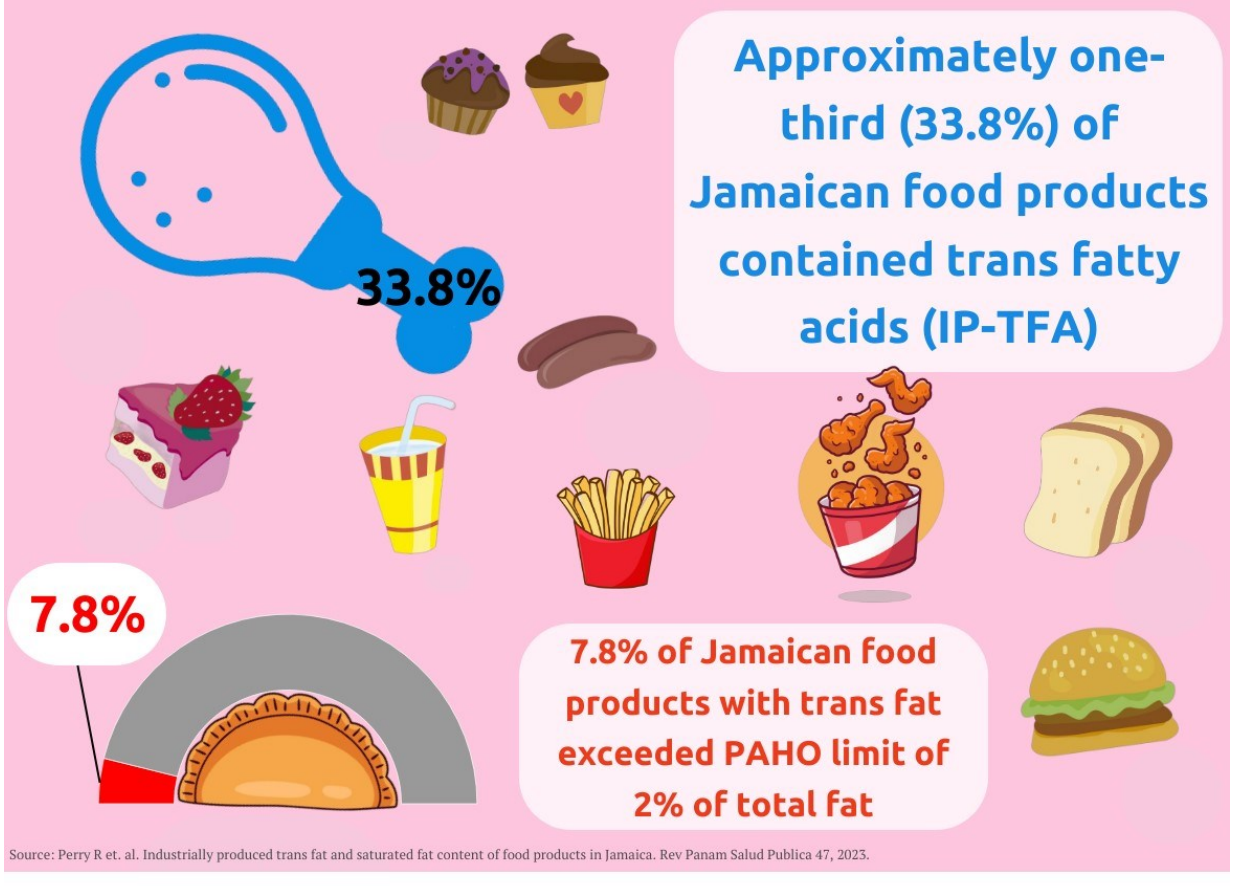



Source: Adapted from: Baker P et. al. Ultra-processed foods and the nutrition transition: Global, regional and national trends, food systems transformations and political economy drivers. *Obesity Reviews*: https://doi.org/10.1111/obr.13126

# Nutrition of Jamaicans

## Trans-Fat Content of Jamaican Food Products

A local study of trans fat content of Jamaican food products found that one third (33.8%) of the 308 foods surveyed contained industrially produced trans fatty acids (IP-TFA).

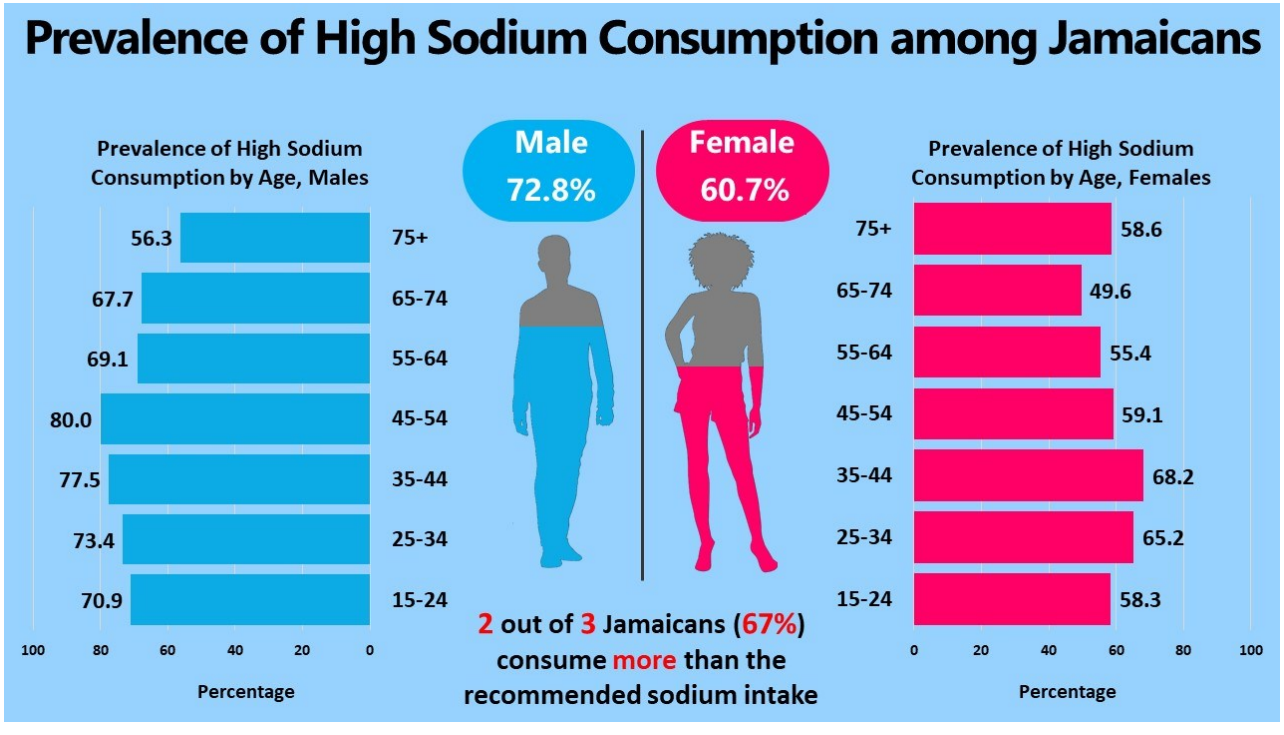


# Nutrition of Jamaicans

## Salt/Sodium Consumption

Salt/Sodium in foods is derived from table salt, in addition to a number of other sources including; seasoning salt, condiments, canned goods, processed meats and baked goods such as bread. It is recommended that persons consume less than 1 teaspoon of salt per day. Persons with hypertension should have less than half a teaspoon of salt per day.[1]

Two out of three Jamaicans consume more than the recommended one teaspoon of salt. Seventy-three percent of males have more than the recommended levels of sodium intake. The prevalence of high sodium consumption was greatest among males 45-54 years. Sixty-one percent of females have higher than recommended levels of sodium intake. The prevalence of high sodium consumption was greatest among females 35-44 years.[2]




Source:


1. Shaking the Salt Habit to Lower High Blood Pressure. Do you know the most common sources of Sodium. American Heart Association.
2. Ferguson et al. (2021). Sodium and Potassium Consumption in Jamaica: National Estimates from the Jamaica Health and Lifestyle Survey 2016-2017

# Nutrition of Jamaicans

Where is Jamaica in the Nutrition and Epidemiological Transitions?

## Where would you put Jamaica on the scorecard?

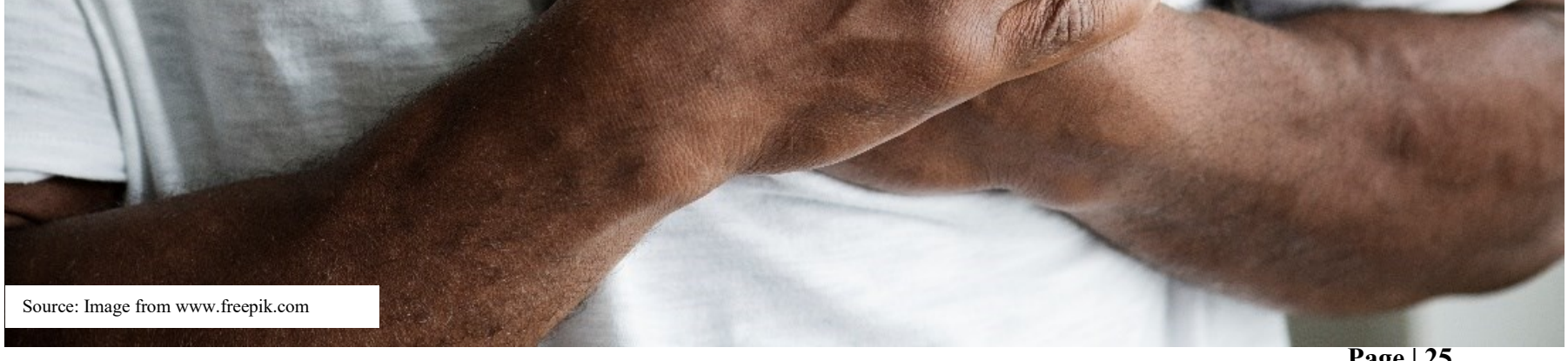

| True | False | |
|---|---|---|
| ☐ | ☐ | 1. Jamaica has a low prevalence of exclusive breastfeeding |
| ☐ | ☐ | 2. Jamaica has a low frequency of fruit consumption |
| ☐ | ☐ | 3. Jamaica has a high frequency of vegetable consumption |
| ☐ | ☐ | 4. Jamaicans consume too much salt |
| ☐ | ☐ | 5. Jamaicans have a low frequency of consumption of sugar sweetened beverages |
| ☐ | ☐ | 6. Jamaica has a decreasing prevalence of non-communicable diseases and risk factors |

Answers

| True | False | |
|---|---|---|
| ☑ | ☐ | 1. Jamaica has a low prevalence of exclusive breastfeeding |
| ☑ | ☐ | 2. Jamaica has a low frequency of fruit consumption |
| ☐ | ☑ | 3. Jamaica has a high frequency of vegetable consumption |
| ☑ | ☐ | 4. Jamaicans consume too much salt |
| ☐ | ☑ | 5. Jamaicans have a low frequency of consumption of sugar sweetened beverages |
| ☐ | ☑ | 6. Jamaica has a decreasing prevalence of non-communicable diseases and risk factors |

**Based on our scorecard Jamaica appears to be in Pattern 4 of the nutrition transition, that is, Overeating and Obesity-Related Diseases. What can we do to move into Pattern 5: Behaviour Change?**

# Consequences of Poor Nutrition



Source: Image from www.freepik.com

# Consequences of Poor Nutrition

## Diet as a Risk Factor for Non-Communicable Diseases

Communicable diseases of infectious origin were for many centuries the leading cause of morbidity and mortality globally[1]. A number of changes in the twentieth century including the emergence and advancement of antibiotics, vaccines and medicines have resulted in increased life expectancy, and have contributed to a shift in the disease profile to non-communicable diseases (NCDs) as leading causes of death and disability[1]. NCDs are conditions that occur over a long duration and are usually incurable[2].

Generally, they are not caused by an acute infection, and result in long-term health consequences, often requiring long-term treatment and care. NCDs result in 41 million deaths each year (approximately 74% of all deaths globally). The World Health Organization (WHO) estimates that approximately 17 million persons die from NCDs before the age of 70 years on an annual basis[2]. Cardiovascular disease, cancers, chronic respiratory diseases and diabetes account for over 80% of all NCD deaths[2].

Many NCDs may be averted by reducing common risk factors and promoting healthier lifestyles. A risk factor is defined as a characteristic associated with a higher likelihood of a negative outcome, and may be classified as *modifiable* (denoting that the condition can be changed) or *non-modifiable.* The table below summarises risk factors for NCDs. Despite the wide range presented, the World Health Organization has proposed that many NCDs can be prevented by reducing four main factors. These are: physical inactivity, tobacco use, harmful use of alcohol and eating an unhealthy diet[4].

Sources:
1. Phaswana-Mafuya, Nancy, Tassiopoulos, Dimitri.(2011); Non-Communicable Diseases (NCDs) in Developing Countries. Nova Science Publishers, Inc
2. Budreviciute A et. al. Management and Prevention Strategies for Non-Communicable Diseases (NCDs) and Their Risk Factors. Front. Public Health 8:574111. doi: 10.3389/fpubh.2020.574111
3. (Mikkelson 2019) (Fall 2013)
4. Srinath Reddy K. Prevention and Control of Non-Communicable Disease. Chapter in. Oxford Textbook of Global Public Health p. 1476-1483. https://doi.org/10.1093/med/9780199661756.003.0237

# Consequences of Poor Nutrition

## Diet as a Risk Factor for Non-Communicable Diseases

**Risk Factors and Determinants of Non-Communicable Diseases**

| Genetic | Environmental | Sociodemographic | Lifestyle | Medical Conditions | Societal |
|---|---|---|---|---|---|
| Family disease history | Air pollution | Age | **Tobacco Use** | Medications | Trade policy |
| Genetic inheritance | Weather changes | Gender | **Harmful Use of Alcohol** | Viruses | Urban design |
| Epigenetic changes | Sunlight (UV radiation) | Race | **Physical inactivity** | Blood pressure | Transportation |
| Environment (e.g. exposure to radiation) | | Ethnicity | **Unhealthy diet** | Lipids | Media and cultural influences |
| Toxic material-based mutations | | Education | Overweight | Obesity | |
| | | Income | Dental health care | Stress | |

Adapted from: a. Budreviciute A et. al[1]; b. Srinath Reddy K[2]

Sources:
5. Budreviciute A et. al. Management and Prevention Strategies for Non-Communicable Diseases (NCDs) and Their Risk Factors. Front. Public Health 8:574111. doi: 10.3389/fpubh.2020.574111
6. Srinath Reddy K. Prevention and Control of Non-Communicable Disease. Chapter in. Oxford Textbook of Global Public Health p. 1476-1483. https://doi.org/10.1093/med/9780199661756.003.0237

# Consequences of Poor Nutrition

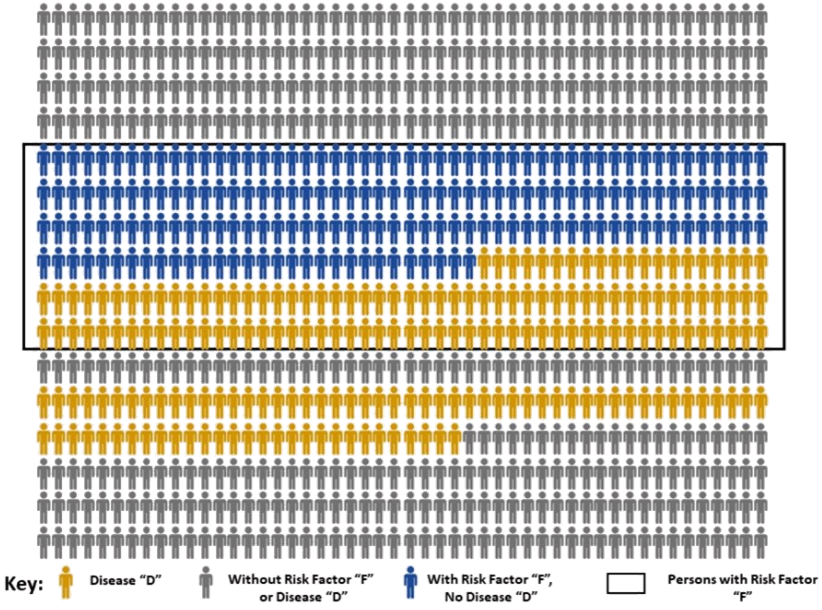
## Population Attributable Risk

- **The population attributable risk (PAR)** is the proportion of incidence (new cases) of disease that is due to a particular exposure.
- It is the difference between the risk in the total population and the risk in the unexposed population.
- **PAR** = Incidence in the total population – Incidence rate in the unexposed
- **Population Attributable Fraction (PAF)**

  = PAR/incidence rate in the unexposed

**Diseased**

| Risk Factor | D+ Disease=Yes | D- Disease=No | |
|---|---|---|---|
| F+ Risk Factor=Yes | 120 | 180 | 300 Total With Risk Factor |
| F- Risk Factor=No | 80 | 420 | 500 Total Without Risk Factor |
| | 200 Total Diseased | 600 Total Without Disease | 800 Total Population |




Example: Our population has 800 persons, 200 has disease "D" and 300 has risk factor "F".

- The proportion of disease "D" in the population is 25% (200/800).
- In the population, 300 persons [37.5%, (300/800)] has the risk factor "F".
- Among these persons, 120 has disease "D". That is 40% (120/300) of the persons with the risk factor "F" had the disease "D".
- While only 16% (80/500) of the persons without the risk factor "F" (500) has the disease "D". This means for persons having the risk factor "F" are 2.5 times more likely to have the disease "D" than those without the risk factor "F".
- The components above are used to calculate the population attributable fraction

$$\text{Population Attributable Fraction PAF} = \frac{0.375 \times (2.5-1)}{1+[(0.375 \times (2.5-1)]} = 0.36 \text{ or } 36\%$$

- This means that 36% of disease "D" in the population is attributed to risk factor "F".


Sources:

1) Askari M & Namayandeh S. Iran J Public Health. 2020 Oct; 49(10): 2018–2019
2) Population Attributable Fraction. Measures of Association. (2024/04/29). Boston University School of Public Health. https://sphweb.bumc.bu.edu/otlt/mph-modules/ep/ep713_association/EP713_Association7.html
3) Mansournia, M. Altman D. Population attributable fraction. BMJ 2018; 360 doi: https://doi.org/10.1136/bmj.k757 (Published 22 February 2018). https://www.bmj.com/content/360/bmj.k757

# Consequences of Poor Nutrition

## Population Attributable Risk

Studies have reported that 26% of diabetes deaths and 70% of incident (new) cases were attributable to dietary factors. In addition, 49% of cardiovascular disease deaths were attributed to poor diet.

| Disease | Outcome | Population | Dietary Factor Examined/Studied | Attributable Risk/Fraction |
|---|---|---|---|---|
| **Diabetes Mellitus (T2M)** | **Diabetes (T2M) Mortality** | 204 Countries/Regions (Global Burden of Disease Studies) | Diets low in fruits, fibre, whole grains, nuts, seeds and high in red meat, processed meat and SSBs | **26.1%** |
| | **Diabetes (T2M) DALY** | | | **27.1%** |
| | **Diabetes Incidence** | 184 Countries | Over/under consumption of Fruits, vegetables, nuts and seeds, whole grains, yoghurt, potatoes, refined rice/wheat, processed meats, unprocessed red meat, SSBs, fruit juices | **70.3%** |

Sources:

Fornay A. Et. al. The Global Burden of Type 2 Diabetes Attributable to Dietary Risks: Insights from the Global Burden of Disease Study 2019. Nutrients. 2023. 15:4613.
Ohearn et. al. Incident type 2 diabetes attributable to sub-optimal diet in 184 countries. Nature Medicine. 2023.29:982--995

# Consequences of Poor Nutrition

## Population Attributable Risk

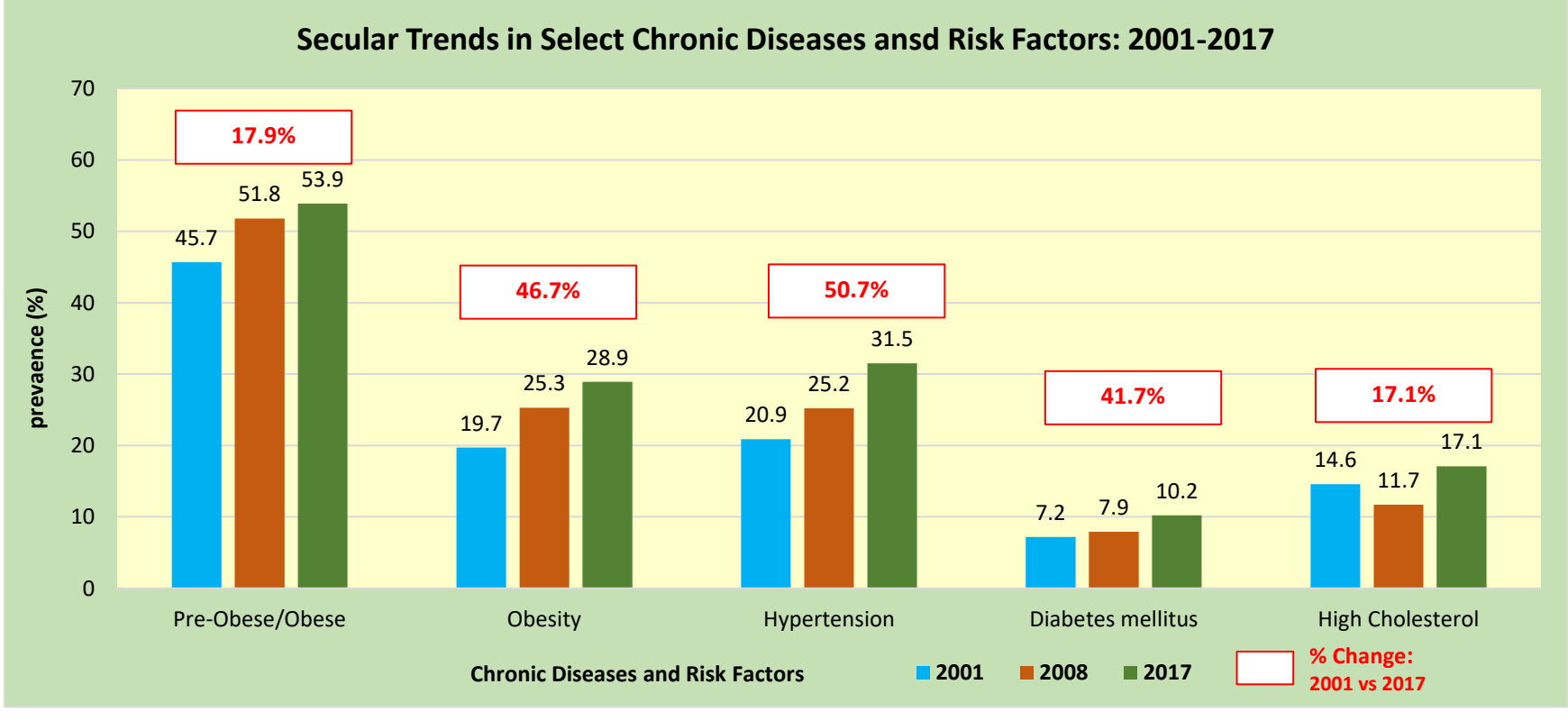
| Disease | Outcome | Population | Dietary Factor Examined/Studied | Attributable Risk/Fraction |
|---|---|---|---|---|
| Cardiovascular Disease | Mortality | 51 countries | Diet low in fibre, fruits, legumes, nuts and seeds, polyunsaturated fatty acids (PUFA), seafood omega-3 fatty acids, vegetables, and whole grains and a diet high in processed meat, sodium, sugar-sweetened beverages (SSB) and trans fatty acid | 49.2% |

Sources:
Fornay A. Et. al. The Global Burden of Type 2 Diabetes Attributable to Dietary Risks: Insights from the Global Burden of Disease Study 2019. Nutrients. 2023. 15:4613.
Ohearn et. al. Incident type 2 diabetes attributable to sub-optimal diet in 184 countries. Nature Medicine. 2023.29:982--995

# Consequences of Poor Nutrition

## Secular Trends in Selected Chronic Diseases and Risk Factors: 2001-2017

There has been an increase in the prevalence of chronic diseases and risk factors among Jamaicans aged 15 years and older over the period 2001 to 2017.

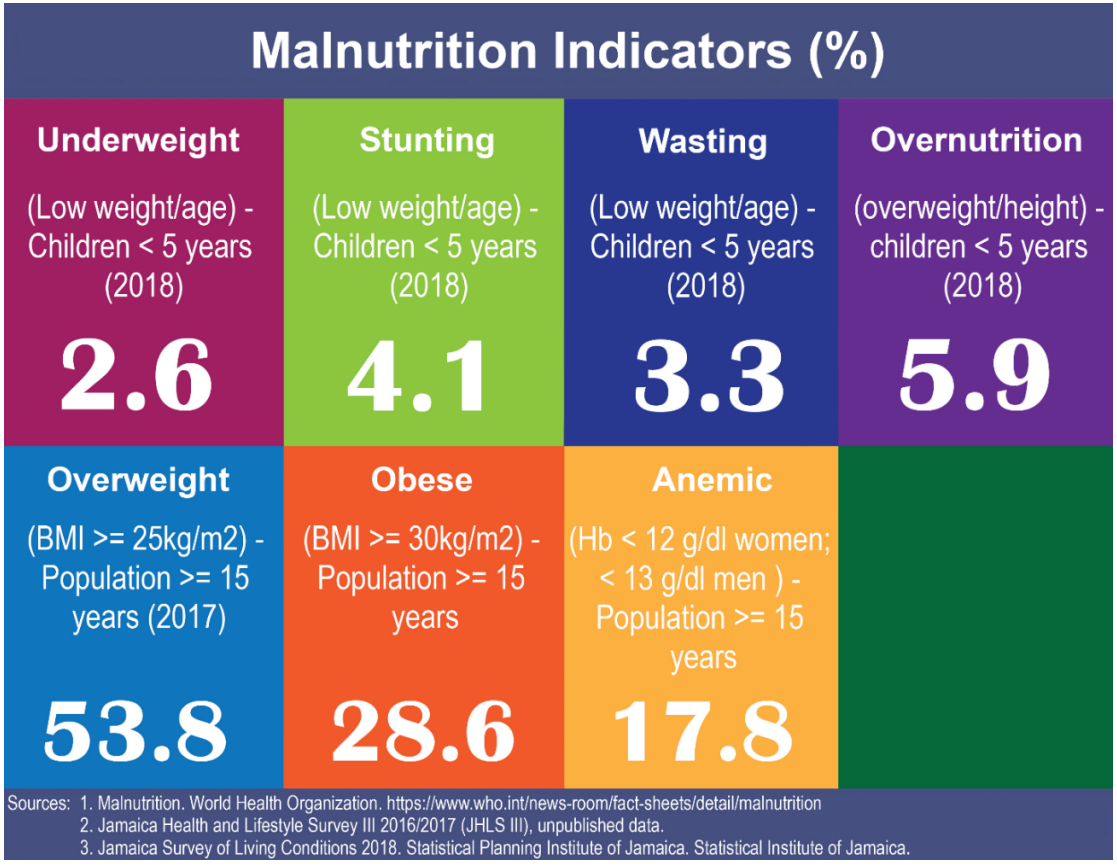



Source: The Jamaica Health and Lifestyle Survey Writing Team (2022). The Jamaica Health and Lifestyle Survey III (2016-2017) Technical Report. 2024. Ministry of Health and Wellness and Caribbean Institute for Health Research, University of the West Indies. Kingston, Jamaica.

# Consequences of Poor Nutrition

## Malnutrition in Jamaica

In assessing the determinants of malnutrition we also want to estimate the magnitude of malnutrition. **WHO** defines 'Malnutrition, in all its forms, includes **undernutrition** (wasting, stunting, underweight), **inadequate vitamins or minerals**, **overweight**, **obesity**, and resulting diet-related non-communicable diseases**.'** Indicators for Jamaica are as follows:



# Consequences of Poor Nutrition

## Malnutrition in Jamaica

Based on data from two main surveys, approximately 1.6 million Jamaicans are malnourished. However, this is an **underestimate** as it does not include all age categories, and does not account for all vitamin and micronutrient deficiencies or resulting diet-related non-communicable diseases.

| Condition | Prevalence (%) | | | Estimated Population (n) | | |
|---|---|---|---|---|---|---|
| | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** |
| **Jamaicans Under 5 years[1]:** | | | | | | |
| Underweight (Low weight/age) | - | - | 2.6 | - | - | 4,607 |
| Overnutrition (overweight/height) | - | - | 5.9 | - | - | 10,454 |
| **Jamaicans 15 years and older[2]:** | | | | | | |
| Persons who have Anaemia | 9.0 | 25.4 | 17.8 | 80,021 | 257,439 | 337,460 |
| Persons who are Underweight (BMI <18.5 kg/m2) | 8.3 | 4.6 | 6.4 | 80,503 | 48,620 | 129,123 |
| Persons who are Overweight (BMI >= 25 kg/m2) | 38.8 | 67.6 | 53.8 | 376,467 | 710,055 | 1,086,523 |
| **Persons who either have Anaemia or are Underweight or are Overweight** | **70.9** | **87.6** | **79.7** | **665,107** | **913,052** | **1,578,160** |

*- No Data was available for 5 to 15 years

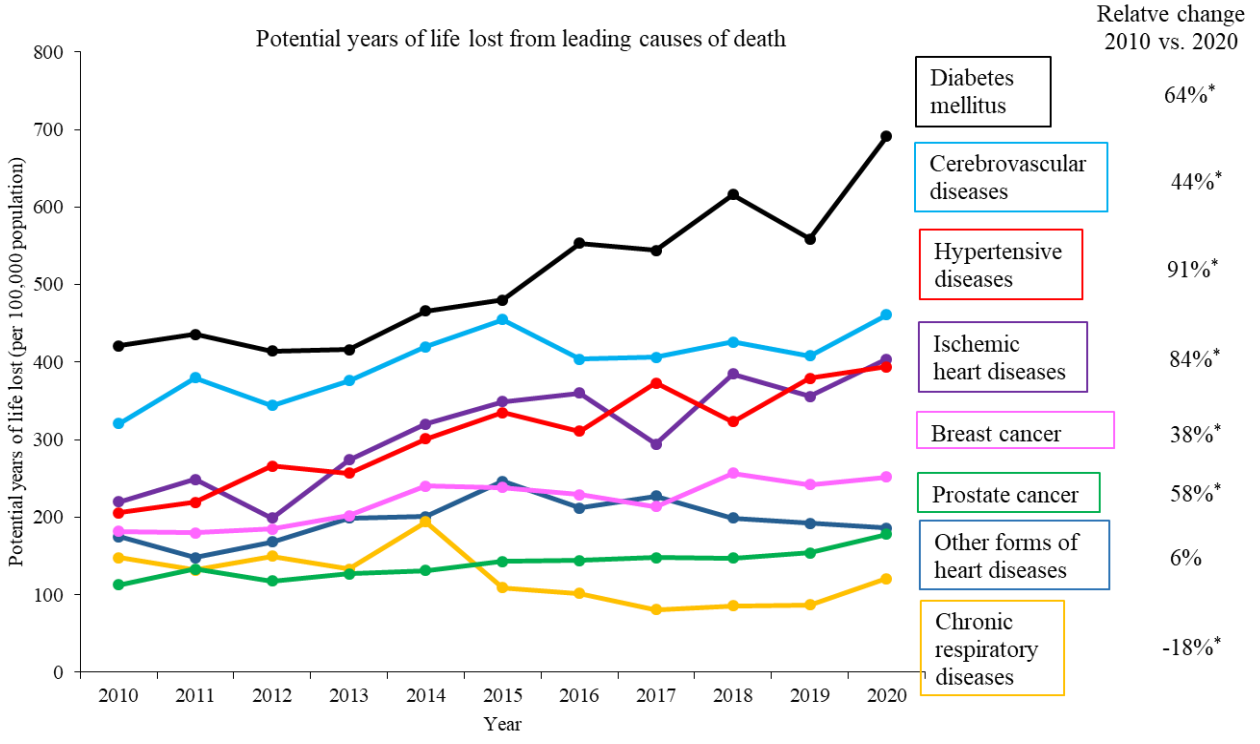
Source:
1. Jamaica Survey of Living Conditions 2018. Statistical Planning Institute of Jamaica. Statistical Institute of Jamaica
2. Jamaica Health and Lifestyle Survey III 2016/2017 (JHLS III), unpublished data

# Consequences of Poor Nutrition

## Potential Years of Life Lost: Leading Causes of Death

The causes of NCDS are complex and multifactorial. The nutrition and epidemiological transitions have resulted in a high NCD burden with many Jamaicans dying younger.

The potential life-years lost is a summary measure of healthy life years lost from illness.




Over the past decade, potential years of life lost from NCDs significantly increased for all leading causes of deaths except for other forms of heart diseases and chronic respiratory diseases. The greatest increase for PYLL was Hypertensive diseases, 91% · Ischemic heart diseases, 84% · Diabetes, 64% · Prostate cancer, 58% · Stroke, 44%1.

Source. Vitals Statistical Report. Non-Communicable Diseases Edition. Ministry of Health and Wellness, Jamaica

# Nutrition Determinants

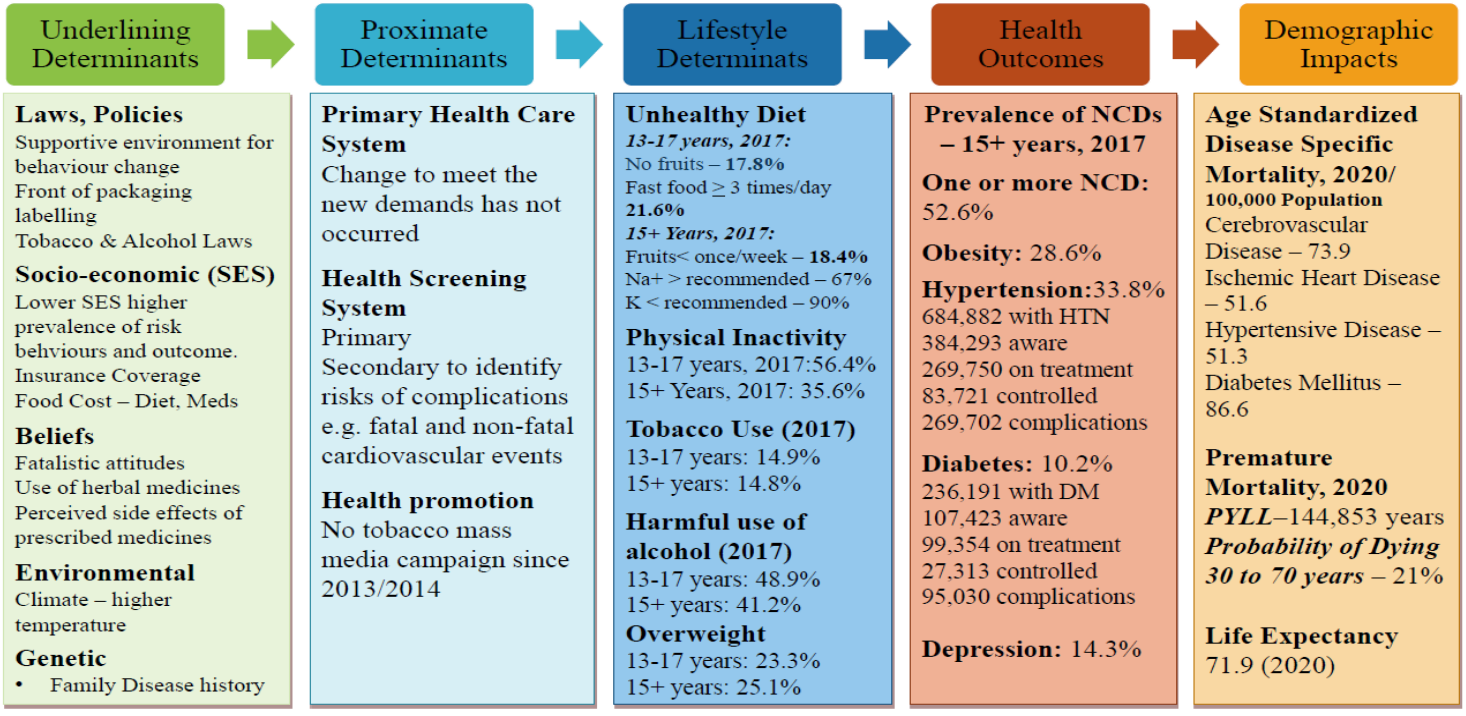
Source: Image from www.freepik.com

# Nutrition Determinants

## Nutrition as a Determinant of Health

In order to promote behaviour and other changes we need to learn more about the underlying determinants. There are a number of factors which affect the health of individuals and communities, which are called the determinants of health. Some of these factors are inherited, while others may be modifiable. According to the World Health Organization these determinants include:

- The social or economic environment
- The physical environment
- The person's individual characteristics and behaviours





Sources:

1. Determinants of Health. World Health Organization. https://www.who.int/news-room/questions-and-answers/item/determinants-of-health
2. Institute of Medicine (US) Committee on Assessing Interactions Among Social, Behavioral, and Genetic Factors in Health; Hernandez LM, Blazer DG, editors. Genes, Behavior, and the Social Environment: Moving Beyond the Nature/Nurture Debate. Washington (DC): National Academies Press (US); 2006.

# Nutrition Determinants

## Jamaica Health and Lifestyle Survey III Qualitative Findings

Customs, traditions and beliefs are important determinants of health. The third Jamaica Health and Lifestyle Survey included a qualitative component to identify barriers and facilitating factors encountered by participants in managing and preventing NCDs. The following summarizes some of the findings:

| **NCD Awareness and Beliefs** | **Health Myths** |
|---|---|
| • Most participants reported an awareness of NCDs<br>• Most participants became aware of their own diagnosis during a routine check-up<br>• Some participants were not motivated to receive regular check-ups or change their lifestyle until they experienced their own health scare | • Participants thought that diabetes could be caused by one period of eating foods high in sugar<br>• Participants who were diabetic or hypertensive thought reducing their intake of sweet or salty foods was enough to reduce their symptoms<br>• Some thought that they could dilute the salt or sugar with water or 'sweat out' the salt<br>• Female participants emphasized heredity in the development of NCDs and believed that the development of these diseases was beyond their control |

# Nutrition Determinants

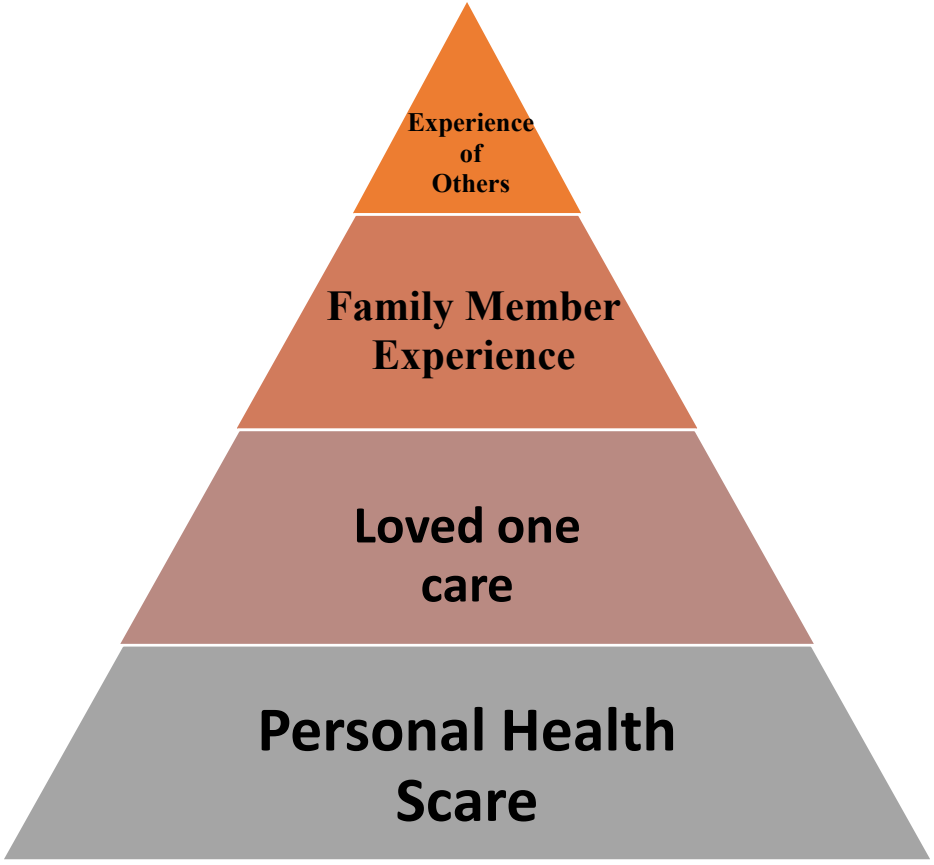
Jamaica Health and Lifestyle Survey III Qualitative Findings

| **Dietary Practices** | **Physical Activity** |
|---|---|
| • Females believed that persons with NCDs should be free to eat any food once portion control was considered<br>• Some women believed that taking ones medication would protect them from the negative health effects of sugar sweetened beverages | • Participants tended to believe that the demand of housework and work-related activities was sufficient to constitute adequate exercise<br>• Some expressed the need for greater access to community spaces and facilities to exercise |
| **Availability of Food Options** | |
| Participants<br>• Felt that food options in the community were too expensive<br>• Reported that chefs who tried to use healthier methods received complaints and were forced to use more salt<br>• Felt that most chefs or cooks used too much salt | |

# Nutrition Determinants

## Jamaica Health and Lifestyle Survey III Qualitative Findings

Qualitative findings of the third Jamaica Health and Lifestyle Survey suggests that one's own health scare was the greatest motivator to change among persons who participated in the qualitative study.



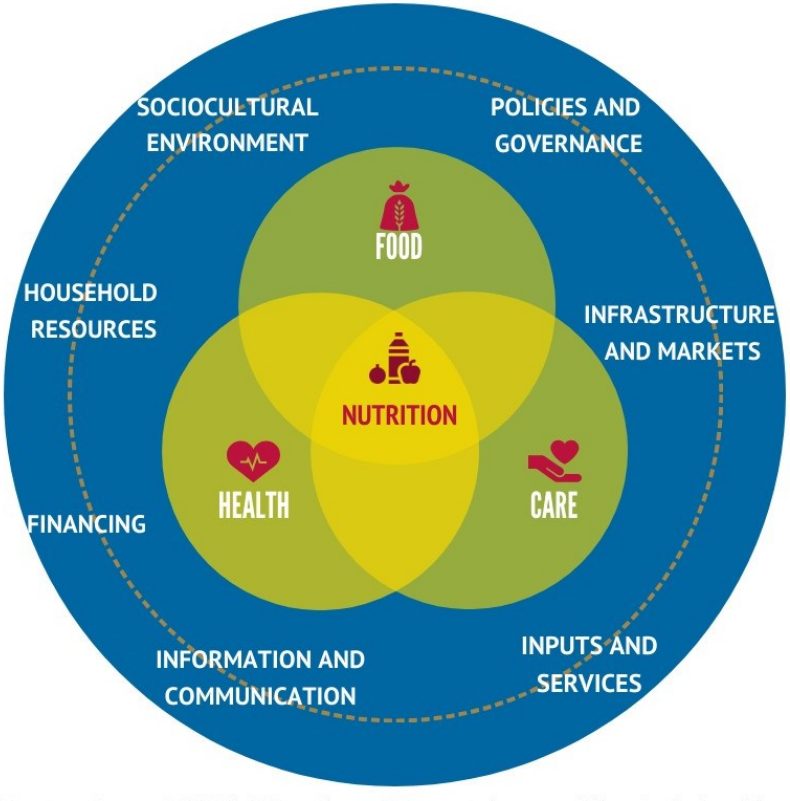

Source: Jamaica Health & Lifestyle Survey III

- **Experience of others** – most are **not** motivated by the experience of others
- **Experience of family members** – some are motivated by seeing family member with disabling symptoms and taking multiple medication every day.
- **Caring for loved one** – many are motivated by concerns about caring for dependents and loved ones in the future
- **Own Health Scare** - Most are motivated to change their behaviour only when they experience their own 'health scare'

# Nutrition Determinants

## Cross-Cutting Factors Affecting Nutrition

There are many cross cutting factors, which play a role in promoting poor or good nutrition. These include polices and governance, the socio-cultural environment, information and communication and household resources.

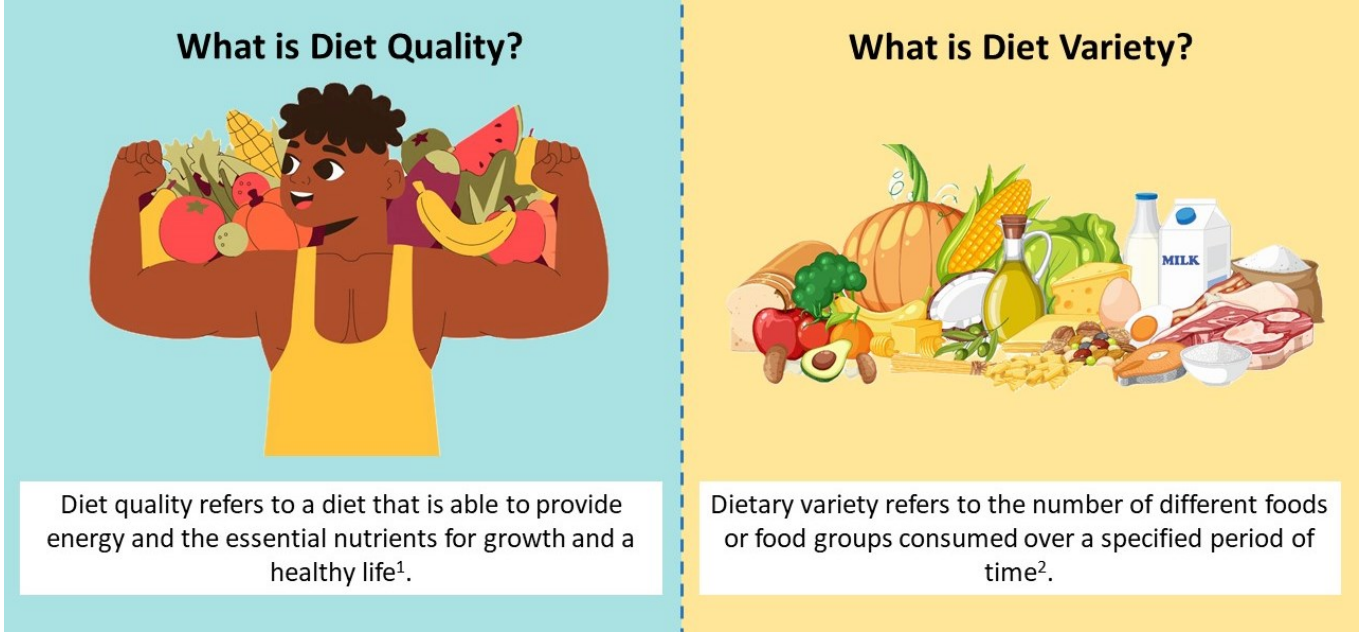



Source: Systems Thinking and Action for Nutrition. USAID. file:///C:/Users/granta/Documents/Epi%20Policy%20Forum/Literature%20Resources/spring_systems_thinking_and_action_for_nutrition.pdf

# Nutrition Determinants

## Food Security: Jamaicans 15 years and older

Recent data from our health and lifestyle survey indicates that 5% had very low food security defined as being food insecure to the extent that eating patterns were disrupted or food intake was reduced. A further 67% had low food security defined as food insecurity characterized by reductions in dietary quality and variety. Two important concepts of dietary quality and variety have been introduced and these have been explained further below:

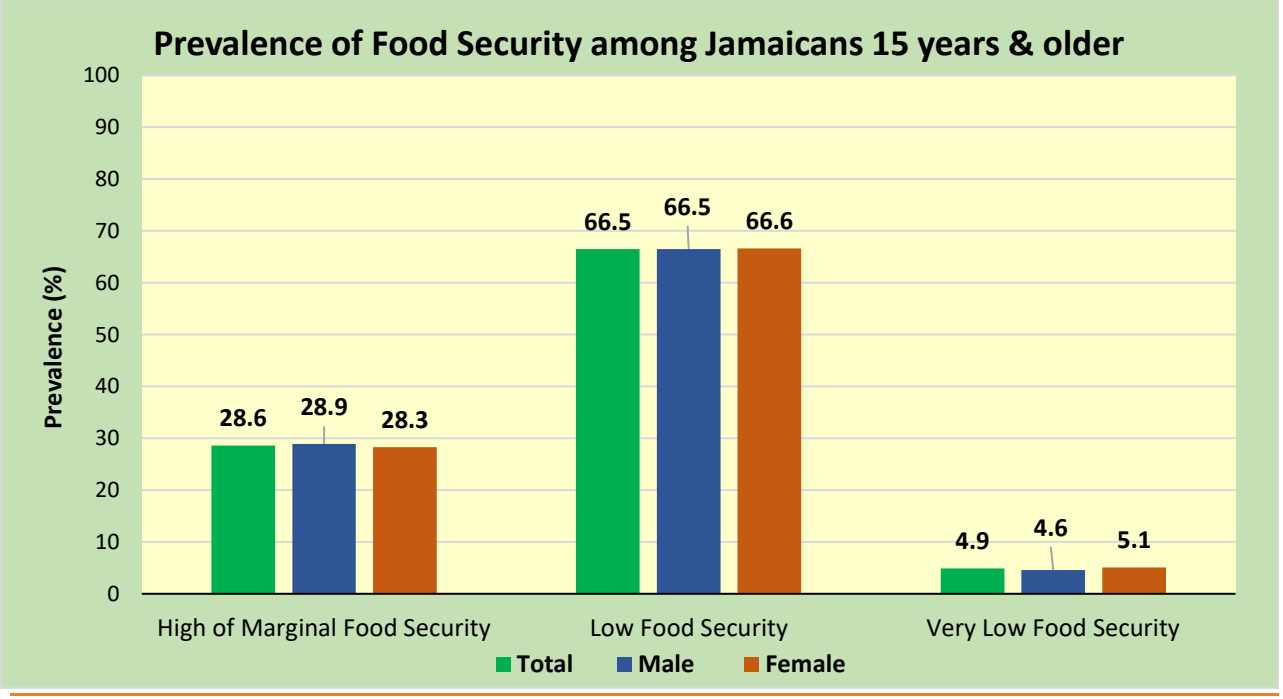



Sources:

1. (Diet quality. International Atomic Energy Agency. 2024/04/29). https://www.iaea.org/topics/diet-quality
2. Maslin K. Dean T, Hasan Arshad S, Venter C. Dietary variety and food group consumption in children consuming a cows' milk exclusion diet. Pediatr Allergy Immunol . 2016 Aug;27(5):471-7. doi: 10.1111/pai.12573. Epub 2016 May 27
3. Images from www.freepik.com

# Nutrition Determinants

## Food Security: Jamaicans 15 years and older




| | |
|---|---|
| **Low Food Security** | Food insecurity characterized primarily by reductions in dietary quality and variety. |
| **Very Low Food Security** | Food insecure to the extent that eating patterns were disrupted (skipped meals) and food intake reduced because the household could not afford enough food. |

Food Security exists '*when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'*

**5% of Jamaicans (100,178) had very low food security**

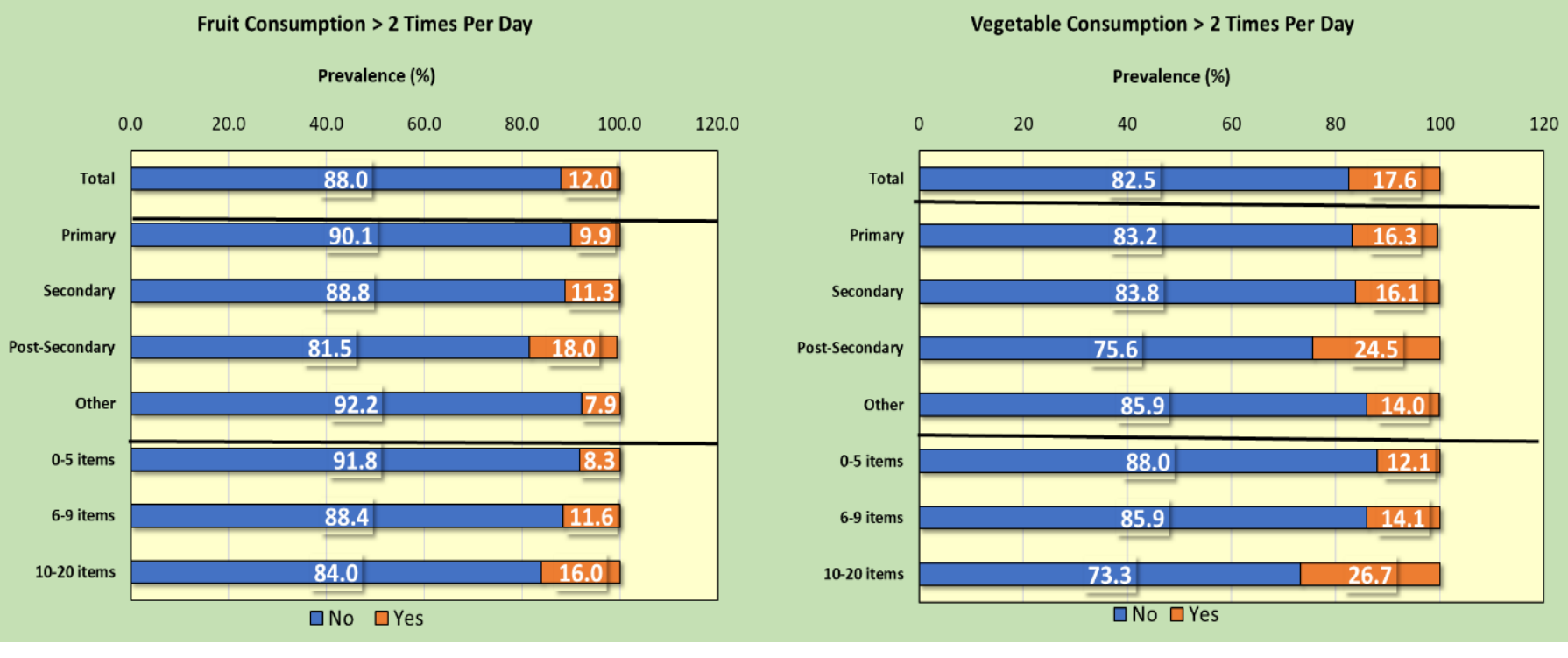
**67% of Jamaicans (1,368,694) had low food security**

Source: The Jamaica Health and Lifestyle Survey Writing Team (2022). The Jamaica Health and Lifestyle Survey III (2016-2017) Technical Report. 2024. Ministry of Health and Wellness and Caribbean Institute for Health Research, University of the West Indies. Kingston, Jamaica.

# Nutrition Determinants

## Fruit/Vegetable Consumption >2 times/day: Jamaicans 15 years & older

Data from the Jamaica Health and Lifestyle Survey (2017) indicates that fruit and vegetable consumption were associated with socio-economic status [(SES), measured by education or number of possessions]; Jamaicans aged 15 years or older with lower SES reported less fruit and vegetable consumption when compared with persons with high SES.

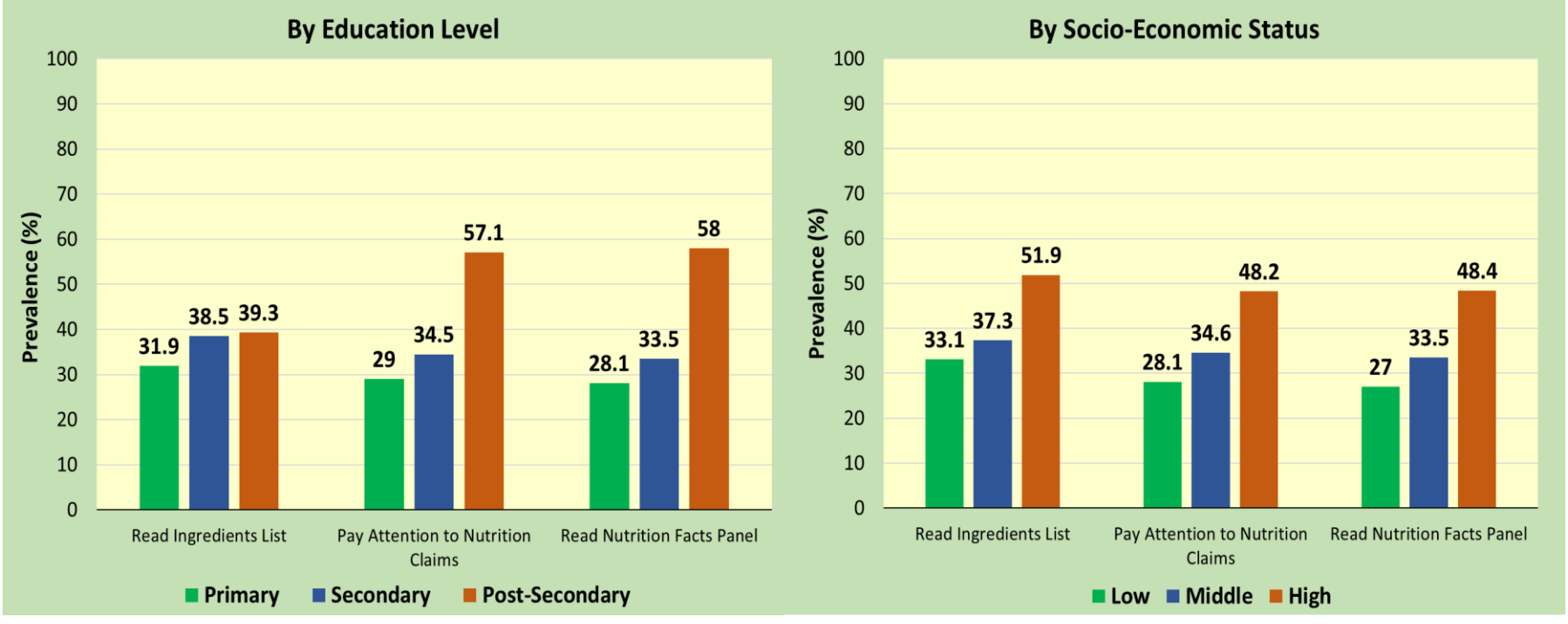



Source: The Jamaica Health and Lifestyle Survey Writing Team (2022). The Jamaica Health and Lifestyle Survey III (2016-2017) Technical Report. 2024. Ministry of Health and Wellness and Caribbean Institute for Health Research, University of the West Indies. Kingston, Jamaica.

# Nutrition Determinants

## Interaction with Nutrition Facts Panel Information by Education and SES: Jamaicans 15 years & older

Persons of low SES may be less likely to have the nutrition information to equip them to make the right nutrition choices. Data from the Jamaica Health and Lifestyle Survey indicates that persons of low SES were less likely to read the nutrition ingredients list, pay attention to nutrition claims, or to read the nutrition facts panel on foods.

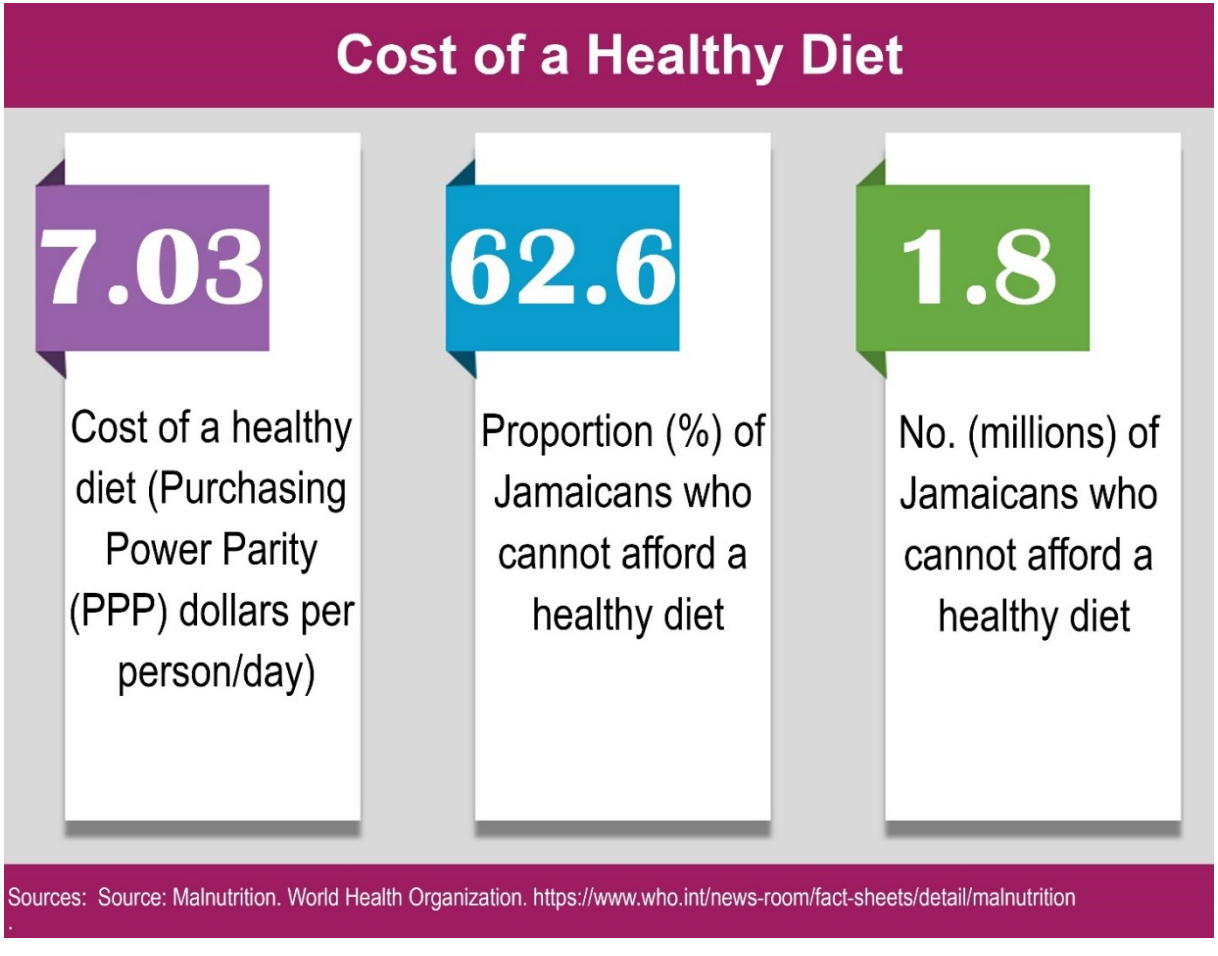


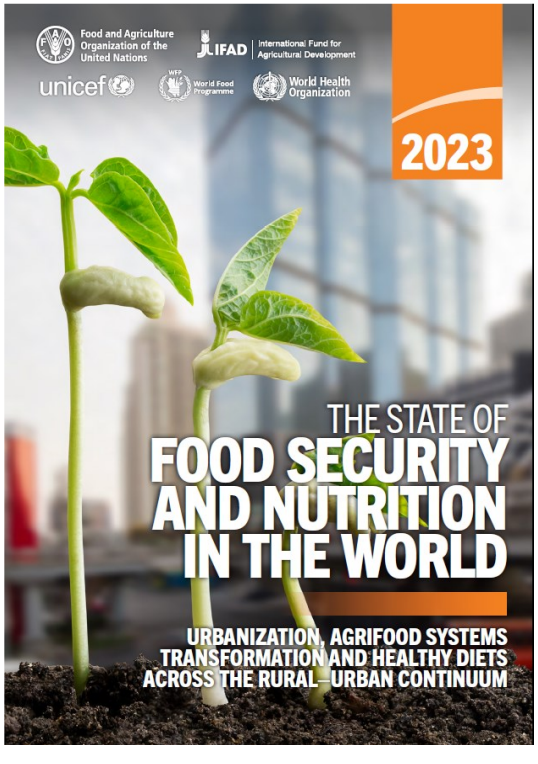

Source: The Jamaica Health and Lifestyle Survey Writing Team (2022). The Jamaica Health and Lifestyle Survey III (2016-2017) Technical Report. 2024. Ministry of Health and Wellness and Caribbean Institute for Health Research, University of the West Indies. Kingston, Jamaica.

# Nutrition Determinants

## Cost of a Healthy Diet

According to the Food and Agriculture Organization approximately two thirds (62.6%) or 1.8 million Jamaicans could not afford a healthy diet in 2021.



# The Response

# Our Response
## Food Based Dietary Guidelines

**Eat a Variety of Foods from All Food Groups Daily**

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • A balanced and healthy diet has Variety, Adequacy, Balance and Control<br>• Different foods from within the same group contain different nutrients<br>• Eating a wide range of foods from each food group will provide all the nutrients needed to maintain a healthy life | • Promotes good health<br>• Improves wellbeing<br>• Provides all the nutrients your body needs<br>• Helps the body to fight illnesses<br>• Provides energy for work and other daily activities | • Include food from each food group daily<br>• Grow a variety of foods in your backyard or in containers<br>• Plan your meals<br>• Use foods with a variety of colours when preparing meals |

**Eat a Variety of Fruits Daily**

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • This includes all fruit such as naseberry, cherry, mango, orange, ripe banana, star apple, among others<br>• These contain fibre, carbohydrate, vitamins, minerals, water and phytonutrients | • Helps prevent constipation<br>• Helps the body to fight illnesses<br>• Improves health of hair, skin and nails | • Eat fruits in season<br>• Grow fruit trees at home<br>• Go for fresh fruits<br>• Prepare fruits in creative ways |

Source: Food Based Dietary Guidelines for Jamaica 2015. Healthy Eating and Active Living. Ministry of Health and Wellness, Jamaica. Images from www.freepik.com, www.canva.com

# Our Response
## Food Based Dietary Guidelines

**Eat a Variety of Vegetables Daily**

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • This includes vegetables such as carrot, string beans, okra, callaloo, cabbage, lettuce, tomato, broccoli among others<br>• Vegetables are a good source of fibre, carbohydrate, phytonutrients, vitamins, minerals and water | • Improves health of hair, skins and nails<br>• Helps the body fight illnesses<br>• Prevents constipation<br>• Helps to control conditions such as diabetes, hypertension, overweight/obesity and heart diseases | • Eat fresh vegetables – eat local and in season<br>• Use vegetables to make your meals colourful<br>• Grow your own vegetables – grow in containers<br>• Use vegetables as snacks |

**Include Peas, Beans and Nuts in Your Daily Meals**

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • This includes all peas, beans, nuts and seeds<br>• These are good sources of fibre, protein and minerals | • Increases fibre intake<br>• Promotes variety in the diet<br>• Provides a healthy option for snacks<br>• Keeps you full for longer | • Eat a handful of nuts as a snack<br>• Add peas and beans to meat dishes<br>• Prepare a meatless bean stew at least once per week<br>• Add peas, beans and nuts to vegetable salads |

Source: Food Based Dietary Guidelines for Jamaica 2015. Healthy Eating and Active Living. Ministry of Health and Wellness, Jamaica. Images from www.freepik.com

# Our Response
## Food Based Dietary Guidelines

### Reduce Intake of Salty or Processed Foods

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • This includes food with very high amounts of sodium such as sausages, bacon, ham, salted peanuts, canned foods such as sardines in brine | Reducing intake of salty or processed foods:<br>• Improves health and wellbeing<br>• Helps to prevent and control high blood pressure, heart disease and some cancers | • Prepare foods with less table salt and artificial seasoning<br>• Avoid using salt at the table<br>• Replace salty snacks with fruits, vegetables and unsalted nuts<br>• Read food labels, look carefully at the sodium content and choose foods with less sodium |

### Reduce Intake of Fats and Oils

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • This includes cooking oil, margarine, butter, meat fat, coconuts, nuts, ackee, avocado (pear), shortening, pastries, fried foods, processed foods, chips, mayonnaise and salad dressing | Reducing intake of fats and oils:<br>• Helps to control hypertension, overweight/obesity, diabetes and heart diseases<br>• Prevents some cancers<br>• Improves health and wellbeing | • Trim visible fat and remove skin from meat before cooking<br>• Use less oil or margarine in cooking<br>• Steam bake and boil foods instead of frying<br>• Read the nutrition facts panels on food labels |

Source: Food Based Dietary Guidelines for Jamaica 2015. Healthy Eating and Active Living. Ministry of Health and Wellness, Jamaica. Images from www.freepik.com

# Our Response
## Food Based Dietary Guidelines

### Reduce Intake of Sugary Foods and Drinks

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • This includes sugar, honey, syrup, jam, sweetened carbonated beverages, condensed milk, sweet snacks and desserts i.e. ice cream and cake, among others | Reducing intake of sugary foods and drinks:<br>• Reduces risk of overweight/ obesity, hypertension, diabetes, heart diseases and chronic illnesses<br>• Helps to control hypertension, diabetes and heart diseases<br>• Helps to control weight | • Read the nutrition facts panel on food labels and choose foods with less sugar<br>• Reduce intake of sweet/sugary drinks<br>• Use fruits in cereals/porridge instead of sugar<br>• Use fruit e.g. ripe banana or raisins in cereals/porridge instead of sugar |

### Make Physical Activity Part of Your Daily Routine

| Characteristics | Benefits | Useful Tips |
|---|---|---|
| • Physical activity that promotes movement and increases heart rate | • Increases energy levels<br>• Reduces stress and promotes relaxation<br>• Prevents and controls diabetes, high blood pressure, high blood cholesterol, heart disease and some cancers<br>• Build strong muscles and bones | • Walk whenever you can. Walk as fast as you can manage<br>• Use stairs instead of the elevator<br>• Stretch and bend for a few minutes as you work<br>• Participate in activities you like such as dancing, skipping and gardening |

Source: Food Based Dietary Guidelines for Jamaica 2015. Healthy Eating and Active Living. Ministry of Health and Wellness, Jamaica. Images from www.freepik.com

# National Response
## Strategies Initiated

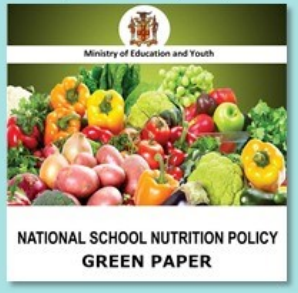
Jamaica has initiated a number of strategies to address nutrition along the life course. These are summarized below:

**Strategies Initiated by the Ministry**
**GoJ Policies and Other Programmes**

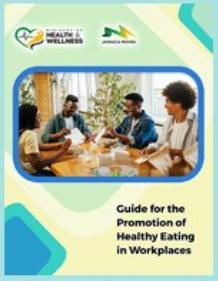
Infant and Young Child Feeding Policy


National Food and Nutrition Security Policy

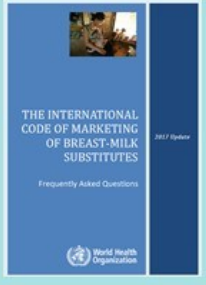

National School Nutrition Policy (Green Paper)




Workplace Policy and Guidelines on Healthy Eating (Being Developed)




International Code of Marketing of Breast Milk Substitutes




Jamaica Moves


Front of Package Labeling


Elimination of Trans Fat From Foods

# National Response

## Critical Actions

The following outlines critical actions to be undertaken in the 'All of Government', 'All of Society' response needed to address the burden of malnutrition in Jamaica:

# Editorial Team