Discovery
Vitality

THE VITALITY OBECITY INDEX 2023

The obesity epidemic is a global challenge that is on the rise and, as a nation, we have one of the highest rates worldwide – half of South African adults are overweight or obese. The Vitality ObeCity Index 2023 analysed data from Vitality members living in six cities across South Africa. While there are some positive trends, we still have a lot to do to combat obesity. We hope that the ObeCity Index highlights possible solutions not only for Vitality members, but for all South Africans. This will go a long way to achieve our core purpose of making people healthier using behavioural, clinical and actuarial science to encourage positive behaviour change for the long term.

– DINESH GOVENDER | CEO: DISCOVERY VITALITY

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FOREWORD

A WEIGHTY ISSUE

We can tackle South Africa's obesity epidemic together

Excess weight is a huge problem in our country and the world today

The prevalence of people who are overweight and obese is at an all-time high, and this is increasing across the globe. More than 1.9 billion or 39% of adults are overweight or obese in the world. In South Africa, 31% of men, 68% of women and about 13% of children under five years old are overweight or obese.

Here's why Vitality is tackling the weight burden

The weight issue we're facing worries us because being overweight or obese increases the risk of people developing illnesses or non-communicable diseases. These include type 2 diabetes, cardiovascular disease and certain cancers. It also increases the risk of premature death.

Obesity leads to increased healthcare costs and reduces both healthspan (the number of years of good health we enjoy) and lifespan. We've seen this among Discovery Health Medical Scheme members.

So, as a behaviour-change programme that is focused on good health, we need to do something about it – and quickly.

We know that obesity is mainly caused by an increasingly poor diet and lack of physical activity, with psychological factors in certain cases contributing to these behaviours and driven by our changing environments.

This impacts mental health too.

Our solution

At Vitality, we know that any lifestyle change, including weight management, is not easy. This is why we want to create lasting interventions that will make a difference to as many people as possible. We hope that our ObeCity Index assists in highlighting the issue and moves the nation towards positive behaviour change. We also hope that our new Vitality HealthyWeight Programme will make a significant impact for those who need it.

The Vitality ObeCity Index presents the latest insights on the weight status, food purchasing and exercise behaviour of Vitality members six major cities in South Africa. Through it we aim to empower, encourage and motivate people, so that we can begin to build a healthier nation – starting today.

Dr Mosima Mabunda
Head of Wellness
Discovery Vitality

OBESITY IS PREVALENT AND INCREASING GLOBALLY

In **2010** ████ **11%** of the world's population was obese
By **2030** ██████ **18%** of the world's population may be obese

OVER **1 BILLION ADULTS** GLOBALLY MAY BE OBESE BY 2030

Source: World Obesity Federation, 2022

Worldwide, 1.9 billion adults are overweight or obese = nearly 1 in 2 people

39% of adults

Source: World Health Organization, 2021a

THE NEXT GENERATION IS GROWING THE WRONG WAY, TOO

Globally, 39 million children under 5 years, and **340 million children and teens** (5-19 years) are overweight or obese.

Source: World Health Organization, 2021a

More than

20 million

South African adults are overweight or obese

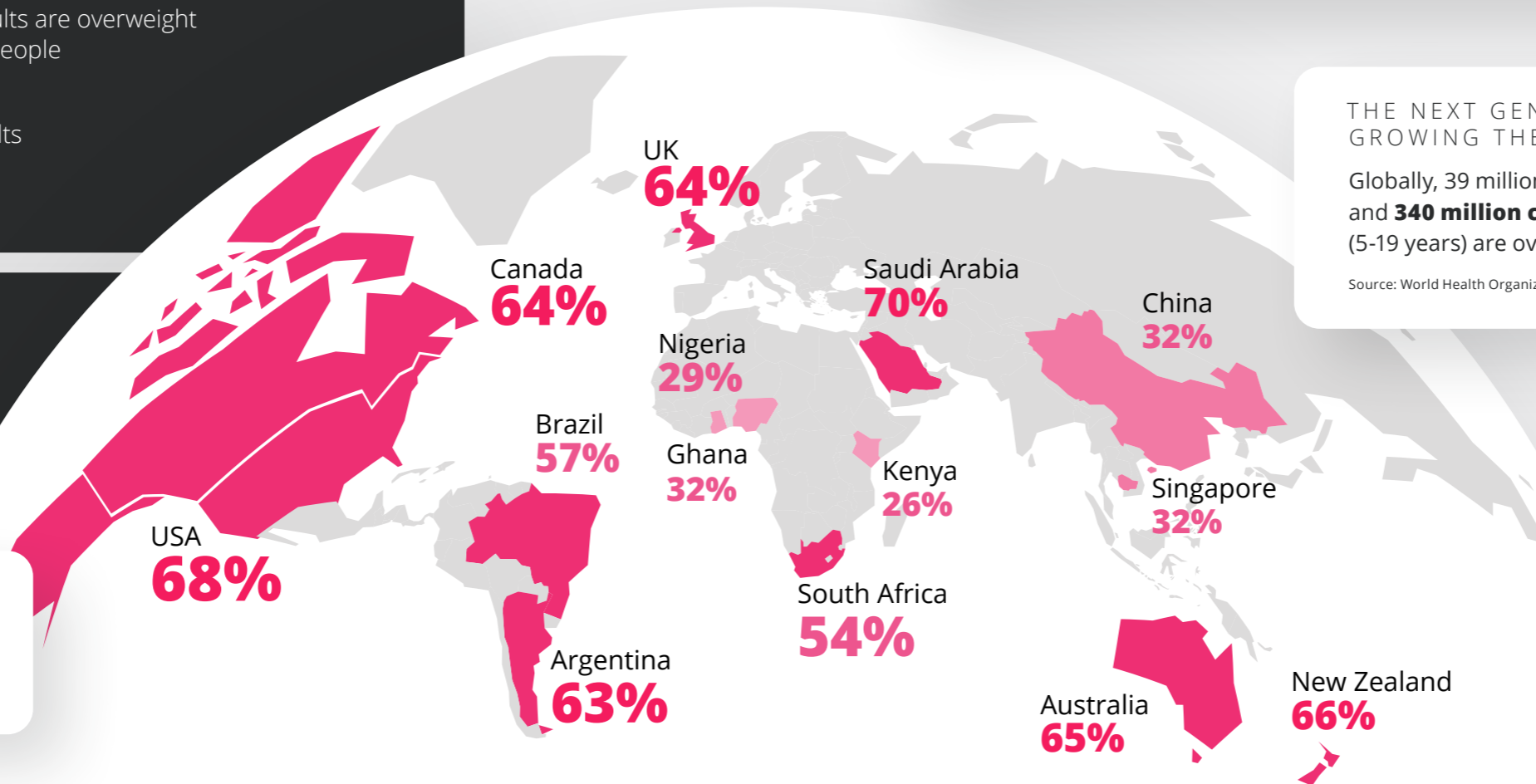Estimation based on adult population size (20 years and older)

OVERWEIGHT AND OBESITY AMONG ADULTS – A WORLDWIDE ISSUE

Source: World Health Organization, 2016 ;18 years and older

UK **64%**

Canada **64%**

Saudi Arabia **70%**

China **32%**

Nigeria **29%**

Brazil **57%**

Ghana **32%**

Kenya **26%**

Singapore **32%**

USA **68%**

South Africa **54%**

Argentina **63%**

Australia **65%**

New Zealand **66%**

WHAT'S MAKING THE WORLD LARGER?

There are a wide range of factors contributing to the rising obesity problem

THE WORLD AROUND US

Unhealthy, energy-dense foods in large portion sizes are affordable and easily available.

The food shopping environment **nudges us to choose unhealthy foods** such as high-fat snacks and sugary drinks.

Misleading food packaging labels make it difficult to correctly identify healthy foods.

The rising cost of living makes choosing healthy foods challenging.

There are **few opportunities for physical activity,** such as access to parks and affordable access to gyms, which makes it difficult to be physically active.

OUR LIFESTYLE HABITS

Consuming more kilojoules from food and drinks than we can burn off means that our bodies store much of the extra energy as fat.

Not being physically active for at least 150–300 minutes a week makes it difficult to maintain a healthy body weight.

Not getting enough sleep is associated with unhealthy weight gain.

HEALTH CONDITIONS AND MEDICATION

Certain health conditions and medication have been associated with weight gain.

GENETICS

Our genes have not evolved for our food-abundant environment, meaning our bodies are primed to protect against weight loss for survival, rather than control weight gain.

While many genes have been associated with obesity (by impacting hunger signals and influencing food intake), **most have very small effects.**

In many cases, **obesity has more to do with environmental factors**, such as poor eating habits and physical inactivity exarcebated by an obesogenic environment.

UNDERSTANDING THE SCOPE OF THE PROBLEM

Obesity is increasingly killing people around the world

South Africans are even more at risk. In 2016, 31% of men, 68% of women, and 13% of our children under five years old were either overweight or obese (Statistics South Africa, 2017). Data (Joubert et al., 2007) show us that a raised BMI is responsible for:

- 87% of type 2 diabetes
- 68% of hypertension
- 61% of endometrial cancer
- 45% of ischemic stroke
- 38% of ischemic heart disease
- 31% of kidney cancer
- as well as 24% of osteoarthritis, 17% of colorectal cancer, and 13% of postmenopausal breast cancer.

Although these statistics are the best we have, the numbers are dated and likely much higher going into 2023.

Dr Jeanne Lubbe

On behalf of the National Department of Health Obesity Strategy Review Team

The key drivers of obesity

We now understand that the causes of obesity are multifactorial and occur at all levels, including the individual person (lifestyle choices like diet and exercise), the immediate environment we find ourselves in (affordability of and access to healthy food and physical activity) and the larger world we live in (market-driven economies, globalisation, policy and legislation).

Although the key drivers of obesity – poor diet and physical inactivity – may at first appear to be individual choice, there are numerous barriers that substantially limit people's choices. These include:

- the cost, taste and accessibility of nutritious versus high-sugar, high-fat foods (and the time, tools and knowledge needed to prepare them),

- the opportunities available in the community for safe physical activity during commuting and leisure time, early childhood feeding practices and school food programmes,

- lack of knowledge about what constitutes a healthy lifestyle (which can sometimes conflict with popular beliefs).

Researchers have shown that obesity is largely driven by environmental effects that undermine the self-regulatory capacity people have to make responsible decisions about personal diet and physical activity.

What we're doing about it

Some of the most notable successes in South Africa for obesity prevention and reduction are the South African National School Nutrition Programme (NSNP) which provides one nutritious meal daily to 9 million children during school terms, supplemented by an additional nutritious breakfast to 40,000 children in the poorest schools.

The Health Promotion Levy, or Sugar Tax, implemented in 2016 has shown a clear reduction in mean sugar intake, reduction of taxed beverage sales and increase in selection of untaxed beverages (milk and bottled water).

Obesity is a treatable condition, with lifestyle changes being the foundation. Medication and surgery are options for those who do not respond to lifestyle change.

Although these are successes to acknowledge and celebrate, all levels of society need to understand the burden of obesity and unite efforts to help South Africans make healthy choices and thus enjoy a healthier life.
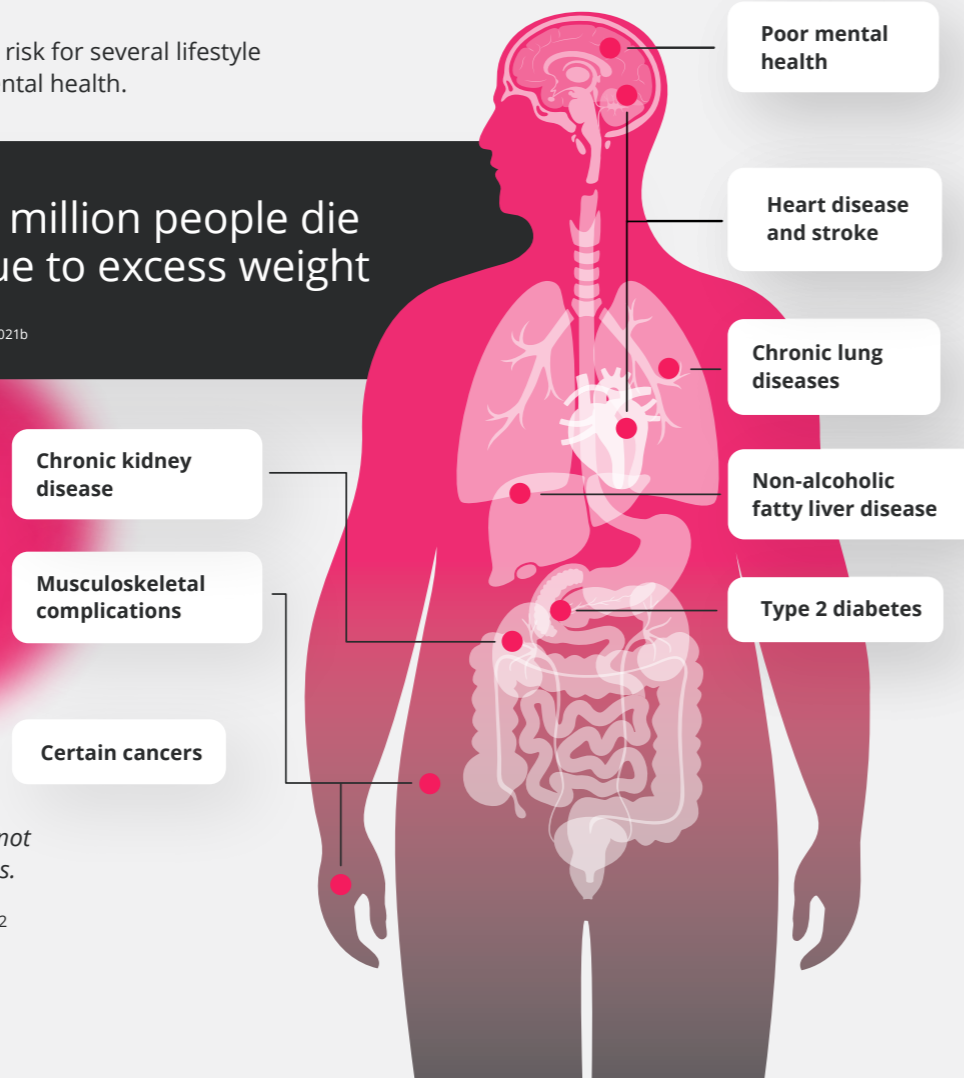
THE BURDEN OF EXCESS WEIGHT

Obesity is a complex chronic disease which reduces our healthspan and lifespan

It significantly increases the risk for several lifestyle diseases as well as poor mental health.

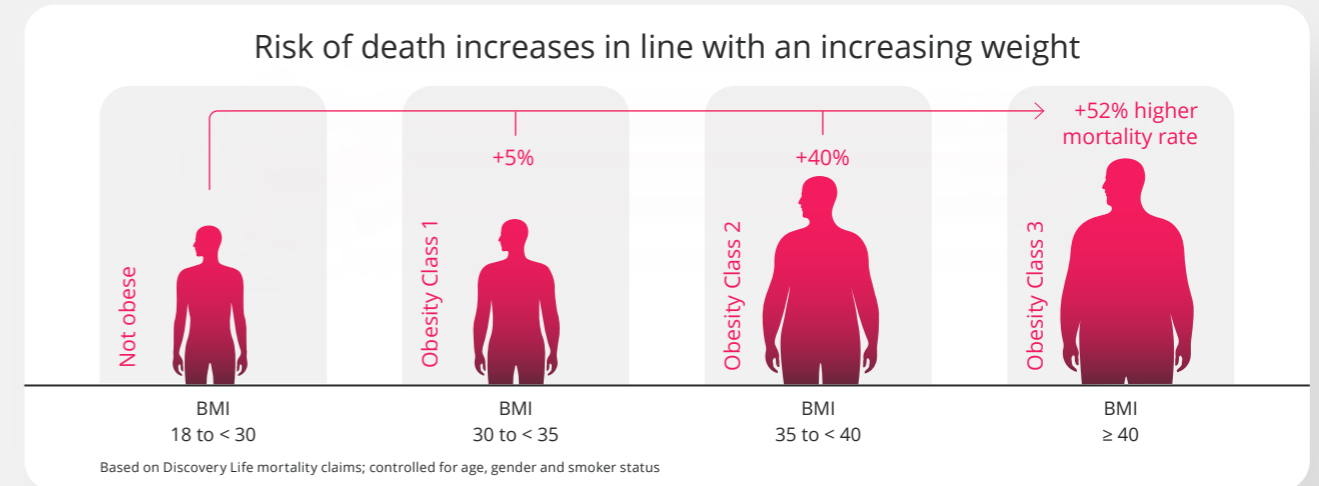**Globally, 2.8 million people die each year due to excess weight**

Source: World Health Organization, 2021b

- Poor mental health
- Heart disease and stroke
- Chronic lung diseases
- Non-alcoholic fatty liver disease
- Type 2 diabetes
- Chronic kidney disease
- Musculoskeletal complications
- Certain cancers

This image depicts some but not all of the health consequences.

Source: World Health Organization, 2022

Added to this are the **economic consequences** of increased costs on the health system.

Risk of death increases in line with an increasing weight

Not obese	Obesity Class 1	Obesity Class 2	Obesity Class 3
	+5%	+40%	+52% higher mortality rate
BMI 18 to < 30	BMI 30 to < 35	BMI 35 to < 40	BMI ≥ 40

Based on Discovery Life mortality claims; controlled for age, gender and smoker status

Obese members are more likely to have a chronic condition compared to those with a healthy weight

Condition	
Type 2 diabetes	6.5x
Hypertension	4.3x
Heart disease	3x
High cholesterol	2.7x
Asthma	1.3x
Rheumatoid arthritis	1.2x

Based on Discovery Health Medical Scheme chronic illness registrations; controlled for age and gender

R21.8 billion

The additional cost of overweight and obesity to medical schemes in South Africa in 2022. Based on the medical scheme covered population in South Africa as at December 2021 (CMS annual 2021/2022 report), this translates into an average additional cost of **R2,444** per individual per year.

Estimation based on Discovery Health Medical Scheme members compared to those within a healthy weight range; controlled for age, gender, plan-type and self-reported smoker status and alcohol intake

BALANCING THE SCALES – HOW TO MEASURE OBESITY

Professor Derick Raal

Director of the Carbohydrate & Lipid Metabolism Research Unit, University of the Witwatersrand

"Body mass index (BMI) is the most widely used method for measuring obesity as it is easy to determine and is most useful for populations because it is the same for both sexes and for all ages of adults.

It is defined as a person's weight in kilograms divided by the square of his height in metres (kg/m^2).

However, an important limitation of BMI is that it cannot distinguish between fat and lean mass, meaning that certain people, such as those with increased muscle mass may be incorrectly classified as overweight. Assessing weight status using BMI together with waist circumference improves the accuracy of the assessment. Waist circumference is highly correlated to fat stored around the abdominal organs (visceral fat), and an increased waist circumference is also associated with an increased disease risk."

$$\frac{\text{Weight}}{\text{Height}^2} = \text{BMI}$$

Body mass index

Vitality assesses weight status using BMI together with waist circumference

A BMI (weight for height) between 18 and 24.9 kg/m^2 is classified as in range.

For a BMI between 25 and 30 kg/m^2, members are classified as having an in range weight status if their waist circumference is less than 80 cm for women and less than 94 cm for men.

An in-range waist circumference is:

less than **80 cm** for women

less than **94 cm** for men

For those aged 65 years and over, waist circumference should be less than 88 cm for women and less than 102 cm for men.

HOW SOUTH AFRICAN CITIES RANK

Which city has the healthiest weight?

We analysed Vitality Health Checks done across South Africa in 2022 which measure waist-adjusted weight and compared the collective weight status across cities.
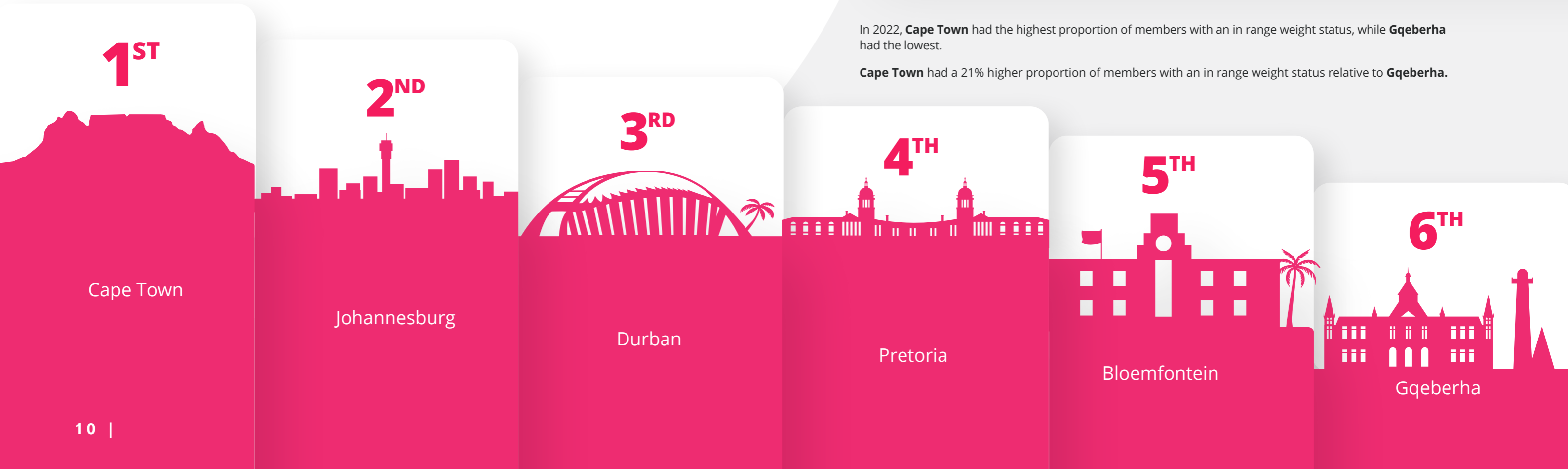
Vitality members aged 18 to 29 years had the highest proportion of members with an in range weight status, while those aged 45 to 64 years had the lowest.
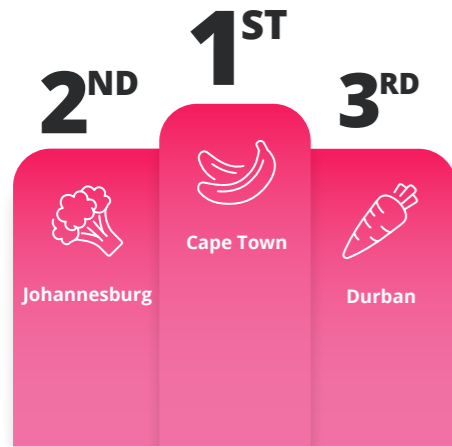
18-29 years old	65+ years old	30-44 years old	45-64 years old
1st	2nd	3rd	4th
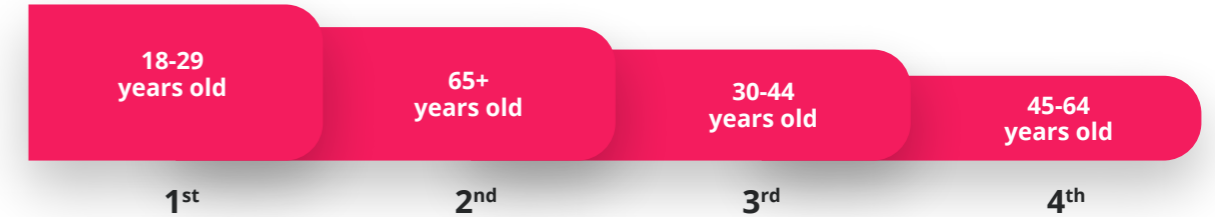
In 2022, **Cape Town** had the highest proportion of members with an in range weight status, while **Gqeberha** had the lowest.

Cape Town had a 21% higher proportion of members with an in range weight status relative to **Gqeberha.**

1ST Cape Town

2ND Johannesburg

3RD Durban

4TH Pretoria

5TH Bloemfontein

6TH Gqeberha

What we are eating

HealthyFood purchases *Vitality* ✓ **HealthyFood**

2ND Johannesburg
1ST Cape Town
3RD Durban

The cities were ranked according to the percentage of HealthyFood items purchased, in comparison to overall food items purchased.

In 2022, members in Cape Town purchased the most healthy food items while those in Pretoria purchased the least. Members in Cape Town purchased 7.5% more healthy food items relative to those in Pretoria.

Vitality HealthyFood items bought in 2022:
71,285,831

Enough to fill
2,376,194
trolleys

Top Vitality HealthyFood items in 2022:

English cucumbers
1,471,200
purchased

Avocados
988,308
purchased

Tuna
978,739
purchased

The amount of fruit and vegetables a typical South African consumes per day:

What we should be eating

At least 5 servings of fruit and vegetables

>

What we actually eat

Under 3 servings of fruit and vegetables

The amount of sugar a typical South African consumes per day:

What we should be eating

No more than 12 teaspoons of sugar

>

What we actually eat

As much as 24 teaspoons of sugar

Sources:
Schneider *et al*, 2007; Temple & Steyn, 2013; World Health Organization, 2015; World Health Organization, 2020

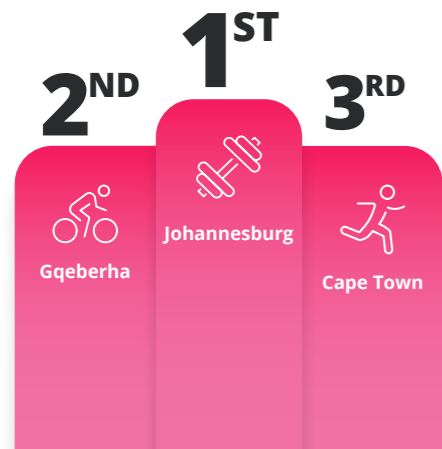### Top three high-sugar purchases

Soft drinks

Sugary baked goods
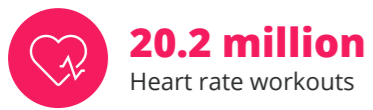
Chocolate

How much - or how little - are we moving?

Monthly physical activity days by city

2ND Gqeberha
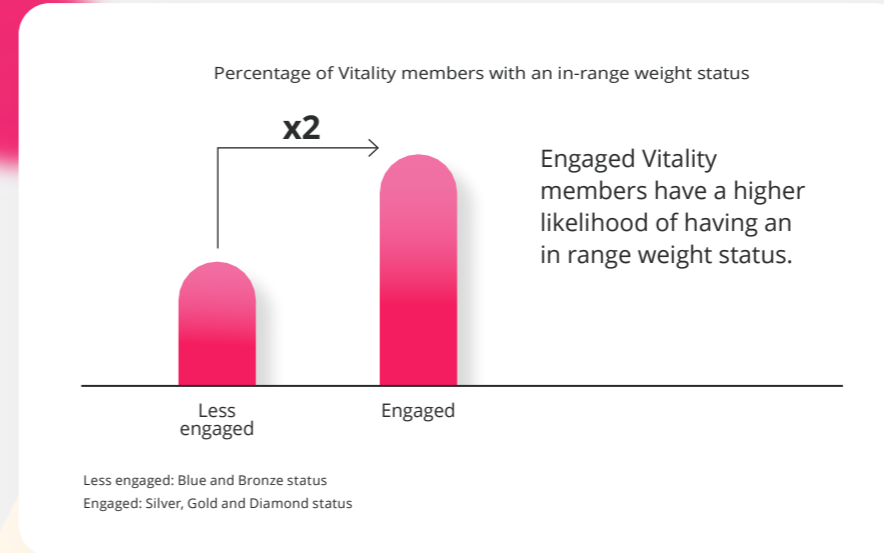
1ST Johannesburg

3RD Cape Town

In 2022, Johannesburg had the highest proportion of members logging a workout, with Gqeberha and Cape Town coming in, in second and third place. Bloemfontein had the lowest number of members logging a workout. Johannesburg had a 5% higher proportion of Vitality members logging workouts relative to Bloemfontein.

The cities were ranked according to average monthly physical activity days. A "physical activity day" was counted as a day on which a member logged any points-qualifying workout (excluding steps). These workouts included workouts connected to a smart device and gym workouts.

Workouts logged in 2022

20.2 million
Heart rate workouts

19.8 million
Gym workouts

60.1 million
Step workouts

Vitality status

Percentage of Vitality members with an in-range weight status

x2

Less engaged

Engaged

Engaged Vitality members have a higher likelihood of having an in range weight status.

Less engaged: Blue and Bronze status
Engaged: Silver, Gold and Diamond status

WEIGHT LOSS IS NOT AN EASY JOURNEY

We conducted a survey of Vitality members to find out why weight management was important to them and what the barriers to successful weight loss could be

THE VITALITY WEIGHT SURVEY

Who are our survey respondents?

Respondents — 900

21-30 years — 8%

31-45 years — 43.8%

46-65 years — 43.6%

Over 65 years — 4.7%

55% | 45%
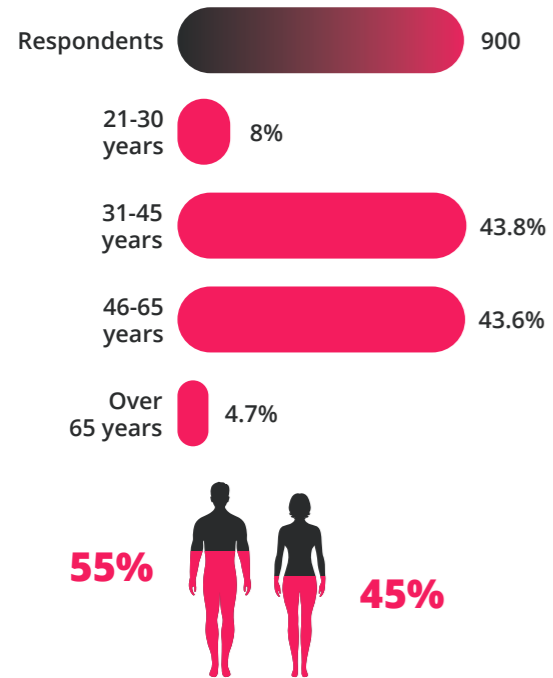
TOP MOTIVATIONS FOR WANTING TO REACH A HEALTHY WEIGHT

01 — Better health

02 — To feel better physically

03 — To look better

04 — Better mental health

05 — To increase Vitality status

TOP CHALLENGES WE FACE WHEN WE TRY TO LOSE WEIGHT

Need support — 26%

Lack of time to cook or exercise — 23.5%

The cost of healthy food — 17%

Need guidance on how to lose weight — 8.5%

Cost of exercise equipment or gym membership — 8%

Lack of healthy cooking skills — 6%

INTRODUCING THE VITALITY HEALTHYWEIGHT PROGRAMME

Vitality HealthyWeight is a fully personalised weight-management programme aimed at motivating you to eat healthier, establish healthy eating habits, and maintain a healthy weight
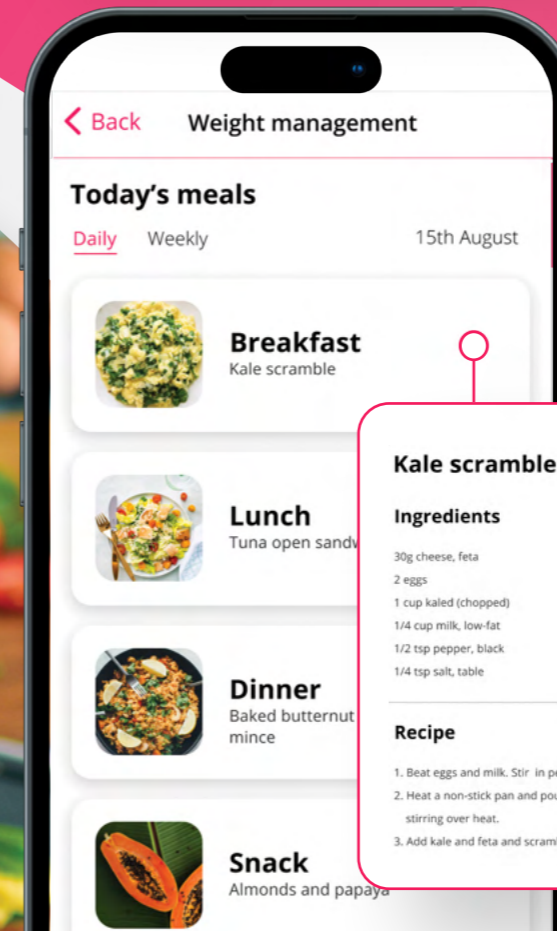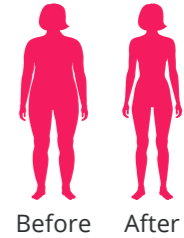
DAILY PERSONALISED SUPPORT

On-demand professional coaching from a dietitian

CUSTOMISED MEAL PLANS, RECIPES AND SHOPPING LISTS

Tailored to dietary and budget requirements, and personal preferences

REGULAR PROGRESS TRACKING AND COACHING

Meal and weight tracking

Before   After
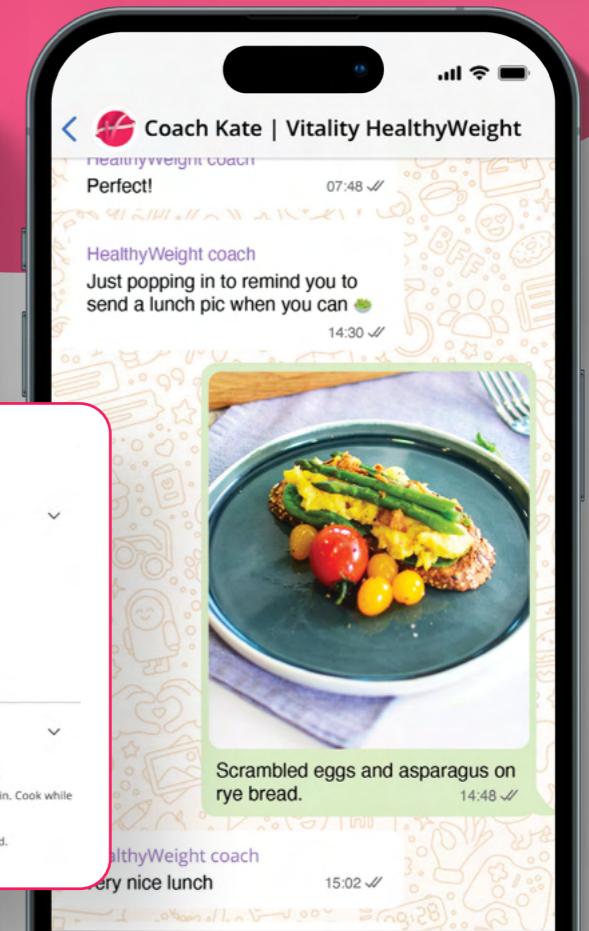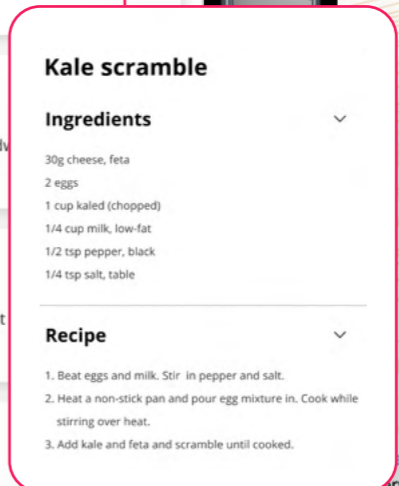
HOW WE KNOW IT WORKS

As part of a pilot phase to test the efficacy of the intervention, over 300 Vitality members were enrolled in the programme. The outcomes of the pilot were extremely successful, demonstrating incredibly high engagement rates with significant weight improvement outcomes. In just 3 months:
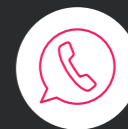
7cm
average waist circumference improvement

5%
average body-weight improvement

98%
participants engaged daily with their coach

VITALITY'S NUTRITION STRATEGY

The Vitality HealthyWeight programme is part of Vitality's holistic nutrition strategy where members are rewarded for knowing and improving their health

01 | KNOW YOUR HEALTH

- **Vitality Age**
- **Vitality Health Check**
  - Waist-adjusted weight
  - Glucose
  - Blood pressure
  - Cholesterol
- **Dietitian visit**

02 | IMPROVE YOUR HEALTH

HealthyFood — The HealthyFood benefit rewards Vitality members for choosing from a catalogue of healthy food items. Members who buy healthy food at the shops receive cash back for their healthy purchases and monthly points towards their Vitality status, a tiered scale of rewards and incentives.

HealthyDining — The HealthyDining benefit rewards members for choosing healthier options when they are eating out at specific partners looking for a convenient dine-in, takeaway meal or ready meal kits.

HEALTHYFOOD STUDIO — The Vitality HealthyFood Studio is a bespoke cooking studio based on the rooftop of Discovery's Sandton offices. Nutrition experts and chefs give cooking skills to empower clients to cook at home, using healthy and delicious ingredients and recipes.

HealthyWeight — Vitality HealthyWeight is a fully personalised weight-management programme aimed at motivating members to eat healthier, establish healthy eating habits, and maintain a healthy weight.

03 | EARN VITALITY POINTS AND STATUS

- Points for Know your Health assessments
- Points for HealthyFood purchases
- Points for dietitian visit or your first HealthyWeight 4 week check-in

04 | GET REWARDED

- Cash back or rewards for HealthyFood, HealthyDining purchases
- Discounted access to HealthyWeight Programme for members at risk

THE FOOD AND MOOD CONNECTION

Dr Uma Naidoo is a Harvard-trained nutritional psychiatrist, professional chef, nutritional biologist and author of the international bestseller:
"This is Your Brain on Food"
(called The Food Mood Connection in South Africa).

The book draws on the latest research to explain the many ways that food contributes to our mental health, and shows how a sound diet can help support and alleviate a wide range of psychological and cognitive health issues, alongside other treatments, such as therapy or medication.

What is the food and mood connection? It starts with the understanding the gut-brain connection. In recent years, we didn't know that there were microbial colonies living in the gut, or how they worked with the rest of the body. This link goes all the way back to embryology because the gut and brain develop from the same cells at conception. Secondly, the vagus nerve, our tenth cranial nerve, works as a text messaging system for chemical messages between the gut and the brain – so whatever we eat sends a direct message to the brain.

Also, 90% to 95% of the serotonin, the happiness hormone, produced in the body comes from the gut. So, the gut turns out to be a hub for neuro-connectivity.

Digestion, too, integrates with the microscopic gut microbes. So, the day you're eating sugar, unhealthy fats or a fast-food diet, the products broken down from that are much more toxic to the gut, and actually feed the 'bad' microbes, too.

You then get damage to the gut lining which causes inflammation – this is the clinical connection and correlation to mental wellbeing, because we know that inflammation over time is behind a variety of mental wellbeing issues.

The gut-brain link then explains the food and mood connection. A happy gut is a happy mood. When you have dysbiosis, or an imbalance, or an unhappy gut, this leads to an unhealthy mood. It's why we say that mental health IS metabolic health. So, the food and mood connection is real. While this area of research is new and emerging and research is ongoing, there is already a strong body of scientific evidence to support this.

CREATING ENABLING POLICIES

Obesity is driven by a complex system that requires a combination of interventions that are mutually reinforcing. While different interventions have been shown to be effective in reducing weight gain, much more could be achieved from adopting policies that target the system which creates barriers for individuals to make healthier choices

Enabling policies for obesity prevention are individuals-centred, systems oriented, transdisciplinary and inclusive of different stakeholders.

Dr Evelyn Thsehla

Research Director/Health Economist

SAMRC/WITS Centre for Health Economics and Decision Science – (PRICELESS SA)

Wits School of Public Health

"There is no one magic bullet for preventing obesity. Collective efforts and policies are needed to tackle the obesity pandemic."

- Consider individual-centred policies, behavioural, socioeconomic and demographic profiles of targeted populations.

- Remove barriers for healthier food choices through interventions such as food labelling

- Encourage healthier options through subsidies and taxes

- Consider barriers for implementation

Systems-oriented approaches

Consider individual, organisational, social, environmental and economic factors and the different actors across sectors and how they dynamically interact.

Transdisciplinary

Engages public health specialists, behavioural scientists, clinicians and other disciplines to take collective action towards a shared goal.

Stakeholder participation

Engage stakeholders and communities to create a sense of ownership and in so doing empowering the population served by the policy.

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