



Vitality™

# Know your health

Screening for early detection of cardiometabolic risk

March 2024

# Vitality incentivises members to know their cardiometabolic disease risk



Globally, cardiometabolic diseases are the leading causes of death, disability and poor health. The prevalence of these conditions puts a significant burden on healthcare systems and economies. In South Africa, diabetes is the top underlying natural cause of death. Cardiovascular diseases are also among the top causes of deaths locally.

Shockingly, despite the high prevalence of these conditions, nearly half of adults living with hypertension or diabetes are unaware that they have these conditions.

Health screenings are proven to be an easy and cost-effective way to detect the early onset of most cardiometabolic diseases. However, screening rates are lower than they should be in the general population

and also among our own members (six out of 10 members have not done a Vitality Health Check in the past three years).

Doing a Vitality Health Check is quick (15 minutes), easy and accessible. Vitality Health Checks give individuals a valuable snapshot of their cardiometabolic disease risk by identifying health risks across five key measures: blood pressure, blood glucose, blood cholesterol, weight status and smoker status. Where results are not within the recommended ranges, a person is flagged as at intermediate or at high risk of developing non-communicable diseases like diabetes or hypertension. Members with out-of-range results are advised to consult with their doctors for further assessment.

When it comes to detecting the risk of chronic diseases, health screenings are incredibly important. By encouraging a health check, we see Vitality members becoming aware of their risk, being able to make the necessary lifestyle adjustments to address high-risk areas early on, and to receive the right support to manage possible chronic health conditions.

**Dr Mosima Mabunda**  
**Head of Wellness**  
**Discovery Vitality**

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“Vitality has been a leader in incentivising preventative healthcare since 1997, offering clinically validated assessments to help our members assess their health status and risk of cardiometabolic diseases. One of these assessments is the Vitality Health Check, which measures key indicators such as waist-adjusted BMI, blood pressure, blood glucose, blood cholesterol and smoking status. These indicators help our members to take action to improve their health and reduce their risk of cardiometabolic diseases. Screening for cardiometabolic disease risk allows for early detection and timeous management which can ultimately reduce healthcare costs. Vitality's mission is to make people healthier and protect their lives, which is why we incentivise our members to know their health. Simply put, the Vitality Health Check saves lives.”

**Dinesh Govender, CEO Discovery Vitality**



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# There is a high prevalence of cardiometabolic diseases across the globe

Across the globe, both cardiovascular diseases (CVD) as well as diabetes are leading causes of death, disability and poor health. The growing burden of cardiometabolic risks across the world necessitates renewed focus on prevention, treatment, and control strategies.

## About cardiometabolic diseases

Cardiometabolic diseases are a group of common and often preventable chronic diseases affecting the heart, blood vessels, and metabolic health. These diseases include CVD (including heart disease and stroke) and diabetes mellitus.

## Diabetes prevalence

In 2021, **529 million people** worldwide were living with diabetes, with a 6.1% prevalence. Type 2 diabetes made up 96% of all diabetes cases. Between 1990 and 2021, the prevalence of diabetes increased by 90.5%. The total global prevalence of diabetes is projected to increase by 59.7% to a 9.8% prevalence by 2050, amounting to **1.31 billion people** living with diabetes.<sup>1</sup>

In 2019, diabetes mellitus was the leading underlying natural cause of death in South Africa, contributing to 26,191 deaths.<sup>2</sup>

## Cardiovascular disease prevalence

Globally in 2022, CVD caused:<sup>3</sup>

- **19.8 million deaths**
- **396 million years of life lost**
- **44.9 million years lived with disability**

Notably, 34% of these CVD deaths occurred in people younger than 70. The main contributor towards CVD-related deaths was ischemic heart disease (with an age-standardised rate of 108.8 deaths per 100,000), followed by intracerebral haemorrhage and ischemic stroke.

- In 2019, CVDs were among the top underlying natural causes of death in South Africa. These included cerebrovascular diseases (23,133 deaths), hypertensive diseases (20,492 deaths), ischaemic heart diseases (15,904 deaths), and other forms of heart disease (15,741 deaths).<sup>2</sup>



Despite the high prevalence of CVD and diabetes, many people living with these conditions don't know that they have them. This could mean that they don't seek care which may increase the risk of the disease progressing.

- **Nearly half (46%) of adults** living with hypertension do not know that they have the condition.<sup>4</sup>
- Similarly, in 2021, **44.7% of adults** were unaware that they had diabetes.<sup>5</sup>

Regular health check screenings are an easy and cost-effective way to detect the early onset of cardiometabolic diseases. However, screening rates are lower than they should be. In England, only 38.9% of people who were invited in the 2022/2023 period took up a National Health Service (NHS) Health Check, which aims to help prevent heart disease, stroke, diabetes and kidney disease.<sup>6</sup>

Vitality data show that more than half of Vitality members have not done a Vitality Health Check in the past three years and may not understand their health status and health risks.

- **6 in 10 members have not done a Vitality Health Check in the past three years.**

<sup>1</sup> GBD 2021 Diabetes Collaborators. (2023) [Global, regional, and national burden of diabetes from 1990 to 2021, with projections of prevalence to 2050: a systematic analysis for the Global Burden of Disease Study 2021](#).

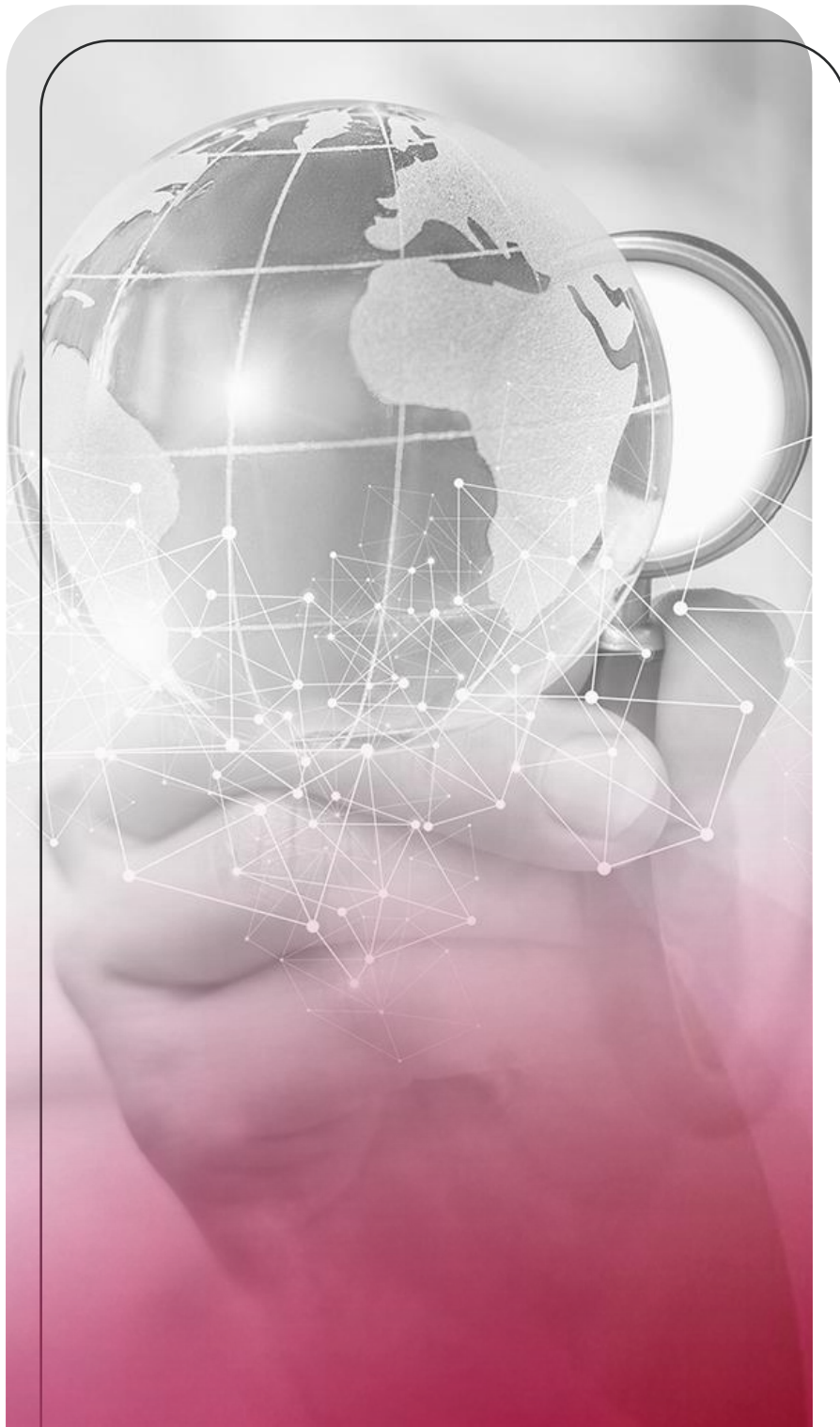
<sup>2</sup> Statistics South Africa (2023) [Mortality and causes of death in South Africa: Findings from death notification 2019](#)

<sup>3</sup> Mensah, et al., (2023) [A Heart-Healthy and Stroke-Free World](#)

<sup>4</sup> World Health Organization (2023) [Hypertension](#)

<sup>5</sup> International Diabetes Federation (2021). [IDF Diabetes Atlas \(10<sup>th</sup> edition\)](#)

<sup>6</sup> Office for Health Improvement and Disparities (2023) [NHS Health Check](#)



# Cardiometabolic diseases place a high economic burden on healthcare systems across the globe

Cardiometabolic diseases place a significant burden on the healthcare systems and economies of countries. The annual direct and indirect cost of cardiovascular disease (CVD) and stroke in the United States was an estimated \$407.3 billion in 2018 to 2019. This figure includes:

- \$251.4 billion in expenditure (direct costs, which include the cost of physicians and other professionals, hospital services, prescribed medication, and home health care, but not the cost of nursing home care).
- \$155.9 billion in lost future productivity attributed to premature CVD mortality (indirect costs).<sup>1</sup>

## The global health care expenditure for diabetes in adults:

- Rose from \$232 billion in 2007 to \$966 billion in 2021 (a 316% increase over 15 years).
- Is predicted to reach \$1.03 trillion by 2030 and \$1.05 trillion by 2045.<sup>2</sup>

<sup>1</sup> Tsao, et al. (2023) Heart Disease and Stroke Statistics – 2023 Update: A Report From the American Heart Association

<sup>2</sup> International Diabetes Federation (2021). [IDF Diabetes Atlas \(10th edition\)](#)

# Risk factors for developing cardiovascular diseases

Cardiometabolic risk refers to risk factors that increase the likelihood of experiencing vascular events (diseases that affect blood vessels) or developing diabetes.

Risks for developing cardiovascular disease (CVD) include raised blood pressure, raised blood glucose, raised cholesterol, and overweight and obesity. These risk factors can all be prevented and controlled through lifestyle and behavioural changes including a healthy diet (specifically the reduction of salt in the diet and eating more fruit and vegetables), regular physical activity, cessation of tobacco use, and avoiding the harmful use of alcohol.<sup>1</sup> On a societal level, multifaceted, multisectoral, social, environmental and policy changes can be implemented to prevent and reduce these risk factors.<sup>2</sup>

## Biomedical and behavioural risk factors contribute to a high level of disease burden

- In 2021, the greatest behavioural risk factor contributor to global CVD disability-adjusted life years (DALYs) (adjusted for age) was dietary risk at 2,340 per 100,000, followed by smoking. One DALY represents the loss of the equivalent of one year of full health.
- The greatest biomedical risk factor contributing towards CVD DALYs (adjusted for age) was high systolic blood pressure at 2,770 per 100,000 globally.
- Dietary risks accounted for 6.58 million cardiovascular deaths and high systolic blood pressure for 10.8 million.<sup>3</sup>

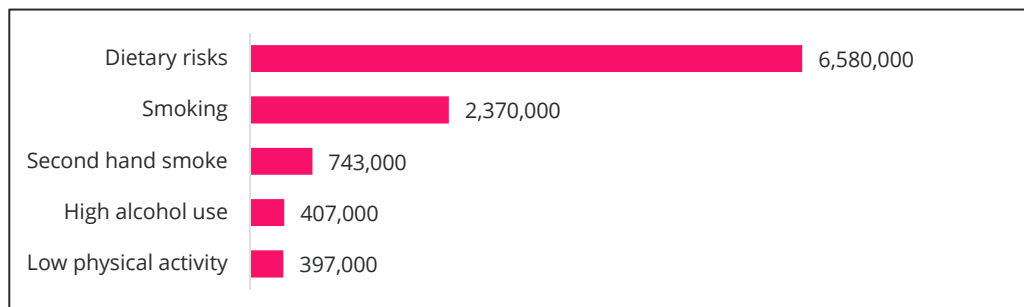
<sup>1</sup> World Health Organization (2021) Cardiovascular diseases

<sup>2</sup> Mensah, et al., (2023) [A Heart-Healthy and Stroke-Free World](#)

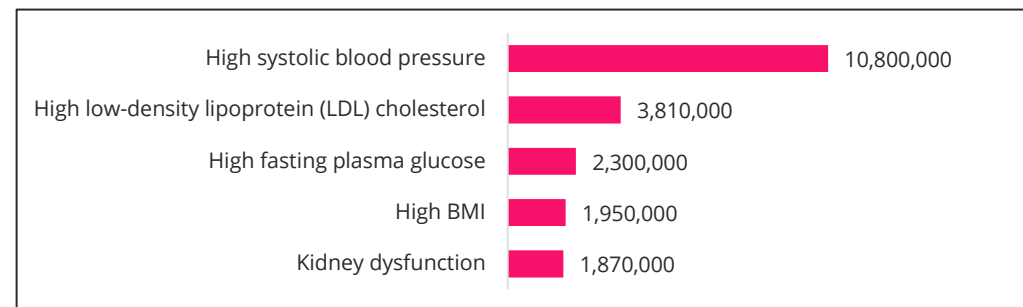
<sup>3</sup> Vaduganathan, et al., (2022) [The Global Burden of Cardiovascular Diseases and Risk: A compass for Future Health](#)



## Top global behavioural risks in 2021 by number of attributed deaths due to cardiovascular disease:<sup>1</sup>



## Top global biomedical risk factors in 2021 by number of attributed deaths due to cardiovascular disease:<sup>1</sup>



## Risk factors for developing diabetes

Risks for the developing type 2 diabetes include being overweight, age (being 45 years or older), having a close family member with type 2 diabetes, as well as being physically inactive.<sup>2</sup> In 2021, high body mass index (BMI) contributed more than half (52.2%) of global type 2 diabetes DALYs, rising by 24.3% between 1990 and 2021. Contributors towards DALYs for type 2 diabetes included dietary risks (25.7%), tobacco use (12.1%), low physical activity (7.4%), and alcohol use (1.8%).<sup>3</sup>

## Leading global risks in 1990 vs. 2019

Biomedical risk factors increasingly became a global risk for disease between 1990 and 2019. Globally, high systolic blood pressure, smoking, high blood glucose, and high BMI were among the top risk factors for disease in 2019. Concerningly, the largest increases in all risk exposure between 1990 and 2019 were seen among two of these risk factors (high BMI and high fasting plasma glucose).<sup>4</sup>

## Leading global risks in 1990 vs. 2019 (all ages)

	Leading risks 1990	Percentage of DALYs 1990
1	Child wasting	11.4
2	Low birthweight	10.6
3	Short gestation	8.7
4	Household air pollution	8.0
5	<b>Smoking</b>	6.2
6	Unsafe water	6.2
7	<b>High systolic blood pressure</b>	5.9
8	Child underweight	4.9
9	Unsafe sanitation	4.6
10	Handwashing	3.2

	Leading risks 2019	Percentage of DALYs 2019
1	<b>High systolic blood pressure</b>	9.3
2	<b>Smoking</b>	7.9
3	High fasting plasma glucose	6.8
4	Low birthweight	6.3
5	<b>High body-mass index</b>	6.3
6	Short gestation	5.5
7	Ambient particulate matter	4.7
8	<b>High LDL cholesterol</b>	3.9
9	<b>Alcohol use</b>	3.7
10	Household air pollution	3.6

<sup>1</sup> Vaduganathan, et al., (2022) [The Global Burden of Cardiovascular Diseases and Risk: A compass for Future Health](#)

<sup>2</sup> Centers for Disease Control and Prevention (2022) [Diabetes Risk Factors](#)

<sup>3</sup> GBD 2021 Diabetes Collaborators (2023) [Global, regional, and national burden of diabetes from 1990 to 2021, with projections of prevalence to 2050: a systematic analysis for the Global Burden of Disease Study 2021](#)

<sup>4</sup> GBD 2019 Risk Factors Collaborators (2020) [Global burden of 87 risk factors in 204 countries and territories, 1990–2019](#)

# The Vitality Health Check gives individuals a valuable snapshot of their cardiometabolic risk

By completing a Vitality Health Check, health risks across five measures are identified.

Vitality members earn Vitality points for completing the Vitality Health Check and for keeping their results within recommended ranges.

Where results are not within the recommended ranges, Vitality defines it as intermediate- or high-risk of developing a serious non-communicable disease such as diabetes or hypertension.

Members with out-of-range results are advised to consult with their doctor for further assessment and management. Additionally, they are encouraged to participate in Vitality's lifestyle interventions, including physical activity through Vitality Active Rewards, access to healthy food options through the Vitality HealthyFood benefit and smoking cessation programs.



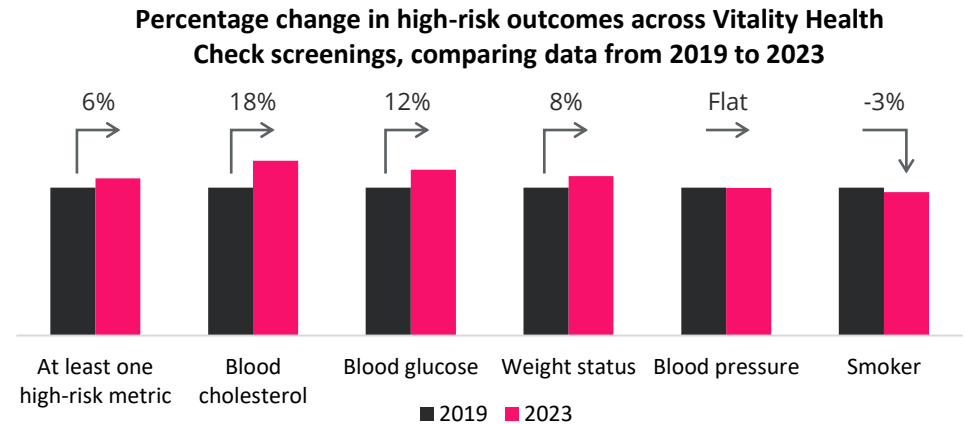


# Risk factors for cardiometabolic disease among Vitality members

## Cohort analysis of Vitality Health Check data in 2019 and in 2023

There is an upward trend in the proportion of members with high-risk outcomes

The percentage of Vitality members who have completed a Vitality Health Check with at least one high-risk outcome increased slightly over time. When looking at individual outcomes, increases were seen across blood cholesterol levels (by 18%), followed by blood glucose levels (by 12%), and weight status (by 8%). Blood pressure outcomes remained stable and smoking prevalence decreased marginally.



Those aged 18-39 years had the highest percentage increase in high-risk outcomes



The percentage of members with at least one high-risk outcome increased most for those aged 18-39 years (by 8%), followed by those aged 40-64 years (by 5%).

- **18-39 years:** high-risk blood glucose increased (by 35%), followed by blood cholesterol (by 33%) and weight status (by 15%). Smoking prevalence and high-risk blood pressure decreased slightly by 5% and 6% from their 2019 levels.
- **40-64 years:** high-risk blood cholesterol increased (by 19%), followed by blood glucose (by 17%), blood pressure (by 10%) and weight status (by 5%). Smoker prevalence remained similar.
- **65 years or older:** high-risk blood glucose increased (by 38%), followed by smoker prevalence (by 20%). High-risk weight status decreased marginally, while blood cholesterol and blood pressure decreased by 15% and 16%, respectively.

Females had the highest increase in high-risk outcomes



More females registered at least one high-risk outcome over time than males (13% vs. 4% increase).

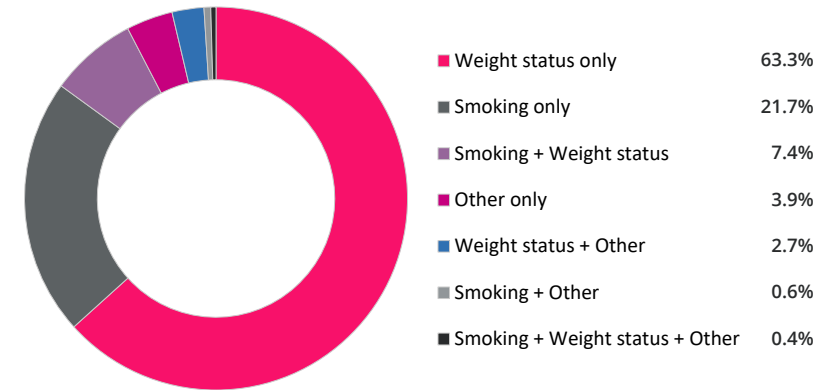
- **Females:** high-risk blood glucose increased (by 28%), followed by blood cholesterol (by 20%), and weight status (by 14%). Blood pressure increased marginally, and smoking prevalence remained stable.
- **Males:** high-risk blood cholesterol increased (by 15%), followed by blood glucose (by 4%). Weight status increased marginally, blood pressure remained stable, while smoking prevalence decreased by 6%.

# Obesity was the most prevalent risk factor recorded in 2023



Data from 2023 Vitality Health Checks shows that obesity remains prevalent. 73.8% of members with at least one high-risk outcome had either weight status alone or combined with other outcomes as their high-risk metrics.

Split of high-risk Vitality members by combination of high-risk outcomes



## Those aged 40-64 years had the highest percentage high-risk outcomes in 2023



- Overall, those aged 40-64 years had the highest percentage of members with at least one high-risk outcome (30% higher compared to those aged 65 or more who had the lowest percentage).
- Those aged between 40 and 64 years recorded the highest percentage of high-risk weight status and blood cholesterol (32% and 89% higher relative to 18-39 years, respectively).
- High-risk blood pressure and blood glucose prevalence increased with age. Smoking prevalence decreased with age.

## Males had the highest percentage of high-risk outcomes in 2023



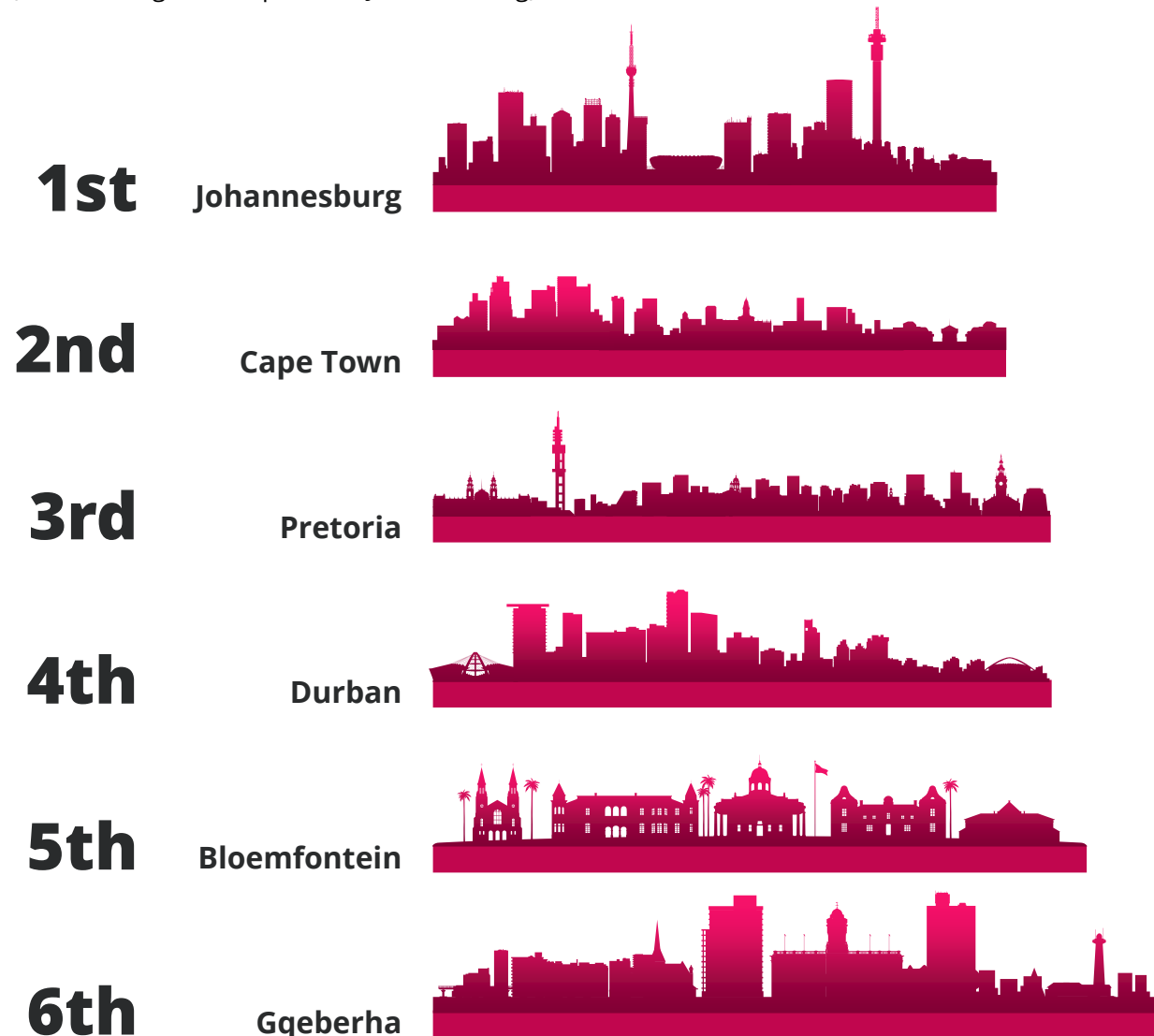
Overall, males had the highest percentage of members with at least one high-risk outcome (12% higher prevalence compared to females).

- Males:** high-risk blood pressure, blood glucose and smoking status were more prevalent among male members (102%, 76%, and 57%, respectively).
- Females:** high-risk blood cholesterol was more prevalent in female members (18% higher prevalence compared to males).

# High-risk outcomes across South African cities

Vitality Health ranked six South African cities according to the percentage of Vitality members who had a high-risk metric in 2023

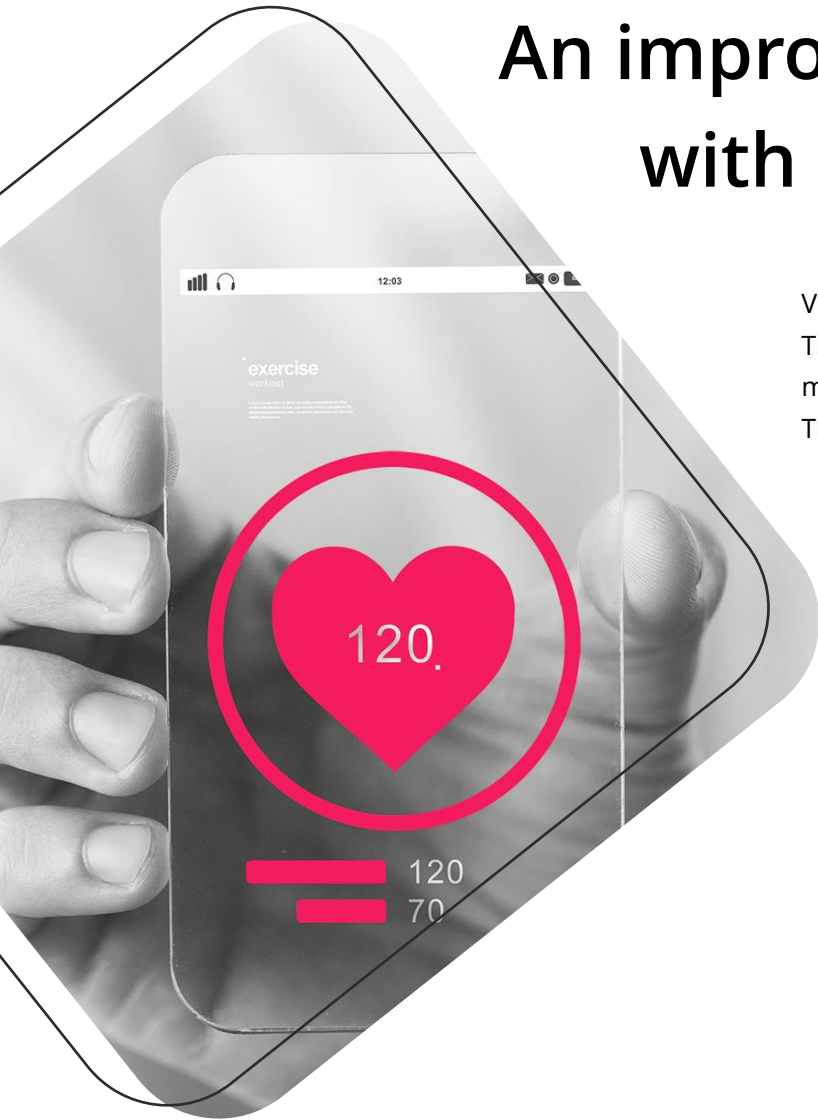
In 2023, Johannesburg had the lowest overall percentage of Vitality members with at least one high-risk Vitality Health Check outcome. Gqeberha had the highest overall percentage of Vitality members with at least one high-risk outcome (1.3 times higher compared to Johannesburg).



## For individual risk outcomes:

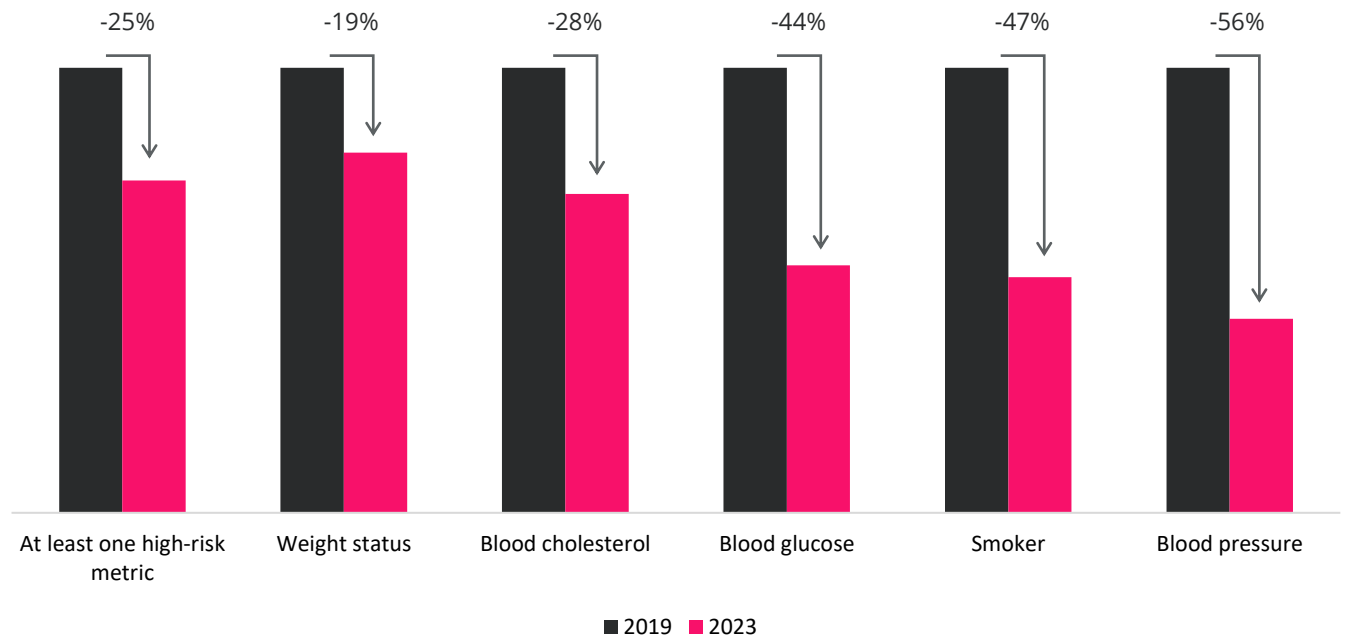
- **Johannesburg** had the lowest percentage of high-risk weight status and blood cholesterol.
- **Pretoria** had the lowest percentage of high-risk blood glucose.
- **Bloemfontein** had the lowest percentage of high-risk blood pressure.
- **Durban** had the lowest percentage of smokers, but the highest percentage of high-risk blood glucose (2.6 times higher relative to Pretoria) and blood cholesterol (2.4 times higher relative to Johannesburg).
- **Gqeberha** had the highest percentage of high-risk weight status (1.4 times higher relative to Johannesburg), blood pressure (2.4 times higher relative to Bloemfontein), and smokers (1.14 times relative to Durban).

# An improvement in Vitality status is associated with improved outcomes across all metrics



Vitality members who increase their Vitality status show an improvement in all of their high-risk outcomes. This was the case among Vitality members who did a Vitality Health Check in both 2019 and in 2023 and who moved from a lower Vitality status in 2019 to a higher status in 2023 (adjusted for age). This could be due to increased awareness of risk factors and participation in Vitality programmes.

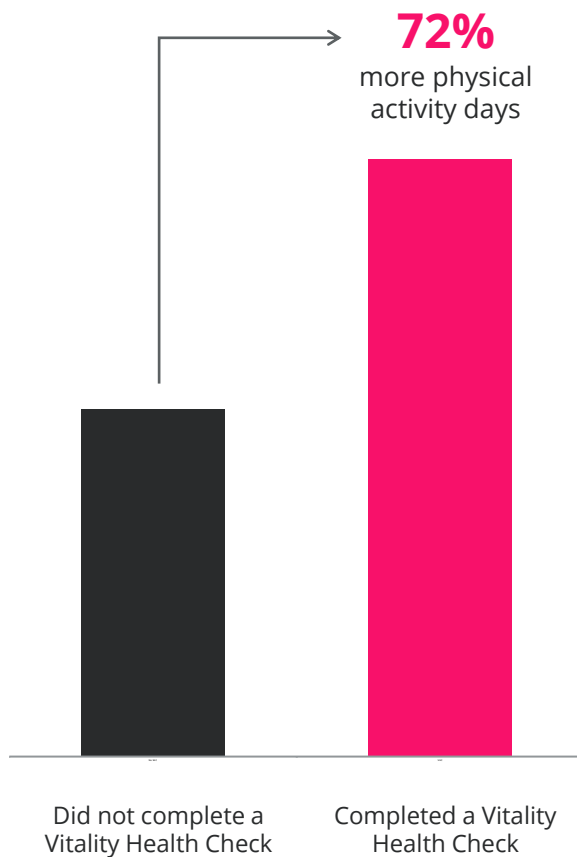
Percentage change in high-risk outcomes across Vitality Health Checks for members who moved from a lower Vitality status in 2019 to a higher status in 2023



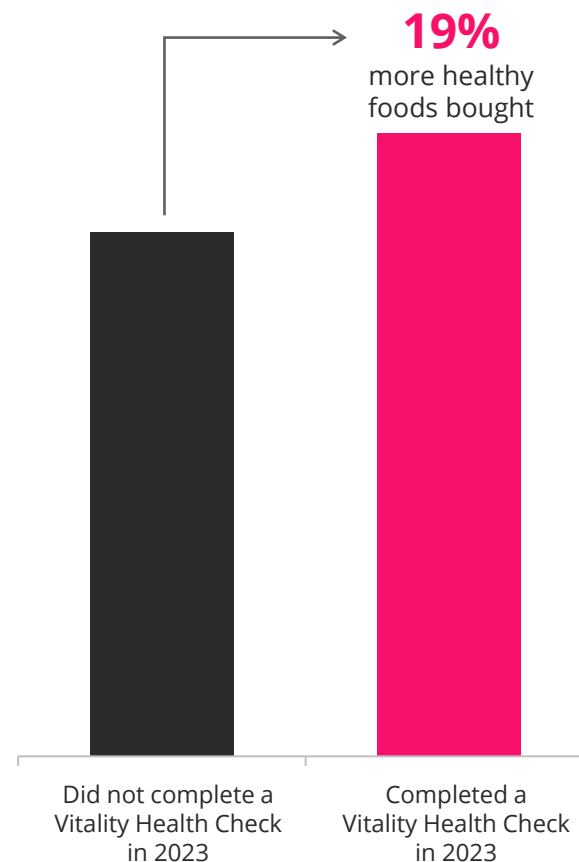
# Completing a Vitality Health Check is associated with healthier lifestyle behaviours and lower healthcare costs

Vitality members who completed a Vitality Health Check in 2023 were more likely to exercise and purchase healthy foods, compared with Vitality members who did not complete a Vitality Health Check.

**Average physical activity days per month, excluding steps, in 2023**

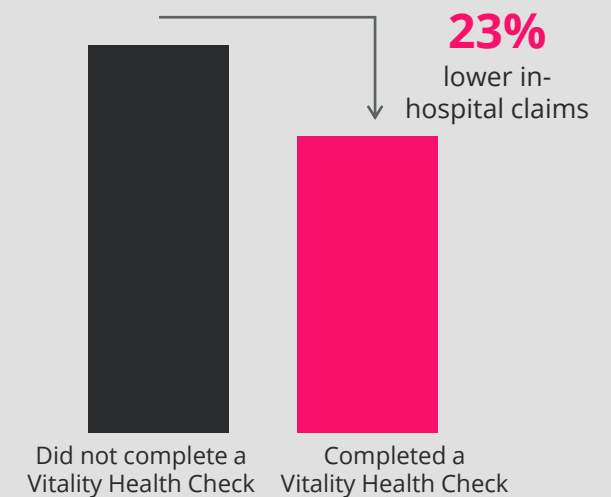


**Average percentage of healthy foods bought on the HealthyFood benefit in 2023**



Completing a Vitality Health Check in 2022 was associated with lower in-hospital claims, compared with Vitality members who did not complete a Vitality Health Check.

**Risk-adjusted in-hospital claims costs in 2022**



**High-risk Vitality members are 11 times more likely to register for the Chronic Illness Benefit within 3 months of completing their first Vitality Health Check**

# Early detection of cardiometabolic diseases has significant cost saving implications

A National Health Service study in the UK looked at six high risk conditions: hypertension, high cholesterol, type 1 and 2 diabetes, non-diabetic hyperglycaemia, atrial fibrillation, and chronic kidney disease.

The study found that:



£68 billion could be saved in healthcare costs.



4.9 million quality adjusted life years (QALYs) gained (one QALY is equal to one year of life in perfect health).



3.4 million cases of CVD prevented over 25 years if everyone in England were diagnosed and managed at current levels.

# Vitality Health Checks are accessible to everyone

**1** Discovery Store



**2** Dis-Chem



**3** Clicks



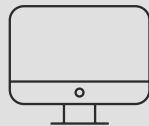

**4** Registered GP and Pharmacy Network



**5** VHC at Home



**6** VHC 65+



For more information, visit [discovery.co.za/vitality/vitality-check](https://discovery.co.za/vitality/vitality-check)

# Toni Redman did her yearly health check. The results changed her life.



A Discovery Vitality member since 2009, Toni Redman, 48, has been going to her local Clicks every year for a Vitality Health Check. At her 2020 consultation, the nurse noticed a concerning trend in the results of Toni's blood sugar tests over the past four years - while her readings were still within the recommended range, they were slowly rising.

Toni's doctor then diagnosed insulin resistance, a condition that potentially leads to type 2 diabetes.

*"Without the Vitality Health Check, I could've developed type 2 diabetes and found myself on chronic medicine for the rest of my life," says Toni.*

*"My GP prescribed medicine to help stabilise my blood sugar levels. But managing my weight has always been a stumbling block, so I knew I had to make other lifestyle changes too."*

## **Toni embraces exercise and healthy eating**

Toni signed up for swimming classes and joined the Vitality HealthyWeight programme in 2023. *"The support from my nutrition coach has been tremendous."*

She lost 9 kg in the first three months on the programme and aims to continue with this sustained, healthy weight loss. *"I'm feeling the change in my overall wellbeing," says Toni.*

## **Reaping the rewards**

*"With Vitality Travel, there are great discounts to take advantage of," she adds. "The points I earn for doing my Vitality Health Check all add up. The incentives for healthy behaviour, the occasional clever nudges from the newsletter, and the encouraging and non-judgemental feedback from my HealthyWeight coach are really helpful."*





# Acknowledgements

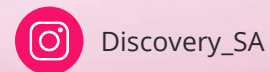
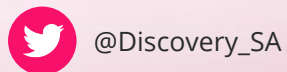
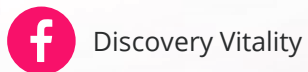
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Sandra Lehmann	Chief Actuary
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