

# Discovery Vitality

### The Economist



Schumpeter | Getting on the treadmill A South African company has some bright ideas for promoting health

ter than cure—and cheaper too. But the forces ranged against this benign cliché are formidable. The sick require immediate treatment. The medical profession values surgeons more than dieti-cians. And most of us are greedy and short-sighted: why forgo the instant ecstasy of a Mars bar, or the joy of unprotected sex, when

the rewards of restraint are so distant?

This is one reason why it is so hard to curb health-care infla-In emerging economies, too, greater prosperity means people are eating more and slouching behind desits instead of sweating in fields. So these countries are increasingly suffering from rich people's illnesses, such as heart disease and diabetes. The World Health Organisation expects the incidence of such non-communicable diseases to rise by 17% over the next decade.

Some policymakers are reaching for a new tool: behavioural economics. Behavioural economists are mapping out ways to "nudge" people to drop the cream pie and chew an apple instead. istein, the co-author of "Nudge: Improving Decisions About Health, Wealth and Happiness", works in Barack Obama's White House. David Cameron, Britain's prime minister, has es-

white troose News charten, formar spirited misses, has al-tibilished a "mudge unit" in Downing Street. Mr. Obama's health-care law encourages employers to offer wellness programmes. At the same time technology is making it easier for people to look after themselves. Monitoring equipment is becoming cheaper and easier to use: Philips is developing an app which uses the camera in an iPada to measure heart and respiration rates. You can keep your health records up to date with pro-grammes such as Microsoft's HealthVault. You can also use social media to shame yourself into shaping up. It is remarkable how much more effective a new year's resolution to lose weight is if you make it public-and agree to a forfeit if you fail.

America is beginning to embrace nudges. Some of the biggest health insurers are introducing incentives of one kind or another. Most reward people for having their vital signs tested and hitting goals such as lowering blood pressure or burning off flab. Some have added interesting bells and whistles to this basic formula.

Aetna offers discounts for gym equipment and medical devices that can be used at home. Anthem provides e-mail access to a health coach. SonicBoom uses a combination of high tech and peer pressure: members can monitor vital signs with tiny devices attached to their shoes and join groups such as Weight Warriors.

A new type of health-care firm helps companies design incentive systems. Examples include IncentOne and Anderson Performance Improvement, both based in America.

Perhaps surprisingly, the most interesting incentives have been developed in an emerging economy: South Africa. The Discovery group, based in Johannesburg, has crafted a programme called Vitality that applies the "air miles" model to health care. You earn points by exercising, buying healthy food or hitting cer tain targets. You rise through various levels, from blue to gold, as you accumulate points (rewards are adjusted to your starting level of fitness to give everybody a chance of making progress). And you are given a mixture of short- and long-term rewards ranging rom reduced premiums to exotic holidays.

Discovery has formed alliances with a bost of companies to

provide rewards linked to your "vitality level". Pick 'n' Pay, a South African grocery chain, provides discounts of up to 25% on The thorniest problem facing the health-care profession is 20,000 "healthy foods". Airlines such as Kulula offer discounted how to strike the right balance between promoting health flights. Discovery can measure whether people actually go to the and curring illness, As is routherly perinted out, prevention is bet-grant, In the than just join, by swithing their membership cards. It says it has solid evidence that participation in the programme more than pays for the rewards; active participants are less likely

to fall ill and, if they do, they spend a shorter time in hospital.

This model has taken Discovery from "one man and a desk" in 1992 to become South Africa's largest health insurer, with 5,000 employees. The company is now entering new markets. It has formed partnerships with Humana, an American health insurer, tion. Insurance premiums have surged 9% in America since 2010. and Prudential, a British company. It has also taken a 20% stake in Ping An Health, one of China's largest private health insurers. The model has even been stretched to other industries, including a credit card that offers discounts linked to well-being and car in surance that offers cheaper petrol to people who drive safely (a telemetric device installed in your car monitors aggressive driving, like harsh acceleration or sharp cornering).

The Discovery story is and ideas are starting to flow

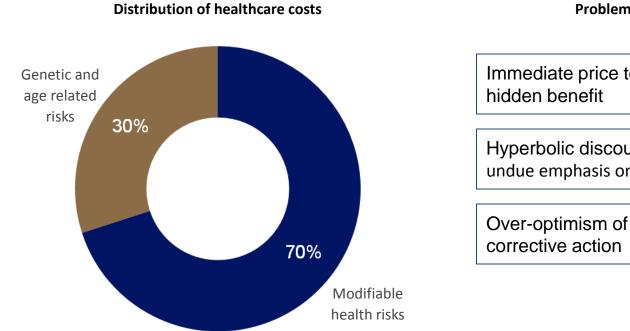
"The Discovery story is another reminder of how quickly new ideas are starting to flow out of emerging markets"



### Problem definition and underlying behavioural causes

Increasing prevalence of diseases of lifestyle

Under-consumption of preventative care



#### Problem of behavioural economics

Immediate price to wellness, hidden benefit

Hyperbolic discounting places undue emphasis on the present

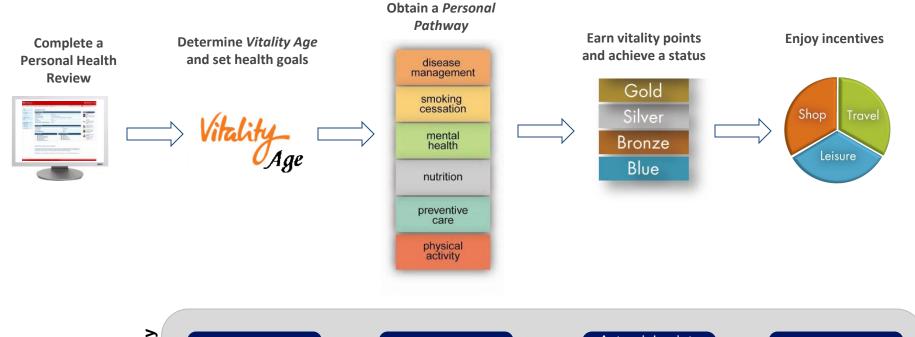
Over-optimism of ability to take corrective action

Access

Behaviour

Facilitated access and immediate benefits are required to address behavior tendencies and to motivate long-term health behaviour change

## Vitality Programme



Assets and capabilities

Online capability

Clinical and scientific basis

Personal Pathway algorithms

Wellness network

Actuarial points allocation methodology

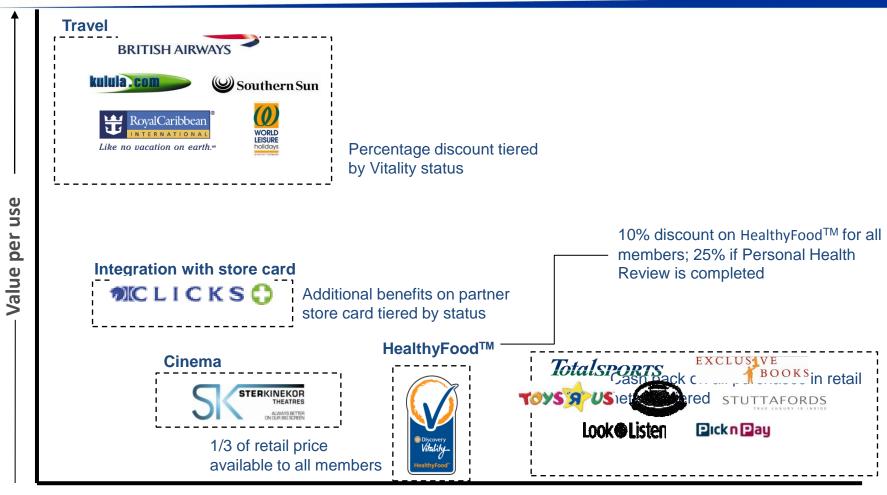
Reward network

Valuable

incentives

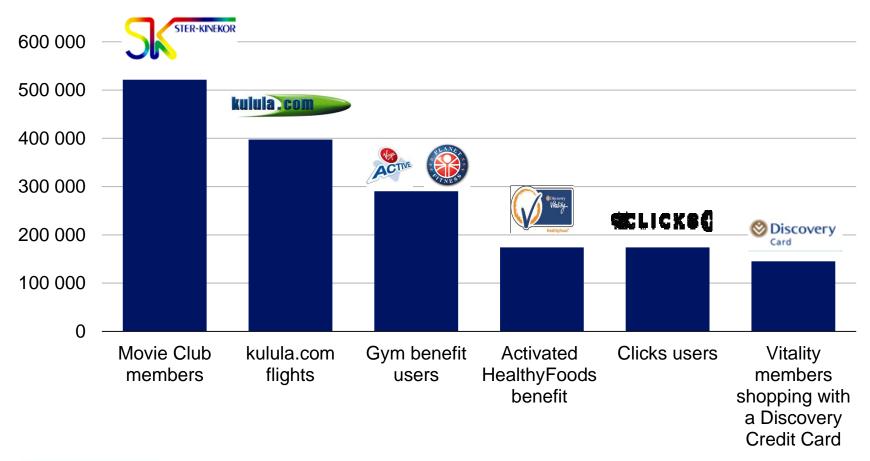


# Broad Rewards Motivate Differing Aspirations: SA Vitality partner network





### Reward utilisation is high across the benefit spectrum





### Nature of reward

### Motivating factor

### Example

Tangible rewards

Self-interest



Charity

Noble cause

- 1. Earn money for a charity of your choice
- 2. Promotion through social networks

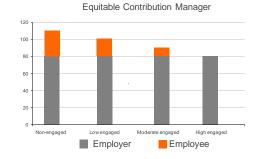
Lottery

Self-interest

- 1. Points convert into entries
- 2. Status gears number of entries

Contributions

Loss aversion





### **Vitality cross-sectional studies**

#### PREVENTING CHRONIC DISEASE

PUBLIC HEALTH RESEARCH, PRACTICE, AND POLICY

VOLUME 6: NO. 4

ORIGINAL RESEARCH

#### Fitness-Related Activities and Medical Claims Related to Hospital Admissions — South Africa, 2006

Estelle V. Lambert, PhD; Rosanne da Silva; Deepak Patel, MD, MSc; Libero Fatti, PhD; Tracy Kolbe-Alexander, PhD; Adam Noach: Craig Nossel, MBChB, MBA; Wayne Derman, MBChB, PhD; Thomas Gaziano, MD, MSc

Suggested citation for this article: Lambert EV, da Silva R. Patel D. Fatti L. Kolbe-Alexander T. Noach A. et al. Fitness-related activities and medical claims related to hospital admissions - South Africa, 2006. Prev Chronic Dis 2009;6(4). http://www.cdc.gov/pcd/issues/2009/oct/08\_ 0226.htm. Accessed [date].

#### PEER REVIEWED

#### Abstract

#### Introduction

We report on the effect of an incentive-based wellness program on medical claims and hospital admissions among members of a major health insurer. The focus of this investigation was specifically on fitness-related activities in this insured population.

Adult members of South Africa's largest private health insurer (n = 948,974) were grouped, a priori, on the basis of documented participation in fitness-related activities, including gym visits, into inactive (80%, equivalent to ≤3 gym visits/y), low active (7.0%, 4-23 gym visits/y), moderate active (5.2%, 24-48 gym visits/y), and high active (7.4%, >48 gym visits/y) groups. We compared medical claims data related to hospital admissions between groups after adjustment for age, sex, medical plan, and chronic illness benefits.

Hospitalization costs per member were lower in each activity group compared with the inactive group. This same pattern was demonstrated for admissions rates.

There was good agreement between level of participation in fitness-related activities and in other wellness program offerings; 90% of people only nominally engaged in the wellness program also were low active or inactive, whereas 84% of those in the high active group also had the highest overall participation in the wellness program.

#### Conclusion

Participation in fitness-related activities within an incentive-based health insurance wellness program was associated with lower health care costs. However, involvement in fitness-related activities was generally low, and further research is required to identify and address barriers to participation in such programs.

#### Introduction

Physical activity can reduce illnesses and deaths linked to chronic diseases (1,2). The health benefits of physical activity increase with increasing frequency, duration, and intensity of exercise (2-4). Data from longitudinal cohort studies suggest that physical inactivity is associated with at least a 1.5-fold to 2.0-fold higher risk of most chronic diseases of lifestyle, such as coronary heart disease, type 2 diabetes, and hypertension (1,5), and accounts for an estimated 1.3% of lost disability-adjusted life-years worldwide. Furthermore, studies corroborate the public health recommendation that 30 minutes of accumulated, moderate-to-vigorous intensity physical activity on most days is protective for these chronic diseases (3). The associated risk of inactivity is similar in magnitude to many other well-known risk factors, such as overweight, smoking, hyperlipidemia, and low fruit and vegetable intake (1,6).

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www.cdc.gov/pcd/issues/2009/oct/08\_0226.htm • Centers for Disease Control and Prevention



Financial Analysis

#### The Association Between Medical Costs and Participation in the Vitality Health Promotion Program Among 948,974 Members of a South African Health Insurance Company

Deepak N. Patel, Mmed; Estelle V. Lambert, PhD; Roseanne da Silva, BSc Hons; Mike Greyling, MSc; Craig Nossel, MBBCH; Adam Noach, BSc; Wayne Derman, PhD; Thomas Gaziano, PhD

#### Abstract

Purpose. Examine the association between the levels of participation in an incentive-based health promotion program (Vitality) and inpatient medical claims among members of a major health insure

Design. A Lyarr, cross-sectional, correlational analyses of engagement with a health promotion program and hospital claims experience (admixions costs, days in hospital, and admission rate) of members of a national private health

Setting. Adult members of South Africa's largest national private health insurer, Discovery Health. Insured members were also eligible for voluntary membership in an insurance-linked incentivized health promotion program, Vitality. Subjects. The study sample included 948, 974 adult members of the Discovery Health plan for the year 2006. Of these, 591,134 (62.3 %) were also members of the Vitality health promotion program.

394,134 (6.2.3%) were also members of the Visilah health promotion program.
Measures. The study sample use grouped based on registration and the level of engagement with the Visilah health promotion program into the following: not registered (37.3%), registered but not engaged with any health promotion program into the following: not registered (37.3%), registered but not engaged with the study of the describing of the describing of the describing of the describing of the accommission of on arbitrary number of point on the Visilah program, allocated against specific activities (knowledge, Therese salled activities, causement and scenering, and healthy chairs). Hoyside admission mosts, the number of days in health, and hapital admission rates were compared among highly engaged unwhere and these them to the compared to the com plan type, and chronic disease status.

Results. Highly engaged members had lower costs per patient, shorter stays in hospital, and fewer admissions compared section. Tripos energes interests and under only per passers, nonert soys in outpost, with credit period with the property of ~ 0.01). Let or on engagement unter a discover dutil have hospital costs. Admission rates were also 2.4% lines for cardiovascular disease, 1) 2.2% lines for career, and 20.7% lines for medicine and instability diseases in the high-period groups compared with any of the other groups (g/cs. 4). One continues are more than in the continue and instability diseases in the high-period groups compared with any of the other groups (g/cs. 4). One continues are consistent in an intentive beautiful vision program, effected by a health instarr, was associated with lear health, one soit, (And Flodish Promat 2012/47):19–20.41.

Key Words: Health Insurance, Wellness Program, Health Risk Appraisal, Chronic Disease, Prevention Research, Manuscript format: research; Research purpose: modeling/relationship testing, descriptive; Study design: cross-sectional, analytic; Outcome measure: finandial/economic, hospital costs; Setting. private national health insurer; Health focus: health risk appraisal, fitness/physical activity, nutrition, smoking control, stress management, weight control, Strategy: education, skill building/behavior change incentives; Target population age: adults; Target population circumstances: health-insured population

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This manuscript was submitted February 17, 2009, revisions were requested June 2, August 19, and August 31, 2009; the manuscript was accepted for publication September 9, 2009.

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#### INTRODUCTION

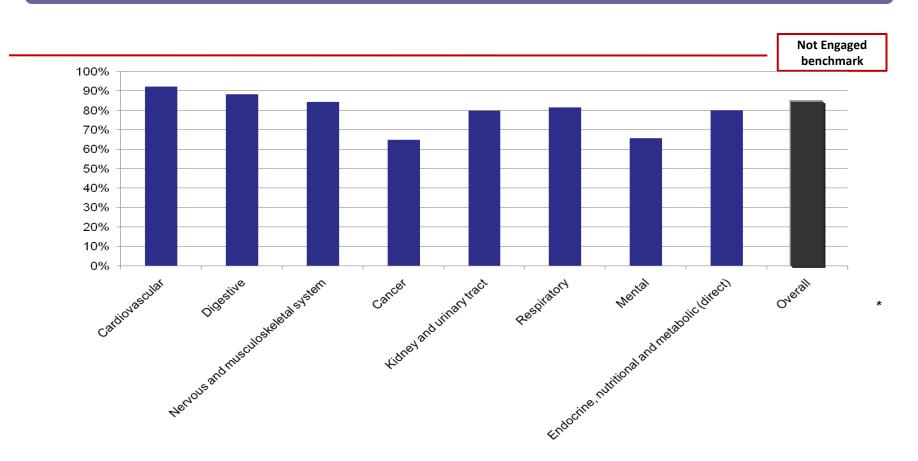
Health care costs are increasing globally. 1,2 Among the many reasons for burgeoning costs are advances in health technology, newer and more expensive drugs, increasing costs of hospitalization, and the increasing burden of chronic diseases requiring more intensive treatments.3-5 The increase in chronic diseases can be partially attributed to an aging population, particularly in developed countries, but combined lifestyle risk factors such as smoking, unhealthy eating, obesity, and physical inactivity share considerable responsibility for the increase.1,6

Recently some insurers have begun to offer incentive-based health promotion programs in an attempt to change health behavior and improve the health of their members.7 It is reasoned that improving the health of members is a more sustainable way of reducing long-term health care costs. 7,8 Numerous public health approaches or strategies have been suggested to improve health behavior in the general population and among select population groups.9 The approaches that private organizations such as health plans offer may complement government actions, but there are limits to the scope of interventions that private organizations can adopt.

Moreover, in most countries, legislation prevents programs from requiring members to participate.10 Interventions offered by health plans to

# VIP Study 1: Vitality engagement is correlated with lower healthcare costs

Risk-adjusted hospital admission costs for engaged vs not engaged

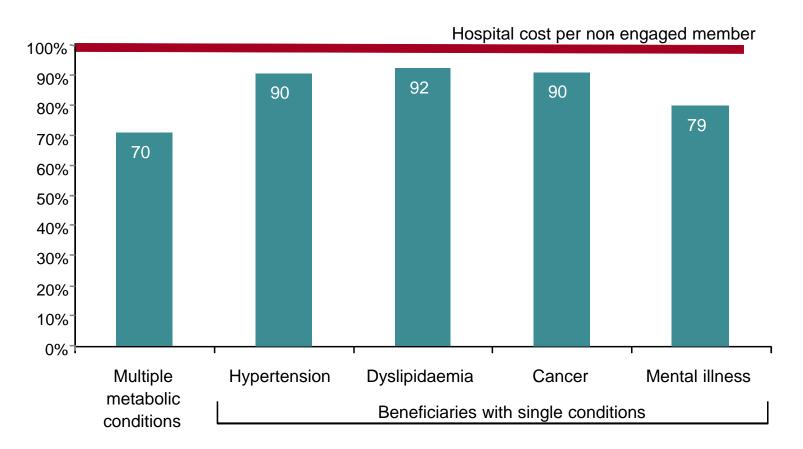


P < 0.001 for all categories (incl overall result) except cancer where P < 0.01

<sup>\*</sup>Categorisation based on diagnosis-related groupers using ICD-10, CPT-4 and local procedural codes

# VIP Study 2: Vitality engagement reduces the cost of managing chronic disease

Risk-adjusted hospital cost for chronic members: engaged vs not engaged

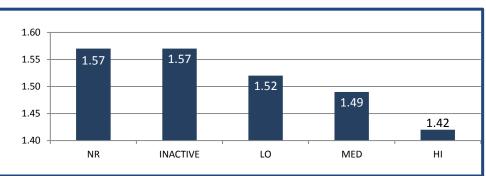


P = 0.001 for multiple metabolic conditions, all single conditions are not statistically significant

# VIP Study 3: Fitter people spend less time in hospital and incur lower healthcare costs

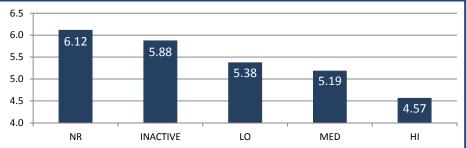
### Admission per patient\*

 9.6% lower in highly active individuals vs inactive



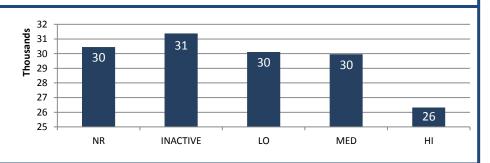
### 2. Length of stay in hospital

 On average 0.57 days shorter for highly active individuals vs inactive



#### 3. Cost per patient

 Medical costs once hospitalised R5,052 lower for highly active individuals vs inactive



Fit people make better patients - admissions, length of stay and costs are risk-adjusted

### Longitudinal Study of Fitness Engagement

- A retrospective analysis of 304,000 adults over the period 2004 to 2008
- The analysis was designed to test
  - For significant changes in engagement with fitness-related activities over time
  - Whether these changes were associated with changes in the probability and cost of hospitalisation

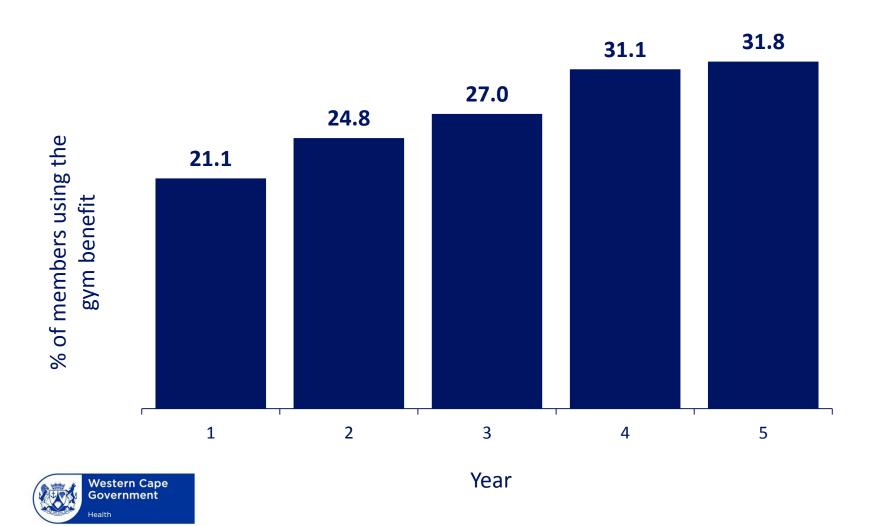




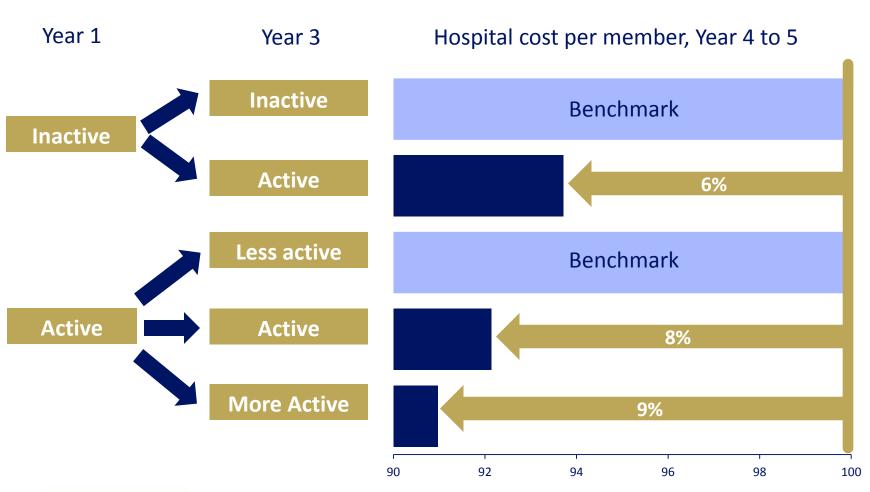




### Increase in Fitness Engagement

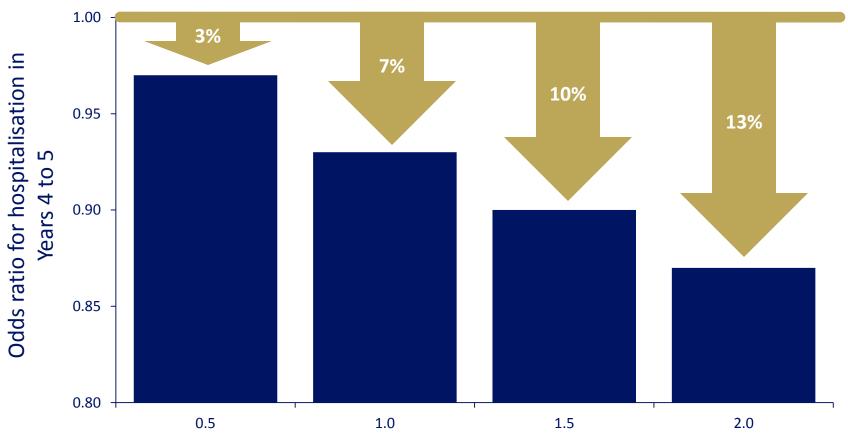


# Outcomes associated with transitions between engagement levels





# Relationship between increasing activity and the odds of hospitalisation





Number of additional gym visits per week from Year 1 to Year 3

# HealthyFood™



25% saving on nutritional items purchased at Pick n Pay

### HealthyFood™ structure

Fruit and vegetables 3,000 products



Mutriont	WHO dietary		
Nutrient	recommendations		



Chicken, fish and meat alternatives 479 products

Grains and cereals

1,425 products



Trans fat 1 en%

Saturated fat

Sodium 1.2mg/kcal

10 en%

10 en%



Vegetable oils and nuts **536 products** 

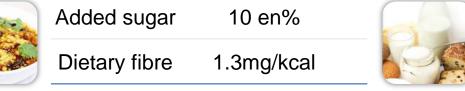


Milk and dairy products 217 products

**373 products** 

Lentils and

legumes



61,000 products assessed; 10,000 classified as HealthyFood™

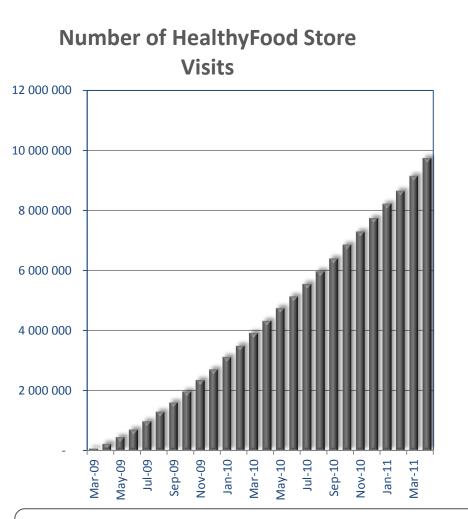
### HealthyFood™ mechanics

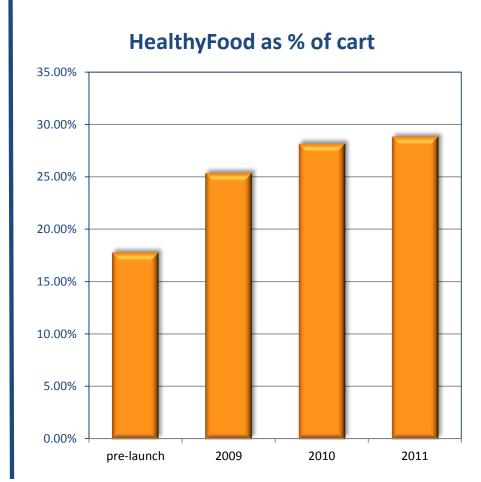


HealthyFood™ purchases marked on till slips

			INDICATO		
			ITALITY	VIT	1
	TAX	(I)	VOIC	E	
	VAT R	EG NO.	4390107	474	
×7576	2621/012	2/032	10.01.	09 11:5	8 AC-00
25% Visit	on Heal www.di	thyFoo			

### **Adoption of the HealthyFood™ Benefit**





Result: Over 240,000 families have activated the HealthyFood™ benefit

## Discovery Healthy Company Index



Western Cape Government







Most people spend the better part of their day at work so a healthy workplace is one of the keys to a healthy lifestyle. The Discovery Sunday Times Healthy Company Index is the first survey of its kind in South Africa. And your company can take part tool It's all about helping your company understand how healthy your workplace is, and what it can do to ensure all employees' wellbeing.

Login to www.healthycompanyindex.co.za before 26 November 2010 to register your company and join the race to become South Africa's healthiest company to work for.

Discovery is an authorised financial services provider.

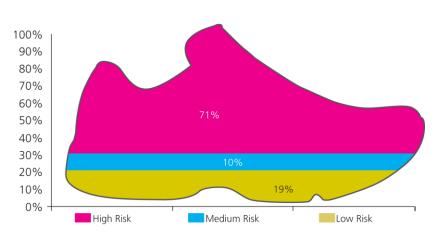
# The Health of a company

is reflected in the figures of its people

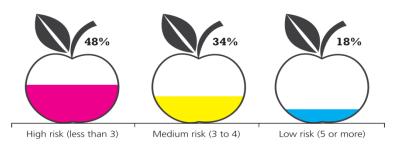
Find out how healthy your company is!

## Discovery Healthy Company Index

#### Levels of physical activity

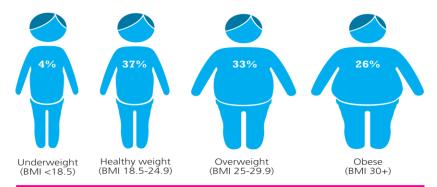


Nutrition risk according to the number of daily fruit and vegetable servings

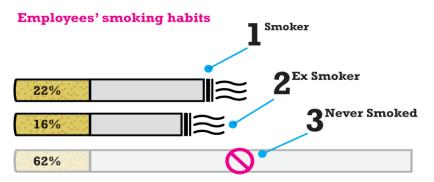


82% of employees do not eat enough fruit and vegetables every day

#### **BMI** of employees



63% of respondents have an unhealthy weight, with 25.9% obese



**11** 78% of employees do not smoke



### Healthy Active Kids Report Card 2010





### Healthy Active Kids Report Card 2010



### Physical Activity (Grade D):

- Less than 70% of high school learners report having regularly scheduled physical education.
- Less than 50% participate in enough physical activity for it to be considered 'health-enhancing'.

### **Nutrition (Grade D):**

- Just over 2 servings of fruits and vegetables per day,
   with less than 1 serving of fruit per day.
- Over 50% drink sweetened cool drinks more than 4 times a week.
- Nearly 30% eat fast food between 2 and 3 times per week.



### Healthy Active Kids Report Card 2010



### Screen time (Grade F):

 Nearly 1 in 3 adolescents watch more than 3 hours of television daily

### Overweight, obesity (Grade C-) and stunting (Grade D-):

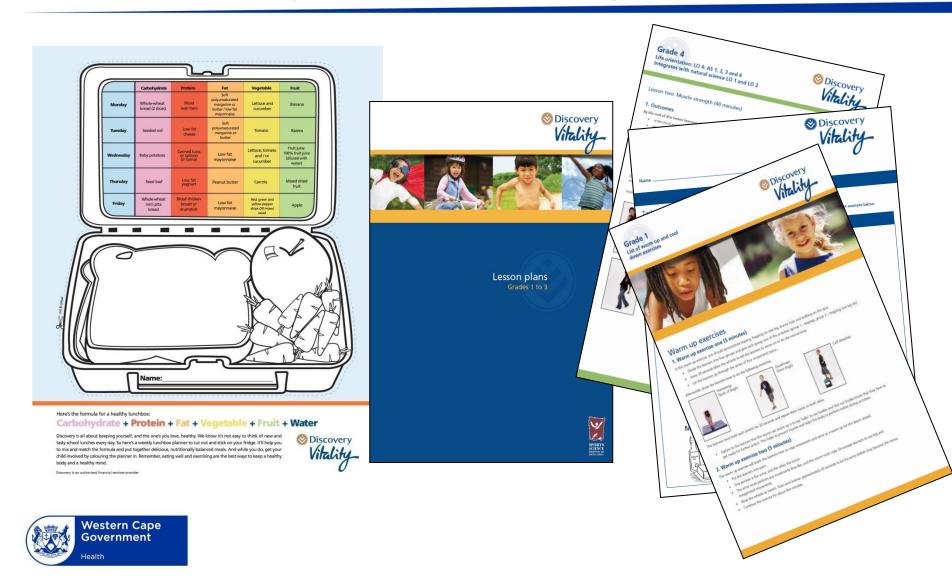
- 20% are overweight and 5% are obese
- 13% of teens are stunted

### Smoking (Grade D):

- 29.5% of adolescents report having smoked
- 21% are current smokers



## Vitality Schools Programme



# Vitality Schools Programme



## Developing healthy active kids





Make the healthier choice!





# Developing healthy active kids



## Vitality Schools Programme





## Vitality Schools Programme





# **Get South Africa walking**



















## Vitality Healthiest City



### PE a city of couch potatoes, new health survey reveals

http://www.theherald.co.za/article.aspx?id=550406

2010/04/08

Lee-Anne Butler butlerl@avusa.co.za

IT'S official – Port Elizabeth is a city of couch potatoes.

Cape Town has the dubious honour of leading a Discovery Vitality survey cities and has the most smokers, heaviest drinkers, lowest levels of physic most overweight residents. Port Elizabeth is ranked second in the unhealth followed by Pretoria and Durban. Johannesburg is the healthiest of the five

"While Capetonians may think the sun, sea and mountain gives them an eleading a healthier lifestyle, our research data indicates that theirs is in fact major dity in South Africa, "said Dr Craig Nossel, head of Vitality Wellness cities" overall health rating is based on the Vitality Age calculation, which in lifestyle behaviours (risk factors) of smoking, physical activity, fruit and veg consumption, blood pressure, cholesterol, depressive symptoms, body ma glucose of Vitality members resident in these areas.

Out of a sample of 1709 people from Port Elizabeth. 24.8% are smokers a smokers. Also, 54.3% exercise less than 75 minutes a week while only 7.7 than 300 minutes a week.

Most surprisingly, only 31.3% of the Port Elizabeth members fell within the mass index) range of between 18.5 and 25. Also, 5.4% of the people surve Elizabeth drink more than 15 alcoholic drinks a week.

"The statistics across all cities are quite worning. Physical inactivity and of approaching epidemic proportions globall Health24

### **Men's Health**

SA's Healthiest City

### Capetonians are the least healthy

A DISCOVERY Vitality survey has found that Cape Town has more smokers than anywhere else in the country, the heaviest drinkers and the most overweight residents.

The findings were derived from data collected during "wellness days" staged at corporate clients of Discovery Vitality in conjunction with the Sport Science Institute. The healthiest cities were, in order, Johurg, Durban, Pretoria and Port Elizabeth. — Staff reporter

Id you guess is the healthiest city in the country? T covery Vitality survey may surprise you aradoc-Davies hours ago)

or not folks, amidst all the smog, big business stress, hij ce of their rugby team (fan-related stress is detrimental burg is the healthiest city in South Africa. Cape Town, we style and slower pace is the unhealthiest city and Cape f six months older than their counterparts in Johannesburg could do with some strict mothering (and some hardownokers, heaviest drinkers, lowest levels of physical active tresidents.

ry Vitality analysis of data collected during a series of w clients around the country revealed these results. Disco n with the Sport Science Institute of South Africa conduo determine the ranking of the major metropolitan areas ealth and fitness.

ding order, the cities were Johannesburg followed by Du and Cape Town bringing up the rear.

# Joburg is SA's healthiest city

CAPE TOWN, South Africa's unhealthiest city, contains the most smokers, heaviest drinkers, lowest levels of physical activity and the most overweight residents.

A Discovery Vitality analysis of data collected during a series of wellness days at corporate clients around the country revealed that Joburg residents had the healthiest lifestyle, followed by Durban and Pretoria.

While Capetonians may think they lead a healthier lifestyle, our research data indicates that theirs is in fact the unhealthiest major city in South Africa, said Craig Nossel, head of Vitality Wellness at Discovery.

"The statistics across all cities are quite worrying. Physical inactivity and obesity are approaching epidemic proportions globally. The result is an increased prevalence of chronic diseases, poor quality of life, increased healthcare expenditure and premature death." – Staff Reporter

them an edge when it s that theirs is in fact l, Head of Vitality

#### CT the unhealthiest city in SA

http://www.health24.com/news/DietFood\_News\_Feed/1-3420,55582.asp



Western Cape Last updated: Wednesday, April 07, 2010 Print

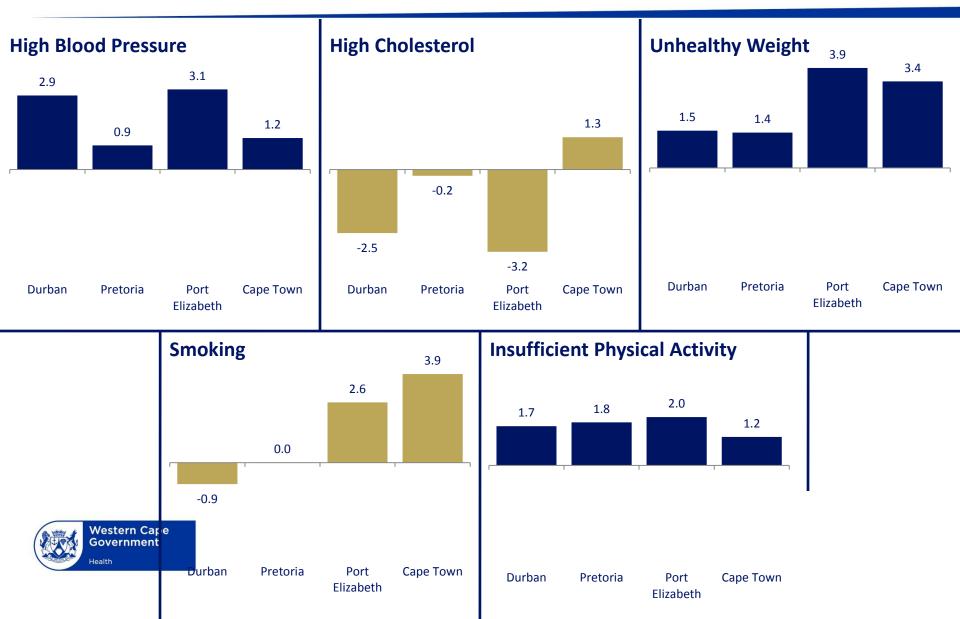
Johannesburg is the healthiest city in South Africa. Cape Town, South Africa's unhealthiest city, contains the most smokers, heaviest drinkers, lowest levels of physical activity and the most overweight residents.

## Vitality Healthiest City

% Difference in mortality risk, compared to Johannesburg 12.7 9.8 4.7 2.8 Durban **Pretoria** Port Elizabeth **Cape Town** 



## Vitality Healthiest City





# Discovery Vitality