STRATEGY FOR THE PREVENTION AND CONTROL OF OBESITY IN SOUTH AFRICA 2015–2020

health

Department:
Health
REPUBLIC OF SOUTH AFRICA

A long and healthy life for all South Africans

health

Department:
Health
REPUBLIC OF SOUTH AFRICA

Prepared and obtainable free of charge from:
National Department of Health
Private Bag X828
Pretoria
0001

Tel: (012) 395 8000

Table of contents

Foreword by the Minister of Health

At the heart of this national strategy for the prevention and control of obesity is the realisation that non-communicable diseases represent a dire threat to the physical and mental health of the South African population. With obesity as a major risk factor for the development of non-communicable diseases, global regional and national interventions should be implemented in order to halt the growth of both epidemics.

South Africa is a diverse country, with several context-specific social determinants of health influencing the incidence and prevalence of obesity. The technical committee developing this national strategy explicitly recognises that the conditions in which people live and their lifestyles influence their health-related behaviours and their quality of life. In addition, poverty, an uneven distribution of wealth, a lack of education, rapid urbanisation and the built environment are among the factors contributing to the rising obesity epidemic. With this in mind, it is important to ensure that as we roll out the implementation of the proposed interventions, we work together with researchers to explore various inter-sectoral and multidisciplinary research agendas in order to understand and influence the macro-economic and social determinants of obesity. Research will guide and influence important inter-sectoral action at the national, provincial and district levels. Implementation research is therefore an essential component, along with rigorous evaluation of the roll-out of these interventions.

It has become imperative to formulate South African context-specific 'best buys' for prevention, health promotion, treatment and care related to obesity. Exploring settings-approach interventions that advocate healthy lifestyles in ECDs, schools, at the workplace and within healthcare facilities may yield far-reaching outcomes, but it is only through sustained research syntheses and evaluation that the most effective evidence-based methodologies will be identified to secure the health of future generations.

Within this vein of evaluating effective and efficient interventions, there may be, as a consequence, an urgent need to review policies that will prevent or halt the exacerbation of obesity. Part of this strategy is to identify gaps in the current policies and regulations related to the prevention and control of obesity, and to recommend a review of such policies. Through targeted regulatory framework changes and amendments, multi-faceted prevention-focused interventions and settings-specific methods, a positive impact on the obesity epidemic is indeed a possibility in the near future. We have set ourselves quite ambitious targets of decreasing the obesity prevalence by 10% by 2020. I believe that this target is achievable if efforts are synergised and consistent. This strategy provides a roadmap for such efforts, and through joint collaboration, we can provide the opportunity for more South Africans to be as healthy as they possibly can be.

Dr PA Motsoaledi (MP)
Minister of Health

Message from the Deputy Minister of Health

Obesity is one of the major public health concerns facing South Africa, and its impact and cost extends to individuals, families, communities, the health service, and society as a whole. The number of people within South Africa who are overweight or obese has been rising annually over the past few decades, and this situation simply cannot be allowed to continue. Most South Africans consume less fruits and vegetables and more fat- and sugar-containing foods. The sad reality is that obesity is not confined to the adult population, but childhood obesity is also on the rise due to inappropriate feeding practices for infants and young children. This cannot be 'business as usual' when our exclusive breastfeeding rates are still very low, and complementary foods are introduced as early as two months.

The Department of Health has the responsibility of curbing the scourge of obesity by putting systems in place with the long-term intention of preventing the spread of non-communicable diseases such as hypertension, diabetes and heart disease, which are the leading causes of death and disabilities in our country. The economic benefits of reducing these chronic diseases are well documented.

Initiatives have already been implemented by different agencies, but I believe we can do more to elevate their impact in our society. The causes of obesity are multi-factorial; therefore, it is imperative that a multi-sectoral, multi-dimensional and life-course approach be adopted in order to address obesity in our country.

Perhaps our biggest challenge is that of changing our attitude towards food and physical activity. Individuals make decisions about their lifestyles, but it is our responsibility to empower people to make informed decisions in this regard and to ensure that they have access to healthy food by raising awareness and increasing the availability of effective initiatives and interventions.

I am aware that change will not come overnight, but by working together and recognising the impact that this will have on future generations, we can and will make a difference. We have, therefore, set ourselves a high target for this challenging issue. This strategy should be used as a tool that harnesses efforts by all stakeholders and should be owned by all stakeholders involved.

Dr Joe Phaahla

Deputy Minister of Health

Message of support from the Minister of Basic Education, Mrs AM Motshekga, MP

As the custodian of the learning and teaching of South Africa's youth, the Department of Basic Education has made great strides in improving access to quality education for learners across the country and creating a conducive environment for learning.

It is our understanding that effective learning cannot happen if the well-being of learners is not prioritised. Therefore, the Department has embraced a key responsibility to ensure that the well-being of our learners takes centre-stage, in line with Goal 25 of ***Action Plan 2019 Towards Schooling 2030*** which states that the Department will "use schools as vehicles for promoting access to a range of public service amongst learners in areas such as health, poverty alleviation, psychosocial support, sport and culture". This clearly shows a commitment to address challenges relating to health, including obesity, which is on the rise among our learners. Schools are in a position to influence behaviour change.

The Department of Basic Education lends support to learners though various programmes as part of our Care and Support Teaching and Learning Programme. These in include Health Promotion which focuses on the welfare of learners to address health barriers to learning; Sport in Education which ensures physical development and performance for learners; the National School Nutrition Programme that provides daily nutritious meal to address hunger and enhance participation and learning; and various other curriculum and co-curricular activities to equip learners with knowledge and skills towards life-long learning.

Reports on the prevalence of stunting and obesity are therefore concerning, as this is seen as a double burden of malnutrition still affecting our learners. In a recent study by the University of Johannesburg's Centre for Social Development in Africa, anthropometric measurement showed positive improvement in the nutritional status of the learner for wasting, stunting and underweight across all schools where a school breakfast and lunch were provided. However, the high number of overweight learners remained a challenge across all sampled schools.

Physical Education also forms part of our timetable and educators promote active participation of learners through sports. Furthermore, two subjects, Life Skills and Life Orientation, include nutrition education, in which more emphasis is placed on healthy eating habits, ensuring that our learners make healthy food choices. The spin-offs of providing knowledge and skills to support healthy lifestyles among learners include maintaining good health, improved learning capacity, decreased absenteeism and thus improved academic performance.

The school environment can influence behaviour change. We commit to working with the Ministry and the Department of Health, as well as all stakeholders, to strengthen our intervention and see the Obesity Strategy implemented successfully.

Mrs AM Motshekga, MP

Minister

April 2015

Statement of commitment

We, the ministers of various government departments, acknowledge our central role in reducing the incidence of non-communicable diseases and contributing to the prevention and control of obesity in South Africa.

We are concerned that:

- South Africa is experiencing a quadruple burden of disease, with non-communicable diseases being one of the leading public health concerns;
- The prevalence of obesity has escalated at an alarming rate and is not limited to the adult population but is emerging in young children;
- There is no multi-sectoral approach being implemented to halt the scourge of obesity in the country;
- Obesity imposes a significant economic burden on an already strained health system and inflicts great costs to the country;
- Most South Africans consume diets that are low in fruits and vegetables and high in fat- and sugar-containing foods; and
- Individuals lead sedentary lifestyles and do not engage in physical activity.

We also note that:

- The National Development Plan Vision 2030 commits the Government to improving long-term health outcomes by prioritising, among other things, nutrition, physical activity, and combating smoking and alcohol abuse. All these are social responsibilities that deserve to be taken seriously by every citizen and promoted by families and institutions.

Therefore, we commit ourselves and call on all stakeholders to support and strengthen efforts to prevent and reduce the prevalence of obesity by 10% by 2020. This will be attained by:

- establishing an inter-sectoral platform that addresses prevention and control of non-communicable diseases, including obesity;
- creating a supportive environment that promotes healthy food choices and physical activity;
- communicating with, educating and mobilising communities to empower and encourage behavioural changes by individuals, families and communities to make positive, life-enhancing decisions on healthy diets and physical activity;
- strengthening settings-based interventions such as in schools and workplaces;
- supporting research that generates new knowledge on tackling the epidemic; and
- aligning with the National Strategic Plan on Non-Communicable Diseases and the Health Promotion Policy and Strategy, and other related policies and strategies.

We therefore commit to working with the private sector and academia in curbing the scourge of overweight and obesity. We acknowledge our responsibility to the people of South Africa to ensure that all citizens lead healthy lives; this is a legacy of which we can all be proud.

Honourable Minister Dr Rob Davies

Minister of Trade and Industry

Honourable Minister Emmanuel Nkosinathi Mthethwa

Acting Minister of Public Service and Administration

Acknowledgements

The National Department of Health acknowledges that the global burden and threat of obesity constitutes a major challenge for social and economic development in South Africa. Obesity is a major risk factor for the development of non-communicable diseases, which consequently worsen poverty, while poverty contributes to the rising rates of non-communicable diseases, further perpetuating the vicious cycle and posing a threat to public health and economic and social development. This creates an urgent need to address the ongoing negative impacts of the South African financial and economic crisis, volatile energy and food prices, and ongoing concerns about food security.

In line with addressing the impact of poverty on obesity, consideration is given to providing healthier food options that are affordable and accessible, and that follow relevant nutritional recommendations. Further strategies to promote and create an enabling environment for healthy behaviours among workers, by promoting access to engaging in physical activity and making healthier food choices available, are imperative for efforts towards halting the obesity epidemic. Through good corporate practices and the implementation of employee wellness programmes, the promotion and practice of health-enhancing behaviours in effect should go a long way in improving obesity rates as well as employee productivity.

Obesity and its consequences tend to affect women and men differently. Women tend to be less physically active than men and are more likely to be obese. Women are also at risk of influencing the weight of their infants; in particular, low-birth weight babies bear the risk of becoming overweight or obese adults later in life. Women also bear a disproportionate share of the burden of caregiving. These gender-based inequitable consequences of obesity are a particular focus of this national strategy for the prevention and control of obesity.

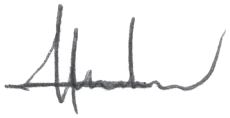
Efforts to control obesity cannot lie solely with the individual, but will require engagement of all sectors of society to generate effective responses for the prevention and control of obesity. A multi-sectoral, multidisciplinary approach with effective leadership is essential to fight obesity.

In order to effectively rise to the challenge of decreasing the incidence and prevalence of obesity, the Government recognises the critical importance of strengthening health systems, including the healthcare infrastructure, human resources for health, and social protection systems. We remain confident that through protracted efforts of multiple partners, including government, non-governmental organisations (NGOs), civil society, international organisations, academics and industry, we will win the battle.

On behalf of the Department of Health, I thank Dr L Adonis who consolidated stakeholder inputs and all researchers who provided scientific evidence towards the development of the Obesity Strategy. We appreciate the work of the task team members who generously offered their time towards the development of the strategy: Dr Karen Hoffman from the University of the Witwatersrand's School of Public Health; Dr C Naude from Stellenbosch University's Centre for Evidence-based Health Care; Prof M Senekal from the University of Cape Town's, Nutrition Department; Prof L Skaal from the Limpopo University's School of Public Health; Dr Vicky Lambert of the University of Cape Town's Sports Science Institute; Ms Carina Muller, Education Specialist in the Department of Basic Education; and all of the academics and research institutes that contributed. The participants of the consultative meeting are also

acknowledged for their contribution in the development of this strategy. A special thanks goes to the World Health Organization (WHO) for their technical support throughout the process and to Dr Taskeen Khan for co-ordinating the WHO's support.

I am grateful to the national team: Ms Lynn Moeng Mahlangu for her oversight and leadership role, Ms Pontsho Sepoloane for co-ordinating the process, and Mr Aaron Manyuha for his technical input in the monitoring framework. Input from the Health Promotion, Nutrition and Non-Communicable Diseases staff is also acknowledged. The multi-sectoral nature of the strategy would not have been realised were it not for the commitment and input from other government departments, namely Sports and Recreation, Transport, and Public Service and Administration.



M P Matsoso
Director-General of Health

Abbreviations

ANC	Antenatal Care
BANC	Basic Antenatal Care
BMI	Body Mass Index
CGSA	Consumer Goods Council of South Africa
GDP	Gross Domestic Product
CHOW	Choose Healthy Options Wisely
COGTA	Co-operative Governance and Traditional Affairs
DALYs	Disability-Adjusted Life Years
DBE	Department of Basic Education
DoT	Department of Transport
DPME	Department of Planning, Monitoring and Evaluation
DPSA	Department of Public Service and Administration
DSD	Department of Social Development
ECD	Early Childhood Development
EPWP	Expanded Public Works Programme
GCIS	Government Communication and Information System
NCDs	Non-Communicable Diseases
NDoH	National Department of Health
NGOs	Non-Governmental Organisations
OECD	Organisation for Economic Co-operation and Development
PA	Physical Activity
RtHB	Road-to-Health Booklet
SALGA	South African Local Government Association
SANHANES	South African National Health and Nutrition Examination Survey
SRSA	Sports and Recreation South Africa
SSB	Sugar-Sweetened Beverages
YRBS	Youth Risk Behaviour Survey

Glossary of terms

Active transport

The term relates to physical activity undertaken as a means of transport. This includes travel by foot, bicycle and other non-motorised vehicles. Use of public transport is also included in the definition, as it often involves some walking or cycling to pick-up and from drop-off points.

Complementary feeding

The process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants and entails feeding an infant foodstuff, whether in liquid, solid or semi-solid form, after the age of six months as part of the transitional process during which an infant learns to eat food appropriate for his or her developmental stage while continuing to being breastfed or fed a commercial milk formula.

Disability-adjusted life years (DALYs)

This is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.

Exclusive breastfeeding

This is when an infant receives only breast milk and no other liquids or solids, not even water (with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines prescribed by the doctor).

Health-in-all-policies

An approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies and avoids harmful health impacts in order to improve population health and health equity.

Obesogenic environment

The sum of influences generated by the surroundings, opportunities or conditions of life that promote obesity in individuals or populations.

Quick-service restaurants

A category of restaurants characterised by provision of food that is supplied quickly after ordering and with minimal service. Foods and beverages purchased may be consumed on site or served as takeaway options.

Surveillance

An ongoing systematic collection and analysis of data on a disease/condition that can lead to action being taken to control or prevent the disease.

Ultra-processed food and drink products

Ready-to-eat foods or drink formulations based on refined substances with a combination of sugar, salt and fat, plus several additives. These include sugar-sweetened beverages, snacks and ‘fast foods’.

Executive summary

The focus for this strategy inherently recognises that no stand-alone intervention methodology on overcoming overweight and obesity is likely to succeed. An individual-based approach to behavioural change is also not deemed to be the most effective solution. Therefore, this strategic plan for the prevention and control of obesity recommends a population-based approach that is centred on ***policy, context and environmental change***.

The aims of this strategy for the prevention and control of obesity are to reform obesogenic environments and enablers, while enhancing opportunities for increased physical activity and healthy food options in every possible setting, including healthcare facilities, early childhood development centres, schools, workplaces and the community at large. This systems-based perspective has the ability to accelerate achievements, in single settings as well as in combination.

The strategy focuses on six broad goals. These are:

Goal 1: Create an institutional framework to support inter-sectoral engagement

Goal 2: Create an enabling environment that supports availability of and accessibility to healthy food choices in various settings

Goal 3: Increase the percentage of the population engaging in physical activity (PA)

Goal 4: Support obesity prevention in early childhood (in-utero – 12 years)

Goal 5: Communicate with, educate and mobilise communities

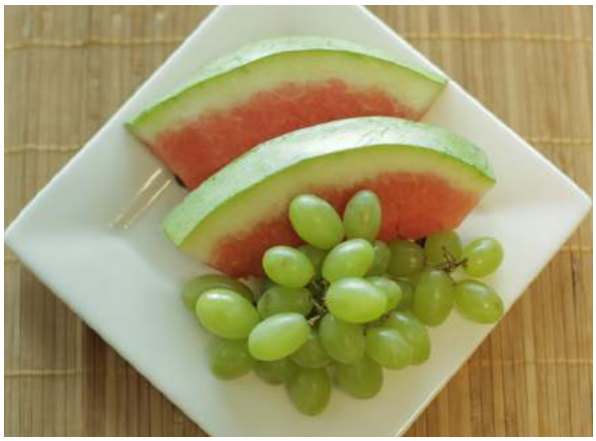
Goal 6: Establish a surveillance system and strengthen monitoring, evaluation and research.

This approach recognises the need for ***a multidisciplinary, multi-sectoral co-ordinating structure***, mandated to take leadership and ownership for steering the directive of ring-fencing the rising overweight and obesity epidemic. This structure should become the focal point for all activities related to the national overweight and obesity crisis, including, but not limited to, co-ordination and dissemination of research priorities and activities, implementation and evaluation of intervention programmes, and monitoring of outcome objectives.

Childhood obesity is singled out within this strategy as a specific area of focus, given the large perceived benefit that these interventions may yield. Pre- and postnatal nutrition, in particular, has a profound impact on child health and the development of overweight and obesity. Several strategies specifically target exclusive breastfeeding and complementary feeding practices, as well as the monitoring of healthy weight gain in childhood. These can only be achieved through strengthening the health system and improving healthcare practices within integrated maternal and child health services.

An overarching principle conceived as the grounding factor of this strategy is that of communication, education and mobilisation of all the key stakeholders in the fight against overweight and obesity. The strategic objectives of this framework can only be achieved if the implementers are aware of it, educated as to its purpose, and take ownership of the intended outcomes. In addition, the public at large should not only be aware of obesity and its consequences, but also be encouraged to become advocates for change, not only in their own lives, but also in the places in which they live, work and play, and to which they travel.

This strategy is aligned with the Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013–17, the Health Promotion Policy and Strategy, the WHO Global Strategy on Diet, Physical Activity and Health, the WHO Initiative on Ending Childhood Obesity, and halting the prevalence of obesity globally. The strategy has been developed for all South Africans and should be adopted by all to improve the quality of life and enhance the potential of each person to make informed decisions regarding their health.



Chapter One

1.1 A growing epidemic

The global population of overweight people has increased rapidly in recent decades, more than offsetting the health gains yielded by the modest decline in hunger. For the first time in human history, the number of overweight and obese people rivals the number of underweight people.[1] Much of this rise has been experienced in developed countries. However, overweight and obesity has also advanced rapidly in developing countries, which often face a double burden of disease from both under-nutrition and overweight and obesity. While the world's underfed population has declined slightly since 1980, the number of overweight people has surged. Obesity is potentially a preventable condition, yet currently, approximately 5% of deaths worldwide are attributable to obesity.[2] According to the McKinsey Global Institute report, if this trend continues unabated, it is estimated that about half of the world's adult population would be overweight or obese by 2030.

1.2 Situational analysis of obesity in SA

According to National Income Dynamics Study (NiDS), one-third of women over the age of 15 were classified as obese in contrast to 11% of men.[3] The 2012 SANHANES report confirms the NiDS study, with 39.2% of women classified as obese compared to 10% of men. The highest prevalence was seen among urban women at 42%.[4]

In terms of sedentary behaviour, the 2008 Youth Risk Behaviour Survey reported that nationally, 29.3% of learners watched television or played video or computer games for more than three hours per day with no significant variation by gender, grade or age, and that more than 41.5% did not participate in sufficient physical activities.[5]

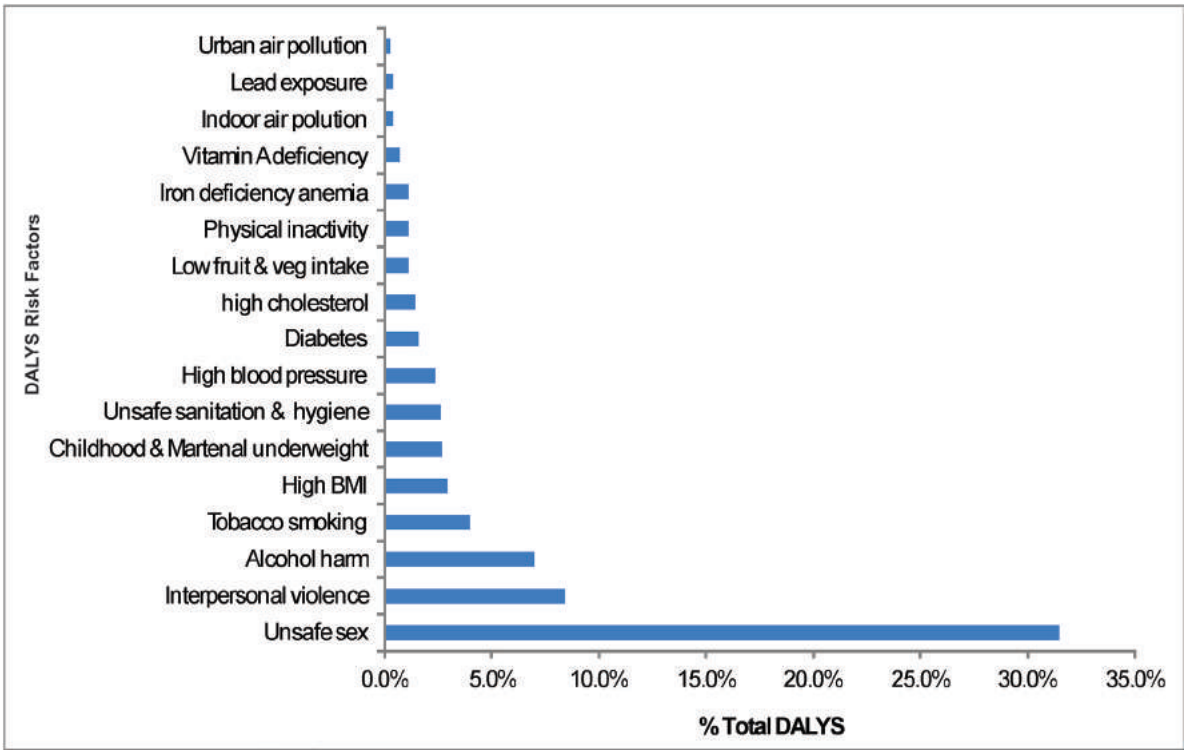
Recent studies have shown that obesity and overweight are not limited to the adult South African population. The prevalence of overweight among children is increasing worldwide; the 2012 SANHANES report indicated an increase from 10.6% to 18.1% in the age group of 2–5 years.

In addition, the NiDS survey found a high prevalence of the dual burden of child malnutrition and adult obesity within the household. In 45% and 37% of households where there is a stunted or underweight child respectively, there is at least one obese adult.

The Department of Sports and Recreation has a goal of increasing the number of citizens participating in sports. To achieve this, the department is implementing a community mass participation programme and works in partnership with the Department of Basic Education for the delivery of an integrated school sports programme.

Obesity in South Africa is ranked fifth as a risk factor for early death and years of life lived with disability or disability-adjusted life years (DALYS). This ranking is outlined in Figure 1.[6]

Figure 1: Ranking of risk factors for DALYs



Chapter Two

2.1 Classification of overweight and obesity

Overweight and obesity reflects a gain of excess body fat, resulting from the cumulative and initially unnoticeable effects of day-to-day eating and physical activity behaviours that create a surplus of energy consumed relative to expended. Excess weight gain is usually unintentional and gradual, and it is often difficult to reverse without an individual's commitment and will. The Body Mass Index (BMI) is generally used to indicate ranges related to health risk, dividing the population into four categories: underweight (BMI <18.5); normal weight (BMI = 18.5–24.9); overweight (BMI = 25–29.9); obese (BMI ≥30). The formula for BMI is weight divided by height squared.

$$\text{Body Mass Index (BMI)} = \frac{\text{Weight (in kg)}}{\text{Height}^2\text{ (in m)}}$$

$$\text{e.g.} \quad \frac{80\text{ kg}}{1.60\text{ m} \times 1.60\text{ m}} = 31.2\text{ kg/m}^2$$

While the BMI is useful as an easily calculated indicator of risk, it should be used in conjunction with other methods of estimating body size, composition and risk.[7] The limitations of the BMI as a measure of total body fat, nonetheless, must be recognised. For example, the BMI overestimates body fat in persons who are very muscular and can underestimate body fat in persons who have lost muscle mass (e.g. the elderly).[8]

In children, however, as the BMI changes with age and differs between the sexes, it must be interpreted using standard deviation (Z score or SD score) relative to population reference data.[9]

The presence of excess fat in the abdomen, out of proportion to total body fat, is an independent predictor of risk factors and morbidity. Thus, monitoring changes in waist circumference over time may be helpful; in addition to measuring the BMI, waist circumference is considered a good estimate of body fat, especially internal fat deposits and the likelihood of developing weight-related disease.

Measuring waist circumference is a simple measurement that requires only a tape measure:

Step 1: Find the top of the hip bone and the bottom of the ribs and breathe out normally.

Step 2: Place the tape measure midway between these points and wrap it around the waist.

Step 3: Read the measure on the tape.

Interpreting the reading:

Category	Moderate risk	High risk
Men	Over 94 cm	Over 102 cm
Women	Over 80 cm	Over 88 cm

2.2 Health and socio-economic consequences of obesity

Overweight and obesity significantly increase morbidity and mortality and negatively impact on the overall quality of life. Being obese or overweight increases the risk of developing non-communicable diseases (e.g. Type 2 diabetes, hypertension, coronary heart disease, stroke, abnormal blood fats, and certain cancers including colon and breast), and other conditions such as gall bladder disease, osteoarthritis, sleep apnoea, obesity hypoventilation problems, and reproductive problems (menstrual problems and infertility in women).[10]

In addition, obese people tend to have low self-esteem, a negative perception of body image and/or depression. In society, they are stigmatised and experience negative stereotyping, discrimination, teasing and bullying, and social marginalisation.

Obesity disproportionately affects women versus men, with the prevalence of obesity and overweight being more prominent in females. This gender disparity is the result of an interaction of complex social, cultural and biological factors.[11] The higher prevalence of obesity in women implies that they carry more of the burden of obesity, including reduced life expectancy, greater risk of obesity-related disease, and increased medical costs. According to the NiDS data, the prevalence of obesity increases with age, but more steeply among women than among men. In addition, among women, the Black population is significantly more likely to be obese than the White population.

According to the McKinsey Global Institute report, the global economic impact of obesity is roughly $2.0 trillion, or 2.8% of the global GDP, roughly equivalent to the global impact of smoking or armed violence, war and terrorism. Obesity carries substantial direct and indirect costs for the nation's economy, such as economic disenfranchisement, lost productivity and disability. As a result, states and communities end up diverting resources to prevention and treatment, and the nation's healthcare system is burdened with the co-morbidities of obesity. According to the McKinsey Global Institute report, the number of DALYs lost to obesity today is three times as high in developed economies as it is in emerging markets. However, that gap is narrowing. The rise in the number of DALYs per 100 000 people lost because of obesity slowed in developed economies between 1990 and 2010, but soared by 90% in emerging economies.

Obesity is one of the top three global social burdens generated by human beings. Obesity imposes significant costs on healthcare systems. The World Health Organization (WHO) estimates that high BMI levels drive between 2% and 7% of global healthcare spending, with up to 20% of all healthcare spending being attributable to obesity, through related diseases such as Type 2 diabetes and heart disease.[12] In addition, obesity rates are increasing in people at all income and educational levels, but absolute rates are higher among those with low incomes and low education levels. This suggests that the gap among socio-economic strata for obesity rates may be closing.[13]

2.3 Key drivers of obesity

Poverty influences every aspect of our lives. It dictates what we know, where we live, how and what we eat, how we travel and with whom we associate. Evidence has indicated that lower-income groups tend to have a higher prevalence of obesity. Poor people have been reported to buy the least expensive foods that are gastronomically the most filling and energy-dense. As income available to buy food decreases, energy density correspondingly increases and this may translate into higher energy intakes and over-consumption.[14] Energy-dense foods typically contain high quantities of fat, sugar and/or starch, such as fast foods, snacks and desserts, as opposed to low-energy dense foods which are higher in fibre and micronutrients, such as fruits and vegetables. In the South

African population, a significant correlation was identified between obesity and the individual's years of completed education and the number of assets owned by the household.[15]

The WHO states that physical inactivity is now identified as the fourth leading risk factor for global mortality and is responsible for 6% of non-communicable disease (NCD) risks. Physical inactivity levels are rising in many countries with major implications for the prevalence of NCDs and the general health of the population worldwide.

Walking and cycling for daily transportation are important sources of physical activity, but they have declined dramatically over the past few decades. Globally, the need to reverse this decline is acknowledged. In the Action Plan for the Global Strategy for the Prevention and Control of Non-Communicable Diseases, member states are urged to implement national guidelines on physical activity for health, and are encouraged to develop and put into practice policies and interventions to, among others, introduce transport policies that promote active and safe methods for travelling to and from schools and workplaces, such as walking or cycling.

In addition to adult obesity, obesity in childhood has become an increasing concern, especially in low- and middle-income countries with high rates of urbanisation.[16]

Childhood obesity is a growing problem worldwide, with 22 million children under the age of five years being classified as obese.[17] In addition, research has confirmed that obese children are more likely to remain obese throughout their adult life.[18]

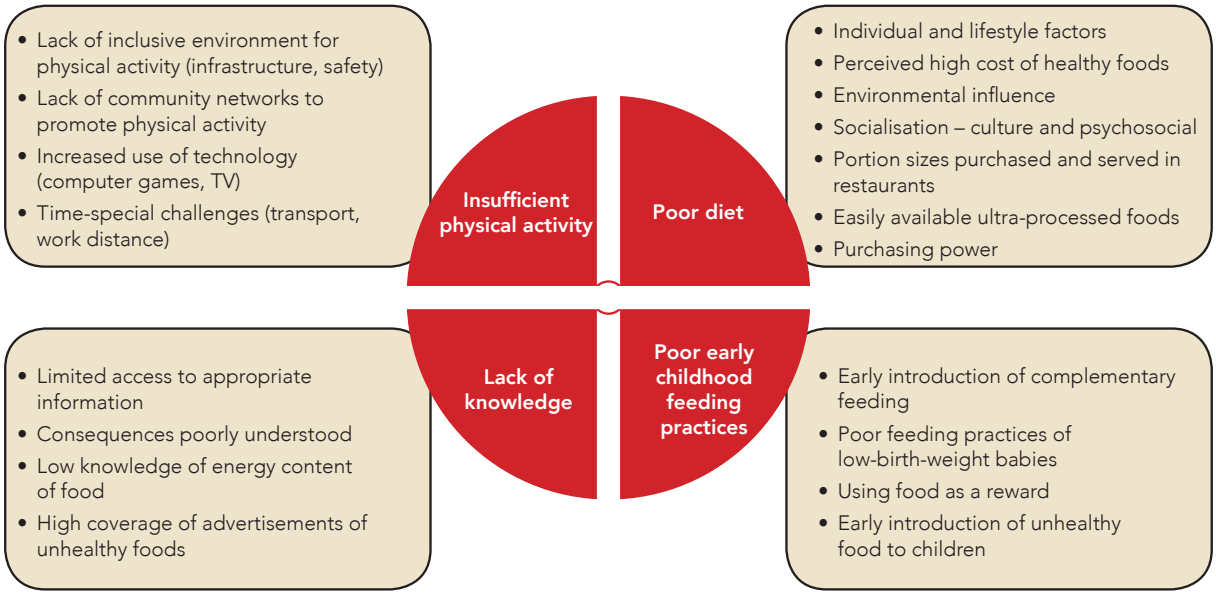
Unhealthy diets are a risk factor for non-communicable diseases. The risk factor starts in childhood and builds up throughout life. The concept of improving nutrition in the first 1 000 days (the period from conception to the first two years of life) should be adopted for the prevention of over- and under-nutrition. Evidence from systematic reviews conducted by the WHO concluded that advertising unhealthy foods to children is extensive and widespread. This can influence children's food preferences, purchase requests and consumption patterns.

Studies demonstrate a link between birth weight and weight gain later in life. Some studies demonstrate that low-birth-weight (LBW) and premature infants have increased growth patterns in the early years of their life due to overfeeding in the early stages of childhood, which is critical to excessive weight gain.[19] Furthermore, other studies showed a strong positive association between high birth weight and childhood obesity.

One major component of weight gain is excess sugar consumption. The escalating obesity in South Africa has occurred in conjunction with urbanisation and an increase in sales of sugar-sweetened beverages (SSBs) and high-caloric energy-dense foods.[20] A mathematical model by academics from the University of the Witwatersrand indicated that a 20% taxation on SSBs could reduce the burden of obesity in South Africa, particularly in adults, as one component of a multi-faceted effort to prevent obesity.[21]

In addition, four main categories drive overweight and obesity: a lack of knowledge, poor diet, physical inactivity and inappropriate early childhood feeding practices. This is illustrated in Figure 2.

Figure 2: Drivers of overweight and obesity



Chapter Three

3.1 Effective interventions

The Organisation for Economic Co-operation and Development (OECD), in collaboration with the WHO, carried out a model-based assessment of a range of interventions to prevent chronic diseases. The primary aim of the assessment was to develop an economic model of the impact of interventions to tackle overweight/obesity and associated risk factors (particularly unhealthy diets and the lack of physical activity) at the population level. Actions assessed were: reduction in salt intake, food taxes on unhealthy food, subsidies for healthy foods and physician counselling. The model's cost-effectiveness, health impacts and cost of implementation are shown in Table 1.

Table 1: The most cost-effective interventions to address diet, physical activity and obesity[22]

Risk factor/ diseases	Interventions/ actions	Cost of implementation (Low = <L$1 per capita, High = >L$2 per capita)	Health impact (DALYs per 1 m population) small <100; large >1 000	Cost effectiveness ($1 per DALY averted) (Very = <GDP per capita, Quite = 1–3 GDP per capita)
Unhealthy diet and physical inactivity	Reduce salt intake	Low	Large	Very
	Food taxes on unhealthy food (foods high in fats and sugar) and food subsidies on healthy food (fruits and vegetables)	Low	Modest	Very
	Physician counselling	High	Large	Quite

In South African Rand value (2010), the most cost-effective intervention was found to be fiscal measures, followed by food advertising regulations at R0.20 and R0.90 per head, respectively. Further measures, such as food labelling, worksite interventions and mass media campaigns were also evaluated, as outlined in Table 2.

Table 2: The most cost-effective interventions to address obesity[22]

Intervention	Cost in Rand per head (2010)
Fiscal measures (e.g. taxes)	R0.20
Food advertising regulation	R0.90
Food labelling	R2.50
Worksite interventions	R4.50
Mass media campaigns	R7.50
School-based interventions	R11.10
Physician counselling	R11.80

It is important to note that a multiple-intervention approach is essential to see substantially larger health gains, rather than individual interventions. Cost savings have been realised in countries that have implemented multiple interventions to address obesity. The effectiveness of interventions is measured against their ability to delay the

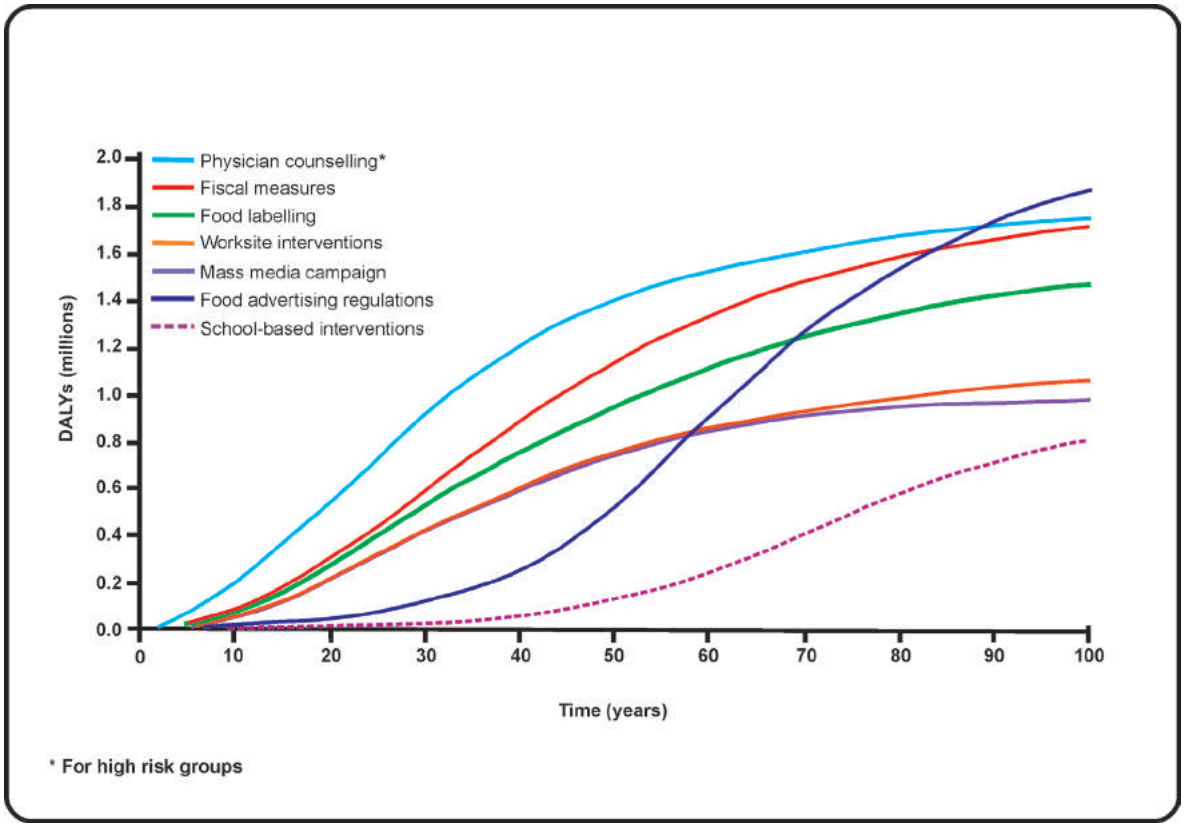
onset of NCDs, best assessed by calculating the number of DALYs averted.[23] The benefits of some interventions targeted to adults start to show immediately, whilst those targeted to children show dividends later in life, several years after implementation.

The largest health gains at the population level for high-risk individuals are achieved by intensive primary counselling, such as dietitian-physician counselling. However, other health professionals should be capacitated to provide the counselling in order to expand the coverage of this intervention. Fiscal measures are consistently cost-saving in all low- and middle-income settings, generating the largest or second-largest health gains in both 20-year and 50-year time periods. In addition, restrictions on advertising considerably reduce obesity in young people (based on the assumptions made in the model), while their effects fade as people get older.

It should be noted that whilst individuals have some responsibility for their health, environmental factors affect the ability of people to exercise personal responsibility. Certain environments deliver large amounts of unhealthy foods to people, which in turn affects their food preferences and increases the demand for unhealthy foods.

Figure 3 elaborates on how various interventions impact on health outcomes at different time periods.

Figure 3: Cumulative disability-adjusted life years (DALYs) gained over time[22]



Fiscal measures seem to yield the greatest gain. Some countries, namely France, Mexico and Denmark, have introduced taxation policies on sugar-sweetened beverages and ultra-processed foods. In particular, Denmark observed a reduction in consumption of the taxed products by 10% to 15% in the first nine months.

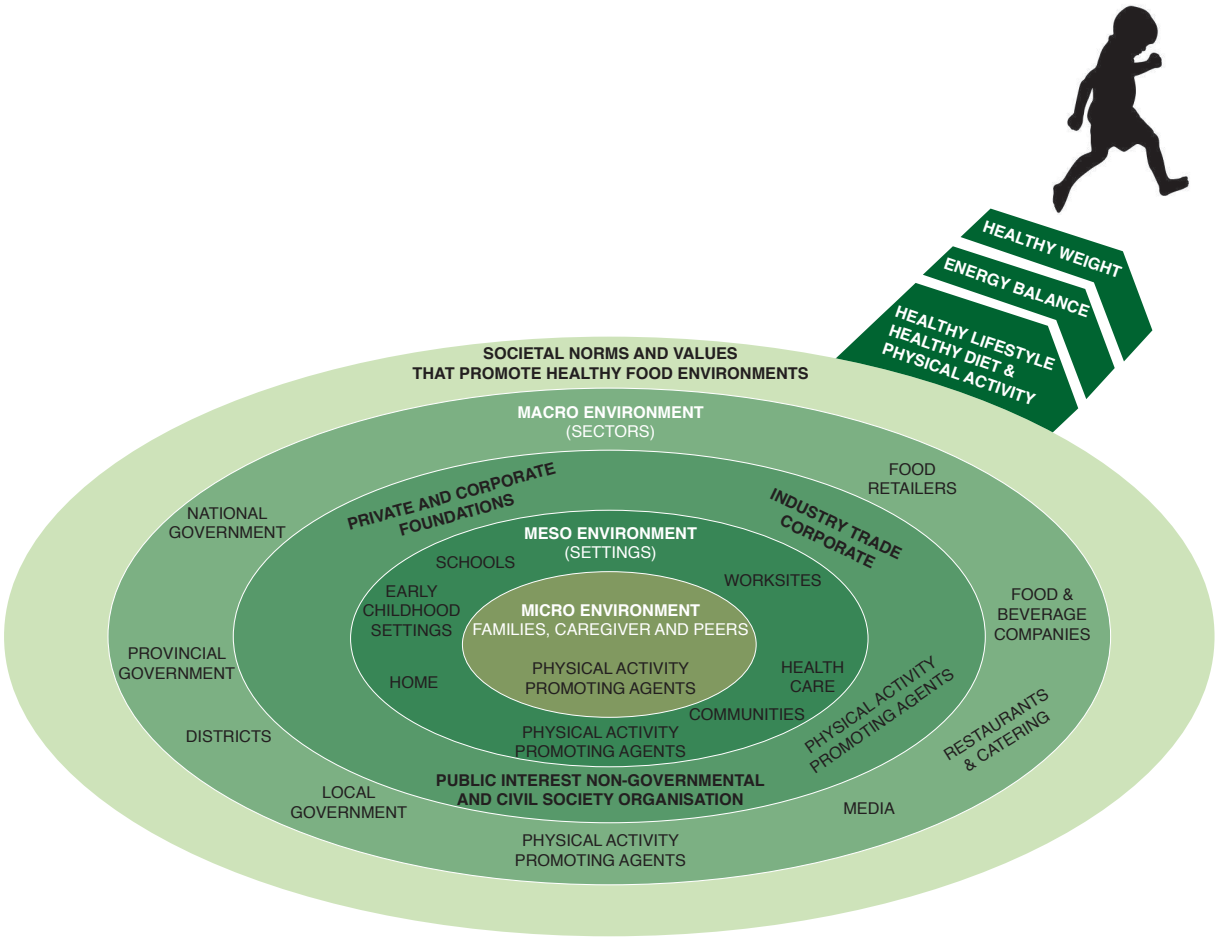
The 2015 Lancet series states that global actions to address obesity include: restricting the marketing of foods aimed at children, regulating the nutritional quality and availability of foods in schools, labelling the front of

packages with nutritional values, taxing sugar-sweetened beverages, implementing mass media campaigns, providing financial incentives to improve food retail environments, initiating private–public partnerships to encourage food industry reformulation, and including health-in-all-policies approaches by governments. Hence, the South African strategy is a comprehensive package which will be implemented in different stages.

3.2 Multi-sectoral approach to obesity control

Efforts to control obesity cannot lie solely with an individual, but will require engagement of all sectors of society to generate effective responses for the prevention and control of obesity. A multi-sectoral, multidisciplinary approach with effective leadership is essential to fight obesity. Figure 4 illustrates stakeholder involvement in promoting healthy environments for populations.

Figure 4: Stakeholder involvement in promoting a healthy environment for the population (adapted from referenced source)[23]



"The public at large should not only be aware of obesity and its consequences, but also be encouraged to become advocates for change, not only in their own lives, but also in the places in which they live, work and play, and to which they travel."

Chapter Four

4.1 Vision

A long and healthy life for all South Africans.

4.2 Mission

To empower the population of South Africa to make healthy choices by creating an environment that enables and promotes healthy eating and physically active lifestyles for the prevention and control of overweight and obesity.

4.3 Purpose

To implement a multi-sectoral approach for the prevention and control of obesity in South Africa

4.4 Target

To reduce the prevalence of obesity by adopting a multi-sectoral life course approach:

- By 2016: no increase
- By 2017: 3% decrease in all age groups
- By 2020: 10% decrease in all age groups

4.5 Broad goals

For the prevention and control of obesity, the overarching goals are as follows:

Goal 1: Create an institutional framework to support inter-sectoral engagement

Goal 2: Create an enabling environment that supports the availability and accessibility of healthy food choices in various settings

Goal 3: Increase the percentage of the population engaging in physical activity

Goal 4: Support obesity prevention in early childhood (in-utero – 12 years)

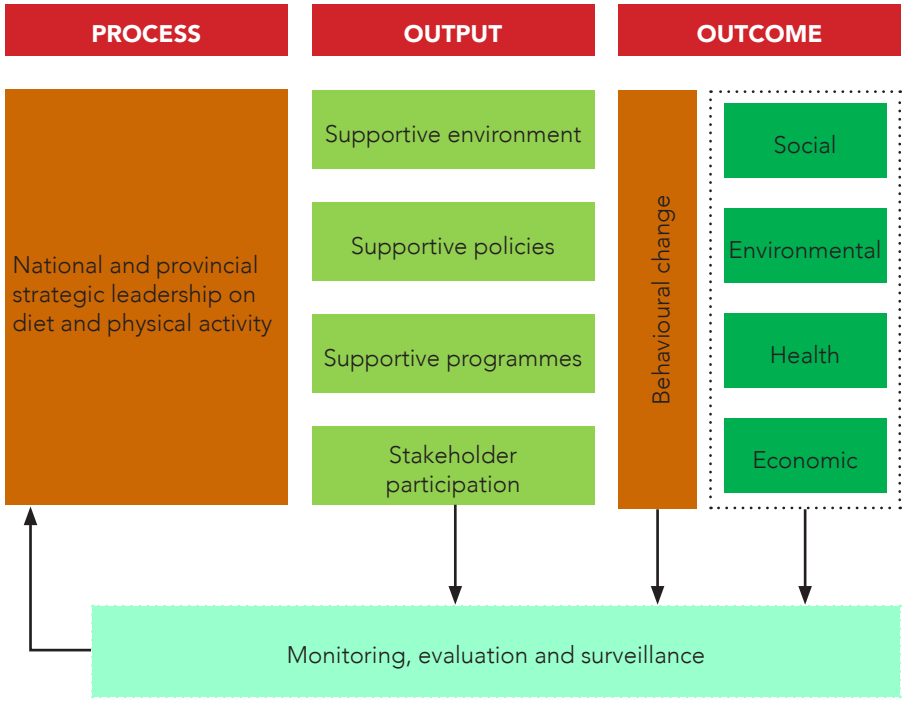
Goal 5: Communicate with, educate and mobilise communities

Goal 6: Establish a surveillance system, strengthen monitoring and evaluation, and research.

4.6 Implementing the key actions

The WHO developed a framework to guide countries on monitoring and evaluating the implementation of key actions. Implementing the action plan will require leadership, resources and commitment from all relevant stake-holders. Behavioural changes that lead to increased physical activity and healthy eating habits require supportive environments, policies and programmes. The guiding process for these supportive and enabling environments requires national leadership, which ideally should harness the strategic skill sets of multiple stakeholders, including the private sector, international organisations, non-governmental agencies and civil society. The intended outcome is decreased obesity rates that will positively influence society, the environment, health and the health sector as well as the economy. The framework illustrates the implementation of these key actions. Implementation of the strategy will adopt a phased approach, enabling various sectors to develop micro-plans that detail specific targets.

Figure 5: Framework for implementation of key actions[24]



GOAL 1: CREATE AN INSTITUTIONAL FRAMEWORK TO SUPPORT INTER-SECTORAL ENGAGEMENT									
Objectives	Key activities/actions	Responsibility	Performance indicators (progress and impact)	Expected outcomes	Target/Timeframe				
					2015/16	2016/17	2017/18	2018/19	2019/20
1.1 Establish a structure to drive and govern implementation	Identify stakeholders and sectors	National government, private sector, NGOs	Inter-sectoral structure established	Co-ordinated multi-sectoral focus on obesity	X				
	Explore and/or formulate a co-ordinating structure to guide the implementation of the strategy and agree on roles and responsibilities				X	X			
1.2 Advocate for resources from different sectors	Incorporate key obesity prevention and control actions in the inter-sectoral plans	All participating departments	Resources allocated in each participating department		X	X	X	X	X

GOAL 2: CREATE AN ENABLING ENVIRONMENT THAT SUPPORTS AVAILABILITY AND ACCESSIBILITY TO HEALTHY FOOD CHOICES IN VARIOUS SETTINGS									
Objectives	**Key activities/actions**	**Responsibility**	**Performance indicators (progress and impact)**	**Expected outcomes**	**Target/Timeframe**				
					2015/16	2016/17	2017/18	2018/19	2019/20
2.1 Promote the development and implementation of a relevant legislative framework	Influence fiscal policies related to sugar-sweetened beverages	National Department of Health (NDoH), National Treasury, Department of Planning, Monitoring and Evaluation (DPME) and academics	Legislation on sugar adopted and implemented	Sugar and fat reduced in processed foods			X	X	X
2.2 Ensure that food and beverage products sold are aligned with optimal national and international nutritional standards	Develop norms and standards on sugar and fat content in ultra-processed foods to guide product reformulation	NDoH, Department of trade and Industry (DTI), Consumer Goods Council of SA (CGCSA)	Norms and standards on sugar and fat content in ultra-processed foods developed	Sugar and fat reduced in processed foods			X		
			Number of foods and beverages manufactured that adhere to nutritional standards					X	X
	Ensure restaurants display nutrient content of menu items	NDoH, food industry: [CGCSA, Choose Healthy Options Wisely (CHOW)]	Number of CGCSA-affiliated restaurant groups displaying nutrient content of menu items	Nutrient content of menu items displayed		X	X	X	X
	Ensure that quick-service restaurants (QSR) include healthy meal options on their menus at competitive prices	NDoH, food industry: (CGCSA, CHOW)	Number of QSR's offering healthy meal options Number of retailers that have reduced or no unhealthy foods at point of sale	Increase healthy meal choices in restaurants Decreased exposure to unhealthy foods at point of purchase	X	X	X	X	X
	Engage with retailers to reduce exposure to unhealthy foods at point-of-purchase								

2.3 Ensure responsible and ethical advertising and marketing of food by the food industry	Ensure that a code and pledge of advertising are developed and adhered to	Food industry (CGCSA), Media and Advertising Standards Authority of SA	Code and pledge of advertising developed	Limit exposure of advertising of ultra-processed products to children and the general public	X	X	X	X	X
2.4 Implement user-friendly food labelling education tool	Investigate, test and establish an appropriate educational tool for front-of-pack labels and meals in restaurants considering low literacy populations	Food Industry: CHOW, NDoH and academia	Appropriate labelling educational tool available	People making informed choices	X	X			
2.5 Increase access and availability of vegetables and fruits	Expand household, local and community food gardens	Departments of: Agriculture, Forestry and Fisheries, Rural Development and Land Reform, SA Local Government Association (SALGA), Department of Co-operative Governance and Traditional Affairs) (COGTA, municipal markets, Expanded Public Works Programme (EPWP)	Proportion of people consuming fruits and vegetables	Increased consumption of fruits and vegetables	X	X	X	X	X
	Explore opportunities to establish local markets for improved access to vegetables and fruits				X	X	X		

2.6 Promote healthy eating in different settings	Strengthen and ensure nutrition education component in the school curriculum is in line with national recommendations	Department of Education, school governing bodies, educators	Number of schools adhering to National School Nutrition Programme Guidelines for Tuck Shop Operators	Improved nutritional status of learners		X	X	X	X
	Review and implement nutritional guidelines for all food and beverages sold or provided in schools (including foods sold by vendors around school premises			Improved nutritional status of learners		X			
	Incorporate healthy eating practices as part of obesity prevention and management in employee wellness programmes	Department of Public Service and Administration (DPSA), NDoH	Number of government departments incorporating healthy eating initiatives in their wellness programmes	Healthy food options available and accessible in the workplace	X	X	X	X	X
	Develop a national guide for healthy meal provisioning in the workplace				X				
	Develop dietary guidelines for prevention and control of obesity	NDoH, private sector, managers at healthcare facilities	Dietary guidelines developed	Improved control of obesity	X				
	Conduct orientation sessions on dietary guidelines for obesity	NDoH	Number of orientation sessions conducted		X	X	X		

GOAL 3: INCREASE PERCENTAGE OF THE POPULATION ENGAGING IN PHYSICAL ACTIVITY (PA)									
Objectives	Key activities/actions	Responsibility	Performance indicators (progress and impact)	Expected outcomes	Target/Timeframe				
					2015/16	2016/17	2017/18	2018/19	2019/20
3.1 Ensure the provision of safe and accessible places for people to engage in recreational activities that promote physical activity	Increase equitable access to and maintenance of recreational and physical activity facilities in communities	SALGA, COGTA, provincial and local governments, Sports and Recreation South Africa (SRSA)	Number of sub-districts with facilities for physical activity	Increased population engaging in physical activity	X	X	X	X	X
	Strengthen partnerships between communities and local schools to access school grounds for physical activities.	Department of Basic Education (DBE), SALGA, COGTA, SRSA			X	X	X		
	Ensure that all urban planning and new developments are required to consider strategies to optimise PA opportunities and create walkable communities (zoning laws, bicycle lanes, etc.)	Department of Transport (DoT), SALGA, COGTA			X	X	X	X	X

	Establish community-based physical activity groups	SRSA, NDoH, NGOs, DPSA, COGTA, Department of Social Development (DSD), DBE, SALGA	Proportion of people participating in physical activity	Increased population engaging in physical activity.	X	X	X	X	X
	Strengthen mass participation in PA within government departments				X	X	X		
	Implement physical activity guidelines								
	Conduct orientation sessions on physical activity guidelines		Number of orientation sessions conducted						
3.2.Promote active transportation	Increase equitable access to public transportation	DoT, COGTA, SALGA	Proportion of people utilising active transportation	Increased population engaging in physical activity.	X	X	X	X	X
	Ensure maintenance, safety and lighting of existing footpaths and pavements	COGTA, SALGA			X	X	X	X	X
3.3 Promote physical activity in schools	Strengthen and ensure physical education component in the school curriculum	DBE, school governing bodies, educators	Proportion of learners engaging in physical activity	Increased population engaging in physical activity.		X	X	X	
	Ensure adequate opportunity for physical activity within the school environment					X	X	X	

3.4 Promote physical activity-friendly environments in worksites	Incorporate physical activity as part of obesity prevention and management in employee wellness programmes using physical activity guidelines.	DBE, NDoH, SRSA, DPSA, DOH, Occupational health and safety committee	Proportion of people participating in physical activity	Implementation of the physical activity guidelines	X	X	X		

GOAL 4: SUPPORT OBESITY PREVENTION IN EARLY CHILDHOOD (IN-UTERO TO 12 YEARS)									
Objectives	**Key activities/actions**	**Responsibility**	**Performance indicators (progress and impact)**	**Expected outcomes**	**Target/Timeframe**				
					2015/16	**2016/17**	**2017/18**	**2018/19**	**2019/20**
4.1.Strengthen and support appropriate weight gain and healthy eating during pregnancy	Include and review nutrition and obesity prevention messages in MomCconnect, Basic antenatal care (BANC) and other initiatives and programmes	National Department of Health, provincial healthcare and facility managers, ANC clinic staff	Nutrition and obesity prevention messages incorporated in BANC guidelines and MomConnect	Improved maternal nutrition status	X	X			
4.2 Strengthen the protection, promotion and support of optimal breastfeeding (BF) to explicitly address obesity	Support and reinforce implementation of existing policies and initiatives to promote, protect and support breastfeeding	NDoH, provincial healthcare facility managers, postnatal clinic staff, wellness managers in public workplaces	Exclusively breastfeeding rate at 14 weeks after birth	Increase exclusive BF coverage	X	X	X	X	X
			Exclusively breastfeeding rate at six months						
	Strengthen implementation of the Guidelines for Childcare Facilities in the Public Service	DPSA, NDoH	Number of government departments with childcare facilities		X	X	X	X	X

4.3 Ensure appropriate complementary feeding practices to explicitly address obesity	Build capacity of healthcare providers to advise on appropriate complementary feeding practices	NDoH, provincial health-care facility managers, postnatal clinic staff, DSD	Proportion of mothers performing optimal complementary feeding practices	Improve complementary feeding practices	X	X	X	X	X
	Develop educational material for appropriate complementary feeding				X	X			
	Monitor adherence to R991 and CODEX standards for commercial complementary feeds				X	X	X	X	X
4.4 Ensure explicit focus on obesity prevention in routine growth monitoring in children	Update the Road-to-Health Booklet (RtHB) to include clear childhood obesity messages	NDoH, provincial health-care facility managers, postnatal clinic staff	RtHB updated	Appropriate weight gain in children		X			
	Develop a step-by-step guide on prevention and control of obesity in children for healthcare personnel					X			
4.5 Promote healthy eating and physical activity in early childhood development (ECD)	Incorporate explicit obesity prevention and control messages in ECD policies and guidelines	DSD, supported by NDoH and DBE	Healthy eating messages incorporated in ECD policies and guidelines	Well-nourished and physically active children during ECD stages	X	X			

GOAL 5: COMMUNICATE WITH, EDUCATE AND MOBILISE COMMUNITIES									
Objectives	Key activities/actions	Responsibility	Performance indicators (progress and impact)	Expected outcomes	Target/Timeframe				
					2015/16	2016/17	2017/18	2018/19	2019/20
5.1 Develop a communication plan targeting various age groups on healthy eating, regular physical activity and risks associated with obesity	Identify partners with no conflict of interest	NDoH, Government Communication and Information System (GCIS), private sector, NGOs	Number of media platforms conveying messages on healthy lifestyle	Improved knowledge on nutrition and physical activity.	X	X			
	Engage with advertising industry and communication experts to develop and design healthy lifestyle messaging				X				
	Identify champions and role models for the mass media campaign				X				
	Implementing strategies for community mobilisation, e.g. community dialogues, campaigns				X	X	X	X	X
5.2 Create demand for healthy food and environments conducive to physical activity	Identify consumer groups and social activism groups to support the obesity initiative	National, provincial and local government departments, NGOs, consumer groups, community forums, private sector, religious groups, transport sector, urban planners, SALGA, SRSA, NDoH and CGCSA	Increase proportion of people performing physical activity	Improved knowledge on nutrition and physical activity	X	X	X	X	X
	Inform the public on where and how to access services to establish weight status				X	X	X	X	X
	Explore expansion of rebates on healthy food purchases				X	X	X	X	X

GOAL 6: ESTABLISH A SURVEILLANCE SYSTEM, STRENGTHEN MONITORING, EVALUATION AND RESEARCH									
Objectives	**Key activities/actions**	**Responsibility**	**Performance indicators (progress and impact)**	**Expected outcomes**	**Target/Timeframe**				
					2015/16	2016/17	2017/18	2018/19	2019/20
6.1 Increase access to health screening services	Partner with private sector to promote health screening. (Drive 'know and understand your numbers' campaigns)	National, provincial and local government departments, private sector	Proportion of the adult population aged 18 years and older who are screened for weight change Proportion of the population that uses the weight measurement services	Improve perception of body weight	X	X	X	X	X
	Promote BMI assessment and counselling on obesity in healthcare settings				X				
	Capacity-building on weight status assessment and interpretation thereof				X				
	Encourage private sector and employers to increase availability of BMI and waist circumference assessment services					X			
	Incorporate weight status assessments in wellness services	Health, private sector	Proportion of employees that have access to weight measurement services		X	X	X	X	
	Strengthen obesity referral systems for nutritional assessment and counselling		Number of referrals for obesity management	Improved adherence to healthy lifestyle and improved self-esteem.	X	X			

6.2 Monitor and evaluate performance indicators	Develop and agree on a set of indicators	All stakeholders	Availability of a monitoring and evaluation framework	Availability of data and trends on obesity	X				
	Develop a reporting tool				X				
6.3 Collate and communicate evidence-based information to stakeholders on obesity prevention and management	Create national repository of South African obesity intervention programmes to advise on implementation, and monitoring and evaluation	National departments, provincial departments, National Obesity Forum, academia	A list of repository documents available	An established and updated repository	X	X	X	X	X
6.4 Set and implement the research agenda for obesity	Consult with stakeholders and identify key research questions	Academia, national, provincial and district health research committees	Number of publications in peer-reviewed journals	Best evidence to inform policies and practices	X	X			
	Conduct prioritised research					X	X	X	X
	Build capacity in obesity research and knowledge transfer				X	X	X	X	X

Chapter Five

5.1 Monitoring and evaluating the impact of programmes

Epidemics such as the current obesity epidemic require a programmatic approach for surveillance, including reliable monitoring of the extent of the epidemic, the associated risk factors, and interventions to control the disease.

The surveillance system needs to inform the public health response. The National Strategic Plan for the Prevention and Management of NCDs indicates that South Africa has many elements that can be developed further into a strategic surveillance system for the prevention of NCDs. Some surveillance programmes are already in place, including the District Health Information System data and specific surveys/research set up for this purpose as well as those from Statistics South Africa (StatsSA), the South African Demographic Health Survey, and the South African National Health and Nutrition Examination Survey.

However, a comprehensive surveillance system should be developed for obesity tracking. This must include monitoring of the exposures that lead to NCDs (unhealthy lifestyles and risk factors including those identified among young people), health outcomes (illness and cause-specific mortality), as well as the health system response (capacity, access to interventions and the quality of interventions). Given that these strategic plans are currently in place, the National Health Commission to be formulated could be utilised to create obesity-specific agendas.

A system of tracking all sector activities should be put in place, which will allow for frequent reporting through the inter-sectoral forum; an example of such a tool that could be used is shown in Annexure A.

5.2 Research

The population-based policies and programmes targeting obesity should be based on sound scientific evidence generated through research. Health systems research is needed to identify how well these policies and programmes are being implemented, as well as the barriers to their effective implementation. Strategies to scale up such interventions should be formulated.

Research is essential to understand the context-specific factors and social determinants of obesity in order to implement interventions effectively, especially in resource-constrained settings where there are multiple competing health problems. Investment in health services and other implementation research can improve the effectiveness of programmes and save resources. To this effect, partnerships between government, academic and research institutions will be established to identify priority research areas and monitor the impact of the proposed interventions.

References

1. Global Issues. Obesity. 21 November 2010. [Internet]. [cited 26 January 2016]. URL: http://www.globalissues.org/article/558/obesity

2. Dobbs R, Sawers C, Thompson F, Manyika J, Woetzel J, Child P, McKenna S, Spatharou A. Overcoming obesity: an initial economic analysis. Discussion paper. London: McKinsey Global Institute; 2014e.

3. Arington C, Case A. Health: Analysis of the NiDS Wave 1 Dataset. National Income Dynamic Study. 2013. [Internet]. [cited 26 January 2016]. URL: http://www.nids.uct.ac.za/publications/discussion-papers/wave-1-papers

4. Shisana O. Labadarios D, Rehle T, Simbayi L, Zuma K, Dhansay A, et al. and SANHANES-1 Team. South African National Health and Nutrition Examination Survey (SANHANES-1). Cape Town: HSRC Press; 2013.

5. Reddy SP, James S, Sewpaul R, Koopman F, Funani NI, Sifunda S, et al.and Umthente Uhlaba Usamila. The South African Youth Risk Behaviour Survey 2008. Cape Town: South African Medical Research Council; 2010.

6. Norman R, Bradshaw D, Schneider M, Joubert J, Groenewald P, Lewin S, et al. A comparative risk assessment for South African 2000: towards promoting health and preventing disease. SAMJ 2007; 97:637–41.

7. Stop Obesity Alliance. Strategies to overcome and prevent (STOP) obesity alliance policy recommendations. [Internet]. [cited 26 January 2016]. URL:http://www.stopobesityalliance.org/wp-content/themes/stopobesityalliance/pdfs/NEW_STOP_Obesity_Alliance_Recommendations.pdf

8. National Health Lung and Blood Institute Expert Panel on the identification, evaluation, and treatment of obesity in adulthood. Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults. Report No. 98-4083. Bethesda (MD): NHLBI; 1998.

9. Reilly JJ. Obesity in childhood and adolescence: evidence-based clinical and public health perspectives. Post grad Med J 2006; 82:429–437. doi: 10.1136/pgmj.2005.043836

10. National Heart Lungs and Blood Institute. Risks of Overweight and Obesity. [Internet]. [cited 26 January 2016]. URL: http://www.nhlbi.nih.gov/health/health-topics/topics/obe/risks

11. Ardington C, Case A. Health: Analysis of the NiDS Wave 1 Dataset. National Income Dynamic Study. 2013. [Internet]. [cited 26 January 2016]. URL: http://www.nids.uct.ac.za/publications/discussion-papers/wave-1-papers

12. World Health Organization. Preventing Chronic Diseases: A Vital Investment. 2005. [Internet]. [cited 26 January 2016]. URL: http://www.whqlibdoc.who.int/publications/2005/9241563001_eng.pdf

13. Mitchell N, Catenacci V, Wyatt HR, Hill JO. Obesity: overview of an epidemic. Psychiatr Clin North Am. December 2011; 34(4): 717–732. doi:10.1016/j.psc.2011.08.005

14. Temple NJ, Steyn NP. Food prices and energy density as barriers to healthy food patterns in Cape Town, South Africa. J Hunger Environ Nutr. 2009; 4: 203–213.

15. Hu F. Obesity Epidemic. New York: Oxford University Press; 2008. p.342–65

16. Fitch A, Fox C, Bauerly K, Gross A, Heim C, Judge-Dietz J, et al. Prevention and Control of Obesity for Children and Adolescents. Bloomington, MN: Institute for Clinical Systems Improvement; 2013

17. Rocchini AP. Childhood obesity and a diabetes epidemic. N Engl J Med, 2002; 346:854–855.

18. Park MH, Sovio U, Viner RM, Hardy RJ, Kinra S. Overweight in Childhood, Adolescence and Adulthood and Cardiovascular Risk in Later Life: Pooled Analysis of Three British Birth Cohorts. PLoS ONE, 2013; 8(7), e70684. doi:10.1371/journal.pone.0070684

19. Vasylyeva TL, Barche A, Chennasamudram SP, Sheehan C, Singh R, Okogbo ME. Obesity in prematurely born children and adolescents: follow up in pediatric clinic. Nutrition Journal 2013, 12:150. [Internet]. [cited 26 January 2016]. URL: http://www.nutritionj.com/content/12/1/150.

20. Tugendhaft A, Hofman KJ. Empowering healthy food and beverage choices in the workplace. Occupational Health South Africa, 2014; 20(5).

21. Cecchini M, Sassi F, Lauer JA, Lee YY, Guajardo-Barron V, Chisholm D. Tackling of unhealthy diets, physical inactivity, and obesity: health effects and cost-effectiveness. The Lancet, 2010; 376: 1775–84.

22. South African National Department of Health. Strategic Plan for the Prevention and Control of Non-communicable diseases 2013–17. Pretoria: National Department of Health; 2013. ISBN: 978-0-621-41510-0.

23. Kraak VI, Swinburn B, Lawrence M, Harrison P. An accountable framework to promote healthy food environments. Public Health Nutrition, 2014; 17(11), 2467–2483.

24. World Health Organization. Population-based approaches to childhood obesity prevention. Geneva: World Health Organization; 2012.

Annexure A: Obesity control stakeholder reporting tool

OBESITY CONTROL STAKEHOLDER REPORTING TOOL								
Facility Name:								
Facility Type (e.g. Workplace, Healthcare Centre, etc.):								
Bi-annually	2016/17		2017/18		2018/19		2019/20	
	Q1&2	Q3&4	Q1&2	Q3&4	Q1&2	Q3&4	Q1&2	Q3&4
Number of physical activity groups								
Number of members in physical activity group								
Drop-out rate in the physical activity group								
Physical trainer available (Yes/No)								
BMI categories for adults	BMI 18–24		BMI 25–29		BMI 30–34		BMI > 35	
Number of Adults over 65 years per BMI category								
Number of Adults 35–65 years per BMI category								
Number of Adults > = 18 years, but <35 years per BMI category								
Waist circumference for adults	WOMEN				MEN			
	Less than 80–88 cm		Over 88 cm		Less than 94–102 cm		Over 102 cm	
Number of adults per waist circumference category								
BMI category for children and adolescents	BMI between ≥–3 to <–2 SD		BMI between ≥–1 SD to <+1 SD		BMI between ≥+1 SD to ≤ +2 SD		BMI above >+2 SD	
Number of Adolescents 13–17 years per BMI category								
Number of Children >=5 years, but < 13 years per BMI category								

National Department of Health

Switchboard: 012 395 8000

Physical address: Civitas Building
Cnr Thabo Sehume and Struben Streets
Pretoria

Postal address: Private Bag X828
Pretoria
0001