

# Parliament Hearings on Sugar Tax Presentation

Dr Sundeep Ruder

MBBCH, FCP(SA), FSEM (SA)

Endocrinologist - Life Fourways Hospital

Honorary Consultant - Charlotte Maxeke Johannesburg Academic Hospital

Associate Lecturer - University of the Witwatersrand

Executive Committee Member - Society for Endocrinology, Metabolism and

Diabetes of South Africa (SEMDSA)

Advocate - Healthy Living Alliance



HEALA  
Healthy Living Alliance



SOUTH AFRICA

## The Sugar Shysters: A day in the life of a South African endocrinologist

🏠 KEVIN BLOOM 📍 SOUTH AFRICA 📅 16 SEP 2015 04:12 (SOUTH AFRICA)







more  
muscles  
than  
brussels



drink at the  
first  
crack of  
yawn



keep perky  
when you're  
feeling  
murky



*A good disposition can be an aid to good health...*

In child or adult, a disposition that is easily and often upset, even though lightly, can help produce an out-of-sorts feeling all over. A sunny smile is usually associated with blooming health.

**"Fresh up" - keep smiling!**

*You like it... it likes you*

In millions and more millions of homes, 7-Up is the day in and day out family drink. Its cheerful, clean-tasting flavor and liveliness always bring a smile to keep your good nature on even keel. From Granddad down to the tiny tots, everyone likes it, everyone enjoys it... and it likes everyone.

Get a case of 7-Up today. Invite the family to sip it... taste it. Drink it slowly... roll it over and under your tongue. Notice the "fresh up" effect... its complete satisfaction to your taste and thirst. Any store displaying the 7-Up signs will supply you.

Order a case from your dealer

REPORT TO PARENTS

Copyright 1941 by The Coca-Cola Company

DRINK  
**Coca-Cola**  
TRADE MARK

Delicious  
Refreshing

Relieves Headache.  
Relieves Exhaustion

AT SODA FOUNTAINS 5¢

The American Magazine

— like oranges? —  
drink **ORANGE-CRUSH**

As a drink in itself, World's Orange-Crush is a refreshing beverage in itself. It is a drink that is not only refreshing but also a treat of surprising delightfulness.

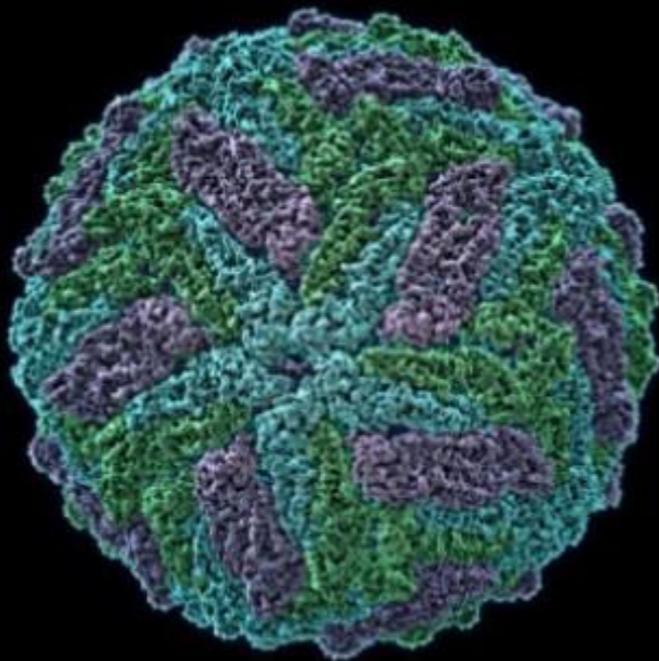
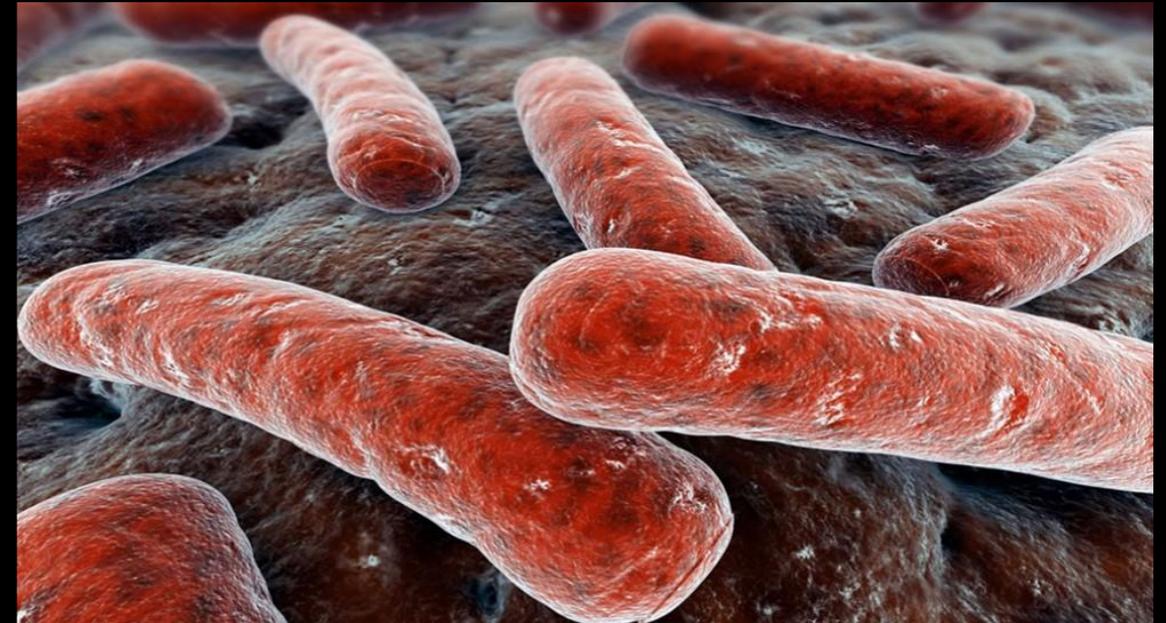
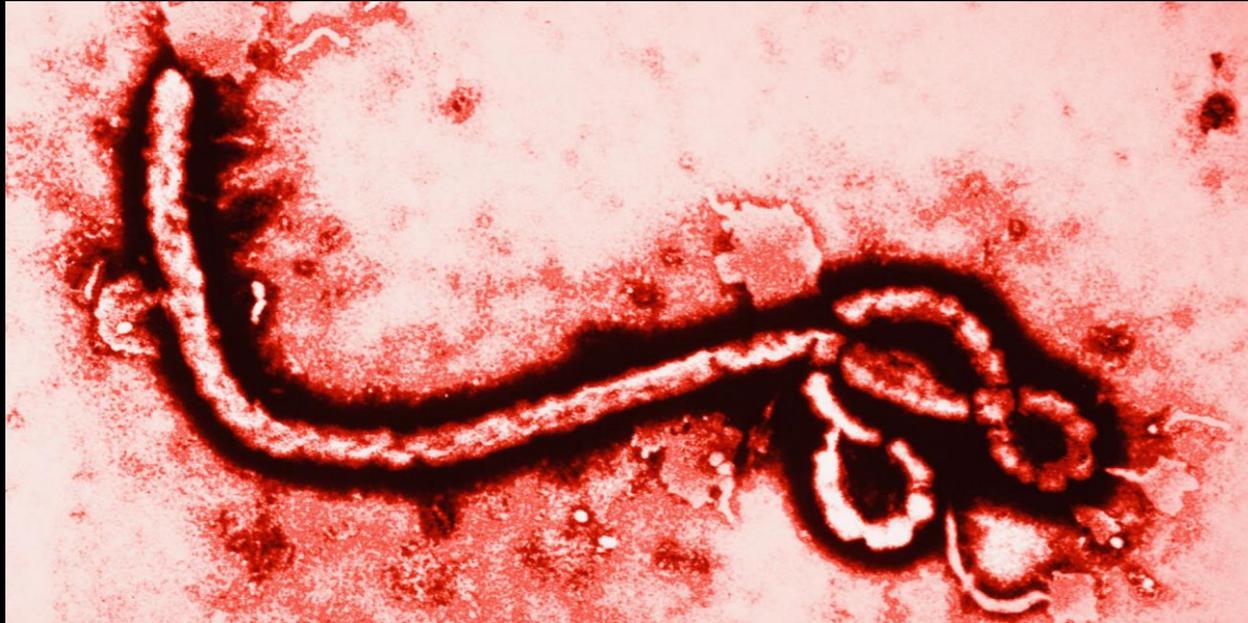
It is a drink that is not only refreshing but also a treat of surprising delightfulness.

It is a drink that is not only refreshing but also a treat of surprising delightfulness.

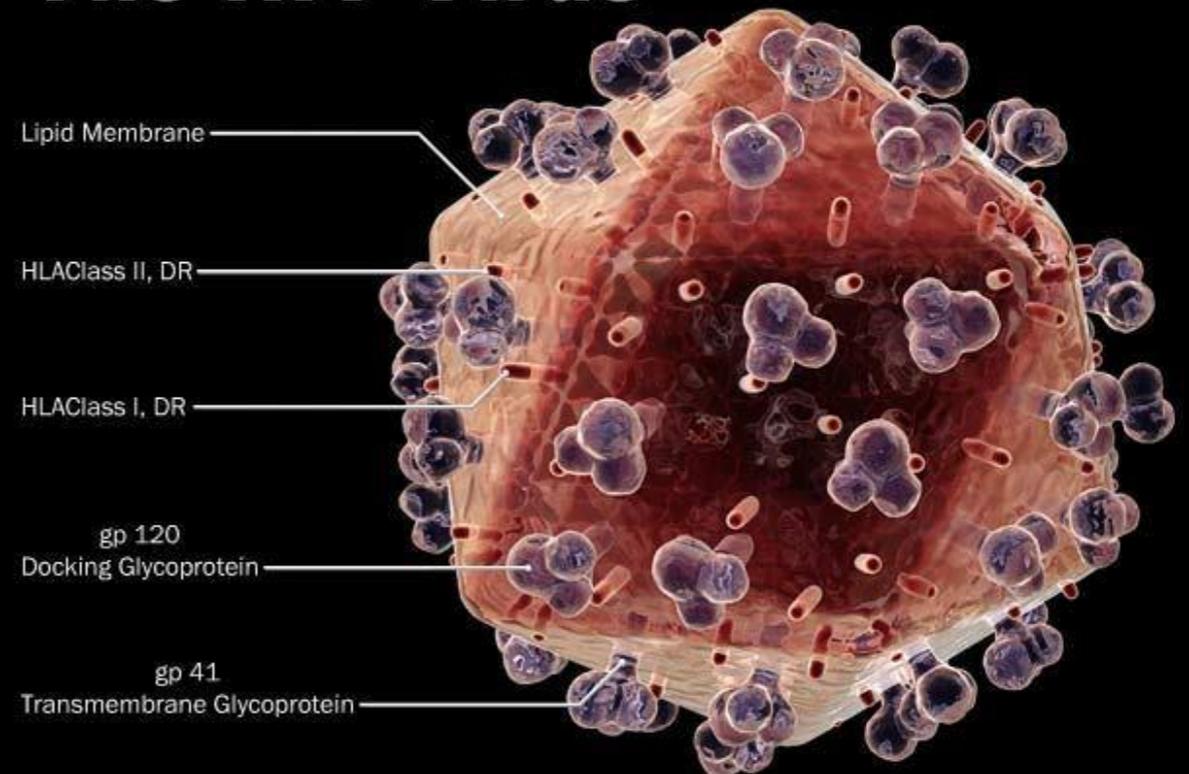
**Coca-Cola**

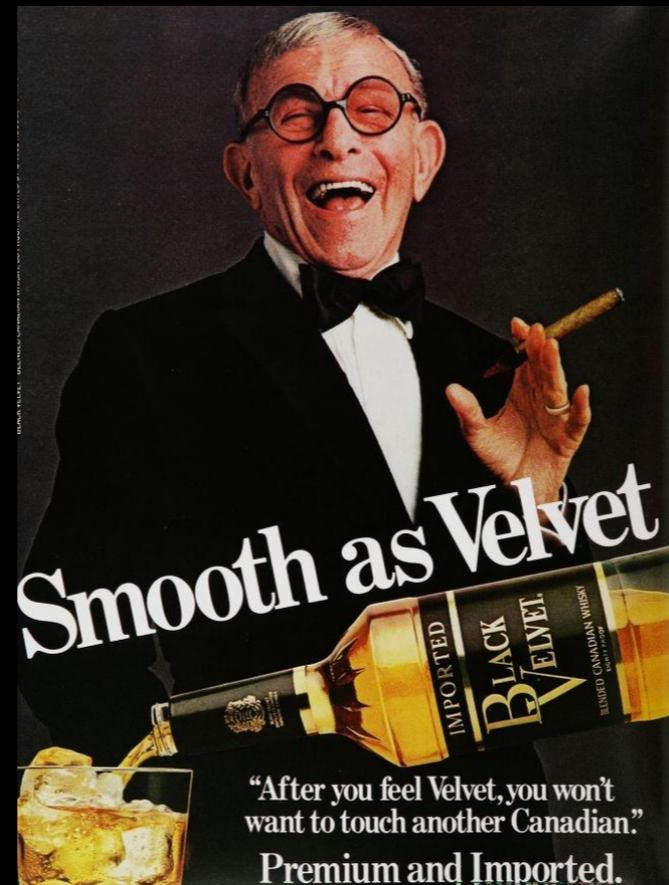


# The Usual Suspects



## The HIV Virus





“The greatest trick the devil ever pulled off is making the world believe he didn't exist.”



World's Healthiest of Parents!  
The exciting addition to the  
July '70 ad campaign.



### Why we have the youngest customers in the business

This young man is 11 months old... and he isn't our youngest customer in our history.  
For 7-Up is so pure, so wholesome, you can even give it to babies and feel good about it. Look at the back of a 7-Up bottle. Notice that all our ingredients are listed. (That isn't unusual of soft drinks you have - but we're proud to do it and we think you're pleased that we do.)  
By the way, Mom, when it comes to toddlers... it just had to be created to drink their milk, not this. Add 7-Up to the milk to enjoy parts, pouring the 7-Up gently over the milk. It's a delicious combination... and it works! Make 7-Up your family drink. The fun is... it's just you!

*Nothing does it like Seven-Up!*

a little **TRICK**  
that makes a **TREAT**

## SEVEN-UP IN MILK!

Mix chilled 7-Up and cold milk in equal parts, by pouring the 7-Up gently into the milk. Do not stir. The 7-Up adds a light and delicate flavor making a delicious blended food drink.

Mothers know that this is a wholesome combination. The addition of 7-Up gives milk a new flavor appeal that especially pleases children.



**"FRESH UP" WITH SEVEN-UP!**





# The Problem

- Obesity
- Type II Diabetes
- Tooth Decay
- Heart disease (independent of weight gain)
- Impact on growing bones

# WHO Classification

Associated risks

BMI between 18.5 and 25 : normal weight

**Normal**

BMI between 25 and 30 : overweight

**Average**

BMI between 30 and 40 : obesity

**Important**

BMI above 40 : morbid obesity

**Severe**

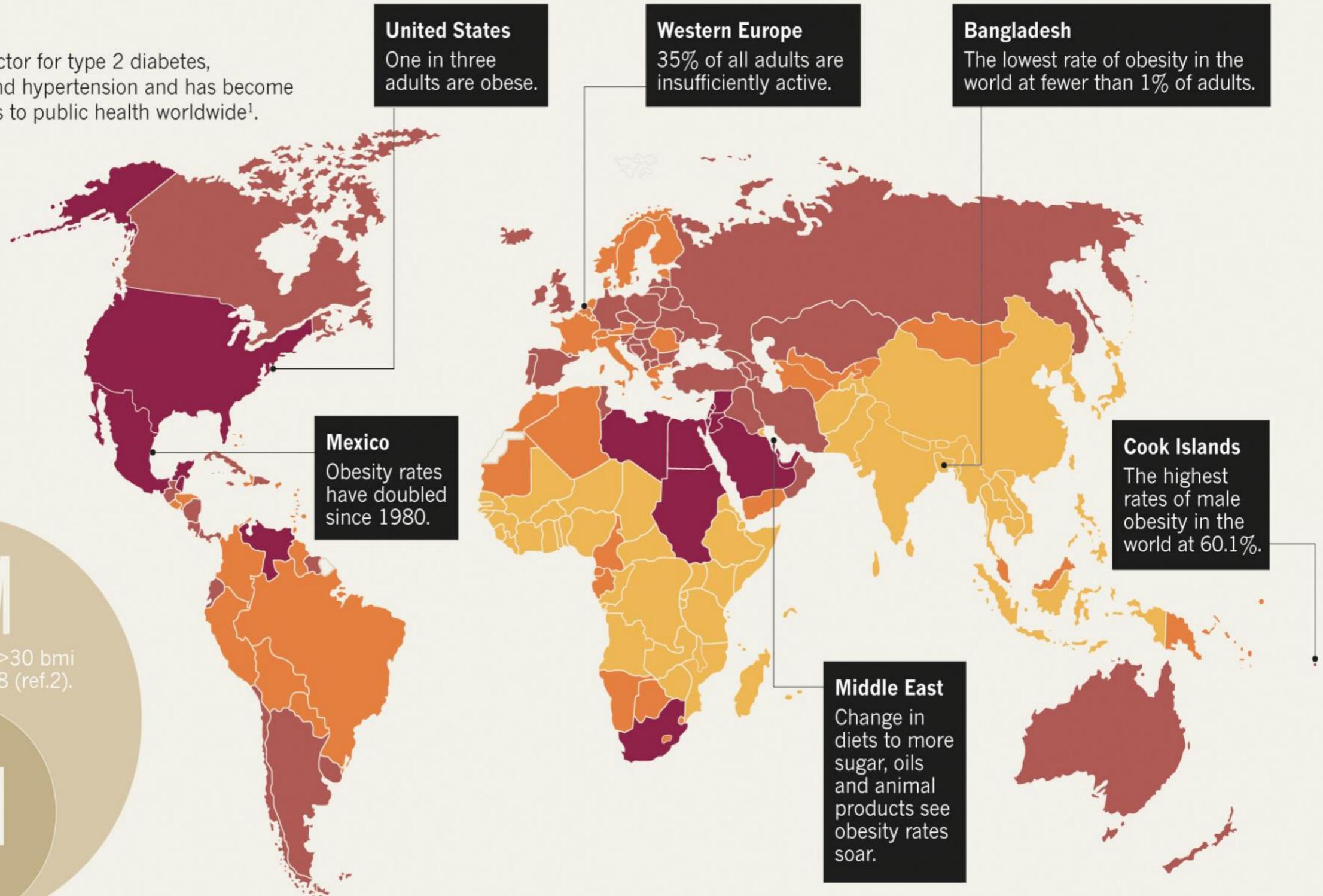
The increasing prevalence of obesity is a worldwide phenomenon, affecting peoples from diverse cultural and economic backgrounds. By **Tony Scully**.

## GLOBAL SPREAD

Obesity is a major risk factor for type 2 diabetes, cardiovascular disease and hypertension and has become one of the leading threats to public health worldwide<sup>1</sup>.

Prevalence of adult obesity 2008 (%)

- >30
- 20-29
- 10-19
- <10



507M

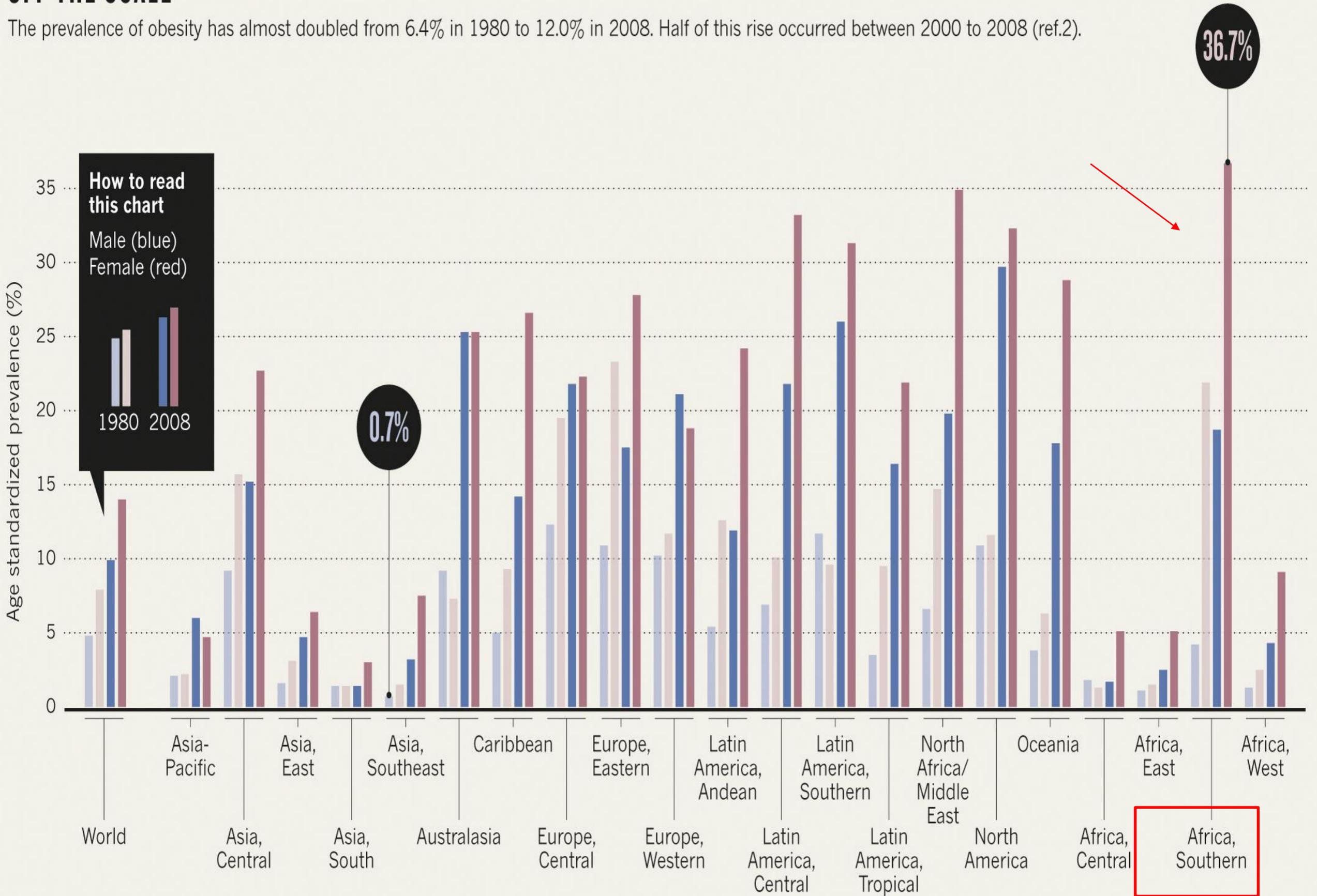
Number of adults >30 bmi worldwide in 2008 (ref.2).

147M

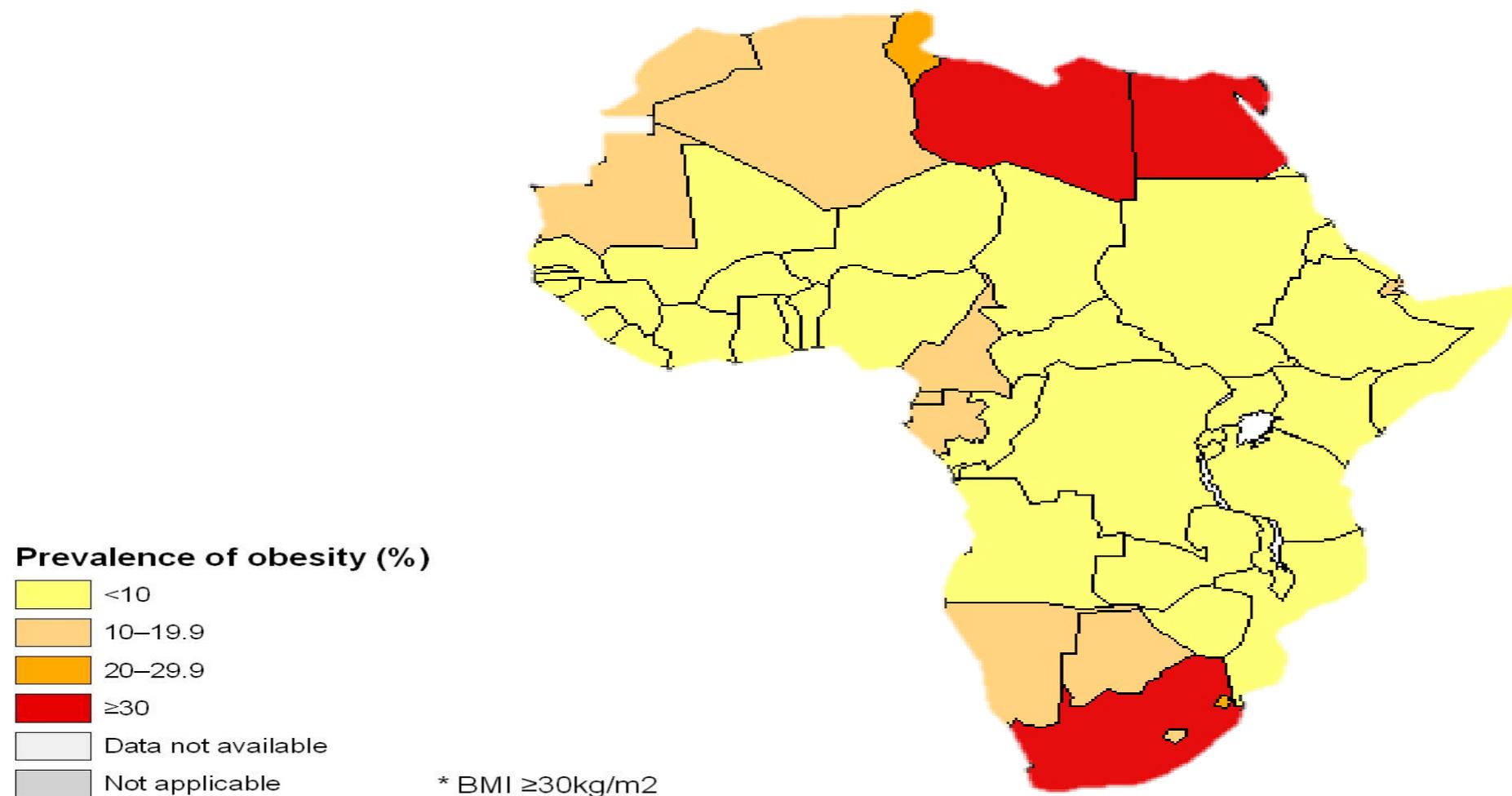
In 1980.

# OFF THE SCALE

The prevalence of obesity has almost doubled from 6.4% in 1980 to 12.0% in 2008. Half of this rise occurred between 2000 to 2008 (ref.2).



# SA is number 1 for Obesity in Africa



WHO, 2011

# South Africa

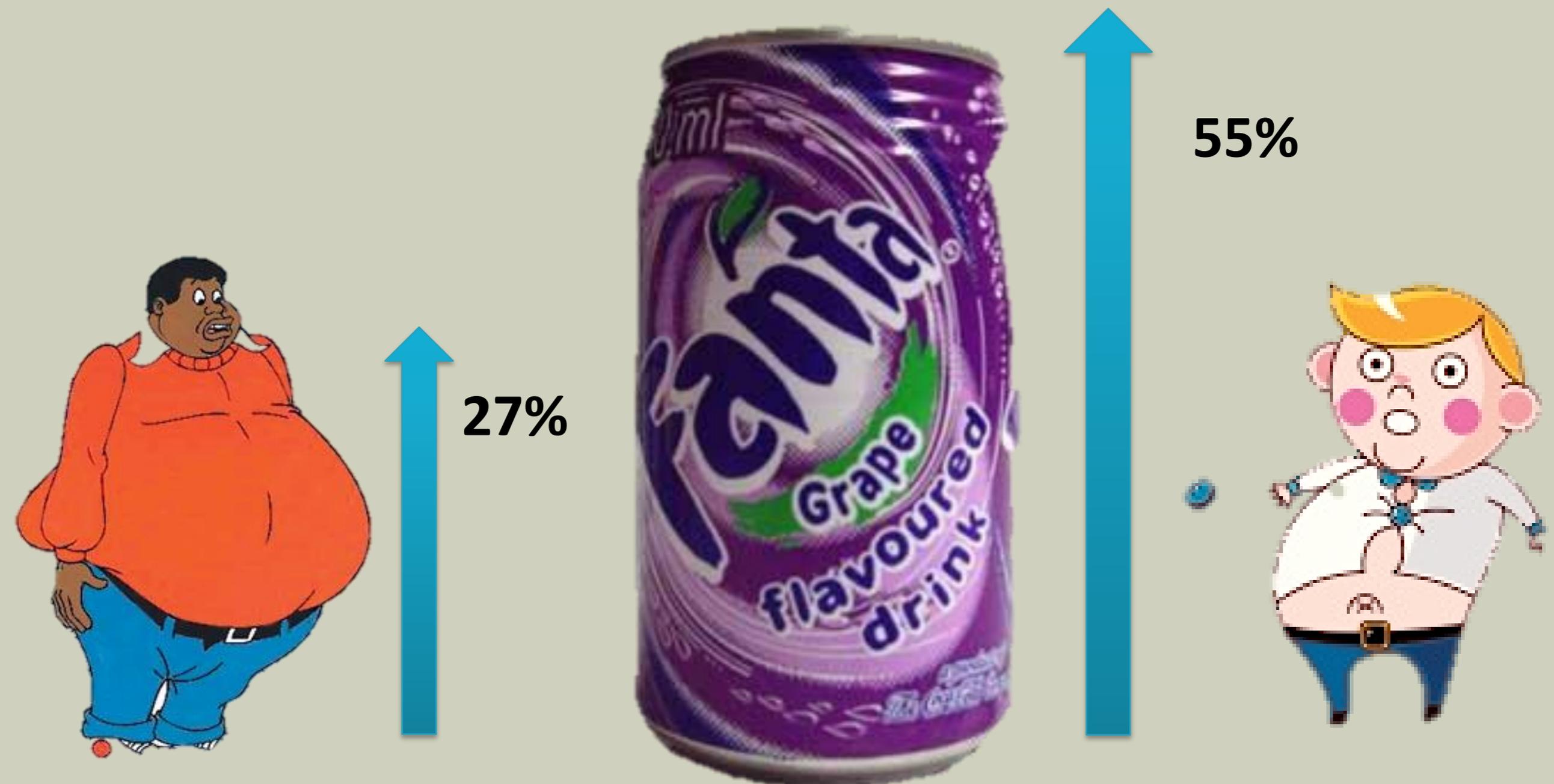
**Highest** overweight and obesity rate in sub-Saharan Africa

70% of women

40 % of men

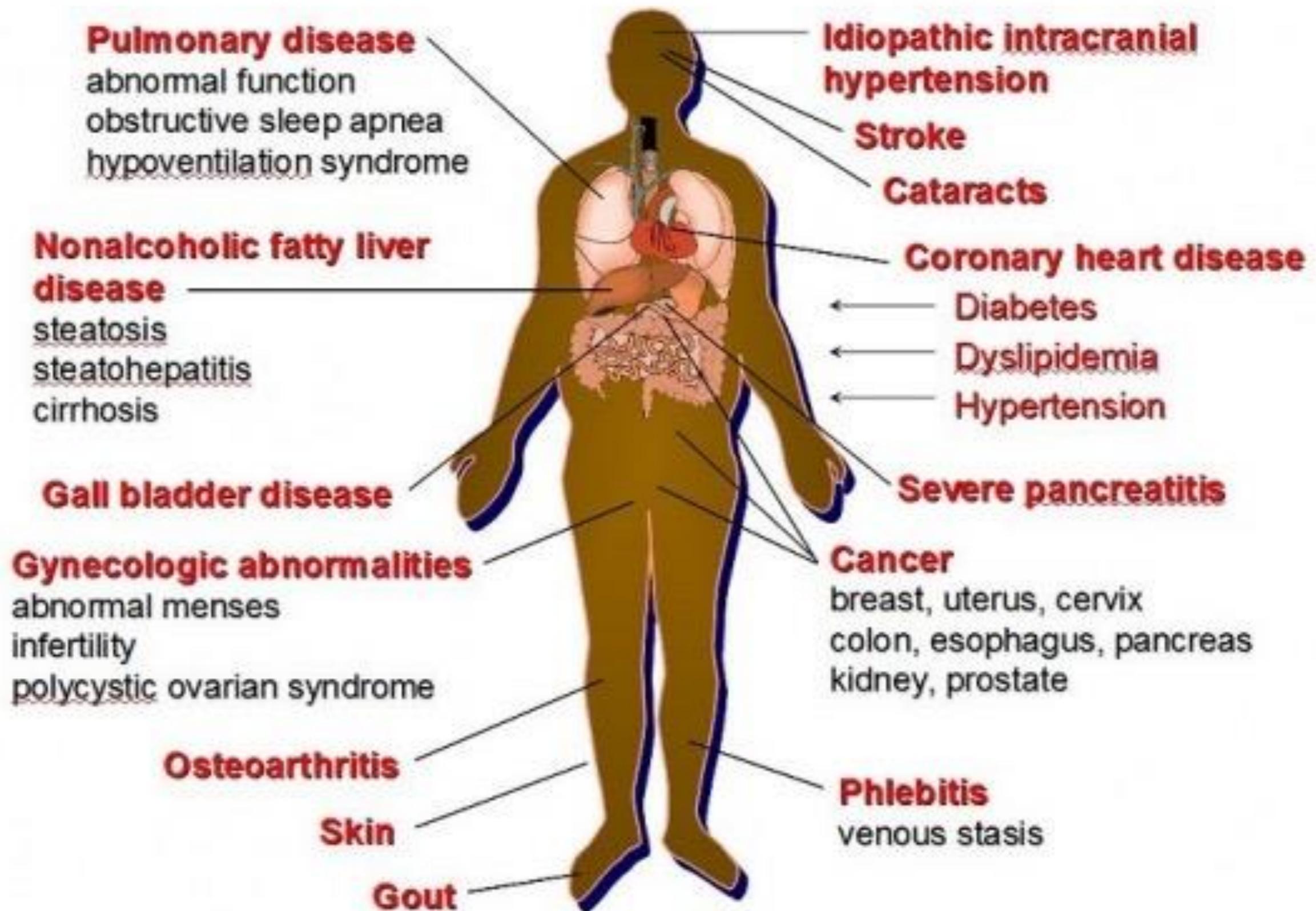
1 in 4 girls & 1 in 5 boys between the ages of 2 and 14 years

**Drinking 1 SSB /day increases adult likelihood of being overweight by 27% and child likelihood by 55%**



(Source: Malik, 2009)

# Medical Complications of Obesity



# Obesity Epidemic Effects

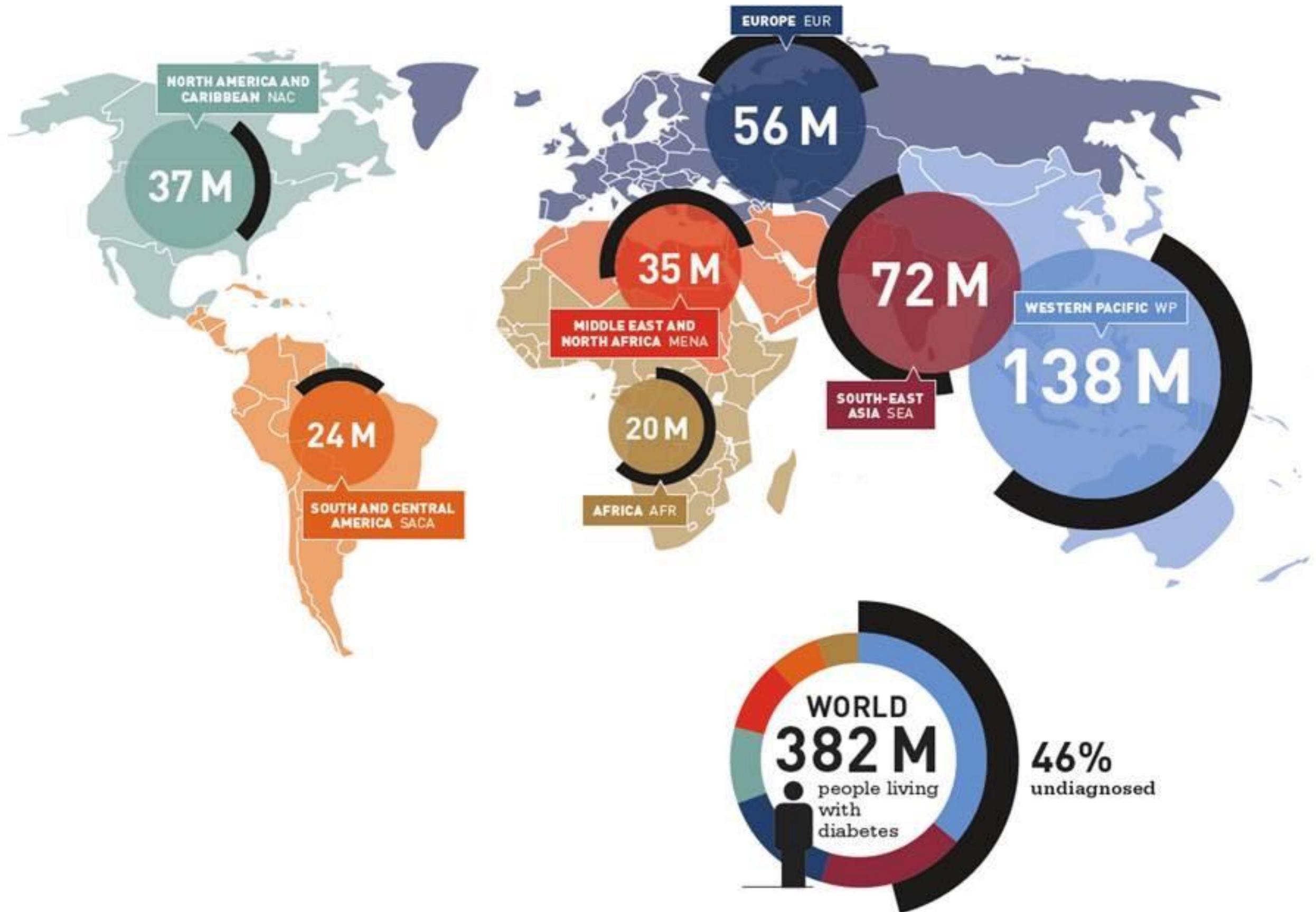
- longevity
- disability-free life-years(DALY)
- quality-of-life
- productivity
- high and middle-to-low income countries
- poses a threat to population health
- substantial burden to many health systems

	UK		USA	
	Recent trend	Historic trend	Recent trend	Historic trend
<b>Scenario 1. Past trends continue unabated</b>				
Diabetes (×1000)	+545 (432)	+668 (159)	+5503 (3524)	+7855 (1618)
Coronary heart disease and stroke (×1000)	+331 (407)	+461 (128)	+5365 (3359)	+6836 (1537)
Cancer (×1000)	+87 (108)	+130 (34)	+405 (265)	+539 (123)
Gain or loss in QALYs (×1000)	-2219	-6300	-24 488	-48 259
<b>Scenario 2. 1% reduction in BMI for every adult at baseline</b>				
Diabetes (×1000)	-179 (385)	-202 (139)	-2051 (2922)	-2420 (1461)
Coronary heart disease and stroke (×1000)	-122 (374)	-122 (116)	-1431 (2799)	-1704 (1400)
Cancer (×1000)	-32 (100)	-33 (33)	-73 (219)	-127 (109)
Gain or loss in QALYs (×1000)	+3011 (930)	+3195 (395)	+15 988 (1911)	+16 135 (781)
<b>Scenario 3. If obesity rates had remained at 1990 levels</b>				
Diabetes (×1000)	-897 (216)	-1021 (159)	-8664 (3524)	-11 016 (1618)
Coronary heart disease and stroke (×1000)	-634 (204)	-763 (128)	-7670 (3359)	-9141 (1537)
Cancer (×1000)	-177 (54)	-220 (34)	-534 (265)	-668 (123)
Gain or loss in QALYs (×1000)	+7073	+11 155	+58 177	+81 948

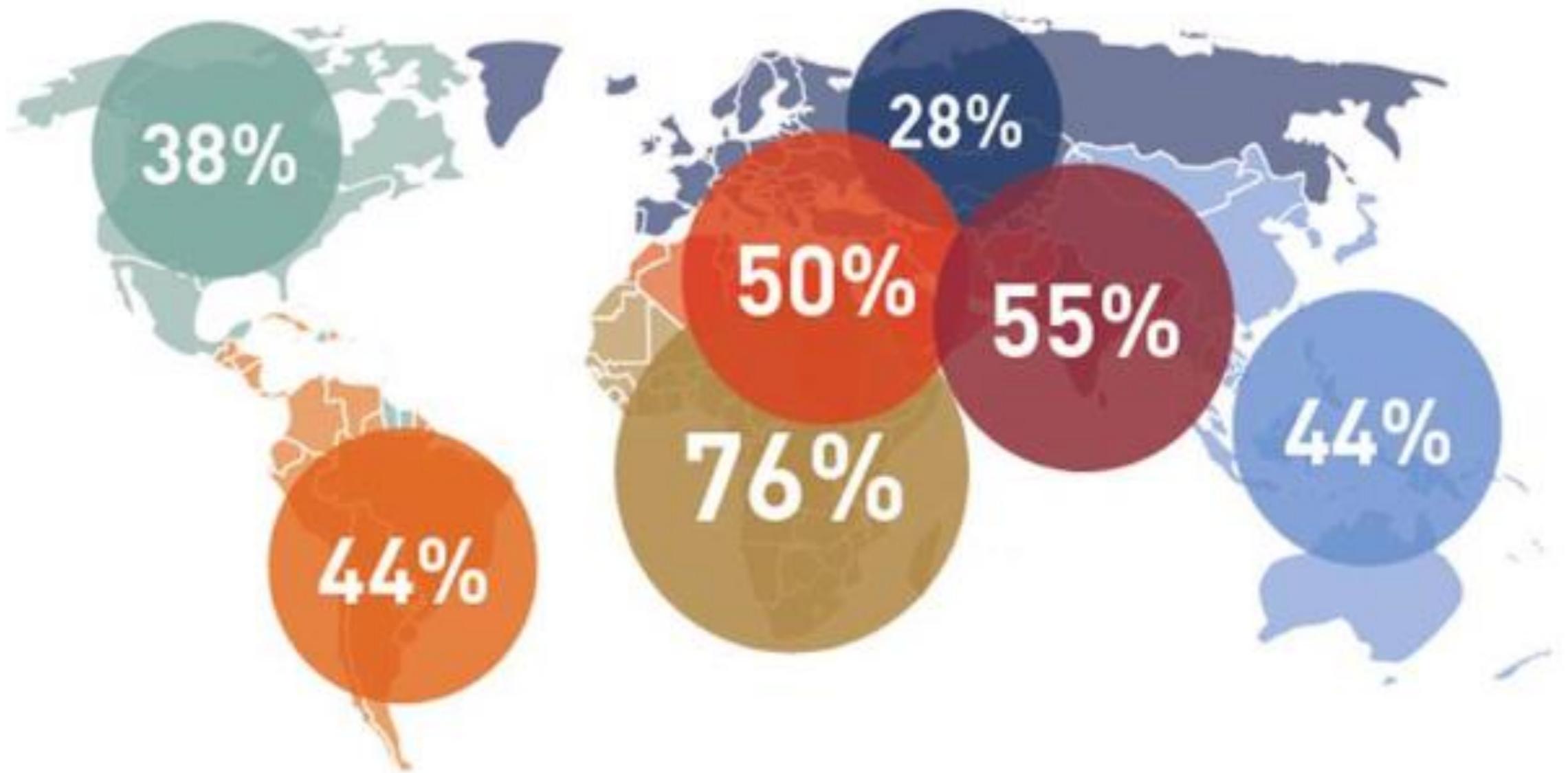
Scenario 1=past trends continue unabated; scenario 2=1% reduction in BMI for every adult at baseline; scenario 3=obesity rates remained at 1990 levels. Recent trend estimates were based on projections with data from 1990, which implied a slower increase in obesity, while historic trend estimates were projected from all available data from 1988, showing a steeper rate of increase in obesity. Data are cases (SE) unless otherwise stated. QALY=quality-adjusted life-years.

**Table 2: Projected health and quality-adjusted life-year outcomes, 2010–30, under three hypothetical scenarios of population-wide change in body-mass index distribution**

# Number of people with diabetes by IDF Region, 2013



**mortality <60**



Proportion of deaths due to diabetes in people under 60 years of age, 2013

# Major **COMPLICATIONS** from diabetes



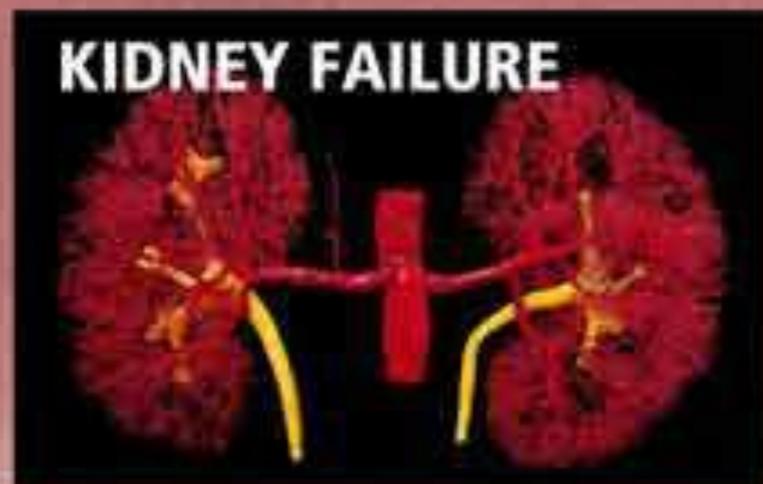
Wounds in foot  
that won't  
heal, leading to  
**AMPUTATION**



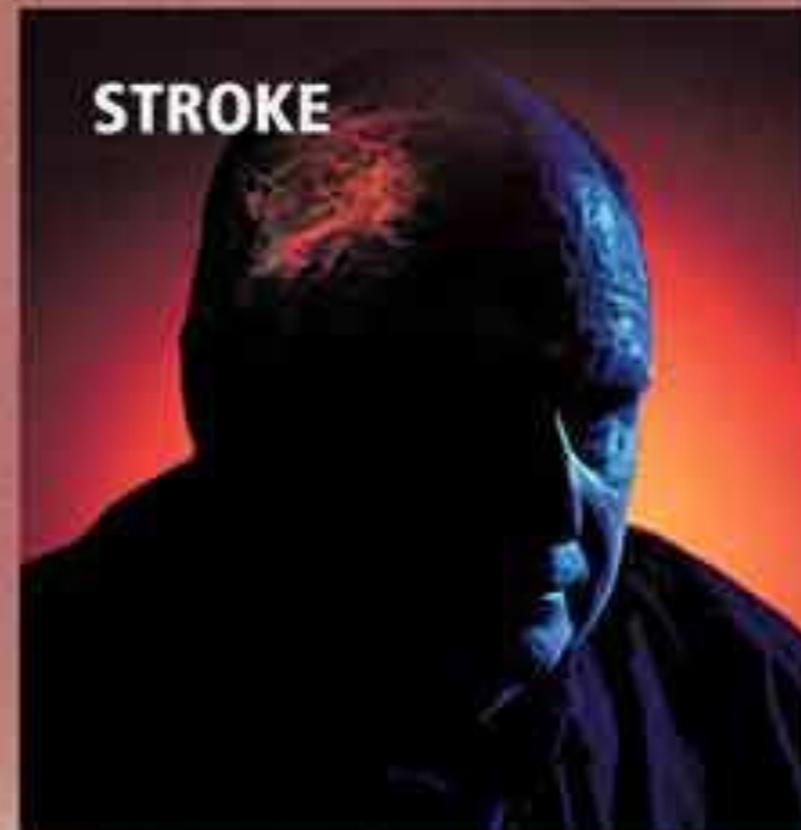
**HEART  
DISEASE**



Damaged  
blood vessels  
in retina  
which  
can cause  
**BLINDNESS**



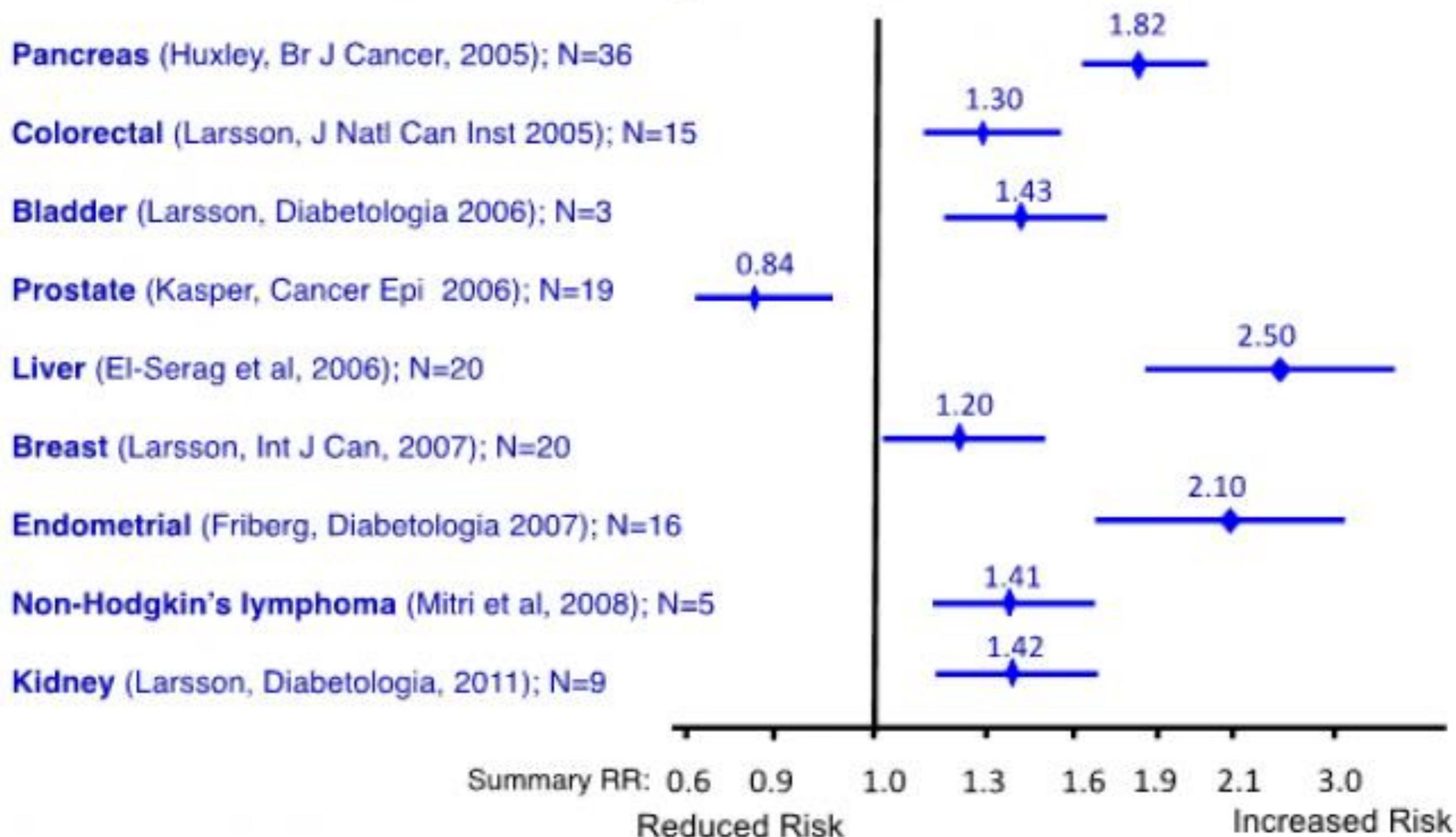
**KIDNEY FAILURE**



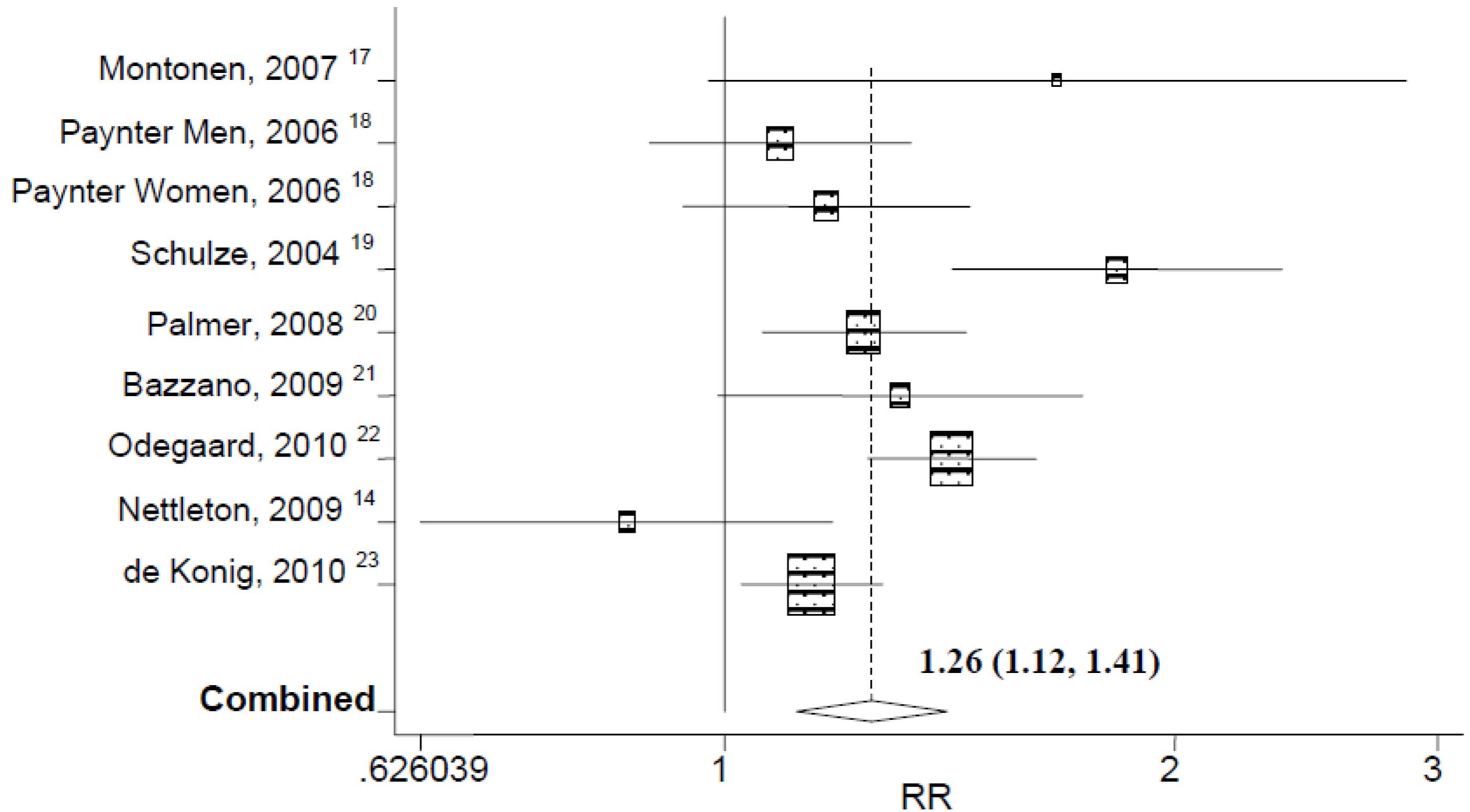
**STROKE**

# Type 2 Diabetes: Association with Cancers

## Meta-analyses, 2005-2011



# Meta-Analysis of Prospective Studies on Sugar-Sweetened Beverages and Risk of Type 2 Diabetes for Adults



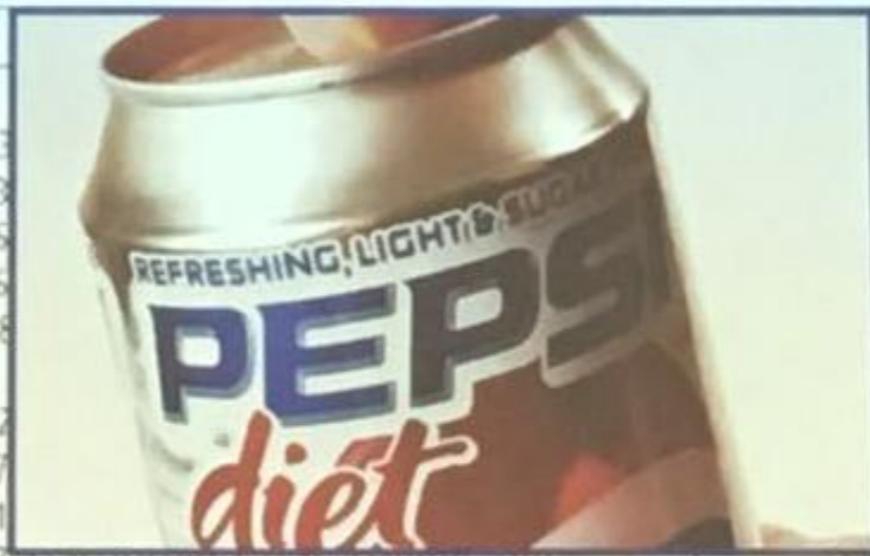
# Soft drinks, sugared or artificially sweetened, increase risk of type 2 diabetes

**LIFESTYLE CHANGE**



**Table 3** Odds ratios and 95% CIs of LADA and type 2 diabetes in relation to intake of sweetened beverages (sugar sweetened, artificially sweetened) in the Swedish Diabetes and Lifestyle Study

Karolinska Institute	LADA			Type 2 diabetes			
	Non-consumers	Consumers (no. of 200 mL servings/day)		Non-consumers	Consumers (no. of 200 mL servings/day)		
		<1	1-2	>2	<1	1-2	>2
<b>Sugar-sweetened beverage</b>							
Cases/controls	268/1029	53/23			130/239	66/85	44/18
Model 1	1	0.88 (0.63-1.22)			0.94 (0.66-1.35)		3.81 (2.07-7.00)
Model 2	1	0.95 (0.66-1.37)			0.84 (0.56-1.24)		3.45 (1.74-6.83)
Model 3	1	0.95 (0.66-1.37)			0.68 (0.44-1.05)		3.17 (1.45-6.93)
Model 3 (continuous)	1		1.18 (0.95-1.32) per 200 mL serving/day				1.21 (1.05-1.41) per 200 mL serving/day
<b>Artificially sweetened beverage</b>							
Cases/controls	289/1151	34/12			110/121	58/75	42/24
Model 1	1	1.16 (0.77-1.75)			1.27 (0.86-1.86)		4.41 (2.48-7.82)
Model 2	1	1.10 (0.71-1.70)			1.16 (0.76-1.79)		3.54 (1.91-6.54)
Model 3	1	1.04 (0.67-1.62)	0.92 (0.53-1.61)	1.90 (0.91-3.97)	1.47 (1.00-2.14)	0.86 (0.53-1.39)	2.42 (1.19-4.92)
Model 3 (continuous)	1		1.12 (0.95-1.32) per 200 mL serving/day				1.18 (1.01-1.38) per 200 mL serving/day



**One can of 330ml increases risk of T2DM by 15% but thereafter every 200ml leads to 20% increased risk**

energy intake + mutual adjustment for sugar-sweetened/artificially sweetened beverages. Model 3 = Model 2 + BMI.

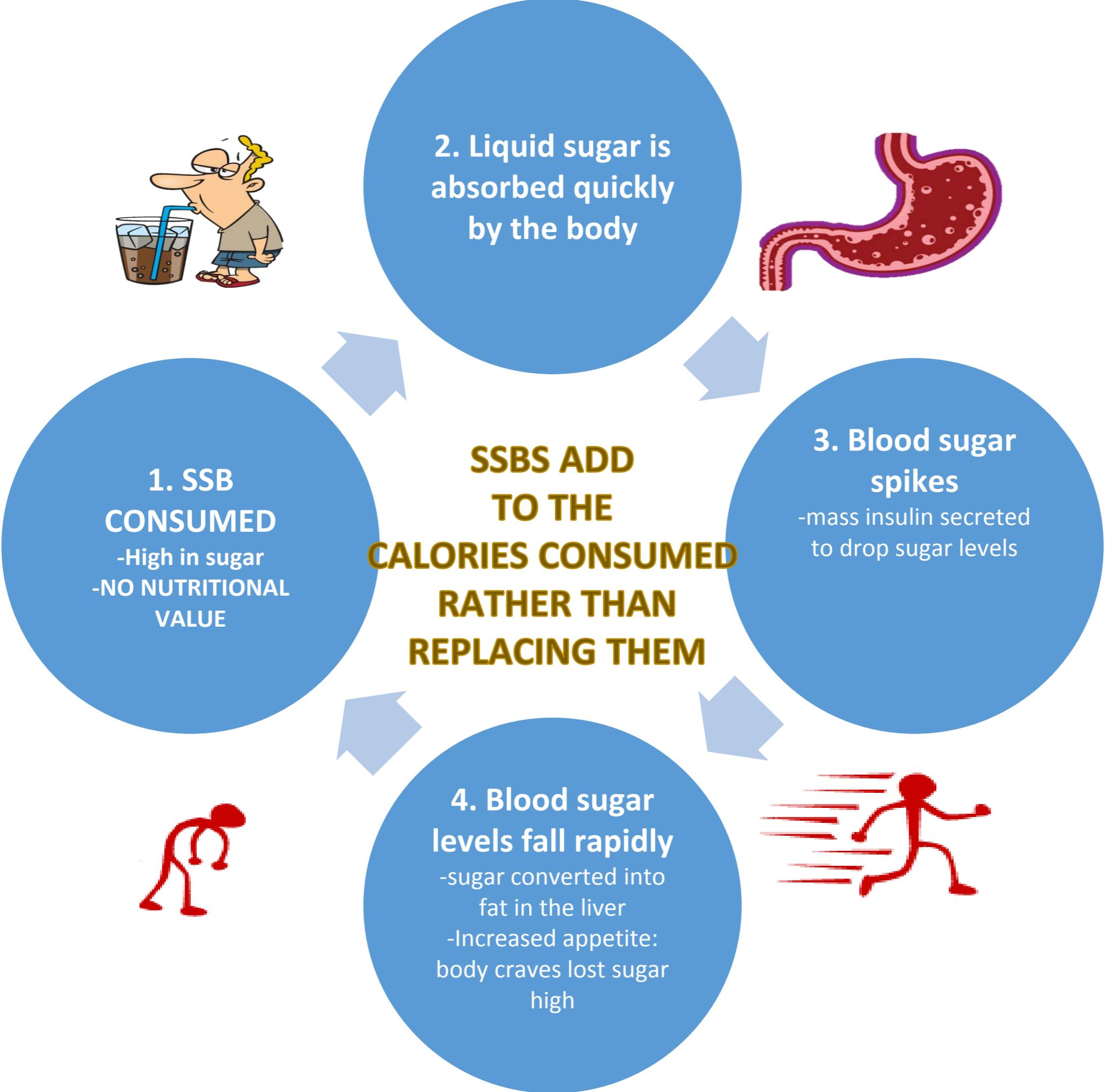
**Drinking 1-2 SSBs/day increases the risk of developing T2DM by 26%**



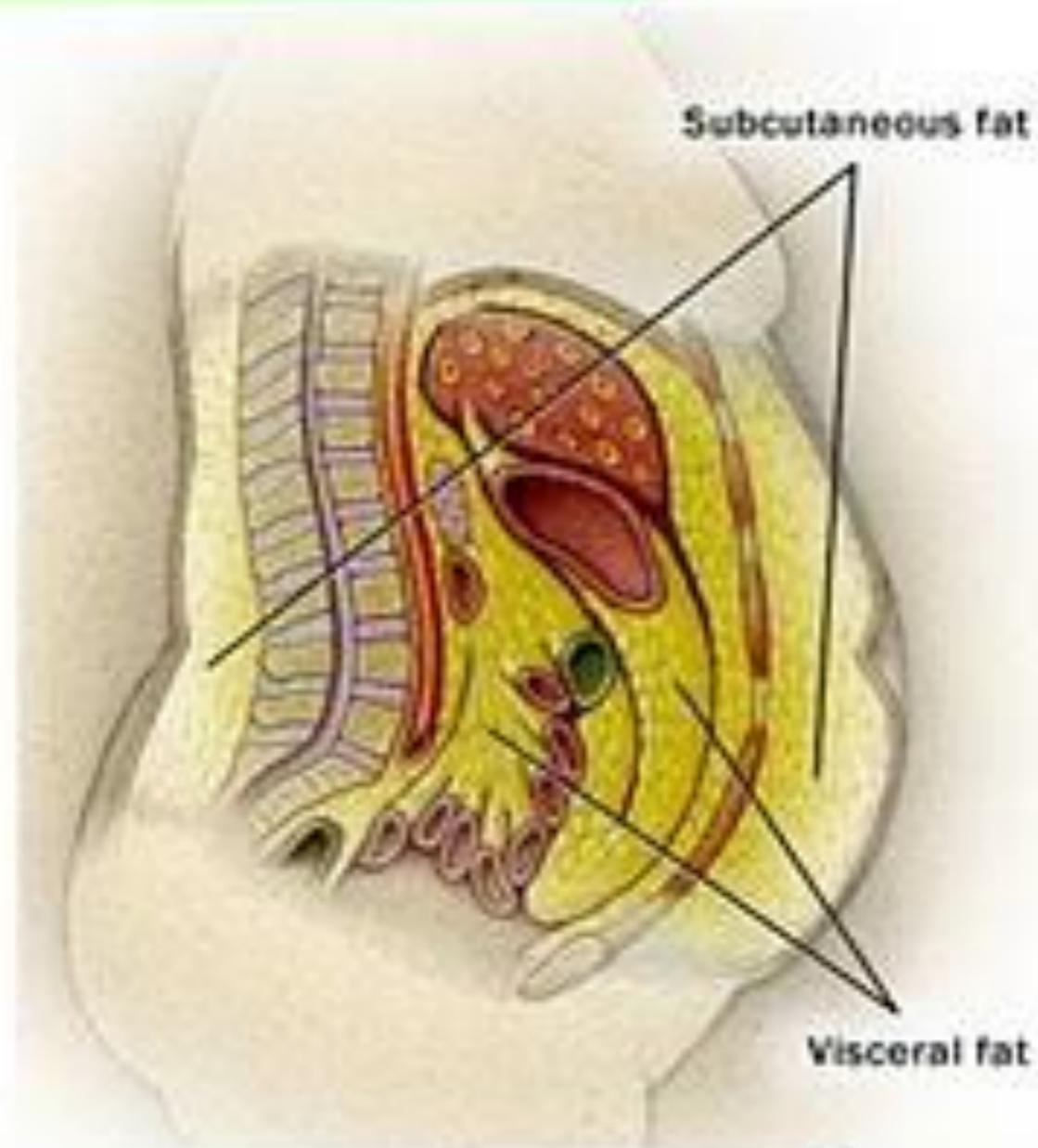
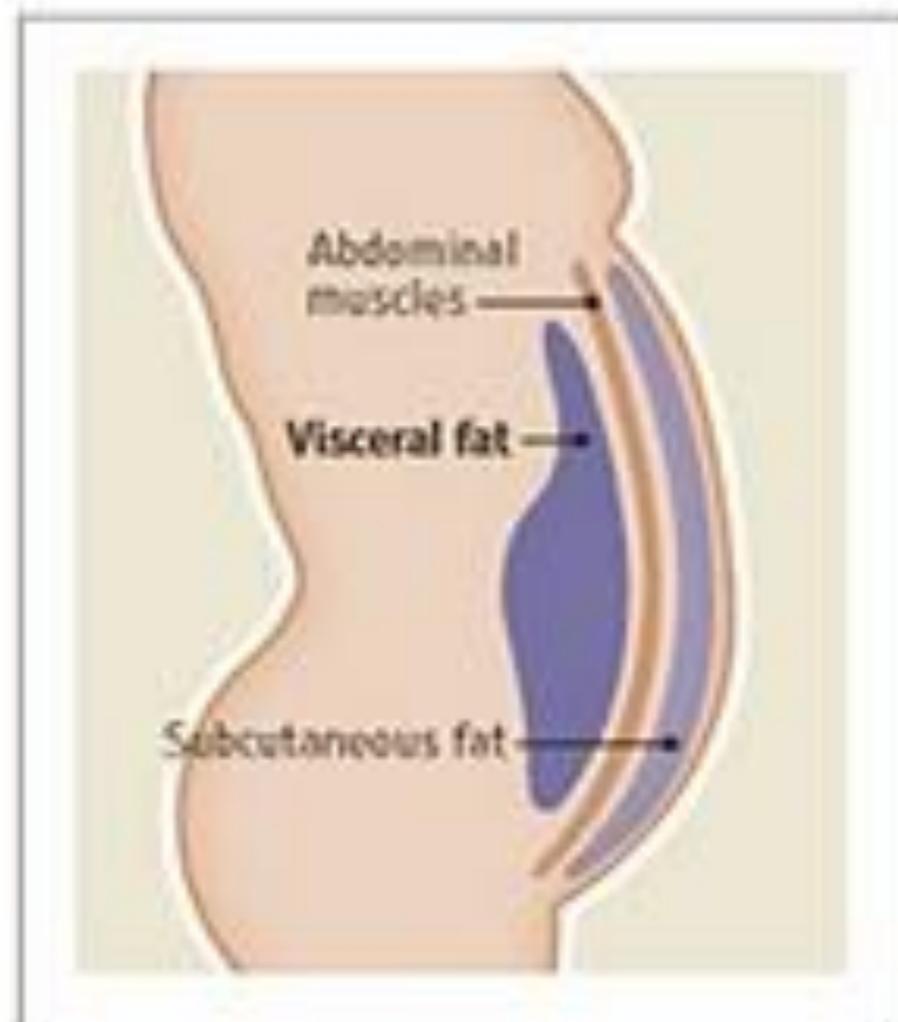
(Source: Malik, 2009)

# Empty Calories

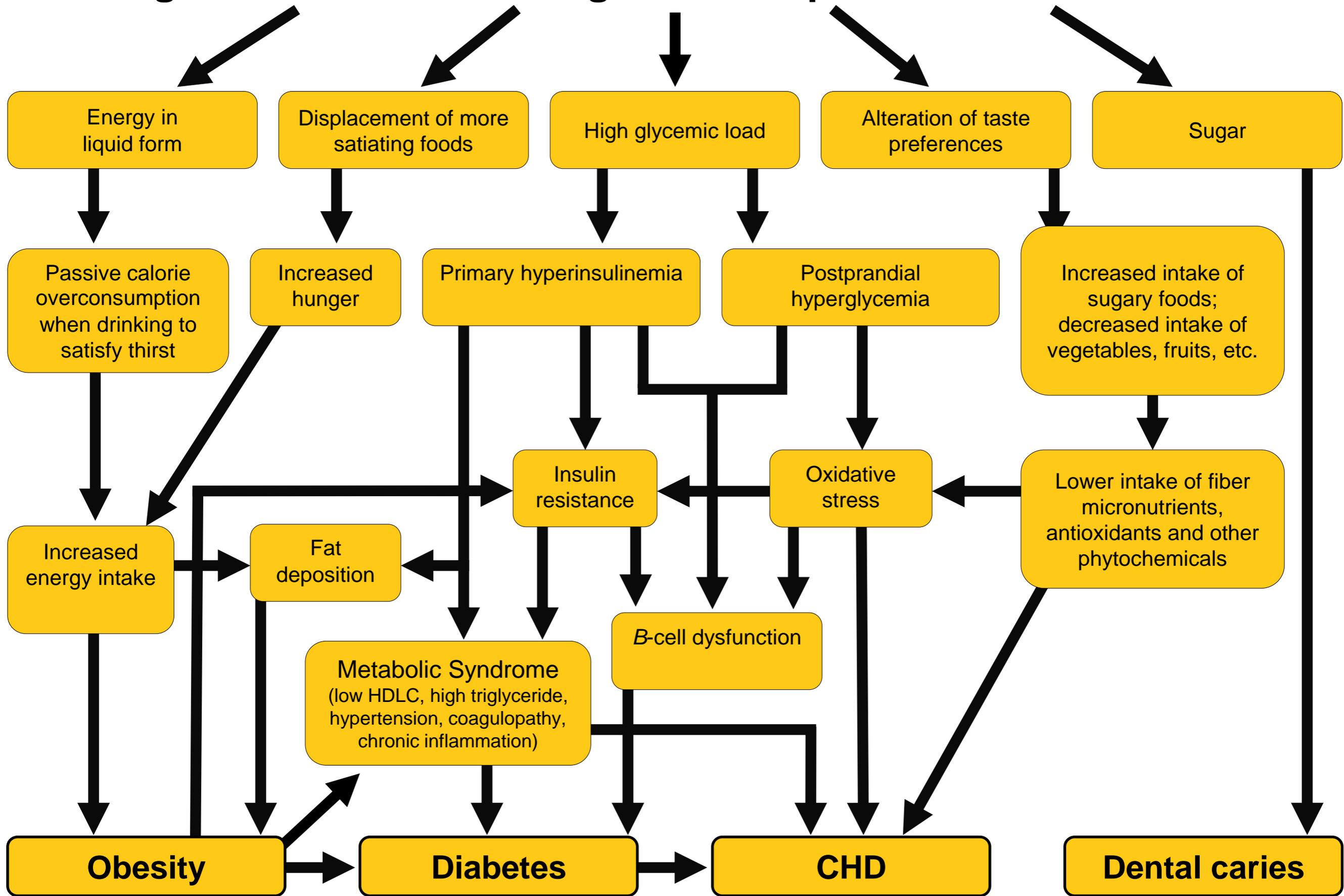
- Sugary drinks are the top calorie source in teens' diets
- From 1989 to 2008, calories consumed in the form of sugary beverages increased by 60% in children ages 6 to 11, and the percentage of children consuming them rose from 79% to 91%
- Reducing intake of soft drinks is associated with less weight gain and metabolic improvement.



# WHERE IS YOUR VISCERAL FAT?



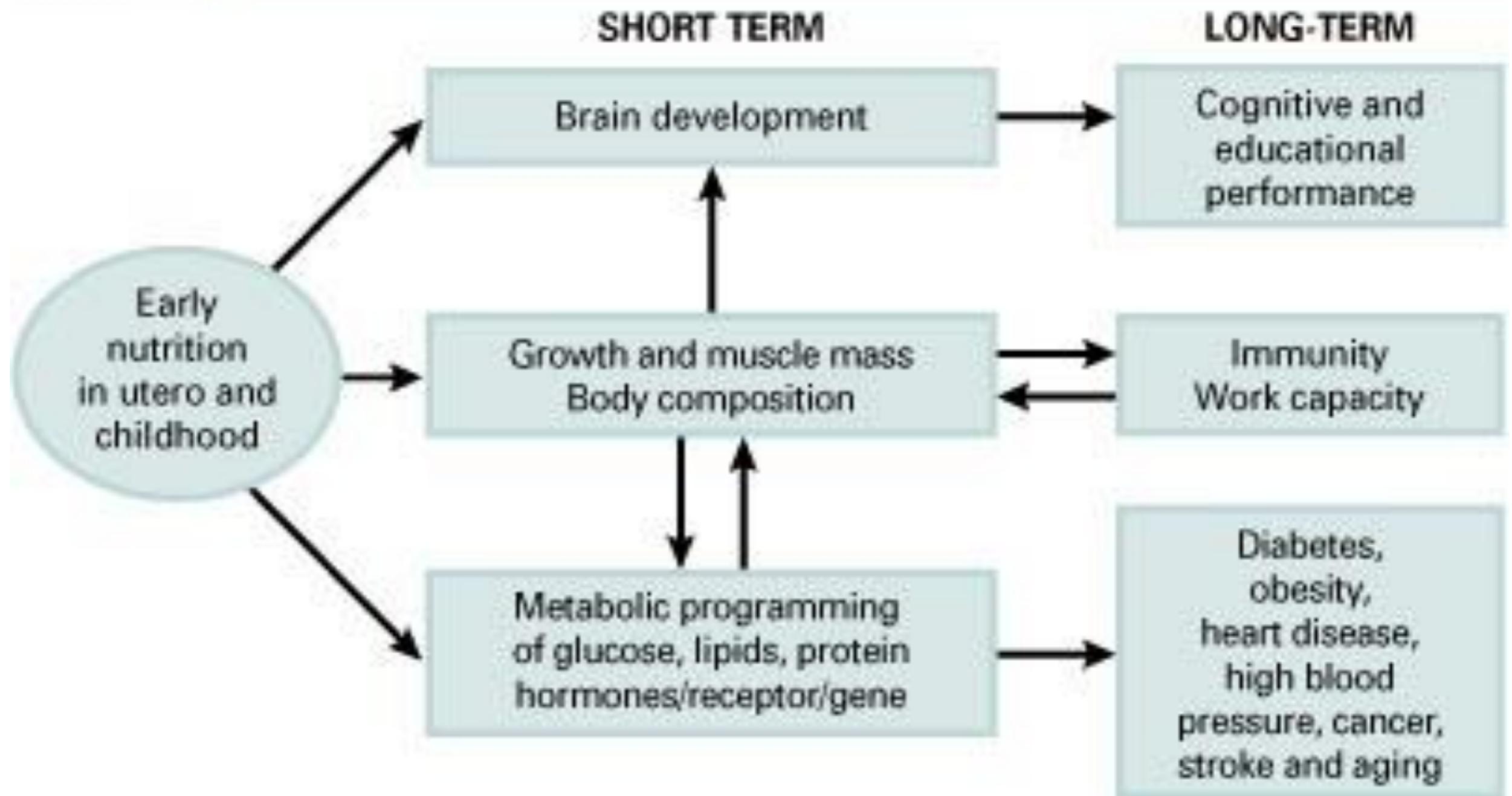
# Sugar Sweetened Beverage Consumption Effects on Health





**Figure 3**

**The short-term and long-term effects of early nutrition**



## AHA SCIENTIFIC STATEMENT

# Added Sugars and Cardiovascular Disease Risk in Children

## A Scientific Statement From the American Heart Association

Miriam B. Vos, Jill L. Kaar, Jean A. Welsh, Linda V. Van Horn, Daniel I. Feig, Cheryl A.M. Anderson, Mahesh J. Patel, Jessica Cruz Munos, Nancy F. Krebs, Stavra A. Xanthakos and Rachel K. Johnson



[Download PDF](#)

**DOI** <http://dx.doi.org/10.1161/CIR.0000000000000439>

**Published Ahead of Print:** August 22, 2016

**CONCLUSIONS:** Associations between added sugars and increased cardiovascular

# Secondhand sugars are the new secondhand smoke – and they're harming children

By Michael I. Goran, Emily Ventura  
January 27, 2017 at 7:22 PM



Sugar.(Deb Lindsey/For The Washington Post)

News > Science

# Sugar addiction 'should be treated as a form of drug abuse'

Withdrawal from chronic sugar consumption would be similar to going 'cold turkey' from drugs, say Australian scientists

Matt Payton | Tuesday 12 April 2016 | [15 comments](#)



# WHO Recommends Limiting Sugar Intake

- Based on systematic reviews, WHO recommends **limits** for “free sugar” intake
- Free sugars are: “monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, and **sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates**” (WHO, 2013)
- WHO strongly recommends **LIMITING** free sugar intake to  
Less than 10% of Caloric Intake approximately 12  
teaspoons/day



# **UN Resolution**

## **21<sup>st</sup> December 2006**

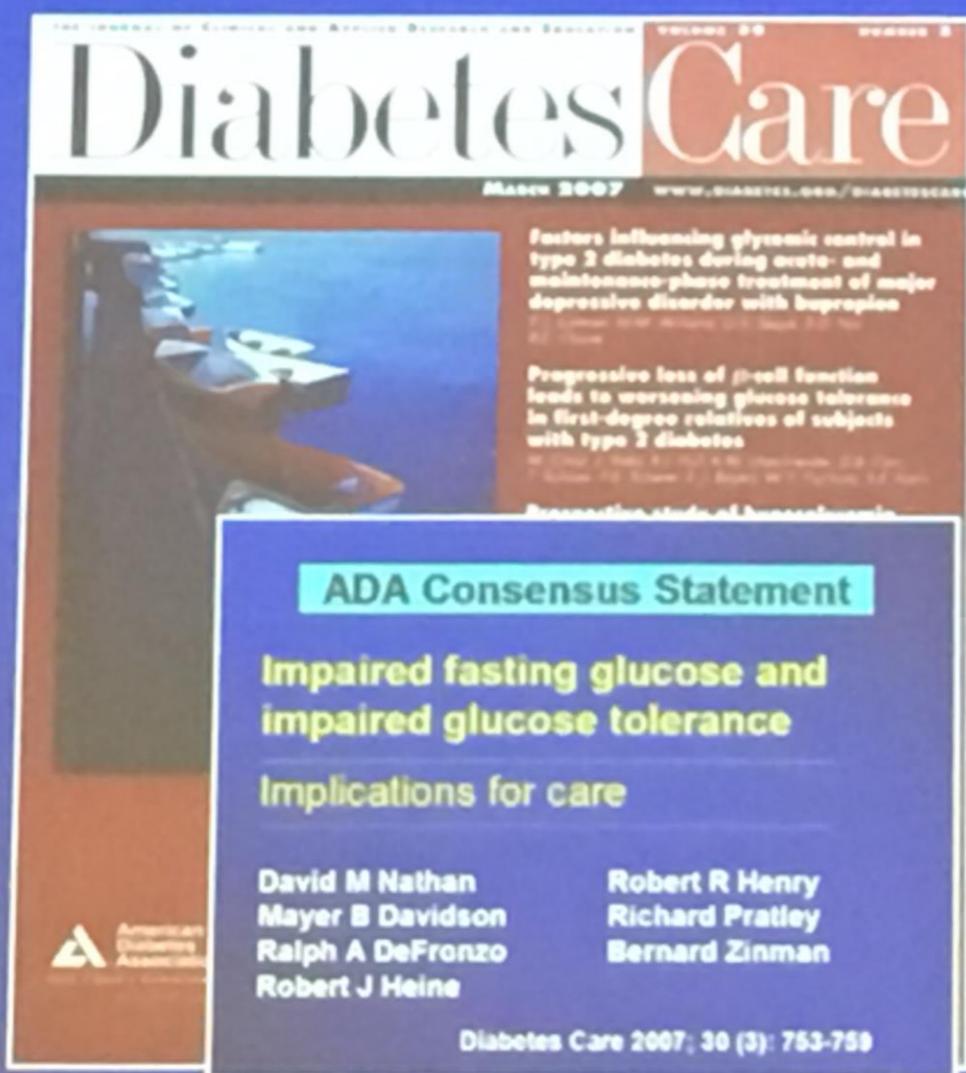


**A call to action for all UN member states to develop national policies for the prevention, treatment and cure of diabetes. ‘The significance is monumental’.**

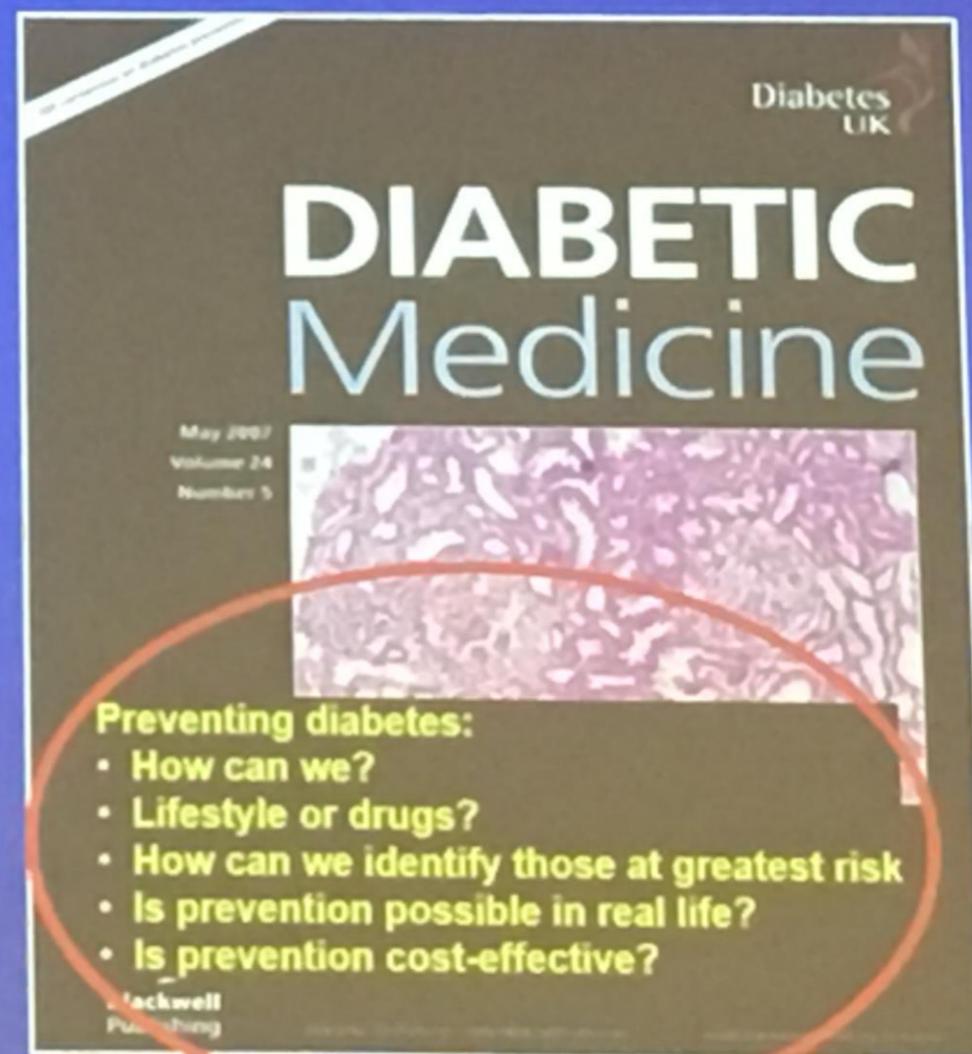
**Professor Martin Silink  
IDF President and Chair  
The Unite for Diabetes Campaign**

# Who should take the responsibility for prevention policies ?

Public Health Authorities, Medical Associations  
Diabetes Organisations



Nathan. Diabetes Care 2007; 30: 753-759



Alberti. Diabet Med 2007; 24: 451-463



**International  
Diabetes  
Federation**

## **Policy recommendations to improve access to diabetes care in South Africa**

### **Service delivery**

- Dedicates part of this budget to improve diabetes early prevention and intervention. This includes working with civil society groups to promote healthy lifestyles, including healthy food and the limitation of marketing of unhealthy food and beverages to all the population, especially children

International Diabetes Federation  
Promoting diabetes care, prevention and a cure worldwide



**Diabetes<sup>®</sup>  
South Africa**



<https://www.idf.org/images/site1/content/IDF-policy-recommendation-south-africa.png>

# SEMDSA 2017 Guidelines for the Management of Type 2 diabetes mellitus

SEMDSA Type 2 Diabetes Guidelines Expert Committee.  
JEMDSA 2017; 22(1)(Supplement 1): S1-S196

*Journal of Endocrinology, Metabolism and Diabetes of South Africa* 2017 ; 22(1)  
<http://dx.doi.org/10.1080/16089677.2015.1056468>

Open Access article distributed under the terms of the  
Creative Commons License [CC BY-NC-ND 4.0]  
<http://creativecommons.org/licenses/by-nc-nd/4.0>

**JEMDSA**

ISSN 1608-9677 EISSN 2220-1009  
© 2017 The Author(s)

**SEMDSA GUIDELINES**

## Chapter 1: Epidemiology of type 2 diabetes

**SEMDSA Type 2 Diabetes Guidelines Expert Committee**

### **SEMDSA 2017 Recommendations**

The estimated national prevalence of diabetes (based on HbA<sub>1c</sub>) in persons older than 15 years was 9.5% (2012), and about 45% of these individuals were undiagnosed. An additional 9% of the South African population had abnormal glucose regulation defined by an HbA<sub>1c</sub> between 6.0 and 6.4%.

The Asian and Coloured populations have the highest prevalence of diabetes in South Africa.

The prevalence of diabetes in rural dwellers appears to be increasing rapidly.

The number of people living with diabetes in Africa is predicted to increase by 140% by the year 2040.

The number of deaths globally from diabetes exceeded the combined mortality from HIV/AIDS, tuberculosis and malaria in 2015.

There are clearly modifiable risk factors driving the diabetes epidemic; the rising prevalence of obesity is one of the most important.

# SEMDSA 2017 Guidelines for the Management of Type 2 diabetes mellitus

SEMDSA Type 2 Diabetes Guidelines Expert Committee.  
JEMDSA 2017; 22(1)(Supplement 1): S1-S196

## **Reduce intake of commercially hydrogenated fats:**

Commercially deep fried foods, fast foods and baked items contain high amounts of trans fatty acids

Trans fatty acids raise total and LDL cholesterol, decrease HDL cholesterol and increase inflammation.

## **Reduce intake of processed meats and fatty red meat:**

Bacon, all types of sausages, polony and deli meats.

High content of salt, nitrates, haem-iron and saturated fat.

## **Reduce intake of sugars:**

Table sugar, honey, sugar sweetened beverages, fruit juices, sweets, desserts and baked goods

Poor nutrient content, contributes to poor glycaemic control, lipid profiles, obesity and inflammation.

## **If alcohol is consumed it should be in moderation:**

Wine, spirits, beer etc.

A high intake aggravates glycaemic control, hypertension and triglycerides.

# The Good Old Custom and the New Generation



Coca-Cola is one of the good things that didn't die young. Its pure and wholesome refreshment has delighted the thirst of three generations.

The Coca-Cola Co., Atlanta, Ga.

*7 million a day*

?evidence

IT HAD TO BE GOOD TO GET WHERE IT IS

Past



Present



Future



Modifiable

“ There comes a time in the history of a nation,  
when we must do what is correct rather than  
what is pleasant “

# UBUNTU

'A person is a person through other people'

A philosophy of African origin



Remain well  
well. hope of  
passed for  
SEC HIP  
Tata, we belong  
to you and we will be  
your legacy  
Proud land

Patricia  
Phahane  
Get well  
soon

MAY GOD  
COMFORTER  
TATA