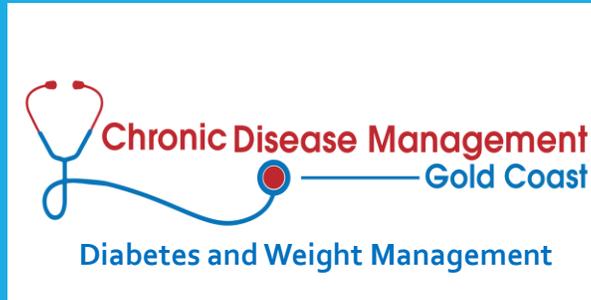


# HEALTHY DIET AND MANAGING WEIGHT – UNLOCKING THE MYTHS



Jules Aitken, Nurse Practitioner Diabetes, Obesity  
and Chronic Disease Management



# Disclosure

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# Obesity and Overweight – the facts...

- In 2016 Worldwide more than 1.9 billion adults 18 years and older were overweight - of these over 650 million were obese (39% of adults aged 18 years and over were overweight and 13% were obese)
- Most of the world's population live in countries where overweight and obesity kills more people than underweight
- Worldwide obesity has nearly tripled since 1975
- 41 million children under the age of 5 were overweight or obese in 2016
- Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016
- Overall about 13% of the world's adult population (11% of men and 15% of women) were obese in 2016.
- **Australia:**
  - **35.5% adults overweight (39% Worldwide) / 28% obese (13% Worldwide)**
  - **25% Australian children are overweight or obese**
  - **9% 2-4 year old's in Australia are obese**
  - **7% 5-17 year old's in Australia are obese**
- **Obesity is preventable**

# Australia

More men than women were overweight or obese in 2014-15; a similar proportion were obese

		
overweight or obese	71%	56%
overweight but not obese	42%	29%
obese	28%	27%

**Seven in 10** Australian men are overweight or obese



**One in two**



**One in four**



## OBESITY RATES

Age	2016	2017
18-24	37.2%	34.6%
25-34	56.5%	54.4%
35-49	65.5%	65.4%
50-64	71.4%	72.8%
65+	69.6%	69.4%

# Childhood Obesity Statistics



20% of Children are starting primary school either obese or overweight.



33% of pupils are leaving primary school either obese or overweight.



Only 20% of girls are achieving the recommended daily exercise.



Overweight or obese children are more likely to become obese adults.

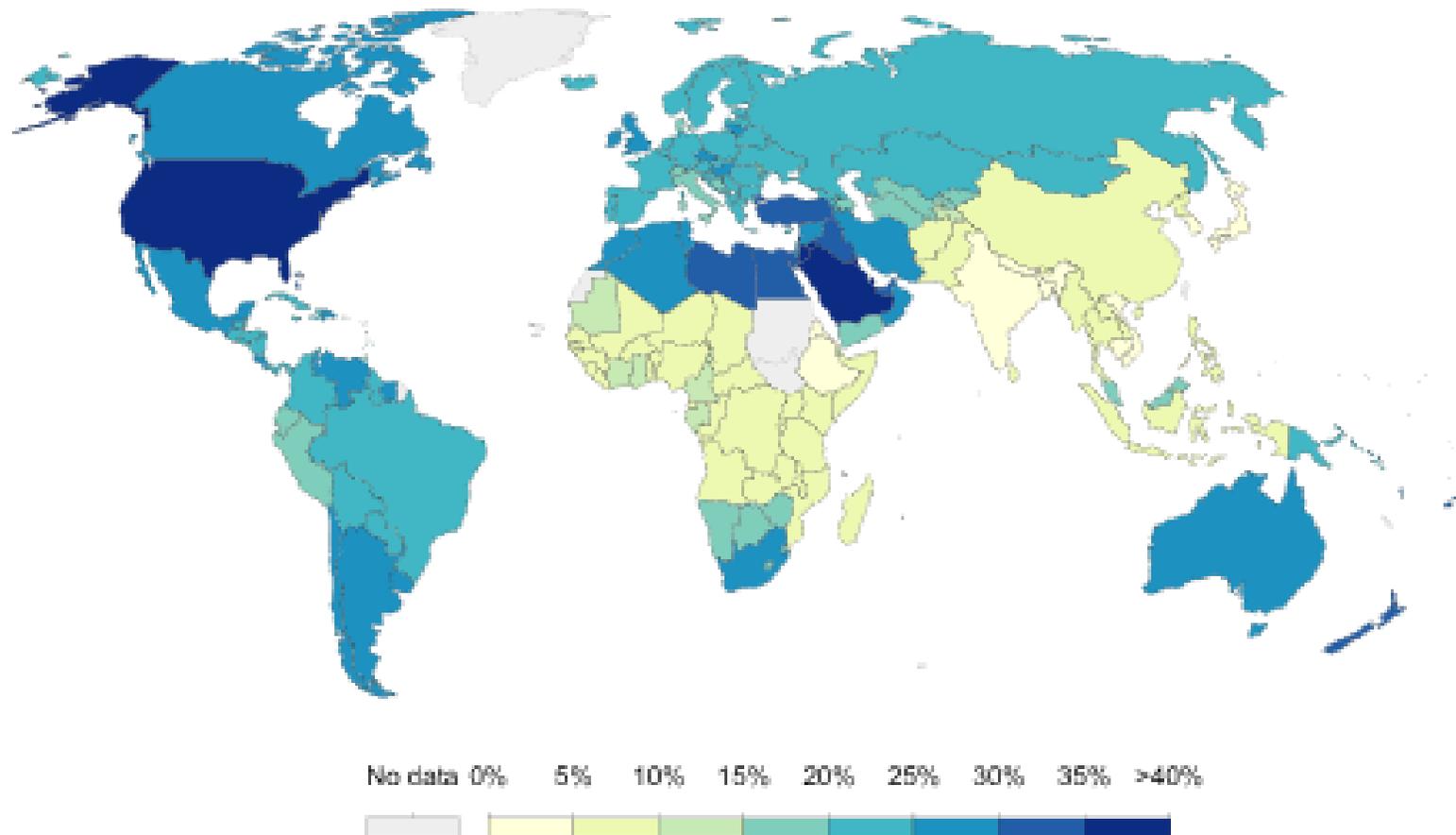


Only 23% of boys are achieving the recommended daily exercise.

## Share of adults defined as obese, 2016

Percentage of adults aged 18+ years old who are defined as obese based on their body-mass index (BMI). BMI is a person's weight in kilograms (kg) divided by his or her height in metres squared. A BMI greater than or equal to 30 is defined as obese.

Our World  
in Data



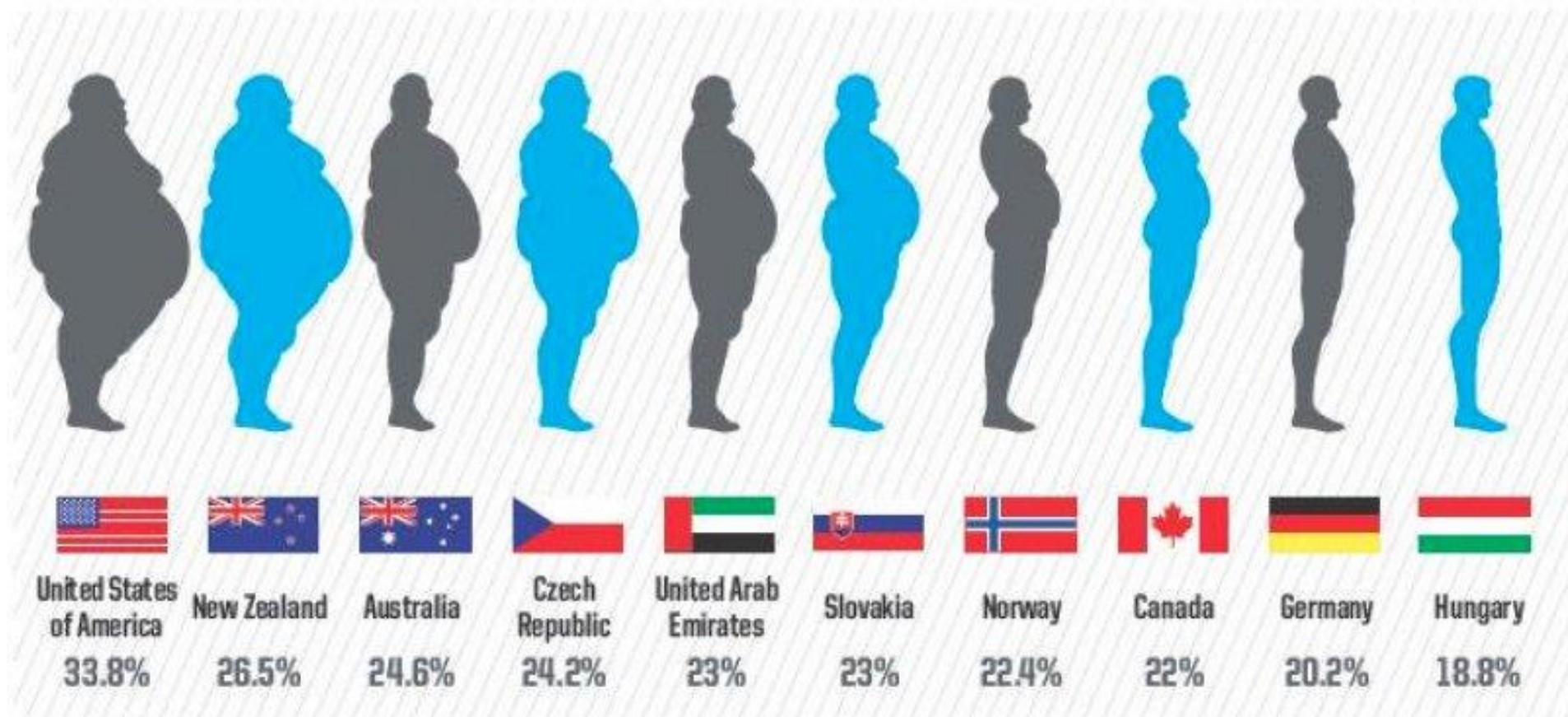
Source: WHO, Global Health Observatory

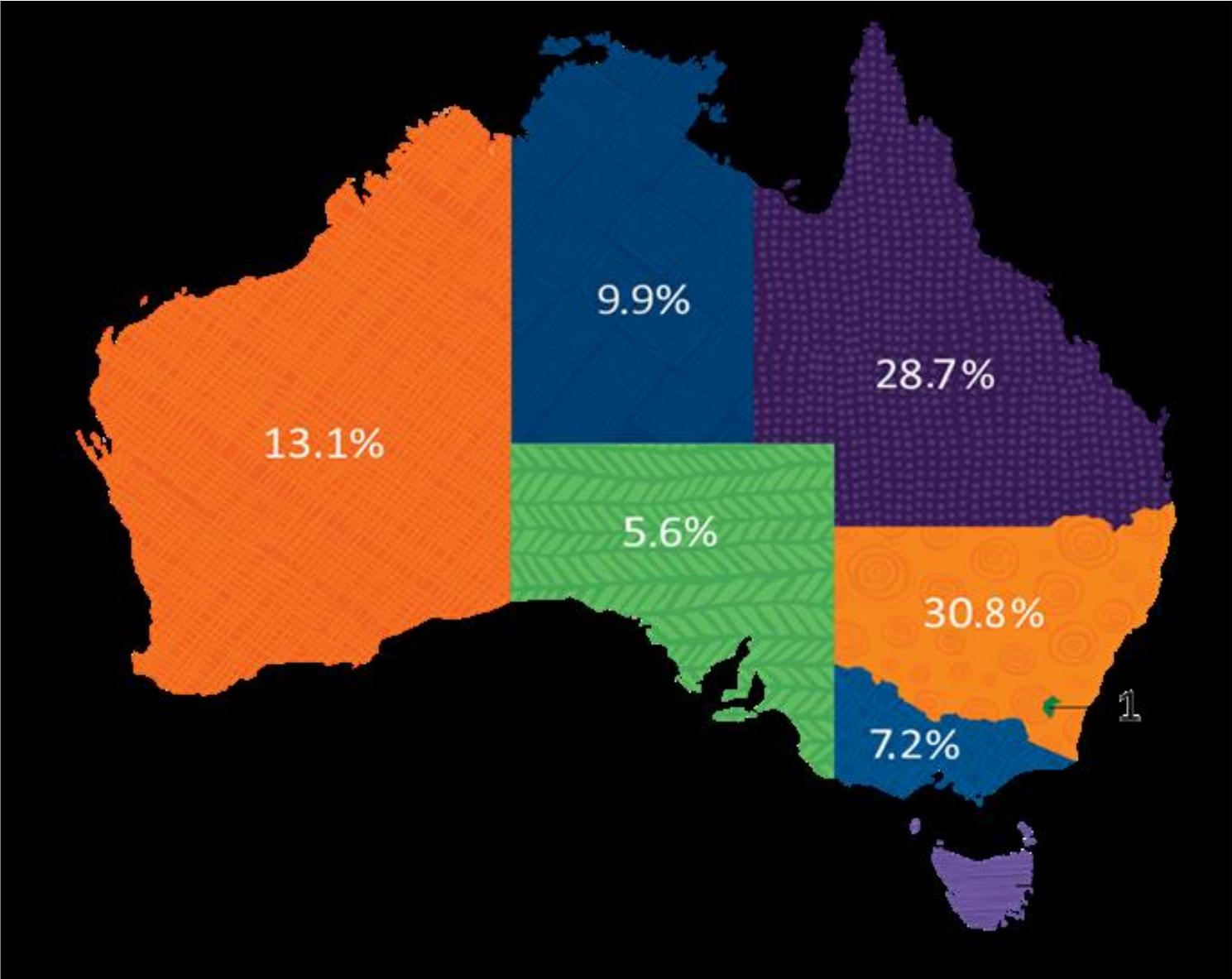
CC BY-SA



# THE 10 MOST OBESE COUNTRIES ON EARTH

According To The World Health Organization | % Obesity rate



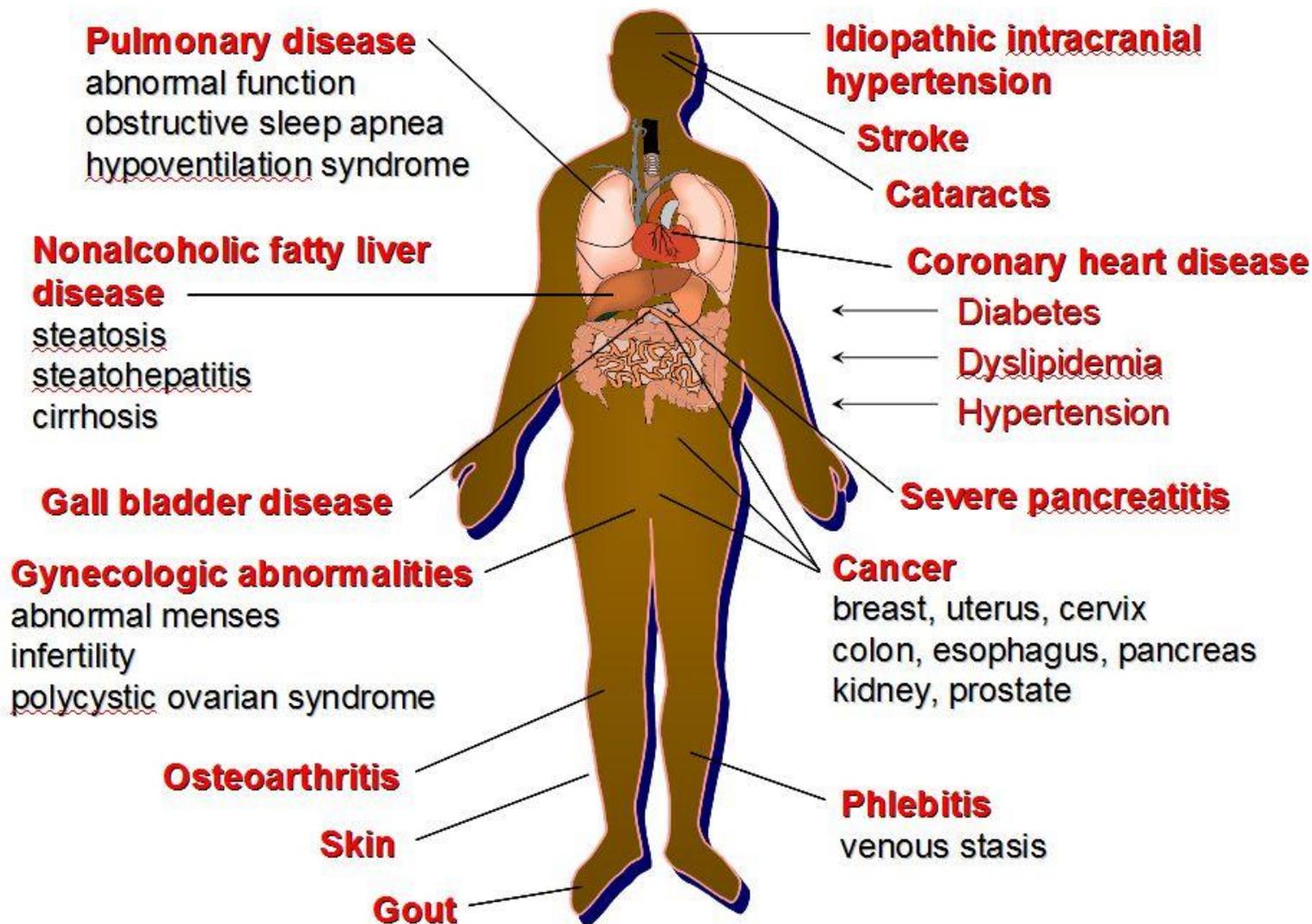


# Consequences of obesity and overweight

Raised BMI is a major risk factor for medical conditions such as:

- Cardiovascular diseases (mainly heart disease and stroke) – a leading cause of death in the developed world
- Diabetes
- Musculoskeletal disorders (especially osteoarthritis)
- Some cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon).
- Childhood obesity is associated with a higher chance of obesity, premature death and disability in adulthood
- Obese children experience breathing difficulties, increased risk of fractures, hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects

# Medical Complications of Obesity

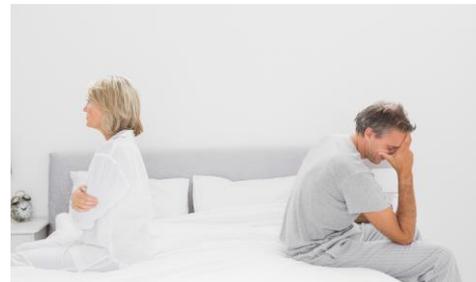


# Consequences obesity or overweight – the taboo subject ...

- Increased body fat reduces testosterone levels =



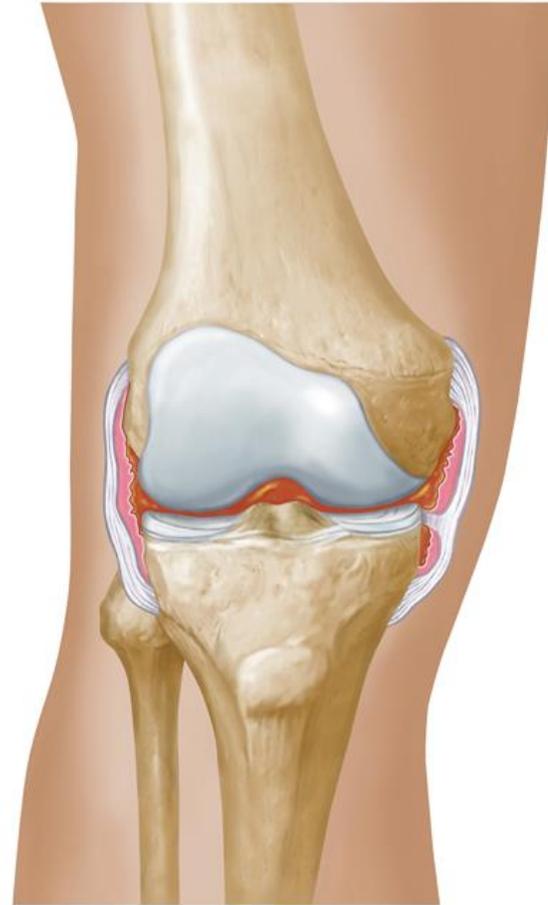
- Poor self-image cause loss of libido =



- Cardiovascular ability and joint health reduces ability



# Obesity and haemophilia



# Obesity and haemophilia

- About 1/3 of European and North American haemophilia patients are overweight or obese (ie 31%)
- Obesity increases joint dysfunction and chronic pain
- It is more prevalent in adults (43.3%) than paediatrics (25.9%) and higher in Europe (49.1%) than North America (38.5%) however in children this trend inverts to 18.8% in Europe and 30.6% in North America
- The risk for obese or overweight adults with haemophilia for non communicable disease is the same for the general population
- Non-alcoholic fatty liver disease – Non-alcoholic steato hepatitis (NASH) – toxicity of treatments requiring dose adjustment and impacting on pre-existing viral exposure

# Obesity and haemophilia – impact on health and lifestyle

- Increased risk for joint replacement / meniscal tears
- Chronic pain / disability
- Increased requirement for NSAIDs or Opioid medications
- Complications of surgery / poorer outcomes
- Financial implications
  - Health costs
  - Loss of earning
  - Equipment
- **1kg weigh loss = approx 2kg pressure through the knees**





**Obesity – what does that word mean to you and how is it defined by a health care professional?**

- Excess weight ?



- Unhealthy food choices ?



- Limited physical activity?



# Measures of obesity

- Thresholds based on Caucasian population

**BMI Classification** | BMI =  $\frac{\text{weight (kg)}}{\text{height (m)}^2}$

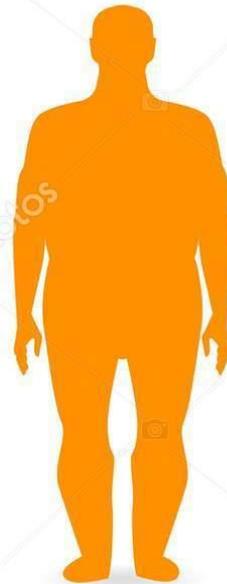
Classification	BMI (kg/m <sup>2</sup> )
Underweight	<18.5
Normal range	≥18.5 and <24.9
Overweight	≥25 and <29.9
Obese	≥30
- Obese class I	≥30 and <34.9
- Obese class II	≥35 and <39.9
- Obese class III	≥40

**Waist Circumference** | Measured midway between the lower rib margin and iliac crest

Gender	Increased disease risk	High disease risk
Males	≥ 94 cm	≥ 102 cm
Females	≥ 80 cm	≥ 88 cm

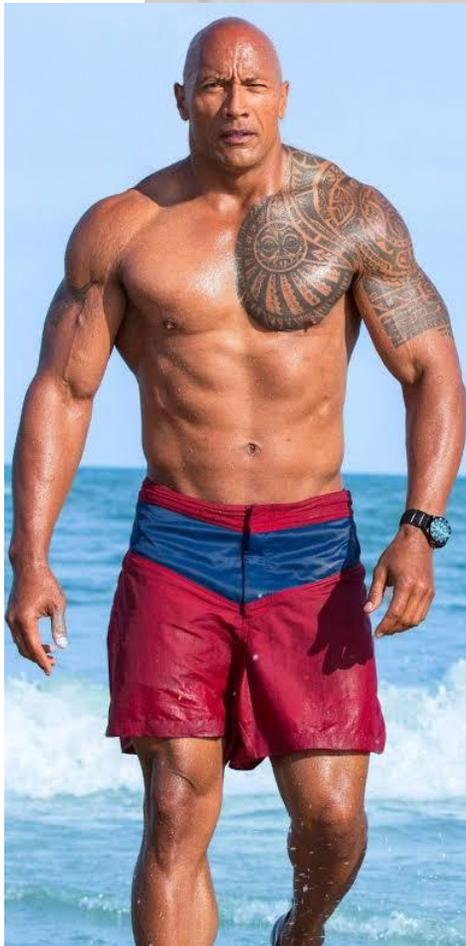
National Health and Medical Research Council (2013) Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia. Melbourne: National Health and medical Research Council.

# BODY MASS INDEX



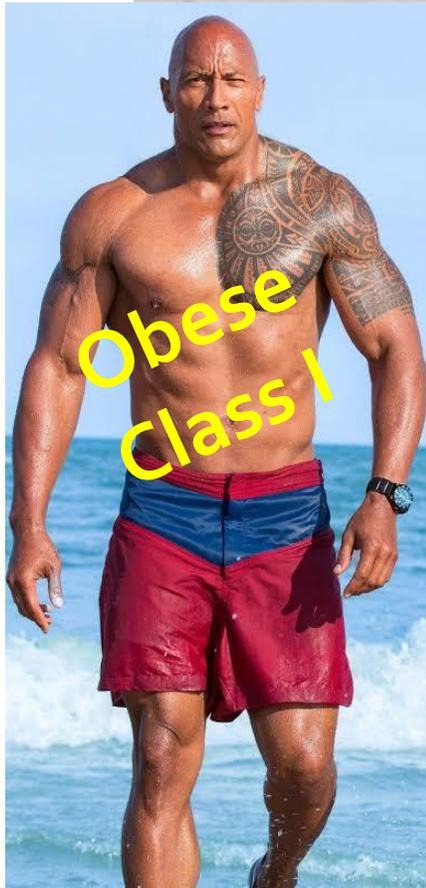
?

Who are the overweight or obese?



?

Who are the overweight or obese?



Height 196cm  
Weight 118kg  
BMI 30.72



Height 190cm  
Weight 110kg  
BMI 30.47



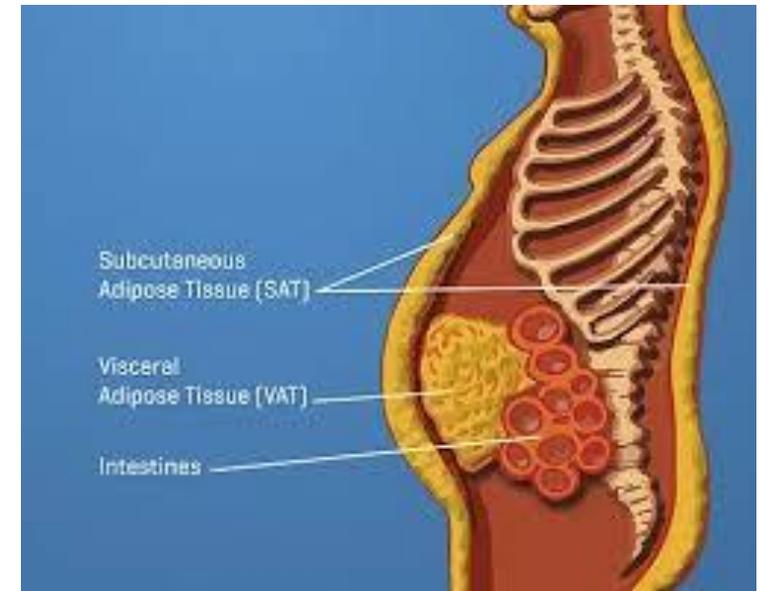
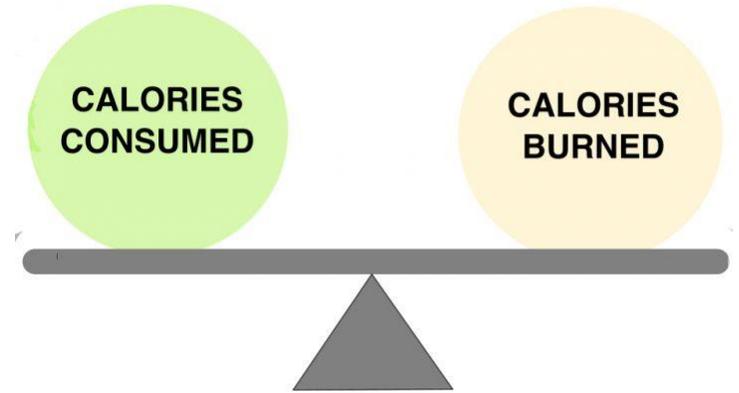
Height 157cm  
Weight 130kg  
BMI 52.74



Height 173cm  
Weight 82kg  
BMI 27.4

# Obesity – the reality is that it is complex and misunderstood

- Simply, it is the consumption of more calories than we expend
- Over time, this excess energy is stored in adipose tissues causing weight gain



# Obesity – it's about energy balance

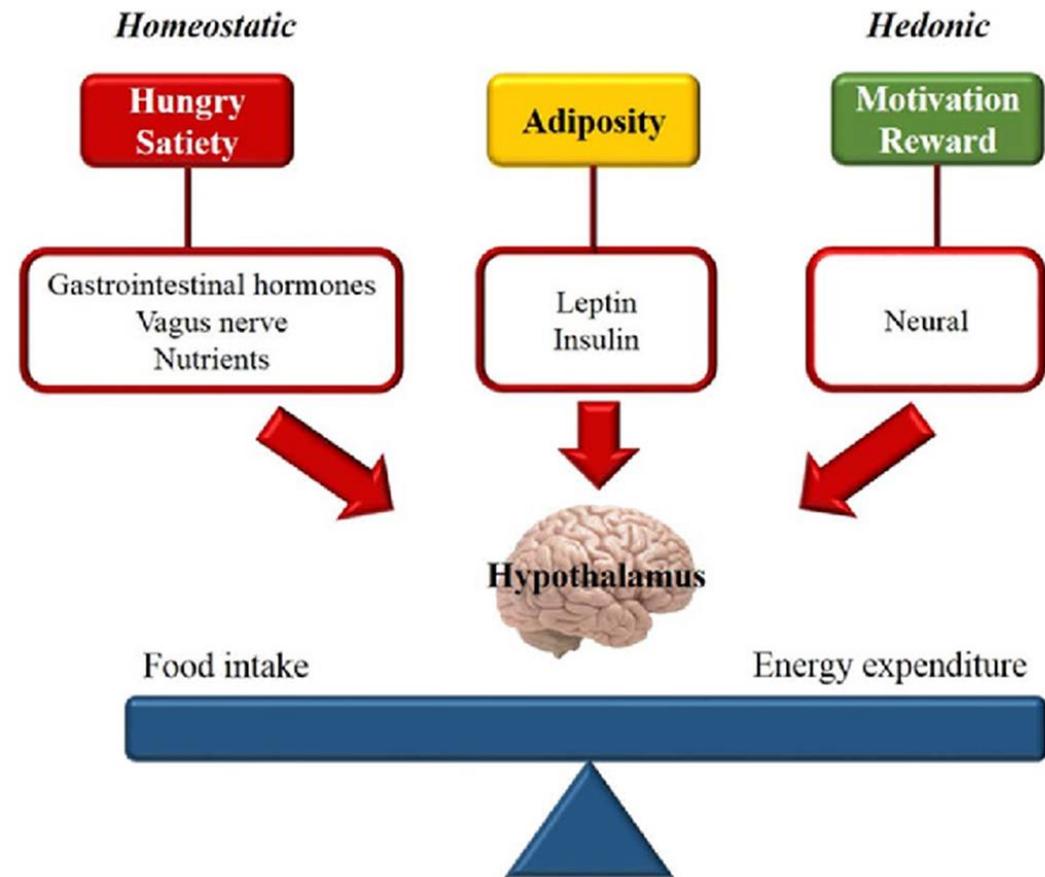
- Energy balance is impacted by many different factors:
  - Physiological
  - Genetics
  - Environment
  - Socio-economic status
  - Psychology



# Obesity – it's about energy balance

- The body's homeostatic system controls:
  - Appetite
  - Energy intake and energy expenditure
  - It involves several areas of the brain including the hypothalamus which processes hormonal and neuronal signals for other parts of the brain
  - The GI tract
  - Adipose tissue

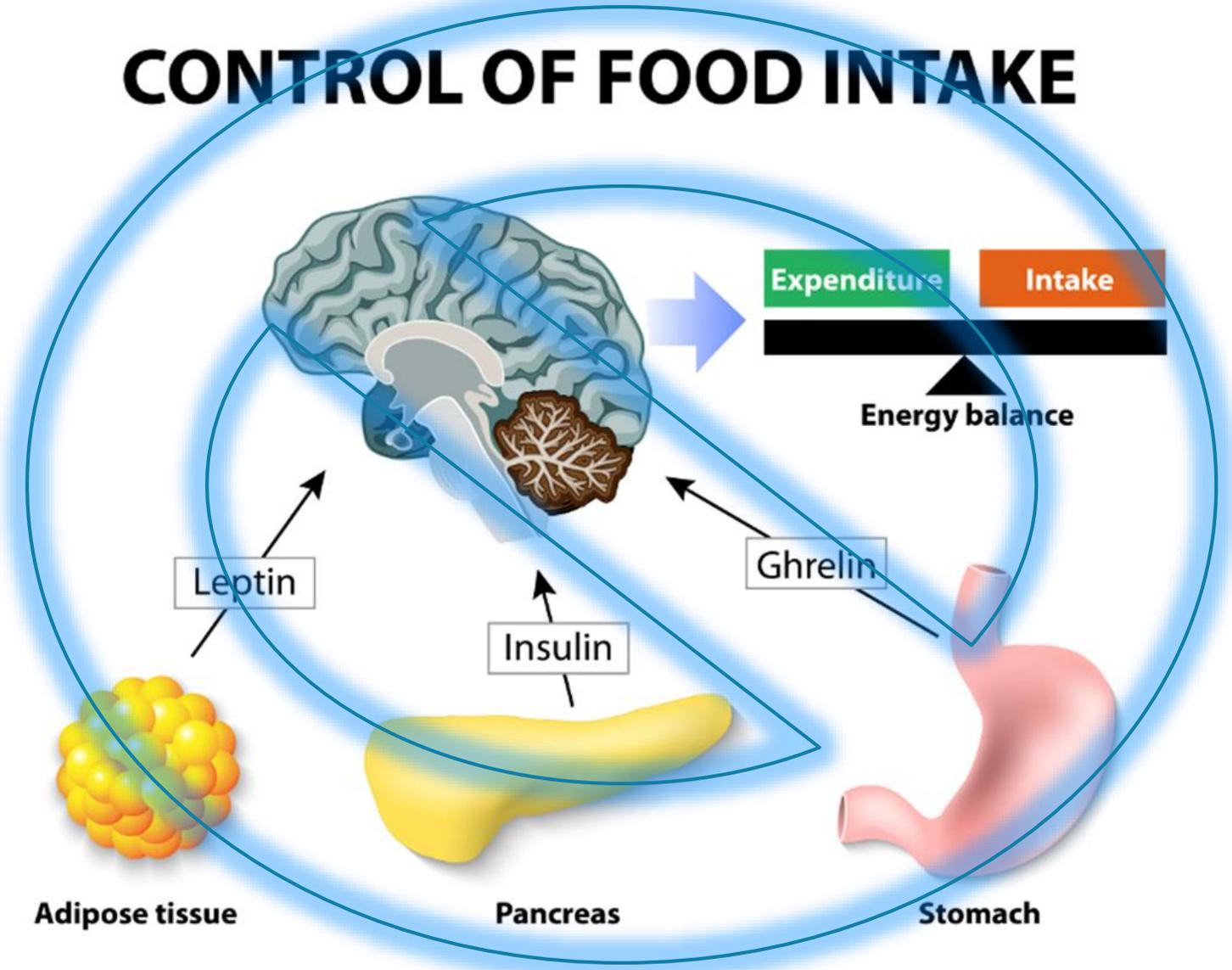
## Energy Balance Regulation by the Central Nervous System



# LEPTIN & GHRELIN



# CONTROL OF FOOD INTAKE



*The Great*  
**Weight Loss**  
**CHALLENGE**

# Considerations ...

- Adults mostly know they are overweight
- Men are less likely to see themselves as obese – just overweight
- Post menopausal women experience weight gain and find it harder to lose weight post menopause
- Anti-depressant medications contribute to weight gain and add to psychological stress and lack of self-esteem
- Clients with diabetes / thyroid problems / steroid treatment and post menopausal women find losing weight as hard as putting cement in a wheelbarrow and pushing it up a hill

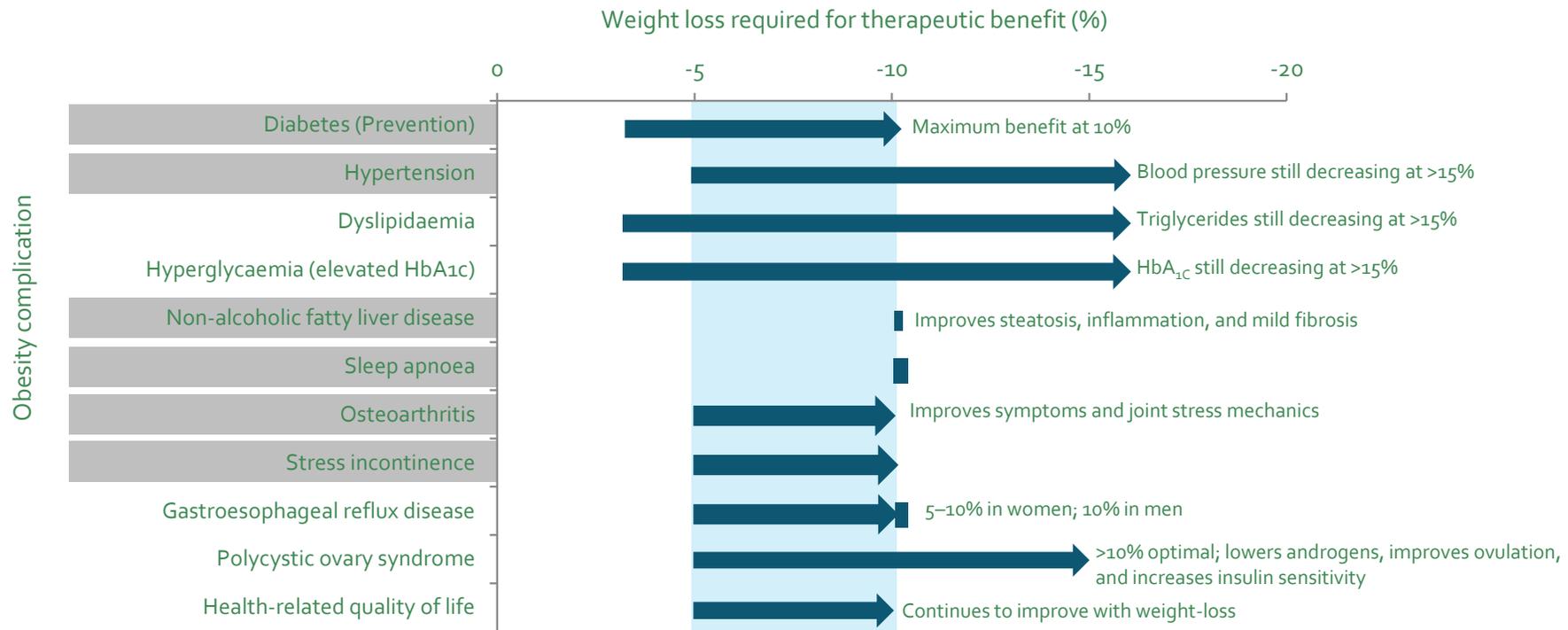
# Considerations (cont) ...

- Being overweight and obese is a significant contributing factor for joint replacement and produces poorer outcomes post surgery - major consideration for clients with haemophilia
- We don't want to be told to 'just eat less' and exercise more
- Weight gain and regain causes significant psychological stress to some people
- Many overweight or obese people exercise regularly
- Many overweight or obese people display symptoms of obstructive sleep apnoea but have never had sleep studies
- As parents we want to comfort our children and food is a natural comforter

# Start the conversation ...

- Why do I want to lose weight – painful joints, current health status, genetic risk factors, pathology results
- Explore how the client / you feel about losing weight / parents - how do you feel about your child's current weight
- Future plans – career goals / travel / health expectations

# 5–10% weight loss is clinically meaningful



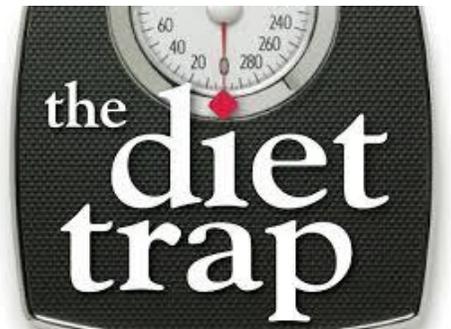
Cefalu WT et al. Diabetes care 2015;38(8):1567-82. Wright F et al. J Health Psychol. 2013;18:574-86.

# Losing weight – the dilemma

- Losing weight and keeping it off involves more than simply eating less and exercising more
- Weight loss causes the body to alter hormonal signals resulting
  - Increased hunger
  - Decreased metabolic rate
  - Increase ghrelin in the stomach which increases hunger and the desire to eat
  - GI track / pancreas / adipose tissue release fewer satiety hormones so brain doesn't recognise feelings of fullness



**FEELING 'HANGRY'**



# The weight loss tick

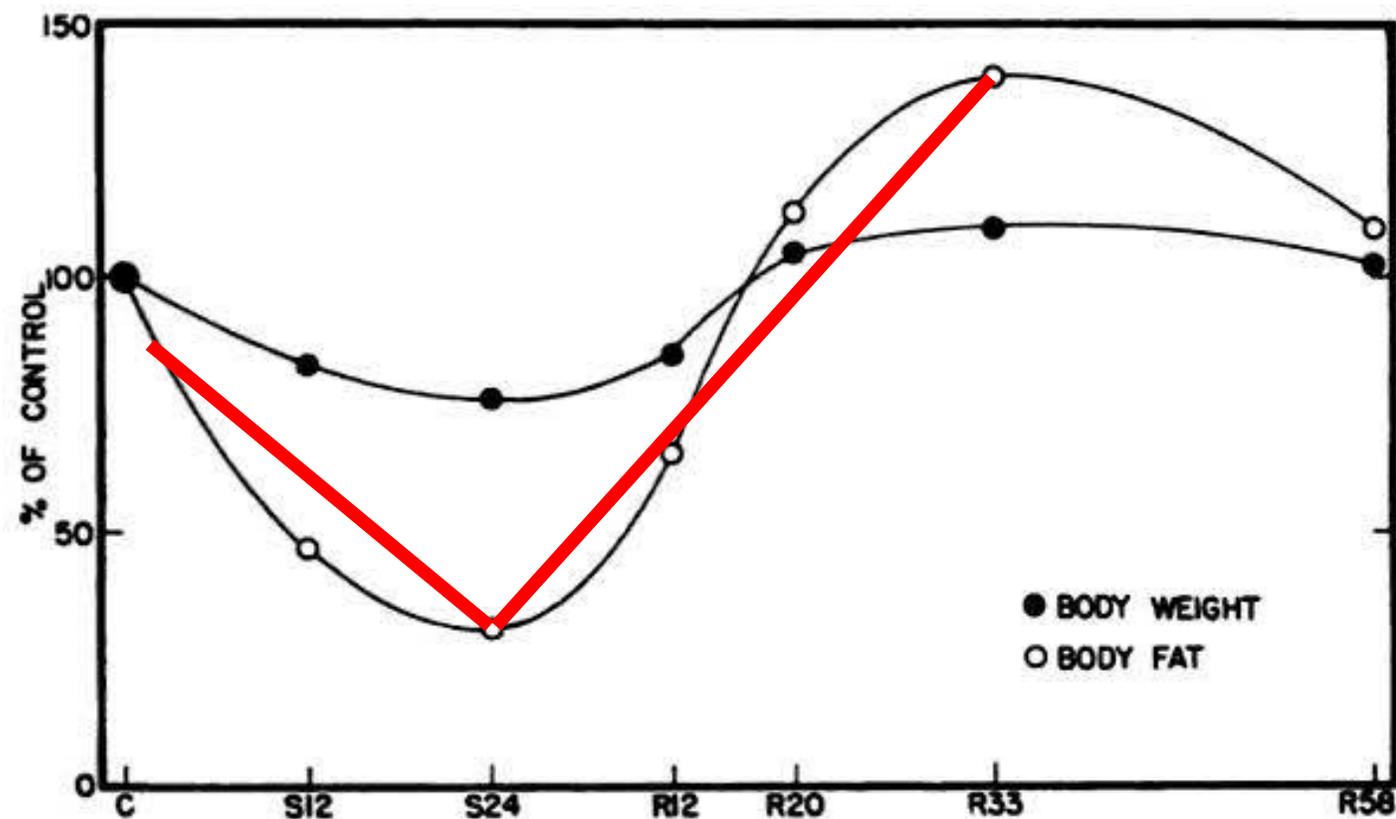
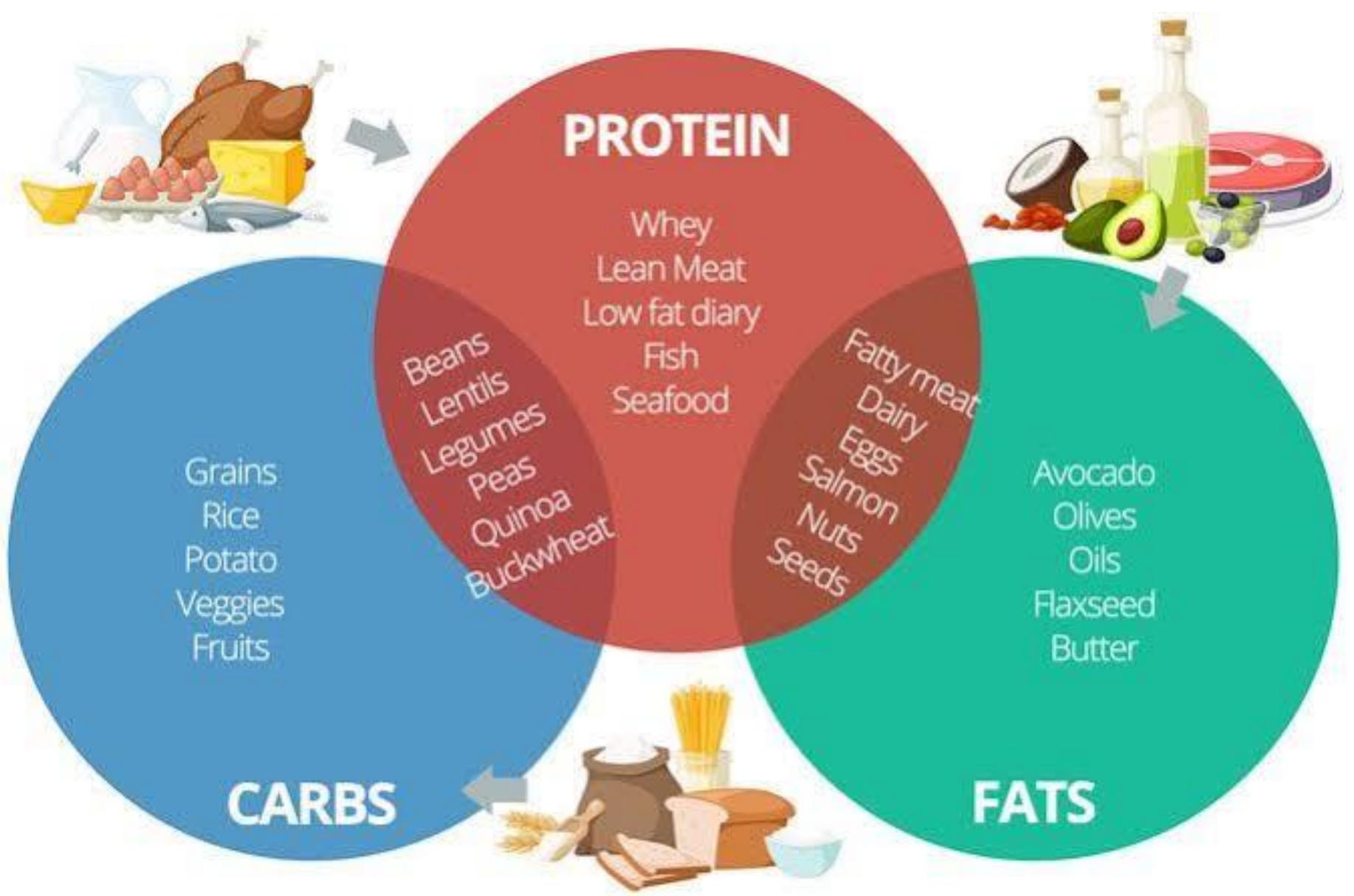


FIGURE 8.9. Body weight and body fat expressed as percentages of the control values for the volunteers in the Minnesota experiment. C, control; Sn, weeks of semistarvation; Rn, weeks of rehabilitation. From Keys et al. (1950, p. 117). Copyright 1950 by the University of Minnesota Press. Reprinted by permission.



# Protein

- The building block of the body
- Found in every cell of the human body
- Most abundant substance in the body next to water
- Protein is manufactured by the body utilising protein consumed
- Vital for maintenance of body tissue including development and repair
- Hair, skin and nails are made from protein
- Needs to be consistently replaced
- Proteins are macronutrients
- Amino acids are the basic building blocks of proteins – there are 2 types:
  - Essential amino acids - Obtained from protein-rich foods such as meat, legumes and poultry
  - Non-essential amino acids - Synthesized by the human body
- **10-25% of calories need to comes from proteins**



# Fat

- Fat is an essential part of the diet - it provides energy, absorbs certain nutrients and maintains core body temperature
- Fat helps maintain skin and hair health
- Some fats are better than others:
  - Good fats protect the heart and keep the body healthy
  - Bad fats increase the risk of disease and damage the heart
- One gram of fat has 9 calories – more than double that of carbohydrate and protein
- **It should constitute no more than 20-35% of dietary intake**
- Fat for absorption:
- Vitamin A, D, E and K – these are fat-soluble vitamins – and an essential part of daily diet

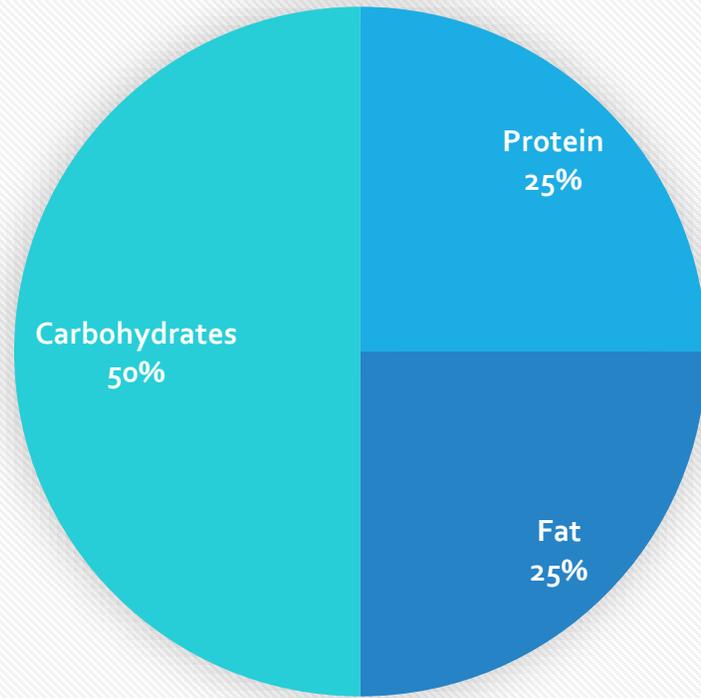


# CARBOHYDRATES - BASICS

- Carbohydrates are essential for two distinct functions – Energy and Digestion
- There are 2 types of carbohydrate
  1. Simple
  2. Complex
- They are the body's main source of fuel needed for physical activity / brain function and operation of organs - All cells and tissues in the body need carbohydrates
- They are important for intestinal health and waste elimination – fibre is essential for normal digestion
- Once consumed carbohydrates are easily converted to fuel
- **45-65% of calories need to come from carbohydrates**

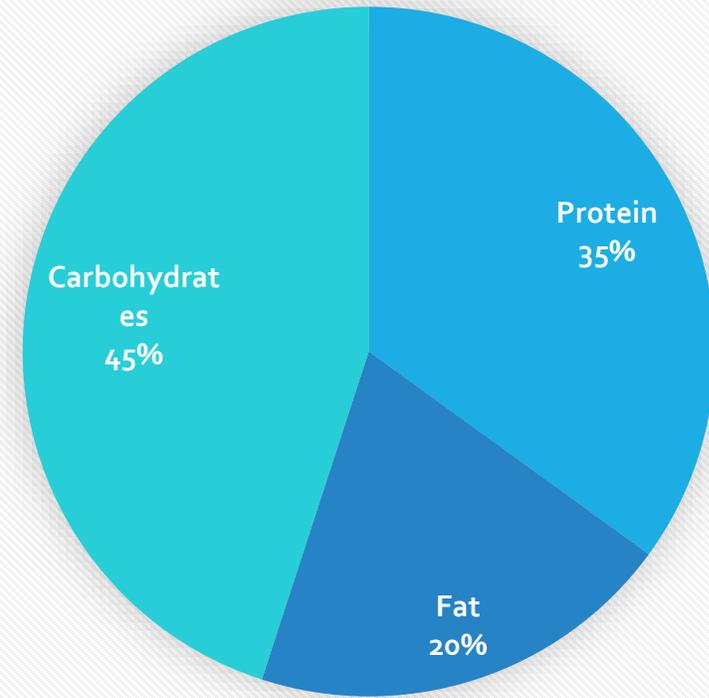


## Nutrients



■ Protein ■ Fat ■ Carbohydrates ■

## Aim



■ Protein ■ Fat ■ Carbohydrates ■

# SUGAR

THE RECOMMENDED DAILY MAXIMUM INTAKE  
OF ADDED SUGARS FOR CHILDREN 2-18 YEARS  
IS 25 GRAMS\*



THE RECOMMENDED DAILY MAXIMUM INTAKE  
OF FREE SUGARS FOR ADULTS IS 50 GRAMS\*



# SUGAR COATING

## 42 DIFFERENT NAMES FOR 'ADDED SUGAR'

- 
1. AGAVE NECTAR/SYRUP
  2. BARLEY MALT
  3. BEET SUGAR
  4. BLACKSTRAP MOLASSES
  5. BROWN SUGAR
  6. CANE SUGAR
  7. CAROB SYRUP
  8. CASTER SUGAR
  9. COCONUT SUGAR
  10. COFFEE SUGAR  
CRYSTALS
  11. CONFECTIONER'S SUGAR
  12. CORN SYRUP
  13. DATE SUGAR/SYRUP
  14. DEMERARA
  15. DEXTROSE
  16. EVAPORATED CANE JUICE
  17. FRUCTOSE
  18. FRUIT JUICE
  19. FRUIT JUICE  
CONCENTRATE
  20. GLUCOSE
  21. GOLDEN SYRUP
  22. GRAPE SUGAR/SYRUP
  23. HONEY
  24. ICING SUGAR
  25. INVERT SUGAR
  26. LACTOSE
  27. MALT
  28. WHITE SUGAR
  29. MALTOSE
  30. MAPLE SYRUP
  31. MOLASSES
  32. MUSCOVADO
  33. PALM SUGAR
  34. PANELA
  35. POWDERED SUGAR
  36. RAPADURA
  37. RAW SUGAR
  38. RICE SYRUP
  39. SUCROSE
  40. TREACLE
  41. TURBINADO
  42. HIGH-FRUCTOSE  
CORN SYRUP

**CHOICE**

Sugar Content, Counted as Cubes of Sugar (1 cube = 1 teaspoon)



Many thanks to Ms. Ellen M. Chin (10/2009) <http://www.hettvcjung.net/SugarContent.pdf>



# How much SUGAR is in that drink?



# How much SUGAR is in that breakfast cereal?



\* Nutritional values are from products' nutrition information panels and labelling values.  
1 teaspoon sugar = 4.5g sugar

At The Hub  
**healthyfood**

Based on one teaspoon (tsp) = 4.5g of sugar

AUSTRALIAN **healthyfood** GUIDE

# How much **sugar** is in that sauce?



1.5 teaspoons per serve

MasterFoods Tomato Sauce  
5.8g per serve



1 teaspoon per serve

Fountain Satay Sauce  
4.6g per serve\*



1.5 teaspoons per serve

Original HP Sauce  
5.9g per serve



2 teaspoons per serve

Fountain Smokey BBQ Sauce  
8.5g per serve



2 teaspoons per serve

Ayam Teriyaki Sauce  
8.6g per serve



0.5 teaspoon per serve

Praise Tartare Seafood Sauce  
1.6g per serve



<0.5 teaspoon per serve

Fountain No Added Sugar Smart Barbecue Sauce  
1g per serve



3.25 teaspoons per serve

Maggi Sweet Chilli Sauce  
13g per serve



1 teaspoon per serve

MasterFoods Seafood Cocktail Sauce  
3.8g per serve



3 teaspoons per serve

Taylor's Plum Sauce  
11.5g per serve

# How much **SUGAR** is in that cafe drink?

We've compared the total sugar content per serve to 1 teaspoon of sugar (4.5g\*).  
(\*Source: FoodWorks nutrition software, 2012.)



16 teaspoons sugar  
Max Brenner Large White Chocolate Italian Hot Chocolate  
72.6g sugar



6 teaspoons sugar  
New Zealand Natural Kids Strawberry Milkshake  
25.9g sugar



18 teaspoons sugar  
Gloria Jean's Large Arnott's Tim Tam Iced Chocolate  
81.1g sugar



18 teaspoons sugar  
Boost Juice Original Blueberry Blast Smoothie  
80.9g sugar



7 teaspoons sugar  
Gloria Jean's Regular Peach Iced Tea  
31.6g sugar



18.5 teaspoons sugar  
McDonald's McCafé Large Mocha Frappé  
83.3g sugar



15 teaspoons sugar  
The Coffee Club Large Mango Ice Frappé  
66.6g sugar



11.5 teaspoons sugar  
McDonald's Medium Bananaberry Bash Smoothie  
51.8g sugar



36.5 teaspoons sugar  
Max Brenner Salted Caramel Milkshake  
165g sugar



8 teaspoons sugar  
Gloria Jean's Regular Very Vanilla Latte  
37.1g sugar

- All calculations are based on a 20g serve of sauce  
1sp of sugar = 4.5g

AUSTRALIAN **healthyfood** GUIDE

Nutritional values are from calorieking.com.au or products' websites. 1 teaspoon sugar = 4.5g sugar.

AUSTRALIAN **healthyfood** GUIDE

# Sugar in fruit



1 large  
apple  
(223g)

= 6



1 medium  
banana  
(118g)

= 3.5



1 cup  
grapes  
(150g)

= 6



4 medjool  
dates

= 16.5



1 glass  
orange juice  
(250ml)

= 5



Bar of  
milk chocolate  
(44g)

= 6



<http://www.zoeharcombe.com/2015/12/sugar-in-fruit/>

© Zoë Harcombe 2015

# THIS vs THAT



Want to wrap your hands around a steaming mug of hot chocolate? Find out which tin to take home!

## Milo

(20g with 200ml skim milk, prepared as per label instructions)

## Cadbury Drinking Chocolate

(15g with 200ml skim milk, prepared as per label instructions)

**650kJ** (156cal)

**KILOJOULES**

**653kJ** (156cal)

Both drinks are the right size for a snack, but Milo is more satisfying thanks to its higher protein content and low GI. Added iron and calcium also make Milo more nutritious.

**2.2g**

**FAT**

**3.2g**

You'll slash fat and kilojoules by making your hot chocolate with skim or reduced-fat milk. In contrast to the above drinks, which are based on skim milk, a large takeaway hot chocolate made with full-fat milk provides an extra 700kJ (168cal) and nearly 10g of fat.

**19.5g**

**SUGAR**

**21.8g**

Milk contains the natural sugar lactose, so about 10g of the sugar in these drinks comes from the milk itself. The amount of added sugar in drinking chocolates varies, so it pays to compare labels.

**400mg**

**CALCIUM**

**243mg**

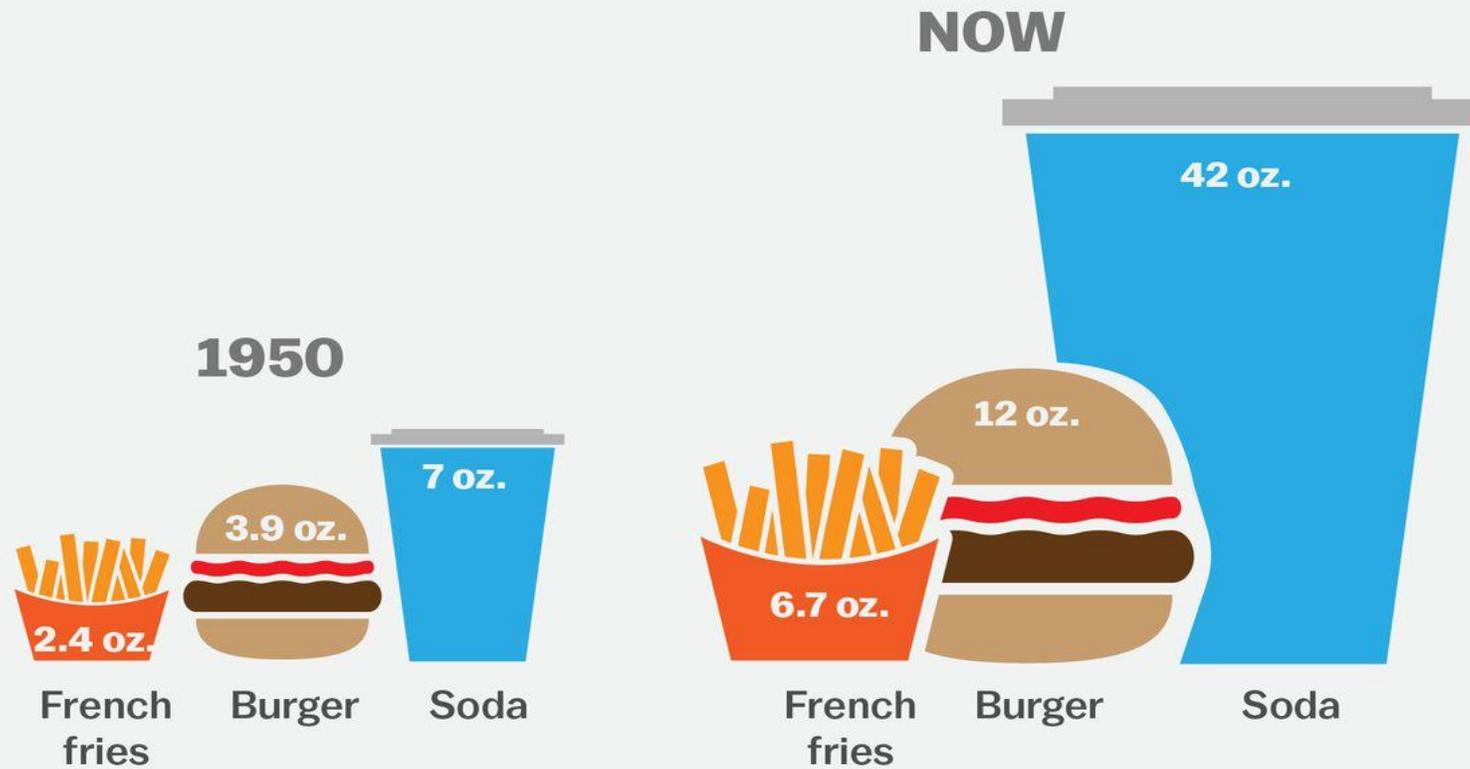
Adding Milo to a glass of milk gives you 40 per cent of your daily requirement for bone-strengthening calcium and ticks off one of your three daily serves of dairy. [hfg](#)

**BETTER CHOICE = MILO**

# Junk Food



## The average restaurant meal today is more than four times larger than in the 1950s

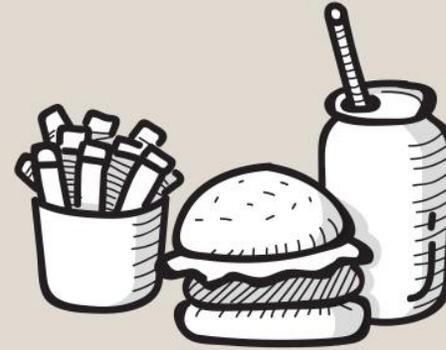


SOURCE: CDC

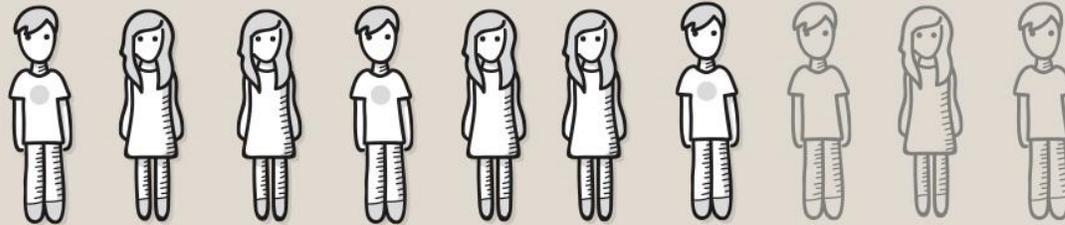
Vox

# AUSSIE TEENS

consume more **junk food**  
than any other age group.



More than **7 out of 10** are not meeting their  
calcium requirements (aged 14-18).

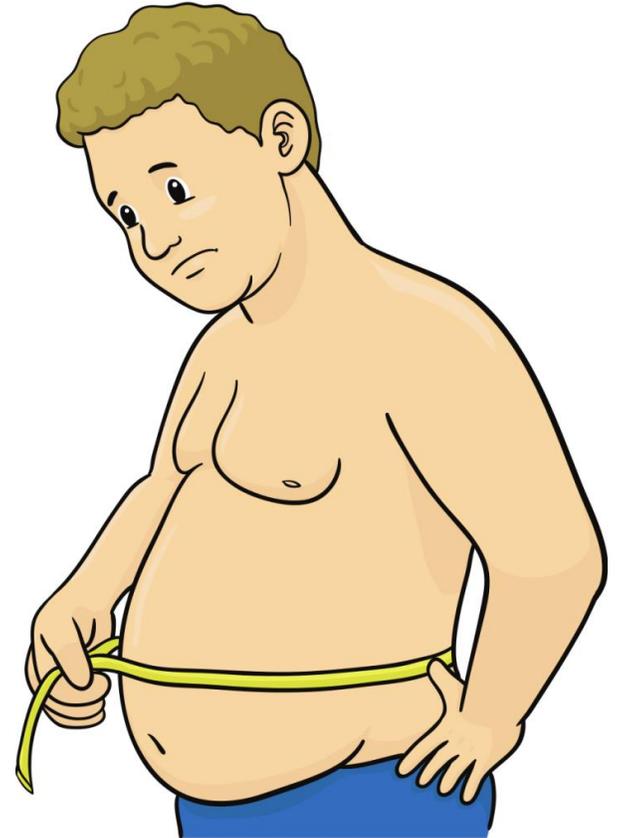


**1 in 4** are overweight or obese (aged 12-17).

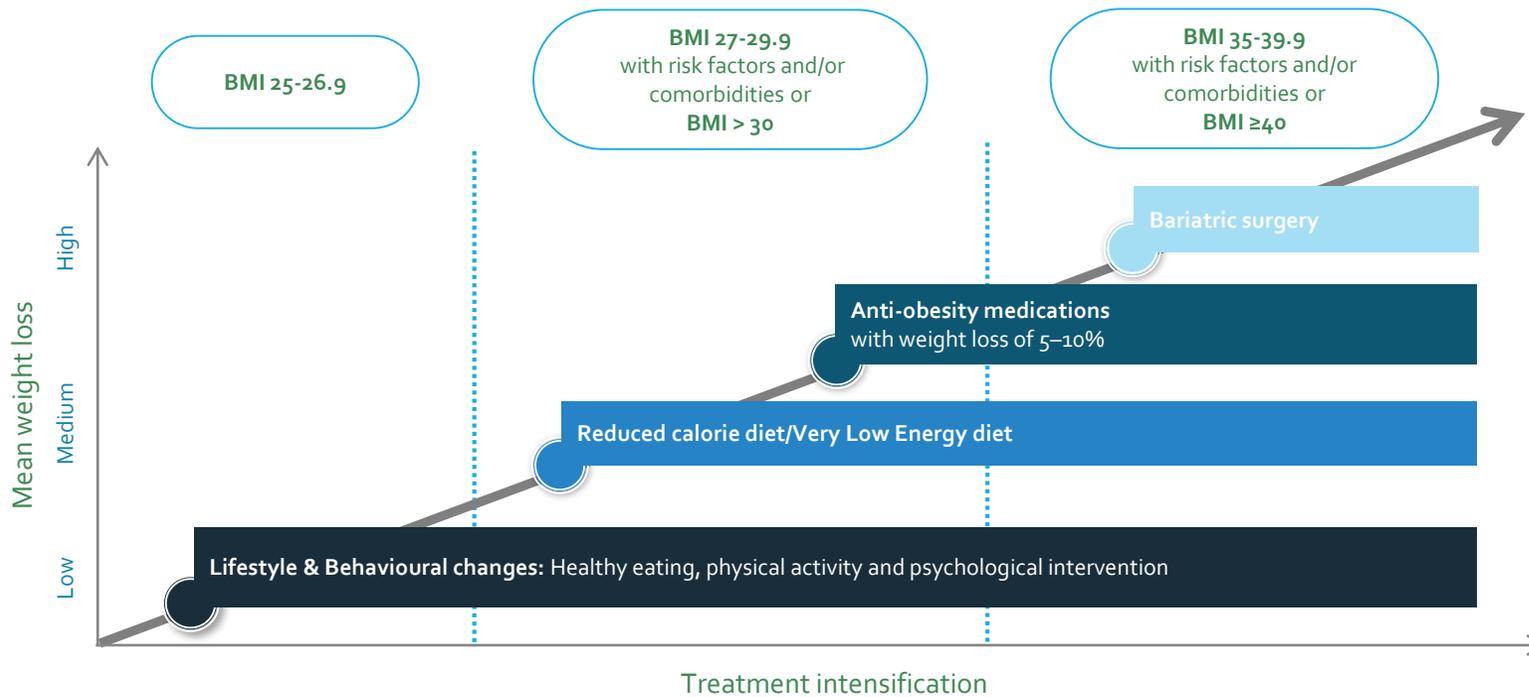


**EAT THE BEST**  
**LEAVE THE REST**

# Managing weight – Strategies and Treatments



# Treatment options for weight management and recommendations



Grima M and Dixon JB AFP 2013;42(8):532-41; National Health and Medical Research Council (2013) Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia. Melbourne: National Health and Medical Research Council.

# Calories – how many?

## Basal metabolic rate (BMR)

Adult male –  $66 + (6.3 \times \text{body weight in pounds}) + (12.9 \times \text{height in inches}) - 6.8 \times \text{age in years} = \text{BMR}$

Adult female –  $665 + (4.3 \times \text{body weight in pounds}) + (4.7 \times \text{height in inches}) - 4.7 \times \text{age in years} = \text{BMR}$

## Total daily calorie needs, multiply BMR by activity factor:

- **Sedentary** (little or no exercise) : **BMR x 1.2**
- **Lightly active** (light exercise/sports 1-3 days week) : **BMR x 1.375**
- **Moderately active** (moderate exercise/sports 3-5 days week) : **BMR x 1.55**
- **Very active** (hard exercise/sports 6-7 days week) : **BMR x 1.725**
- **Extra active** (very hard exercise sports and physical job or 2 x training) : **BMR x 1.9**

# Calories to lose weight

- 3500 calories in a pound stored fat
- Cutting 3500 calories each week should reduce body weight by 1lb (on average 75% on this fat and 25% is lean tissue)
- Cutting 7000 calories each week should reduce body weight by 2lb, etc, etc

# Not all calories and food are equal



## ▪ Breakfast

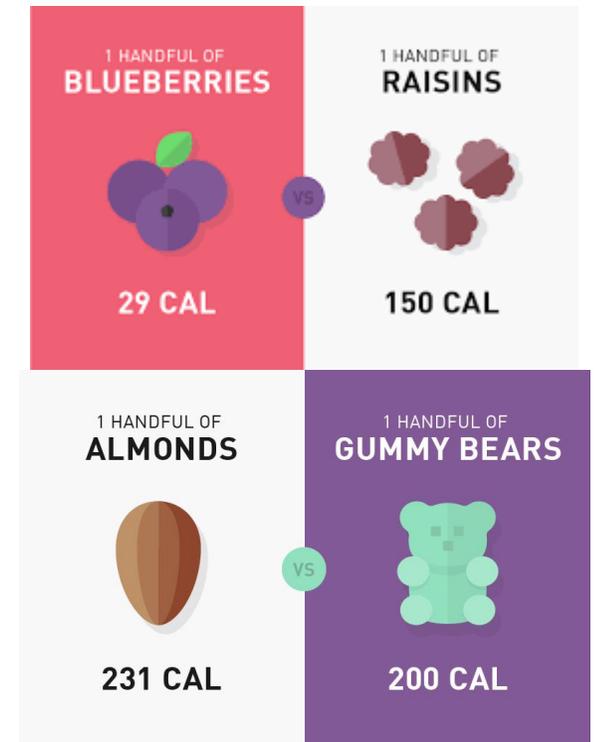
- 2 x weetbix and ½ cup full fat milk – 210 calories / 2 x weetbix and ½ cup low fat milk – 150 calories
- Thick and creamy yoghurt – 190 calories // Flip yoghurts 220 calories / Yopro / Chobani fit / Greek yoghurt – 90 calories

## ▪ Meals

- 1 chicken breast 200 calories / 1 cup pumpkin 30 calories / vegetables = 250 calories
- Big Mac = 550 calories – Big Mac meal = 890 calories / McDonald's cheeseburger = 313 calories
- KFC 2 pieces chicken meal = 570 calories / Classic twister meal 1,164 calories /  
Dominos pizza x 2 slices = 600 calories / McCain Rustic Sourdour pizza (whole pizza) – 850 calories
- 1 cup sweet potato – 114 calories / 1 cup pumpkin – 30 calories

## ▪ Snacks

- Blueberry muffin 417 calories / 1 piece fruit – average 90 calories
- 1 x packet Lays potato chips = 150 calories / 2 almonds = 83 calories



# Not all calories are equal

- Drinks

- Dare iced coffee (raw) 243 calories / Dare iced coffee 425 calories
- Tall skinny cappuccino 122 calories / Tall cappuccino 184 calories
- Fizzy water / low joule cordial – 2 calories / 1 can coke – 139 calories

- Calorie trap

- 1 tablespoon olive oil = 119 calories / ½ medium avocado = 117 calories
- 1 large egg 72 calories



**HEALTHY**  
@RYANC\_FIT



**BUT HIGH CALORIE**



AVOCADO - 160 KCAL  
PER 100G



ALMONDS - 163 KCAL  
PER 23 NUTS



COCONUT OIL - 117 KCAL  
PER TBSP



NUT BUTTER - ~150 KCAL  
PER 25G



GRANOLA - 218 KCAL  
PER 55G



DARK CHOCOLATE - 155 KCAL  
PER 28G



CHICKPEAS - 364 KCAL  
PER 100G



OLIVE OIL - 119 KCAL  
PER TBSP

# Motivating for weight loss

- Set realistic goals – 5kg blocks
- Try to maintain healthy eating and regular physical activity
- Track food in electronic apps eg MyFitnessPal
- Practice regular social eating to establish regular eating habits
- Use meal times to discuss healthy options and food choices as a family
- Use portion size bowls and plates / food diaries / weigh food
- Do not eliminate foods you like – reduce the frequency and amount
- Do not drink your food
- Do not eat food you don't like
- Seek support from health professionals specialising in weight loss
- **DON'T GIVE UP IF YOU HAVE A BAD DAY**



WHEN YOU FEEL LIKE  
**QUITTING**  
THINK ABOUT WHY YOU  
**STARTED**

# Parents ...

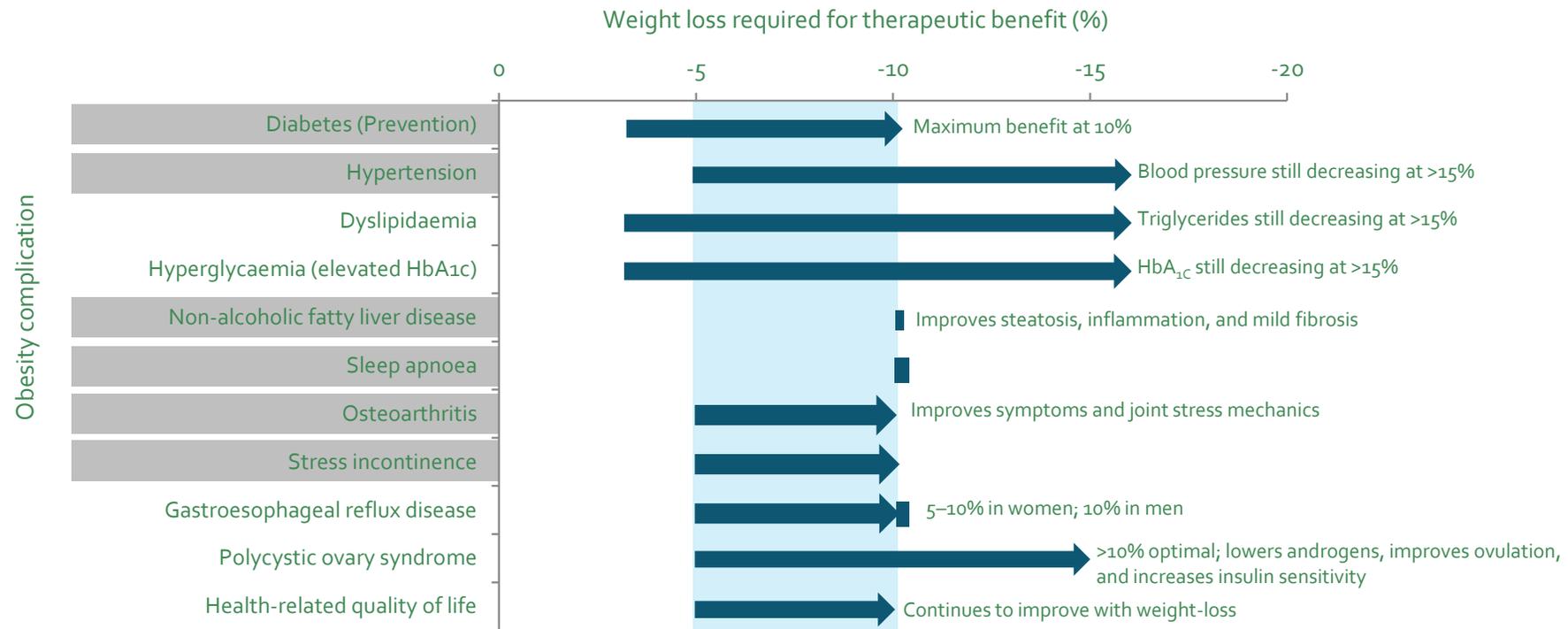
- Use meal times to discuss healthy options and food choices
- Engage all family members in nutritional education ie grandparents
- Complete the weekly shopping as a family where possible – it's an opportunity to discuss food choices
- Avoid comforting children and adolescents with food – it can lead to lifelong emotional eating and weight problems
- Seek support of health professionals and community groups
- Implement a 'token' system for children to save for a new toy / game / outing



# Summary of points



# 5–10% weight loss is clinically meaningful



Cefalu WT et al. Diabetes care 2015;38(8):1567-82. Wright F et al. J Health Psychol. 2013;18:574-86.

## CAUSES of OBESITY



DIET



SEDENTARY LIFESTYLE



SLEEP DEPRIVATION



STRESS, MENTAL DISORDER



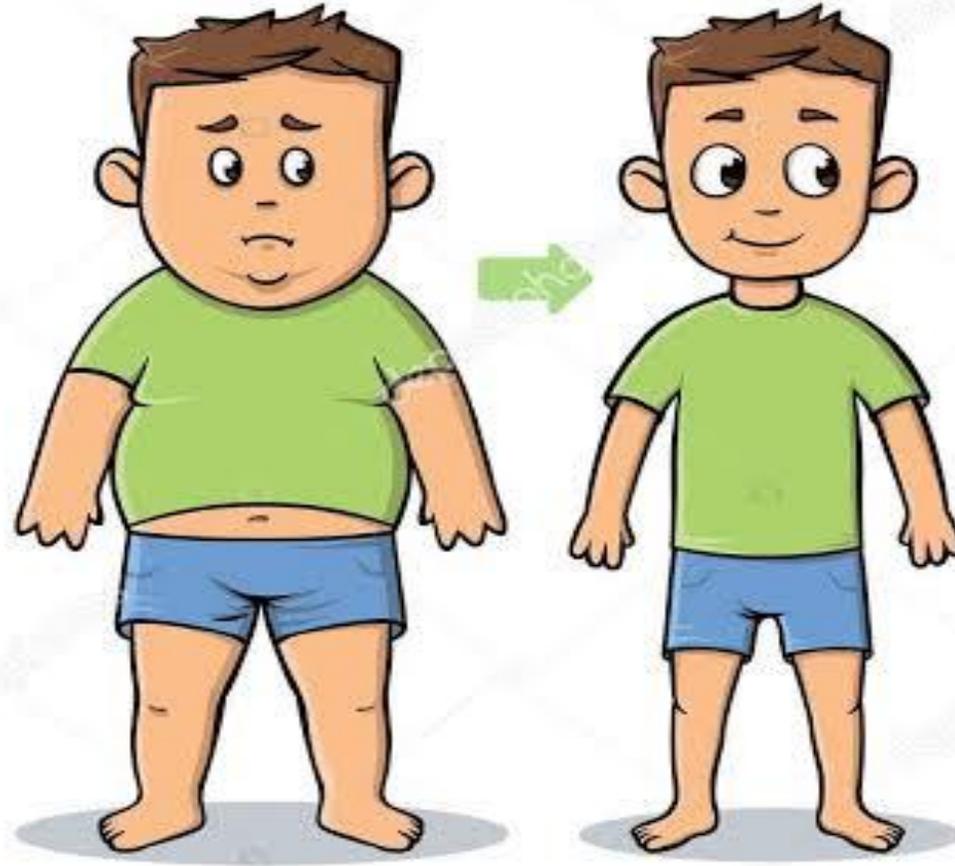
GENETICS



GUT BACTERIA



MEDICAL DRUGS



## WHAT TO DO



PHYSICAL EXERCISE



AVOID STRESS



HEALTHY DIET

# THE WORLD IS GETTING FATTER



## HOW DO I KNOW WHETHER I AM OVERWEIGHT?

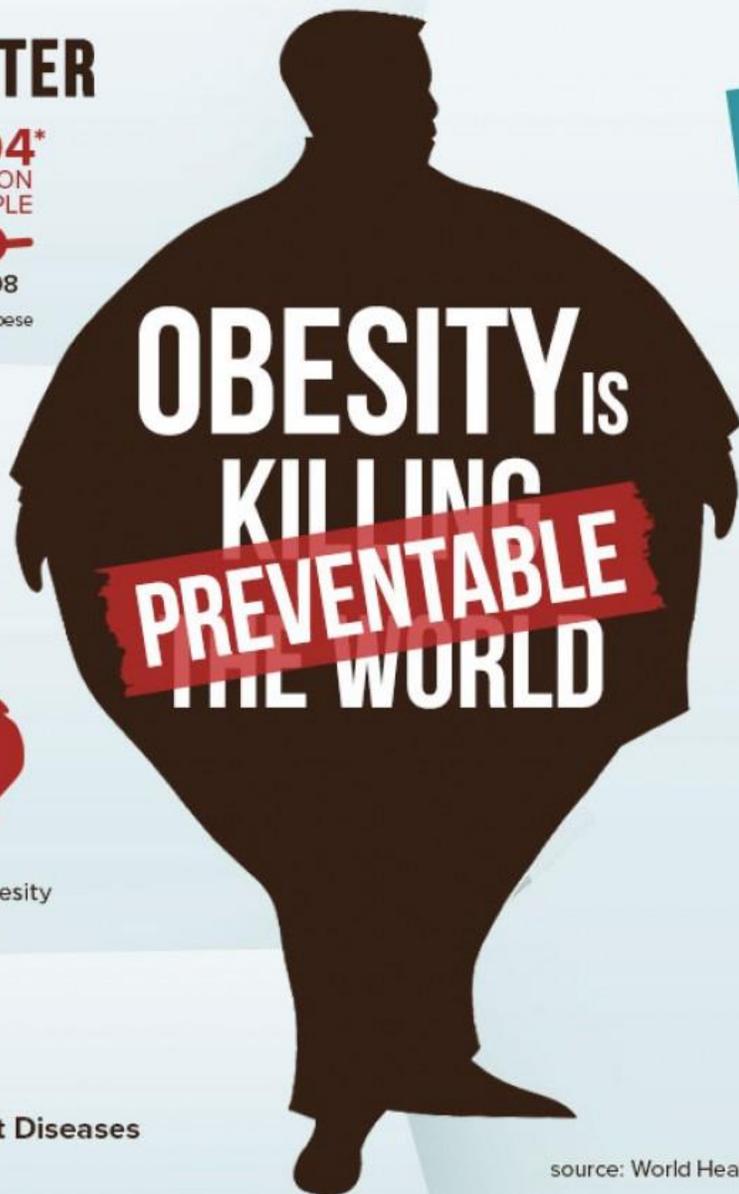
Calculate your body mass index (BMI) using this formula

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height}^2 \text{ (m}^2\text{)}}$$


## OBESITY KILLS!

7 common diseases due to obesity:

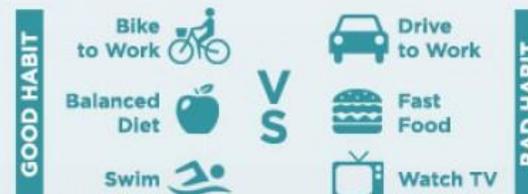
- Arthritis
- Cancer
- Infertility
- Heart Diseases
- Back Pain
- Diabetes
- Stroke



## ABC TO OBESITY PREVENTION

### SIMPLE RULES TO STAY IN SHAPE

#### A dopt New Healthy Habits



#### B alance Your Calorie Intake



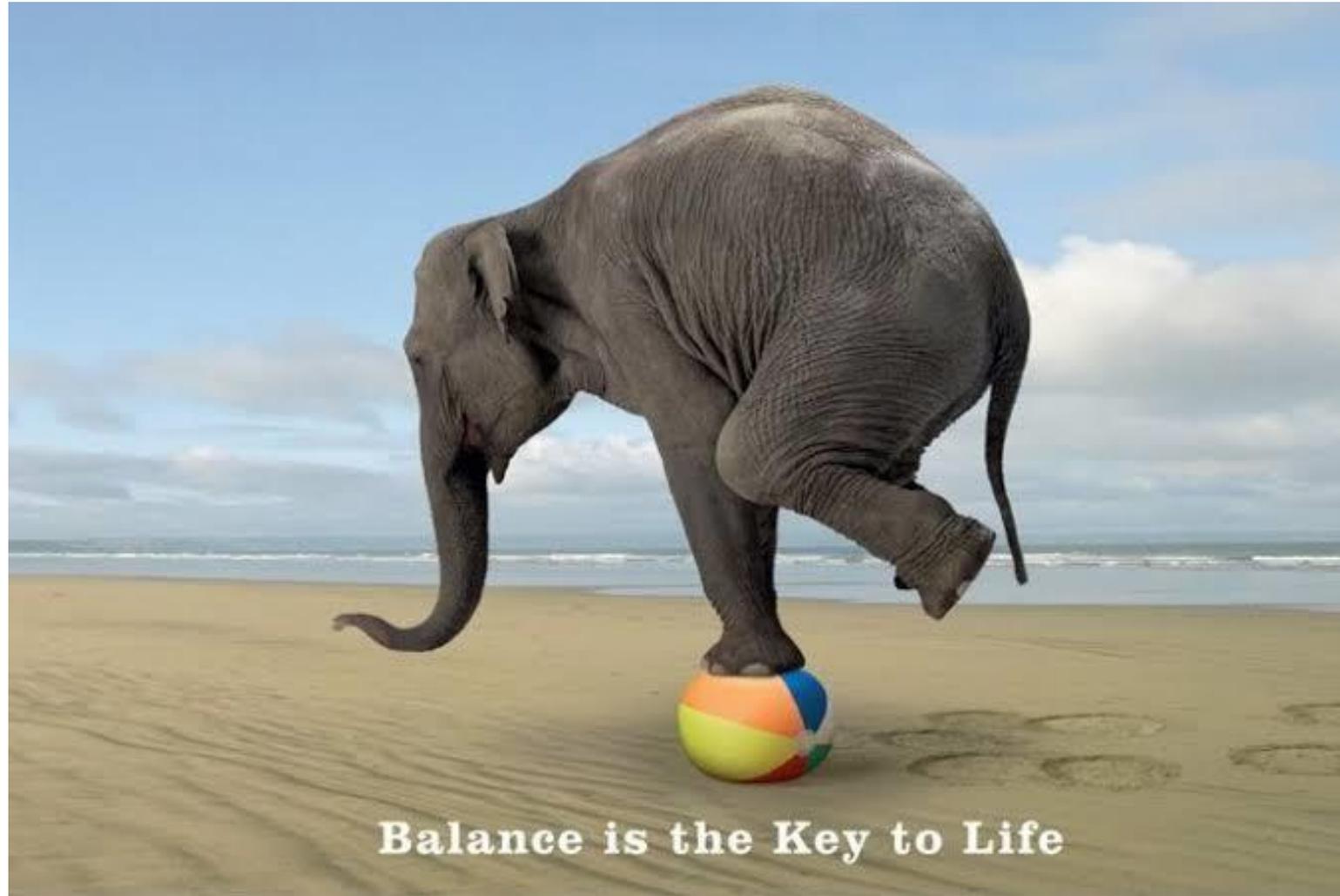
#### C ontrol Your Weight Gain



IF **JUNK FOOD**  
**COMMERCIALS**  
**WERE**  
**HONEST**



**CRACKED**



A healthy balance

**RHINOS ARE JUST  
UNICORNS THAT HAVE  
LET THEMSELVES GO.**



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