

Voluntary Health Scotland Annual Lecture and 15th AGM

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MRCGP MBE
20th November 2019



A Quick word from my sponsor Fiterix®

- Major effect on the faulty immune system reducing the pro-inflammatory markers of anti-TNF factor, C Reactive Protein and IL-6.
- Increases antioxidants and reduces the oxidative stress from Krebb's Cycle in each mitochondria as measured by reduction in 8-hydroxydeoxyguanosine (8-OHdG)
- Prolongs the life of cells by stimulating Temelorse and lengthening the telomeres at the end of each Chromosome hence prolonging cell life.
- Reduces blood pressure, visceral fat, obesity, fibrinogen, blood pressure, and HDL/LDL ratio and can reduce the atheroma in each coronary artery
- Stimulation of Brain-Derived Neurotrophic Factor Increases repair of neurons in the brain and promotes neural generation and increases grey and white matter with enlarging the Hippocampus.



Fiterix

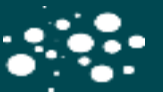
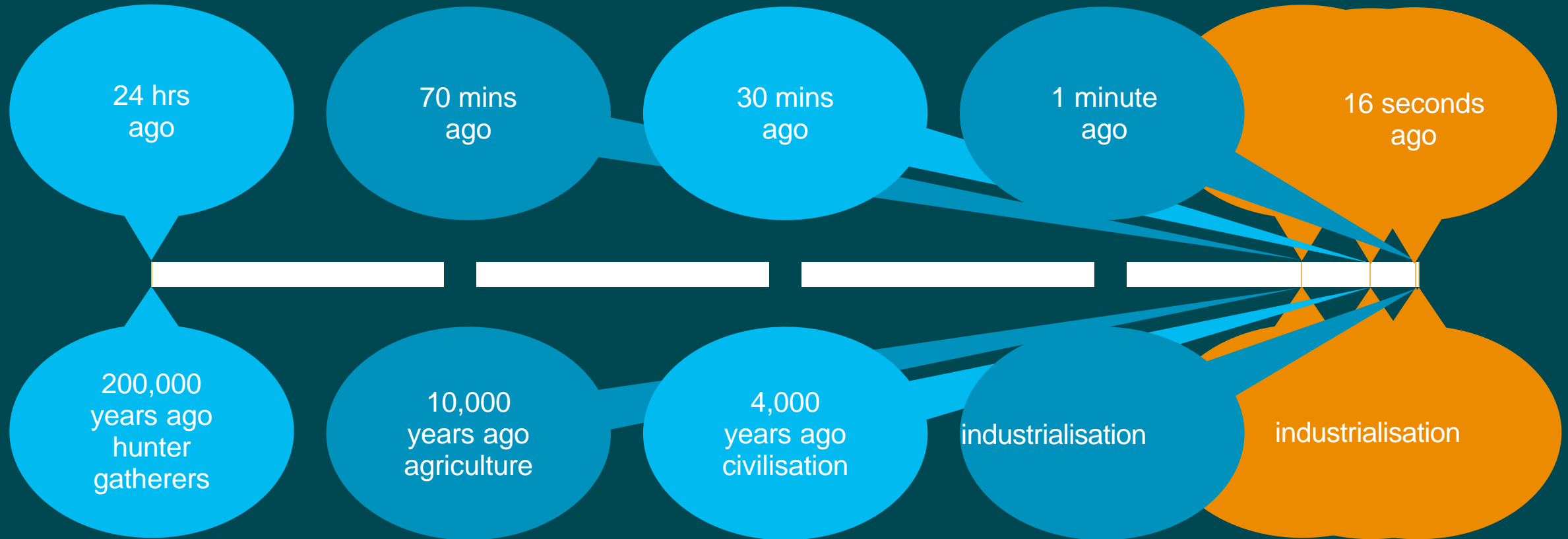


Fiterix
(aka going for a walk)

4X Strength



If we compress the 200,000 years of human history
– into 24 hrs



Our factory setting is to be in a sociable group, supportive environment and have a purpose

People



Sociable

Connect

Place



Nature

Take Notice

Purpose



Autonomy

Be Active, Give
Keep Learning



People



Loneliness

Place



Hostile

Purpose



Lack of control

Fear and Chronic Stress



Inactivity and chronic stress

- **Chronic psychosocial stress, increases the risk of physical inactivity and contributes to the epidemic of disease.**

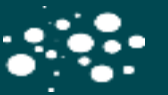
Tsatsoulis, A. and Fountoulakis, S., 2006. The protective role of exercise on stress system dysregulation and comorbidities. *Annals of the New York Academy of Sciences*, 1083(1), pp.196-213.





Chronic
Stress
Loneliness

Inactivity
Poor diet
Obesity
Smoking



Chronic Stress

```
graph TD; CS[Chronic Stress] --> SH[Stress Hormones]; CS --> L[Inactivity<br/>Poor diet<br/>Obesity<br/>Smoking]; SH --> CI[Chronic Inflammation]; L --> CI;
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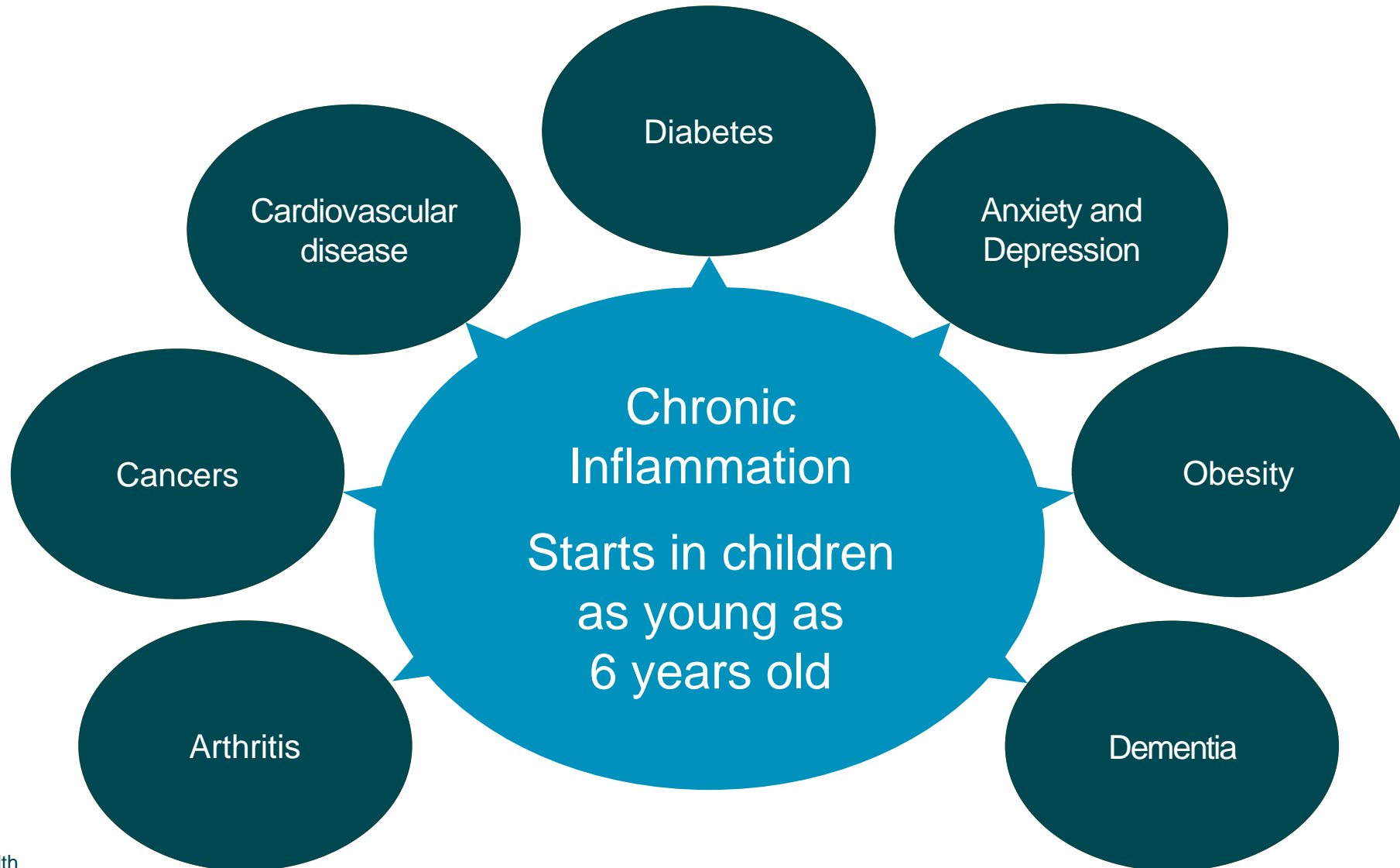
Stress
Hormones

Inactivity
Poor diet
Obesity
Smoking

Chronic Inflammation



Inflammation: The cause of Causes



Walking reduces inflammation

1.
Reduces
visceral fat

2.
Reduces anti-
inflammatories

3.
Damages
healthy cells



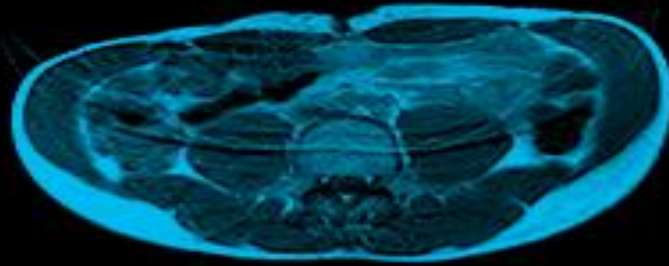
Inactivity: trilogy of inflammation

1.
Increases
visceral fat

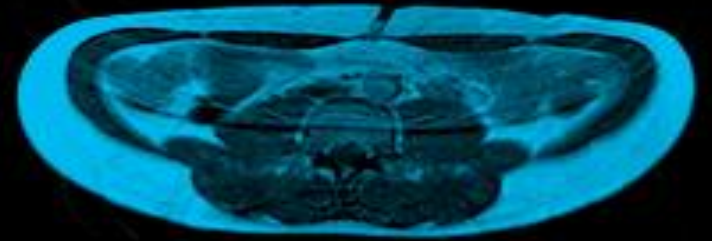


Reducing inflammation – fat

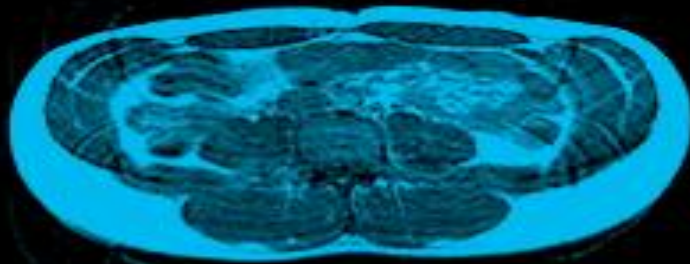
Variation in visceral fat content in men with the same waist circumference



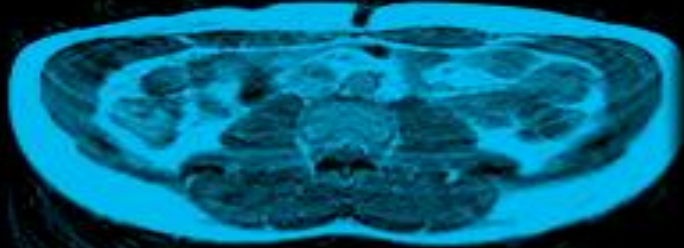
Visceral fat = 0.5 L



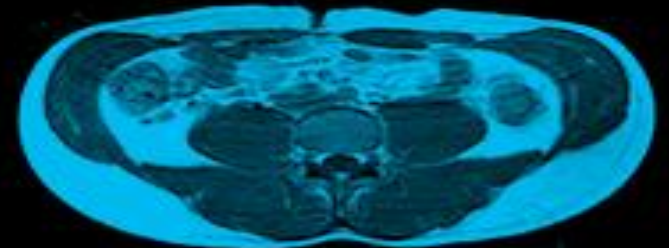
Visceral fat = 1.1 L



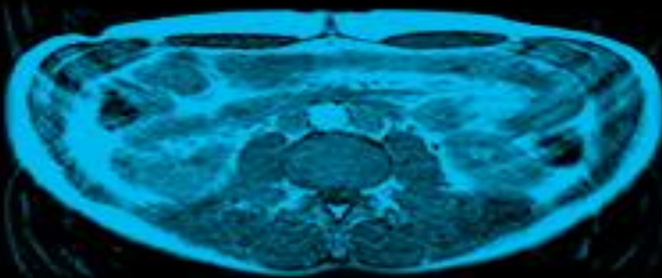
Visceral fat = 1.2 L



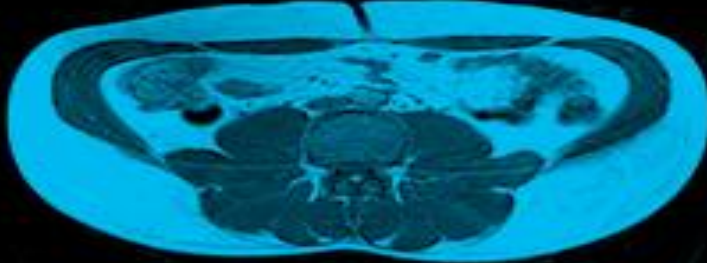
Visceral fat = 1.3 L



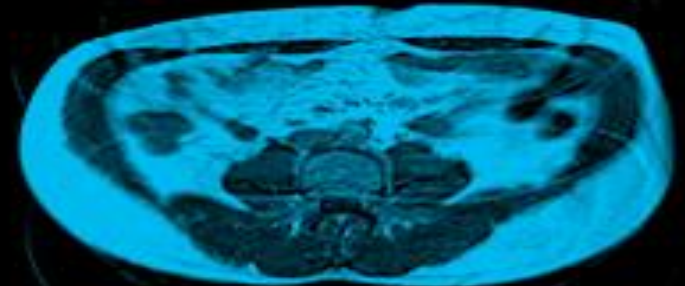
Visceral fat = 1.7 L



Visceral fat = 1.8 L



Visceral fat = 4.2 L

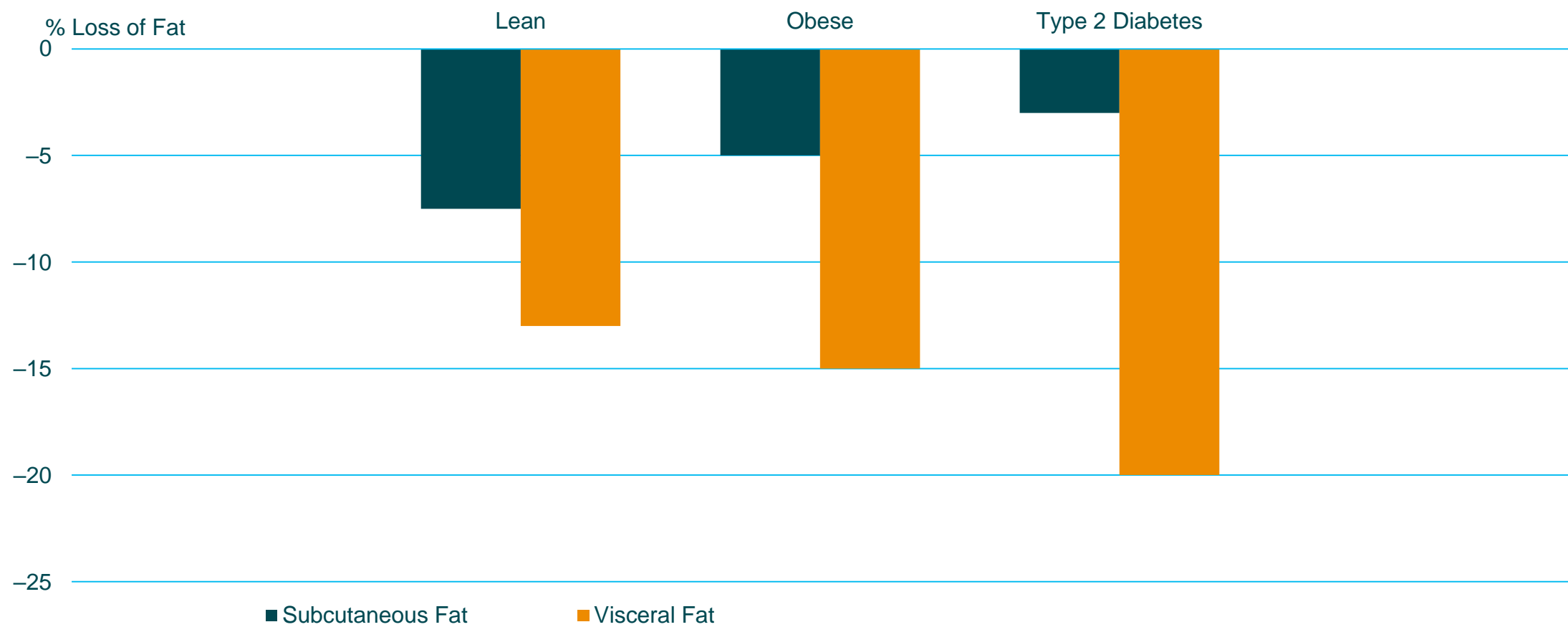


Visceral fat = 4.3 L



Visceral fat reduction with exercise

Fat loss after 13 weeks of walking 60 mins a day and no weight loss



Lee S et al. J Appl Physiol 2005;99:1220-1225



Inactivity: trilogy of inflammation


1.
Increases
visceral fat

2.
Reduces anti-
inflammatories

3.
Damages
healthy cells



Reducing inflammation – muscles



Contracting
muscles
release powerful
anti-inflammatories
called Myokines

These Myokines
Circulate around the
whole body calming
every cell



Inactivity: trilogy of inflammation

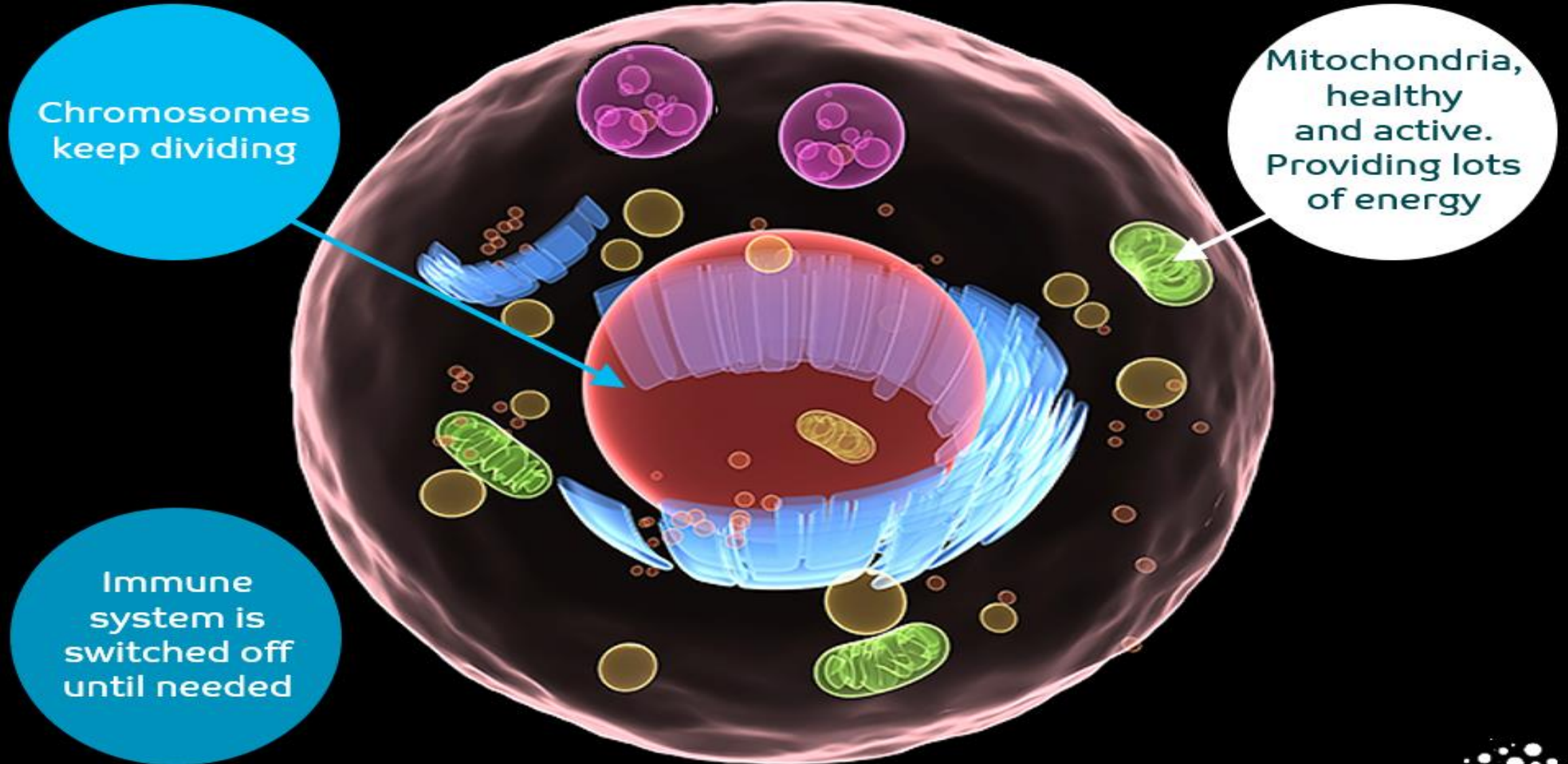
1.
Increases
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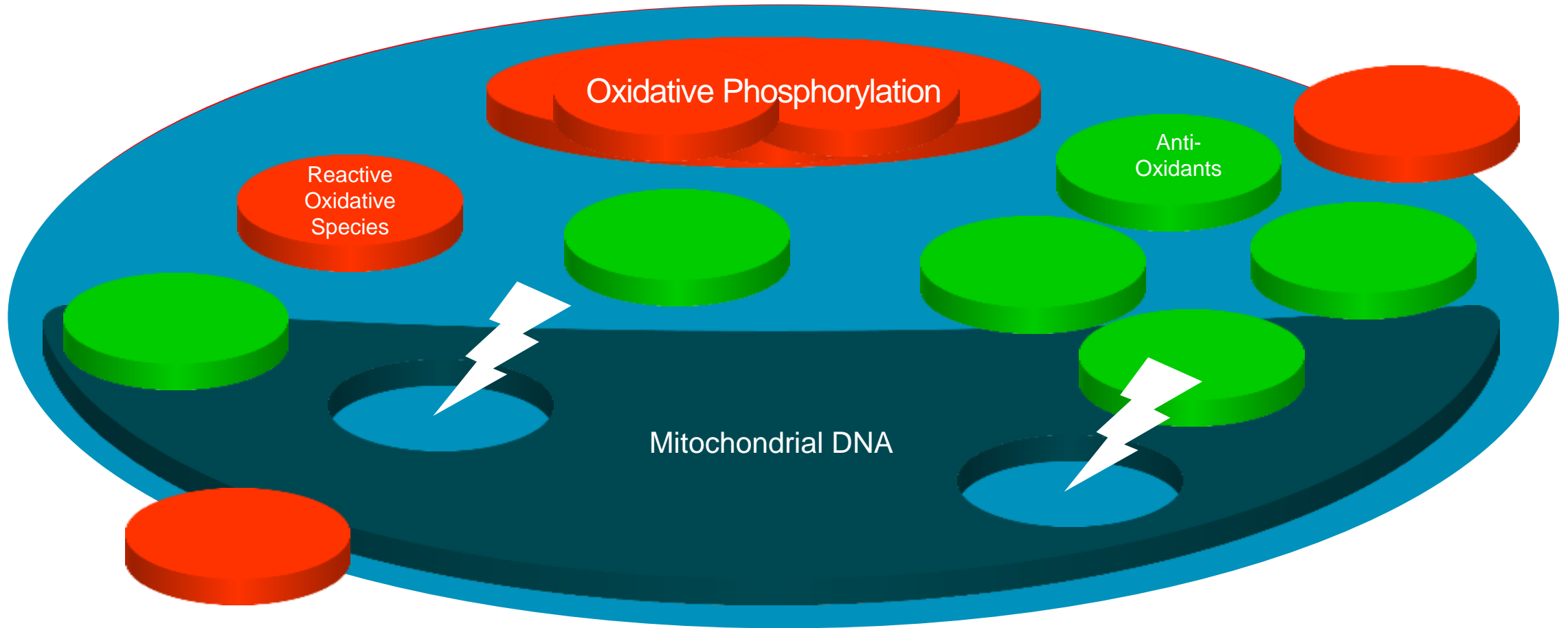
3.
Damages
healthy cells



Inside a healthy cell



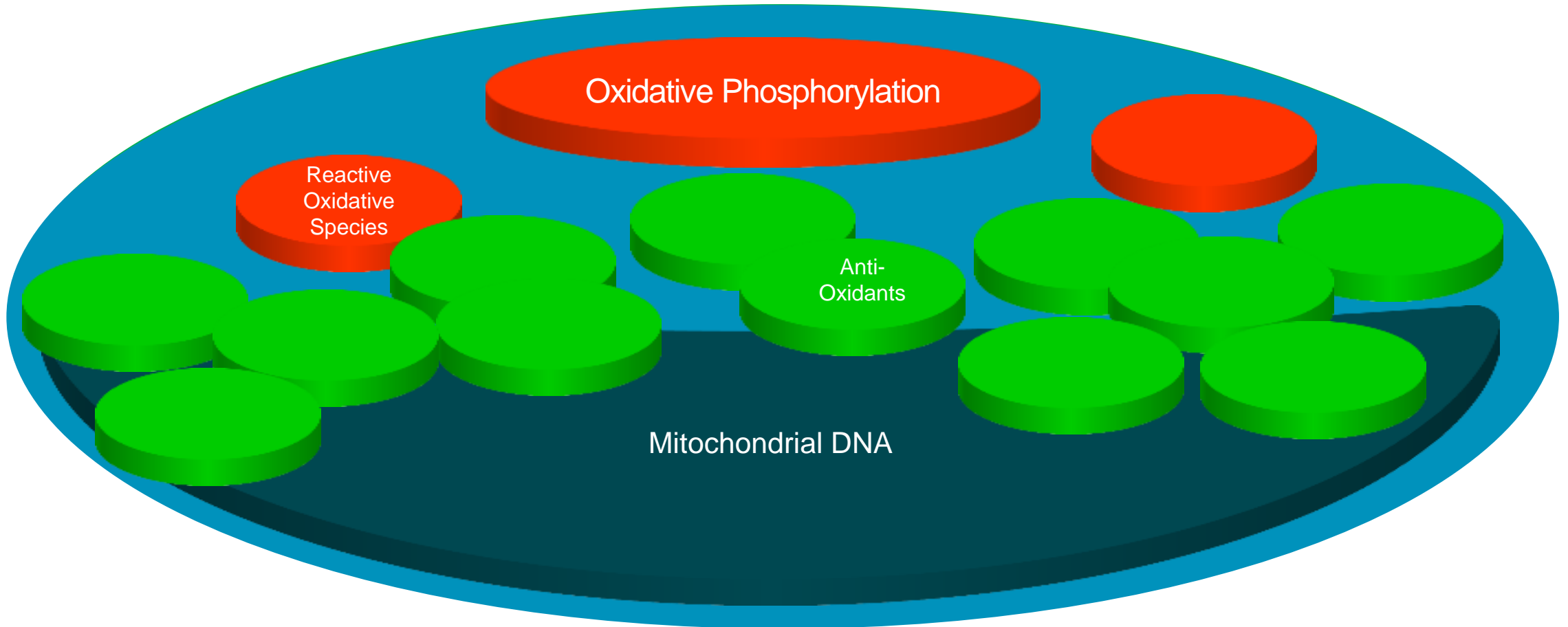
Sedentary, high fat diet and stress



Mitochondria



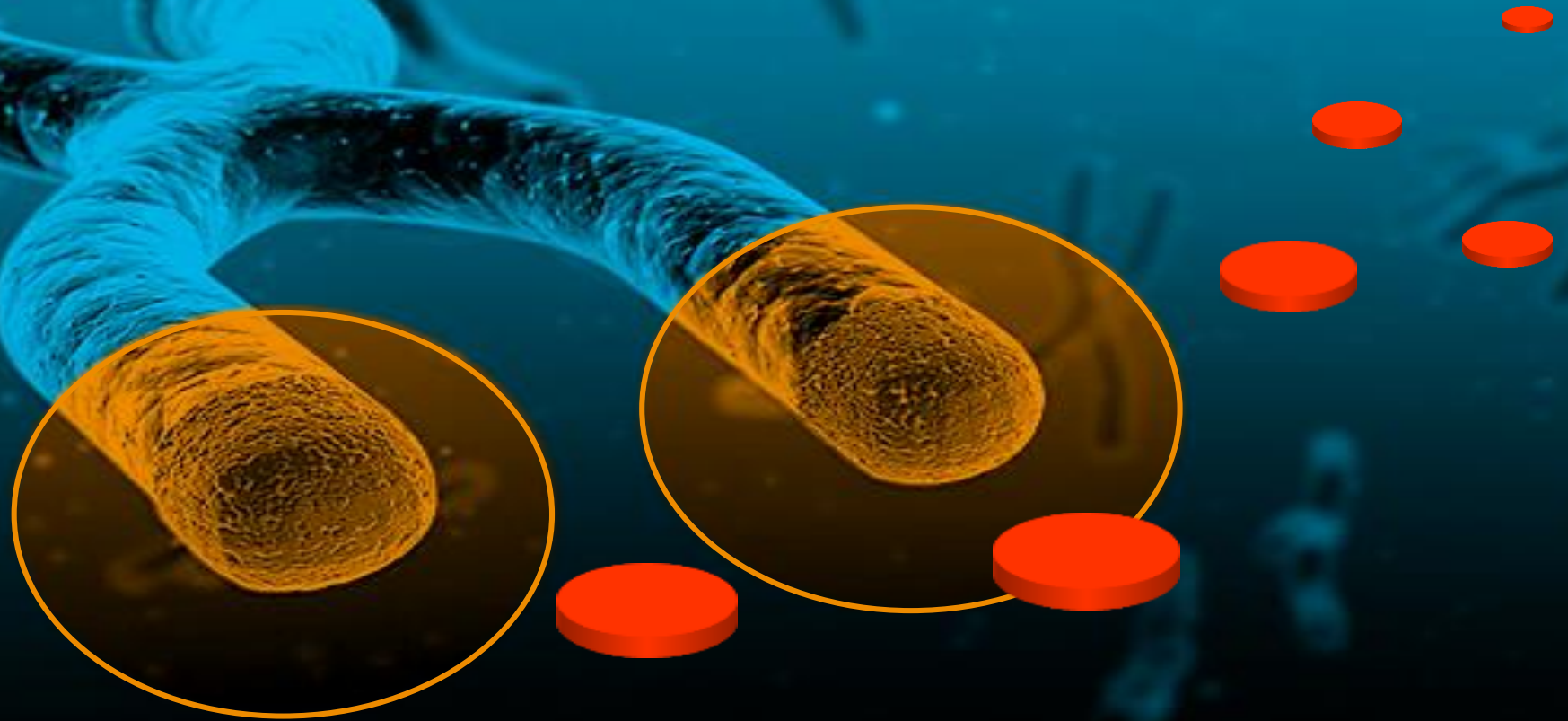
Physically active, low fat and not stressed



Mitochondria



Telomeres get shorter



Epel, Elissa, et al. Can meditation slow rate of cellular aging? Cognitive stress, mindfulness, and telomeres. *Annals of the New York Academy of Sciences* 1172.1 (2009): 34-53



We have a new disease that conventional medicine cannot treat

Chronic Inflammation



Pathway of Ill Health



People



Place



Purpose

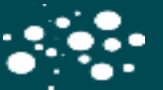
Chronic stress

Poor health behaviours

Mitochondrial damage, telomere shortening,
and chronic inflammation

Cardiovascular disease, diabetes, cancer, depression

<https://www.youtube.com/watch?v=kYPRV-Ynilk>



How lack of walking impacts society



People



Place



Purpose

Chronic stress

Inactivity

Poor concentration, tiredness, irritability, addiction, depression, weakness, chronic inflammation

Unsafe streets, poor air quality, reduced learning and productivity, dependence of elderly, less volunteering, isolation, obesity

How walking invigorates society



People



Place



Purpose

Happiness

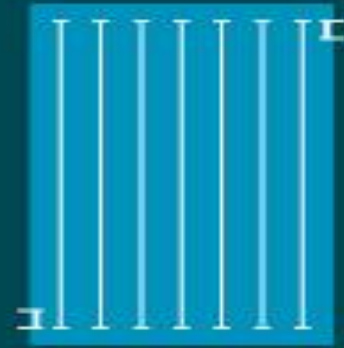
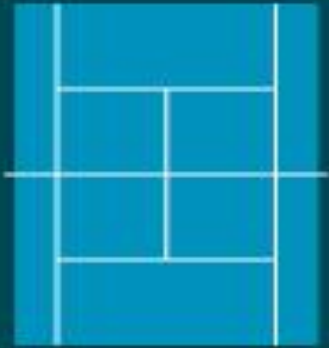
Being active

Increased confidence, greater concentration, less illness, greater contentment, better behaviour.

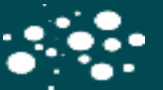
Increased productivity, safer streets, good air quality, stronger students, community cohesion, independence, more volunteering etc



The focus has moved physical activity
from a venue based strategy



EXERCISE REFERRAL



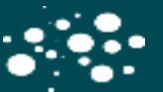
... to a community based activity where
activity happens everywhere

SOCIAL PRESCRIPTION



But to get real scale we need to
get lots of people becoming
activity leaders themselves

SOCIAL MOVEMENT





Meet
Bob



A man with a beard and mustache is sitting on a couch, looking thoughtful with his hand on his chin. He is holding a dark bottle in his other hand. A speech bubble is overlaid on the image, containing the text "Let's get Bob active". The entire image has a blue tint.


Let's get
Bob active






We can
give him
NHS
treatment






‘Bob, why
don’t you
get off the
bus a stop
early?’





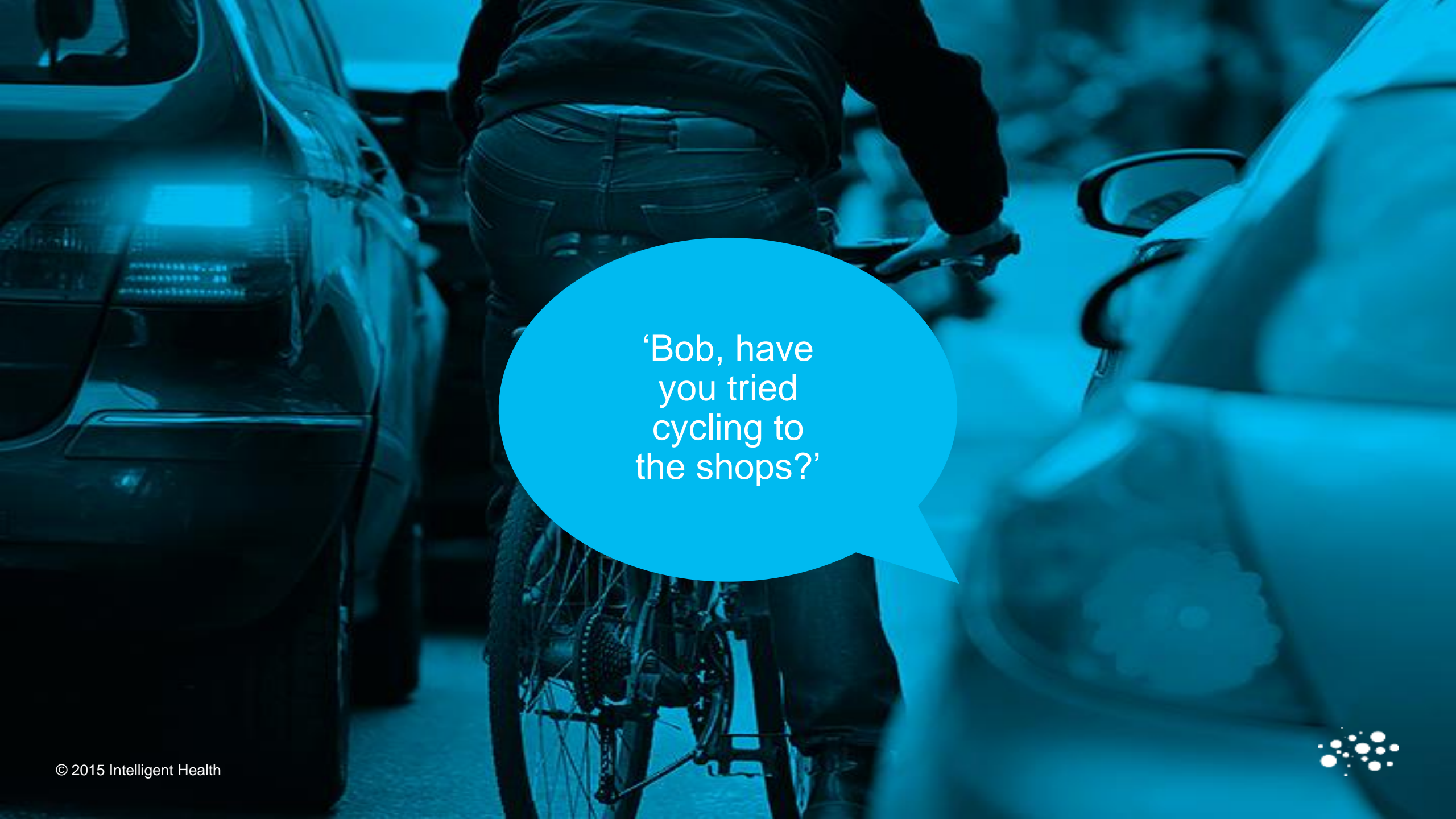
‘Bob, you
really should
take the stairs
instead of
the lift’






‘Bob, why
don’t you try
Betty’s keep fit
class on a
Tuesday?’



A person is riding a bicycle through a parking lot filled with cars. The entire image is tinted with a solid blue color. A white speech bubble is positioned in the center of the frame, containing the text 'Bob, have you tried cycling to the shops?'.

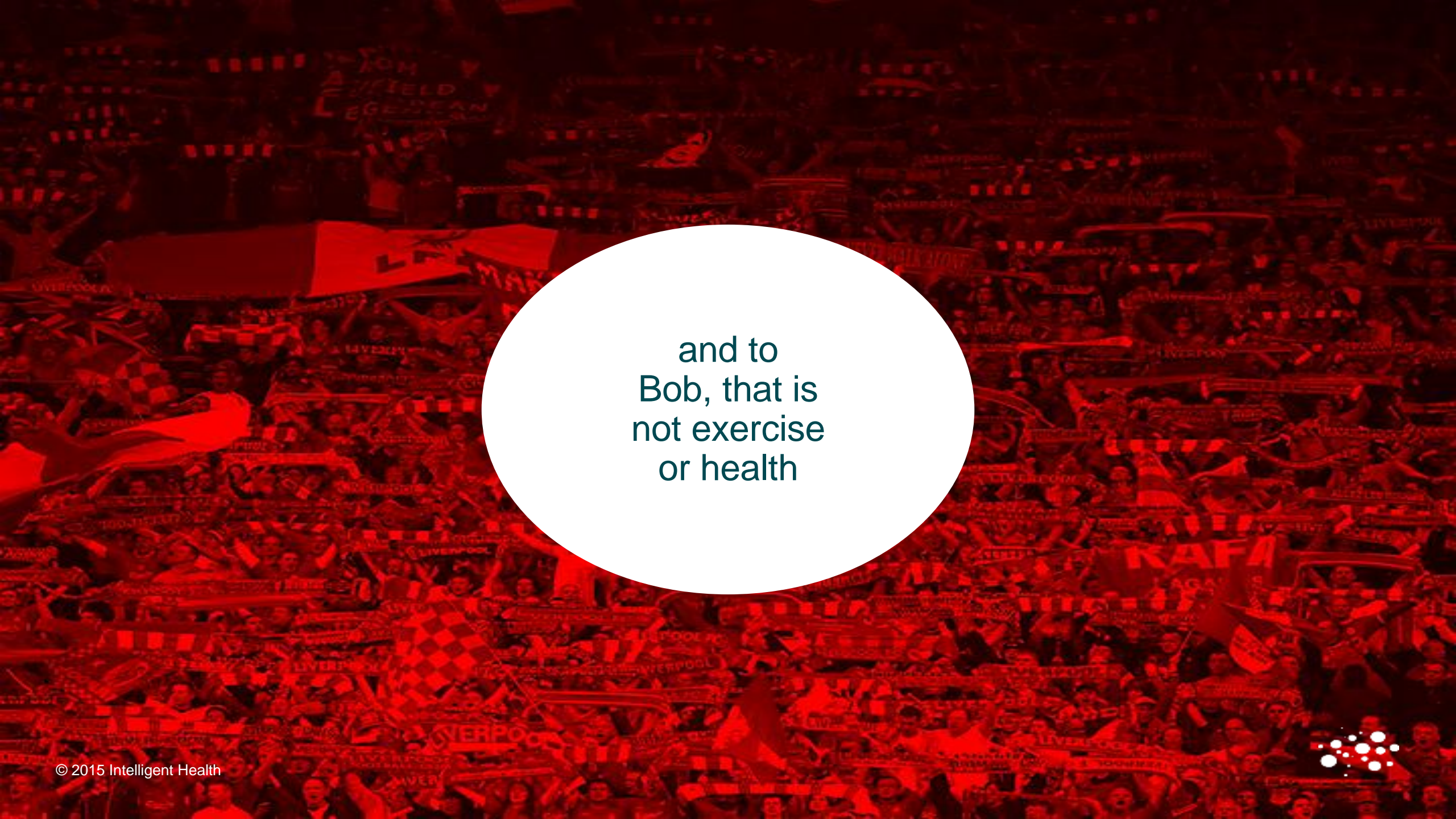
‘Bob, have
you tried
cycling to
the shops?’





Or we
can link him with a
group of supporters
who walk 2 miles to
Anfield





and to
Bob, that is
not exercise
or health



Physical Activity is now hidden behind
a much greater experience for Bob

It is invisible to him

It is a 'means to an end' not the end itself

'The end' is now getting to Anfield

And finding this greater value for each person
will help create the industrial scale required







THE IMPACT

Transforming activity levels and improving our environment

48%

of inactive adults
**BECAME
ACTIVE**

68%

of inactive children
**BECAME
ACTIVE**

76%

of players play
**BEAT THE STREET
TOGETHER**
at weekends/evenings

33%

reduction in
AIR POLLUTION
outside schools



WHO WE **REACH**

We collect rich data – **6 MILLION** time, date and location stamps recorded in 2018



1 MILLION
PLAYERS
85% are
families



105
PROGRAMMES
across the UK



70%
of registered
players are
FEMALE AGED
30-45



56%
OPEN RATE
on weekly
e-newsletters

2,500



SCHOOLS
64% of
pupils play



5.5M
Facebook
impressions



Regular
local and
national
media
coverage

Beat the Street East Lothian Beat Box distribution. 5,000 people participated



FaceBook comments East Lothian



Lynsey Wilson Well done to Cockenzie Primary School. I am so proud of all of the kids for getting out and about and clocking up so many points. (Often in cold weather and rain!) Their POSITIVE attitude towards this challenge has lead to their SUCCESS! Just goes to show, hard work pays off! Beat the street has made me realise what a fantastic community we live in. We are truly blessed. I have met so many lovely people and made some great new friends through this experience.

Like · Reply · 3w · Edited



Jacqueline Carpenter Lynsey Wilson it's been a pleasure 😊 the kids have loved it and it's been great seeing everyone out and about 😊 roll on next year when we can hopefully do it all over again xx

Like · Reply · 3w



Lorette Glen Well done to everyone who took part in Beat the Street, it's been a fantastic 6 weeks. **Congratulations** to all the winners. 😊

Like · Reply · 3w



Scottish Libyan Well done Pinkie 🎉 must say what a great way to get the whole community motivated we absolutely loved it 🥰 **Congratulations** to all first place winners 👍 😊

Like · Reply · 3w





Exploring the local area (66%)

Getting fit (54%)

Having fun (54%)

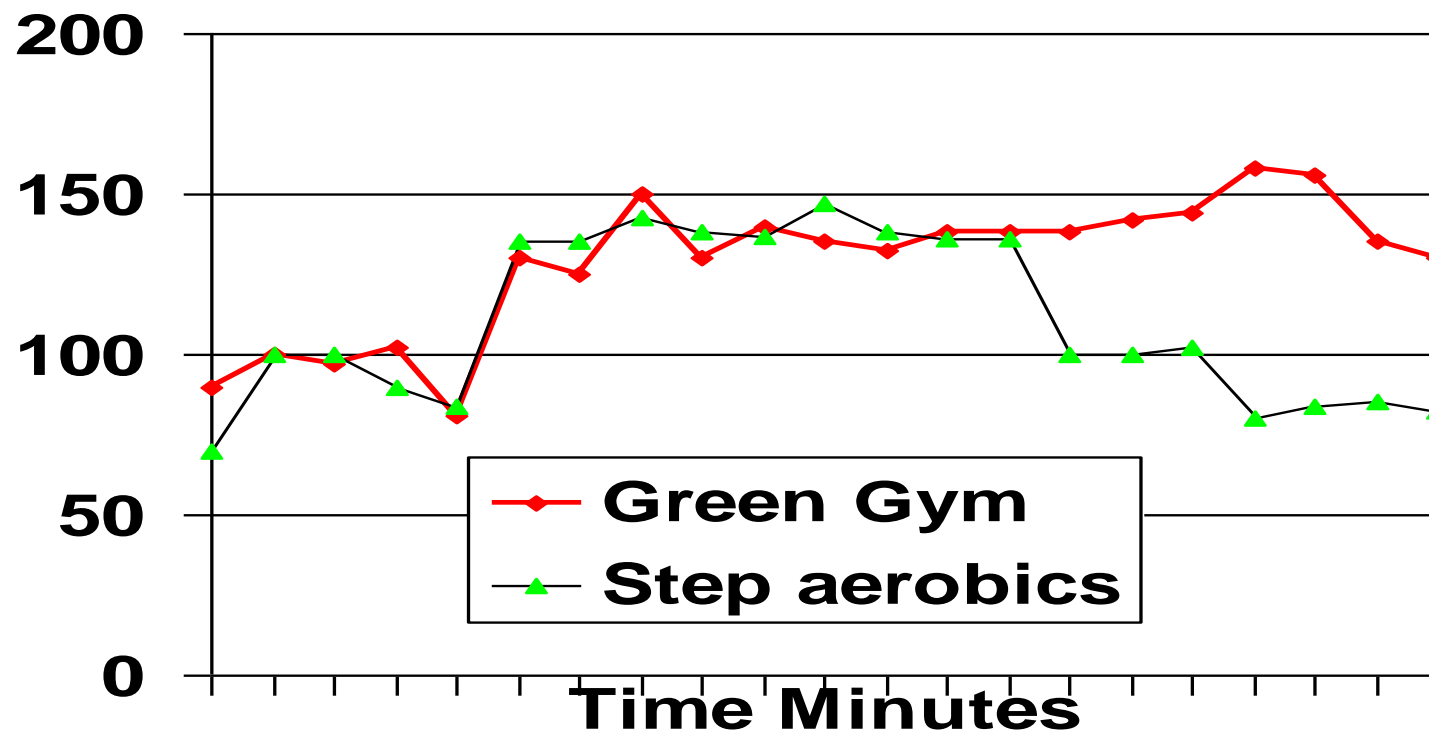
Spending time with friends or family (53%)
and feeling more healthy (52%)

Winning Prizes (13%)



Green Gym Vs Aerobics

Comparison of heart-rate response during two sessions of activity



V Reynolds 1999 OCHRAD





Reader's
Digest

WALKING FOR HEALTH AND HAPPINESS

The Complete
Step-by-Step Guide to
Looking Good and
Feeling Your Best

DR. WILLIAM BIRD &
VERONICA REYNOLDS



WALKING FOR HEALTH

The complete **step-by-step** guide
to getting fit and feeling your best

DR WILLIAM BIRD & VERONICA REYNOLDS



Summary

- We live in a stressful environment
- Isolation disconnection to nature and lack of purpose create chronic stress.
- Chronic stress causes poor health behaviour and leads to Chronic Inflammation (CI)
- CI is the “cause of causes” of most long-term conditions
- Health, diet, activity should be means to the end which is Happiness leading to greater potential and productivity.
- Its definitely walking for Happiness



Building Active Communities

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