

The Power of
Walking
Queen's University,
Belfast

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14th Novemeber2019



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

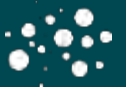
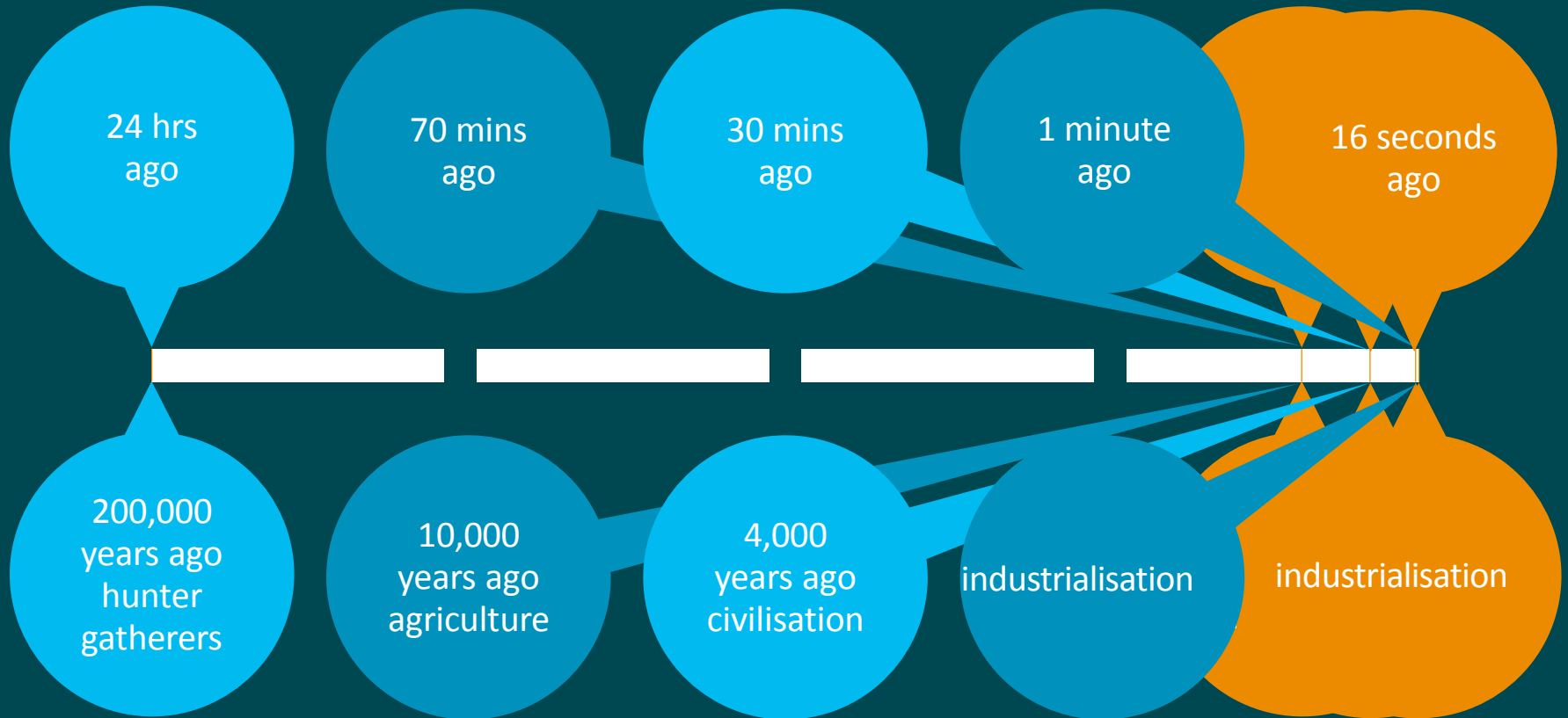


Fiterix
(aka going for a walk)

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

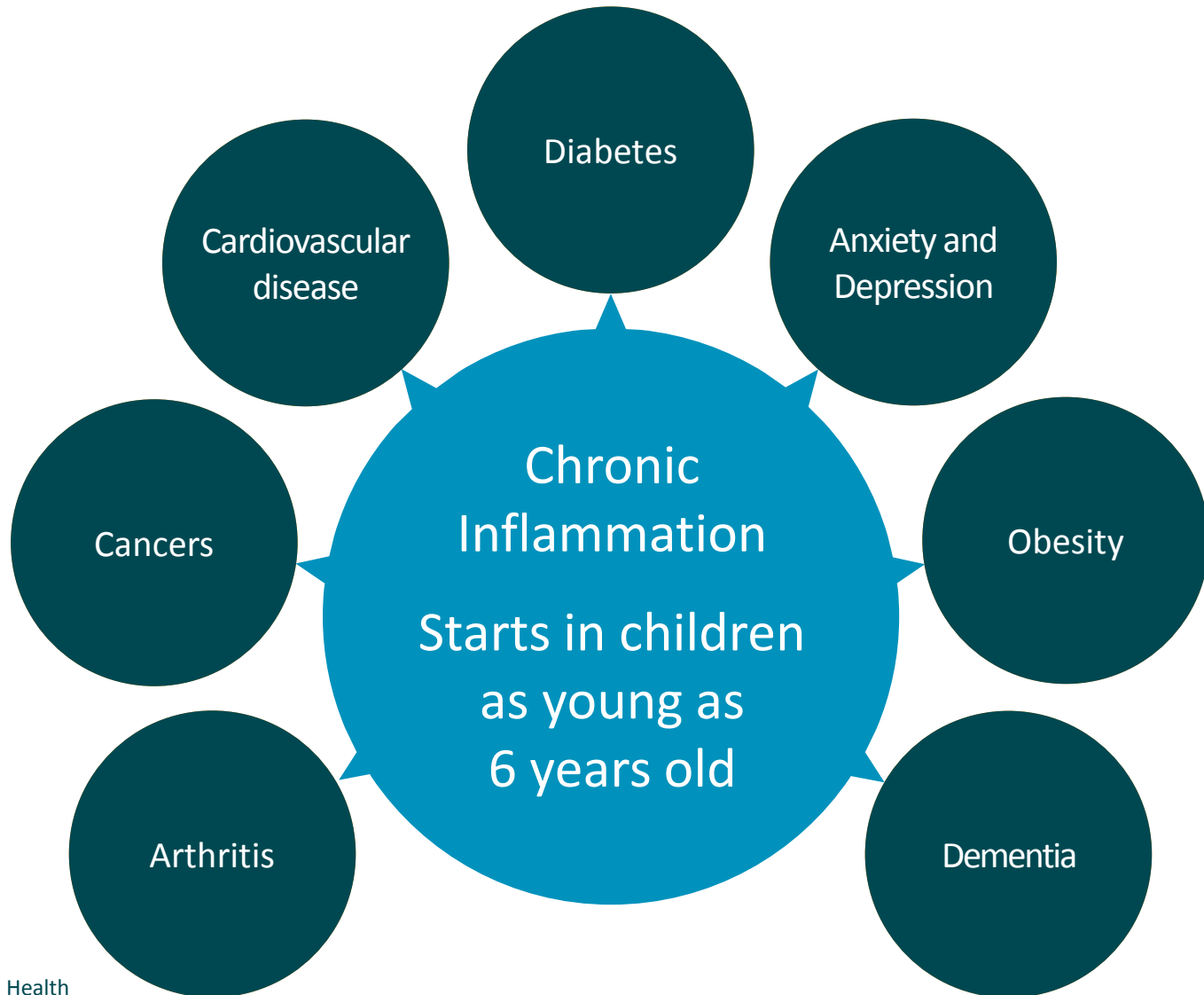
Stress
Hormones

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



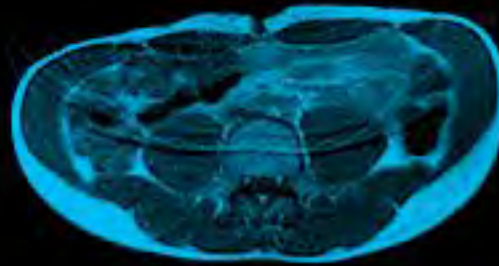
Inactivity: trilogy of inflammation

1.
Increases
visceral fat



Reducing inflammation – fat

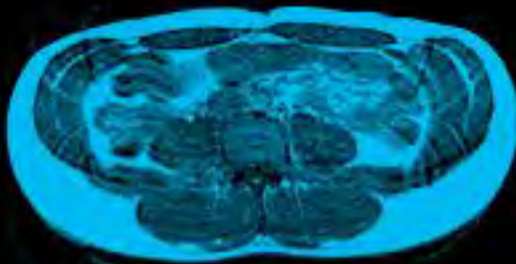
Variation in visceral fat content in men with the same waist circumference



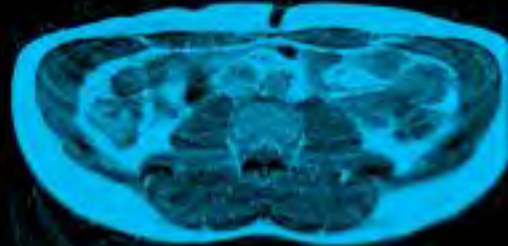
Visceral fat = 0.5 L



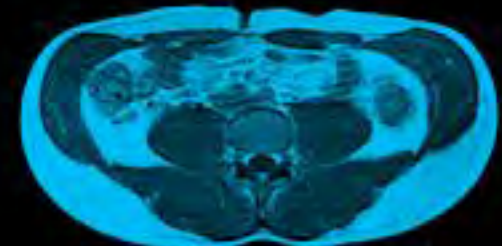
Visceral fat = 1.1 L



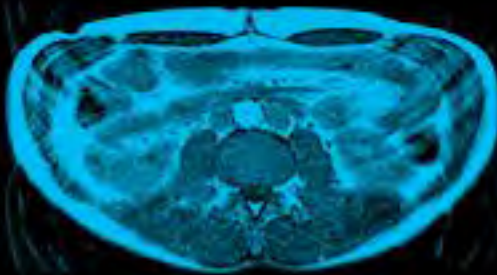
Visceral fat = 1.2 L



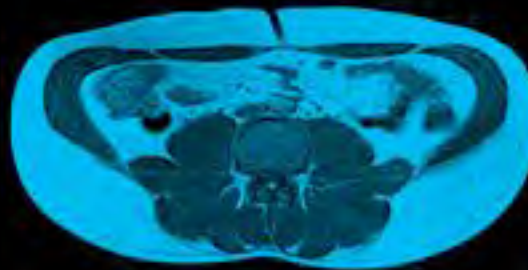
Visceral fat = 1.3 L



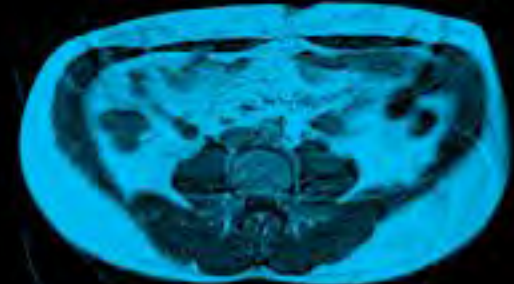
Visceral fat = 1.7 L



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
visceral fat

2.
Reduces anti-
inflammatories

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Damages
healthy cells



Inside a healthy cell

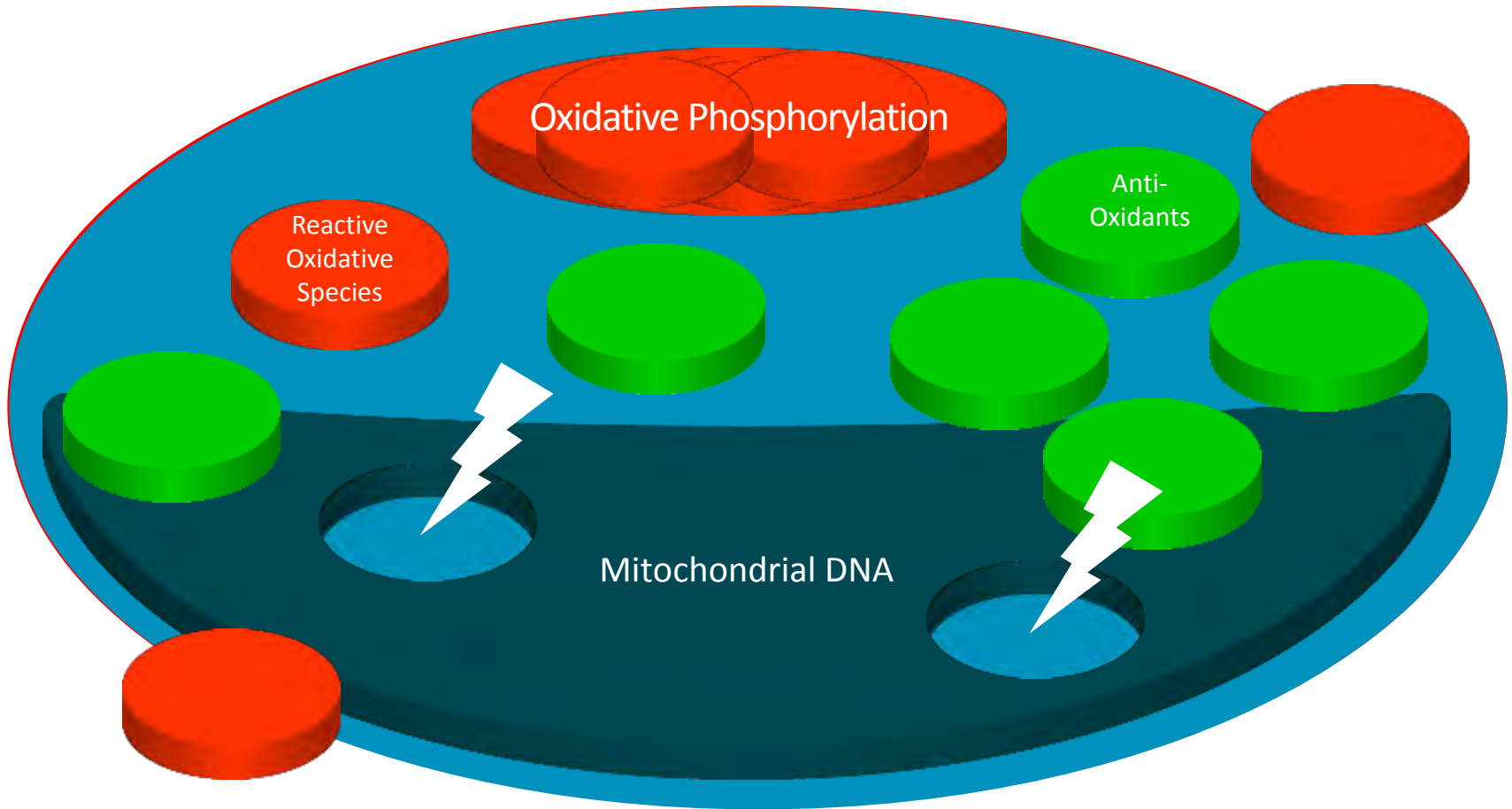
Chromosomes
keep dividing

Mitochondria,
healthy
and active.
Providing lots
of energy

Immune
system is
switched off
until needed



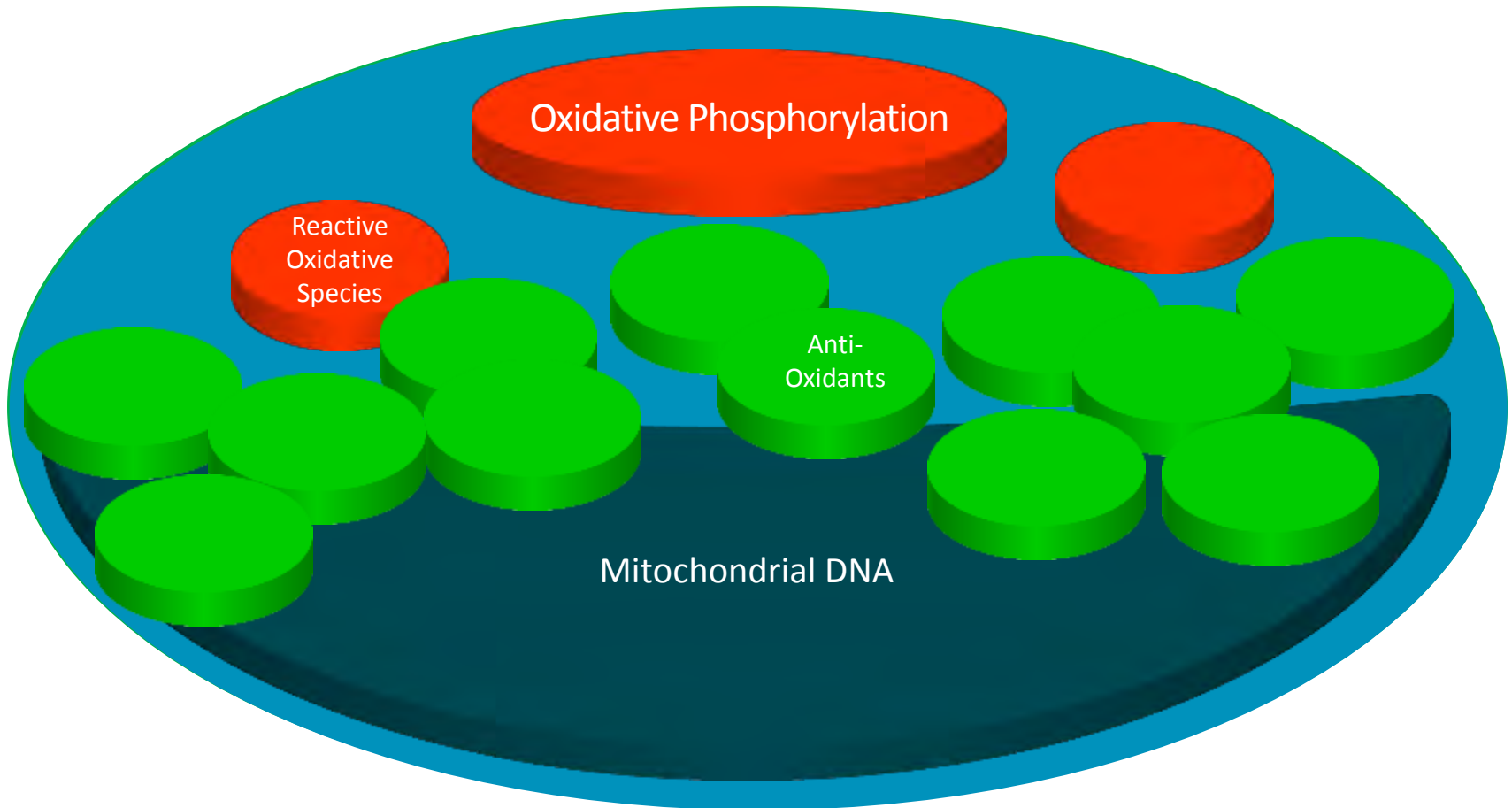
Sedentary, high fat diet and stress



Mitochondria



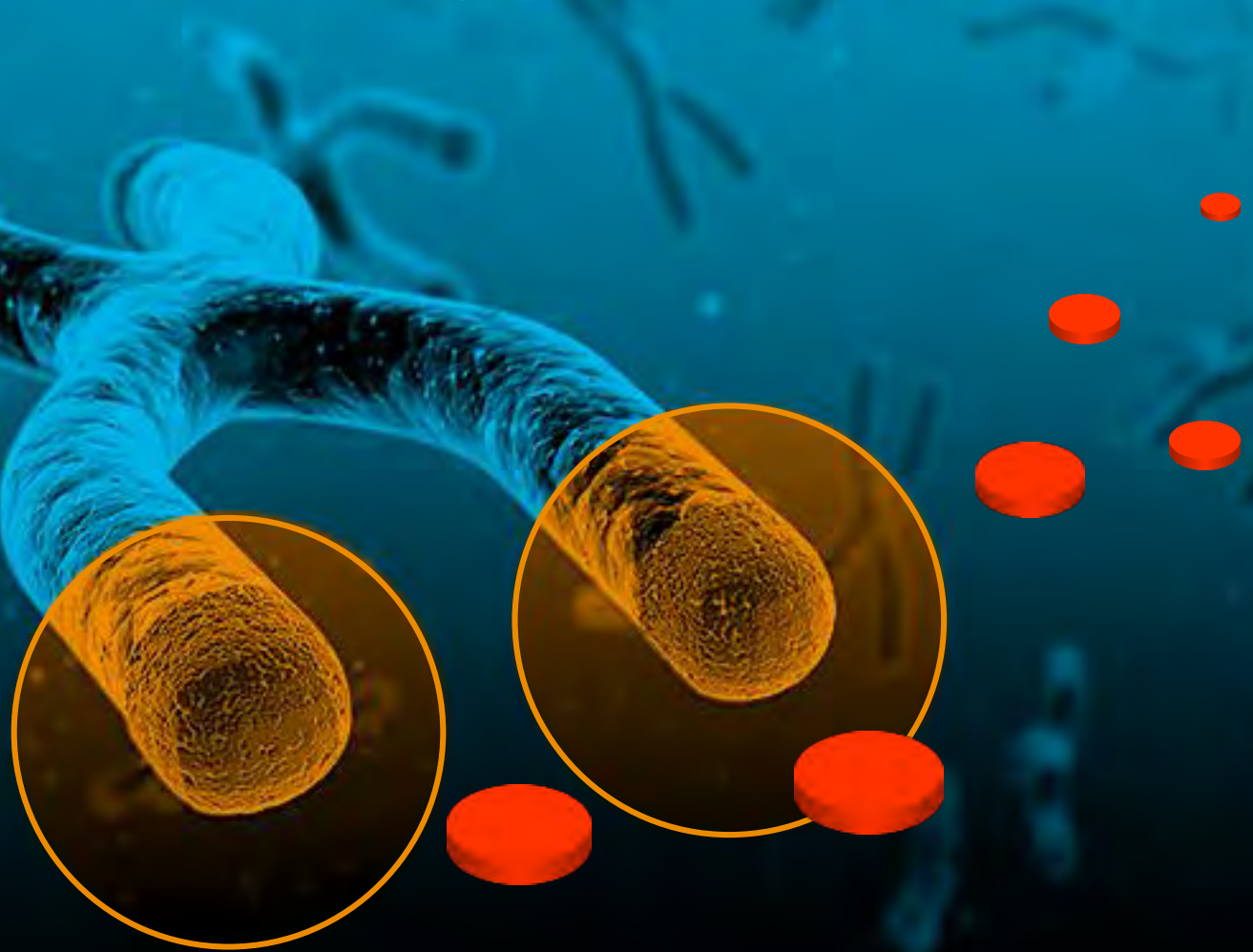
Physically active, low fat and not stressed



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



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

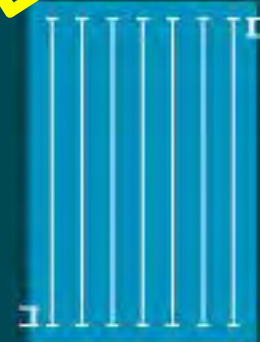
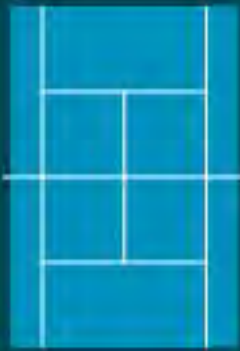
Being active

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





Beat the Street Northern Ireland Beat Box distribution. 34,000 people participated





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

DATA AND TECHNOLOGY IS AT THE HEART OF WHAT WE DO



The **physical activity**
challenge that works!



How to play
Beat the Street

Watch the video

best technology to improve health

- We use RFID technology to make our engagement platform inclusive and deliverable at scale
- Beat Boxes are part of Internet of Things and capture time and location data across a population
- Our web app allows registration data capture, in game mapping and gamification
- Social media is curated to allow players to connect
- Data is used to provide full analysis of behaviour change, demographics and activity patterns across a town



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

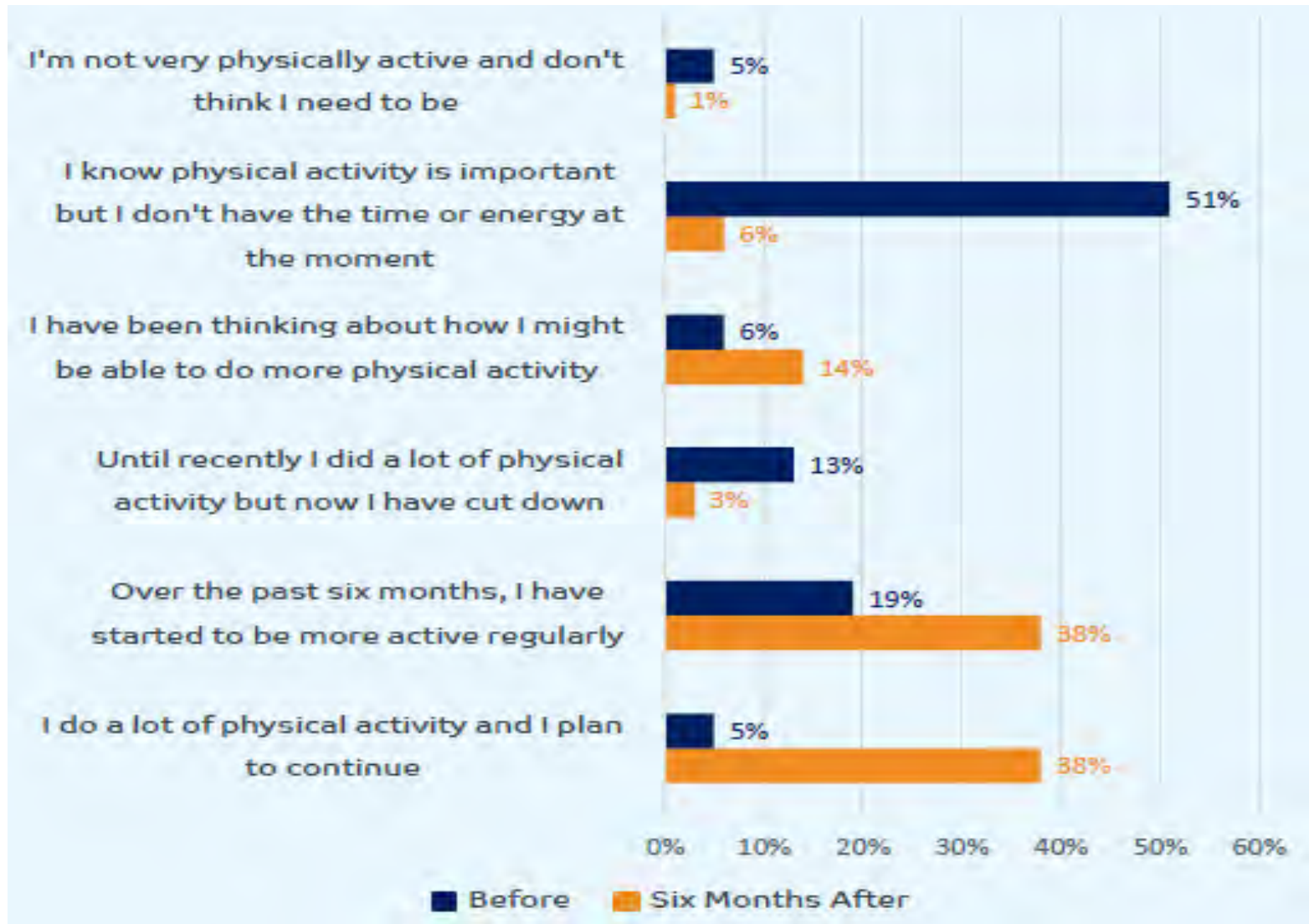
33%

reduction in
AIR POLLUTION
outside schools

Number of days people walked before, after and 6 months after Beat the Street Northern Ireland 2017



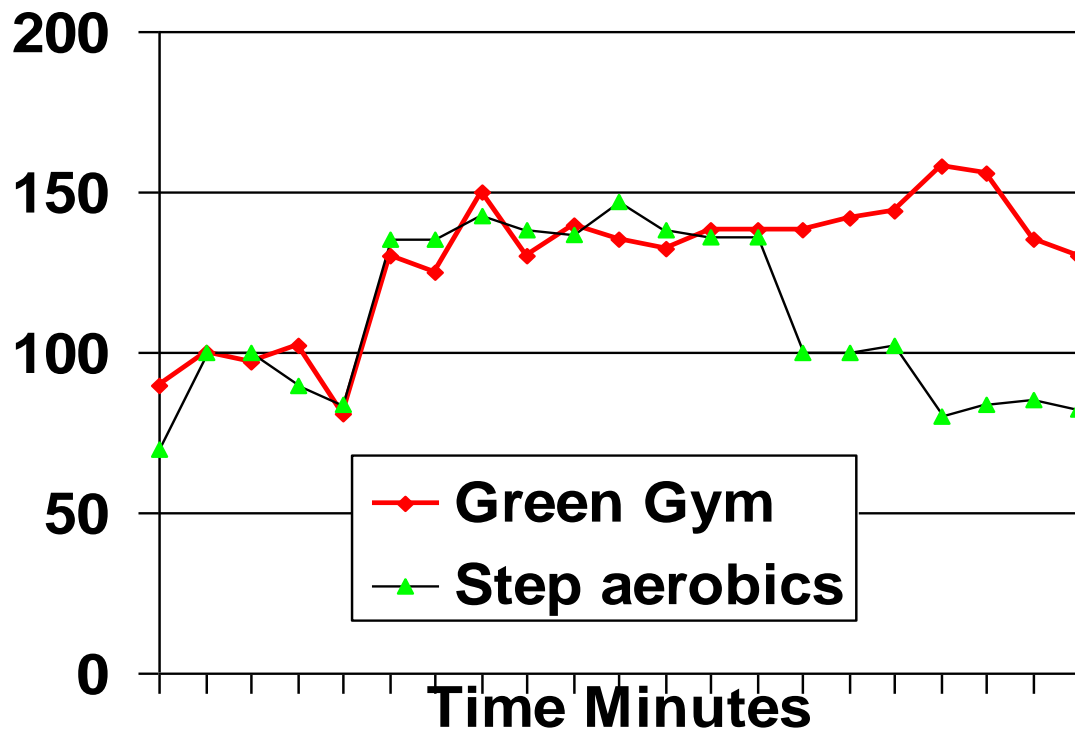
Stages of Change Northern Ireland 6 months after Beat the Street 2017





Green Gym Vs Aerobics

Heart Rate **Comparison of heart-rate response during two sessions of activity**



V Reynolds 1999
OCHRAD





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%)



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

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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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