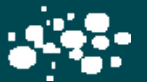
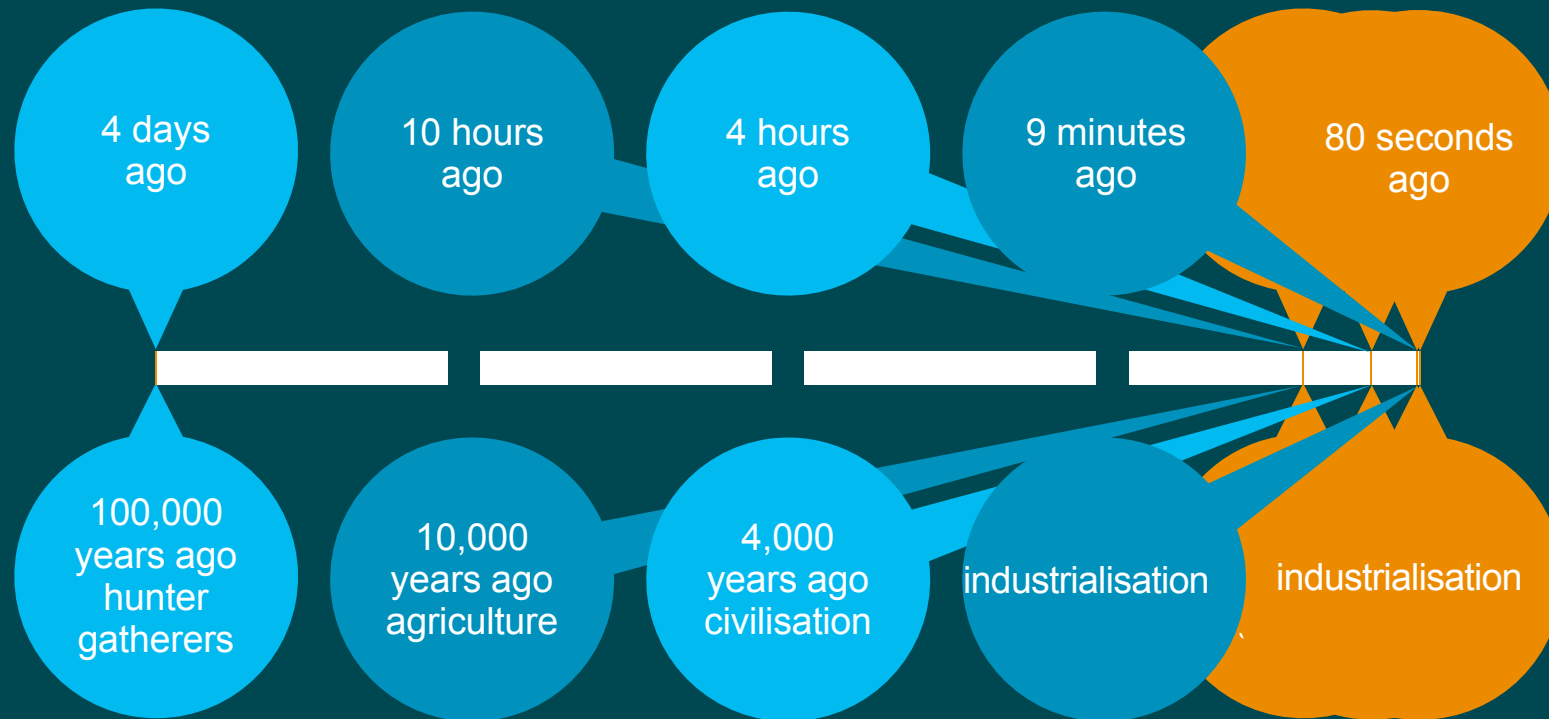


APSE Annual
Seminar
2017: Session 3
Beyond Austerity

Dr William Bird MRCGP MBE
6th September 2017



If we take an hour to equal 1,000 years,
then four days is 100,000 years – the time
from the origin of mankind to today



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

People



Sociable

Place



Green

Purpose



Valued



How does nature benefit health?



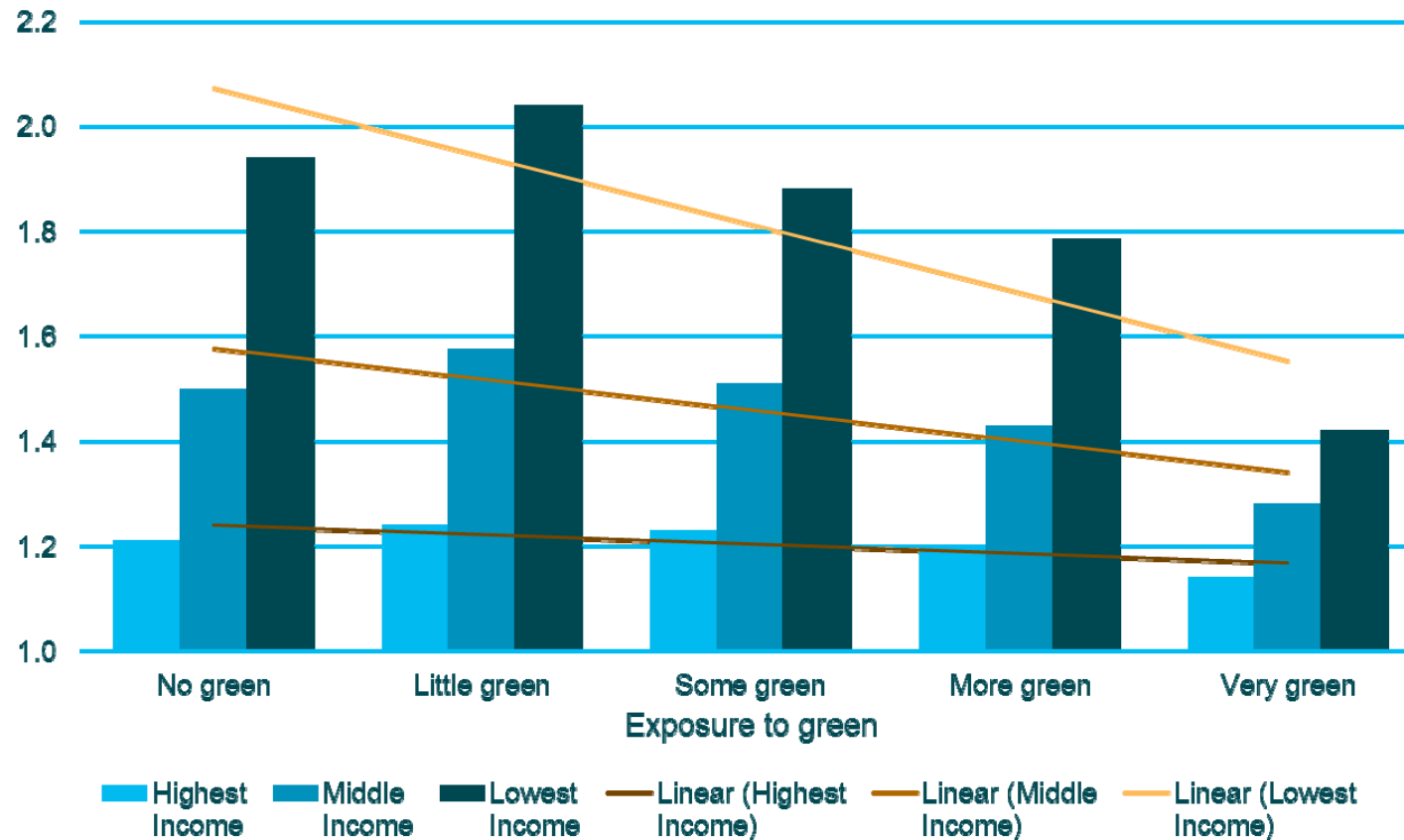
- (a) Less stressed,
- (b) More exercise,
- (c) More positive social interactions and
- (d) Better quality environment for health promotion (i.e. has lower levels of air pollution)

Hartig T., Mitchell R., De Vries S. and Frumkin H. (2014) Nature and health. Annual Review of Public Health 35, 207–228.



Green Space reduces Health Inequalities

Incidence Rate Ratio



Mitchell, R. and Popham, F. (2008) Effect of exposure to natural environment on health inequalities: an observational population study. *The Lancet* 372(9650):pp. 1655-1660.



People



Loneliness

Place



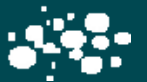
Hostile

Purpose



Rejection

Fear and Chronic Stress



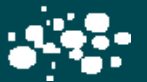


Chronic Stress

Anxiety and depression

Physical Inactivity

Poor diet



Chronic Stress

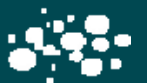
Stress
Hormones

Physical
Inactivity

And other
poor health
behaviours

Chronic Inflammation

Mitochondria as a key component of the stress response. Manoli et al. Trends in Endocrinology and Metabolism Vol 18 No 5 2007



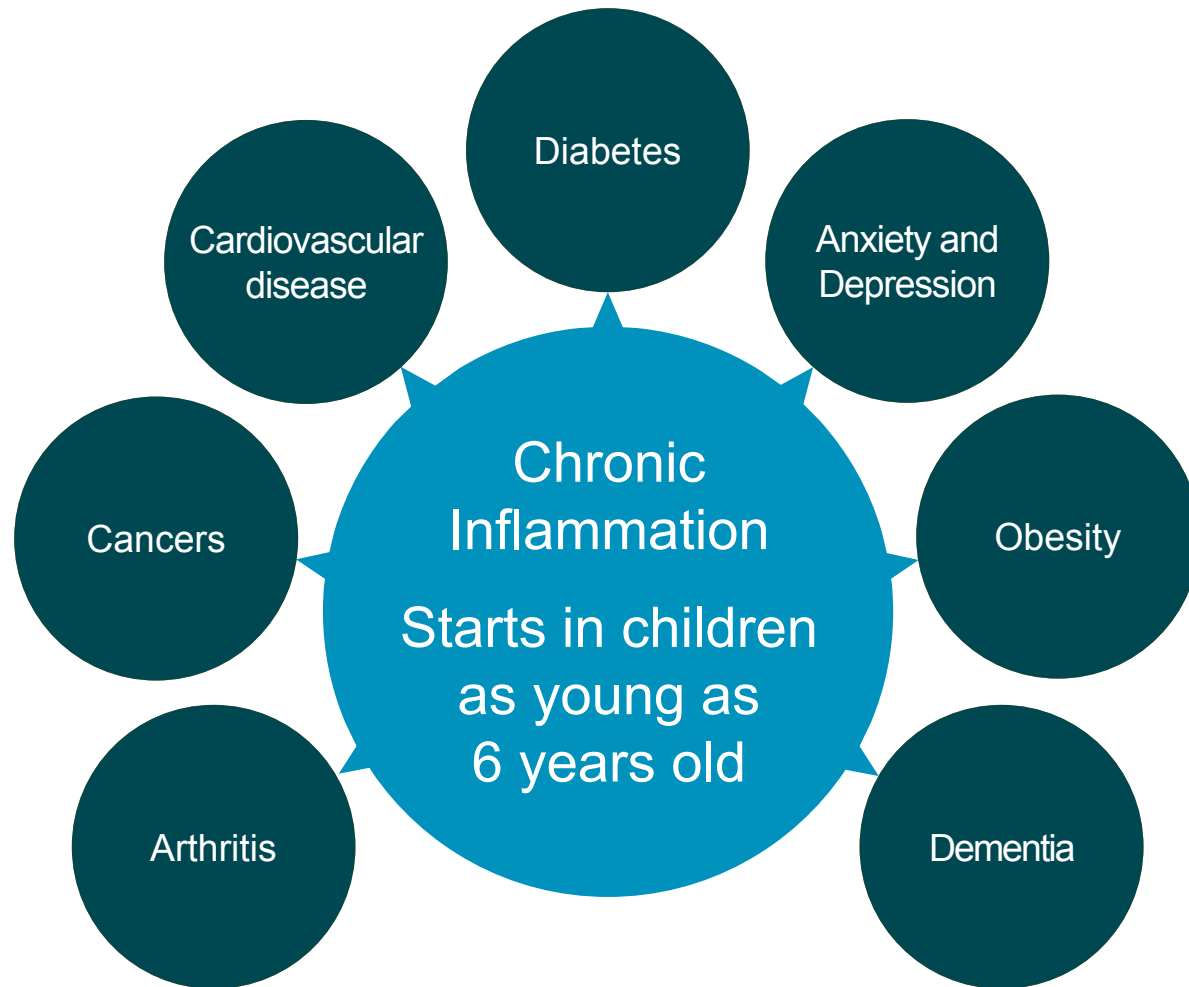


This causes inflammation

Immune system
is constantly
switched on



Inflammation: 'the cause of causes'



Inactivity causes inflammation



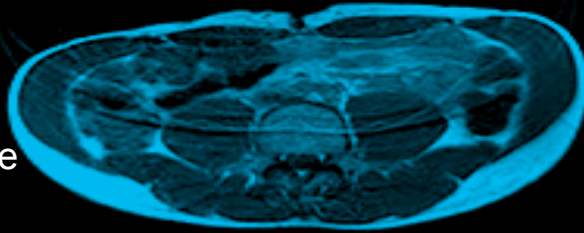
Inactivity: trilogy of inflammation

1.
Increases
visceral fat

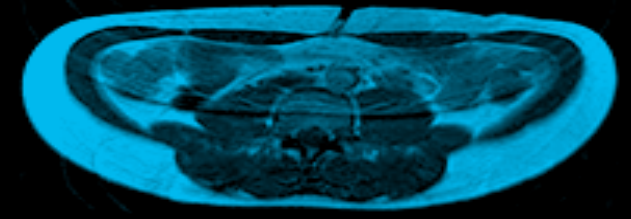


Reducing inflammation – fat

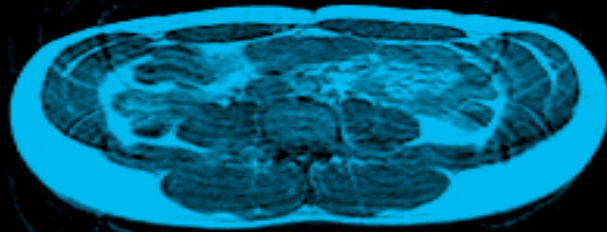
Variation in visceral fat content in men with the same waist circumference



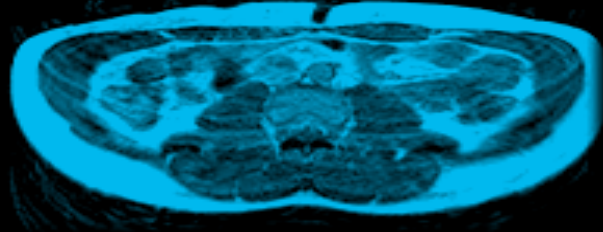
Visceral fat = 0.5 L



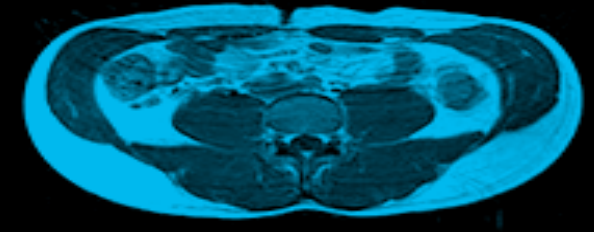
Visceral fat = 1.1 L



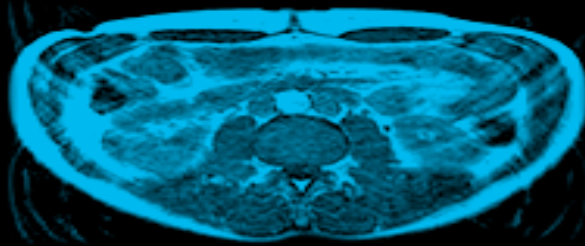
Visceral fat = 1.2 L



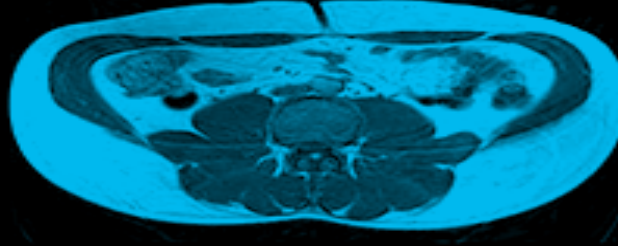
Visceral fat = 1.3 L



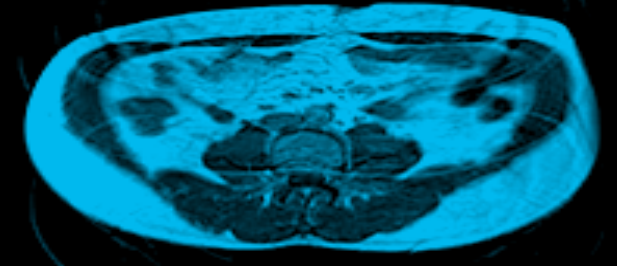
Visceral fat = 1.7 L



Visceral fat = 1.8 L



Visceral fat = 4.2 L

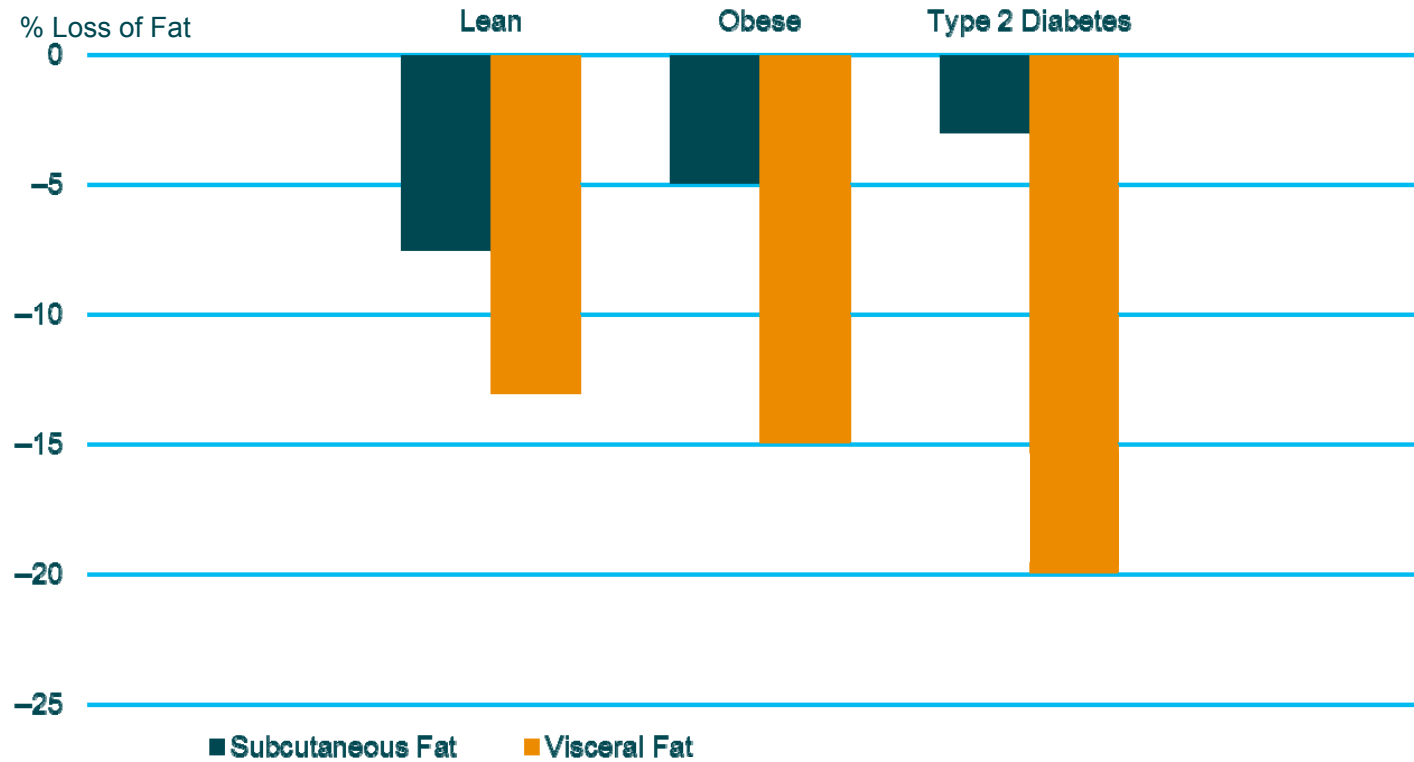


Visceral fat = 4.3 L



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



Reducing inflammation – muscles

A photograph of two muscular arms shaking hands, symbolizing strength and health. The arms are positioned in the center of the frame, with the hands clasped together. The background is plain white.

Contracting muscles release powerful anti-inflammatories called Myokines

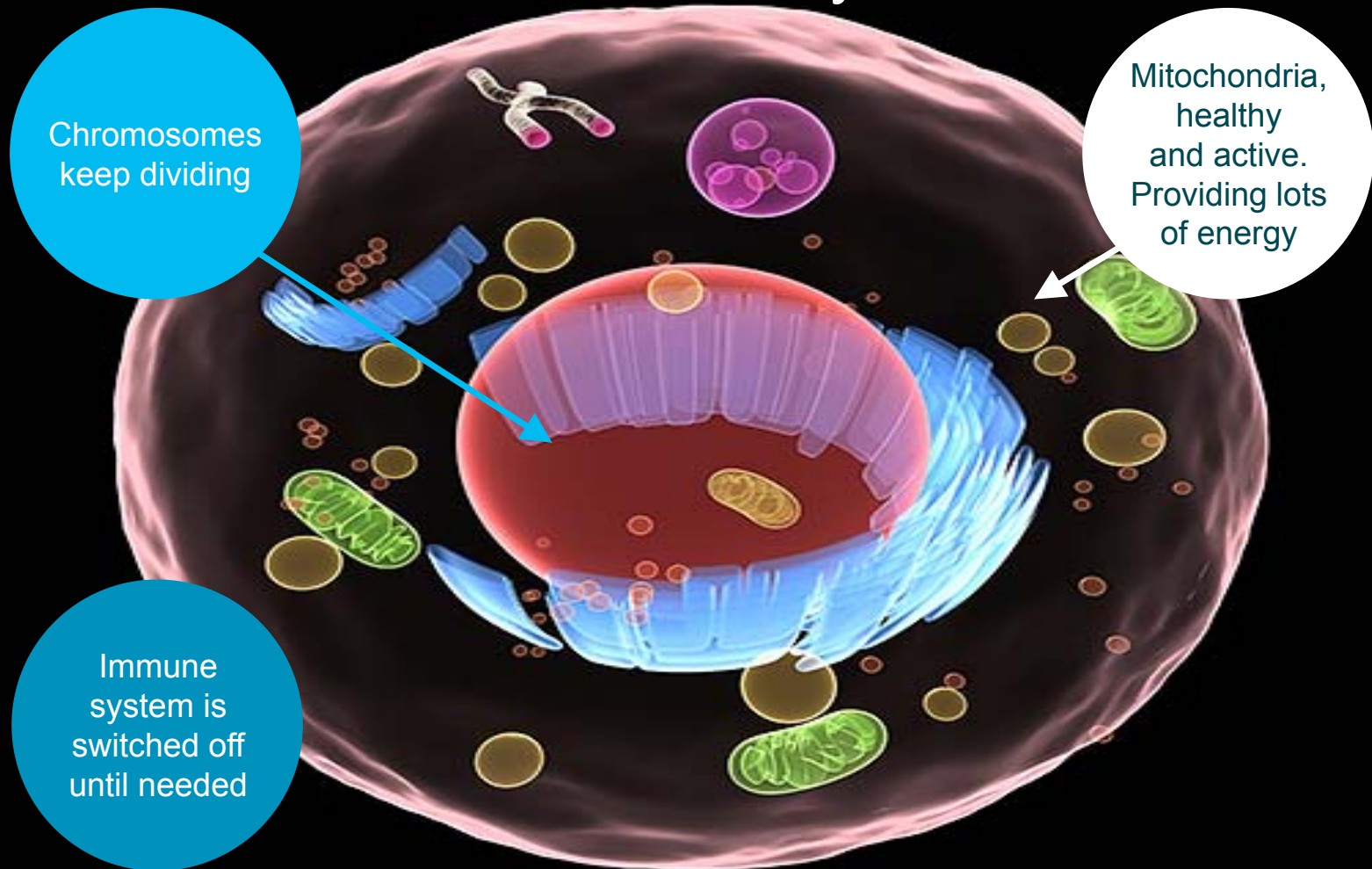
These Myokines Circulate around the whole body calming every cell



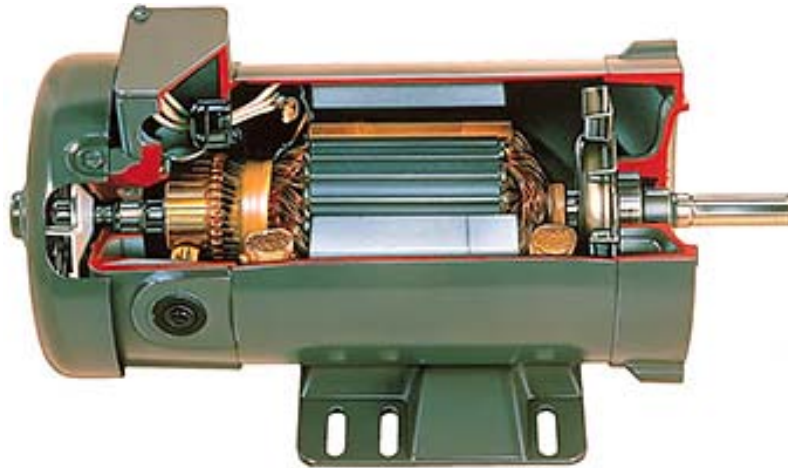
Inactivity: trilogy of inflammation



Inside a healthy cell



‘The mitochondria is like a dynamo,
it has to keep moving ...

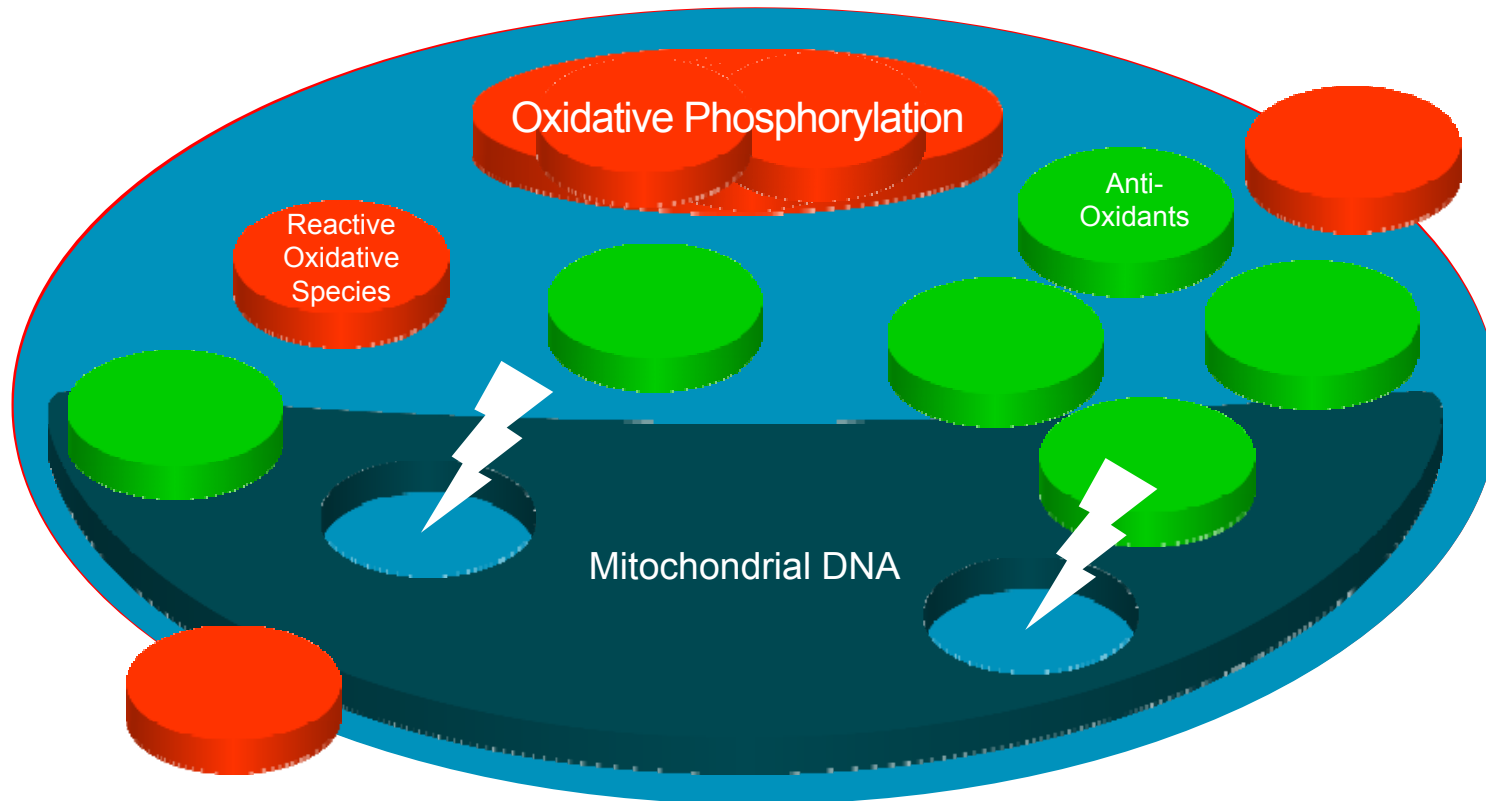


... and in the body they
weigh as much as a car battery’

Prof Mike Murphy,
MRC Mitochondrial Biology Unit Cambridge University



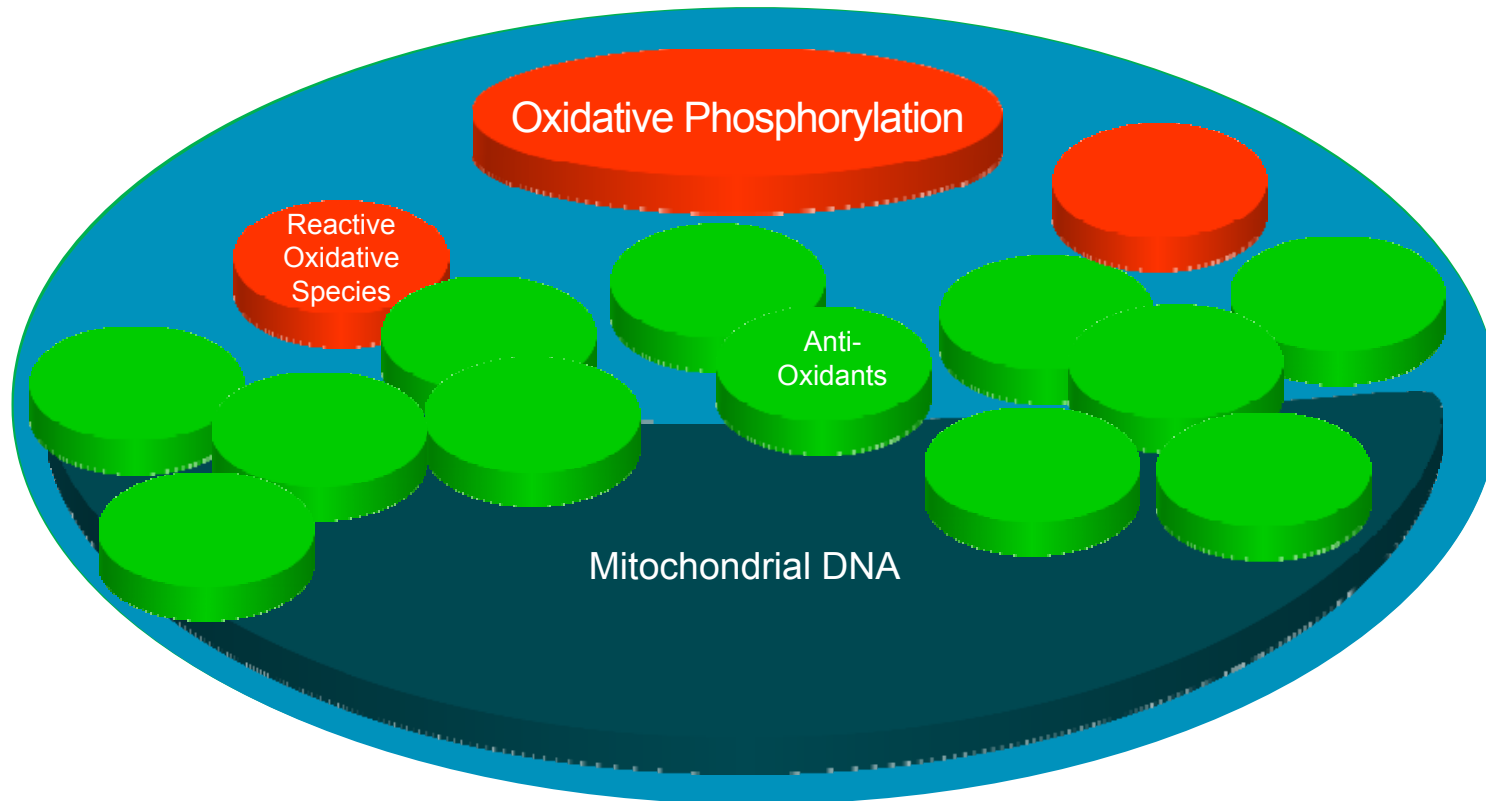
Sedentary, high fat diet and stress



Mitochondria



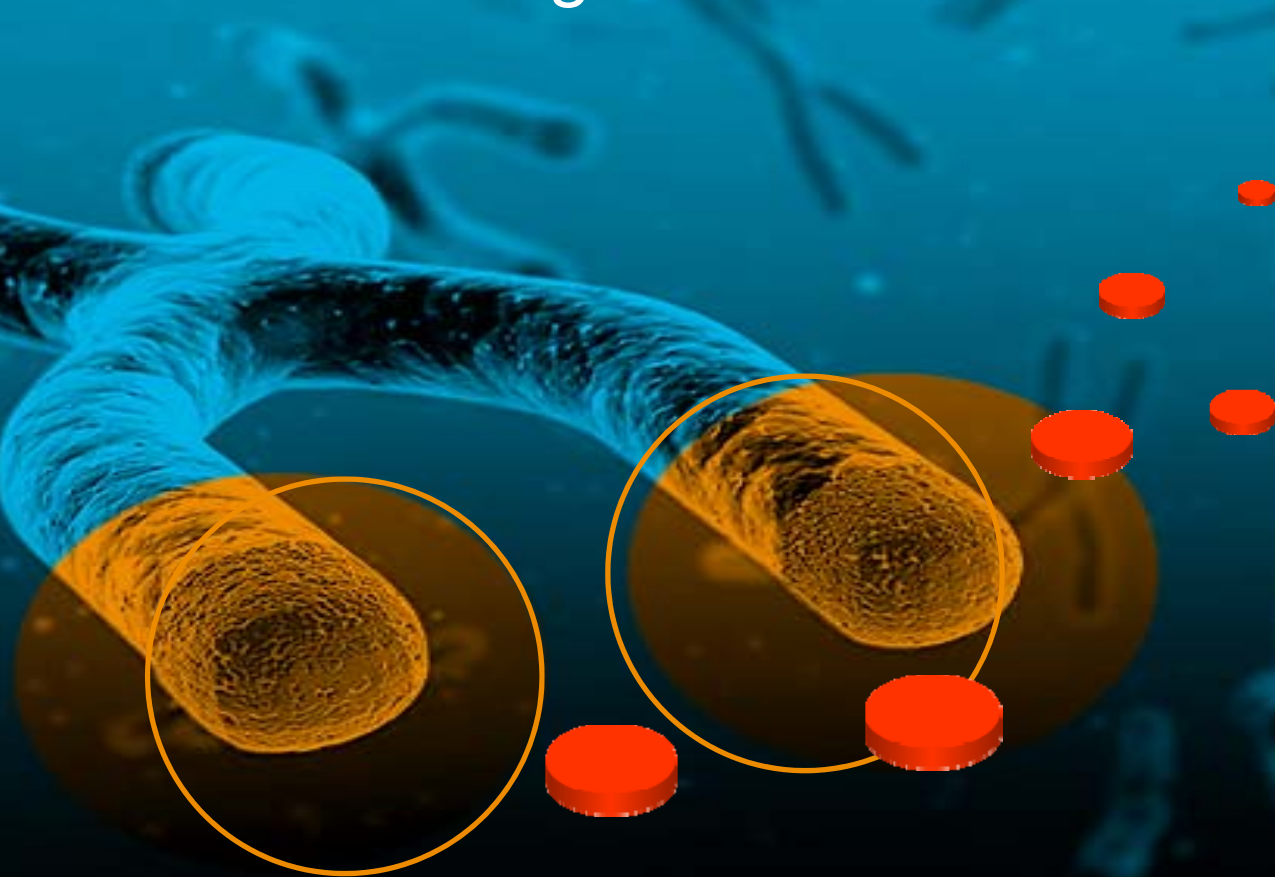
Physically active, low fat and not stressed



Mitochondria



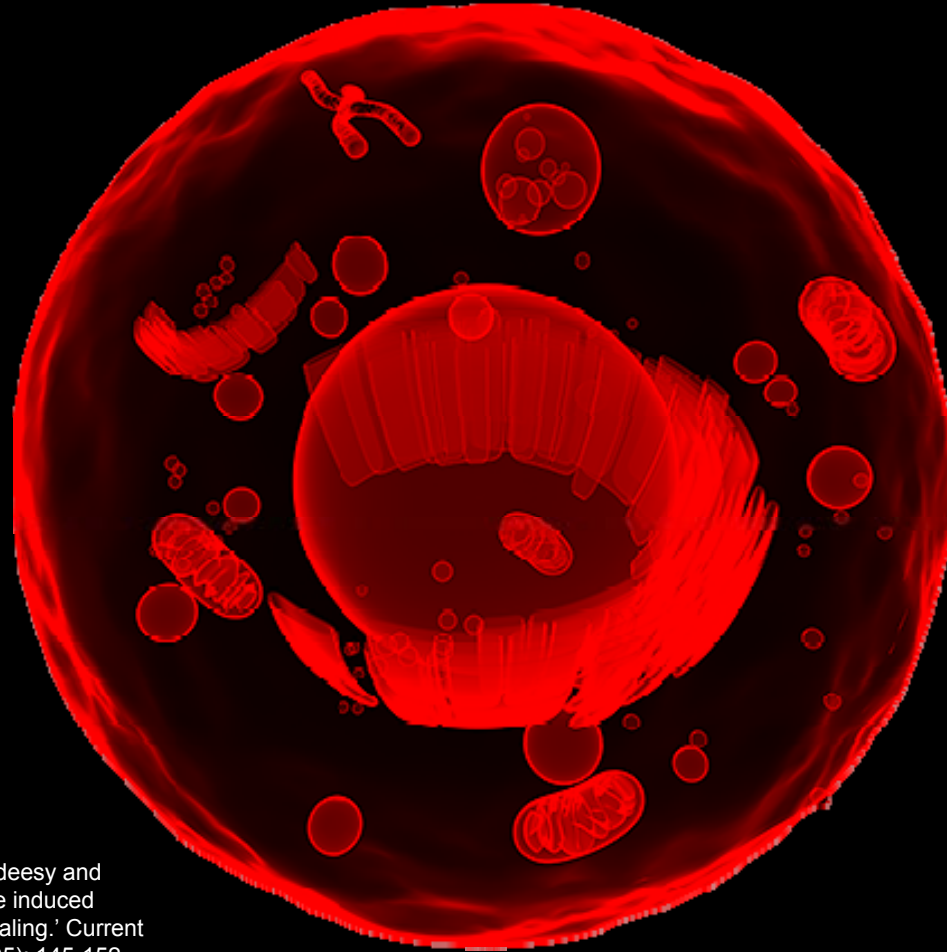
Telomeres get shorter



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



Senescence: the end of the cell



Hezel, Aram F., Nabeel Bardeesy and Richard S. Maser. 'Telomere induced senescence: end game signaling.' *Current molecular medicine* 5.2 (2005): 145-152.



People



Loneliness

Place



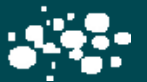
Hostile

Purpose



Rejection

Fear and Chronic Stress



Chronic Stress

Stress
Hormones

Physical
Inactivity

And other
poor health
behaviours

leads to inflammation
Mitochondrial damage and telomere shortening

Depression

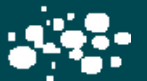
Cancers

Cardiovascular

Diabetes

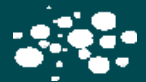
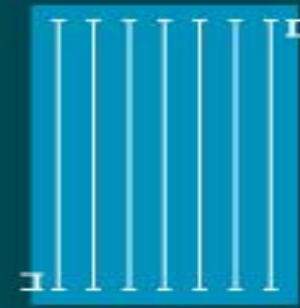
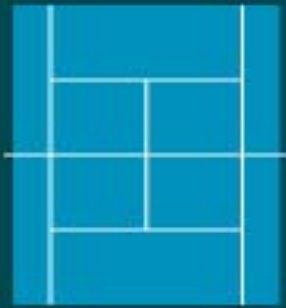
Dementia

Mitochondria as a key component of the stress response. Manoli et al. Trends in Endocrinology and Metabolism Vol 18 No 5 2007

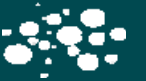




The focus has moved physical activity
from a venue based strategy ...



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



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



Delivering an active community



Recruit via

Deliver via



A man with a beard and short hair is sitting at a table, looking thoughtful with his hand to his chin. He is holding a dark glass bottle of beer in his left hand. In front of him is a bowl of food, possibly a pizza or a sandwich. The entire scene is bathed in a blue light. A white circular graphic is overlaid on the image, containing the text "Meet Bob".

Meet
Bob



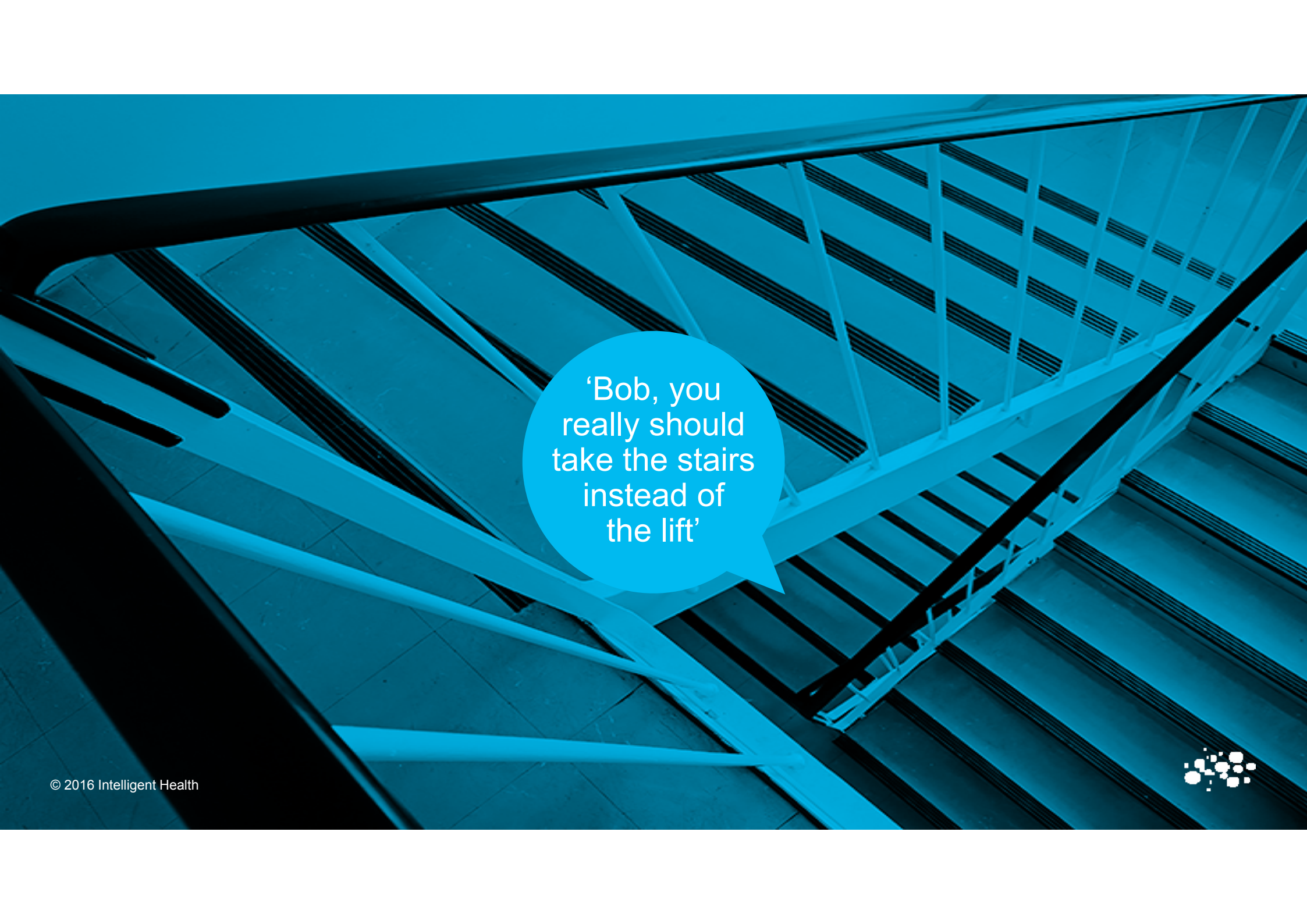


Let's get
Bob
active



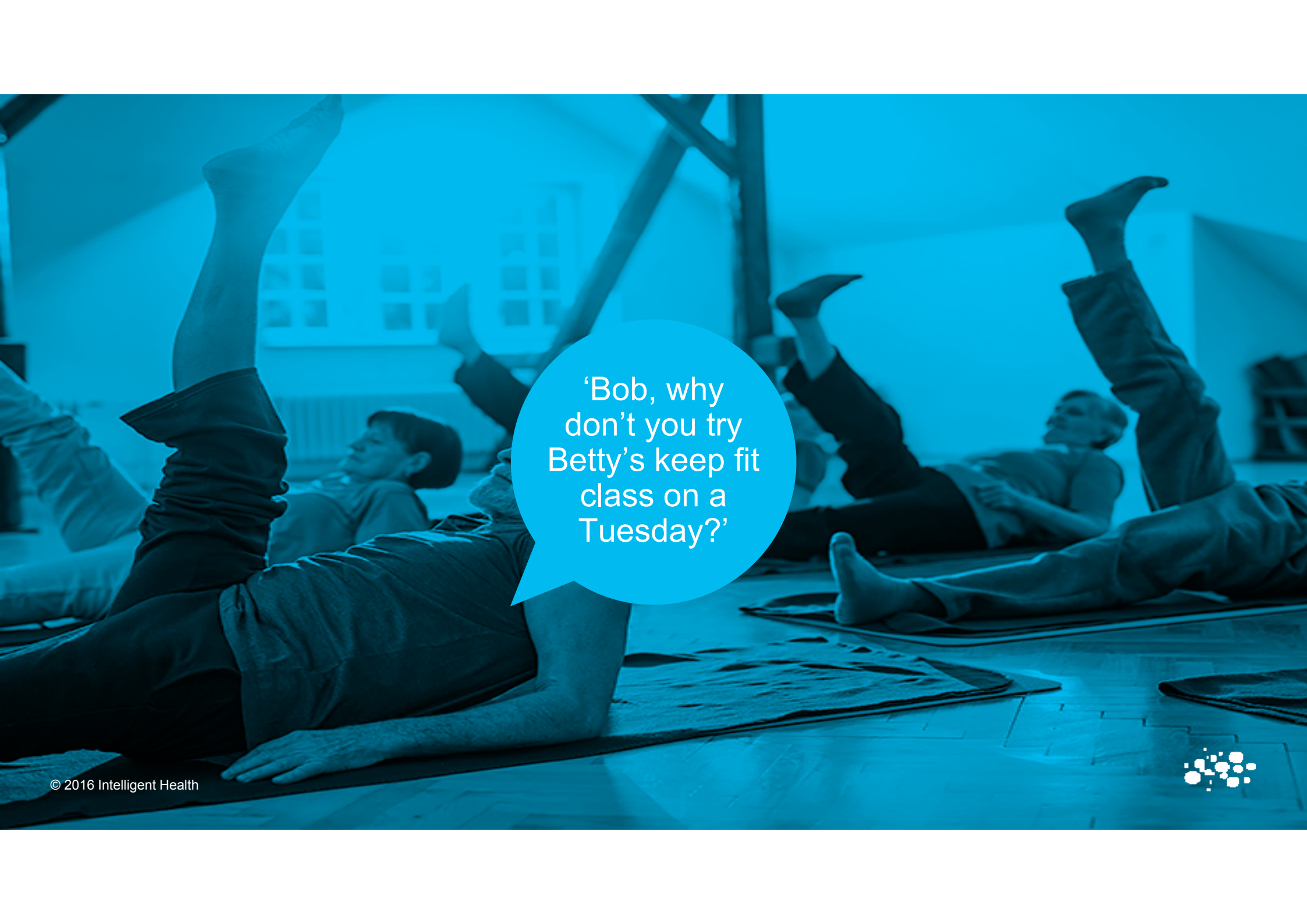
'Bob, why
don't you
get off the
bus a stop
early?'






'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 photograph of a person riding a bicycle in traffic, viewed from behind. The scene is overlaid with a blue tint. A white speech bubble is positioned in the center, containing the text 'Bob, have you tried cycling to the shops?'. The background shows the rear of a car on the left and the front of a car on the right, both slightly out of focus.


'Bob, have
you tried
cycling to
the shops?'






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



A large crowd of Liverpool football fans celebrating, with a white circle containing text overlaid on the center. The fans are holding up various flags and banners, including the Liverpool crest and the club's motto 'YOU'LL NEVER WALK ALONE'. The scene is filled with energy and excitement, with many fans wearing red and white checkered scarves. The overall atmosphere is one of intense support and joy for the team.

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



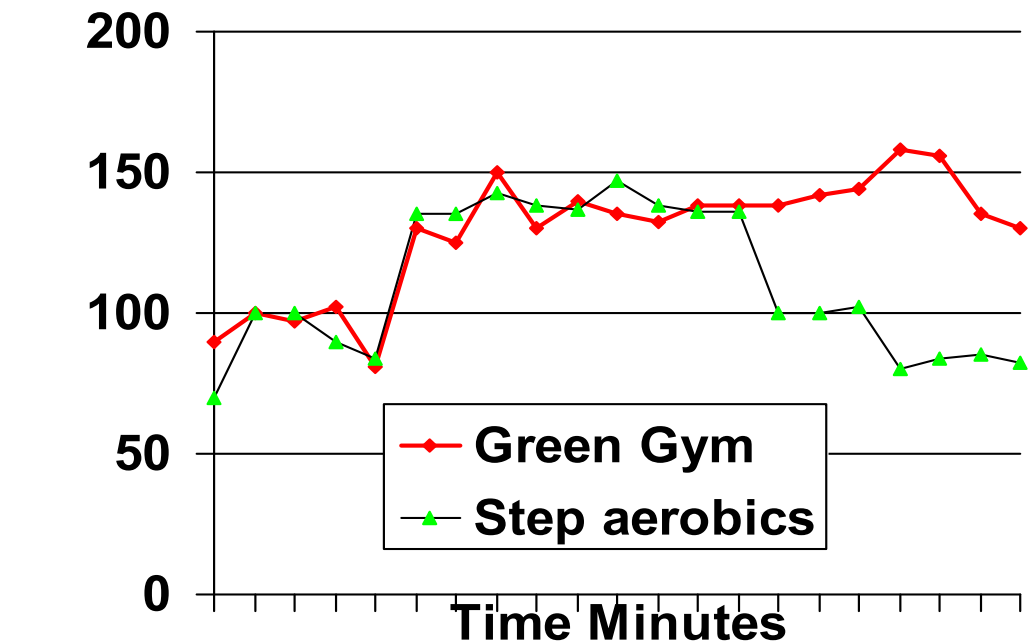
Green Gym supports the 5 ways to well being

- Connect**
with the people around you
- Be active**
discover an activity you enjoy
- Take notice**
be aware of the world around you
- Keep learning**
try something new or rediscover an old interest
- Give**
do something good for the community



Green Gym Vs Aerobics

Comparison of heart-rate response during two sessions of activity



V Reynolds 1999
OCHRAD



To make a step change in activity levels we need to be bold

Let's remove boundaries and turn a whole town into a playground!



Step change across a community





Community 'own' the game





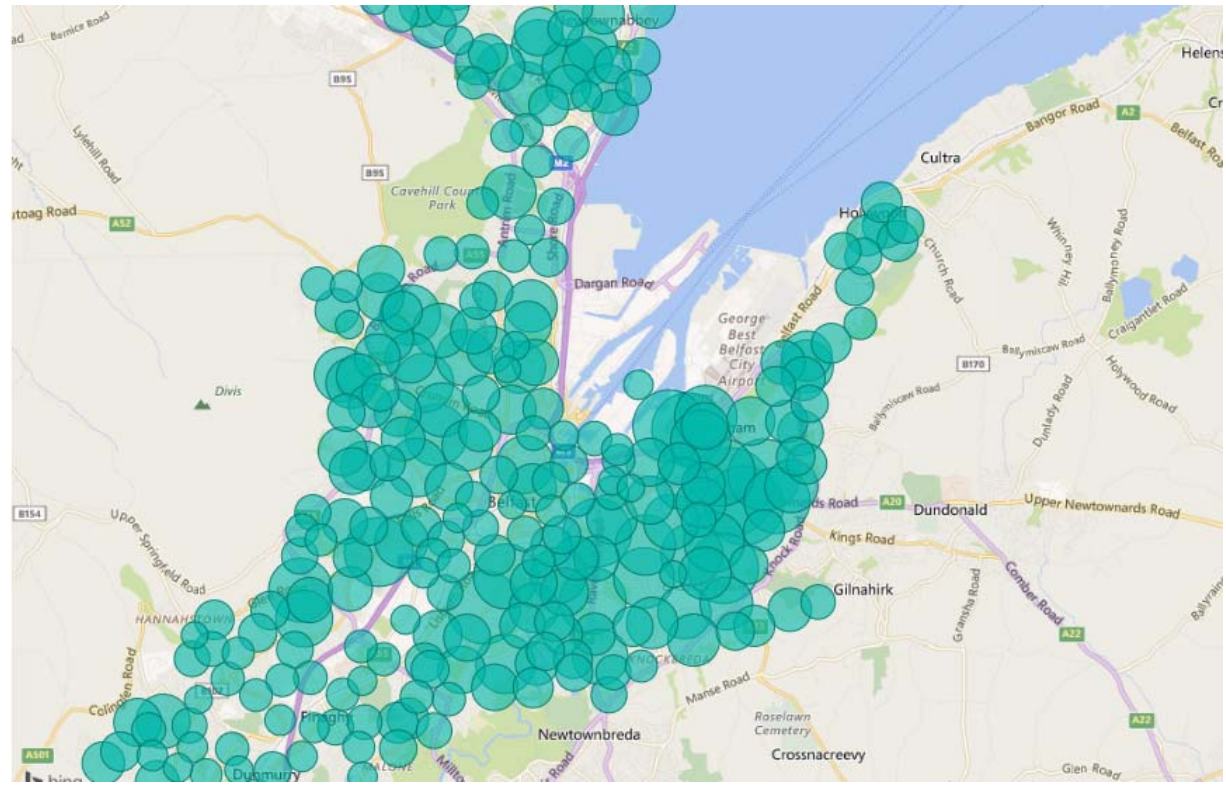
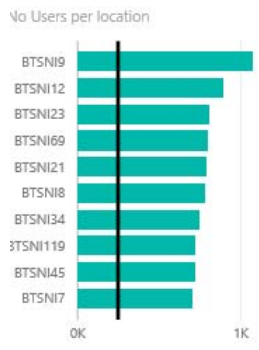
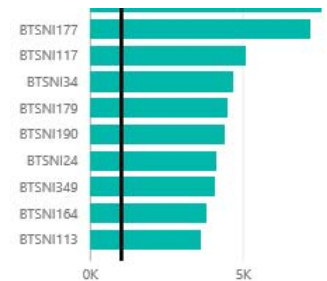
Community Champions bring their community together



Handsworth Library Community Sports Day



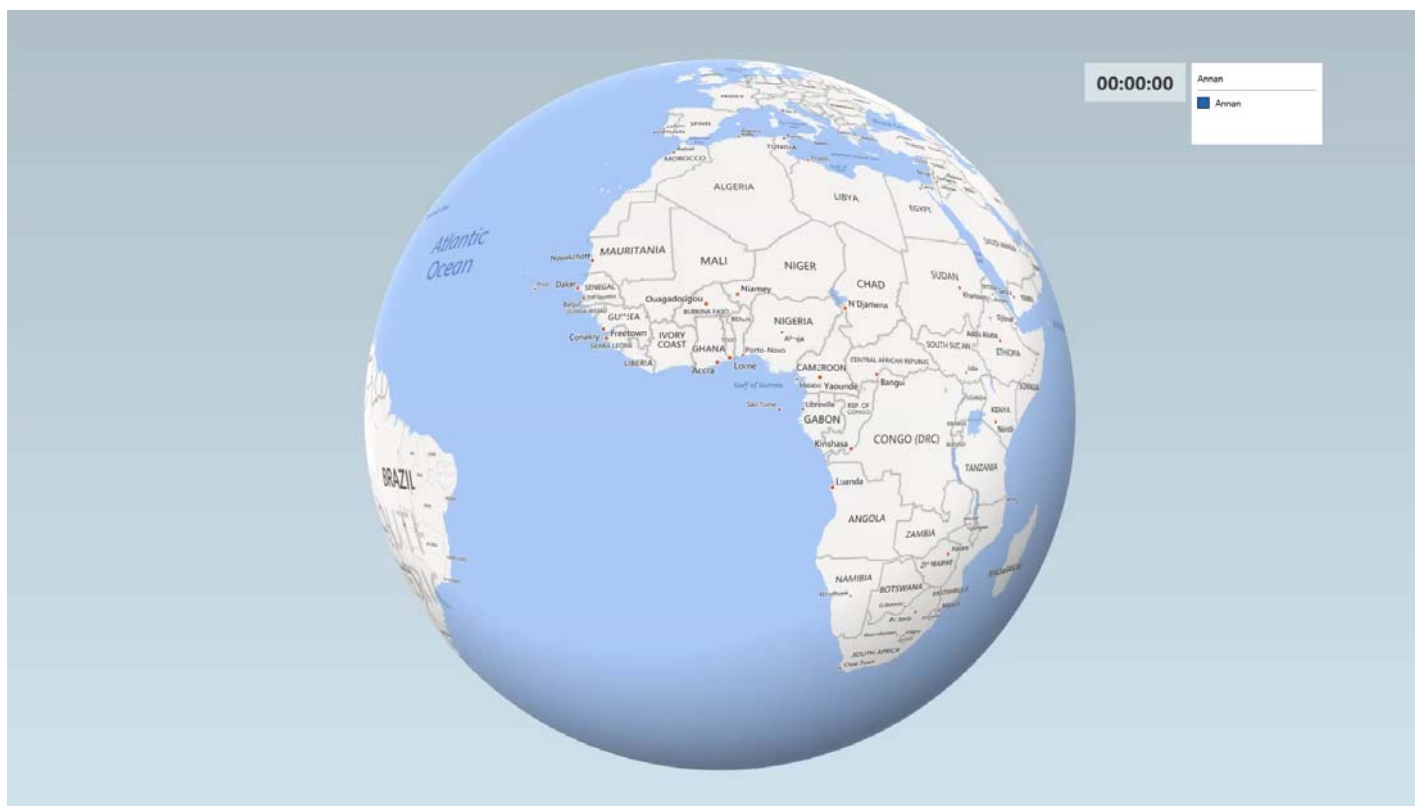
430 Beat Boxes across a population of 550,000 38,000 players





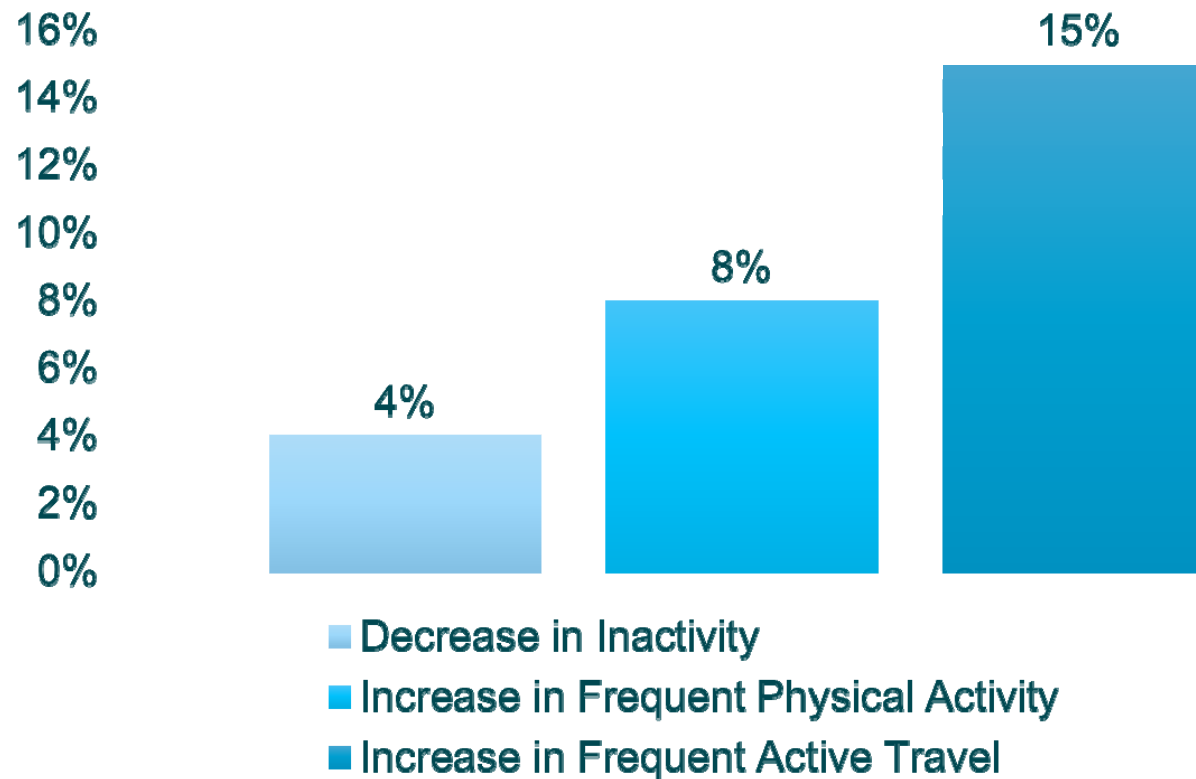
Exploring the local area (66%)
Getting fit (54%)
Having fun (54%)
Spending time with friends or
family (53%)
and feeling more healthy (52%)
Winning Prizes (13%)

A day in the life of ...Annan Beat the Street

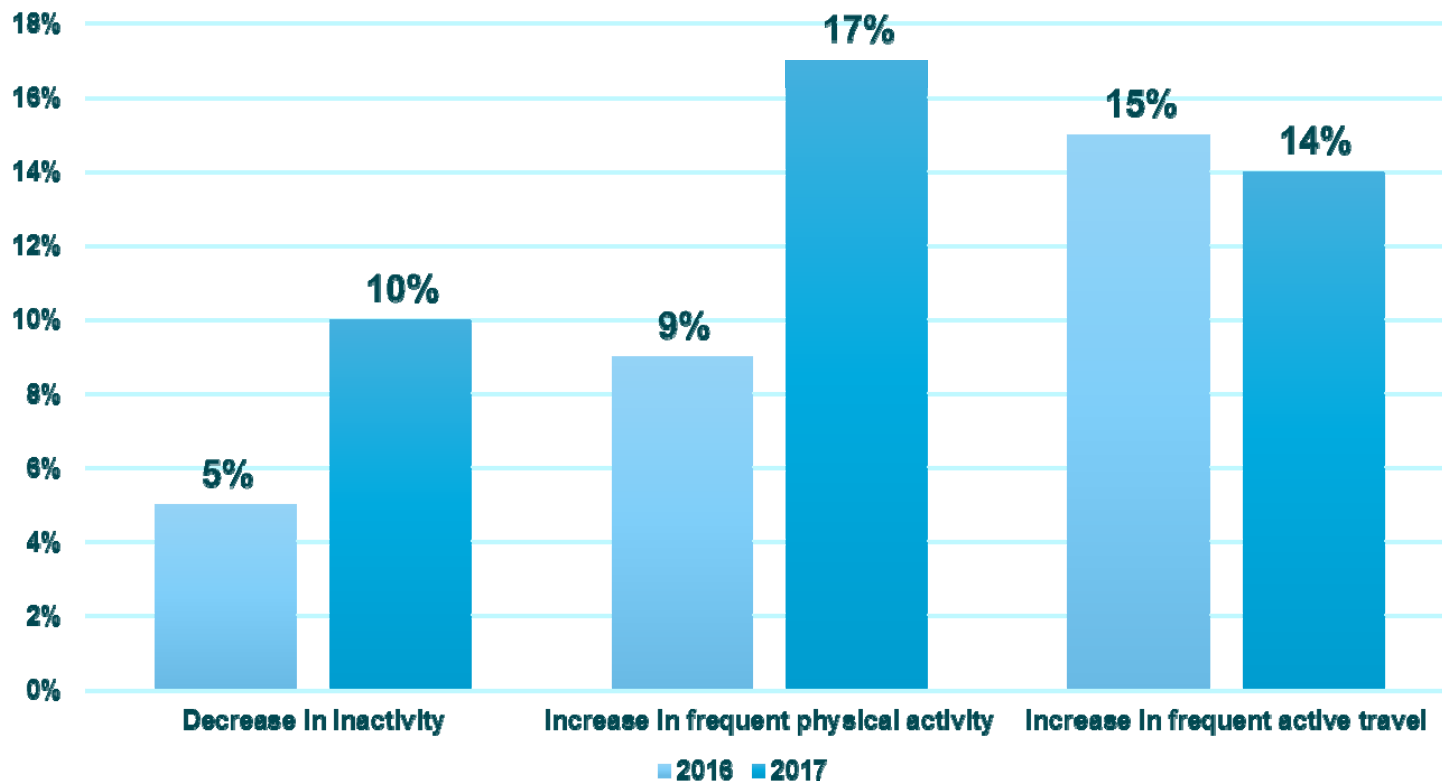


Beat the Street in 2016 – 6 Months

- 18 Interventions delivered across the UK



Beat the Street in 2017 – Post-Game (phases one and two, N = 5)



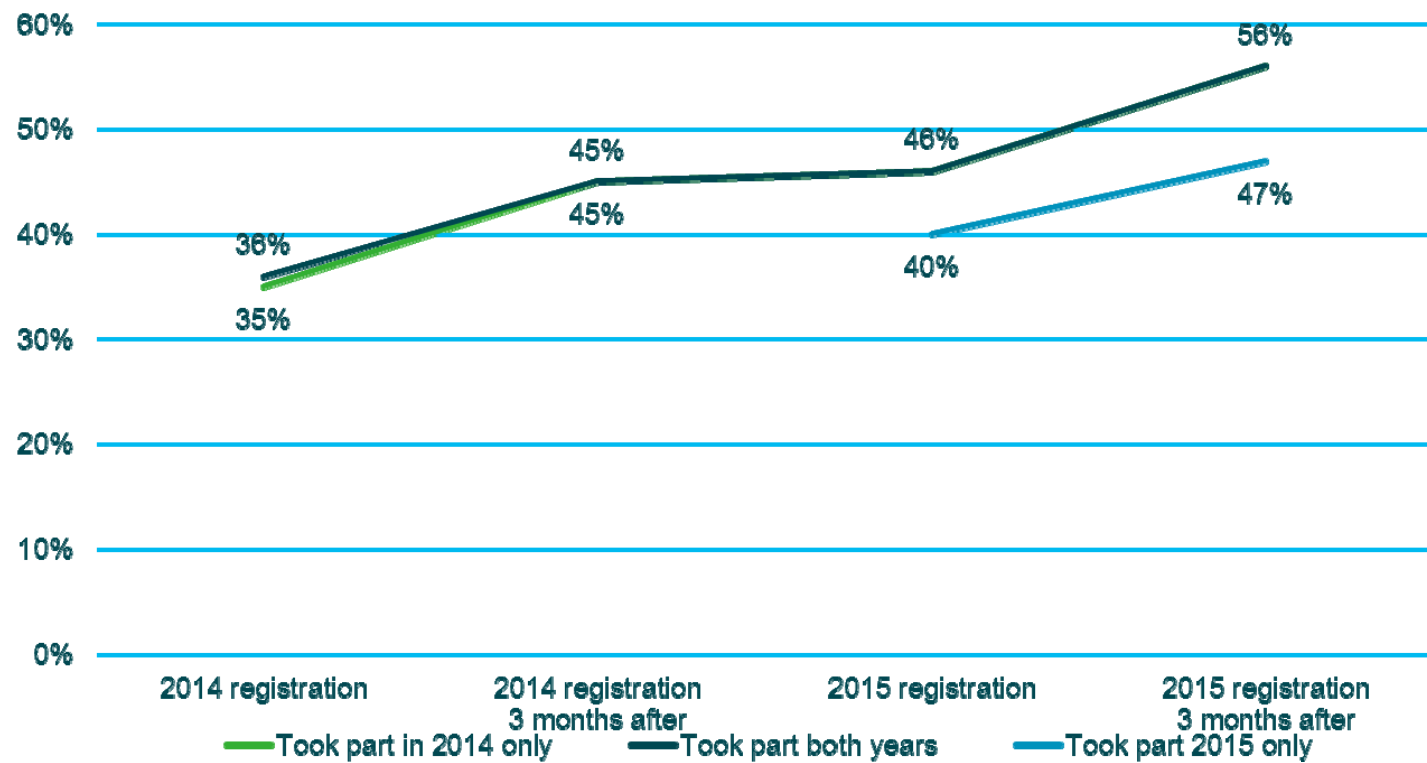
Data Collection in 2017

Project	Live Date	Report/Data Available	Standard Evaluation	Bespoke Evaluation
Phase One				
Milton Keynes	01/02/17 to 22/03/17	June	Physical Activity (Scot-PASQ) Old active travel table	Redways usage and improvements
Sandwell	18/02/17 to 07/04/17	June	Physical Activity (Scot-PASQ) New active travel measures Stages of change	Short-form WEMWBS
Phase Two				
Wolverhampton	15/03/17 to 03/05/17	July	Physical Activity (IH BHF) Stages of change	IPAQ -Qualitative Insight Research
Durham	29/03/17 to 17/05/17	July	Physical Activity (BHF) Old active travel table	Types of activity Barriers to Activity
Phase Three				
North Lanarkshire	03/05/17 to 21/06/17	August	Physical Activity (Scot-PASQ) New active travel measures	Social Cohesion and Mental Wellbeing
Rhondda Cynon Taff	17/05/17 to 05/07/17	August	Physical Activity (Scot-PASQ) New active travel measures	Social Cohesion and Mental Wellbeing
Nottingham	07/06/17 to 26/07/17	September	Physical Activity (Scot-PASQ) New active travel measures	In-depth Social Cohesion (People to People; People to Place)
East Sussex	07/06/17 to 26/07/17	September	Physical Activity (IH BHF) New active travel measures	IPAQ WEMWBS Children activity, attitudes and self-efficacy



Beat the Street Reading

Over two years in Reading there has been a 20% increase in the number of people reaching the Government recommended activity levels of 150 minutes a week



The Story

We are
designed to
be Hunter
Gatherers

- Disconnection from other people and nature causes chronic stress
- We eat badly and exercise less
- More visceral fat, inflammation and telomere shortening.
- Result: an epidemic of chronic disease e.g. diabetes , heart disease
- Being healthy is about friends, family, nature and feeling good about ourselves.



Thank you

Building Active Communities

William.bird@intelligenthealth.co.uk

[@Intelligent_HIt](https://twitter.com/Intelligent_HIt)

