UNIVERSITY OF CAMBRIDGE

MRC | Epidemiology Unit

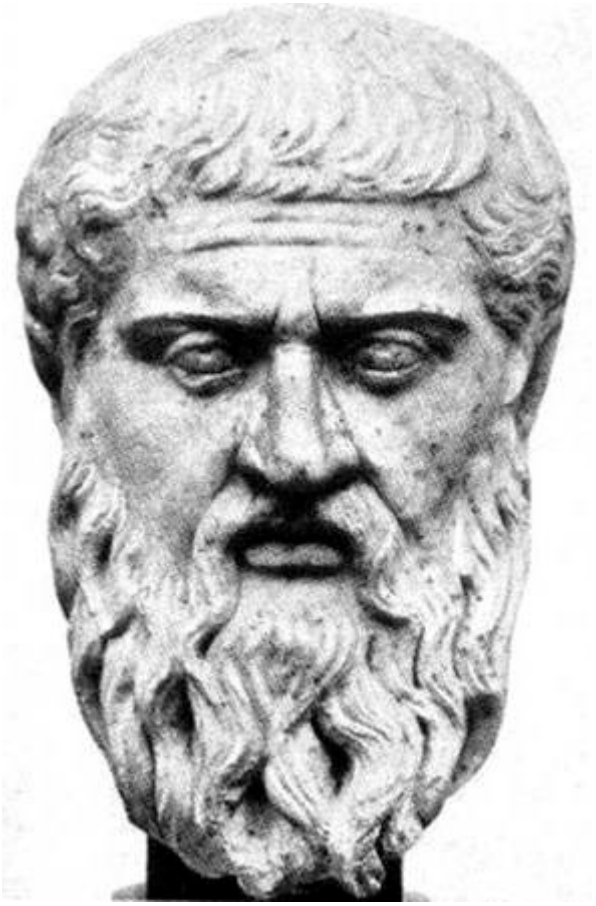
THE FENLAND Study

Can we influence the lifestyles of people in Fenland?

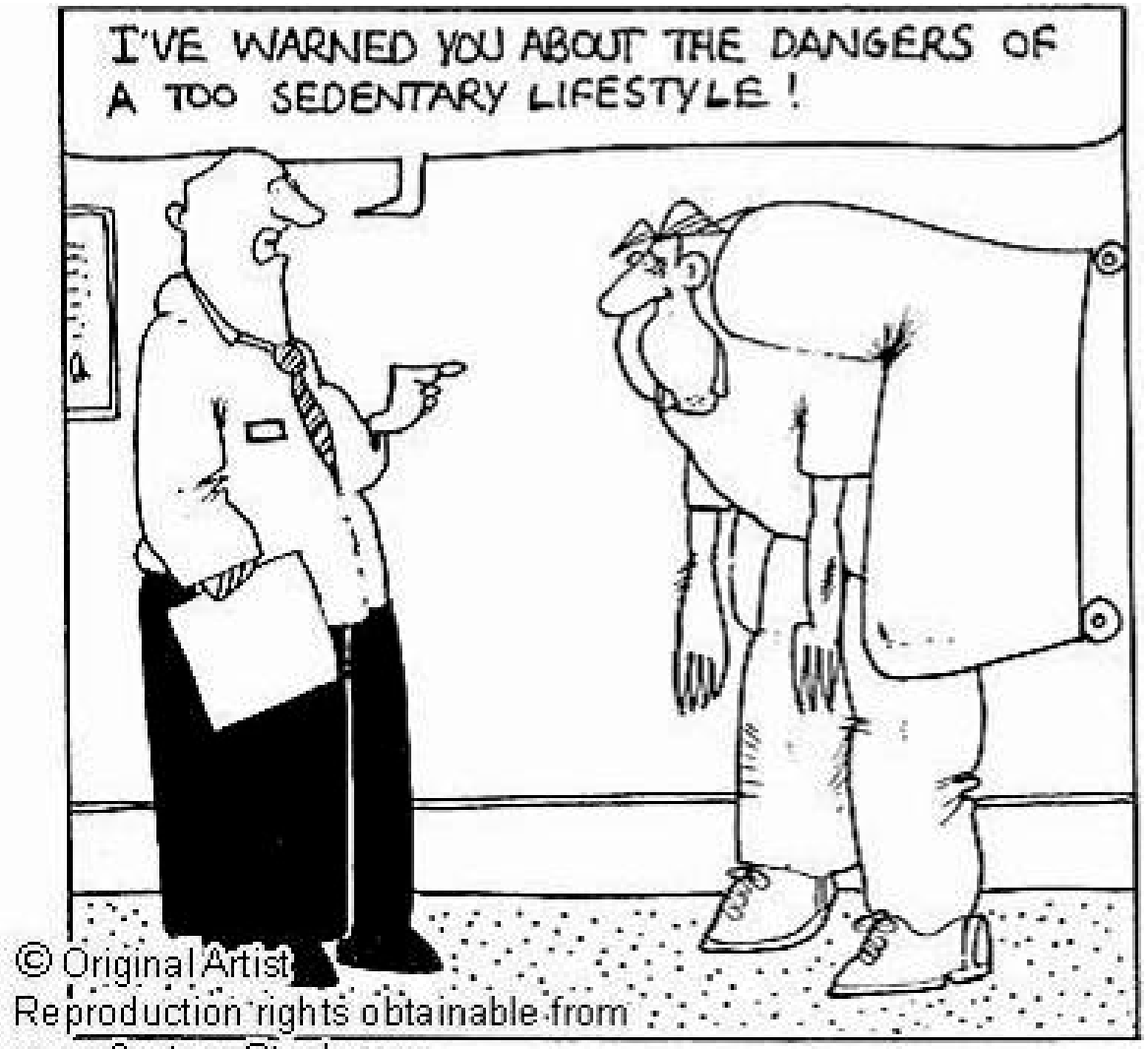
Simon Griffin

20th September 2013

Lack of activity destroys the good condition of every human being while movement and methodical physical exercise save it and preserve it



Plato



Physical inactivity

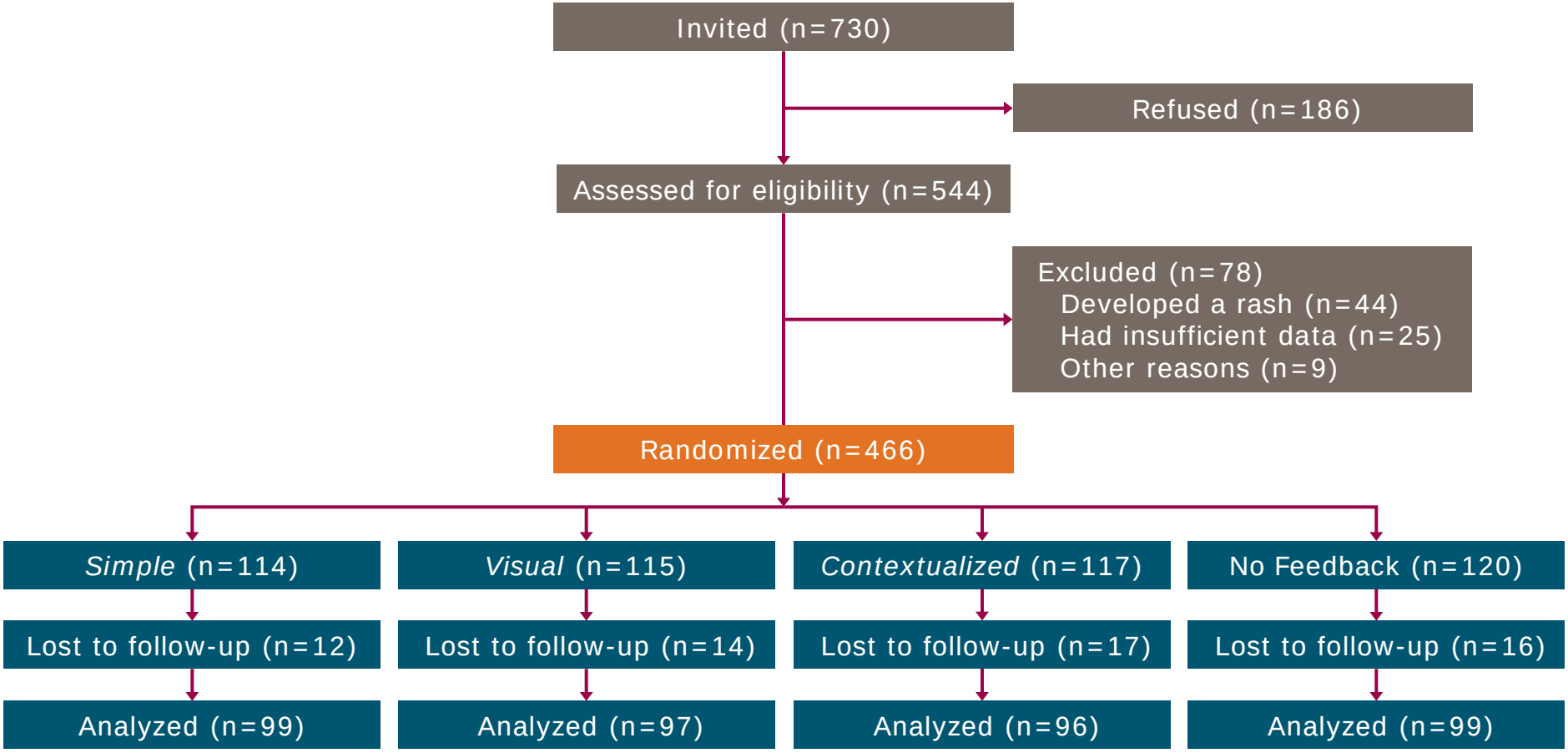
- Fourth leading cause of death worldwide

- Accounts for -
  - 9% of premature mortality
  - 5.3 million deaths worldwide in 2008
- Common
  - 34% report meeting physical activity recommendations
  - 5% meet recommendations according to accelerometer

Lancet 2012;380:219–229

Impact of personalised feedback on change in physical activity (the FAB trial)

ISRCTN 92551397



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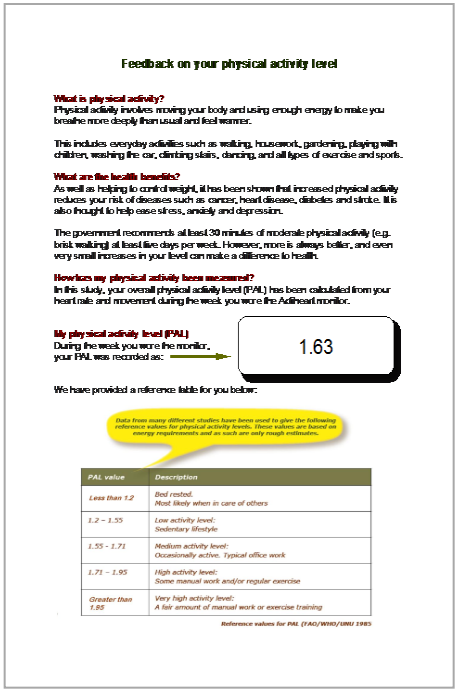
BMC Public Health 2010;10:144.

Methods

- Allocated to receive no feedback, or one of three different types of feedback

1) *Simple*



Feedback on your physical activity level

What is physical activity?
Physical activity involves moving your body and using enough energy to make you breathe more deeply than usual and feel warmer.

This includes everyday activities such as walking, housework, gardening, playing with children, washing the car, climbing stairs, dancing, and all types of exercise and sports.

What are the health benefits?
As well as helping to control weight, it has been shown that increased physical activity reduces your risk of diseases such as cancer, heart disease, diabetes and stroke. It is also thought to help ease stress, anxiety and depression.

The government recommends at least 30 minutes of moderate physical activity (e.g. brisk walking) at least five days per week. However, more is always better, and even very small increases in your level can make a difference to health.

How has my physical activity been measured?
In this study, your overall physical activity level (PAL) has been calculated from your heart rate and movement during the week you wore the Actiheart monitor.

My physical activity level (PAL)
During the week you wore the monitor, your PAL was recorded as: 1.63

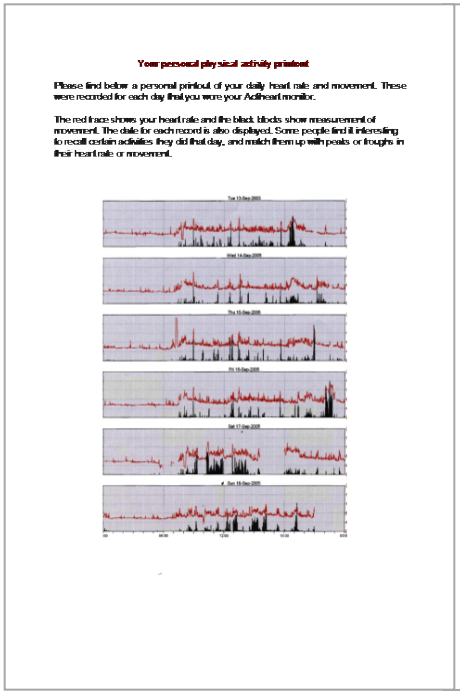
We have provided a reference table for you below:

Data from many different studies have been used to give the following reference values for physical activity levels. These values are based on energy requirements and as such are only rough estimates.

PAL value	Description
Less than 1.2	Bed rested. Most likely when in care of others
1.2 – 1.55	Low activity level: Sedentary lifestyle
1.55 – 1.71	Medium activity level: Occasionally active. Typical office work
1.71 – 1.95	High activity level: Some manual work and/or regular exercise
Greater than 1.95	Very high activity level: A fair amount of manual work or exercise training

Reference values for PAL (FAO/WHO/UNU 1985)

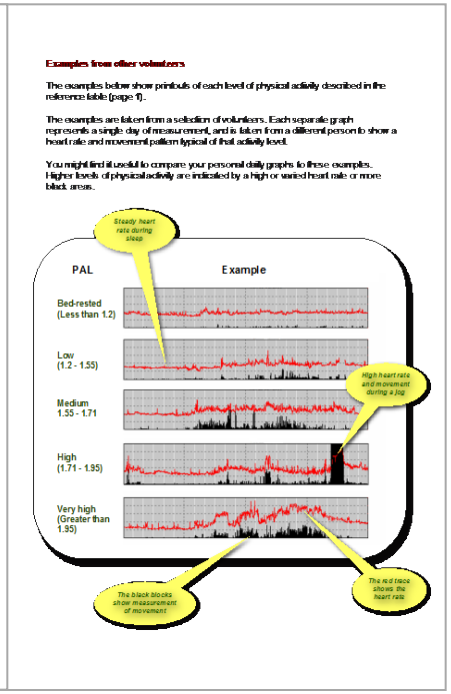
2) *Visual*



Your personal physical activity printout

Please find below a personal printout of your daily heart rate and movement. These were recorded for each day that you wore your Actiheart monitor.

The red trace shows your heart rate and the black blocks show measurement of movement. The date for each record is also displayed. Some people find it interesting to recall certain activities they did that day, and match them up with peaks or troughs in their heart rate or movement.



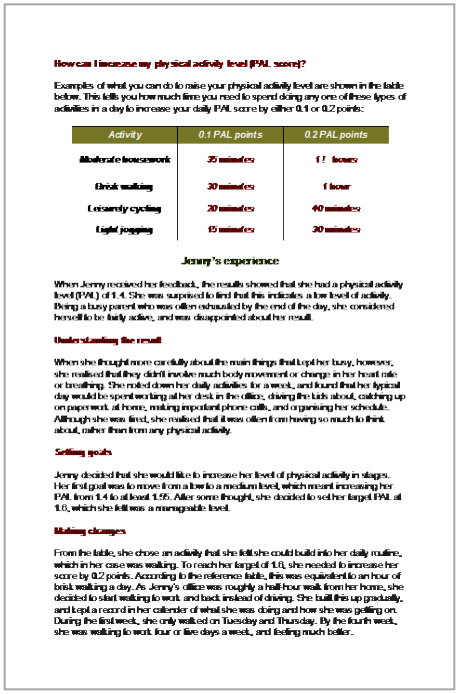
Examples from other volunteers

The examples below show printouts of each level of physical activity described in the reference table (page 1).

The examples are taken from a selection of volunteers. Each separate graph represents a single day of measurement, and is taken from a different person to show a heart rate and movement pattern typical of that activity level.

You might find it useful to compare your personal daily graphs to these examples. Higher levels of physical activity are indicated by a high or varied heart rate or more black areas.

3) *Contextualized*



How can I increase my physical activity level (PAL score)?

Examples of what you can do to raise your physical activity level are shown in the table below. This tells you how much time you need to spend doing any one of these types of activities in a day to increase your daily PAL score by either 0.1 or 0.2 points:

Activity	0.1 PAL points	0.2 PAL points
Moderate housework	25 minutes	1 ¼ hours
Brisk walking	30 minutes	1 hour
Leisurely cycling	20 minutes	40 minutes
Light jogging	15 minutes	30 minutes

Jenny's experience

When Jenny received her feedback, the results showed that she had a physical activity level (PAL) of 1.4. She was surprised to find that this indicates a low level of activity. Being a busy parent who was often exhausted by the end of the day, she considered herself to be fairly active, and was disappointed about her result.

Understanding the result

When she thought more carefully about the main things that kept her busy, however, she realised that they didn't involve much body movement or change in her heart rate or breathing. She noted down her daily activities for a week, and found that her typical day would be spent sedentary at her desk in the office, doing the kids about, catching up on paperwork at home, making important phone calls, and organising her schedule. Although she was tired, she realised that it was often from having so much to think about, rather than from any physical activity.

Setting goals

Jenny decided that she would like to increase her level of physical activity in stages. Her first goal was to move from a low to a medium level, which meant increasing her PAL from 1.4 to at least 1.55. After some thought, she decided to set her target PAL at 1.6, which she felt was a manageable level.

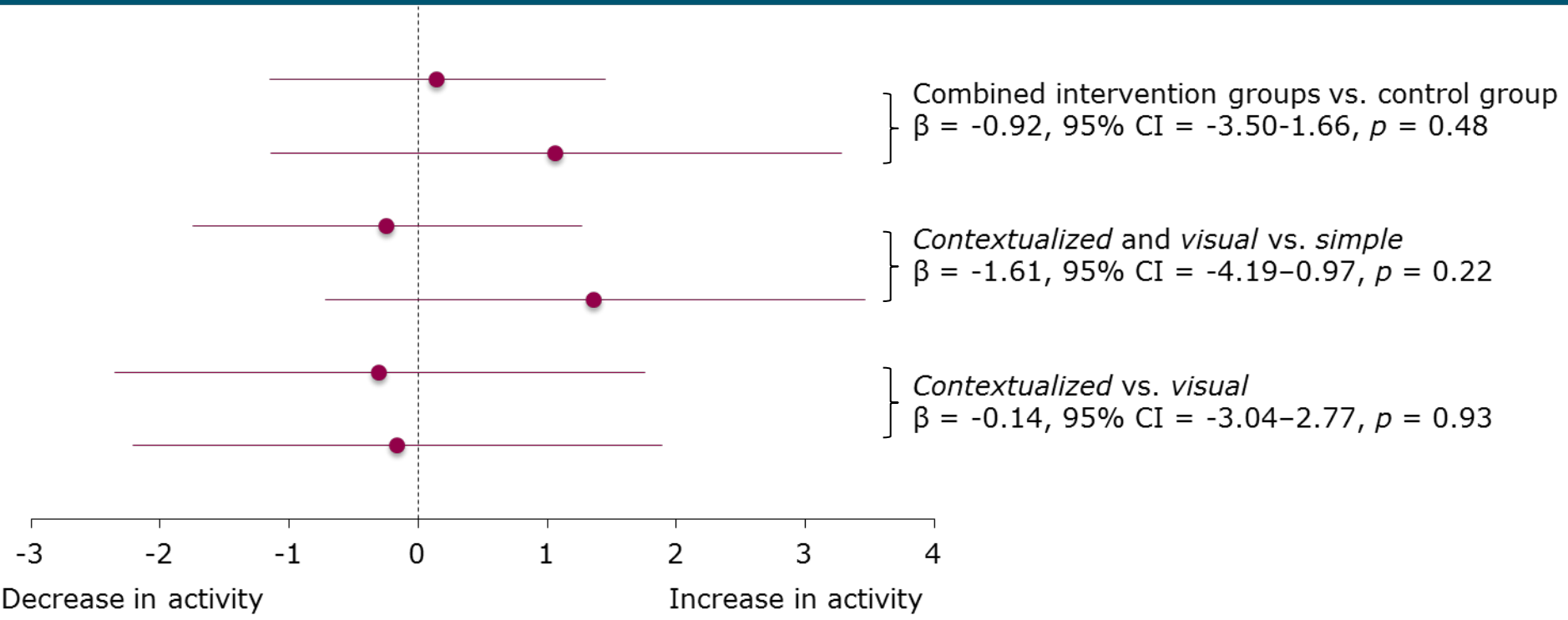
Making changes

From the table, she chose an activity that she felt she could build into her daily routine, which in her case was walking. To reach her target of 1.6, she needed to increase her score by 0.2 points. According to the reference table, this was equivalent to an hour of brisk walking a day. As Jenny's office was roughly a half-hour walk from her home, she decided to start walking to work and back instead of driving. She built this up gradually, and kept a record in her calendar of what she was doing and how she was getting on. During the first week, she only walked on Tuesday and Thursday. By the fourth week, she was walking to work four or five days a week, and feeling much better.

Results

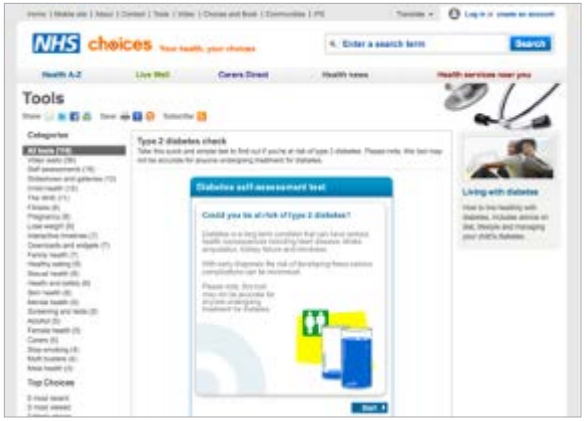
- Objectively measured physical activity, defined as physical activity energy expenditure (kJ/kg/day)

Differences in means between groups at follow-up, adjusted for baseline (analysis of covariance) (N=391)



Diabetes risk communication trial (ISRCTN 09650496)

- Information about risk of type 2 diabetes is widely available



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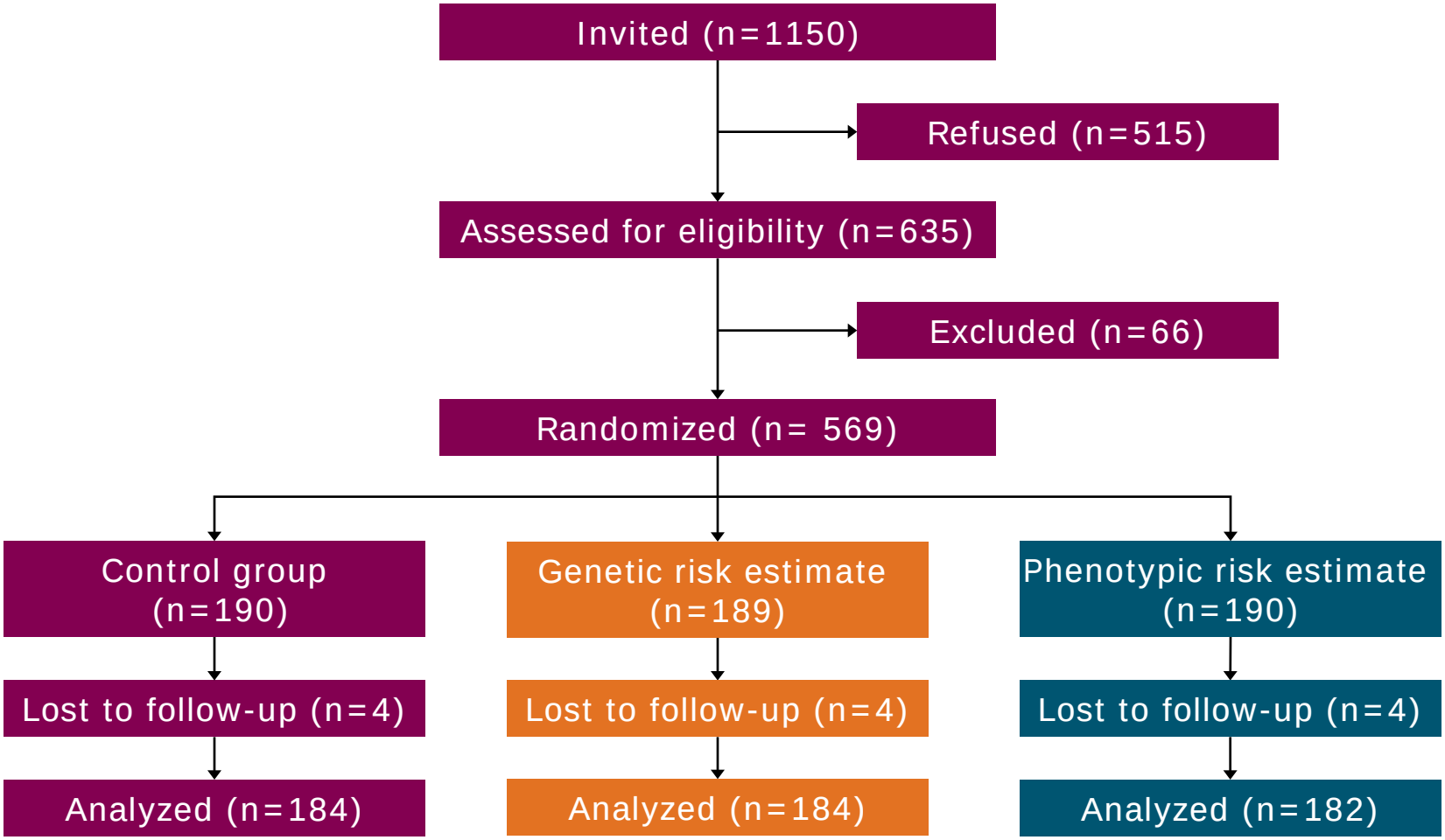

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BMC Public Health 2012;12:444.

Methods: interventions

Standard lifestyle advice

Genetic risk estimate

Phenotypic risk estimate

What is type 2 diabetes?

What are the risk factors for type 2 diabetes?

What are the symptoms of type 2 diabetes?

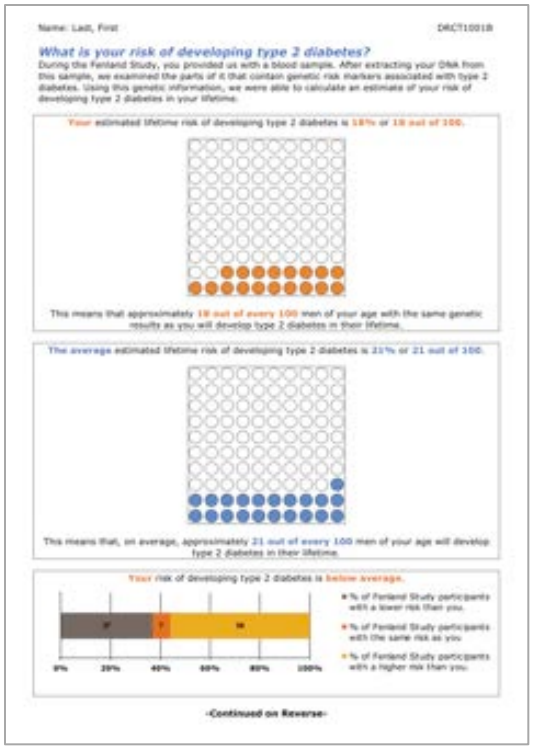
What are the consequences of type 2 diabetes?

How can I avoid type 2 diabetes?

• Physical Activity

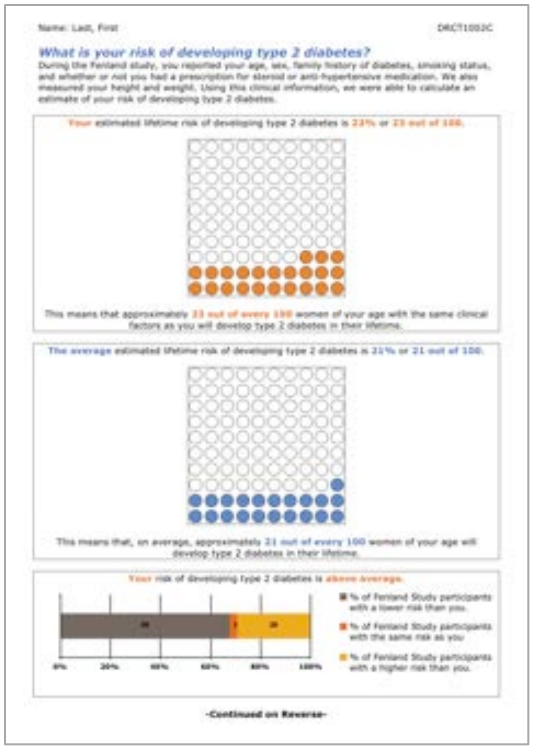
• Healthy Diet

• Maintain a Healthy Weight



What is your risk of developing type 2 diabetes?

-Continued on Reverse-



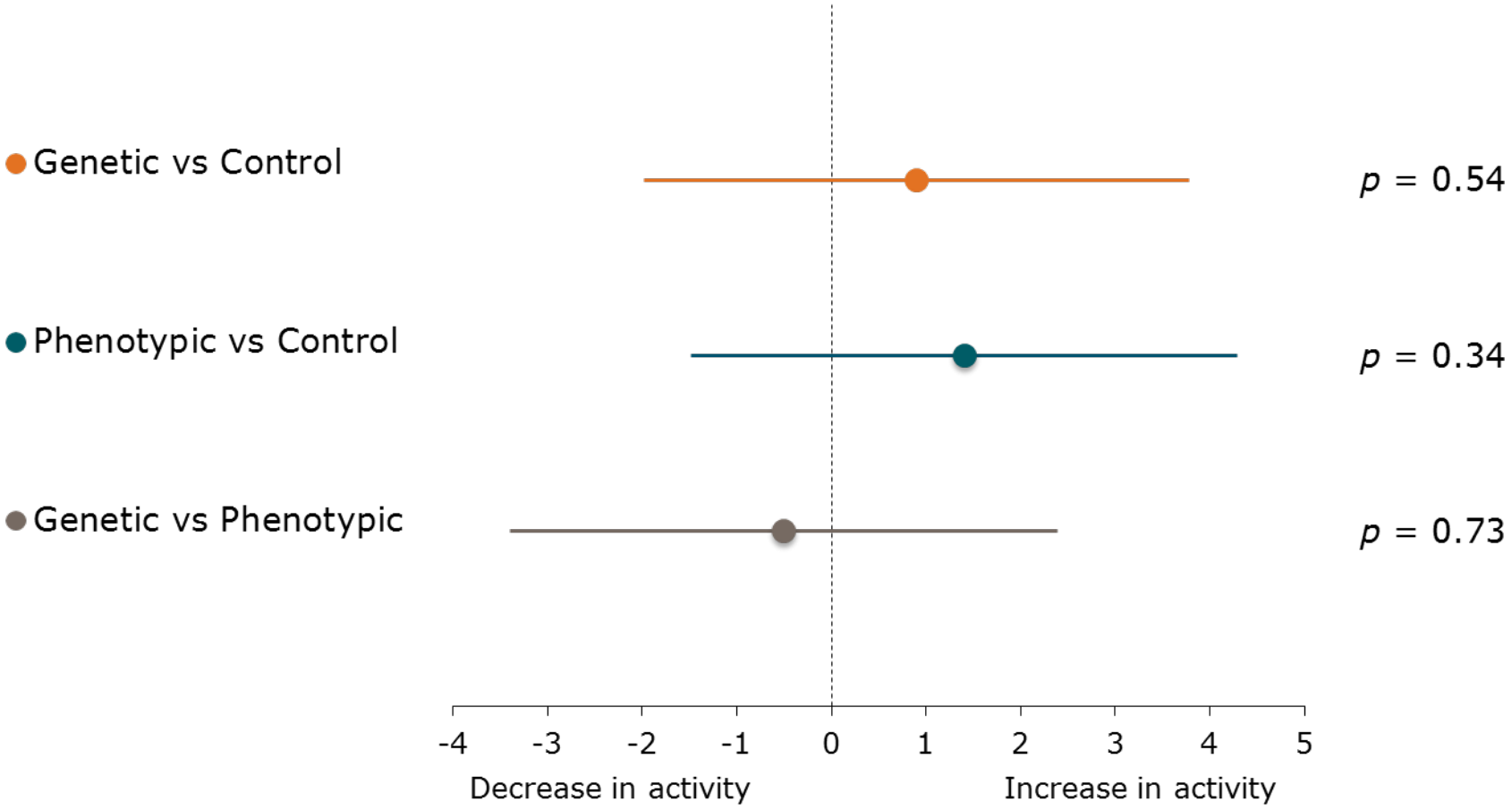
What is your risk of developing type 2 diabetes?

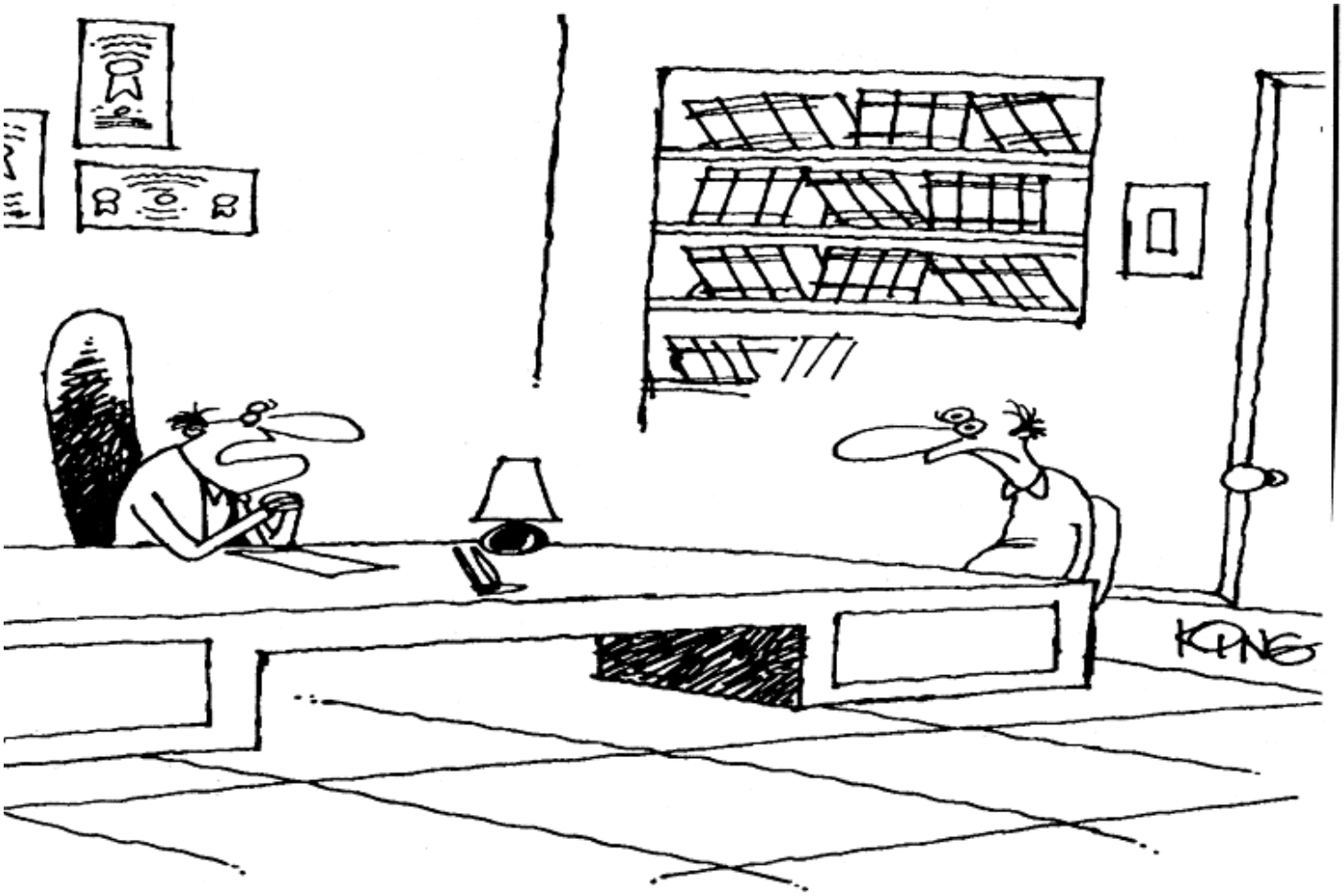
-Continued on Reverse-

Results: Physical activity

(physical activity energy expenditure, kJ/kg/day)

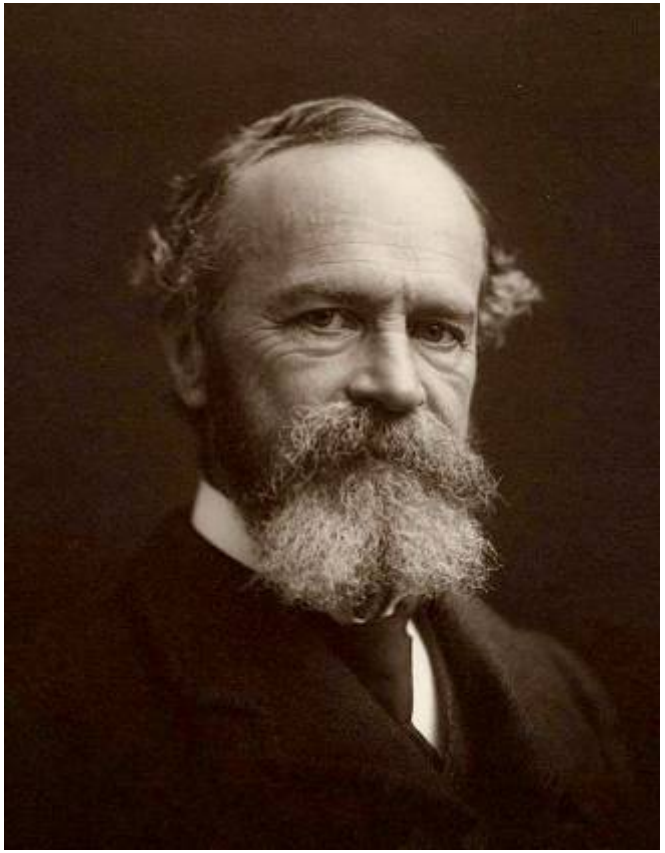
Difference in means between groups at follow-up, adjusted for baseline (N=550)





'Visiting your health club's web site is a start, but I prefer you actually go there and exercise.'

Ninety-nine hundredths or, possibly, nine hundred and ninety-nine thousandths of our activity is purely automatic and habitual, from our rising in the morning to our lying down each night

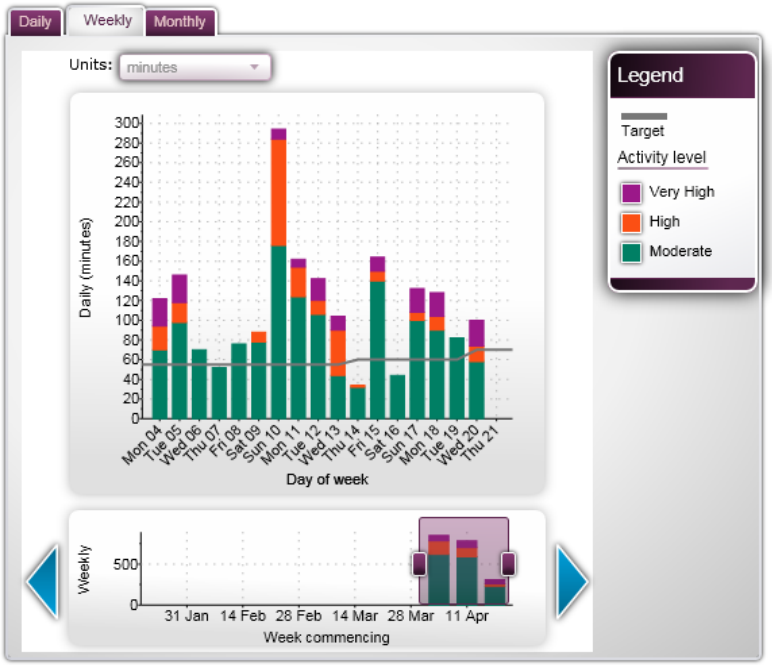


William James

My Activity

Home
My activity
Pledge
Activity plan
Activity solutions
Reminders
Activity charts
Activity details
Borg RPE scale
Hints and tips

Activity charts



Claim missing minutes

Influence of neighbourhood design

Low walkability

High walkability

BRUCE OGILVIE

On your bike

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