



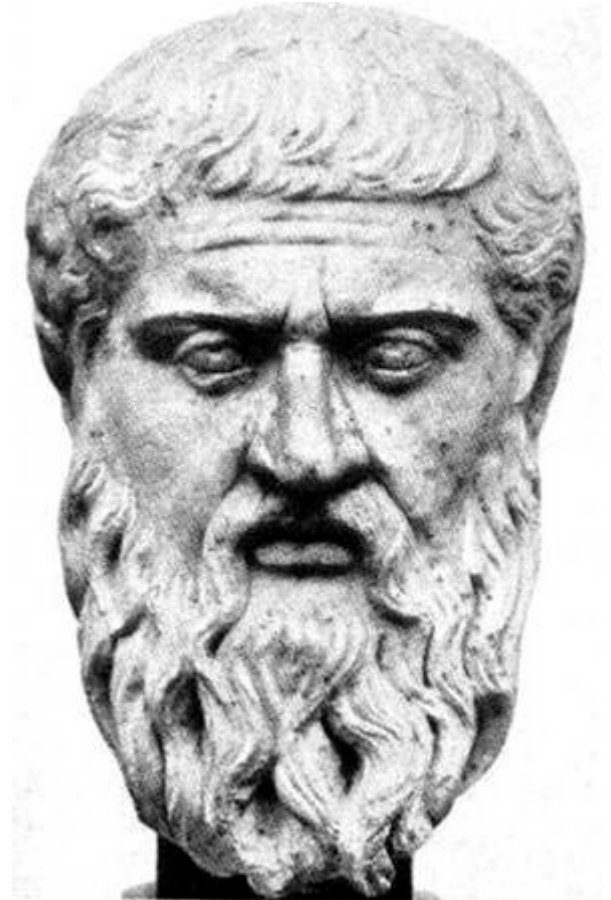
THE **FENLAND**
Study

**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

I'VE WARNED YOU ABOUT THE DANGERS OF
A TOO SEDENTARY LIFESTYLE !



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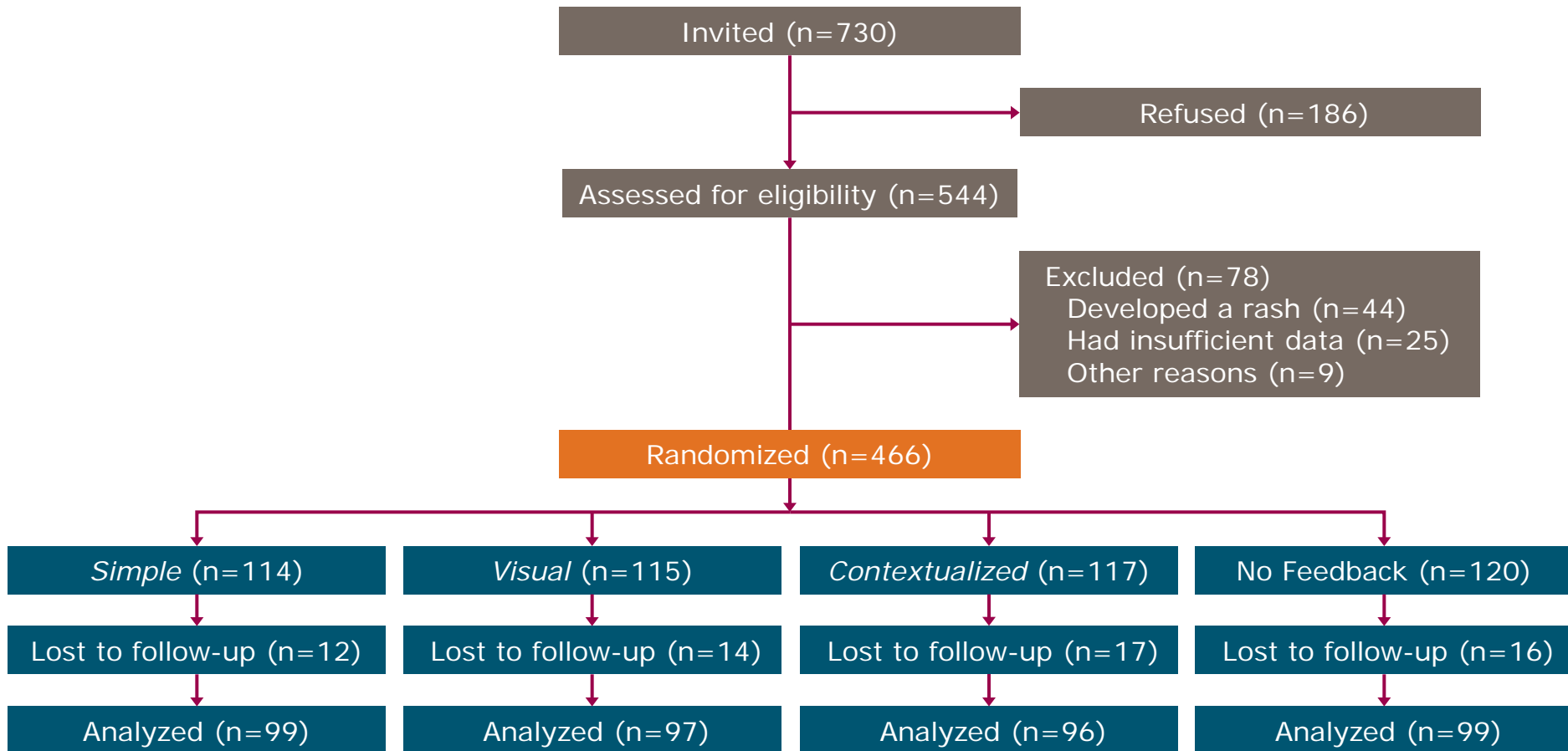
Physical inactivity

- 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



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

ISRCTN 92551397



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, cleaning 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 is my physical activity level 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 Adidas 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 average requirements and so may vary slightly between individuals.

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 (PAL) (WHO) (WHO) (WHO)

2) Visual

Your personal physical activity printed

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

3) Contextualized

Examples from other volunteers

The examples below show printouts of each level of physical activity described in the reference table (page 9).

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 higher peaked heart rate or more black areas.

Example

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	20 minutes	11 hours
Brisk walking	30 minutes	1 hour
Leisurely cycling	20 minutes	40 minutes
Light jogging	10 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 ruled down her daily activities for a week, and found that her typical day would be spent working at her desk in the office, doing the kids about, catching up on paper work at home, making important phone calls, and preparing her schedule. Although she was fit, she realised that this was often a time 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 it on 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 goal.

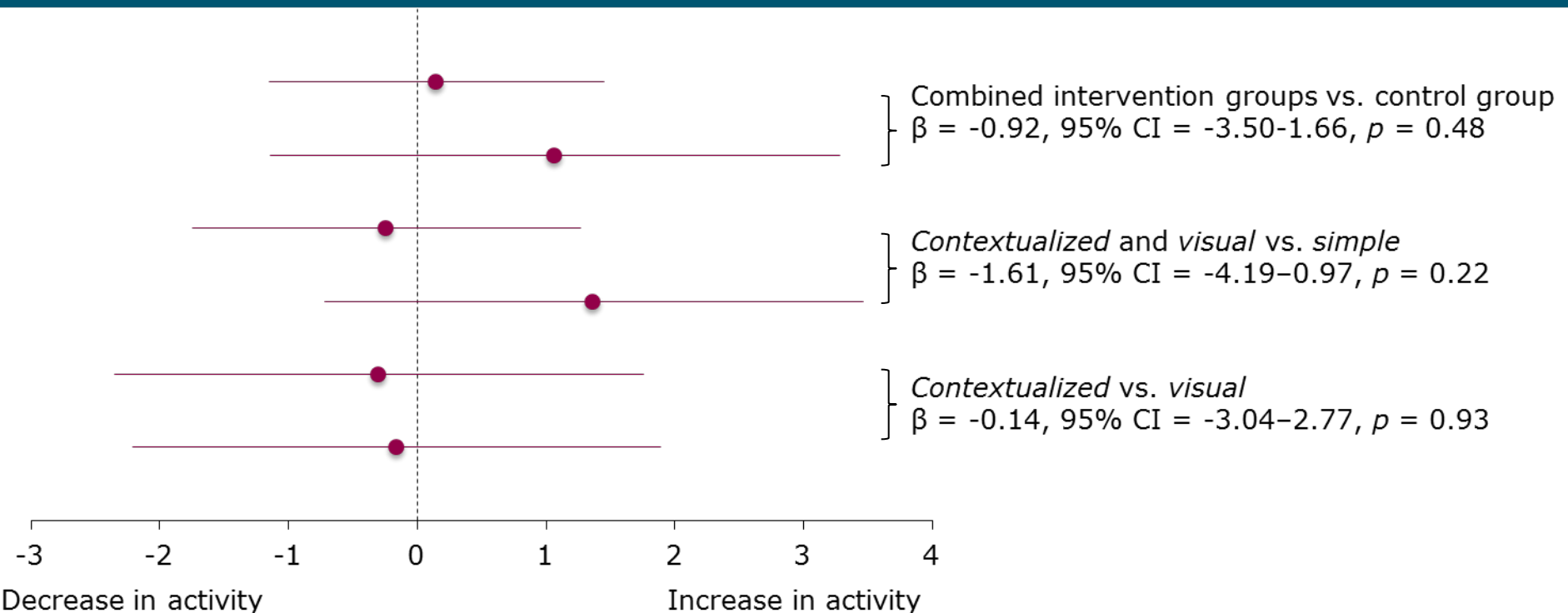
Making changes

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 note 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)

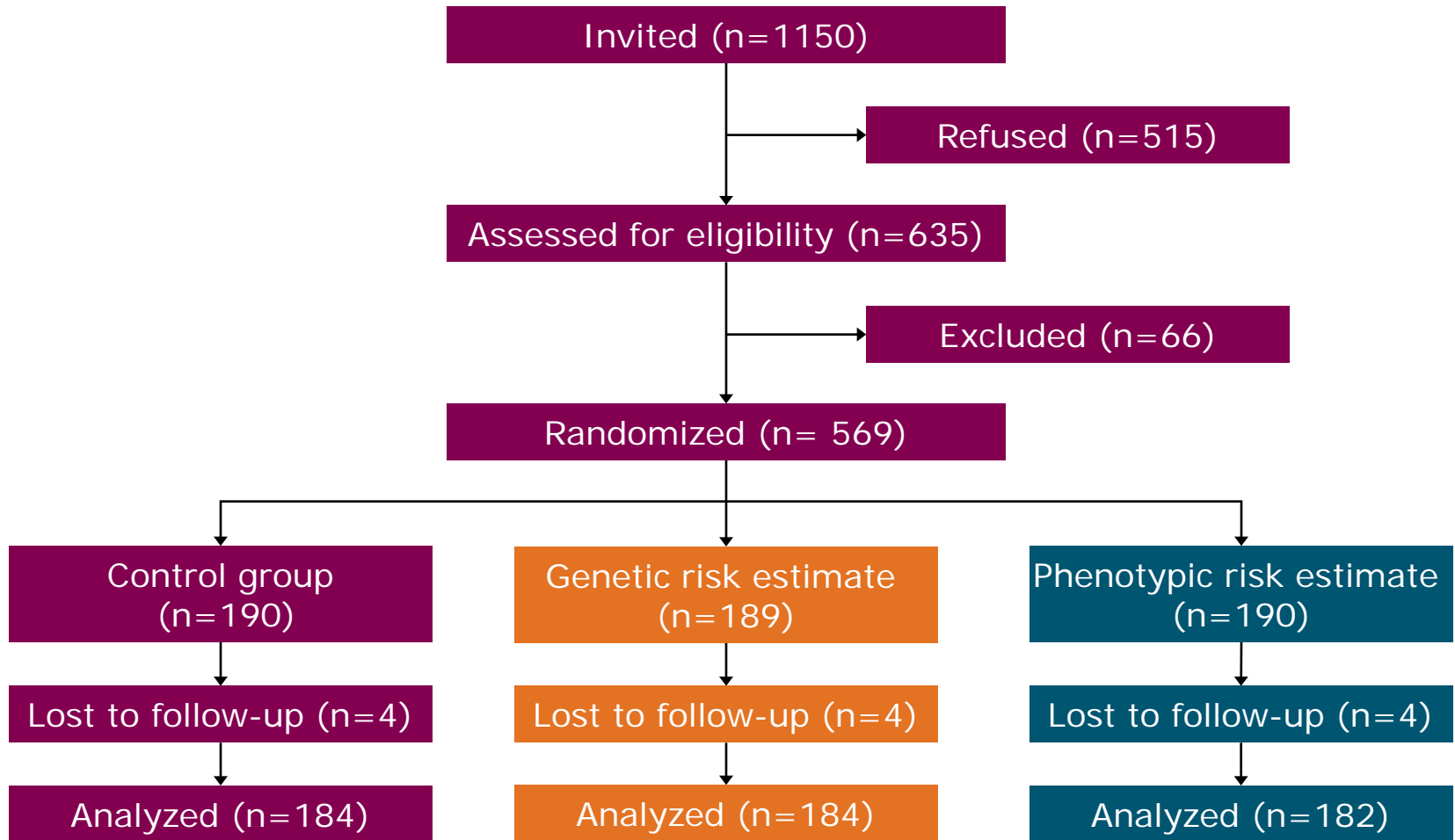


Diabetes risk communication trial (ISRCTN 09650496)

- Information about risk of type 2 diabetes is widely available



Diabetes risk communication trial (ISRCTN 09650496)



Methods: interventions

Standard
lifestyle advice

Genetic
risk estimate

Phenotypic
risk estimate

What are the symptoms of type 2 diabetes?
The symptoms of type 2 diabetes usually develop slowly, over an extended period of time. Some of the symptoms include: feeling thirsty all of the time, frequent urination, blurred vision, extreme tiredness, weight loss, and repeated bouts of fungal infections such as thrush. Not everyone with type 2 diabetes will experience all of the symptoms.

What are the consequences of type 2 diabetes?
Large amounts of glucose in the blood can permanently damage many parts of the body. The eyes, kidneys, nerves, and heart are particularly vulnerable. Without treatment, type 2 diabetes can lead to severe complications. Some of the complications include: blindness, kidney failure, nerve damage, amputations, heart disease, and stroke. It is precisely because of these complications that type 2 diabetes is associated with decreased life expectancy.

How can I avoid type 2 diabetes?
It is important to understand that being at increased risk for type 2 diabetes does not mean that you will certainly develop the disease. Likewise, being at decreased risk does not mean that you will not develop the disease. Research has proven that you can reduce your risk of developing type 2 diabetes by half just by being physically active, eating a healthy diet, and maintaining a healthy weight. This advice can help anyone to reduce their overall risk for type 2 diabetes, but it is particularly important for those who have an increased risk of developing the disease.

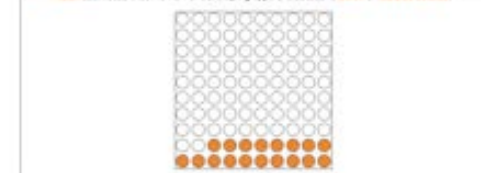
- **Physical Activity**
Research has shown that physical activity helps to regulate the amount of glucose in the blood and makes insulin operate more effectively. According to national recommendations, people should be active at a moderate intensity (e.g., brisk walking) for at least 30 minutes per day, at least 5 days a week. If you would like more information and tips on how to increase your physical activity please visit the following website: www.nhs.uk/7/1/physical/fitness/
- **Healthy Diet**
An important part of eating a healthy diet is making sure that you get enough fruit and vegetables. A diet high in fruit and vegetables will help you to control the level of glucose in your blood. According to national recommendations, people should consume at least 5 portions of fruit and vegetables a day. If you would like more information and tips on how to eat a healthy diet, please visit the following website: www.nhs.uk/7/1/physical/3days/
- **Maintain a Healthy Weight**
Research has demonstrated that just a 5-10% reduction in body weight resulting from being physically active and eating a healthy diet is enough to reduce the risk of type 2 diabetes by 58% among those at highest risk of developing the disease. In addition to reducing your risk of developing type 2 diabetes, maintaining a healthy weight can prevent or treat high blood pressure, reduce your cholesterol level, reduce your chances of heart attack, stroke, and some cancers, and even alleviate stress. If you would like more information and tips on how to maintain a healthy weight then visit the following website: www.nhs.uk/7/1/physical/loseweight/



Name: Last, First
DICT1001B

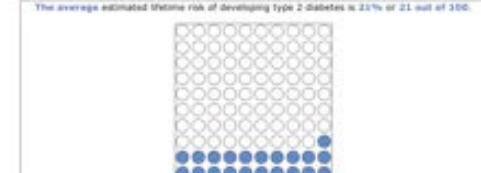
What is your risk of developing type 2 diabetes?
During the Fenland Study, you provided us with a blood sample. After extracting your DNA from this sample, we examined the parts of it that contain genetic risk markers associated with type 2 diabetes. Using this genetic information, we were able to calculate an estimate of your risk of developing type 2 diabetes in your lifetime.

Your estimated lifetime risk of developing type 2 diabetes is 18% or 18 out of 100.



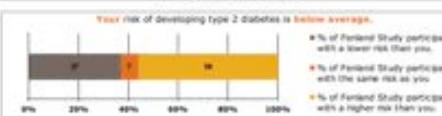
This means that approximately 18 out of every 100 men of your age with the same genetic results as you will develop type 2 diabetes in their lifetime.

The average estimated lifetime risk of developing type 2 diabetes is 21% or 21 out of 100.



This means that, on average, approximately 21 out of every 100 men of your age will develop type 2 diabetes in their lifetime.

Your risk of developing type 2 diabetes is below average.



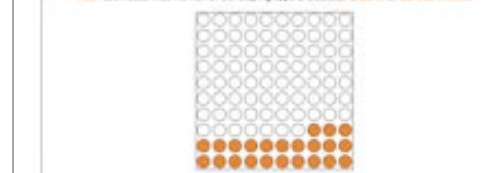
- % of Fenland Study participants with a lower risk than you.
- % of Fenland Study participants with the same risk as you.
- % of Fenland Study participants with a higher risk than you.

-Continued on Reverse-

Name: Last, First
DICT1001C

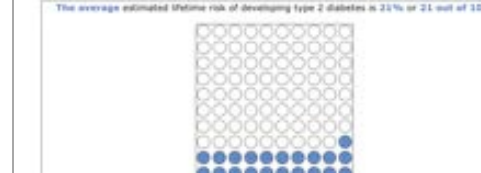
What is your risk of developing type 2 diabetes?
During the Fenland study, you reported your age, sex, family history of diabetes, smoking status, and whether or not you had a prescription for statins or anti-hypertensive medication. We also measured your height and weight. Using this clinical information, we were able to calculate an estimate of your risk of developing type 2 diabetes.

Your estimated lifetime risk of developing type 2 diabetes is 23% or 23 out of 100.



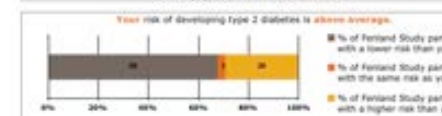
This means that approximately 23 out of every 100 women of your age with the same clinical factors as you will develop type 2 diabetes in their lifetime.

The average estimated lifetime risk of developing type 2 diabetes is 21% or 21 out of 100.



This means that, on average, approximately 21 out of every 100 women of your age will develop type 2 diabetes in their lifetime.

Your risk of developing type 2 diabetes is above average.



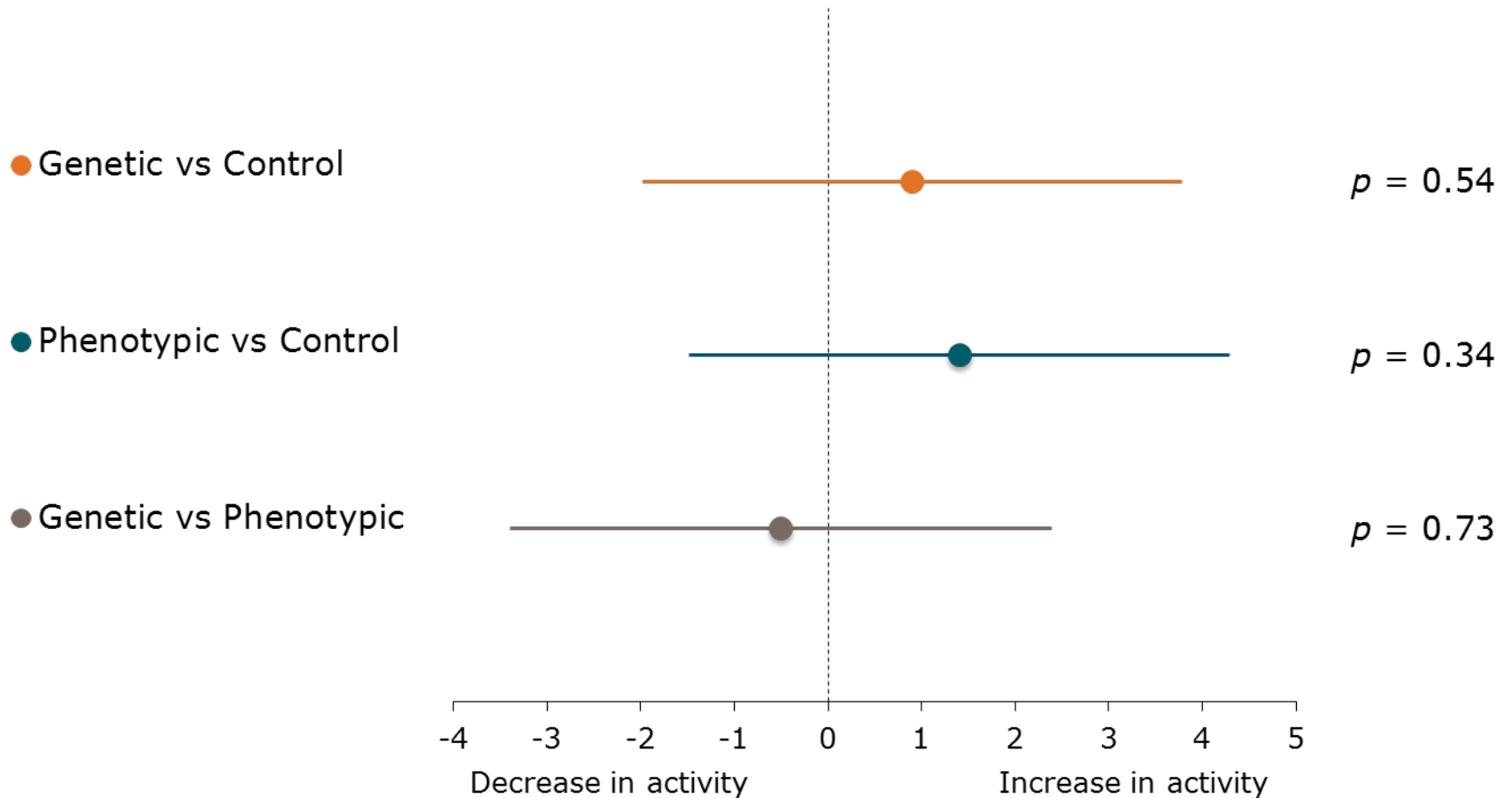
- % of Fenland Study participants with a lower risk than you.
- % of Fenland Study participants with the same risk as you.
- % of Fenland Study participants with a higher risk than you.

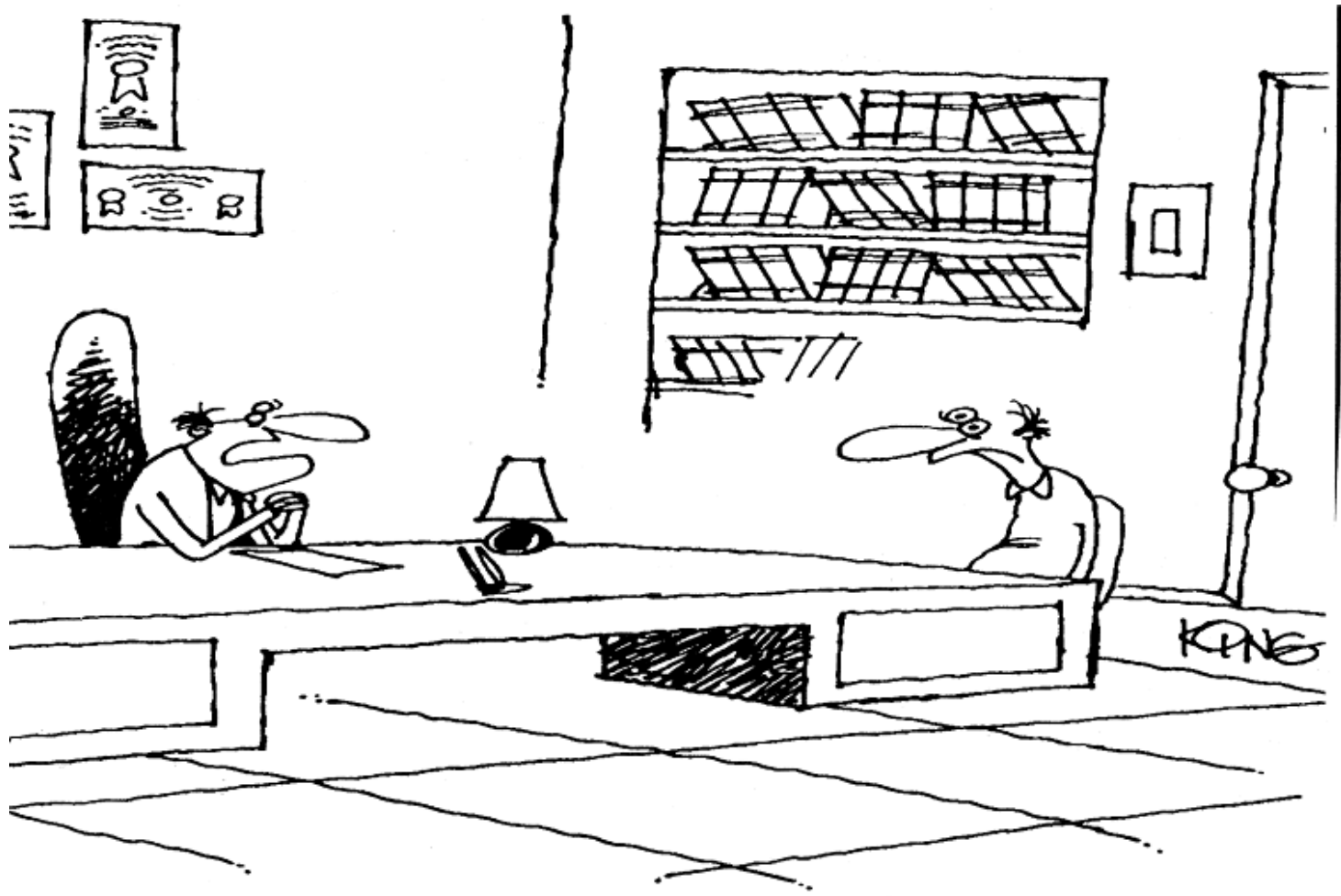
-Continued on Reverse-

Results: Physical activity

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

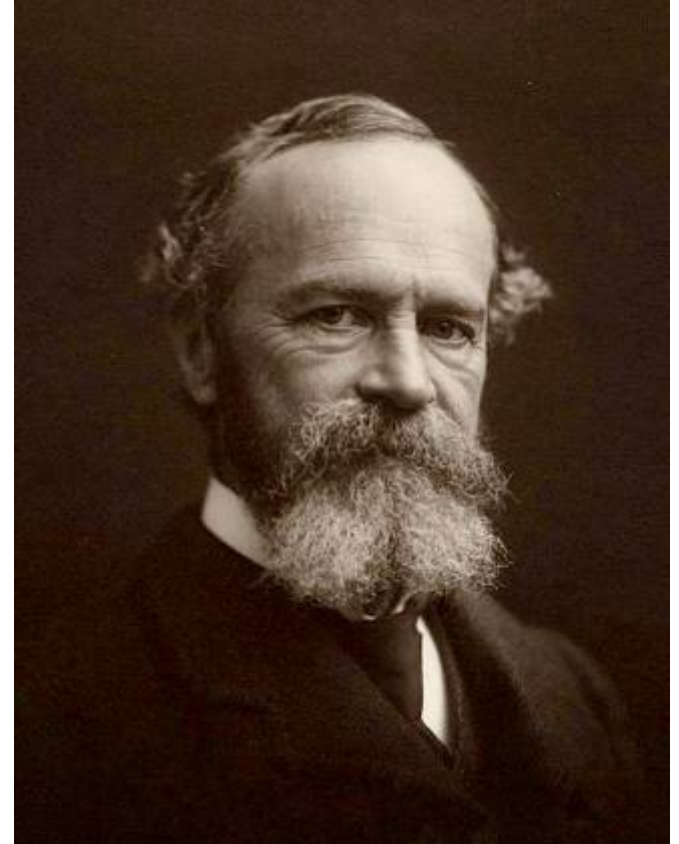
Difference in means between groups at follow-up, adjusted for baseline (N=550)





'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

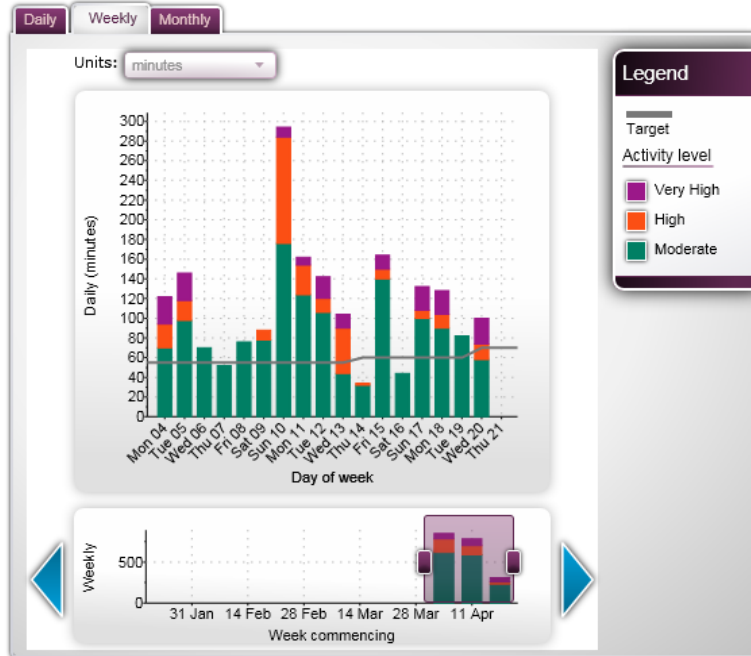


William James



- ▶ 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





UNIVERSITY OF
CAMBRIDGE

MRC

Epidemiology Unit

