

Information for research participants

Study title: Heart disease risk factors in habitual exercisers and sedentary men aged 35 to 50

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Purpose of the study

Heart disease mortality is lower in habitual exercisers than in sedentary men. This research is designed to investigate whether habitual exercisers enjoy protection from heart disease because they exercise or because they are, on average, leaner than sedentary men. To determine the health benefits of exercise and leanness, we will measure cholesterol, blood pressure and other heart disease risk factors in 50 lean exercisers, 50 lean sedentary men, 50 obese exercisers and 50 obese sedentary men. If we found that cholesterol levels were better in lean exercisers than in lean sedentary men, for example, it would suggest that habitual exercise lowers heart disease risk independent of body fat.

What are the benefits of taking part in this study?

You'll learn lots about your health, including your cholesterol concentration, your blood pressure, your physical fitness, and your future risk of heart disease. You'll also receive individualised guidelines to help you interpret your results.

What will I have to do?

You will visit our lab on three occasions. On the first visit, your blood pressure will be measured and you'll provide fingerprick and venous blood samples after a 12-hour overnight fast and 24-hour abstinence from vigorous activity. Your fingerprick blood sample will be analysed immediately for cholesterol and glucose concentrations. Your venous blood sample will be frozen and later analysed for a number of heart disease risk factors, including low-density lipoprotein cholesterol ("bad cholesterol"), high-density lipoprotein cholesterol ("good cholesterol") and fibrinogen (a potent coagulant). Your first visit to the lab will also include an assessment of your heart's size and function using echocardiography, a harmless and painless ultrasound technique. In another harmless and painless procedure, your heart's nervous function will be assessed during five minutes' seated rest using a heart rate monitor, which consists of a chest strap and wristwatch receiver. You'll provide a second fasting blood sample 3 to 7 days after first visiting our lab. Your height, weight, waist girth, body fat, blood pressure, socio-economic status and physical activity level will also be assessed on this visit. Blood pressure and cholesterol concentrations are measured on two occasions in order to obtain a better indication of your true values, which are subject to daily variation. You will be asked to complete a 7-day food diary after your second visit to the lab. On your third visit, you'll undertake a fitness test. 'Low risk' individuals with no more than one heart disease risk factor will cycle to exhaustion during an incremental test lasting around 8–20 minutes. 'Moderate risk' individuals with two or more risk factors will cycle to 80% of their age-predicted maximum heart rate. 'High risk' individuals who report signs or symptoms of heart disease will be excluded from exercise. Please be aware that participation in the study is voluntary: you may withdraw freely and without prejudice at any time, before, during or after testing.

What are the risks?

Intense exercise is associated with increased risk of light-headedness, nausea, fainting and abnormal blood pressure. We'll minimise these risks by accompanying your fitness test with a low-intensity warm-up and a low-intensity cool-down. Intense exercise is also associated with a remote risk of death. The best estimates suggest that there is around 1 death per 50,000 exercise tests in coronary patients. The risk of death during exercise is lower still in healthy adults. Exercise tests will be conducted in a laboratory equipped with an automated external defibrillator and will be supervised by individuals trained in emergency life support.

Eligibility

You can volunteer to take part in this study if you're a non-smoking male aged 35 to 50 years. We will take note of your exercise habits and measure your waist girth to determine which group you lie in: lean exerciser, lean sedentary man, obese exerciser, or obese sedentary man. You cannot take part in this study if you have smoked in the last two years, if you have type 2 diabetes or lung disease, if you take medication that affects your cholesterol or blood pressure, or if you have anginal symptoms (you experience pain in your chest on exertion).

Confidentiality

Your identity will be coded and will not be revealed in any research publication. Dr. Gary O'Donovan is the only investigator who will be able to reconcile your results with your identity. Your results will only be made available to your GP on your request.

When will the study begin?

The study will begin in January 2006.