

# Effect of a 12 week supervised exercise programme 12–24 months after weight-loss surgery on physical function and physical activity maintenance: the Motion Study

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<b>Registration date</b> 06/02/2015	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 08/08/2017	<b>Condition category</b> Digestive System	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Worldwide, increasing numbers of people are becoming morbidly obese (extremely overweight). Obese people are more likely to have health problems such as type 2 diabetes (a disease in which the pancreas does not produce enough of the hormone insulin or the individual's cells do not react to the insulin), heart disease, non-alcoholic fatty liver disease (a build-up of fat in the cells of the liver), problems with sleep and some cancers than are people with a healthy weight. Obesity can also reduce how long people live. Bariatric surgery (weight loss surgery) is a successful way for obese people to lose weight. After surgery, some people might regain weight and not everyone regains the same amount of weight after surgery. Increasing exercise and physical activity (e.g., walking, house work and playing with children or grandchildren) after bariatric surgery can improve weight loss and make daily activities easier. The aim in this study is to improve movement and physical wellbeing while preventing weight regain after surgery.

### Who can participate?

People with a BMI of at least 30 kg/m<sup>2</sup> (≥28 kg/m<sup>2</sup> for South Asian individuals)

### What does the study involve?

Patients will be randomly assigned to one of two groups. Patients in the exercise group will be offered a 12-week structured and supervised hospital gym-based exercise programme at a time when they often start putting weight back on after weight loss surgery. Individuals in the control group will have 12 weeks of no structured exercise. Both groups will have advice sessions, will be offered an exercise programme of their choice and will be given a diet information sheet. Patients will have a follow-up assessment at 6 months.

### What are the possible benefits and risks of participating?

The possible benefits are physical wellbeing and prevention of weight gain. Risks were not provided at the time of registration.

Where is the study run from?  
Leicester Diabetes Centre, Leicester General Hospital (UK)

When is the study starting and how long is it expected to run for?  
From February 2014 to July 2015

Who is funding the study?  
Leicester Loughborough Diet, Lifestyle and Physical Activity Biomedical Research Unit (UK)

Who is the main contact?  
Miss Louisa Herring  
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## Contact information

**Type(s)**  
Public

**Contact name**  
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## Additional identifiers

**Protocol serial number**  
120659

## Study information

**Scientific Title**  
Effect of a 12 week supervised exercise programme 12–24 months after bariatric surgery for obesity on physical function and physical activity maintenance: a randomised controlled trial

**Study objectives**  
1. To examine the effect of a 12 week exercise intervention on physical fitness (aerobic and musculoskeletal) and body composition in patients 12–24 months after bariatric surgery  
2. To examine the combined effect of a 12 week structured and supervised exercise intervention in addition to physical activity advice on physical fitness and activity maintenance at 24 weeks

**Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

National Research Ethics Service West Midlands - Edgbaston, 10/12/2013, reference 13/WM/0445

### **Study design**

Interventional single-centre study

### **Primary study design**

Interventional

### **Study type(s)**

Treatment

### **Health condition(s) or problem(s) studied**

Obesity

### **Interventions**

Patients will be randomly assigned to one of two groups:

1. Exercise group: moderate intensity exercise combining aerobic and resistance exercise

1.1 Pre-intervention (baseline) assessment

1.2. 12 week hospital-based moderate intensity exercise intervention (3 x 60 minute sessions per week)

1.3. Ongoing behavioural counselling incorporated into sessions (through ongoing client-trainer interaction)

1.4. Post-intervention assessment (at about 12 weeks)

1.5. Patient-specific advice session (30–60 minutes) to discuss relevant topics (e.g., physical activity maintenance, overcoming barriers and goal setting); patients will be offered an optional exercise programme of their choice (e.g., home based, walking outside, gym or swimming); and they will be given a diet information sheet

1.6. 6 month follow-up assessment

2. Control group

2.1. Pre-intervention (baseline) assessment

2.2. 12 weeks of no structured exercise

2.3. Post-intervention assessment (at about 12 weeks)

2.4. Patient-specific advice session (60 minutes) to discuss relevant topics (e.g., physical activity maintenance, overcoming barriers and goal setting); patients will be offered an exercise programme of their choice (e.g., home based, gym or swimming); and they will be given a diet information sheet

2.5. 6 month follow-up assessment

### **Intervention Type**

Behavioural

### **Primary outcome(s)**

Incremental shuttle walk test (metres): will be measured at baseline, 3 months and 6 months

### **Key secondary outcome(s)**

1. Grip strength (kg), measured with a analogue hand grip dynamometer

2. Seat to stand test (seconds), using a 5 x seat to stand protocol

3. Body composition: measured using Tanita bioelectrical impedance scales (BC-418-MA)
  4. Height (cm), measured by a SECA stadiometer
  5. Weight (kg), measured by Tanita bioelectrical impedance scales (BC-418-MA)
  6. Waist and hip circumference (cm), measured with a SECA tape measure
  7. Physical activity, measured by Actigraph GT3X+ accelerometer
  8. Self-reported physical activity, measured with the Short form International Physical Activity Questionnaire (IPAQ)
  9. Blood pressure (mmHg), measured with an automated Intelle sense blood pressure machine (arm cuff)
  10. Resting heart rate (beats per minute), measured with a finger pulse oximeter
  11. Oxygen saturation (%), measured with a finger pulse oximeter
  12. Dietary intake, measured with a 24-hour food recall
  13. Self-efficacy, measured using the self-efficacy to regulate physical activity (SERPA) questionnaire
  14. Anxiety and depression measured with the Hospital Anxiety and Depression Scale (HADS)
  15. Medications and doses: obtained from medical notes
  18. Cholesterol, measured with venous blood specimens
  19. High-density lipoprotein, measured with venous blood specimens
  20. Low-density lipoprotein, measured with venous blood specimens
  21. Triglycerides, measured with venous blood specimens
  22. Non-fasting glycated haemoglobin, measured with venous blood specimens
- All these outcomes will be measured at baseline, 3 months and 6 months.

**Completion date**

01/07/2015

## Eligibility

**Key inclusion criteria**

1. Age 18–60 years old
2. Had bariatric surgery in past 12–24 months
3. Body-mass index (BMI) of at least 30 kg/m<sup>2</sup> ( $\geq 28$  kg/m<sup>2</sup> for South Asian people)
4. Completion of a stress test and approval from an in-house clinician in accordance with our standard operating procedure and document

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Highly active individuals or individuals meeting current physical activity guidelines (self-report of  $\geq 2.5$  hours per week)
2. Unstable diabetes
3. Orthopaedic limitations
4. Motor neurone disease
5. Stage II hypertension (systolic blood pressure  $>60$  mmHg and/or diastolic blood pressure  $>100$  mmHg)
6. Cardiovascular disease: coronary artery disease, cardiomyopathy, heart failure, cor pulmonale, cardiac dysrhythmias, endocarditis, myocarditis, valvular heart disease, cerebrovascular disease, peripheral arterial disease, congenital heart disease and rheumatic heart disease
7. Pulmonary disease: inflammatory lung disease, obstructive lung disease, chronic obstructive pulmonary disease, emphysema, cystic fibrosis, respiratory tract infections, pleural cavity disease and pulmonary vascular disease
8. Renal disease
9. Chair bound
10. Weight limit of 200 kg or greater

**Date of first enrolment**

26/02/2014

**Date of final enrolment**

01/03/2015

## Locations

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

**Leicester Diabetes Centre**

Leicester General Hospital

Gwendolen Road

Leicester

United Kingdom

LE5 4WP

## Sponsor information

**Organisation**

University of Leicester

**ROR**

<https://ror.org/04h699437>

# Funder(s)

## Funder type

University/education

## Funder Name

Leicester Loughborough Diet, Lifestyle and Physical Activity Biomedical Research Unit (UK)

# Results and Publications

## Individual participant data (IPD) sharing plan

## IPD sharing plan summary

Not expected to be made available

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	01/06/2017		Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes