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Could supported weight loss reduce bowel cancer surgery complications?

Submission date
01/03/2023

Recruitment status
No longer recruiting

Registration date
13/03/2023

Overall study status
Ongoing

Last Edited
08/10/2026

Condition category
Cancer

[X] Prospectively registered
[X] Protocol
[X] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
In the UK, 42,000 people each year are diagnosed with bowel cancer. It is the fourth most common cancer. Surgery to remove the cancer is the best treatment. However, it has a risk of complications, which is doubled for people who are overweight/obese. Patients experiencing complications recover more slowly, stay in the hospital longer and need more care. This isn't good for patients or the NHS. Physical fitness and well-controlled blood sugar are linked with fewer complications from surgery. For people who are overweight, weight loss improves both of these factors so that it may reduce complications. One reliable way to lose a meaningful amount of weight in the short period before surgery (3-4 weeks) is through a low-calorie diet programme: eating only special nutritious soups and shakes (880 calories/day) that have all the necessary vitamins. With weekly support from a dietitian, most people succeed. Typically, people lose 5% of their weight within 20 days. The NHS uses a version of this programme to treat type 2 diabetes. In small-scale studies, patients with cancer who are overweight have been willing and able to take part in less intensive weight management programmes before surgery but lose little weight. However, the period before bowel cancer surgery is associated with feelings of uncertainty and anxiety, so it is unclear if patients can follow a more intensive programme.

Who can participate?
To start to find out if this treatment is in the best interests of patients' physical and mental health, we will recruit 72 overweight patients awaiting bowel cancer surgery

What does the study involve?
Half of the participants will be randomly allocated to continue with their usual care and half will be offered the weight loss programme. We will see whether enough patients are willing to take part, lose weight, and return for follow-up visits. We will monitor complications for 30 days after surgery and any reduction in muscle mass due to the weight loss. We will interview patients about their experiences.

This information will tell us if a full trial is worthwhile to test whether this programme can reduce complications from surgery, improve outcomes for people with bowel cancer, and if the financial costs are likely to be worth the benefits. It will also help us refine the treatment plans according to patient feedback.

The researchers discussed the study with seven patients and public representatives (PPI). They thought it was a critical study and the team included their suggestions for making it easier for patients to join the trial, stick to the programme, and attend visits. The research team will work with the PPI throughout the trial.

What are the possible benefits and risks of participating?
By taking part, participants will help the researchers find out if this treatment might help people with bowel cancer in the future. For participants in the normal care group, there are no direct benefits. Participants in the supported weight loss group may lose weight and this could reduce complications after surgery. Most people who follow the low-calorie diet do not experience side effects from it. The most common side effect is constipation and side effects are typically only mild and temporary.

Where is the study run from?
Nuffield Department of Primary Care and Health Services, University of Oxford (UK)

When is the study starting and how long is it expected to run for?
March 2022 to September 2028

Who is funding the study?
National Institute for Health and Care Research (NIHR) (UK)

Who is the main contact?
The CARE study team, care@nds.ox.ac.uk (UK)

https://www.cancerresearchuk.org/about-cancer/find-a-clinical-trial/a-trial-of-supported-weight-loss-before-surgery-for-bowel-cancer-care-trial

Contact information

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Additional identifiers

Integrated Research Application System (IRAS)
320173

Central Portfolio Management System (CPMS)
54218

Study information

Scientific Title
Pre-operative intentional weight loss to support post-operative recovery in patients with overweight and colorectal cancer: the CARE feasibility randomised controlled trial

Acronym
CARE

Study objectives
To assess whether progression to a definitive randomised controlled trial is justified

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 23/01/2023, South Central - Oxford B Research Ethics Committee (Ground Floor, Temple Quay House, 2 The Square, Bristol, BS1 6PN, UK; +44 (0)207 104 8241; oxfordb.rec@hra.nhs.uk), ref: 22/SC/0465

Primary study design
Interventional

Study design
Multi-centre feasibility parallel randomized controlled trial with embedded evaluation and optimisation of the recruitment process

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Colorectal cancer

Interventions
This is a randomised controlled trial to assess a low-energy total diet replacement programme with behavioural support which will also look at the feasibility of progression to a definitive trial that would assess whether the low-calorie diet before colorectal cancer surgery can help reduce complications post-surgery.

We aim to recruit 72 participants from NHS hospitals across England. Participants are expected to be involved in the study for about 2-3 months. They will be requested to attend a screening visit at the hospital and a visit 30 days after surgery. In between the visits, they will be asked to fill in questionnaires remotely (online/at home) and take part in audio-recorded telephone interviews about their experience.
Following the screening visit, participants will be randomised 1:1 to the supported weight loss group or standard care. The method of randomisation involved minimisation with a 20% random element. The two stratified variables will be performance status (0 versus 1-2) and the median age at diagnosis ((</≥70 years).

Supported weight loss (intervention)
Participants will be asked by dietitians trained in the intervention to eat only formula products, such as soups, shakes, and bars, until 1-2 days before surgery. These products contain all the vitamins and minerals essential for good health, plenty of protein and fibre to help them feel full, but far fewer calories than most people usually eat. On average, we anticipate that they will follow the diet for 3-4 weeks. They will get remote (phone/video) support from a dietitian weekly to support them adhere to the diet.

Standard care (control)
Participants in the standard-of-care group will follow their standard pre-habilitation pathway in line with their local hospital policy.

We will also conduct audio-recorded, phone/video consultations (e.g., MS Teams) and interviews with clinical and research staff about their experience of the trial.

Intervention Type
Behavioural

Primary outcome(s)
Feasibility to progression to a definitive randomised controlled trial is the primary objective. This will be judged based on 5 outcome measures:
1. Recruitment rate measured using the number of sites open, the total n participants recruited, and the number of participants recruited per site as documented in the study notes per month
2. Engagement rate measured using the mean proportion of phone calls answered per participant documented in the study notes at one timepoint
3. Adherence rate measured using the proportion of intervention participants with ≥5% weight loss documented in the study notes from baseline to the day of surgery
4. Retention rate measured using the proportion of participants documented in the study notes as attending their final follow-up (30 days post-operatively)
5. Safety profile measured using related adverse events and expected related and unexpected related serious adverse events documented in the study notes throughout the study

Key secondary outcome(s)
Morbidity will be assessed from patient records at discharge and 30 days postoperatively using the Clavien-Dindo classification as follows:
1. Any morbidity
2. Morbidity by grade (II, IIIa, IIIb, IVa, IVb)

Oncological outcomes will be assessed from patient records at discharge and 30 days postoperatively using:
3. Survival (grade V)
4. Resection margins
5. Recurrence
6. New primary/secondary cancer

Operative outcomes will be assessed from patient records at discharge and 30 days postoperatively using:
7. Intraoperative blood loss
8. Operative time
9. Conversion to open surgery
10. Surgical site infection
11. Stoma rates and complications
12. Radiologically-defined anastomotic leaks
13. Time in the intensive care unit and high-dependency unit
14. Re-operation rates
15. Re-admission rates

Hospital stay will be assessed from patient records at discharge and 30 days postoperatively using:
16. Length of hospital stay (fitness to discharge)
17. Days alive and out of hospital

Anthropometry will be assessed by measuring in-person at baseline, on admission, and 30 days postoperatively using:
18. Weight
19. Fat-free mass

Fitness will be assessed by measuring in-person at baseline and 30 days postoperatively using:
20. Time for sit-to-stand test

Health-related quality of life will be self-reported at baseline, 4 days preoperatively, and 30 days postoperatively using:
21. EQ-5D-5L
22. HADS

Health-related quality of life will be self-reported at 30 days postoperatively using:
23. EORTC-QLQ-CR29

Costs and resource use will be assessed from trial records and by self-report at baseline and 30 days postoperatively using:
24. Intervention costs
25. Healthcare resource use questionnaire
26. QALYs

27. Adverse events will be self-reported throughout the study

Completion date
01/09/2028

Eligibility

Key inclusion criteria
1. Participant is willing and able to give informed consent for participation in the study
2. Able to communicate in English or has a relative/friend/carer acting as interpreter
3. Aged 18 years or above
4. BMI ≥28 kg/m2 (or BMI ≥25 kg/m2 for people of Black, Asian, or minority ethnic origin)
5. Listed for curative elective colorectal resection for cancer
6. If neoadjuvant treatment is indicated, it must have been completed
7. Performance status 0-2

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit

110 Years

Sex
All

Total final enrolment
71

Key exclusion criteria
Current exclusion criteria as of 20/11/2023:
The participant may not enter the study if ANY of the following apply:
1. ≥10% self-reported weight loss in the 6 months before the screening visit
2. <20 days from the screening visit until surgery
3. Having allergy to soy
4. Documented stage 4-5 kidney disease
5. Documented severe heart failure (defined as New York Heart Association grade 3 or 4)
6. Previous bariatric surgery
7. Type 1 diabetes
8. Currently on warfarin
9. Currently on insulin with a previous episode of diabetic ketoacidosis
10. Radiological suspicion of imminent intestinal obstruction or endoscopic evidence of an impassable tumour
11. Pregnancy, breastfeeding, or planning pregnancy during the course of the trial
12. Any other significant disease or disorder which, in the opinion of the Investigator or healthcare professional, may either put the participants at risk because of participation in the trial, or may influence the result of the trial, or the participant's ability to participate in the trial
13. Currently taking part in other interventional clinical trials unless agreed in advance by all trial teams (participation in observational studies is allowed)

A list of trials that co-enrolment has been agreed upon by all trial teams and a list of trials that co-enrolment has been agreed not to be allowed will be regularly updated and provided to trial sites.

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Previous exclusion criteria:
The participant may not enter the study if ANY of the following apply:
1. ≥10% self-reported weight loss in the 6 months before the screening visit
2. <20 days from the screening visit until surgery
3. Follows an exclusively vegan diet, has lactose intolerance or has an allergy to soy
4. Documented stage 4-5 kidney disease
5. Documented severe heart failure (defined as New York Heart Association grade 3 or 4)
6. Previous bariatric surgery
7. Type 1 diabetes
8. Currently on warfarin
9. Pregnancy, breastfeeding, or planning pregnancy during the course of the trial
10. Any other significant disease or disorder which, in the opinion of the Investigator or healthcare professional, may either put the participants at risk because of participation in the trial, or may influence the result of the trial, or the participant's ability to participate in the trial.
11. Currently taking part in other interventional clinical trials unless agreed in advance by all trial teams (participation in observational studies is allowed).

A list of trials that co-enrolment has been agreed upon by all trial teams and a list of trials that co-enrolment has been agreed not to be allowed will be regularly updated and provided to trial sites.

Date of first enrolment
23/03/2023

Date of final enrolment
13/08/2024

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Oxford University Hospitals NHS Foundation Trust
John Radcliffe Hospital
Headley Way
Headington
Oxford
England
OX3 9DU

Study participating centre
Cambridge University Hospitals NHS Foundation Trust
Addenbrookes Hospital
Cambridge
England
CB2 0AU

Study participating centre
Royal Devon University Healthcare NHS Foundation Trust
Royal Devon University NHS Ft
Barrack Road
Exeter
England
EX2 5DW

Study participating centre

Dorset County Hospital NHS Foundation Trust
Dorset County Hospital
Williams Avenue
Dorchester
England
DT1 2JY

Study participating centre
University Hospitals Dorset NHS Foundation Trust
Poole Hospital
Longfleet Road
Poole
England
BH15 2JB

Study participating centre
North West Anglia NHS Foundation Trust
Peterborough City Hospital
Bretton Gate
Bretton
Peterborough
England
PE3 9GZ

Study participating centre
University Hospitals of Derby and Burton NHS Foundation Trust
Royal Derby Hospital
Uttoxeter Road
Derby
England
DE22 3NE

Sponsor information

Organisation
University of Oxford

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Government

Funder Name
National Institute for Health and Care Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be stored in a non-publicly available repository (to be determined following the publication of results)

IPD sharing plan summary
Stored in non-publicly available repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		01/12/2025	06/01/2026	Yes	No
Protocol article		31/07/2023	21/08/2023	Yes	No
HRA research summary			28/06/2023	No	No
Other publications	Participants' perspectives	05/07/2024	08/07/2024	Yes	No
Other publications	Embedded qualitative study	01/10/2026	08/10/2026	Yes	No
Statistical Analysis Plan	version 1.0	14/03/2023	16/03/2023	No	No
Statistical Analysis Plan	version 2.0	07/10/2024	08/11/2024	No	No
Statistical Analysis Plan	version 1.0	07/10/2024	08/11/2024	No	No
Study website		11/11/2025	11/11/2025	No	Yes