Participant Information sheet

1. Study title

PROMED-EX: A Randomised Controlled Trial to evaluate the effect of a protein enriched Mediterranean diet and exercise intervention on the nutritional status and memory of individuals at risk of undernutrition and memory loss.

2. Invitation

You are invited to take part in a research study that is being carried out in Northern Ireland. The research team is led by researchers from Queen's University Belfast (QUB) and involves other research teams from Europe including University College Dublin (UCD), Wageningen University and the Friedrich-Alexandra University of Erlangen-Nümberg. Before you decide to take part, it is important that you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with your family and friends if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

3. What is the purpose of the study?

It is common for older people to experience nutritional problems such as low appetite, eating less food or having trouble digesting their food. This can cause gradual weight loss and problems with health, such as reduced physical strength and poor memory and thinking functions. It is thought that early intervention to correct nutritional problems and avoid weight loss in older adults can benefit

these health issues. The PROMED-EX study will test whether adopting a healthy diet (with or without exercise) can improve nutrition as well as cognitive (memory and thinking) functions.

4. Why have I been selected?

You have been selected to take part in this project as you are 60 years old or over, have a risk of undernutrition (this might be due to a poor appetite, recent weight loss or poor diet quality) and you have reported a minor decline in your cognitive function (memory or thinking abilities). You have also suggested that you are ready to make changes to your lifestyle including changes to your diet and exercise routine if advised to do so by the study team.

5. Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be asked to keep this information sheet and to sign a consent form (you will also keep a copy of the consent form). There will be 104 other similar volunteers taking part in this study.

If you decide to take part, you are free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

6. What will happen to me if I take part?

If you express an interest in taking part, a researcher will contact you by telephone to complete a screening appointment; a screening appointment is where we ask questions to assess if you are suitable to take part in this study.. At this stage, the researcher will ask you some questions about your health and complete a short assessment of your nutrition status and cognitive (memory and thinking) function.

The screening telephone call should last no longer than 45 minutes and the researcher will confirm whether you are eligible to take part in the study.

If you are eligible to take part, you will be given a unique study ID number and randomly assigned to a study group. Sometimes we do not know which treatment or lifestyle change is best, so we need to make comparisons between the different approaches. Participants will be randomly placed into one of three study groups and then comparisons will be made between the groups at the end of the study. The groups are selected by a computer which has no information about the individual – i.e., participants are randomised into the groups by chance. The 3 study groups are:

- **Group 1. PROMED (High PROtein MEDiterranean diet**) – you will be advised to follow a high protein Mediterranean diet
- **Group 2. PROMED-EX** (**High PROtein MEDiterranean diet and Exercise)** – you will be asked to follow a high protein Mediterranean diet and an exercise programme
- **Group 3. Control** – you will be asked to continue with your normal diet and exercise routine.

Each of the three study groups are described in more detail below.

1. **PROMED (High PROtein MEDiterranean diet**)

At the start of the study a researcher will either visit you at home, invite you to the Centre for Public Health (CPH) or arrange a phone/video call with you (whichever is the best option for you) in order to deliver the PROMED-EX intervention to you. During this time, they will provide advice and written materials including recipes and meal plans to support you to make the dietary changes towards the PROMED diet. This visit should last no longer than 60

minutes. You will be encouraged to eat foods that are high in protein and common in a Mediterranean diet. These foods will be based on your dietary preferences but can include milk, fruits, vegetables, nuts, fish, chicken and high protein cereals. You will be encouraged to set small dietary goals to build up over time and track your progress in achieving these goals.

Following the initial appointment, the researcher will contact you weekly in the first three months, either online or by telephone. These calls will last up to 30 minutes and are intended to review your progress and support you to make the recommended dietary changes. Key PROMED foods will be delivered to you on either a weekly or fortnightly basis for the first 3 months to help you achieve the dietary goal. You will also be advised to keep your exercise routine the same as it is now.

After the first 3 months of following the PROMED diet, you will no longer receive the weekly phone calls or food deliveries. However you will be asked to continue with the dietary changes for a further 3 months (i.e. from months 3 to 6).

2. PROMED-EX (High PROtein MEDiterranean diet and Exercise)

You will receive the PROMED dietary advice, written materials and key foods as discussed above and you will also be asked to follow a home-based exercise programme.

At the initial appointment, lasting up to 2 hours, the researcher will provide PROMED diet advice (described above) and then devise an exercise programme suited to your fitness level and which you can easily complete at home. This exercise programme will combine aerobic exercises to increase the heart rate and resistance exercises to improve muscle strength. The researcher will show you

how to do the exercises and provide you with a written booklet describing your personal exercise programme.

The researcher will also provide you with dumbbells and direct you to pre-recorded videos of the exercises which will be available online. The videos can also be provided on DVD if that is preferable. You will be advised to perform the exercise programme at least twice per week for 30-60 minutes and complete an activity diary to track your progress. You will also receive a pedometer to count your daily steps. The study researcher will contact you on a weekly basis by telephone for the first 3 months of the study to check in and see how you are finding the diet and exercise programme, and to review your progress and support you to make the recommended diet and exercise changes.

After the first 3 months of following the PROMED-EX diet and exercise programme, you will no longer receive the weekly phone calls or food deliveries. However you will be asked to continue with the diet and exercise changes for a further 3 months (i.e. from months 3 to 6).

Group 3 - Control (usual care)

If assigned to this group, you will be given an information sheet with healthy eating advice. We will ask that you keep all other aspects of your diet and exercise routine the same. The research team will provide all of the PROMED-EX diet and exercise written resources to you at the end of the study.

Further information for all Study Participants

The study will last for 6 months in total. During this time, we ask that you avoid taking dietary or vitamin supplements (unless prescribed by your doctor) and let the research team know if anything changes with your health/medical treatment.

You will be asked to meet with the researcher 3 times:

- At the beginning of the study
- After 3 months
- After 6 months

This will be either in your home or at CPH (QUB) whichever you prefer. At each of these 3 visits we will measure your weight, height, body composition (muscle and fat mass), muscle strength, physical function, pulse rate and blood pressure. The researcher will also conduct a cognitive assessment to test your memory and thinking functions and complete some questionnaires with you about your medical history, appetite, diet, exercise and quality of life. You will be asked for a blood sample (50 ml, which is approximately 10 teaspoons) to allow us to examine markers of your nutrition and health. The researcher taking the study measurements and blood samples will be fully trained. The 3 scheduled visits with the researcher will last approximately 2 hours each. You will also be asked to complete a detailed food record at home on 3 occasions during the 6-month period.

If your nutritional assessment score or cognitive test battery results suggest you may be malnourished or have a cognitive impairment, we will contact your GP, to inform them of your test results. We will also contact your GP if your blood pressure measurement is ≥179/109.

At the end of the study, we will ask you to complete a questionnaire on what you felt about the study procedures and your experience of being in the study. You will also receive a summary of the study results when available.

Additional measurement

We will also ask you to provide a small stool (poo) sample at the beginning of the study and after 6 months. This is an optional part of the study and will allow us to measure changes in the type and amount of bacteria in your gut. If you agree

to provide a poo sample, we will provide you with clear instructions and a collection device to allow you to collect the poo sample in your own home at a convenient time. We will also ask you to complete a short questionnaire once you have collected your sample. This will ask questions about the date and timing of your sample collection. You will be given a stamped addressed envelope to post the collected sample to the researcher at QUB where it will be stored in a secure freezer before being transferred to specialists at the Quadram Institute, Norwich England for analysis.

7. What are the possible advantages of taking part?

The PROMED-EX trial aims to test the effect of a 6-month protein enriched Mediterranean diet, with and without exercise, on the risk of undernutrition and cognitive (memory and thinking) decline in older adults in Northern Ireland. PROMED-EX is completed with the help of a group of older people with the same experiences of mild memory complaints and/or nutritional problems who are helping to guide this research project.

Our goal is to find ways of addressing undernutrition which can reduce memory decline and other negative health impacts on older people. This research can be used to guide public health dietary guidelines for older people to prevent undernutrition and increase healthy life years.

8. What are the possible disadvantages or risks of taking part?

There are no real disadvantages to taking part. Everyone taking part will be visited in their home or attend the CPH, QUB on three occasions to have a series of measurements (discussed in detail above) collected along with a blood sample and optional stool (poo) sample. There is a small risk of developing bruising after the blood sample has been taken however a fully trained phlebotomist (someone

specifically trained in taking blood samples) will take the blood sample to ensure any discomfort is kept to a minimum. If you are assigned to the PROMED-EX group, there may be a small risk of injury associated with starting exercise such as a sprained muscle. The exercise programme will be carefully designed by the study team based on your ability and fitness, which will minimise any injury risk. A member of the research team will attend your home or you may attend the CPH to complete study measurements and provide the intervention, and this may increase the risk of COVID transmission. We plan to reduce this risk by following strict COVID precautions during each visit. This will include ensuring our researchers are vaccinated and wearing Personal Protective Equipment (PPE) at all times within your home and maintaining a two metre distance whenever possible. There is also a time commitment involved in taking part, particularly if you are assigned to the PROMED or PROMED-EX groups where you will have contact with the research team on a weekly basis. Every effort has been made by the research team to minimise any time burden for participants.

9. What if something goes wrong?

Complaints: If you have a concern about any aspect of this study, you should ask to speak to the researchers. They will do their best to answer your questions. If a suitable explanation is not provided by a researcher, then you should contact the study co-ordinator Dr Farsi at the CPH, QUB (02890 971602 or promedex@qub.ac.uk) or the Chief Investigator Dr McEvoy at the CPH, QUB (02890 976078 or c.mcevoy@qub.ac.uk.)

Harm: If you are harmed by taking part in this research project, there are no special compensation arrangements. If you are harmed due to someone's negligence, then you may have grounds for a legal action but you may have to pay for it.

10. Will my participation be kept confidential?

If you agree to take part in this research study, the information you provide will be securely stored by the research team. Data will be collected and stored according to the General Data Protection Regulation. We will give you a study ID number when you enter the study and we will use this on all study paperwork containing your personal information, rather than using your name or any other potentially identifying information. Any data collected will be anonymised and archived in password-protected study databases. Any documents containing personal data will be held separately in a secure filing cabinet at CPH, QUB. Anonymised participant data will be held on a password protected computer within a secure building at QUB. Any blood and stool samples will be collected, transferred, processed and stored using your unique study ID number. Some of your blood sample will be securely transferred from QUB to UCD's laboratories for analysis of small molecules and your stool samples will also be transferred to our study partner in the Quadram Institute in Norwich, England. All information collected about you during the course of the research study will be kept strictly confidential.

11. What will happen to the results of the research study?

The results will help researchers better understand how a high protein Mediterranean diet and exercise might improve health, nutrition, physical function and the brain health of older adults. The results will help the research team develop dietary and lifestyle guidance to prevent poor nutrition, muscle loss and declines in memory for older adults – recommendations that are currently lacking. Results will be presented at scientific and patient conferences as well as events for the public and professionals working in this area; they will also be published in scientific journals. You will not be identified in any publication or presentation.

12. What will happen to my personal data?

QUB in Northern Ireland is the sponsor for this study. We will use information collected from you to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. Responsible individuals from QUB and regulatory organisations may look at your research records to check the accuracy of the research study. The only people in QUB who will have access to information that identifies you will be the researchers who need to contact you for recruitment and data collection purposes or audit the data collection process.

QUB will keep identifiable information about you for 10 years after the study has finished.

13. Where can I find out more about how my information is used?

You can find out more about how we use your information by asking one of the research team or from the website https://www.qub.ac.uk/privacynotice or Information Compliance Unit: 028 9097 2505 and info.compliance@qub.ac.uk

14. What will happen if I do not wish to carry on with the study?

You can stop being part of the study at any time, without giving a reason, however we will keep information about you that we already have. If you decide to withdraw from the study and have provided your consent, any blood samples which have already been stored will be used in the study, but no further samples will be collected.

15. Who is organising and funding the research?

The research is being sponsored by QUB. The study is funded under the European Horizon 2020 Joint Programming Initiative "A Healthy Diet for a Healthy Life" (JPI HDHL) with National funding provided from the UK Research and Innovation (UKRI): Biotechnology and Biological Sciences Research Council

(BBSRC) and Medical Research Council (MRC). The members of the research team will not receive any payments for including you in this study.

16. Who has reviewed the study?

This research project has been peer-reviewed by several experts working in this research area – this is a requirement of the organisations providing funding for the project and aims to make sure the research is well designed, of high quality and important to inform the research in this area. The study has then been reviewed and approved by the North West- Greater Manchester East Research Ethics Committee.

17. Researcher training

Dr McEvoy is supervising two PhD students who will be involved in the delivery and analysis of the intervention as part of their PhD research being completed at QUB.

18. Further information and contact details:

If you have any questions that have not been answered here, please contact us for further information. The contact details for the Chief Investigator and Study Coordinator are provided below:

Chief Investigator	**Study Coordinator**
Dr Claire McEvoy Centre for Public Health 01.024 Institute of Clinical Sciences, A Queen's University Belfast Grosvenor Road Belfast BT12 6BJ Email: c.mcevoy@qub.ac.uk	Dr Dominic Farsi Centre for Public Health 01.027 Institute of Clinical Sciences, A Queen's University Belfast Grosvenor Road Belfast BT12 6BJ Email: promedex@qub.ac.uk

Telephone: 0044 2897 6078	Telephone: 0044 2890 971602

The researchers would like to thank you for considering whether to take part in this study.

All volunteers will be provided with their own copy of this Participant Information Sheet along with a copy of the consent form which you sign.