Welcome to our new facility

At the Rowett we run a variety of human nutrition studies for which volunteers are needed. A brief description of our latest studies and how to take part are listed here.

If you have received this newsletter in error or have any comments or questions please feel free to get in touch with David Bremner, Research Assistant. Email: d.bremner@abdn.ac.uk
Our latest studies

Zinc in Potatoes (ZiP study)

Are you getting enough daily zinc? It’s probably not a question uppermost in your mind every morning and you may be unaware that your food choices are affecting your intake of zinc and that this has an impact on your health.

Zinc is an essential trace element and has a number of roles and functions in the human body including:

• It is important for immune function.

• It is involved in wound healing and tissue repair.

• It is needed for the senses of taste and smell.

Using normal farming methods, we have increased the zinc content of a variety of potato to approx 3x that of unfortified potatoes because they are a favoured food for people who are most at risk of zinc deficiency. Our aim is to look at whether these fortified potatoes can improve the levels of zinc and the health of individuals with a low zinc status.

We are looking to recruit volunteers who are:

• Healthy men aged 18-50 years
• Normal to overweight – BMI 18-30 kg/m²
• Non-smoker
• Not taking any long term medication or health supplements

This 5 week long study involves individuals eating low zinc foods for 2 weeks followed by higher zinc foods including portions of potato for a further 2 weeks. All foods will be supplied. Volunteers will receive 3 injections of zinc and be asked to provide blood samples, a number of urine samples and have non-invasive eye scans to check how eye health responds to body zinc level.

At the end of the study volunteers will receive a wealth of information about various aspects of their health as well as a gratuity for participating.
Is this the right whey?

After meals, the levels of glucose circulating in the body rises. Certain food components can lower these glucose levels while also helping to curb appetite, particularly proteins. This works by increasing the release of gut hormones. Whey protein left over when milk is made into cheese, is particularly good at this.

The purpose of this study is to find whether taking a whey protein based supplement in the form of a small drink before a meal can help to lower blood glucose in the period after the meal. Regular blood samples will be taken over the course of a few hours after eating, as well as filling in a questionnaire concerning hunger and appetite.

We are looking to recruit volunteers who are:

- Men and women aged between 55 and 70
- Body Mass Index (BMI) greater than 25 kg/m²
- Non-smokers
- Not allergic to milk protein or lactose intolerant
- Non-diabetic

Ready to eat breakfast study

We are looking for volunteers for a new study researching the effects of ready-to-eat breakfast products. These products are convenient, but what effect do they have on our energy expenditure?

This study will investigate the effect of soluble fibres in the diet by comparing the effects of 4 breakfasts high in soluble fibres on the metabolic rate of healthy adults. These breakfasts will be comprised of ready-to-eat products currently available in most supermarkets.

We are looking to recruit volunteers who are:

- Males aged between 18 – 65
- Females aged 18 or over currently taking the oral contraceptive pill
- Body Mass Index (BMI) between 18.5 and 42 kg/m²
- Individuals who regularly eat breakfast (at least 5 days per week)
Propionate supplementation and blood vessel stiffness (PROPAC) study

Around 38% of the UK’s adult population are affected by high blood pressure which is a huge risk factor for cardiovascular disease.

We know that whole grain foods (oats, unrefined wheats etc) can lower blood pressure. Recent studies suggest that breakdown of indigestible fibres by gut bacteria releases substances called short chain fatty acids (SCFA), which cause this effect on blood pressure. These substances, including one called propionate, are commonly used as food additives and are known to be safe. This study aims to find out if taking a propionate containing drink will help to reduce blood vessel stiffness.

We are looking to recruit:

- Healthy men aged 40-65 years old
- Body Mass Index (BMI) between 19 and 30 kg/m²
- Not taking any long term medication or nutritional supplements or probiotics
- Blood pressure less than 159/99mm Hg and greater than 115/70mm Hg
- Not consuming a high intake of wholegrain foods or prebiotics (> 2 servings per day)

Phyto-foods study

There is a lot of scientific evidence to suggest that the bacteria in our gut play a major role in health. In this study we hope to identify how the bacteria in our gut changes the food that we eat into products that may help to prevent disease. The foods we will look are phytochemical rich bread rolls incorporating powders of oat, pea, soya, spinach, kale and strawberry.

We are looking to recruit volunteers who are:

- Healthy men and women aged 18-55 years
- Body Mass Index (BMI) less than 30 kg/m²
- Non-smokers
- Not taking any medication or nutritional supplements
Thermic Effect Study

We gain weight when the energy taken in from our food outweighs the amount we expend. While over 50% of the energy we use is spent on keeping the body functioning, around 40% is used for physical activity. In addition to this, around 10-15% of energy is spent on what is referred to as Diet Induced Thermogenesis (DIT).

Diet Induced Thermogenesis is the increase in the amount of energy our body uses following a meal. It represents the energy that is used to digest the food. Some nutrients such as proteins require more energy to digest and therefore produce a greater DIT than others such as fat. In addition to this, some food components are able to independently stimulate calorie burning. Examples such as caffeine, chilli, ginger and green tea have been shown to induce calorie burning through DIT. The inclusion of such foods in our diet should help to increase the amount of energy our body burns and subsequently help with weight control.

This study aims to determine the DIT effects of some plant foods that have been shown to contain compounds that stimulate DIT and that are native to Scotland (blackberries, blueberries, red raspberries, wild garlic and sea buckthorn). If found to be effective then these foods could be used to develop dietary strategies to help weight control in Scotland and beyond.

We are looking to recruit volunteers who are:

- Men and pre-menopausal women aged 18 – 50
- Not taking hormonal contraceptives
- Non-smokers
- Non-vegetarian or non-vegan
- Not suffering from any food allergies or intolerances
- Not suffering from diabetes, high blood pressure, gastrointestinal or thyroid disorders
- Not consuming large amounts of caffeine (more than 6 cups of tea/coffee per day or energy drinks)
- Body Mass Index (BMI) between 18.5 – 25kg/m²
Moving with the Times

In March 2016 the Rowett moved from its home of over 100 years at Bucksburn to a new purpose built facility on the Foresterhill site beside the hospital. The Human Nutrition Unit occupies the entire level 3 of this new 5 level building and some of our features include:

- 3 clinical rooms for blood sampling
- 2 Resting Metabolic Rate (RMR) machines
- BOD POD body composition room
- Medical consulting room
- Interview Room
- Light, spacious volunteer dining area
- Volunteer lounge
- 7 double bedrooms with en-suite facilities
- Physical activity expenditure fitness suite
- Barrier controlled volunteer car parking spaces

Resting Metabolic Rate (RMR)

Metabolism refers to the amount of energy used in a set period of time or more commonly as that rate at which the body burns calories. The RMR is a measure of the amount of energy used by the body in an inactive state to simply maintain basic life functions including respiration, circulation, digestion, brain activity etc.

The RMR varies from person to person and is influenced by many characteristics including weight, age, height, gender, physical activity level, muscle mass and normal caloric intake.

Our Quark RMR uses indirect calorimetry which is the measurement of the amount of heat produced by a subject by determination of amount of oxygen consumed and amount of carbon dioxide eliminated.

The canopy or dilution technique used on site involves lying relaxed on a bed for approx 30 mins with the head under a transparent hood connected to a pump which applies an adjustable ventilation through it. Exhaled gas dilutes the fresh air ventilated under the hood and a sample of this mixture is analysed. RMR measurements are usually done after an overnight fast.

BOD POD

The Bod Pod is an Air Displacement Plethysmograph that uses whole body densitometry to determine body composition.

Simply put, it is similar in principle to underwater weighing. The Bod Pod measures body mass (weight) and volume by getting the volunteer to sit inside. Body density can then be calculated. Once the overall density of the body is determined, the relative proportions of fat mass/lean mass are calculated.
Bedrooms
As part of a residential stay during participation in one of our studies or, coming from afar and requiring an overnight stay prior to early morning blood sampling, the new Rowett facility boasts 7 double bedrooms all with en-suite facilities.

Dining room
The volunteer dining area where you will eat any research meals as part of the studies or have breakfast after completing any study measurements is spacious and bright.

Volunteer Lounge
A spacious area equipped with two televisions with freeview and sofas where volunteers can go to relax while residential here or in between sampling periods. Volunteers wishing to use i-pads or other hand held devices will be able to connect to the free university wi-fi while there.

Volunteer kitchen
For those participating in studies requiring residential stay, there is a fully equipped kitchen facility which allows preparation of or re-heating of volunteer meals at times where staff are not normally present.

Parking
When coming to the HNU for your initial meeting with the investigators, screening or sampling, or as a longer term resident, there are a number of designated, barrier controlled volunteer parking spaces. The barrier is controlled by staff during the day who can be contacted by pressing the button on the control unit when you arrive. Once enrolled onto a study you will be given a trustcard which will raise the barrier.
Human Nutrition Unit on Facebook

The Rowett Institute has its own Facebook page. The aim is to provide volunteers for our Human Nutrition studies with information about studies as well as provide feedback on completed studies. We will also try to answer any questions that you may have about what volunteering for a particular study involves. https://www.facebook.com/RowettAberdeen

If you have a topic you would like more detail on or ideas for topics to include in our newsletters then please send suggestions to David Bremner at the e-mail address listed on page 1. All suggestions or requests for topic matters will be treated confidentially. Alternatively, if you would like to see a more in depth explanation about any of the current studies or maybe a study you previously participated in, then contact us in the same way.

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