

NIHR Bristol Nutrition BRU Newsletter

I am delighted to welcome back Amanda Chong and Elsie Horne (and congratulations to Elsie on doing so well in her MSc examinations!), to welcome Amy Davies and Duncan Proctor and to have Brigid Lynch visiting us this week and again later in the year.



Andy Ness meets HRH Prince Charles .

We are now into our final year and I am pleased to see all the publications arising from our studies. As this newsletter shows we are still recruiting to studies, collecting and analysing data. So there should be many more publications over the rest of this final year.

We ran our nutritional epidemiology course for the second time last month. We made a number of changes based on our experience with the pilot. The course felt much improved and the feedback supported this.

Many thanks to all the staff and tutors for their contributions. We submitted a nutrition theme in Bristol's BRC submission. I think we submitted a strong proposal and I have my fingers crossed for the interviews in July. I would like to thank everyone in the BRU for their input, including our affiliates, who gave up a day of their time last month to help us plan the nutrition theme.

I would also like to thank our strategy group (Professors Janet Cade, Kay-Tee Khaw and Ivan Perry), for their support and guidance over the last few years and for being so positive about our progress when we met a few weeks ago.

Finally it was a pleasure and honour to meet Prince Charles last week and to describe our work to him. As I talked to Prince Charles I felt proud of what we have achieved over the past four years. Well done all!



Breakfast club at the Workhouse Café
Organised by Amanda Chong

Promoting Electrically-assisted cycling in people with Diabetes: Acceptability and feasibility (PEDAL)



**By Byron Tibbitts,
Research Associate**

There is a need to develop acceptable and sustainable lifestyle interventions, which empower people with type 2 diabetes to change their behaviour and improve their health. In the Sedentary Behaviour theme, headed up by Professor Ashley

Cooper (pictured cycling), we have been building a portfolio of research with this aim in mind, beginning with the very successful STAMP-2 study. STAMP-2 was an observational study that collected lifestyle and metabolic data on 170 people with recently-diagnosed type 2 diabetes with the aim of understanding more about the determinants of sedentary behaviour in this population, and with a view to developing targeted interventions to reduce prolonged sedentary time and improve metabolic health. One key finding from STAMP-2 was that many individuals made lots of short journeys by car; journeys which, if replaced by active forms of transport like cycling, could contribute meaningfully to overall physical activity levels whilst at the same time reducing sedentary time. However, there are potential barriers to cycling. These include a lack of equipment, a lack of perceived safety, hilly routes and the perceived physical effort required to cycle.

Electrically-assisted bicycles provide graded assistance to the user, essentially flattening the hills, but still raise the heart rate enough to improve cardiorespiratory fitness and metabolic health. Therefore they may help to overcome some of these barriers and offer a novel approach to increasing physical activity in clinical populations with low fitness, such as people with type 2 diabetes. PEDAL is a feasibility trial to test a novel intervention in this population. Working with Bristol-based companies **Life Cycle UK** and **Sustainable Travel Solutions Ltd**, PEDAL provides participants with an electrically-assisted bicycle (eBike) for personal use for up to 6 months, with cycle training and practical support provided as part of the intervention. Twenty volunteers have been recruited from the STAMP-2 participant database to take part in this study, and we have just completed baseline measurements with everyone. They will now have personal use of an eBike each until November, at which time we will conduct follow-up measures to explore study effects. Changes in cycling behaviour and cardiorespiratory fitness are certainly of interest to us in this study.

However as a feasibility trial this study is primarily interested in finding out how acceptable this intervention has been to participants, and whether being provided with these resources has enabled them to make sustainable changes to their health behaviours. Our main outcomes therefore are recruitment and retention to the study, along with qualitative exploration of participants' experience of the intervention as well as any changes in attitude to active travel and physical activity.



STAFF CHANGES

Duncan Procter

I started with a BSc in Zoology from the University of Durham, then an MSc in Evolutionary and Behavioural Ecology from the University of Exeter. Following on from those I have just completed a PhD at the University of York, working on the effects of changes in forest cover on a species of ant that specialises on forests. So I am in some ways an entomologist, ecologist and evolutionary biologist..... I will admit it does not then seem the next logical step to start working on the kind of research topics that the BRU is interested in. I now find myself working on the ENABLE project, assessing how the built environment affects human activity. I was looking for a new challenge after my PhD and it would appear I have found one. In terms of data analysis, there are a great many similarities with my background, analysing spatial data and assessing the relationship between an organism and the environment. In terms of the field there are very few similarities, but new knowledge is always good. My job here will be to deal with vast quantities of GPS and accelerometer data, and help to make the most of the spatial aspect of that data, rather than just using the speed the GPS kicks out. Anyone is welcome to hassle me with related problems, once I have had time to get into the field and data a little.



Elsie Horne

After graduating from the University of Bristol in 2015 with a BSc in Mathematics I was awarded an NIHR Pre-Doctoral Research Methods Fellowship at the BRU. As part of this fellowship, I was required to undertake an MSc in Medical Statistics. For the past 8 months I have studied at the University of Leicester, with occasional trips back to the BRU to plan my summer project. The summer project will be my first opportunity to apply the skills gained from my MSc and I am looking forward to getting started when I move to the BRU full time in June. The primary focus of my project will be to identify activity patterns within accelerometry data collected in the Early ACTID trial, with the hope of enabling public health advice on activity to be better targeted. As a secondary focus I will be comparing the standard statistical methods of dealing with data of this nature to a more complex approach. In May I attended a training course entitled 'Instrumental Variables and Structural Equation Modelling in Stata' – I look forward to applying the techniques from this course to the Early ACTID data. Staying active plays an important role in my life; I am particularly interested in the effects of nutrition on health and performance in sport so am looking forward to getting involved in further projects at the BRU for the remainder of my fellowship.

Amy Davies

When leaving school I originally trained as a Dental nurse here at The University of Bristol. After a few years working clinically I decided to change my career path and went to study a BSc in Business Decision Mathematics and an MSc in Statistics. Following university I joined The University of Bristol facilitating research at ALSPAC. In 2015 I moved from School of Social and Community Medicine to Oral and Dental Sciences where I joined the Cleft Collective as a Research Coordinator. I was thrilled to be offered a 0.2 FTE placement at the BRU in April 2016 as a Senior Research Associate alongside my role at The Cleft Collective. My role within the BRU will be focused on the analysis of small projects within Head & Neck 5000. Since joining the BRU I have been made to feel very welcome. I am looking forward to getting stuck into some analysis and being able to use and develop the skills I obtained throughout my degrees.

Amanda Chong

I moved to Bristol in November 2015 after graduating from a Bachelor of Animal and Veterinary Bioscience at the University of Sydney, and began working at the BRU in the beginning of April. The idea of starting a new job in a new country was initially quite daunting, but everyone at the BRU is so lovely that I am very much enjoying working here. As a Casual Research Assistant, my role is to assist in scientific research administration tasks and data processing on a range of studies such as Cleft Care UK, PrEvENT, Head and Neck, and systematic reviews. This variety of studies has allowed me to learn about the different project themes that the BRU focus on, and the different types of data being collected in each study. The change from animal research to studies on humans has definitely been a big change for me. I am used to working on a farm trying to herd sheep into a pen so we can flip them and get blood samples, or trekking through the Sumatran rainforest collecting faecal samples from wild orangutans. I am looking forward to working on many more studies while I am here, and hopefully organising more social events and Breakfast Club mornings!

International Clinical Trials Day: Friday 20th May

By Shirley Jenkins, Management Assistant to the Bristol Nutrition BRU

The Bristol Nutrition BRU presented a selection of their research at the International Clinical Trials day held on Friday 20th May 2016 by University Hospitals Bristol. The BRU stall was situated in the Bristol Heart Institute Atrium and was visited by a selection of health professionals and members of the public. On display were posters about the research and flyers about the unit. Rachel Perry, Eileen Sutton, Luke Robles and Amanda Chong, from the BRU, were available on the day to talk about the work the unit is undertaking, and to encourage health professionals and the public to engage with research.



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Nutritional Epidemiology Course 2016

By Dr Kate Northstone, Senior Research Fellow

May saw the second run of the Nutritional Epidemiology course hosted by the BRU. The course focusses on introducing participants to the nuances of nutritional data and how to account for these in the analysis and interpretation of epidemiological studies involving dietary data. The course was piloted internally last year with some tweaks made as a result. Tutors come from the Schools of Social and Community Medicine and Policy Studies as well as from the BRU itself. The three day course goes back to basics explaining the importance of diet in health and the different ways in which dietary data may be captured. It then moves on to present ways of handling the data itself and issues such as energy adjustment, implausible data and confounding. Ways of summarising the diet through scores and patterns are discussed and finally participants are introduced to body composition and physical activity, which of course go hand in hand with diet. This year we welcomed participants from as far away as Italy and received positive feedback from all involved. The timetable is available on the BRU website and we will be looking to ensure the course runs annually from now on. Take a look and register your interest by emailing shirley.jenkins@bristol.ac.uk so that you can be added to the mailing list.



Optimising rehydration to reduce the risk of cerebral oedema in children with diabetic ketoacidosis via bioimpedance monitoring

By Vanessa Marshall, BRU Manager

This feasibility study, is a collaboration with the biotechnology company, Maltron. The study aims to define changes in extracellular and intracellular water during standard insulin and fluid treatment in children aged 5 – 18 years presenting with Diabetic Ketoacidosis (DKA). This will be done via bioimpedance, using the Maltron: BioScan 920-II -2 and comparing cases to controls. The study objective is to better understand and manage the mechanism of cerebral oedema (a rare but life threatening complication of DKA) in children. Bio-impedance has been used for many years to tell us about body composition (how much muscle and fat is in the body). This is the first time the device will be tested in children with ketoacidosis as a measure of rehydration. If the changes in bio-impedance match those we routinely take in blood tests when measuring improvement, then future clinical care may be improved for children with ketoacidosis as we can measure bio-impedance painlessly almost continuously rather than using blood tests every few hours. Staff in the Children's Emergency Department have been trained to use the machine and the study is open to recruitment.



Sabbatical

By Dr Brigid Lynch,
Senior Research Fellow,
Cancer Epidemiology Centre, Cancer Council
Victoria

I will be visiting the Bristol Nutrition BRU from Monday 13 to Friday 17 June. I am very much looking forward to meeting with staff and students, and hearing more about the innovative translational work being done by the group. Much of my research over the past decade has focussed on how physical activity and sedentary behaviour are associated with health outcomes for cancer survivors. I have a strong interest in methodological issues relating to physical activity and sedentary behaviour assessment, particularly in clinical populations. I have generated some of the first objective data on these behaviours amongst cancer survivors, using accelerometry. More recently, I've become interested in exploring the feasibility of using commercially available wearable technology to facilitate improvements in physical activity. One of the projects I will be highlighting in my presentation to the

Bristol Nutrition BRU is a WRCF International funded trial of wearable technology in breast cancer survivors. The ACTIVITY And TEchnology (ACTIVATE) Trial is a randomised control trial using wearable technology activity monitors (the Garmin Vivofit 2®). Increasing physical activity after a breast cancer diagnosis has been shown to improve survival and other health outcomes, yet many women who have had breast cancer struggle to implement such changes unaided. The ACTIVATE Trial will test whether using wearable technology can increase physical activity and reduce sitting time amongst women who have completed primary treatment for postmenopausal breast cancer. Whilst in Bristol I will also be progressing a project that I have initiated with Richard Martin and Sarah Lewis, which will utilise the framework they have developed with the WRCF to conduct a synthesis of known and possible mechanisms underlying the associations of physical activity and sedentary behaviour with postmenopausal breast cancer risk. I will be returning to the University of Bristol later in the year for a ten week period, funded by a Yamagiwa-Yoshida Memorial international study grant from the UICC, in order to complete the first phase of this project.

Food. the forgotten Medicine

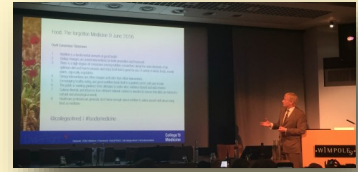
By Vanessa Marshall, BRU Manager

This first UK conference on Food and Medicine, at the Royal Society of Medicine was attended by Vanessa Marshall and Andy Ness. It was advertised as a "must attend" event for all healthcare professionals, who want to know how food can be used to prevent and treat disease. The conference promised to focus on providing clinicians with the necessary resources and information to be applied in everyday practice and was keenly anticipated. It had great media interest, not least due to the VIP guest at lunchtime- HRH Prince Charles who presented prizes to poster and essay winners, and spoke to the conference organising committee, which included Andy Ness.

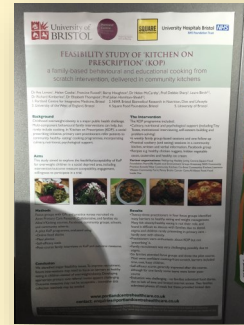


The day was chaired by the universally amusing Phil Hammond and speakers included Professor Tim Spector from King's College London, speaking about the

importance of the microbiome. The patient perspective was given by Carrie Grant, judge and vocal coach on BBC 1's Fame Academy who is a keen campaigner for change in our healthcare system. Delegates were even treated to a healthy cooking demonstration by the Medicinal Chef, Dale Pinnock.



Included in the Poster Display was a Bristol Nutrition BRU affiliated project on Kitchen on Prescription, by Ava Lorenc and Elizabeth Thompson, from the Portland Centre for Integrative Medicine.



"Virtual" Research Meetings with Leicester-Loughborough BRU

By Vanessa Marshall, BRU Manager

Directors, Managers and Training leads from Bristol Nutrition BRU, Leicester-Loughborough Nutrition BRU and the Southampton BRC hold regular meetings to share plans, progress and policies. We have also produced a joint document "Nutrition and Physical Activity Collaborative 2012-2016.

http://www.uhbristol.nhs.uk/media/2556091/npa_collaborative_bru__4_.pdf

In addition to the established meetings, we have now piloted two joint "virtual research meetings" between Bristol and Leicester-Loughborough utilising NIHR Google hub technology. These are sessions for trainees to present via video link with senior members of staff from the reciprocal unit acting as discussants.

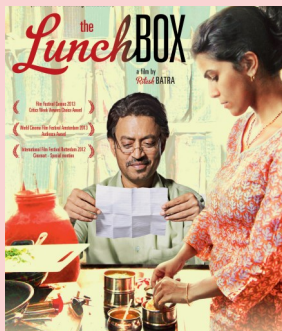
At our most recent successful "virtual meeting", Laura Brocklebank presented her PhD work to examine the acute effects of regularly breaking up prolonged sitting with short bouts of standing or light-intensity walking on interstitial glucose concentration in adults with or at risk of Type 2 diabetes and Tom King from Leicester presented his work on Understanding and overcoming barriers to healthy lifestyles in lorry drivers: the SHIFT (Structured Health Intervention for Truckers) programme". This is a venture we intend to continue.



Laura Brocklebank

Post Easter Social Event at Horts Pub

By Sofia Leadbetter, BRU Administrative Assistant



On Friday 22nd April, staff of the Nutrition BRU team attended a post Easter social event at Horts pub, in the centre of Bristol. A fantastic recommendation by Vanessa Marshall, as Horts has a unique feature, an exclusive director's cut 26 seater screening room, where we could sit back, relax and watch a film whilst enjoying a beverage and some food. The film that was chosen was 'The Lunch Box', a lovely story of a mistaken delivery in Mumbai's famously efficient lunchbox delivery system, which connects a young housewife to an older man, in the dusk of his life, as they build a fantasy world together through notes in the lunchbox. The evening was a success and the film was enjoyed by the whole team.



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