

HNERC News

Human Nutrition and Exercise Research Centre



From the Director



Welcome to our HNERC 2023 update. It's been quite a year for me, stepping up to the director role and building on our historic successes. Over the last year we've been steadily growing the HNERC community with a weekly group meeting to hear about each other's research, getting to grips with post-pandemic working and growing our research identity, visibility, and presence, as this amply newsletter shows. We have organised conferences, won awards, published leading papers. HNERC colleagues have appeared in the media, on conference podia, all the time continuing to lead excellent research and deliver a lively experience for our growing numbers of nutrition, sports, exercise and dietetic students.

For me personally, it has been a pleasure to step into the director role and my thanks to every member of the HNERC team for your support and for your relentless enthusiasm.

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HNERC Communications

As part of the rebranding of the HNRC to the **HNERC**, we have been working to update our communications.

Twitter (or possibly just "X" by the time you read this): our presence on social media (our twitter following is now >1000 individuals and growing) this is a great way to keep up with our latest news. Follow us at @HNERC_NclUni

Website. We have been working hard to update our website with a crisp new feel. The website will function as a one-stop launch pad to access our staff, projects, opportunities and facilities, not to mention a regular blog from our team. The blog is live already, you can find us here: <https://blogs.ncl.ac.uk/hnerc/>

The website wasn't quite ready for our copy deadline, follow the blog or twitter for the official launch.



HNERC Successes

Media Achievements

Dr Oliver Shannon's work, with **Professors Emma Stevenson** and **John Mathers**, on the Mediterranean diet and dementia risk has attracted national and international media attention. The research was featured in, amongst others, The Guardian, Times and Telegraph in the UK, and on CNN, NBC and Fox News in America. The research was published in the high impact medical journal BMC Medicine and shows that following a Mediterranean-like diet could reduce dementia risk by as much as 23%, irrespective of genetic vulnerability for this condition. It is currently the 39th highest ranking article in the world by Altmetrics score (which measures the online attention an article has received, taking into consideration mainstream and social media) for all research papers across all fields of science published in 2023.

Guardian: <https://www.theguardian.com/society/2023/mar/14/mediterranean-diet-may-lower-dementia-risk-by-a-quarter-study-suggests>

Telegraph: <https://www.telegraph.co.uk/news/2023/03/14/mediterranean-diet-could-cut-dementia-risk-nearly-quarter/>

Times: <https://www.thetimes.co.uk/article/mediterranean-diet-lower-risk-dementia-study-2023-m3xwxks6r>

Funding

Dr Oliver Shannon (PI), alongside **Dr Rebecca Townsend** and **Dr Fiona Malcomson** (Co-Is) has received a Forum Grant from Rank Prize to bring together leading researchers exploring the health and environmental impacts of adherence to the Eatwell Guide. The event will take place in June of this year at Newcastle University.

Dr Oliver Shannon and Prof Viktor Korolchuk have received funding from the UKRI AGENTS network to develop an expert consensus on tractable biomarkers of ageing for use in research. They are in the process of hiring a research assistant to work on this project, which will commence in July/August of 2023.

Funding awarded – cross FMS Themes (HNERC, RDCH, PHHI): **Dr Nicola Heslehurst** as PI and PHSI co-apps Judith Rankin, Steph Scott, Gina Nguyen, Kerry Brannen-Tovey and Christine Moller-Christensen have been awarded a grant from NIHR School for Public Health Research (£217,867) "Exploring food insecurity in pregnancy in the UK to inform future Public Health intervention needs." The grant application includes external co-applicants from Lancaster, Birmingham and Teesside Universities, as well as NHS, public health and charity partners: Gateshead and Coventry NHS Trusts and Councils, Moat House Community Trust, Coventry Feeding Network, and Felling Food Network.



Dr Suzanne Spence and colleagues have been awarded the following grants:

- NIHR PHR 'Free School Meals, Diet Quality and Food Insecurity in Secondary School Pupils: a Mixed Methods Study' ~£1.2M (PI Prof J Woodside QUB; Co-I Dr S Spence)
- NIHR PRP Translating Obesity Research into Policy 'Promoting healthier food in secondary schools: developing recommendations to enhance existing national school food policy' ~£150k (PI Dr M Pallan University of Birmingham; Co-I Dr S Spence)
- QR PSF Baseline data collection for evaluation of Universal Free School Meal provision in secondary-school aged pupils in Tower Hamlets' & 'Exploring secondary school pupils' food and drink choices across the school day and purchasing patterns' ~£20k (P Dr S Spence; Co-I Dr J Bradley)

PhD Success

Dr Jen Bradley was awarded her PhD in August 2022. The thesis is entitled '*The development and application of approaches to assessing diet across childhood and adolescence*'.

Ellie Hayes successfully defended her PhD thesis in May 2023. The thesis is entitled '*Recovery from resistance exercise in later life; why does it matter, what do we know about it, and can we do anything about it?*' Prof Emma Stevenson is the primary supervisor and Ellie's PhD was funded through CIMA. Her examiners were Dr David Scott (Deakin University, Australia) and Dr Adrian Holliday (Newcastle University).

Zainab Akhter's PhD was on the topic of pregnancy after bariatric surgery, including risk factors for adverse outcomes and nutritional support provision by healthcare professionals. Zainab is currently working between Newcastle University and the National Congenital Anomaly and Rare Disease Registration Service to continue her previous work on congenital anomalies in pregnancy after bariatric surgery among other studies.

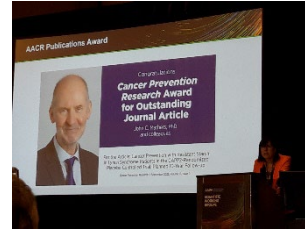
Zoe Bell's doctoral research used a qualitative methodology to explore food insecurity and health amongst women and children. Currently, she is working at King's College London as a research associate directing a portfolio of research that aims to improve our understanding of maternal health and nutrition, and interventions that improve outcomes for women before and during pregnancy. Zoe has recently been awarded a 12-month ESRC-funded LISS DTP Postdoctoral Fellowship starting 1st October 2023. Her fellowship will use a novel partnership approach with Lambeth Council and co-development to explore and move towards addressing food insecurity and health in the first 1,001 days.



Awards

Prof John Mathers has been awarded the Nutrition Society's Gowland Hopkins Award 2022 – see: <https://www.nutrition-society.org/announcements/2022-gowland-hopkins-award-winner-announced-professor-john-mathers>

Prof Mathers and his co-authors have also been awarded the American Association for Cancer Research Cancer Prevention Award for Outstanding Journal Article for their paper entitled “Cancer Prevention with Resistant Starch in Lynch Syndrome Patients in the CAPP2-Randomized Placebo Controlled Trial: Planned 10-Year Follow-up”.



Overseas Collaborations

Prof John Mathers has a new collaboration with Prof Lars T. Fadnes and colleagues (University of Bergen, Norway) investigating gains in life expectancy from sustained changes in dietary patterns using data from UK Biobank and other large prospective cohort studies.

New Studies

Laura Basterfield is running a pilot intervention study in a secondary school in Ashington, using high-intensity interval exercise training (HIIT). This involves short bursts of maximum effort exercise interspersed with rest periods, and is beneficial for both physical and mental wellbeing. Five sixth formers have been trained to be ‘Young Fitness Leaders’, who can lead Year 7 children in short HIIT sessions twice a week, rather than teachers or researchers.

The idea is to give the Young Leaders the skills and confidence to run the sessions, and then pass on their knowledge to the next year group before they leave, so that the sessions can be self-sustaining within school. The study is running until mid-July and is a collaboration with Dr Kathryn Weston at Edinburgh Napier University, Dr Naomi Burn at University of South Australia and Dr Brook Galna at Murdoch University, Western Australia.



Laura will also be supervising a NUmEd student who was successful in winning a vacation research scholarship to investigate “Physical fitness and mental wellbeing of children from Newcastle upon Tyne: does it differ by deprivation?”



Staff News

Congratulations to **Dr Julie Young** who has been appointed to the post of Lecturer in Nutrition Enterprise & Outreach and DPD for Nutrition & Dietetics, School of Biomedical, Nutritional & Sports Science.

Congratulations!

Julie took up her post on 1st March, moving from Northumbria University where she was Assistant Professor in Nutrition and Head of Education in the Department of Applied Sciences. As well as creating awareness within our local schools of the importance of nutrition as a science and for health, Julie also hopes to persuade children (and their teachers) to consider nutrition as a possible future career and how undertaking a nutrition degree at Newcastle will help with that career pathway. Based on this nutrition education theme, Julie currently supervises 2 PhD students who are researching nutrition education interventions in ethnic groups, and the effectiveness of serious gaming as a tool for improving nutrition education and physical activity in schoolchildren.



Introducing **Dr Rebecca Townsend** [@rebeccatownsnd](https://www.instagram.com/rebeccatownsnd), a Lecturer in Sport & Exercise Nutrition within the School of Biomedical, Nutritional & Sports Sciences. Rebecca's research broadly relates to the role of nutrition and exercise to support healthy ageing across the life-course. Specifically, she investigates the relationship between nutrition, exercise and brain health, to inform the nature and timing of preventative strategies.

Some of her past published work has sought to understand the impact of [dietary patterns](#) on a range of outcomes relating to brain health, including neuroimaging markers, cognitive decline and disorders. She is also interested in the development and evaluation of behaviour change interventions to promote brain health across various populations, especially children/adolescents, athletes and females. In relation to this, Rebecca has previously conducted a large cross-sectional survey to explore awareness, beliefs and behaviours surrounding brain health and lifestyle factors across UK and Irish adults. She has also recently been awarded Inspire funding from [ARUKscientist](#) with a team from [@CPH_QUB](#) and [@QUBSONM](#), to co-develop a serious digital game with children to raise awareness surrounding brain health.

Congratulations to **Dr Fiona Malcomson** who started her new role as Lecturer in Human Nutrition in June. Fiona said: "I am delighted to start my new role as Lecturer within the HNERC and Population Health Sciences Institute. I am particularly looking forward to teaching on the Human Nutrition and related degrees, as well as continuing my research in the area of nutrition, lifestyle, cancer prevention and survival. I am delighted to progress my career at Newcastle University and to work and collaborate with such a fantastic and supportive team of academics both within the HNERC and more widely across the University."

Fiona was also recently awarded the **Nutrition Society Julie Wallace Award**, an award that recognises early stage scientific excellence in the field of nutrition in memory of Professor Julie Wallace and her sustained commitment to supporting and promoting early career researchers, and was invited to deliver a presentation on 'The role of diet and lifestyle in colorectal cancer risk' at the Nutrition Society Irish Section Meeting in Athlone in June.



HNERC Strategy Away Day

Summary by Dr Adrian Holliday

Members of the Human Nutrition and Exercise Research Centre recently met for an enjoyable and productive day of science and strategy. The aim of the Away Day was to share and formulate ideas to establish potential PhD programmes of study, to creatively synthesise some “big ideas” for Advancement Projects, and to collaboratively discuss how HNERC can effectively support members to submit competitive grant applications.

A total of eighteen different project ideas were pitched to colleagues by sixteen different researchers, highlighting the strength and buoyancy of our group. With project proposals covering topics such as the promotion of diet for brain health in school children, assessing vulnerability to injury in young female athletes, identifying the role of alterations in selenoprotein genes in cancer risk, understanding thermoregulatory responses to heat wave scenarios, developing culturally adapted dietary interventions for brain health in British South Asians, and determining protein intake in breast and colorectal cancer patients, the breadth and scope of expertise in the group was showcased. As a research group, we really are adopting multidisciplinary approaches for addressing key challenges and opportunities in nutrition and exercise across the lifespan, in health and disease, and across various cohorts of the population. Collaborative discussions have continued after the Away Day, and members are reminded to please add project titles and supervisor teams to the excel document [here](#).

Break-out discussion groups fostered “big thinking” for Advancement Projects. Ideas included initiating a large cohort study, replicating and learning from some limitations of the Newcastle 85+ study; reshaping the local food industry to make it more sustainable and environmentally friendly; and addressing food inequalities across the North East.

The day concluded with discussions on how best to support the writing and submission of competitive grant applications. The greatest challenge to successful grant writing was typically identified as a lack of time. A popular means of addressing this challenge was to ring-fence time for productive writing through writing-focused away days and residential writing retreats. Other ideas proposed to facilitate successful grant writing included formal mentoring and shadowing schemes, with ERCs supported by experienced PIs within the group, and establishing a database of examples of successful applications for specific funding streams. Watch this space for follow up actions!



2nd FMS HNERC and Reproduction, Development and Child Health (RDCH) Joint Theme Meeting on Maternal and Child Nutrition

Summary by Dr Nicola Heslehurst of the meeting held in March 2023.

The meeting was led by Nicola Heslehurst, Raya Vinogradov, Simon Bamforth, Georg Lietz, Bernard Corfe and Suzanne Spence and attended by 15 colleagues – spanning all career stages - with a research interest in maternal and child nutrition. Short presentations from all delegates provided an overview of areas of research interest, followed by round table discussions on potential collaboration opportunities for research relating to reproduction, pregnancy and infancy, and for school age children.

Nutrition-related topic areas of interest were wide ranging, including obesity, weight management, diet behaviours, breastmilk/feeding, epigenetics, DoHaD, preconception care, specific diseases (e.g. T2DM), climate change, inequalities/socio-economics status, food insecurity, biomarkers, global health, school-based environments and interventions, impact of policy on diet and health, population and individual approaches to nutrition, dental health, sugar reduction and SEN school environments.

Methods areas of interest that colleagues were interested in developing further and collaborating on included mixed methods research, GIS, behaviour change, dietary assessment, intervention feasibility/acceptability/implementing/evaluation, Big Data (& proxy measures), data linkage, robust & novel methods for improving data collection in schools, and co-design with pupils as stakeholders.

There was lots of discussion for potential collaborations moving forward, and we agreed that we would hold a 3rd joint meeting towards the end of 2023 to review progress, potentially inviting wider stakeholder (e.g. clinical and public health colleagues) with an interest in maternal and child nutrition to further develop collaborations outside of academia.

The organisers would like to thank all colleagues who joined the meeting and contributed to these valuable discussions.



Invited lectures at Events/Conferences

Oliver Shannon was invited to attend and presented at the Rank Prize Symposium on Omega-3 Fatty Acids and the Brain. His presentation was titled 'Contributions of n-3 fatty acids to the cognitive benefits of healthy dietary patterns'.

Prof Emma Stevenson and a group of colleagues, will be attending the nutritional resilience for healthy ageing conference at Queens University Belfast on 6th and 7th June. Prof Stevenson will be giving the plenary presentation and other colleagues are contributing to workshops across the 2 days. Details of the conference can be found at:

<https://www.ukanet.org.uk/blast/events/nutritional-resilience-for-healthy-ageing-workshop/>

Miss Alice Roberts attended the following conferences:

- Nutrition Futures Conference, September 2022: *'Exploring Opportunities to Improve the Food and Drink Environment in UK Secondary Schools'*
- NEPG Conference, October 2022: *'Improving the UK Secondary School Food and Drink Environment'*
- ARC Conference, May 2023: *'Exploring adolescent's views of their school food and drink environment: Pilot test of a workshop session'*

Alice will also be attending the upcoming Society for Social Medicine conference in September 2023: *'A qualitative study exploring the views of Year 8 pupils on their secondary school food and drink environment'*

Miss Rebecca McIntyre attended the following conferences:

- North East Postgraduate Conference, October 2022 (organiser & presenter): *'An exploration of the impact of school food policy changes on 11-12 year-olds dietary intake in Northumberland'*
- Nutrition Society Scottish Section Conference, March 2023: *'Exploring change in the diet quality of 11-12y olds in 2010 and 2022: a repeat cross-sectional study'*



Publications

Recent HNRC publications



- **Basterfield L**, Burn NL, Galna B, Batten H, Goffe L, Karoblyte G, Lawn M, Weston KL. “Changes in children’s physical fitness, BMI and health-related quality of life after the first 2020 COVID-19 lockdown in England: A longitudinal study”. Publication date: 2022. Journal: *Journal of Sports Sciences*. <https://www.tandfonline.com/doi/full/10.1080/02640414.2022.2047504>
- Chormova D, Kavvadias V, Okello E, Shiel R, **Brandt K**. Nitrogen Application Can Be Reduced without Affecting Carotenoid Content, Maturation, Shelf Life and Yield of Greenhouse Tomatoes. *Plants (Basel)*. 2023 Apr 4;12(7):1553. [doi: 10.3390/plants12071553](https://doi.org/10.3390/plants12071553). PMID: 37050179; PMCID: PMC10097077.
- Alfurayhi R, Huang L, **Brandt K**. Pathways Affected by Falcarinol-Type Polyacetylenes and Implications for Their Anti-Inflammatory Function and Potential in Cancer Chemoprevention. *Foods*. 2023 Mar 11;12(6):1192. [doi: 10.3390/foods12061192](https://doi.org/10.3390/foods12061192). PMID: 36981118; PMCID: PMC10048309.
- Thorne JL, Holen I, **Corfe BM**. The Second Nutrition and Cancer Networking Meeting Nutrition and Breast Cancer: Translating Evidence into Practice. *Proc Nutr Soc*. 2023 Feb;82(1):58-62. [doi: 10.1017/S002966512200283X](https://doi.org/10.1017/S002966512200283X). Epub 2022 Dec 12. PMID: 36503526.
- Tuttiett ER, Ioannou E, Wijnhoven HAH, **Corfe BM**, Williams EA. Adaptation and validation of a protein intake screening tool for a UK adult population. *J Nutr Sci*. 2022 Nov 10;11:e100. [doi: 10.1017/jns.2022.96](https://doi.org/10.1017/jns.2022.96). PMID: 36405091; PMCID: PMC9672832.
- Shannon OM, Ranson JM, Gregory S, Macpherson H, Milte C, Lentjes M, Mulligan A, McEvoy C, Griffiths A, Matu J, **Hill TR**, Adamson A, Siervo M, Minihane AM, Muniz-Terra G, Ritchie C, Mathers JC, Llewellyn DJ, Stevenson E. Mediterranean diet adherence is associated with lower dementia risk, independent of genetic predisposition: findings from the UK Biobank prospective cohort study. *BMC Med*. 2023 Mar 14;21(1):81. [doi: 10.1186/s12916-023-02772-3](https://doi.org/10.1186/s12916-023-02772-3). PMID: 36915130; PMCID: PMC10012551.
- Perri G, **Hill TR**, Mathers JC, Walsh JS, Gossiel F, Winther K, Frölich J, Folkestad L, Cold S, Eastell R. Long-Term Selenium-Yeast Supplementation Does Not Affect Bone Turnover Markers: A Randomized Placebo-Controlled Trial. *J Bone Miner Res*. 2022 Nov;37(11):2165-2173. [doi: 10.1002/jbmr.4703](https://doi.org/10.1002/jbmr.4703). Epub 2022 Sep 29. PMID: 36093566; PMCID: PMC10087503.
- **Mathers JC** et al. (2022) *Cancer Prev Res (Phila)*. 15(9):623-634. “Cancer Prevention with Resistant Starch in Lynch Syndrome Patients in the CAPP2-Randomized Placebo Controlled Trial: Planned 10-Year Follow-up”. <https://pubmed.ncbi.nlm.nih.gov/35878732/>
- Malcomson FC, **Mathers JC**. (2023) *Redox Biol*. 62:102710. “Translation of nutrigenomic research for personalised and precision nutrition for cancer prevention and for cancer survivors”. <https://pubmed.ncbi.nlm.nih.gov/37105011/>
- **Shannon OM**, Ranson J, Gregory S et al. (2023). Mediterranean diet adherence is associated with lower dementia risk, independent of genetic predisposition: Findings from



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- **Shannon OM**, Gregory S & Siervo M. (2022). Dietary nitrate, aging and brain health: The latest evidence. *Current Opinions in Clinical Nutrition and Metabolic Care*. doi: 10.1097/MCO.0000000000000866. https://journals.lww.com/co-clinicalnutrition/Abstract/2022/11000/Dietary_nitrate,_aging_and_brain_health_the.5.aspx
 - Babateen A, **Shannon OM**, O'Brien G et al. (2023). Moderate doses of dietary nitrate elicit greater effects on blood pressure and endothelial function than a high dose: A 13-Week pilot study. *Nutrition, Metabolism and Cardiovascular Diseases*. doi: 10.1016/j.numecd.2023.02.024. [https://www.nmcd-journal.com/article/S0939-4753\(23\)00084-4/fulltext](https://www.nmcd-journal.com/article/S0939-4753(23)00084-4/fulltext)
 - Bryant, M, Burton, W, O'Kane, N, Woodside, JV, Ahern, S, Garnett, P, **Spence, S**, Sharif, A, Rutter, H, Baker, T, Evans, CEL. (2023) Understanding school food systems to support the development and implementation of food based policies and interventions. *Int J Behav Nutr Phys Act* 20, 29. <https://doi.org/10.1186/s12966-023-01432-2>



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