FoodBioSystems DTP - PhD Project Advertisement

Project title:
FBS2021-15-McEvoy: Design and evaluation of a nutritionally adequate diet for healthy ageing in older UK adults: The Healthy Ageing DIet (HADI) Study

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Project description:

In the UK people are living longer but are not necessarily healthier at old age. A key public health challenge is to reduce the risk of disability and extend the health span of UK citizens. In this regard, adequate nutrition can protect against physical and cognitive decline during ageing and prevent chronic diseases such as cardiovascular disease.

The UK Eatwell Guide provides advice on food groups which supply the required reference nutrient intake (RNI) and promote overall population health with low environmental impacts. However, ageing is associated with numerous physiological changes e.g. loss of olfactory function and taste, altered immune function, changes to body composition, delayed gastric emptying and disrupted appetite regulation, leading to altered food preferences and decreased nutrient bioavailability that predispose older adults to nutritional deficiencies. We have recently reported strong evidence to support an increased RNI for protein, calcium, folate and B12 among people aged ≥65 years. Other nutrients of concern during ageing include suboptimal intakes of potassium, iron, zinc, vitamin A, vitamin C, vitamin E, vitamin K, vitamin B6 and vitamin D and excess intake of saturated fat, sugar and sodium. It is becoming clear that older adults have nutritional needs that differ from those of the younger adults and which have not been fully considered in UK dietary guidelines.

There is a critical need to define nutritionally adequate diets for optimal health and well-being in later life and inform agri-food innovation on targeted strategies to help UK citizens aged ≥65 years meet their nutritional needs.

This PhD project will address research gaps by: (i) combining dietary statistical modelling and stakeholder engagement to design a Healthy Ageing DIet (HADI) for older UK adults; and, (ii) evaluating the impact of the newly developed HADI on nutritional intake, nutritional status and measures of healthy ageing in UK older adults.

The main objectives of the project are to:

1. Complete a systematic review on health impact of undernutrition in older adults
2. Apply diet optimisation statistical modelling using national food consumption data to define the minimum amount of dietary change to current guidelines to meet nutritional requirements for UK adults ≥65 years
3. Use the models to determine target nutrients that will require diet fortification to meet the nutritional needs of older adults
4. Conduct qualitative research with older consumers and agri-food industry stakeholders to define acceptable foods that would be feasible for targeted nutrient fortification and product innovation.
5. Construct a HADI score to determine adherence to an optimised healthy diet for older adults,
6. Conduct longitudinal data analysis in nationally representative UK ageing cohorts to determine relations between HADI, nutritional status and measures of healthy ageing.

The 4-year project provides an exciting opportunity to work with an Internationally recognized scientific team from leading UK Institutions to gain expertise in translational public health nutrition and ageing research.

Training opportunities:

There will be several training opportunities to develop analytical data analysis skills including an opportunity for an International placement with research collaborators who will actively contribute to the project.

Student profile:
This project would be suitable for motivated students with a first-class degree in nutrition, food science or a closely related science and a strong interest in public health nutrition. The student should have basic statistical analysis skills, though full training and support will be provided. In addition to dietary data analysis, the student will be conducting qualitative research with consumers and industry stakeholders and therefore will need to have excellent interpersonal, communication and organisational skills.

Funding Note
This project is part of the FoodBioSystems BBSRC Doctoral Training Partnership (DTP), it will be funded subject to a competition to identify the strongest applicants.
The studentship is open to UK and international students (including EU countries) however due to funding rules, no more than 30% of the projects can be allocated to international students.
The funding will include a tax free stipend (minimum £15, 285 per year), support for tuition fees at the standard UK rate (currently £4,407 per year) and a contribution towards research costs. **Please note** that the host universities have not yet confirmed the level of fees charged to international students funded by the DTP. Fee levels may vary across the institutions. This information will be shared on the FoodBioSystems DTP website as soon as it becomes available.

To apply
Please go to FoodBioSystems DTP website for information on how to apply for this studentship. The closing date for applications will be 8 February 2021.