

FoodBioSystems DTP - PhD Project Advertisement

Project title

FBS2021-58-Clegg: Investigations of food form and eating processes in older adults, aiming to improve appetite and increase nutritional intake.

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Project description

In Britain, 11.9 million residents were aged 65 years and over in 2018, representing 18% of the total population. By 2050, this is projected to grow to 17.7 million people (24.8% of the population). The oldest old are the fastest-growing age group, with the numbers of those aged 85 years+ projected to double from 1.6 million in 2018 to 3.6 million by 2050. In 2018, a man aged 65 could expect to live for another 18.6 years, while a woman could expect to live for 21 more years. However, if these years are spent in ill health, they are unlikely to be enjoyable. Improved quality of life and independence is paramount in how we consider ageing.

Malnutrition is a common clinical and public health challenge, particularly in older adults which results in loss of independence, reduced quality of life, adverse health conditions causing an increase in hospital admissions and length of hospital stays. Nearly 1.3 million people aged 65+ years suffer from malnutrition in the UK, with 93% of those affected reported to live in the community. Elderly malnutrition is multifactorial and is generally associated with a lack of appetite. Strategies that can improve appetite and decrease malnutrition are needed to ensure the maximum number of quality of life years in old age.



Eating is a complex process which must consist of a series of well-coordinated operations in order to be successful, including transporting the food to the mouth, closing the mouth, chewing, saliva incorporation, bolus formation and swallowing. Decreasing nutrient intakes in elderly individuals are directly or indirectly associated with loss of muscle, a decrease in saliva flow and mouth function and a decline in coordination capabilities, all of which affect the complex process of eating. In healthy young adults, it is established that slower eating results in a lower food intake and conversely eating quickly results in higher intakes. Although for

the majority of the population slower eating may be beneficial to reduce food intake, for older adults it may be detrimental to meeting adequate calorie and protein needs but necessary to ensure comfortable and safe swallowing. Through a series of lab-based studies, the current project aims to explore how older adults process food in the mouth and if this impacts on the quantity of food they eat. The project will then progress to explore how changing the consistency or type of food can impact on how food is processed in the mouth and if these strategies can be used to increase food intake.

Training opportunities

The student will benefit from cross-disciplinary training offered by all partners (University of Reading, Queen's University Belfast and Apetito) aimed at enhancing their future career prospects.

Training on oral processing software will be provided by Queens University Belfast. These skills will be brought to the University of Reading to assess bites, chews, swallows, and oral processing time. At the University of Reading, training includes measurement of gastric emptying using stable isotopes, measurements of appetite and food intake, oral volume capacity, stimulated and unstimulated salivary flow rates, blood glucose and plasma insulin and data analysis skills.

Apetito are a food manufacturing company that provides meals to older adults in the community (through Wiltshire farm foods) into hospitals and into nursing homes. The student will have the opportunity to undertake a placement with Apetito, during which they will develop practical skills including the development of palatable, accessible, food options for older adults. They will also learn about decision-making within the food industry, data analysis, and transferable work skills.

The University of Reading Graduate School supports the development of effective and professional working, based on the Researcher Development Framework, a nationally endorsed tool by Vitae. A Learning Needs Appraisal will be undertaken that will match the student's training requirements to appropriate training sessions.

Student profile

This project would be suitable for students who have at least an upper second-class degree in a related science degree such as nutrition, dietetics or food science. However we would also be very open to applications from student from other health professions such as dentistry, speech and language therapy or physiotherapy. Good skills on reviewing literature, attention to detail, time-management, organisation, teamwork and independent learning, are also required. An MSc in relevant science would be advantageous, but not essential.

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.