Protein for Life: Towards a Focused Dietary Framework for Healthy Ageing

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Background

• Project funded by the ‘Priming Food Partnerships’ initiative

• Sandpit Event, Bristol 19th-21st September 2016

Aims of the Sandpit:

○ To foster partnerships in pre-competitive research, across the food chain and between disciplines

○ To fund innovative research of relevance to the food industry and addressing a public health challenge

○ To stimulate preliminary research to give support to further research investment
Project Team

Prof Emma Stevenson  
Newcastle University

Prof Jeff Brunstrom  
University of Bristol

Dr Bernard Corfe  
University of Sheffield

Dr Alexandra Johnstone  
University of Aberdeen

Dr Mark Green  
University of Liverpool

Dr Liz Williams  
University of Sheffield
Industry Stakeholders

Campden BRI

Mondelez International

Nestle

Sainsbury’s

pladis

BRADGATE BAKERY

PREMIER FOODS
The Public Health challenge

• There are now more people in the UK aged 60 and above than there are under 18.5

• The number of people aged 65+ is projected to rise by over 40 per cent in the next 17 years to over 16 million.

• ‘Ageing well’ – is priority public health message (WHO)

• 50% of adults fail to meet the RDA for protein
  • Failure to address this will have significant impact on public health
Protein For Life

OUR RESEARCH QUESTION IS: How do we maintain a healthy protein intake in an ageing population?

OUR AIM IS: To develop and to disseminate a set of design rules for formulation of palatable higher-protein foods.
Project Objectives

1. To develop a **multi-disciplinary evidence-base** around protein intake and decision making in older adults

2. To identify **design constraints** for academic and industry partners

3. To use outcomes from Objective 1 to yield a **set of design rules** for higher-protein products

4. To formulate and trial an exemplar product based on the design rules

5. To disseminate our findings to key stakeholders; to develop a more general roadmap to inform product development
Work Packages

• **WP1 - Profiling of consumer behaviours for protein intake** – Mark Green, Bernard Corfe & Liz Williams

• **WP2 - Focus groups and interviews on consumer barriers and opportunities for protein consumption** – Emma Stevenson

• **WP3 – Choice architecture** – Jeff Brunstrom

• **WP4 – Development of documentation on protein ingredient range with industry partners** - Alex Johnstone

• **WP5 – Development of a design brief** - Bernard Corfe

• **WP6 – Production of exemplar products and product assessment by consumers** - Simon Penson /Emma Stevenson

• **WP7 – Communication brief and knowledge launch**- Emma Stevenson
WP1: Profiling of consumer behaviours for protein intake

Mark Green, Liz Williams & Bernard Corfe
Three data sources:

2. Consumer Data
3. Food diary analysis from two projects from Sheffield
How do people engage with protein in middle and older age?

- 3 age groups – 40-54, 55-69 and 70+ years
- How much protein consumed on a daily basis
- Types of products regularly consumed
- Timing of protein intake throughout the day
- Snacking vs meals
WP2: Focus groups and interviews on consumer barriers and opportunities for protein consumption

Emma Stevenson
Newcastle University
Focus Groups

- sample of community-dwelling **healthy mid-life** (40-54 years), **young old** (55-69 years) and **older old adults** (70+ years)

- Equal numbers of male and female participants from a range of socio-economic backgrounds

- Participants will be recruited through local newspaper advertisements and invited to attend a focus group discussion
Focus Groups

• Discussions will explore reasons for consumption and non-consumption behaviours including:

  - product-based reasons (e.g. appearance and taste)
  - environmental-based reasons (e.g. convenience and effort to cook)
  - cognitive-based reasons (e.g. nutritional knowledge and health beliefs)

Important information on psychological/behavioural drivers for food choices and preferences
WP3: Choice Architecture

Jeff Brunstrom
University of Bristol
Deliverables

• Choice Architecture - A laboratory-based technique to quantify individual differences in ‘preference for protein’

• A broader understanding of individual drivers of choice

• Information about how these ‘food-choice architectures’ change with age
Which one would you choose?

250 trials

Calories
Portion size (g)
Palatability
Healthiness
Expected satiety

Predictors of choice

Choice weightings predicting % fat

Which one would you choose?

250 trials

Calories
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Predictors of choice

Choice weightings predicting % fat
WP4: Development of documentation on protein ingredient range with industry partners

Alex Johnstone
University of Aberdeen
Deliverables

• This will consist of an academic review of the current literature to collate information on the optimal sources of protein considering amino composition and palatability, sustainability, public acceptability.

• This will also be guided and reviewed by the industry partners with consideration to cost, blendability, palatability and impact on processed final product.
WP5: Development of a design brief

Dr Bernard Corfe,
University of Sheffield
Academic Data –
Which products are acceptable and enrichable?
Are there gaps (meals / times / formats) and opportunities?

Academic insight –
Optimal types of protein for health?
Optimization for sustainability?

Industry Data –
What sources are affordable, modifiable in the manufacturing environment?
Constrains around preparation storage, pricepoint?

WP5 –
Development of a Design Brief–
We will draw together leads and industry partners
Workshop format
Present what we know
*In an ideal world we would*......
Determine limits of what can be
*In this world we can*......
Integration of information to yield a design brief

Industry Insight –
What products are adaptable in practice?
What *culs de sac* can be avoided?
WP6: Production of exemplar products and assessment by consumers

Emma Stevenson
Newcastle University
Exemplar product production

• Led by Simon Penson at Campden BRI

• Involvement from all industry partners

• Anticipated that three diverse products (e.g. a biscuit, a cracker and a liquid/semi-solid product) will be developed.
Consumer Testing

- Carried out at Aberdeen, Newcastle, Sheffield and Bristol

- 50 participants in each age range (40-54 years, 55-69 years 70+ years) across the sites.

- Participants will complete a sensory panel for each exemplar product in which the product will be assessed alongside a comparable, commercially available product.

- Participants will be asked to rate a range of sensory responses including palatability, mouth feel, acceptability and expected satiety.
WP7: Communication brief and knowledge launch

Emma Stevenson
Newcastle University
Communication brief and toolkit

• The communication brief will be a written document summarising the findings from the study

• Toolkit for stakeholder agreement
  - video clips and social media content
  - Infographics
  - press-release statements
  - Powerpoint slides
Knowledge Launch

• Half-day event hosted at Campden BRI to which all members of Campden BRI will be invited

• Project team will present the main findings of the research and also highlight the communication brief and toolkit

• Members will be encouraged to provide feedback on the study and engage in discussions on future collaborative opportunities.
Summary

• Multidisciplinary novel approach to tackling a public health issue with relevance to the food industry

• Pump-priming study – only the beginning!

• New approach for the research councils to foster the relationship between industry and academia
Any Questions?