



School of Life Course & Population Sciences
Faculty of Life Sciences & Medicine

KING'S
College
LONDON

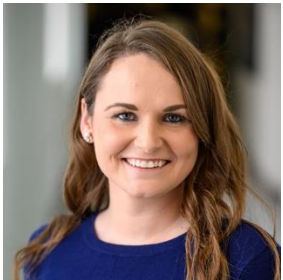
Culinary Nutrition

Skills from the past for a healthy and sustainable future



Dr Rachel Gibson – Senior Lecturer (registered dietitian)

- Changing the narrative – Public Health Nutrition a core component of Dietetics



Dr Fiona Lavelle - Lecturer

- The Culinary Nutrition Landscape



Georgia Browne – Research Assistant

- Culinary Nutrition – Insights from research, practice and education
-



Office for Health
Improvement
& Disparities

We focus on improving the nation's health so that everyone can expect to live more of life in good health, and on levelling up health disparities to break the link between background and prospects for a healthy life.

- identify and address health disparities, focusing on those groups and areas where health inequalities have greatest effect
- take action on the biggest preventable risk factors for ill health and premature death including tobacco, obesity and harmful use of alcohol and drugs
- work with the NHS and local government to improve access to the services which detect and act on health risks and conditions, as early as possible
- develop strong partnerships across government, communities, industry and employers, to act on the wider factors that contribute to people's health, such as work, housing and education
- drive innovation in health improvement, harnessing the best of technology, analytics, and innovations in policy and delivery, to help deliver change where it is needed most

2025: 10 Year plan publication



Headlines

- Moving care from hospitals to local communities
- Preventing illness, not just treating it
- Realising the potential of digital technology

- Effective public health nutrition requires **three** discrete functions:
 - the **acquisition, synthesis and dissemination of knowledge** relating to nutrition to health and disease;
 - **surveillance programmes** to detect potential nutritional problems across the life course among the population, and to monitor change;
 - **evidence-informed** policy development, implementation and evaluation.

HCPC standards of proficiency

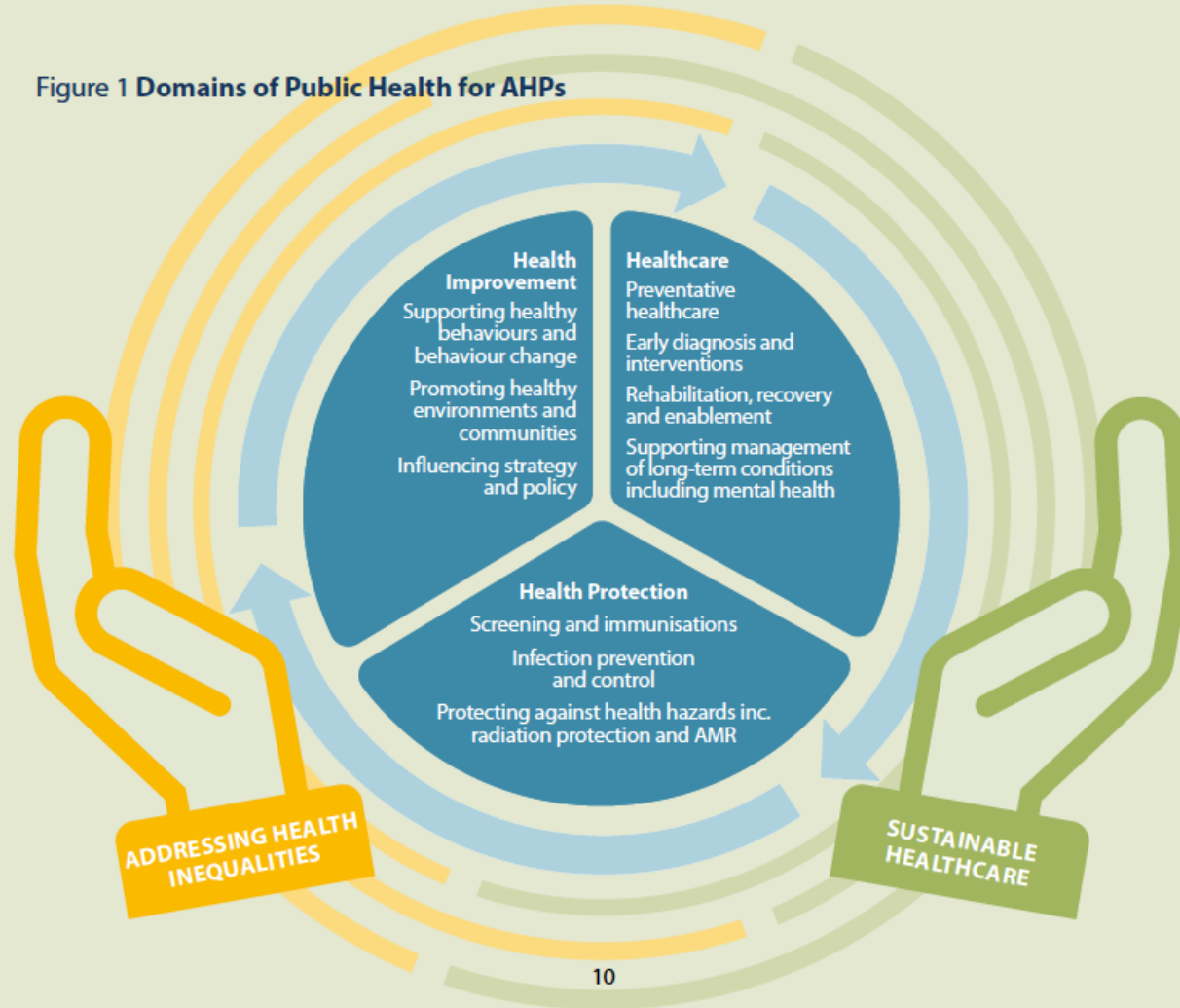
Effective 1st September 2023

Promoting public health and preventing ill-health

- Understand the role of their profession in health promotion, health education and preventing ill-health
- Understand how social, economic and environmental factors (wider determinants of health) can influence a person's health and well-being
- Empower and enable individuals (including service users and colleagues) to play a part in managing their own health
- Engage in occupational health, including being aware of immunisation requirements

Model of Public Health for AHPs

Figure 1 Domains of Public Health for AHPs



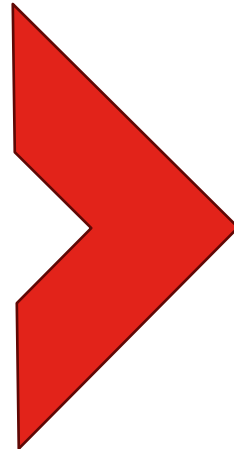
The “Top 10” Research Priorities

Allied Health Professions (AHP) Evidence Informed Policy: Research Priorities

Consensus Agreement



October 2025



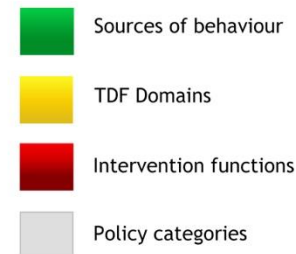
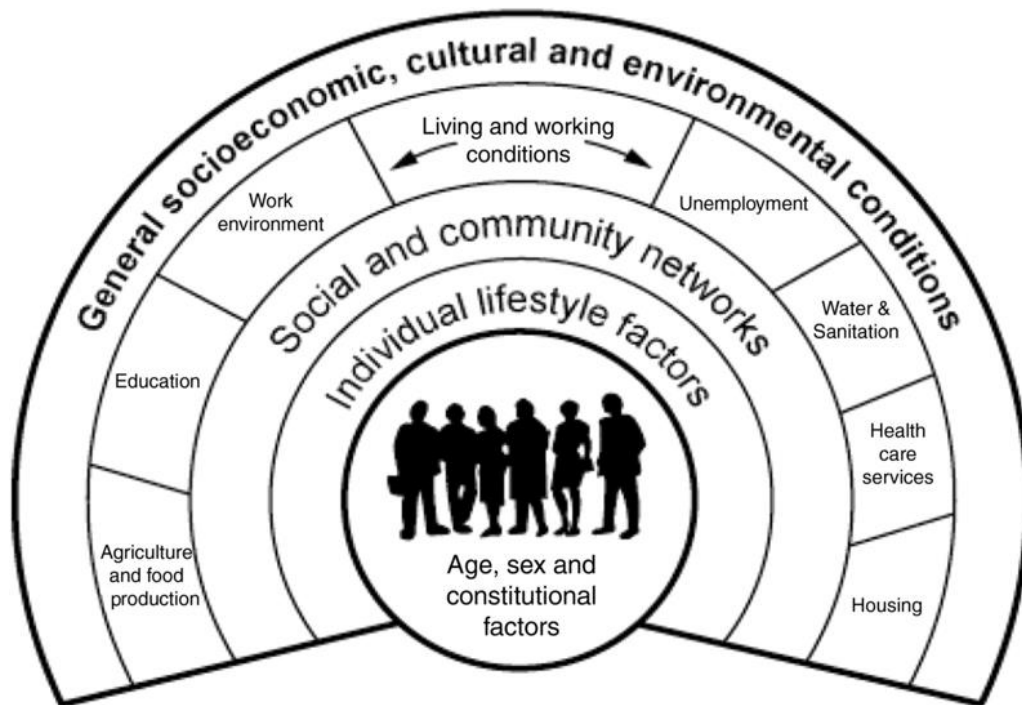
Priorities	
1	Impact and role of AHPs in neighbourhood health, care closer to home, community integration and frailty pathways
2	Long term economic impact of AHPs including Return on Investment and value in healthcare systems
3	Best approaches to measure service impact, improve care and inform policy (such as benchmarking, data standards and key performance indicators)
4	Identify and evaluate digital tools and data-driven approaches in AHP practice to enhance patient care, outcomes and access to services.
5	Impact of AHPs in public health and the best approaches to reduce health inequalities addressing the social determinants of health (including population health, well-being, economic impact and employment)
6	Impact of AHPs in patient flow, discharge planning and service effectiveness including health outcomes, admissions, length of stay, waiting lists and supporting safer transition home.
7	Identifying where AHPs have the best potential to improve patient care, experience and outcomes (whole patient pathway and lifespan)
8	Impact of AHPs in optimising rehabilitation and reablement including improving occupational health, employment and community recovery outcomes
9	What are the wider societal impacts of AHPs (including crime reduction, return to work and reducing harm) - and how do these contributions inform and shape health policy?
10	Best approaches to AHP retention including staff wellbeing and career development

Public Health Nutrition & sustainability

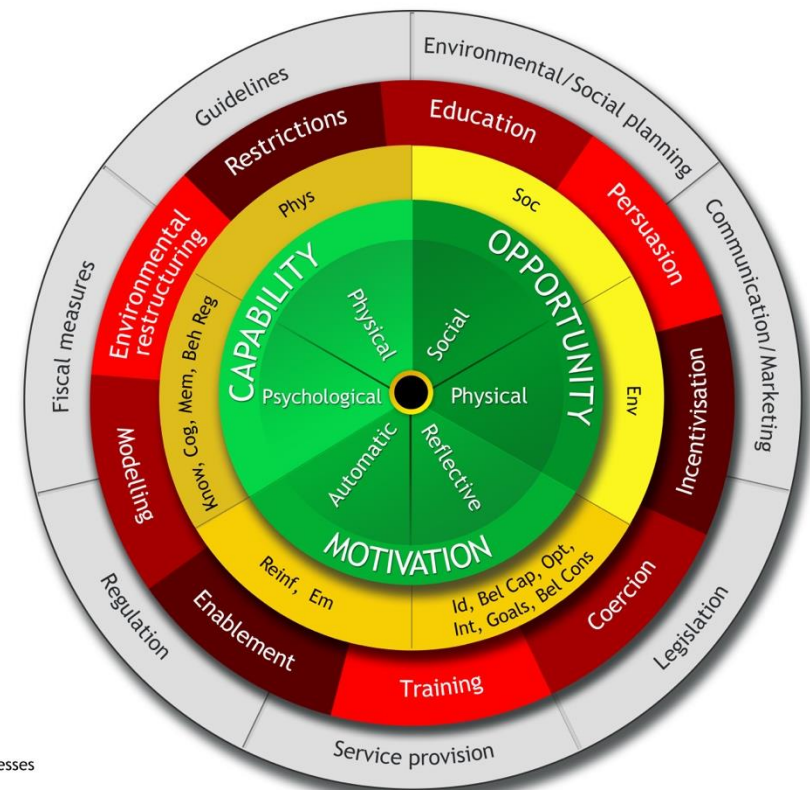
Eating patterns for health and environmental sustainability



Public health is complex



Soc - Social influences
 Env - Environmental Context and Resources
 Id - Social/Professional Role and Identity
 Bel Cap - Beliefs about Capabilities
 Opt - Optimism
 Int - Intentions
 Goals - Goals
 Bel Cons - Beliefs about Consequences
 Reinf - Reinforcement
 Em - Emotion
 Know - Knowledge
 Cog - Cognitive and interpersonal skills
 Mem - Memory, Attention and Decision Processes
 Beh Reg - Behavioural Regulation
 Phys - Physical skills



The changing food system & environment

- NCDs – 74% of global deaths (41 million) annually
- Modifiable risk – diet – prevent more than 11 million deaths
- Global surge in ‘western diets’ – convenience/UPFs/food prepared outside the home
- Dual burden (Obesity/malnutrition) – exasperated by socioeconomic inequalities
- Social, environmental and technological changes
- Breakdown in traditional meal patterns
- Less time spent on domestic food preparation



The role of cooking

- Dramatic changes in abilities to select, prepare & consume food
- Fewer and/or different cooking skills
- Loss of necessary skills to prepare a meal from raw ingredients
- Loss of Intergenerational transference of cooking skills
- **Is cooking now a spectator sport?**



Associations with diet/health

Adults

- **Consumption of home cooked meal/cooking and food skills associated with:**
 - Weight management/ normal range BMI/ normal percentage body fat/ normal HbA1c/low cholesterol/reduced cardiometabolic & type 2 diabetes risk
 - Greater diet quality
 - Greater consumption of fruit and vegetables

Children

- Dietary intake & diet quality
- Fruit and Veg consumption
- Fruit and Veg preferences
- Cooking attitudes
- Cooking Self-efficacy/perceived competence
- Food phobias

Associations with wellbeing & sustainability

- Association between cooking & wellbeing
 - Adults
 - Adolescents
 - Children
- Home prepared products versus store bought (life cycle impact)
- Different cooking methods have different environmental impacts
- Cooking associated with reduced food waste & can be used to include more edible 'food waste' in meal prep



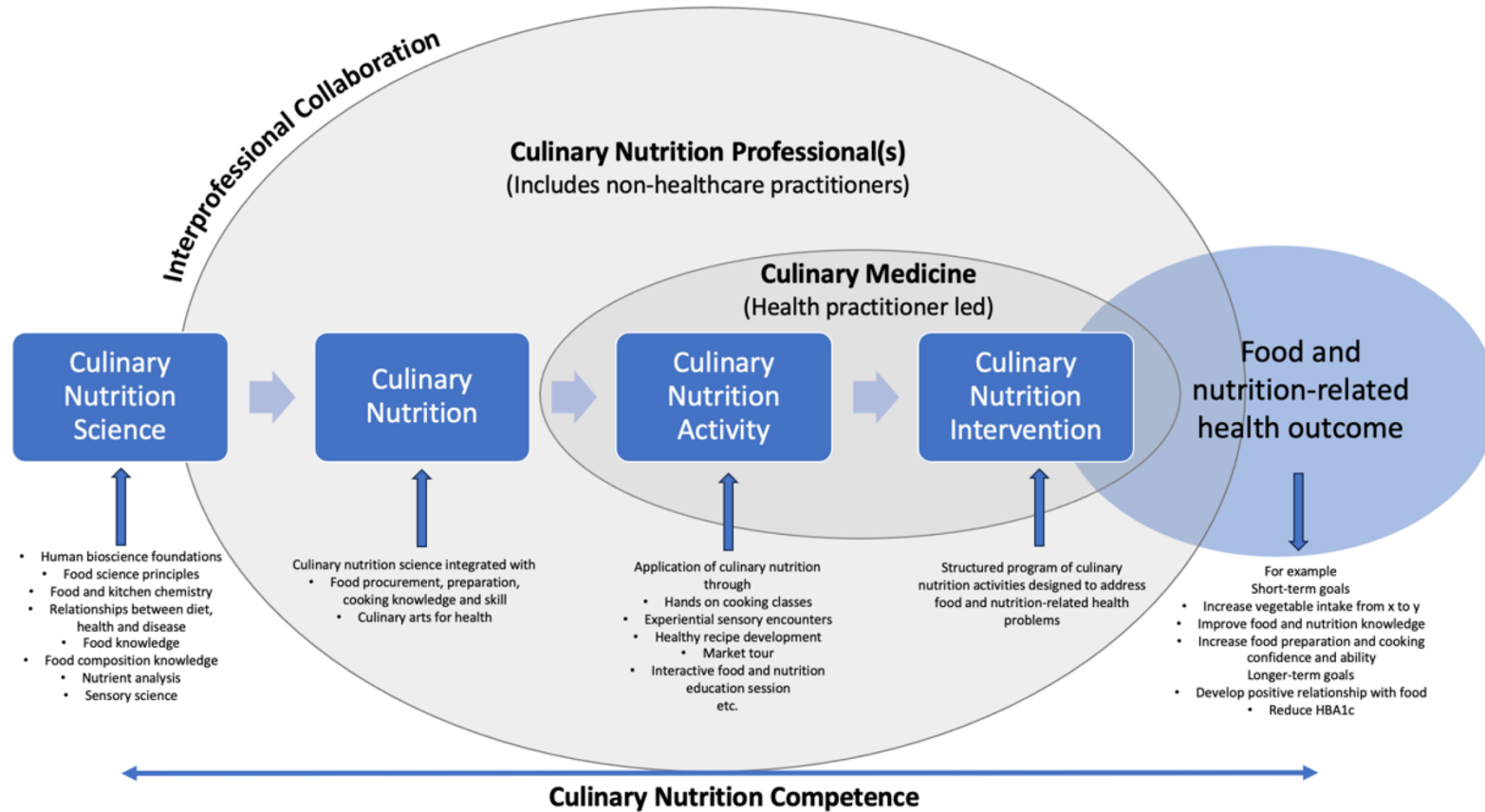
Area limitations

McGowan et al. 2017 (2015)	Limited theory, weak measurement design
Hollywood et al., 2017	Limited theory
Taylor et al., 2021	Majority neutral or low quality, weak measurement design
Lavelle, 2023	Majority neutral or low quality, weak measurement design, lack of theory, lack of sample size calculation
Camp et al., 2025	Majority neutral or low quality, weak measurement design, lack of theory
Sanaan et al., 2025	Majority neutral or low quality, weak measurement design
Renard et al., 2025	Majority neutral or low quality, weak measurement design, lack of theory, selection bias

Dietitians – ideally positioned

- Dietitians have existing knowledge around diet & disease
- Translating this to practical skills/behaviours for patients/clients
 - Clinical management
 - Prevention
 - Promoting positive relationships with food
 - Enjoyment (Wellbeing connection?)
- Training programmes in Culinary Nutrition/Culinary Medicine are varied
 - Content
 - Format
 - Timing
 - Population
- These programmes need evaluation for effectiveness of training professionals & on impact on patient/client
- **We need to be clear on what Culinary Nutrition is, how it is perceived in the discipline, how we train individuals and how they thoroughly deliver programmes.**

But what is Culinary Nutrition?



“The integration of culinary arts and nutrition that applies practical knowledge and skills to improve food and nutrition-related health”

Interprofessional framework for Culinary Nutrition and Culinary Medicine Competencies

Interprofessional Framework for Culinary Nutrition (CN) and Culinary Medicine (CM) Competencies

DOMAINS



Delivering Culinary Nutrition: Key Considerations



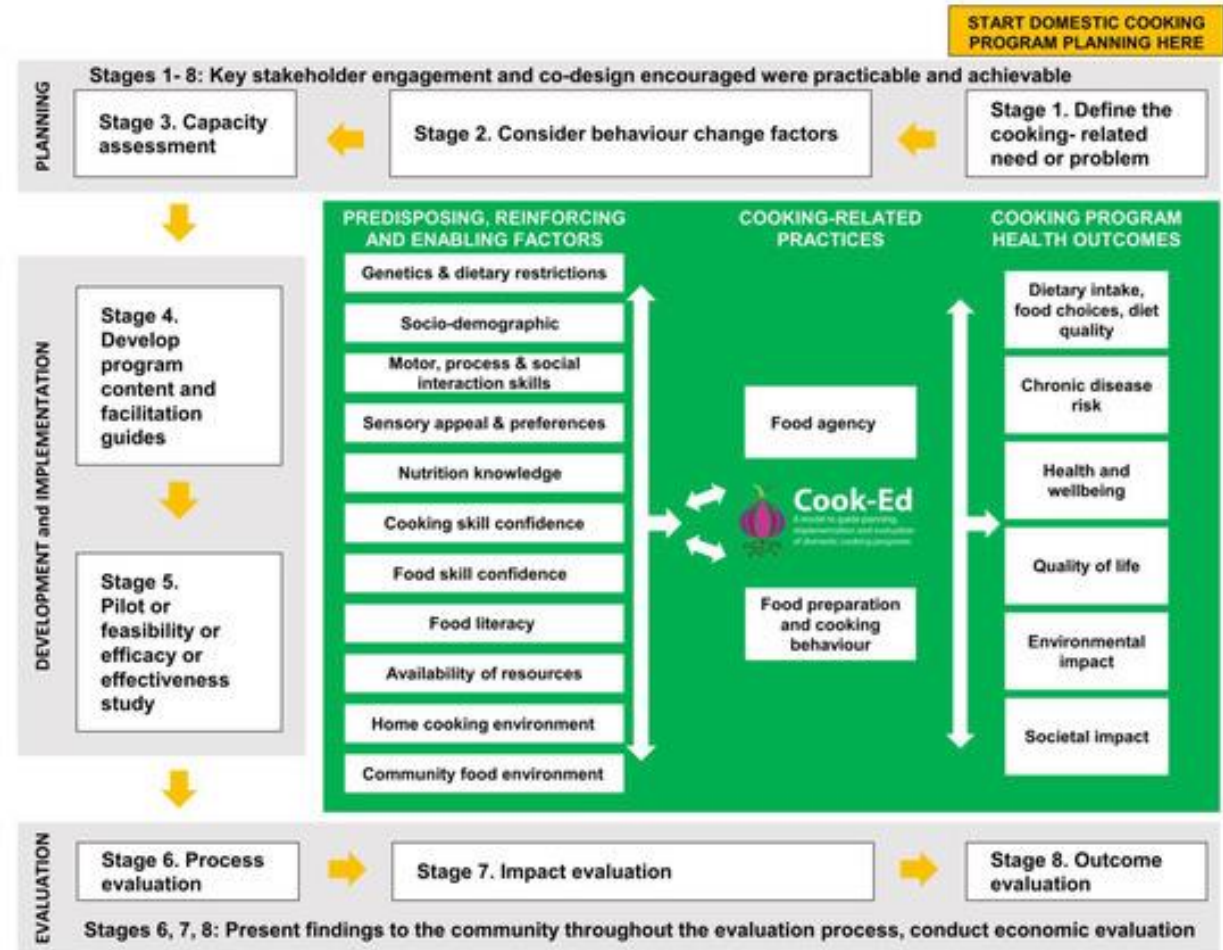
Theory



A model should be guiding complex intervention design



& other research designs should include learning/behaviour theory to guide understanding



- What & why?
- What content are you including & why?

4. Food group specific food skills					
Vegetables & Fruit	Grains	Meat & Alternatives	Dairy & Alternatives	Extras	
4.1.1 Select in season unpackaged produce or minimally packaged produce or low sodium/low sugar packaged alternatives considering price, availability, and sustainable food practices	4.2.1 Identify and select wholegrain and wholegrain based products	4.3.1 Identify and select minimally processed/wholefood meat alternatives to create a variety of plant-based meals	4.4.1 Recognise core vs. extras/non-core dairy or alternatives products	4.5.1 Review packaging information to identify extra/non-core foods and/or ingredients and select better alternatives	
4.1.2 Identify veg or fruit with short vs. long storage life, purchase and use accordingly to promote diet variety and minimise wastage	4.2.2 Identify grain foods for multiple purposes and to increase wholegrain intake and variety	4.3.2 Identify and select lean meats, low sodium and minimally processed/wholefood meat, and meat alternatives	4.4.2 Review the nutritional composition of plant-based milk alternatives to select the most suitable to meet nutritional needs and requirements	4.5.2 Modify convenience foods to increase nutrition content	
4.1.3 Know when and how to clean/wash produce	4.2.3 Know how to use when approaching end of life but still safe for consumption	4.3.3 Select recipes that utilise a range of cooking techniques to prepare different cuts of meat, fish varieties, or alternatives considering budget, nutrition, and ecological footprint	4.4.3 Select shelf stable varieties if access to fresh varieties or suitably healthier options is limited	4.5.3 Modify recipes to use or incorporate more core group foods and to replace non-core food items	
4.1.4 Apply appropriate storage techniques for stage of ripeness and nutrient retention	4.2.4 Modify recipes to increase fibre	4.3.4 Identify a variety of legumes and corresponding preparation and cooking methods	4.4.4 Modify recipes to use lower salt and fat reduced products		
4.1.5 Identify techniques and suitable uses for food that is bruised, imperfect, or approaching end of life but still safe for consumption		4.3.5 Identify and know how to select eggs or suitable egg alternatives for different purposes and know suitable recipe substitutions			
4.1.6 Identify ways to include different types of veg into snacks and each meal type of the day (e.g., B, L, D)		4.3.6 Modify recipes to use lower salt and/or lower saturated fat meat and alternatives			
4.1.7 Modify recipes to include more veg					

Design – groups with different needs

- What can children do?

Table 2

Deconstruction and mapping of 32 cooking skills to different developmental skills.

Cooking Skill	Frequency of Appearance through Identified Sources	Deconstruction	Fine Motor Skills	Gross Motor Skills	Food Hygiene and Safety Awareness
Washing Fruit and Vegetables	18	Holding items in a palmar grasp and or a pinch between index and thumb under running water	Forming palmar grasp and pincer grasp	Requires strength and movement of arms as well as accuracy	No
Stirring and Mixing	32	Holding a spoon in closed fist (radial palmar grasp), moving hands and arms in a circle. Holding pot handle using radial palmar grasp or bowl with flat palm spread or raking grasp on bowl edge	Forming radial palmar grasp and engaging intralimb coordination between wrist, elbow and shoulder	Requires strength and movement of arms	No
Mashing	10	Holding masher or fork in a radial palmar grasp with force, moving hands and arms up and down	Forming radial palmar grasp and engaging intralimb coordination between wrist, elbow and shoulder	Requires strength and movement of arms	No
Sprinkling and Rubbing In	6	Moving finger tips, rubbing them together, forming pincer grasps between the thumb and each finger	Rubbing fingertips together, forming pincer grasps	Requires strength and movement of arms	No
Spooning	12	Holding a spoon in radial palmar grasp, keeping a steady hand and firm wrist, rotating wrist to pour ingredients into bowl	Forming radial palmar grasp and differentiating pronation and supination	Movement of arms and wrist	No

Table 3

Fine motor skill classification of cooking skills.

Motor Skill Category (Gerber et al., 2010; Payne & Isaacs, 2017; Rosenbloom & Horton, 1971)	Crude Hand Movements	Radial Palmar Grasp	Dynamic Quadrupod or Tripod Grasp	Combination of Various Grasps	Additional Skills
Age Range (Years)	2-3	3-5	5-7	7-9	9+
Cooking Skills	Washing Fruit and Vegetables Kneading and Mixing with Hands Tearing	Stirring and Mixing ^a Mashing Spooning	Sprinkling and Rubbing In Breading, Flouring and Dipping Pickling and Podding	Weighing and Measuring ^d Using a Grater ^b Using an Oven or Microwave ^{a,d}	Stirring and Mixing ^a Cutting, Chopping and Slicing ^b Using Scissors ^b

THE EVIDENCE-BASED GUIDE TO COOKING SKILLS BY AGE

2-3 Years



Washing Fruit and Vegetables
Kneading and Mixing with Hands
Tearing
Using a Rolling Pin
Rolling Mixtures into Balls
Breaking Vegetables into Pieces
Using a Cookie Cutter

3-5 Years

Stirring and Mixing*
Spoon
Brushing Oil on with a Pastry Brush
Cutting, Chopping and Slicing*
Spreading and Buttering
Using Scissors*

Sieving
Squeezing
Mashing

Every child is different. Some skills can be performed in the recommended age group but are more for experienced & confident.



5-7 Years

Peeling with Fingers
Sieving
Squeezing



Sprinkling and Rubbing In
Breading, Flouring and Dipping
Pickling and Podding
Shaking Liquids in a Sealed Container
Creasing
Skewering*
Pouring from a container
Crushing and Pounding

7-9 Years

Weighing and Measuring*
Using a Grater*
Using an Oven or Microwave*
Draining
Using a Hand Mixer*



Adult supervision is recommended for skills involving hot & sharp objects.

9+ Years



Using a Peeler
Using a Can Opener
Stirring and Mixing over Heat
Using Sharp Scissors
Skewering Unsupervised
Weighing and Measuring Unaccompanied
Using a Grater Unsupervised
Using an Oven or Microwave Unsupervised
Using a Hand Mixer Unsupervised

*Parental supervision is recommended

Assessment/Evaluation

Lavelle et al. *International Journal of Behavioral Nutrition and Physical Activity* (2017) 14:118
DOI 10.1186/s12966-017-0575-y

International Journal of Behavioral
Nutrition and Physical Activity

RESEARCH

Open Access

The development and validation of measures to assess cooking skills and food skills



Fiona Lavelle¹, Laura McGowan², Lynsey Hollywood³, Dawn Surgenor³, Amanda McCloat⁴, Elaine Mooney⁴, Martin Caraher⁵, Monique Raats⁶ and Moira Dean^{1*}

Food Quality and Preference 62 (2017) 96–105



ELSEVIER

Contents lists available at ScienceDirect

Food Quality and Preference

journal homepage: www.elsevier.com/locate/foodqual



Development of the Cooking and Food Provisioning Action Scale (CAFPAS): A new measurement tool for individual cooking practice



Jacob Lahne^{a,*}, Julia A. Wolfson^b, Amy Trubek^c

^a Department of Culinary Arts and Food Science, Drexel University, 101 N 33rd St, Philadelphia, PA 19104, USA

^b Department of Health Management and Policy, University of Michigan, 1415 Washington Heights, Ann Arbor, MI 48109, USA

^c Department of Nutrition and Food Sciences, 109 Carrigan Dr, University of Vermont, Burlington, VT 05405, USA



nutrients



Article

Development and Validation of a New Home Cooking Frequency Questionnaire: A Pilot Study

Leticia Goni^{1,2}, Mario Gil³, Víctor de la O^{1,2}, Miguel Ángel Martínez-González^{1,2,4}, David M. Eisenberg⁴, María Pueyo-Garrigues⁵, Maria Vasilj¹, Lucía Gayoso^{6,7}, Usune Etxeberria^{6,7} and Miguel Ruiz-Canela^{1,2,*}

Food Quality and Preference 108 (2023) 104880



ELSEVIER

Contents lists available at ScienceDirect

Food Quality and Preference

journal homepage: www.elsevier.com/locate/foodqual



An evaluation and shortening of the Cooking and Food Provisioning Action Scale (CAFPAS) using item response theory



Simon Karlsson^a, Kathryn L. Harris^b, Jeanette Melin^a, Jacob Lahne^c, Julia A. Wolfson^d, Elizabeth S. Collier^{b,e,*}

^a RISE Research Institutes of Sweden, Division of Safety and Transport, Measurement Science and Technology Unit, Gothenburg, Sweden

^b RISE Research Institutes of Sweden, Division of Bioeconomy and Health, Perception and Design Unit, Stockholm, Sweden

^c Virginia Polytechnic Institute and State University, Department of Food Science and Technology, Blacksburg, VA, USA

^d Johns Hopkins University, Bloomberg School of Public Health, Department of International Health and Department of Health Policy and Management, Baltimore, MD, USA

^e Linköping University, Division of Society and Health, Department of Health, Medicine and Caring Sciences, Linköping, Sweden

Assessment/Evaluation - children

- Need for validated measures but additionally:
 - Fun, engaging
 - Simple
 - Quick/easy

Dean et al. *International Journal of Behavioral Nutrition and Physical Activity*
(2021) 18:20
<https://doi.org/10.1186/s12966-021-01089-9>

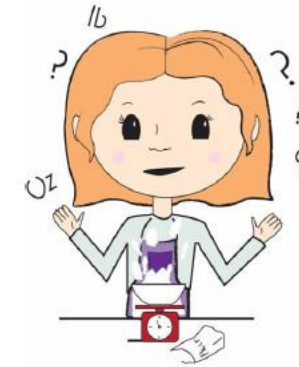
International Journal of Behavioral
Nutrition and Physical Activity

RESEARCH

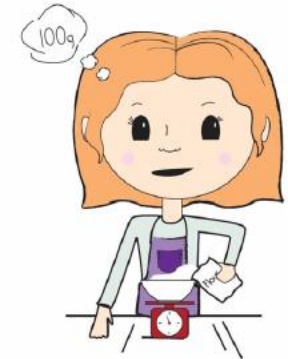
Open Access

CooC11 and CooC7: the development and validation of age appropriate children's perceived cooking competence measures

Moirá Dean^{1,2}, Johann Issartel³, Tony Benson¹, Amanda McCloat⁴, Elaine Mooney⁴, Claire McKernan¹, Laura Dunne⁵, Sarah F. Brennan^{1,6}, Sarah E. Moore^{1,6}, Danielle McCarthy¹, Jayne V. Woodside^{1,5,6} and Fiona Lavelle^{1*} 



A is not that good at weighing



B is really good at weighing

Which are you MOST like?

- ☐ I am a lot like A ☐ I am a little like A ☐ I am a bit like A and B ☐ I am a little like B ☐ I am a lot like B



Take home points

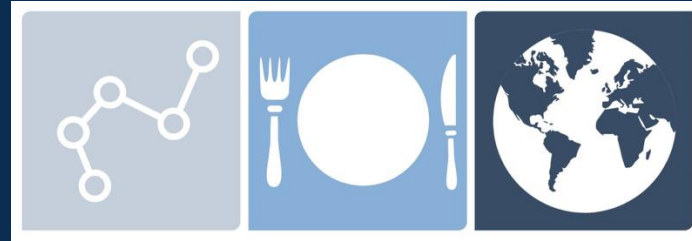
- Change in food environment – complex
- Loss of skills from the past (cooking)
- Cooking associated with positive health, wellbeing & sustainable outcomes
- **Culinary nutrition needed!**
- Dietitians ideally situated to deliver culinary nutrition (or could be – next talk)
- Area is limited by weak evidence, moving forward, consider use of theory/models/validated tools in:
 - Design
 - Content development
 - Evaluation





School of Life Course & Population Sciences
Faculty of Life Sciences & Medicine

KING'S
College
LONDON



Thank you

Rachel Gibson – Rachel.Gibson@kcl.ac.uk

Fiona Lavelle – fiona.lavelle@kcl.ac.uk