

Innovation in nutrition education:

The culinary coaching telemedicine model

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Today's menu :

- Treating the cause: culinary behavior
- Health related culinary education programs
- The culinary coaching telemedicine model
- The impact of the culinary coaching telemedicine program

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Treating the cause: culinary behavior

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Lifestyle Medicine, treating the cause

Definition of Lifestyle Medicine

Lifestyle Medicine is a branch of evidence-based medicine in which comprehensive lifestyle changes (including nutrition, physical activity, psychological stress, social support and environmental exposures) are used to prevent, treat and even reverse the progression of chronic diseases **by addressing their underlying causes.**

<https://eulm.org>

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Lifestyle Medicine definition

Evidence based practice of assisting individuals and families to **adopt and sustain behaviors** that can improve health and quality of life.

Lianov L. & Johnson M. JAMA. 2010, 304(2): 202-203

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Home food preparation

US: home food preparation

1965-6: 65%-72% of total energy

2007-8: 54%-57% of total energy

Decrease of 23% in 40 years

US: eating away from home

1970: 33% of total household food expenses

2010: 47% of total household food expenses

Increase of 42% in 40 years

Smith et al. Nutrition Journal 2013;12:45

US department of agriculture, economic research service 2011

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Home cooking & energy consumption

NHANES: home cooked dinners/week

Low (0–1, n=802)

Medium (2–5, n=3,704)

High (6–7, n=5,063)

	0-1 times/week	2-5 times/week	6-7 times/week
Mean total energy consumption (KJ/d)	2301	2204	2164
Mean total energy consumption (KJ/d)*	2384	2282	2242

* Individuals who did not try to lose weight

Wolfson JA et al. *Public Health Nutr.* 2015 Jun;18(8):1397-406

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Home cooking & nutritional quality

Population-based cohort study, UK adults 29 - 64 (n = 11,396)

	<3/week (704)	3-5/week (3688)	5</week (7004)
Fruit intake (grams/day)	143	181	227
Vegetable intake (grams/day)	174	235	281
DASH score	22	23	25
Mediterranean Diet score	7	8	10

Mills S et al. *Int J Behav Nutr Phys Act* 2017 Aug 17;14(1):109

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Home cooking: The NOVA classification

Group 1 - Unprocessed or minimally processed foods

Group 2 - Processed culinary ingredients

Group 3 - Processed foods

Group 4 - Ultra-processed foods



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Unprocessed or minimally processed foods

- Edible parts of plants and animals
- Minimally processed (e.g., drying, crushing, grinding, roasting, boiling)
- Many unprocessed or minimally processed foods are prepared and cooked at home or in restaurant kitchens



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Processed culinary ingredients

- Modified versions of Group 1 foods (e.g., oils, butter, sugar, salt)
- Products that are suitable for use to prepare Group 1 foods
- They are not meant to be consumed by themselves



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Processed food

- Made essentially by adding substances from Group 2 to Group 1 foods
- Usually have two or three ingredients
- Recognizable as modified versions of Group 1 foods (e.g., bottled vegetables, canned fish, fruits in syrup, cheeses, breads)



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Ultra-processed foods

- Formulations made mostly or entirely from substances derived from foods and additives (i.e., soft drinks, sweet or savory packaged snacks, reconstituted meat products, pre-prepared frozen dishes)
- Include nutrients not normally used in culinary preparations (e.g., casein, lactose, whey, gluten)
- Include items derived from further processing of food (e.g., hydrogenated oils, soya protein isolate, high-fructose corn syrup)
- Include additives (i.e., preservatives, antioxidants, stabilizers, enhancers, non-sugar sweeteners)



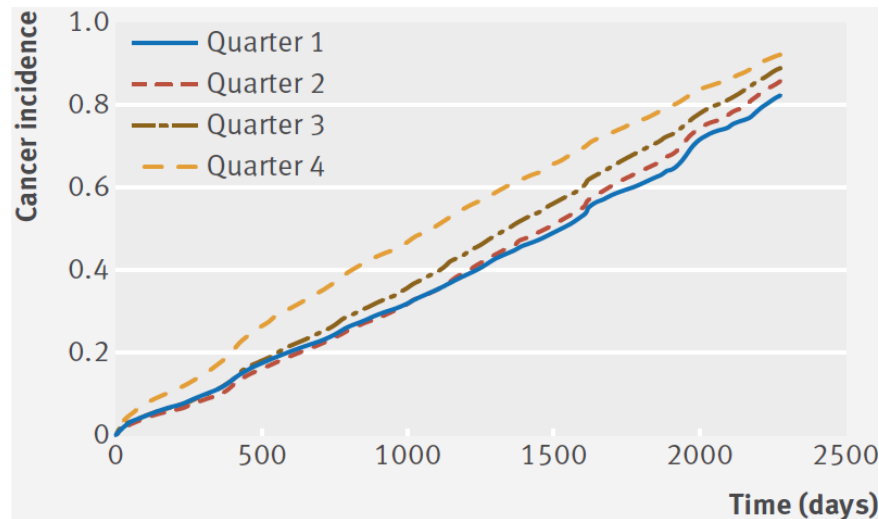
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The opposite behavior:

Consuming ultra-processed food

104,980 adults, participants aged at least 18 years (2009-17)



10% increase in the proportion of ultra-processed foods was associated with a significant increase of greater than 10% in risks of overall and breast cancer

Fiolet T et al. BMJ 2018 Feb 14;360:k322.

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Cooking interventions

Effectiveness of interventions that included cooking

Systematic review (2014)

- January, 1980 through December, 2011
- Twenty eight studies were identified

Systematic review (2017)

- January, 2011 through March, 2016
- Thirty four studies were identified

Reicks M. J Nutr Educ Behav. 2014 Jul-Aug;46(4):259-76; 2017 Sep 25

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Cooking interventions

Outcomes

- Improved cooking knowledge/skills, confidence and attitudes
- Improved diet quality
- Inconsistent health outcomes

Well-designed studies are needed that rigorously evaluate long-term impact on cooking behavior, dietary intake, obesity and other health outcomes.

Reicks M. J Nutr Educ Behav. 2014 Jul-Aug;46(4):259-76

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Health related culinary education programs

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Culinary Medicine program – status

A summary of representative educational programs

- Survey of 10 Culinary Medicine program directors

Results

- All ten culinary programs deliver medical education curricula educating 2,150 health professionals/year
- Six programs deliver curricula for both healthy individuals and patients with chronic diseases, educating 3,800 individuals/ year

Polak R. et al. Glob Adv Health Med. 2016;5(1):61-68

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Culinary programs' gaps

1. Curricula are focused on culinary skills, with little attention to proven home cooking barriers and facilitators.

Polak R. et al. Glob Adv Health Med. 2016;5(1):61-68

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Culinary programs' gaps

2. Majority of programs lack a dominant behavioral change component

Polak R. et al. Glob Adv Health Med. 2016;5(1):61-68

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Culinary programs' gaps

3. Majority of programs include hands-on modules in teaching
kitchens

Polak R. et al. Glob Adv Health Med. 2016;5(1):61-68

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Educational approach: Culinary coaching

***Culinary coaching:** Behavioral intervention that aims to improve nutrition and overall health by facilitating home cooking through an active learning process for participants that combines culinary training with health and wellness coaching competencies*



Polak et al. J. Applied Physiology, Nutrition, and Metabolism. 2017 Aug;42(8):893-896

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Culinary coaching principles, example

Exercise goal:

Walking 30 minutes on Wed and Fri evenings

Culinary goal:

Cooking vegetable stew for Wed and Fri dinners

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Home cooking principles, examples



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Mode of Delivery: telemedicine

Unique telemedicine approach, decreasing culinary education costs and improving accessibility.

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Asynchronous culinary education

Culinary videos



<http://www.acpm.org/page/culinarymedicine/>

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Asynchronous culinary education

Culinary videos, educational advantages:

- Watch while working in the kitchen
- Start, stop and review whenever needed
- Review several times
- Rewind whenever needed



Surgenor D. Appetite. 2017 Jul 1;114:306-312.

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Synchronous education – Hands on



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CHEF Coaching for patients

Outcomes

- Improved cooking confidence
- Improved health outcomes

Polak et al. J. Applied Physiology, Nutrition, and Metabolism. 2017 Aug;42(8):893-896

Polak et al. Glob Adv Health Med. 2014 Nov;3(6):42-8
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CHEF Coaching for clinicians

- Improved cooking confidence
- Improved competencies to prescribe culinary medicine.

Polak et al. Med Educ Online. 2018 Dec;23(1)

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- Follow Rani Polak on twitter, [@RaniPolakMD](https://twitter.com/RaniPolakMD)
- Like the CHEF Coaching Facebook page, [@CHEFCoaching](https://www.facebook.com/CHEFCoaching)

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