CME: Culinary Education, a Recipe for an Effective Nutrition Intervention

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Culinary Education and its Role in Restoring and Maintaining Health

Integrative Healthcare Symposium - 2024

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SPAULDING REHABILITATION HOSPITAL

THE INSTITUTE OF LIFESTYLE MEDICINE

HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Learning objectives:

- Define the relationship between home cooking and health; and understand the rationale for the importance of patients' culinary behaviors
- Demonstrate basic patient-centered culinary knowledge and skills; and describe strategies for empowering patients to adopt home cooking
- Describe how to implement culinary coaching as part of medical encounters and lifestyle medicine meetings

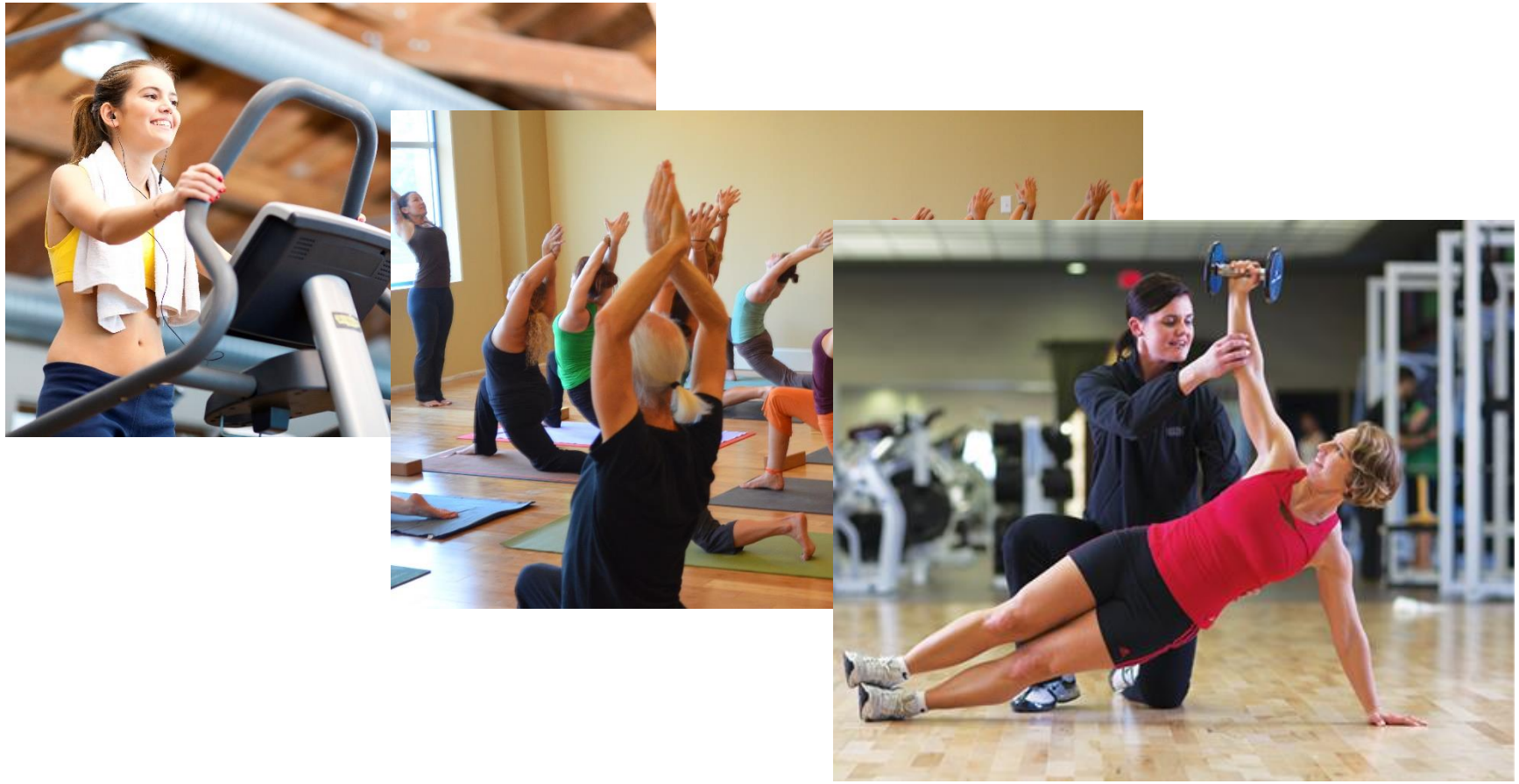
1. The Emerging field of culinary medicine

The problem

In the US, the most important risk factor is unhealthy diet, which is associated with 26% of deaths and 14% of disability-adjusted life-years

Murray CJ et al. JAMA. 2013 Aug. 14;310(6):591-608.

Exercise counseling



Nutrition counseling

What if ?

Danya Weiner

Culinary Medicine

The practice of helping patients use nutrition and good cooking habits to restore and maintain health

https://www.acpm.org/page/culinarymedicine

2. The case to address home cooking

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

Home cooking decrease energy consumption

NHANES: home cooked dinners/week

	0-1 times/week (n=802)	2-5 times/week (n=3,704)	6-7 times/week (n=5,063)
Mean total energy consumption (Kcal/d)	2301	2204	2164
Mean total energy consumption (Kcal/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

Home cooking improves nutritional quality

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

	<3/week (n= 704)	3-5/week (n=3688)	5</week (n=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

Home cooking is negatively correlated to BMI after stratification for adherence to healthy diet

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

Home cooking improves health outcomes

Methods

- Nurses' Health Study (58,051 US women aged 30-55)
- Health Professionals Follow-up Study (41,676 US men aged 40-75)
- 2.1 million person-years of follow-up
- MPAH – Meals Prepared At Home

Main results

- Eating 11– 14 MPAH per week had a 14% lower risk of developing T2D than those eating 0– 6 MPAH per week.
- Eating 11– 14 MPAH per week had less weight gain compared to those eating 0– 6 MPAH per week.

Zong G et al. *PLoS Med* 2016 Jul 5;13(7)

3. Ultra-processed food and health

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

Monteiro CA Public Health Nutr. 2018 Jan;21(1):5-17

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

Monteiro CA Public Health Nutr. 2018 Jan;21(1):5-17

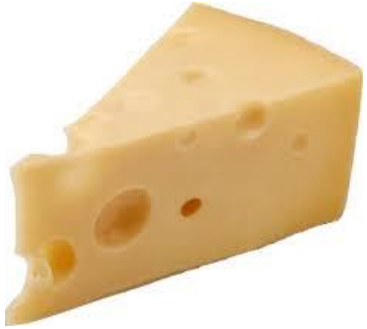
Processed culinary ingredients

- 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

Monteiro CA Public Health Nutr. 2018 Jan;21(1):5-17

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., canned or jarred vegetables, canned fish, fruits in syrup, cheeses, breads)

Monteiro CA Public Health Nutr. 2018 Jan;21(1):5-17

Ultra-processed foods

- Formulations made mostly or entirely from substances derived from foods and additives (e.g., soft drinks, packaged snacks, pre-prepared frozen dishes)
- Include nutrients not normally used in culinary preparations (e.g., casein, 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, non-sugar, sweeteners)

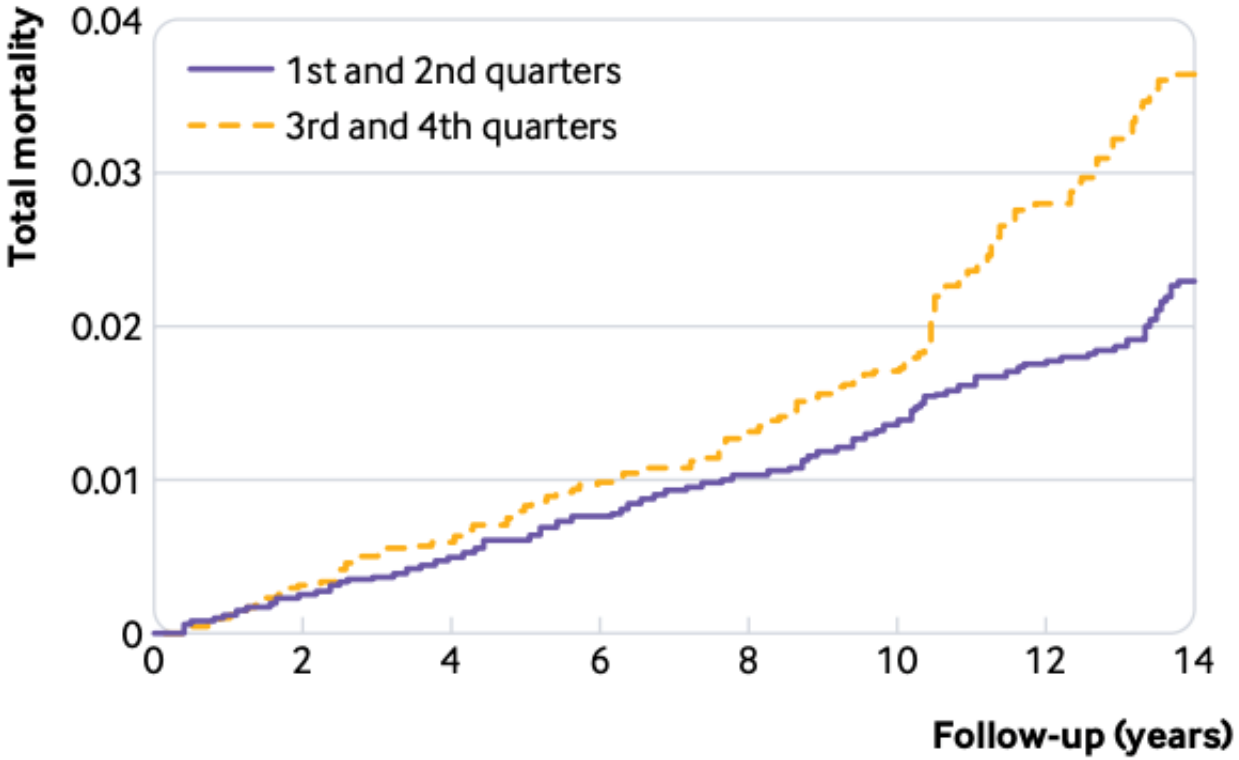


Monteiro CA Public Health Nutr. 2018 Jan;21(1):5-17

UPF increases risk of mortality

A higher consumption of UPF (>4 servings daily) was associated with a 62% relative increase for all cause mortality.

For each additional serving of UPF, all cause mortality increased by 18%.

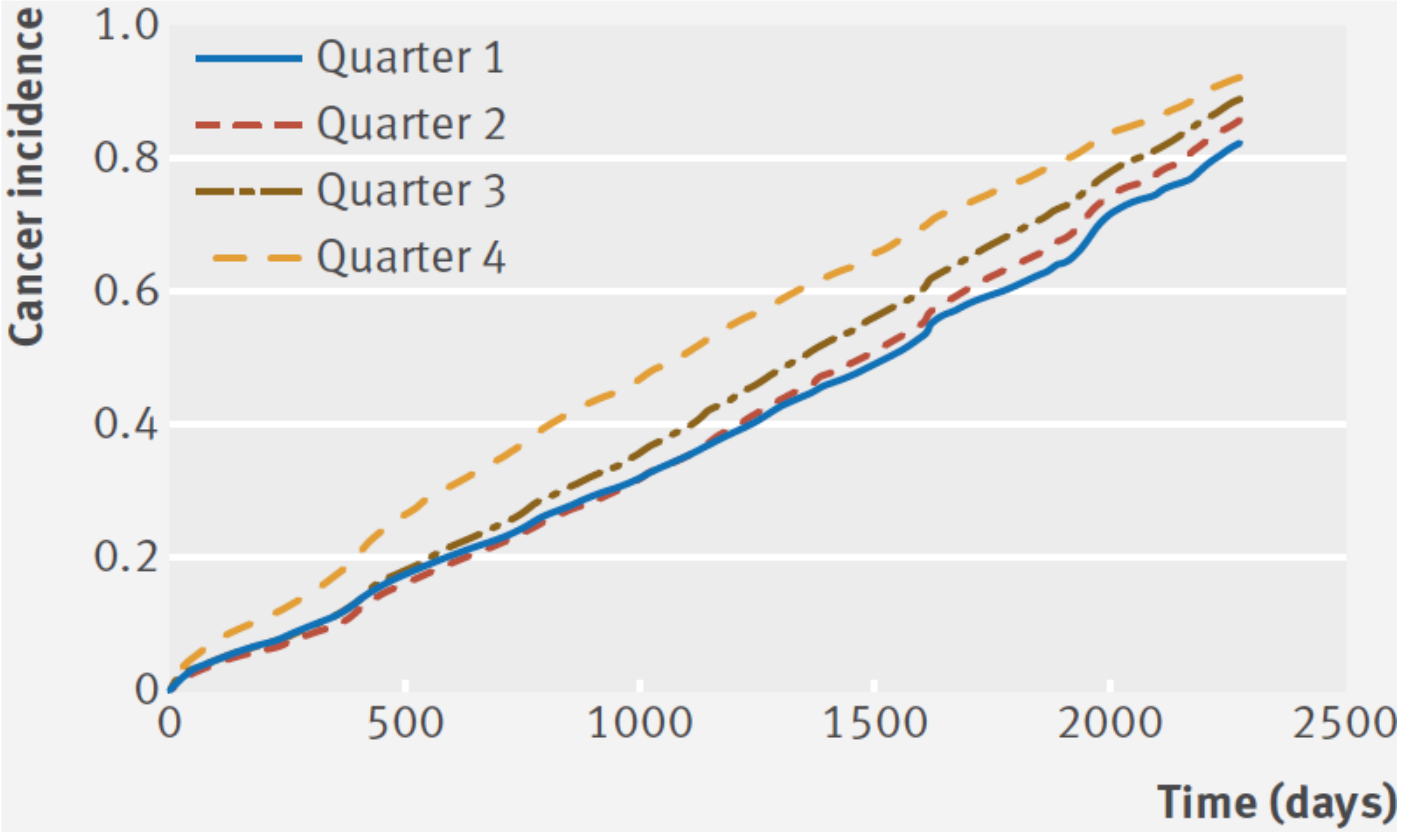


18,899 participants in Spain, aged 20-91

Rico-Campà A et al. BMJ 2019 May 29;365:l1949

UPF increases risk of cancer

10% increase in the proportion of UPFs was associated with a significant increase of greater than 10% in risks of overall and breast cancer

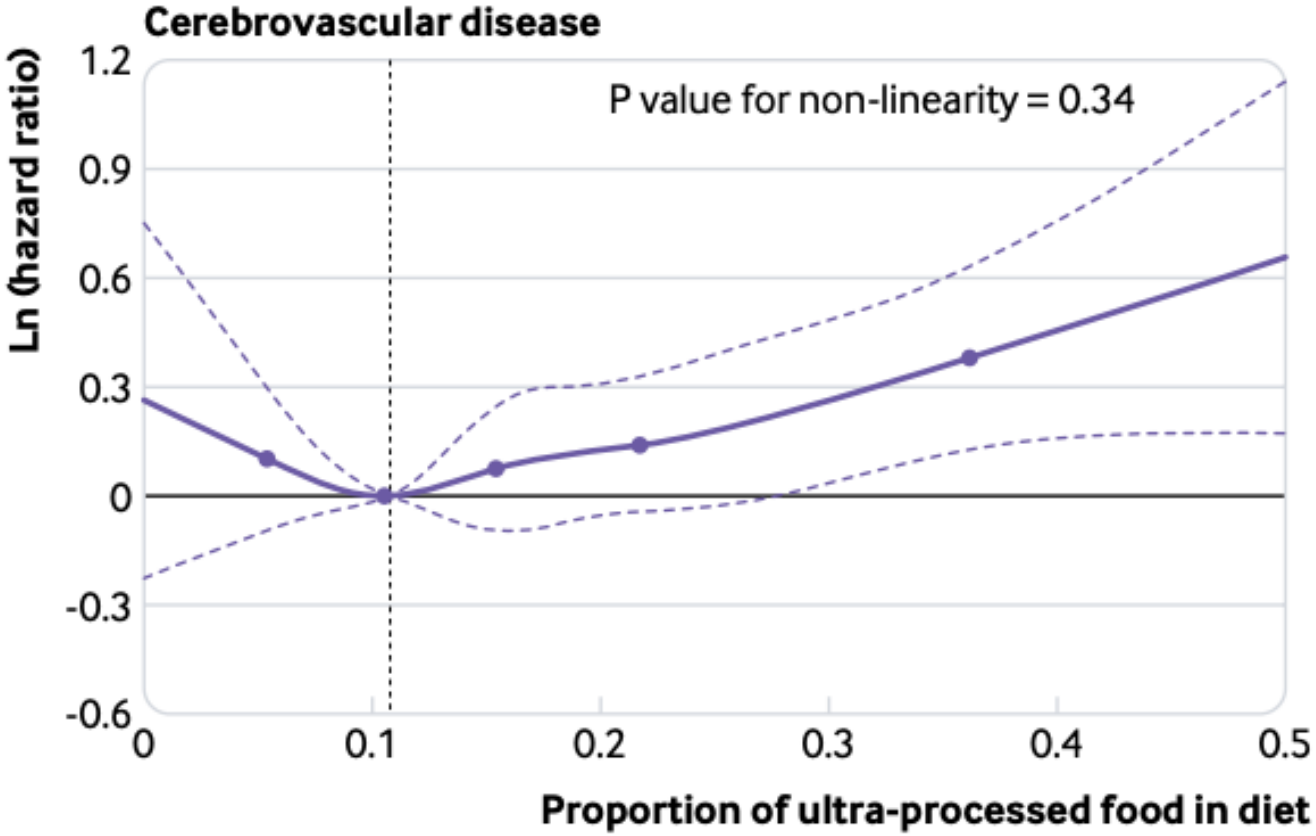


104,980 adults, participants aged at least 18 years (2009-17)

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

UPF increases risk of cardiovascular disease

These results remained statistically significant after adjustment for saturated fatty acids, sodium and sugar intakes, dietary fiber, and healthy dietary pattern



105,159 participants, aged at least 18 years, France

Srour B et al. BMJ 2019 May 29;365:l1451

Ultra-processed foods promote weight gain

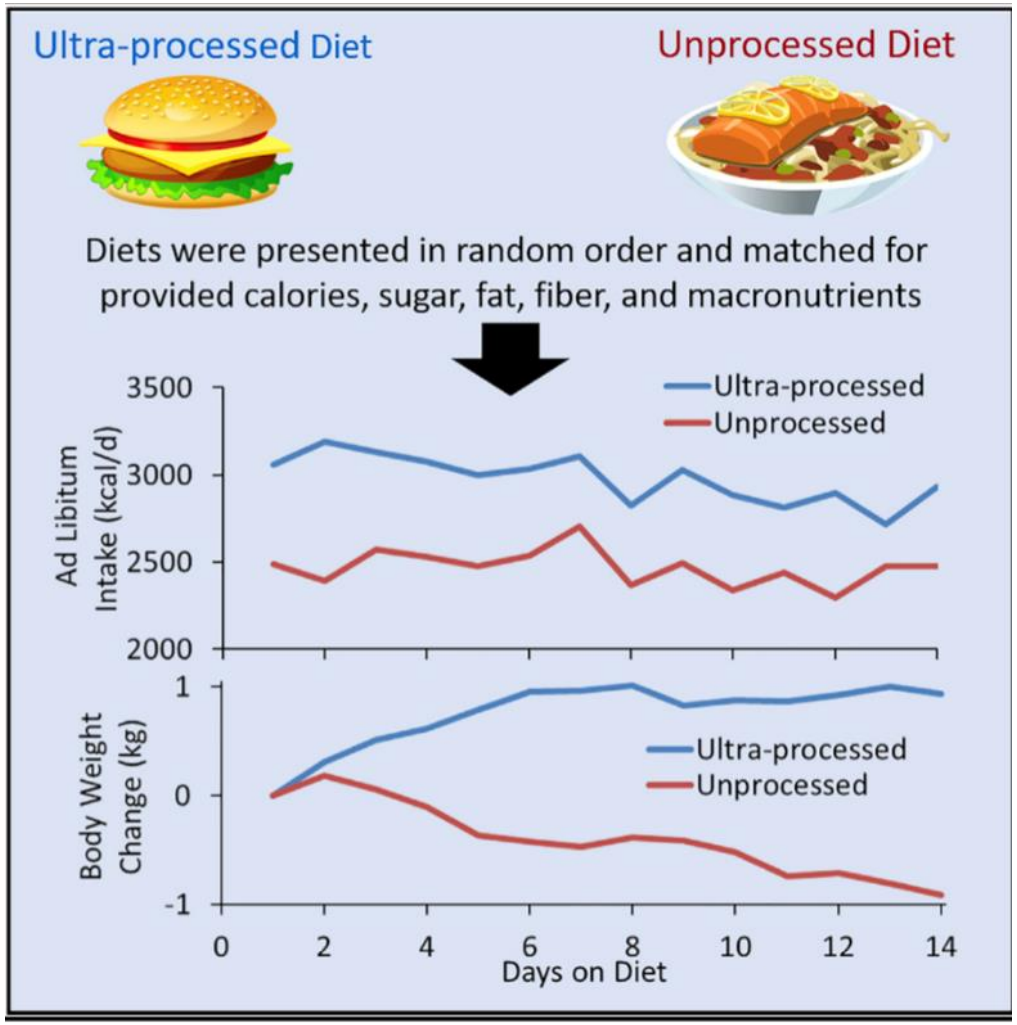
- 20 inpatient adults received unprocessed or ultra-processed diets for 14 days each
- Diets were matched for presented calories, sugar, fat, fiber, and macronutrients

Cell Metab. 2019 Jul 2;30(1):67-77

Ultra-processed foods promote weight gain

- Ad libitum intake was 500 kcal/day more on the ultra-processed versus unprocessed diet

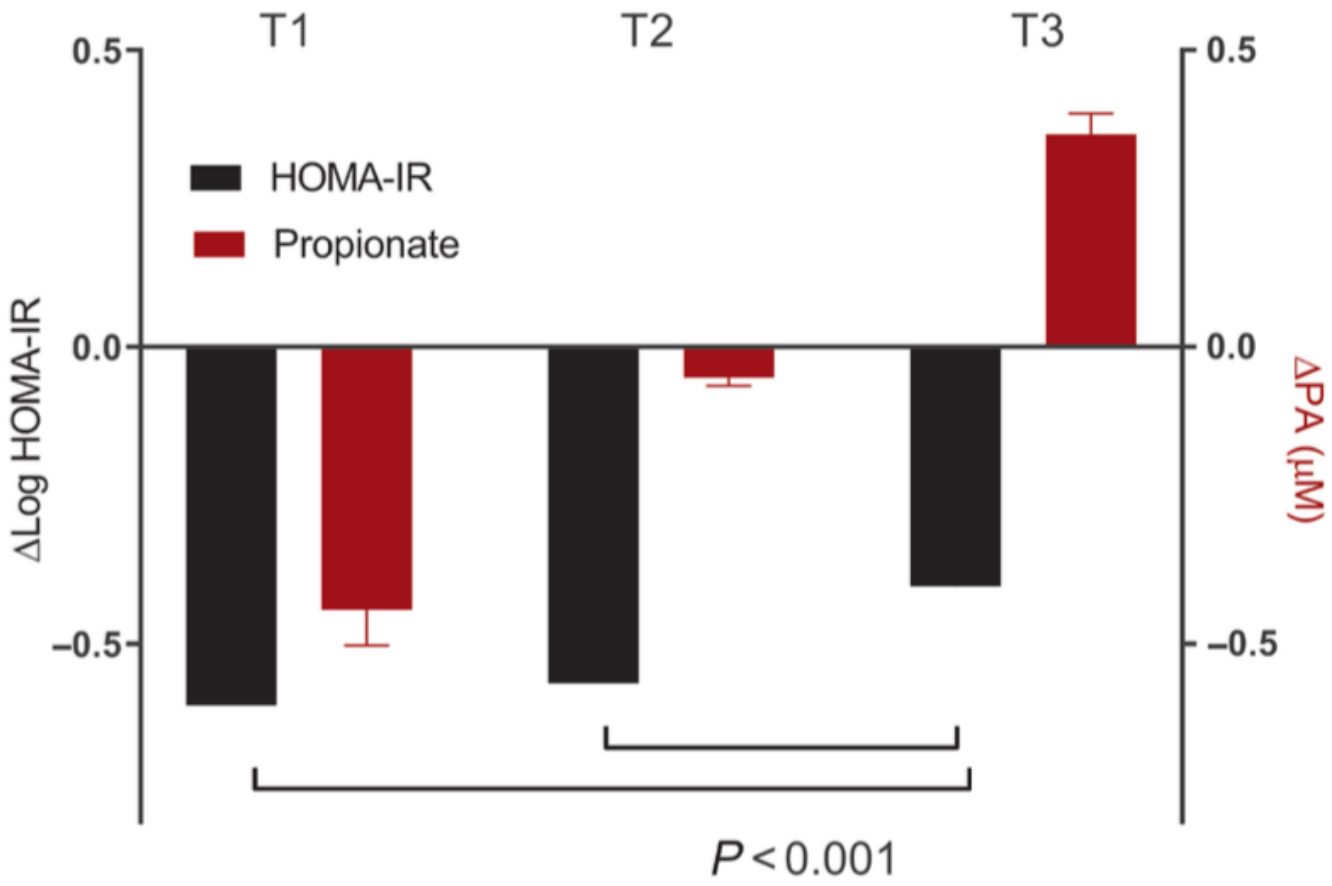
- Body weight changes were highly correlated with diet differences in energy intake



Cell Metab. 2019 Jul 2;30(1):67-77

Propionate impairs insulin action

- 160 overweight /obese participants (DIRECT study)
- Plasma propionate at baseline and at 6 months



Tirosh A et al. Sci Transl Med. 2019 Apr 24;11(489)

Where are we going?

Eat all the junk food you want as long as you cook it yourself.

- *Michael Pollan*

4. Culinary education as a strategy to improve nutrition

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;

Riecks M. J Nutr Educ Behav. 2018 Feb;50(2):148-172

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

Culinary coaching for patients

Methods

Twelve 30-minute tele-visits through Zoom, focused on:

- Setting and reviewing culinary goals
- Using motivational interviewing to discuss culinary challenges
- Brainstorming patient centered culinary solutions
- Focus on plant-based whole food cooking
- Sharing culinary resources, such as recipes and videos

Culinary coaching for patients

- Multicenter RCT, one year follow-up
- Patient (n=72) with overweight and obesity, 27.5<BMI<35
- Primary outcome: 5% weight loss in 6 month

Culinary coaching leads to weight loss

Average weight change at 6 months:

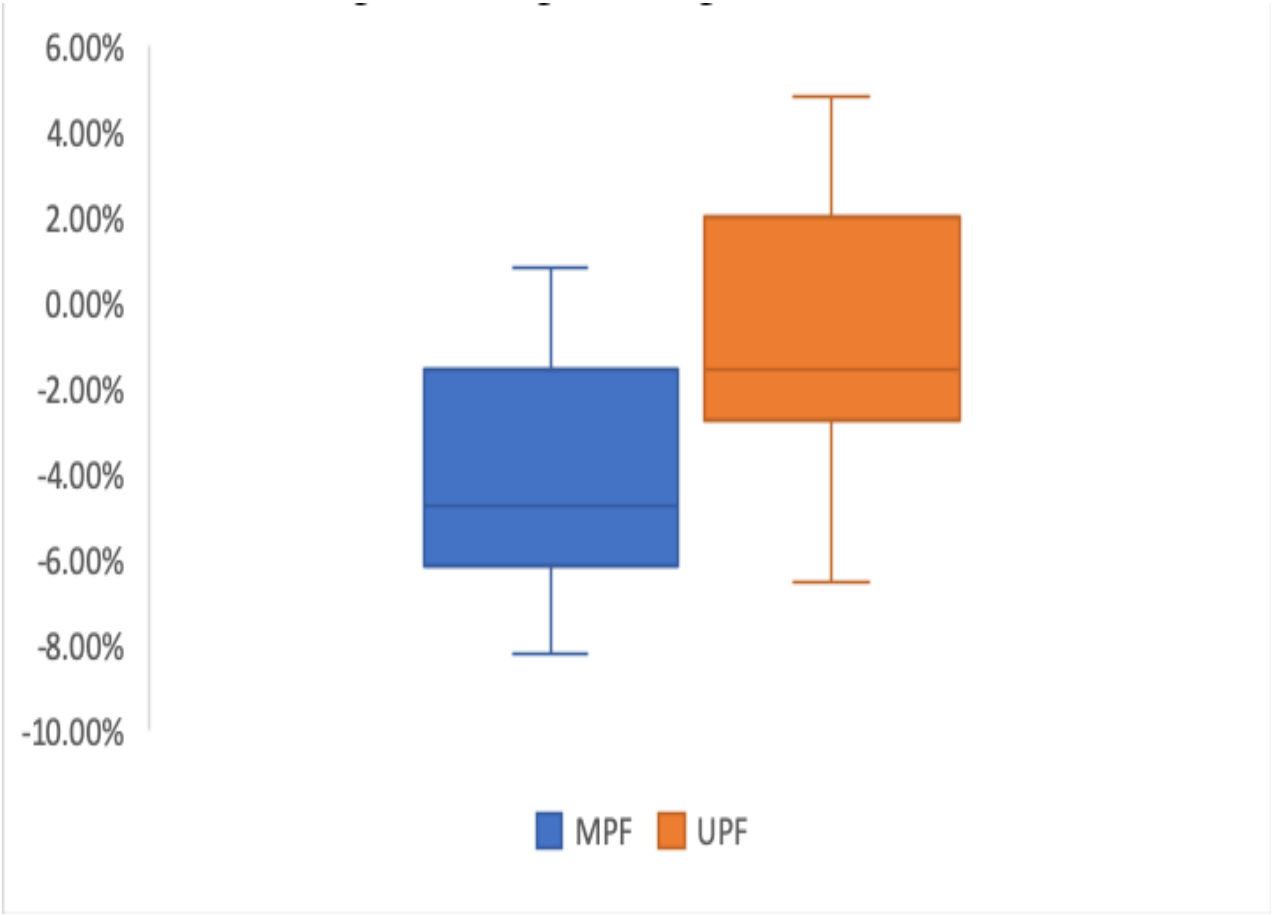
Intervention -4.2% ± 3.98 (n=11),

control -0.8% ± 3.37 (n=13), p=0.008

Average weight change at 12 months:

Intervention -4.1% ± 8.03 (n=4),

control +1.2% ± 3.97 (n=7).



Polak et al Unpublished data

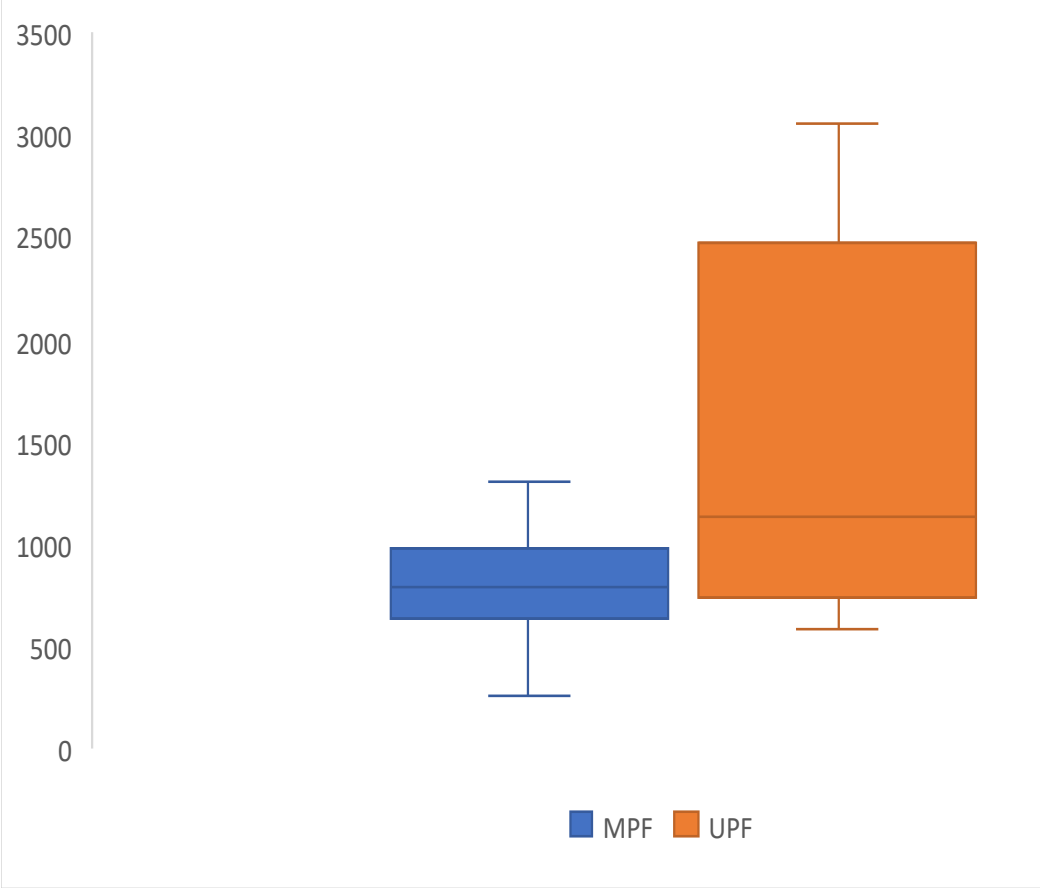
Preliminary outcomes – NUTRITION

Average UPFs consumption at 6 months

Intervention: 775 ± 301 gr/day (n=11),

Control: 1526± 893 gr/day(n=13),

p=0.0075



Polak et al Unpublished data

Preliminary outcomes – EMOTIONAL WELLBEING

<u>Participant coping strategies during the COVID-19 pandemic</u>

- Brief Resilient Coping Scale (BRCS) (17 coping strategies)

Selfcare

- Intervention 4.64 (1.69)
- Control 6.14 (1.66)
- p = 0.03

Polak et al Nutrients. 2021 Jul 5;13(7):2311

Preliminary outcomes – EMOTIONAL WELLBEING

Participant resiliency level during the COVID-19 pandemic:
COPE Inventory

Resiliency level	Control, n (%)	Intervention, n (%)	Total, n
Low	4 (28.6%)	1(7.1%)	5 (17.8%)
Medium	6 (42.8%)	8 (57.1%)	14 (50%)
High	4 (28.6%)	5 (35.8%)	9 (32.2%)
Total	14 (100%)	14 (100%)	28 (100%)

Polak et al Nutrients. 2021 Jul 5;13(7):2311

Clinical pearls:

Patient eats primarily outside / ultra-processed food?

- Empower patient to cook more at home
- Empower patient to cook from scratch

Patient cooks at home?

- Empower patient to improve ingredients
- Empower patient to improve cooking techniques

5. The role of health coaches in adopting home cooking

The health coach role in culinary education

Cooking is more than just a set of skills; it is related to work, family, and personal patterns of self-care.

<u>Additional barriers (partial list):</u>

- Will the food be delicious?
- Will my family like it?
- Will they be happy about the change?

Erlich R. Public Health Nutr. 2012 Jul;15(7):1139-4.

Home cooking principles, examples

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. Appl Physiol Nutr Metab. 2017 Aug;42(8):893-896

Implementing Culinary Coaching

Self care:

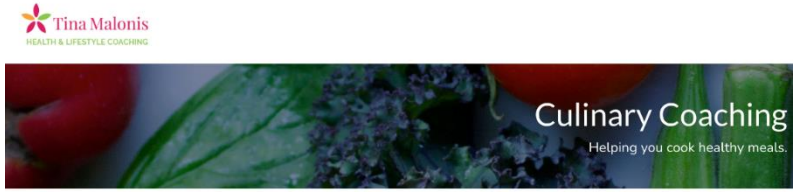
- Improved home cooking

Professional:

- Coaching encounters
- Culinary Coaching principles as part of culinary visits/meetings
- Culinary Coaching principles as part of a culinary programs
- Remote culinary coaching programs

Implementing culinary coaching– patient education

Culinary coaching modules for various health conditions



Culinary coaching telemedicine program for patients with Spinal Cord Injury

Queen's UNIVERSITY
HEALTH SCIENCES
Professional Development and Educational Scholarship

Implementing culinary coaching– medical education

One-hour culinary coaching module

Clinicians CHEF Coaching

Phillips EM et al. Med Sci Educ 2021 Jan 9;32(2):319-323
Staufer et al. Med Sci Educ 2021 Nov 18;32(1):57-61

5. The CHEF Coaching program

CHEF Coaching structure – 2023-24

CHEF Coaching the Basics
Enduring material stand alone recorded course

CHEF Coaching the Basics
Live online, as part of the ILM courses

CHEF Coaching – the Basics and Beyond the Basics
Live online stand alone course

Certificate of completion:

THE INSTITUTE OF LIFESTYLE MEDICINE

This certifies that

Shirley Garrett

has successfully completed an 18-hour training in

Culinary Coaching

June 1, 2015

Rani Polak.

Rani Polak, MD, MBA
Program Director, CHEF Coaching
Institute of Lifestyle Medicine

Edward Phillips MD

Edward M. Phillips, MD
Director, Institute Of Lifestyle Medicine

SPAULDING REHABILITATION NETWORK

HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Delivery options

CHEF Coaching the basics

- Live online through Spaulding
- Enduring material through HMS

CHEF Coaching Beyond the Basics

- Live online through HMS and Spaulding

More information including accreditation, bit.ly/CHEFCoachInfo

CHEF Coaching team

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Karla Arancibia

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Moria Petchel, NBC-HWC

How to stay connected

- Join our mailing list: https://bit.ly/ILM_Signup
- Follow Rani Polak on twitter, @RaniPolakMD
- Like the CHEF Coaching Facebook page, @CHEFCoaching
- Follow us on Instagram, @chef_coaching
- Follow us on Linkedin, @CHEF Coaching

Questions?

Saturday 10:00am – 11:00am

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Please scan this QR code on you mobile

or tablet device to access the session feedback survey

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