



Implementing a Mediterranean-Style Diet Outside the Mediterranean Region

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Abstract

Purpose of Review Populations surrounding the Mediterranean basin have traditionally reaped health benefits from a Mediterranean diet (MedDiet), which may benefit Westernized countries plagued by chronic disease. But is it feasible to implement beyond the Mediterranean? To answer this question, we present evidence from randomized controlled trials that achieved high dietary compliance rates with subsequent physical and mental health benefits.

Recent Findings In the 1960s, the Seven Countries Study identified dietary qualities of Mediterranean populations associated with healthy aging and longevity. The PREDIMED study confirmed reductions in CVD-related mortality with a MedDiet; a meta-analysis in over 4.7 million people showed reduced mortality, CVD-related mortality, and reduced risk of Parkinson's and Alzheimer's disease. Continually emerging research supports the MedDiet's benefits for chronic diseases including metabolic syndrome, cancers, liver disease, type 2 diabetes, depression, and anxiety.

Summary We summarize components of studies outside the Mediterranean that achieved high compliance to a Med-style diet: dietitian led, dietary education, goal setting, mindfulness; recipe books, meal plans, and food checklists; food hampers; regular contact between volunteers and staff through regular cooking classes; clinic visits; and recipes that are simple, palatable, and affordable. The next step is testing the MedDiet's feasibility in the community. Potential obstacles include access to dietetic/health care professionals, high meat intake, pervasive processed foods, and fast food outlets. For Western countries to promote a Med-style diet, collective support from government, key stakeholders and policy makers, food industry, retailers, and health professionals is needed to ensure the healthiest choice is the easiest choice.

Keywords Mediterranean diet · MedDiet · MedLey · HELFIMED · Blue zones

Abbreviations

CVD	Cardiovascular disease
HbA1C	Glycated hemoglobin
HELFIMED	Healthy Eating for Life with a Mediterranean Diet
MedDiet	Mediterranean diet
MedLey	Mediterranean diet for cognitive and cardiovascular health in the elderly
NAFLD	Non-alcoholic fatty liver disease
PREDIMED	Prevención con Dieta Mediterránea

SMILES	Supporting the Modification of Lifestyle Interventions in Lowered Emotional States
UNESCO	United Nations Educational, Scientific and Cultural Organization

Introduction

A few years ago, Ikaria was dubbed the “Greek island of old age” [1]. It is one of the world's blue zones—so-named because many inhabitants live to celebrate their 100th birthdays. Ikaria reached the public eye when Stamatis Moraitis returned there after being diagnosed with lung cancer in the USA and given 6 months to live. Forty-five years later, he was celebrating his 98th birthday. In a BBC interview, he attributed it to the wine, which he makes himself and shares with his friends. He also has his own olive and fruit trees, like other Ikarians who grow and cook their own food and make tea from the wild herbs that grow on the island—not a morsel of processed food

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in sight. Although blue zone inhabitants enjoy other health-promoting qualities like fresh air and a relaxing lifestyle, another feature they share is a diet rich in whole, plant foods. What does the evidence say about its health benefits?

The traditional diet embraced by countries like Spain, Greece, and Italy in the Mediterranean region attracted the interest of researchers because people in small southern Italian villages had low levels of heart disease [2]. The Mediterranean diet (MedDiet) is predominantly plant based, rich in vegetables, fruit, nuts, legumes, seeds, and fish with moderate dairy foods, low red meat consumption, and little or no packaged, highly processed foods filled with sugar, refined carbohydrates, and unhealthy fats [3]. A distinguishing feature is its abundant use of extra virgin olive oil, dating back to 5000 BC [4] and considered a “gift of the gods.” The MedDiet encourages moderate consumption of alcohol, mainly red wine, with meals, and acknowledges conviviality, frugality, and the importance of physical activity [5] (Fig. 1). Its fertile history has earned the MedDiet an inscription on the list of intangible cultural heritage of humanity with the United Nations Educational, Scientific, and Cultural Organization (UNESCO).

Few can argue that following a Mediterranean dietary pattern is healthy. Abundant research reports its health benefits for several chronic lifestyle diseases including non-alcoholic fatty liver disease (NAFLD) [6, 7], cancer [8–10], and overall mortality [11]. More surprising for many perhaps is emerging evidence showing its benefits for mood, depression [12, 13, 14••, 15, 16], cognition [17, 18], and protection from Alzheimer’s disease and dementia risk [8].

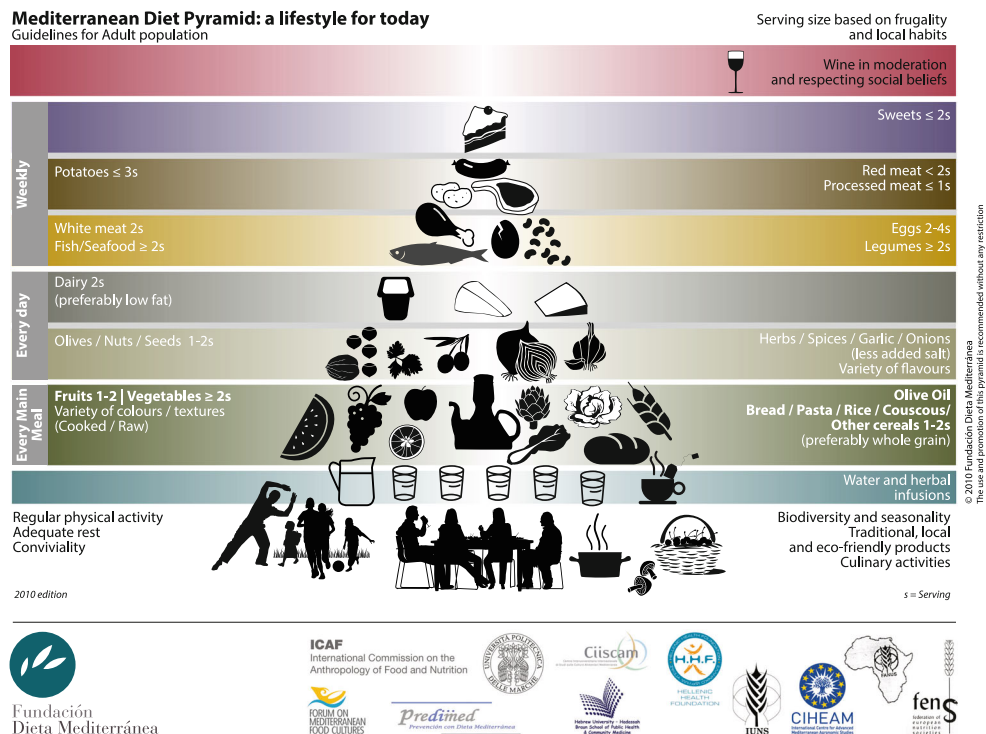
Evidenced by its region’s predominance in blue zone areas, the MedDiet pattern promotes healthy longevity. Furthermore, evidence from longitudinal, prospective, and randomized controlled trials suggests that it could be the most effective dietary pattern for preventing cardiovascular disease (CVD) and associated conditions [11, 19–23, 24••].

A systematic review and meta-analysis of more than 1.57 million people from Mediterranean and non-Mediterranean countries showed that a two-point increase in adherence to the MedDiet adherence score was associated with lower risk of mortality (RR 0.91, 95% CI 0.89, 0.94), mortality from CVD (RR 0.91, 95% CI 0.87, 0.95), and lower incidence of Alzheimer’s and Parkinson’s disease (RR 0.87, 95% CI 0.80, 0.96) [8]. These health benefits were sustained (mortality RR 0.92 95% CI 0.91, 0.93; CVD risk RR 0.90 95% CI 0.87, 0.92) when the authors updated the meta-analysis in 2013 for cardiovascular outcomes in a final meta-analyses of over 4.7 million people [9] from countries in the Mediterranean and beyond the Mediterranean Sea.

Prospective and cross-sectional studies have explored relationships between MedDiet adherence and health in Western populations like Australia [25, 26] and the USA [27–29]. Large cross-sectional studies like the Melbourne Collaborative Cohort Study also reported that high adherence to a MedDiet was associated with lower risk of developing type 2 diabetes and a lower glycated hemoglobin level (HbA1C; an indicator of longer term glycemic control) [30].

Although much of Australia’s climate is ripe for Mediterranean produce like olives, grapes (wine), fruit, and vegetables, few Australian studies have explored its health

Fig. 1 A Mediterranean dietary pattern pyramid



benefits in randomized controlled trials. Greek-born Itsiopoulos and colleagues pioneered research in Melbourne showing a MedDiet-lowered HbA1C over 12 weeks compared with a usual diet in 27 free-living individuals with type 2 diabetes [30]. The MedLey study in older Adelaideans improved CVD risk factors after 6 months of following a MedDiet: participants had lower systolic blood pressure, triglycerides, and F2-isoprostanes and greater flow-mediated dilatation compared with the control group [24••, 31–34]. Lee et al. [16] compared a Mediterranean-style diet with usual diet over 10 days in 24 women aged between 20 and 38 years and showed improved mood and augmentation pressure (a measure of vascular stiffness in cardiac blood vessels). Similarly, the HELFIMED study [14••] reported that a Mediterranean-style diet supplemented with fish oil improved mental health and depressive symptoms compared to normal diet over 3 months in 152 adults aged 18–65 years with depression. This was one of the two first randomized controlled trials worldwide to show an effect of the diet on mental health. The other study, “SMILES,” showed remarkably similar results over 12 weeks in 67 adults diagnosed with major depressive disorder [12, 13]. Other Australian trials have taken a MedDiet style approach to explore its effects on cognition [35], CVD risk factors of [36, 37] and NAFLD [6].

Current dietary recommendations are clearly not working for Australia where CVD remains the largest killer; 68% of adults and 30% of children are overweight and obese, and Australians are deriving 35% of energy from discretionary foods. These statistics are similar to the USA where 71% of adults over the age of 20 are overweight or obese (<https://www.cdc.gov/nchs/fastats/obesity-overweight.htm>) and 47% of children aged between 2 and 19 years are obese ([https://www.cdc.gov/nchs/data/16.pdf#053](https://www.cdc.gov/nchs/data/hus/16.pdf#053)). However, in 2015, the USA introduced the Dietary Guidelines 2015–2020 [38], which featured three healthy dietary patterns including the Healthy US-Style Eating Pattern, The Healthy Mediterranean-Style Eating Pattern, and the Healthy Vegetarian Eating Pattern (<https://health.gov/dietaryguidelines/2015/guidelines/chapter-1/a-closer-look-inside-healthy-eating-patterns/>). These dietary patterns were introduced because of strong health evidence and the ease of adapting them for cultural and personal preferences. It is premature to determine a positive health effect of the Mediterranean-style eating pattern in the US population. However, in light of escalated chronic disease in Western society, the MedDiet pattern offers a way to combat chronic illness and promote healthy aging, particularly in populations where obesity and its associated complications abound in epidemic proportions.

Although studies demonstrated MedDiet-related health benefits in Australia, a non-Mediterranean population, in many, the MedDiet was implemented both by using

preprepared meals or advising dietary recommendations in Greek migrants and for short timeframes. What is the feasibility of implementing a MedDiet in non-Mediterranean individuals in an ad libitum manner and over a longer duration? We know based on earlier publications in Western countries like Australia that providing preprepared cooked Mediterranean-style meals facilitates high compliance resulting in health outcomes in people with NAFLD and type 2 diabetes mellitus [7, 30]. Here, we describe successful strategies used to encourage non-Mediterranean populations to adopt a Mediterranean-style diet. Further, we offer insights for a population-wide adoption of a Mediterranean diet.

Trialing a Mediterranean Dietary Pattern in Australia

The HELFIMED and SMILES trials successfully implemented a Mediterranean-style diet in community-dwelling people with depression, compared with controls who received social support without dietary intervention. SMILES [12, 39] provided one-on-one personalized dietary advice from qualified dietitians in seven 60-min sessions over 12 weeks (four weekly sessions followed by fortnightly sessions). Participants received counseling and support strategies like motivational interviewing, goal setting, and mindful eating. To increase their exposure to the diet, they were given food hampers containing principle foods, recipes, and meal plans.

HELFIMED took a group approach [14••, 40]. Participants in the dietary arm attended a group nutrition education session followed by fortnightly group cooking workshops for 3 months. They also received food hampers and recipes and were encouraged to set goals that were achievable for them each fortnight (for instance, replace snacks with fruit and nuts, have salad with meals, replace soft drink with sparkling water, etc.).

Both trials reported significantly improved diets, and in a 6-month follow-up, HELFIMED found participants had sustained their healthy dietary changes.

A promising pilot study of the HELFIMED protocol also achieved healthier food habits in people with serious mental illness and cardiovascular risk factors residing in Community Residential Care [41]. Residents attended weekly cooking workshops, and staff were encouraged to take part and continue the program. Recipes were designed to be tasty, quick, and easy to prepare using inexpensive ingredients. Many can be made in batches and eaten over 2–3 days or frozen for emergencies.

The MedLey study was a randomized dietary intervention with 166 older men and women which compared the effect of a MedDiet with habitual diet on cardiovascular risk factors and cognitive performance over 6 months. The detailed trial protocol is published elsewhere [32, 42]. Adherence to the MedDiet significantly increased

from 7.4 to 10.6 points over 6 months with a 90% compliance rate to the MedDiet intervention. We now describe how MedLey achieved such high MedDiet compliance over an extended period, that achieved encouraging physical health benefits in older Australians [24••].

Implementing the MedLey Diet

This randomized controlled trial shared some basic principles of HELFIMED and SMILES. The dietary prescription was intense and required expertise to deliver. Dietitians worked with volunteers using motivational interviewing to overcome ambivalence to dietary change. They did this together to identify barriers and solutions to ensure they could adhere to the diet for at least 6 months. As this was a major dietary change, a detailed description of the diet was necessary to ensure the volunteers understood MedDiet principles and components of a traditional MedDiet versus typically Western foods. Key points promoting compliance to a MedDiet from MedLey, SMILES and HELFIMED are summarized in Table 1.

Written Resources

The dietitians provided each MedDiet volunteer with a dietary booklet outlining specific foods, servings, and portion sizes to consume daily and weekly for their energy requirements (weight was kept constant to avoid weight loss masking any other metabolic effect of the diet). Dietitians provided written resources with general information about the MedDiet, recipe modifications, an example menu for 1 day and 1 week, a published recipe book [43], and a daily food checklist to help track compliance with the diet.

Regular Contact and Provision of Study Foods

Upon study enrolment, all volunteers attended an information session which outlined the principles of the MedDiet, the diet,

and the requirements for successful study participation. Upon study commencement, each volunteer had an initial consultation with a dietitian and again at 3 and 6 months and every fortnight in between. Clinical and biochemical measurements were collected at 0, 3, and 6 months together with a 30-min face to face with the dietitian to discuss the diet they had been randomly allocated to (MedDiet or habitual diet). At each fortnightly visit, volunteers were weighed and were able to problem solve difficulties in following the diet with the dietitian. This individualized session gave volunteers the opportunity to be specific about personal struggles.

Volunteers on the MedDiet intervention collected study foods characteristic of a MedDiet including extra virgin olive oil, canned tuna, canned legumes, nuts, and Greek yoghurt. These foods were kindly donated from a range of companies (Cobram Estate™, Peanut Company of Australia, The Grains & Legumes Nutrition Council™, Simplot Australia Pty. Ltd., Goodman Fielder Ltd., and The Almond Board of Australia) and provided near 30–35% of the volunteers' total energy intake. There was no doubt that food hampers were a major contributor to the high dietary compliance (> 90%). However, the foods were provided not only to increase compliance but also as a training tool to familiarize volunteers with a MedDiet. To achieve dietary changes requires intense re-training of behavior around food choice, and evidence from research trials demonstrates such tools as written materials and food hampers facilitate this [6, 14••, 30].

Implementing the MedDiet Outside a Research Environment

The Mediterranean diet is not simply a list of foods. It encompasses a social, cultural, and agricultural way of life. Cooking and preparing foods brings conviviality and sharing of food for festivities, celebrations, social, and religious traditions and with family and friends. It embodies frugality, biodiversity, seasonality, minimizing waste, and long-term sustainability. The

Table 1 Key points identified from the MedLey, SMILES, and HELFIMED studies contributing to high compliance to a MedDiet pattern

Key point	Description
Dietitian	Skills in dietary education; ability to develop rapport and good communication with volunteer/client; motivational interviewing; goal setting including use of the S.M.A.R.T goals (specific, measurable, attractive, realistic, timeframe); knowledge of mindfulness
Written resources	Study booklet, provision of recipes, daily and weekly meal plans, food checklists, recipe book
Food hampers	Provision of principle foods of a MedDiet; enables familiarization and helps facilitate dietary behavior change
Regular contact	Regular contact with volunteers/clients; weekly on-site residential cooking classes; fortnightly clinic visits; dietary sessions; fortnightly cooking classes
Recipes	Simple, tasty, affordable meals, many of which can be made in bulk and frozen

lifestyle embraces rest and regular physical activity. To many Westerners, the MedDiet may be a foreign concept, bringing barriers for implementation outside the Mediterranean region. However, the versatility and palatability of the diet helps to account for its successful adoption in research studies.

Helping individuals modify diet and behavior is no easy task for health professionals. Australia and other Western countries like the USA and the UK are among the highest global consumers of meat [44]. So it was not surprising that one of the dietary instructions most difficult for MedDiet participants to adhere to was restricting red meat intake [45••]. This is not surprising given adult Australians consume nearly two serves of the lean meats and alternatives food group, or the equivalent of 184 g of meat per day, with red meat contributing 38% [46]. The MedDiet recommends 1–2 serves of fruit and 2 or more serves of vegetables at every main meal; however, Australians reportedly consume 2.7 serves of vegetables and 1.5 serves of fruit per day (AHS). Instead, Australians consume just over a third of their daily energy intake from discretionary foods. This is similar in the USA, posing challenges to adopting a MedDiet high in plant foods and low in discretionary foods. Overcoming these kinds of barriers requires good structured dietetic instruction, education, and use of tools to promote food preparation skills and familiarity with new food. A motivational interviewing approach assists with identifying stage of change, addressing barriers to change, and setting SMART goals (specific, measurable, attractive, realistic, timeframe) with the volunteer or client.

The MedDiet Is Convenient and Easy to Prepare

Busy Westerners, if they cook, tend to look for quick, easy to prepare meals. So many recipes nowadays with the “at home masterchefs” call for a pantry cupboard of ingredients, some of which people never use again. Mediterranean-style meals use a consistent foundation of extra virgin olive oil, fresh or dried herbs or a Sofrito sauce (onion, garlic, extra virgin olive oil and tomatoes), and the natural flavor of vegetables, legumes, or animal protein. This provides delicious yet quick, easy meals for time-poor people. Of course, when more time is free to enjoy shared cooking over a moderate glass of wine (unlike the binge drinking that many non-Mediterranean countries indulge in), people may create slow roasted casseroles and stews for weekends or social events (note that in traditional Greek culture, the slow-roasted meat on a spit is reserved for special occasions only).

Many dietary plans these days are expensive. Individual meals, soup sachets, bars, shakes, high protein meat-based diets etc. can be costly and therefore less sustainable. Because the MedDiet is primarily plant based, it is relatively inexpensive. Considering the seasonality of fruits and

vegetables, produce in season costs less, and bought in bulk saves money. Canned, frozen, or dried fruit are suitable alternatives to fresh; however, try to avoid fruit canned in syrups or select those in natural juice, and be mindful of portion size for dried fruits as recommended serves are much smaller than their fresh counterparts. Similarly for vegetables, fresh is best, frozen is fine, and if you are not into the Mediterranean tradition of bulk saucing tomatoes, canned versions are good alternatives. Fresh fish, particularly oily fish like salmon that are rich in omega-3s, can be expensive in many parts of the world. Canned tuna, salmon, sardines, oysters, and mackerel are good omega-3 sources and can easily provide the two weekly serves of fish typically eaten in the MedDiet at a lower cost. Legumes are rich in nutrients and fiber and inexpensive. Buying dried legumes and soaking overnight can save even more. Bulk nuts separated into individual 30 g serves are a quick, inexpensive, nutritious snack.

For anyone who has traveled Mediterranean countries, both in major cities and in the countryside or seaside villages might notice a dearth of fast food outlets which are common features of many Western countries and quite obviously influences discretionary food choices.

What Framework Might Facilitate Implementation of a MedDiet Pattern in Countries Beyond the Mediterranean Sea?

Contextual dietary and lifestyle habits need to be considered when introducing a Mediterranean dietary pattern in Western countries. Dietary guidelines need to adapt to that population’s requirements. For example, the MedDiet is low in dairy foods, a major source of dietary calcium, and is estimated to provide between 700 and 820 mg of calcium per day [47, 48]. While this meets the recommended intake for European populations [49], it does not meet the recommended daily intake for calcium in an Australian population for the prevention of bone disorders and needs consideration due to higher rates of osteoporosis in Australia [50, 51]. Recipes could supplement the guidelines to inspire Mediterranean-style cooking, adapted to local preferences—for instance replacing battered, deep-fried fish and chips with grilled fish and oven-baked potato brushed in extra virgin olive oil, served with sofrito in place of commercial tomato sauce. Heavy red meat consumers in countries like Australia could be encouraged to eat more dairy foods and lean pork for protein. Recipes could educate people to replace red meat with legumes in popular dishes. Some HELFIMED favorites were kidney beans for burritos/nachos/tacos sauce, lentils in place of mince for Shepherd’s Pie, and lentil/nut burgers to throw on the barbeque (recipes in Appendix 1).

Furthermore, adequate resources need to be prepared with appropriate portion sizes, serving sizes, and visual aids for health professionals such as general practitioners and dietitians.

But what about the ongoing requirement to see health professionals? The cost and availability of seeing a medical doctor or a dietitian for dietary advice is expensive, particularly if regular ongoing consultations are required to adopt a new diet.

Differences in food supply and availability may need to be addressed. For instance, including fruits and vegetables that are not typically Mediterranean, like pineapple or avocado, may enhance acceptability and sustainability. Given promising results from Medley, our group has further explored the MedDiet in a population “at risk” of cardiovascular disease in two further crossover intervention trials comparing a low-fat diet with a MedDiet with additional dairy foods and fresh lean pork as an alternative meat protein [36, 37].

Population-Wide Adoption of a Mediterranean Diet

Population-wide adoption of the Mediterranean diet requires a multi-sectoral approach with the collaboration and commitment of food industry and food retailers, regulatory bodies and policy makers, and health professionals. A framework for adoption must address a socio-ecological model to accommodate for all settings including home, schools, the workplace, and the community (Table 2). Population-wide adoption of the Mediterranean dietary pattern must not only be cost-effective in terms of health benefits, but also economically affordable, inexpensive, and culturally acceptable. The framework used many years ago in the campaign to reduce tobacco use addressed tobacco supply and consumption, introduced taxes on products, modified tobacco packaging and labeling, and increased public education and awareness of the health risks associated with tobacco use. In Australia, just increasing the price of tobacco products contributed to a significant drop in tobacco use [52].

Would it be as simple as reducing the tax on healthy food options and increasing the tax on less healthy food options? Would this encourage the consumption of healthy foods particularly in lower socioeconomic areas which often suffer at the hands of takeaway and fast food options? This could be one strategy as part of a framework for the adoption of the Mediterranean dietary pattern. In their 2015–2020 Dietary Guidelines, the US Department of Health and Human Services and US Department of Agriculture (USDA) [8] provided detailed recommendations for the adoption of the Mediterranean diet, one of three healthy dietary patterns presented. Key information is presented in a clear manner for health professionals and the general public. Strategies are offered for changing dietary behaviors such as swapping less healthy food options for healthier choices. To encourage these dietary changes on a population-wide level poses challenges. In The Lancet’s latest Obesity Series [53], leading researchers proposed that the food environment is a primary target:

Table 2 Key points for consideration in population-wide adoption of a Mediterranean diet

Key point	Description
Multi-sectoral collaboration	Collaboration of food industry, food retailers, health organizations and associations, regulatory bodies, academics, and health professionals
Socio-ecological model	Settings approach: formulate plan to disseminate information in schools, home, workplace, and the community
Evidence base	Consolidate, translate, and communicate scientifically substantiated evidence on the health benefits of a Mediterranean diet to the general public
Tax	Tax less healthy food and drink choices (fastfood, take away foods, discretionary and ultra-processed foods, sugar-sweetened drinks); remove tax on healthy food choices (plant-based foods, fish, lean poultry, meat, dairy foods, etc.)
Resources and training	Production of key resources and training of appropriate personnel for delivery of the Mediterranean diet

“Today’s food environments exploit people’s biological, psychological, social, and economic vulnerabilities, making it easier for them to eat unhealthy foods. This reinforces preferences and demands for foods of poor nutritional quality, furthering the unhealthy food environments.” The series argues that governments need to take regulatory action to make sustainable changes in food availability and marketing.

Evidence also suggests that people trust nutrition advice from their GPs [54]. This presents an ideal opportunity to train non-nutrition health professionals in the pivotal role of diet in health, encouraging them to recommend diet and refer patients to nutrition professionals. In the spirit of food hamper success in research, specified food vouchers could be added to medical prescriptions.

Summary

The MedDiet’s association with greater life expectancy, lower risk of total and cardiovascular disease-related mortality, and other chronic lifestyle diseases has generated considerable interest. Whether it can be adopted in non-Mediterranean countries has been a topic of discussion among health professionals and academics. It is a highly palatable, versatile diet, and emerging evidence from Australian studies suggests that it is achievable. In particular, MedLey showed that Australians can adopt a MedDiet for 6 months with adequate resources, supplied foods, and support from health professionals. Whether and how this can be replicated in a non-research environment remains to be explored.

In time, population health and nutrition data will emerge from the USA Dietary Guidelines which included a Mediterranean diet as one of three healthy dietary patterns. In the meantime, implementing a healthy dietary pattern like the MedDiet needs collective support from the government, stakeholders, policy makers, the food industry, and food retailers as well as health professionals working together to make the healthiest choice for a Western population the easiest choice. Whether it be focusing on reducing the cost of healthier food options, reducing portion sizes, regulating discretionary and processed packaged foods, implementing food advertising restrictions, taxing discretionary food, funneling funds from the health care budget to medical and dietetic support for individuals, something needs to happen now to address the modern scourge of chronic disease.

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Compliance with Ethical Standards

Conflict of Interest Karen J Murphy and Natalie Parletta declare no conflict of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

Sample of popular HELFIMED recipes replacing meat with legumes

Chilli Beans

This simple, versatile Mexican-inspired dish has a tasty combination of flavours and textures with the cool creaminess of the avocado combined with the rich spiciness of the beans. Serve with rice or quinoa for extra boost of protein and nutrients. Also a delicious and nutritious topping for nachos, burritos or tacos.

Ingredients

- 1-2 tbsp extra virgin olive oil
- 1 red onion
- 2-4 cloves garlic
- 2-3 fresh chillies or ~1 tsp powdered chilli to taste
- 2 heaped tsp sweet paprika
- 1 tsp salt
- 1 can crushed tomatoes
- 1 can red kidney beans

- Grated mozzarella cheese
- *Use all or any combination of the following vegetables*
- Celery
- Carrot
- Eggplant
- Red capsicum
- Zucchini
- Sweet potato

Method

1. Finely chop all vegetables (except avocado)
2. Lightly heat olive oil in a saucepan then add onion, celery, carrot and eggplant
3. Cook until onion is clear; add garlic, fresh or dried chilli and paprika; cook for a few minutes, stirring occasionally
4. Add cans of tomatoes and kidney beans with remaining vegetables plus half a can of water and salt
5. Cook until simmering, stirring occasionally; lower heat and put the lid on
6. Cut avocado into slices
7. When the vegetables are soft, serve the chilli beans with grated cheese and avocado on top – can be eaten alone or with rice/quinoa, burritos, nachos or tacos.

Lentil Nut Burgers

These tasty meat-free burgers are high in protein and can be eaten with salad and home-made chips or on a bread roll with salad and sauce. Great for picnics and barbeques. Omit the breadcrumbs for a gluten-free version.

Ingredients

- 1 can lentils
- 1 potato
- 1 small sweet potato
- Handful of mushrooms, finely chopped or processed
- 1 cup chopped parsley
- 1 onion, finely chopped
- 2 cloves garlic, finely chopped
- ½-1 cup ground mixed nuts (e.g. almonds, walnuts, cashews)
- 1 egg
- Salt and pepper
- Chilli powder or cayenne pepper (optional)
- 1 tbsp soy sauce or tamari
- Breadcrumbs for coating
- Extra virgin olive oil for cooking

Method

1. Peel and dice the potato and sweet potato, boil in salted water and cook until just soft enough to mash (not too soft); mash and allow to cool.
2. Finely chop onion, garlic, parsley and mushroom.
3. Mix all ingredients apart from breadcrumbs and olive oil. Adjust ground nuts as needed for consistency firm enough to form patties.
4. Shake some breadcrumbs onto a plate, make patties from the lentil mixture and roll in the breadcrumbs to cover. (If desired, the burgers can be frozen in batches for other meals at this point).
5. Lightly heat olive oil in a frying pan and cook patties on both sides until golden brown.

Shepherd's Pie with Lentils

A tasty, nutritious alternative to Shepherd's Pie. This dish was especially popular with a person who didn't previously like lentils – she started cooking it on a regular basis!

Ingredients

- 1 cup lentils and 4 cups water or stock (or 2 cans lentils)
- 1 onion, chopped
- 4 cloves garlic, chopped
- 1 large carrot, diced
- 1 large or two medium zucchini, diced
- 1 stalk celery, diced
- 1-2 cups mushrooms, chopped
- 2-3 bay leaves
- 1 tsp sea salt and black pepper
- 2 tblsp parsley, chopped
- 6 potatoes, chopped
- 2 cloves garlic, chopped
- ½ cup milk
- Extra virgin olive oil
- Grated mozzarella cheese (optional)

Method

1. If using whole lentils, place lentils and water or stock in a saucepan with bay leaves; bring to boil then simmer.
2. Lightly heat olive oil in saucepan, add chopped onions, carrot and celery and sauté until onions start to become clear and vegies soften.
3. Add chopped garlic, zucchini and mushrooms and cook until zucchini starts to soften.

4. Add lentils to the vegetables with cooking water (or canned lentils and bay leaves), with salt, pepper and parsley, and continue to cook until lentils are soft.
5. Meanwhile, boil some water, peel and chop potatoes. Cook in salted boiling water until soft and drain water out. (Pre-heat oven now to 180 degrees.)
6. Mash or blend cooked potatoes with salt, pepper, milk and a drizzle of olive oil.
7. Pour cooked lentil mixture into a casserole dish and gently spread the mashed potato over the top. If using grated cheese, sprinkle over the top. Bake until cheese melts and starts to brown (or top is golden if not using cheese); serve with a green salad.

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