

Nut Consumption and Heart Health

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DIET & INFLAMMATION

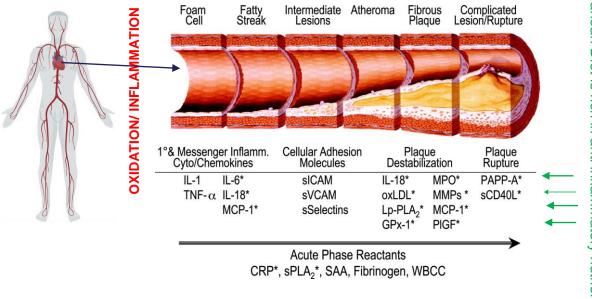
Most Chronic Diseases originate from Low Grade Chronic "Systemic" Inflammation

Mediterranean Norma Inflammation Endotoxins Air, water, food oral cavity, microbiota Alzheimer's Astrocytes Astrocytes Diet is rich Keratir Keratino cytes cytes Coronary Heart Disease Cardiac Cardiad Myofibro-Myofibr blasts hlocts in anti inflammatory nutrients Visceral Obesity Epithelial Epithe cells Diabetes Osteoarthritis Chondro Chondro cvtes Spreading inflammation DOI: https://doi.org/10.1515/sjpain-2019-0061 Elisabeth Hansson & Eva Skiöldebrand, 2019

Intermediate biomarkers: Increased pro-inflammatory markers hs-CRP, TNF-a, IL-6

The illustration was made by Pontus Andersson, Art Production, Gothenburg, Sweden.

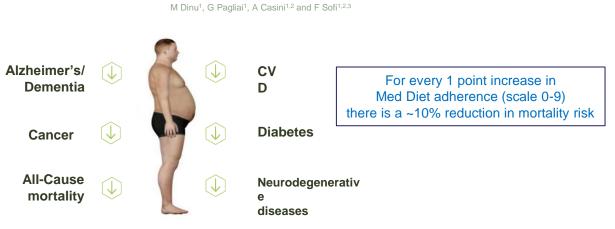
Coronary Heart Disease [Atherosclerosis] is Complex!



http://atvb.ahajournals.org/content/27/1/15/F1.large.jpg

Scientific Evidence in Support of Cardioprotective Mediterranean Diet

Mediterranean diet and multiple health outcomes: an umbrella review of meta-analyses of observational studies and randomised trials



13 meta-analyses of observational studies and 16 meta-analyses of RCTs investigating link between adherence to the Mediterranean diet and 37 different health outcomes, for a total population of over than 12 800 000 subjects

European Journal of Clinical Nutrition (2017), 1–14 © 2017 Macmillan Publishers Limited, part of Springer Nature. All rights reserved 0954-3007/17

www.nature.com/ejcn



PREDIMED Study Group



The multidisciplinary team of the PREDIMED study assembles outstanding research groups involved in nutrition and cardiovascular risk in Spain. Partners are 16 groups distributed in 7 autonomous communities in Spain, which are formed by university researchers, hospital clinicians, primary care physicians, nutritionists and epidemiologists working in various public institutions. The team takes advantage of modern communication technologies and performs as a research network, thus

http://predimed.onmedic.net/Default.aspx?alias=predimed.onmedic.net/eng



Effects independent of weight loss

of cardiac events (%) Incidence

PREDIMED Final Outcomes

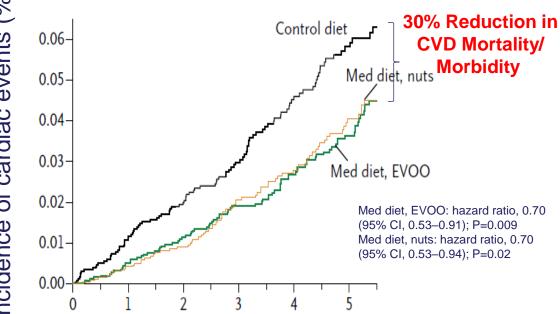


Figure 1. Incidence of Primary End-Point (a combination of acute myocardial infarction, stroke and all-cause death) following use of the Mediterranean Diet for the primary prevention of cardiovascular disease. EVOO = Extra Virgin Olive Oil

(Estruch et al, 2013)

Tresserra-Rimbau et al. BMC Medicine 2014, 12:77 http://www.biomedcentral.com/1741-7015/12/77



RESEARCH ARTICLE

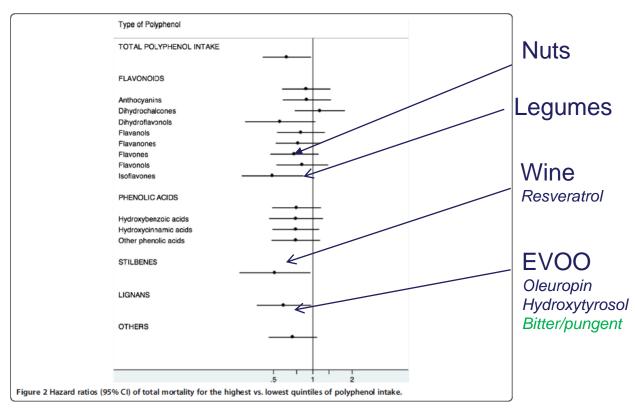
Open Access

Polyphenol intake and mortality risk: a re-analysis of the PREDIMED trial

Anna Tresserra-Rimbau^{1,2}, Eric B Rimm³, Alexander Medina-Remón^{2,17}, Miguel A Martínez-González^{2,4}, M Carmen López-Sabater^{1,2}, María I Covas^{2,5}, Dolores Corella^{2,6}, Jordi Salas-Salvadó^{2,7}, Enrique Gómez-Gracia^{2,8}, José Lapetra^{2,9}, Fernando Arós^{2,10}, Miquel Fiol^{2,11}, Emili Ros^{2,12}, Lluis Serra-Majem^{2,13}, Xavier Pintó^{2,14}, Miguel A Muñoz^{2,15}, Alfredo Gea^{2,4}, Valentina Ruiz-Gutiérrez^{2,16}, Ramón Estruch^{2,17}, Rosa M Lamuela-Raventós^{1,2*} and on behalf of the PREDIMED Study Investigators

37% reduction in mortality in Q5 vs Q1 of polyphenol intake

PREDIMED: Mortality and Polyphenol Intake (by type)



Tresserra-Rimbau et al. BMC Medicine, 2014

What is an anti-inflammatory diet?



DIETARY INFLAMMATORY INDEX (DII®)

An estimate of the inflammatory potential of overall diet

Evidence relating 45 diet parameters to inflammatory signaling





Higher *pro-inflammatory* DII scores are positively associated with inflammation, High Blood Pressure, obesity, metabolic syndrome and coronary heart disease (CHD)

PREDIMED: Greater incidence of Cardiovascular Deaths with Increasing Score of Pro-Inflammatory Diet

Shivappa et al. Designing and developing a literature-derived, population-based dietary inflammatory index. Public Health Nutr 2014;17:1689-96.

Acknowledgement: Dr Hannah Mayr

	Food parameter	Weighted number of articles	Raw inflammatory effect	Overall inflammatory effect score	Global daily mean intake [‡] (unitz/d)	sd‡
	Alcohol (g)	417	-0.278	-0.278	13.98	3.72
	Vitamin B ₁₂ (µg)	122	0.205	0.106	5-15	2.70
	Vitamin B ₆ (mg)	227	-0.379	-0.365	1.47	0.74
	β-Carotene (μg)	401	-0.584	-0.584	3718	1720
	Caffeine (g)	209	-0.124	-0.110	8-05	6-67
	Carbohydrate (g)	211	0.109	0.097	272-2	40.0
	Cholesterol (mg)	75	0.347	0.110	279-4	51-2
	Energy (kcal)	245	0-180	0.180	2056	338
	Eugenol (mg)	38	-0.868	-0.140	0.01	0.08
	Total fat (g)	443	0.298	0.298	71-4	19-4
Garlic –ve	Fibre (g)	261	-0.663	-0.663	18-8	4.9
Ganic –ve	Folic acid (ug)	217	-0.207	-0.190	273-0	70.7
Anti-inflammatory	Garlic (g)	277	-0.412	-0.412	4-35	2-90
Anti-innannnatory	Ginger (g)	182	-0.588	-0.453	59-0	63-2
	Fe (mg)	619	0-032	0.032	13-35	3-71
	Mg (mg)	351	-0.484	-0.484	310-1	139-4
	MUFA (g)	106	-0.019	-0.009	27.0	6-1
I-3 fatty acids -ve	Niacin (mg)	58	-1.000	-0.246	25.90	11.77
Inti-inflammatory	n-3 Fatty acids (g)	2588	-0.436	-0-436	1.06	1-06
and an internation y	n-6 Fatty acids (g)	924	-0-159	-0.159	10-80	7-50
	Onion (g)	145	-0.490	-0.301	35.9	18-4
	Protein (g)	102	0-049	0.021	79-4	13-9
	PUFA (g)	4002	-0-337	-0.337	13-88	3-76
	Riboflavin (mg)	22	-0.727	-0.068	1.70	0.79
Saturated fat +ve	Saffron (g)	33	-1-000	-0.140	0.37	1-78
-	Saturated fat (g)	205	0-429	0.373	28.6	8-0
Pro-inflammatory	Se (µg)	372	-0.191	-0 191	67-0	25-1
	Thiamin (mg)	65	-0.354	-0.098	1.70	0-66
	Trans fat (g)	125	0.432	0.229	3-15	3-75
	Turmeric (mg)	\$14	-0.785	-0.785	533-6	754-3
	Vitamin A (RE)	663	-0.401	-0.401	983-9	518-6
	Vitamin C (mg)	733	-0-424	-0-424	118-2	43-46
	Vitamin D (µg)	996	-0-446	-0-446	6-26	2-21
	Vitamin E (mg)	1495	-0.419	-0.419	8.73	1-49
	Zn (mg)	1036	-0-313	-0.313	9.84	2-19
	Green/black tea (g)	735	-0.536	-0.536	1.69	1-53

Food parameters included in the dietary inflammatory index, inflammatory effect scores, and intake values from the global composite data set; Dietary Inflammatory Index Development Study, Columbia, SC, USA, 2011–2012

The Dietary Inflammatory Index Food Parameters

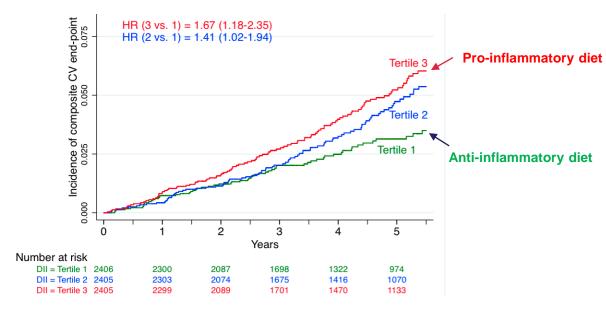
Shivappa et al, PHN 2014)



MDPI

Review The Role of Dietary Inflammatory Index in Cardiovascular Disease, Metabolic Syndrome and Mortality

Miguel Ruiz-Canela 1,2,3,*, Maira Bes-Rastrollo 1,2,3 and Miguel A. Martínez-González 1,2,3



Sánchez-Villegas et al. BMC Medicine 2013, 11:208 http://www.biomedcentral.com/1741-7015/11/208



RESEARCH ARTICLE

Open Access

Mediterranean dietary pattern and depression: the PREDIMED randomized trial

Almudena Sánchez-Villegas^{1,2*}, Miguel Angel Martínez-González^{1,3}, Ramón Estruch^{1,4}, Jordi Salas-Salvadó^{1,5}, Dolores Corella^{1,6}, Maria Isabel Covas^{1,7}, Fernando Arós^{1,8}, Dora Romaguera^{1,9,10}, Enrique Gómez-Gracia^{1,11}, José Lapetra^{1,12}, Xavier Pintó^{1,13}, Jose Alfredo Martínez^{1,14}, Rosa María Lamuela-Raventós^{1,15}, Emilio Ros^{1,16,17}, Alfredo Gea^{1,3}, Julia Wärnberg^{1,11} and Lluis Serra-Majem^{1,2}

Results suggest that a Mediterranean diet supplemented with 30g nuts/day (almonds, walnuts, hazelnuts) reduces the risk of depression by 40% in people With type 2 Diabetes.

RMIT Classification: Trusted Dietary Patterns and Protection ALL Chronic Diseases (Fardet and Boire, Nutrition Reviews 2014)

A synthesis of all (304) pooled meta-analyses and systematic reviewed published 1950-2013

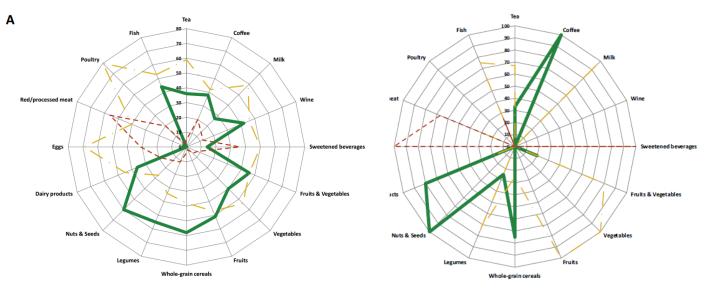


Figure: Radar plot of food groups and beverages and link with Chronic Disease (A) & T2DM (B). _____ protective _____ neutral _____ deleterious

Feasibility of a Mediterranean Diet: Australian Studies

Historical Overview: Traditional Mediterranean diet studies- Australian Studies



First Clinical Study using a *Cretan* Mediterranean diet "**whole cuisine**" in Diabetes <u>in Australia</u>.



Can the Mediterranean diet lower HbA1c in type 2 diabetes? Results from a randomized cross-over study *

C. Itsiopoulos a,b,* , L. Brazionis b,e , M. Kaimakamis c , M. Cameron c , J.D. Best b,d , K. O'Dea e , K. Rowley f



The ditter and the second seco

Cooked meals and staples (olive oil, dried fruit, nuts, sourdough bread) Were provided for duration of study.

>12 week study of Greek-style Med diet "ad libitum" vs Usual Diet in T2DM

>Clinically significant change in HbA1c (of the order found in many single OH trials)

> Change of - 0.3 HbA1c% = 10% reduction in CHD Mortality in T2 diabetes

> Health benefits independent of weight loss!





THE AUSMED HEART TRIAL PILOT



Dr Hannah Mayr

Multi-Centre Study investigating impact of secondary prevention of Heart Attack following 6 months intervention with a Mediterranean Diet vs Low Fat Diet.

Results of pilot (n=65) 83% male, average age 62 yrs,

28% Diabetes, 41% Metabolic Syndrome.



Randomization to 6-month Mediterranean diet compared with a low-fat diet leads to improvement in Dietary Inflammatory Index scores in patients with coronary heart disease: the AUSMED Heart Trial

Hannah L Mayr^{a, b}, Colleen J Thomas^{c,*}, Audrey C Tierney^{a, d}, Teagan Kucianski^a, Elena S George^{a, e}, Miguel Ruiz-Canela^{f, g}, James R Hebert^{h, i}, Nitin Shivappa^{h, i}, Catherine Itsiopoulos^a

Hypothesis: MedDiet is more anti-inflammatory than Low Fat Diet and will improve markers of inflammation and related cardiometabolic risk markers in patients with heart disease.

THE AUSMED HEART TRIAL PILOT



- Med Diet outperforms the Low Fat diet in anti-inflammatory score (anti inflammatory nutrients)
- Following a Mediterranean Diet for 6 months significantly reduces biomarkers of inflammation (IL-6)
- Following a Mediterranean Diet for 6 months improves diet towards a protective anti-inflammatory diet -> builds antioxidant defence



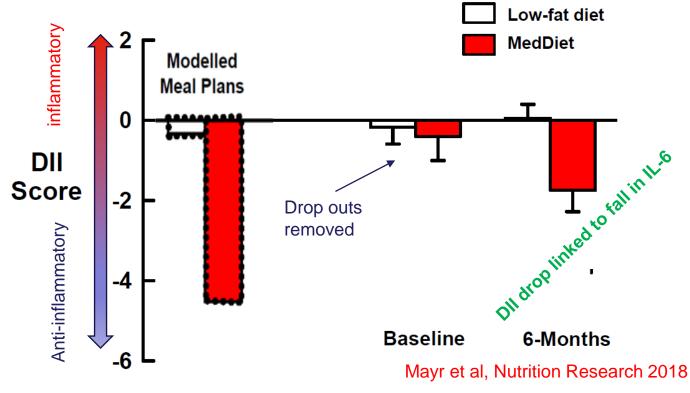
50% people Med Diet

6 months



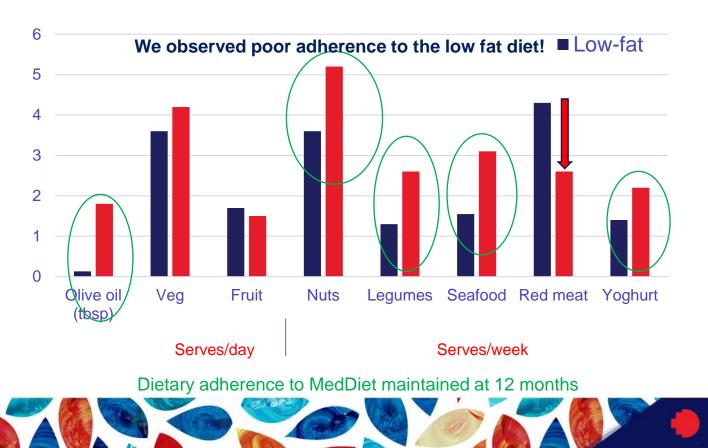
Mayr et al, Nutrition Research 2018

MedDiet lower in DII (anti inflammatory) than LFD





AUSMED Heart Trial Participants Adhered to the Mediterranean Diet at 6 months (Mayr et al, 2018)



Assessing MedDiet Adherence: PREDIMED 14-Item Diet Quality Guide → MEDAS

14-item food diet quality guide: PREDIMED Study (Martinez-Gonzalez et al, 2013).

Foods Positively Associated with Mediterranean Diet

•Olive oil as main fat

● ≥ 4 tbsp olive oil/day

- ≥ 2 serves vegetables (2x200g cooked, 100g raw)/day
- \geq 3 serves of fruit/day
- •≥ 7 glasses wine/week (If a consumer of alcohol)
- 3 serves (3x150g) legumes /week
- •> 3 serves fish (100-150g) or shellfish (200g)/week
- •> 3 serves (3x30g) nuts/week
- •Chicken, turkey, wild meats as main meats
- •≥ 2/week dishes cooked in tomato, onion, garlic, olive oil (sofrito or salsa)

Foods Negatively Associated with the Mediterranean Diet

- •< 1 serve red meat/meat products (100-150g)/day</p>
- •<1 serve butter, margarine or cream/day</p>
- •< 1 sweet/carbonated beverage/day</p>
- •< 3/week commercial sweets, cakes, biscuits.

AUSMED Heart Trial Participants Adhered to the Mediterranean Diet at 6 months (Mayr et al, 2018)

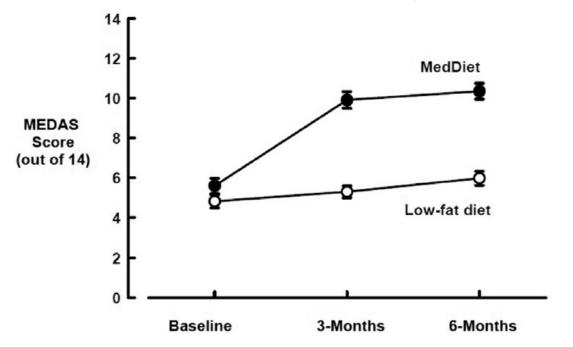
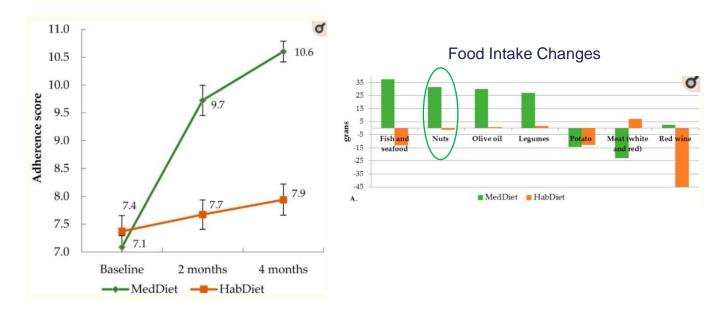


Fig. 2. Mediterranean diet (MedDiet) adherence across intervention time points by study group. Mean Mediterranean Diet Adherence Screener (MEDAS) score in the low-fat diet (n = 31) and MedDiet (n = 34) groups. Data are mean \pm SEM.



Older Australians Can Achieve High Adherence to the Mediterranean Diet during a 6 Month Randomised Intervention; Results from the Medley Study (Davis et al, Nutrients 2017)



Mean MedDiet Adherence score of Australian men and women <u>> 65yrs following MedDiet or Habitual Diet</u>

IS A MEDITERRANEAN DIET TRANSFERABLE? Lessons from Implementation Science



A recent Australian survey of dietitians (n=182) investigated Knowledge and Applications of a MedDiet in Management of Chronic Conditions.



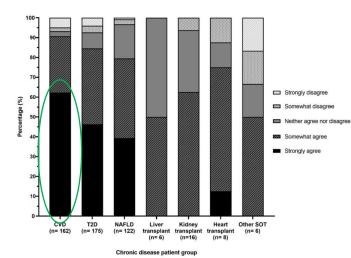
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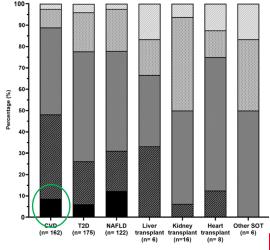
Investigating Whether the Mediterranean Dietary Pattern Is Integrated in Routine Dietetic Practice for Management of Chronic Conditions: A National Survey of Dietitians

Hannah L. Mayr ^{1,2,3,4,*,†}[©], Sarah P. Kostjasyn ^{2,†}, Katrina L. Campbell ^{1,2,4}, Michelle Palmer ⁵[©] and Ingrid J. Hickman ^{1,4}

Agreement of Evidence in Support of MedDiet



Frequency of MedDiet Counselling



Chronic disease patient group

Investigating Whether the Mediterranean Dietary Pattern Is Integrated in Routine Dietetic Practice for Management of Chronic Conditions: A National Survey of Dietitians

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Hannah L. Mayr <sup>1,2,3,4,*,†</sup><sup>©</sup>, Sarah P. Kostjasyn <sup>2,†</sup>, Katrina L. Campbell <sup>1,2,4</sup>, Michelle Palmer <sup>5</sup><sup>©</sup>
and Ingrid J. Hickman <sup>1,4</sup>
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Findings:

Greater than 60% dietitians agreed there is enough evidence to support recommending the MedDiet for Cardiovascular Disease, whereas <10% routinely recommended a MedDiet.

Barriers for not recommending a MedDiet

- Limited consultation time
- > Practical application of the MedDiet to patients from diverse cultural backgrounds
- Concerns that principles such as high fat foods (liberal EVOO and nuts most days) and dairy recommendations do not align with Australian guidelines, which dietitians prioritise.
- Limited education in dietetic degrees

I don't like to call it a Mediterranean diet – but apply the principles'

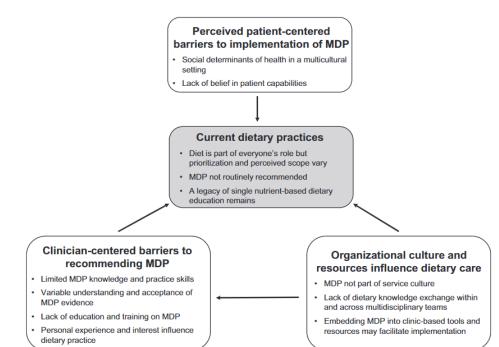




Clinician Perspectives of Barriers and Enablers to Implementing the Mediterranean Dietary Pattern in Routine Care for Coronary Heart Disease and Type 2 Diabetes: A Qualitative Interview Study

AIM: Exploration of multidisciplinary health care professionals' perspectives on recommending the MedDiet in T2DM and CHD care.

N= 57 (nurses, doctors, dietitians, physiotherapists)



Hannah L. Mayr, PhD, APD*; Jaimon T. Kelly, PhD, APD*; Graeme A. Macdonald, MBBS(Hons), PhD, FRACP; Anthony W. Russell, MBBS, PhD, FRACP; Ingrid J. Hickman, PhD, AdvAPD*

J Acad Nutr & Diet 2022







Opinion

A Mediterranean Diet Model in Australia: Strategies for Translating the Traditional Mediterranean Diet into a Multicultural Setting

Elena S. George 1,2,* , teagan Kucianski 1 , Hannah L. Mayr $^{1\bigcirc}$, George Moschonis 1 , Audrey C. Tierney 1,3 and Catherine Itsiopoulos 1

Vegetables		Carbohydrate		Protein		Condiments
Green salad mix		Whole grain crackers		Canned lentils or legumes		EVOO*
Frozen vegetables		Microwavable rice		Canned chicken		Salt (minimal) +/- pepper
Cucumber, tomato and carrot	+	Wholegrain bread	+	Canned fish (e.g. tuna, sardines, salmon, mackerel, herring)	+	Lemon juice
Cabbage and carrot shredded		Potato (all varieties) – small for microwaving		Boiled egg (s)		Vinegar
Rocket and/ or spinach leaves		Cous-cous (add boiling water, cover for 3 min)		Nuts or nut butter		Herbs +/- spices

*EVOO should be added to all meals

Our Mediterranean trials experience: Challenges and Solutions!



Challenges	Solutions
Cultural diversity/ interest in Med diet	Adjust current foods embedding key Med diet ingredients
Fear of eating too much fat – 4 tbs EVOO/ day	Focus on heart health benefits of EVOO, polyphenols, taste
Dislike of some food staples (yoghurt)	Try plain Greek-style with fresh fruit, walnuts, honey
Concern over eating "carbs" e.g. bread/ pasta	Approach is moderate carbs, focus on sourdough/grain, and high plant:animal food ratio
Poor cooking skills/ no time to cook	Focus on 'no cooking req' options, cook in bulk and freeze
Ingredient challenges (garlic, EVOO, leafy greens, legumes)	Add spinach and lentils to lasagne. Bake veggies with garlic and EVOO. Simple lunches – leafy salad, tinned salmon/tuna, 4 bean mix, EVOO.

ASSESSING HEALTHY DIET AFFORDABILITY IN A COHORT WITH MAJOR DEPRESSIVE DISORDERS

Rachelle S. Opie^{1*,} Leonie Segal², Felice N. Jacka³, Laura Nicholls³, Sarah Dash³, Josephine Pizzinga³ and Catherine Itsiopoulos¹



Cost modelling of 20 participants from SMILES Study (reversal of depression with Med diet):

- Cost of food per person in control condition = \$138/ week (\$2.35/ MJ)
- Cost of food per person in Mediterranean diet intervention = \$112/ week (\$1.54/ MJ)



shutterstock.com · 247565809

J Pub Health Epi, 2015

THE MEDITERRANEAN LIFESTYLE MEDICINE TOOLKIT



Mediterranean diet

Cyprus, Croatia, Spain, Greece, Italy, Morocco and Portugal

Inscribed in 2013 (8.COM) on the Representative List of the Intangible Cultural Heritage of Humanity

- Set of skills, knowledge, rituals, symbols and traditions;
- Crops, harvesting, fishing, animal husbandry, conservation, processing;
- Cooking and sharing food and eating together is foundation of cultural identity;
- Emphasises values of hospitality, neighbourliness, intercultural dialogue, respect for diversity;
- Festivals, celebrations, bringing together people of all ages;
- Women play important role in transmitting knowledge of the traditional Mediterranean diet.





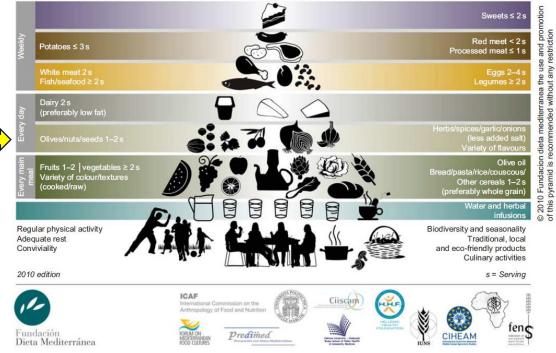


Functional Mediterranean Diet Pyramid

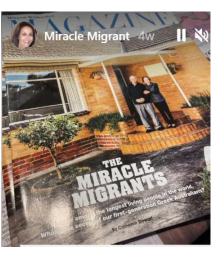
Mediterranean diet pyramid: a lifestyle for today guidelines for adult population

Serving size based on frugality and local habits

Wine in moderation and respecting social beliefs



Bach-Faig et al, 2011



Home Growth Health: Greek Migrants Maintain Home Gardens into old age



Dr Antonia Thodis

BENEFITS OF GROWING YOUR OWN VEGGIE GARDEN

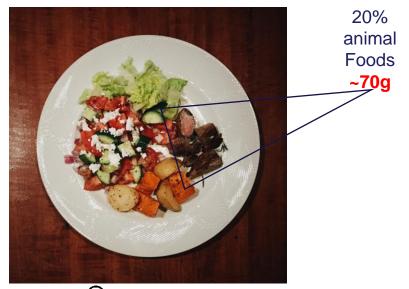
- -> Physically Active
- -> Eat More Plant Foods
- -> More sunshine/ Vit D
- -> Share Foods with Neighbours
- -> Socially Active
- -> Sustainable locally grown produce

- 75% of elderly Greeks keep a home garden (onions, garlic, tomatoes, cucumbers, wild greens and herbs) and olive trees!
- Growing onions, garlic, leafy greens associated with lower BP.
- Wild edible greens (horta) have 70% higher levels of b-carotene and lutein compared to common greens (Su, Itsiopoulos et al, 2002)



Balanced Plate – Mediterranean Style 4:1 ratio of Plant : Animal Foods

80% plant foods ~280g



C Itsiopoulos, C



Translating the traditional Mediterranean Diet: 10 Principles



Extra Virgin Olive oil as the main added fat! ~60ml/d

Vegetables /salads with every main meal (>400g/d) *100g tomato/100g leafy green

> Use herbs and spices to flavour foods *fresh lemon juice!

egumes twice per week (250g/serve)



3

(cc)

Fish/seafood twice a week (150g/serve)



Meat/Chicken less often. Choose small portions and Prefer free range Itsiopoulos, C

Sweets on special occasions

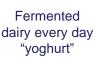


Wholegrain sourdough breads



Fresh fruit Everyday 'include citrus'







Nuts everyday 30g/d



Wine in moderation, always with meals.

MAKE THE PERFECT SALAD

Salads are part of every main meal in a traditional Mediterranean diet. Variety in texture and colour is important to boost the fibre content, nutrient value and antioxidant power of the salad. Here's a ten-step guide to preparing the perfect salad.

Remember the synergies – adding an acid dressing helps the body absorb iron from leafy greens, adding olive oil to the dressing helps the body absorb the carotenoids (lycopene from tomatoes and lutein from leafy greens), and adding herbs doubles the antioxidant uptake from the herbs and salad vegetables.

Step 1

Choose a variety of leafy greens (po for dark-coloured greens with spiry flavours, such as rocket, Iala, dandelion greens, mustantgreens, and, if you can find them in specially markets, amarkets, awarkits, with dandelion, wild chicory and pursland). These will ensure you have high concentrations of vitamins A, C, K, calcium and folate, as well as a rich variety of polybhenols. Some of these last greens also contain the plant form of omega-3 fats, alphalinolenic acid (LAA).

04 MDC SoupsSalads 5th Indd 88-89

* Step 2

Add flavoursome tomatoes - cherry, Roma and heirloom mixed varieties - for their high levels of the antioxidant lycopene.

⇒ Step 3

Add some finely grated root vegetables – carrots, rainbow carrots, beetroot, parsnip, turnip. These add antioxidants called carotenoids and anthocyanins, and are high in fibre and therefore bulky and filling.

• Step 4

Add a mix of seeds and crushed nuts for fibre, iron, calcium, protein (in nuts), polyphenols and healthy monounsaturated and polyunsaturated fats (especially the plant omega-3 ALA).



Add a good-quality extra virgin olive oil for its healthy monounsaturated fats and high levels of polyphenols and other antioxidant and anti-inflammatory substances (hydroxytyrosol, oleuropein and oleocanthal).

⇒ step 6

Add an acid, such as balsamic vinegar or fresh lemon juice, which can help convert the iron in the leasy greens into a more absorbable form. Acetic acid (in vinegar) is thought to be important for maintaining a healthy gut because it supports friendly bacteria in the intestines.

⇒ Step 8

To convert a salad to a main meal, add a protein source. For vegetarians this could be a variety of home-cooked or canned legumes or pulses, and for non-vegetarians it could be tuna, salmon, cooked skinless chicken, or grilled lamb, beef or pork fillet (marinated in extra wigni olive oil, herbs, pepper and perhaps even wine).

🕈 Step 7

Add a variety of fresh or dried herbs, which add amazing flavours and are a rich source of antioxidants and anti-inflammatory substances.

......

Dairy lovers could add small quantities of a strong-flavoured cheese (shaved parmesan, crumbled fetal or, for something a little more decadent, creamy blue cheese. Cheese adds valuable calcium and is also a protein source.

a Step 10

a Step 9

Toss everything together to coat the ingredients in the dressing, and enjoy!







Chevy Almond Biscuits Amigdalota

3 egg whites

1½ cups (330 g) caster sugar	
3 cups (300 g) almond meal	
1 teaspoon mastiha paste or ground gum mast	c
1 tablespoon amaretto or Frangelico	
1½ cups (150 g) almond flakes	

NUTRIENT COMPOSITION PER BISCUIT:

	Quantity per serve	%RDI	
		Q	d
Energy	778 kJ [186 kcal]	9	8
Protein	4.8 g	7	5
Carbohydrate	15.8 g	7	6
Total fat	11.7 g	13	11
Saturated fat	0.7 g	5	3
Sodium	9 mg	1	1
Fibre	1.9 q	8	6

These delicious chewy almond biscuits are easy to make and are gluten free.

1 Prehest oven to 180°C and line 2 baking trays with baking paper.

2 Beat the egg whites in a medium bowl until soft peaks form. Add sugar and continue beating until mixture is thick and shiny.

3 In a large bowl, combine the almond meal, mastiha paste and amaretto. Fold the egg white mixture into the almond mixture.

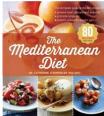
4 Roll webnut-size pieces of dough into balls then roll in almond flakes for alternatively, mix flaked almonds into dough before rolling for an alt-through cruchi). Place on prepared baling trays, leaving a few centimetres around each biscuit – they do spread a little.

5 Bake for 16-18 minutes, or until golden. Allow to cool on trays over a wire rack. They will be very soft when they come out of the oven but will harden as they cool.

MAKES 20-25 BISCUITS



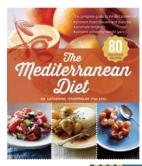


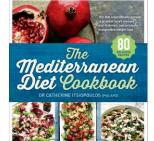






Incorporating the Mediterranean Diet into everyday life!







Healthy Menu for Chronic Disease Prevention: Diabetes, Heart Disease, Stroke, Dementita

RGH OMEGA 3 FATS, OW IN SATURATED FATS, INTIOXIDANT RICH	BREAKFAST	LUNCH	DINNER	SNACK
SUNDAY	Dakos (Bruchetta) Coffee (Greek/Espresso) Mandarin	Mussels stewed in white wine. Slice grain bread Greek Salad	Eggplant moussaka with lamb mince. Raddichio fennel and walnut salad.	Low Fat Greek yoghurt with berries. Sesame snack bar
MONDAY	Slice grain bread with poached egg and sliced avocado sprinkled with lemon juice and cracked pepper.	Rocket, pear and walnut salad with small tin tuna. Mandarin Plain mineral water	Baked chicken breast, skinless. Boiled broccoli salad. Small baked potato. Beetroot and garlic salad.	Low fat Greek yoghurt with walnuts and honey. Slice watermelon. Greek biscuit (koulourakia
TUESDAY	Porridge (cooked rolled oats with skim milk) topped with fresh blueberries. Coffee (Greek/Espresso)	Stuffed vine leaves (4-6) Greek coleslaw salad. Eggplant dip	Baked snapper. Salad of boiled greens and beetroot with garlic side salad. Glass white wine	Risogalo dessert Whole orange Almonds (8-10)
WEDNESDAY	Dakos (Bruchetta) Herbal tea Whole orange	Beetroot and runner bean salad with walnuts and feta. Slice grain bread.	Vegetable bake. Greek salad. Mineral water	Dried figs (2-3) Walnuts (30g) Low fat Greek yoghurt with berries
THURSDAY	Porridge (cooked rolled oats with skim milk) topped with fresh blueberries. Herbal tea	Cannellini bean soup. Greek salad Slice grain bread.	Rabbit stew with red wine (can use chicken if prefer) Mixed potato salad Glass red wine	Low fat Greek yoghurt with honey and walnuts. Slice revani cake (or other) 1 Apricot
FRIDAY	Slice grain bread with poached egg and sliced avocado. Sprinkled with lemon juice and pepper.	Roasted vegetable open sandwich. Plain mineral water	Baked risoni with lamb. Lettuce, cucumber, spring onion salad. Plain mineral water.	Slice walnut cake. Low fat Greek yoghurt with berries. Slice rock melon.
SATURDAY	Poached eggs in stewed tomatoes. Slice grain bread. Whole orange	Baked sardines on toasted grain bread. Greek coleslaw salad. Plain mineral water.	Stuffed tomatoes with rice. Black eye bean salad. Tzatziki dip Glass white wine.	Baklava (sm. serve). Greek yoghurt with honey. Slice watermelon
8000kj	78 g Protein (16% Energy)	180 g Carbs (38% Energy)	92 g Fat (42% Energy)	6 g Alc (2.2% Energy)

Website: https://themediterraneandiet.online



1st International Post-Graduate Summer School June 27 - July 5, 2022, Kos - Leros, Greece

"The Science and Art of the Traditional Mediterranean Lifestyle Medicine: An experiential approach"



Conclusions

A traditional Mediterranean Diet:

A Palatable and Sustainable "anti-inflammatory" Lifestyle Intervention rich in plant foods including daily consumption of walnuts, almonds and hazelnuts, is effective in prevention of CVD and premature mortality independent of weight loss!