Reframing Healthy Fats in Everyday Practice:

A Webinar for Health Professionals

Presented by Dr Joanna McMillan • Dr Tim Crowe, MC

12pm–1pm Tuesday 9th September AEST

australian avocados

Olive Wellness INSTITUTE ™

nuts for life ®

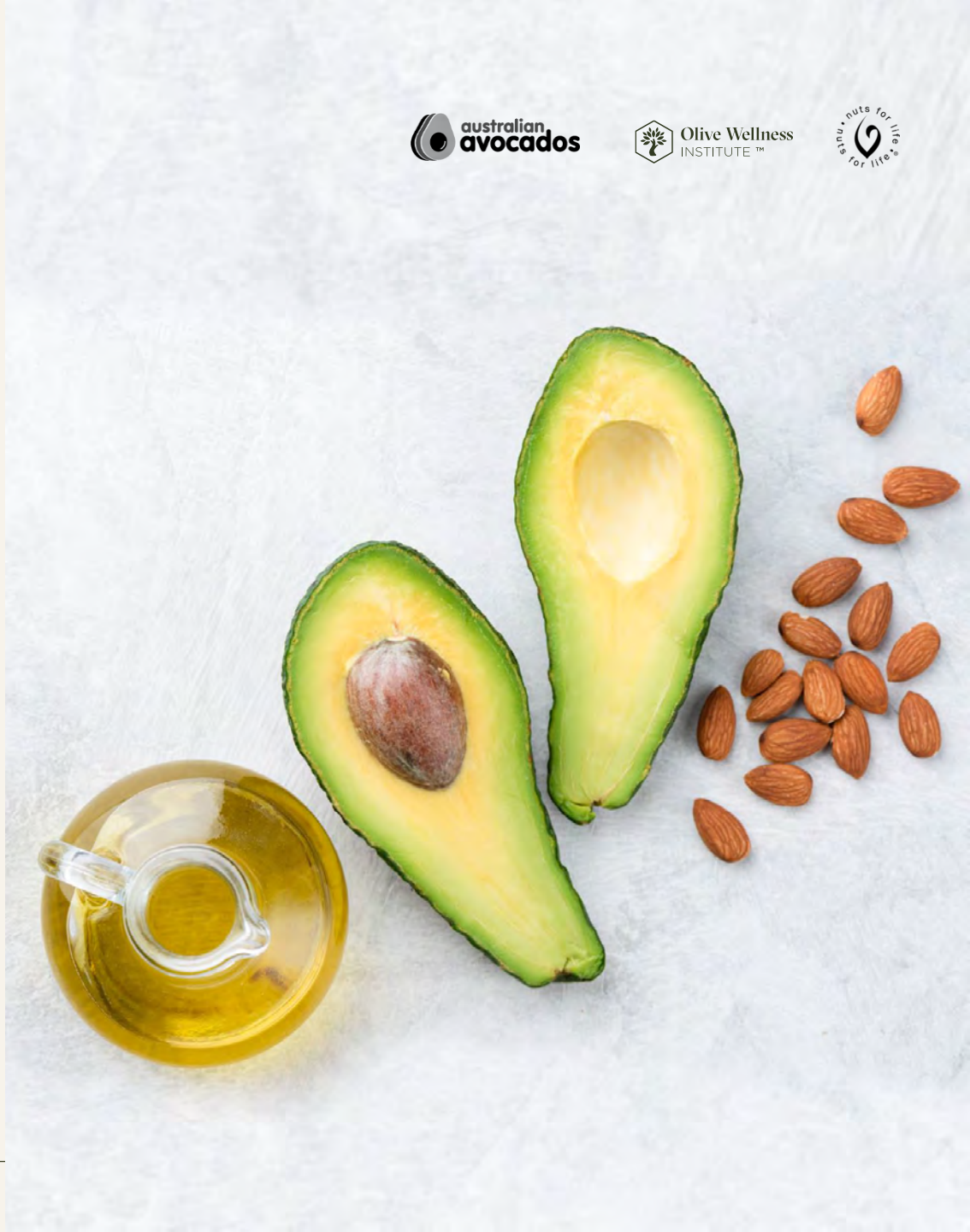
The Low-Fat Hangover

Despite nutritional progress, avocado, EVOO & nuts remain under-recommended and under-consumed

Current ADGs has lingering emphasis on lowering fat, although does recommend replacing SFA with PUFA & MUFA

Yet oils not included in core food groups & no differentiation between oils

HSR algorithm overly simplistic - doesn't account for the complexity and diversity of minor components in these foods



Consumption vs Recommended

	CONSUMPTION	ADGS	RESEARCH RECOMMENDATIONS
Avocado	3g/d (16g/d in avocado eaters) National Nutrition Survey 2011–12	A serving = 75g (1/2 avocado) included in daily veg serves	75-150g (1/2 – 1 avocado) per day
EVOO	5-6g/d Ref: Aus Olive Ass.	A serving = 1 tsp (5g) & 2-4 servings/d	2-3 tbsp (45/60ml)
Nuts	4.6g/d (11.6g/d in nut eaters) National Nutrition Survey 2011–12	A serving =30g/d & an option in the meats/ alternatives group, not specified as daily	30g/d minimum

What's in Avocado?

PHYTONUTRIENTS

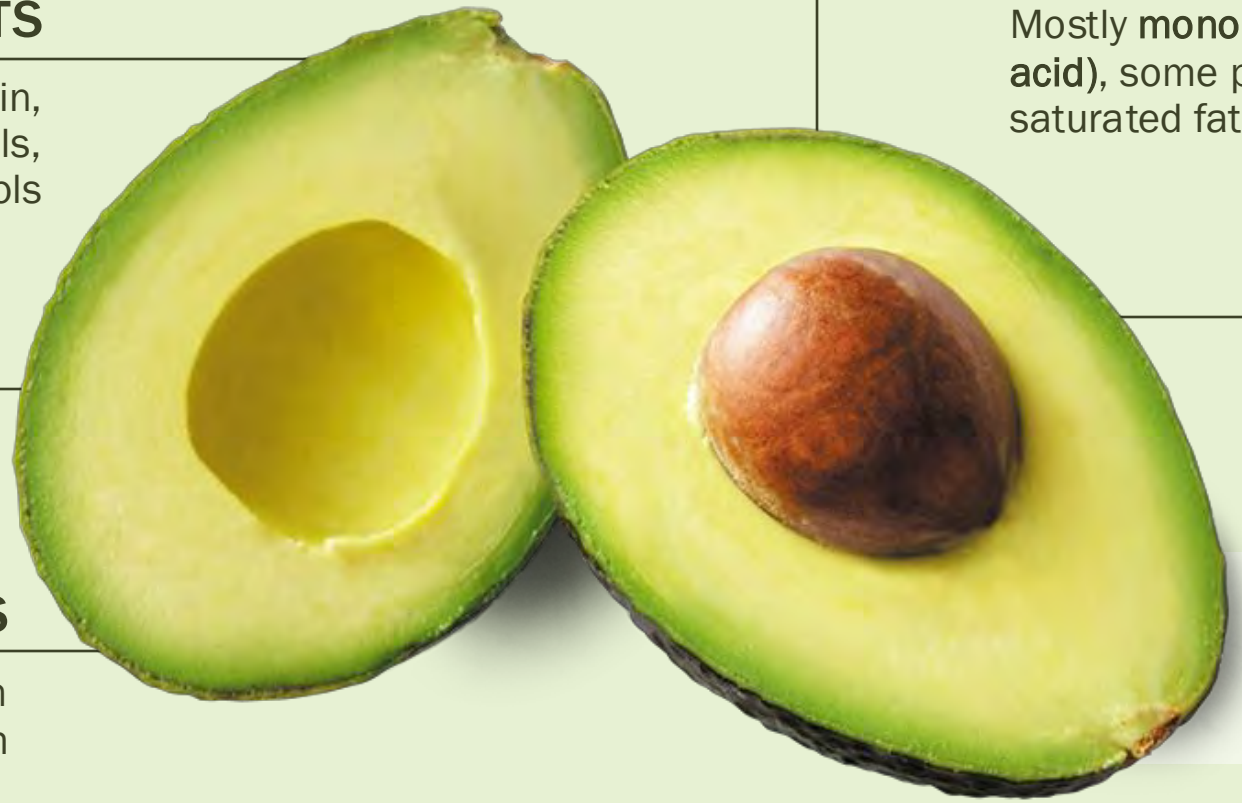
Carotenoids (lutein, zeaxanthin), phytosterols, glutathione, polyphenols

VITAMINS

Folate, vitamins E, K, B5, B6

MINERALS

Potassium (more than banana), magnesium



FATS

Mostly **monounsaturated (oleic acid)**, some polyunsaturated, low in saturated fat

FIBRE

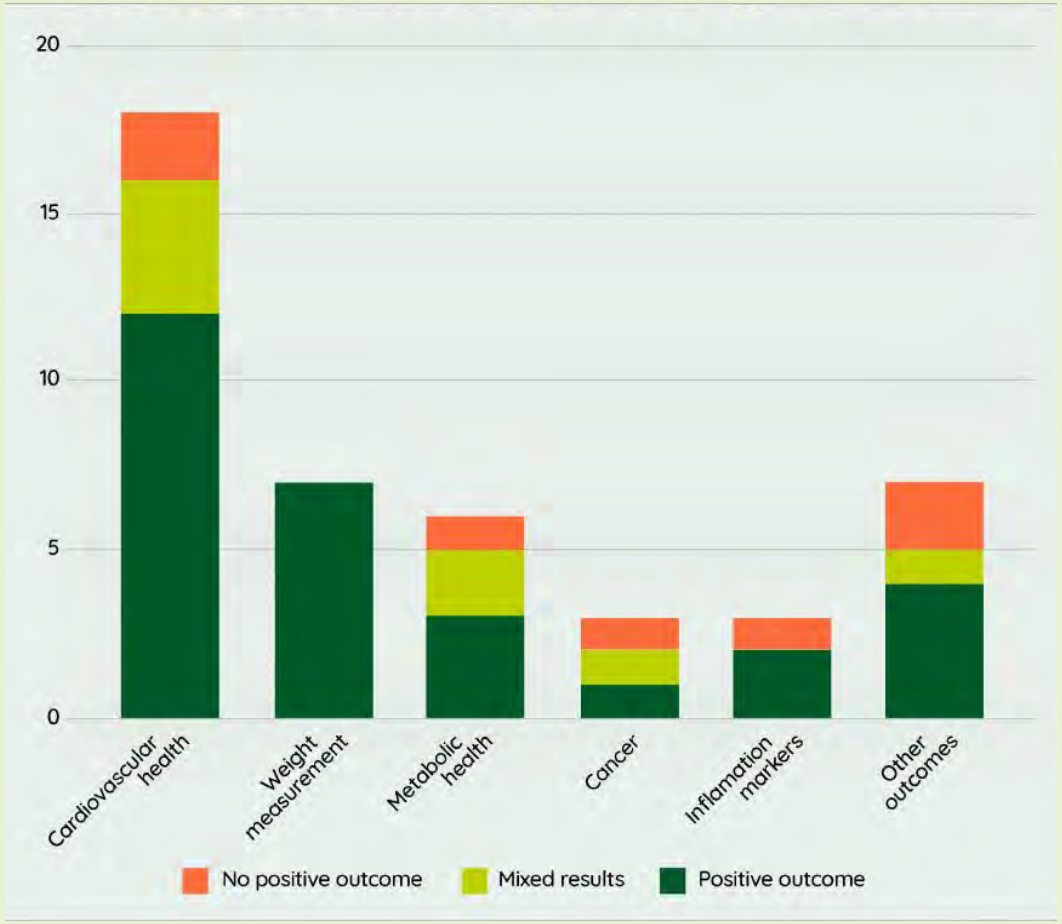
Source – ~ 4.3 g per 100 g (both soluble & insoluble)

OTHER

Low sugar, low GI, aids absorption of fat-soluble nutrients

Avocado - Summary of Health Benefits & Optimal Dose

FIGURE 1. SUMMARY OF STUDY OUTCOMES



Villani A, Casey E, Pelly F (2024) Quantity and frequency of avocado consumption for health benefits in free-living adults: a scoping review. University of the Sunshine Coast, QLD, Australia.

Cardiovascular benefits

Lipid lowering benefits were demonstrated with intakes of one avocado per day in people with and without cardiovascular disease risk factors. As little as half an avocado per day may lower overall cardiovascular disease risk.

Body composition

When combined with an energy restricted diet, consumption of one whole avocado per day may help facilitate weight loss and promote reductions in central adiposity. Up to one avocado per day was not associated with unfavourable weight gain.

Other health benefits

There is lack of evidence to recommend specific quantities needed to elicit benefits related to glycemic control, cognitive and mental health, vascular outcomes, inflammatory markers, gastrointestinal health, musculoskeletal health and cancer risk, due to a lack of primary studies

Avocado & Weight

Population

- 158 Latina women (median age 42 y, BMI ~33)

Design

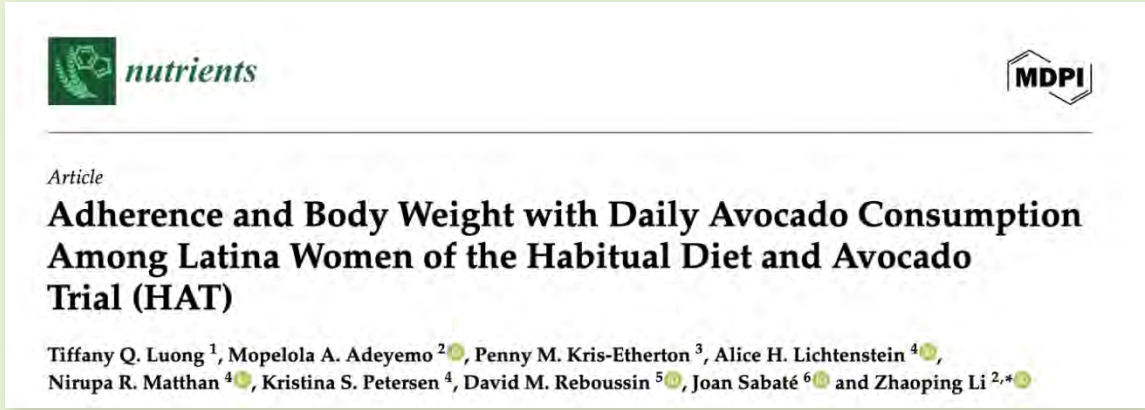
- RCT, 6 months
- **Avocado group**: 1 avocado/day (~2.2 serves)
- **Control group**: habitual diet, ≤2 avocados/month

Adherence

- Excellent compliance: avocado group ate ~1.9–2.1 servings/day across recalls

Findings

- **No significant change** in weight or waist circumference between groups after 6 months



Nutrients 2025,17, 367https://doi.org/10.3390/nu17020367

Daily avocado intake is weight-neutral in Latina women

Avocado & Weight

- HAT Trial (2025): Daily avocado intake (1/day for 6 mo) — no significant impact on weight or waist in Latina women. (Luong *et al*. 2025)
- HAT Multi-Centre RCT: Daily avocado improves diet quality over 26 weeks; weight change not observed. (Yang *et al*. 2025)
- Meta-analysis (2022): Avocado intake among overweight adults — no changes to weight, fat mass or visceral fat. (Conceição *et al.* 2022)
- Scoping Review (2025): Few long-term RCTs; overall findings are inconclusive regarding avocado's effect on body weight. (Villani A *et al*. 2025)

Avocado consumption appears weight-neutral—it doesn't promote weight gain. Its real benefit may lie in improving diet quality and satiety, without adverse weight effects.

Rethinking Avocado Serve Size

A serve of avocado is 75g or half a medium avocado. This is an equivalent amount to a serve of vegetables (75g) in the ADGs

New evidence supports encouraging people to eat an avocado a day, as part of a healthy diet, to help lower blood cholesterol, without the risk of weight gain

Regularly up to a whole avocado a day is not associated with weight gain

In fact, evidence supports positive outcomes for weight and body composition when an avocado a day was included as part of an energy-controlled diet

Increasing a serve of avocado to between 75g and 150g (half or a whole avocado), would align with the evidence and be closer to a serve of fruit (150g) in the Australian Dietary Guidelines.

Avocado Key Messages

Avocados are a nutrient-dense fruit that plays an important role in a healthy diet

Avocados contain healthy fats, dietary fibre (insoluble and soluble) and more than 20 different nutrients and phytochemicals

Research shows eating avocados, as part of a healthy diet:

Improves lipid profiles and contribute to cardiovascular health

Assists in weight management

Increases the diversity and abundance of gut microbiota

Maintains cognitive function in ageing

Improves skin appearance

What's in EVOO?

FATS

Principally oleic acid

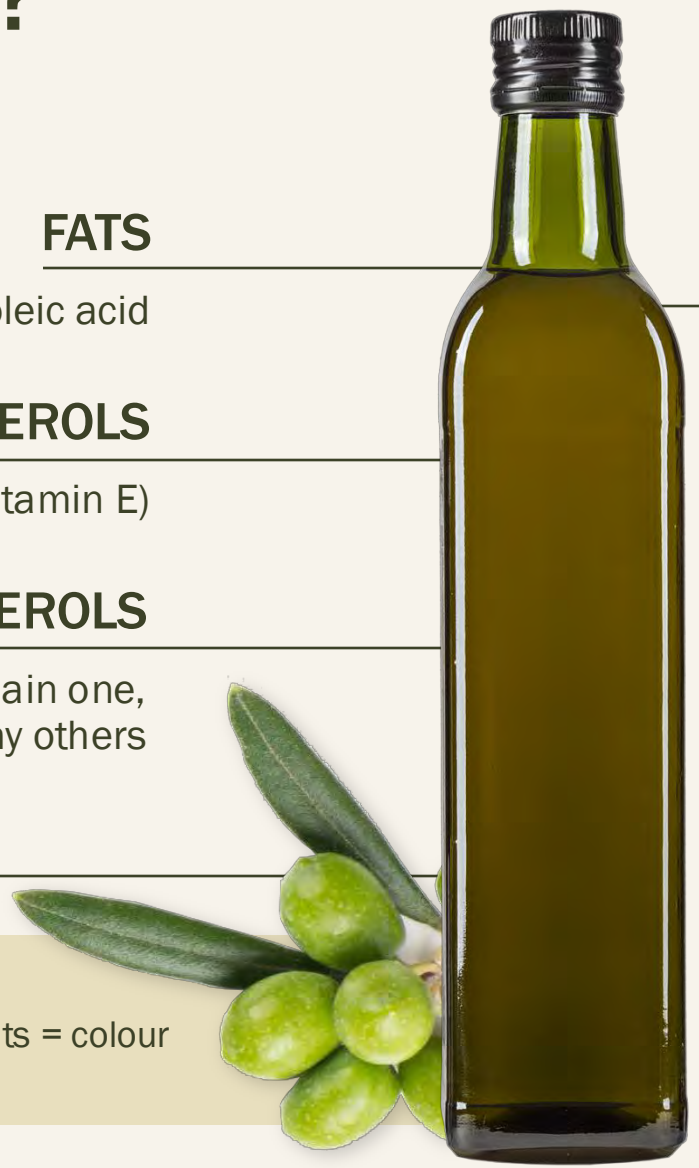
TOCOPHEROLS

(vitamin E)

PHYTOSTEROLS

beta-sitosterol is main one, but many others

SQUALENE



ACTIVE BIOPHENOLS

Phenolic Acids
e.g. p-coumaric, gallic, vanillic, caffeic acid

Flavonoids
e.g. luteolin, apigenin & derivatives

Lignans
e.g. pinoresinol, 1-acetoxypinoresinol

Secoiridoids
e.g. oleuropein, ligstroside, oleocanthal

Phenolic Alcohols
e.g. tyrosol, hydroxytyrosol

OTHER MINOR COMPONENTS
carotenoids & chlorophyllic pigments = colour
volatile compounds = smell

Imagine more detailed NIPs on fresh foods

NUTRITION INFORMATION

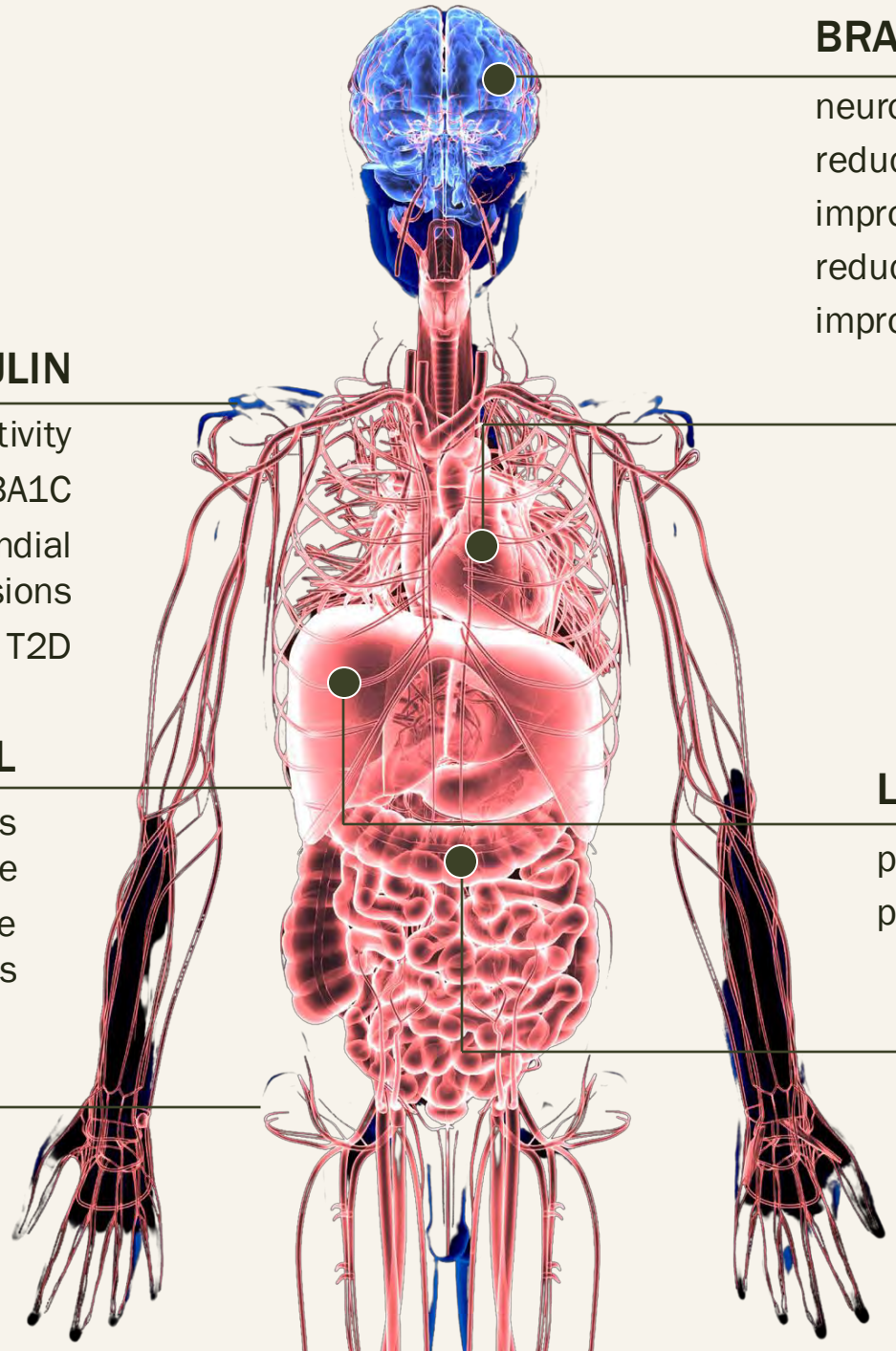
Serving size: 15mL

	Average Quantity per Serving	Average Quantity per 100mL
Energy	510kJ (121kcal)	3399kJ (809kcal)
Fat, total	13.8g	91.9g
Saturated fat	2.1g	14.3g
Trans fat	0g	0g
Polyunsaturated fat	1.3g	8.4g
Monounsaturated fat	9.7g	64.6g
Cholesterol	0mg	0mg
Vitamin A (retinol equivalents)	0.3ug	2ug
Vitamin E (alpha tocopherol)	2.3mg	15.6mg
Vitamin K	9ug	60.2ug^
Beta carotenes (Beta carotene equivalents)	1.5ug	10ug
Phytosterols	27.7mg	184.7mg
Total Biophenols	4.63mg	30.84mg
Oleuropein derivatives	0.5mg	2.1mg
Oleocanthal	0.56mg	3.74mg
Tyrosol	0.1mg	0.66mg
Hydroxytyrosol	0.14mg	0.92mg
Squalene	88.9mg	592.5mg

g = grams, mg = milligram, ug = microgram

Sources: Australian Food Composition Data 2; Modern Olives Laboratory Services; USDA National Nutrient Database.
Values are averages only and may vary based on season, olive cultivar, climate condition and production processes.

Summary of EVOO Health Benefits



BRAIN

neuroprotective
reduced brain inflammation
improved cognition
reduced risk of neurodegenerative disorders
improvements in mood

HEART

lower blood pressure
improved blood lipids
reduced oxidised LDL
reduced atherosclerosis progression
reduced risk of CVD

LIVER

prevention & treatment of NAFLD
prevention & resolution of liver damage

COLON / GUT

prebiotic effects on gut microbiome
reduced risk of colon cancer
reduced inflammation
immune benefits

GLUCOSE & INSULIN

improved insulin sensitivity
improved HBA1C
reduced fasting glucose & post-prandial glucose excursions
reduced risk of T2D

WEIGHT CONTROL

oleoylethanolamide (OEA) induces satiety & reduction in appetite
reduces weight & waist circumference cf control diets

VASCULAR

reduced biomarkers of inflammation
reduced oxidative stress markers
improved endothelial function

2025 Review & Meta-Analysis Papers

Du and Zhou *Journal of Health, Population and Nutrition* (2025) 44:135
https://doi.org/10.1186/s41043-025-00866-7

Journal of Health, Population and Nutrition

RESEARCH Open Access

Effect of olive oil consumption on diabetes risk: a dose-response meta-analysis

Yanbin Du[1] and Hua Zhou[2*]

"Evidence from this meta-analysis suggested that OO consumption is associated with a decreased risk of diabetes, especially, 10–20 g OO daily may be beneficial for prevention and management of diabetes."

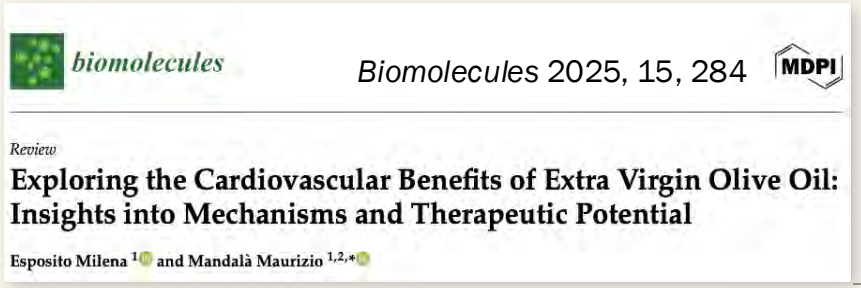
Nutrients 2025, 17, 1843

Systematic Review

Exploring the Benefits of Extra Virgin Olive Oil on Cardiovascular Health Enhancement and Disease Prevention: A Systematic Review

Sara Ussia[1,†], Giovanna Ritorto[1,†], Rocco Mollace[1,2,*], Maria Serra[1,*], Annamaria Tavernese[3], Carmen Altomare[1], Carolina Muscoli[1], Massimo Fini[4], Francesco Barillà[2], Ciro Indolfi[5], Pasquale Perrone Filardi[6], Vincenzo Mollace[1,7] and Roberta Macrì[1]

"EVOO represents a valuable addition to dietary strategies aimed at reducing the global burden of cardiovascular diseases."



Biomolecules 2025, 15, 284

Review

Exploring the Cardiovascular Benefits of Extra Virgin Olive Oil: Insights into Mechanisms and Therapeutic Potential

Esposito Milena[1] and Mandalà Maurizio[1,2,*]

"A balanced diet with EVOO represents a simple yet potent method to counteract metabolic dysfunctions associated with CVD."

Summary of these papers

BLOOD PRESSURE

↓ Systolic BP,
improved endothelial function

DIABETES

↓ T2D risk by 13–20%

BIOPHENOL POWER

Benefits strongest with high-polyphenol
EVOO (20–30 g/day)

CVD PROTECTION

↓ recurrent events (17 trials)

ANTI-INFLAMMATORY

↓ CRP, IL-6, oxidative stress

BLOOD LIPIDS

↑ HDL, ↓ LDL oxidation

Olive Oil & Long-Term Weight Change

- Nurses' Health Study, NHS II, HPFS (n = 121,119; 20–24 yrs follow-up)
- +½ tbsp/d olive oil (≈7 g) ⟶ –0.09 kg body weight (95% CI: –0.11, –0.08; $p < 0.0001$)
- In contrast: same increase in butter, margarine, or other oils = weight gain
- Substitution analyses: replacing butter, margarine, or refined carbs with olive oil ⟶ significantly less weight gain
- Effects strongest in participants with overweight/obesity

👉 Higher olive oil intake is linked to less long-term weight gain, supporting the importance of fat quality, not restriction.

Guasch-Ferré, M., et al. (2025). "Changes in olive oil consumption and long-term body weight changes in 3 United States prospective cohort studies." AJCN **121**(5): 1149–1156.

EVOO beneficial not detrimental to weight

- Estruch R et al. Lancet Diabetes Endocrinol. 2019;7(5):e6–e17.
  Effect of a high-fat Mediterranean diet on bodyweight and waist circumference: a prespecified secondary outcomes analysis of the PREDIMED randomised controlled trial.
  🔑 **≈50 mL/day EVOO → no excess weight gain; trend to less central adiposity**

- Razquin C et al. Int J Food Sci Nutr. 2017;68(7):865–872.
  Dietary energy density and body weight changes after 3 years in the PREDIMED study.
  🔑 **Energy density from EVOO/nuts not associated with weight gain over 3 years**

- Lotfi K et al. Adv Nutr. 2022;13(1):152–166.
  Adherence to the Mediterranean diet, five-year weight change, and risk of overweight and obesity: a systematic review and dose-response meta-analysis of prospective cohort studies.
  🔑 **Mediterranean diet (rich in EVOO) → less weight gain, lower obesity risk**

- Cândido FG, et al. Eur J Nutr. 2018; 57(7):2445-2455.
  Consumption of extra virgin olive oil improves body composition and blood pressure in women with excess body fat: a *randomized, double-blinded, placebo-controlled clinical trial.*
  🔑 **EVOO-based diet → greater fat mass loss vs soybean oil diet**

EVOO Key Messages

Fat quality matters for health & weight outcomes

Assessing foods on calories is not in line with evidence

It's not just about the fat – bioactives are playing major roles – key difference between EVOO & refined oils

EVOO has effects both as individual food & as part of Med Diet

Research supports 2-3 tbsp a day

You can and should cook with it!

What’s in a nut?

HEALTHY FATS

Predominantly unsaturated fats (mono- & polyunsaturated) with small amounts of saturated fat

PROTEIN & FIBRE

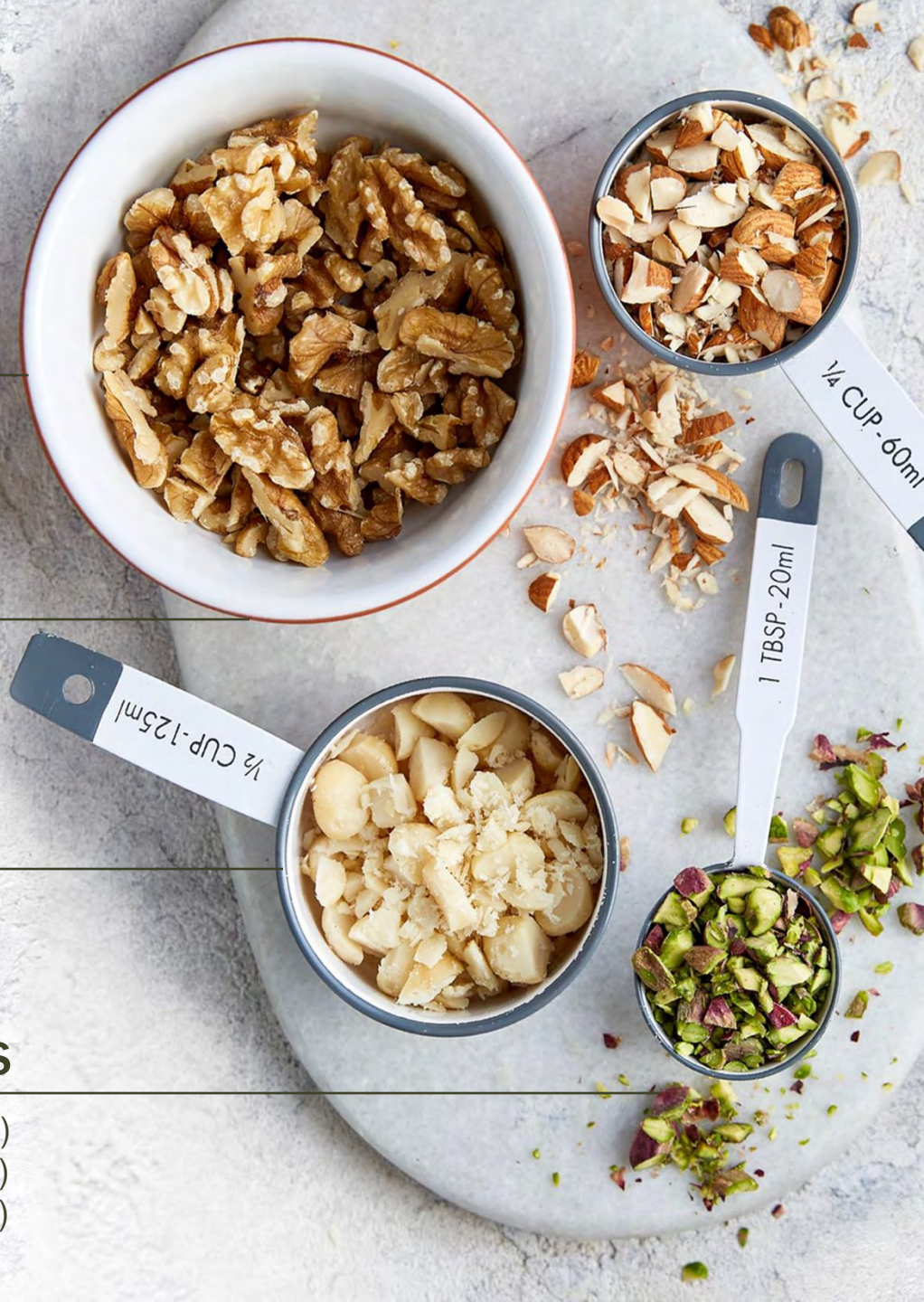
~20 g protein per 100 g (varies by nut)
Dietary fibre to support satiety & gut health

VITAMINS & MINERALS

Vitamin E, folate, magnesium, potassium, calcium, zinc, selenium

PHYTONUTRIENTS

Biophenols (antioxidant, anti-inflammatory)
Plant sterols (cholesterol-lowering effect)
L-arginine (precursor for nitric oxide → vascular health)



Nut highlights

PEANUTS

Resveratrol (antioxidant activity) + B vitamins (folate and niacin), protein.

WALNUTS

Plant omega-3 (ALA) for heart & brain health

BRAZIL NUTS

Selenium powerhouse (antioxidant & thyroid function)

ALMONDS

Vitamin E & calcium (skin, bones, antioxidant protection)

CHESTNUTS

Low GI, vitamin C

HAZELNUTS

Folate & Biophenols (cardiometabolic health)

PISTACHIOS

Lutein & zeaxanthin (eye health), plus protein & fibre

MACADAMIAS

Monounsaturated fats (heart health, Mediterranean style)

PINE NUTS

Manganese (bone formation), iron and zinc

PECANS

Biophenols & flavonoids (antioxidant activity)

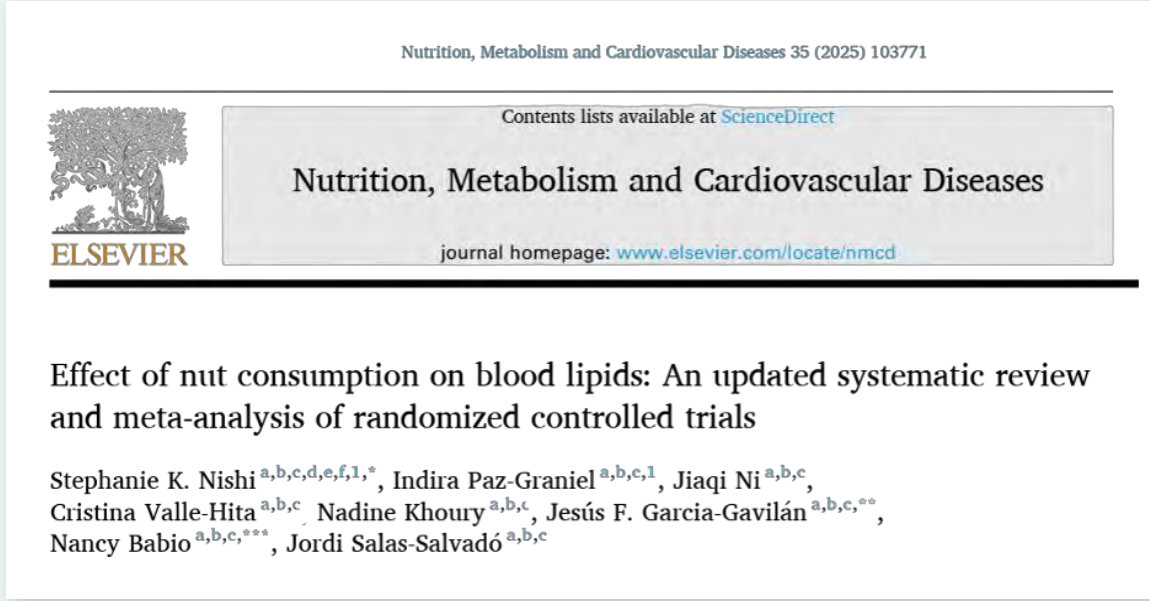
CASHEWS

Copper, magnesium, iron & zinc (energy metabolism, immunity)

Nuts and Nutrition, Metabolism and Cardiovascular Diseases

Significant reductions in:

- Total cholesterol (MD -0.14 mmol/L)
- LDL-C (MD -0.12 mmol/L)
- Non-HDL-C (MD -0.16 mmol/L)
- Small reductions in triglycerides (MD -0.05 mmol/L) and apolipoprotein B (MD -0.04 g/L) were also observed
- HDL-C levels showed no significant change (MD 0.02 mmol/L)



Nutrition, Metabolism and Cardiovascular Diseases 35 (2025) 103771

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

Effect of nut consumption on blood lipids: An updated systematic review and meta-analysis of randomized controlled trials

Stephanie K. Nishi[a,b,c,d,e,f,1,*], Indira Paz-Graniel[a,b,c,1], Jiaqi Ni[a,b,c], Cristina Valle-Hita[a,b,c], Nadine Khoury[a,b,c], Jesús F. Garcia-Gavilán[a,b,c,**], Nancy Babio[a,b,c,***], Jordi Salas-Salvadó[a,b,c]

Nut consumption positively affects various blood lipid parameters, indicating potential cardiovascular benefits

Nuts & Weight

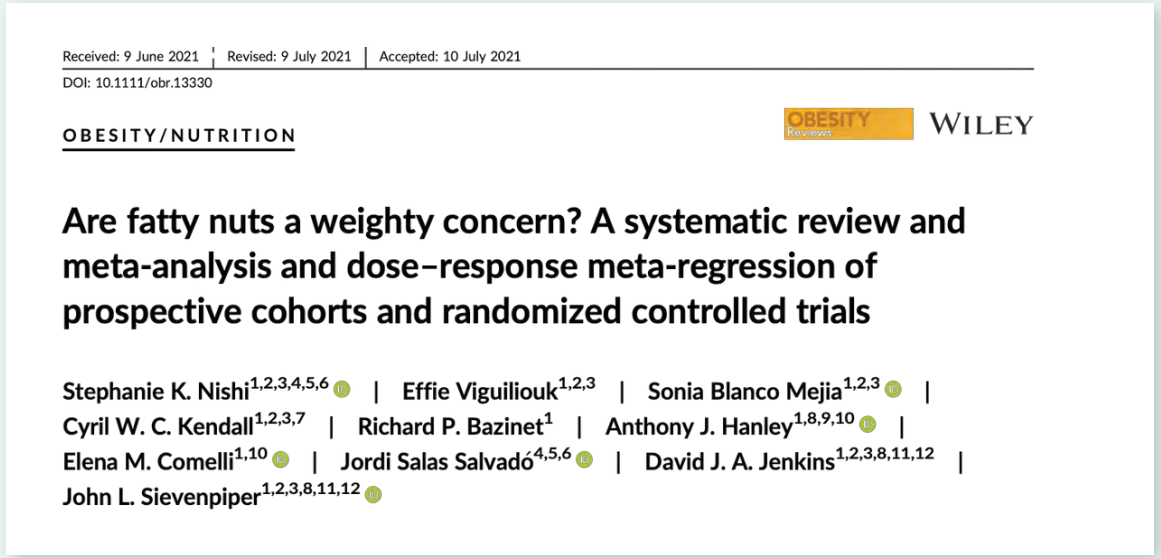
- 520,331 participants, 91,256 cases included across meta-analyses
- High nut intake linked with ↓ risk of overweight/obesity (RRR 0.93; 95% CI 0.88–0.98)
- Dose–response: ~28 g/day nuts → 5% lower risk of overweight/obesity (RRR 0.95; 95% CI 0.94–0.96)
- Long-term nut consumption consistently associated with less weight gain and lower obesity risk in cohort studies
- Evidence quality: high, though heterogeneity exists (different nut types, doses 5–100 g/day)

Nutrients 2025, 17(4), 662; https://doi.org/10.3390/nu17040662

Despite being energy-dense, regular nut intake is linked with lower risk of overweight and obesity, not weight gain

Nuts & Weight

- Across 569,910 people in cohort studies, higher nut intake was linked with lower incidence of overweight/obesity (RR 0.93) and reduced risk of gaining ≥5 kg.
- Pooled 86 RCTs (n=5,873) with 'high certainty' evidence showed no adverse effect of nut consumption on body weight (mean difference: +0.09 kg, not significant).
- Dose–response analyses suggested that higher intakes may even reduce body weight and body fat.



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DOI: 10.1111/obr.13330

OBESITY/NUTRITION

OBESITY Reviews WILEY

Are fatty nuts a weighty concern? A systematic review and meta-analysis and dose–response meta-regression of prospective cohorts and randomized controlled trials

Stephanie K. Nishi[1,2,3,4,5,6] | Effie Viguiliouk[1,2,3] | Sonia Blanco Mejia[1,2,3] | Cyril W. C. Kendall[1,2,3,7] | Richard P. Bazinet[1] | Anthony J. Hanley[1,8,9,10] | Elena M. Comelli[1,10] | Jordi Salas Salvadó[4,5,6] | David J. A. Jenkins[1,2,3,8,11,12] | John L. Sievenpiper[1,2,3,8,11,12]

Concerns that nuts promote weight gain are unwarranted

Nuts & Weight

Meta-analysis of 55 nut-feeding trials

- No weight gain in studies where participants added nuts without adjusting their diet (no substitution instructions)
- No change in body weight, BMI, or waist circumference even when nuts were added on top of usual diets
- When substitution instructions were given (replace other foods with nuts), participants saw a small but significant reduction in body fat %

Intake of Nuts or Nut Products Does Not Lead to Weight Gain, Independent of Dietary Substitution Instructions: A Systematic Review and Meta-Analysis of Randomized Trials

Liana L Guarneiri and Jamie A Cooper
Department of Foods and Nutrition, University of Georgia, Athens, GA, USA

Adv Nutr 2021;12:384–401

Nuts can be included freely in the diet without risk of weight gain; structured substitution may even enhance body composition

Nuts Key Messages

Healthy fat, protein & fibre source

Very versatile food - many different types of nuts & flavour profiles

Regular nut intake is linked with lower risk of overweight and obesity – not weight gain

Research supports minimum 30g every day

Strategies to meet avocado recommendations

SPREAD OR SWAP
Use mashed avo instead of butter or mayo in sandwiches and wraps

GRILLING & ROASTING
Grill avocado halves (with a drizzle of EVOO) or roast alongside veg

EGG DISHES
Pair with scrambled eggs, omelettes, or baked eggs

SOUPS
Blend into chilled soups (e.g., gazpacho) for creaminess

SUSHI & ROLLS
Add to sushi, nori rolls, or rice paper rolls

BAKING
Substitute for butter/oil in cakes, muffins, or brownies

STUFFED AVOCADOS
Fill with tuna, chickpeas or grains for quick meals

FROZEN TREATS
Blend into ice creams or popsicles for creamy texture

Strategies to meet EVOO recommendations

FINISHING OIL
Drizzle over soups, stews, grilled fish, or roasted veg for flavour boost

WHOLEGRAIN & LEGUME DISHES
Stir through quinoa, lentils, couscous, or beans

DESSERTS
Swap for butter in cakes, brownies, gelato or drizzle over fruit & dark chocolate

MARINATING, PICKLING & PRESERVING
Use in marinades for vegetables or feta

DIPS
Mix into hummus, baba ganoush, or bean dips

INFUSIONS
Make herb or citrus-infused EVOO for extra variety

BREAKFASTS
Drizzle on oats, yoghurt bowls, or eggs

AND OF COURSE…
Dressings!

Strategies to meet nut recommendations

TRAIL MIX
Combine with dried fruit, dark chocolate, seeds

NUT CRUSTS
Coat fish, chicken, or tofu with crushed nuts before baking

STIR-FRIES & CURRIES
Add cashews, peanuts, or almonds for crunch & protien

SOUPS & STEWS
Garnish with chopped nuts or stir in nut butter for creaminess

FROZEN DESSERTS
Sprinkle on ice cream, yoghurt bark, or blend into “nice cream”

BREAKFAST BOWLS
Top porridge or cereal, mix through overnight oats, muesli & granola

BLEND
Nut butters, dips & smoothies

SALADS
Adds crunch, texture and nutrition

Conclusions

- ✓ Shake off the **low-fat hangover**
- ✓ Reframe fats: focus on **quality, not quantity**
- ✓ Avocado, EVOO & nuts = **nutrient-dense foods**, rich in phytonutrients & fibre
- ✓ **High fat ≠ weight gain** – evidence shows neutral or beneficial effects on weight
- ✓ These foods can **support weight control** and improve satiety
- ✓ Proven benefits for **cardiovascular & metabolic health**

hort frontiers
Strategic partnership initiative

HEALTH, NUTRITION & FOOD SAFETY FUND

Hort Innovation AVOCADO FUND

Hort Innovation OLIVE FUND

This project has been funded by Hort Innovation using the Olive and Avocado research and development levies, contributions from the Australian Government and co-investment from the Australian nut industry. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

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