

*dr. Joanna*

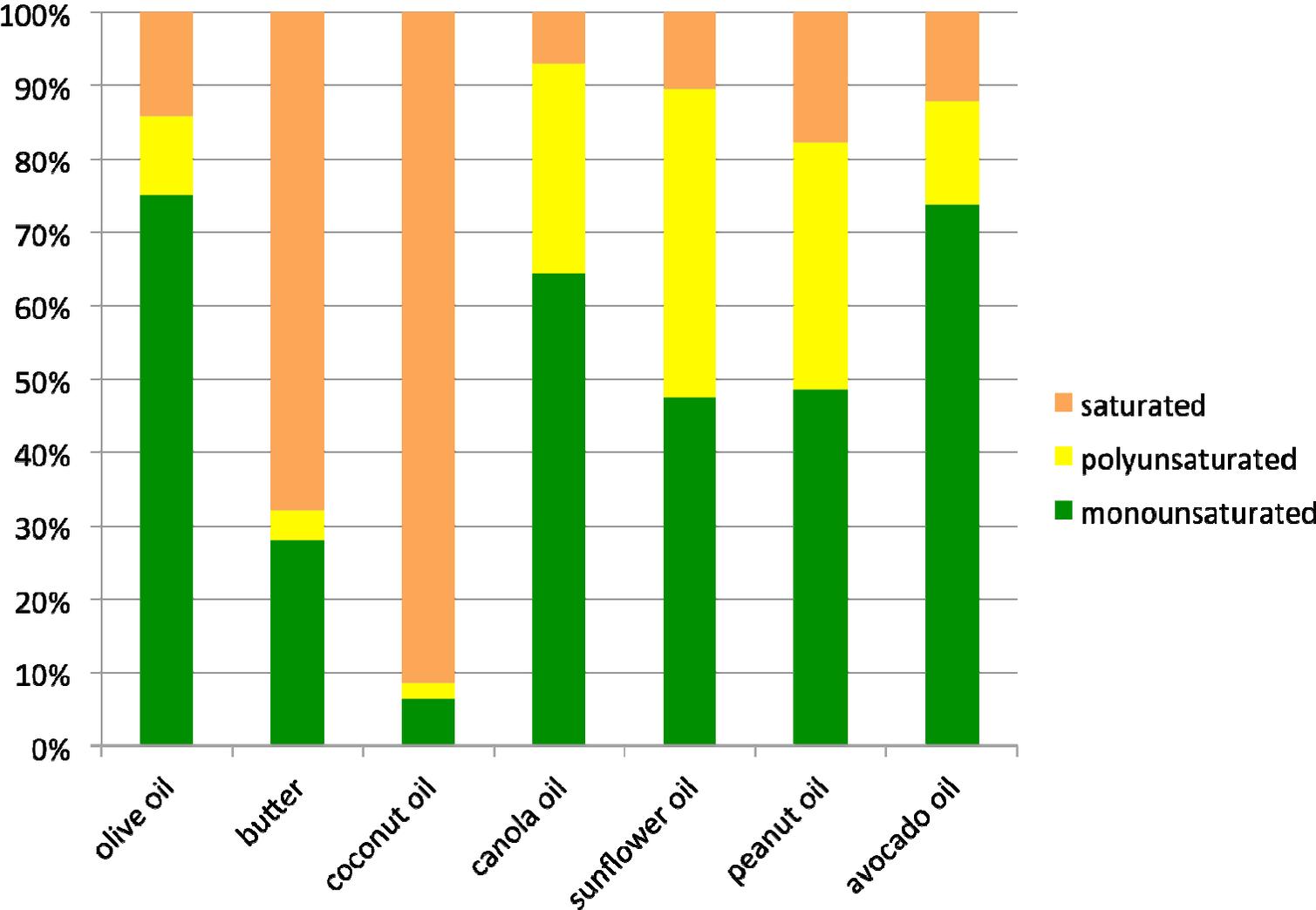


# Why Extra Virgin Olive Oil?

Dr Joanna McMillan



# Comparison of Oils





## There's More to Olive Oil

If effects of olive oil were only due to the monounsaturated fat content, we would see similar results with canola, high oleic sunflower oil and other high mono fats – but we don't.





# Benefits of Olive Oil

Mediterranean diet long been touted as one of the World's healthiest

- high MUFA diets shown to assist in weight loss
- associated with low risk heart disease & certain cancers
- reduced systolic bp in Northern European men

(J. Nutr. (2007) 137: 84-7)





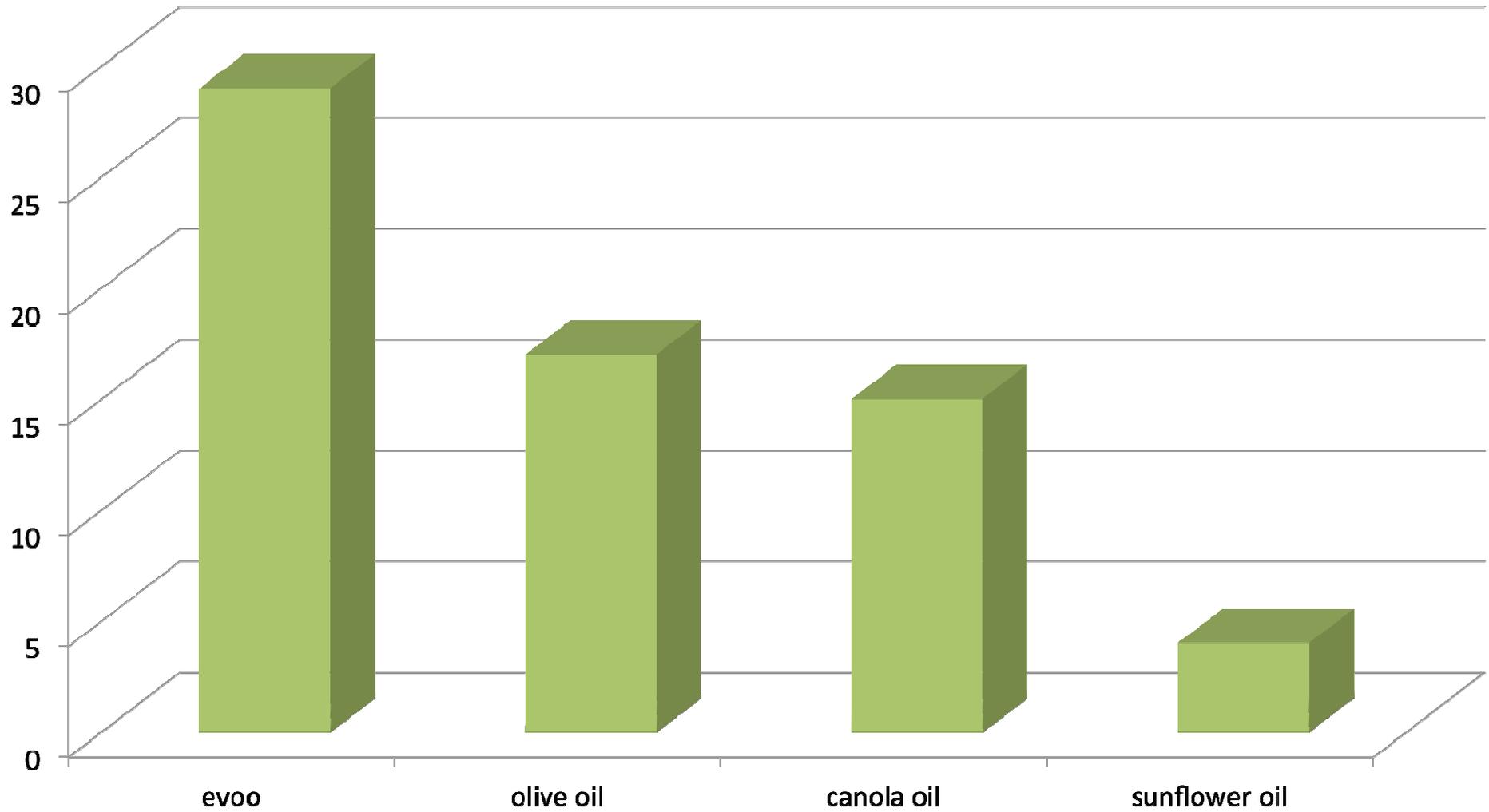
## Nutrients & Phytochemicals

- Vit E: 15g provides ~30% of daily need for women & 21% for men
- Vit K: 15g provides ~18% of daily need for women & 15% for men
- 29 polyphenols in evoo
  - Including Flavonoids, Phenolic acids, Lignans & other Polyphenols
- Squalene & Phytosterols



# Polyphenols in different oils

**No. of polyphenols**



# Refining Effects

## EVOO

- Quality olives crushed soon after harvest - oil removed mechanically without heat or chemicals
- Retains the naturally present phytochemicals e.g antioxidants, polyphenols

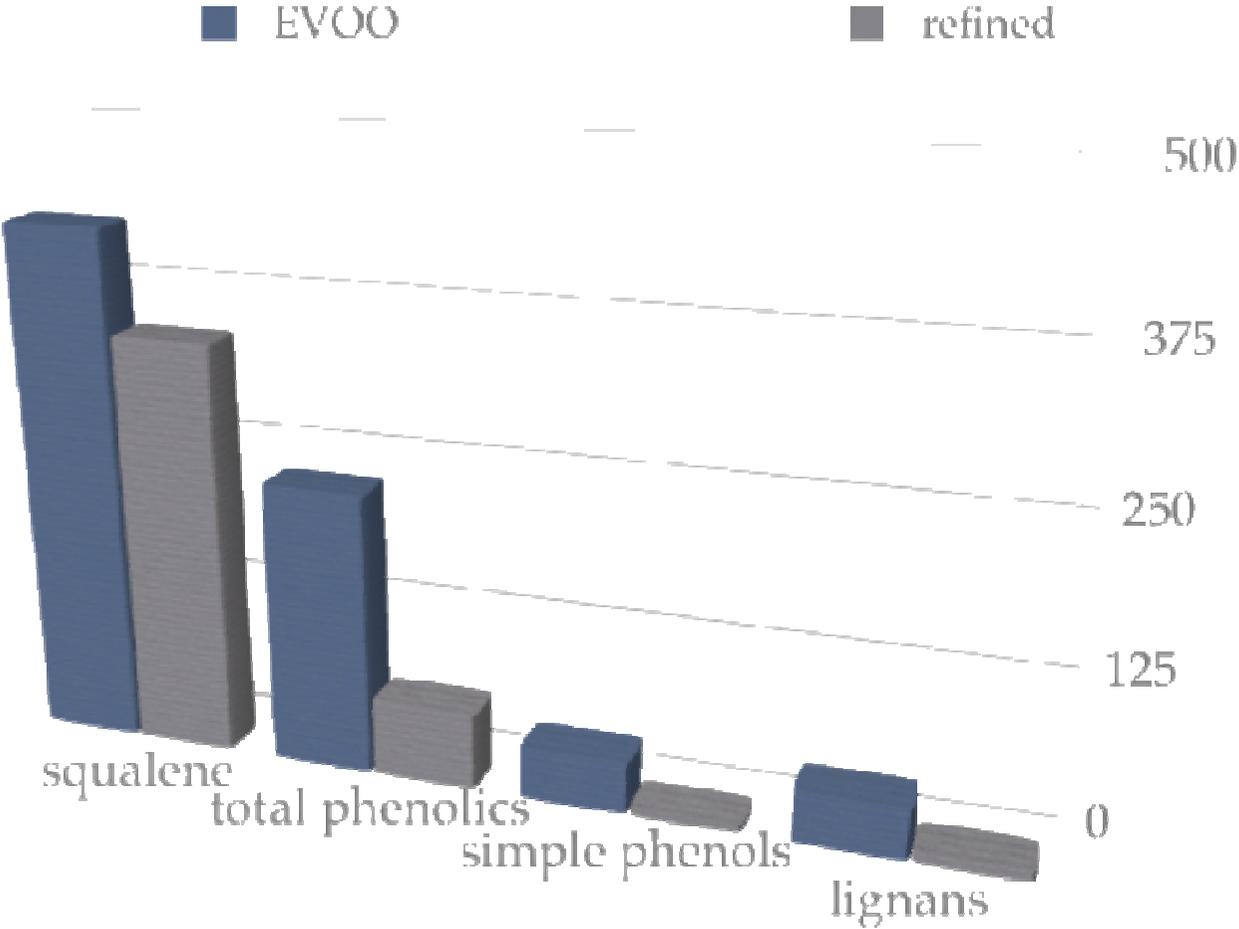


## Refined Olive Oil

- Heat, pressure, filtration methods and/or chemicals used to extract the oil and refine it
- Removes many of the phytochemicals
- The flavour is noticeably blander as a result



# EVOO vs Refined



Food Chem Toxicol (2000) 38:647-659

- Squalene

- Major intermediate in biosynthesis of cholesterol
- Olive oil ~0.7% (other foods in range .002-.03%)
- In body majority transported to skin where can scavenge free radicals
- High levels of squalene in Mediterranean diet may be factor reducing skin cancer incidence



- Phenols

- Potent antioxidants, likely to be responsible for reducing levels of oxidised LDL
- Antioxidant capacity EVOO > olive oil > seed oils

- Polyphenols from EVOO trigger cancer cell death
- Inverse correlation olive oil consumption & breast cancer incidence

*(Lancet Oncol 2000;1:107-112)*

- EPIC study olive oil intake  $>30.5\text{g/d}$  30% less likely to be in high mammographic breast density group (associated with increased breast cancer risk)

*(Int J Cancer 2006;118:1782-9)*



- EVOO phenols shown in in vitro research to be beneficial in all 3 stages of colon cancer development:
  - Reduced DNA damage, increased barrier function, reduced cell invasion of surrounding tissue

*(Int J Cancer 2005;117:1-7)*

- Adding evoo to vegetables increases the absorption of antioxidants & other phytonutrients



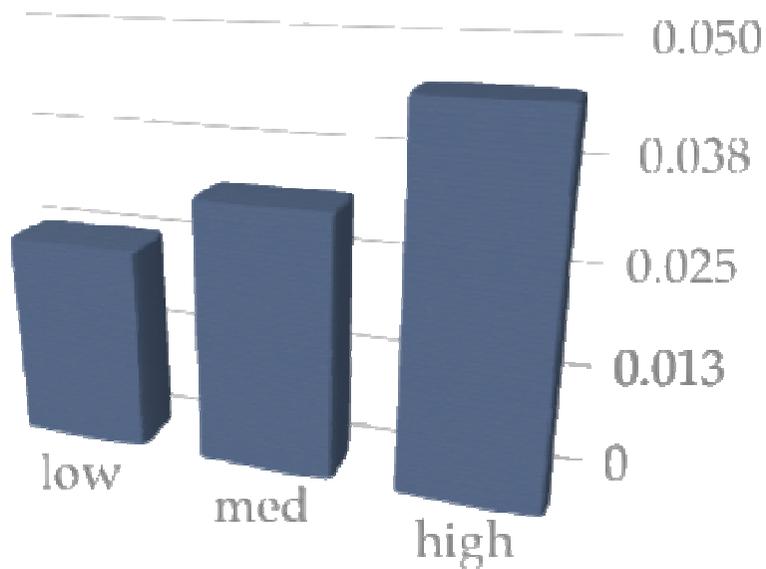
- 200 healthy males
- 6 centres in 5 European countries
- 25ml/d of olive oil varying in polyphenols
  - low 2.7 mg/kg olive oil
  - med 164 mg/kg olive oil
  - high 366 mg/kg olive oil



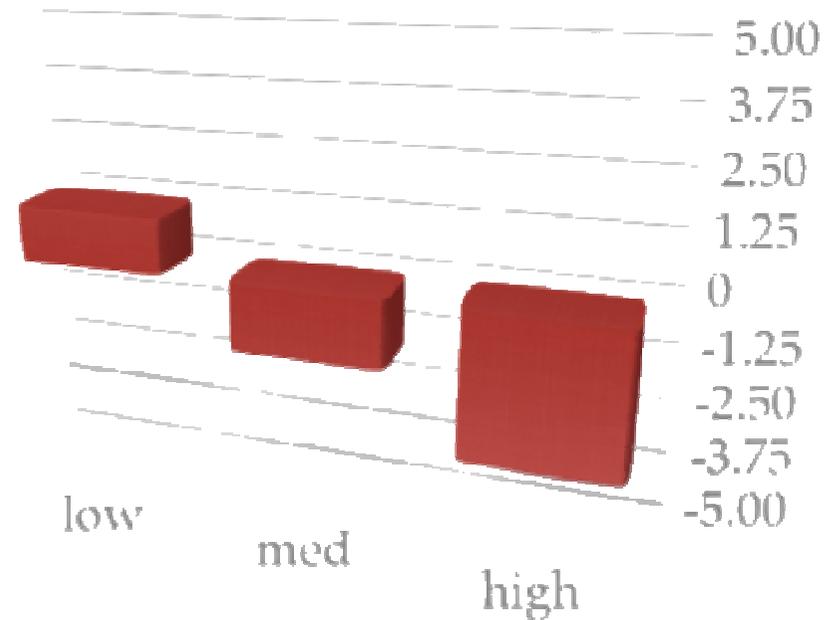


# Key Differences

## Changes in HDL



## Oxidised LDL



HDL & HDL:TC decreased linearly with polyphenol level  
Oxidative stress markers decreased linearly with polyphenol level

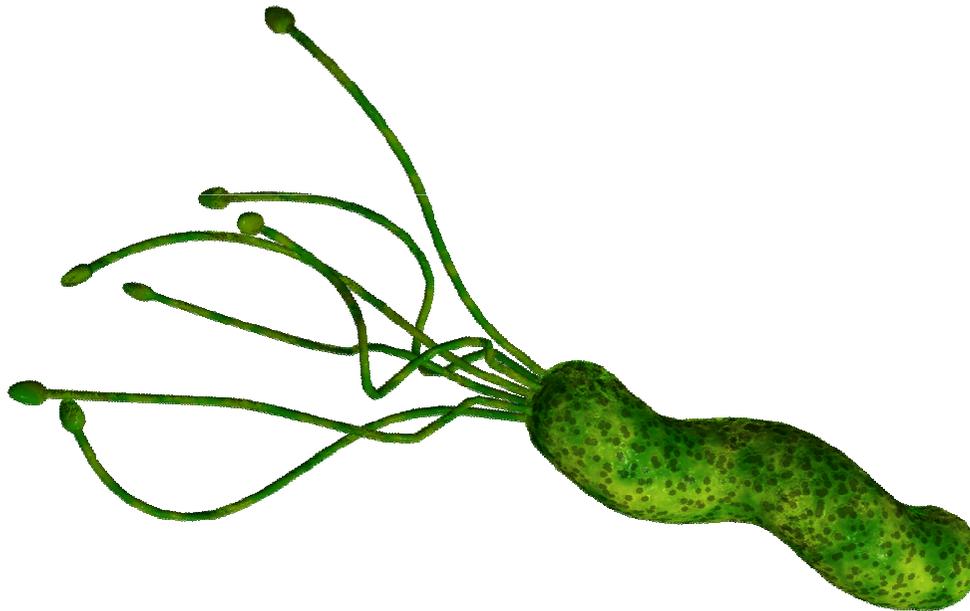
“..our study shows that olive oil is more than a monounsaturated fat. The polyphenol content of an olive oil can account for further benefits on HDL cholesterol levels and oxidative damage in addition to those from its monounsaturated fatty acid content.

Our study provides evidence to recommend the use of polyphenol-rich olive oil, that is virgin olive oil, as a source of fat to achieve additional benefits against cardiovascular risk factors.”

## Polyphenols & *H Pylori*

- Several of the polyphenols in EVOO are known to be antimicrobial
- 2007 study showed benefit in combating *H Pylori*, the major cause of gastric ulcers, yet to be proven in vivo but suggested as preventative treatment

*J Agric Food Chem 2007;55:680-6*





## Could frying with evoo provide further benefits?

Meal A: 60g pasta,  
150g grilled zucchini &  
25g uncooked evoo +  
150g apple

vs

Meal B: 60g pasta fried  
in 10g evoo & 150g  
zucchini deep-fried in  
15g evoo + 150g apple

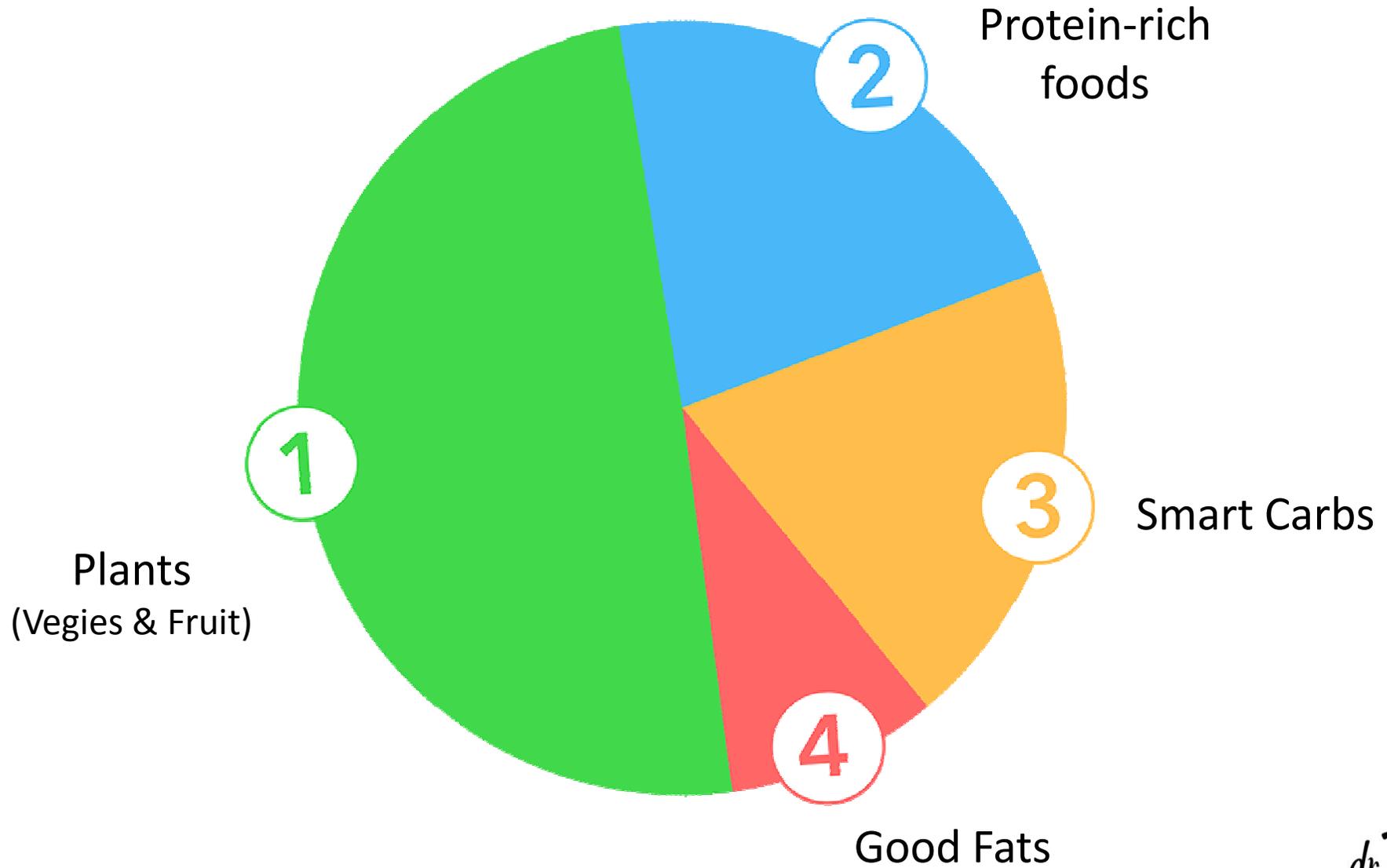
In obese women, frying the food in evoo significantly reduced post-prandial insulin responses

# EVOO vs Seed & Coconut Oils





# Dr Joanna Plate Model



# How Can We Get People Eating More Olive Oil?

- Bust the myths
- Promote uses
  - Cooking, baking, drizzling, dressing
- Promotion – how did coconut oil do it?



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- All olive oils provide good source of oleic acid which confers benefit
- But the levels of phytochemicals, particularly polyphenols, are significantly higher in EVOO
- Evidence is building to suggest these polyphenols may be beneficial in areas ranging from cancers, heart disease to gut health and even in slowing the aging process
- While there is a wealth of evidence for evoo, it is lacking for coconut oil & concerns over seed oils
- We have the potential to capture the oils market in Australia & many areas overseas