



Popular Diets – Fact or Fiction?

Bonnie T. Jortberg, PhD, RDN, CDCES

Associate Professor

Department of Family Medicine

University of Colorado School of Medicine



Disclosures

➤ None





Objectives


- ▶ Describe the evidence-based nutrition and lifestyle recommendations for their patients to prevent and treat chronic diseases, such as type 2 diabetes, cardiovascular disease, and obesity.
- ▶ Discuss the pros and cons of popular diets, such as Paleo, Mediterranean, and Keto.



Evidence-Based Lifestyle Recommendations¹

- ▶ BMI <30 kg/m²
 - ▶ 5%-10% weight loss results in clinically significant reductions in lipids, HgA1c, BP
- ▶ Dietary pattern:
 - ▶ Fruits/veg; whole grains, plant-based; healthy fats; low saturated/trans fats; lean protein sources; low added sugars
- ▶ Physical activity:
 - ▶ Minimum of >150 minutes/week
 - ▶ More is better (>250 minutes/week)

¹US Dietary Guidelines; American Diabetes Assoc. Guidelines; AHA/ACC/TOS



Evidence- Based Weight Loss & Maintenance

Create energy deficit – reduce calories in and increase caloric expenditure.

Metabolic adaptations as result of weight loss:


100-200 fewer calories/day after 5-10% weight loss.

Physical activity 5-6 days/week; minimum 30 minutes.

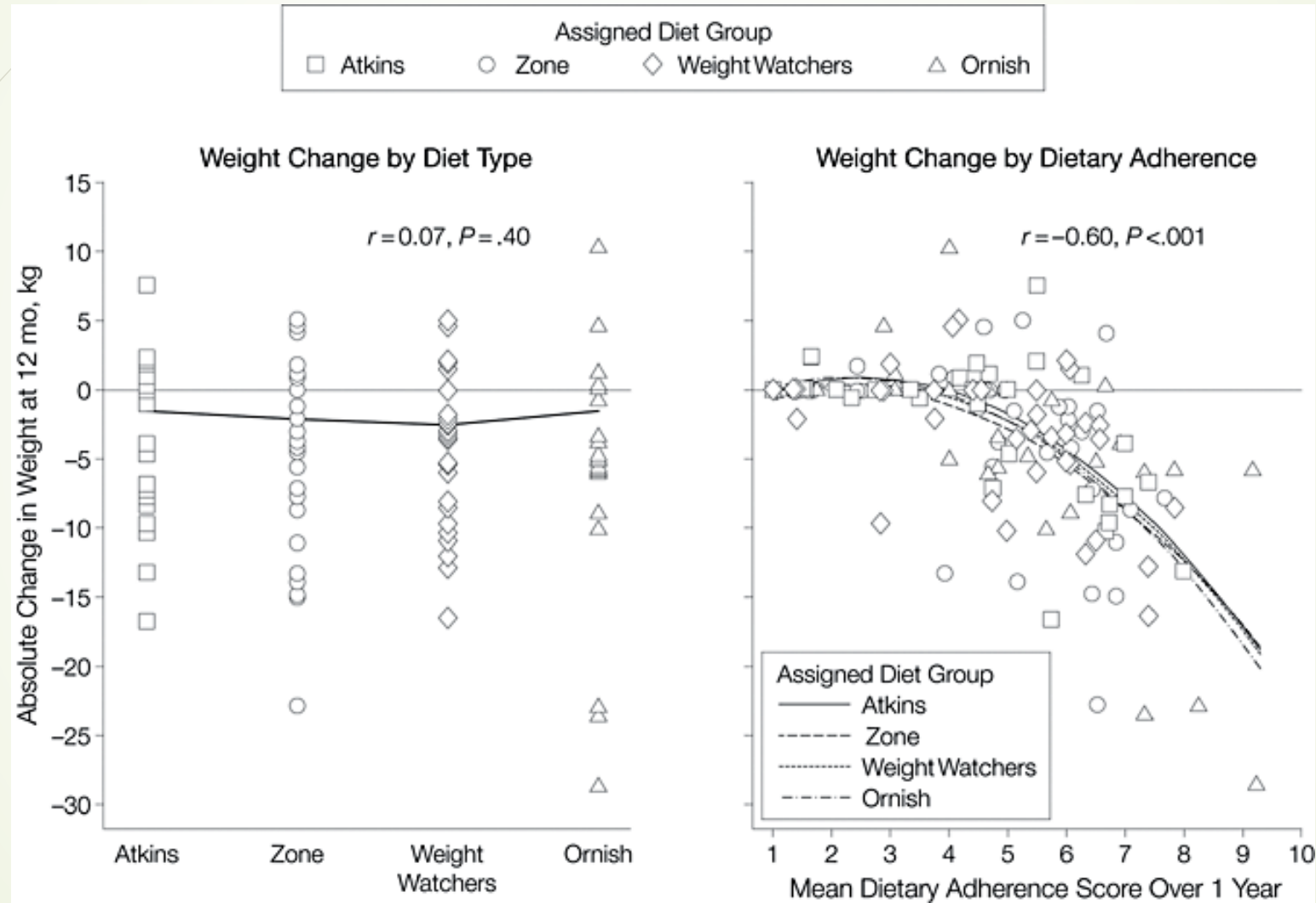
Self-monitoring: food/activity records; weighing



Fad Diets: Why are they so appealing?

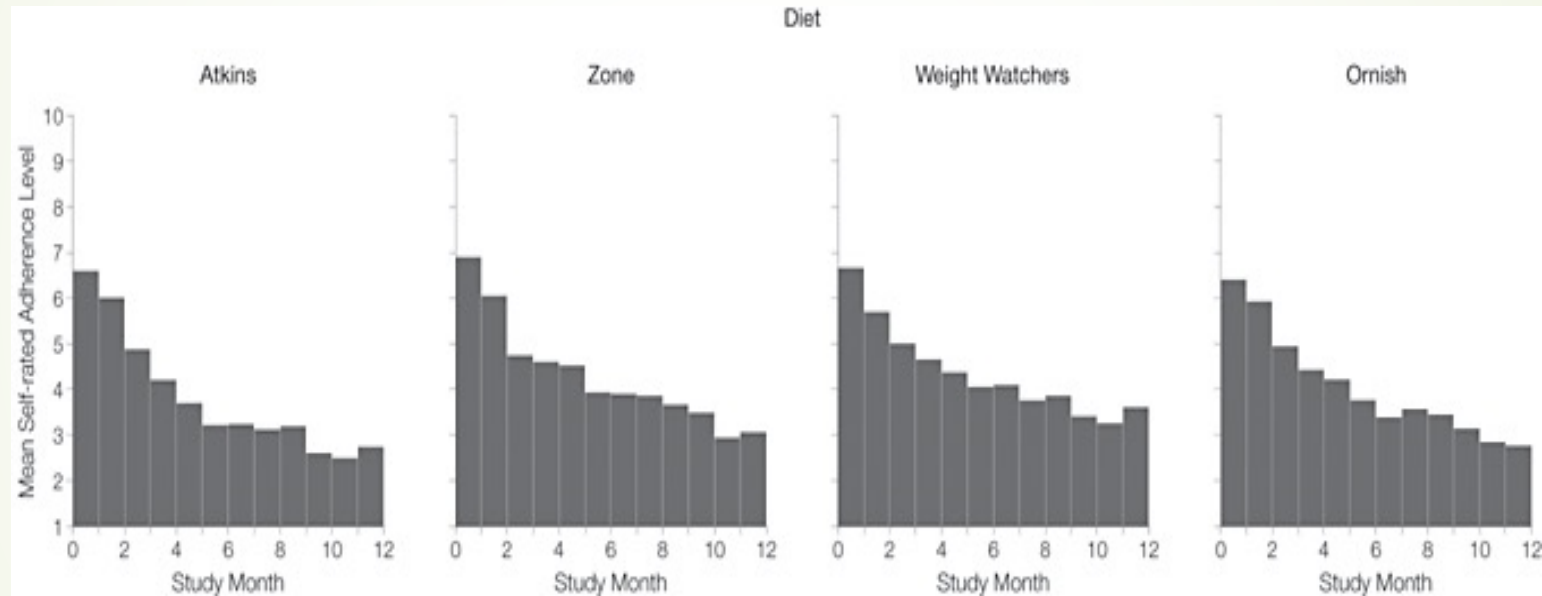
- Compelling story
 - Promise “magic weight loss”
 - “Rules” to follow
 - Parts of the diet make sense
 - Americans are always looking for something new...
- 

One-Year Changes in Body Weight as a Function of Diet Group and Dietary Adherence Level for All Study Participants



Dansinger, M. L. et al. JAMA 2005;293:43-53.

Mean Self-reported Dietary Adherence Scores of All 4 Diet Groups, According to Study Month



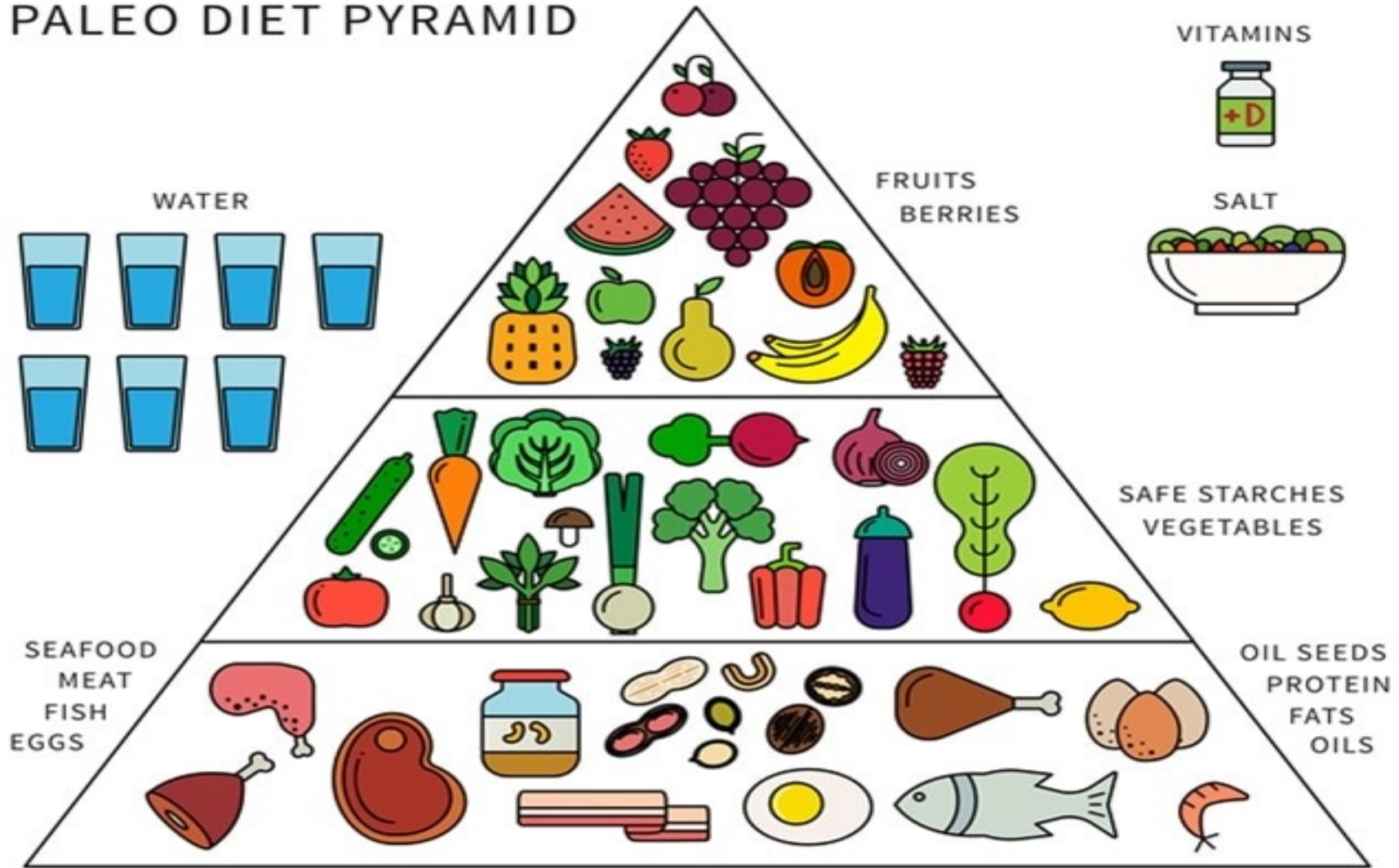
Dansinger, M. L. et al. JAMA 2005;293:43-53.



Results/Discussion

- ▶ At one year, “extreme” diets had greater attrition (48% Atkins; 50% Ornish) compared with 35% Zone and WW)
- ▶ Amount of weight loss predicted amount of improvement in cardiac risk factors (total/HDL ratio; C-reactive protein; insulin levels) regardless of diet type
- ▶ No diet significantly worsened any cardiac risk factor at 1 year
- ▶ No significant association between change in exercise and change in weight or any cardiac risk factor at 1 year

PALEO DIET PYRAMID



Paleo Diet

- ▶ Paleo Diet
 - ▶ Based on premise that healthiest diet is the one from our hunter-gatherer ancestors, and that our genetics have not changed since the Stone Age.
 - ▶ Includes meat, fish, eggs, fruits, vegetables, roots, nuts & seeds
- ▶ **The following is a summary of foods generally permitted on the diet:**
 - **Allowed:** Fresh lean meats, fish, shellfish, eggs, nuts, seeds, fruits, vegetables, olive oil, coconut oil, and small amounts of honey. Certain root vegetables like sweet potatoes and cassava may be allowed in moderation because of their high nutrient content.
 - **Not Allowed:** Whole grains, cereals, refined grains and sugars, dairy products, white potatoes, legumes (peanuts, beans, lentils), alcohol, coffee, salt, refined vegetable oils such as canola, and most processed foods in general.
 - Calorie counting and portion sizes are not emphasized. Some plans allow a few “cheat” non-Paleo meals a week, especially when first starting the diet, to improve overall compliance.



What Does the Research Say?





Paleo Diet Research



- ▶ Small, randomized controlled trials have shown Paleo diet to produce short-term benefits (greater weight loss, decreased BP, increased insulin sensitivity, improved lipids).
- ▶ One large randomized controlled trial in 70 post-menopausal Swedish women found no benefits of Paleo diet compared with Nordic Nutrition Recommendations at 24 months (there were some benefits at 6-months).



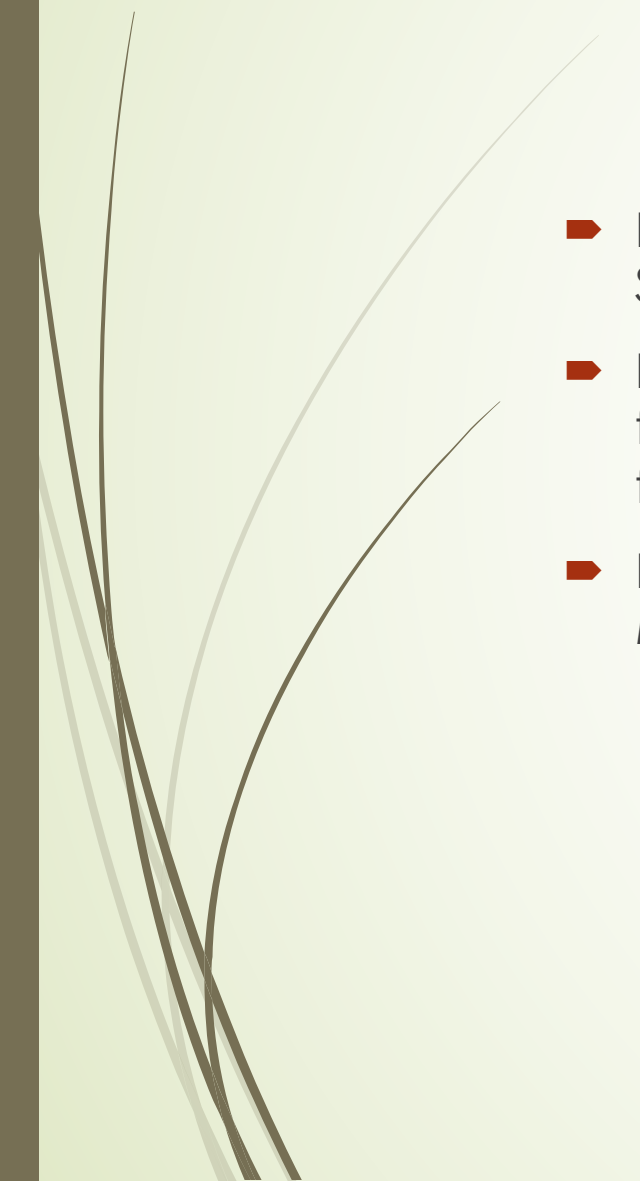
Potential Pitfalls



- *Meal planning.* Because the diet relies heavily on fresh foods, expect a time commitment to plan, purchase, prepare, and cook meals. This may be challenging for busy lifestyles or for those less experienced with cooking.
- *Higher cost.* Fresh meats, fish, and produce tend to be pricier than processed versions such as frozen or canned.
- *Excluding foods, including entire categories of commonly eaten foods:*
 - ▶ Whole grains and dairy
 - ▶ May increase the risk of deficiencies such as calcium, vitamin D, and B vitamins. For example, there are some nondairy calcium-rich foods that are absorbed well by the body such as collard and turnip greens or canned bone-in sardines and salmon, but you would have to eat five or more servings of these greens and fish bones daily to meet recommended calcium needs. (Note that some greens like spinach that are touted to be calcium-rich also contain oxalates and phytates that bind to calcium so very little is actually absorbed.) One small, short-term intervention study of healthy participants showed a 53% decrease from baseline in calcium intake after following a Paleo diet for three weeks. [8]



Mediterranean Diet (MeDiet)

- ▶ Defined as traditional dietary pattern found in Greece, Southern Italy, Spain, and other olive-growing countries of the Mediterranean basin
 - ▶ Diet consists of abundant use of olive oil, high consumption of plant-based foods (f/v, legumes, nuts/seeds, whole grains), mod intake red wine and fish/seafood, dairy products; low consumption of red/processed meat
 - ▶ Research has consistently shown inverse association btw adherence to MeDiet and CVD
- 



Drink water



Wine in moderation

MEAT



SWEETS



EGGS



POULTRY



FISH & SEAFOOD



CHEESE & YOGURT



OLIVE OIL



FRUITS



LEGUMES & NUTS



VEGETABLES



WHOLEGRAIN BREAD, PASTA, RICE, COUSCOUS, POLENTA, QUINOA, OTHER GRAINS & POTATOES



Monthly

Weekly

Daily



Daily Physical Activity





What Does the Research Say?



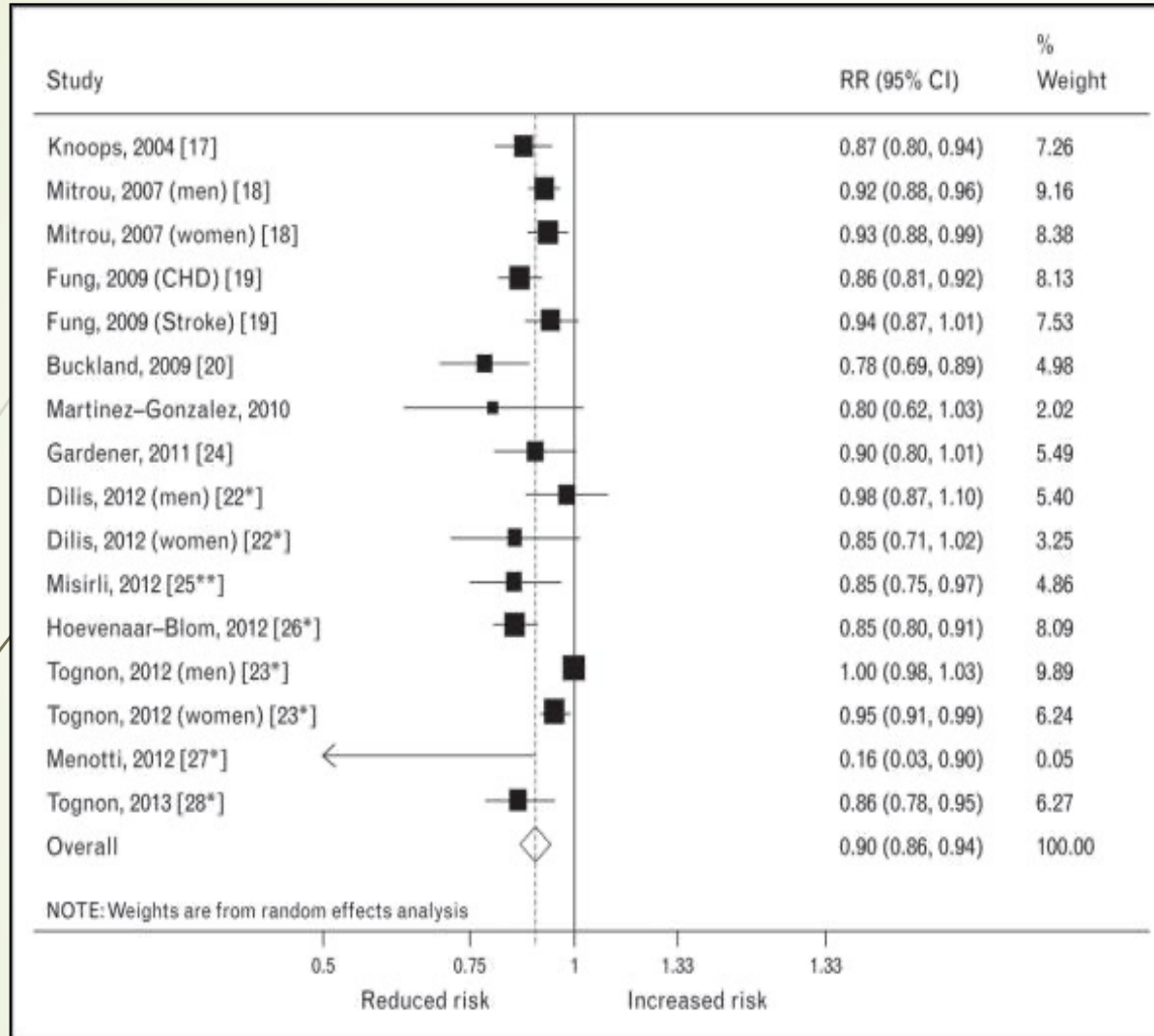


Mediterranean Diet

- ▶ Research has consistently shown that the Med Diet is effective in reducing the risk of CVD and overall mortality.
 - ▶ Underlying mechanism may be changes in inflammation, blood sugar, and BMI.
- ▶ May improve aging and cognitive function
- ▶ Nurses' Health Study followed 10,670 women ages 57-61 and found that those who followed a Med diet-type eating pattern were 46% more likely to age healthfully – defined as living 70 years or more, having no chronic diseases, or major declines in mental health, cognition, and physical function.

[Circulation](#). 2009 Mar 3;119(8):1093-100; [AJCN](#). 2013 Oct 30;99(1):172-80.; [Annals of internal medicine](#). 2013 Nov 5;159(9):584-91

FIGURE 2



Dietary patterns, Mediterranean diet, and cardiovascular disease.
 Martinez-Gonzalez, Miguel; Bes-Rastrollo, Maira
 Current Opinion in Lipidology. 25(1):20-26, February 2014.
 DOI: 10.1097/MOL.0000000000000044

FIGURE 2 . Observational studies assessing the association between a two-point increase in adherence to the Mediterranean diet score (0-9 points) and the risk of mortality from or incidence of cardiovascular disease. The center of each square indicates the relative risk (RR) of the study, and the horizontal lines indicate 95% CIs. The area of the square is proportional to the amount of information from the study. The diamond indicates pooled estimate. CHD, coronary heart disease. When five estimates assessing exclusively fatal cases (Mitrou [27]; Tognon [18][black small square]; Menotti [22][black small square]) were removed, the heterogeneity disappeared ($I^2 = 19.8\%$, $P = 0.26$) and the pooled RR was 0.87 (95% CI: 0.85-0.90) per two-point increase in the score.

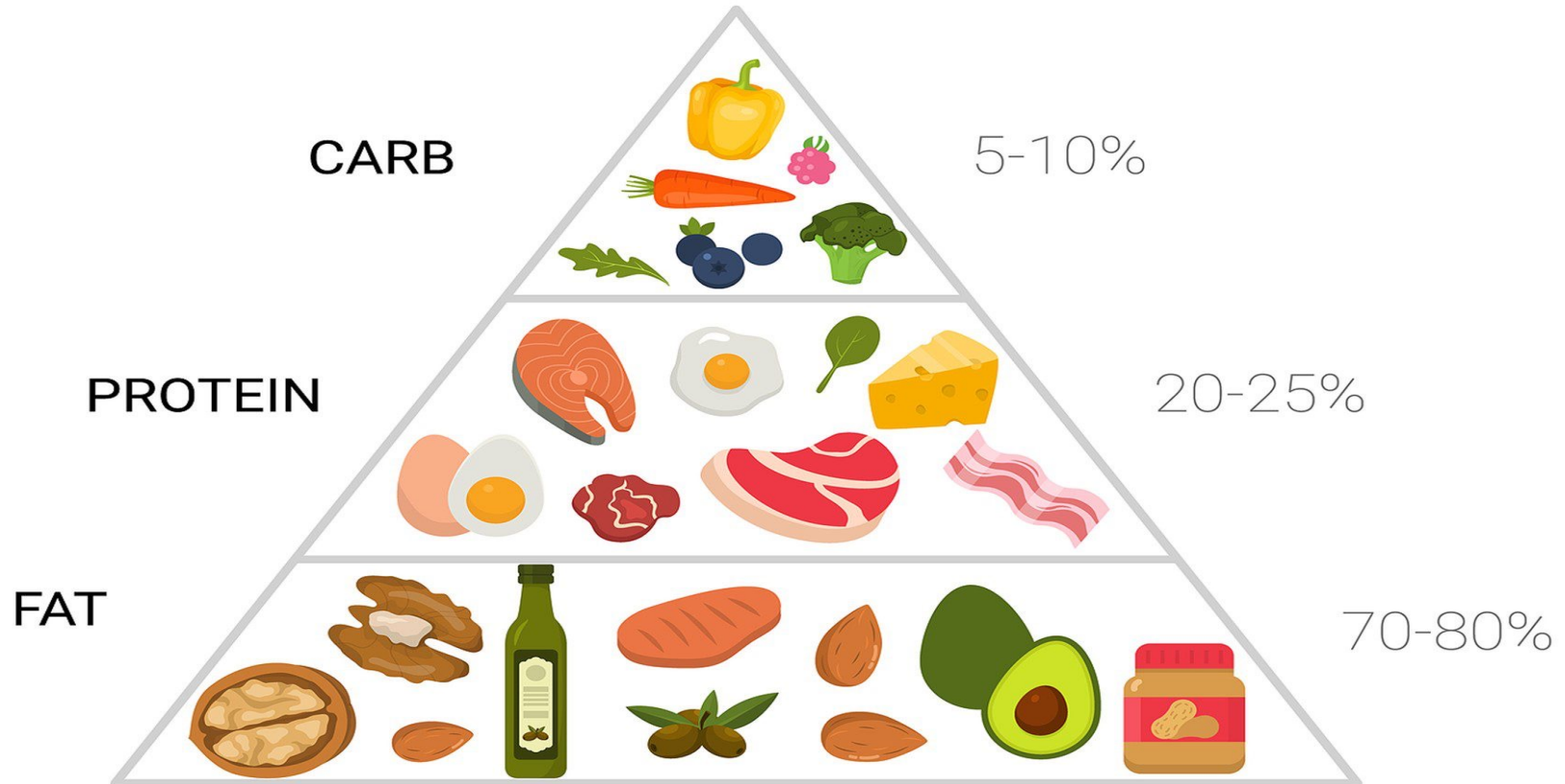


Low Carb Diets

- Based on idea that need to avoid carbs in order to lose weight
 - <20% of daily kcals from carbs
- Avoid foods high in carbs, such as pasta, bread, rice, cereal, fruit, and starchy vegetables
- Diet is high in fat and protein

A KETO DIET

WHAT CAN I EAT



AVOID:



FRUIT



POTATOES



BEER



RICE



BREAD



SUGAR



Keto Diet



- ▶ Low carb (LC) diet, high fat (HF) that has been used for centuries to treat specific medical conditions; in the 19th century was commonly used to help control diabetes.
- ▶ In 1920, it was introduced as an effective treatment for epilepsy in children.
- ▶ How it works – premise is that if you deprive the body of glucose, an alternative fuel is produced (ketones) from fat.
- ▶ Typical keto diet limits carbs to <50 grams/day, but can be as low as 20 grams/day.
 - ▶ 70-80% from fat; 5-10% from carbs; 10-20% from protein



What Does the Research Say?





Keto Diet Research

- ▶ Limited studies: meta-analysis of 13 randomized controlled trials following overweight and obese participants for 1-2 years on either low-fat diets or very-low-carbohydrate ketogenic diets
 - ▶ Produced a small but significantly greater reduction in weight, triglycerides, and blood pressure, and a greater increase in HDL and LDL cholesterol compared with the low-fat diet at one year.
 - ▶ The authors acknowledged the small weight loss difference between the two diets of about 2 pounds, and that compliance to the ketogenic diet declined over time, which may have explained the more significant difference at one year but not at two years.

[Obes Rev.](#) 2015 Jan 1;16(1):64-76.



Realistic Ways for Working with Patients on Weight Loss

- ▶ Engage patient about what is important to them (why do they want to lose weight).
- ▶ Build self-efficacy.
- ▶ Go for the “low hanging fruit”.
- ▶ Address metabolic adaptations as result of weight loss; address need to continue to eat fewer calories and continue with physical activity.
- ▶ Set small, specific, and realistic goals (SMART goal setting).