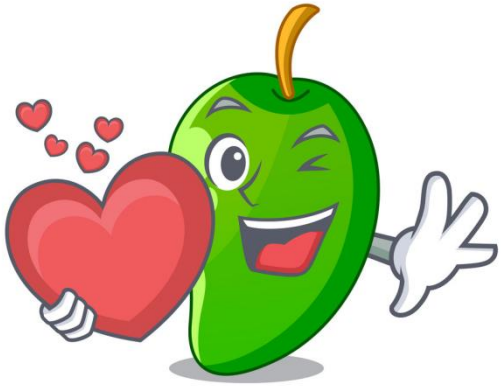


המרכז הרפואי שערי צדק
SHAARE ZEDEK MEDICAL CENTER

מגוון הדיאטות- מה כן כדאי לקחת ללב

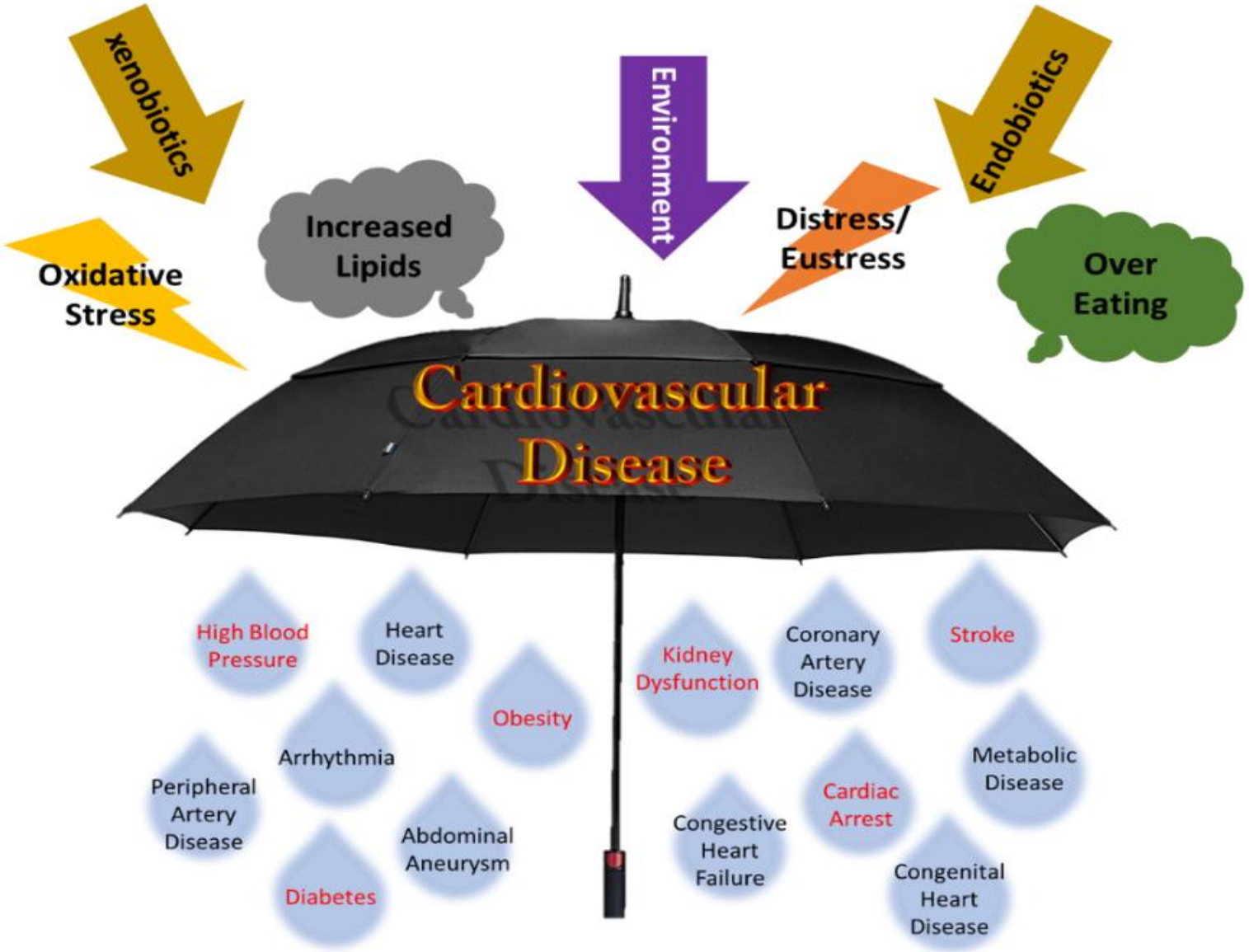
קרן הרשקופ RD PhD
מנהלת המחלקה לתזונה ודיאטה
המרכז הרפואי שערי צדק
שיקום לב נובמבר 2019

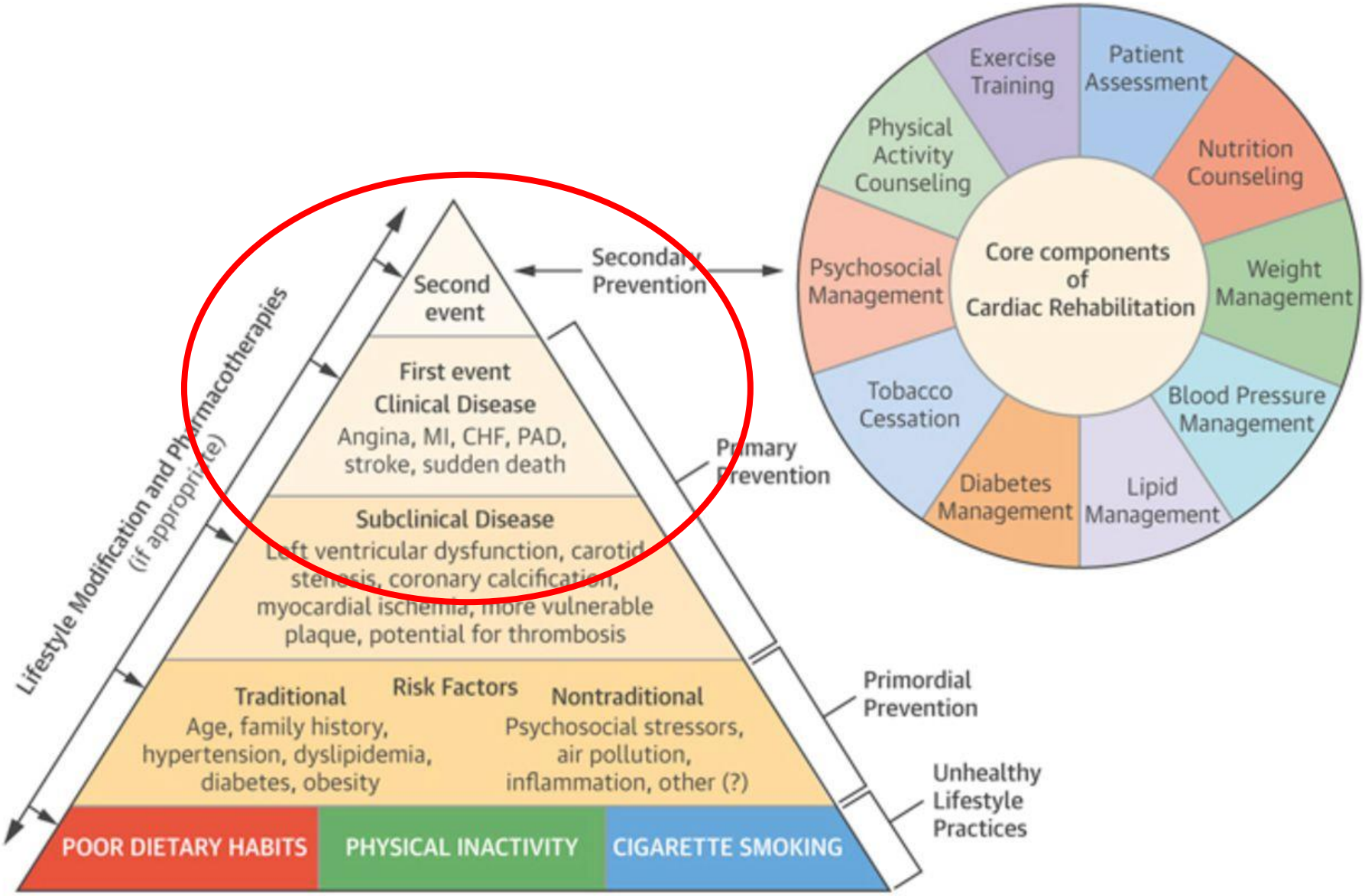
Outline:

- The patient in rehabilitation
- Dietary trends
- The effect on heart disease and cardiometabolic risk factors
- Take home message

The rehabilitation Patient

- A cluster of diseases
- Each patient is different
- A chance for motivational change


Xenobiotics
Environment
Endobiotics
Increased Lipids
Oxidative Stress
Distress/ Eustress
Over Eating
Cardiovascular Disease
High Blood Pressure
Heart Disease
Obesity
Kidney Dysfunction
Coronary Artery Disease
Stroke
Arrhythmia
Peripheral Artery Disease
Abdominal Aneurysm
Diabetes
Congestive Heart Failure
Cardiac Arrest
Metabolic Disease
Congenital Heart Disease



Sandesara, P.B. et al. J Am Coll Cardiol. 2015; 65(4):389-95.

LYON STUDY

- Randomized secondary prevention trial
- Compared the Mediterranean diet with the western diet (AHA step1)
- 605 patients that had an MI within the prior 6 months
- Mean Follow-up 45 months
- Resulted in a reduction of 50% in recurrent MI or major secondary events

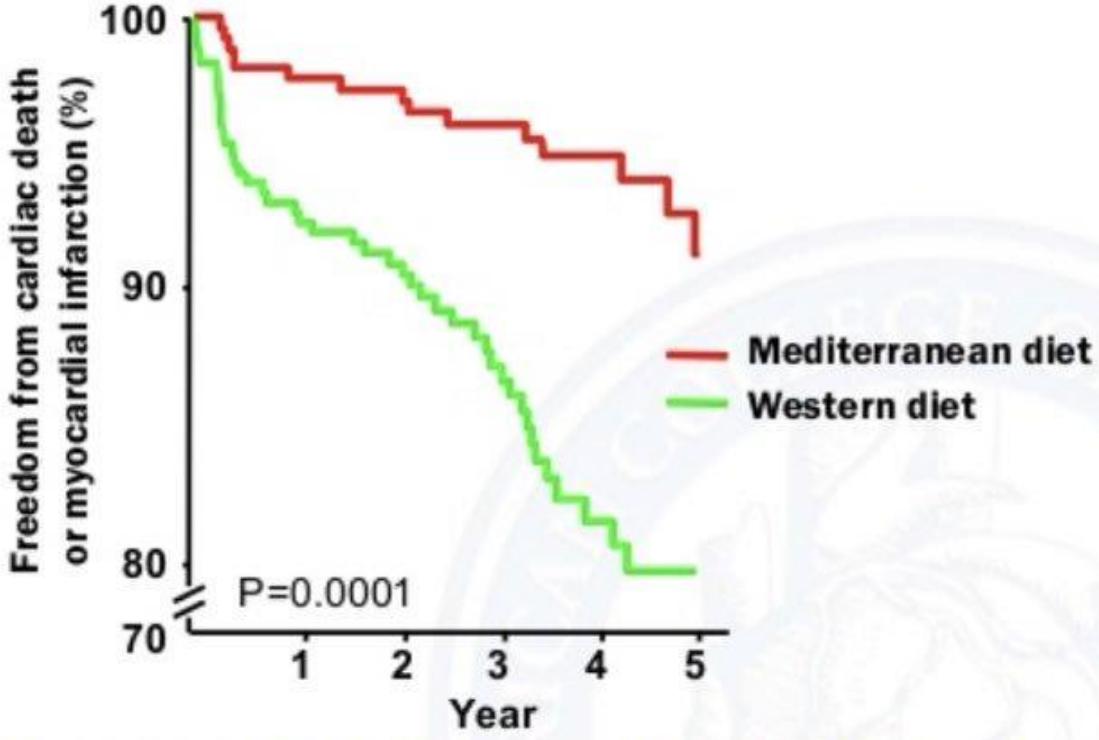
LYON STUDY

	Mediterranean diet	Control French Diet	Δ Significance
Energy	1928 kcal	2140 kcal	p< 0.001
SFA	8.3 E %	11.7 E %	p< 0.001
Oleic acid	12.9 E %	10.3 E %	p< 0.001
Linoleic acid	3.6 E %	5.3 E %	p< 0.001
α –linolenic acid	0.81 E %	0.27 E %	p< 0.001
Cholesterol	217 mg	318 mg	p< 0.001
Carbohydrates*	52.3 E %	50.8 E %	N/A
Protein	17.2 E %	16.5 E %	P=0.12
Fat	30.5 E %	32.7 E %	P=0.008
Fiber	N/A	N/A	N/A
Trans fat**	N/A	N/A	N/A

Diet Evidence: Secondary Prevention

Lyon Diet Heart Study

605 patients following a myocardial infarction randomized to a Mediterranean* or Western diet for 4 years**



A Mediterranean diet reduces cardiovascular events

Helping Cardiovascular Professionals Learn. Advance. Heal.

*High in polyunsaturated fat and fiber,
**High in saturated fat and low in fiber

Source: De Lorgeril M et al. *Circulation* 1999;99:779-785

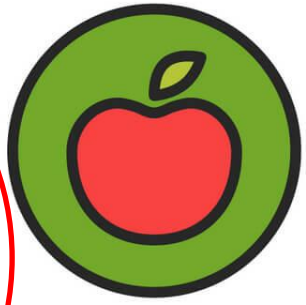
KETO

PALEO

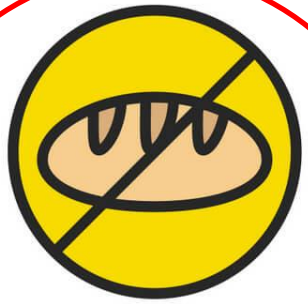
VEGETARIAN

VEGAN

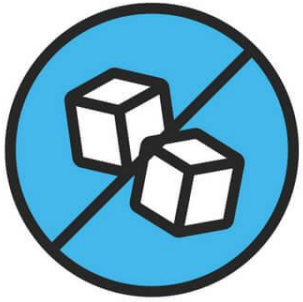
MEDITERRANEAN



RAW



LOW CARB



NO SUGAR

Journal of Clinical Lipidology (2019) ■, ■–■

Journal of Clinical Lipidology

Original Research

Review of current evidence and clinical recommendations on the effects of low-carbohydrate and very-low-carbohydrate (including ketogenic) diets for the management of body weight and other cardiometabolic risk factors: A scientific statement from the National Lipid Association Nutrition and Lifestyle Task Force

Carol F. Kirkpatrick, PhD, MPH, RDN, CLS*, Julie P. Bolick, MS, RDN, CD, CLS, Penny M. Kris-Etherton, PhD, RDN, CLS, Geeta Sikand, MA, RDN, CLS, Karen E. Aspry, MD, MS, Daniel E. Soffer, MD, Kaye-Eileen Willard, MD, Kevin C. Maki, PhD, CLS

Low carbohydrate diets

- A moderate –CHO diet: 26-44% of TDE or 130-225 gr/d
- A low CHO diet: 10-25% of TDE 50-130 gr/d
- A very-low CHO diet<10% of TDE <50 gr/d
- Protein and fat content is variable.
- Low and moderate diets do not result in ketosis

- Typically high in SFA and cholesterol
- The severe restriction in CHO reduces intake of vegetables, fruit, legumes and whole grain.

Effects of low and very-low CHO diet compared to high-CHO low fat diets on cardiometabolic risk markers at 1-2 years follow-up

Cardiometabolic risk factor	Adults with overweight or obesity	Adults with overweight or obesity and T2D
Weight	↓**	↑ ↓*
LDL-C	↑**	↑*
HDL-C	↑***	↑**
TG	↓**	↓**
HbA1c	↓*	↑ ⇔ ↓**
SBP	↓*	↑ ↓**
DBP	↓**	↑ ↓**

*NS

**mixed results

***significant

- The effect on weight loss is mainly in the short term
- Very-low CHO diets are difficult to maintain and are not clearly superior for weight loss
- There is a variable total-C and LDL-C response to low –CHO and very-low-CHO diets
- Compared with high-CHO low fat diets the low-CHO diets result in improvement in TG and HDL-C levels.

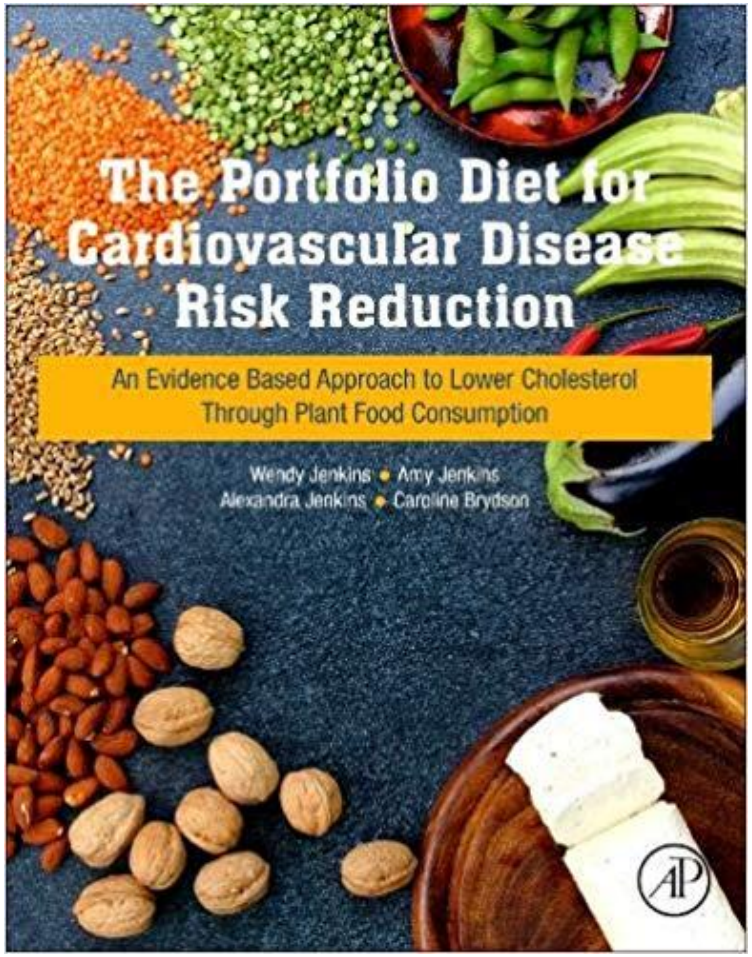

VEGETARIAN
VEGAN
— THE —
PORTFOLIO DIET
An evidence-based eating plan for lower cholesterol
SOY
WHAT IS THE PORTFOLIO DIET?
The portfolio diet is a way of eating that evidence has shown can help lower cholesterol and your risk of heart disease. Instead of focusing on what you can't eat, the Portfolio diet is about what you can add to your menu!
EGGPLANT
CHICKPEAS
VEGGIE BURGER
WALNUTS
TOFU
PLANT STEROL MARGARINE

A plant based dietary pattern that combines know cholesterol lowering foods

- Plant based dietary pattern first devised in the early 2000.
- A “portfolio” of 4 lowering cholesterol foods
- Each of which has approved health claim for cholesterol lowering or CVD risk reduction.

(FDA, Health Canada)

For a 2000 kcal diet:



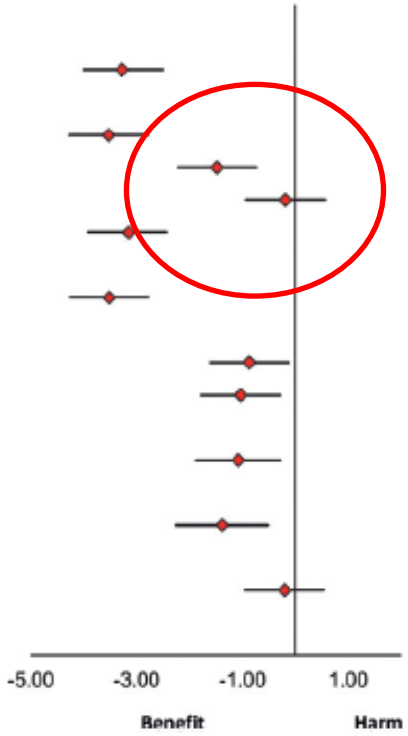
- ✓ Nuts (42 gr)
- ✓ Plant protein (50 gr)
- ✓ Soluble fiber (20 gr)
- ✓ Plant sterol- enriched margarine (2 gr)
- ✓ MUFA (26% of energy)
- ✓ Vegan- excludes:

Meat , poultry, seafood, dairy and eggs

Portfolio Dietary Pattern and Cardiovascular Disease: A Systematic Review and Meta-analysis of Controlled Trials☆,☆☆

Laura Chiavaroli [a,b], Stephanie K. Nishi [a,b], Tauseef A. Khan [a,b], Catherine R. Braunstein [a,b], Andrea J. Glenn [a,b], Sonia Blanco Mejia [a,b], Dario Rahelić [f], Hana Kahleová [g,h], Jordi Salas-Salvadó [i,j], David J.A. Jenkins [a,b,c,d,e], Cyril W.C. Kendall [a,b,k,*], John L. Sievenpiper [a,b,d,e,*]

Outcome	No. trials	N	Pooled Effect Estimates: MD (95% CI)	Pooled Effect Estimates: SMD (95% CI)	Heterogeneity: P-value	Heterogeneity: I^2	%Change* : P-value	%Change*
PRIMARY OUTCOME								
LDL-C (mmol/L)	7	439	-0.73 [-0.89, -0.56]	-3.28 [-4.00, -2.51]	<0.0001	67%	0.006	-17%
SECONDARY OUTCOMES								
Lipids								
TC (mmol/L)	7	439	-0.81 [-0.98, -0.64]	-3.53 [-4.27, -2.79]	<0.0001	52%	0.05	-12%
TG (mmol/L)	7	439	-0.28 [-0.42, -0.14]	-1.48 [-2.22, -0.74]	<0.0001	58%	0.03	-16%
HDL-C (mmol/L)*	7	439	-0.01 [-0.05, 0.03]	-0.19 [-0.93, 0.56]	0.56	22%	0.26	-1%
non-HDL (mmol/L)	7	439	-0.83 [-1.03, -0.64]	-3.15 [-3.91, -2.43]	<0.0001	61%	0.02	-14%
Apolipoproteins								
(g/L)	7	439	-0.19 [-0.23, -0.15]	-3.52 [-4.26, -2.78]	<0.0001	60%	0.02	-15%
Blood Pressure								
SBP (mmHg)	7	439	-1.75 [-3.23, -0.26]	-0.87 [-1.61, -0.13]	0.02	0%	0.79	-1%
DBP (mmHg)	7	439	-1.36 [-2.33, -0.38]	-1.03 [-1.77, -0.28]	0.006	0%	0.46	-2%
Inflammation								
mg/L)	7	435	-0.58 [-1.01, -0.15]	-1.08 [-1.88, -0.28]	0.008	33%	0.18	-32%
Estimated 10-year CHD Risk								
CHD risk (%)	5	415	-1.34 [-2.19, -0.49]	-1.38 [-2.26, -0.51]	0.002	54%	0.07	-13%
dy weight (kg)	7	439	-0.1 [-0.48, 0.27]	-0.20 [-0.95, 0.53]	0.59	0%	0.99	0%



LDL

Lipids

APO-B

CRP

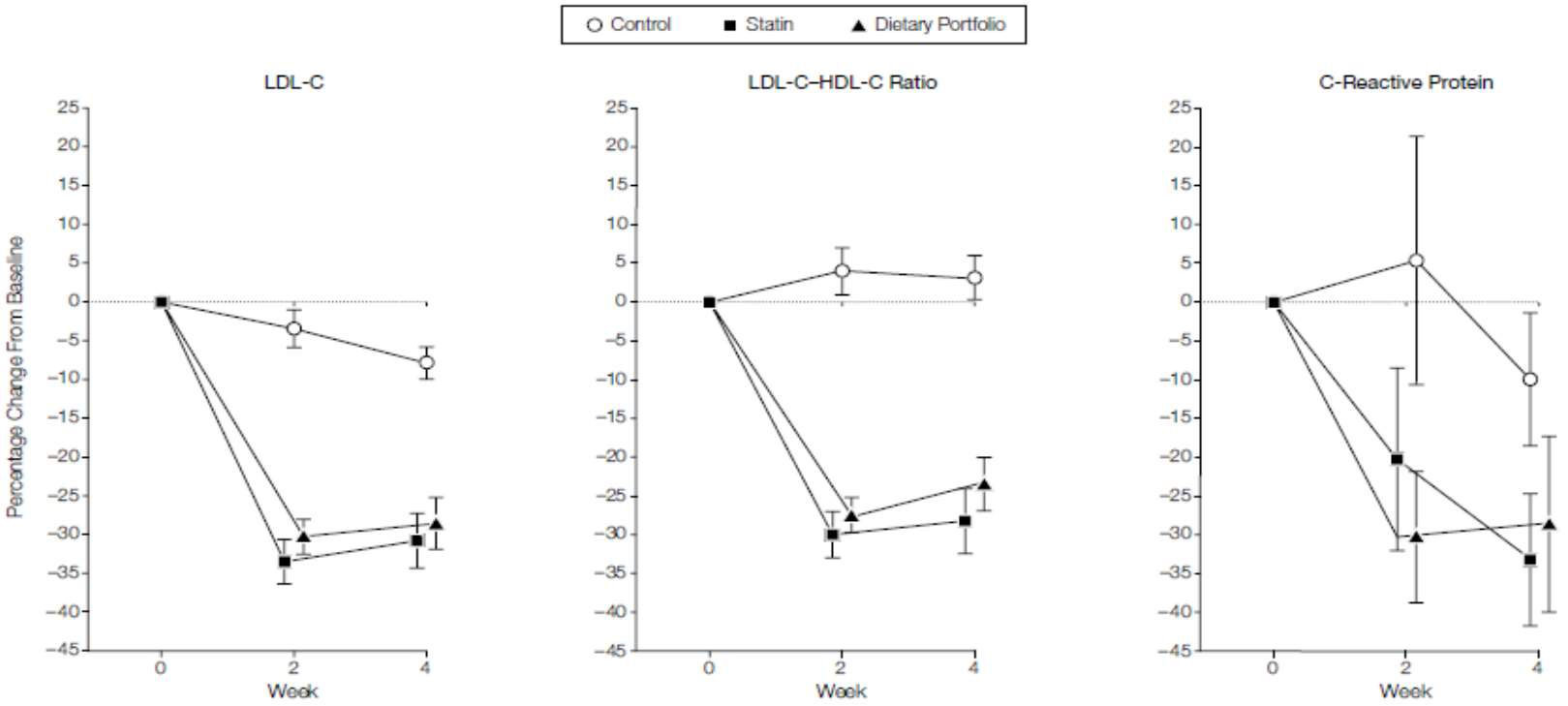
weight

Effects of a Dietary Portfolio of Cholesterol-Lowering Foods vs Lovastatin on Serum Lipids and C-Reactive Protein

Each group n=16, 4 week follow-up

JAMA, July 23/30, 2003—Vol 290, No. 4 (Reprinted)

Figure 2. Change From Baseline in LDL-C, LDL-C–HDL-C Ratio, and C-Reactive Protein

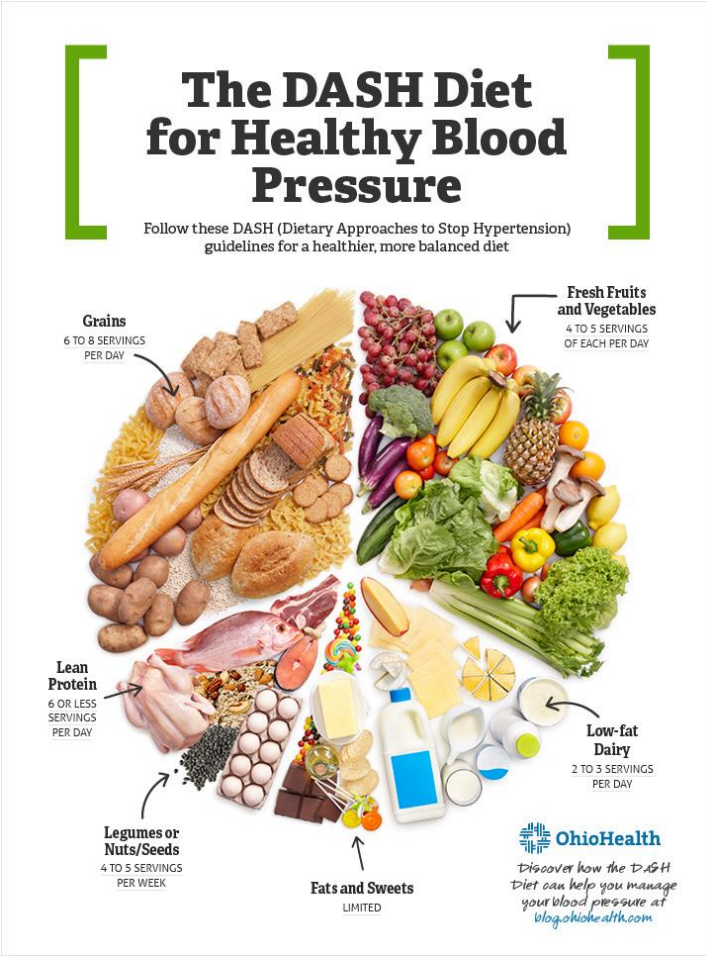


LDL-C indicates low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol. Values are expressed as mean (SE) because, with the number of participants involved, approximately twice the SE represents a significant difference.

DASH DIET

Dietary Approaches to Stop Hypertension

- Fruit
- Vegetables
- Fat free/low fat dairy products
- Whole grains
- Nuts and legumes
- Limit: saturated fat, red meat, sugar, sweets, salt and sugar based beverages.



nutrients

MDPI

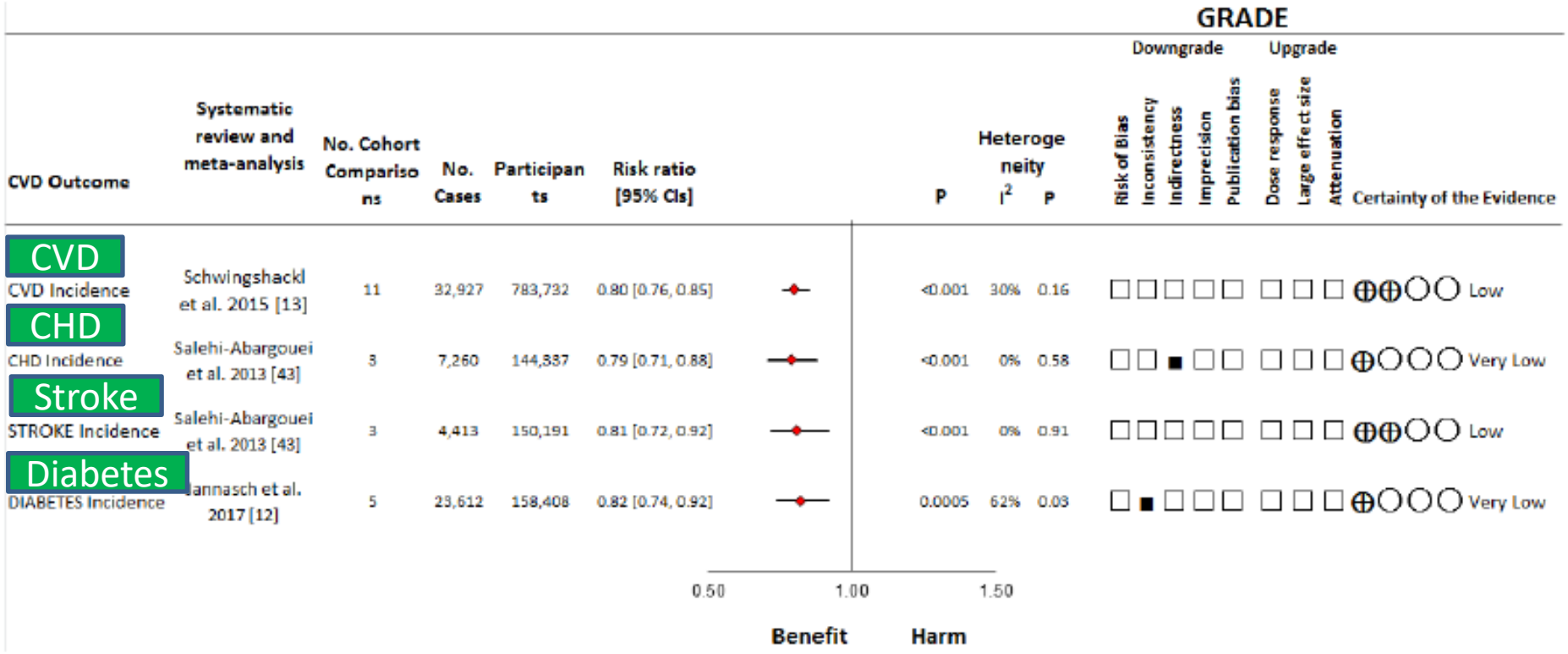
Review

DASH Dietary Pattern and Cardiometabolic Outcomes: An Umbrella Review of Systematic Reviews and Meta-Analyses

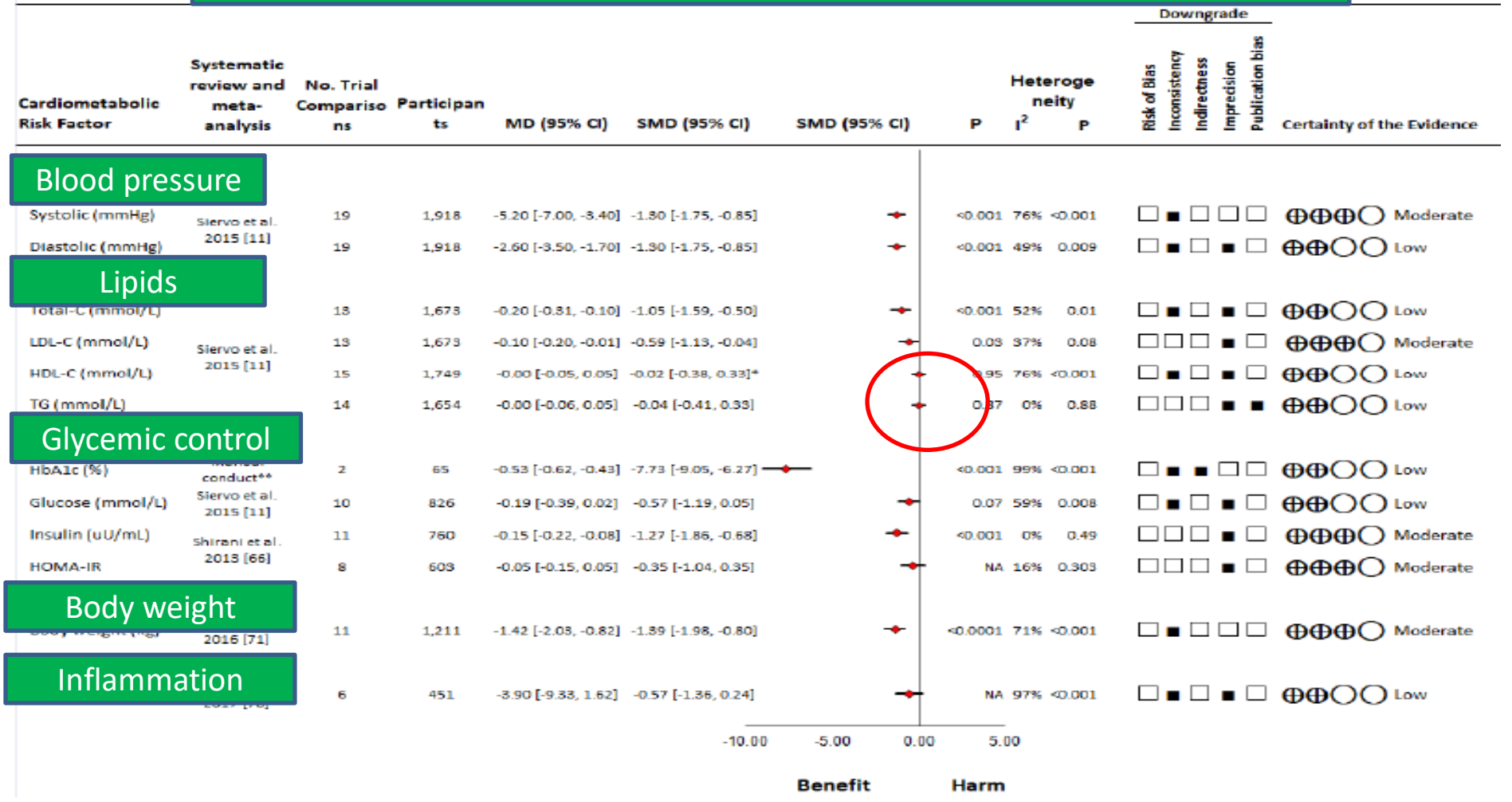
DATA Collection:

- CVD and CHD -systematic review and meta-analysis of prospective cohort studies
- Blood pressure and blood lipids - meta-analysis of controlled studies
- Follow-up 5-24 years

DASH diet and CVD outcome



DASH diet and Cardiometabolic risk factor



MEDITERRANEAN DIET

Cochrane Library
Trusted evidence.
Informed decisions.
Better health.

Cochrane Database of Systematic Reviews

[Intervention Review]

Mediterranean-style diet for the primary and secondary prevention of cardiovascular disease

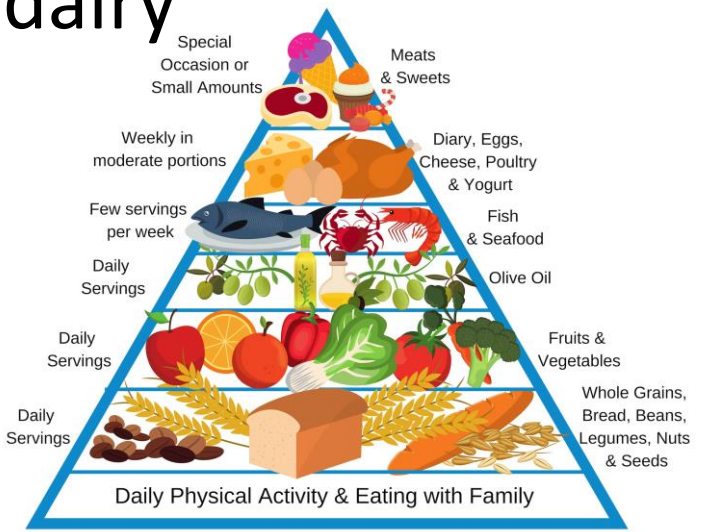
Karen Rees[1], Andrea Takeda[2], Nicole Martin[2], Leila Ellis[1], Dilini Wijesekara[1], Abhinav Vepa[1], Archik Das[1], Louise Hartley[3], Saverio Stranges[4]

[1]Division of Health Sciences, Warwick Medical School, University of Warwick, Coventry, UK. [2]Institute of Health Informatics Research, University College London, London, UK. [3]RTI Health Solutions, Manchester, UK. [4]Department of Epidemiology and Biostatistics, Schulich School of Medicine and Dentistry, Western University, London, Canada

2019

- High intake of vegetables and fruit
- Whole grain breads
- Beans
- Nuts and seeds
- Olive oil as main source of fat
- Low to moderate amounts of dairy
- Low quantities of red meat
- Higher quantities of fish
- Moderate wine consumption

MEDITERRANEAN



MEDITERRANEAN DIET

Primary outcomes

1. Cardiovascular mortality.
2. All-cause mortality.
3. Non-fatal endpoints such as MI, CABG, PTCA, angina or angiographically defined CHD, stroke, carotid endarterectomy or peripheral arterial disease (PAD).

MEDITERRANEAN

Secondary outcomes

1. Changes in blood lipids (total cholesterol, high-density lipoprotein (HDL) cholesterol, low-density lipoprotein (LDL) cholesterol, triglycerides) and blood pressure (systolic and diastolic blood pressure).
2. Occurrence of type 2 diabetes as a major CVD risk factor.
3. Health-related quality of life.
4. Adverse effects (as defined by the authors of the included trials).
5. Costs.

AUTHORS' CONCLUSIONS

Implications for practice

Despite the large number of trials included in the review there is still uncertainty regarding the effects of a Mediterranean-style diet on clinical endpoints and cardiovascular disease (CVD) risk factors for both primary and secondary prevention from current clinical trial evidence. However, based on supportive observational evidence, positive findings from early clinical trials and the biological plausibility of several mechanisms to explain the beneficial effect of the Mediterranean diet, it has become a popular dietary pattern.

compliance

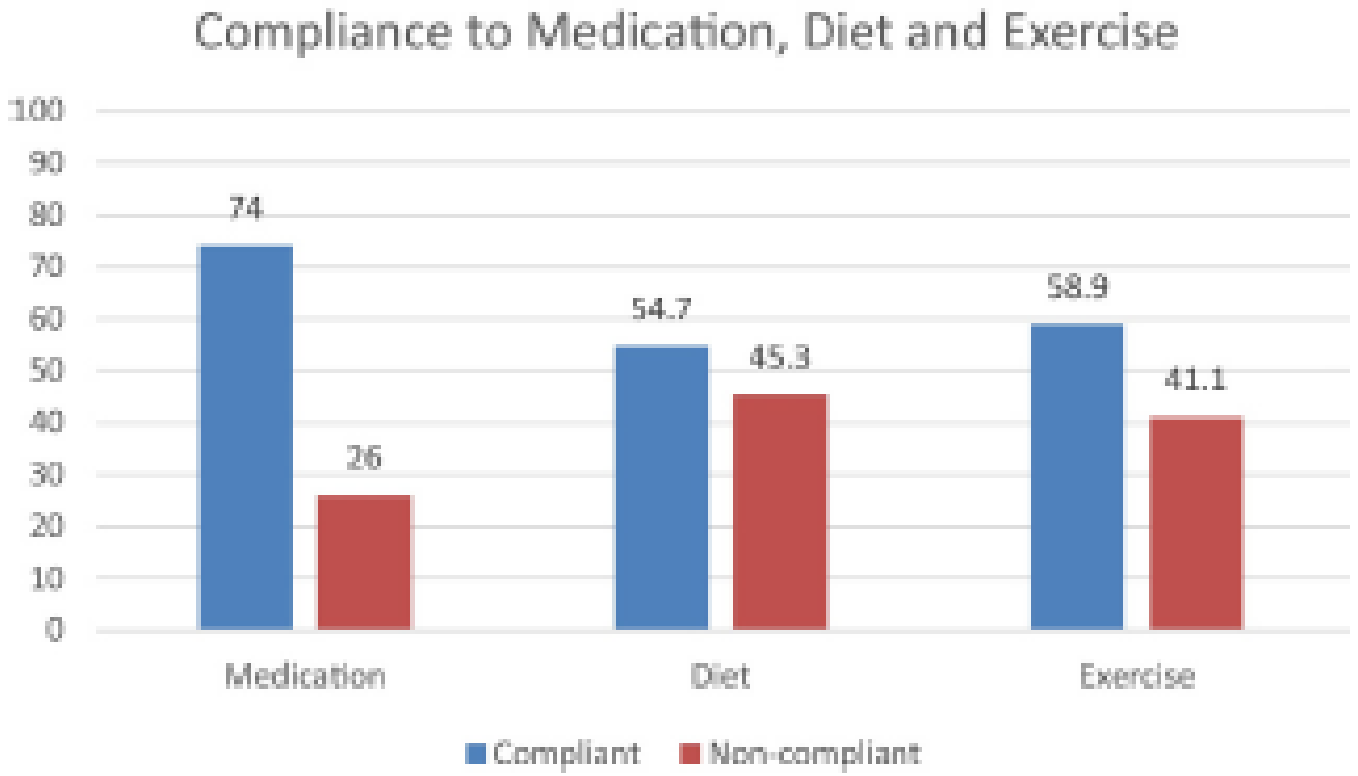


Fig. 1. Frequency of post-CABG patients who were compliant and non-compliant ($n = 265$) to different factors.

Take Home message

- ✓ The rehabilitation patients differ in risk factors
- ✓ Different diets have diverse effects on the components of cardiometabolic risk factors
- ✓ There is a great importance in personal dietary evaluation and treatment
- ✓ Motivation for change is a major factor in choosing the right diet regime

"טוב לדאוג לחולה שיהיה בריא, אבל יותר טוב לדאוג לבריא שלא יחלה"(היפוקרטס)