



Professor John Dixon

Head of Clinical Obesity
Research

Baker IDI Heart and Diabetes
Institute
Melbourne



Professor Louise Baur

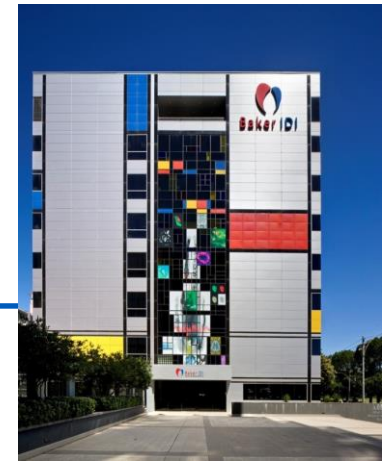
Head of Child & Adolescent Health
University of Sydney

Saturday, August 10, 2019

(Room 3)

14:00 - 14:55 WS #110: Lifestyle and Behavioural Interventions: Benefits, Expectations and Outcomes
15:05 - 16:00 WS #120: Lifestyle and Behavioural Interventions: Benefits, Expectations and Outcomes
(Repeated)

Lifestyle and behavioural interventions: Benefits, Expectations and Outcomes



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Head, Clinical Obesity Research
Baker IDI Heart & Diabetes Institute
Melbourne, Australia



South GP CME South Meeting
08 Aug 2019 - 11 Aug 2019

Obesity as a chronic disease

- A chronic disease that should be managed like any other chronic disease
- Long term problem, not likely to improve without treatment
- Treatable and manageable, not thought of as “curable”
- Stopping treatment may lead to recurrence or relapse
- Strategies are long term
- Weight management ongoing
- Multidisciplinary care continuum approach essential

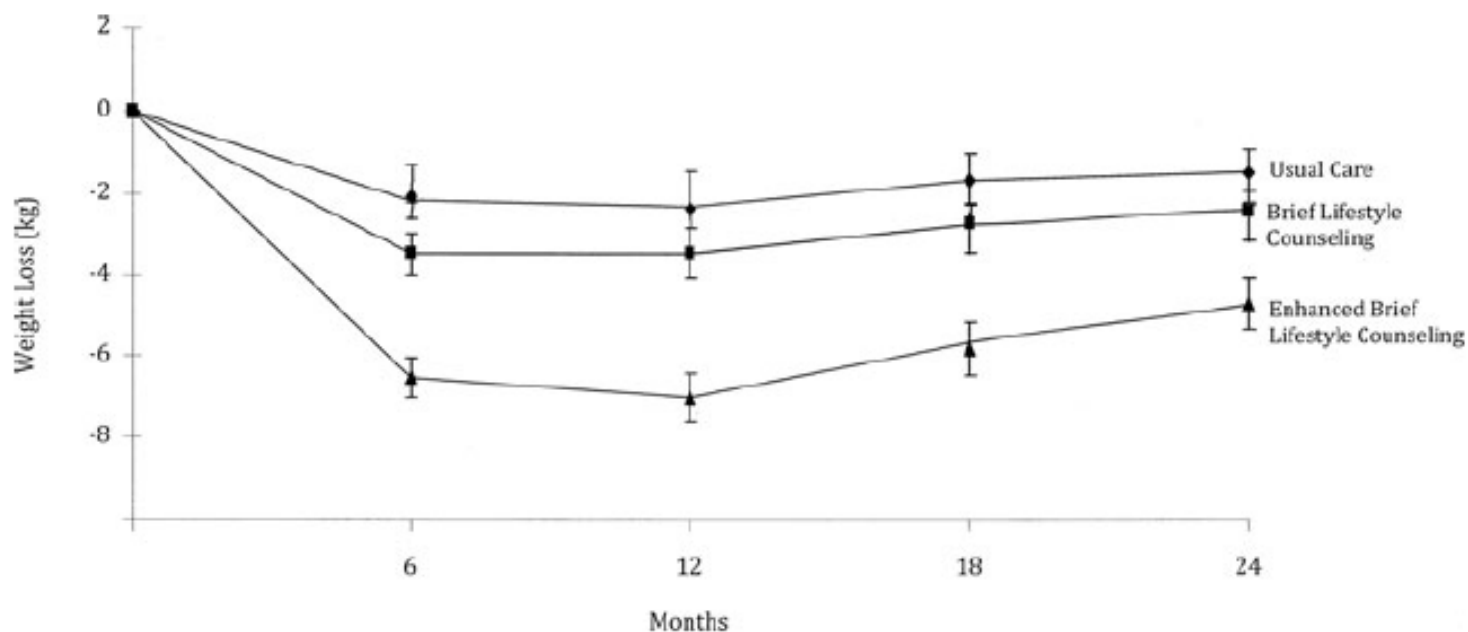


Weight Loss is Hard to Achieve¹

Primary care setting, comparing usual care with:

Brief lifestyle counselling (quarterly GP visits with medical assistant counselling)

Enhanced brief lifestyle counselling (brief lifestyle counselling + meal replacements / medication)



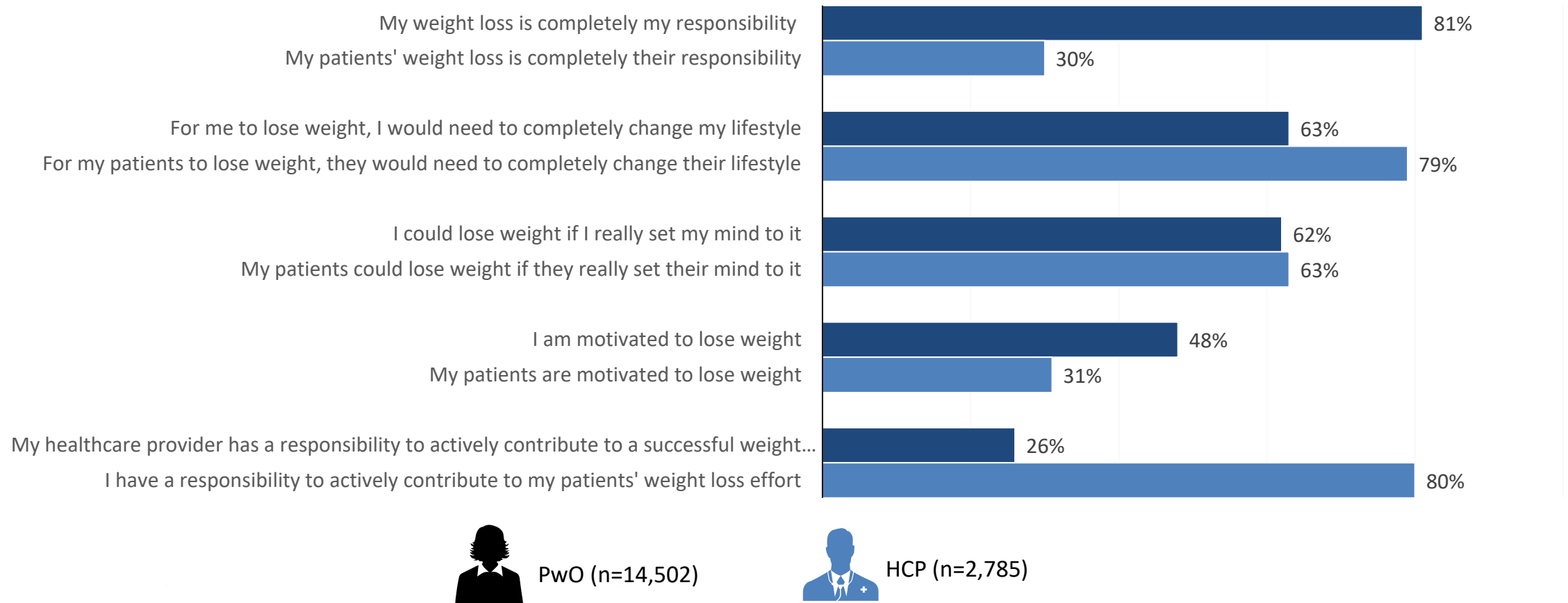
1. Wadden, T.A et al 2011. N. Engl. J. Med. 365:1969-1979



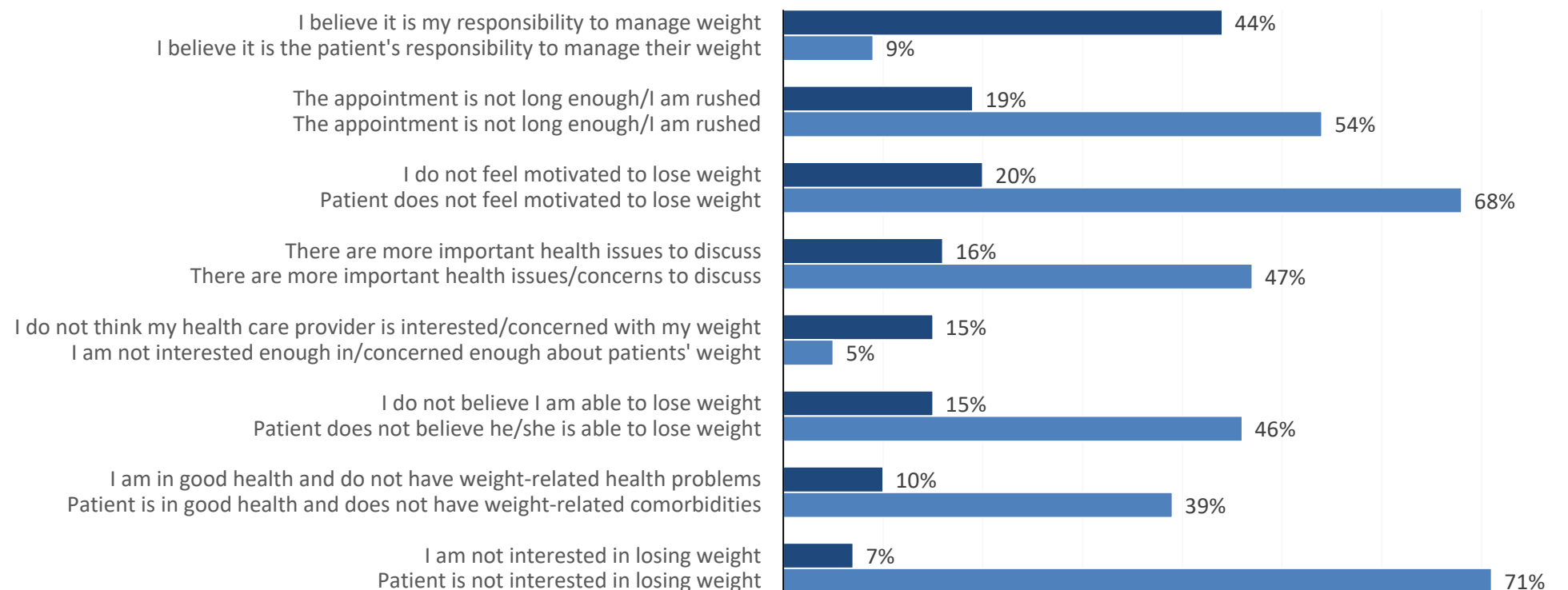
Attitudes towards weight loss

HCP, healthcare professional; PwO, people with obesity.

Caterson ID et al. *Diabetes Obes Metab*. 2019. DOI: <https://doi.org/10.1111/dom.13752>.



Reasons for not discussing weight with an HCP



PwO (n=14,502)

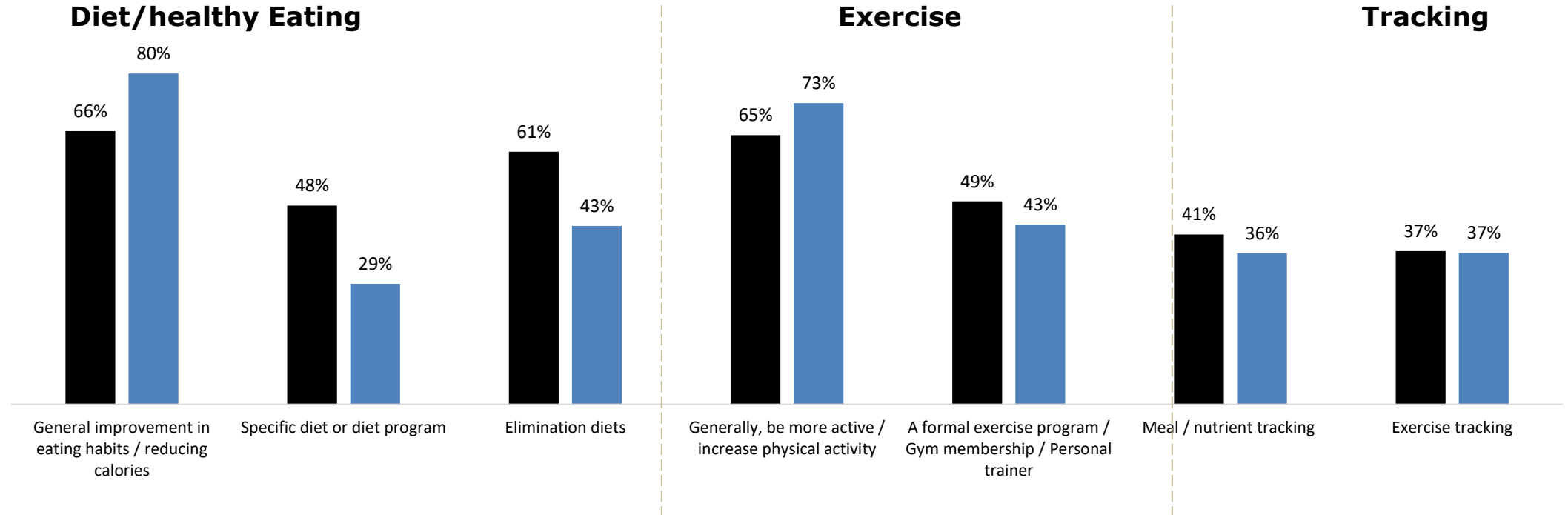


HCP (n=2,785)

HCP, healthcare professional; PwO, people with obesity.

Caterson ID et al. *Diabetes Obes Metab*. 2019. DOI: <https://doi.org/10.1111/dom.13752>.

Perceived long-term treatment effectiveness



PwO (n=14,502)

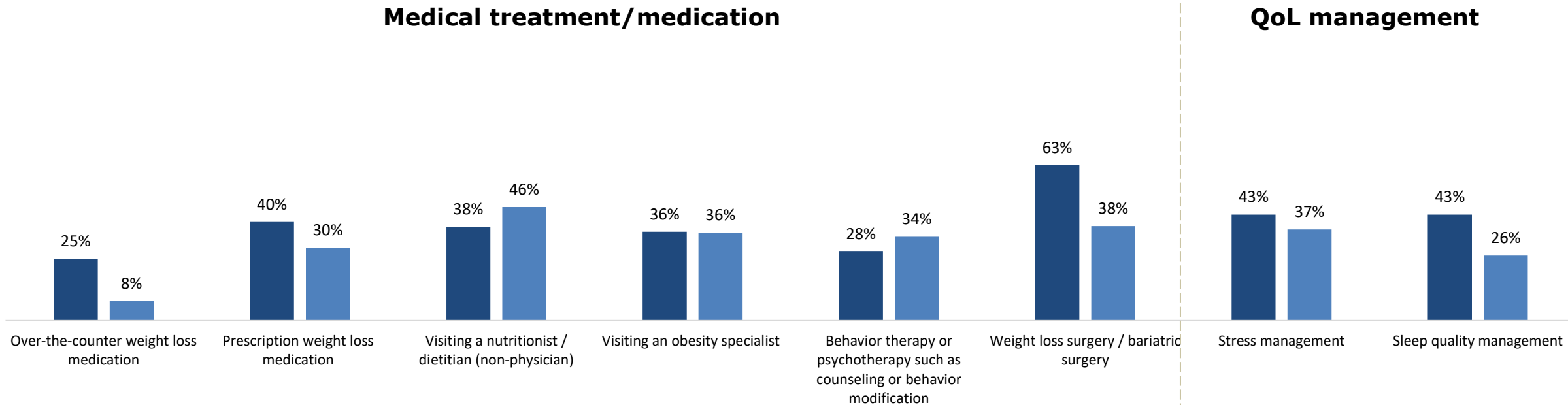


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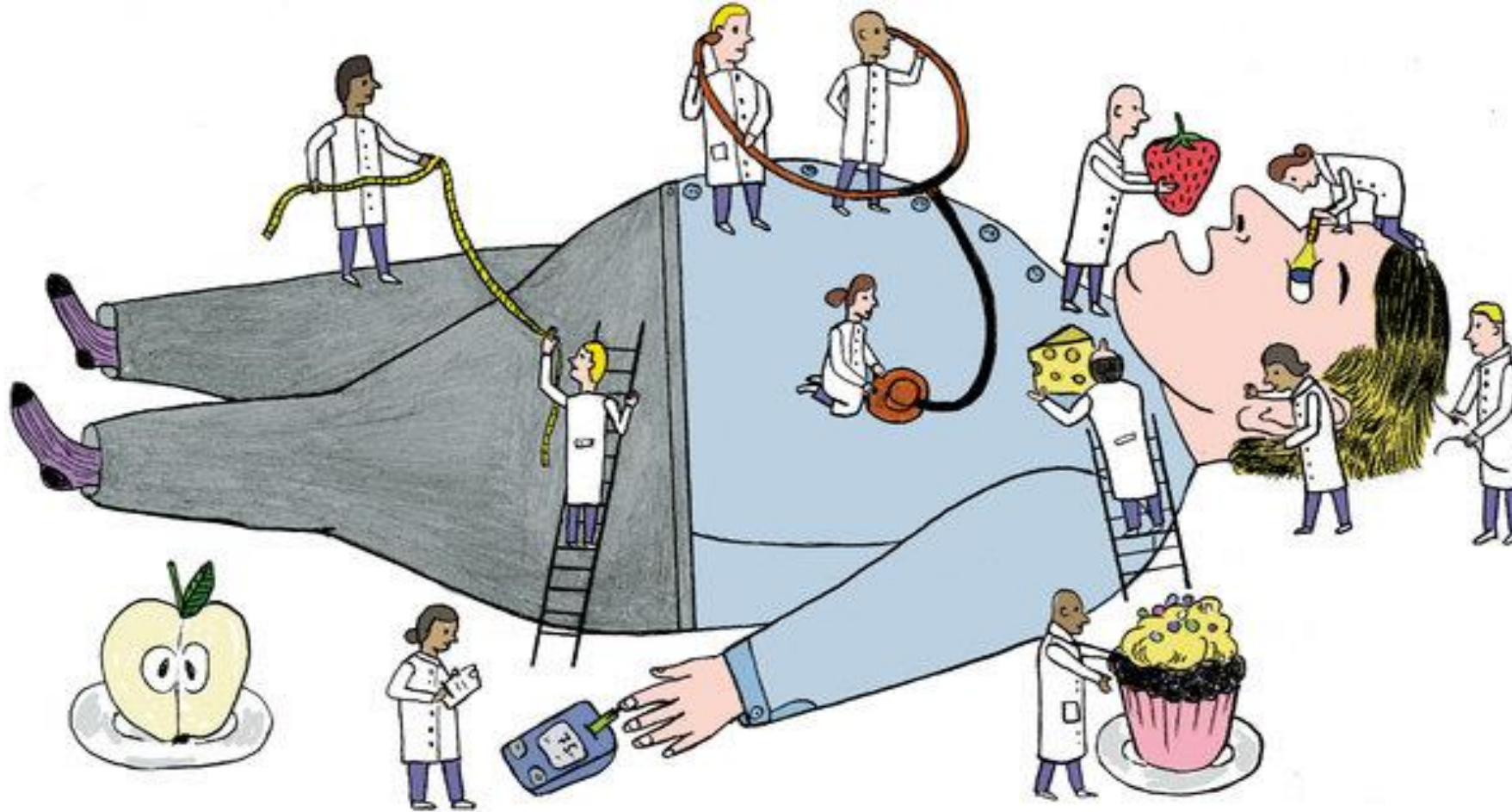


HCP (n=2,785)

HCP, healthcare professional; PwO, people with obesity; QoL, quality-of-life.

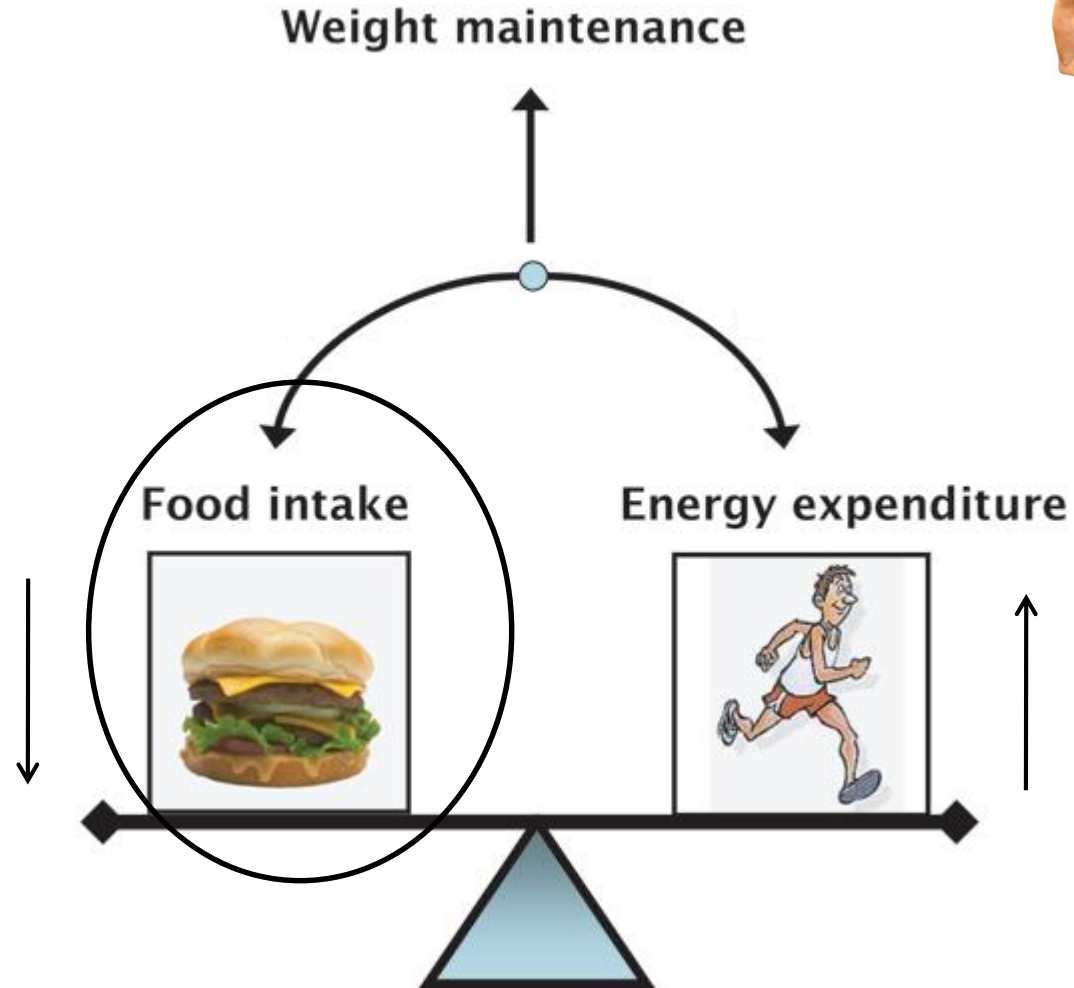
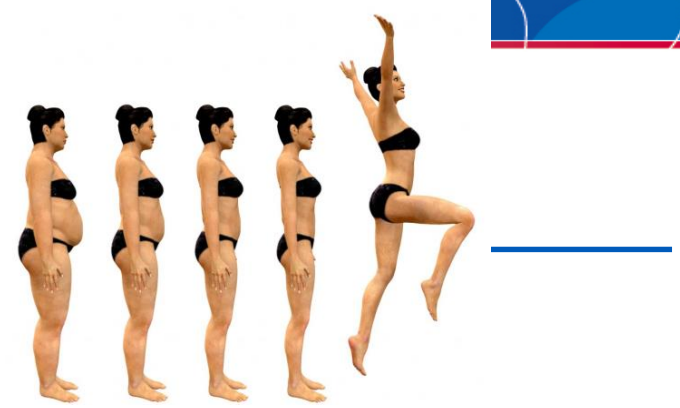
Caterson ID et al. *Diabetes Obes Metab*. 2019. DOI: <https://doi.org/10.1111/dom.13752>.

Why is nutrition so confusing?



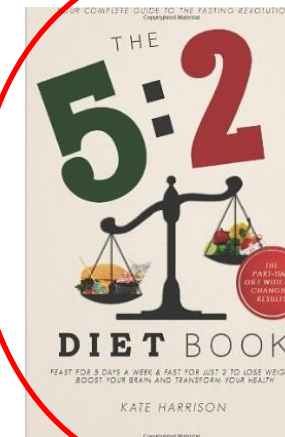
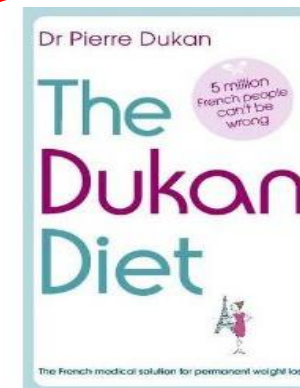
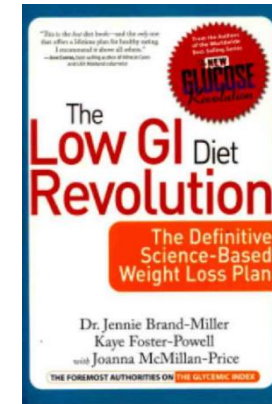
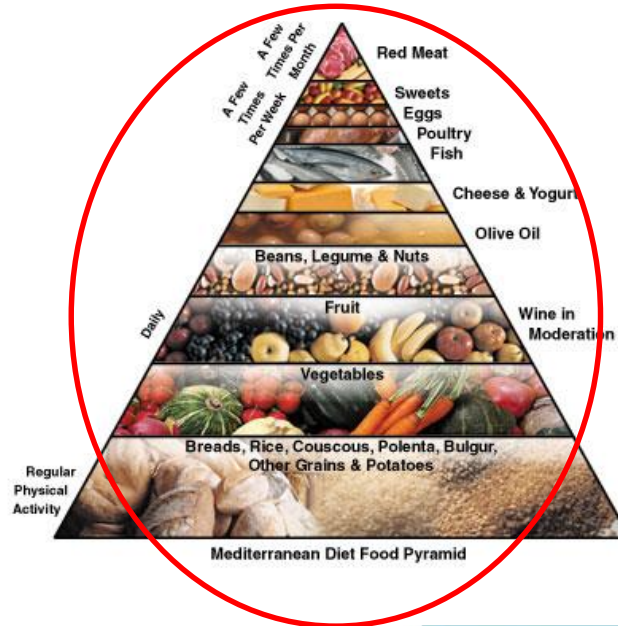
Food fundamentalists are not helping

Losing Weight is Simple...??



ACHIEVING WEIGHT LOSS

A closer look at the evidence



The Paleo Diet

(AKA: Palaeolithic, Caveman, Stone Age, Hunter Gatherer)

- Based on a *presumed diet* of the Palaeolithic era
(pre agriculture / pre domestication of animals, approx. 2.5M-10K yrs ago)
- Paleo advocates suggest that our genomes have not changed significantly and therefore believe humans have not evolved to properly digest “new foods” such as grain, legumes and dairy
- Links modern diet to disease and rising obesity

However

- There is no one Paleo Diet and varies based on world region
- Humans ate what was available to them out of necessity not out of choice
- Our current problems are far more recent – 35 years

How Hunter-Gatherer Diets Vary by Geography

Percentage of Different Foods in Diet

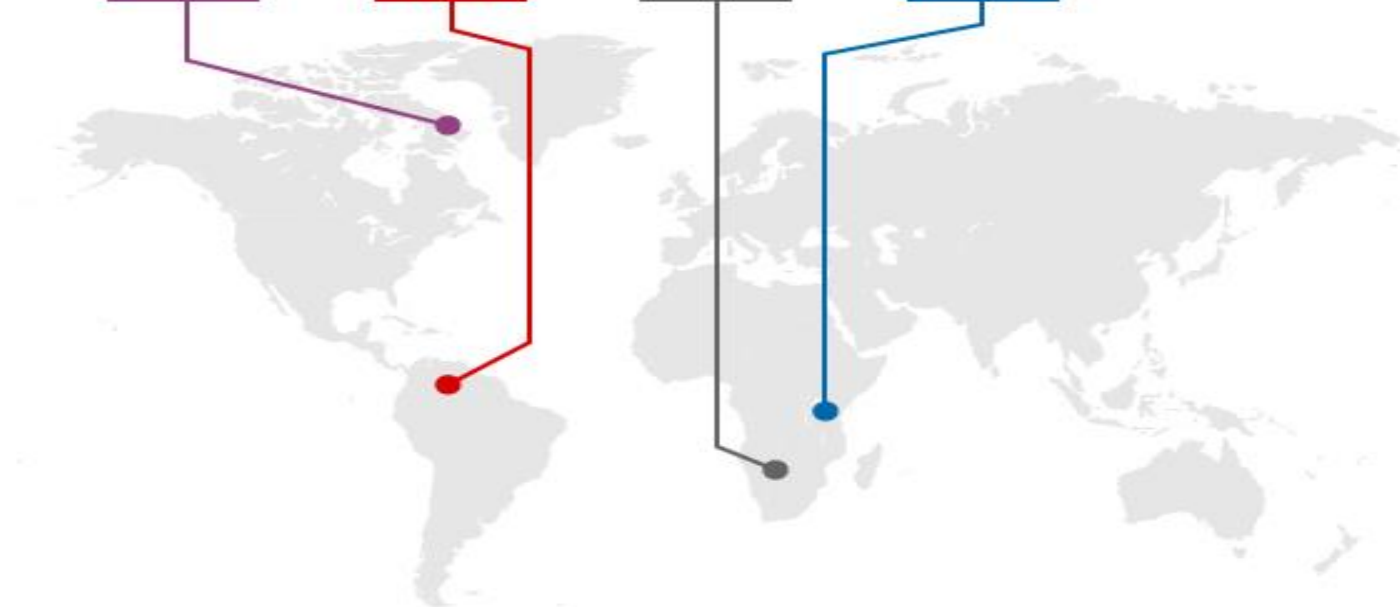
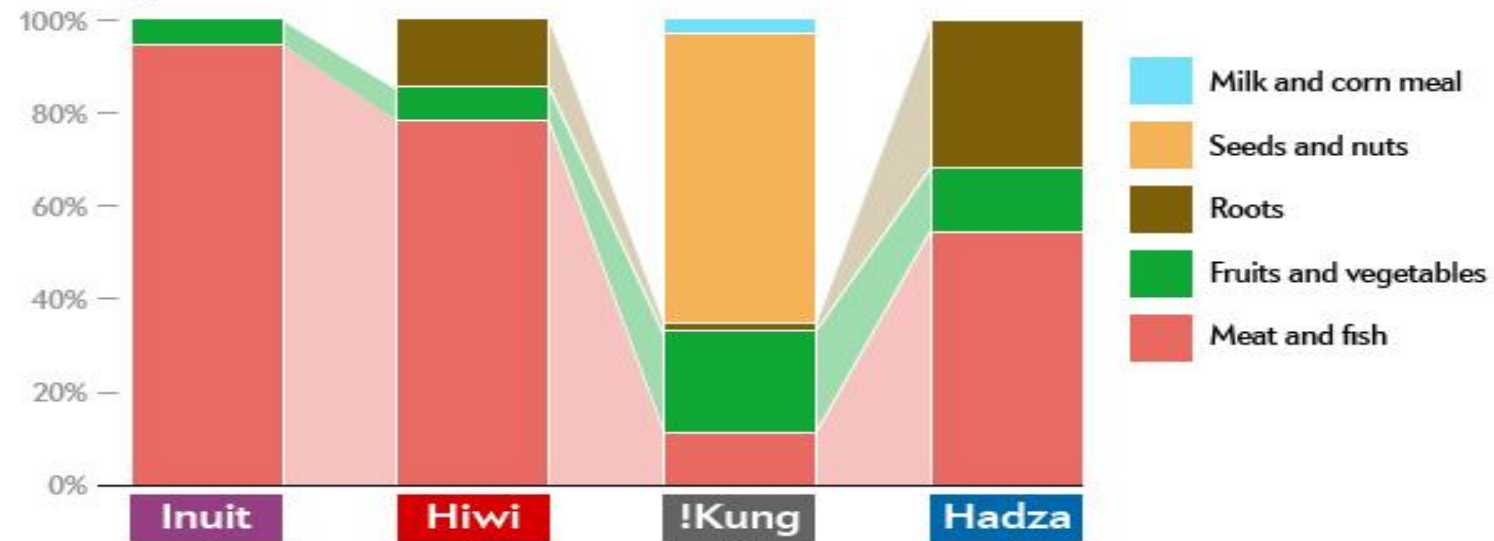
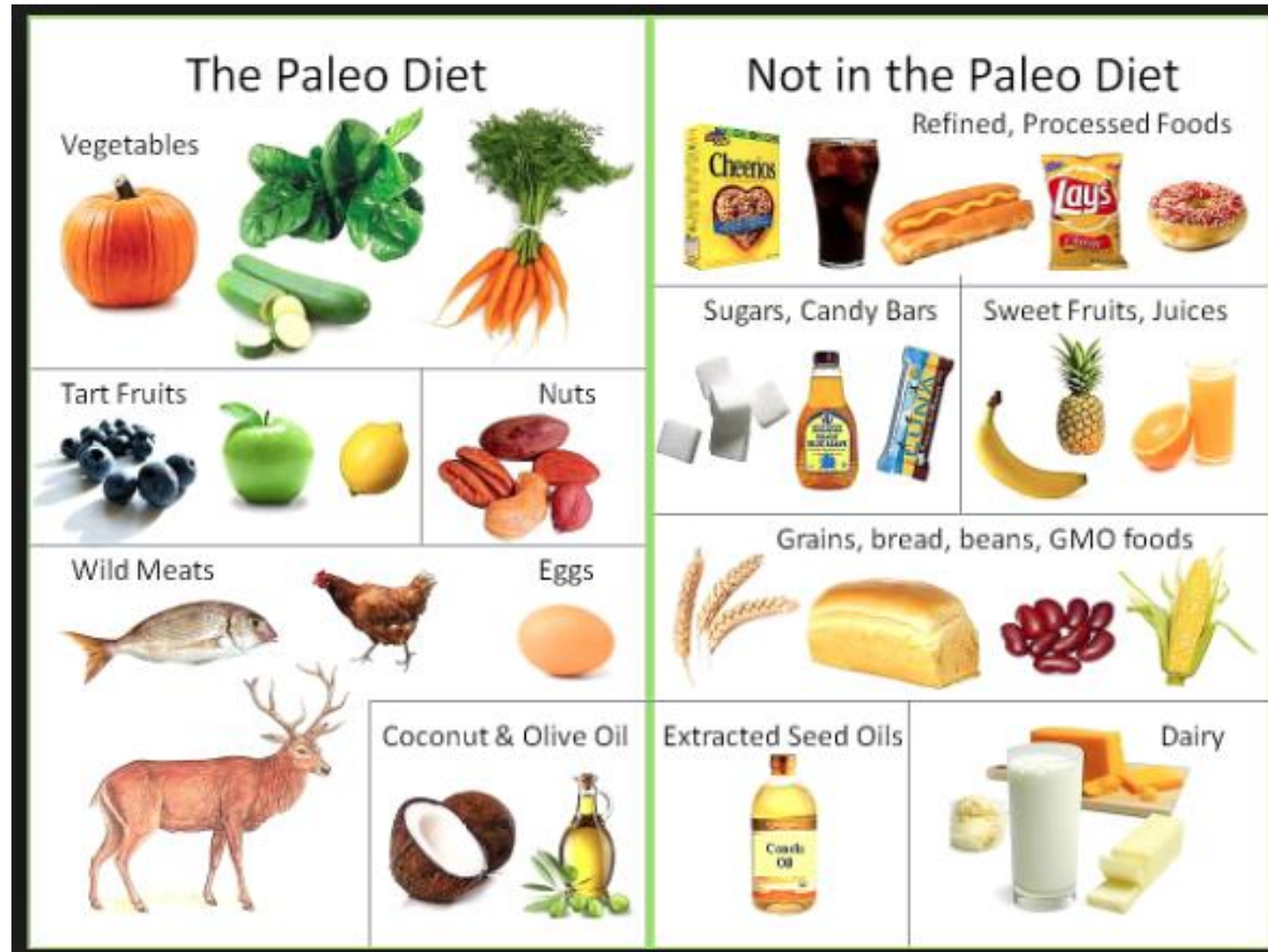


Image source: Jen Christiansen (Scientific American)

The Paleo Diet



Mediterranean Diet

The healthy Greek Mediterranean Diet is a 1960's post WWII peasant diet

- Use **olive oil**: 60mls/day
- **Eat Leafy vegetables** with every meal: 100g
green leaf vegetables, 100g Tomatoes, 200g of other vegetables
- 2+ legume based meals per week (250g x 2/week)
- 2+ serves (150-200g) of fish per week, including oily fish
- Eat meat but smaller portions and less frequently
- Eat fresh fruit every day
- Eat yoghurt everyday
- Choose wholegrain breads and cereals in smaller portions
- Consume wine in moderation with meals
- Sweets for special occasions



High in diet of bioactive phyto-chemicals

Mediterranean Diet – Systematic reviews

Weight loss

- Sixteen randomized controlled trials, with 19 arms and 3,436 participants -1,848 - Mediterranean diet & 1,588 assigned to a control diet)
- -1.75 kg (95% CI -2.86 to -0.64 kg)
- Conclusion despite relatively high fat does not cause weight gain

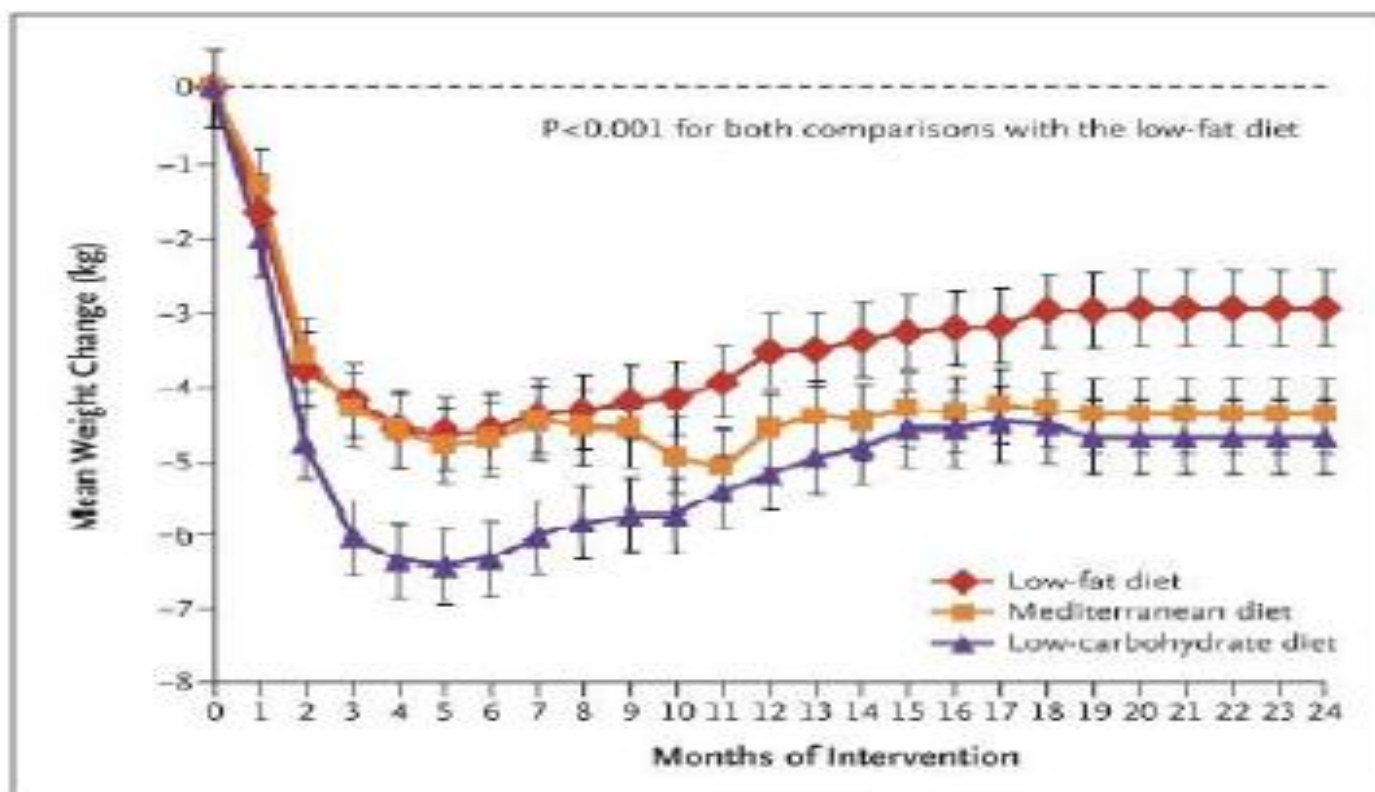
Esposito K, et al *Metab Syndr Relat Disord.* 2011;9:1-12

Metabolic syndrome

- (35 RCT's, 2 prospective and 13 cross-sectional) with total 534,906 participants.
- Metabolic syndrome hazard ratio: -0.69
- -0.42cm in Waist, +1.17mg/dl HDL, -0.614 mg/dl TG's, -2.35 mmHg SBP, and -3.89mg/dl Glucose
- Findings consistent with epidemiological studies

Kastorini et al (2011) *Am Coll Cardiol.* March 15:57 (11) 1299-313

Mediterranean diet: more sustainable weight loss and better for diabetes.



Med diet more effective on Glycaemic control In T2DM subjects

Shai: N Engl J Med, Volume 359(3).July 17, 2008.229–241

High risk patients – primary prevention

7447 persons were enrolled (age range, 55 to 80 years)

Mediterranean diet supplemented with extra-virgin olive oil

Mediterranean diet supplemented with mixed nuts

A control diet (advice to reduce dietary fat)

Primary endpoint: major cardiovascular events N=288

MD – Olive oil AHR 0.70 (0.54 to 0.92) 96 events

MD - Nuts AHR 0.72 (0.54 to 0.96) 83 events

Control group (109 events).

Mediterranean diet supplemented with extra-virgin olive oil or nuts reduced the incidence of major cardiovascular events.

Estruch R, et al *NEJM* 2013;368:1279-1290

The DASH eating plan: Dietary approached to stop hypertension

Emphasizes vegetables, fruits, and fat-free or low-fat dairy products

Includes whole grains, fish, poultry, beans, seeds, nuts, and vegetable oils

Limits sodium, sweets, sugary beverages, and red meats

DASH Diet Rankings

#1 in Best Diets Overall

#12 in Best Weight-Loss Diets

#3 in Best Heart-Healthy Diets

#1 in Best Diets for Healthy Eating

#1 in Best Diabetes Diets

#7 in Easiest Diets to Follow

<http://www.nhlbi.nih.gov/health/health-topics/topics/dash>

The Fasting “5:2” Diet for Weight Loss

RCT over weight or obese pre-menopausal women (n= 107)

RCT of intermittent vs continuous energy restriction of 25% of intake over 6 months

Intermittent diet

2 days of 650kcal/day

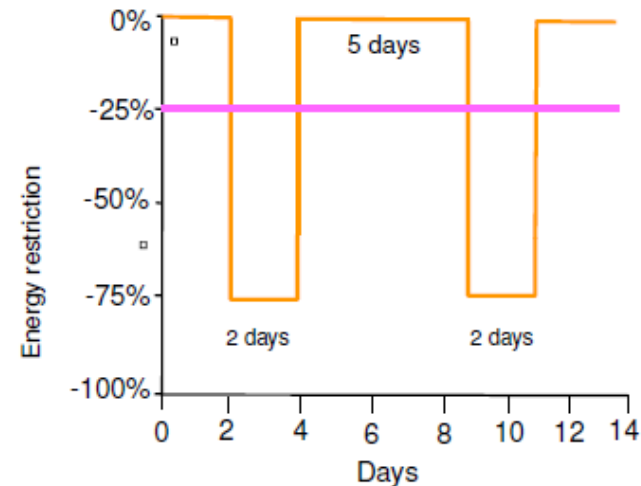
5 days 1900kcal/day

Mediterranean Diet

Continuous Energy Restriction

7 days at 1500kcal/day

Mediterranean Diet



Overall 25% energy restriction

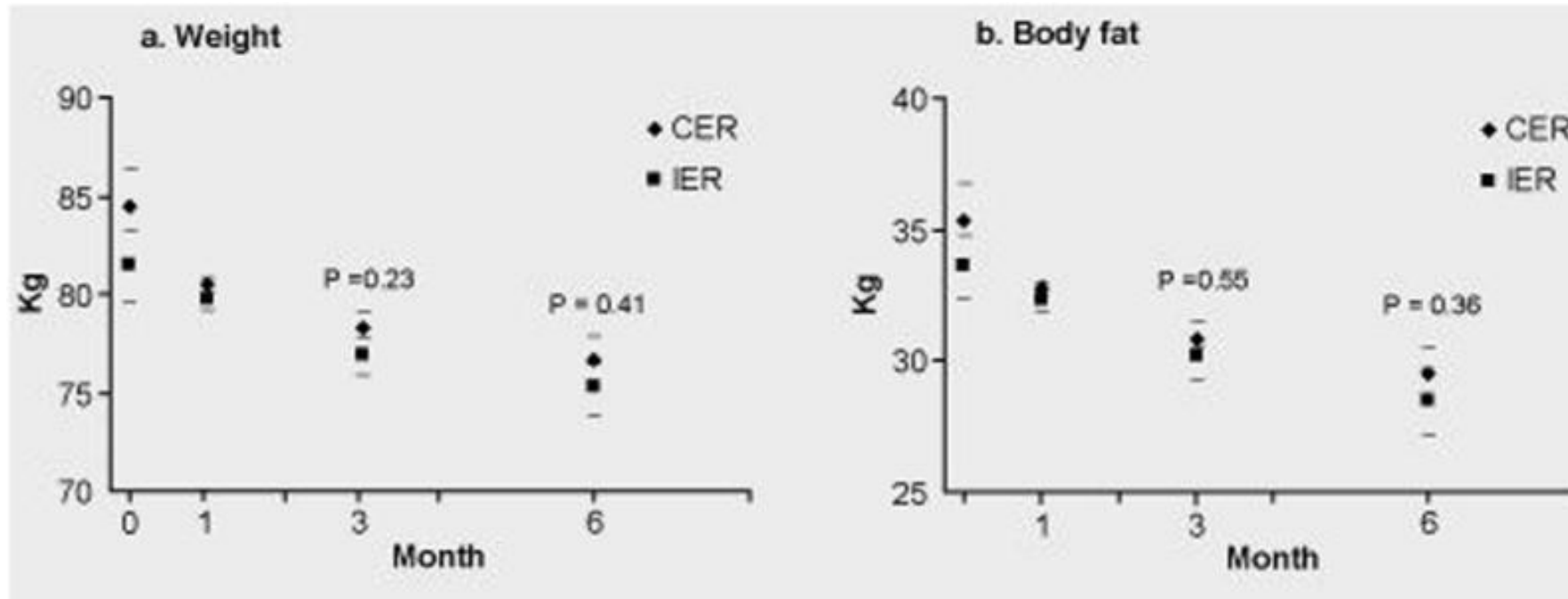
- Daily energy restriction : 25% restriction 7 days / week
- Intermittent energy restriction 75% restriction 2 days/ week

Harvie et al Int J Obes (2011); 35: 714-27.

The Fasting “5:2” Diet for Weight Loss

RCT over weight or obese pre-menopausal women (n= 107)

Intermittent CR resulted in 6kg loss of fat compared with CER 4.9kg (not significantly different).



IER is as effective as CER with regard to weight loss, insulin sensitivity and other health biomarkers, and may be offered as an alternative equivalent to CER for weight loss and reducing disease risk.

Intermittent vs continuous restriction

Few quality studies performed

Some authors are suggesting preferential reduction in visceral fat and growth factors that suggest these diets may be helpful in reducing breast cancer risk

Harvie M, Howell A. Energy restriction and the prevention of breast cancer. *Proc Nutr Soc.* 2012;71:263-275

In post menopausal women – similar changes in weight, body composition and metabolic profile

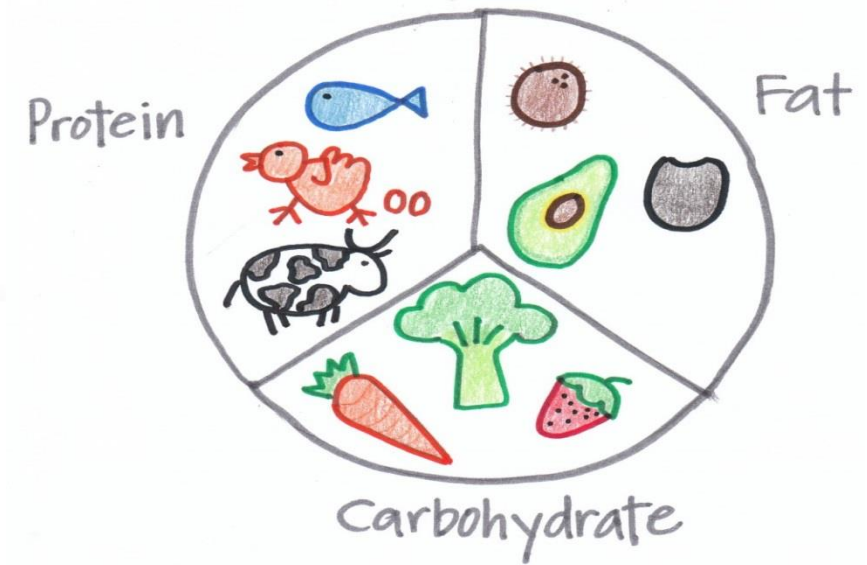
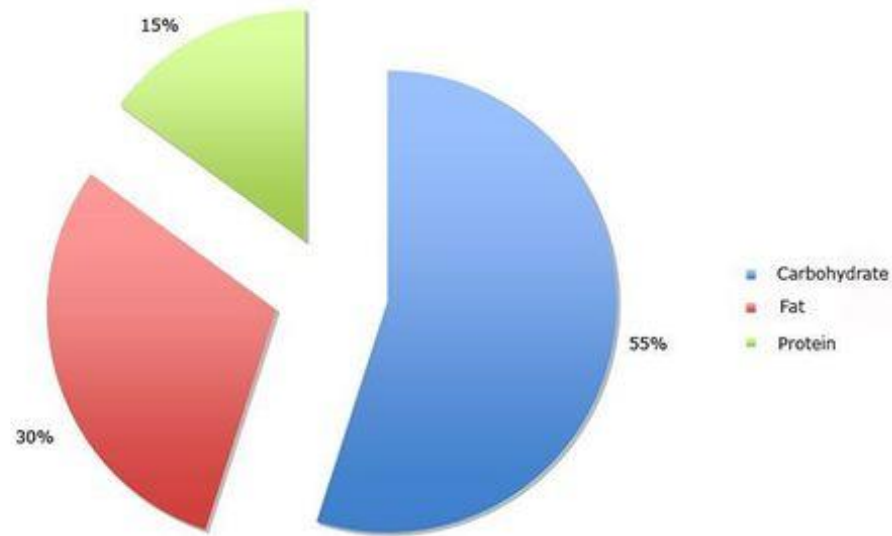
Arguin H, et al *Menopause.* 2012;19:870-876

MACRO NUTRIENTS

PROTEIN

FAT

CARBOHYDRATES



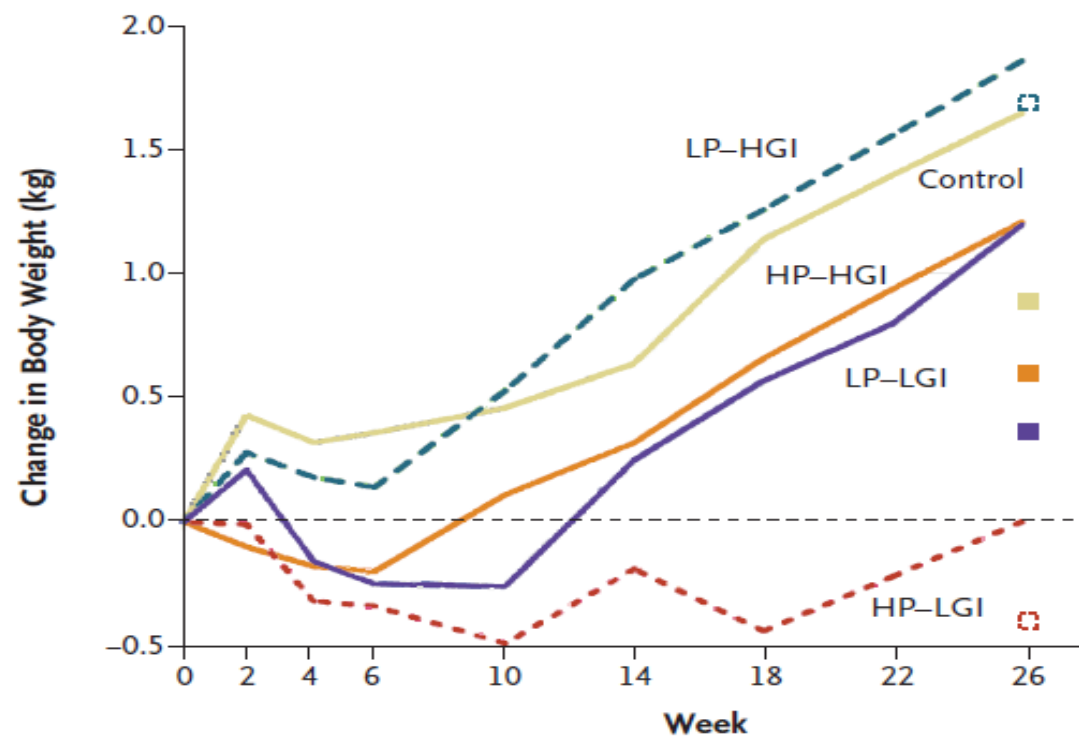
The Diet, Obesity and Genes (DIOGENES) Dietary Study

- 891 Families with ≥ 1 overweight/obese parent underwent screening
- Parents started an initial 8wk low cal diet
- Families (in eight separate centres) with ≥ 1 parents attaining weight loss of $\geq 8\%$ randomised to one of five ad lib. (low fat) diets for 6-12 months.
 - *Low protein, low GI*
 - *Low protein, high GI*
 - *High protein, low GI*
 - *High protein, high GI*
 - *Control diet*

***LOW GI <55, High Protein 25%*

Managing Wt Loss – *Diet Composition*

B



No.

LP-LGI	150	116	121	118	112	104	101	97	106
LP-HGI	155	118	114	118	108	104	95	91	97
HP-LGI	159	132	136	131	125	116	118	114	124
HP-HGI	155	130	124	121	118	114	100	104	107
Control	154	126	131	125	131	125	118	110	114

Table 2. Pooled, Multivariable-Adjusted Results for the Relationships between Changes in Dietary Habits and Weight Change.*

Increased Dietary Intake†	Weight Change within Each 4-Year Period (95% Confidence Interval)†			
	Age-Adjusted Change lb	P Value	Multivariable-Adjusted Change‡ lb	P Value
Fruits	-0.69 (-0.92 to -0.46)	<0.001	-0.49 (-0.63 to -0.35)	<0.001
Vegetables	-0.25 (-0.37 to -0.12)	<0.001	-0.22 (-0.34 to -0.11)	<0.001
Nuts	-0.78 (-1.31 to -0.26)	<0.001	-0.57 (-0.97 to -0.17)	0.005
Whole-fat dairy foods§	0.25 (0.05 to 0.45)	0.01	0.10 (-0.10 to 0.30)	0.31
Butter	0.47 (0.23 to 0.71)	<0.001	0.30 (0.15 to 0.45)	<0.001
Cheese	0.13 (-0.08 to 0.34)	0.23	0.02 (-0.09 to 0.13)	0.75
Whole-fat milk	0.08 (-0.05 to 0.22)	0.24	-0.06 (-0.19 to 0.06)	0.32
Low-fat dairy foods§	-0.17 (-0.21 to -0.13)	<0.001	-0.05 (-0.14 to 0.05)	0.33
Low-fat or skim milk	-0.02 (-0.11 to 0.07)	0.69	0.06 (-0.07 to 0.20)	0.37
Yogurt¶	-1.16 (-1.48 to -0.84)	<0.001	-0.82 (-0.99 to -0.67)	<0.001
Potato chips	3.01 (2.09 to 3.94)	<0.001	1.69 (1.30 to 2.09)	<0.001
Potatoes§	2.14 (1.26 to 3.03)	<0.001	1.28 (0.87 to 1.70)	<0.001
French fried	6.59 (4.35 to 8.83)	<0.001	3.35 (2.29 to 4.42)	<0.001
Boiled, baked, or mashed	0.99 (0.36 to 1.61)	0.002	0.57 (0.26 to 0.89)	<0.001
Whole grains	-0.59 (-0.65 to -0.53)	<0.001	-0.37 (-0.48 to -0.25)	<0.001
Refined grains	0.56 (0.28 to 0.83)	<0.001	0.39 (0.21 to 0.58)	<0.001
Sugar-sweetened beverages	1.32 (1.03 to 1.62)	<0.001	1.00 (0.83 to 1.17)	<0.001
100%-fruit juice	0.19 (0.07 to 0.31)	0.002	0.31 (0.14 to 0.47)	<0.001
Diet soda	-0.12 (-0.23 to -0.02)	0.02	-0.11 (-0.21 to -0.02)	0.02
Sweets or desserts	0.65 (0.31 to 1.00)	<0.001	0.41 (0.16 to 0.66)	0.001
Processed meats	1.76 (1.43 to 2.09)	<0.001	0.93 (0.79 to 1.08)	<0.001
Unprocessed red meats	1.68 (1.08 to 2.28)	<0.001	0.95 (0.55 to 1.34)	<0.001
Trans fat	1.44 (0.95 to 1.94)	<0.001	0.65 (0.41 to 0.89)	<0.001
Fried foods				
Consumed at home	0.49 (0.33 to 0.64)	<0.001	0.36 (0.22 to 0.51)	<0.001
Consumed away from home	0.52 (0.27 to 0.76)	<0.001	0.28 (0.08 to 0.48)	0.007

* Data are based on 20 years of follow-up (1986–2006) in the Nurses Health Study, 12 years of follow-up (1991–2003) in the Nurses Health Study II, and a 20 years of follow-up (1986–2006) in the Health Professionals Follow-up Study. Findings according to sex and within each study were generally similar to the pooled results (see the tables in the Supplementary

Weight maintenance following intensive dietary weight loss (mean 12 .3 kg)

Twenty studies with 3017 participants

- Drugs 3.5 kg (1.5, 5.5 kg) 12-36m
- Meal replacements 3.9 kg (2.8, 5.0 kg) 10-26m
- High-protein diets 1.5 kg (0.8, 2.1 kg) 3-12 m
- Exercise 0.8 kg (-1.2, 2.8 kg) 6-12m
- Dietary supplements 0.0 kg (-1.4, 1.4 kg) 3-14 m

Johansson K, Neovius M, Hemmingsson E. The American journal of clinical nutrition. Jan 2014;99(1):14-23.