

Diets, Diatribes, and a Dearth of Data

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Losing weight, and to an unfortunately lesser extent, finding health, are persistent fixations of modern culture. We have devised an almost perfectly obesigenic environment, making weight control ever more alluring even as we make it ever more elusive. The epidemiological result is, predictably, epidemic (or, perhaps more correctly now, hyperendemic) obesity, and its numerous sequelae, in adults and children alike.¹ The corresponding cultural result, equally predictable, is a weight loss sellers' market.

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There is one additional element in the mix propagating the seemingly endless parade of weight loss remedies: the suspension of common sense. Most sensible adults know that get-rich-quick schemes are the stuff of scams and sitcoms. Those same sensible adults, however, routinely reach for their credit cards when an offer of get-thin-quick or get-healthy-quick comes along. In a market where buyers reject the tried and true in favor of false promises and pixie dust and in a culture where scapegoats and silver bullets² are preferred over a prosaic blend of science and sense, the sellers respond accordingly.

What ensues is a seemingly never-ending^{3,4} beauty pageant of dietary contestants, each emphasizing what differentiates it from the others and each contending to be the best. And along with each diet comes its entourage, singing its praises, disparaging the competition, and seeking the profits that come with wearing the tiara. These camps routinely include publishers, media of every variety, and the experts, pseudoexperts, and nonexperts who write the books, and devise the potions.

But is any one of these diets truly best, either for losing weight, or finding health?

That, ostensibly, is the question Atallah et al set out to answer⁵ in this issue of *Circulation: Cardiovascular Quality and Outcomes*. In their own words, the authors sought to assess the validity of competing dietary claims by examining "the efficacy of...4 [popular] diets at promoting weight loss and improving cardiovascular risk factors."

Atallah and colleagues specifically compared 3 book-based diets—Atkins, South Beach, and the Zone⁶⁻⁸—and 1

commercial weight loss program, Weight Watchers (WW).⁹ They make their case for these choices in their introduction, and readers may choose to be persuaded or otherwise.

The choices are rather odd if the objective here was to examine the full expanse of competing dietary claims, which readily extends from vegan to Paleo, grain-centric to grain-phobic.¹⁰ By their own admission, the authors chose 3 variations on the theme of carbohydrate restriction and compared these with 1 commercial weight loss program, which traditionally has been more about calorie restriction than any particular dietary pattern. As this article looks back on published results, the updated approach now espoused by WW is unlikely to figure in it, as is the new incarnation of Atkins in the aftermath of bankruptcy.¹¹

The article thus examines the merit of conflicting dietary claims through a surprisingly narrow window. The view proves rather illuminating just the same.

The authors found that the objective data diverged decisively from marketing claims and media hyperbole. All 4 diets were deemed "modestly efficacious" for short-term weight loss, with no convincing evidence of long-term benefit. This conclusion would be a somewhat bracing reality check even if long-term actually meant long-term. In the myopic context of weight loss studies, however, long-term is 24 months.

In virtually all of the 26 randomized clinical trials incorporated in the review, weight loss was front-loaded into the first 6 months. The authors' note that even at the 12-month mark, weight regain was common enough so that the intervention diets were "generally similar in efficacy to their control groups." WW outperformed the competition for weight loss at 12 months in general, but not in the trials that put the candidates head-to-head. These studies suggested that the various diets produced "modest and similar weight loss" at 12 months. By 24 months, some degree of weight regain and diminution of health benefits were all but universal.

As for those health benefits, they may at present inspire more dietary divisiveness than even weight loss.¹⁰ But here, too, the tales of competitive advantage may be full of sound and fury, while signifying next to nothing. So suggest the findings of Atallah and colleagues.

In addition to body mass index, body fat, waist circumference, and waist-to-hip ratio, the authors examined fasting glucose, fasting insulin, total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, triglycerides, systolic blood pressure, diastolic blood pressure, and the prevalence of adverse events.

Weight loss at 12 months for all diets ranged from ≈ 1.5 to 5 kg, with the control group averaging a 2.2 kg weight loss. The authors found "no major differences" in glycemic control measures among the diets studied.

The punch line for cardiac risk indices was much the same. No marked differences were seen in effects on lipids at 12

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months among Atkins, WW, and Zone diets. One study¹² found that Atkins was superior to the Zone for effects on triglycerides only. In the authors' own words, "results showed no marked differences between Atkins, WW, and Zone at improving cardiovascular risk factor levels. Although North Americans spend millions of dollars in the weight loss industry, available data are conflicting and insufficient to identify one popular diet as being more beneficial than the others."

Further compounding conclusions about cardiometabolic superiority is the weight loss inevitably seen in at least the initial months of weight loss trials. Obesity itself, and in particular central obesity,¹³ is an important cardiac risk factor. Metabolic health is apparently often compromised even in healthy overweight adults as compared with their lean counterparts.¹⁴ Such risk factors are generally responsive to weight loss, so that the differential effects of competing diets may be obscured by the homogenizing influence of weight loss.¹⁵ We are left, then, with almost nothing to substantiate the claims of cardiometabolic superiority attached to an array of popular diets—those studied here, and many others.

There are, indeed, many other diets, and as noted, they represent a much wider array of competing claims than encompassed by the current review. The 3 book-based diets, each with a strong emphasis on the distribution of macronutrients and, according to the investigators, all emphasizing variations on the theme of carbohydrate restriction, are more alike than different. Each of the books cited as the source of these "popular" diets is now nearly 10 years old, or older.⁶⁻⁸

Despite its use as a weight loss diet, and a book devoted to that application,¹⁶ the Ornish diet was considered, but excluded, reportedly because Medicare classifies it as "intensive cardiac rehabilitation." Given the focus here on both cardiac risk mitigation and weight loss, that would seem to make it more, rather than less, relevant. Absent some a priori focus on carbohydrate restriction, which the article does not profess, the exclusion is peculiar at best.

WW, a well-known commercial weight loss program, has historically emphasized calorie control, using a point system as guidance, and a proxy for calories. The more recent version of WW addresses nutritional quality somewhat more holistically, but is almost certainly too new to figure in this analysis. This entry, then, does not really test any particular diet, but the combination of calorie control, supervision, and social support.

Perhaps the choices here are simply reflective of the timeline involved. Systematic reviews are hard work and can take years to plan, fund, complete, and publish. Perhaps these "popular" diets were indeed more genuinely popular when this particular effort was initiated.

An effort initiated now to compare popular diets for weight loss and cardiac risk reduction would warrant far more diversity. The contestants might minimally include low fat as well as low carbohydrate diets; vegan and vegetarian diets; low glycemic diets; Paleo diets; Mediterranean diets; and diets incubated at the National Institutes of Health to lower blood pressure¹⁷ or prevent diabetes mellitus.¹⁸

Such reviews have, in fact, been conducted. A recent, less systematic, but far more comprehensive review by this author found little to support the claims of superiority made

for a diversity of diets.¹⁹ An independent review addressing the role of diet in diabetes mellitus and its antecedents reached remarkably similar conclusions.²⁰ And the even wider view provided by the compilation of the new edition a nutrition textbook citing some 10 000 papers disclosed much the same vista.²¹

The basic theme of optimal eating, for both health promotion and weight control, is well substantiated, if seldom practiced. The contention that any specific variant on or off that theme is the pageant winner is rooted in salesmanship, not science.

What is the theme? Michael Pollan famously encapsulated it in 7 words: "eat food, not too much, mostly plants."²² Wholesome foods in sensible combinations says much the same, and in only 5.

Despite the competition among diets for our attention and our wallets, and even the somewhat more objective adjudication of diets anticipated annually,²³ the distinctions seem to be of little consequence. Diets of genuine, likely benefit in efforts to lose weight and keep it off, or find health and keep it, are more alike than different. Our culture accentuates the distinctions, but it is the similarities that matter.

Consider, for instance, the evidence in support of a diet based entirely on diverse, nutrient-rich plant foods. Such a diet has been associated with diverse benefits and notably has been shown to both (a) shrink atherosclerotic plaque²⁴ and (b) markedly reduce the rate of recurrent MI in high-risk adults.²⁵ This same basic dietary pattern, often, if regrettably, referred to as "low fat", has been shown, in conjunction with a comprehensive program of lifestyle as medicine, to alter gene expression related to cancer risk as well.²⁶

Any inclination to award laurels on that basis should be denied, however. A Mediterranean diet, decidedly not low fat, but also comprising wholesome foods, mostly plants, in sensible combinations, has been shown to confer an almost identical cardiovascular benefit.²⁷ The moderate, balanced, real-food diet prescribed in the Diabetes Prevention Program was neither low-fat nor Mediterranean and prevented type 2 diabetes mellitus in 58% of high-risk adults relative to control.¹⁸

Nor are relevant insights limited to the contrived discipline of randomized trials. The Blue Zones²⁸ are a global, ethnographic study, characterizing the lifestyle habits of the world's healthiest, longest-lived peoples. What the project lacks in trial methodology, it makes up for in numbers, tenure, and real-world relevance. Blue Zone populations range from vegans in California, to the quintessentially Mediterranean dieters of Crete, to the traditional Asian dieters of Okinawa. The diets all emphasize foods direct from nature, a variety of plants, and none of the hyper-processed, willfully unsatiating²⁹ junk that makes up so much of the typical American diet. They are all nutrient rich, high in fiber, and low glycemic. But they are not uniformly low or high in any given macronutrient. The emphasis is consistently on wholesome foods in sensible, time-honored combinations, and the macronutrients fall within broad ranges.

An argument that the Cretan diet is better than the Okinawan diet, or vice versa, would be something of a silly distraction. No randomized trial has ever assigned neonates to one or the other, then followed a large cohort of them to see in which group a greater percentage lives to be 100. No such study has

compared optimized versions of any vegan, Mediterranean, Asian, or Paleo diet, either, and none is likely to do so.

We would need such studies to put the coveted tiara on any particular diet. We need no such studies to establish the common elements of all good diets and establish the winning theme.¹⁹

Atallah and colleagues look past the narrow vista of their own data to note that "comprehensive lifestyle interventions aimed at curbing both adult and childhood obesity are urgently needed. Interventions that include a (sic) dietary, behavioral, and exercise components, as well as legislative measures and industry regulations, may be better suited to the multifaceted obesity epidemic." Disappointing though the weight loss they documented was, they note it might still be greater, under the "ideal conditions" of RCTs, than that seen in routine, clinical practice.

This is a valid insight, but represents some degree of mission creep, given a stated objective of comparing diets. Sticking to that mission, and looking through the narrow window accorded by Atallah et al, or one as wide as the Blue Zones, we are left with a rather clear conclusion.

Claims that any one specific diet is best are not supported by data. The clamoring by each camp for its particular favorite is just so much diatribe.

But we do know a bit about the common theme of healthful eating for Homo sapiens. No one diet wins. But we and our patients all might, if we devoted ourselves to using what we know about the basic theme of optimal eating, allowing for variations on that theme, while tuning out the prevailing cultural static: a plethora of claims, conjoined to a dearth of data.

Disclosures

The author speaks routinely on the topic of this editorial, and is often compensated for such speaking engagements.

References

1. Pedersen SD. Metabolic complications of obesity. *Best Pract Res Clin Endocrinol Metab.* 2013;27:179–193.
2. Katz DL. Scapegoats, saints, and saturated fats: old mistakes in new directions. *Huffington Post.* 2013.
3. Katz DL. Pandemic obesity and the contagion of nutritional nonsense. *Public Health Rev.* 2003;31:33–44.
4. Katz DL. Competing dietary claims for weight loss: finding the forest through truculent trees. *Annu Rev Public Health.* 2005;26:61–88.
5. Atallah R, Filion KB, Wakil SM, Genest J, Joseph L, Poirier P, Rinfret S, Schiffrin E, Eisenberg MJ. The long-term effects of 4 popular diets on weight loss and cardiovascular risk factors: a systematic review of randomized controlled trials. *Circ Cardiovasc Qual Outcomes.* 2014. 7; 815–827.
6. Atkins RC. *Dr. Atkins' New Diet Revolution.* New York: HarperCollins; 2002.
7. Agatston A. *The South Beach Diet.* New York: St. Martin's Press; 2005.

8. Sears B. *A Week in the Zone.* New York: HarperCollins; 2004.
9. Weight Watchers International, Inc. The science behind the PointsPlus™ Program. http://www.weightwatchers.ca/util/art/index_art.aspx?tabnum=4&art_id=52761. Accessed August 1, 2013.
10. Katz DL. Brawn, brains, and grains of truth. *Medscape Neurology.* 2014.
11. Warner M. Atkins Diet Saga Now at Chapter 11. *The New York Times.* 2005: http://www.nytimes.com/2005/08/03/dining/03diet.html?_r=0. Accessed October 17, 2014.
12. Gardner CD, Kiazand A, Alhassan S, Kim S, Stafford RS, Balise RR, Kraemer HC, King AC. Comparison of the Atkins, Zone, Ornish, and LEARN diets for change in weight and related risk factors among overweight premenopausal women: the A TO Z Weight Loss Study: a randomized trial. *JAMA.* 2007;297:969–977.
13. Amato MC, Guarnotta V, Giordano C. Body composition assessment for the definition of cardiometabolic risk. *J Endocrinol Invest.* 2013;36:537–543.
14. Twig G, Afek A, Derazne E, Tzur D, Cukierman-Yaffe T, Gerstein HC, Tirosh A. Diabetes risk among overweight and obese metabolically healthy young adults. *Diabetes Care.* 2014;37:2989–2995.
15. Lavie CJ, Milani RV, Ventura HO. Obesity and cardiovascular disease: risk factor, paradox, and impact of weight loss. *J Am Coll Cardiol.* 2009;53:1925–1932.
16. Ornish D. *Eat More, Weigh Less.* HarperTorch. 2002.
17. The DASH Diet Eating Plan. <http://dashdiet.org/>
18. Knowler WC, Barrett-Connor E, Fowler SE, Hamman RF, Lachin JM, Walker EA, Nathan DM; Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med.* 2002;346:393–403.
19. Katz DL, Meller S. Can we say what diet is best for health? *Annu Rev Public Health.* 2014;35:83–103.
20. Ley SH, Hamdy O, Mohan V, Hu FB. Prevention and management of type 2 diabetes: dietary components and nutritional strategies. *Lancet.* 2014;383:1999–2007.
21. Katz DL, Friedman RSC, Lucan SC. *Nutrition in Clinical Practice.* 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2014.
22. Pollan M. Unhappy Meals. *New York Times Magazine.* 2007: <http://www.nytimes.com/2007/01/28/magazine/28nutritionism.t.html?pagewanted=all>.
23. US News & World Report, Best Diets: <http://health.usnews.com/best-diet>.
24. Ornish D, Scherwitz LW, Billings JH, Brown SE, Gould KL, Merritt TA, Sparler S, Armstrong WT, Ports TA, Kirkecide RL, Hogeboom C, Brand RJ. Intensive lifestyle changes for reversal of coronary heart disease. *JAMA.* 1998;280:2001–2007.
25. Koertge J, Weidner G, Elliott-Eller M, Scherwitz L, Merritt-Worden TA, Marlin R, Lipsenthal L, Guarneri M, Finkel R, Saunders Jr DE, McCormack P, Scheer JM, Collins RE, Ornish D. Improvement in medical risk factors and quality of life in women and men with coronary artery disease in the Multicenter Lifestyle Demonstration Project. *Am J Cardiol.* 2003;91:1316–1322.
26. Ornish D, Magbanua MJ, Weidner G, Weinberg V, Kemp C, Green C, Mattie MD, Marlin R, Simko J, Shinohara K, Haqq CM, Carroll PR. Changes in prostate gene expression in men undergoing an intensive nutrition and lifestyle intervention. *Proc Natl Acad Sci U S A.* 2008;105:8369–8374.
27. de Lorgeril M, Salen P, Martin JL, Monjaud I, Delaye J, Mamelle N. Mediterranean diet, traditional risk factors, and the rate of cardiovascular complications after myocardial infarction: final report of the Lyon Diet Heart Study. *Circulation.* 1999;99:779–785.
28. Buettner D. The Blue Zones. *National Geographic.* 2010.
29. Moss M. The extraordinary science of addictive junk food. *The New York Times Magazine.* 2013: <http://www.nytimes.com/2013/02/24/magazine/the-extraordinary-science-of-junk-food.html?pagewanted=all>

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