

## Science-Based Strategies for Healthy Eating

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### Editorial

The American diet is nutrient-poor and very good at promoting weight gain. By the year 2015, more than half of the population will be obese, according to researchers at Duke University [1]. I have been studying nutrition my entire professional life and know the literature. There are a lot of good published studies, which clearly identify ways of eating to improve diet quality and reduce weight gain. However, many Americans get their nutritional advice from self-proclaimed gurus. These include personal trainers, book authors, and TV doctors, who often base their advice on opinions, rather than science. Don't we deserve better? Why can't the best practices be disseminated to the public? I read the nutrition-related scientific literature constantly, and am up-to-date on what is proven to work and what does not. In this Editorial, I review five recent articles, which provide sound advice on how to eat a healthy diet, while dispelling some common myths promulgated by so-called experts. These aren't my ideas; I'm simply reporting what I think the key papers are. The ideas include: foods that promote weight gain and loss; portion sizes versus eating occasions; diet composition; fiber; and exercise. My hope is that you'll share these strategies with your patients, family, and friends. Adopting a healthy diet based on scientific studies will be rewarding, by reducing chronic diseases of aging and preventing weight gain. Following dietary recommendations with no scientific merit is unlikely to yield any benefit.

### Foods that Promote Weight Gain and Loss

According to researchers at the Harvard School of Public Health, certain foods promote weight gain – potato chips, sugary beverages, unprocessed red meats, and processed meats [2]. These foods were identified from three separate cohorts of more than 120,000 healthy, not obese subjects at baseline. An evaluation of dietary intake, weight, and lifestyle factors was conducted at 4-year intervals. Participants gained nearly one pound per year during the 20-year study, and these foods had the greatest impact on that weight gain. You'll notice that the common recommendation of avoiding "white foods" like white flour and sugar did not show up. Sweetened beverages did promote weight gain, but had a similar impact to eating red meat and processed meats. Other investigators found that sugar sweetened beverages were not associated with weight, but did relate to cardiometabolic risk (e.g., waist circumference, LDL-cholesterol concentration) [3]. Perhaps, the recent focus on sweetened beverages, like the proposed ban in New York City, may not achieve its goal of preventing obesity. Certainly, avoiding "white foods" is not supportable by this study.

Weight gain was inversely associated with consumption of vegetables, whole grains, fruit, and yogurt [2]. The message from this study is simple. Don't consume foods that promote weight gain, or at the very least, limit their use. In addition, try including more of those foods that promote weight loss. Lifestyle factors were assessed as well. Things that promoted weight gain included: lack of exercise, sleep (<6 or >8 hours of sleep), and television watching. Strategies for preventing obesity should include both dietary and lifestyle modifications.

### Portion Sizes versus Eating Occasions

Investigators at the University of North Carolina set out to answer

the age-old question of what has a greater impact on promoting obesity – portion size or eating occasions [4]. To determine this, cross-sectional, nationally representative data from several food surveys were evaluated. Portion size was the main driver for obesity in the mid-1970s up until 1990. During that period, an extra 15 calories per day was consumed from increased portions. Today the problem lies with how frequently people eat. Snacks added an extra daily 39 calories per person. This may not seem like a lot, but theoretically it could produce a weight gain of four pounds per year. Adults typically gain 1-2 pounds per year, which relates to an "energy gap," of about 30 calories, according to an obesity expert, Dr. James Hill of the University of Colorado [5]. Thus, frequent snacking may explain most of the weight gain seen in adult Americans today.

Admittedly, the party line about healthy eating is to include two snacks and three meals a day to help achieve weight loss and weight maintenance [6]. Many personal trainers recommend frequent snacking, as well. However, in light of this new finding, snacking should be viewed with caution. New information suggests that the best way to avoid gaining weight from snacking is to stop doing it. Ignore the pastry and other snack items at your next business meeting. And try setting an example by not serving food at every event, especially if children are present. It is OK to be a hungry for an hour or so. More importantly, the body needs to be in a post-prandial state to reduce insulin concentrations, allowing for fat mobilization and oxidation.

### Diet Composition

The macronutrient composition – that is carbohydrate, protein, and fat – of the American diet has changed over the past 35 years [7]. Interestingly, everyone (yes, even normal weight individuals) is consuming more calories today than they did in the first half of the 1970s. Most people, regardless of weight classification, are eating between 150 and 300 more calories today than they did 30 years ago. During this time, the prevalence of obesity increased from 15% to 33%. This increase in energy intake and obesity prevalence was likely related to changes in the macronutrient composition of the diet. In the first half of the 1970s, the energy contribution of diet was 44% from carbohydrate and 37% from fat. By 2005-2006, the carbohydrates contributed 49% of the energy and fat, only 34%. The contribution of dietary protein remained stable at around 16% of energy intake.

Could it be that this change to a low-fat diet increased hunger, leading to more calories being consumed? The dietary shift in macronutrients observed in this study was a result of recommendations

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by nutrition experts, who said that Americans should consume a low-fat diet to reduce the risk of cardiovascular disease and type 2 diabetes. The population heeded the experts' advice and gained weight as a result. From this study [7] and others [8], the low-fat diet does not appear to be the answer to reduce weight or the risk of these common comorbidities. Rather than recommending a high-fat diet, what may be more helpful is to focus on protein intake. These investigators [7] found that individuals, who ate a higher percentage of energy from protein, spontaneously ate fewer total calories. For every 1% increase in the percentage of energy from protein, there was a decrease in total energy intake of 32 calories. This amount may be enough to offset the excess energy intake associated with snacking and close the "energy gap". Weight loss strategies should focus on increasing the intake of dietary protein. Dr. Donald Layman, an expert on dietary protein from the University of Illinois, recommends that adults should consume protein at the higher end of what is considered safe (approaching 35% of total energy intake), especially when following an energy-restricted diet [9].

### Fiber

Epidemiological data support a role for dietary fiber intake in preventing obesity, and fiber intake has been shown to be inversely associated with body weight and body fat [10]. Intervention studies are mixed, however, it seems that dietary fiber favorably alters secretion of gut hormones, thereby promoting satiation leading to weight loss.

Investigators at the National Cancer Institute looked into fiber in terms of life span in the National Institutes of Health-AARP Diet and Health Study [11]. Dietary fiber intake was associated with a significantly lower risk of total death ( $P < 0.001$ ). In addition, dietary fiber intake also lowered the risk of death from cardiovascular disease, infections, and respiratory diseases by about 25-50%. Including fiber-rich foods in the diet may lead to significant health benefits. Currently, dietary fiber intake is suboptimal and has not increased over the past several decades, despite recommendations from the Institute of Medicine and American Heart Association [12]. Average fiber intake is about 16 g per day, which it was in 1999. Doubling this could reduce risk of early death. This may be a more powerful and correct message for dietary fiber, rather than suggesting its consumption leads to weight loss. An adequate intake of fiber can only be achieved from inclusion of fruits, vegetables, and whole grains in the diet – all of which are associated with healthy eating. If the diet lacks these foods, a fiber supplement is warranted.

### Exercise

The American College of Sports Medicine and the American Heart Association recommend that adults need moderate-intense aerobic physical activity for a minimum of 30 minutes, five days each week, or vigorous-intensity aerobic physical activity for a minimum of 20 minutes on three days each week [13]. These recommendations promote and maintain health, but are not enough to induce weight loss; more intense and prolonged exercise would be needed. Because of this, many overweight and obese individuals do not engage in any form of physical activity.

Is there another message that may resonate with a non-exercising population? New studies show that sitting for prolonged periods of time is a risk factor for all-cause mortality and increases the risk of cardiovascular disease and type 2 diabetes [14,15,16]. Breaking up periods of prolonged sitting with short bouts of light- or moderate-

DIETARY ISSUE	WHAT TO DO
Type of foods associated with body weight	AVOID/LIMIT: potato chips, sugary beverages, unprocessed red meats, and processed meats  INCLUDE MORE OF: vegetables, whole grains, fruit, and yogurt
Portion size versus eating occasion in promoting weight gain	-Eliminate or reduce snacking  -If you do snack, make sure that it includes some protein
Diet composition of carbohydrate, protein, fat	-Balance carbohydrate and fat  -Increase protein intake, and consume it at every meal and snack
Dietary fiber	Increase through foods, fiber supplements, or both
Exercise	-30 minutes, 5 days a week  -Break up periods of sitting. Every 20 minutes, take a 2-minute brisk walk.

intensity walking lowers postprandial glucose and insulin levels in overweight and obese adults [16]. Thus, too much sitting should now be considered an important component of the physical activity and general health.

Exercise is often a dirty word for those trying to lose weight. It is good for general health, but sadly overweight and obese individuals become frustrated after several months of exercise, because it doesn't help them lose weight. For these individuals, the new message should be to take breaks from sitting. Just a 2-minute brisk walk after every 20 minutes of sitting has favorable effects on cardiometabolic risk markers. I think that this is an actively the most people can adopt.

### Summary

Americans are confused about how to eat. Much of what they learn comes from self-reported nutrition experts who are not giving fact-based information. Hence, the diet of American is not improving and obesity rates are increasing. New strategies on healthy eating are welcome, and a few are reviewed herein. They are novel, clinically supportable, and easy to follow. Simply adopting one or two of these strategies should help people eat better, live longer, and if they are trying to lose weight, do so as well.

### References

1. Finkelstein EA, Khavjou OA, Thompson H, Trogon JG, Pan L, et al. (2012) Obesity and severe obesity forecasts through 2030. *Am J Prev Med* 42: 563-570.
2. Mozaffarian D, Hao T, Rimm EB, Willett WC, Hu FB (2011) Changes in diet and lifestyle and long-term weight gain in women and men. *N Engl J Med* 364: 2392-2404.
3. Duffey KJ, Gordon-Larsen P, Steffen LM, Jacobs DR Jr, Popkin BM (2010) Drinking caloric beverages increases the risk of adverse cardiometabolic outcomes in the Coronary Artery Risk Development in Young Adults (CARDIA) Study. *Am J Clin Nutr* 92: 954-959.
4. Duffey KJ, Popkin BM (2011) Energy density, portion size, and eating occasions: Contributions to increased energy intake in the United States, 1977-2006. *PLoS Med* 8: e1001050.
5. Hill JO (2005) Preventing excessive weight gain. *Obes Res* 13: 1302.
6. Bachman JL, Phelan S, Wing RR, Raynor HA (2011) Eating frequency is higher in weight loss maintainers and normal-weight individuals than in overweight individuals. *J Am Diet Assoc* 111: 1730-1734.
7. Austin GL, Ogden LG, Hill JO (2011) Trends in carbohydrate, fat, and protein

- intakes and association with energy intake in normal-weight, overweight, and obese individuals: 1971-2006. *Am J Clin Nutr* 93: 836-843.
8. Dumesnil JG, Turgeon J, Tremblay A, Poirier P, Gilbert M, et al. (2001) Effect of a low-glycaemic index--low-fat--high protein diet on the atherogenic metabolic risk profile of abdominally obese men. *Br J Nutr* 86: 557-568.
  9. Layman DK (2009) Dietary Guidelines should reflect new understandings about adult protein needs. *Nutr Metab (Lond)* 6: 12.
  10. Slavin JL (2005) Dietary fiber and body weight. *Nutrition* 21: 411-418.
  11. Park Y, Subar AF, Hollenbeck A, Schatzkin A (2011) Dietary fiber intake and mortality in the NIH-AARP diet and health study. *Arch Intern Med* 171: 1061-1068.
  12. King DE, Mainous AG 3rd, Lambourne CA (2012) Trends in dietary fiber intake in the United States, 1999-2008. *J Acad Nutr Diet* 112: 642-648.
  13. Haskell WL, Lee IM, Pate RR, Powell KE, Blair SN, et al. (2007) Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Circulation* 116: 1081-1093.
  14. van der Ploeg HP, Chey T, Korda RJ, Banks E, Bauman A (2012) Sitting time and all-cause mortality risk in 222 497 Australian adults. *Arch Intern Med* 172: 494-500.
  15. Dunstan DW, Howard B, Healy GN, Owen N (2012) Too much sitting - A health hazard. *Diabetes Res Clin Pract* .
  16. Dunstan DW, Kingwell BA, Larsen R, Healy GN, Cerin E, et al. (2012) Breaking up prolonged sitting reduces postprandial glucose and insulin responses. *Diabetes Care* 35: 976-983.