

Ethical Issues II

Selling False Hope

Health insurance brokers often provide products and services for which clients act or pay now but benefit in the future. Physical therapy today might avoid expensive, painful surgery tomorrow. Routine dental care today might avoid expensive and painful tooth extractions and implants in the future. An annual physical this year may identify inexpensively treatable abnormalities and avoid far more expensive coronary procedures in a decade.

Many in the brokerage and insurance communities think a comprehensive corporate wellness program implemented today may prevent diabetes or reduce employee diabetes treatment costs in the future.

These future benefits affect both employees and employers. Employees theoretically gain better health and lower medical costs in the future. The employer – the majority payor in standard commercial health insurance policies – gets lower future health insurance premiums and less future employee absenteeism.

This text will address some ethical issues arising from selling or promoting these ‘pay-now-and-benefit-in-the-future’ types of programs. We’ll focus on the ethics of selling hope and specifically of selling false hope.

A simple hypothetical example

Consider whether an employer should actively promote the annual wellness visit included in ACA compliant health plans.

The ‘annual wellness visit’, better known as an annual physical, provides the employee with a range of screening tests and an opportunity to talk with his or her doctors about his or her medical status. Promotion might include

- Memos or emails reminding employees to get their annual physical,
- Brochures highlighting the benefit, perhaps with emotional wording like ‘Get your annual physical now - it might save your life’ and could include a testimonial from someone who discovered a serious health risk at her physical,
- A benefits seminar at which the benefits manager or broker extolls the advantages of having an annual physical.

Offering a promotional program will presumably result in a higher percentage of employees accessing this benefit, i.e., having an annual physical.

Offering no such promotional program will presumably result in a lower percentage.

What should the broker advise? We’ll present 3 different implications of the employer’s promotional actions in the false hope arena, based on 3 different research conclusions.

* First, a broker relying on WedMD’s analysis and conclusion, below, might encourage an employer to promote annual physicals aggressively.

WebMD suggests that regular checkups benefit the patient - “not only help you stay healthy, but they could save you money, too” - and to the employer, stating that physicals “cut costs for the employer that provides your health insurance” by finding diseases early when they’re easiest to treat.¹

The employee, they suggest, might avoid a \$50,000 heart bypass procedure or treat arthritis without need for a joint replacement, both resulting in substantial future savings. Overall, according to WebMD, the annual physical might help the employee lower his or her medical bills, avoid taking medications, and avoid surgery. When the patient / employee saves money, so does the employer who typically pays most or all the health insurance premium. (We assume here some sort of experience modification affecting health insurance premiums.)

Based on the WebMD study, an ethical, professional broker would encourage an employer to promote this benefit aggressively.

* On the other hand, though, some researchers like Dr. Ateev Mehrotra of Harvard Medical School disagree with WebMD’s analysis, arguing that “we should move forward with the elimination of the annual physical” and that patients should only visit their doctors when they’re sick or have a scheduled screening test like a colonoscopy.² Randomized studies, he suggests, support his view that the current costs of wellness visits outweigh the future savings. Many other researchers agree with Dr. Mehrotra.³

A broker subscribing to Dr. Mehrotra’s analysis might recommend that a company not promote the annual physical benefit very aggressively to employees.

* But on yet another (third?) hand, some researchers go even farther including Dr. Michael Rothberg of the Cleveland Clinic who generally *avoids* giving physicals, suggesting they do more harm than good.⁴ He argues that doctors are trained to look for problems and “If you get near them, they’ll start to look for things and order tests because that’s what doctors do.”

The risk, in Rothberg’s opinion, is overdiagnosis or false positive test results, finding and treating problems that don’t exist. This leads to additional current costs to the employer and risks to the employee with little-to-no potential future benefit

¹ Watson, Why Regular Check Ups Make Financial Sense, WebMD, September 5, 2022
<https://www.webmd.com/healthy-aging/annual-checkups-seniors-lower-costs#:~:text=Routine%20checkups%20with%20your%20doctor,they're%20easiest%20to%20treat.>

² Gold, Your Annual Physical is a Costly Ritual, CNN, April 14, 2015
<https://www.cnn.com/2015/04/14/health/annual-physical-ritual-costly>

³ For example, Heid, **Do I Really Need an Annual Physical?**, Time, January 10, 2018, Levine, **Is It OK to Skip Your Annual Physical?**, AARP, October 25, 2018, Kliff, **TV Docs Say Annual Checkups Save Lives**, VOX, September 26, 2016, Emanuel, **Skip Your Annual Physical**, NY Times, January 8, 2015

⁴ Ibid.

because there's no problem in the first place; that's the definition of false positive or overdiagnosis.

A broker subscribing to Dr. Rothberg's analysis might suggest that the employer advise skepticism to employees about the value of annual physicals.

Who's right?

- WebMD's 'get your annual physical, it will improve your health and save your employer money in the future'
- Dr. Mehrotra's 'not so fast, we don't see any benefit in comparative studies' or
- Dr. Rothberg's 'avoid it; the risks outweigh the benefits'?

The answer is that the research you rely on as a broker has direct implications for your client. Your advice to the employer risks selling false hope or even harm.

Consider the likely impacts of your actions or non-actions:

- If you advise the employer to **encourage employees** to get their annual physicals i.e., rely on the WebMD analysis, you promote the hope that future employer medical costs will be lower and future employee health status will be higher.

But if WebMD is wrong and Dr. Mehrotra is right, the broker's advice promotes the *false hope* of future benefit. And if Dr. Rothberg is right, the broker's advice might actually increase medical costs and risks.

- If you advise the employer to **tell employees to do their own research** about annual physicals i.e., rely on Dr. Mehrotra's analysis, then, presumably, some will not get them. They might, as a result, suffer poorer future health if the WebMD analysis is right and Dr. Mehrotra wrong.

The employer would also likely incur higher future medical costs, again if WebMD is right and Dr Mehrotra wrong.

- If you advise the employer **not to say anything** and let their employees decide for themselves, then, according to Dr. Rothberg's analysis, some will get harmed by having their annual physical, at least by facing higher-than-necessary medical testing and exploration costs.

Some employees in this 'don't actively promote it' scenario might think 'the annual physical must be good since my employer included it in my policy' and incur both increased medical risks and higher costs as a result if Dr Rothberg is right. The employer, in other words, *implicitly* promotes the false hope of benefit by not *explicitly* advising employees to be skeptical or informing them of the risks.

Meanwhile, the employer might face higher short term medical costs from these (harmful in Dr. Rothberg's opinion) annual physicals. Here the broker *implicitly* promotes the false hope of benefit by not *explicitly* informing the employers of the risks.

My point in this introductory section: any healthcare related product or service could include implications about future financial benefits or costs to employers and employees. And any broker action either to promote or not a specific benefit risks selling false hope, either explicitly or implicitly.

Beware of what you sell and how you promote it.

Understanding hope and false hope

Hope in its simplest sense is an optimistic state of mind based on an expectation of positive outcomes from a set of conditions, events or circumstances.⁵ 'I hope the Red Sox win' or 'I hope to recover from this illness' for example. In these cases, you have a set of circumstances – the Red Sox playing baseball or you being ill – and a goal that will bring you joy.

Hope in a richer sense also includes a fact-based expectation that your goal is achievable. You may know, for example, that the Red Sox pitching is particularly good this year, that their infield is very strong or that their team batting average is highest in the American league. Those facts – or your interpretation of them – makes your goal seem reasonable and contributes to your sense of optimism. Ditto about your illness and related medical treatment.

Some philosophers suggest hope rests on these 2 necessary conditions – desire for a specific goal that makes you feel good and the fact-based belief that the probability of achieving that goal is greater than 0.⁶

Other commentators go even further, arguing that hope entails an action plan to achieve your goal⁷, a set of steps that probabilistically lead to you achieving your goal. This assumes, of course, that you are an active participant - like a patient trying to get healthy – not a passive one like a Red Sox fan.

All these conditions and nuances can give us a headache! To avoid becoming bogged down in minutia, we'll settle on 'hope' containing 3 features in this text:

1. Having a *goal* that generates something positive for you.
2. Having a *probabilistic expectation* about your likelihood of achieving that goal.
3. Having a *plan* to achieve that goal.

⁵ Wikipedia definition

⁶ John Patrick Day in the American Philosophic Quarterly, 1969 as discussed in Is There A Problem With False Hope, Bert Messchenga, Journal of Medicine and Philosophy, August 2019

⁷ Charles Snyder in the Wikipedia discussion op cit and the Messchenga paper ibid.

False hope contradicts at least one of these features:

- You may have an incorrect goal, in other words seek something that will not generate the desired positive impact on you if-or-once you achieve it.

Consider a depressed person, dissatisfied with his life, who hopes a Sox win will improve his mood. He buys an expensive ticket to Fenway Park, pays for parking, watches the Sox win – against the Yankees! – but still feels depressed. Here, the false hope that a Sox win would change his life and make him feel better was an incorrect goal.

- You may have an unrealistic expectation about the probability of achieving your goal.

Consider a patient who opts for a particular surgery hoping it will be successful despite the published 6% success rate. When it turns out unsuccessful – a near certainty in this case - he feels discouraged. He suffered from false hope of success based on an unrealistic expectation.

- You may have a faulty plan to achieve your goal or no plan at all.

Consider the high school athlete who hopes to play in the NBA but spends his time playing video basketball games instead of training and developing his basketball skill set. Bad plan. He suffers from the false hope that his natural ability would be enough to make the Celtics.

These are, of course, supercilious examples. Each feature above has lots of variation available. Readers can embellish upon them.

Nonetheless I propose that this list is good enough, useful for our purposes. It will help us understand the notions of hope and false hope. It provides a template for us to evaluate various benefit programs.

Hope, false hope and ancillary insurance programs

We'll now shift focus from a theoretical discussion of hope and false hope to a discussion of wellness programs, one type of employee benefit. We'll use wellness programs as a specific to represent the general false hope issue.

Wellness programs aim to improve the physical, mental, and emotional health of employees. They cost about \$238 per employee per year according to the Fidelity Investment Business Group on Health's report released in June of 2021.⁸ That's down from about \$521 in 2013.⁹ Most large employers offer some sort of wellness program for their employees though the specific program components vary considerably.

⁸ Mayer, How much are employers investing in wellness programs, Human Resource Executive, June 10, 2021

⁹ Frakt and Carroll, Do Corporate Wellness Programs Work, Generally Not, New York Times, September 11, 2014

Total spending on corporate wellness programs hit \$20 billion in 2021.¹⁰

SHRM, the Society of Human Resource Managers offers a nine step guide on how to establish and design a wellness program.¹¹

- Step One – Conduct Assessments including a health risk assessment to determine which programs you need and an organizational assessment to determine which programs you can realistically offer.
- Step Two – Obtain Management Support by determining your strategic priorities, program expectations and senior management orientations.
- Step Three – Establish a Wellness Committee to build, sustain and communicate a wellness culture to the employees.
- Step Four – Develop Goals and Objectives, most commonly to reduce healthcare costs. Other typical goals include reducing absenteeism, boosting worker productivity and increasing employee retention.
- Step Five – Establish a Budget to implement the program.
- Step Six – Design the Program Components commonly including weight loss programs, exercise programs, smoking cessation and nutrition education.
- Step Seven – Select Wellness Program Incentives or Rewards. According to SHRM’s website, these are “an effective tool to change unhealthy behaviors, to adhere to healthy behaviors, to increase participation rates or to help individuals complete a program.”
- Step Eight – Communicate the Wellness Plan to engage employees in it.
- Step Nine – Evaluate the Success of the Program, a necessary step according to SHRM to sustaining management and employee support for it.

Many of these steps are internal actions a company takes, including communication and budgeting. Useful though they are, we’ll sidestep Steps 1 – 5, 7 and 8 as they’re more focused on program implementation than hope and/or false hope raising. Step 9 is premature for our discussion since we haven’t yet developed the program so can’t yet discuss the outcomes. We’ll sidestep it also.

We’ll focus instead on Step 6, designing the program components and ask if a wellness program must inevitably raise false hope or if one can be designed - somehow - only to raise realistic hope. As a first cut, the prospects look unpromising.

¹⁰ Global Newswire, Global Corporate Wellness Market, July 29, 2021 <https://www.globenewswire.com/news-release/2021/07/29/2270961/0/en/Global-Corporate-Wellness-Market-to-Reach-87-3-Billion-by-2026.html> . One quote from this article “The U.S. Market is Estimated at \$20.4 Billion in 2021”

¹¹ <https://www.shrm.org/resourcesandtools/tools-and-samples/how-to-guides/pages/howtoestablishanddesignawellnessprogram.aspx> downloaded and summarized November 30, 2022

Two healthcare economists, Austin Frakt and Aaron Carroll, writing in the New York Times reviewed several high quality studies and concluded that wellness programs do not work.¹² Among the research they cited:

- "We found little evidence that such programs can easily save costs through health improvement" Horowitz et al *Wellness Incentives in the Workplace* Health Affairs, 2013
- Wellness programs "did not save money for the employer in the short term" Gowrisankaran et al, *A hospital system's wellness program* Health Affairs, 2013
- "They generally do not achieve long term behavior change" and any decrease in medical spending associated with wellness programs "is not statistically significant" Mattke et al, *Workplace wellness programs study, Final Report*, Rand Corporation 2013.

Other studies arrived at similar conclusions:

- "The results were disappointing. There seemed to be no causal effects." Aaron Carroll describing the *Illinois Workplace Wellness Study* in the New York Times, 2018¹³
- "The research found no significant differences in outcomes like lower blood pressure or sugar levels and other health measures. And it found no significant reduction in workers' health care costs." Reed Abelson describing the *BJ's Wholesale Club experience* in the New York Times, 2019¹⁴

Nonetheless, some people, often financially compromised, claim wellness programs work and generate high returns on the employer's investment. They present statistics and assorted data to back their claims.

I find these claims and the studies they rely on unconvincing. The reasons are complicated, nerdy, relevant, and, unfortunately, critical to understanding why so many studies justifying wellness programs are not credible.¹⁵ Put briefly, first, these pro-wellness programs compare *one specific group* of people before and after participating in a wellness program. This methodological slight-of-hand allows them, sometimes if not always, to find benefits such as higher employee retention or lower hospitalization costs.

But when comparing that one group to a control group - a similar group of people that does not participate in a wellness program – those benefits generally disappear.

In other words, when studying only one group, the wellness program results may simply mirror other workplace trends. For example,

¹² Do Corporate Wellness Programs Work, Generally Not, New York Times, September 11, 2014

¹³ Workplace Wellness Programs Don't Work Well, NY Times, August 6, 2018

¹⁴ Employee Wellness Programs Yield Little Benefit, NY Times April 16, 2019

¹⁵ These are outlined in Workplace Wellness Programs Don't Work Well, NY Times, August 6, 2018 op cit

- If employee retention increases nationwide, for example during a recession when employees find it difficult to change jobs, then it will show up in our before-and-after study.
- If gym participation rates are up, for example due to a cool new fitness fad, then they will also be in our before-and-after study.
- If smoking rates are down nationally, then they will also be in our before-and-after study.

We can't determine, when looking only at one employee group before-and-after, whether the wellness program itself accounted for any of the benefits. They may have occurred anyway, for reasons unrelated to the program itself.

Second, researchers, especially those financially compromised, may find a before-and-after statistical fluke and claim it as a wellness program benefit.

- 'Financially compromised' means paid by a wellness program or similar organization that stands to benefit financially from favorable report results.
- 'Financially disinterested' means paid by an organization that cannot benefit financially from the study outcomes. We want to read studies authored by financially disinterested parties.
- 'Statistical fluke' means a change that happened randomly or for reasons unrelated to the program.

Consider, for example, an increase in daily outdoor walking among employees who participated in an October - March corporate wellness program. The April and May walking increase might occur every year simply because the weather improves. But our before-and-after wellness program analysis picks it up, incorrectly, as a wellness benefit.

The bottom line: weak study methodologies used by financially compromised researchers can justify wellness investments while better, more scientifically valid methodologies used by financially disinterested researchers do not.

Here we enter the false hope arena, just as we did earlier in our discussion about promoting annual physicals. The study you choose to believe can determine your actions as a broker. But the study you choose to believe may not correlate to real life benefits. Beware!

The vast preponderance of high quality, statistically valid studies – ie. those produced by financially *dis*interested researchers using comparative study methodologies - conclude wellness programs **do not** generate medical or financial benefits to employers. Brokers who sell them or advise their clients to adopt them raise false hopes of future benefit and act, according to the argument in this text, unethically.

Let's articulate this using the 3 features of hope and false hope introduced earlier. Hope entails

- Having a goal that generates something positive for you. False hope entails having a goal that will not generate a positive benefit for you.

In this case, improving employee health and reducing future medical costs is a reasonable and valid goal. No false hope problem with this feature.

- Having a probabilistic expectation about the likelihood of achieving that goal. False hope means pursuing a goal that you *do not* have a reasonable likelihood of achieving.

In this case, based on the preponderance of financially disinterested, methodologically valid studies, employers have very little if any realistic expectation of achieving their goals.

They engage in the false hope of improving employee health and reducing future medical expenses by participating in wellness programs.

- Having a plan to achieve the goals.

Wellness programs qualify as a ‘plan’ in that they have a bunch of steps that seem to go in a direction. Unfortunately it’s a bad plan; at the end of it they are unlikely to achieve their goals. (I don’t know whether a ‘bad plan’ qualifies as a ‘plan’. It’s a semantic issue. In this case, the ‘plan’ doesn’t get you to the hoped-for benefits.)

A deeper dive Diabetes, pre-diabetes and metabolic syndrome

Let’s dig a little deeper and consider the context of wellness programs, some reasons employees participate in non-healthy behaviors and some obstacles wellness programs face when trying to change employee behavior.

Wellness programs address various chronic medical conditions and diseases. Chronic disease treatments consume about 85% of all healthcare spending with about half of Americans – that’s roughly 160 million folks - having one or more chronic diseases. The number of chronic disease patients grows by 7 – 8 million every 5 years.¹⁶

The ten most common chronic conditions are arthritis, cancer, chronic obstructive pulmonary disease, coronary heart disease, asthma, diabetes, hepatitis, hypertension, stroke and weak or failing kidneys. These often – not always – have a lifestyle cause, a combination of excess body weight, suboptimal nutrition and insufficient exercise.

¹⁶ The Relation of the Chronic Disease Epidemic to the Healthcare Crisis, Holman, American College of Rheumatology, Feb 19, 2020

We have known about these chronic diseases, their costs and their causes for years, yet they continue and increase. Why? This section will suggest answers and focus on diabetes as a prime example of a lifestyle-caused chronic condition.

Diabetes occurs when your body produces too little insulin and results in you having too much sugar in your bloodstream. The disease comes in 2 basic forms: Type 1, an autoimmune disorder typically identified in kids for which there is no cure and Type 2, largely behaviorally based, in which your body doesn't use insulin well and can't regulate sugar in blood stream. About 95% of our diabetic population has Type 2. It is largely preventable and potentially reversible. (Type 1 is neither.) We'll focus on Type 2 in this text.

Diabetes increases your risk of developing many of the chronic conditions listed above, perhaps most notably hypertension, failing kidney, stroke and heart disease. We might consider it a common cause of and link among America's epidemic of chronic diseases. That's admittedly an overstatement, though not a huge one.

Diabetes is defined by your number on one of 4 medical tests:

- Your A1C (aka hemoglobin A1C or HbA1c) above 6.5%
- Your fasting blood sugar above 126 mg/dL
- Your glucose tolerance above 200 mg/dL 2 hours after drinking a liquid. You need to fast the night before.
- Your random blood sugar above 200 mg/dL

About 37 million Americans have diabetes. It is the 7th leading cause of death and the #1 cause of kidney failure, lower limb amputations and blindness in the US. The number of diabetics has doubled in the past 20 years.

Two syndromes / conditions predict a patient becoming diabetic: 'prediabetes' and 'metabolic syndrome'. Though overlapping in some ways, these are distinct. Both provide a warning to patients about their likely diabetes diagnosis future.

Prediabetes is a narrowly defined condition in which you have too much sugar in your bloodstream though not enough to have full blown diabetes. By the CDC's definition, you have prediabetes if tests determine the following about your blood sugar:

- Your A1C or hemoglobin A1C or HbA1c test is 5.7 - 6.4%.
 - Full blown diabetes is defined as 6.5% or greater.
- Your fasting blood sugar test is 100 – 125 mg/dL.
 - Full blown diabetes is defined as 126 mg/dL or greater.
- Your glucose tolerance test is 140 – 199 mg/dL.
 - Full blown diabetes is defined as above 200 mg/dL.

Here's a summary chart.¹⁷

¹⁷ CDC Diabetes Basics <https://www.cdc.gov/diabetes/basics/getting-tested.html>

Result*	A1C Test	Fasting Blood Sugar Test	Glucose Tolerance Test	Random Blood Sugar Test
Diabetes	6.5% or above	126 mg/dL or above	200 mg/dL or above	200 mg/dL or above
Prediabetes	5.7 – 6.4%	100 – 125 mg/dL	140 – 199 mg/dL	N/A
Normal	Below 5.7%	99 mg/dL or below	140 mg/dL or below	N/A

* This chart comes from the CDC.

About 96 million Americans have prediabetes including, according to Dr. Dariush Mozaffarian, dean of the Tufts Friedman School of Nutrition Science and Policy, about 1 in 4 American teenagers.¹⁸ The condition increases your risk of developing Type 2 diabetes and suffering from all the problems associated with and resulting from it.

Metabolic syndrome, the other common precursor to full blown diabetes, is defined more broadly, again by the results of medical tests. It is a cluster of medical conditions occurring together, first identified in the late 1990s. Though researchers quibble about the exact numbers that define it, here is a generally accepted definition.¹⁹

- Obesity or having a BMI > 30.
 - Alternatively, males have a waist circumference >40 inches, females > 35.
- Blood triglyceride levels above 150 mg/dL
- Low HDL (good) cholesterol, levels below 40 mg/dL in men or 50 in women
- High blood pressure, greater than 130/85 for people under 60 years old or on blood pressure medications.
 - For people over 60 years old, the American Heart Association suggests levels above 150/90 become worrisome.
- Elevated blood sugar, having a fasting blood glucose level above 100 mg/dL, an A1C above 5.7 or taking diabetes medications.

Researchers seem to suggest that having 3 or more of these indicators defines someone has having metabolic syndrome, a somewhat squishy definition but a useful direction.

Some 37% of Americans suffer from metabolic syndrome with the risk increasing as you age; some 50% of 60-year-olds have it including almost 60% of Hispanics over 60.²⁰

¹⁸ Boston Globe, Nov 22, 2021 'The Obesity Pandemic Has Made Covid Much More Deadly'

¹⁹ This definition comes from Harvard Health, Shmerling, Metabolic Syndrome is On the Rise, Oct 2, 2020 and AARP, Levine, Metabolic Syndrome

²⁰ AARP, Metabolic Syndrome, Levine

People with metabolic syndrome are about 4x more likely to develop diabetes than healthy folks, 3x more likely to suffer a heart attack or have a stroke, and 55% more likely to develop kidney disease. In addition, according to the National Heart, Lung and Blood Institute²¹, the syndrome increases your risk of developing

- Coronary heart disease
- Erectile dysfunction
- Heart failure
- Inflammation and immune system problems – raise risks of complications from infections and Covid
- Organ damage esp pancreas, liver, gall bladder, kidneys
- Polycystic ovary syndrome (PCOS)
- Pregnancy complications such as preeclampsia, eclampsia, and gestational diabetes
- Problems with thinking and memory
- Sleep apnea and
- Certain cancers.

Metabolic syndrome, like prediabetes and diabetes itself, is largely preventable by maintaining a healthy weight, eating a healthy diet, exercising regularly and avoiding smoking.²²

This link between obesity, defined as having a Body Mass Index greater than 30, and diabetes is so strong that some researchers invented a new word for it: diabetesity.²³ As the Cleveland Clinic put it in 2021:

The pancreas creates insulin, which is a hormone that moves glucose out of your blood. Normally, insulin transports glucose to your muscles to use right away for energy or to the liver, where it's stored for later.

But when you have diabetesity, your cells resist letting insulin move glucose into them. To make matters worse, the area of your liver where excess glucose is usually stored is filled with fat. It's like trying to put furniture in a room that's already packed. With nowhere to be stored, the glucose remains in the bloodstream.

Your pancreas becomes overworked, and as a result, it wears out. It starts producing less insulin. Diabetes develops and then quickly worsens if the fat resistance remains

The CDC calls diabetes the most expensive medical condition in the US, though no one knows for sure how much it costs because it affects so many other medical conditions.

²¹ National Heart, Lung and Blood Institute <https://www.nhlbi.nih.gov/health/metabolic-syndrome/living-with>

²² Ibid.

²³ Cleveland Clinic, November 2021 'Diabetesity: How Obesity is Related to Diabetes', slightly edited in the following quote.

Should we include leg amputations as diabetes costs? The associated prosthetics? The replacement prosthetics ten years downstream? Unclear.

The CDC estimated direct diabetes costs and related reduced productivity at the lower end, \$327 billion in 2017. That's about \$500 billion today give a take a few dozen billion, about 14% of healthcare spending. That's the low estimate.

On the higher end, the American Diabetes Association claims that 25% of all US healthcare spending goes to people with diabetes.²⁴ Under either estimate, diabetes is a big deal and very expensive.

We know a lot about it, understand its causes and estimate its costs as high under any reasonable assumptions. Why don't we prevent it?

Why We Don't Prevent Diabetes and cut healthcare spending while improving American's health

The classic advice for treating metabolic syndrome or pre-diabetes, the two typical precursors of full blown diabetes, is lifestyle modification. This traditionally has 2 components: dietary improvement and exercise increase, more or less a traditional wellness program. In short, eat a bit less of mainly healthier foods, and exercise a bit more.

Easier said than done.

Let's put some numbers and costs into this advice. We'll use a typical American male as a case study. This will provide an analytic framework / methodology to understand the problem. You can then apply the framework other demographic groups.

We could have used American females instead of males – same methodology, just different numbers. Ditto for Latino women, Appalachian residents, elderly urban men, etc. Same methodology, different demographic groups, different numbers.

We'll first address the dietary part of that old 'diet and exercise' mantra and consider calorie **quantity** and **quality**.

In 2022, the average American male – we'll call him Joe - was 5 foot 9 inches tall, 38 years old, exercised 1 – 3 times per week and weighed 198 lbs.²⁵ He had a BMI of 29.2,

²⁴ American Diabetes Association. Economic costs of diabetes in the US in 2017. *Diabetes Care*. 2018;41:917–928.

²⁵ Average weight American male adult from healthline.com <https://www.healthline.com/health/mens-health/average-weight-for-men>

Average height American male adult from World Population Review <https://worldpopulationreview.com/state-rankings/average-height-by-state>

Average age Americans in 2022 from World Population Review <https://worldpopulationreview.com/state-rankings/median-age-by-state>

How Much Do Americans Exercise, Romero, Washingtonian, May 12, 2012

Daily calories to lose ½ lb / week from www.Calculator.net

Daily calories to gain 1.5 lbs / year from www.Calculators.net

almost obese. He gained about 1.5 pounds per year. According to online calorie consumption estimates²⁶, he eats about 2650 calories per day; that's the amount that generates his 1.5 pound / year weight increase.

We'll assume that Joe is single for analytic ease.

Joe needs to reduce his daily calorie intake to 2237 to lose ½ a pound per week. That would get him down to 172 pounds in a year for a BMI of 25.4, slightly overweight but not nearly obese. It would probably get him out of the prediabetic or metabolic syndrome condition and help him avoid diabetes.

I choose the ½ pound weight loss per week as a moderate amount. I didn't want to bias this analysis with a more aggressive number. A faster weight loss, with the associated greater degree of daily discomfort / hunger, might lead to a quick termination of a dietary program with the associated relatively fast rebound back to Joe's original weight.

In other words, I want to stack the odds in Joe's favor.

We'll assume here that Joe spends 10% of his income on food. That comes from the US Department of Agriculture's 2021 estimate.²⁷

We know that Joe earns \$1,144 / week – that's \$59,488 per year - thanks to various Bureau of Labor Statistics studies.²⁸ That means he has \$16.34 available for food each day, 7 days / week, a combination of eating in and eating out. The BLS says we split this about 50/50.

If Joe was a Black or Hispanic male – examples of specific socio-economic groups – he would only earn \$820 / week (\$42,640 per year)²⁹ meaning \$11.71 available for food each day.

Average American annual weight gain from Washington Post, 'Look How Much Weight You're Going to Gain' 1/29/2016

²⁶ In this case I used www.calculator.net.

²⁷ US Dept of Agriculture estimate 2021, [https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=76967#:~:text=In%202021%2C%20U.S.%20consumers%20spent,from%20home%20\(5.1%20percent\)](https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=76967#:~:text=In%202021%2C%20U.S.%20consumers%20spent,from%20home%20(5.1%20percent).).

²⁸ Overall Median weekly earnings from BLS, [wkyeng \(5\).pdf](#), July 29, 2022, 'Usual Weekly Earnings of Wage and Salary Workers Second Quarter 2022'

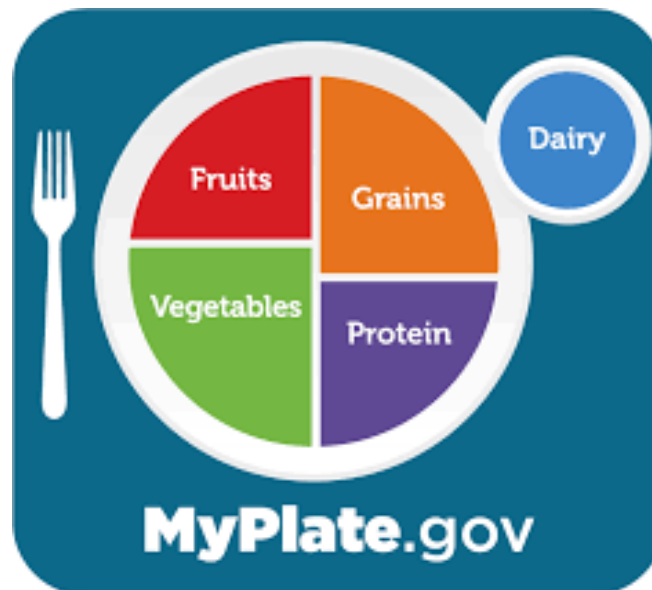
²⁹ Black and Hispanic male earnings from BLS, 'TED, The Economics Daily', Oct 25, 2021, <https://www.bls.gov/opub/ted/2021/median-weekly-earnings-were-916-for-women-in-third-quarter-2021-83-3-percent-of-mens-earnings.htm#:~:text=Source%3A%20U.S.%20Bureau%20of%20Labor,End%20of%20interactive%20chart.&text=In%20the%20third%20quarter%20of%202021%2C%20median%20weekly%20earnings%20for,the%20median%20for%20White%20men.>

Or if Joe were a woman, again a different socio-economic group, he would earn, on average, about 15% less and need about 10% fewer calories.³⁰

Quick quantitative summary about Joe:

- He currently eats about 2650 calories per day. He gains about 1.5 pounds per year.
- He needs to reduce his daily caloric intake to 2237 to lose ½ pound per week or 26 pounds / year. That's 13% of his body weight.
- He has \$16.34 available for food daily.

Let's turn now from calorie quantity to calorie **quality**. The most recent government recommendation is that our food plate consist of 50% fruits and vegetables, 25% grains – mainly whole grains – and 25% protein and dairy. That's a rough approximation of the US Department of Agriculture's MyPlate, image below. You can google MyPlate.gov for more.



I don't like this graphic. It's too cartoonish in my opinion and not detailed enough as a guide. I prefer the Canadian Food Plate version, below. It conveys the same information but with more impactful graphics; it shows specific foods in each category. We'll call it the Food Plate and use it in this text rather than the MyPlate image above for graphic and presentation reasons only. Feel free to disagree with my artistic taste.

³⁰ Earning estimates from various BLS studies. Calorie estimates from calculator.net; I simply substituted 'female' for 'male' using Joe's numbers. The calculator estimated 2008 calories / day for a woman instead of 2237 for Joe.

The Canadian Food Plate

Water is the recommended drink.



You can quickly see the breadth and types of foods in each category and the approximate serving size of each.

Proteins, for example, include nuts, beans, legumes and eggs, not just chicken, beef, pork, and fish and make up a quarter of your meal plate.

Fruits and vegetables come in lots of different colors and flavors, with that variety apparently providing nutritional benefits.

This version suggests that we eat lots of different vegetables, not just potatoes and tomatoes, the two most commonly consumed vegetables in the US, which together dwarf all the others combined.³¹

Ditto lots of different fruits, not just apples and oranges, the most commonly consumed fruits in the US, which, along with bananas, dwarf the others.³²

³¹ Potatoes and tomatoes most commonly consumed vegetables, US Economic Research Service, Department of Agriculture, 2019 <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=58340>

³² Apples and oranges are top US fruit choices, US Economic Research Service, Department of Agriculture, 2019 <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=58322>

That's why I like this graphic: it's impactful and recommends a wide variety of foods simply and comprehensibly.

It also tells you what to avoid. Look at what's not on this plate:

- Corn, at least not very much of it
- Sugar
- Sweeteners
- Oils, salad dressing
- Refined, bleached flour
- Processed foods and snacks like chips, cookies & baked goods
- Sugary drinks
- Beer, wine & alcohol

We eat lots of these foods. Consider these food consumption amounts from a Pew study of American food and nutrition practices:³³

Baked goods, a \$35 billion / year market segment not on the Food Plate, includes refined flour and sugar.

Sweeteners, about 15% of daily calories for the average American, include sugar and corn based products in addition to non-caloric options like aspartame. A can of regular Coke contains 140 calories for example. Americans consume about 40 gallons of soft drinks per person annually, 72% non-diet.³⁴ Soft drink sales run about \$318 billion per year. Not on the Food Plate.

Snacks, about 27% of children's daily caloric intake (remember Tufts Dean Dr. Mozaffarian's estimate on page 11 above that 1 in 4 American teenagers is pre-diabetic?), mainly salty snacks, candy, cookies, and sugary drinks. Snacks, ice cream, candy and cookies are a \$70 billion / year industry segment. Not on the Food Plate.

Oils for cooking, flavoring, and salad dressing, about 23% of our daily calories. On average. Americans consume about 36 pounds of these per year. Not on the Food Plate.

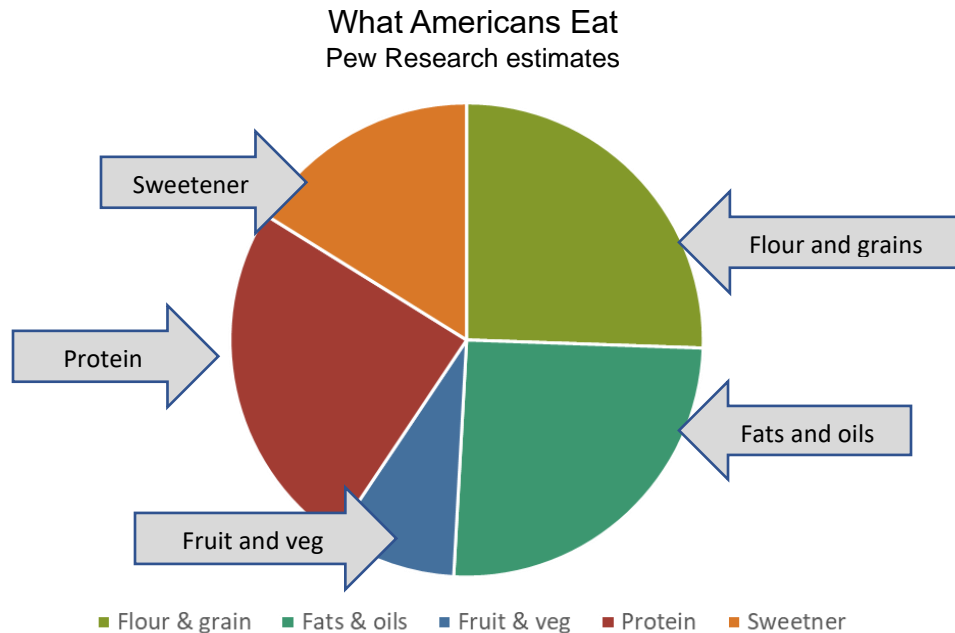
Processed foods including hydrogenated oils, High Fructose Corn Syrup, flavoring agents and emulsifiers used in foods like potato chips, sugary drinks and processed meat, not on the Food Plate. Processed foods tend to lead to higher weight gain than unprocessed.³⁵

³³ What's On Your Table: How America's Diet Has Changed Over the Decades, Drew Desilver, Dec 13, 2016

³⁴ Diet vs regular soda percent estimates from statistica.com
<https://www.statista.com/statistics/1133019/carbonated-soft-drinks-regular-vs-diet-volume-us/>

³⁵ First randomized, controlled study finds ultra processed diet leads to weight gain, Clinical Center News from NIH, 2019 <https://clinicalcenter.nih.gov/about/news/newsletter/2019/summer/story-01.html>

Instead of eating the high quality calories shown on the Food Plate above, here, according to the Pew Research folks, is what we really eat:



I find this estimate credible based on supermarket shelf space allocations and restaurant menus.

Supermarkets allocate shelf space according to food sales, more to foods that sell the best. See the space allocated to salad dressing, cookies, and sweetened breakfast cereal for example.

Restaurants offer meals that people request the most. Moderate priced, popular restaurants - the large chains for example – frequently offer ‘burger and fries’ or ‘chicken, potato and vegetable of the day’ or ‘salad’ generally lettuce, tomato and carrot shavings doused in dressing. Many restaurants offer more dressing options than vegetable variety. Compare all this to the frequency of fruit offerings.

Joe, our typical American male, thus faces 3 tasks in his attempt to avoid diabetes:

- Eat fewer calories.
- Eat higher quality calories.
- Stay within his \$16.34/day food budget.

How might he accomplish all this?

Composite Daily Menus

Let’s compare the daily costs of Joe’s current diet and a healthier one designed to prevent diabetes. I’ve developed two sample day’s meals – one called Food Plate based on the Canadian Food Plate above and the other called Typical based on the

Pew analysis. I used food prices at my local Shaw's supermarket in Easton, Massachusetts in October 2022.

These diets are composites of what people *should* eat and what they often *in fact* eat. In designing these menus – particularly the typical one - I considered supermarket shelf space. I choose popular items meaning lots of people buy and eat them.

We have, of course, endless food options and combinations in this country. I present this analysis in part to show calorie and cost data and in part to show a methodology. You can do a similar analysis yourself and see your own results. I suspect they will be close to mine below.

The healthier Food Plate diet below comes to 2237 calories for a day, our goal for Joe to lose ½ pound / week; the typical diet comes to 2648 calories, very close to our daily estimate of 2650 for Joe to gain 1.5 pounds / year.

Look at the components and cost difference.

Breakfast, Food Plate

- 1 whole wheat English muffin = 120 calories, \$.88
- 2 tablespoons peanut butter = 190 calories, \$.32
- 1 medium banana = 105 calories, \$.24
- 1 large orange = 87 calories, \$.73
- Black coffee = 2 calories, \$.20
- 504 calories
- \$2.37 at Shaw's, Easton

Breakfast, typical diet

- Shaw's honey bran muffin = 420 calories, \$1.25
- Coffee = 2 calories, \$.20
- Cream @ 35 calories per serving of Coffeemate = 35 calories, \$.07
- Sugar @ 30 calories per serving of granular sugar = 30 calories, \$.04
- 487 calories
- \$1.56 at Shaw's, Easton

Lunch, Food Plate

- Spinach salad w/ tomato, carrots, yellow pepper, beets (130 cal total, \$5.02)
 - 1 serving of fresh spinach = 20 calories, \$1.71
 - Half a tomato = 45 calories, \$1.50
 - Half a serving of carrots = 15 calories, \$.16
 - Half a yellow pepper = 25 calories, \$.85
 - Half a serving of beets = 25 calories, \$.80
- Oil & vinegar dressing = 84 calories, \$.22
- .33 lb chicken breast @ 748 calories per pound = 247 calories, \$1.32

- 1 pita = 90 calories, \$.37
- Apple = 95 calories, \$.66
- 648 calories
- \$7.62 at Shaw's, Easton

Lunch, typical diet

- Ham & cheese on sub roll with mustard & iceberg lettuce (538 cal total, \$3.20)
 - Ham, .25 pound @ 885 calories per pound = 221 calories, \$2.00
 - Cheese, 1 slice = 100 calories, \$.30
 - Sub roll = 200 calories, \$.50
 - French's mustard, 1 serving = 1 calorie, \$.03
 - Iceberg lettuce .15 of a head = 16 calories, \$.37
- Bag of chips from multi-bag box = 150 calories, \$.52
- 3 Oreos = 160 calories, \$.26
- Apple = 95 calories, \$.66
- Coca Cola, can = 140 calories, \$.23
- 1083 calories
- \$4.88 at Shaw's, Easton

Dinner, Food Plate

- Basmati rice bowl with broccoli, summer squash, snap peas, green beans, .4 lb salmon, soy (873 calorie total, \$8.48)
 - 2 cups Basmati rice @ 170 calories per cup = 340 calories, \$.38
 - 1/3 pound of broccoli = 51 calories, \$.66
 - 1/3 pound of summer squash = 24 calories, \$.66
 - 1 serving of sugar snap peas = 35 calories, \$1.00
 - 1/4 pound of green beans = 25 calories, \$.82
 - .4 pounds of salmon = 378 calories, \$4.80
 - 1 tablespoon low salt soy sauce = 20 calories, \$.16
- Blueberries (.6 pint) = 137 calories, \$1.20
- Strawberries (.5 lb.) = 75 calories, \$2.50
- 1085 calories
- \$12.17 at Shaw's, Easton

Dinner, typical diet

- Pasta with sauce, ground beef, grated cheese (578 calories, \$2.55 total)
 - Barilla pasta, 1 serving = 200 calories, \$.37
 - Prego traditional pasta sauce, 1 serving = 70 calories, \$.80
 - 80% ground beef, .25 pounds = 288 calories, \$1.25
 - Grated Kraft parmesan cheese, 1 serving = 20 calories, \$.13
- Green salad with dressing (150 calories)
 - Dole American salad bag, 2 servings = 30 calories, \$1.50

- Ken's House Italian dressing, 1 serving = 120 calories. \$.25
- Canned peaches, 1 serving = 100 calories, \$.50
- Friendly's vanilla ice cream, ½ serving = 105 calories, \$.28
- Bottle of Budweiser beer = 145 calories, \$1.38
- 1078 calories
- \$6.46 total, food from Shaw's, Easton, beer from Walmart

You can see my spreadsheets at the end of this chapter for additional details. I encourage you to use this methodology with your dietary analysis. You can adjust the daily calorie targets to fit your own needs, then insert your foods of choice.

We learn from this process that 2237 healthier Food Plate calories cost \$22.16 / day. Those are the foods Joe is supposed to eat, with meals designed to lose ½ pound per week and out of metabolic syndrome. If Joe spends 10% of his salary on food as the Bureau of Labor Statistics suggests, then he needs to earn at least \$80,000 per year to afford this menu.

But Joe only earns \$59,488 per year. We learned that earlier in this chapter. He can't afford the healthy Food Plate!

Imagine that Joe is a Black or Hispanic male. He'd only earn \$42,640 per year making the Food Plate even more unaffordable.

Try this with your socio-economic demographic of interest and see what you learn.

Now let's consider the 2648 calorie typical diet. It only costs \$12.90 / day, making it affordable to people earning at least \$47,000 per year. Joe earns that much. It is tasty and satisfying.

But he gains 1.5 pounds per year on it and risks prediabetes, metabolic syndrome and diabetes.

We're beginning to learn why we don't prevent diabetes by following the 'eat more fruits, vegetables and whole grains, less processed food, fat and sugar' mantra. It's too expensive.

This analysis only addressed foods prepared at home using one supermarket's prices. I ran a similar analysis on restaurants, comparing healthier and typical meals at Cheesecake Factory and D'Angelo's. It's methodologically easy; simply look up your items of choice on the restaurant's menu and nutritional guide – sometimes they're listed together on the menu - then divide.

Here's what I found, again all in October 2022.

At the Cheesecake Factory, 'The Club' sandwich with turkey, bacon, bread, French Fries, lettuce, tomato and mayonnaise contains 1740 calories and costs \$17.95. That's 1.0¢ per calorie.

The Cheesecake Factory's Skinnylicious Factory Chopped Salad including dressing contains 530 calories and costs \$15.95. That's 3.0¢ per calorie, 3x more per calorie than the Club sandwich.

At D'Angelo's, the medium Italian sub contains 790 calories and costs \$10.29. That's 1.3¢ per calorie.

The D'Angelo's Garden Salad with small Pokket (pita bread) but without dressing contains 180 calories and costs 4.6¢ per calorie, about 3.5x more per calorie than the Italian sub.

As with our supermarket example above, eating the Food Plate healthier calories costs more. The oft-recommended 'fruits, vegetables and whole grains, not processed food, fat and sugar' diet is still too expensive.

How much more expensive? According to my supermarket food data above, eating healthier – meaning eating according to the Food Plate – costs about \$9.26 more per person per day. That's \$3370 per year or, for the US average 2.6-person household, over \$8700.

A single person would need to earn \$33,000 more annually to afford the Food Plate meals above. That's using the US Department of Agriculture's '10% of your income on food' estimate discussed above.

An average American household would need to earn \$87,000 more.

That's not the cost of eating but the *additional* cost of eating a healthy diet, the one designed to avoid or exit from, metabolic syndrome.

Even if my analysis is off by 60% - which it isn't – the typical American 2.6 person household would still need to earn \$35,000 more to eat Food Plate style.

That's a significant economic disincentive to eat healthy foods and a significant economic incentive to stay the course.

Can Joe simply eat fewer typical calories and lose weight?

Perhaps, but unlikely.

Healthier Food Plate meals make you feel fuller, longer, largely because of the water and fiber contents of fruits and vegetables. More typical meals, with lower of both, make you feel hungrier more quickly.

In addition, research published in the Journal of the American Medical Association in January, 2023 suggests that our typical meals, compared to the Food Plate, increases these risks: ³⁶

³⁶ JAMA Internal Medicine Healthy Eating Patterns and Risk of Total and Cause-Specific Mortality, Jan 9, 2023

- Cardiovascular death by about 10%
- Cancer death by about 10%
- Dementia by about 10%
- Respiratory disease by about 35%

The highly processed foods in our typical diet tend to raise blood pressure – from the salt – and blood sugar from the various corn-based additives. That sugar spike then wanes and makes you feel hungry again, more quickly than from a Food Plate meal.

Some research suggests that the combination of sweeteners, salt, fat, and food additives in typical foods makes some almost addictive; you crave certain tastes and feelings like fullness, pleasure or quick energy. Sugar alone seems to exhibit addictive properties³⁷ making it difficult to modulate or cut from your diet. Ditto for diet soda.³⁸

Bottom line: it is highly unlikely that Joe can lose weight by reducing his daily caloric consumption while staying on the less-expensive, typical diet. Our national weight gain experience over the past few decades – while most of us claim to be on diets, or want to lose weight at any rate - seems to support this conclusion.

Why do healthier foods cost more?

This chapter is not a discussion of food subsidies but the question often arises. Here's a very short explanation:

Congress and various states subsidize food production.³⁹ In 2016, for example, the feds provided \$13.9 billion in crop subsidies and insurance payments, equivalent to 25% of farmers income. Those subsidies generally went to the largest and best organized farm groups like huge companies that produce commodities - corn and soybeans for example. About 90 million acres – half our farmland – goes to those types of heavily subsidized products.

Food producers, in turn, then use those products in processed foods. That helps explain why corn sugar (a.k.a High Fructose Corn Sugar, HFCS and corn syrup) is included in so many of our processed foods. Just check the ingredients of your favorite jars or cans of food. We'll discuss this more in the section on food tastes, below.

Subsidized corn sugar competes with real sugar and thus helps control the cost of real sugar, thus expanding the market for sweeteners, about 15% of American's typical daily calories.

³⁷ Is Sugar Addictive? DIABETES, publication of the American Diabetes Association, June 13, 2016 <https://diabetesjournals.org/diabetes/article/65/7/1797/16150/Is-Sugar-Addictive> and Sugar Addiction: Is It Real?, BMJ Journals, British Journal of Sports Medicine, Vol 52, Issue 14, 2018 <https://bjsm.bmj.com/content/52/14/910>

³⁸ Ellin, I Was Powerless Over Diet Coke, NY Times, August 11, 2021

³⁹ This analysis comes from Barth, Congress Finally Passed a New Farm Bill, January 7, 2019, Modern Farmer

Meanwhile, only about 10 million acres, or 3% of our cropland, goes to fruits, nuts and vegetables, products not typically included in the farm subsidy programs. They're more expensive for 2 reasons:

- Consumers pay the full price for their production since production costs are not subsidized by the government
- There is no excess supply since their acreage is constrained by market forces, not supplemented by subsidies. Tighter acreage means less supply. The standard economics of price being determined by supply and demand factors then takes over.

We subsidize the foods we're not supposed to eat much of and fail to subsidize the foods we're supposed to eat in abundance. Hmmm....

But wait, there's more Some non-cost problems switching to a healthier diet

Let's now discuss some additional, non-cost problems of switching from our typical to a Food Plate diet. The problems fit into 3 groups: hunger, taste, and convenience. How much of a financial incentive would be required to induce people to overcome these problems as, for example, in a wellness program? We'll take some guesses. Remember: the guess amounts are over and above the \$3370 per person food cost difference.

Hunger: as people eat fewer calories, they feel hungry. That's the prime behavioral reason so many diets fail: people want that satisfyingly full feeling.

I sometimes hear people claim, 'I lost 25 pounds and never felt hungry.'

I rarely see these dietary results replicated on a large group of people over a long time period, making me dubious. Indeed, studies suggest that the vast majority of dieters regain all their weight within 2 years. I suspect hunger or related food cravings is a primary culprit.

When people claim to have lost weight without feeling hungry, I often ask 'Why doesn't everyone do that?'. That generally ends the conversation.

I can think of only 2 large groups of people who successfully lose weight by dieting and keep it off for a long time: actors and athletes. Apologies if I unintentionally missed a group. Actors and athletes sometimes / always have body weight requirements included in their employment contracts. That's a tremendous economic incentive, far exceeding anything that employers, insurance companies or the medical establishment can provide to employees or patients.

A word about the long term issue facing dietary incentives. Good food habits – eating certain foods, losing your taste for others, acclimating yourself to a certain 'appropriate' hunger – takes months if not years to develop. By 'appropriate' hunger, I mean accustoming yourself to feeling somewhat hungry much of the

time and feeling only somewhat full immediately after meals, not ‘stuffed’ or ‘fully satisfied’.

Most people, according to studies, need at least a few months to adapt to this new feeling and develop new food habits; other folks need much longer.⁴⁰ I needed a year when I lost 40 pounds in 2021 but that story comes later in this text.

How much of an economic incentive does Joe need to switch from his traditional 2650 calories per day to the Food Plate’s 2237? Probably less than the \$200,000 Matthew McConaughey earned for his 50 pound weight loss in Dallas Buyer’s Club but I don’t know how much less. Perhaps 3% of Joe’s annual income? 5%? More? While I don’t know the exact amount, I’m pretty sure that a calorie-restricted dietary program needs to address this issue and that it’s costly.

Taste. Our Food Plate lacks many tastes common to the typical American diet including sugar, salt, salad dressings and mayonnaise. Because of this, people sometimes complain that healthy foods taste bland. They also sometimes describe food cravings, missing various tastes and sensations.

Food producers know this and have identified the ‘bliss point’, a combination of sweetness, saltiness and richness (generally from some sort of fat) that people find satisfying. The right combination of these sends a jolt of endorphins to your brain causing a pleasure sensation and desire to do it again. That’s why people like mayonnaise on sandwiches, salad dressing on their salads and cream and sugar in their coffee. It makes food more satisfying. How often have you heard ‘I just couldn’t drink black coffee’?

The combination of sweetness, saltiness and richness works better together than any one ingredient on its own. That’s why a standard sized Hershey Bar contains 35 milligrams of sodium⁴¹ and a Nestle Crunch Bar 66 milligrams,⁴² why Jif peanut butter contains 2 grams of sugar per serving⁴³ and Barilla pasta sauce 7 grams⁴⁴. Try eating pasta sauce without any added sugar.

Fruits and vegetables lack the bliss point. There’s infinitesimal salt in an apple or yellow pepper, infinitesimal sugar in spinach or kale. And no fat.

The good news is that people can adjust their tastes to become satisfied with non-bliss point foods. The bad news is that it takes time to develop the habit, just like adjusting to the new ‘slightly hungry’ or ‘no longer totally full’ eating feeling. Again, programs aiming

⁴⁰ Grohol, Need to Form a New Habit? Give Yourself At Least 66 Days, PsychCentral, October 7, 2018 <https://psychcentral.com/blog/need-to-form-a-new-habit-66-days> ; UCL News August 9, 2009 Interview with Phillippa Lally <https://www.ucl.ac.uk/news/2009/aug/how-long-does-it-take-form-habit>

⁴¹ <https://www.hersheyland.com/products/hersheys-milk-chocolate-candy-bar-1-55-oz.html>

⁴² <https://www.heb.com/product-detail/nestle-crunch-candy-bar/98268>

⁴³ <https://www.jif.com/peanut-butter/creamy/simply-jif>

⁴⁴ <https://www.heb.com/product-detail/barilla-traditional-sauce/1637428>

to help people eat fewer-but-healthier calories need to maintain their incentives for this lengthy time period.

A personal observation about food habits and their development.

I recently had an 11:00 am meeting at a local college. The building's foyer featured a Dunkin' Donuts kiosk with a constant line of students from 10:30 am when I arrived until noon when I left.

This was just one of several food outlets on campus.

I watched student after student, dozens if not a hundred plus during my time there, order bacon-egg-and-cheese on a bagel, sausage-egg-and-cheese on a croissant or similar, along with various lattes and macchiatos.

I looked up the calories:

- 16 ounce latte, 190 calories
- 16 ounce Caramel Macchiato, 250 calories
- Sausage, egg and cheese croissant, 720 calories
- Bacon, egg and cheese bagel, 520 calories

No vegetables. No fruit. No whole grains. Virtually nothing from the Food Plate.

College age people develop habits when they live away from home for the first time. Unhealthy habits in this case, according to the US and Canadian food plate guidelines.

I left my meeting depressed about the future health of these college kids. Most, or at least many, will have 'the talk' with their doctor in a couple of decades, *after* they become prediabetic or develop metabolic syndrome, or worse, diabetes itself.

They'll discuss the need to lose 10-20% of their body weight and drastically change their diet to avoid diabetes. A heavy lift in their 40s and 50s.

But, unfortunately, an entirely preventable near certainty.

Latte and macchiato calories estimates from Java Express [https://www.javapresse.com/blogs/enjoying-coffee/how-many-calories-are-in-coffee#:~:text=Calories%20In%20A%20Latte%2C%20Cappuccino%2C%20And%20Other%20Espresso%20Drinks&text=Cappuccino%20\(8%20ounces\)%3A%2080.16%20ounces\)%3A%20250%20calories](https://www.javapresse.com/blogs/enjoying-coffee/how-many-calories-are-in-coffee#:~:text=Calories%20In%20A%20Latte%2C%20Cappuccino%2C%20And%20Other%20Espresso%20Drinks&text=Cappuccino%20(8%20ounces)%3A%2080.16%20ounces)%3A%20250%20calories) I couldn't find exactly what I sought on Dunkin' Donut's website.

Convenience. Joe's 'typical' meals described in this text included a store baked honey bran muffin as opposed to the Food Plate English muffin and peanut butter with fruit. His ham-and-cheese sandwich lunch with a bag of chips and Oreos was quicker to make than the Food Plate made-from-scratch spinach salad with chicken breast. Not only quicker to make, but also quicker to eat.

His industrially produced dinner pasta sauce with canned peaches and ice cream for dessert was easier to prepare than the Food Plate home-made rice bowl.

Accessing these convenient foods is easy and relatively stress free – just open the can or package. Meanwhile, shopping for, cutting and preparing the less-convenient-but-healthier Food Plate meals is more difficult and time consuming and therefore more stressful in our time compressed daily lives.

As one indication of convenience importance in our daily food decisions, consider the number of take-out food options now available. (I'm not sure if take-out counts as eating at home or out, but it doesn't much matter what we call it as long as people stay within their '10% of salary on food' parameter.) We had, for example, 71,856 pizza restaurants in 2012 but 78,092 in 2020.⁴⁵ That's almost a 9% increase in 8 years, just pizza shops, not including other competitive take out options. All this suggests that increasing numbers of us order out to eat in, the definition of convenience.

How much should designers of wellness or diet programs incentivize people to eat more labor intensive / healthier foods as opposed to more convenient-but-less healthy? I don't know – not a program designer – but food convenience is one factor that such programs need to address. 'Address' here means 'provide economic incentives to do', i.e. pay people to do.

Summary of the diet part of 'diet and exercise'

We have established so far that eating fewer-but-healthier calories costs more than eating more-but-unhealthier ones. The cost difference is about \$9.12 per person per day or \$3320 per year. Those are, of course, just estimates – take them with a grain of salt. (Bad pun.)

We have also discussed

- how eating fewer calories makes people feel hungry
- how eating non-bliss point foods diminishes taste satisfaction, and
- how consuming less convenient foods is more difficult and time consuming.

Overcoming those behavioral obstacles requires additional financial incentives for the 6-to-8 months – or more – necessary for the new dietary habits to get formed.

Remember our discussion so far: we want to help brokers avoid selling the false hope that wellness programs will save employers and employees money in the future. As a case study, we explored helping people avoid prediabetes, metabolic syndrome and diabetes. We discussed the 'diet' part of that standard 'diet and exercise' recommendation. We learned that eating healthier foods is more expensive, less tasty, less convenient and less comfortable. The dietary goal is, therefore, difficult to achieve.

Tons of real world evidence supports this conclusion, including the increasing rates of obesity and diabetes in the past 20 years.

⁴⁵ Number of pizza restaurants in the US, Statistics <https://www.statista.com/statistics/377597/number-of-pizza-restaurants-us/>

Let's switch focus and turn to the exercise side now, to see if that holds more promise for success.

Exercise

The April – May 2004 issue of Harvard Magazine summarized some then-current research at Harvard University and Medical School as follows, lightly edited for flow:

[Imagine there's] a pill, a marvel of modern medicine that will regulate gene transcription throughout your body, helping prevent heart disease, stroke, diabetes, obesity, and 12 kinds of cancer—plus gallstones and diverticulitis.

Expect the pill to improve your strength and balance as well as your blood lipid profile. Your bones will become stronger. You'll grow new capillaries in your heart, your skeletal muscles, and your brain, improving blood flow and the delivery of oxygen and nutrients.

Your attention span will increase. If you have arthritis, your symptoms will improve.

The pill will help you regulate your appetite, and you'll probably find you prefer healthier foods. You'll feel better, younger even, and you will test younger according to a variety of physiologic measures.

Your blood volume will increase, and you'll burn fats better. Even your immune system will be stimulated.⁴⁶

There is just one catch. There's no such pill.

The prescription instead is exercise.

Everyone knows that exercise is good for you. The Harvard quote makes the point poignantly. But touting the overall benefits of exercise is not our aim here. Instead, our focus is diabetes prevention and, more specifically, the impact of exercise on people with prediabetes or metabolic syndrome and the tie-in to wellness programs. How does exercise impact these groups?

Several papers address this, mainly for metabolic syndrome patients. I'll quote 3 below:

One study by the Norwegian University of Science and Technology Faculty of Medicine in 2008 found that 36% of patients with metabolic syndrome reversed the condition with 4 months of exercise.⁴⁷ "The study shows that exercise in general, but especially interval training, is able to partially or completely reverse metabolic syndrome," according to lead author Arnt Erik Tjønnå.

⁴⁶ The Deadliest Sin, Harvard Magazine, April – May 2004

⁴⁷ <https://norwegianscitechnews.com/2016/08/exercise-to-combat-metabolic-syndrome/>

Second, a 2017 meta-review of 16 studies was, according to the authors, the “first to compare the effects of aerobic, and combined aerobic and resistance, exercise on clinical outcome measures in people with metabolic syndrome”.⁴⁸

The authors concluded that

- BMI was significantly reduced in exercise versus control groups.
- Fasting blood glucose was significantly reduced in exercise compared to control groups.
- Triglycerides were significantly improved, and LDL cholesterol was significantly improved in exercise versus control participants.
- HDL cholesterol was unchanged in exercise versus control participants.

Third, a 2019 metastudy, published in *Nutrients* suggested that “physical activity as a treatment for metabolic disease remains underutilized.”⁴⁹ Among their findings

In one component study “exercise training resulted in marked improvements in the metabolic profile of the participants, including triglycerides, HDL cholesterol, blood pressure, fasting plasma glucose, and waist circumference. Of the 105 participants with the metabolic syndrome at baseline, 30.5% (32 participants) were no longer classified as having the metabolic syndrome after training.”

A different component study found “strong support the use of aerobic exercise for patients with the metabolic syndrome who have not yet developed diabetes.”

A third component study totaling 77,000 patient hours of exercise for folks with metabolic syndrome found “In analyses comparing aerobic exercise training versus control groups, there were reductions in BMI, waist circumference, systolic blood pressure and diastolic blood pressure, fasting blood glucose, triglycerides and low-density lipoprotein.”

The authors concluded that “achieving the minimal physical activity guidelines (at least 150 minutes per week of moderate-intensity activity or 75 minutes per week of vigorous intensity activity) has been consistently demonstrated to have significant benefits on metabolic risk” and “Among subjects who meet the criteria for the metabolic syndrome, health outcomes are significantly improved by aerobic or resistance training, or their combination.”

Terrific benefits to people suffering from metabolic syndrome. Unfortunately, Americans don’t exercise much or enough.

The CDC recommends that adults get 2.5 to 5 hours of moderate cardio exercise per week and 30 minutes of muscle strengthening exercise. Only 23% of us meet these

⁴⁸ Ostman et al, The effect of exercise training on clinical outcomes in patients with the metabolic syndrome: a systematic review and meta-analysis, *Cardiovascular Diabetology*, 2017

⁴⁹ Myers et al, Physical Activity, Cardiorespiratory Fitness, and the Metabolic Syndrome, *Nutrients*, July 19, 2019

targets, skewed toward higher income folks.⁵⁰ Lower income folks, those most likely to find switching to the Food Plate diet more economically difficult, tend to exercise the least.

How much might it cost to incentivize people to exercise? An old economic rule-of-thumb suggests that people value their free time at 1/3 the amount they normally earn. Our hero Joe, earning the US male average of \$1,144 / week, gets \$28.60/hour and would therefore value his free time at \$9.44/hour. He would, according to this economic theory, exercise in his free time if someone paid him \$9.44 / hour or more.

Joe probably should exercise about 4 hours / week – that’s conservative, the mid-point of the CDC’s weekly recommendation. I exercised about 7 hours / week during my own weight loss period, mainly brisk walking, but again, that discussion comes later in this text. Joe’s 4 hours / week would cost \$37.76, or \$1964 in annual incentives. I don’t know who pays this – an employer, insurance company, hospital, TPA or other. At this point, I only want to suggest what the incentive would be. I focus here on why we fail to prevent diabetes and invite others to figure out the rest.

Two Context Factors that increase diabetes risks

Two socio-medical factors underly our failure to treat patients suffering from metabolic syndrome and to prevent diabetes. I’ll briefly address each in turn.

Television. Americans watch, on average, about 3 hours of TV each day.⁵¹ The states in which people watched the most TV correlate closely with states having the highest percent of obese people – West Virginia, Alabama, Arkansas and Mississippi. Obesity often leads to diabetes. We begin to see the television link

“The best single behavioral predictor of obesity in children and adults is the amount of television viewing,” according to Harvard School of Public Health’s Professor Steven Gortmaker.⁵² “The relationship is nearly as strong as what you see between smoking and lung cancer.” Wow.

Unpack this:

TV watching is non-weight bearing, non-aerobic, entirely sedentary activity that generates no metabolic system benefit or weight loss.

TV watching exposes viewers to ads for generally-less-healthy food products like sugary breakfast foods, salty snacks, baked goods and highly processed fast

⁵⁰ Only 23% of adults meet guidelines, Time Magazine, Ducharme, June 28, 2018.

⁵¹ Hubbard, Outside of Sleeping, Americans Spend Most of Their Time Watching TV, US News, July 22, 2021. Also Statista, Average Daily Time Spent Watching TV, <https://www.statista.com/statistics/186833/average-television-use-per-person-in-the-us-since-2002/#:~:text=Estimates%20suggest%20that%20in%202022,hours%20watching%20TV%20each%20day.>

⁵² The Way We Eat Now, Craig Lambert, Harvard Magazine, May-June 2004

foods. Plus beer, especially during sports shows. Products advertised rarely include the fruits and vegetables that are supposed to account for half our food plate.

The average American child sees over 40,000 TV commercials per year according to estimates by the American Psychological Association.⁵³ That's a lot of low-quality food message reinforcement!

In addition, TV watching, according to anecdotal evidence, is associated with munching low-quality foods. People report eating salty snacks, buttery popcorn, sugary baked goods and similar while watching TV; fewer (none?) report over-indulging in broccoli or kale to prime time dramas or football playoffs.

The take-away about television watching: if you want to create an obese, diabetic population, just get them to watch lots of TV and subsidize the foods advertised (corn and soy crop subsidies). Our bountiful viewing options including streaming services, seem ideally suited to this task.

Cholesterol treatments. Our typical diet, referenced in the meal case study above, leads to high blood cholesterol, with statin prescriptions a primary treatment. About 1/3 of American adults currently take a statin.⁵⁴

Statins, it turns out, may increase your risk of developing type 2 diabetes.

Statins prevent the buildup of fatty deposits in blood vessels and reduce the inflammation that occurs when arteries are blocked. This lessens your risk of having a heart attack, but it may also make cells more resistant to insulin, the hormone that helps regulate glucose levels in blood. The net effect according to various studies...⁵⁵

- Statins increase your risk of developing diabetes by about 9% on average, but
- The higher the statin dose, the higher the diabetes risk, and
- The higher your blood sugar levels when you start taking the statin, the more likely you are to develop diabetes.

That means sicker people, taking higher statin doses, are more likely to develop diabetes - exactly the people most at risk.

⁵³ Protecting Children From Advertising, American Psychological Association, June 2004
<https://www.apa.org/monitor/jun04/protecting#:~:text=The%20average%20child%20is%20exposed,a%20year%20C%20according%20to%20studies.>

⁵⁴ The 1/3 estimate is extrapolated from the trend. <https://consumer.healthday.com/general-health-information-16/misc-drugs-news-218/number-of-americans-taking-statin-keeps-rising-cdc-694895.html> or <https://www.ahrq.gov/data/infographics/statin-use.html>

⁵⁵ This analysis comes from Madhusoodanan, NY Times, October 25, 2022 Ask Well 'Do statins increase the risk of type 2 diabetes?'

One study found that, on average again, 1 in every 255 people who take a statin for 4 years will develop diabetes⁵⁶ with older patients especially those suffering from multiple health problems are at higher risk than younger, healthier people.⁵⁷

Note the caveat here: though changes in blood sugar caused by statins are 'pretty modest' according to Dr. Jill Crandall, an endocrinologist at the Albert Einstein College of Medicine in New York, they may be enough to tip someone from prediabetes to full blown diabetes.⁵⁸

Let's tie all this together:

- Diabetes and related medical costs account for up to 25% of all healthcare spending, with diabetes rates rising
- About 90% of diabetes is type 2, caused by lifestyle behavior
- The standard 'lose weight and exercise to avoid diabetes' i.e., wellness program advice, is both unaffordable and unpalatable to most of us; diets generally fail within 2 years
- The economic incentives required to keep people on their diet and exercise programs are unaffordable to employers, insurance carriers or similar
- One common behavioral response to our high stress lifestyles – TV watching – may exacerbate the diabetes problem
- Medical treatments for other behaviorally related health problems, like statins to lower cholesterol, may also exacerbate the diabetes problem.

Is there a medical solution?

Semaglutide

Semaglutide developed by Novo Nordisk, apparently treats obesity and diabetes quite well.

In one large random controlled study, for example, patients taking 2.4 milligrams of semaglutide lost an average of 6% of their body weight by week 12 and 12% of their body weight by week 28. That's impressive.

Other studies have suggested similar successes.⁵⁹

In February 2022, the British National Institute for Clinical Excellence (NICE), the UK's medical rationing agency, approved Wegovy, Novo Nordisk's brand name for semaglutide to treat obesity. In the vernacular, NICE approval means the drug works; it has a higher approval bar than the US Food and Drug Administration.

Eli Lilly has developed a competitor weight loss drug called tirzepatide, approved by the FDA for diabetes treatment in May, 2022. Its initial 72 week trial resulted in

⁵⁶ Sattar, Statins and risk of incident diabetes, <https://www.ncbi.nlm.nih.gov/books/NBK78906/>

⁵⁷ Madhursodanan, op cit

⁵⁸ Ibid.

⁵⁹ Weghuber et al, One-Weekly Semaglutide in Adolescents with Obesity, NEJM, Nov 2, 2022

an average 15% weight loss; some 85% of patients lost at least 5% of their body weight compared to only 35% of people on the placebo. Only about 5% of people reported adverse side effects.⁶⁰

I assume other companies have already, or will, similarly design competition to semaglutide.

NICE's stringent use guidelines for semaglutide illustrate some underlying issues with the drug and, perhaps, tirzepatide and others.⁶¹

- It is approved for people with at least 1 weight related medical issue and a BMI of 35 or more, or, only exceptionally, for people with a BMI between 30 – 34.9
- It can only be prescribed as part of a specialist weight management program including supervised weight loss coaching. This has implications for the US where only 1% of physicians are trained in obesity medicine.⁶²
- Semaglutide can be prescribed for 2 years, maximum.

Novo Nordisk also sells semaglutide for diabetes treatment under the brand named Ozempic though, anecdotally, some non-diabetics take it for weight loss.

But the pricing:

- Ozempic, semaglutide for diabetes, lists for \$894 for 4 weeks in the US. Insurance companies normally cover it for diagnosed diabetics.
- Wegovy, semaglutide for weight loss, lists for about \$1,350 per month. Insurance companies normally don't cover it, at least not without a fight.
- Saxenda, basically Wegovy lite also by Novo Nordisk, also lists for \$1,350 per month. Ditto on the insurance coverage front.
- Tirzepatide lists for about \$1,087 for a month supply.⁶³

This creates confusing incentives. In the US, having a high BMI does not necessarily qualify a patient for Wegovy or Saxenda as in the UK. American doctors must wait until their patient becomes diabetic. Patients 'only' suffering from obesity and metabolic syndrome don't have access so must settle for less robust, older medications, often with unpleasant side effects, though this prescribing situation appears fluid as of the time of writing this text.. Currently though, as the New York Times reported, one doctor 'finds herself rejoicing when patients have high blood sugar levels'⁶⁴, i.e., becomes diabetic and therefore eligible for treatment.

⁶⁰ Tirzepatide Once Weekly for the Treatment of Obesity, New England Journal of Medicine, July 21, 2022

⁶¹ Much of this discussion comes from 'NICE approves Wegovy for obesity', European Pharmaceutical Review, February 10, 2022 <https://www.europeanpharmaceuticalreview.com/news/168431/nice-approves-wegovy-semaglutide-for-obesity/>

⁶² Kolata, The Doctor Prescribed and Obesity Drug; the insurance company called it vanity, NY Times, May 31, 2022. Much of the following discussion comes from this source.

⁶³ Drugs.com <https://www.drugs.com/price-guide/mounjaro>

⁶⁴ Ibid.

We don't yet know the long term effects of semaglutide or tirzepatide because they're too new:

- Does a patient who loses 12% of their body weight quickly then keep it off when they stop taking the drug?
- What happens after 2 years, the UK's time limit for semaglutide prescription?
- Is 2 years long enough for the patient to develop good eating habits?
- Can the patient, post-medication, afford to stay on the healthier diet?
- What is the medical cost difference between staying on Wegovy for life and returning to obesity and diabetes?

Semaglutide and, perhaps, the competitor drugs, may be the light at the end of the obesity-to-metabolic syndrome-to-diabetes tunnel. Or they may be the proverbial headlight of an oncoming train. I certainly don't know which, but the future looks murky to me. At best.

Case study

My own experience with metabolic syndrome

My doctor diagnosed me with metabolic syndrome in August 2020 based on various numbers from my annual physical.

A quick word on numbers and annual physicals. I consider these equivalent to a half-semester report card in high school, a rough indication of your academic health and direction. You might be a good student having a bad semester for some ephemeral reason. You might have a serious learning issue. Or you might be going in a bad academic direction through lack of effort for example. Your half semester report card doesn't tell which.

A series of report cards over time might though. Consider a student with an A average in 8th grade, an A- average in 9th grade, a B average in 10th grade and a C- average on the first half semester report card in 11th grade. We see a trend. The report card suggests need for an intervention by the school, parents, community, or others to identify the issue and address it.

Similarly, my 2020 annual physical numbers suggested an issue. What it was – lifestyle, individual biology or something else – remained to be determined.

Add to that my own idiosyncratic personality: I don't like to receive failing grades. I found myself annoyed more than concerned and determined to do something about it. I self diagnosed – always a bad idea – my problem as lifestyle and decided to lose weight, exercise more and see what happened.

See my August 2020 numbers compared to the metabolic syndrome guidelines below. The numbers in red are those indicating metabolic syndrome:

Before (Physical 8/2020)

Weight 225

- BMI 30.5
- BP 168/104
- Total Cholesterol 203
- Triglycerides 269
- HDL 29
- LDL 120
- TC – HDL ratio 6.9
- A1C 5.3
- Heart Rate 91

Guidelines

- Should be < 25; obesity = 30+
- Should be < 150/90 (over 60 yrs old, AHA)
- Should be < 200
- Should be < 200
- Should be > 45
- Should be < 130
- Should be < 4.9
- Should be < 5.7
- Should be 60 - 100

I put myself on diet-and-exercise program and lost about 40 pounds in a year. See the addendum to this chapter for details.

But the big question facing me: would the healthy habits, developed over a year, maintain themselves and keep me at a healthy weight at the 2 year anniversary? I know the 2 year failure rate of weight loss programs is well over 80% with some estimates as high as 97%.

Also, what would that metabolic profile look like 2 years later?

Here are the results from my August 2022 physical, 2 years later. Again, metabolic syndrome number in red:

<p>After (Physical 8/2022) Weight 189</p> <ul style="list-style-type: none"> • BMI 24.9 • BP 142/80 • Total Cholesterol 172 • Triglycerides 83 • HDL 44 • LDL 112 • TC – HDL ratio 3.9 • A1C 5.3 • Heart rate 61 	<p>Guidelines</p> <ul style="list-style-type: none"> • Should be < 25; obesity = 30+ • Should be < 150/90 (over 60 yrs old) • Should be < 200 • Should be < 200 • Should be > 45 • Should be < 130 • Should be < 4.9 • Should be < 5.7 • Should be 60 - 100
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And here's the side-by-side comparison of all those numbers two years apart to show the remarkable impact of weight loss and exercise increase in one relatively easy-to-read chart.

<p>Before (8/2020) Weight 225</p> <ul style="list-style-type: none"> • BMI 30.5 • BP 168/104 • Total Cholesterol 203 • Triglycerides 269 • HDL 29 • LDL 120 • TC – HDL ratio 6.9 • A1C 5.3 • Heart rate 91 	<p>After (8/2022) Weight 189</p> <ul style="list-style-type: none"> • BMI 24.9 • BP 142/80 • Total Cholesterol 172 • Triglycerides 83 • HDL 44 • LDL 112 • TC – HDL ratio 3.9 • A1C 5.3 • Heart rate 61
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Diet and exercise worked well to get me out of the metabolic syndrome.

It's a shame that cost, convenience, and other factors keep so many others from enjoying this success and the related good health / low healthcare costs.

Summary so far

Diabetes accounts for up to 25% of all healthcare spending. Its incidence grows over time, along with the underlying causes: obesity, low quality caloric food consumption and insufficient exercise afflict many of us, perhaps a majority of Americans, perhaps a large majority.

Many afflicted folks progress through metabolic syndrome and / or prediabetes to full blown diabetes. Efforts to intervene behaviorally - typically referred to as wellness programs or lifestyle changes involving dietary improvements and exercise increases - generally fail, by some estimates up to 97% of the time.⁶⁵ They're

- Too expensive for average income Americans
- Too uncomfortable to maintain for years
- Too inconvenient
- Too dissonant with our normal lifestyles, TV watching for example.

New, promising medications are too expensive for widespread use, with 'widespread' meaning the 70 million currently obese Americans. Insurance companies balk at the cost.

I don't see a hopeful path forward. Instead, I see our diabetic population growing along with the associated healthcare costs.

A pessimistic end to a pessimistic chapter.

My calorie and cost spreadsheets

All data from Shaw's, Easton Massachusetts, October 2022. I made several trips to gather data.

In case you have trouble reading the spreadsheets below, the column headings are

- Item name
- Cost / package. The store publishes this.
- Servings / package. This is on the nutritional label of all packaged foods, or you can google it for fruits and vegetables.
- Calories / serving. Again, on the nutritional label. Google provides this information about other foods - calories / pound of apples for example, or calories in a medium apple.
- Cost / calorie. This is a simple division: cost / package divided by number of servings / package divided by number of calories / serving.
- # servings per meal. That's how much you put on your plate. You may choose 2 servings of spinach for example, or ½ serving of ice cream.
- Total calories = Again a simple calculation: the number of calories / serving times the number of servings on your plate.
- Total cost = the cost / calorie for each food times the number of calories on your plate.

⁶⁵ The Weight of the Evidence, Harriet Brown, Slate, March 24, 2015 <https://slate.com/technology/2015/03/diets-do-not-work-the-thin-evidence-that-losing-weight-makes-you-healthier.html>.

Item	Cost / package (\$)	Servings / package	Calories / serving	Cost / calorie	# servings	Total # calories	Total cost (\$)
2 large Eggiant's Best eggs - range fr	4.99	12	70	0.005940476	2	140	\$ 0.83
2 pieces Arnold Multigrain toast	5.29	16	110	0.003005682	2	220	\$ 0.66
1 medium banana	0.69	3	100	0.0023	1	105	\$ 0.24
1 large orange	0.73	1	87	0.008390805	1	87	\$ 0.73
Black coffee	19.99	100	2	0.09995	1	2	\$ 0.20
Total						554	\$ 2.66
Healthy lunch							
Spinach salad	5.99	3.5	20	0.085571429	1	20	\$ 1.71
Tomato	2.99	1	90	0.033222222	0.5	45	\$ 1.50
Carrot	3.49	11	30	0.010575758	0.5	15	\$ 0.16
Yellow Pepper	1.7	1	50	0.034	0.5	25	\$ 0.85
Beets	3.99	2.5	50	0.03192	0.5	25	\$ 0.80
Olive oil - Bertolli	7.49	33	120	0.001891414	0.67	80.4	\$ 0.15
Balsamic vinegar - Filippo Berio	6.99	33	11	0.019256198	0.33	3.63	\$ 0.07
.3 lb of chicken breast	3.99	1	748	0.005334225	0.3	224.4	\$ 1.20
1 pita	2.99	8	90	0.004152778	1	90	\$ 0.37
Apple	1.99	3	95	0.006982456	1	95	\$ 0.66
Total						623.43	\$ 7.47
Healthy dinner (Rice Bowl)							
2 cups brown rice	20.99	111	170	0.001112348	2	340	\$ 0.38
Broccoli	1.99	1	154	0.012922078	0.33	50.82	\$ 0.66
Summer squash	1.99	1	74	0.026891892	0.33	24.42	\$ 0.66
Snap peas	2.99	3	35	0.02847619	1	35	\$ 1.00
Green beans	3.29	4	25	0.0329	1	25	\$ 0.82
Salmon	11.99	1	944	0.012701271	0.4	377.6	\$ 4.80
Low salt soy sauce	3.29	20	20	0.008225	1	20	\$ 0.16
Blueberries	2	1	229	0.008733624	0.5	114.5	\$ 1.00
Strawberries	4.99	1	149	0.033489933	0.5	74.5	\$ 2.50
Total						1061.84	\$ 11.97
Total Daily Calories & Cost						2239.27	\$ 22.10

Item	Cost / package (\$)	Servings / package	Calories / serving	Cost / calorie	# servings	Total # calories	Total cost (\$)
Typical breakfast							
Honey bran muffin (Shaw's)	\$5.00	4	420	0.00297619	1	420	\$ 1.25
Coffee	19.99	100	2	0.09995	1	2	\$ 0.20
Cream (Coffeemate)	4.49	63	35	0.002036281	1	35	\$ 0.07
Sugar (Domino's granular)	1.99	54	30	0.001228395	1	30	\$ 0.04
Total						487	\$ 1.56
Typical lunch							
Ham	7.99	1	885	0.009028249	0.25	221.25	\$ 2.00
Cheese (20 slices / lb)	5.99	20	100	0.002995	1	100	\$ 0.30
Sub roll	2.99	6	200	0.002491667	1	200	\$ 0.50
Mustard (French's)	2.49	79	1	0.031518987	1	1	\$ 0.03
Lettuce - ice berg	2.49	1	105	0.023714286	0.15	15.75	\$ 0.37
Bag of chips	21.99	42	150	0.003490476	1	150	\$ 0.52
3 Oreos	5.49	21	160	0.001633929	1	160	\$ 0.26
Apple	1.99	3	95	0.006982456	1	95	\$ 0.66
Coca cola	2.79	12	140	0.001660714	1	140	\$ 0.23
Total						1083	\$ 4.88
Typical dinner							
Regular pasta (Barilla)	2.99	8	200	0.00186875	1	200	\$ 0.37
Pasta sauce (Prego traditional)	3.99	5	70	0.0114	1	70	\$ 0.80
Ground beef - 80%	4.99	1	1152	0.004331597	0.25	288	\$ 1.25
Grated cheese (Kraft parm)	5.99	45	20	0.006655556	1	20	\$ 0.13
Green salad - Dole American	3	4	15	0.05	2	30	\$ 1.50
Italian dressing (Ken's house)	3.99	16	120	0.002078125	1	120	\$ 0.25
Canned peaches	3.49	7	100	0.004985714	1	100	\$ 0.50
Ice cream (Friendly's)	4.99	9	210	0.002640212	0.5	105	\$ 0.28
Beer (Bud) Walmart	8.27	6	145	0.009505747	1	145	\$ 1.38
Total						1078	\$ 6.46
Total Daily Calories & Cost						2648	\$ 12.90

Gary's Guide to Weight Loss: My 2021 book

This describes my own process of returning to good health from the metabolic syndrome
A version is available on www.lulu.com.

Foreword
Dr. David Mudd

Gary asked me to write a forward to his book while we were kayaking together. I told him I would be honored to do so.

I have worked for 30 years as a primary care physician in a mixed urban / suburban environment. Over these years obesity rates have skyrocketed. I have seen it in my own practice: young and old patients, blue and white collar, it doesn't matter. Far too many of my patients are heavier these days causing other health conditions to become more prevalent including diabetes, hypertension and heart disease.

I have had countless people come to me complaining of their inability to lose weight. The complaints are the same and the accounts of their food intake and exercise eerily similar. "I hardly eat anything" or "I eat the same amount I always have." Lacking hard data, I wonder about this.

When I ask about their activity level, they usually respond “I try to walk.”

They typically want to have their thyroid checked, assuming that there is a medical explanation for their weight gain and fatigue.

My message to them is always the same: “you need to cut back on your calories and become more active”. Unfortunately, we never have enough time together for me to understand their lifestyles, dietary norms and physical activity habits in enough detail. Invariably they return frustrated and unsuccessful.

Fewer than 1/10 patients actually make the changes necessary to lose weight and keep it off.

Patients such as Gary Fradin are few and far between but a joy to work with. Gary is the rare patient who understands nutrition and exercise and actively takes control of his own health. He formulated a plan to cut his calories and increase his activity level and enjoyed spectacular results, losing over 40 pounds and getting himself into good physical shape as well.

Gary summarized the process in this readable and informative book. His recommendations are science based, useful and appropriate. I heartily recommend it.

In fact, I plan to give this book to my own patients. Enjoy it and good luck!

Dr. David Mudd
Easton, Massachusetts
May, 2021

Preface

After Covid struck, after our lives turned upside down, after my business revenues fell by 50%, after all normal routines disappeared, my doctor told me I had metabolic syndrome and to lose weight.

I told him I was fit and healthy.

He repeated his order.

How to lose weight? Diet options ranged from A (Atkins) to Z (Zone). All claimed dramatic successes.

But all almost certainly fail over time. Research suggests that 97% of people regain their weight within about 3 years.⁶⁶ Here, for example, is Traci Mann from UCLA summarizing her group’s study:

⁶⁶ The Weight of the Evidence, Harriet Brown, Slate, March 24, 2015 <https://slate.com/technology/2015/03/diets-do-not-work-the-thin-evidence-that-losing-weight-makes-you-healthier.html>.

“You can initially lose 5 to 10 percent of your weight on any number of diets, but then the weight comes back. We found that the majority of people regained all the weight, plus more.”⁶⁷

I didn't want to be one of the failures.

My doctor offered a nutritionist referral, which I postponed; I didn't like the odds, hate scheduling medical appointments and feared entering the modern diet culture even under the guise of organized medicine.

Instead, I decided to try on my own. I figured I could achieve at least the same dismal long- term weight loss result myself, and possibly do even better.

This chapter describes how.

The program isn't a unique, novel or brilliant but it's straightforward, practical and honest. You can easily adapt it to your own situation.

Just follow the steps, modify it to your own needs and give yourself time.

The Camera Adds 20 Pounds
Me, fit-and-healthy pre-weight loss



⁶⁷ Dieting Does Not Work, Stuart Wolpert, UCLA Newsroom, April 3, 2007
<https://newsroom.ucla.edu/releases/Dieting-Does-Not-Work-UCLA-Researchers-7832>

Introduction

I'm not a doctor, nutritionist, dietician or exercise physiologist. I have no medical training.

Instead, I'm an economist. I measure things. Weight loss strikes me as a measurement problem:

- If you eat more calories than you burn, you gain weight.
- If you eat fewer calories than you burn, you lose weight.
- As you eat less, your metabolism slows so you need to exercise more.

Sustained, long term weight loss also incorporates a fourth, behavioral consideration:

- Do this all slowly enough to develop new habits. That increases your chance of long-term success.

This program incorporates all those issues.

As background, I'm a 68-year-old, 72-inch-tall man. I weighed 225 pounds in my doctor's office on August 13, 2020.

I followed this program for 9 months and weighed 185 at my Sunday morning weigh-in April 4, 2021. I had lost 40 pounds over 36 weeks, about a pound per week on average.

It wasn't very difficult – more a task to accomplish than a mountain to climb - but I was hungry much of the time, especially at the beginning. That feeling dissipated as my new eating habits became ingrained and my body adjusted to its new setpoint. Dissipated but didn't disappear.

I'm optimistic about long-term success, optimistic that my habits have changed enough to maintain my new weight for years to come. Cautiously optimistic that is, not blindly. After all, 97% of people who lose weight ultimately put that weight back on.

We'll see. The future is a long time.

Step 1: Calculate your daily calorie needs.

There's a weight loss mantra 'eat 500 calories less each day and lose a pound a week'.

Maybe true – I don't know - but I needed a starting point. 500 calories less *than what?* No idea. I hadn't tracked my previous consumption.

I initially tried cutting cream from my morning coffee and dessert from lunch and dinner. But I didn't use the same amount of cream every day. Nor did I eat dessert every day but when I did, the type and size varied. Did that cut 500 calories? No idea.

I tried eating smaller portions. Small enough? Too small? Again, no idea. I only knew that I felt hungry. I worried that if I felt hungry without seeing results, I'd get frustrated and stop.

I needed a plan.

So instead of eating 500 calories *less* than some unknown number, I decided to calculate how many calories I *should* eat each day to lose a pound a week, an absolute number.

I googled ‘calories per day to lose weight’ and found lots of websites that base their estimates on age, height, weight, gender and daily activity level. Most suggested roughly the same amount – 2300 calories per day to lose a pound a week from that 225 pound starting point. (Your own amount will vary.)

The agreement among websites gave me a reasonable degree of confidence.

I aimed for 2200 calories per day, slightly below the 2300 estimate to allow for measurement errors.

Interestingly, 2200 calories per day isn’t a starvation diet. Far from it. In fact, the US Department of Agriculture estimates that the average American consumed 2234 calories per day in 1970.⁶⁸ My 2200 calorie target simply mimicked America’s pre-obesity food consumption level.

Three thoughts on eating according to your daily calorie estimates and watching the impact on your weight:

1. Remember to recalculate as you lose weight. Your calorie needs drop.
2. Set reasonable weight loss goals – neither too fast nor too much – to avoid frustration.
3. Weigh yourself on the same scale, at the same time, every week. This generates the most consistent data, necessary to keep you on track. I choose Sunday mornings, first thing. Those are the weights I show in the **Results and Lessons** chapter.

I started thinking ‘if I can get down to 215, I’ll be successful’. Then, upon reaching 215, I wondered about losing another 5 pounds. Then I aimed for 200, a nice round number. Then 195, a 30-pound loss and enough to write a book. Maybe others could benefit from this program?

But losing 40 pounds sounded better than 30, so I aimed for 185 and made it. Low enough! My doc said to stop here.

Remember that my initial goal wasn’t 185. It was 215. Try to define success for yourself as a goal you can reasonably reach in a relatively short period, something that will make you feel proud. Then let the future take care of itself as you gain confidence through success.

⁶⁸ Wells and Buzby, US Food Consumption Up 16% Since 1970, Economic Research Service US Department of Agriculture, November 1, 2005 <https://www.ers.usda.gov/amber-waves/2005/november/us-food-consumption-up-16-percent-since-1970/>

Step 2: Divide your daily calorie target into 3 meals and a snack.

I used this rule-of-thumb for my initial 2200 calorie per day program.

Breakfast - 400 calories (18% of total daily calories)

Lunch - 600 calories (27%)

Dinner - 800 calories (36%)

Snacks or dessert - 400 calories. You can add these to your breakfast, lunch or dinner.

Your own calorie target and meal amounts may differ.

You'll find calorie estimates for specific foods on packages or online. Simply google 'calories in a medium potato' or 'calories in a cup of blueberries' or whatever. It's easy and close enough for our purposes.

Meal timing: I ate according to the clock throughout this program and expect to in the future:

- Breakfast at 9:00
- Lunch at 1:30
- Dinner at 6:30. Regular as clockwork.

Try not to eat whenever you feel hungry because those feelings come and go. Stick to the clock. It's honest, reliable and will keep you on track.

See the discussion of hunger below, for more on this.

Food choices: I learned several things through trial and error about my own reaction to food groups. You probably will too, though perhaps different lessons.

First, I feel fuller, longer, eating vegetables probably because of their high fiber and water contents. I eat lots of vegetables these days.

Second, I prefer healthy food tastes. I look forward today to my English muffin, peanut butter and banana breakfast as enthusiastically as I had previously anticipated pancakes with syrup, or eggs with bacon, sausage and toast.

In fact, I no longer want those overly-sweet, overly-salty, overly-filling, low-fiber meals, not because they're so high in calories but because they make me feel lousy afterward. They sit like a rock in my stomach and leave me stuffed and thirsty, then surprisingly hungry relatively quickly.

Third, I don't miss those previously routine, calorie-rich tastes, things like cream in my morning coffee, cheese and crackers between meals or rich desserts after dinner. I now prefer blueberries, raspberries or strawberries for dessert, sometimes with a drop of honey on top. Berries are sweet and delicious, and I feel good after eating them.

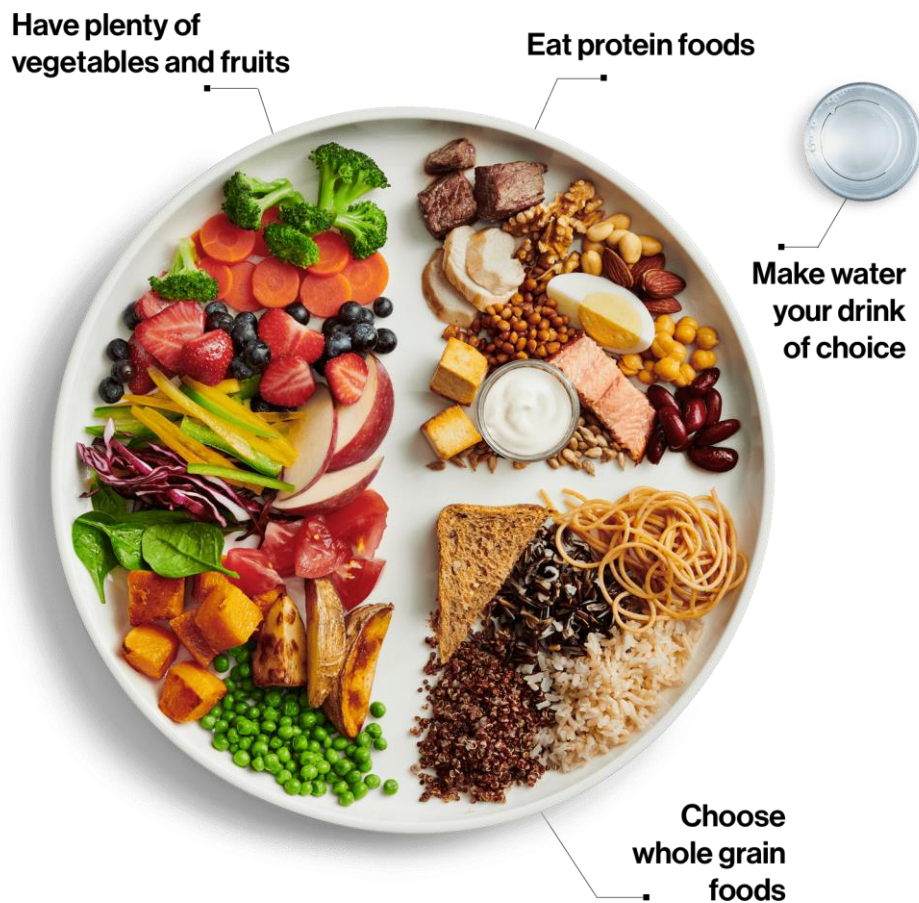
Plus I don't have that sugary thirst like I used to after eating cookies or cake.

My experiences mirror recommendations from 2 thoughtful sources. Michael Pollan, New York Times contributor, best-selling author, and Berkeley professor famously advises people to "Eat food. Not too much. Mostly plants." Consider each phrase.

- **"Eat food"** means eat real, identifiable farm products like fruits, vegetables, whole grains, meat and fish. Avoid ingredients you can't pronounce and foods your grandmother wouldn't recognize.
- **"Not too much"** means stick to your daily calorie limit.
- **"Mostly plants"** means lots of fruit and vegetables.

The Canadian Food Plate, photo below, suggests the proportion of each food group – plants, grains and proteins – to eat daily. Remember that nuts, beans and legumes count as proteins.

About half your plate should be fruits and veggies – aim for lots of different colors - a quarter protein and another quarter whole grains.



Eat food. Not too much. Mostly plants.

Tastes and habits: When people say, 'I can't drink coffee without sugar' or 'I can't eat an egg without salt', I wonder if they remember what got them into their overweight situation in the first place.

Changing eating habits is a process, both challenging and rewarding. The good news is that you really can change.

The bad news is that it takes time. Most people require at least 2 months for a new taste preference to become fully automatic though some people take up to 8 months according to research.⁶⁹ Understand and accept this. Give yourself time to change your habits.

This habit development process may suggest why our modern diet industry so often fails people. It operates within two mutually exclusive constraints.

- First, it has to deliver weight loss results quickly enough that people don't drop out and post negative reviews online.
- But second, long term sustained weight loss and new habit creation takes a long time.

You can't generate fast results slowly! That's why I didn't want to get involved with it. I wanted a program without commercial or time pressure.

Hunger. Eating fewer calories per day makes you hungry. That's simply reality. I learned to differentiate three types of hunger.

* **Hunger as not feeling completely full.** I had previously enjoyed eating until I was 'pleasantly satisfied'. I don't get that feeling anymore.

Instead, I feel 'full enough' these days, not exactly hungry but not completely full either. I could happily eat an additional muffin at breakfast, a bigger sandwich at lunch, an extra helping at dinner or a second bowl of fruit in the evening. But I don't.

I've learned to embrace feeling 'full enough' when I reach my calorie limit per meal. It's my new normal, my new habit. Today it feels right.

You can adapt to this new feeling too. Just give yourself time. And remember your goal.

* **Hunger as deprivation,** actual physical need. This is sometimes called 'belly hunger' as opposed to 'head hunger', below.

I wasn't worried about physical deprivation as long as I ate every 4 – 5 hours. I knew that my 2200 calorie per day program was sufficient for good health; the 1970 era US

⁶⁹ Grohol, Need to Form a New Habit? Give Yourself At Least 66 Days, PsychCentral, October 7, 2018 <https://psychcentral.com/blog/need-to-form-a-new-habit-66-days> ; UCL News August 9, 2009 Interview with Phillippa Lally <https://www.ucl.ac.uk/news/2009/aug/how-long-does-it-take-form-habit>

food experience proved that. Two hundred million Americans ate that way every day. End of story.

Some people, of course, might have special nutrition or health issues. I can't speak to those. Still not a doctor.

* Head hunger differs from **belly hunger**. Head hunger goes away when you think about something else. Belly hunger does not.

Try this thought experiment to understand the difference: visualize a delicious burger or juicy steak or moist chocolate cake or juicy mango. Imagine the taste. Picture it. Anticipate the sensation as you bite in.

Hold that thought.

Feel hungry? It's head hunger.

Now think of an IRS audit or root canal surgery. Visualize it. Hold onto it. Lose the hungry feeling?



Causes head hunger



Removes head hunger

Head hunger is a mental state. You can feel it equally few hours after either a big or small meal. When you feel it, think about something else. Easier said than done of course.

Food costs. Vegetables, per calorie, cost more than most other food groups due to various food subsidy and tax programs. Understand this and be prepared for a food budget increase.

Restaurants pose a problem for calorie restricted diets. Here are four suggestions that might help:

- Split a main course with someone and complement each portion with a side salad.
- Ask the restaurant to bring a doggie-bag containing half of your meal **when they serve it**. I find this works better than attempting to estimate and eat half first, then asking for a doggie bag later.

- Stick with salads and protein toppings. Careful with the dressing. This option might make the restaurant experience less special, but it will make your calorie intake more predictable.
- Pay attention to drinks, both alcoholic and non. Wine has about 120 calories per glass, beer 150, gin and tonic 170, Long Island iced tea 280 and Margaritas up to 450.⁷⁰ Coca-Cola classic has 140 calories per 12 ounces, orange juice about 110 per cup and chocolate milk about 200. Those all count toward your daily total.

Cheating: Try not to. You'll only sabotage your progress and depress yourself at your next weekly weigh in. Be honest with your measurements and anticipate that you'll be on this program for several months at least, maybe for life (maintenance period).

Summary: Eat according to the clock and follow your grandmother's advice: eat the foods she would approve, don't eat foods she wouldn't recognize and control your portions.

Allow yourself time to develop new habits.

I invented some recipes, unexpected food combinations that satisfied me. Several became my new habits. If you like any, use them. Feel free to invent your own!

Breakfasts

Toasted English muffin with peanut butter plus a banana with almond butter. I eat this most frequently, perhaps 5 times per week. Cut a whole wheat English muffin (100 calories) in half and toast both halves. Then spread one tablespoon of salt-free peanut butter – about 100 calories – onto the 2 halves, about half a tablespoon per half. I don't add jam because I don't like very sweet tastes for breakfast, but that's just me.

Then cut a ripe banana, about 100 calories, in half and spread one tablespoon of almond butter – about 100 calories - onto it, again half a tablespoon per half. I prefer almond butter to peanut butter with bananas but again, my own preference.

Poached eggs on oatmeal. Instead of 2 scrambled eggs and 2 pieces of toast for breakfast, I substituted 2 poached eggs over oatmeal with a splash of ketchup, again my own taste preference. Oatmeal instead of wheat, one grain for another. Make it thick. One-third cup of steel cut oats is 170 calories, two jumbo eggs total 180.

Sometimes I add tomato slices or steamed broccoli. Tasty. Other times I melt Swiss cheese into the oatmeal, then put one egg on top. Delicious!

⁷⁰ Best and Worst Booze While Dieting, Carolyn Williams on [cookinglight.com](https://www.cookinglight.com/healthy-living/weight-loss/best-alcohol-drink-on-diet)
<https://www.cookinglight.com/healthy-living/weight-loss/best-alcohol-drink-on-diet>

Plenty of other breakfast options exist within that original 400 calorie constraint. You're only limited by your imagination.

Lunch

I often eat leftovers for lunch, generally vegetables with some protein and fruit for dessert. Sometimes I add peanuts, cashews or butter beans - I really like butter beans - depending on our refrigerator's contents. Remember to estimate your calories honestly when you do this.

Here are some creative combinations that I enjoyed.

Tuna fish sandwich with pickles and a chocolate banana smoothie. I use chunk light tuna, only 90 calories per can, oilier than solid white so requiring less mayonnaise; add about ½ tablespoon, 50 calories. Then 2 slices of bread @ 100 calories each, a tomato slice and lettuce with a side of pickles for a 360 calorie, filling sandwich. Maybe add a splash of mustard (!) for flavor.

Then, assuming your taste buds require (mine generally do), make a frozen banana smoothie. One cup of skim milk (100 calories), a banana (another 100) and 2 tablespoons of Ovaltine (40 calories). I prefer Ovaltine to other chocolate syrups, but again, that's just me. Total about 240 calories, making your tuna sandwich plus smoothie a tasty 600 calorie lunch.

Beans or mussels in tomato sauce over steamed vegetables. One 8-ounce packet of frozen mussels (I use PanaPesca) contains 175 calories; 3 cups of broad beans about 150 calories. One cup of tomato or marinara sauce has about 120 calories depending on the brand. Put this modified bolognese sauce over steamed zucchini, broccoli or cauliflower and sprinkle with parmesan cheese for a delicious and filling 300 calorie lunch. Enjoy a couple pieces of fruit for dessert.

I sometimes substitute chicken, garbanzo beans or left-over steak.

And I sometimes, though rarely, put this over a cup of pasta, about 200 calories.

Plenty of options to try.

A word about vegetables and salad. Per volume, vegetables contain fewer calories than most other foods. It's hard to overeat spinach or broccoli!

Try mixing three cups of raw spinach (25 calories) with a cup of raw beets (45 calories), a large tomato (25 calories), left over veggies from your refrigerator and any other vegetables you have on-hand. Then top with your favorite cheese, nuts or protein.

Careful with the dressing though. I limit myself to 1 tablespoon, generally of Italian or Greek dressing, 50 - 75 calories depending on the brand. Sometimes I make my own, mixing olive oil, vinegar and mustard or horseradish.

A word about fruit. I normally eat at least 3 pieces of fruit every day in addition to my frequent morning banana. I'm partial to apples, oranges, clementines, strawberries, raspberries and blueberries. We're not, in my family, big melon, pineapple or mango people but if we were, I'd include those too. It's a matter of taste again.

Dinner

We enjoy broiled vegetables at almost every dinner during the winter and grilled veg in the summer, generally broccoli, cauliflower, green beans, Brussels sprouts or eggplant. I char them slightly and sometimes sprinkle lightly with salad dressing. ('Lightly' means about a tablespoon per pound of veg.)

We typically eat this as a side dish with grilled meat, chicken or fish, most often fish. Sometimes my wife and I split a sweet potato too, about 80 calories per half. That adds natural sweetness to the meal.

Remember to control your portions! Steak has more calories per pound than chicken; salmon more than white fish.

We also try more creative dinners too.

Tomato sauce with turkey or beans and vegetables. This becomes a stand-alone stew; no pasta required. We use low fat ground turkey, a low calorie / low salt pasta sauce (read the labels) and add broccoli, cauliflower, peas, onions, mushrooms, peppers or fresh tomatoes. Then flavor with red wine.

We sometimes substitute butter beans for the turkey.

One issue with this meal: estimating calories accurately, especially leftovers. I generally add up all the calories in the entire batch, then estimate portion size – a quarter, a third, etc. Close enough for our purposes. Overestimating your portion today leads to underestimating it tomorrow or vice versa.

I then label the leftover calories in the fridge because I forget otherwise.

Baked feta and vegetables. Cut a block of feta cheese into 300 calorie chunks then bake or broil with red onions and cherry tomatoes. Sprinkle lightly with Greek salad dressing. Add a glass of chilled white wine, about 100 calories.

We sometimes add or substitute tofu for feta. Same idea but a different flavor.

Homemade oatmeal muesli, a sweet, Swiss-themed change from veggies and protein. Mix together 1/2 cup of steel cut oatmeal (255 calories), 1/2 cup of unsalted cashews or peanuts (320 cal.) or almonds (414 cal), a cup of blueberries (85 cal.), a cup of strawberries (50 cal.) and a banana (100 cal.). Total about 800 calories depending on your specific ingredients. Top with yogurt or honey, another 70 calories or sprinkled coconut. Eat hot or cold.

Snacks and Deserts

Some of my favorite quick-and-easy snacks include:

- Baked apples with cinnamon
- Blueberries or raspberries. 85 cal. per cup each + 1 tablespoon honey, 70 cal. equals 155 calories total
- Yogurt with Ovaltine. ½ cup fat free, sugar free yogurt, 60 cal. + 2 tablespoons of Ovaltine, 40 cal. = 100 calorie version of chocolate mousse. OK, not *exactly* mousse but it's pretty good. I sometimes double this if I'm ahead on my daily calories. (Haven't tripled it yet.)

You'll invent your own recipes. Write everything down so you remember which worked best for you.

Step 3: Go for a daily brisk walk.
or get some other form of daily exercise

Our metabolisms slow down as we eat fewer calories. To counter this, exercise every day. I normally enjoy a brisk daily walk, equal emphasis on **brisk** and **daily**. 'Brisk' means you can *just barely* keep a conversation going. Walk with a friend to find your own speed using this metric. (Check with your doctor to make sure you're healthy enough first.)

**Our frighteningly unfashionable hero in his
winter walking outfit, 2021**



I average about 420 minutes – 7 hours – of brisk walking per week. I measure minutes of exercise per day instead of steps or total walking distance to allow for variety - swimming, bike riding, exercise classes, weight-lifting, cross country skiing or similar activities.

Interestingly, both the CDC and British National Health Service recommend at least 150 minutes per week of brisk exercise for everyone. More is better. That weekly 420 minutes of brisk walking helped keep my metabolism from slowing down as I ate fewer calories. The simple form at the end of this book helped me stay on track. Try it yourself.

Daily exercise – walking in my case - like everything else in this book, becomes a habit. You miss it on days you don't go. Allow yourself time for this habit to develop.

I like to measure both my daily exercise time and walking distance. The goal is to maintain at least, and hopefully increase, both. Various smart phone apps can help.

One day, early in this program, I walked 4 miles in 70 minutes, about 17.5 minutes per mile, finishing tired and certain I couldn't go farther or faster. Six months later, on a mid-February walk, I averaged 15:30 per mile for 5 miles, equally certain that I couldn't go faster ... but pretty sure, this time, that I could go farther. (I actually went 7 miles a week later though at a slower 16:30 pace.)

Some people prefer to track total daily mileage or total daily steps. These are different ways to measure the same thing. I prefer exercise minutes since I can plan and control these, but again, just my preference. As long as you walk briskly during your exercise minutes, any measure can work.

One trick that keeps me motivated, even enthusiastic about walking every day: I listen to novels, generally long ones that keep me engaged. I prefer historical fiction and mysteries but again, personal preference.

I've walked with Winston Churchill during the Blitz of London, young Nigerian intellectuals as they navigate life, Sherlock Holmes, seafaring merchants, unscrupulous criminals, clever detectives and many others. I look forward each day to reconnecting with my audio friends and often – oddly – feel sad when each book ends. Listening while walking has become another habit, one that I increasingly enjoy.

Confessionary addendum: I know that I should add strength training to my exercise regime. I keep meaning to start but, truth be told, I never enjoyed lifting weights or doing sit-ups. Maybe I'll start tomorrow.

Probably not.

Step 4: Write *everything* down.

Write down your food consumption after every meal and snack, and your exercise time (or whichever exercise metric you choose) every day. That keeps you on track to achieve your goals.

The forms below can help. Completing them becomes another habit. It takes a minute or so. I expect to continue this for years since I plan to stay in the 185 pound weight range for a long time.

Writing down your food consumption each meal also makes you think twice about what you eat. It acts as a speed bump, forcing you to ask ‘Do I really want to use this many calories on this food?’ I found it a useful exercise.

Weight I weigh myself first thing every Sunday morning, always on the same scale. That’s my ‘official’ weight though I confess to checking more frequently. I worry, slightly, that daily weigh-ins will drive me crazy, or, more likely, my wife. I’m already obsessive enough!

Beware of salt and water retention at your weigh-ins. Eating a salty evening meal – feta cheese or pasta sauce for example – can increase my weight by 2 to 3 pounds the next morning. Factor this into your calculations and, perhaps more importantly, watch your daily salt consumption. Harder to do than say unfortunately.

Meals You can use the attached simple form to track your daily calories. You’ll see patterns emerge pretty quickly. Plus this will keep you from overeating in response to head-hunger. I’ve inserted a week of meals simply as an example. You can set up these forms very easily in Excel and design your own meals.

Date	Breakfast	Lunch	Dinner	Snack(s)	Total
Sun	Eng Muffin (100) Pnut butter (100) Banana (100) Almond butter (100) Total 400	Salad bag (50) Tomato (30) Chicken left overs (300) Italian dressing (75) Apple (100) Total 555	Turkey stew (ground turkey, pasta sauce and veg) (750) Salad and dressing (100) Pineapple (120) Total 970	3 Clementine (105) Yogurt & Ovaltine (100) Blueberry + honey (150) Total 355	2280
Mon	Oatmeal (170) 2 jumbo eggs (180) Ketchup (20) Total 370	Cauliflower left overs (75) Butter beans (150) Dressing (75) Chicken (150) Apple & cashew butr (190) Total 640	Salmon (300) Broccoli (100) Salad (50) & Dressing (75) Wine (100) 3 clementines (105) Total 730	Bana & Alm butr (100) Blueber & honey (150) Yogurt & ovaltine (200)	2190
Tues	Eng Muffin (100) Pnut butter (100) Banana (100) Almond butter (100) Total 400	Broad beans (200) Steamed veg (150) Dressing (75) 2 sm oranges (180) Total 605	Cod & panko (450) Salad & beans (200) Dressing (75) 1 slice bread (100) Total 825	Blueberries & Activia (220) Orange (100) Apple (100) Total 420	2250
Wed	Eng Muffin (100) Pnut butter (100) Banana (100) Almond butter (100) Total 400	Impossible burger (270) 2 x Bread (200) L & T, mustard, pickle (30) Apple (100) Total 600	Oatmeal (170) Cashews (320) 2 cups frozen fruit (140) Honey (70) Total 700	Baked apple & cinn (200) Yogurt & Ovaltine (200) Total 400	2100

Thurs	Eng Muffin (100) Pnut butter (100) Banana (100) Almond butter (100) Total 400	Tuna (90), mayo (50) 2 x Bread (200) Pickles, L & T (40) Skim milk & banana (200) Ovaltine (40) Total 640	Swordfish (400) Broccoli (200) Green beans (100) Dressing (75) Blueberries (85) Total 860	Apple (100) Orange (100) 2 x Clem (70) Total 270	2170
Fri	Oatmeal (170) 2 jumbo eggs (180) Ketchup (20) Tomato (30) Total 400	Broccoli (100) Green means (50) Swordfish (200) Dressing (50) Pear & orange (200) Total 600	Baked feta (300) Tomatoes, onions (50) Broccoli (100) Potato (200) Wine (100) Total 750	Blueberries & honey (180) Yogurt & Oval (200) Clem (100) Total 480	2230
Sat	Oatmeal (170) Swiss cheese (100) 1 egg (90) Ketchup (20) Total 380	Tuna (90), mayo (50) Eng muffin (100) Pickles, L & T (40) Skim milk & banana (200) Ovaltine (40), Apple (100) Total 580	Beans (200) Rice (200) 1/3 cup cashews (250) Salad and dressing (150) Blueberries (100) Total 900	Baked apple & cinn (200) Yogurt & Oval (100) Orange (100) Total 400	2260

Exercise Use this form to track your daily exercise, total mileage or steps. If you track exercise minutes, focus on brisk walking minutes, the time your heart beats more quickly than normal so you can just barely keep a conversation going.

Exercise minutes per day, mileage or steps

	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Total
date								
date								
date								

Results and Lessons

This program worked for me. It may also work for you. No promises but I hope so.

If you decide to try, give it an honest effort. Stick with it for at least 6 months, long enough to develop new food habits.

You'll likely be pleased with the results.

Below, a sample of my own experience over 3 months, enough to make the point.

Weekly Food Consumption, Exercise and Weight Change 4th quarter, 2020

Week Ending Date	Average Calories Consumed per Day	Total Minutes Walked per Week	Sunday Morning Weight	Weight change, pounds, rounded
Oct 4	2120	465	207	

Oct 11	2020	535	206	-1
Oct 18	2230	465	204	-2
Oct 25	2110	550	203	-1
Nov 1	2300	360	202	-1
Nov 8	2019	475	201	-1
Nov 15	2087	455	200	-1
Nov 22	2657 (Thanksgiving)	580	198	-2
Nov 29	2069	540	199	+1
Dec 6	2157	320	196	-3
Dec 13	2452	485	195	-1
Dec 20	1999	340	197	+2
Dec 27	2400	410	196	-1
Jan 3, 2021	2332	600	195	-1
Averages over 14 weeks	2210	470		-.9 lb. per week

False hope, wellness programs and the broker's role

Brokers who have read this far have, hopefully, the background to evaluate research reports for their false hope contents. Does the research report clarify reasonable goals? Are those goals probabilistically likely? Does the program have a reasonable plan to achieve those goals?

We'll put those skills to the test in this last section. We'll reproduce parts of the Health and Human Services 2013 Report to Congress on Workplace Wellness.⁷¹ Read through it and see if you can identify and differentiate scientifically valid points from false hope raising statements. We'll include some commentary to help.

A wellness program is defined in section 2705(j)(1)(A) of the Public Health Service Act, as amended by the Affordable Care Act, as a program offered by an employer designed to promote health or prevent disease. Certain types of wellness programs offered through employment-based group health plan coverage must meet standards the Affordable Care Act sets forth. More broadly, there is a wide array of workplace wellness programs which include employment-based activities or employer-sponsored benefits aimed to promote health-related behaviors (primary prevention or health promotion) and disease management (secondary prevention). Wellness programs may include a combination of data collection on employee health risks with population-based strategies and individually-focused interventions to reduce those risks. Programs may be part of a group health plan or offered outside of that context. They may range from narrow offerings, such as free gym memberships, to comprehensive counseling and lifestyle management interventions.

⁷¹ <https://aspe.hhs.gov/reports/report-congress-workplace-wellness-0>

The burden of chronic disease is growing in the United States as rising rates of obesity and physical inactivity are leading to more diabetes and cardiovascular disease. Particularly worrisome is that the onset of chronic conditions such as obesity and hypertension is shifting to younger age cohorts, who are still participating in the labor market. This shift increases the economic burden of chronic disease, as illness-related loss of productivity is added to the cost of medical care. To counter this trend, employers are adopting health promotion and disease prevention strategies, taking advantage of their access to employees at an age where interventions directed at healthy behaviors can still change the trajectory of employees' long-term health. These strategies range from changes to the working environment, such as providing healthy food options in the cafeteria, to comprehensive interventions that support employees in adopting and sustaining healthy lifestyles.

Our comment: good statement of the goals.

Study Findings1

According to the employer survey conducted for this study, approximately half of U.S. employers with 50 or more employees offer wellness promotion initiatives. Larger employers are more likely to offer programs than smaller employers and larger employers offer a greater variety of options. Seventy-five percent of employees in organizations with 50 or more employees work for employers offering wellness programs. Programs often include **a combination of wellness screening activities to identify health risks and interventions to reduce risks and promote healthy lifestyles.** Wellness benefits can be offered by employers directly to all employees or through group health plans to plan members. According to the survey, less than half of employees (46 percent) in those organizations with a wellness program undergo clinical screening and/or complete a Health Risk Assessment (HRA), and fewer participate in interventions (ranging from 7 to 21 percent). Focus group participants indicate that poor accessibility of wellness activities due to rigid work schedules and wait times limit access to wellness benefits.

Reasonable description of the program contents.

Effectiveness of wellness programs

A review of the scientific literature evaluating the impact of workplace wellness programs on health-related behavior and medical cost outcomes found, consistent with previous reviews, evidence for positive effects on diet, exercise, smoking, alcohol use, physiologic markers and healthcare costs, but limited evidence for effects on absenteeism and mental health. It was not clear from the literature whether program intensity was positively correlated with impact. Positive results found in the literature review **studies should be interpreted with caution as many of these programs were not evaluated with a rigorous approach,** and published results tend to focus on

larger employers and therefore may not be representative of the experience of a typical U.S. employer. A RAND analysis of the CCA database, when comparing wellness program participants to statistically matched non-participants, found statistically significant and clinically meaningful improvements in exercise frequency, smoking behavior, and weight control, but not in cholesterol control.

Our comment: huge red flag here. 'Studies should be interpreted with caution as ... not evaluated with a rigorous approach'. We discussed above, pages 7 – 10, how methodologically weak studies can show wellness program benefits while methodologically rigorous studies can show the opposite.

Impact of such wellness programs on the access to care and affordability of coverage for participants and non-participants of such programs:

Most employers who offer workplace wellness programs regard them as a viable strategy to contain health care costs. A review of the literature identified randomized controlled trials that found workplace wellness programs did result in significant decreases in healthcare costs, including a savings in medical costs ranging from \$11 to \$626 per year. The employer survey found that 60 percent of employers offering a wellness program stated that their programs reduced healthcare costs, and around four-fifths reported that they decreased absenteeism and increased productivity. But less than half of the employers reported regularly evaluating their wellness programs and only 2 percent provided actual savings estimates. *Analysis of the CCA database was inconclusive* as point estimates suggest that participation in a wellness program may lower healthcare costs and decrease utilization, but *differences between participants and non-participants were not statistically significant.*

Our comment: The same huge red flag. 'Inconclusive' and 'Differences between participants and non-participants were not statistically significant' means any differences could be quirks and not associated with the wellness program itself. 'Not statistically significant' means 'could have happened for many reasons, not necessarily from the wellness program.'

We discussed on page 8 how an April and May increase in outdoor walking following a winter wellness program could have resulted simply from improved springtime weather and not from the wellness program itself.

Wellness programs can also provide direct access to care through on-site vaccination activities or health or occupational clinics. Of those employers offering a wellness program, 76 percent offered on-site vaccinations. Over 40 percent of employers, regardless of whether they offer a wellness program, reported having an Employee Assistance Program (EAP), which provides access to counseling and assistance for personal issues, and over 24 percent an occupational health service. About five percent of employers nationally maintain an on-site clinic.

Our comment: Note how program goals change when faced with questionable or weak outcomes. Vaccinations and counselling are fine activities but not the core original wellness program goal.

Impact of premium-based and cost-sharing incentives on participant behavior and the role of such programs in changing behavior and the effectiveness of different types of rewards

Financial incentives have become a commonly used tool to promote employee engagement in worksite wellness programs, and employers are expanding their use. According to the employer survey results, financial incentives are offered in a variety of forms, such as cash, cash equivalents (e.g., discounted gym memberships), and novelty items (e.g., t-shirts or gift cards). Evidence from the peer-reviewed literature suggests that targeted incentives can help to influence behaviors in the short-term and increase participation in wellness programs. Among employers who offer workplace wellness programs, 69 percent use incentives to encourage utilization of a wellness program. Monetary incentives for Health Risk Assessment (HRA) completion and lifestyle management programs are most common and offered by about 30 percent of employers with those particular wellness programs. Employers also linked cost-sharing incentives to health coverage for program participation and/ or attainment of health goals, including cost-sharing incentives related to the employees' share of health plan premiums (37 percent), and employer contribution to Health Reimbursement Accounts (5 percent). Based on the survey, incentives are typically framed as rewards for engaging in wellness programs. Only 2 percent of employers frame their incentive offerings only as penalties, and 11 percent of employers reported framing incentives as both rewards and penalties.

The use of incentives targeted to achieving specific health outcomes such as smoking cessation and reductions in body-mass index remains uncommon. The survey suggests that nationally only 10 percent of employers with more than 50 employees use any such incentives, and only seven percent link the incentives to the premiums for health coverage. The average maximum incentive amount for these employers was less than 10 percent of the total annual cost of coverage, far from the 20 percent regulatory ceiling imposed by the Health Insurance Portability and Accountability Act (HIPAA).²

There was too little variation in the rewards offered by employers in the CCA database to be able to assess effectiveness of different types of rewards. To date the most common trigger for incentives is participation in screening activities, and the studies' results suggest that such incentives, particularly payments above \$50, are effective. Incentives are also commonly used to increase participation in wellness interventions, such as weight loss programs, but the evidence for their effectiveness remains weak. A smaller number of employers tie incentives to achieving health standards, primarily with regard to smoking cessation. With respect to effectiveness, the analyses of employer data in the CCA database imply that incentives for HRA completion and program

participation can significantly reduce weight and smoking rates and increase exercise. The size of these effects, however, is small and unlikely to be clinically meaningful.

Our comment: whenever a study concludes ‘the size of these effects is small and unlikely to be clinically meaningful’, it’s time to move on. Who wants to pursue a program that generates small, clinically insignificant benefits?

Other Factors affecting program success

This review of the literature also highlights a number of factors that may affect wellness program success in the workplace. Effective communication with employees about program goals and benefits, accessibility and alignment with employee needs, leadership support, creative use of resources, and continuous program improvement all appear to be factors that can improve employee health and increase the effectiveness of worksite wellness programs.

Our comment: the next few sections describe various activities without commenting on their effectiveness. We’ll pick up below when this report suggests some conclusions and future activities.

Rulemaking

The Affordable Care Act addresses employers' ability to reward employees who participate in certain wellness programs offered through employment-based group health plans and which require individuals to meet health goals. A number of federal laws and regulations impose requirements and regulate the use of financial incentives in certain types of wellness programs.³ Section 2705(j) of the Public Health Service Act, as amended by the Affordable Care Act, raises the allowable value of wellness incentives provided through employment-based group health coverage that require satisfaction of a health-related standard from 20 percent to 30 percent of the cost of coverage in 2014 and provides discretion to the secretaries of DOL, HHS, and the Treasury to increase the reward to up to 50 percent of the cost of coverage if they determine that such an increase is appropriate. It also codifies in statute the HIPAA regulatory standards for health contingent wellness programs.

On November 26, 2012, the Departments of Health and Human Services, Labor, and Treasury released a Notice of Proposed Rulemaking on the wellness program provisions of the Affordable Care Act. Final rules regarding incentives for nondiscriminatory wellness programs in group health plans were published contemporaneously with this report to Congress in early May 2013. The final rule increases the maximum permissible reward under a health-contingent wellness program offered in connection with a group health plan (and any related health insurance coverage) from 20 percent to 30 percent of the cost of coverage, as outlined in the Affordable Care Act. It also allows a maximum reward up to 50 percent for wellness programs designed to promote tobacco cessation, and clarifies that small group market plans including those offering workplace wellness programs may only apply the tobacco

surcharge allowed under Section 2701 of the Public Health Service Act if they also provide a tobacco cessation wellness program (consistent with Section 2705(j) of the Public Health Service Act) that would eliminate the surcharge for participants. Finally, the final regulation clarifies several of the consumer protections required for health-contingent wellness programs.

Also relevant to workplace wellness are the preventive services for adults that are covered without cost-sharing in non-grandfathered group health plans as a result of other provisions in the Affordable Care Act. Section 2713 of the Public Health Service Act, as amended by the Affordable Care Act, requires non-grandfathered group health plans to cover a series of recommended preventive services without imposing cost-sharing, including diet counseling for adults at higher risk for chronic disease, cholesterol screening for adults of certain ages or at higher risk, and blood pressure screening. Tobacco use screening and cessation interventions to smokers are also included in the recommendations.

Select Federal Workplace Wellness Activities

The federal government is engaged in many efforts to foster worksite wellness programs, both with employers throughout the nation, and as an employer of a large and diverse workforce.

National Prevention Council

The Affordable Care Act created the National Prevention Council and called for the development of the National Prevention Strategy to realize the benefits of prevention for all Americans' health. The National Prevention Strategy, released in June 2011, focuses on both increasing the length of people's lives and ensuring that people's lives are healthy and productive. The National Prevention Council is comprised of 17 Federal departments, agencies and offices and is chaired by the Surgeon General. The National Prevention Council Action Plan, released in June 2012, outlines the Council's commitment to implementing the vision, goal, priorities, and recommendations of the National Prevention Strategy. It also highlights important opportunities that the National Prevention Council and its 17 member departments – representing sectors such as housing, transportation, education, environment, and defense – are creating to ensure the health, well-being, and resilience of the American people. Example Council department actions to improve worksite wellness from the Action Plan include:

Department of Defense is working to reduce tobacco use on its installations to promote health and mission readiness, help tobacco users to abstain/quit, and lead by example for all workplaces.

Department of Veterans Affairs will implement a program for safe patient handling, including staff protocols and tools, in all Veterans Health Administration facilities in order to decrease musculoskeletal injuries among employees.

Department of Homeland Security (DHS) will implement the DHSTogether program, a department-wide program for employee and organizational resilience designed to promote the health and well-being of the entire DHS workforce and ensure that employees have the tools and resources for balancing work-life issues and thereby reducing sick leave, absenteeism, and stress.

Department of Labor will raise awareness among employers, group health plans, and issuers about benefits under the Mental Health Parity Act and Mental Health Parity and Addiction Equity Act through outreach and training to promote mental health and well-being in the workplace.

In addition, The National Prevention Council, through the combined efforts of all its 17 federal departments, has voluntarily committed to identifying opportunities to consider prevention and health, increasing tobacco free environments, and increasing access to healthy, affordable food. These commitments highlight the National Prevention Council's efforts to improve workplace wellness and the health of and well-being of all the people they serve. The National Prevention Council Action Plan can be found here: <http://www.surgeongeneral.gov/initiatives/prevention/2012-npc-action-plan.pdf>

Centers for Disease Control and Prevention

The Affordable Care Act included provisions directing the Centers for Disease Control and Prevention (CDC) to provide technical assistance and evaluation support for employer-based wellness programs and to conduct a National Worksite Health Policies and Programs study. As an initial step, \$10 million from the Affordable Care Act's Prevention and Public Health Fund was awarded to two organizations with expertise in working with employers to develop and expand workplace wellness activities, such as tobacco-free policies, flextime for physical activity, and healthier food choices in the workplace as well as tools, resources, and guidance to build or enhance workplace health programs. While most workplace wellness studies have focused on large employers, the CDC's National Healthy Worksite Program is working directly with over 100 small and mid-size employers to develop and provide the tools needed to create a comprehensive health place wellness program, including employer and employee assessments, program planning and implementation support and evaluation.⁴

Federal Workplace Health Collaborative (FWHC)

In 2009, the CDC created the Federal Workplace Health Collaborative (FWHC) linking federal government workplace points of contact to better promote workplace health practices and evidence based approaches to workplace wellness and disease prevention. In its first year, the Collaborative, in collaboration with the National Institutes of Health (NIH), gathered seminal workplace health resources for employers and employees from different Federal agencies to create the Federal Wellness Resource Guide accessible at:

www.cdc.gov/policy/resources/federalwellnessresourceguide.pdf . FWHC members include workplace health contacts in Health and Human Services (CDC, Center for

Medicare and Medicaid Services, Federal Occupational Health, Health Resources and Services Administration, NIH, Substance Abuse and Mental Health Services Administration), DOL, General Services Administration, Office of Personnel Management, Veteran's Health Administration, the National Institute for Occupational Safety and Health, the Bureau of Engraving and Printing, and the U.S. Department of Agriculture.

Office of Personnel Management (OPM)

Through the Federal Employees Health Benefits (FEHB) program, OPM encourages the 90+ health insurers who participate to offer Health Risk Assessments, biometric screening, and other wellness services to enrollees. They also require that FEHB plans offer, at no cost to enrollees, all preventive services with an A or B recommendation from the US Preventive Services Task Force. In addition, OPM has had a pilot workplace wellness program in place for the last three years. The program, known as WellnessWorks (WW), offers comprehensive wellness services to OPM employees at the Theodore Roosevelt Building in Washington, D.C. Services include health risk assessment, biometric screening, health coaching, health education classes, fitness, and group challenges. Approximately 40 to 50 percent of eligible employees participate in one or more WW activity. The program is being formally evaluated by an independent third party, but those results are not yet available. The Healthcare Leadership Council has selected the program for its Wellness Frontiers Award.

Federal Occupational Health (FOH)

Federal Occupational Health, the largest provider of occupational health services in the federal government, serves more than 360 federal agencies and reaches 1.8 million federal employees. FOH has developed an innovative health, wellness, and work/life program named FedStrive. Launched in October 2009 at an event led by First Lady Michelle Obama and Health and Human Services (HHS) Secretary Kathleen Sebelius, FedStrive takes a highly integrated approach to help agencies create a "culture of health" for their workers.

Initially, FedStrive served as a pilot project for 3,000 employees at the HHS headquarters in Washington, D.C., offering comprehensive onsite and virtual programs that included:

- Online health risk assessment and lifestyle management tools

- Walk-in care at an onsite clinic, including health screenings, biometric assessments and immunizations

- Onsite Fitness Center

- Employee Assistance and Work/Life Programs

- Lactation Support

Smoking Cessation

Ergonomic Assessments

Health education programs

AED Program management and oversight

Healthier nutrition choices at the work sites, including cafeteria offerings, vending machines, and a Farmer's Market

Lifestyle Coaching

FedStrive is well-integrated into the HHS organizational structure. FedStrive enjoyed engagement from high-level leadership that included HHS Secretary Kathleen Sebelius, Assistant Secretary Ned Holland and Surgeon General Regina Benjamin – who not only spoke at events but participated in activities. FedStrive received important input from the Office of the Secretary (OS) Wellness Committee which is co-chaired by FOH. This crosscutting employee-centric committee worked with management to help ensure programs were developed in accordance with employee needs, readiness for change, worksite culture, and workplace priorities.

In less than two years, FedStrive data showed significant behavior changes among its members and is now expanding nationally. FedStrive has already been formally launched in Kansas City, San Francisco, Seattle, Philadelphia, and Dallas. FedStrive has shown that an integrated health and wellness program – along with organizational and environmental supports - can produce significant behavior changes among federal employees and can indeed help create a “culture of health.”

As part of its evaluation of FedStrive, FOH is developing a new Return on Investment (ROI) Model. The model allows FOH to help government agencies project future cost savings and ROI from risk reduction efforts in addition to retrospectively estimating cost savings and ROI for existing programs. **Preliminary analysis of the FedStrive cohort data shows an ROI of \$1.60 for every \$1 invested in the program in just the second year and an even greater ROI of \$2.14 for every dollar invested in the third year.** Like private sector employers, the federal government can achieve benefits from both lower medical spending and a more productive workforce.

Our comment: beware of 'preliminary analysis'. Look for comparative analysis, ie. between one group that participates in the wellness program and another that does not.

Otherwise you may run into the methodological difficulties that we discussed on pages 7 – 10 above and in our critique of this report. The \$2.14 return on each dollar of investment raises hope. Based on the methodological problems discusses earlier in this text and this report, it feels more like false hope than realistic hope.

Office of the Assistant Secretary for Health

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans (www.healthypeople.gov). For four decades, Healthy People has established benchmarks and monitored progress over time in order to: (1) Encourage collaborations across communities and sectors; (2) Empower individuals toward making informed health decisions; and (3) Measure the impact of prevention activities. Healthy People 2020 includes several national objectives aimed at improving worksite wellness, including those listed below.

Educational and Community-Based Programs

ECBP-8: (Developmental) Increase the proportion of worksites that offer an employee health promotion program to their employees

ECBP-9: (Developmental) Increase the proportion of employees who participate in employer-sponsored health promotion activities

Infant and Child Health

MICH-22: Increase the proportion of employers that have worksite lactation support programs
Increase the proportion of employers that have worksite lactation support programs

Nutrition and Weight Status

NWS-7: (Developmental) Increase the proportion of worksites that offer nutrition or weight management classes or counseling

Physical Activity

PA-12: (Developmental) Increase the proportion of employed adults who have access to and participate in employer-based exercise facilities and exercise programs

Tobacco Use

TU-12: Increase the proportion of persons covered by indoor worksite policies that prohibit smoking
Increase the proportion of persons covered by indoor worksite policies that prohibit smoking

TU-13: Establish laws in States, District of Columbia, Territories, and Tribes on smoke-free indoor air that prohibit smoking in public places and worksites.

*Our comment: beware of confusing program **inputs** – increasing the number of worksites that offer an employee health promotion program or increasing the proportion of employed adults who have access to employer-based exercise facilities – with program **outcomes** like improved employee health, lower rates of metabolic syndrome and lower employee medical costs.*

Future Research

This Workplace Wellness Programs Study Final Report contributes to an improved understanding of current worksite wellness program participation, impact and the role of incentives, and has also identified priority areas for future research.

Long-term impact of wellness programs: The study was able to detect statistically significant and clinically meaningful effects of wellness programs on health risk factors after examining six years of CCA data. Given the latency between health risks and development of manifest chronic diseases, a much longer follow-up period would be required to fully capture the effect of worksite wellness programs on health outcomes and cost.

Impact on broader range of measures: Measures such as absenteeism, productivity, and retention are of critical importance to employers as they directly affect business performance. Determining program effect on quality of life measures can inform the broader policy question on welfare implications of wellness programs.

Program design and delivery: A more granular look at program components would provide valuable insights into determinants of program success, and could investigate a possible dose-response relationship, i.e., whether more contacts are more effective and cost-effective and the relationship between size of incentives and participant response.

Employer factors and employee characteristics: Employer characteristics, such as workplace culture, and factors impacting employee engagement such as demographic characteristics, psychological states, and educational attainment might modify the effect of wellness programs. Understanding the role of such modifying factors would require data from a large sample of employers with differences in program implementation and characteristics to compare and contrast.

Notes:

1 This document includes an overview of the study findings. For more information, see full report Workplace Wellness Study Final Report (attached).

2 The Health Insurance Portability and Accountability Act of 1996 (HIPAA) prohibited employment-based group health plans from discriminating against individuals based on health status. Specifically, under HIPAA, individuals may not be denied eligibility or continued eligibility to enroll in a group health plan based on any health factors they may have and an individual may not be charged more for coverage than any similarly situated individual is being charged based on any health factor, including being charged a higher premium. HIPAA provided an exception to the nondiscrimination provisions that allowed employment-based group health plans to provide rewards for participation in wellness programs. The HIPAA regulations released in 2006 defined two types of wellness programs: those available to all similarly situated individuals that do not require participants to meet a particular health status standard, and those that are contingent on meeting a health status standard. Programs that fall in the first group are not required to meet any additional non-discrimination standards under HIPAA or the ACA. Programs in

the second group, called health contingent wellness programs, were required to meet certain standards under the HIPAA regulations, including that the reward could not exceed 20 percent of the total cost of coverage under the plan. See the regulations published in the Federal Register Volume 71, No. 239, at page 75014, December 13, 2006. See also, "Health Policy Brief: Workplace Wellness Programs," Health Affairs, and Updated December 04, 2012. Accessed at: http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=81

3 "Health Policy Brief: Workplace Wellness Programs," Health Affairs, Updated December 04, 2012. Accessed at: http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=81

4 CDC Workplace Wellness site: <http://www.cdc.gov/nationalhealthysite/index.html>

The broker's ethical responsibilities

Promoting false hope contradicts the broker's responsibility to protect the client's / subscriber's interests in 3 main ways.

First, programs that promote false hope generate unnecessary costs to clients; they pay for programs that do not benefit them. That's the easy and obvious first takeaway from this text.

Brokers have a prima facie obligation to avoid wasting their client's money. Promoting false hope generates a financial harm to clients and subscribers. It acts in opposition to the broker's primary responsibility.

Second, programs that promote false hope undermine support for, and belief in the value of health insurance brokers. It justifies mistrust in broker advice and undermines broker credibility and the value of broker advice.

Consider a Medicare broker for example, Medicare being our national health insurance system for the elderly that comprises about 20% of total healthcare annual spending. Medicare brokers typically advise clients to purchase a Medicare supplement or Part C.

- Supplements pay for gaps in Medicare Parts A (hospital care) and B (physician services) coverage and may also provide Part D (drug) coverage.
- Part C (Medicare Advantage) acts like an old fashioned HMO. It offers lower premiums in return for subscribers using a narrower provider network. Some Part C plans may also cover medications.
- Medicare brokers earn commissions from selling Supplements and Part C plans.
- Clients generally ask for broker advice about which plan to purchase
- False hope can lead some clients to question their Medicare broker's credibility and advice. This can directly impact the broker's compensation and business.

Third, promoting false hope undermines credibility in our healthcare system. When one aspect of our system fails to live up to the promoted expectations, as I have argued wellness programs do, reasonable people can question the credibility of claims about other aspects.

- Hospitals, for example, often claim they're in the top 50 or 100 on some scale or other. Patients may choose those hospitals in the hope of receiving outstanding care.
- One underreported element in generating good patient outcomes is the patient's belief in his or her doctor and hospital. This placebo effect is important though difficult to quantify.
- False hope that undermines this kind of patient belief may lead to less robust outcomes than otherwise.

I hope the main takeaway from this text is that broker's have an obligation to avoid promoting false hope.