

UNDERSTANDING HEALTHY EATING

A SCIENCE-BASED GUIDE
TO HOW YOUR DIET
AFFECTS YOUR HEALTH



RENAISSANCE PERIODIZATION

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About the Authors



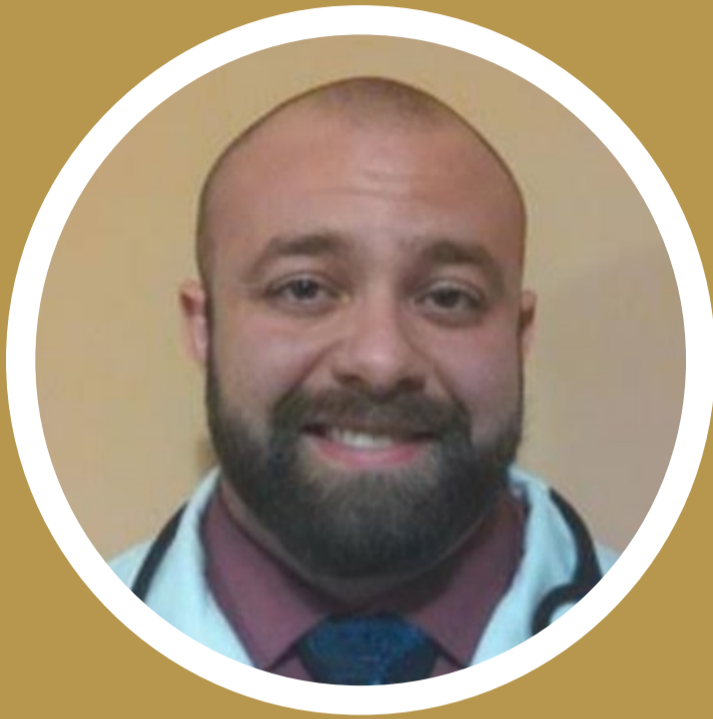
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Renaissance Periodization



UNDERSTANDING HEALTHY EATING

Renaissance Periodization is a diet and training consultation company co-founded by CEO Nick Shaw (with his wife Lori as COO, both pictured above) and Head Science Consultant Dr. Mike Israetel. RP's consultants (including the authors of this book) write diets and training programs for a diverse clientele. RP works with athletes trying to reach peak performances, businesspeople that need more energy at work, and people from all walks of life who want to look and feel better. The founders of RP had a vision for a company that delivered the absolute best quality of diet and training to its clientele. By hiring almost exclusively competitive athletes that are also PhDs in the sport, nutrition, and biological sciences, Nick Shaw has assembled a team of consultants that is unrivaled in the fitness industry. In addition to training and diet coaching, the RP team creates automated diet and training templates that simplify the fitness process at very affordable rates. RP also publishes informational articles, informational books, cookbooks, and videos on diet, training, periodization science, and all matters involving fitness, sport and health. Visit us at www.renaissanceperiodization.com and find us on Instagram at [@RPStrength](https://www.instagram.com/RPStrength).

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The Facebook advertisement features a central image of a bodybuilder with arms outstretched. On the left is the Renaissance Periodization logo with the tagline "SCIENCE IS STRONGER" and the handle "@renaissanceperiodization". On the right, text reads "30 team members. 90 days." followed by the challenge question "ARE YOU UP FOR THE CHALLENGE?" and a "REGISTER NOW" button.

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Introduction

Thinking critically about nutrition and health

Let's start this book off with some good news! As it turns out, just one glass of red wine per day has the same effect on your health as an hour of hard exercise! Even better news; if you take in enough antioxidants, you literally won't ever get sick! And the kicker? By staying away from just 5 bad foods, you can lose all the weight you want in weeks without ever getting hungry or low on energy!

Does that all sound too good to be true? You are right; it is too good to be true, and none of it is remotely true. The diet and health community is rife with literally thousands of claims that are either completely false, or at best much more nuanced than claimed. The situation is so bad that when a relative at a family function starts off a diet claim about health with "they say that...", you can be pretty sure some really wacky and mostly wrong stuff is about to be voiced.

While many claims regarding ways to eat are just flat out wrong or vastly overhyped, some claims seem to have a lot of truth to them, but also seem to completely contradict other claims. For example, vegans and vegetarians seem to be quite healthy on the average (and indeed they are), and will tell you that it's the lack of meat in their diet that's giving them most of their health benefits. On the other hand, folks that follow the "paleo" approach of eating lots of animal products and keeping plant foods lower in intake are often very healthy as well and say that it's the meat that's doing it and that too many grains in our diets can cause lots of health problems. If both vegans and paleo adherents are in good health, can their claims on plant vs. animal intakes really be as set in stone as they claim?

Further still, even when we know that some features of a diet affect health, there are some big divides in the diet and health community on how much these diet features actually impact health when compared to one another. Some people say that the most important factor in your diet is your hydration level, and that being dehydrated, even on occasion, is quite bad for long term health. Others say that the timing of your meals is of critical importance; if you eat the same amount of food spread into 6 meals, you'll get all sorts of health benefits 2

meals a day wouldn't provide... and the crazy thing is, some folks (advocates of intermittent fasting) say literally the complete opposite! Some people say that getting in enough protein is critical for health, but others say that calorie intake is still the most important feature of a diet. Who's right?

How do we clear the air and see the truth when so many often contradictory claims are floating around? The answer, while quite laborious, is rather simple. Since science provides a one of a kind opportunity to study concepts precisely, it's likely to be the surest path to the approximate truth in the search for healthy approaches to eating.. However, the way to discern the most likely truth derived from science isn't to read a study here and there, but rather it's to look at the majority of the studies ever done on a subject and take all that information together. By looking at most (or nearly all) of the studies done on a subject, we can be sure that we're not likely to be biased and simply cherry-pick the studies that please our preconceived notions. And because any one study has a small chance of leading to the wrong conclusion about the topic by simple chance, with lots of studies on a subject, finding ones that say what you want rather than say what's really going on isn't so hard. By looking at nearly all of the studies on a subject, we can begin to see the big trends that point us to the likely direction of the truth. Not all studies agree, but if the underlying concept is true in reality, most studies will detect that concept, and by looking at the sum total of all of them, we can get a pretty good idea of what's really going on!

Looking at all of the studies on a subject isn't just to let us know what works and what probably doesn't... we can do one better still. Nearly every published study states conclusions and provides context, for example, a given study may present findings that eating more protein promotes less hunger than eating more carbs, and then go on to state how much less hunger is promoted. Not only can studies tell us that something works, they can tell us how much it works compared to other factors and strategies. Another perfect example is the comparison of direct health measurements. If we look at all of the diets that did nothing but lower the calories of the participants, we can see how much, for example, the average LDL ("bad") cholesterol level reduction was. Then we can take that cholesterol reduction and compare it to cholesterol reduction values in studies in which calories were kept the same, but the subjects ate more whole grains and less processed grains. That comparison can begin to answer the question of "what's more important to health; eating less food in general or eating less processed foods in particular?" The picture we construct from looking

at all of the studies in nutrition and health is a picture not only of what factors in diets make for better and worse health, but which factors are the most impactful, moderately impactful, and least impactful.

So who has ever looked at such a huge quantity of studies on diet and health and both figured out what works and what doesn't as well as how powerful the various effective diet features are? We did! And we wrote this book as a simple, jargon-free explanation of our findings. We wrote this book for you, the thinking person who's tired of fads, scams, contradictory claims and confusion. We wrote it for you, the person that wants clear answers and a set of dependable principles on which to judge, plan, and create a healthy pattern of eating.

Chapter 1: The Diet Priorities for Health

Masses of Literature

Over the course of writing this book (and long before), we've been pouring over countless studies about the various features of diet and how they affect health. We claim to have integrated the majority of the studies on diet and health into this book, which seems like an impossible task. And it would have been had we not had a ton of help from the scientific community. Our big help came in the form of a type of published article called a 'comprehensive literature review.' Comprehensive reviews are articles written by the very best subject-matter experts in the many small sub-fields of the study of nutrition and health. There are protein experts, calorie experts, vitamin experts, and even hydration experts. To write a comprehensive review of the literature, these top scientists collect all of the studies done in their sub-fields on a particular topic, which is usually anywhere between 10 and 100 studies in most sub-fields. Once they have collected all of the current studies on the matter, they carefully read them and extract the meaningful relationships and measurements of each study. After organizing and tallying up the findings of every study (not an easy task, and one that often requires some pretty impressive work in mathematics and statistics), the authors of the comprehensive reviews are able to give the reader a sense of what the general trends of all the studies taken together seem to be. For example, a recent review of this kind found that while there is quite a bit of variation and special circumstances, higher intakes of saturated fats in the diet tended to predict poorer cardiovascular health, all things being equal. So while we can say that we "used nearly all of the studies available" to write this book, we'd be giving ourselves WAY too much credit. What we really did was read the comprehensive reviews of the literature on all of the main factors of diet, which is a much, much easier task, and a HUGE credit is owed to the many brilliant and tireless scientists who wrote those reviews from which we can all benefit. Lastly, we'd like to thank Dr. Israetel's intern and RP's forum moderator extraordinaire, Tiago Vasconcelos Faleiro, for cataloging most of the studies we used. There were

so many studies referenced that we had to put them on our website instead of here in the book, because they would have added another 75 pages to the length! The web links to the citations for each chapter appear at the end of each chapter. Please click on them and you'll be taken to the citation web page for that chapter, where all of the studies can be viewed individually via PubMed.

The 6 Principles of Diet and Health

When we look at the comprehensive reviews on diet and health, we begin to see some very clear patterns. Some of the clearest of these patterns are the realities that diet and health interaction can be separated into 6 distinct dietary factors, each of which have effects on your health. When any two diets differ, they almost wholly differ on one or more of the following 6 factors, presented to you here with their very brief definitions:

| PRINCIPLE | DEFINITION |
|------------------------------|---|
| Calorie Balance | How much food you are eating per average day in relationship to how much energy you are burning on body processes and physical activity. |
| Food Composition | The sources of the food you are consuming; be it animal or plant proteins, fibrous carbs or simple sugars, the kinds of fats you are taking in, and how processed vs. unaltered the food sources are. |
| Macronutrient Amounts | How much of each of proteins, carbs, and fats you are eating on average per day. |
| Nutrient Timing | How often you eat and how you space out your meals and snacks. |
| Hydration | How much fluid you take in from food and drink. |
| Supplements | What kinds of extra pills, powders or extracts you are taking to enhance your diet. |

As you alter these features in any diet, the effect of that diet on your health (both short term and long term) will change. So if we want to be able to conclude what types of features healthier diets have in common, we'll have to take a close look into each of these 6 principles of diet and health. Just a reminder, these are the diet principles for general adult health. Children, the elderly, and those with special conditions or disease states may share many of the same basic tenets, but should consult a physician and/or registered dietician before altering their diets.

Unequal Effects

Yes, all of the principles of diet affect the health value of every diet. Both the calorie contents and timing structure of a diet affect its health outcomes. Put more simply, both how much food you eat and when you eat it affect your health. But each of the principles have different magnitudes of effects on how much changes to them affect the health effects of the diet. If that wasn't the case and if all principles had equal weight, we'd come to some very strange and very wrong conclusions about diet and health, such as:

- You can eat all the food you want, so long as it's timed correctly.
- If you just take certain supplements, you can eat only junk food and be quite healthy.
- If you eat only healthy foods, you can be 200lbs overweight and not suffer any ill effects.

It turns out that some of the principles of healthy eating are much more impactful on health than others. Some of the principles are hugely important; getting them right is a great start to a healthy diet, and getting them wrong can mean poor health even if the rest of the principles are applied spot-on. Other principles don't have such gigantic impacts on health, but their contributions are large and meaningful. If you get the biggest principles right but ignore these intermediately impactful ones, you can be in good health but not great health. If you focus on the intermediately impactful ones, to the ignorance of the biggest principles, you can still be in poor health despite a very concerted effort to eat right. Lastly, there are the principles smallest in effect. It is best to focus on them only if you are doing a good job with the bigger ones, because only getting these small ones right will do so little to improve your health, you'll barely notice.

It's important to become familiar with these smallest principles, both to know how to do them right when you've got the bigger ones down and to know not to spend too much time fussing over them and missing the bigger picture.

In our study of this subject, we noted not only which diet changes have positive, negative, or mostly neutral effects on health, and we noted how much but also how much of an effect on health outcomes the changes to every principle had. We noted how much healthier study subjects became when calories were lowered vs. how much healthier they became when meal schedules changes from 3 meals to 6 meals per day. We compared how much healthier study subjects became by replacing saturated fats with monounsaturated fats vs. how much healthier they became by increasing their daily protein intakes. We compared how much healthier study subjects became by taking Omega-3 supplements vs. how much healthier they became when they drank several extra cups of water per day. In technical terms, we compared the effect size averages of comprehensive literature reviews on the different healthy eating principles. To measure health, we used the same variables that are standards in medicine and nutrition, including measurements of longevity, mortality, morbidity, specific disease risk (like heart disease, cancer, diabetes, etc.), and predictive markers (blood markers such as cholesterol, immune function, liver function, etc.)

We used all of the available literature reviews that we could find on each principle, and added up all of the effect sizes (how much each principle affects health) together. Once we had a rough total figure of "how much do all diet changes affect health," we sought to find what fraction of that total effect of diet on health each one of the individual principles was responsible for. For example, of all the ways in which your diet affects your health, how much of that total effect is accounted for by the how much food you eat (the principle of Calorie Balance), how much of that total effect is accounted for by where your calories come from (the principle of Food Composition), how much of that total effect is due to macronutrient amounts, due to timing, due to supplements and due to hydration? After a good deal of careful study, we came to some approximate but useful figures. It's important for us to be very clear about this: our estimates for the average effects of each diet principle on total health are just that... both very average and very estimated. We've given them exact numbers to make the discussion as simple as possible, but the truth is that these numbers are almost certainly not exactly what we say they are in reality. However, they are unlikely to be too far off, and, most importantly, the relative ranks of the priorities

are very likely to be as we've found. Put another way, it might be true that calories are 10% less impactful on health than we've estimated, but it's VERY unlikely that calories are less important to health than food composition and exceedingly unlikely that they are less important than macro amounts or any of the still-smaller principles.

In our final rough estimate, we've found that the 6 principles of dieting affect health to the following extents:

| Principle | Percent of Total Health Effect |
|-----------------------|---------------------------------------|
| Calorie Balance | 60% |
| Food Composition | 20% |
| Macronutrient Amounts | 10% |
| Nutrient Timing | 5% |
| Hydration | 2.5% |
| Supplements | 2.5% |

When we address each of the specific principles in detail later in this book, we'll describe in more depth why we've estimated the health effects of each one as we did, and we'll defend the reasonableness (while certainly not perfect) of our estimates. There is some subjectivity in assigning these values (for example, a fine case could be made for hydration being 100% since without water you die within days), and we'd like to give a quick word, from a conceptual perspective, about how we arrived at the values shown.

First of all, we began each “default” diet from the average western diet... the one most readers of this book are likely to be starting from (or have historically eaten). “How much does lowering calories improve health?” and the various other such questions regarding effect are answered from the hypothetical start of a typical western diet. Yes, in some desert-based society (not to be confused with dessert-based, which would be delicious), the constant need to aggressively rehydrate and the pervasive dehydration of many residents would in fact rank hydration much higher than the paltry 2.5% we assign it. But the way we answer the question of “How big of a health effect does hydration have?” is by finding out “How much does increasing or decreasing the hydration levels of the average western dieter have on their health?.” A related question is “How much does the variance in hydration among dieters in the developed world explain their differences in overall health?,” and we find that on average, in our modern western society, the answer is “not much.”

Secondly, and derived from the aforementioned, we assign a low effect magnitude to meeting minimum needs for a nutrient when we find that in our typical western diet, the occurrence of insufficiency in that nutrient is very low. For example, we rank macronutrients below food composition, even though not getting in a minimum level of protein and fat is just as bad if not worse than failing to meet the minimum daily intakes of vitamins and minerals addressed in food composition. But the reason we rank macros lower than composition in this book is that the occurrence of protein insufficiency in western societies is very rare, and fat insufficiency is almost unheard of outside of very special circumstances or disease states. On the other hand, especially intermittent vitamin, mineral, phytochemical and fiber deficiency is incredibly common in the western diet. Thus we rank food composition higher in part because changes in food composition are likely to improve health for the many more people in the west that are deficient in vitamins, minerals, phytochemicals and fiber, whereas changes in protein and (especially) fat amounts won't have very big health impacts on any but the much smaller numbers of western diet practitioners that are deficient in them.

Is this form of analysis perfect? No. For one thing, as more research is done, no doubt there will be shifts at the margins in the effect magnitudes of these principles. We say “at the margins” because some of these principles are confirmed and re-confirmed by decades of nutritional study, and it's unlikely that big relationships will be wholly overturned or reversed. Our analysis could very

well have errors in various places, and our assignment of effect size to deficiencies could have its own problems. But we think it does a good job at roughly estimating the health impacts of the various features of diets and gives someone living in the modern world a pretty good set of tools with which to improve their own diet for the goal of improving their personal health.

The Principles as Priorities

Now we come to the very purpose of deriving the ranks of these principles in the first place: to let you have an informed and logical way to arrange your own diet so that it best supports your health. Imagine for a second if we made no effort to rank the principles on their effect magnitudes and simply assumed they were all equally important. What could be some of the results of such a presentation?

Because you have a limited amount of time and effort to put into changing your diet for the better, you cannot make every single possible beneficial change. So if all of the principles are mistakenly deemed as equally important to one another, you are likely to make two kinds of errors, and risk a single type of side effect.

Error 1: You focus most of your efforts on nutritional changes which result in very small benefits in health. You might watch your hydration super closely and even go so far as to measure and allot fluids through the day. You might purchase and re-purchase a whole stocked shelf of supplements that all combined have a near-unnoticeable effect on your total health. You might make sure to eat exactly 7 meals each day, keeping each meal small and thus never or rarely allow yourself the pleasure of a big meal. All of these changes require considerable dedication, yet even all of them combined will have less than 10% of the total possible effect, that improved diet can have on your health.

Error 2: A direct derivative of error 1 is the fact that as you spend most of your time focusing on the small details, you may very well glaze over the big picture items and fail to make the changes that matter most. As you meticulously track your water intake, you may fail to track the intake of protein, which has much greater health effects when varied in most circumstances. As you spend your money on supplements of various and numerous kinds, you may not be willing to spend additional funds buying food that's minimally processed, and thus miss out on the delivery of most of the nutrients those supplements supply and many nutrients no supplement provides. Lastly, you might insist so much on following

dedicated meal timing that you overeat on calories and do great disservice to your health by failing to account for the most powerful health effector of them all.

Side Effect Risk: The big side effect from committing the two errors above is not to be understated. The side effect is that after spending so much of your time and energy on altering your diet and getting so little out of it, you might become frustrated not just with your most recent approach to dieting, but with the idea of dieting as a whole. That is, if you put in a ton of work and get out almost no change in health, you might be much more likely to just “give up” on trying to make your diet better. You might focus more on exercise (which is good, but is in most cases not as powerful in improving health as diet), talk to your doctor about bariatric surgery or drug options, or simply regress from all concerns about your health until the next bloodwork scare or hospital trip. If we count up the number of people in the western world that have fallen for supplement scams, nutrient timing quirks, and the whole lot of misallocated resources, the numbers are both massive and depressing. To avoid the risk of burnout alone, we must make sure not only to give out sound diet advice, but to make sure that this advice is paired with an explanation of how much of a difference in health it can make. We must make sure that when people diet for their health, they place the highest emphasis on the most impactful principles, and only get to the least impactful principles once they are doing a good job with the big picture.

Because some principles are more important than others and because it's best to focus most on the more important ones, we can best view the diet principles as diet priorities. By viewing them as priorities, people can gain an understanding that following the most important principles should usually be their biggest priority, doing the intermediate ones should come only when the big ones are being attended to, and so on. In order to best illustrate this priority structure of dieting, we chose the pyramid graphic with which to display them.



In the pyramid graphic, the base of calorie balance represents the most important and biggest piece of the diet and health puzzle, and must be present for the other priorities to be built on top of it. Can you build a pyramid without its biggest base piece? Sure, but the total size of the pyramid will be greatly reduced, just as total health benefit of a diet is greatly reduced if its calorie balance is not properly attended to. We'd like to say we came up with the pyramid concept, but that wouldn't be the whole truth. While we did come up with priority charts for both body composition and performance nutrition as well as strength program design, the visualization of priorities in pyramid style was coined by fitness expert Eric Helms, whose books "The Muscle and Strength Pyramids" are highly recommended for those of you interested in fitness and strength training.

The Path to a Healthier Diet

So far, so good. Various factors affect how much your diet influences your health, and by focusing on changing the most powerful of these factors first and by putting our biggest efforts into these main factors (priorities), we can find or build a diet that addresses them and be on our way to better health. Now all we need are the details of how and why these factors change health, along with tips to mold them into our real world diets, and we'll be assured success.

Yes, in an ideal world, this would be the case. But in the real world, four huge recommendations will go a long way in making sure you have the best chances of success once you begin to execute your better diet.

Adherence:

The most logical, effective, and easy to follow diet in the world is absolutely useless if you don't actually follow it. Adherence is the question of whether or not you start your diet to begin with and how long you go about executing it. Those who have the highest adherence have the best health improvements, even with highly imperfect diets. For example, many people have experienced great amounts of weight loss and health improvement on low carb diets, low junk food diets, or even low protein diets. How did they do so well when none of these changes were changes to any of the most important principles? Because those who had success chose A DIET (any diet that does anything positive for health will do) and STUCK TO IT. There's not a single diet on this earth that works if you don't do it, and most diets work at least pretty well if you stick to them.

Progression:

When you start out changing your diet, it's easy to get overwhelmed, especially early on. Reading food labels, counting grams of protein, shopping for healthier foods, making sure to get in regular meals, and even the very act of having to think at all about what you eat can seem like a big burden at first. If you start out by just focusing on a few simple practices, it's going to be much easier and less stressful to see success. For example, a first rule you can impose on most of your eating when you are just starting out is to eat mostly healthy foods.

Because healthy foods (as will be detailed in Chapter 3) are usually not very calorie dense and tend to be more filling than junk foods, this small change can lower your calories and improve your food composition greatly. That's up to 80% (60% from calorie balance and 20% from food composition) of the potential health value of your diet, all with one recommendation. Now, the act of eating mostly healthy foods isn't the simplest thing in the world, nor is it a weird trick, but it's a heck of a lot better than having to plan, count, measure, and track precise food types and amounts at specific times of the day. Once you get into the habit of eating mostly healthy foods, you can move on to more specific details if you've got the ability, need and/or desire to further improve your health. But when you are just starting out, no matter how dire your health situation may be (outside of true emergency circumstances), starting slow and simple is a great way to increase your chances of adherence.

Resilience:

It's VERY important to note that health is both deteriorated by AND improved by diet very slowly... usually over years and decades. There is no ice cream that (outside of being laced with poison by assassins) will kill you after one pint, and just the same way, there's no week-long diet or "cleanse" that will restore you back to good health after years of poor eating habits. In the realm of dieting for health, time is the biggest factor by far. On that note, the reality is that almost everyone falls off the wagon. Diet perfection is reserved for Olympic Gymnasts, Professional Bodybuilders during their competitive seasons, and few others. Life happens, cheeseburgers happen, and we all fall off of our planned diets (even if those diets are just some informal practices and not written-out meal plans) every now and again. What happens after we fall off is hugely determinative of our long term health outcomes. Some folks fall off and never come back to good eating, or come back years or months later. Of course, because you can count, in months, the total amount of their lives they spent eating well in months (and the amount of time they spent eating poorly in decades), the long term health effects of even the best diets will be nearly null and void. Some folks will eat well for several months or weeks, and then eat poorly for a similar time. They definitely see the long term health benefits of dieting, but could see much more if they got back on track faster. The people that see the biggest long term health effects from diet aren't just the ones that fall off the least... they are the ones that jump back pretty fast after falling off. A

weekend of poor eating amongst months of healthy adherence will play almost no negative role in your long-term health. So no, you don't have to be perfect, but you do have to do your best to eat healthy most of the time.

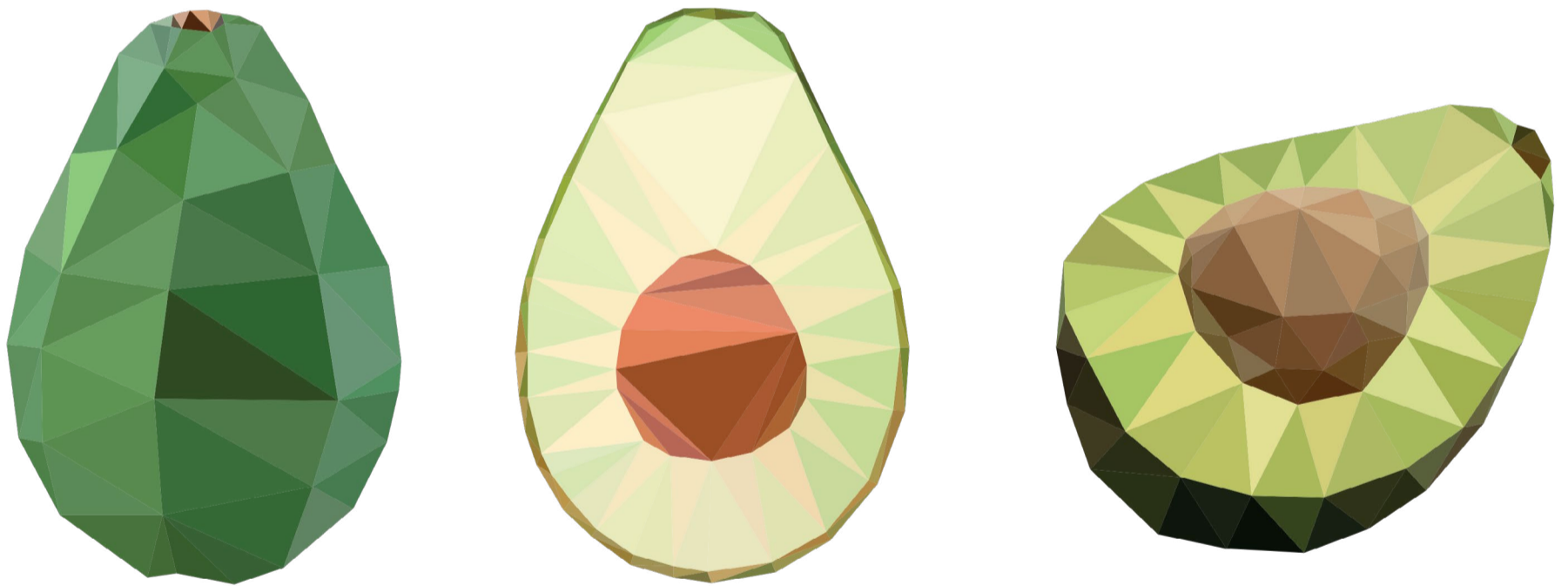
Sensibility:

We say the best long term results are seen by those who aim to eat healthy most of the time and not all of the time. At first glance, that seems a bit odd. Doesn't getting ALL the answers on a test get you a higher score than answering only 95% of them correctly? It sure does, but if you are being tested over and over, the very act of seeking perfection might drive you a bit insane. In the diet world, those who seek perfection at ALL times tend to miss out on the fun and psychologically rejuvenating practice of relaxing all responsibilities, sometimes even those of eating well. By relaxing commitments to healthy eating here and there (perhaps a couple of nights a week with a small junk food binge, one weekend a month with some serious food indulgence, and once or twice a year on a vacation trip with family and friends), our drive to continue to eat healthy is refreshed and "diet fatigue" never accumulates to the highest levels. Those high levels of diet fatigue (the accumulating psychological burden of always having to plan and track and restrict in some way) can cause episodes of burnout and can lead people to abandon the habits of healthy eating for extended times on end. Sensible approaches to diet that avoid high accumulations of diet fatigue are usually best if long-term health is the goal.

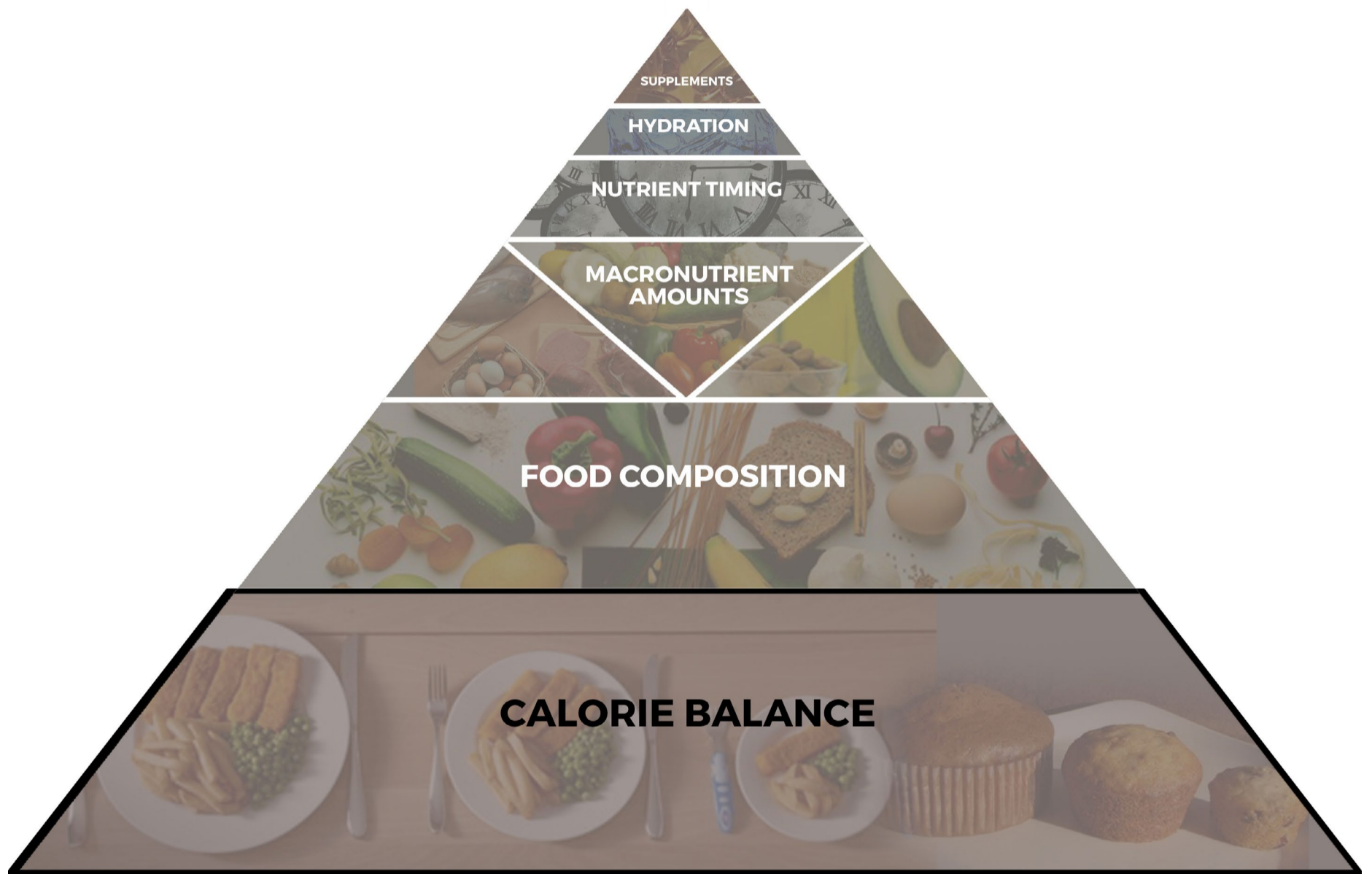
For long term adherence (otherwise known as "consistency") to the major diet priorities, it pays to focus on doing a good job of following the priorities most of the time. Easing into a sensible diet approach pays the biggest dividends, and consistency is highly prized. Those who stick to the plan almost all of the time see the greatest benefits by far. But because even the best diets can get burdensome, it's a good idea to back away from strict application on a sparse but semi-regular basis. No need to do all-or-nothing plans that are almost sure to fail. Just do well and don't worry about being perfect, and the health benefits of proper eating will be yours

In the following 6 chapters, we'll go priority by priority and both explain why and how each priority leads to health as well as give you recommendations on how to integrate each priority's implications into your eating so that your health can reap the benefits. We're going to go a bit deeper into each diet priority, first

defining it in more precise terms, then describing it in depth, explaining some of its bigger implications to the process of healthy eating, and finally leaving you with some helpful real-world recommendations – that you can start using right away – about how to make your diet healthier.



Chapter 2:



Chapter 2: Calorie Balance

Definitions

What are Calories?

In the very simplest sense, calories are just a unit with which to measure energy, specifically the energy people get from eating food. When any food that can be used for energy is absorbed after digestion (proteins, carbs, fats, and some other compounds like alcohols), it can be used for energy, fueling the various processes that not only allow for physical activity but that also keep you alive. If you have already consumed enough energy to meet all of your needs, almost all foods that have calories can be converted and stored as body fat. So, if you eat significantly more calories than you need to fuel your body and its activity on a regular basis, you'll begin to gain fat and of course the bodyweight that fat adds. On the other hand, if you chronically under-eat food, the insufficient level of calories means your body will have to go elsewhere to meet its energy needs. If you are working out hard on a regular basis, especially with weights, most of that energy will come from stored body fat and you'll get leaner. If you don't work out much and still under-eat, the losses will come from both muscle and fat. If taken too far, muscle losses can lead to weakness and some health problems (we will get to that in just a bit). For now, just think of calories as "how much food" you are eating. Consume less than you need to fuel your body and you lose weight; consume more and you will gain weight, mostly in the form of body fat.

Calories and Bodyweight:

By representing the raw materials and energy needed to keep all of our vital systems functioning, calories are critical to life and of course by that extension, to health. One of the most replicated and well-supported findings throughout the history of nutrition research is that calorie balance is the *only*, and we mean *only* determining factor of your long term bodyweight. You can eat only very special foods, you can time your nutrient intake to the minute, and you can take all the newest supplements, but the only determinant of your bodyweight will be the balance between how many calories you take in and how many you expend. If you want to lose weight, whatever else you do, you'll have to either lower your calorie intake or raise your physical activity to expend more calories. If you want to maintain weight, you must make sure that on average, you are eating enough food to meet your needs and not much more or less. If you are gaining weight,

it's because you are either eating too much food, not being active enough, or both. But hold on, we thought this was a book about health, not bodyweight.

What do the two have to do with each other?

Bodyweight and Health:

Over the long term, an intake of sufficient calories needed to provide the energy and support the structures your body needs to be alive are critical to your survival and health. Because of the close relationship between calories and bodyweight, we can roughly tell how much energy and structural support you are getting by how much you weigh. If you weigh within the very broad range of healthy weights for your height, it is likely that you are getting about the right amount of calories you need to support your health; no less, no more. However, if you weigh much less or much more than the amount most of your vital structures (the parts of the body you need to be alive and healthy) weigh, there's a good chance your health is compromised. Calorie balance has a massive effect on your health, and that's mostly because of the relationship between calorie balance and your bodyweight. Put another way, calorie balance is responsible for roughly 60% of the total health effect of your diet because your bodyweight (and especially your body fat level) is so hugely important to your health.

Realities

Bodyweight and calorie intake have a near 1:1 relationship, and bodyweight is hugely important to health, both if it's too low or too high. Let's find out a bit more about why exactly that is.

Low Bodyweights and Health:

If you chronically under-eat calories, your weight will eventually drop so low that your health will begin to suffer. Of course the end of that path is starvation, but your health deteriorates long before doctors are worried about your sheer survival. When you are chronically underweight, you lack the raw materials and energy to properly support your immune system, which means you are more susceptible to infections of all kinds. This means underweight people will get sick more and be more likely to recover slower and have complications any time they get sick. In the low-energy environment of being underweight, muscle and

bone reconstruction suffers, which means that underweight people will be much weaker than otherwise and also that they'll have more brittle bones, putting them at higher risk for fractures of all kinds. Especially in the elderly, muscle and bone weakness can be a serious disrupter of health and quality of life, as seen with the conditions of osteopenia and osteoporosis. Physical activity is a significant contributor to health, and being too weak or too hurt to move as much as you need to can severely impinge on your health and longevity as you become older. There is such a thing as being "too skinny," and it is bad for your health. But in the modern western world, it's not nearly as common as the other calorie-related malady: being overweight.

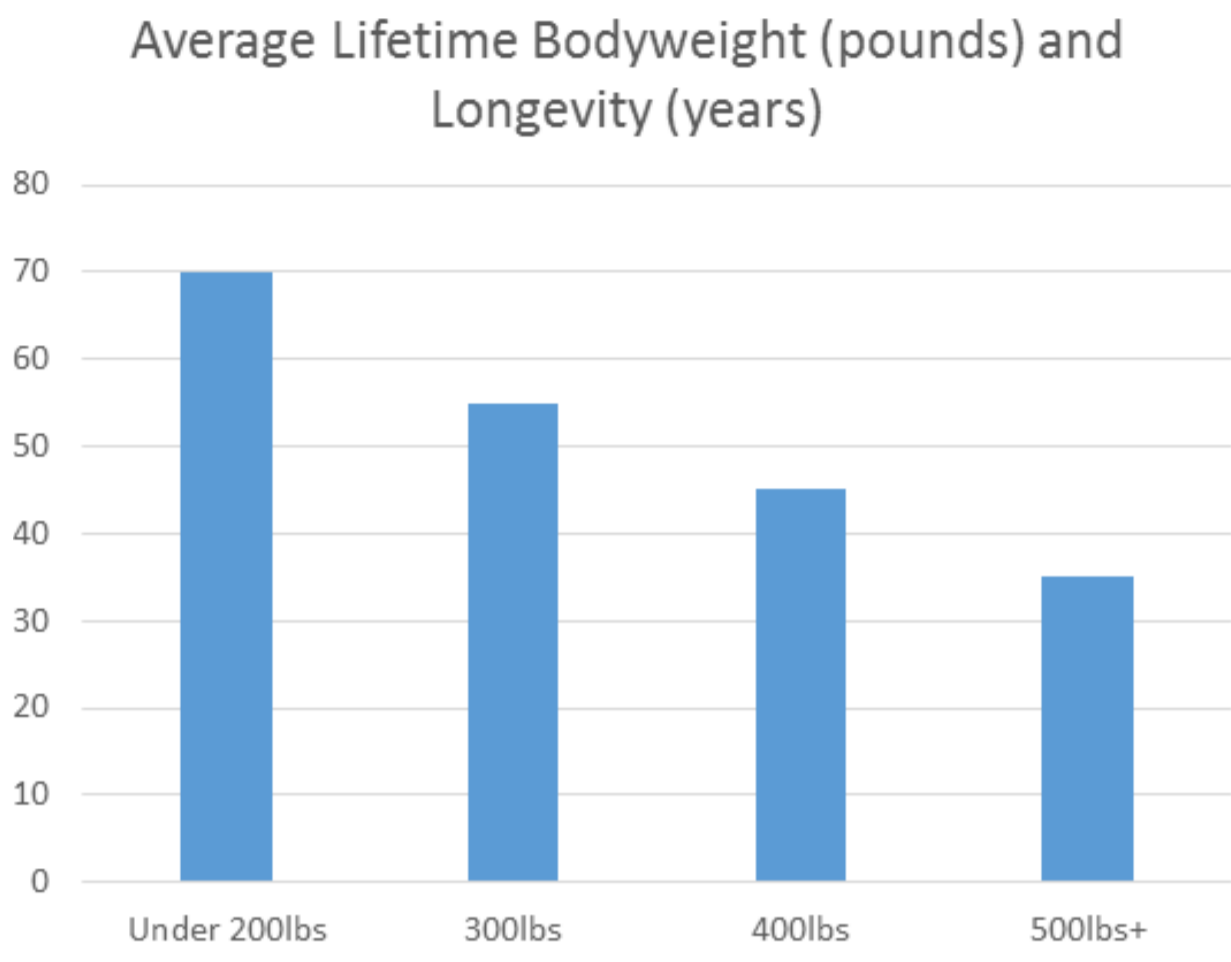
High Bodyweights and Health:

In modern western countries like the United States, the number of people in health trouble because they are too thin is dwarfed by the number that are in health trouble because they are too fat. Something like 2% of Americans, for example, are underweight whereas upwards of 70% are overweight. And yes, though excess bodyweight of any kind is a health negative, excess body fat (accumulated from both over-eating and under-activity in most cases) is the biggest health culprit. And when we say "biggest," we mean that obesity-related diseases likely contribute more to poor health of the average westerner than most any other single variable, including smoking, infectious disease, and even workplace accidents. Why does having too much bodyweight and body fat so greatly impinge health? Here are some reasons (and this is not an inclusive list, so the reality is even worse):

- High bodyweights literally weigh down on body structures (like the knees and hips) leading to their faster deterioration.
- Large tissue masses require more blood to be pumped through them, which makes the heart work harder without a break, leading to increased risk of heart trouble.
- Heavier people tend to have higher blood pressures. Chronically high blood pressures literally damage the kidneys and other organs, directly leading to health maladies. On average, every 10lbs an overweight person loses reduces their systolic blood pressure (the top number) by around 10 points... a very clinically significant value.

- Heavier people tend to have poorer glucose dynamics, which means they develop prediabetes and type 2 diabetes much sooner than lighter people. While genetic predisposition is still the dominant cause of type 2 diabetes, obesity plays a facilitating role.
- Body fat stores themselves secrete a variety of hormones and lipids, some of which throw off the profile of blood hormones and lipids enough to negatively affect health, in such well known ways as raising triglycerides and LDL (bad cholesterol) levels and lowering HDL (good cholesterol) levels.
- High levels of body fat cause a higher level of chronic inflammation in the body. While intermittent inflammation (such as that caused by exercise) can be great for supporting health, chronic inflammation can be quite detrimental to health.

So does gaining one pound outside of the typical range of healthy weights automatically cause terrible health? Not at all. Bodyweight affects health in processes that are mediated by both time and magnitude. Firstly, what this means is that how long you have been overweight affects how much long-term health damage has been done. If you are 20lbs overweight for 2 years and then go back to a healthy weight for the rest of your life, you are unlikely to see much in the form of long term health or lifespan reduction. On the other hand, if you are 20lbs overweight for the majority of your adult life, chances are that this life will be both less healthy and shorter than otherwise. Secondly, how much heavier than the healthy range you are plays a very big role in how much less healthy you are likely to be. For any length of time, being overweight by 20lbs is not nearly as health-damaging as being overweight by 50lbs. In fact, the clearest illustration of this reality is the observation of lifespans of people who are variously overweight. Folks of average height that weigh under 200lbs can expect to live around as long as most anyone else, to the tune of 70-80+ years in most of the modern world. People who live most of their lives around 300lbs have significantly shorter lifespans, to the tune of 50 to 60 years on average. Those in 400lb range can expect to live only into their 40s, and those 500lbs and over don't often make it out of their 30s. The evidence from nearly every single field of medicine is quite clear; the heavier you are beyond your healthy weight, and the longer you remain heavy, the more your health suffers.



Implications

Calories as a Priority:

Because roughly 60% of the power of your diet to affect your health (for the better or worse) is a function of calorie levels, we can be sure of two major implications right up front. First of all, if you do nothing for your diet other than watching your weight and keeping it in the healthy range (via calorie balance, of course), you will still gain a huge health benefit. This means that folks who eat all manner of junk food, eat irregularly, fail to get enough protein, or most any other nutritional snafu can still be fairly healthy, as weird as that sounds. A very related implication is that if your goal is to become healthier and the ONLY thing you change about your diet is that you start to eat less (or you become more active without changing eating at all, thus still losing weight), you will almost certainly see a health benefit, and a big one too... without ever stepping foot in a health food store or even in your local grocery's produce aisle. This extreme was illustrated by Dr. Mark Haub of Kansas State University when he ate a diet almost wholly composed of Twinkies, Ho-Hos, and other such snack cakes and saw very

significant improvements in all health-related bloodwork. The big key is: he ate just enough protein and micronutrients (vitamins, minerals, phytochemicals) to meet minimum levels, and ate just enough snack cakes to still be in a caloric deficit and thus lose weight. We don't recommend the Twinkie diet for your health, but we have to recognize that calorie balance is so important to health, it's literally more important than all of the other priorities combined. Getting calorie balance right is the biggest diet step you can take when moving towards better health.

On the other side of getting calories and nothing else right is the common error of getting everything else but calories right. At 60% of the total health outlook, calories cannot be ignored if good health is the goal. Even if only the healthiest of foods are eaten, and meticulous attention paid to macronutrient ratios, timing, supplements, and hydration, health improvements won't compare to those resulting from simply eating less. When overweight people say that they've not lost any weight but they are eating a lot healthier, this is a good thing. But it's not nearly as good as both eating healthy and losing weight, and not even as good as just losing weight while making no effort to eat healthier foods.

Weight Loss Goals and Health

Because weight (and thus calorie balance) is such a huge factor in health, it's valuable to recognize the importance of getting folks to try to lose some weight if they are overweight. Of course gaining weight is just as important for the underweight, but being as this problem is greatly overshadowed by obesity, we'll only devote a very small amount of attention to it throughout this discussion. This importance of weight loss comes with two notable implications. The first one is that no matter how small the weight loss is, it's usually a health benefit. And because weight is so critical to health, even small losses can pay off. Many folks will try to lose 30, 50, or even 100lbs in one shot because they are under the impression that unless they are within a "health range" for weight, it's all a wash and they'll remain unhealthy. So if they lose only 15lbs, they are likely to get demotivated and gain it back, thinking "what does it matter, it's only 15lbs and I've got dozens of extra pounds to lose." But it DOES matter! Even being 15lbs less than you used to be confers health advantages, because ANY weight lost when

you are overweight is an improvement. For overweight people, it's ok and in fact great to lose any weight, and it's very much pointless to get down on yourself if you haven't lost ALL of the weight. Any loss is good!

Very related to this first implication is the second implication; that taking your time to lose weight to keep it off is much better than fad-dieting a ton of weight off just to see it pile back on. Because excess weight affects your health over years, being just a bit lighter beats being just a bit heavier if you are overweight. But it also means that even if it takes you 5 years to slowly, steadily, and non-linearly lose a bunch of excess weight in such a way that sets you up for keeping it off for good, that beats – by a very wide margin - losing it quickly only to rebound back. If you weighed 300lbs until you were 40 and then took 5 years to drop down to 180lbs, you've got decades of living at a much healthier weight ahead of you... decades of much better health and decades you might not have had had you stayed at 300lbs. However, if you get down to 160lbs over the course of just one year and burn yourself out in the process, only to regain it over the next two years, you are back to square one only 3 years later. The net effect on your health of that yo-yo? Maybe you lived at an average weight of 180 a sum total of a year during that time. Does that even compare to the decades at which you'll likely live at 180 if you took the 5 years you needed to lose the weight sustainably? No way. If you are thinking about losing weight but you are intimidated by how much you have to lose and by how fast you have to lose it, don't be. Don't try to lose any more weight at a time than you can and take all the time you need. It all helps your health.

How Many Calories do YOU Need for Health?

In order to support your health rather than detract from it, your bodyweight needs to be in a certain range based on your height. We'll take a look at what this range is in much more depth in the next discussion, but for now let's just assume that in our particular example case, it's between 150 and 180lbs. In order to weigh between 150 and 180lbs, a certain average number of daily calories must be consumed. But your weight is not the only determining factor for your calorie intake to keep you at that weight. Other variables that affect calorie needs include:

- Your level of daily physical activity. Individuals who work office jobs need to eat less than those who work factory or construction jobs.

- How much you exercise. Those who exercise more can eat more food without gaining weight than those who do not exercise.
- Genetic metabolic differences. Some individuals burn a lot more calories just because of their genetic metabolic speed and not much else. Others burn much less energy and don't need as many calories to stay a given weight.
- Height. Taller people, mostly because they have more surface area and thus need to produce more body heat to stay alive, need more calories on average than shorter people.
- Muscle mass. Even if two people are the same weight, those whose weight is made of more muscle and less fat burn just a bit more energy and need more calories. It's not a huge difference, but it adds up.
- Gender. The combination of hormonal and muscle mass differences lead males to burn a bit more calories at the same bodyweight as females.
- Age. After your 40s, the older you get, the fewer calories you burn. However, most of that change comes from loss of muscle mass, so those who exercise (especially with weight training) see much slower declines. And in any case the difference isn't massive in the grand scheme until you get into your 70s and 80s, so we have to be wary of those that claim that "nothing changed but my age" to explain their rapid gain of dozens of pounds of weight in a short time.

All of those variables taken together mean that for two individuals of the same weight, there could be substantial differences in how many calories they need to remain in that weight. It means that for those who are already at a healthy weight, the amount of calories it takes to keep them there may differ greatly from the amount of calories it takes for someone else to stay at the same weight.

While this seems to make the path to health more confusing (if we can't tell how many calories we need, how can we possibly get the right amount to get to a healthy weight and/or stay there?), at least one easy implication presents itself immediately: copying someone else's diet verbatim is not likely a good idea. Even if they weigh close to what you weigh, the potentially big differences in calorie

needs between the two of you can cause problems if you are both trying to follow an identical diet. Either you or they might not be getting nearly enough calories, leading to rapid, unhealthy or unsustainable weight loss, or far too many calories, leading to excessively slow weight loss or even weight gain.

So you need to figure out YOUR OWN calorie needs and you can't cheat by copying someone else. Ok, so do we look up calorie calculators on the internet and try to enter our physical activity, gender, and lots of other descriptors to get an estimate? We can, but there's a simpler way. To figure out how many calories you need per day, just keep eating the same way you have been and count your daily calories. Don't try to eat healthier during this time to impress yourself. Just do what you usually do and count your intake. After about a week of measurements, your average calorie intake is going to be very close to what you are actually taking in over the long term. If you are at a stable weight when you count these calories, then it's likely that the number of calories you need to maintain your weight is very close to that number. If you are gaining or losing weight, it's below and above that number, respectively. And if you are much over or under weight, lowering or raising your calories from your calculated value to lose or gain weight will be the path to health. Please note that body water levels (especially in menstruating females) can vary weight quite widely, so a 5 pound buffer zone in both directions is a good idea. If your weight is more than 5lbs outside of your normal range for several weeks, that's a more sure sign your calories need adjusting.

Healthy Weight Ranges:

How much you weigh (at a given height) has an important (actually, as far as diet is concerned, the most important) effect on your health. On the next page is a chart that lists each height increment within the normal range and describes what weight range is typically related to the best health outcomes:

General Healthy Weight

| Height | Low Weight | High Weight |
|--------|------------|-------------|
| 4'10" | 85 | 140 |
| 4'11" | 90 | 145 |
| 5'0" | 95 | 150 |
| 5'1" | 95 | 155 |
| 5'2" | 100 | 160 |
| 5'3" | 100 | 165 |
| 5'4" | 105 | 170 |
| 5'5" | 105 | 180 |
| 5'6" | 110 | 185 |
| 5'7" | 115 | 190 |
| 5'8" | 115 | 195 |
| 5'9" | 120 | 200 |
| 5'10" | 125 | 205 |
| 5'11" | 130 | 215 |
| 6'0" | 130 | 220 |
| 6'1" | 135 | 225 |
| 6'2" | 140 | 230 |
| 6'3" | 140 | 235 |
| 6'4" | 145 | 245 |
| 6'5" | 150 | 250 |
| 6'6" | 160 | 260 |

If you are within your healthy-weight range for your height according to this chart, gaining or losing weight might make you a bit healthier but it might not be an overwhelming effect. Thus if you are well within your range, especially not close to the top end of it, you might very well benefit by focusing your diet more on eating healthier foods and making sure you are getting enough protein rather than altering your calories greatly.

Now, if you are outside your range, this means it's likely that losing weight (if you are over) or gaining weight (if you are under) can help you substantially improve your health. We say "likely" because this isn't always the case, and a couple of common caveats are worth mentioning:

- This data is an agglomeration of all ages. Much but not all of the association between being underweight and in poor health is accounted for by including elderly people in the data. Thus if you are younger (less than 60 years old) and a bit underweight for your height, you likely have nothing to worry about and weight gain may not make you any healthier. However, if you are VERY underweight for your height, you might still need to consider this as a possible health negative.

- Having extra muscle is not nearly as unhealthy as having extra fat. If you are over your healthy weight range but you are very muscular and quite lean, you are not going to be nearly at the same health risk as someone of your same weight but with no more muscle than average. Excess weight still has a negative health effect, but it's a much smaller one if you are more muscular rather than fatter than average.
- Being physically active is great for people of any and all weights. Even if you are above your healthy average, being very physically active can make you just as healthy as someone who's lighter but not as active. Losing weight is probably still a good idea for your health, but high levels of activity can close the health gap if the extra weight isn't excessively (20lbs+) over your healthy range. That being said, as you get higher in weight and further away from your healthy range, the excess weight and fat will almost always have a bigger negative health effect than any amount of physical activity you can reasonably do. You CAN be healthy at any size if you eat healthy foods and are very active, but it's less and less likely the heavier you get, and for the heaviest people (those over 300 and 400lbs), it's highly unlikely.
- Even if you're within your healthy range, losing fat and gaining muscle is going to have a big positive effect on your health. So if you're 5'7" and usually 175lbs and you lost 15lbs of fat to weigh 160lbs, you're likely to be much healthier at 160lbs than you were at 175lbs even though both weights are well within the healthy range for your height. And if you put on 10lbs of muscle over the years and still end up at 160lbs (but lost 10lbs of fat while gaining 10lbs of muscle), you're going to be much healthier with 10lbs of muscle than 10lbs of fat. Point being; it still pays big health dividends to focus your diet on being lean and muscular even if you're within your healthy weight range either way.
- The ranges are estimates and not absolute figures. You are not "unhealthy" if you are outside of them and "for sure healthy" if you are within them. If you are outside the ranges, you might very well be perfectly healthy. But as you get further and further out (both up and down), the chances that you are still in your best health rapidly decline. There are lots of healthy 220lb women who are 5'8," but the number of healthy 400lb, 5'8" women is very small.

Recommendations

How do You Get to a Healthy Weight if You are Slightly Above The Range?

If you are within 10% of your intended healthy weight, the basic solution to weight loss is rather straightforward. You simply cut your daily average calories by 10% (or increase activity by that many daily calories, or a combination), and you'll start to lose weight. How fast you'll lose depends on how much you weigh, but it will likely be around 2/3 of a pound per week if you weigh around 200lbs and 1lb per week if you weigh 300lbs. And as you get to your target weight, you'll start to lose at slower and slower rates as you settle into maintaining your weight. It's that simple... just reduce your calories by 10%, change nothing else, and you'll be down to 10% less than your current weight within about half a year. Once you are at your new weight, stay physically active, keep your calorie averages in check, and enjoy your healthier being!

How to Lose Large Amounts of Weight:

Losing 10% of your weight is a great step towards your health. If you weighed 300lbs, losing 10% of your weight means you lost 30lbs. That's nothing to sneeze at, and it will almost certainly contribute to noticeably improving your health, down to the bloodwork. That's the good news. The bad news is that you still weigh 270lbs. While it's better than 300, it's still quite a ways in pounds and health from the 200lbs you might need to be to enter your healthy range. Can you just continue to cut calories linearly and drop all the way to 200lbs in one shot? You could, but that's probably not the best idea for multiple reasons. The underlying factor that causes these reasons is explained by the "settling point" concept. This concept describes the tendency of your body, and any body, to try to stick to the weight you've held for the last several months or years. When it comes time to lose weight, your old "settling point" of 270lbs might try to keep you close to that weight by producing several of the following effects as you move further and further down and away in weight:

- Your metabolism begins to slow. This means that to lose more and more weight, you have to either eat less and less food or do more and more exercise/activity. Eventually this becomes quite difficult to keep up, if not unsustainable. Doing more and more exercise while eating less and less food can make it tough to exert yourself mentally and physically both at work,

home and in all of your hobbies. It can make your work, home, and social life much less productive, engaging, and enjoyable.

- Your NEAT begins to fall. NEAT stands for “non-exercise activity thermogenesis.” It’s a very scientific way of describing how much physical activity you do every day that’s not formal exercise. You might walk your dog an extra time when you are bored in the evening, you might go bowling with your friends, or you might give up on looking for a closer parking spot at the mall and just park in the first spot you see, burning calories to walk the difference. When you’ve been cutting calories for too long in one stretch and your weight falls too far below your last settling point, your NEAT starts to decline. This happens quite subconsciously in most cases, and the conscious perception you might have is that you are feeling a bit more tired or lazy than usual. This feeling affects behavior in such ways that lower your NEAT and thus your calorie burning. You might let your dog out in the yard, sit down with a cool glass of water, and watch him run around and chase flies instead of walking him. Instead of bowling, you might talk your friends into seeing that new superhero movie that just came out (even though the last one stunk, you are willing to give the franchise a second chance). You might spend an extra 3 minutes circling the lot just to get that close parking spot you were looking for... and you might not even go to the mall in the first place and choose to browse Amazon instead. The result of all of these behavioral changes is that you burn less calories than you otherwise would have, making you cut more food or add more exercise than otherwise, which brings us back to the first problem.
- Hunger and Craving begins to rise. Hunger is the desire to eat food... any food. It stems from your physiological need for energy and raw materials. Craving is the desire to eat a specific kind of food, even when you might not be generally hungry. You are not hungry after finishing a tasty big meal at a restaurant, but you might very well be craving some dessert! As you get further and further below your last settling point, hunger and cravings begin to rise. Not only do you start to crave tasty junk food, you might find yourself wanting to overeat on just any food at all!

As you can probably tell, the effects of the settling point concept are quite problematic for long-term weight loss success. The more weight you lose, the harder it gets to lose weight. And because these effects all increase at the same time, weight loss doesn’t just get linearly harder the more weight you lose, it gets

exponentially harder. Losing 30lbs at once might be pretty easy. Losing 60lbs might be very tough. Losing 90lbs usually requires a monumental effort, capable of depleting even some of the most impressive reserves of willpower. Once you've reached your goal weight, even if you make it there by brute force alone, what happens? Well, settling point theory describes that the mechanisms (both psychological and physiological) that pull you back up to your starting weight recede in their power over time. Some of them seem to never recede completely, (so that we know to be vigilant about keeping tabs on our weight and health habits for good once we've succeeded in losing weight and keeping it off, even for years), but many recede over the course of months. So if you manage to stay at your new weight for about a year after you've lost a bunch of weight, your chances for success in keeping it off are huge. And in fact that's true, however, how many people first, make it all the way down the increasingly hard weight slope and second, fight their settling point's pull for up to a year to reach the much easier path of maintaining their losses? Only a small percentage of all individuals that try to lose a lot (more than 50lbs or so) of their weight actually succeed on both counts. Terrible, terrible odds. Is there any way to improve these odds and have a better chance to lose a lot of weight and keep it off? You bet!

One of the biggest tools to long term weight loss is the use of maintenance phases. Maintenance phases are distinct, planned periods of diet manipulation that occur after each 10% or so loss in weight. During a maintenance phase, the goal is ONLY to maintain the losses in weight that occurred during the last weight loss phase and NOT to make any more weight loss progress. The maintenance phase allows an individual to accomplish the relatively easy task of keeping off 10% or so of their weight... not the biggest deal in the world and certainly within reach of way more people than could maintain the 30% or more that will eventually be lost in total by someone who has lots of weight to lose.

So what is the purpose of this maintenance phase? Is it just to kill time? In a sense, yes. Time is the number one determinant of how strongly the last settling point pulls on a dieter's current weight. The first couple of weeks of maintaining a 10% loss might be quite tough, with low energy and hunger/cravings common. But with each week, the pull of the settling point gets weaker and weaker, and maintaining becomes easier and easier. After several months, the body "thinks" it's pretty much at home at that new weight (270lbs from our earlier example), and the pull to go back up to 300lbs might be trivial in strength. At this point,

when the pull to 300lbs is barely noticeable, months after 270lbs had first been achieved, it's time to again cut calories and shoot for the next 10% goal. This time that goal would be a weight of 243lbs. Once that goal is reached, the 270lb settling point will be pulling very hard to get you back up to 270lbs, but if you resist during maintenance, months later the pull isn't very strong at all and is again barely an issue. Then you drop again to the next 10%, and so on.

This alternating of weight loss and maintenance phases allows you to combat the effects of settling points to a much higher degree than simply dropping all at once. And psychologically, it helps greatly to alleviate diet fatigue. Always having to shoot for lower and lower bodyweights and always having to restrict more and more can become incredibly burdensome via sheer psychology alone. It's like a work week with no weekends... even if the work itself isn't terribly tough... it's still work, and never having time off can wear on even the most motivated. But the maintenance phase is like a weekend. It lets you relax, doesn't require you to keep making more and more progress, and actually gets easier the longer you do it. Once it's over, you are refreshed and much more ready to go for another round of weight loss dieting.

While it's a great idea to hire a nutritionist or diet coach to help you navigate the details, we can offer some general guidelines on weight loss and maintenance phases here:

- Keep each weight loss phase to no longer than 3 months in duration. After much longer than 3 months of consistent dieting, anything other than that first 10% drop (that does not require this kind of lose-maintain-lose structure) becomes very difficult for most to pull off. The pull of the settling point becomes very strong after 3 months, stronger than most should want to challenge if they want the highest chances of success. And if you know you are not the most willful when it comes to weight loss dieting, try a 1 or 2 month phase instead of crashing and burning with 3 for no good reason.
- Maintain for about as long as your last weight loss phase was for. There's no rush, and the longer you maintain, the likely easier and more successful the next weight loss phase will be. If you lose weight for 3 months and maintain for 2 weeks, you are not doing much to relax the pull of the settling point and you are not doing yourself any favors. Take the time you need to give yourself the best long term chances of keeping the weight off. Remember that health

is much more important over the decades than it is over the months. If you take your time with maintenance phases of sufficient length, (at least as long as your diet phases) you give yourself the best chance of being healthier for decades instead of risking a rebound in an effort to save a few months.

- You don't have to lose 10% of your weight at once, but don't lose much more. If you try to lose much more than 10% of your weight at a time, you risk the same problems that occur with trying to lose weight for much longer than 3 months at a time. However, if even 10% seems like a lot to lose over 3 months (it is), you can always lose less. A goal of 5% at a time is just fine, so long as you actually go through with it.
- On weight loss phases, keep weight loss from ½ to 1% of your total body-weight per week. Much slower and the changes are so small, you might become discouraged. Much faster and you risk yanking too hard at once on your settling point, leading to higher chances of falling off the wagon before you even reach a maintenance phase, and a harder and more rebound-risky maintenance phase if you do reach it.
- Time your phases realistically to your life. Plan to lose weight when you are not swamped by (as many) children's birthdays, holidays, vacations, or visiting family. No time is ever perfect, but at least try not to plan your weight loss phases during the several weeks of winter holidays or through the several months of summer barbeque season. The work of trying to resist the temptation to enjoy normal life can be needlessly high during such times, and outside of reducing your chances of success, we must remember that stress itself can be bad for your health in prolonged excess. This recommendation seems like a no-brainer, but you'd be amazed to find out how many people choose to swim upstream in this regard. When you aim to lose weight for your health, do yourself a favor by making it easier in every way you can, not harder. If you are into the psychological development benefits of meeting difficult challenges, that's absolutely great. But save them for endeavors that don't impact your health, such as picking up a new challenging hobby or learning a new language.

In order to successfully pull off the weight losses recommended here, either activity has to go up, some calories need to be eliminated from your diet, or both need to occur. Since calorie cuts are such a powerful tool for weight loss (you only

have time for so much working out in any given week!), they will usually be a big part of most successful weight loss approaches. But cutting calories usually causes quite a bit of hunger as your settling point tries to fight the weight loss. This hunger can make dieting tougher and falling off the wagon more tempting, but luckily, the science and practice of nutrition has provided us with 4 simple strategies to help reduce hunger and increase your chances of weight loss success.

1.) More Protein

Higher protein intakes have been shown to increase satiety. By consuming more of your calories in protein (as lean meats, lean dairy products, and/or high protein plant foods), your hunger levels can be reduced substantially, even if you are still lowering your calories in order to lose weight. Because protein's anti-hunger effects are pretty transient, trying to consume plenty of protein spread through most of your daily meals is a better idea than simply eating the extra protein in one or two meals.

2.) Focus on Veggies and Fruits

Veggies and fruits (especially fresh ones) have tons of fiber and water. This makes them both low in calories and very voluminous. Their high volume takes up a lot of space in your GI tract, pushing up against it and helping to signal your brain that you are full. It's not a very powerful effect, but it helps. Eating more of your calories as veggies and fruits provides you with tons of other health benefits we'll cover in the next chapter, but it also reduces your hunger a bit and can help you stay on track.

3.) Go Easy on the Saturated Fats and Sugars

The Food Palatability Reward Hypothesis (FPRH) is another very fancy concept that boils down to a simple observation: people eat more tasty foods than more bland foods. Almost every kind of junk food is loaded with saturated fats and sugars, and mostly for no other reason than that they taste amazing. There are two kinds of people in this world; those that can't just eat one potato chip, and liars! Not only this, but fats and sugars are very energy-dense... they pack a lot of calories per bite. Processed foods usually have the

highest amount of saturated fats and sugars, AND they are designed to be as delicious as technology will allow. If you are on a weight loss plan and you are cutting calories, starting with cuts to mostly processed foods high in saturated fats (fatty meats and dairy, most junk food) and sugars (non-diet sodas, juices, desserts, most junk foods) not only reduces calories very effectively, it can make you crave those calorie-dense foods less and were cutting calories elsewhere.

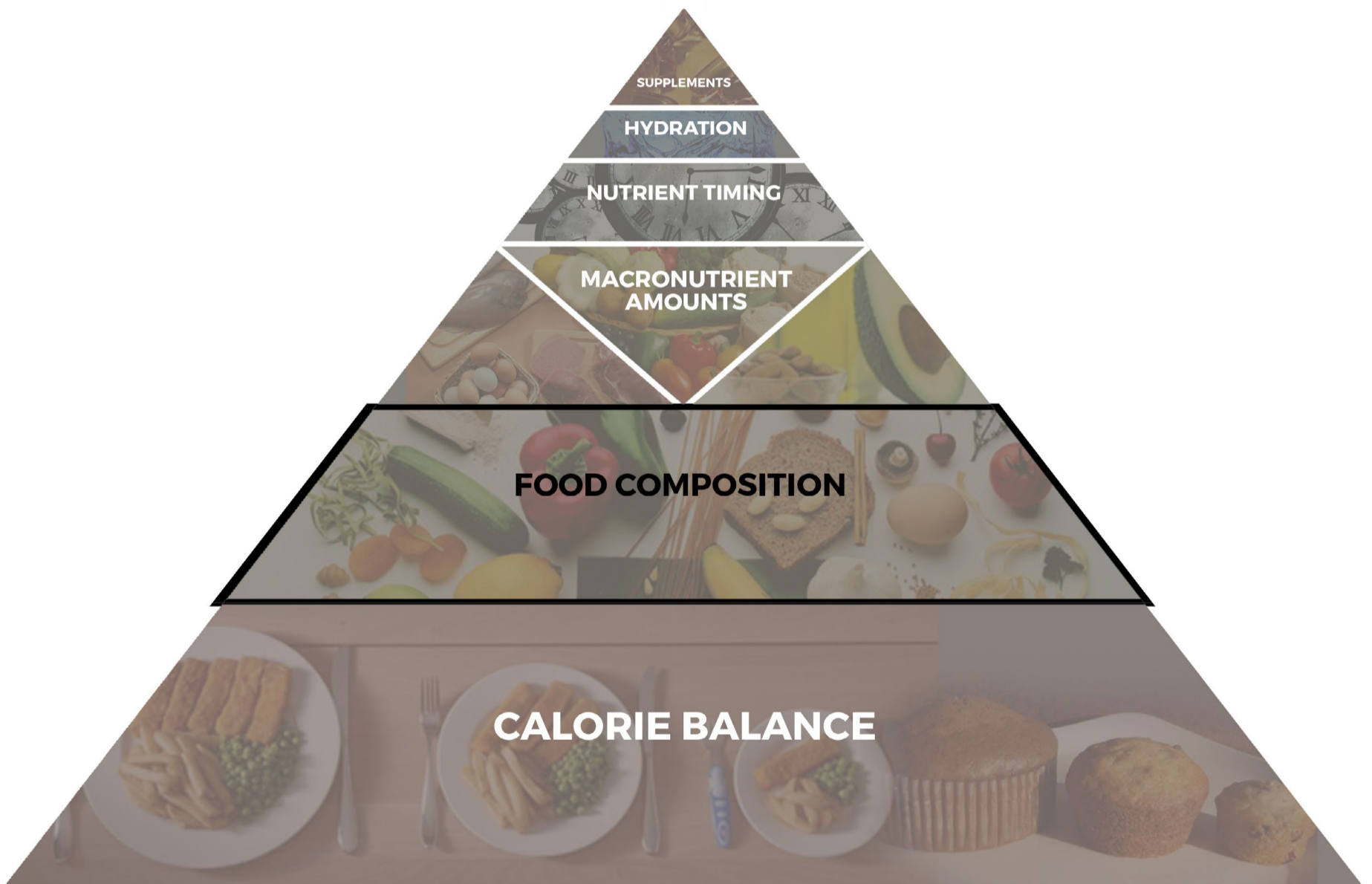
4.) Try Not to Eat Out of Boredom

If you eat for entertainment sometimes, you are human. Who doesn't like to share an awesome tasty meal with friends... or just with your Netflix account. But if you rely on food as a big source of your entertainment, anti-boredom, and comfort, you are going to pile on the calories pretty quickly. By making sure you are cultivating some combination of a great career, great hobbies, and great friends, you reduce eating to just something you usually have to do that pulls you away from what you really like, rather than something you really like that pulls you away from something you have to do. When life is so enthralling that eating becomes (even a bit of) a chore, constant hunger becomes a faint sensation and steady weight loss becomes much more likely.

Further Reading:

<http://renaissanceperiodization.com/understanding-healthy-eating-ebook-references-chapter-2/>

Chapter 3:



Chapter 3: Food Composition

Definitions

The priority of Food Composition deals with what kind of food is actually being consumed, unlike Calorie Balance, which deals only with how much food is being consumed and not what kind of food it is. In its most simple definition, Food Composition is what you eat and how it affects your health.

More particularly, food composition has four different components which make up the “what” that is in the food we eat and on which we can objectively judge the effects of that food on health. The four components of food composition are protein sources, carbohydrate sources, fat sources, and the micronutrients (such as vitamins and minerals).

For the average dietary situation in the modern world, most individuals experience a rise in health when they bring the composition of their diets closer to the following basic guidelines:

- Sourcing protein from complete or complementary protein sources
- Sourcing carbs from mostly whole grains, fruits, and vegetables (which are also the best sources of the micronutrients)
- Sourcing fats from a balance of sources that favors monounsaturated and polyunsaturated fat intake
- Sourcing foods that are highest in micronutrients, particularly vitamins, minerals, phytochemicals and fiber (which tend to be minimally processed lean meats, whole grains, fruits, veggies, and monounsaturated-heavy plants and plant oils)

In simple terms, while the number of calories you eat per day is by far the biggest determinant of your diet-mediated health, there is such a concept as “healthy”

food and in most times and cases for best health outcomes, it pays to consume more of those kinds of foods as a fraction of your daily calories. Let's take a deeper look at exactly what these healthy sources are and how they affect overall health.

Realities

In order to survive, humans need a minimum intake of proteins and fats, with carbs not being essential to survival but providing both direct and indirect health benefits. The sources of those macronutrients actually matter more than how much of them you are getting, provided you are meeting your minimum protein and fat needs, which in modern countries is not difficult to do in most cases. Let's take a look at each category of food composition and find out which kinds of food choices are healthier than others.

Healthy Protein Basics:

Because our bodies cannot construct amino acids (the building blocks of body proteins) from just any kind of other calories, they need to be taken in from our diets at minimal doses for both life and health. Amino acids rarely occur free-form, and almost always appear in our food as the building blocks of proteins. When we eat those foods, the proteins are broken down inside our digestive tracts to give us the amino acids we need for our survival and health needs. But all proteins are not created equal, so to speak. Proteins differ on two main factors, and a third factor of protein sources that also affects health.

- 1.) All proteins can be ranked on their completeness of digestion. When you eat any protein source, a certain amount of the protein will get digested, making the amino acids broken down usable by the body. However, every protein source will not digest 100% completely, and some protein will escape digestion and be excreted out of the body. This results in the amino acid escaping use by our bodies for its essential functions. If we rank all common food protein sources on how big of a proportion of their contents gets fully digested and absorbed from the average meal, we find that nearly all animal proteins have very high digestibility, often in the high 90s of percent. While some plant proteins like soy are just below animal proteins in their completeness of digestion, the average plant-sourced protein is much less digestible than most animal sources, which means that only some smaller fraction of it ends up being used for benefits to the body.

2.) All proteins can be ranked not only on how completely they digest, but also on the ratio of amino acids they provide. To the human body, amino acids are like different-shaped building blocks. We need a wide spectrum of them, but because of the specific designs of our own body proteins (which are built by the amino acids we eat), we need more of some than others. How closely eaten proteins match up in amino acid fractions with human needs is a ranking that is independent of (and is done after) protein digestibility. Some proteins provide a mixture of amino acids that is very close to human needs, while others provide proteins that have way too many amino acids of a kind we already have in abundance (not a health risk, just gets burned up for energy or stored as fat instead of built into structures) and not enough of a kind we need more of. When a protein has all of the amino acids in requisite amounts to meet basic survival and health needs, it's called a "complete" protein. When two proteins must be eaten together to fill in each other's gaps of amino insufficiency, they are called "complementary" proteins because they complement each other. Lastly, when a protein source doesn't have all of the needed amino acids in high enough concentrations to support human life and health, it's termed an "incomplete" protein. While all animal sources are complete, most plant sources are not. While some plant sources can form complementary intake pairs with each other (beans and rice being a common example), most plant proteins are classified as incomplete protein sources. Please see the chart below for some sample protein quality scores.

3.) In addition to carrying a significant amount of completely digestible and complete proteins, animal products are also rich in a number of vitamins and minerals which plants tend to have in much smaller quantities or almost none at all. Examples include some of the B vitamins (in particular B12) and Iron.



Protein Quality and Digestibility Scores (PDCAA)

| | |
|------------------------------|------|
| Milk Proteins (Casein, Whey) | 1 |
| Egg Protein | 1 |
| Mycoprotein (vegan) | 0.99 |
| Beef | 0.92 |
| Chickpeas | 0.78 |
| Black Beans | 0.75 |
| Peanuts | 0.52 |
| Rice | 0.5 |
| Whole Wheat | 0.42 |
| Wheat Gluten | 0.25 |

The picture that emerges for protein intake is one that seems to favor the consumption of animal protein sources to best support health. If you don't consume animal protein sources, can you still be maximally healthy? Absolutely, but you need to make sure to take some extra steps to ensure your health, particularly:

- Focusing your consumption on complete plant sources like quinoa and soy.
- Making sure to take in more protein than is recommended for the general meat-eating public, so as to offset the poorer digestion and amino acid fractions of plant proteins.
- Consider supplementation for some of the micronutrients inadequately supplied by plant-based diets, such as the B vitamins and iron.

Healthy Carb Basics:

When comparing the sources of carbohydrates by their effects on health, we can order them by how they rank on three distinct variables.

1.) Concentration of the micronutrients: fiber, vitamins, minerals, and phytochemicals. Fiber is a type of carbohydrate which we for the most part cannot digest (so it has no calories or very close to no calories), but it has numerous health benefits, including the lowering of cholesterol levels and controlling spikes in blood glucose. We need vitamins and minerals in minimum doses to survive, and without enough of them, optimal health cannot be attained. Lastly, phytochemicals are special molecular structures found only in plants. While they are not essential to life, many phytochemicals so far discovered have a very small but positive effect on human health. When we consider that there are hundreds of documented phytochemicals and that more of them are discovered every year, their health benefits can add up to a still small but still meaningful positive effect.

2.) Rank on the Glycemic Index. How quickly and to what magnitude a carbohydrate digests and appears in the blood is represented on the glycemic index. All carb sources can be ranked on the index, which stretches from pure glucose on one end (score 100, meaning a rapid appearance of a lot of glucose in the blood after eating) to pure fiber on the others (score 0, meaning no appearance). What does the magnitude of carb digestion imply for health? By itself, not much. Correlation of the glycemic index to health outcomes has shown some favoritism towards low-glycemic (slower digesting) foods, but not the kind of overwhelming and clear relationship from which we would be comfortable making recommendations. However, lower glycemic foods are slightly healthier in most cases than higher glycemic foods for at least three indirect reasons. First, low glycemic foods almost always tend to be the kinds that have the most fiber and vitamins, minerals, and phytochemicals. Fiber slows down digestion and the subsequent release of glucose into the bloodstream, making it directly responsible for lowering the glycemic index score of any accompanying carbohydrates. Most high-fiber foods are the very plant foods loaded with vitamins, minerals, and phytochemicals. Secondly, because of their slow digestion rates, low glycemic foods are more likely to provide a steady stream of energy to your daily activities rather than the high-then-crash potential of high glycemic foods. By providing a steady stream of

energy, low glycemic foods help to support both more stable mental abilities for work and more stable energy levels for continual physical activity through the day, which is itself directly health-promoting. Lastly, low glycemic foods are usually (though not always) more satiating (creating a feeling of fullness) than higher glycemic index foods. And satiation is our third variable for carbohydrate source consideration.

3.) All eaten carbs (and any foods, actually) can be ranked on a scale of satiety promotion. That is, we can answer the question of what kind of carb sources tend to keep you fuller longer, and what kind of other carb sources leave you hungry shortly after eating them. Because the kinds of carbs that, calorie-for-calorie, lead to more fullness also lead to less overall calorie consumption, they tend to have better effects on health, be it indirectly, through the priority of Calorie Balance.

| Satiety Index Sample | |
|--------------------------------|-----------|
| | Very High |
| Most Vegetables | |
| Most Fruits | |
| Potatoes | |
| Oatmeal and other Whole Grains | |
| | High |
| Beans | |
| Whole Grain Breads | |
| Moderate | |
| Pasta | |
| Rice | |
| | Low |
| French Fries | |
| White Bread | |
| Ice Cream | |
| | Very Low |
| Chips | |
| Cookies, Cakes | |
| Candy Bars | |

Taken together, the three considerations for carb source actually lead to simpler diet advice than it would initially seem when you consider having to juggle the net agreement of three different variables. In nearly every case, the healthiest carb sources (as measured by fulfillment of the above three considerations) are almost always whole grains, fruits, and/or vegetables. Whole grains, fruits, and veggies are jam-packed with vitamins, minerals, phytochemicals, and fiber, they are usually lower on the glycemic index than other carb sources, and nearly always cause greater satiety due to their high fiber and water concentrations giving them large, stomach-expanding volumes. Because processing strips off some fiber, water, vitamins, minerals, and phytochemicals, the healthiest kinds of carbs tend to be the least processed kind. While carbs like lactose sourced from dairy are by no means bad for health, most individuals would see the biggest health benefits by focusing their carb intakes on whole grains, fruits, and vegetables.

Healthy Fat Basics:

There are four basic categories of fat, based on their molecular structures. While we won't dive into the details of those structures, here's a basic synopsis of each kind of fat:

Trans-Saturated Fats, or trans-fats, are fats most commonly used to increase the shelf life of common baked goods. Diets high in trans fats have been shown deleterious to health, particularly to cardiovascular health. The recommended intake of trans fats is "minimal," and luckily their use in food prep in modern countries has been in fast decline.

Saturated Fats are most commonly found in animal products like fatty steak, dairy, butter, and cheese. While they are not bad for health when consumed in moderation, their consumption in excess has been associated with slightly poorer health outcomes, particularly for cardiovascular disease.

Polyunsaturated Fats are most commonly found in plant oils (like corn oil), but are also found in animal sources as well. Consumption of polyunsaturated fats in moderation doesn't harm health, and in fact, two types of polyunsaturated fats (Omega-3 and Omega-6) are essential to survival and health because we can't make them ourselves and must get them from our diets. While we need both

Omega-3 and Omega-6 fats in our diets, most of us in the modern west get plenty of Omega-6 but sometimes not enough Omega-3. It has been shown that grass-fed animals have higher concentration of Omega-3 fats in their meats, and it very well might be slightly worth consuming more grass-fed animal products than the alternative. While moderation is the best recommendation for polyunsaturated fats, higher levels of Omega-3 fats have been shown to improve cognitive functioning and decrease cardiovascular disease risk.

Monounsaturated fats are a variety of fats that mostly occur in plant foods. Common sources of this fat include nuts, nut butters, olive and canola oils, and avocado. Their positive health effects when they replace polyunsaturated and especially saturated fats in a diet are well documented, and if you are going to eat a lot of any one kind of fat, monounsaturated is your best bet.

| Fat Intake Recommendations | |
|--|-------------------------------|
| Fat Type | Recommended Percentage Intake |
| Monounsaturated | 45% |
| Polyunsaturated (preferably higher Omega-3 sources) | 35% |
| Saturated | 20% |
| Trans Fats | 0% |

Implications

The first clear implication of the priority of Food Composition is that yes, there are such things as “healthy” and “unhealthy” foods. However, these delineations do not form perfect categories. First of all, nearly all foods are some combination of healthier and less healthy ingredients. For example, while egg yolks contain lots of saturated fat which is bad in excess, they also contain plenty of monounsaturated fat, which is quite healthy even in high amounts. Secondly, for those needing more or less of a particular nutrient, “healthy” can be quite different than what it is from what’s healthy for other people. For example, a vegetarian who’s low on Omega-3 and 6 essential fats might be much better served with a piece of fatty fish (such as salmon) than they would with a bowl of quinoa, though someone more in need of fiber and plant vitamins might benefit more from the bowl of quinoa. Lastly, “unhealthy foods” (those high in some combination of low quality proteins, fast digesting and nutrient-sparse carbs and saturated fats, for example) are only unhealthy under one condition: if you eat so many of them as to push out the minimum amounts of healthy foods you need for your daily intake.

Once you meet your vitamin, mineral, fiber, phytochemical, protein, and essential fat needs, and so long as you are not having issues with hunger or energy levels, eating junk food is just fine, and in most cases has no meaningful effect on your health. Especially if you keep your daily saturated fats within reason and focus on monounsaturated fats, some junk here and there, *on top of a healthy base intake to meet your needs* is very much a part of an overall healthy diet. The big problem with junk food is usually not that it’s so bad by itself (it’s not), it’s that diets too high in junk food either push out healthy foods and leave you wanting for essentials and health-enhancing ingredients, and/or worse, they push your calories higher in an attempt to fit everything in.

The second implication of food composition is that, once it has been accounted for and calorie balance is in line, up to 80% of the potential health effects of a diet are in place. What this means is that just watching your food amounts and eating mostly from healthy sources gives you a huge fraction of health improvement for your investment of time and energy. This is a very big deal, and one of the bigger take-home messages of this book. If you don’t have the time to get blue in the face considering different protein, carb, and fat ratios, timing your meals to the minute or taking in countless “superfood” supplements, you don’t

have to! You can still take the biggest steps to health by simply controlling your portions and focusing mostly on healthy foods. By definition, vitriolic arguments between Vegans and Paleo advocates, between anti and pro-supplement camps, and between intermittent fasting and grazing proponents are fighting over the very small differences in the health effects of diets after calories and healthy sources have been taken care of. If you have the time, energy, and desire to spare on the details of the smaller priorities, that's totally cool and will yield you better health still. But if you are ok to just get through this chapter and then put down the book, that's just fine... its biggest lessons have already been taught. Of course, there's much more to learn, so let's keep going!

Recommendations

We can make four practical recommendations based on the priority of Food Composition that you can implement into your diet right away:

- 1.) Focusing on a diet of lean meats is a cornerstone of health. Protein is both essential and satiating, and lean meat consumption does not risk giving you an intake of too much saturated fat for best health. Vegans and vegetarians should focus their diets on complete protein sources like quinoa and soy.
- 2.) Focusing your diet on fruits, veggies, and whole grains is a great way to support health. The fresher and least processed, the better, and the more varied the sources, the better.
- 3.) Focusing your fat intake on monounsaturated and Omega-3 polyunsaturated sources is best. You'll almost certainly get enough saturated and Omega-6 polyunsaturated fats to meet your needs just by eating lean meats and a variety of plant foods. When added fats are required in your recipes, choosing mono-heavy sources like olive oil will make a more positive health impact.

Example Healthy Food Sources*

| Lean Protein Sources | Veggies | Fruits | Whole Grains | Healthy Fats |
|---------------------------------|----------------|--------------|----------------------|------------------------------|
| Tuna | Broccoli | Apple | Whole Grain Bread | Cashews |
| Salmon (and all fish) | Spinach | Pear | White Rice | Pistachios |
| Chicken Breast | Lettuce | Peach | Brown Rice | Walnuts |
| Turkey Breast | Onions | Cantaloupe | Wild Rice | Sunflower Seeds |
| Lean Ground Beef | Tomatoes | Watermelon | Oatmeal (steel cut) | Peanuts |
| Lean Steak | Green Peppers | Banana | Sweet Potatoes | Almonds |
| Shrimp, Crab, Scallops, etc. | Red Peppers | Grapes | Quinoa | Macadamia Nuts |
| Ground Turkey | Yellow Peppers | Blueberries | Regular Pasta | Pecans |
| Egg Whites | Asparagus | Cherries | Whole Wheat Pasta | Canola Oil |
| Fat Free Greek Yogurt | Zucchini | Strawberries | Corn | Flaxseed Oil |
| Tofu | Cauliflower | Raspberries | Buckwheat | Avocado |
| Mycoprotein | Celery | Honeydew | Whole Grain Crackers | Olive Oil |
| Cottage Cheese (nonfat) | Cucumbers | Melon | Whole Grain Wraps | All Nut Butters (natural) |
| | | Oranges | | |

* This is not an exhaustive list, just a suggestion list. There are many other foods that fit into these categories that are not included here. These are just to give you some ideas about what kinds of foods can be used to build healthy diets.

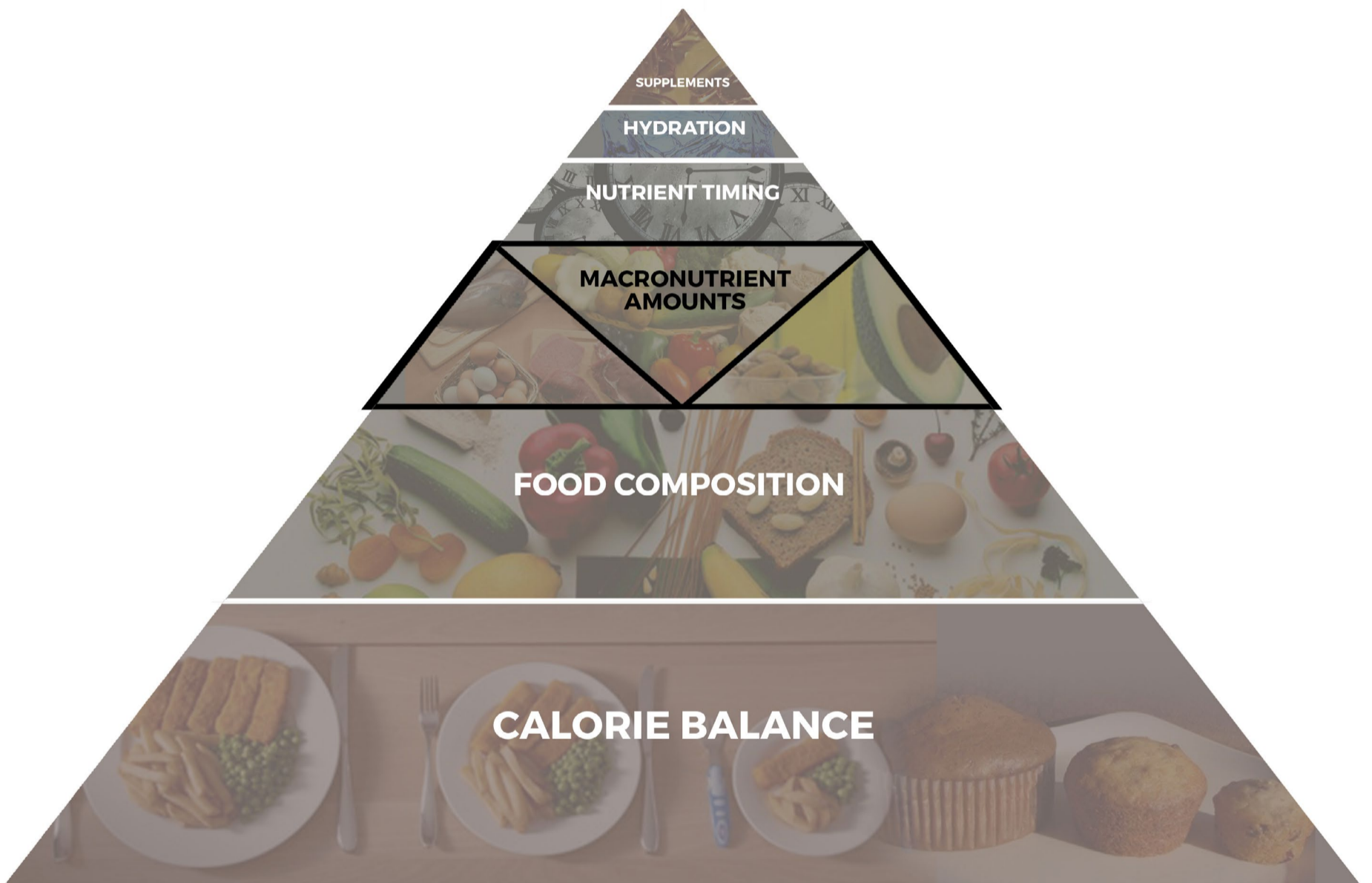
4.) It's okay to eat junk sometimes, but a good idea may be to save it for later in the evening after most of your day's duties are done. This is recommended for two reasons. First, most people need a steady stream of energy through the day to be productive at work, school, or with physical activities such as sports. If they take in healthier foods that digest slowly and don't cause crashes, they will be more likely to be productive in all of their endeavors. Most people work in the mornings and relax in the evenings. Even though junk food isn't the best choice for high energy through the day, it tastes good and pairs much better with relaxing activities than it does with workday tasks. Saving it for later can allow you to be productive at work and enjoy your downtime in the evenings. Secondly, most people tend to experience junk food cravings much more in the evenings when they are relaxing than when they are at work or school, often too busy to think of food and certainly too busy to use food to help them relax. By focusing on eating mostly healthy through the day and having some junk at night (though not so much that it throws calories totally out of whack), you match what your cravings were likely to lead you to anyway and two things can happen. You stay more productive through the day and you keep your calories in check by avoiding overeating junk food over the course of the day. Some ice cream after dinner is hard to argue against, but donuts in the middle of the workday? You probably don't need us to tell you that you may benefit from skipping that temptation.

Further Reading:

<http://renaissanceperiodization.com/understanding-healthy-eating-ebook-references-chapter-3/>



Chapter 4:



Chapter 4: Macronutrient Amounts

Definitions

In order to ensure both survival and good health, a minimum intake of proteins and fats must occur in any diet. Even if calories are met and all of the calories are from healthy sources, insufficient protein and fat intake can result in deteriorating health and eventually be life-threatening if not addressed. In addition, while carbohydrate intake is not essential for survival, a certain minimum intake of carbohydrates is likely to be associated with good health. So long as the health minima of each of these three macronutrients is met, diets ranging widely in macronutrient ratios can all be very healthy.

Realities

Protein Needs:

Protein intake is critical to human survival and health because adult humans can only manufacture 11 of the 20 common amino acids, leaving 9 of them to be sourced exclusively from the diet. These 9 essential amino acids can be converted into the 20 non-essential, but not vice versa. The amino acids consumed from diet and produced internally go to the construction of all human body proteins. Many of these proteins have structural roles, such as the holding together of bones, and the literal composition of muscles. Non-structural roles include the building of proteins involved in the contraction of muscle (including those that pump the heart and control blood flow to all parts of the body by narrowing and widening blood vessels), pumping ions across nerve cell membranes to keep our brains working and our bodies moving, digesting the food we eat and everything in between. Without protein, life is, well, impossible.

Obviously all humans need protein to survive and TO be healthy, but how much is enough?

Generally speaking, the average mildly or moderately active person living in a modern society needs a minimum of around 0.3g of protein per pound of body-weight per day (or at least 40g a day for most people). Vegans and vegetarians may need up to 0.45g of protein per pound of bodyweight per day as a minimum in order to offset their reliance on incomplete and lower quality proteins. Generally speaking, the higher quality the protein you tend to consume, the less protein you can get away with and still be healthy.

Is there such a thing as an excessively high intake of protein as far as health is concerned? Though scientists and doctors have been studying and debating this question for decades, the current best answer is “probably not.” So long as your consumption of protein isn’t so high as to push out fat minima and recommended carb minima, you are probably not at large health risk for eating too much protein, even if consumption is quite high. Studies that show protein is related to poor health usually fail to co-vary for saturated fat intake, food processing practices, and multiple lifestyle choices. When those variables are factored out, there is no strong evidence that having high protein intakes is a health negative. It’s important to note that this advice only applies to those without special medical conditions, particularly those that impair kidney functions. Individuals with such conditions are highly encouraged to consult their primary caregivers about the safe level of protein their diets can handle.

Fat Needs:

Just as with protein, the human body can make most any kind of fats from eating most any kind of other fats (and from eating most any kind of carbs and proteins too, in fact). However, it can’t make all of the fats needed for survival and health from just any other food and two types of fat must be taken in from the diet alone; alpha-linolenic acid and linoleic acid. They are, respectively, omega-3 and omega-6 type polyunsaturated fatty acids. If they are not eaten in sufficient quantities, health starts to suffer and eventually death can result.

Failing health and death are clearly serious conditions we want to avoid, so how much fat do we need daily in order to meet our minimum needs for the essential fats? In parts of the world where people are in poor health from too

little fat intake, they are also not getting enough protein, calories, and many kinds of vitamins and minerals, so it's difficult to precisely scope out the effects of fat in that milieu. In the modern world, obesity is the leading nutritional malady and outside of medically-documented special problems with fat absorption, fat under-eating is incredibly rare. However, based on the available research, a minimum intake of fats to the tune of 0.3g of fat per pound of bodyweight per day (or at least 40g per day for most people) is probably a very safe bet.

How do we know this? Well, the minimum recommended intake for Omega-6 fat is just around 0.1g of fat per pound of bodyweight per day (otherwise listed as 2% of your total calorie intake or around 5-7g per day). Because most people in modern countries consume a good deal of vegetable oils, omega-6 deficiency is exceedingly rare. The needs for Omega-3 fats are even lower, but most people fail to consume the minimum recommended amount of around 0.6-1.2% of daily calorie intake (or around 1-3g per day). However, not all fat consumed - by a long shot - is composed entirely of the essential fats, so any average daily figure must take into account that many other kinds of fats will be eaten as well. Thus, the figure of 0.3g of fat per pound of bodyweight per day covers nearly all cases. Yes, it is possible to eat much less fat than this if you are intentionally eating sources heavy in the essential fats, but eating as little as 0.3g per pound per day will almost certainly give you enough essential fats to nearly optimize health.

Is an excess of fat bad for health? It can be, but only for fats of certain kinds. While the jury is still out on excessive polyunsaturated fat consumption, excessive saturated fat consumption is almost certainly a small detriment to health, even when calories are controlled. Notice that the detriment is very small... if calories are controlled and nutritious foods are eaten while protein and carb minima are met, a diet very high in saturated fats is only slightly less healthy than one lower in them. If your diet is high in monounsaturated fats, there's no reason to believe that it will be deleterious to health. In fact, Mediterranean cultural eating habits, among other examples, illustrate the health benefits of monounsaturated fats, even when they are consumed in large quantities.

Carbohydrate Needs:

Carbohydrates are, plainly and simply, not required for survival. All essential carbs can be manufactured in the body from eaten proteins and fats, so their intake from the diet is not mandatory. The clearest illustration of this lack of

carbohydrate needs has come from the experiences of several marooned explorers of the Antarctic. Some of them were isolated for many months without eating so much as any plant products, and the only carbs they did have were from the tiny amounts of blood glucose of animals they killed for food and the stored muscle glycogen in the meat of those animals... amounting to no more than several grams per day. When these stranded explorers were rescued, they were in fine health, and the only trace of carb needs that could be found were in their diaries, wherein they wrote about their cravings for breads and sweets! However, though carbs are not essential to survival and basic good health, their inclusion in a diet can and does optimize health.

Carbs offer several advantages to their consumer. First of all, they are an excellent source of energy for physical tasks and the preferred source of fuel for the brain. Because high levels of physical activity are extremely good for health, a minimum of eaten carbs to support such activity is recommended. Secondly, fiber is an all-around health benefactor, and outside of specific supplementation, it exists only when eaten with the carb-laden foods of whole grains, fruits and vegetables. Lastly, those same carb-laden whole grains, fruits, and vegetables also bring with them the vast majority of vitamins, minerals, and phytochemicals needed to support and enhance health. If your goal is to avoid all carbs, then you might be risking deficiency in important micronutrients by staying away from the whole grains, fruits, and vegetables in which they are most abundantly found. As you can see, though carbs don't have a direct benefit to health, their indirect benefits are noteworthy. A rough minimum intake of around 0.3g of carbs per pound of bodyweight per day taken in as whole grains, fruits, and vegetables is a good point of reference when optimizing a healthy diet is the goal.

Can carbs be consumed in excess? Obviating those with diabetes and related conditions, no. So long as calories are in required ranges and protein and fat minima are met, there is no evidence that diets with the balance of calories as carbs are worse for health than any other ratios of macronutrient consumption.

Implications

There are quite a few implications of the relationship between macronutrient amounts and health. Many of these implications help shed a great deal of light on how there can seem to be so many contradictions in diet and health claims, and how these are really not contradictions at all.

Wide Macro Ranges Can Be Healthy

If we meet our protein, fat, and carb minima to get in all of our essential nutrients and to power physical activity, we can be on our way to best health. However, just meeting the minima of these nutrients leaves a whole lot of calories unaccounted for, and those calories will have to come from some combination of proteins, fats, and/or carbs. The big revelation here is that it doesn't much matter where these calories come from. So long as the sources of the eaten macros are mostly healthy, it's just fine to have a diet of mostly carbs, mostly proteins, or even mostly fats (and anything in between) and be totally healthy.

When you think about it, this is really good news. If you really like to eat meat, getting in a minimum of whole grains, fruits, and veggies as well as plant fats can let you eat all the lean meat you like until you fill up your calorie allotment for the day. If you are a fan of a high fat diet, just make sure to meet protein and carb minima and stick mostly to monounsaturated fats, and eat up! If you are a carb nut, or just happen to follow a vegan or vegetarian diet on ethical grounds, resulting in higher carb intake as compared to protein or fat intake, you are completely in the clear as long as you meet your minimum protein and fat needs. If you want to go super low carb and go below 0.3g of carbs per pound of body mass per day, you can, but you'll likely need to consider supplementing with a mixed-green and mixed-fruit supplement, a multivitamin/multimineral, and a fiber supplement in order to try to offset the deficits of those nutrients when carbs are low.

We can now see how groups of dieters with seemingly contradictory diets are largely in very good health. The paleo and primal community has lower carb intakes and focuses most of its calorie recommendations on proteins and fats, while the Vegan and Vegetarian communities generally consume much less fat and protein and much more carbohydrates. And, with no surprise to nutritionists, both communities have tons of healthy members, particularly those individuals that balance their calories and choose mostly healthy sources.

Vegan/Vegetarian Diets and Health

A lot of the people that don't eat meat cite moral or ethical grounds for their decisions, which is absolutely ok and outside both the scope of this book and the expertise of the authors to judge. However, some of the people that don't eat

meat also advocate that others stop eating it on the proposed grounds that meat eating is bad for health. Some will often cite the infamous “China Study” which supposedly demonstrated the health negatives of meat consumption on a huge populace. Well, it turns out that both the health basis for rejecting meat (and by implication or explicit referral a high protein diet) and the China Study itself were both flawed. The publishers of the China Study initially reported that higher animal protein intakes were associated with poorer health. But when other researchers analyzed the raw data, they found that this was only the case if total and saturated fat intakes were not controlled for in the analysis. As soon as saturated fat intakes were factored out (showing purely the effect of higher protein on health) higher protein intakes were no longer associated with any worse health outcomes. Confirmed by countless other studies, the reality is that high protein intakes by themselves don’t contribute to poor health and no, we don’t all have to reject meat to be healthy. By focusing mostly on lean protein sources, optimal health is possible even at very high protein intakes.

On the other hand, there has been a recent reactionary trend against advocates of meatless eating. Those espousing the virtues of Primal eating patterns have in some cases, begun to insist that not eating meat is bad for health, and have cited some recent studies showing vegans and vegetarians to be in worse health than meat eaters. The problem with such study citations is that they ignore the overwhelmingly large body of studies that show vegans and vegetarians to be at least as healthy as meat eaters, and when processed meat consumption and saturated fat consumption is not factored out in the comparisons, those who don’t eat meat actually appear healthier. In reality, both meat eaters and abstainers can be equally healthy so long as they meet protein and fat minima and get in sufficient micronutrients. While both eating and avoiding meat and high protein diets have powerful moral and ethical arguments in both directions, their health-based arguments are largely without merit.

Protein Magic

The health benefits of high protein intakes have been well documented. By supporting muscle mass and reducing hunger, protein is accumulating a lot of evidence as quite a healthy macronutrient, a welcome respite to its long-demonized nature. However, in some circles the pendulum has swung a bit far in the other direction, and now a host of nutrition specialists are recommending very high protein intakes for everyone; both athlete and sedentary alike. While

such high intakes are just fine for health and are in no way a negative, they are also not mandatory as some advocates of high protein diets would have you believe. The documentation of excellent health in populations with low protein intakes (even just above the bare minimum) as well as the direct study of low protein diets in the lab assures us that while high protein diets can be a part of a very healthy diet plan, high protein intakes are not mandatory for best health.

Fat Demonization

In the 80s and 90s, consuming fat-heavy foods in public was nearly tantamount to a faux pas. Fat was considered the root of nearly all modern nutritional ills, and attempts at its reduction in the diet spanned decades. However, while excess saturated fat is likely a small health negative, almost all of the studies that show excess fat to be bad for health are paired with excess calories. When healthier fat sources like monounsaturated and Omega-3 fats are consumed and calories are balanced, there is no reason to believe fats are any worse for health than any other macronutrient. What about sugar? That's such a big discussion, it's going to get its own section in the "myths and fads" chapter later. Preview: excess sugar isn't bad either, so long as calories and macros are controlled.

Recommendations

The recommendations for this chapter are quite simple and straightforward. When constructing your daily diet, make sure to focus most of your efforts on balancing your calories and choosing foods from mostly healthy sources. In addition to that, make sure to eat at least the minimum recommended intakes of protein and fat, and try to get your carbs, however few or many of them you want to eat, from mostly healthy, nutrient rich sources such as fruits, veggies, and whole grains.

After that has been done, choose to eat as many carbs, proteins and fats as needed to fill in the rest of your remaining calories, and don't succumb to attempts by various interest groups to demonize one macronutrient or lionize another. In fact, those who promote very skewed diets by claiming one or another macronutrient is terrible for health end up making healthy dieting more difficult by interfering with consistency. For example, if you are on a low-carb diet and you are traveling, not having access to low carb foods may occur so often

that you eventually abandon the diet due to its inconvenience. With that abandonment and the belief that the only path to healthy eating is by reducing carbs, some people are inclined to drop all of their healthy diet habits when they become frustrated with the reality of trying to cut out all or most carbs. The same can be said for the other diet extremes; though totally fine, they are not for everyone. How many people will abandon all healthy eating if they are lead to believe that the cornerstone of healthy eating is the avoidance of meat? Millions, very likely.

That being said, the satiating and muscle-supporting powers of protein (especially for the active and the elderly) give it just a small edge in overall health benefits when compared to the other macronutrients. Our recommendation for the average individual in the modern world is to focus on perhaps eating just a bit more protein from lean sources such as meats, egg whites or dairy products (whole eggs are fine too in moderation) or complete plant sources such as quinoa and soy, and to space out those protein servings regularly, especially with main meals. This can lead to support of higher activity levels, muscle mass levels for daily function, and satiety for better consistency with calorie balance; all effects which improve health outcomes and pretty successfully make the case for at least a bit more protein than minimal levels. If you still want to eat a minimal-protein diet, that's fine, but it may be worth considering the merits of a slight increase.

Further Reading:

<http://renaissanceperiodization.com/understanding-healthy-eating-ebook-references-chapter-4/>

Chapter 5:



Chapter 5: Nutrient Timing

Definitions

Nutrient timing is best defined in 5 distinct parts:

1.) Meal Frequency

How many meals per day are eaten? This can range from zero on some days (with some intermittent fasting protocols on which alternating day eating occurs) to 9 or more meals on others (as some grazing advocates have prescribed).

2.) Meal Spacing

Are the meals evenly spaced or irregularly spaced? For example, is there an even time spacing between breakfast and lunch vs. lunch and dinner? Is there a bedtime meal to help space meals evenly through an entire 24 hour period? Secondly, are the meals regularly consumed at the same time intervals. High frequency does not necessarily imply high regularity. For example, you can always eat breakfast at 9am and dinner at 9pm and eat at no other times, but you might eat 6 meals per day, sometimes starting at 5am and eating every 4 hours or sometimes eating every 2 for the first several meals, then waiting longer for the next several, etc.

3.) Per-Meal Calorie Distribution

Do all of the meals have roughly the same number of calories or do some have more than others? Some say that a big breakfast and a light dinner have health merits, while others prefer the opposite. This is also where snacks come in. Snacks are, more or less, just smaller meals, and sometimes snacks have characteristically different macronutrient compositions as well, which brings us to definition #4.

4.) Per-Meal Macronutrient Distribution

Are all the meals a fairly even split of protein, carbs, and fats, or is there a big difference between meals in this regard? There are health claims for eating fewer carbs at night, and even health claims that say proteins and fats should be eaten separately because they have different optimal digestion environments. Less exotically, snacks fall into this category as well, as traditional western snacks tend to have a dominance of carbohydrate and a paucity of protein, the latter usually being saved for main meals.

5.) Timing to Activity

Is there an optimal time to eat before or after working out? If you have a very active afternoon, should you be eating differently than if you are just lounging around (calories aside)? Is there any merit to eating differently before sleeping, since you are going to be inactive for so long?

In real life, these 5 timing factors blend into a countless number of nutrient timing patterns. These patterns range from entire days of fasting coupled with days of gorging by intermittent fasting proponents to a steady consumption of 8 or more meals per day, every day by some fitness enthusiasts. Some people eat evenly sized meals, while some eat very big meals alternated with much smaller snacks. Some people spread their protein intake relatively evenly through the day, while others save it for main (non-snack) meals or even most of it for one meal a day (usually dinner in this case). Some people eat in special ways before exercising and eat in special ways after they are done, while others don't alter their eating to account for their exercise sessions in any reliable way, short of not stuffing themselves right before and risking the speedy return of that food back out the way it came in!

There are also advocates and practitioners of more precise eating patterns. Some claim that more or less food should be consumed with breakfast, some midday, and some at night. You'll find die-hard advocates of each one of these mutually contradictory strategies. An interesting timing variation on which there is a bit of animal evidence is that regular eating patterns are more conducive to fat loss and health states than irregular eating patterns. For example, if you always eat your meals around the same times of the day, the claim is that you'll be a bit healthier than if you end up going long stretches without meals or eat

meals back to back with an unstable schedule. Because there's so little evidence on this phenomenon, we can't say for certain if there is validity to it just yet. But remember that with only 5% of the health total, such a small variation in nutrient timing shouldn't take up a very big fraction of your health concern in any case. For now, we can say with relatively high confidence that more stable meal schedules have the advantages of allowing you to plan and pack healthy options and get your calories and macros right as opposed to getting food you need on the fly. For that reason, it is probably at least a good idea to default to a stable schedule when possible. Could there be an additional, small health benefit to regularity as the animal studies have shown? Maybe, and only time and more research will tell.

Realities

So what does science actually say about what kind of timing strategies are best? Before we narrow down the recommendations, we will survey the scientific literature on timing. We'll split our discussion into the two big groupings of evidence that form; studies and rationale in favor of specific timing as a health benefit, and studies and rationale against specific timing as a health benefit.

Pro Specific Timing:

- 1.) Not eating in the morning can reduce initial activity rates.
Food powers activity, and particularly carbohydrates are effective to that end. If you skip breakfast, you'll have a harder time being active in the morning as you'll have less energy to do so. This might lower your activity levels and because of that lowered activity, your health may be negatively impacted.
- 2.) Not eating an even spread of meals can reduce total daily activity rates.
If we expand the first point from just breakfast to all meals, we can conclude that going for a while without food during ANY part of the day is likely to lead to reduced activity. In addition, to maintain calorie balance, a large volume of food must be consumed after a long fast to make sure a healthy weight is maintained. This large volume of food may be so big 'that it, in and of itself, causes a reduction in energy expenditure by bogging the eater down and making them sleepy. The combination of long fasts (low energy from not enough food) and big binges (low energy from too much food at once) might

reduce activity levels and by that route indirectly reduce health outcomes since high levels of activity are so beneficial to health.

3.) Timing carbs and fats to training can support better exercise training results.

By a small yet noticeable margin, eating less fat and more carbs before and after hard exercises usually allows the individual to both train harder and recover better for next time, and this is more true for more active people. Since exercise is highly impactful to health, some nutrient timing of this kind might be slightly beneficial.

4.) Balanced protein consumption can support muscle mass and reduce cravings.

The body does not have a dedicated storage form of protein. While it stores carbs it doesn't use as glycogen in the muscles and liver and stores fat it doesn't use in specialized fat cells, when extra protein is eaten in a single sitting it's almost always burned up for energy right there and then. When we lack the protein for vital functions and none is coming in from the digestive tract, our muscles are one of the first places our bodies turns to for "spare parts." Skeletal proteins are broken down and used to construct biological proteins required for vital functions. Thus, it can be surmised that eating an even spread of daily protein can both prevent the breakdown of muscle tissue and allow dietary protein to be best used by the body for biological protein formation. Direct research backs up these assumptions, and since muscle mass has been increasingly shown to predict and partially cause good health, this timing concern is certainly impactful.

Sounds pretty impressive so far, huh? If you stopped reading here, you might be convinced that precise nutrient timing is a big concern for health, even if it is only a small fraction. But for all the evidence in favor of timing your food intake precisely, there's just about as much against. Let's take a look.

Against Specific Timing:

1.) Health demonstrated at a wide variety of meal frequencies.

While we can speculate, until we're blue in our collective faces, that all of the timing factors are a big deal to health, what does the direct study of eating patterns actually say? When we look at studies that in various ways compare different kinds of eating schedules, from alternating day fasting to 6+ meals per day, we find that while there are small differences here and there, great health (and distinct, mutually exclusive health benefits) have been demonstrated for nearly all of them. It's just not true that timing is a big factor in health, and some of the research suggests that unless we use a fine-toothed comb, it might not be a real-world factor at all.

2.) Meal frequency does not affect metabolic rate.

This is one of the biggest and most long-standing myths in nutrition and health. If it didn't fit so perfectly into the timing discussion, we'd have saved it for the myths and fads chapter. Looking at all of the available evidence (which previous researchers were so kind to put into comprehensive reviews), it's just not true that eating more meals increases metabolic rates. When calories are equated, there is no difference in metabolism (and thus weight loss) between eating 6 meals a day or even 1 meal a day. Yes, your metabolism does slow when you don't eat for a while. But when you eat a HUGE meal, it revs up like crazy to digest and absorb it, cancelling out pretty much the whole period of lower metabolism that preceded the meal. And while frequent meals do keep your metabolism humming along, they are smaller than the huge single meal and thus the hum of your metabolism is never a roar with frequent meals. The "overall volume" of your metabolic rate ends up being the same and you neither gain nor lose weight appreciably faster with higher or lower meal frequencies.

3.) Fat loss and gain with big meals cancels out.

Similarly to the metabolic rate relationship, meal timing alteration doesn't alter fat loss and gain in any big ways. When you eat 3 meals a day, for example, it's too much food for you to use as 100% energy for the body at any one point, so you'll store some fraction of the calories after each meal as fat.

But because there is such a long wait between each meal, that fat is used up before the next meal is eaten, and no net fat is gained (provided that you are in calorie balance, of course). On the other hand, if you eat 6 meals a day, it's true that less fat or even no fat is stored after each meal, because the meals are smaller and most or all of their calories can be used directly for energy. But if you are eating meals so frequently, when does fat get a chance to burn off? It doesn't! So you don't add any fat like the 3 meal schedule does, but you don't lose any fat like it does either, bringing your fat levels and health to just about the same place.

4.) Circadian eating patterns for health are elusive or nonexistent.

You've heard it your whole life; "breakfast is the most important meal of the day." Your grandparents said it, your parents said it, your friends say it, and even your doctor might say it now and again. And how often did you used to hear "don't eat past 6pm (or whatever pm) if you want to lose weight?" On the other hand, there has recently been a trend in advocating for smaller morning meals or even morning fasting, with claims that more food at night is better and that eating too much in the morning sets you up for bad health consequences throughout the rest of the day. Some have even marketed coffee products that you are supposed to drink upon waking, postponing your eating until much later in the day. When we look at all of the studies on meal timing and health, there's just no reliable trend in any direction. Once you equate for calories, macros, and composition, there's just no clear relationship between time of day and health effects of eating. If you don't like eating a lot at night because it results in difficulty falling asleep, or heartburn, those are good reasons to choose to disregard the purely nutritional effects of late-night eating. However, from a nutritional perspective, you can rest assured that if you eat a very light breakfast or (gasp!) eat after 6pm, you are not headed for health-hades anytime soon and in high likelihood you are not altering your health whatsoever.

5.) Big meals are not a problem for those without medical conditions.

It's true that for those with serious heart problems and some other medical conditions, big meals are themselves either too stressful to digest or provide an overwhelmingly large and thus deleterious pulse of nutrients. However,

these conditions are quite rare, and for most people, large meals are not less healthy by their size alone when in the context of a calorie balanced diet.

6.) No reliable effect of snacking on hunger.

Some folks say that snacking keeps them from bingeing. Others say snacking is just a way to add extra calories between meals and will make you fatter. When we look at the research on snacking and hunger, it looks a lot like the relationship between the time of day you eat and your health: there's just not a conclusive trend in the study results. There may be some effects of snacking (positive or negative) discovered later with more research, but you can bet they will be quite small in their relevance to health, or make no difference whatsoever for most people.

Implications

The first and most pertinent implication of the facts on nutrient timing is that, well, nutrient timing is just not that big of a deal for health. For high level athletes involved in hard training, nutrient timing can be an essential element in maximizing performance and improvement of that performance over time. For those mostly interested in health, however, meal timing just doesn't play a big role, and even extreme forms of timing (grazing all day vs. eating every other day) simply do not have big effects on overall health. Thus, it simply doesn't pay to be too neurotic about meal timing. A completely serious reality is that worry (and the overwhelming need to schedule and plan your diet to the minute that can cause it) is itself very bad for your health. And it's almost certainly much worse for your health than detailed timing can be better for it. So if you are concerned about missing out on health for fear that your meal schedule is the missing piece, you can stop worrying right about now!

In the same vein, because timing has such a small effect on health, it's not likely a good idea to expect big health improvements from following a particular timing scheme closely. You might be meticulous in your meal planning for months, only to find out that your latest physical exam results show that you are no healthier than back when you ate much more sporadically. Could your health have improved too little to notice and been swallowed up by the chance variation in medical tests? You bet. But please don't let this needlessly get you

down. Just like you shouldn't worry about getting your timing completely specific, don't expect it to be a huge health benefit even if you do get it very specific.

Another (and final) implication is that it probably doesn't pay to get into the real extremes of timing. Day-long fasts can leave you drained of energy at work, school, family time or sport, and can cause rebound binges that out-match the fasts and cause weight gain. meal schedules that demand you eat on the hour or every two hours require so much prep, planning and time that they're not likely worth the tiny health benefits they might offer. Add to that their disruption of fluidity of your work and play (sorry guys, gotta eat again!), and such plans are a recipe for unsustainability, increasing the risk that you'll quit the diet altogether. Such schedules might play a role in the lives of professional athletes in some sports, but don't pay off for people whose number one priority is health.

Recommendations

We can give 4 distinct recommendations with regard to meal timing.

- 1.) Because crazy timing extremes pose issues with consistency and sustainability, most people should probably start by shooting for 3-6 meals per day, with an option for snacks that fit into their calorie balance needs. Just 3 meals a day is fine, and up to 6 meals a day is no problem at all for most people to pull off. Choose the meal plan you think you'll best be able to follow with your schedule and hunger patterns.
- 2.) To promote energy and quell cravings, most meals should be spread relatively evenly through the day. This means that for most people and outside of special circumstances, breakfast should be eaten, and the last meal of the day should be pretty late, even if it's a bedtime snack. This will also keep your muscle mass in check (a higher protein bedtime snack is a good idea) and lower the chance of evening hunger cravings.
- 3.) If you work out pretty hard, you should consider consuming a bit less fat and a bit more carbs in the meal before you train (1-3 hours before in most cases) and after you train (as soon as you get home and cleaned up). If you are very interested in the specifics of a training-oriented eating pattern, please feel free to check out our classic [Renaissance Diet e-book](#).

4.) Try to keep track of when you are hungry, and plan your intake to adjust to those times. For example, many people really don't have that big of an appetite in the morning, but they crave food like it's going out of style at night. Those folks might benefit from altering the intake in some or all of the following ways:

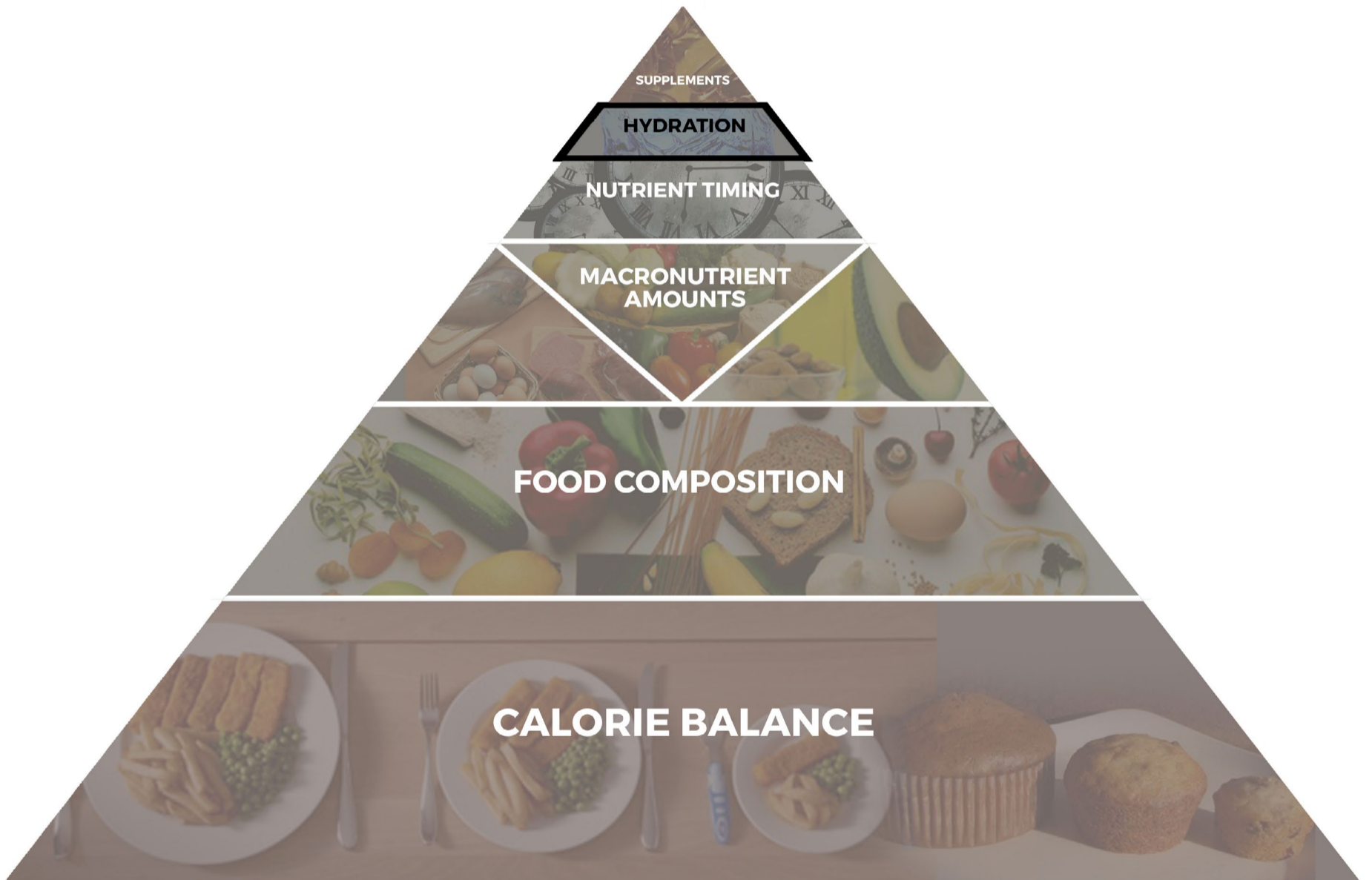
- a. Eating a smaller breakfast and lunch, then eating a bigger dinner and late night snack
- b. Eating mostly protein and veggies (low calorie but supports muscle) in the morning and afternoon, and eating more carbs in dinner and evening meals.
- c. Spread more time between earlier meals, less time between later. For example, you might have breakfast upon waking, and then not eat again for 6 hours. Then you'll eat dinner 5 hours after lunch, and have an evening snack only 2 hours after dinner, keeping you full when you are hungriest.

On the other hand, if you are a big morning eater and not so much of a night owl, you can flip those recommendations right around. If you are an afternoon eater, just eat more meals, more calories per meal, or more frequent meals in the afternoon and the opposite in the morning and evening. Heck, if you always tend to wake up hungry in the middle of the night, leave yourself a protein-rich snack (maybe some Greek yogurt or a couple slices of turkey breast) in the fridge! So long as your daily calories are controlled, you can eat your food when it's most convenient, energy-supplying, and hunger-quelling for you. And don't worry about that "so-and-so is the most important meal of the day" stuff. It's not 1950 anymore!

Further Reading:

<http://renaissanceperiodization.com/understanding-healthy-eating-ebook-references-chapter-5/>

Chapter 6:



Chapter 6: Hydration

Definitions

To be hydrated is to have enough body water to support life. To be optimally hydrated for health purposes is to make sure that you have enough body water to promote health on top of being alive.

Realities

As you may well have well heard for most of your life, the body is, by weight, made mostly of water. Unlike many of the things we hear about so often concerning nutrition and health, this claim is in fact true. And water is critical for health not only because it literally gives us most of our substance, but because of all the chemical reactions that construct, power, and control our muscles, hearts, bodies and brains only occur in a water solvent.

Because of water's critical importance to the body, not getting enough water is of course deadly. But once enough water has been supplied for the maintenance of life, not much more is needed to optimize health. The very important concept to understand about water is that its effect on health is much more permissive/facilitating, than it is additive/enhancing. If you get enough water, any more doesn't have any added benefits, and much more has pretty serious health risks which we'll address a bit later on. Not all nutrients have this sort of dynamic. Protein, for example, is vital at minimum intakes for survival. However, eating more protein than that might have benefits for hunger reduction, so in a sense and to a point, the more protein you eat, the better it can be for your health (provided that all other nutrient minimums are being met). Such is not nearly the case with water, whose minimum and optimal levels are quite close together.

So how do you know if you are getting enough water? Outside of the much more technical definitions and ways of measuring hydration, a couple of very simple guides cover most cases. You know you are well hydrated if you regularly (not just the last time you checked):

- a.) Have clear or light-yellow urine color
- b.) Urinate with high volumes at most times

You can get this effect by drinking a bunch of fluids all at once and then be dehydrated mere hours later, but if the above is the case more or less all the time, you are very likely well hydrated (outside of special medical circumstances) and have nothing to worry about on that front. On the other hand, if the opposite is true, you are likely dehydrated and need to focus on slowly and regularly increased fluid intake. So if your urine is regularly deep yellow or darker and if your urine volumes are low, you could likely benefit from addressing your fluid intake.

A very important point in the discussion of hydration is that, first as mentioned before, hyperhydration (having more body water than needed) is not a health benefit, and that, in fact, in extremes it can be a health cost. The biggest risk of hyperhydration is a condition called Hyponatremia. Hyponatremia is a low concentration of electrolytes (particularly sodium) in your body. Electrolytes are salts that are eaten in food, and they are critical components of maintaining body ion balance as well as literally allowing for the contraction of muscles and the conduction of nerves. If you drink way too much pure water (without much food or added electrolytes) in a short time, and especially if you also sweat a lot during or before consuming large amounts of water, you can actually flush out too many of your electrolytes and thus put yourself at serious health risk and even risk your life. A typical scenario of hyponatremia is when inexperienced half-marathon runners drink half a gallon of water before the race starts for fear of dehydration and continue to drink lots of water through the race. Since one of the symptoms of excessive water can actually be cramping (which is also a symptom of dehydration), it can be mistaken for dehydration and even more water intake is commenced, which of course leads to worsening symptoms, etc.

Now, what's the risk that YOU will get hyponatremia without doing anything extreme? Very low and nothing to worry about most of the time. But the underlying point is true for everyone... extra water is not better than just being

hydrated. So if you are paranoid about not being hydrated and are trying to make up for it by pushing in extra fluids you don't feel like drinking, there's a chance you won't benefit at all and might not need to do that.

Implications

If you are getting in regular fluids and you are attending to your thirst in a timely manner (not going hours while being thirsty), hydration likely plays a tiny role in your health as reflected by its meager 2.5% estimated contribution. The big take-home message from this... if you really start to pay attention to your fluid intake and make sure to stay well-hydrated much more than you used to, do not expect big changes in either how you feel or your underlying physical health. You might very well feel better (because dehydration can make you feel very low on energy) by becoming better hydrated, but it's not something to expect. Many people don't feel much of a difference at all, outside of the extra urination frequency and volume! Stay hydrated for your health because it's easy and it helps a bit... don't do it because you think it will revolutionize your health.

Recommendations

Staying hydrated is not super complicated or difficult in most cases. Starting steps are as easy as making sure to drink plenty of fluids right when you first get thirsty and not delaying for hours, as well as drinking plenty of fluids with each meal. Just by doing the latter, you are already a step ahead. And by watching your urine color and volume, you can drink more or less if needed.

As far as what to drink? Regular water from the tap or bottle is almost always great, as well as diet sodas (yep, more on this in the myths and fads chapter to come) and most any other calorie-free drinks of any kind. Why calorie free? Is orange juice forbidden? Of course not. But if you drink calorie-laden beverages, those calories will go to your daily food intake. And the thing is, liquid calories are much easier to get in and don't have the same effect on curbing hunger as do solid food calories. Thus if you are looking to lower your weight or keep it from rising, avoid calorie-containing beverages for the most part so that you can eat more of your food and be fuller because of it, making your weight loss or weight control that much easier.

Further Reading:

<http://renaissanceperiodization.com/understanding-healthy-eating-ebook-references-chapter-6/>

Chapter 7:



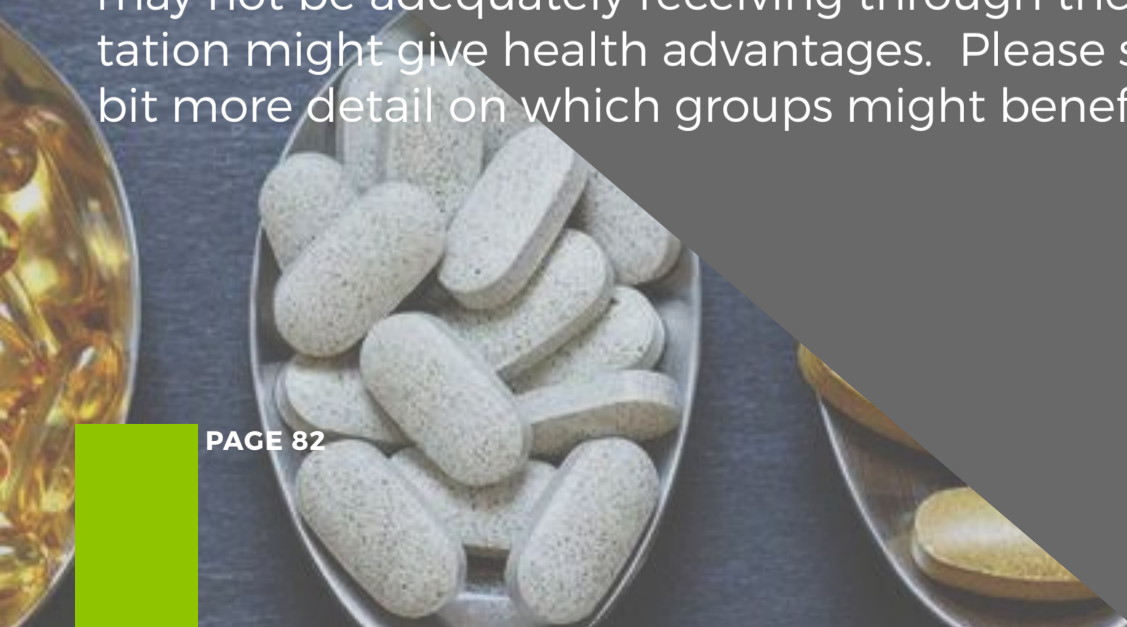
Chapter 7: Supplements

Definitions

A diet based on at least the minimum recommended amounts of carbs, proteins and fats goes a long way to providing all of the necessary nutrients for health. On top of that, making sure to get those proteins, carbs, and fats from mostly lean meats, whole grains, and healthy fat sources is a huge step in the direction of a complete diet. Lastly, the intake of a wide variety of foods within each of those categories rounds out nearly all of the nutrients that the human body requires for optimal health. That is, instead of eating a diet of exclusively chicken breasts, brown rice, broccoli and olive oil, a varied diet which alternates meals or days of eating chicken with turkey, beef, and fish just as it alternates brown rice with whole grain breads, oats, sweet potatoes, etc., will usually provide nearly every nutrient needed for optimal health outcomes.

However, some nutrients are tougher to get from whole food sources alone, and in some cases supplementation from processed sources might carry a small health enhancement benefit. This is especially true for people who are missing out on some nutrient source in their environment that was not a limiting factor through most of human evolution. The two big examples of this situation are in Vegetarians or Vegans and in folks who live in northern latitudes. Vegetarians and Vegans might be missing out on some of the B Vitamins that mostly or only occur in animal products, and those who live in northern latitudes might not get sufficient amounts of sunlight to produce enough D vitamins for their optimal health needs.

There are a few other nutrients that various groups of people in modern countries may not be adequately receiving through their diets and for which supplementation might give health advantages. Please see the table on the next page for a bit more detail on which groups might benefit from which supplements.



Potential Health-Enhancing Supplements

| Supplement | Potential Health Benefit | Population of Potential Need |
|-------------------------------|---|--|
| D Vitamins | Increase the absorption of calcium, iron, magnesium, phosphate and zinc | Everyone, particularly those with dark skin tones or those with little sun exposure |
| Multivitamin/ Multimineral | Combats deficiency in the diet | Everyone, particularly those on a low calorie diet |
| Folate | Prevent neural tube defects | Females of childbearing age (particularly important during 1st trimester) (consult physician or dietitian) |
| Iron | Healthy red blood cell formation | May be needed by many women of childbearing age (consult physician or dietitian) |
| Calcium | Healthy red blood cell formation | May be needed by many women of childbearing age (consult physician or dietitian) |
| EPA/DHA | Healthy bone growth | Most people, particularly females |

Realities

Aside from the fact that certain groups of people might benefit from certain specific supplements, two supplements may benefit such a large portion of the population that we are comfortable recommending them to most people across the board. The first is a general multivitamin/multimineral. Yep, the very kind you can buy very inexpensively at a Sam's Club, Costco, or Walmart. Even though we get all or nearly all of our vitamins and minerals through a proper diet, two considerations must be made:

- We don't always eat a proper diet. Multiple days of not-so-great eating are a feature in nearly everyone's life at some point.
- Even with a pretty varied diet, it's hard to make sure to get enough variety to get ALL of the essential vitamins and minerals in each day.

Those two considerations reveal that short term deficiencies in some micronutrients are possible, and for some kinds of vitamins especially (the water-soluble kind; particularly vitamin C and all B vitamins), this means actual shortages in the vitamin's availability to the human body's function.

Is this a big deal? Absolutely not. But can we potentially enhance health just a tiny bit by taking a multivitamin/multimineral and "covering our bases," so to speak? Probably. And because there's not much of a downside to a multivitamin/multimineral supplement (even the price is absurdly low), it's probably a good policy for most to adopt. Notice, a multivitamin/multimineral does NOT provide you with enough or even a complete list of all of the micronutrients (especially phytochemicals) from which your health can benefit so taking a multivitamin/multimineral is NOT a replacement for a well-balanced diet. But, it might be a good insurance policy to take in in addition to a good diet.

For those that, for whatever reason, have trouble getting in most of their nutrients as healthy choices, there is some potential health enhancement with a mixed-greens and mixed-fruit supplement. These powders are basically dried and mixed components of many different kinds of fruits and vegetables. No doubt not as good in terms of sources of phytochemicals and fiber as whole food fruits and veggies, but perhaps better than nothing. Before considering a mixed fruit

or mixed greens supplement, it's best to try to eat as many fruits and veggies as possible so as not to have to go the supplement route. But if fruit and veggie intake is lower for whatever reason, mixed dried powders may be a health-enhancing supplement.

As mentioned earlier in the chapter on macronutrients, most people in the developed world (especially in Europe and North America) get enough Omega-6 essential fats but may not be getting enough Omega-3 fats. Of course eating fatty fish at least twice a week is a great solution to this problem, but that's not always realistic. Alternatively or in conjunction with fish consumption, an Omega-3 supplement may offer some pretty well-studied health benefits to most people living in the modern world. An EPA/DHA supplement can be consumed instead of fish oil capsules. Fish oil capsules often contain rancid (spoiled) oils that cannot be used by the body. EPA/DHA are eicosanoids, biological compounds, formed from the breakdown of Omega-3 fats in the body. These two eicosanoids are responsible for the improvements in cardiovascular, neurological and cognitive functioning that is associated with Omega-3 consumption. Another great source of Omega-3 fats is ground flax seed, so that might be worth a try. Ground (and not whole) flax is by far the best option, as whole flax seeds are so resistant to digestion, they pass through the body completely intact, thus you aren't getting any of the Omega-3 benefits!

Lastly, it must be mentioned that health-promoting supplements are only health-promoting if you get enough of them, and not much more than that. Taking extra supplements makes you no healthier than putting extra air in your bike tires makes for a better ride. In fact, much like the bike tires, too much of any micronutrient can actually be a health negative, especially in long term situations where far too much of the supplement is taken over time. For example, chronic overconsumption of calcium can lead to kidney stones and excess zinc can lead to nausea and other GI distresses and problems with cholesterol levels. This "megadosing" has been popular before and will doubtless make a resurgence, and is not only absent any benefits, it might in some cases be harmful to health.

Implications

By our count, supplements make a tiny contribution to the overall health benefit proper nutrition can bring. Especially in the context of a well-balanced diet, supplements play only a very tiny role in health enhancement, with many people not being in the position to benefit from supplements at all!

This reality implies that almost all situations in which you are being sold on a supplement with supposedly huge benefits are situations in which the seller is exaggerating wildly, whether knowingly or unknowingly. If you are looking for a supplement that will turn your health around or even make a noticeable contribution to the way you look and feel day to day, you are looking for something that does not yet exist. This of course doesn't at all mean that many individuals and companies out there won't want to tell you that they indeed do have such a supplement and it's ready for sale. It's up to you to be wary of claims and as always, buyer beware!

This is of course not to say that all supplements are useless and that you shouldn't bother with them at all. Some are indeed helpful, but usually to a very small extent. If you are looking to supplements to help your health, it pays to make sure you've covered your bases on calories, food composition, and macronutrient amounts at the very least prior to investing time and energy into investigating supplements.

Recommendations

The recommendations for supplements are fairly simple. First, focus as much as possible on eating a balanced diet, and consider taking a multivitamin/multimineral and Omega-3 or EPA/DHA supplement every day. Stay in touch with your doctor or other medical professionals about any special situations that might make you a candidate for supplementation with some of the specific supplements for specific groups we mentioned earlier. And remember, there is no magical, mythical pill or potion that everyone must take for huge health benefits. And even though such tiny changes to a diet don't offer big health changes, claims to the contrary abound. For these mythical supplement claims and many others, we refer you to Chapter 9, Myths, Fads, and Fallacies in Nutrition and Health.

Further Reading:

<http://renaissanceperiodization.com/understanding-healthy-eating-ebook-references-chapter-7/>

Chapter 8: Making the Change to Healthy Eating

Changing your eating to better your health is a great idea. But for any great idea to work and to sustain, it has to be executed properly. In the case of healthy eating, all too many people have made some kinds of changes in the right direction but have reverted back to their old habits all too soon. In this chapter, we hope to give you some tips to help increase the chances that your transition to healthy eating is as smooth as possible and leads to long-term changes and thus, long-term health benefits.

The 4 Step Sequence

If you are just getting started in eating healthy, the first rule of success is to make very small changes and, until you get used to them, don't make any more changes. So many people try to go from zero to sixty and attempt to completely overturn their old habits by doing everything they can to eat healthy right away that they overwhelm themselves and the stress of the process leads them to abandon their changes. Many of these people conclude that "healthy eating is just too hard for my busy life," and end up missing out bigtime on the potential benefits of a good diet. On the other hand, if you take changes one at a time until each one comes as a no-brainer habit, it never really feels overwhelming and your chances of sticking with it are much greater. Thus in all of the following steps of the sequence, the instructions are to move onto the next stage **ONLY** when the current stage becomes nearly thoughtless habit.

Step 1: Healthy Choices

When you first endeavor to make a change to eat better, the first step to take is to start paying attention to **ONLY** the food composition (from Priority #2) of the food you eat, and to try to stick with healthy options for *most* of your meals and snacks. This means that you have to try to, as best you can, eat a diet based

around lean proteins, fruits, veggies, whole grains and healthy fat sources. Can you have some junk here and there? You bet! Just don't make it ALL the time and keep overall calories in check. Some good times for junk are at night when you are relaxing with friends and family or watching TV. You'll need to use common sense here; if you are eating fast food for breakfast and chips and candy for lunch, you can do better. In addition, there are times and places where unrestricted eating is a great idea and restriction of any kind is best placed elsewhere. If you are at a friend's birthday dinner at a restaurant, it's OK to order up the tasty stuff and have fun! But if you are buying and packing junk into the lunches you take to work, that's a very appropriate time to focus on healthy options instead. By eating healthy options throughout the day and saving the other stuff for special occasions, you can have better energy levels at work and improve your health while avoiding the transition into a full-on health zombie who never has any fun!

And you don't have to be perfect, not even close. Improvement should be relative to how you usually eat. If you are starting from pretty much all crap... try ONE meal a day of healthy stuff. If you do ok with that, in a week or two you can try two meals a day of healthy stuff. And remember, there's no portion control, so eat as much of the healthy stuff as you want. Pretty soon and in no rush, you are eating mostly healthy food and you are reaping the benefits!

What benefits are you getting? Well, it's not just the 20% or so health benefit of enhanced food composition. Because healthy food is so filling (and let's be honest, much harder to binge on than junk), almost no one eats as many calories when they start eating healthier as when they used to eat mostly junk. Just by eating healthy, you usually end up eating fewer calories, and in many cases the reduction is quite large. So not only does eating better choices get you to a healthier state by improving the composition of your food, it also goes a long way in reducing your calories and thus getting you even more health benefits in that regard!

Step 2: Per-Meal Macros

Once you are in the habit of eating mostly healthy food, it's time (if you are ready) to take the next step. Mind you, this step can take weeks or months to reach, and what's important is that you are ready when you get here, not how fast you get here. Once you are ready, you can start to organize your individual meals to make sure that you are meeting your daily macronutrient levels sufficiently. This means

that you get into the habit of building every meal and snack around a protein source. It doesn't have to be a lot, but some tangible amount of lean meat, lean dairy, or lean vegan products high in complete protein should form the basis of each meal. Once you have the protein, you can add in plenty of veggies and some fruits as well. If you need plenty of energy for physical activity in the hours ahead, feel free to include whole grains, and if you are extra hungry, some healthy fats too. If you are not super hungry or don't have much physical activity to attend to before the next meal, sticking with just lean meats, veggies and fruits is totally fine. Does every meal have to be perfectly balanced? No, but aim for balance in most meals to be so. If you can't get any healthy fats, at least get the grains, fruits, veggies, and proteins. If you don't have grains around, at least get fruits, veggies, and proteins. If you have only veggies and proteins around for that meal, that's ok, and the last thing your meal should go without is the lean protein itself. And still, no portion control... eat as much as you like.



Step 3: Meal Size and Number

Now that you are comfortable with eating mostly healthy foods and you are eating mostly balanced meals of lean protein, veggies, and possibly fruits, grains and healthy fats, you can move on to step 3. In step 3, we take our healthy meals and for the first time, exert some portion control. By this point you've gotten a feel for how much food per meal it takes to keep you from getting hungry or low on energy, and you have gotten a good feel for when you usually get hungry and when your schedule allows you to eat. Knowing these two things, you can now

make yourself a loose meal schedule. You keep your breakfast, lunch, dinner and snacks about the same size every day, and you eat them at around the same time every day. You don't have to be perfect, but the more of a habit of standardizing your intake you can develop, the easier the next and final step will be.

At the end of step 3, you've become very accustomed to having a certain amount of lean proteins, veggies, fruits, grains and healthy fats in most of your daily meals, and you are used to having those meals at certain times. This kind of regular intake takes care of your health from the perspective of macros and timing; you are well on your way to getting the most out of your health! In fact, you can just stop here and live your life in healthy balance (with some junk now and again, of course) and not move onto the next step if you are already at a healthy weight. But if you are overweight, we've got one more step for you to try if you are interested.

Step 4: Intentional Reductions

Eating healthy foods with enough proteins, carbs and fats and on a regular schedule is a great start to your health. Making sure you are well hydrated and investing in a couple of supplements can round out your dietary health approach, but if you are overweight, you'll need one more trick up your sleeve. As described in the chapter on calorie balance, you'll have to intentionally cut your calories in order to lose more weight. By following the tips in the Recommendations section of that chapter, you can lose weight in several month periods, and intersperse those with periods of equivalent length where you just maintain the lost weight. During the weight loss periods, it's probably a good idea to eat less junk, as that keeps your calories lower and gives you less "reminder of how good this tastes" cravings, making the calorie reduction process easier. The maintenance periods can be times of a bit more indulgence so that you are not always restricting yourself, especially on calories. Such constant restriction, perpetuated by the misnomer "weight loss lifestyle" is a big cause of burnout and reversion to poor eating habits. Set a 10% weight loss goal, take several months to get there, and then maintain until you are mentally and physically ready to diet again.

How do you actually cut the calories? Well, you need the protein to blunt

hunger and you need the carbs for daily mental and physical energy, so that leaves the fats as the first choice. Cutting out junk goes a long way to cutting out fats to begin with, and then cutting out some healthy fats will get you most of the calorie deficit you need to lose weight. If you start having to cut a lot of fats to keep losing weight on track, cutting carbs via grains and fruits (in that order) is ok, but make sure your physical activity levels are up to make the process much easier and more effective.

By alternating periods of weight loss and weight maintenance, you can eventually trend your bodyweight down to a healthy weight, and then go back to step 3 and live your life in a healthy balance. Mostly healthy foods, regular, balanced meals, lots of physical activity, and some junk on occasion. Along with proper hydration and perhaps some basic supplements, your health will benefit essentially as much as it can from diet changes alone. Now, all you have to do is stay the course and be consistent, and that means avoiding falling for big Myths and Fads in nutrition, which are up next!



Chapter 9: Myths, Fads and Fallacies in Nutrition and Health

While it's true that the reality of dieting for health is actually quite simple when you break it down to calories, healthy foods and basic macro and timing guidelines, it still takes quite a bit of work to pull off and to actually eat healthy. If only dieting for health meant getting rid of a few kinds of "bad foods" or some micronutrient or even a whole macronutrient. If only diet was super simple or easy or intuitive, it would be so much better! We agree that it would! But unfortunately it's not, and we can't, in the name of intellectual honesty, tell you that it is.

However, that same drive for intellectual honesty and due process does not apply to all purveyors of nutrition and health information. In fact, too many are willing to tell people just what they'd like to hear in order to sell them various books, supplements, or diet schemes. What's worse is that all too many people are very much looking for the shortcuts and simple fixes, and are often so frustrated with dieting that they're ready to believe most anything. The result is that our informational space is polluted with a great amount of myths, fads, and fallacies on the subject of diet and health, with just as many pushers as there are hopeful people willing to believe them.

This landscape is a scary one to traverse, especially for folks new to thinking about the health implications of their diet or the diets of their loved ones. No one reading this book wants to be taken for a fool and buy into gimmicks that don't work. And the good news is that by following the principles of healthy eating that we've laid out thus far, such a blunder is already unlikely. If any diet and health claim violates the 6 main principles of diet (even by giving far too much weight to the minor ones and under-emphasizing the major ones), you can start to be very skeptical of its potential validity.

Aside from just knowing the principles and sticking to them, there are some fads and myths in the diet arena that are so prevalent and subscribed to religiously by so many (many of whom will try very hard to convert you to their ways), understanding why they are misleading in each individual case may be a worthwhile effort so that you can be sure to avoid falling for them. The following is a list that is, sadly, not inclusive. But it gives you a case-by-case tour of some of today's most common nutrition and health myths. Some of them are so widespread, you might have taken them for granted as true until now. Give these a look and you might end up saving yourself some pretty substantial time, money, effort, and worry, and instead benefitting from the real and effective principles of nutrition and health.

The Naturalistic Fallacy

This is the king of all nutritional fallacies, and that's no understatement. The vast majority of all nutritional fallacies (including most of the ones listed here) are fundamentally derived from the naturalistic fallacy. If you can understand how this fallacy works and how to spot it, you'll be saving yourself a whole lot of misinformation.

Also called the "argument from nature" or "argumentum ad naturam" or "appeal to nature fallacy," the naturalistic fallacy is the fundamental claim of two truths:

- 1.) Anything that is natural is good.
- 2.) Anything that is artificial is bad.

In the realm of nutrition and health, it can be formally stated as:

- 1.) Natural foods are good for health.
- 2.) Artificial foods are bad for health.

Wait... are we saying this isn't true? Hasn't it been said by nearly everyone for as long as we can remember? Yep. And no, it's not true. The most basic reason that it's not true is the empirical one. Natural food is no more healthy than artificial food as a rule. For example, what's healthier, beef lard or whey isolate protein? Well, beef lard is about as natural as it gets, and whey isolate protein is derived

(processed, in fact) in a factory with all sorts of chemical processes involved. Now, there are certainly some foods which are healthier in their more natural state. Fruits, veggies, and whole grains are on average better for health than the refined sugar that can be made from them. So it's definitely not true to say that artificial foods are in fact healthier than more natural foods, but it's certainly not true the other way around either.

Does processing make foods less healthy? Sometimes, but it depends entirely on what that processing does. Pasteurization makes milk safer to drink by killing bacteria, so it's healthier. Removal of fiber and phytochemicals when making white flour takes away nutrients so it's less healthy. Removing saturated fat when making skim milk makes milk healthier, and in fact some milk has extra D vitamins and calcium added to further artificially boost its health value. On the other hand, some of the chemicals used in meat processing (to make bacon and sausage, for example) might make the meat less healthy to consume over time. It's not the processing that's the health problem or the health solution, it's what the processing removes or adds that must be analyzed on a case by case basis. Generally, if processing removes components of food we may get in excess (saturated fats, for example) or adds nutritive components we may not get enough of (vitamins and minerals, for example) it makes foods healthier. If it removes health-promoting components (phytochemicals and fiber, for example) and adds deleterious components (trans fats, for example), then it makes foods less healthy. "Processed" or "unprocessed" are labels that are not specific enough to be very useful.

Now, this is not to say that they are not at all useful. On average, most unprocessed food tends to be healthier than most processed food, simply because most processing removes nutrients rather than adding them. But this is only a very rough guide and not remotely a hard rule. If someone tells you that as long as a food is unprocessed it's healthy or that if a food is processed it's automatically unhealthy, they are going to be wrong in literally hundreds of very common cases, some as common as the example of skim milk.

If we expand the analysis of the naturalistic fallacy to include artificial sweeteners vs. sugar, foods treated with antibiotics vs. those without, and genetically modified foods vs. unaltered ones, we find that processing is actually the more favorable of the comparisons and that for the most part, natural does not in fact mean "better."

Ok, so the naturalistic fallacy fails on the empirical “what actually happens in the real world” front. What about the theoretical front? Is there at least some reason to believe that natural foods are better for us than artificial? No. In fact, the opposite belief is theoretically more likely. When people say “natural,” they almost always mean “designed for people,” or “people are used to consuming it.”

But while that’s true for some food, it’s wildly false for others. For example, if you are reading this book and are not of native south or north American ancestry, you’ve got a problem. While native Americans have been consuming avocados for thousands of years and co-evolving with them, Europeans have not and were exposed to avocados incredibly recently in evolutionary time. It would be wholly false to say that avocados are “natural” for Europeans to eat insofar as the meaning of that term in this usage is “they evolved alongside it and thus their physiology is used to it.” Guava and Acai? Forget about it! How can you possibly be sure such food is safe for you to eat, when chances are you might be in the first generation of your ancestors to ever try it? You probably wouldn’t just eat berries off of random trees on a trip to the Indonesian jungle, but when you are eating exotic fruit from the amazon that sits on store shelves in the U.S. or Europe, that’s not so far off!

And when people really are subscribers to the naturalistic fallacy, they think such practices are perfectly safe, even though they are wildly skeptical of any foods altered by humans. Even if these foods were carefully studied, manipulated and altered in precise laboratory conditions by the most brilliant minds, tested on animals and humans alike, and approved by every single regulatory body. When the claim is that this whole process doesn’t produce a safer food than the analogical equivalent of eating random berries off of trees in the jungle, it’s just not clear how such a claim would be defended, outside of blind faith in nature. Are we saying that artificially altered foods are, as a rule, safer and healthier than unaltered ones? Absolutely not. However, the reverse is no truer, and believing it to be true is the very definition and error of the naturalistic fallacy.

As you'll see in the coming discussions of more specific fallacies, the naturalistic fallacy forms the basis for most of the others.

Artificial Sweeteners

Artificial sweeteners have been vilified practically from their inception. The claims of their negative health effects range the entire gamut of health problems humans can potentially run into, and if you believe the claims, artificial sweeteners sound pretty much like purposefully poisonous compounds. However, the reality of the matter is that for the artificial sweeteners approved for human consumption by western governments (such as Aspartame, Splenda, etc.), evidence for negative health effects is almost non-existent. Of course absence of evidence is not evidence of absence, but consider the following.

Artificial sweeteners (let's take the demonized Aspartame, for example) have been examined over 100s of studies from a wide range of funding sources. They have been tested for what now amounts to decades, and the health measures taken from these tests range from blood sugar disruptions to cancer. What's been found is that artificial sweeteners are some of the safest food additives ever created. They don't reliably cause any major health concerns, and most of the studies that rung alarm bells (like the famous Ramazzini studies on Aspartame) were shown to be seriously methodologically flawed or even fraudulent. It's not unlikely that after several studies showing no harm, more studies could show that harm is in fact occurring. It's much less likely that after dozens of studies of no harm, that future studies discover that harm did in fact occur. But after literally hundreds of studies, if the overwhelming majority shows that no harm occurs, it's incredibly unlikely that harm is in fact occurring.

Yep, artificial sweeteners are safe for human consumption within limits. And those limits are safety minima (not the point at which you'll definitely get negatives but the point at which the regulatory agencies can't guarantee that you won't), not maxima. What are those limits? While it varies for each particular kind of sweetener, the typical minimum safety cut off translates to something like 18 12oz cans of diet soda per day, every day. Even then, with the intentionally wide safety margin in the ADI (Acceptable Daily Intake), it's by no means clear negative health effects would result. So unless you've got one of the most impressive diet soda habits of all time, there's almost certainly no need to be concerned about artificial sweeteners and your health.

Organic Food

There's seemingly no way to say this without being blunt, but here it is. Organic food is only different from conventionally farmed food in one predictable way: it costs more. In review after comprehensive review, organic food fails to show any reliable differences in nutritive value from conventionally farmed food. Sometimes organic foods have more of some kinds of vitamins or minerals than conventional foods, and sometimes they have less.

But what about pesticides? It's true that some pesticides are in fact carcinogenic, and organic foods may use different ones from conventional foods. But how carcinogenic are pesticides? Well, it has been estimated that many more cancers (still, a tiny number in the grand scheme) are caused by the caffeic acid naturally found in apples, peanuts, and coffee than by pesticide exposure in the United States. So unless you are willing to stop eating a whole range (possibly all) natural foods to lower your cancer risk (also forget about being in the sun, cause that's even more carcinogenic), there's no need to worry about pesticide residue on food in the modern countries of the world.

Genetically Modified Foods

In much the same vein as organic foods, genetically modified foods have been tested for decades. So far, there is not a single genetically modified food that has been shown to cause notable health problems. When considering the fact that such foods are incredibly well tested long before they are sold to the general population, this is no surprise, but the temptation to commit the naturalistic fallacy is often very strong in most of us. To keep this section readably short; if someone claims that genetically modified foods are bad for your health, they are either speculating without information, making things up, or plain old lying.

Local Eating

Are foods that grow locally and don't spend time in shipping better for you than foods grown far away and delivered over great distances? Well, while fresher food may taste better, there is no evidence that it's better for you, and no general nutritional backing for the supposition that it should or would be. Eating locally grown food is just fine, and going to the farmer's market can be a very fun way to shop for healthy food, but it's not in any special way enhancing to health.

Low Carb or ELSE

Low carbohydrate diets can absolutely be very healthy. So long as you get sufficient vitamin, mineral, phytochemical and fiber intakes and stay physically active, lower carb diets can be great for supporting health and longevity. But it's not true to say that the only way to best health is to follow such an approach. Equivalent health outcomes can be had with very high carb diets. Formal research and experiment aside (which supports the equivalent health impacts of low and high carb diets so long as calories are matched and food composition is attended to), one only need look at vegans and vegetarians for evidence of the compatibility of high carb diets and health. Both groups regularly consume as much as 70% of their daily calorie intakes from carbs, and for a long time they were so much healthier than the average western population that it was thought that such high carb intakes were in fact proactively healthier than lower carb intakes! While we now know that we don't need a mostly-carb diet to attain our best health, we're still very confident that high carb intakes are in no special way bad for health and that low carbs are not the must-follow path for those aspiring to a state of good health.

Cleanses and Detoxes

Most cleanses and detoxes are short in duration (about a week) and involve the cessation of eating junk food and the consumption of only healthier foods and sometimes almost no foods at all while getting in lots of fluids. This big short term calorie drop and high fluid consumption leads to very rapid weight loss, but because most of the weight is water, it will be quickly regained. The reality about cleanses is that no amount of water or special herbs can reverse the negative health effects of a chronically poor diet. The only thing that makes you healthier in the long run is actually eating healthy on a regular basis. It would be great if the body's function allowed for crappy eating and low activity habits to just be washed away with a cleanse, but unfortunately it doesn't work like that. In fact, by being so restrictive, cleanses usually cause more junk food cravings, not fewer! Instead of jumping from one ineffective cleanse/detox to the other, best health is achieved by slowly and steadily improving your diet by getting the right priorities in order.

Death by Sugar

If you watch a lot of TV news or scroll through your Facebook feed for even a short time, you are likely to see an article or video about how bad sugar really is. And if you believe the hype, it's terrible! Apparently sugar causes nearly every health problem we can have, and on top of that, some have claimed it's as addicting as cocaine, too! While sugar may be quite addicting, it's hardly the health culprit it's made out to be. Sugar CAN BE bad, but not by itself. For sugar to exact a notable health effect, it would have to be consumed in excess amounts which lead to higher calorie consumptions. By that pathway, fat gain can be caused and poor health is sure to follow. And the reality is that yes, it's very easy to over eat on sugary foods (because they are both very tasty and not as filling as low-sugar foods).

However, if you watch your calories and make sure to get in most of your foods from healthy sources, there's nothing per se that makes sugar bad for non-diabetic populations (if you are diabetic, you can still eat sugar but need to consult with your medical professionals on proper procedures). Earlier we learned that even water can be bad in excessive amounts. Sugar is no different, but much like water, sugar doesn't need to be vilified.

If you or someone you know does have a problem with too much sugar causing big calorie totals, reduction of sugar and/or replacement with artificial sweeteners (which have no calories and are thus perfect for this role) can be very good ideas. But remember, it's not that sugar is toxic or anything like that... it's just that too much of it can lead to too many unnecessary calories.

All-Powerful Antioxidants

Antioxidants, many of them vitamins, have been the rage in health circles for decades. In the body's cells, antioxidants help to reduce the occurrence of free radicals, compounds that in excess can damage cells and cause declines in health. By eating antioxidant rich foods like fruits, veggies, and whole grains, you can make sure to prevent any excessive damage by free radicals.

But if the normal healthy diet provides enough antioxidants for your needs, wouldn't supplementing be even better? It turns out this that is not the case. For one thing, too many antioxidants can actually blunt your adaptive responses to

exercise training, which means you don't get in as good of shape as you could have gotten for how hard you are working. In addition, when you consume too many antioxidants in your diet, your body's own production of its endogenous antioxidants declines, so on the net balance, you gain no more antioxidant ability from getting in too many.

Yes, antioxidants are important for health, but just eating a diet of mostly healthy foods provides you with enough antioxidants for that purpose. Trying to get tons more just hurts your wallet and might hurt your exercise results, but doesn't help your health.



Vegan or Else

Many vegans tend to be quite passionate about their nutritional habits. And they often make various moral and health claims about the consequences of eating animals and animal products. Their moral claims are quite powerful, and are stuff of serious consideration by modern moral philosophers. The health claims,

however, are a bit of a different story. Yes, it's true that those who consume animal products in fact have poorer health than those who don't. But those who consume animal products also tend to consume more calories, processed meats and saturated fats in excess. When studies obviate for these three variables, thus comparing vegans to meat eaters who eat a calorie-balanced diet of lean, unprocessed protein sources, health outcomes are just about equal. The vegan lifestyle can be very healthy and is possibly morally superior, but it's not a must for those seeking to enhance their health.

Super Water

Several companies have marketed special kinds of water that supposedly enhance health. Alkaline water, natural mountain water, water with added oxygen and even water that has supposedly had its chemical alignment altered. All of these types of water are either not going to enhance health in the slightest or are downright chemically impossible and are pure make-believe. Normal clean water is about as good as it gets for health, so please be wary of any claims about special water.

"Bad" Foods and "Good" Foods

Spend just a short time browsing fitness-related sites and many of the ads that pop up and garnish the sides of the sites will tell the same story. Just avoid these 5 "bad foods" and you'll burn fat, fast! Stay away from these 3 foods and you won't put on any more fat and your cholesterol problems will be a thing of the past! Can this be true? Well, it certainly would be awesome if it was! Think about how many delicious foods there are that you love to eat in high quantities. Now imagine that if you stayed away from only 5 of these foods (out of hundreds of amazing foods, no less), you could get leaner while eating unlimited amounts of other very high calorie foods. That would be amazing indeed. Is it possible? Well, which types of foods are responsible for most of the reason why many folks are overweight and unhealthy? We can very broadly narrow it down to just 3 factors:

- Foods high in calories
- Foods that are easy and tempting to eat in large quantities
- Foods high in saturated fats (a very small but notable contributor)

Is it really fair to say that only 5 or 3 or even 20 foods fit these criteria? Absolutely not. Hundreds, if not thousands of foods from cultures around the world (many of which can be found at restaurants in the developed world) fit these criteria to a T, so abstaining from just a small fraction of them is no guarantee for fat loss. So long as foods are high in calories and easy to eat (we don't even need to count saturated fat as it's such a minor variable), they can make you fatter and degrade your health if you let them push your calories too high. It's not some special chemicals or ingredients in foods that make your health decline... it's the calories that add up that are the big deal.

On the other hand, what happens if you eat these "bad foods" within the context of your calorie-balanced diet? Absolutely nothing. You can be in excellent health eating cheeseburgers and pizza on a regular basis so long as most of your diet is based in healthy foods that meet your nutrient needs and your calories are in check.

So if there aren't any bad foods you should completely avoid, are there "magic foods" or "good foods" that you can eat without any repercussions to your health or in fact health positives? Technically, no. Anything eaten in great excess can be harmful to health. While broccoli has very few calories and lots of nutrients, overeating it can have downsides. If you just go wild and eat as much broccoli as you can stomach, you are at risk of consuming too much fiber (yes, that's possible). Too much fiber intake can actually interfere with the absorption of other nutrients (such as some vitamins and minerals) and cause deficiency in them. Now, you'd have to eat a LOT of broccoli or any other veggie to make this happen, but, in a strict sense, it can happen. In addition to that, if you focus too much on veggie consumption, you may under-eat in protein and essential fats, which could also reduce your health outcomes.

If we don't go totally nuts and try to eat ALL the veggies, isn't it fair to say that they are pretty healthy to eat? You bet. But "eating lots of veggies in a balanced diet" just doesn't have the pop of "6 magic foods you can't over-eat."

Lastly? What about the claim that some veggies have negative calories, insofar as they take more calories for your body to digest than you get from them? As awesome as that would be for those of us trying to get lean, no such food has yet been discovered. Even the super low calorie veggies (like celery and lettuce) still do have SOME calories to contribute.

Looks like the quick shortcuts just keep coming up short, and a diet based around calorie balance of mostly healthy foods is still the best option we have to be healthy.

Anti-Dairy

No other animals drink milk after they're no longer young, and no other animals drink the milk of another animal species that's not their own, so shouldn't we expect humans to suffer some health maladies when they do it? Maybe we should, except neither of the above propositions is true. Plenty of animals (in fact most mammals) will gladly drink the milk of other animals into adulthood when it's made available. And in many human ancestral regions (Europe and parts of Africa especially), milk-drinking has been practiced for so long (thousands of years) that people have evolved the ability to fully digest every single component of milk, down to the sugar lactose.

When we look at the broad health literature, we see that dairy consumption is in fact very compatible with excellent health. Interestingly enough, for those people that balance calories and are at healthy weights, whole-fat milk products might offer even more small health advantages than skim milk products!

Is dairy good for everyone? Not quite. Those with milk allergies obviously need to stay away from dairy, and those with lactose intolerance either need to limit dairy intake, consume lactose-free dairy products, add lactose-digesting supplements to their dairy-containing meals, or take a combination of those approaches. But for those who don't have allergies and can deal with lactose either by design or by adjustment, dairy can absolutely be a part of a healthy diet and doesn't need to be excluded on principle.

Diets Individualized Around Genetics

Every single human on this planet (other than identical twins) has slightly different genetic coding than everyone else. Wouldn't it be awesome if diets could be designed with each person's genetics in mind so that they optimally improved health outcomes? It sure would and that technology is already being tested in labs around the world with great promise. But that's just the thing... it's still being tested in its early phases and is not yet on the mass market. At the time of the writing of this book (2016) and probably for at least several years after, there is not

and likely won't be any commercially available and reliable way to pair your nutrition to your genetic profile. And unfortunately, various diet books and the gurus that write them have been proclaiming to have such tools for decades. When genetically-based diet design is a mass-market reality, it will be a great development for nutrition and health indeed. But until then, we have to stay sharp and be wary of those who would trick us out of our money and time, and into believing that reality has already arrived.

Eating Healthy is Too Expensive

It's been repeated so many times, most of us could swear it's true: eating healthy is expensive. And without a doubt, some ways of going about healthy eating are in fact expensive. Shopping for organic foods in specialty stores and buying loads of exotic supplements sure can get pricey. So what are you to do if you are eating on a budget... is healthy eating out of your price range?

Not even close. Everyone who can afford enough food to become overweight can afford to eat healthier because less food always costs less than more food. Because calorie balance is such a big part of the health equation especially for those who are overweight, overweight individuals can see massive health benefits just from eating less food. So it doesn't matter as much what you eat as it does how much of it you eat. And eating less if you are overweight is the surest path to bettering your health. It's common wisdom that fast food and junk food are cheap (and there's some truth to that, though it's not all true), so folks who can't afford expensive health foods like fresh fruits and veggies end up eating junk and gaining weight. But we already know that junk doesn't magically make you gain weight... it only makes you gain weight because it's full of calories. If you still eat junk but eat 2/3 of the junk you used to (for example, by having only two cheeseburgers for dinner instead of three) and generate a calorie deficit, then you are going to lose weight and your health WILL almost certainly improve. Yes, when they sell junk food in bulk it's cheaper per unit amount, but you can just take longer (3 days vs. 2 days, for example) to get through the family pack of potato chips and still eat less. Because food costs money and more of any food costs more money, and because calorie balance is the most important variable for health, eating healthier is possible for people of any income level if they are overweight to begin with.

So that's a lot of good news! Unfortunately it's not all great news. Fruits and veggies do cost a bit more than many junk foods, so it's tougher to eat on a budget if you want to make a big dent in the food composition priority. Tougher, but certainly not out of reach for almost anyone in the modern world. First of all, many grains, even whole grains, are incredibly cheap. And per calorie, healthy fats (nut butters, olive and canola oils) are very inexpensive as well. If you buy in bulk, brown rice, beans, ground beef, and canola oil can be used to make very healthy, balanced meals. But they don't cost a fortune, and in fact are very cheap indeed. Combine them with canned vegetables and you are getting the foundations of healthy eating for very, very cheap.

Throw in the fact that a wide range of macronutrient intakes are healthy and we don't have to worry so much about being able to afford large quantities of the highest quality and leanest protein sources, which can be somewhat pricey. Just basic chicken breast and fatty ground beef can be a part of a healthy diet, and especially if you consume other complementary protein sources (beans and rice, for example), you don't need very much meat at all to meet all of your protein needs for health. In almost all economic circumstance seen in the modern world (of course, the developing world is a different situation altogether), most folks can afford the basic diet so far described and even throw in the occasional fresh fruit and vegetable, with most being able to afford such ingredients for at least a meal or two per day. A diet based on whole grain rice, bread, or pasta, with beans, peanut butter, canola oil and a bit of fatty meat and with fresh fruits and veggies on occasion can fill out nearly the entire pyramid of health priorities and do so for LESS money than most people spend on fast food and junk food. There's no room for organic food in a budget healthy eating plan, but as we've already seen, organic food is not a requirement for health in any sense.

A final consideration is that through food palatability, junk food and fast food is so tasty that it's very tempting to consume more of it than needed and thus set up for poor health. And folks with higher incomes can afford healthy alternatives more readily than those with lower incomes. While this is true, as seen above, folks with lower incomes can comfortably afford the health basics. And unless brown rice with beans and ground beef with olive oil sound like 5-star chef creations, the health basics aren't exactly the kinds of foods most people will find so overly tasty that they'll be likely to get carried away into overeating. Just making the choice to eat healthy (which means the food won't taste as good as junk food) is a big start, and that choice doesn't have much at all to do with

income. People of all circumstances can make that choice, and it's no easier for wealthier people (who have so many more tasty foods to choose from, on the downside of being wealthy and healthy) than it is for the less wealthy.

Big Health Effects of Cooking Styles

Sometimes we as scientists and doctors get so caught up in the theoretical that we forget to address the practical. One practical idea in nutrition and health is that the way in which you prepare food can have a big impact on your health when you eat that food. Various preparation methods such as grilling, baking, frying, boiling, leaving raw and everything in between will, according to some, powerfully alter the health value of foods. The reality is that preparation methods don't really have a huge effect on the health value of foods. There are some small but notable effects. If you fry foods, make sure it's in calorie-free cooking sprays and if you cook in oils, choose the healthier ones and count their calories towards that meal. While grilling your food is perfectly safe, over-grilling it can slightly enhance the carcinogenic effect of the food. If you microwave or boil veggies, they may lose some of their nutrients but the ease with which your digestive system can absorb others from those same veggies can be enhanced. It would be beyond the scope of this book to delineate the many small ways in which the health value of cooked food can change based on cooking method, but for the purposes of general health, suffice it to say that those ways are in fact quite small, and certainly not worth much concern, especially when huge factors like calorie balance and food composition need attention.

Gut Health and Diet

Especially lately, two concepts have been receiving lots of attention in the media. First, that gut health (the health of the stomach organ and the intestines themselves) is important to total body health and second, that diet has a big effect on gut health. While the first point is almost certainly true, the second is still contentious. It's definitely true that diet has some effect on gut health. But for individuals without diagnosed disease conditions (such as Celiac Disease), it's not quite clear what the exact effects are, and most of the so-far-documented effects are quite small. The modern view of large nutritional educational and governing bodies is that if your diet is fundamentally healthy (as described in this book), then your gut is almost always going to be healthy as well, and no obvious

need exists for any special attention or supplementation to address gut health in otherwise healthy individuals with balanced diets. Now, some of the research on how different foods affect GI tract health is only in its formative phases, so much more information will be revealed over the next decade. But for now, it's a safe bet that just eating a healthy diet is going to be the biggest step towards good health, with not much special attention for the gut required for most people.

Easy 'Health Hacks' and Wonder Supplements

Almonds. Coconut oil. Acai Berry. B Vitamins. Grapefruit. Fish oil. Raspberry ketones. The list can go on and on. At one time or another over the last several decades, these and many other foods and supplements have been touted as miracle cures to a host of ailments and one-shot wonders for better health. In addition, various food consumption and timing structures have been touted as the cure-all. Low carbs. No carbs. Carb Back Loading. All carbs early in the day. Frequent meals. Intermittent Fasting. Low Protein Diets. High Protein Diets. The list goes on. Just like for the individual foods, the claims for magical and powerful effects of these diet approaches turned out to be mostly if not wholly false.

The reality is that, unfortunately, if you are looking for health hacks, quick fixes and easy answers, you are looking down a blind alley. It would be so great if that were the case. In fact, the company that published this book and employs all of its authors (Renaissance Periodization) is a private, for-profit company. We'd LOVE it if we could boil down healthy nutrition to a food or supplement or diet type that we could easily sell. But the reality is just not so. To maintain our intellectual integrity, we have to give it to you straight... in diet and health, there are no shortcuts yet discovered.

But there being no short cuts doesn't mean there aren't any answers or solutions. By following the principles of healthy eating thus far described, you CAN improve your health and greatly so! It just takes a bit of dedication, consistency, and a lot of time. The longer you spend going from one fad to the next, the longer you put off the principled and scientific journey to good health through proper eating, so we'd like to kindly urge you to reconsider and put the search for the next magic bullet on hold. Give the principles of healthy eating a chance instead, and you just might like the results. And even if they're not rapid or easy, they keep on coming, they are dependable, and they last.

Further Reading:

<http://renaissanceperiodization.com/understanding-healthy-eating-ebook-references-chapter-9/>

Chapter 10: Toward Better Health: Putting it all Together, One Step at a Time

If you'd like to improve your diet to improve your health, hopefully you've found the contents of this book helpful. It's quite a lot of information, which can of course be a bit overwhelming. If you want to get on the right track, where do you start? Luckily, the priority pyramid is exactly where you can start! By using the priorities, you can remind yourself of what's really important in diet and what you should focus on, while remembering not to sweat the small stuff.

Because you have limited time and resources, you want to focus on the big picture items first. For example, calorie balance must come first at all times if health is your concern. If you are at your kid's birthday party and there's cake, enjoy some cake! But keep calorie balance in mind and only have a slice or two, not the whole thing! People who over-value food composition tend to go all out when they eat less-than-healthy foods because they think "well, since I'm off the plan, I might as well just indulge until the next meal (or tomorrow, or next week...)." But calories matter the most, so eating a slice of cake is not the end of the world and doesn't really set you back... it's the 5 or 8 slices of cake that do.

Once you've got your calories right, food composition comes next. Anywhere there's a grocery store, and even in most restaurants, food composition can be a realistic priority. Heck, you can even order two grilled chicken breast sandwiches as McDonalds and hit both calories and food composition no problem. Over the last decade, a few people have even made documentaries about their weight loss and health-enhancing journeys when eating only at McDonalds to rebut some of the claims of the "Supersize Me" movie about gaining weight eating only McDonalds. Getting enough protein is getting to be easier all the time, with most gas stations now carrying a wide assortment of protein bars and lean beef jerky varieties. As for timing, eat when you can make time, and try to make time. If you

miss a meal here or there, it's not the end of the world! Just go about your day like it never happened, and eat well in the next meal like usual. Just by following the priorities for good health (and potentially making and executing a purposeful plan to lose a certain amount of weight over the long run), you can improve your health by great margins without having to spend a fortune on health food or eliminating entire food groups for months at a time.

Lastly, avoid fads by remembering the naturalistic fallacy and by resisting the temptation to label certain food groups or macronutrients as “bad” and “good.” Nothing can replace critical thinking. If a supplement or diet claim seems too good to be true, it probably is.

Is healthy eating the easiest thing in the world? No way. But as you've hopefully seen through this book, it's not overly complicated, and the simplest changes (such as eating healthy and eating less) are the powerful ones. Do your best, don't obsess, and don't stress over the small stuff. Enjoy your healthy eating journey and best wishes from the authors!