A Complete Program to Burn Fat, Increase Energy, and Reverse Disease

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INTRODUCTION

We're in a crisis of health. Two thirds of us are overweight or obese, despite spending over \$50 billion a year on diet and weight-loss products. More than 100 million Americans suffer from various problems with blood sugar, ranging from mild insulin resistance to prediabetes to full-blown type II diabetes; by 2020, this will affect half of all Americans (Mark Hyman). Fifty million Americans now suffer from allergies of some type (Allergy Facts and Figures). Autoimmune disease, perhaps the the most rapidly growing type of chronic disease, was virtually unknown a century ago and yet already afflicts nearly one in 10 Americans (Donna Nakazawa). Celiac disease, an autoimmune disease characterized by gluten sensitivity, has increased in prevalence by 500% in the past fifty years (Brody 2014). Autoimmune type I diabetes has also increased by around 500% since 1950 in certain countries such as Finland (Blaser 2014)

At the same time, we spend more as a country on health care than we've ever spent before. The amount we spend per person per year on health care, over \$8200, is the highest of any country in the world, and nearly 3 times more than the country that ranks second (Jason Kane, 2012). We spend around \$3 trillion on health care in the United States, which is over 17% of GDP, also the highest percentage of any country (Jason Kane, 2012). To be fair, the US is one of the world leaders in healthcare research, and has excellent survival rates in certain diseases

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like cancer. However, we still suffer from the highest obesity rates in the world, high chronic disease rates and below average life expectancy compared to other industrialized nations. According to a 2011 World Bank report, the United States ranks forty-sixth when it comes to infant mortality, coming in behind Europe, Australia, Canada, Korea and Cuba (Sarah Williams, 2012).

So what's the solution? Certainly there are social, political and financial factors that complicate these issues. While I believe the problem is complex, the solutions in my mind are relatively simple. They involve a return to the basics of human health, updated for the unique challenges of modern society. That's what I'm presenting in this book, based on my clinical work with thousands of patients.

What my patients have taught me is that it's both easy and incredibly difficult to be healthy in today's world. It's difficult because of societal and environmental factors, chronic stress, isolation and lack of community, the ready availability of processed foods and changes in our food supply. It's hard because of the explosion of conflicting, contradictory health information that inundates us from many sources. But it's easy because the elements of health are present in our communities and our lives if we know what to look for and what to focus on. If we realize the importance of getting local organic food from the farmers market, eating a whole foods plant-based diet that is right for us, focusing on our mind-body connection and moving throughout the day, we could focus more on these factors. In addition, the body has a remarkable capacity for self-healing. Again and again, I have seen patients who have been told by other doctors that they cannot get better who are able to heal their bodies using diet and lifestyle approaches and natural supplements. Human beings are remarkably resilient and, I believe, always have the ability to transform their bodies and their lives in some way.

The problem of conflicting advice and misinformation is especially acute in the realm of ancestral diet approaches—such as Paleo, primal,

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or caveman diets—that, broadly speaking, seek to emulate the dietary patterns of our ancestors. Every day I get questions from my patients about these (ironically) fairly new approaches to eating. And it's clear that it is not just my patients who are interested, as the number of books and news stories that have cropped up about them speaks to a larger trend across the country. The Paleo Diet in particular was the most searched diet on Google worldwide in 2013—it was featured on the Doctor Oz show and has become a complementary staple to many people who participate in the massively popular Crossfit program.

But the level of interest in these diets is matched only by the number of myths and misconceptions about them. And with the explosion of books and web sites on Paleo, it's hard to sort through the overwhelming amount of information to discern what is true and accurate. Should you eat just bacon and burgers? Since salads didn't exist in the caveman era, should you cut out vegetables? Follow a low-carb diet? (No to all of the above, FYI.) It's not surprising that so many people that I talk to are very confused about this subject.

Moreover, I see many patients in my clinic who are following a Paleo diet but actually doing themselves some harm inadvertently. This may be due to consuming fewer carbohydrates than they need, not adapting their diet to changing medical conditions or life circumstances, or following a diet that is not ideal for their body type. In my experience, most people following a Paleo diet don't usually know that they need to customize this diet for themselves. They are always shocked to find out that the way they have been following Paleo could actually be detrimental to their health in some way (for cases of actual patients see page TK). Moreover, it's one thing to know that "one-size-fits-all" doesn't work in nutrition, but being able to practically figure out the diet that is best for you is much harder. To help individualize diets for my patients I rely on a science that my patients are usually not familiar with—Ayurveda, the 5000-year-old traditional medical system from India. In this book, I integrate the core principles of Paleo

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with Ayurveda to help you figure out the optimal, individualized diet for you.

As a Harvard-trained M.D., my practice integrates a strong scientific background in biochemistry and Western medicine with training in Ayurveda and study of ancestral societies around the globe. This unique background enables me to seamlessly blend Paleo and Ayurvedic principles with the latest research in nutrition, food science and medicine. I provide definitive, practical health information based on cutting-edge research and clinical experience. My approach has already benefited thousands of my patients who have incorporated this approach to improve energy, lose weight and reverse disease. THE PALEOVEDIC DIET will provide practical guidelines on how to integrate the seemingly opposed world of ancient wisdom and modern science to create a customized nutrition plan for optimal health.

How to Use This Book

This book is divided into three parts. In Part One, I start by focusing on the health of traditional societies. There are a few areas in the world known as "blue zones" where populations still enjoy exceptional longevity and good health, including Okinawa, Japan, Loma Linda, California (where the population lives about ten years longer than other Americans), Icaria, Greece and Sardinia, Italy. In addition, there are a few populations that still follow a traditional hunter-gatherer diet and lifestyle, including the Inuit Eskimos of Greenland, the Hadza tribe of Tanzania, native Australians known as Aborigines and the Kitava people of Papua New Guinea.

Remarkably, medical analysis has revealed that all of these populations are relatively free of chronic illnesses like heart disease, diabetes and cancer, which are epidemic throughout modern society. What are the common elements shared by these groups? One commonality is their consumption of nutrient-dense foods and avoidance of processed

foods. How can we apply lessons from these groups in our everyday lives to address our modern health crisis?

Part One covers in great detail the topic of what you should put into your body, addressing popular misconceptions about the Paleo diet. A question I hear frequently in my clinic is "Should I eat meat?" There are books that argue vehemently for eliminating meat, stating that the healthiest ancestral societies were vegetarian. Other best-selling Paleo books emphasize the importance of eating animal protein. These conflicting theories will be reconciled and clarified. I have found that determining your Ayurvedic body type (which will be covered in Chapter 7) can be very helpful in approaching this question. It will help you to determine whether incorporating meat into your diet or being a vegetarian may be preferable. To me, the Paleo diet is a plant-based diet, which the majority of what you're eating being vegetables. Sometimes people don't realize this with all the controversy about eating meat, and the popular conception of Paleo as a meat-based diet.

Another common point of confusion is the issue of carbohydrate intake. Is the ancestral diet low-carb or high-carb? The answer is that it varies, but what is fundamentally different from our Western diet is the *type* and *quality* of carbohydrates consumed. Part One will also discuss issues such as grains and gluten sensitivity, which types of fats are healthiest, in-depth perspectives on protein, whether or not to consume legumes, unheralded superfoods (you'll be surprised to see what I'm talking about here), how to heal and repair your digestive tract, and a discussion of your bacterial flora and their many roles.

I will also discuss key principles from Ayurveda that you can use to customize a diet that's optimal for your body type. Finally I will review 12 powerful healing spices that comprise a veritable pharmacy of disease fighting power that lies unrecognized in your kitchen. Revered in Ayurveda as medicinal agents, spices have been shown by modern research to be incredibly nutrient-dense and rich sources

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of phytochemicals that can prevent or help treat over 100 different diseases. You will learn about the remarkable healing potential of each spice, and get ideas about how to use them in delicious recipes.

Part Two will address the other aspects of ancestral societies besides nutrition that enable them to be remarkably healthy. Before food was readily available 24/7, our ancestors had to be well-adapted to surviving alternating periods of feast and famine. An approach to eating known as intermittent fasting, that mimics this ancestral pattern of eating, has been shown to help your body burn fat, balance hormones and lose excess weight. Research on certain modern hunter-gatherer populations has shown that they in fact consume their food in this way. I explain why outdated advice such as not to skip breakfast and to eat small meals throughout the day is in fact not helpful if your goal is to lose excess body fat and reduce your weight.

Second, learning to move the way our ancestors did is vital to health. We've always been told by our doctors that going to the gym three times a week is all you need to do. And yet, the latest research is that this is not enough. Studies show that if one sits for long periods every day, there is a significantly increased risk of death—even if one engages in regular exercise. This growing body of research has undermined the conventional wisdom regarding fitness. In Part Two, I present a movement approach that mimics the activity pattern of hunter-gatherers which can dramatically improve one's fitness, and in less time than it takes to do traditional workouts.

Part Two addresses other elements that contribute to ancestral societies' well-being. This includes common practices of traditional societies that are health-promoting, such as following a balanced daily routine, getting quality sleep, practicing stress reduction, having a sense of purpose, and maintaining a genuine connection with other people (i.e. not just Facebook). With each topic, the focus is on simple, practical guidelines that can be implemented immediately to improve quality of life.

Part Three will focus on a core element that is often missing in the discussion of ancestral diets—the topic of detoxification. Our ancestors did not have to deal with the level of environmental pollutants and toxins that we are exposed to in today's world. These toxins may contribute to fatigue, frequent infections, inflammation, and a host of other maladies—and you may not even realize that you have them. Some researchers believe that toxins can accumulate in body fat, making it hard to lose weight. Through my work with patients, I have found that doing a specific detoxification program ("Paleovedic Detox") can take their health to the next level.

This section begins with the three-week Paleovedic Detox. This comprehensive program of diet and supplements helps people to reduce inflammation, improve energy and detoxify. It will guide you in eliminating the most common harmful foods in our modern diets, and add in the nourishing and healing nutrient-dense foods consumed in traditional societies. The Paleovedic Detox incorporates intermittent fasting as well. This section will also include a detailed menu, food plan, and recipes provided by well-known nutritionist Sharon Meyer.

Next, I cover common environmental toxins that we are all exposed to and may not even know about. I will talk about why these toxins matter for our health and provide practical suggestions on how to reduce exposure to these pollutants in our diet, homes and work spaces. Tips on how to incorporate specific foods and traditional practices to accomplish regular, daily detoxification are included. Finally, this section discusses how to incorporate more intensive periodic cleansing and detoxification programs (for example, working specifically to support the liver through food and supplements). I have understood from working with my patients how vitally important it is to perform detoxification in order to attain optimal health. It is often the missing link that is not addressed by other practitioners and diets.

Part Three also discusses how to individualize the ideas presented in the book if you have specific medical problems or illnesses. It concludes

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with a detailed customized dietary program putting together all the concepts from the book. Appendices include ancestral recipes and a detailed two-week menu plan.

Throughout the book, cases from actual patients I have treated are included (names and identifying details are changed). I want to give you an idea about how other people who may be facing similar health challenges to you have been able to achieve radical improvements in health by following the principles I'm talking about.

Ultimately, my goal is to present a comprehensive roadmap to optimal health and detail a practical, sensible and enlightened approach to living. If enough people take control of their own health and follow a path to optimal wellness, we can alter our trajectory as a society and begin to reverse our modern epidemics of chronic disease.

CHAPTER 6

HEAL THE GUT, HEAL THE BODY—THE MICROBIOME

This chapter will discuss the close link between gut health and overall health, and why it's important to focus first on improving digestive function on the path to optimal wellness. It is a fundamental principle of Ayurvedic medicine that the foundation of good health is a healthy digestive tract. Increasing research in Western medicine is also establishing the importance of having healthy digestive function for overall well-being. My approach is always to "heal the gut first". With almost any medical condition, I first focus on fixing and repairing the patient's digestive tract. I treat a lot of patients with autoimmune disease, and they're often surprised when I tell them that 80% of their immune systems is in their gut, and that I'm going to begin their treatment with a gut healing program (even if they don't have any digestive symptoms).

One of the key components of optimal digestion is having a healthy microbiome. Most human beings have around 100 trillion bacteria and "only" 10 trillion human cells—therefore, you are only 10% human, and 90% bacterial. Research has revealed that gut bacteria play a role in a number of processes, including carbohydrate digestion, energy storage, maintaining the health of intestinal cells, enhancing immune function and protecting against pathogenic organisms. In addition, gut flora are now being implicated in various chronic illnesses including obesity, insulin resistance and cardiovascular disease. Some of the most exciting new research is about the role of healthy gut flora in weight loss. Certain bacteria can affect metabolic functions by changing cell signaling and affecting the body's creation of fat. There also appears to

be a change in the gut microbiome in obese people that corresponds to changes in weight. More research is needed to understand these interconnections, but it is clear that the microbiome plays a fundamental role in metabolic balance and obesity.

First, take the following quiz to determine the relative health of your microbiome:

Microbiome Assessment Quiz

Answer yes or no to the following questions:

- I was born via vaginal delivery and my mother was not on antibiotics during labor
- I was breast-fed for at least one year by my mother
- I received no more than two courses of antibiotics before the age of three
- I have not taken antibiotics within the past one year
- I do not use any antibacterial soaps or hand sanitizers
- I grew up on a farm or in a rural area in a developing country until the age of 10.
- I currently eat a variety of fermented foods almost everyday
- I generally drink water that is purified by reverse osmosis or other technology that can remove antibiotics from the water supply
- I avoid feedlot-raised and factory farmed meat or fish
- I am not under extreme stress and practice some type of mind-body stress reduction technique regularly
- I eat a diet that's rich in both soluble and insoluble fiber as well as prebiotic foods (refer to Table 2 in this chapter for the complete list)
- I don't have any digestive symptoms such as heartburn, bloating, excessive gas, constipation or diarrhea

How Did You Do?

Count up the number of "Yes" answers that you have.

Score: 12. Congratulations! You most likely have a vital and robust microbiome. Of course there are other factors that could negatively impact the microbiome but most likely you have a predominantly healthy balance of gut bacteria.

Score: 9-11. This is a good score. You have a lot of positive things working in your favor to support the health of your microbiome. You want to continue working to maintain and possibly strengthen your gut bacteria.

Score: 8 or below. Your microbiome may have been adversely impacted by the presence of negative factors such as antibiotic use or the absence of positive factors such as vaginal birth or breast-feeding. You can definitely improve your microbiome through the strategies outlined at the end of this chapter.

We know that the microbiome is complex and may contain over 1000 different species in the healthy individual. Anaerobic bacteria (which do not require oxygen for growth) may comprise more than 90% of the bacterial species. Foods that contain certain kinds of fiber known as prebiotics, play an important role in providing food that helps these good bacteria to thrive.

Food sources of prebiotics include onions, garlic, artichokes, asparagus and starchy tubers (see below for complete list). Interestingly, breast milk was found to contain certain prebiotics known as oligosaccharides, compounds that cannot be digested by babies but appear to support and feed the infant's healthy bacteria. Colonic bacteria ferment the oligosaccharides, producing short-chain fatty acids especially n-butyrate, which is one of the important energy sources for intestinal cells. A variety of bacteria can metabolize the non-digestible

oligosaccharides. However, two groups—the bifidobacteria and lactobacilli—seem to thrive on these prebiotics (Case Adams, 234).

A number of factors have been shown to adversely impact the microbiome. These include reduced breast-feeding rates, low fiber diets, increased consumption of processed foods, widespread use of antibiotics, emotional stress and environmental toxins. Over the years, increased use of antibiotics in livestock, overprescribing of antibiotics by physicians, improved sanitation with sterilizing of drinking water, reduced exposure to farm animals and farm environments, increased use of antibacterial soap and cleansers, and improved sanitation of the environment has led to dramatic decreases in the amount and degree of microbial diversity that we are exposed to growing up. While antibiotics were one of the most important advances in medicine in the 20th century, it is clear now that antibiotics are being overused and overprescribed in both outpatient clinics and hospitals (Shaun Marsh, 2014, Capital OTC).

CHAPTER 8

THE KITCHEN PHARMACY— 12 POWERFUL HEALING SPICES

Ayurveda believes in the healing use of spices, which I believe are perhaps the most underutilized and yet easily accessible health promoting tool that there is. We all have kitchens with at least some spices but you may not realize how truly powerful and therapeutic spices can be and what a profoundly positive impact they can have on your health. In my experience, spices are often not emphasized within the Paleo literature or community, and yet they are some the most nutrient-dense and antioxidant-rich foods on the planet. Therefore, I believe they are indispensable for people who value nutrient density, disease prevention, and the achievement of optimal health and vitality through natural means. The best part is that they can also make your food taste better at the same time. Ayurveda considers spices to be a category of medicine and this chapter will be focused on 12 healing spices that I have selected after extensive research. I have chosen these spices based primarily on the potency of their health benefits. I call them "The Kitchen Pharmacy," and I believe no kitchen should be without them. These 12 spices can be safely used by people of all body types. Some spices such as cayenne or paprika, while potentially beneficial, may be too pungent and therefore inappropriate for people with pitta body type, or not tolerated by others simply based on the spice level. The spices I have selected are mild enough for daily use.

Scientists have uncovered profound biochemical and physiological healing effects from various spices. The spices listed here have unparalleled abilities to protect your body from oxidative damage through their rich array of antioxidants. Let's talk a little bit about why this is important. Oxidative stress and resultant damage is one of the underlying

mechanisms behind almost all major diseases and the aging process itself. Oxidative stress generally is caused by compounds known as free radicals, molecules that directly damage proteins, DNA, and other components of our cells. In the same way that an apple turns brown when exposed to air, you can think of a similar process of "rusting" occurring in our cells when they're exposed to free radicals. The main benefit of antioxidants is that they protect our bodies from the damage caused by free radicals, and that is why they are so important.

Spices also have the capacity to strengthen digestion, which is fundamental to health, and to quiet inflammation, which is the underlying cause of most chronic disease. One of the key mechanisms by which many spices exert their beneficial effect is by blocking a compound known as Nuclear Factor-kappa B (NF-kB), which stimulates the expression of a broad array of inflammatory genes and is linked to multiple chronic diseases including cancer, heart disease, Alzheimer's and diabetes; phytochemicals from spices such as turmeric (curcumin), red pepper (capsaicin), cloves (eugenol), ginger (gingerol), cumin (anethol), fennel (anethol), rosemary (ursolic acid), and garlic (ajoene and others) have been shown to be effective at inhibiting the activation of NF-kB (Aggarwal, 434).

There is a remarkable amount of scientific literature on the therapeutic properties of spices. For each spice, I summarize some of the most important studies, focusing on clinical trials in humans (which are the most relevant) and occasionally mentioning animal studies and laboratory research if they are significant.

Sample Menu

Day 1 Lunch

Breakfast: **Asian Steak Salad**

Egg muffins Dinner

Green Soup & Ginger with Lunch:

Ceviche Spinach Cake

Dinner:

Stir-Fried Beef & Broccoli

Day 2

Breakfast:

Chicken Apple Sausage with

Grilled Tomatoes

Lunch

Salmon Cakes on Mixed Greens with Lemon Vinaigrette

Dinner

Thai Pumpkin Soup

Day 3 Breakfast Congee

Day 4

Breakfast

Poached Eggs on Spinach with

Pear

Lunch

Herby Chicken Patties on Mal-

abar Rice

Dinner

Mushrooms & Shrimp in Saffron Coconut Curry Broth

The Kitchen Pharmacy—12 Powerful Healing Spices

THE PALEOVEDIC DIET

Herby Chicken Patties

1½ lbs of ground white chicken
3 tbs of chopped fresh sage
3 tbs of chopped fresh sage
2 chopped green onions
3 tbs of chopped fresh sage
2 tbs smoked paprika

3 garlic gloves 1 red pepper finely chopped

Olive oil

1 nob ginger microplaned into the mixture—no need to peel

Place all the ingredients in a food processor

Pulse for 4-5 times

Form into patties, brush with oil and place on a hot grill—2 to 3 minutes each side—depending on the size of the patties.

Malabar Rice

Malabar in India is home of cardamom and pepper and this rice is a perfect accompaniment to chicken or lamb.

2 cups white basmati rice 3 cups water

2tbs of ghee 1 large onion finely chopped 8 green cardamoms 2 cinnamon sticks broken

into 3 pieces

8 cloves 1 tsp cumin seeds

12 black peppercorns 2 tsp salt

Cover the rice with the water for at least 30 minutes.

Heat the ghee in a pan and sauté the onion until golden or translucent.

Bruise the cardamom pods (I use my garlic press, or you can whack them with back of a heavy handled knife).

Add cardamom, cinnamon, cumin, cloves, peppercorns, salt to the onions and gently sauté for 2 minutes.

Drain the rice, reserve the water and put the rice into the pan and sauté for 3 minutes, add the water, salt.

Stir and bring to the boil; then reduce the heat to low. Cover the pan and simmer for 20 minutes until all the water is absorbed.

Turn off the heat, replace the lid and the rice to steam for another 10 minutes.

When ready to serve, turn out the rice on to a warmed platter with a wooden fork fluffing it.

Coconut Chicken

Chicken thighs (boneless, skinless) 1 can coconut milk

1 onion finely chopped 1–2 tsp garam masala or curry

powder

5 cloves garlic chopped 1 green & red pepper, deseeded,

chopped

1 tsp smoked paprika 2 tbs oil

1 tsp ginger ½ cup raisins

1tsp chili paste 1 lime zested & juiced

finely sliced Swiss Chard or kale

or bok choy

Salt & pepper Mint chopped

Add oil to a pan, sauté onion, peppers, ginger, chili, paprika, curry powder, until onions are soft and translucent, add garlic and cook for 1 minute.

Add chicken thighs and 1 can coconut milk, raisins. Simmer slowly for 20 minutes.

Add bok choy or any greens, and continue to cook for another 5 minutes.

OMEGA 3 vs. OMEGA 6

The following charts illustrate the Omega-3 and Omega-6 content of different categories of foods. For each category, the foods are listed in ascending order of Omega-6 content. Remember that you want to aim for a ratio of Omega-6 to Omega-3 fats in your diet of between 1:1 to 4:1. Therefore, limiting total intake of Omega-6 fatty acids is essential and the following tables will help guide you in achieving this. Let's take an example. Assume that you are getting 2500 mg per day of Omega-3 fats through fish or seafood consumption. In order to maintain the 4:1 ratio, you would need to consume no more than 10,000 mg or 10 g of Omega-6 fats each day. As you can see from the data in the tables, without some attention to detail, you might easily go over this amount and end up consuming more Omega-6 fats than is optimal. For example, three handfuls of almonds would easily give you more than 10 g of Omega-6 fats.

Also remember as we discussed in the text that fish and seafood have long chain Omega-3 fatty acids such as EPA and DHA which are more beneficial and health-promoting than the short chain Omega-3 fats such as ALA in nuts, seeds and plant oils.

OMEGA 3 vs. OMEGA 6 IN PLANT FATS AND OILS

| Plant Fats and Oils, per 100 grams (3.5oz) | Omega 6 mg (Lowest to highest) | Omega 6 grams | Omega 3 (ALA) mg |
|---|--------------------------------------|------------------|---------------------|
| Coconut oil | 1800mg | 1.8g | 0mg |
| Macadamia nut oil | 2400mg | 2.4g | 0mg |
| Olive oil | 9763mg | 9.8g | 761mg |
| Hazelnut oil | 10101mg | 10.1g | 0mg |
| Avocado oil | 12531mg | 12.5g | 957mg |
| Flaxseed oil | 12701mg | 12.7g | 53300mg |
| Canola, high oleic | 14503mg | 14.5g | 9137mg |
| Safflower oil, high oleic | 14350mg | 14.3g | 0mg |
| Mustard oil | 15332mg | 15.3g | 5900mg |
| Almond oil | 17401mg | 17.4g | 0mg |
| Peanut oil | 31711mg | 31.7g | 0mg |
| Rice bran oil | 33402mg | 33.4g | 1600mg |
| Sesame oil | 41304mg | 41.3g | 300mg |
| Soybean oil | 50293mg | 50.2g | 7033mg |
| Cottonseed oil | 51503mg | 51.5g | 200mg |
| Walnut oil | 52894mg | 52.9g | 10401mg |
| Corn oil | 53510mg | 53.5g | 1161mg |
| Sunflower oil (linoleic) | 65702mg | 65.7g | 0mg |
| Grapeseed oil | 69591mg | 69.6g | 100mg |
| Safflower oil and (linoleic) | 74615mg | 74.6g | 0mg |

You may wonder exactly how much is 100 g of oil? While it varies depending on the specific oil, 100 g of oil is generally equivalent to about 7 tablespoons, or a little less than half a cup.

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OMEGA 3 vs. OMEGA 6 IN ANIMAL FATS

| Animal Fats, per 100 grams | Omega 6 mg per 100g | Omega 6 gram per 100g | Omega 3 |
|-------------------------------|------------------------|--------------------------|---------|
| Butter oil | 2247mg | 2.2g | 1417mg |
| Butter | 2728mg | 2.7g | 315mg |
| Ghee (clarified butter) | 2728mg | 2.7g | 315mg |
| Beef tallow | 3100mg | 3.1g | 600mg |
| Lard (from pork) | 10199mg | 10.2g | 1000mg |
| Duck fat | 11999mg | 12g | 1000mg |
| Chicken fat | 19503mg | 19.5g | 1000mg |
| Turkey fat | 21201mg | 21.2g | 1400mg |

OMEGA 3 vs. OMEGA 6 IN MEAT

| Meat, per 100grams | Omega 6 | Omega 3 |
|---------------------------|---------------|---------------|
| | (approximate) | (approximate) |
| Beef, grass-fed, lean | 90mg | 23mg |
| Goat | 100mg | 20mg |
| Lamb, lean | 150 – 300mg | 100 – 200mg |
| Venison | 220mg | 100mg |
| Bison | 200 - 300mg | 80mg |
| Beef, grain-fed, lean | 300mg | 10 – 30mg |
| Rabbit | 360mg | 140mg |
| Pork, lean | 300mg | 10mg |
| Ostrich | 350mg | 70mg |
| Beef, grass-fed, not lean | 420mg | 86mg |
| Chicken liver | 400 - 700mg | 140 - 290mg |
| Duck breast, wild | 510mg | 10mg |
| Turkey, light meat | 550mg | 20 - 60mg |
| Cheese, cheddar | 557mg | 365mg |
| Chicken, light meat | 690mg | 76mg |
| Veal | 1000 - 2500mg | 140mg |
| Chicken, thigh meat | 1890mg | 120 - 150mg |
| Eggs, whole scrambled | 1916mg | 154mg |
| Turkey, meat and skin | 2940mg | 280mg |
| Chicken, dark meat | 3040mg | 190 - 240mg |
| and skin | | |
| Duck, meat and skin | 3360mg | 60mg |
| Eggs, yolks only | 3538mg | 282mg |
| Bacon | 5020mg | 480mg |

How large is a portion of 100 g of meat? While it varies based on the type of meat, 100 g is equivalent to 3.5 ounces which is about the size of a deck of cards or a computer mouse.

OMEGA 3 vs. OMEGA 6 IN NUTS AND SEEDS

| Nuts and seeds per 100g | Omega 6 | Omega 3 (short chain ALA) |
|-------------------------|---------|---------------------------|
| Coconut, dried | 706mg | 0mg |
| Macadamia | 1296mg | 206mg |
| Hazelnut (filbert) | 5499mg | 87mg |
| Chia seed | 5785mg | 17552mg |
| Flaxseed | 5911mg | 22813mg |
| Cashew | 7782mg | 161mg |
| Almond | 12053mg | 6mg |
| Pistachio | 13636mg | 254mg |
| Brazil nut | 20564mg | 18mg |
| Pecan | 20630mg | 986mg |
| Pumpkin seed (pepita) | 20703mg | 166mg |
| Sesame seed | 25226mg | 376mg |
| Pine nut | 33606mg | 112mg |
| Sunflower seed | 37389mg | 79mg |
| Walnut | 38092mg | 9079mg |

How much is 100 g of nuts? This is equivalent to 3.5 ounces, which is about 3 small handfuls of nuts (1 handful of nuts with approximately 1 ounce).

OMEGA 3 vs. OMEGA 6 IN SEAFOOD

With this table analyzing different kinds of seafood, the foods have been arranged in descending order starting with the foods with the highest Omega-3 content. These are the types of seafood that you should generally try to eat more of.

| Fish and Seafood, | Omega 6 | Omega 3 (long chain |
|----------------------------|---------|---------------------|
| per 100 grams | | EPA and DHA) |
| Fish caviar, black and red | 81mg | 6789mg |
| Mackerel, Atlantic | 219mg | 2670mg |
| Salmon, Atlantic, wild | 172mg | 2586mg |
| Salmon, Atlantic, farmed | 982mg | 2506mg |
| Herring, Pacific | 192mg | 2418mg |
| Salmon, Chinook | 472mg | 2418mg |
| Tuna, blue fin | 68mg | 1664mg |
| Mackerel, Pacific | 116mg | 1614mg |
| Sardine, Atlantic | 110mg | 1480mg |
| Salmon, sockeye, canned | 152mg | 1323mg |
| Trout | 224mg | 1068mg |
| Bluefish | 60mg | 1067mg |
| Swordfish | 30mg | 825mg |
| Oysters, Pacific | 32mg | 740mg |
| Halibut | 38mg | 669mg |
| Eel | 196mg | 653mg |
| Shrimp, canned | 28mg | 601mg |
| Flatfish (flounder, sole) | 8mg | 563mg |
| Lobster | 13mg | 534mg |

| Mussels, blue | 18mg | 482mg |
|------------------|-------|-------|
| Mackerel, king | 45mg | 423mg |
| Clams | 32mg | 396mg |
| Scallop | 4mg | 396mg |
| Crab | 8mg | 382mg |
| Snapper | 25mg | 343mg |
| Octopus | 9mg | 326mg |
| Tuna, yellow fin | 10mg | 243mg |
| Tilapia | 300mg | 240mg |
| Cod, Pacific | 8mg | 221mg |
| Crayfish | 76mg | 184mg |

Tables adapted with permission from Julianne Taylor.