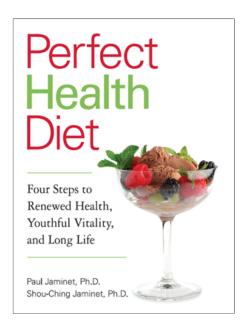
The



# **Color Companion**



# Featuring Supplemental Material for the Book, Including: The PHD Food Plate, Food Pictures and Images, Index, and Errata

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### PAUL JAMINET, PH.D.,

and

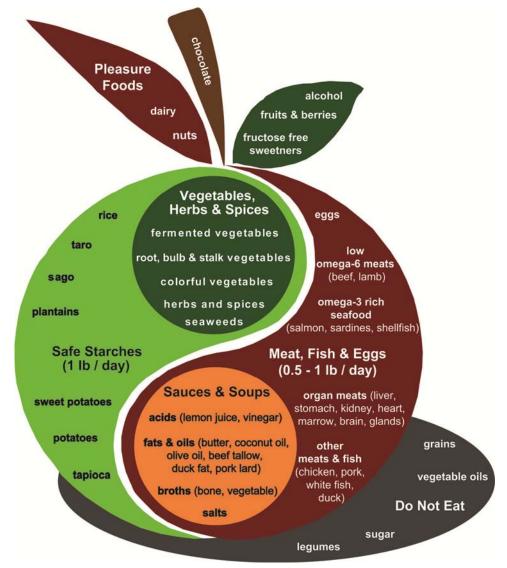
SHOU-CHING JAMINET, PH.D.

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## The Perfect Health Diet in Brief

The Perfect Health Diet is, by calories, a low-to-moderate-carb (20-30%) highfat (55-65%) moderate-protein (15%) diet. However, by weight, the diet is about 65% plant foods, 35% meats and oils.

The diet is represented by our "Perfect Health Diet Food Plate":



The stem and leaves are "Pleasure Foods" – good foods for snacks and desserts. For various reasons – the fructose content of fruits and berries; the omega-6 and antinutrient content of nuts; potential biological activity from milk proteins; potential harmful effects of high-doses of alcohol – these foods should be eaten in moderation. But they are healthful in moderation. There is nothing wrong with a glass of wine at dinner and a banana for a morning snack and berries and cream for dessert. We recommend sweetening foods with fructose-free sweeteners like rice syrup or xylitol. And don't develop a chocolate deficiency!

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The body of the apple represents the components of a meal. As the yin-yang symbol suggests, meals should have a balance of plant and animal foods.

The bulk of the calories come from:

- Up to 1 lb **safe starches** per day. Safe starches have 300 to 600 calories per pound, and one pound per day provides an appropriate amount of carbohydrate calories, plus a beneficial form of fiber "resistant starch."
- 0.5 to 1 lb **meat, fish, and eggs** per day. Meats typically have about 500 protein calories per pound, so this amount of meat will provide 250 to 500 protein calories per day an appropriate amount. Give preference over other meats to organ meats, such as liver, for their nutrients; seafood, for its high omega-3 and low omega-6 fat content; red meats like beef and lamb, for their low omega-6 fat content; and eggs, for choline and vitamin A. (Those sensitive to eggs should eat only the yolks.)
- Healthy fats and oils. Generally speaking, both protein-rich and carb-rich foods should be fatty enough to taste delicious. Generally speaking, this happens with a ratio of 2 calories of fat to every 1 calorie of carb or protein. Fatty, moist-tasting meats tend to naturally have this ratio: eggs are 68% fat, 32% protein, and fatty steaks like ribeye and fatty fish like salmon have a similar ratio. Lean, dry-tasting meats like chicken breast or white fish should be combined with fats to reach this ratio. Similarly, safe starches should be combined with fats or oils: add butter or animal fat to a baked potato or rice until you like the taste. The more athletic you are, the more fat you can add. But be sure to use only healthy fats and oils: dairy fats like butter, animal fats like beef tallow or duck fat, and tropical plant oils like coconut oil, palm oil, or olive oil.

Other meal ingredients provide fewer calories, but provide nutrition and improve gut health:

- **Vegetables** provide micronutrients like potassium, healthful fiber to feed probiotic gut bacteria, and antimicrobial toxins which help keep pathogenic microbes at bay.
- **Fermented vegetables** are especially desirable, as they provide beneficial species of probiotic bacteria.
- Seaweeds have nourishing minerals.
- **Traditional herbs and spices** are rich in antimicrobial toxins that help ensure a healthy gut flora.
- Traditional cooking acids like **lemon juice and vinegar** nourish a healthy gut flora.
- Salt is an important micronutrient that is needed for manufacture of stomach acid, for immune function, for optimal hydration, and for toxin removal.
- **Bone broths** are highly desirable sources of body components minerals and extracellular matrix components that are not easily obtained from other food sources.

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You can put these together by preparing a bone broth on weekends and then having different flavors of soup at each meal; and by mixing lemon juice or vinegar with a healthy fat or oil to make sauces for your meats, starches, and vegetables.

The world's traditional cuisines tend to follow this formula, and so traditional cookbooks can be mined for recipe and flavor ideas.

In the shadow of the apple are four groups of foods you should not eat:

- **Grains** and **legumes**, both rich in toxins. The exceptions are white rice, whose toxins are destroyed in cooking, and low-calorie legumes like green beans and peas.
- **Vegetable oils**, which are high in omega-6 fats and often contain additional toxins from the native plant and from industrial processing.
- **Sugars** which are rich in fructose, such as sucrose or high-fructose corn syrup. Fructose should be limited to that obtained from fruit and berries.

#### These "do not eat" foods contain naturally toxic proteins; excessive fructose and omega-6 fats; and few nutrients.

#### Finally, DO:

- Supplement to optimize nutrition, with a daily multivitamin plus vitamins C, D3, and K2 and magnesium, selenium, iodine, and chromium. (And, if you don't eat liver, copper.)
- Practice intermittent fasting, for instance by restricting eating to an 8-hour window each day, or by taking longer "ketogenic fasts" with coconut oil and perhaps a bit of protein but no carbs.
- Enhance your circadian rhythms through morning and mid-day sun exposure, sleeping in a totally darkened room without an alarm, and daytime exposure to human faces and conversation.
- Get regular exercise and activity of varying levels of intensity and playfulness but don't forget to give yourself plenty of rest.

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### The Economics of a Perfect Diet

Paul is an economist at heart, and he thinks of nutrients as cooperating to produce health in much the way people cooperate to produce a successful economy.

Many concepts from economics can be helpfully borrowed by nutrition. Here is a typical "marginal benefit curve" for nutrients.

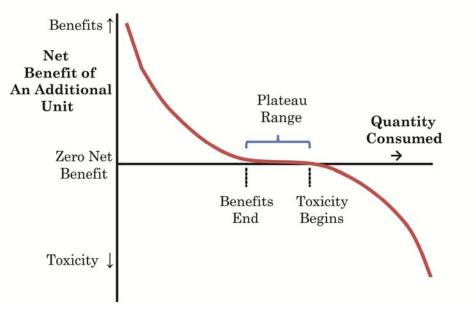


Figure: Marginal Benefit Curve for Nutrients

With each extra bit of nutrient eaten, the benefits are reduced. Eventually, nutrients become unhelpful and then toxic.

This pattern is known as "declining marginal benefits." Its application to toxicity – increasing toxicity with higher doses – is known as the "toxicologist's rule," and was first formulated by the medieval physician Paracelsus.



### Shou-Ching's First Cartoon

If Shou-Ching had not become a scientist, she would have liked to have been a painter and cartoonist. So she says – but she never had a chance to publish a cartoon, until our book.



Lions and lambs don't eat the same diet ... or do they?

This cartoon leads into our discussion of animal diets. The difference between a herbivore and a carnivore may be less than you think!



Learn how many pounds of vegetables gorillas eat per day ... and what macronutrients they get from them.



### Illustrations

Pictures can be worth many words. Here are illustrations of fats in the body, and of a wheat kernel, drawn by Seo Jung Sa.

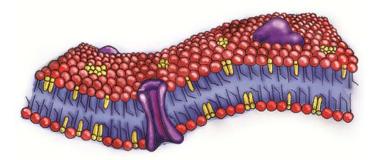


Figure: A portion of a cell membrane, showing a phospholipid bilayer threaded by a few proteins.

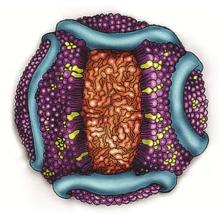


Figure: An LDL particle. Each particle contains an oily core (red), a phospholipid coat (purple), cholesterol (yellow), and one protein molecule – apoprotein B100 (blue).



Figure: A wheat kernel. The bran, or outer shell, makes up about 14% of the kernel and is included in "whole" grains; the starchy endosperm, in yellow, makes up 83% of the kernel and provides most of the calories; and the germ, in dark brown, makes up about 3% of the kernel.



### Health and Behavior

The same factors that cause disease – toxins, malnutrition, and pathogens – affect mental health and behavior. It's possible that the effects of diet on the mind are large. Here's a chart of murder rates versus vegetable oil consumption, from a paper by Joseph Hibbeln and collaborators:

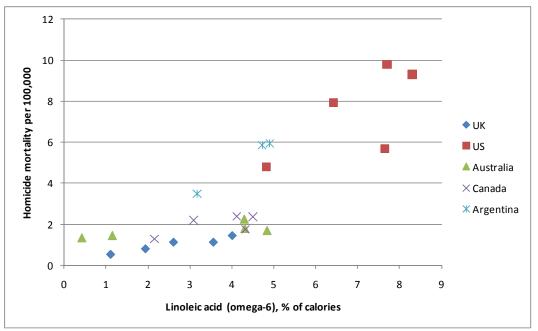


Figure: Homicide mortality versus consumption of omega-6 linoleic acid, plotted for 1961, 1970, 1980, 1990, and 2000 in five countries. Within each country, homicide rates go up as linoleic acid consumption goes up.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Hibbeln JR et al. Increasing homicide rates and linoleic acid consumption among five Western countries, 1961-2000. *Lipids*. 2004 Dec;39(12):1207-13. http://pmid.us/15736917. Hat tip Stephan Guyenet, http://wholehealthsource.blogspot.com/2008/09/omega-ratio.html.



### **Macronutritious Eating**

Most people eat too little fat, and too much protein and carbohydrate. Most protein and carb rich foods will taste better, and be healthier, if they are mixed with healthy (low in polyunsaturated fat) fats and oils. The pictures below give some ideas.



A half taro corm with cream cheese and a fig spread. We are here squeezing the cooked corm out of its brown skin.



our favorite ways to eat rice is in a chicken soup. We boil a whole chicken with 20 garlic cloves, then remove it and add uncooked rice to the broth. Later we'll return shredded chicken meat to the soup, and vegetables. Left: adding egg yolks to rice soup to get our 1 calorie carb to 2 calorie fat ratio. Right: finished meal.





Lean meats like chicken should be combined with a fat source, such as avocado or olive oil.



A representative meal: Salmon, vegetables, and sweet potatoes mashed with butter and coconut oil.



### **Replacing Forbidden Foods**

2

Some people are lost for breakfast ideas without cereal, or dinner without pasta; or what to use in place of vegetable oils. We suggest a few possible substitutes.



Some breakfast ideas. Paul often eats a banana and coffee mixed 50-50 with heavy cream; Shou-Ching likes whole milk yogurt and berries, sometimes a boiled egg.



Asian supermarkets offer various styles of rice noodles. The spaghetti-style noodles on the left are pure rice. The lasagna-style noodles on the right have some flour and vegetable oil; buy pure rice noodles if you can find them.



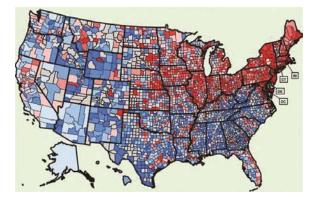
Coconut oil is one of our favorite oils, for its low omega-6 content and ketogenic short-chain fats. It is a clear liquid above 76°F, a white solid below. "Extra virgin organic" brands taste best.

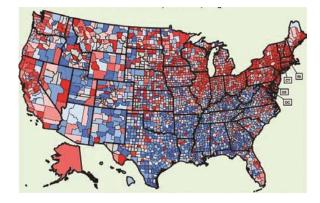


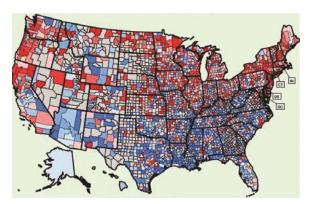
### **Micronutrients**

Some vitamins and minerals can make a big difference in mortality.

Vitamin D, for instance: note how people who live farther north, and get less sunshine, have higher cancer rates. Here are some maps from the National Cancer Institute illustrating the pattern.<sup>2</sup>







**Figure: Cancer mortality in the U.S.** *Top left:* Colon cancer mortality among males. *Top right:* Breast cancer mortality among white females. *Bottom left:* Ovarian cancer mortality among white females. In all maps, dark red is the highest mortality rate, dark blue the lowest.

<sup>&</sup>lt;sup>2</sup> National Cancer Institute, "Cancer Mortality Maps and Graphs,"

http://www3.cancer.gov/atlasplus/, based on Devesa SS et al. Atlas of cancer mortality in the United States, 1950-94. Washington, DC: US Govt Print Off; 1999 [NIH Publ No. (NIH) 99-4564].



### **Micronutritious Foods**

Many people eat an unvaried diet: their animal foods are from muscle only, and their plant foods come from a few staple species.

This approach risks micronutrient deficiencies, because every tissue has somewhat different nutritional needs and muscle does not provide all of them.

Helpful foods include tendons and connective tissue, seaweed, seafood, egg yolks, liver and other organ meats, and bone marrow.



Left: Beef stew ingredients: beef tendon (top) and beef short ribs (bottom). Right: Finished beef stew with rice. The rib meat has fallen off the bones.



Beef bone and seaweed soup



Mussels with onions, carrots, garlic, and shallots in a soy sauce.



Egg-and-potato salad: Make mayonnaise from egg yolks, oil (we prefer coconut oil), vinegar and lemon juice. Mix diced potatoes, eggs, carrots, cucumber, and spices.



Bone marrow.

There is an old Chinese saying that you should "eat what ails you." If you have a stomach problem, for instance, then eat tripe; a kidney problem, eat kidney. This is a sure way of obtaining the micronutrients your ailing organ needs.

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### A Japanese Buffet

Quality ingredients make a nutritious meal. Any combination of a safe starch, seaweed, vegetables, and meat, eggs, or seafood makes a great meal.

A frequent meal for us, because it is so easy to prepare, is a Japanese buffet – a sort of homemade sushi. Here is how it looks:



Left: A buffet: Eggs, bacon, shrimp, avocado, cucumber, and smoked gouda cheese; sushi nori seaweed; and white rice. Right: A homemade sushi roll.

### Vegetable-Wrapped Finger Foods

A variation on the Japanese buffet is to use more conventional vegetables in place of the nori, and sautéed meat and vegetables in place of the buffet ingredients.



Beef with pine nuts and mandarin oranges in a boiled cabbage leaf. Add in rice or potato for a more complete meal.

### **A Program For Perfect Health**

We believe that most diseases are caused by the interaction of a bad diet with infectious pathogens.

This is good news, because:

- With optimal diet and nutrition, the body resists pathogens easily and can successfully avoid disease.
- With optimal diet and nutrition, the body has enormous recuperative powers. Few diseases, we believe, are incurable if the right diet is combined with appropriate antibiotic therapies.

Step Four of the book is devoted to natural healing and disease prevention. It offers tips on how to enhance immunity, how to avoid feeding pathogens, and how to work around and recover from past damage.

### Our Goals

One goal of the Perfect Health Diet is to give hope and health to patients with chronic diseases that conventional medicine considers incurable; and longer, healthier, fitter lives to those who are free of clinical disease.

But a larger goal is to revolutionize medicine by shifting healing toward natural methods that really work.

Scientists ourselves, we know it won't be easy to persuade the medical community. One thing above all is persuasive: the experiences of large numbers of people. By helping people heal themselves and become healthy centenarians, we hope to make a difference in the course of medical practice.

#### Please Join Us

We invite you to experience the benefits of the Perfect Health Diet for yourself, and become a contributor to our medical revolution. Two first steps are:

- **Buy the book**. *Perfect Health Diet: Four Steps to Renewed Health, Youthful Vitality, and Long Life* is available from online booksellers and can be ordered by retail bookstores.
- Visit our blog. At http://perfecthealthdiet.com, we welcome your comments, questions, and feedback.
- **Tell others**. If you benefit from out diet, please let others know that they can benefit too.

Our best wishes for perfect health!

Pal Show hing



### Index

The book went to print without an index; we now keep an index online at the Errata+Index page. This is the index as of February 2012. If any keywords are missing that you would like to see, please suggest them in the comments to that page and we'll add them to the index.

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### Errata

These are known Errata as of February 2012. If you find errors in the book, please let us know by leaving a comment on the Errata+Index page.

These are corrections or clarifications to the text of the book. Deletions or additions are in *italic bold*.

Dago	The Book Reads
Page	But Should Read
p 12	<ul> <li>Most carbs are a fat source. The average American gets 55% of calories from carbs, but most of these are converted to fat. On high-carb diets, fructose is converted directly to fat in the liver (if all goes well), and beyond 15-20% of calories glucose is either converted to fat and stored in fat cells, or substitutes for fat as an energy source. Thus, that 55% of calories that enters the mouth as carbs may later end up in the body mostly as the 16-chain saturated fat palmitic acid.</li> <li>Most people don't know that most of the carbs they eat become fat in the body. If they did, they might not be so shy about eating the fat directly.</li> </ul>
	• <b>Excess</b> carbs are a fat source. The average American gets 55% of calories from carbs, but <b>will probably not utilize more than about 30% of energy as glucose</b> . On high-carb diets, fructose is converted directly to fat in the liver (if all goes well), and <b>excess</b> glucose is either converted to fat or substitutes for fat as an energy source. Thus, a significant fraction of that 55% of calories that enters the mouth as carbs may end up in the body as fat.
	Most people don't know that <i>many</i> of the carbs they eat become fat in the body. If they did, they might not be so shy about eating the fat directly.
p 45	the impaired immune function and other risks of <i>glycogen</i> deprivation.



	the impaired immune function and other risks of <i>glucose</i> deprivation.
p 76	the chemically fragile PUFA, whose extra carbon double bonds are easily altered by oxidation, <i>glycation, or fructation,</i> are frequently modified into toxic compounds in the body.
	the chemically fragile PUFA, whose extra carbon double bonds are easily altered by oxidation, are frequently modified into toxic compounds in the body.
р 96	Although gut bacteria generate healthful short-chain fats, they also generate <i>harmful</i> "endotoxins" – <i>toxic bacterial proteins</i> that excite an immune response Endotoxins are fat-soluble <i>proteins</i> and <i>they</i> are carried into the body with dietary fats.
	Although gut bacteria generate healthful short-chain fats, they also generate "endotoxins" – <i>lipopolysaccharides</i> that excite an immune response Endotoxins are fat-soluble and are carried into the body with dietary fats.

p 104	Rice has about 1300 calories per pound: thus, a quarter pound (100 g), or about 3/4 cup (180 ml) of cooked rice, will provide the daily 300-400 calories.
	Uncooked rice has about 1300 to 1700 calories per pound, but rice absorbs a lot of water during cooking and cooked rice typically has only 500 to 600 calories per pound. Thus, a cup (180 ml/160 g) of cooked rice will provide about 200 carb calories, and several cups of cooked rice may be eaten per day.

p 126 fn	Stephan Guyenet, faulty link
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208	Stephan Guyenet, correct link
p 170	Hormone-dependent cancers, like breast, <i>cancer</i> , ovarian, and colon cancer
	Hormone-dependent cancers, like breast, ovarian, and colon cancer

p 191	Most people get some MK-7 from gut <i>bacteria and some MK-4 from foods like liver, butter, cream, cheese, and eggs</i> .
	Most people get some MK-7 from gut bacterial fermentation of fiber and fermented foods like cheese, kimchi, and natto, and MK-4 from animal foods such as liver, butter, cream, and eggs.

p 211	Blood tests found that 34% of men and 27% of <b>men</b>
	Blood tests found that 34% of men and 27% of <i>women</i>

p 213	he was cured by 100 <b><i>mg</i></b> /day vitamin C
	he was cured by 100 <b>g</b> /day vitamin C

p 243	Bacterial infections of the brain often cause depression, and drugs which relieve the depression by increasing serotonin levels may backfire by providing bacteria with tryptophan.
	<i>For this reason,</i> bacterial infections of the brain often cause depression.
p 252	Cancer cells are metabolically impaired and can only metabolize

🎽 Color Companion

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glucose, a phenomenon known as the Warburg Effect.

Cancer cells are metabolically impaired and can only metabolize glucose *and some amino acids such as glutamine*.

p 259	fructose avoidance is needed to prevent toxic "fructation" of <i>omega-6</i> .
	fructose avoidance is needed to prevent toxic "fructation" of <i>proteins and subsequent peroxidation of omega-6</i> .