



Walter Willett, Okemos Class of 1963

Health & Medicine: **Harvard Medical School**

Dr. Walter Willett is Professor of Epidemiology and Nutrition at the Harvard T.H. Chan School of Public Health and Professor of Medicine at Harvard Medical School in Boston, Massachusetts. He served as Chair of the Department of Nutrition at Harvard T.H. Chan School of Public Health for 25 years.

Dr. Willett was born in Hart, Michigan and grew up in Madison, Wisconsin, (*!*) studied food science at Michigan State University, and graduated from the University of Michigan Medical School before obtaining a Doctorate in Public Health from Harvard School of Public Health. Dr. Willett has focused much of his work over the last 35 years on the development of methods, using both questionnaire and biochemical approaches, to study the effects of diet on the occurrence of major diseases. He has applied these methods starting in 1980 in the Nurses' Health Studies I and II and the Health Professionals Follow-up Study. Together, these cohorts that include nearly 300,000 men and women with repeated dietary assessments are providing the most detailed information on the long-term health consequences of food choices.

Dr. Willett has published over 1,800 articles, primarily on lifestyle risk factors for heart disease and cancer, and has written the textbook, *Nutritional Epidemiology*, published by Oxford University Press. He also has **four books** for the general public, *Eat, Drink and Be Healthy: The Harvard Medical School Guide to Healthy Eating*, just recently revised and released, *Eat, Drink, and Weigh Less*, co-authored with Mollie Katzen, *The Fertility Diet*, co-authored with Jorge Chavarro and Pat Skerrett and *Thinfluence*, co-authored with Malissa Wood and Dan Chids. **Dr. Willett is among the top three most cited persons in all areas of science.** He is a member of the National Academy of Medicine and the recipient of many national and international awards for his research.

In 2011, Walter joined the Organizing Committee developing the [African Heritage Diet Pyramid](#),. The topic was of special interest to him, as he and his family had lived in Tanzania in the early 1980's, and he is now involved in education efforts around AIDS and nutrition in East and Southern Africa.

***!* THEY LEFT OUT THE OKEMOS PART!**

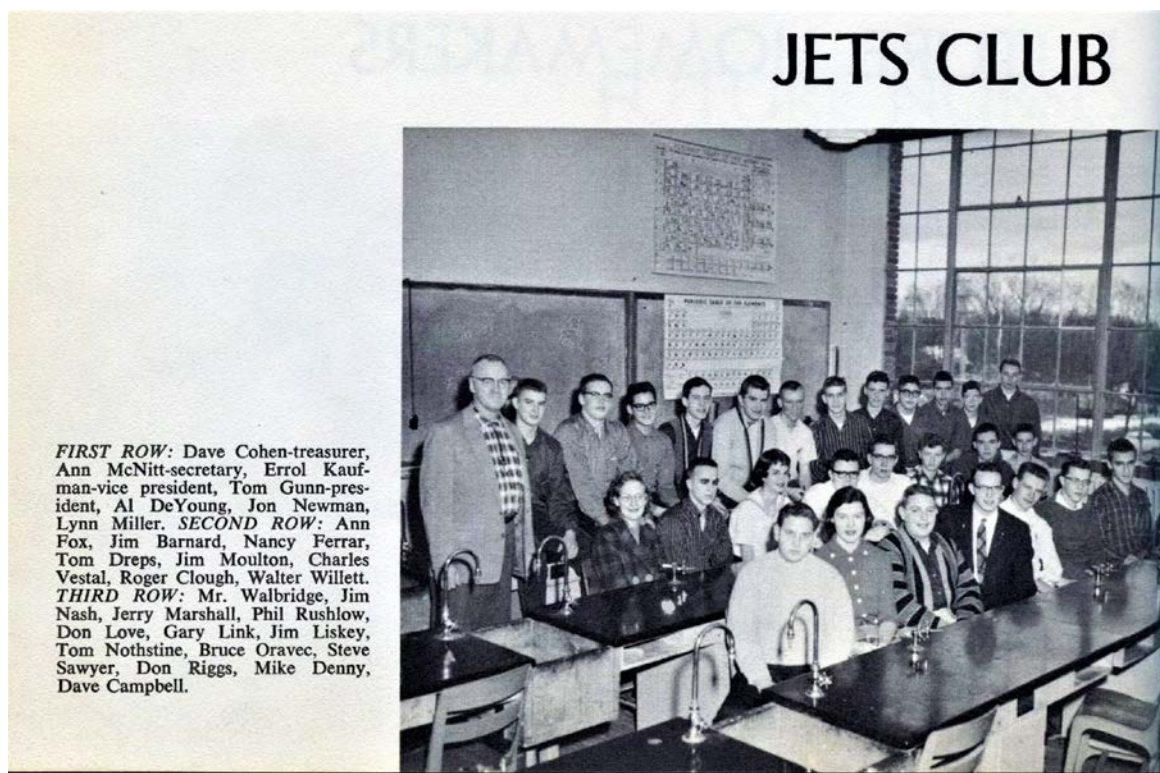
By Rod Ellis '65

Walter's biography from Harvard Medical School left out the Okemos part, so we will add, "Walt graduated from Okemos High School in 1963." In addition to being one of the "most quoted persons in all areas of science", Dr. Willett is one of the most remembered and revered Okemos grads of all time. His friendship was greatly appreciated by classmates many grades ahead and behind him. I was two class behind, but could and did seek guidance from Walt. As a Sophomore, I had a poorly thought out Science Fair idea to observe a frog's "brain waves" on my HeathKit oscilloscope! When nothing appeared on the scope after connecting up the unfortunate frog, without hesitation, I called Walt. He came right over and inspected my "laboratory" in the basement of our house in Forest Hills and immediately diagnosed the problem and said..."You need to amplify the signal...you'll need an Electroencephalograph... and I just happen to have a spare one that I made out of old TV parts"! I knew then that I had better go into insurance sales like my father!

Remembering his High School days.

Always remembered as a science guy, freshman Walter Willett (second row on the end) participated in all science activities, in and out of the classroom.

The 1960 Science Club.



1963

JETS Face Challenge of Science



First row: Tom Riggs, Dick Gilbert, vice president; Bill McCloud, president; Walter Willett, secretary; Bill Nothstine, treasurer; Mr. Bjorquist, sponsor. **Second row:** Fred Schultz, Greg Young, Chuck Gaa, Ellery Cook, David Krause, Lee Meadows. **Third row:** Mark Johnson, Hans Wiegand, Bob Bratzler, Milburn Amundsen, Chris Coburn.

Attract Members



First row: Cindy Kyle, Jan Schiff, Marilyn Gibler, Katie Johnson, Gary Weeber, Sally Everhardus, Joel Peterson, SP representative; Janet Coleman, Gary Sturk, Karl Boedecker, treasurer; Georgia Turner, vice president; Melody Ellis, secretary; Jim Eichmeier, Jan Mensendick, Jan Heiser, Mrs. Goldstein, sponsor. **Second row:** Paula Kralovec, Wendy Hamner, Ann Nimphie, Ann Moulton, Rilla Haga, Carol Conner, Liz Byrd, Ann Blomquist, Margaret Guertin, Tonnie Kisse, Jim Somers, Bob Bratzler, Beth Adams, Greg Miller. **Third row:** Marilou Peterson, Mary Guile, Margaret Haynes, Coleen Gronseth, Beverly Smith, Debbie Taylor, Mary Knudsen, Claire Bidwell, Betty Ann Schultz, Bonnie Lantz, Martha Travis, Fred Stehman, Doug Delind. **Fourth row:** Irene Townsend, Carolyn Fishel, Dawn Weeber, Renee Runciman, Chris

Savage, Susan Henry, Jill Ralston, Dick Gilbert, Cindy Wang, Linda Swenson, Sue Perkins, Diane Laitala, Glen Gronseth, Anne Dahnke. **Fifth row:** Vickie McGowan, Amy Schiff, Jean Hubbard, Mary Jo Wronski, Susan Warner, Linda Parks, Lynda Reed, Janet Olstrom, Vernita Gates, Jacquie Caul, Susan Hause, Don Parkhurst, Jim Westwood, Dick Vary. **Sixth row:** Dick Ambrose, Kathy Soltow, Judy Bowden, Judy Kralovec, Jan Layne, Ellen Warner, Debbie Carpenter, Jan Whitmore, Karen Brown, Karen McGowan, Janet Severence, Jean Guile, Marc Prium. **Seventh row:** Bruce Gunn, Walter Willett, Arlo Peterson, Bruce Champion, Dick Burr, Chris Coburn, Jack Parisian, Fred McGlone, John Trafelet, John Ruswinckel.

Not only science, Walt was involved with all school activities. French Club above.

Senior Banquet Requires Detailed Planning



The Senior Banquet committee met in mid-December and began planning for their May Senior Banquet. Committee members were: seated, Martha Travis, Steve Mitchell, Jack Parisian, chairman; and Sue Moray. Standing, Walter Willett, Dick Ambrose, Evelyn Wight and Beth Spangler.



Senior Class officers were Martha Travis, secretary; Betty Schultz, treasurer; Jack Parisian, president; Walter Willett, vice-president.

Class Officers, Top Ten

The Class of '63 entered its final year with an enrollment of 123. Class sponsors were Mrs. Rachel Grinnell, permanent class sponsor; Mrs. Joy Moore, permanent senior sponsor; Mrs. Bertha Mosher, and Mr. John Nordrum.

One of the first events of the year was the election of a homecoming king and queen. Betty Schultz and Roger Pavlik were crowned at the annual homecoming dance October 15. Linda Reed and Steve Pfeifer were co-chairmen the senior float built at Dick Gilbert's house.

The seniors sponsored a dance February 8. The chairman of the dance was Jack Parisian. The theme, Ski Time '63, was carried out with snowflakes suspended from the ceiling, skis, and a large fireplace. Jim Eaton, disc jockey from WILS, provided music for the dance.

In February Mrs. Grinnell measured students for caps and gowns. As soon as this was done the announcements which had been chosen during the spring of the previous year were ordered.

Martha Travis and Bruce Gardner represented Okemos and the Senior Class on WILS radio once a month.

The Junior-Senior Prom was held May 11. This was followed by the Banquet May 22.

And Honor Society below.



First row: Marilyn Hotaling, Lynda Reed, Sue Jacoby, Dick Gilbert, SP representative; Hans Wiegand, Irene Conner, secretary; David Krause, vice president; Chris Coburn, president; Georgia Turner, treasurer; Sally Crafton, Carol Conner, Evelyn Wight. Second row: Mrs. Peterson, sponsor; Margaret Guertin, Betty Ann Schultz, Judy Johnson, Katie Johnson, Erna Hassell, Pat Vinge, Jill Ralston, Diane Laftala, Jan

Coleman, Martha Travis, Janne Rutheford, Carol Reed, Barb Barilett, Kuni Nuechterlein, Mr. Walbridge, sponsor. Third row: Mr. Raymond, sponsor; Cindy Kyle, Marilyn Gibler, Trisha Love, Anne Dahnke, Bob Bratzler, Bruce Champion, Walter Willett, Jon Overholt, Jack Parisian, John Ruswinckel, Don Black, Karl Boedecker.

Highlights of his professional career.

B Magazine

MAGAZINE

Walter Willett's food fight

The world's most influential nutritionist is waging a war against unhealthy eating, obesity, and, every once in a while, his fellow researchers.

By [Neil Swidey](#) JULY 28, 2013

SLENDER CELEBRITY CHEF RICK BAYLESS, the goateed enchilada evangelist who has transformed Mexican street food into fine dining, stands at the back of the Regattabar, near the full-length windows overlooking Harvard Square. Several people encircle him, straining to hear his voice over the din of the cocktail party, which caps the first day of a major food-industry conference being held here.

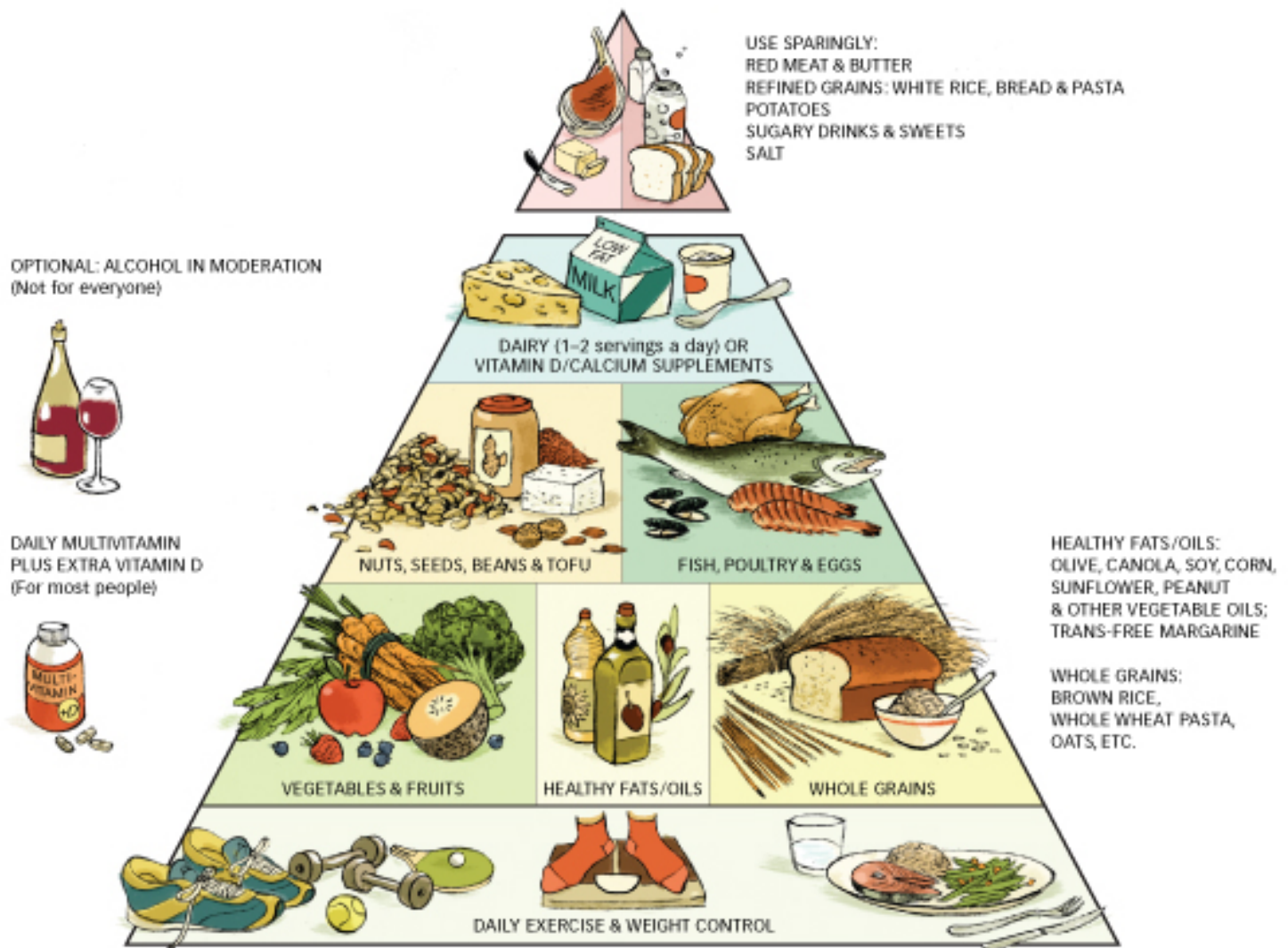
To the average foodie dropping in on this June evening, Bayless would be the biggest name in the room. He's got his long-running PBS cooking show, a win on *Top Chef Masters*, and the standing that comes from owning [one of the Obamas' favorite restaurants in Chicago](#). But the savviest industry insiders—the power players here from multinational giants like Unilever and McDonald's—know there is a far more important get: a soft-spoken Harvard professor [named Walter Willett](#).



Walter Willett

THE HEALTHY EATING PYRAMID

Department of Nutrition, Harvard School of Public Health



For more information about the Healthy Eating Pyramid:

WWW.THE NUTRITION SOURCE.ORG

Eat, Drink, and Be Healthy
by Walter C. Willett, M.D. and Patrick J. Skerrett (2005)
Free Press/Simon & Schuster Inc.

Twenty-Five Years of Walter Willett: From Ancel Keys and the Mediterranean Diet to Common Ground

For two and half decades, as Oldways has explored and championed traditional diets, we've been fortunate to have one of the world's most quoted and respected nutrition scientists at our side: Walter Willett.

We're not the only ones who appreciate his contributions. On Sunday, May 1 and Monday, May 2, 2016, friends, family and colleagues celebrated Walter's 25 years as chair of the Department of Nutrition at the Harvard School of Public Health (HSPH), and recognized the many contributions he has made to knowledge about food, nutrition and health.

Harvard Accomplishments



Walter Willett with Ancel Keys, "father of the Mediterranean Diet" at Oldways 1993 Conference on the Diets of the Mediterranean.

As described on the [HSPH website](#), the research of Walter Willett and his team at HSPH "primarily involves the investigation of dietary factors,

using epidemiologic approaches, in the cause and prevention of cardiovascular disease, cancer, and other important conditions. Fundamental to this work has been the development of methods to measure dietary intake in large populations. Thus we have devoted substantial ongoing effort to the creation and refinement of standardized dietary questionnaires that can be completed repeatedly by subjects over a number of years."

It is this creation of databases of dietary data from large cohorts (Nurses Health Study, Health Professionals Study and Nurses II) that is among Willett's most well known accomplishments during his years at HSPH. He's also the author of more than 1,100 scientific articles, as well as *the* textbook on Nutritional Epidemiology, and three other consumer-friendly books, including [Eat, Drink and Be Healthy](#), *Eat Drink and Weigh Less*, and *The Fertility Diet*.

Our Collaborations with Walter

Walter Willett (right) with Oldways President Sara Baer-Sinnott and David Katz, founder of the True Health Initiative, at Oldways' Finding Common Ground conference, November 2015.



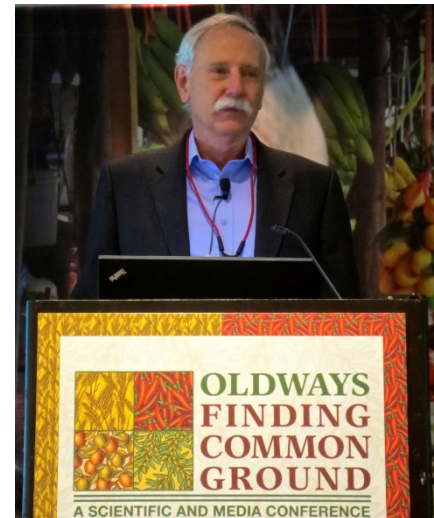
For us at Oldways, Walter Willett's leadership has meant a great deal. We've been very lucky to have Walter and HSPH as our partner in a number of educational programs, especially the Mediterranean Diet.

Along with his HSPH colleague, Dimitrios Trichopoulos, and Marion Nestle of NYU, Walter chaired Oldways' first Conference on the Diets of the Mediterranean in 1993, where the first [Mediterranean Diet Pyramid](#) was introduced. He also led our second Mediterranean Diet Conference in 1994 in San Francisco, where the World Health Organization also endorsed the Mediterranean Diet Pyramid. And then in 1995, he chaired Oldways' International Conference on the Diets of Asia, where our [Asian Diet Pyramid](#) was launched.

In 2000, Walter worked with Oldways to create the first [Continuing Medical Education](#) program that married food and cooking with the nutrition science of the Mediterranean Diet. Together, we brought doctors to Liguria, Bordeaux and Tuscany for week-long explorations of the Mediterranean Diet *in situ*. Walter and his colleagues would update participating physicians on the latest nutrition research for hours each day, then we'd all travel to an olive grove, or a winery to put our new knowledge into practice, with Walter standing in the aisle on the bus, continuing to answer nutrition questions from that day's material.

In 2011, when Oldways focused on developing the [African Heritage Diet Pyramid](#), Walter joined the Organizing Committee. The topics was of special interest to him, as he and his family had lived in Tanzania thirty years ago, and he is now involved in education efforts around AIDS and nutrition in East and Southern Africa.

Most recently, concerned that there was too much confusion around communicating nutrition information, we talked with Walter about developing a conference to clear up this confusion. The result of this meeting was [Finding Common Ground](#), a two-day consensus conference chaired by Walter and David Katz. This event brought together leading nutrition scientists — from Vegan to Paleo — to reach a groundbreaking consensus about healthy eating.



So, as we celebrate [International Mediterranean Diet Month](#), it seems only fitting to also honor Walter Willett for his many contributions to Oldways and to everyone who cares about common-sense, scientifically-based knowledge about food and nutrition.

BRAVO Walter and many thanks!

Sara Baer-Sinnott, President, Oldways

Interview on Frontline, January 2004

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= Interview Walter Willett, M.D.

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Of course there's also huge economic interests behind a lot of this. The huge push for high consumption of dairy products is really not based on good science, yet the public's been led to believe it's absolutely essential

The public is confused about nutrition. Who is most to blame?

I think there's lots of blame to go around in this situation. First of all, the academic community has told people that they should do one thing -- say, avoid eggs, or eat lots of

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to have your three glasses a milk a day.

Things get reported in a preliminary state because everyone is interested.

exercise at the base and to separate out "good" and "bad" fats and carbohydrates. This interview was conducted on Jan. 9, 2004.

(The entire interview is included at the end)

I got over 10 pages of "hits" by Googling "Walter Willett Recipes"!



walter willett reci	

About 113,000 results (0.41 seconds)

Search Results

[Healthy Breakfast Ideas and Recipes | Time](#)

time.com > Health > Diet/Nutrition

May 11, 2016 - One option is a combination of whole grains, nuts and fruit, plus a bit of yogurt, suggests Dr. *Walter Willett*, chair of nutrition at Harvard School of ...

[What's New in Eat, Drink, and Be Healthy, 2017 | The Nutrition Source ...](#)

https://www.hsph.harvard.edu > The Nutrition Source > Nutrition News > Faculty Books

Oct 15, 2017 - In 2001, the first edition of Dr. *Walter Willett's* Eat, Drink, and Be ... on healthy eating for special conditions, and more plant-based *recipes*.

[Eating Healthy with Walter Willett | Taking Charge of Your Health ...](#)

https://www.takingcharge.csh.umn.edu/eating-healthy-walter-willett

Walter Willett, Chair of Nutrition at Harvard School of Public Health, has been instrumental in the development of the Healthy Eating Plate, a new user-friendly graphic that aims to help all of us make better decisions about diet and nutrition. This graphic depicts an ideal meal ...

[Walter Willett - Cookstr.com](#)

<https://www.cookstr.com/users/walter-willett>

Cookstr's mission is to organize the world's best cookbooks and *recipes* and make ... Dr. *Walter Willett* is chairman of the Department of Nutrition at the Harvard ...

[Walter Willett Cookbooks, Recipes and Biography | Eat Your Books](#)

<https://www.eatyourbooks.com/authors/10583/walter-willett>

Browse cookbooks and *recipes* by *Walter Willett*, and save them to your own online collection at EatYourBooks.com.

[Walter C. Willett, M.D. | The Joy of Cooking](#)

www.joyofcooking.com/all-about-joy/walter-c-willett-md

Walter C. Willett, M.D., is chairman of the Department of Nutrition at the Harvard School ... In addition, it features a full range of *recipes* by dietitian and food writer ...

[What to eat? Harvard's Walter Willett thinks he has the answers - The ...](#)

<https://www.bostonglobe.com/magazine/2013/07/27/...walter-willett.../story.html>

Jul 28, 2013 - Harvard's *Walter Willett*, the world's most influential nutritionist is waging a war against unhealthy eating, obesity, and, every once in a while, his ...

[The Experts Dish - Better Nutrition Magazine - Supplements, Herbs ...](#)

<https://www.betternutrition.com/features.../oz-garcia-christine-avanti-favorite-recipes>

May 1, 2010 - And they share some of their favorite meals, snacks, *recipes*, and human ... *Walter Willett*, MD, DrPH, chair of the department of nutrition at the ...

[How Do You Make These Yummy Lentil Dishes? - The People's ...](#)

<https://www.peoplespharmacy.com/.../how-do-you-make-these-yummy-lentil-dishes/>

Rating: 4.6 - 18 votes

Sep 26, 2016 - During that interview, we spoke with *Walter Willett*, MD, DrPH, ... He described a lentil-walnut loaf *recipe* that his family enjoys frequently.

[Twenty-Five Years of Walter Willett: From Ancel Keys and the ...](#)

<https://oldwayspt.org/.../twenty-five-years-walter-willett-ancel-keys-and-mediterranea...>

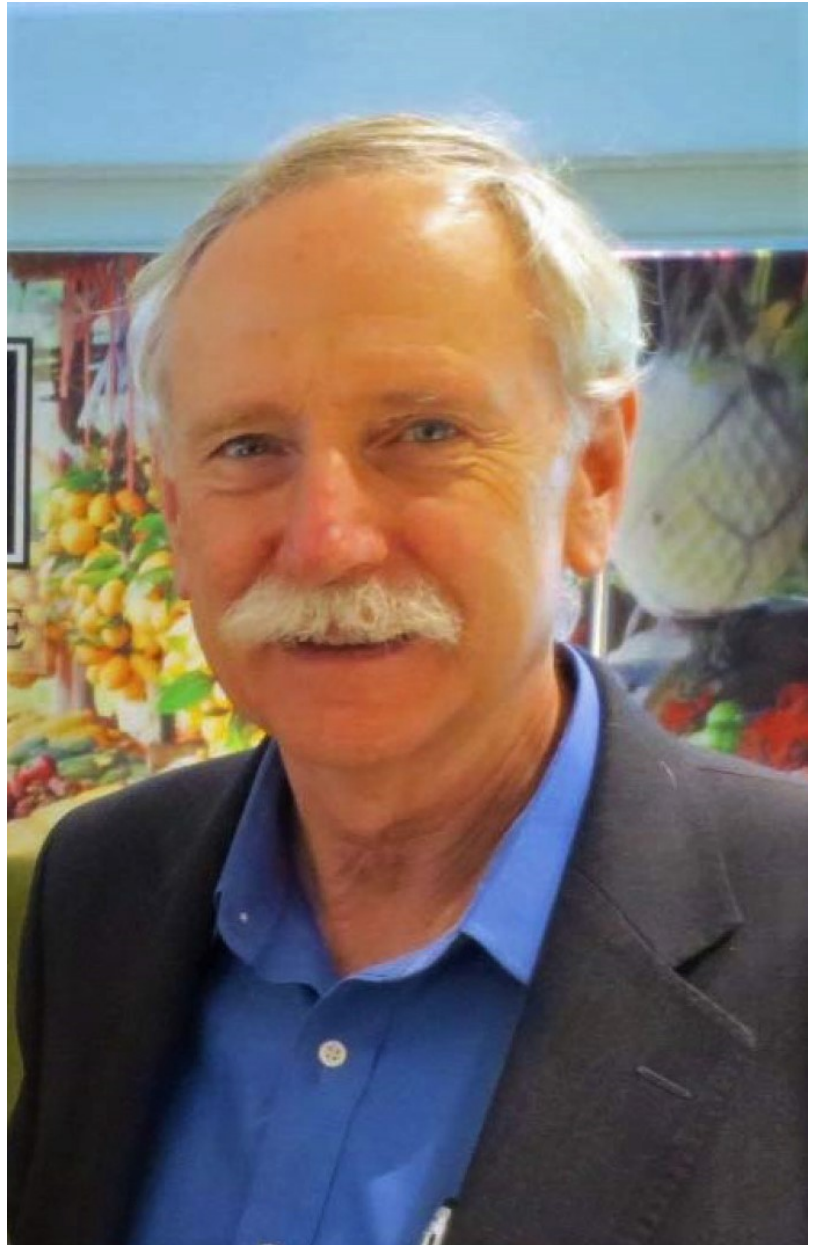
May 3, 2016 - As described on the HSPH website, the research of *Walter Willett* and his team at HSPH “primarily involves the investigation of dietary factors, ...

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Searches related to “walter willett recipes”

[walter willett vegetarian, walter willett books, dr walter willett diet, walter willett wife](#)

[walter willett paleo, dr walter willett nutrition, walter willett email, walter willett salt](#)



To those classmates who wrote “Why hasn’t Walter Willett been nominated for the Outstanding Alumni Award?”, I can answer, “He has been nominated.” I only have to get him back to Okemos to accept it! Walter will never slow down, but maybe we can catch up with him on his way thru! In the meantime, he is in our Alumni Hall of Fame and forever loved and remembered.

Rod Ellis ‘65

(Just to show you how impossible his schedule is, here is some correspondence from Walt in April 2018. I added the highlights and notes)

Dear Rod,

Nice to hear from you and great to hear all that is happening in Okemos.

The list of people in science in medicine is impressive; I can't think of other names, but there could easily be more of whom I am not aware.

Are you asking specifically about attending a symposium? I would enjoy doing that, but **my travel schedule for the coming months is very heavy; I'm co-chairing a major international commission report on food systems, health, and climate change, which is taking up pretty much all my spare moments.** As my siblings are no longer in Michigan, I don't get back there on a regular basis any more, although it is nice to see relatives who live up in the thumb. Is there a specific time frame you had in mind?

Please say hi to Melody! *(Sister of Rod Ellis and in Walt's class)*

Walter

H Rod,

Unfortunately, **I will be in Viet Nam and Laos in most of November working on a project with colleagues there.** This will close a loop in what was a large part of our lives in the 60's and 70's as I have never been there myself. It would be really fun to be at the event, but unfortunately, it doesn't seem that this will work.

Best wishes,

Walter

Frontline interview January 9, 2004

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[Interview](#) **Walter Willett, M.D.**

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**The public is confused about nutrition.
Who is most to blame?**

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Of course, there's also huge economic interests behind a lot of this. The huge push for high consumption of dairy products is really not based on good science, yet the public's been led to believe it's absolutely essential to have your three glasses a milk a day.

Things get reported in a preliminary state because everyone is interested.

Right. Part of the problem is that the public is interested in nutrition. The science of nutrition addresses a topic that is directly important for people, and of interest to people. Very often science is presented to the public in a way that is conclusive when in fact the science behind it is often very preliminary, very inconclusive.

The amount of disease that could be prevented through modifying one's diet?

The potential impact of healthy diet, when you combine it with not smoking and regular physical activity, is

author of *Eat, Drink, and Be Healthy: The Harvard Medical School Guide to Healthy Eating*. He is also one of the principal investigators on the [Nurses Health Study](#), one of the largest, long-term studies to look at the effect of diet on health. Willett explains how his research on the Nurses Health Study led him to become one of the USDA food pyramid's greatest critics. "The food guide pyramid that was developed in 1991 really is based on the idea that all fat is bad," he says. "This pyramid is really not compatible with good scientific evidence." In this interview, he explains the reasoning behind his revision of the food pyramid to include exercise at the base and to separate out "good" and "bad" fats and carbohydrates. This interview was conducted on Jan. 9, 2004.

enormous. For example, our studies have shown that we could prevent about 82 percent of heart attacks, about 70 percent of strokes, over 90 percent of type 2 diabetes, and over 70 percent of colon cancer, with the right dietary choices as part of a healthy lifestyle. The best drugs can reduce heart attacks by about 20 or 30 percent, yet we put almost all of our resources into promoting drugs rather than healthy lifestyle and nutrition.

Do you think the government agrees with you about what's at stake?

I think the government has under-funded research in diet and nutrition. In some ways we blame the abstract government for it, but in some sense it's also the scientific community that's partly to blame for it, because we often tend to fund the novel, exciting science, the new gene discoveries, the new mechanisms of drugs, for example. Often diet and nutrition and lifestyle are perceived to be sort of passé or too simple, and yet they are very important topics. There is interesting science behind it, but because it's not regarded as so novel and new, it's often neglected in scientific funding.

What caused the shift from how much you ate to what you ate?

If we look back at the beginning of the 20th century, over 100 years ago, the main problems were under-nutrition, even in the United States. During the first few decades of the last century, we discovered vitamins and minerals and the necessity for having those, and it was clear that many people were not getting enough of those critical nutrients. But we solved most of those problems, in fact, and about the middle part of the last century we started to appreciate that there was a huge epidemic of heart attacks, coronary heart disease and strokes emerging. ...

Tell us about Ancel Keys, looking at different countries.

One of the ways that we appreciated that diet and lifestyle might really be important was the work of Ancel Keys, who looked at 14 different populations across Europe and Asia. What he realized was that there

were some groups -- for example those living in Crete and some villages in Japan -- where heart disease rates were extremely low, only about one-tenth of those in the United States. And yet we also knew, when people moved from those environments, those lifestyles, and lived in the United States, they developed heart disease rates that were very high, just like everybody else in the United States. So that was powerful information telling us that there was something about the diet and lifestyle, way of life, that was extremely important in determining our risk of heart attacks.

Where did the idea of saturated fat come from?

The idea that saturated fat was a major underlying factor for heart disease did come about largely from the work of Ancel Keys, where he looked at various countries around the world and looked at their heart disease rates, and found that they were strongly correlated with saturated fat in the diet. However, even Keys recognized that it was difficult to point the finger totally at saturated fat, because there were many other aspects of diet and lifestyle that were different among these various population. ...

It was suggested we would do better with more vegetable oils?

Building on the work of Ancel Keys that showed that countries with high saturated fat had high heart disease rates, there were a number of detailed studies looking at, if we fed different types of fat, how would they affect our blood cholesterol? And it was found that saturated fats increased our blood cholesterol, and polyunsaturated fats from liquid vegetable oils reduce our serum cholesterol. And so in the mid-1970s, the predominant dietary advice was to replace saturated fat with polyunsaturated fat.

As it turns out, that advice was probably very good and had additional benefits beyond just those that influence serum cholesterol levels, in that [the] increase in polyunsaturated fat was probably largely responsible for the major reduction in heart disease rates we had during the '70s and early '80s in the United States. In fact, the rates of heart disease death went down by about 50

percent during that time.

The movement to get people to switch the types of fat: isn't this a heroic struggle that we should feel proud of?

Actually, I think we should be very proud of the achievements that were made during the 1970s, early 1980s, changing the type of fat in diet. We really made some very major national changes, and it did have some important benefits in reducing heart disease rates.

This low-fat dogma was incorporated into the USDA food guide pyramid in 1992?

Well, there's a little bit of complexity. It's interesting. In the '70s and early '80s, while heart disease rates were going bad, we were not talking about low-fat diets. We were talking about replacing saturated fat with a healthy fat, polyunsaturated fat. But somewhere in the mid-1980s, we lost that message. It's perhaps partly because some nutritionists felt it was too complicated to talk about different types of fat and developed the notion we should just reduce all types of fat across the board. That was really the beginning of the low-fat, high-carbohydrate crusade.

From the beginning, people said you should limit total fat, but the amount of saturated fat was less? There wasn't always a distinction?

If we go back to the 1960s, 1970s, it was really not so much even limiting total fat. It was really a replacement, and a strong belief that polyunsaturated fat was good. In fact, it really turned out to be that that was right.

[What are] examples of the types of fat?

What we were talking about when we meant replace saturated fat with polyunsaturated fat was reducing foods like butter, lard, the fat in red meat, with liquid vegetable oils and things made from liquid vegetable oils.

How is the simplification -- eat less fat -- manifest in this food guide pyramid?

Well, the food guide pyramid that was developed in 1991 really is based on the idea that all fat is bad. Therefore [if] fat is bad, and you have to eat something, carbohydrate must be wonderful. So, the base of the pyramid is really emphasizing large amounts of starch in the diet. We're told we can eat up to 11 servings a day, and if that wasn't enough starch, the pyramid puts potatoes along with the vegetables, so you can have up to 13 servings a day. That's a huge amount of starch.

Where's fat?

Fat's up at the top of the pyramid, and where it says explicitly "fats and oils, use sparingly." It doesn't make any distinction about the type of fat, and it tells us to eat basically as little as possible.

From a public health standpoint, how would you characterize this pyramid?

Well, this pyramid is really not compatible with good scientific evidence, and it was really out of date from the day it was printed in 1991, because we knew, and we've known for 30 or 40 years that the type of fat is very important. That was totally neglected.

[What were the] unintended consequences? The food industry started using vegetable oils, but baking was difficult, so they made a technical modification.

In some ways, we do have to credit the food industry with being responsive to what nutritionists were saying. They did believe or accepted the evidence that vegetable fats, vegetable oils, would be better than animal fats, and that really led to the development and promotion of the margarine industry and Crisco, baking fats that were made from vegetable oils. But they were made by a process called partial hydrogenation, which converts a liquid oil, say like soybean oil or corn oil, to something like margarine or vegetable shortening. As it turns out that was a very disastrous mistake, because in the process of partial hydrogenation, a totally new type of fat is formed called trans fat. The evidence has now become very clear that trans fat is far worse than saturated fat.

So, when people were told to switch from butter to margarine?

Unfortunately, as a physician back in the 1980s, I was telling people that they should replace butter with margarine because it was cholesterol free, and professional organizations like the American Heart Association were telling us as physicians that we should be promoting this. In reality, there was never any evidence that these margarines, that were high in trans fat, were any better than butter, and as it turned out, they were actually far worse than butter.

People read on the label "cholesterol free."

Right. This is a good example where just focusing too much on one particular piece of the diet, one particular substance or nutrient, can really mislead us. It is true that these vegetable shortenings and margarines were cholesterol-free, and that was pushed. ... Even though these products were cholesterol-free, the trans fats in them raised our blood cholesterol much more than actual cholesterol in the margarines would have done.

"All fat is bad" led to many low-fat products, some of which had beneficial value. Talk about one example.

This campaign to reduce fat in the diet has had some pretty disastrous consequences. ... One of the most unfortunate unintended consequences of the fat-free crusade was the idea that if it wasn't fat, it wouldn't make you fat. I even had colleagues who were telling the public that you can't get fat eating carbohydrates. Actually, farmers have known for thousands of years that you can make animals fat by feeding them grains, as long as you don't let them run around too much, and it turns out that applies to humans. We can very easily get fat from eating too many carbohydrates, and the public was really directed to only focus on fat calories, when we really have to keep an eye on calories no matter where they're coming from.

With more fat-free products than ever, Americans got fatter.

Right. The reality is that during this campaign for fat-

free and reduced-fat products, actual fat consumption did go down, but Americans got much fatter during this period of time. Now of course lots of things were going on at the same period in time, but I think it's highly likely this focus only on fat calories to the neglect of carbohydrate calories has contributed to this epidemic of obesity.

Is it fair to blame the food pyramid when people don't follow it anyway?

The food guide pyramid has actually had a substantial impact on the diets of Americans. If we look back compared to 20 years ago, the percentage of calories from fat in the American diet is quite a bit lower compared to earlier days. Second, there're some important indirect impacts of the food guide pyramid, in that many tens of billions of dollars of federal food policies have to be compliant with the food guide pyramid. So many programs -- for example, what's fed to young children, to pregnant mothers, to low-income families -- have to be consistent with low-fat diets. So the impact really has been, overall, substantial.

Behind the food pyramid were a collection of constituencies. Were people receptive when you raised these criticisms in the '90s?

There was not much receptivity in the 1990s, when we raised these criticisms of the food guide pyramid. It was almost an accepted religious belief that fat was bad and carbohydrates were good. Then there were lots of economic interests behind the food pyramid as well. Clearly the dairy industry is extremely well represented in the food pyramid. The beef industry is there, and it's very convenient that beef is combined along with fish and poultry and nuts and legumes. So each one of those industries can say: It's healthy to have three servings a day of our product.

What makes it so difficult to study the relation between diet and health?

The relation between diet and health is unusually complicated to study, and that's probably why we don't have all the final answers even yet. In a trial of a drug,

for example, you can randomly assign people, one group to a placebo and another [group] to the new drug, and see what happens to them. But obviously you can't do that with nutrients or a whole diet very easily.

Second, we have to follow people for many years to learn all the consequences of diet, and perhaps even almost a lifetime, because some of the effects of diet may be operating during childhood and not be manifested until adult life. So there's no one simple kind of study that will give us all the truth about how diet influences our health, and we need to combine the results of many different studies to have the best and most complete picture.

One [kind] of study, for example, involves feeding small groups of people very controlled diets for short periods of time, and seeing what happens, for example, to their blood cholesterol levels. But blood cholesterol levels are only part of the picture, so we are also conducting very large studies where we enroll tens of thousands of people and follow them for many years, all the way along, finding out what they're eating, and then what happens to them in terms of their risk of heart attacks, cancers, and other conditions. And of course in those studies we need to control for many factors, like whether they smoke, how much exercise they have, their family history of various diseases. It's really only when we put those kinds of studies together with the more detailed metabolic, biochemical studies that we can have the best information about the effects of diet.

So you find out what they eat, rule out the bad things they do, and look for associations?

Right. What we do is find out what people eat through very detailed, structured questionnaires, observe what happens to them in terms of disease rates -- heart attacks and cancers, for example -- and then put these together, controlling for other aspects of lifestyle like diet and activity.

What did you notice that seemed to clash with the low-fat dogma?

When we began our studies back in the late 1970s, we

expected that we would find a relationship between, say, fat intake and breast cancer, because that was almost an accepted relationship. But as the data started coming in over the years, we just did not find any higher risk of breast cancer among women who consume more fat in the diet. And the same was true for colon cancer and for heart attacks and risk of type 2 diabetes. In fact, the percentage of calories from fat in a diet has not been related to any important health outcome.

Amount of fat has no relationship to coronary heart disease?

The amount of fat had no relationship to risk of coronary heart disease, but the type of fat was extremely important.

So the advice we were getting was not just misleading but dangerous?

Right. The evidence that we accrued really suggested not only that the type of advice that people were getting was not useful, but it actually could be dangerous, because some people were eliminating the very healthy types of fat that actually reduce heart disease rates.

Certain fatty acids can dramatically reduce the incidence of cardiac arrhythmia?

One of the important findings, not just from our studies but several trials conducted by other people in Europe and also some careful animal studies, have very clearly indicated that some types of fatty acids in the diet, in particular the omega-3 fatty acids, can actually reduce the heart arrhythmias that really cause people to drop dead in the street. We call that sudden death. And that's very important because some people were eliminating those critically important fatty acids from their diet because they were told that all fat is bad. ...

Traditionally people think of carbohydrates as made up of simple sugars and complex starches. What's wrong about that?

Right. The thinking in nutrition about carbohydrates really had broken them down into two classes: sugars

and so-called complex carbohydrates, which are mostly starches. ... The idea has been pushed that all forms of so-called complex carbohydrates are really the poster child of nutrients, and we should be eating them in large amounts. That's what the pyramid tells us to do. But in fact, these kinds of starches -- white bread, white rice, potatoes -- are starches that are very rapidly converted to glucose, really pure sugar, and almost instantly absorbed into the bloodstream. And these are the kinds of carbohydrates that we really should be minimizing in our diets.

A sugar rush from a potato?

Actually, careful studies have shown, demonstrated that you get a bigger rise in blood sugar after eating potatoes, a baked potato, say, than you do from eating pure table sugar.

Really!

Really.

That seems pretty extreme. Why is that?

... There are several problems with these rapid rises in blood glucose after you ingest large amounts of a rapidly digested form of carbohydrate. First of all, when the blood sugar goes skyrocketing up, the body wants to bring it back down. So our pancreas pumps out a big blast of insulin, and as a result, the blood sugar comes crashing down rapidly. In fact, in many people, after three and four hours, it overshoots and actually become a little hypoglycemic, and that rapid crashing down of blood glucose and insulin stimulates hunger. That would be no problem, except that it's often all too easy to go in the refrigerator or find a snack, and if we do that frequently throughout the day, that can add up to too many calories over weeks and months and years, and contribute to obesity.

Second, these high rises in blood glucose and insulin have a bad metabolic effect on the blood cholesterol fractions. Specifically the HDL, the good cholesterol, is driven down, and triglycerides, another type of fat in the

blood that leads to heart attacks, goes up.

Third, after many years of demand for high amounts of insulin, the pancreas tends to give out. And at that point in time, we've got type 2 diabetes.

[What is the role of insulin?]

The role of insulin is to transport glucose from the blood into the cells, like into muscle or into fat cells.

What can go wrong with this system?

Well, the problem really comes about when we develop insulin resistance. And that means that the cells, like the muscle cells, become more resistant to the action of insulin transporting the glucose inside the cell. And we can become insulin-resistant in several different ways. There's some genetic component, and as it turns out, for example, many Asians tend to have more insulin resistance. Also if we have overweight or low levels of physical activity, we'll be more insulin resistant.

Many people argue the virtues of Asian diets, with a lot of white rice.

Right. The Asian diet as it's traditionally been used raises some very interesting issues in nutrition, in fact, some of the most important findings during the last several years. What we've come to realize is that if we have a higher degree of insulin resistance, then we much less well tolerate a high-carbohydrate diet.

Interestingly, in traditional Asian societies, people were very lean, very active, and therefore had low insulin resistance. They could eat large amounts of rice, even white rice, in the diet and have low heart attack rates and have low rates of type 2 diabetes. But if you take that same person, and they [now] may be living in Beijing and driving a car and watching a television, and they put on a few pounds, they're going to have much more insulin resistance. So if you take that same diet, high in carbohydrate and white rice, they will have a much worse metabolic response and much higher rates of type 2 diabetes.

If you're American and overweight, won't you be put on a low-fat diet?

If you're overweight and living in the United States, and you go to a hospital and see a dietician, almost for sure, you're going to be put on a low-fat, high-carbohydrate diet.

What's your view of that?

The problem is that that's really the wrong diet for an overweight person. Because the person is overweight, in general they're going to have quite a bit more insulin resistance and much less well able to tolerate low-fat, high-carbohydrate diet.

But fats have twice the amount of calories per gram as carbohydrates. Doesn't it make sense to push the low-calorie diet and therefore a diet low in fat?

There's been a very simplistic idea: Just because fats have more calories per ounce than carbohydrates, we should be eliminating fats or reducing fats to control our total caloric intake, in other words, to help control our weight. What's really important though is how satisfying a diet is, because we have very complex mechanisms that control our total intake of calories, and it's become pretty apparent that if we have a high-carbohydrate diet, particularly high refined carbohydrate, it makes it much more difficult to control our total caloric intake. That's probably because when we eat refined carbohydrates, we get these swings in blood glucose and insulin that lead to hunger between meals; whereas if we have a diet that's somewhat higher in fat, we tend to be more satisfied over the long run.

Is this what Dr. Atkins was saying 30 years ago?

Dr. Atkins was saying as much as 30 years ago, that if we reduce our carbohydrate intake to quite low levels, that will make it easier to control our caloric intake and thus promote weight loss. As it turns out, there is a strong element of truth in that. A number of studies in the last year have looked in a very careful way, comparing low-fat, high-carbohydrate diets with reduced-carbohydrate diets, and in general people have

done better on the reduced-carbohydrate diets in terms of their weight.

Even though each ounce of fat has twice as many calories, you eat fewer calories because they're more satisfying?

Yeah. Well, first of all, this idea of how many calories per gram of fat versus how many calories per gram of carbohydrate is a little simplistic, because we almost never eat foods that are pure fat and pure carbohydrate. They come in foods as mixes, and often with a lot of fiber and a lot of water, and all of those things make a difference as well. But what is really important in the long run is how satisfying a food will be. And as it turns out, that many high-fat foods -- sometimes like meat, but even think of a handful of nuts -- are often very satisfying even though the physical amount is not very great.

One of the interesting observations in the recent studies that have compared high-fat diets with high-carbohydrate diets is that there are a lot of differences between people; that it's not that everybody loses a certain amount of weight on a reduced carbohydrate diet. Some people lose a lot of weight. Other people hardly lose any, so one of the things we have to come to understand better is the reasons why there's such a difference in response to these diets.

Talk about [your food pyramid](#).

We've tried to put together an alternative food guide pyramid that would be based on the best available science. And of course it is a little bit challenging to boil down a tremendous amount of complex science to a simple graphic, and you really have to focus on the things that are well established and important.

Right at the bottom, we put weight control and regular physical activity, because overweight is the number one nutrition problem in the United States. Almost everyone is going to need to exercise on a regular basis if they want to control their weight over the long run. And this also is a message that all forms of calories are important.

On the next level, we put healthy forms of carbohydrate, meaning whole-grain carbohydrates and healthy forms of fat, meaning from vegetable oils, in the recognition that in most people's diet, most calories are going to be coming from some source of carbohydrate and fat. And what's really important is that those both be healthy sources.

Some of those fats have come right from the top of the other pyramid.

Right. What we've done is, we've brought some of those fats from the top of the pyramid down to the base, because healthy fats are an important part of a healthy diet.

The rest of the pyramid?

Our alternative pyramid, like the USDA pyramid, does emphasize plenty of fruits and vegetables, but we've taken potatoes out of the vegetable group. We've put legumes and nuts as a layer. If you want to be a vegetarian, those are good protein sources. But moderate amounts of poultry, fish, and nuts can also make a diet be a non-vegetarian diet and still very healthy. And up at the top we've put red meat and dairy products, dairy fat, because those are high in saturated fat. ... At the top of the pyramid, we've put foods like white bread, white rice, white pasta, and sweets as those that should be used sparingly. And that was really the base of the USDA pyramid.

Some nutritionists have criticized your pyramid as "floating on a lake of olive oil."

The formal studies that had compared a more moderate fat intake as we've suggested, with low-fat diets, have actually consistently shown that people did as well or better controlling their weight on a moderate-fat diet compared to a high-carbohydrate, low-fat diet.

Even good fats are more fattening than good carbs. So they think you're contributing to the obesity epidemic, or there's a risk of that. A tablespoon of olive oil is 14 grams of fat.

There are all kinds of beliefs about the amount of fat in a diet, tremendously strong opinions. What we really need is sound data, and the studies that have been done show that people actually end up controlling their weight at least as well, and usually better, on moderate-fat diets compared to low-fat, high-carbohydrate diets.

Is it okay to get more than 30 percent of your calories from fat?

The evidence is quite clear that it's perfectly fine to get more than 30 percent of your calories from fat, and probably, in fact, it's even better to be getting more than 30 percent of calories from fat, if it's the healthy form of fat. ...

When you look at the causes of obesity, what do you find?

The causes of obesity and the obesity epidemic in the United States are extremely complex. In fact, obesity is sort of a tip of the iceberg of tremendous social change that's been going on during the last few decades. First of all, our activity patterns have changed greatly. We have children and adults now watching on the average, about four hours of television per day, and in study after study, we've seen just the number of hours of television watching being the strongest predictor of obesity. When I was young and came home after school, we'd all go out and play, and our mothers would have to drag us in for dinner. That doesn't happen very often anymore. Often the mothers are not there. Kids are inside. The television is used as baby sitters. We've also made it dangerous and uninviting to walk to places, to walk to stores, to ride bikes in urban areas, and that's removed an important amount of physical activity from our lives as well.

So the physical activities pattern's changed, but the food environment has also changed. We have food available fast and very low-cost and very convenient, almost everywhere. The food industry has invested many tens of billions of dollars in making their products more attractive, more sweet, more salty, more sexy, more seductive in every way that they can, and we're vulnerable to that promotion, and we are eating more. So

you put these two factors together -- reduction in activity, heavy promotion of food -- and you've got, not surprisingly, an epidemic of obesity.

Which we're exporting to the rest of the world.

Unfortunately, what we've created is now being exported to the rest of the world. And in almost every country, in Europe as well as Africa, Latin America and Asia, rates of obesity are climbing rapidly.

When you think about solutions, how can we proceed?

The causes of obesity are very complex, and therefore any response is going to have to be complicated and multi-faceted as well. There is no single solution to this, but we have to do many things to really solve this problem.

We've actually looked at this in a very detailed manner over the past two years in the New England states, and identified eight different areas that we have to really modify. For example, schools have to change what's served, what's promoted in schools. The healthcare providers -- physicians, nurses -- have to be providing much better and effective advice to their patients about controlling their weight. Work sites have to change. The whole food environment and what we promote to children has to be somehow modified, and we do have to protect children from these aggressive advertisements. We have to change the physical environment to make it more conducive, more attractive to bicycle to work, to destinations, not just drive places. Many other things need to be done if we're going to solve this problem, and it's time we really began.

The national obesity crisis, I mean, it's really severe. And to hear you talk about it, it sounds like it's hopeless to overcome it.

The crisis we're facing is severe, and it's getting worse. Interestingly, the full consequences won't be seen for another 30 or 40 years, because it takes that long a time for the risk of diabetes and the complication of diabetes to play out. But it's not hopeless, and I think that's the good news. There are places, if we look around the

world, where people have been controlling their weight. For example, in Japan and in Sweden, women have really not been gaining weight as they've gone through midlife and gotten older, so we do need to learn more about how they're doing it.

Also in the U.S. there are many people who are controlling their weight successfully. Not everybody is going to be as successful, even if they do the same diet and do the same amount of physical activity, but many people are doing pretty well. And one piece of evidence we have is that upper-income groups actually only have about half the rate of obesity compared to lower-education groups. So it's not hopeless, but we are going to have to devote many more resources to doing this if, as a whole country, we're going to be successful. ...

The advice for so long was: Buy something that says "fat-free," or at least "low-fat" on it. All these [salad] dressings, fat free. But not necessarily a good idea?

In fact, a pretty bad idea, and that was really unfortunate that the crusade against fat really led the food industry to produce all these fat-free salad dressing products. The problem is that the fats that were in the salad dressings were the healthy fats, the ones you should be including in the diet. They were the unsaturated fats that reduce our blood cholesterol levels, and we've also seen that they reduce heart attack risk and type 2 diabetes, as well. So people were giving up these healthy fats, and what we've seen is actually an increase in risk of heart disease among people avoiding full-fat salad dressings.

Of course one of the important roles of a full-fat salad dressing is that it makes salads taste good, and we want people to be eating those vegetables. So it's not that we're telling people to gulp down bottles of salad dressing. We want them to use it on a salad and enjoy it.

...

[At] the base of your pyramid, after exercise: whole grains. Right?

Right. On the base of our pyramid, side-by-side, we put healthy fats and whole grains. And that's because we do see positive benefits in study after study, that there's

lower risks of type 2 diabetes and heart disease, and probably better weight control as well, with some whole grains in the product. And that's because these carbohydrates are generally absorbed more slowly, they give less of a spike in blood glucose, and they come with a whole package of minerals, vitamins, and fiber that all have positive health benefits. ...

Some of these diets, even South Beach, for instance, say you're going to lose weight on this diet even if you don't exercise. They're not advocating that I don't exercise, but they're de-emphasizing it. You, however, are saying exercise is really central. It's the base of your pyramid, right?

Right. Exercise is absolutely essential. Even though we might think of exercising half an hour a day, and I ride my bike to work, might be quite a bit compared to the average American, it's still really pretty modest compared to what my grandfather did, who worked in the fields for 10-12 hours a day. ...

Okay now, in the great tradition of American reporting, I'll focus this all on myself again. I love nuts. My wife harasses me. She's got great advice on most things, but she says, "Don't eat nuts. Lay off nuts." You're my only hope.

Okay. Well, let me help out, because nuts are really one of the neglected health foods on American grocery store shelves. They've been given a bad rap by nutritionists because they are high in fat. Most of the calories in nuts are from fat, but it's almost all healthy fats. And what we've seen, interestingly, study after study is that people who eat more nuts do not weigh more than people who don't eat nuts. And it's probably because even a small amount can be very satisfying, and we unconsciously replace other forms of calories with the nuts when we consume them. Now of course, you can overdo any good thing. So being a little bit sensible about that is important.

What's also useful is to think of nuts not as a sort of added on snack, but as a protein source. For example, I often have it with a salad and that combination is a good meal. And there's ways to put nuts into mixed dishes and

casseroles and things like that. So with a little creativity, they can really be an important part of a diet and a very healthy part of a diet.

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posted april 8, 2004

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