HARVARD T.H. CHAN | SCHOOL OF PUBLIC HEALTH

NUTRI NEWS

The Department of Nutrition

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Dr Walter Willett Discusses a Diet that's Healthy for People and the Environment

Global Food+ 2021 is a free online joint webinar series sponsored and hosted by Harvard's Weatherhead Center for International Affairs, and run by researchers at Boston University, Harvard, MIT, and Tufts on their current work on the intersection of agriculture, health, environment, and society. The *Harvard Gazette* recently spoke with ***Dr Walter Willett,*** professor of epidemiology and nutrition at the T.H. Chan School of Public Health who gave a talk on "Fine Tuning Healthy, Sustainable Diets" during its inaugural session. Some highlights of this interview include some of Willett's thoughts on the following.

When asked what he meant about "fine tuning a healthy diet, he replied that part of it is intuitive, but even when we say "Eat a more plant-based diet," what we've come to realize is that not all plant foods are healthy. Dunkin Donuts and Coca-Cola are plant foods, but they're not good for our health, even though they have a relatively small environmental footprint. We've created a plant-based dietary index with more-healthy plant foods, like whole grains, fruits, vegetables, nuts, legumes, and also unhealthy plant-

based food, like sugar-sweetened beverages and things made from refined flour. It's good to simplify things as much as possible, but we can't and shouldn't oversimplify.

Willett did maintain, however, that we can still have a sustainable planet without everybody becoming a vegan. **The Eat-Lancet Commission**, which he co-chaired, did conclude that there's room for about two servings of animal-source foods per day, one being dairy and one being some combination of fish or poultry a couple of times a week, or some eggs, with red meat just once a week. He stated, "People could become vegans, of course, if they're careful about getting enough vitamin B12, but this does provide a lot of flexibility. We're quite off target at this point in time though, especially in the United States."

Willett also agreed that the goals of human health and sustainability as a planet are basically aligned, noting that ". . . very broadly, the healthiest diet for humans will be a diet that is healthy for the planet. But there is this divergence in that you can have a diet that is relatively healthy for the planet, but very bad for humans. And that's the diet that is low in animal source foods but high in starch, especially if it's refined starch, and sugar. We often call that a poverty diet in that the cheapest sources of calories are starch and sugar. That has a light footprint on the planet, but it's not healthy.

When asked what we should be eating, Willett replied "Variety, but there are some parts of that are important to include in that variety. We do see, for example, that the dark orange and green leafy vegetables like carrots and greens are important for helping reduce breast cancer risk, and the cruciferous vegetables like broccoli and cabbage are related to lower risk of breast cancer later in life. For cognitive function, it looks like including tomato products, like tomato sauce, is important. It's not that there's one magic bullet there, but making sure we include these kinds of vegetables is important."

Regarding whether such a diet is sustainable, he said that **"**In general vegetables have a light- to moderate-impact environmental footprint, but it varies tremendously. If we produce them in California and ship them across the country, there is an appreciable-impact carbon footprint, not from producing the vegetables *per se* but from the process of keeping the cold chain. Some colleagues at Michigan have shown that by very simple low technology, like greenhouses where they don't use fossil fuels for heat, they can produce greens pretty much year-round in Michigan with about 1/10 of the environmental footprint compared to those that are produced and shipped from California. So it's not just what we eat, but how it's produced.

This doesn't necessarily mean that we should eat everything local, and cautions that if you have a greenhouse in New England that's burning a lot of fossil fuel to produce tomatoes in January, that isn't necessarily going to be good. He says "We do have pretty much every day what's called a fruit train come up the East Coast from Florida to the Boston markets. We're taking advantage of the warmth and sunlight in Florida, and train transportation is pretty inexpensive, so that's probably better than putting a couple of bushels of fruit in your pickup in Western Massachusetts and driving to Boston. We want to simplify things, but not oversimplify things."

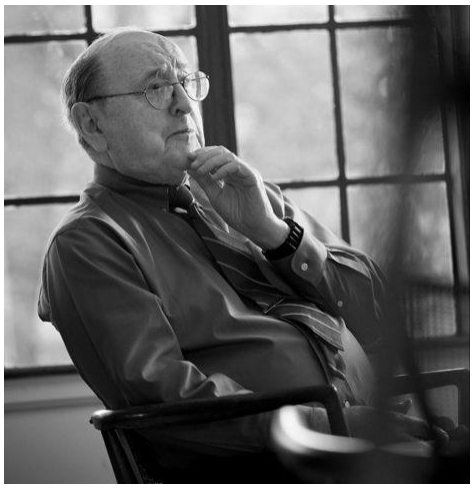
From: https://news.harvard.edu/gazette/story/2021/02/walter-willett-looks-at-whats-healthy-for-you-and-the-planet/?utm_source=SilverpopMailing&utm_medium=email&utm_campaign=Daily%20Gazette%2020210211%20(1)

In Memoriam

Dr Bernard Lown

With great sadness, we report the passing of a beloved emeritus faculty member and mentor, ***Dr Bernard Lown***. His was a life devoted to the health and well-being of people around the world, from his innovative work in the field of cardiology to his tireless advocacy against the catastrophic

threat of nuclear war. Bernard retired from Harvard Chan School in 2000 as a professor of cardiology emeritus, but remained a vital part of the life of the School through the training program established in his name. He died on February 16 at his home in Chestnut Hill, Mass. He was 99.



As a cardiologist, Dr Lown focused on preventing sudden cardiac death, one of the most common causes of death in the United States. He pushed the field forward technically—notably by revolutionizing care of patients with heart attack through development of coronary care units, and by developing the direct-current defibrillator and heart-monitored exercise testing—while also exploring the root causes of disease and becoming involved in activism for peace.

After his medical training, Bernard became a physician and researcher at the former Peter Bent Brigham Hospital and Harvard Medical School. He joined Harvard Chan School's Department of Nutrition in the 1950s, adding his expertise at a time when it was shifting its focus from the health needs of a population under wartime rationing to the role of nutrition in the so-called "diseases of civilization," including heart disease.

In 1961, as Cold War tensions mounted with the Soviet Union, Bernard co-founded Physicians for Social Responsibility to organize U.S. physicians against the threat of nuclear war. He co-founded International Physicians for the Prevention of Nuclear War (IPPNW) in 1980, and accepted a Nobel Prize on behalf of the group with Soviet cardiologist Yevgeny Chazov five years later.

In 2008, the Bernard Lown Scholars in Cardiovascular Health program was established at Harvard Chan School to train scientists and public health professionals from Africa, Asia, and Latin America. At the Harvard Chan School, the Lown Scholars Program and the Lown Archives will celebrate his life and create paths to pursue the changes for which he has always fought. An extraordinary human being has left us. He will be missed by all.

In 2017, ***Dr. Frank Hu***, Professor and Chair, visited Dr. Bernard Lown at his home in Chestnut Hill to conduct a filmed interview for the Department's **75th Anniversary Symposium**. Dr. Lown fondly

remembers his over four decades of time in the Department of Nutrition as being filled with intellectual freedom and generous support from ***Dr Frederick Stare***. During the course of their interview Drs. Hu and Lown discussed the importance of prevention in tackling some of the important problems in the world. Dr. Lown shared memories and highlights regarding his extensive research accomplishments in the area of cardiovascular diseases, noting, "If we are curing we have failed." Dr. Lown offered that poverty along with climate change need urgent attention. He felt strongly these issues were central to public health today and related closely to challenges facing researchers in nutrition. These views aligned well with Dr Hu's thoughts and vision for the Department.

Commenting on Dr. Lown's passing, Dr Frank Hu said, "Dr Lown is a towering figure in cardiology, public health, and the peace movement. He is also a compassionate doctor, scientist, and human being. The Department of Nutrition was fortunate to have him as one of its many accomplished faculty members. His legacy will live on forever."

NEWS FROM AROUND THE NUTRITION DEPARTMENT

NEW GRANT

Dr Qi Sun, Associate Professor of Nutrition and Epidemiology at the Department of Nutrition, received a new R01 from the NIH/NIDDK in January 2021 for a microbiome-related project. The overall goal of this 4-year project is to understand how the microbiome may influence the risk of developing type 2 diabetes in U.S. men and women with diverse racial and ethnic backgrounds. This is among the first research efforts that examine this important association prospectively. The project is built on the ongoing MICRObiome Among Nurses (MICRO-N) collection through which thousands of fecal samples are collected from women participating in the Nurses' Health Study II. The samples are processed and stored in a leading-edge facility at Harvard T.H. Chan School of Public Health, including a robotic BiOS freezer and liquid handler, and supported by multiple core facilities at the Chan School. This new award is among the first NIH grants for research facilitated by the MICRO-N and Chan School. ***Dr Qibin Qi***, adjunct faculty at the Department of Nutrition, serves as a multiple PI for this project and leads research activities in the Hispanic Community Health Study of Latinos. ***Drs Frank Hu, Eric Rimm, Kyu Ha Lee***, and ***Mingyang Song*** of the Department of Nutrition and ***Dr Curtis Huttenhower*** of the Department of Biostatistics are co-investigators of this project.

PRESENTATIONS

On January 11 - 12th, 2021, the National Heart, Lung, and Blood Institute, National Institute of Diabetes and Digestive and Kidney Diseases, and the Office of Disease Prevention of the National Institutes of Health presented the "Precision Nutrition: Research Gaps and Opportunities Workshop" to explore the complex factors that affect individuals' physiologic responses to diet and how to individualize dietary recommendations or therapies based on these factors. The workshop is available for free at https://www.labroots.com/ms/virtual-event/precision-nutrition-research-gaps-opportunities-workshop. ***Dr Josiemer Mattei,*** Donald and Sue Pritzker Associate Professor of Nutrition, was one of the speakers, and she presented about the importance, gaps, and opportunities in research of social determinants of health and inequities for precision nutrition.

New Faces in the Department

Dr Yeli Wang
Postdoctoral Fellow

Hi everyone, my name is Yeli. I obtained my master's degree in nutrition from Columbia University and my doctoral degree in epidemiology from the National University of Singapore. My previous research included childhood obesity intervention, diet, lifestyle, and biomarkers (traditional and novel) associated with cardiometabolic diseases (chronic kidney disease, type 2 diabetes, and cardiovascular disease), as well as some COVID-19 research on psychological distress and knowledge levels. In February 2021, I joined our Department as a postdoctoral fellow under the mentorship of ***Dr Qi Sun***. During my stay here, I will examine the roles of the microbiome and other novel factors of cardiometabolic diseases, as well as assess some interesting dietary and lifestyle factors associated with cardiometabolic diseases. In 2017 (April to October), I was a visiting student in our Department under the supervision of ***Dr Majken Jensen***. I am thrilled to be back and incredibly grateful for the persistent support and help from Dr Sun and ***Patrice [Brown]*** in helping me obtain a visa and make my relocation possible during this difficult time.

In addition to research, I have worked in industries and non-profit organizations, and my most unforgettable experience was to join a 6-month global volunteer program where I travelled with ~100 people from 20 different countries and we visited a new city every week across the US, Mexico, Denmark, Sweden, and Italy. My favorite country to travel to is Japan. I also like to exercise and spend time with friends and family in my spare time. I hope you are all staying safe and doing well. I am looking forward to meeting everyone soon, hopefully in the office!

MORE NUTRITION NEWS

Milk May Not Be Necessary for Most Adults

In a January 26, 2021 article in *Discover,* ***Dr David Ludwig***, Professor in the Department of Nutrition, and ***Dr Walter Willett***, Professor of Epidemiology and Nutrition, discussed findings from a 2020 review they co-authored in the *New England Journal of Medicine.* In this review Ludwig and Willett argued against current government recommendations that adolescents and adults consume three servings of dairy per day.

Evidence suggests that drinking milk does help children grow taller, but it may not be as beneficial for adult bone strength as once thought. The authors' findings indicate that, paradoxically, countries that consume the highest amounts of dairy also tend to have the highest rates of hip fractures. Further, high dairy consumption may be associated with greater risk for prostate and endometrial cancer. Willett adds, "When considering milk's place in a healthy diet, it's also important to look at what is served with it. While

full-fat milk adds saturated fat to the diet, low-fat milk is less satiating, encouraging higher consumption of other foods to compensate".

Although there are many milk substitutes available, such as soy and almond milk, caution must be exercised because these substitutes can be high in added sugar; and like milk from animals, they should be considered optional for most adults, according to Willett and Ludwig. Instead, the researchers recommend choosing other sources of calcium, such as tofu, leafy greens, and fortified orange juice.

From: https://www.hsph.harvard.edu/news/hsph-in-the-news/milk-healthy-diet/

Read the Discover article: https://www.discovermagazine.com/health/is-milk-bad-for-you-heres-what-the-science-says

Machine Learning Illustrates How Walnuts Benefit Health

According to a February 4, 2020 article in *Health IT Analytics*, a newly developed machine learning algorithm has uncovered information about how eating walnuts can lead to significantly lower risk of chronic diseases. The study was based on the data from 1833 participants at high cardiovascular risk from the PREvención con DIeta MEDiterránea (PREDIMED) study conducted in Spain with available metabolomics data. The paper was published in Journal of Nutrition (https://doi.org/10.1093/jn/nxaa374).

A research team, led by ***Dr Marta Guasch-Ferré***, a research scientist in the Department of Nutrition, used the algorithm to analyze data from 1,833 participants of a multi-year nutrition study and identify 19 biomarkers associated with walnut consumption. The researchers were then able to determine that people who had metabolic profiles containing these biomarkers had a 17% lower risk of type 2 diabetes and a 29% lower risk of cardiovascular disease.

Although researchers have long known that consuming walnuts is associated with better health outcomes, why that is the case remains a mystery. Guasch-Ferré suggests that the findings bring researchers "one step closer to understanding 'how' walnuts are good for our health" and that discoveries from machine learning will significantly influence the future of nutrition recommendations.

"With data-driven technologies, we are able to enhance our understanding of the relationship between diet and disease and take a personalized approach to nutrition which will lead to better prevention and management of various health conditions," she said.

> Marta Guasch-Ferré, Pablo Hernández-Alonso, Jean-Philippe Drouin-Chartier, Miguel Ruiz-Canela, Cristina Razquin, Estefanía Toledo, Jun Li, Courtney Dennis, Clemens Wittenbecher, Dolores Corella, Ramon Estruch, Montserrat Fitó, Emilio Ros, Nancy Babio, Shilpa N Bhupathiraju, Clary B Clish, Liming Liang, Miguel A Martínez-González, Frank B Hu, Jordi Salas-Salvadó. Walnut Consumption, Plasma Metabolomics, and Risk of Type 2 Diabetes and Cardiovascular Disease. *The Journal of Nutrition*, Volume 151, Issue 2, February 2021, Pages 303–311, https://doi.org/10.1093/jn/nxaa374

From: https://www.hsph.harvard.edu/news/hsph-in-the-news/machine-learning-sheds-new-light-on-how-walnuts-benefit-health/

Read the Health IT Analytics article: https://healthitanalytics.com/news/machine-learning-uncovers-link-between-diet-chronic-disease-risk

During Pandemic SNAP Online Purchasing Program Increased Access to Healthy Food

According to a new analysis released February 10, 2021 by unBox, a U.S. Department of Agriculture (USDA) pilot program that allows people receiving Supplemental Nutrition Assistance Program (SNAP) benefits to purchase groceries online has improved recipients' access to healthy food and their ability to social distance. As food insecurity nationwide was worsened during the COVID-19 pandemic, the USDA expanded the pilot program, called the Online Purchasing Program (OPP), to reach 47 states.

A team of students and recent graduates from across the U.S. found that despite some technological and other barriers, SNAP beneficiaries rapidly made use of the pilot program when it became available. Many used a high percentage of their monthly benefits for online orders, perhaps opting to buy in bulk to minimize delivery fees, the researchers suggested.

Dr Eric Rimm, professor in the Departments of Epidemiology and Nutrition at Harvard T.H. Chan School of Public Health and an adviser to the unBox team, was a co-author of the report.

After noting that participation in OPP has plateaued in some areas, the researchers wrote, "Looking beyond the pandemic, it is important to recognize the impact this program can have on healthy food access (i.e. in rural areas). The USDA and relevant partners should work closely together to ensure that there is longer term program success."

From: https://www.hsph.harvard.edu/news/hsph-in-the-news/snap-online-grocercies-covid19/

MONDAY NUTRITION SEMINARS

The Department of Nutrition holds its weekly **Monday Nutrition Seminar Series** every Monday throughout the academic year. The talks are varied, but they highlight the many different aspects of cutting-edge research that is currently being conducted in the fields of nutrition and global public health. These seminars are held from **1:00-1:50 pm** and are free and open to the public. Because of COVID-19, the seminars have been presented via Zoom since March of this past spring, and this zoom format will continue in the fall of 2020. A zoom link for viewing will be available one week prior to each seminar.

Our March speakers will be:

Mar 1 ***Dr Chris Sudfeld, ScM, ScD***, Assistant Professor of Global Health and Nutrition, Harvard T.H. Chan School of Public Health; ***Dr Wafaie Fawzi, MBBS, MPH, MS, DrPH***, Richard Saltonstall Professor of Population Sciences, Professor of Nutrition, Epidemiology, and Global Health, Harvard T.H. Chan School of Public Health – *"Vitamin D and Infectious Disease: New Evidence and Future Directions"* – NGHP

Mar 8 ***Dr Caitlin Caspi, ScD***, Associate Professor, Allied Health Sciences, Rudd Center – *"Community-level policies and interventions to address food insecurity and nutrition"*

Mar 15 ***SPRING BREAK***

Mar 22 ***Dr Dong (Daniel) Wang***, Member of the Faculty of Medicine, HSPH – *"New explorations into diet and the microbiome. Resources and Early Results."*

Mar 29 ***Dr Erica Kenney***, Assistant Professor of Public Health Nutrition, Department of Nutrition - TBD

NUTRITION SOURCE UPDATES

Spotlight on Heart Disease
In recognition of "heart month," learn about heart disease, and steps you can take to help prevent it.
https://www.hsph.harvard.edu/nutritionsource/disease-prevention/cardiovascular-disease/

The Science of Snacking
Snacks have been associated with both weight gain and maintaining weight, as well as with a lower or higher diet quality. What differentiates the two scenarios is one's snacking behavior: what you snack on, why you snack, frequency of snacking, and how snacks fit into your overall eating plan.
https://www.hsph.harvard.edu/nutritionsource/snacking/

Food feature: Dark chocolate
Learn more about dark chocolate and health, and get tips on purchasing, storing, and serving it up as a healthier dessert.
https://www.hsph.harvard.edu/nutritionsource/food-features/dark-chocolate/

If you would like to remain current as to what is happening in the field of nutrition, please be sure to view our Nutrition Source website for the latest updates!
(See: https://www.hsph.harvard.edu/nutritionsource/)