



Food is Medicine

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Dean

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41st Annual National Food Policy Conference

Washington, DC

March 29, 2018



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Nutrition Science and Policy

The Global Nutrition Crisis

Health and wellbeing

Health care costs and access

Government budgets

Private business, economic growth

Sustainability and climate change

National security

Disparities

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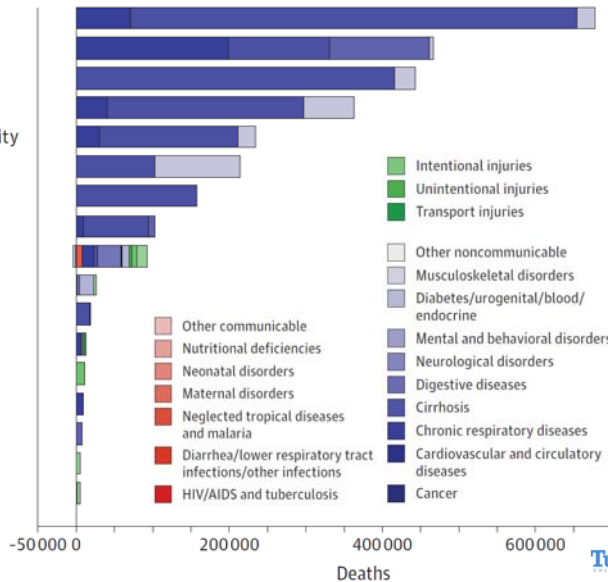
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Our Food: The #1 Cause of Poor Health

Risk Factors

Dietary risks

Tobacco smoking
 High blood pressure
 High body mass index
 Physical inactivity and low physical activity
 High fasting plasma glucose
 High total cholesterol
 Ambient particulate matter pollution
 Alcohol use
 Drug use
 Lead exposure
 Occupational risks
 Low bone mineral density
 Residential radon
 Ambient ozone pollution
 Intimate partner violence
 Childhood sexual abuse



US Burden of Disease
 Collaborators, JAMA 2013

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Diet-Related Disease: Enormous Economic Burdens

Annual direct and indirect costs:

- **Cardiovascular diseases: \$317 billion/year**
 (\$193B in direct healthcare, \$124B in lost productivity)
- **Type 2 diabetes: \$320 billion/year**
 (\$112B in direct healthcare, \$208B in lost productivity)
- **All obesity-related conditions: \$1.42 trillion/year**
 (~ 8% of U.S. gross domestic product)

American Heart Association, *Heart Disease and Stroke Statistics*, 2016

The Milken Institute, *Weighing Down America*, 2016

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Lesson #1. Foods and Obesity: More than Calories

- Hunger, fullness
- Glucose, insulin, other hormonal responses
- Liver *de novo* fat synthesis (conversion of starch and sugar to fat)
- Brain reward, craving
- Gut microbiome (bacteria) responses
- Body's metabolic rate (energy *out*)

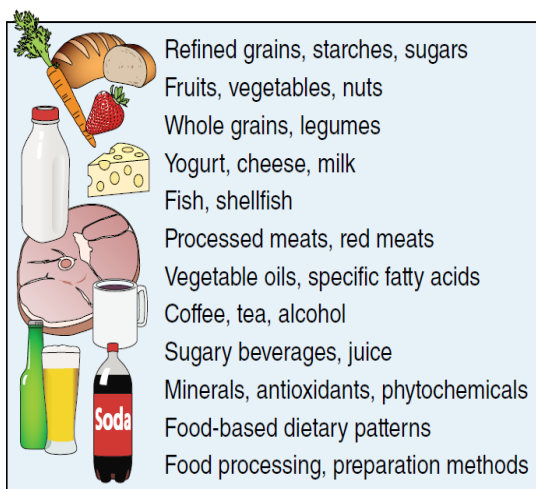
**All Calories
are Not
Created Equal**

e.g., Browning AJCN 2011; Ebbeling JAMA 2012;
Poutahidis Plos ONE 2013; Lennerz AJCN 2013; Ludwig JAMA 2014; etc.

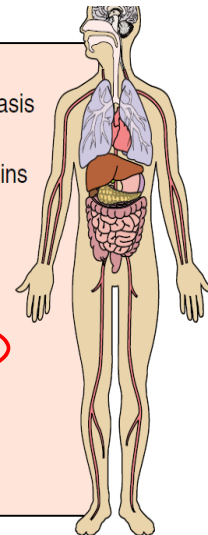
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Lesson #2. Diet & Well-Being: Complex Pathways




Blood pressure
Glucose-insulin homeostasis
Liver fat synthesis
Blood lipids, apolipoproteins
Endothelial function
Systemic inflammation
Brain reward, craving
Gut microbiome
Satiety, hunger, obesity
Adipocyte function
Cardiac function
Thrombosis, coagulation
Vasular adhesion



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Mozaffarian D, Circulation 2016

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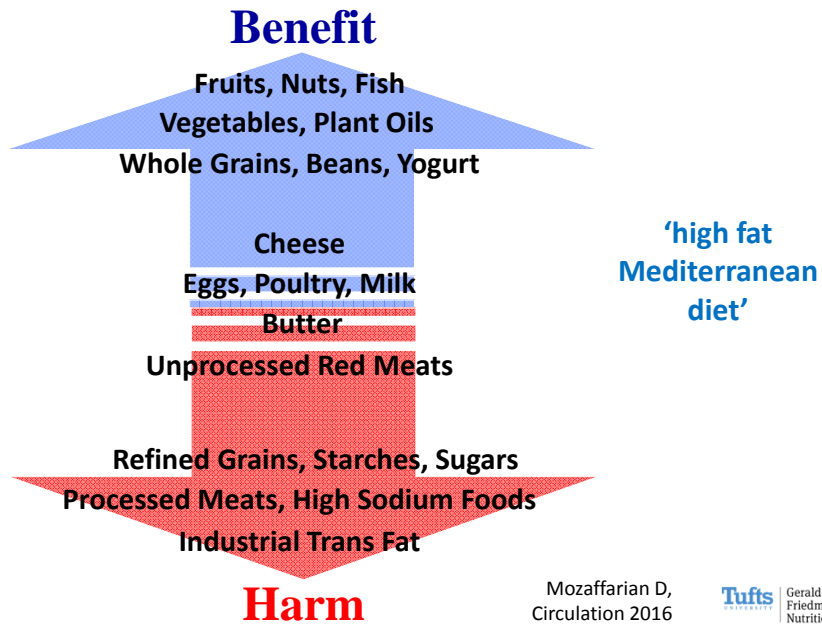
Lesson #3. Priorities: Foods and Food Patterns



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Dietary Priorities: Healthy Food Patterns

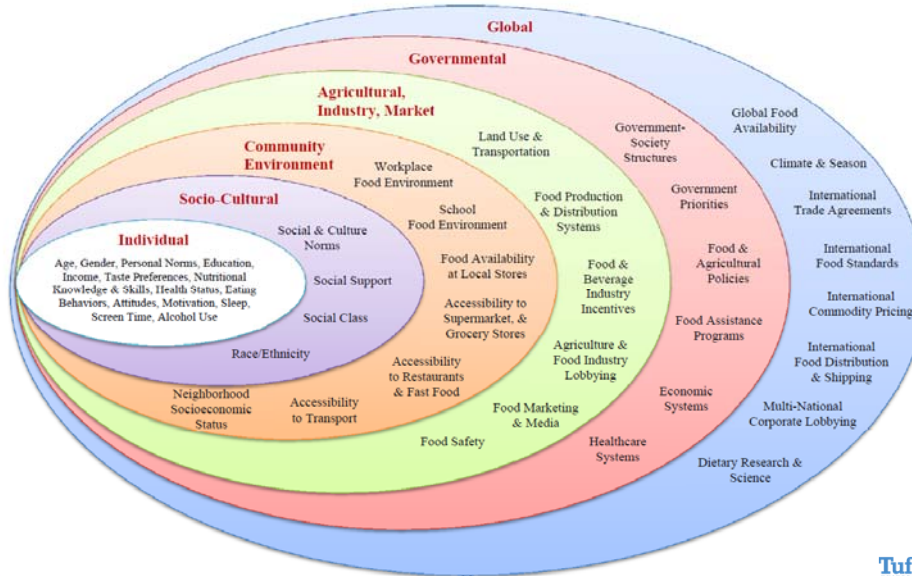


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Lesson #4. Policy and Systems Changes



Afshin et al, 2014

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“Best Buy” Policies

Research & Innovation	Healthcare Reform	Economic Incentives	Schools	Worksite Wellness	FDA Quality Standards	FDA Labeling
<ul style="list-style-type: none"> • Fundamental discovery • Microbiome • Bioactives • Big data, technology • Policy translation • Public-private partnerships 	<ul style="list-style-type: none"> • Electronic records • Medical education • F&V Rx • Medically tailored meals • Patient incentives • Billing & quality metrics 	<ul style="list-style-type: none"> • Retail consumer incentives • Industry (R&D, marketing, etc.) • Govt. food programs (SNAP, WIC) • SSB, sugar, salt taxes 	<ul style="list-style-type: none"> • School meal standards • Competitive food standards • F&V provision • School gardens 	<ul style="list-style-type: none"> • Healthy food incentives • Technology wellness platforms • Cafeteria nudges • Meal & vending standards 	<ul style="list-style-type: none"> • Additives (trans fat, salt, sugar) • Marketing to children 	<ul style="list-style-type: none"> • Relevant front-of-pack logos • Restaurant menu labels • Warning labels

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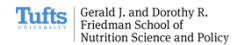
www.food-price.org

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Food is Medicine

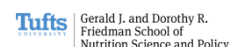
- Tufts is working with multiple stakeholders on a bipartisan initiative: ***Food is Medicine***.
- Effective food and nutrition policy is essential for addressing health and well-being, healthcare costs, business competitiveness, disparities, and military readiness.
- Remarkable advances in science and technology now provide relevant, cost-effective solutions.
- New evidence on actionable and impactful policy priorities for private business and local, state, and federal governments.

<http://now.tufts.edu/articles/healthy-diets-better-health>

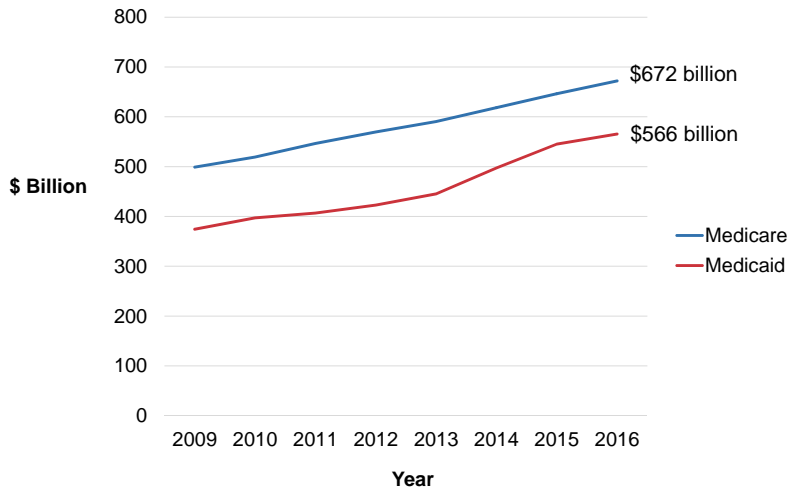


Food is Medicine: Health Care Reform

- **Electronic health records (EHR)**
- **Fruit and vegetable prescriptions**
- **Medically tailored meals**
- **Novel technologies for patient incentives, nudges**
- **Medical education:** licensing exams (USMLE), specialty certifications (ABIM)
- **Reimbursement and quality metrics**



Medicare and Medicaid: Unsustainable Rise in Costs



25% of the total federal budget

Medicaid Incentives for Prevention of Chronic Diseases (2011 ACA/CMS pilot)

Medicare "Better Health Rewards" (2012 Senator Rob Portman, R-OH)

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Centers for Medicare & Medicaid Services, 2018

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Food Rx in Medicare and Medicaid: Health Impacts, Costs?

F&V Incentive (30% subsidy)

Healthy Food Incentive (30% subsidy)



F & V



Nuts & Seeds



Whole Grains



Fish



Plant-based Oils

Lee et al, AHA Spring Meeting, March 2018
www.food-price.org


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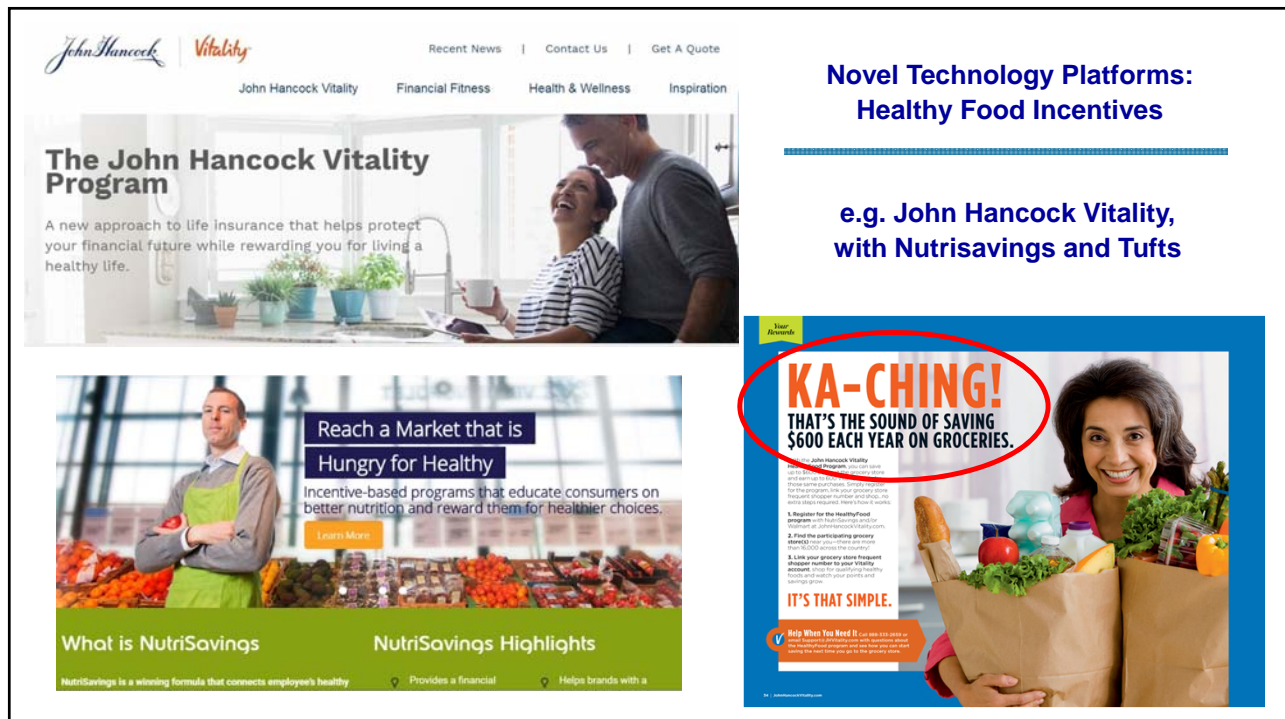
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Food is Medicine: Worksite Wellness

- Healthy food incentives
- Novel technologies for wellness platforms
- Cafeteria & vending nutrition standards
- Cafeteria nudges

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The screenshot shows the John Hancock Vitality website. The top navigation bar includes "Recent News", "Contact Us", and "Get A Quote". Below the navigation, there are links for "John Hancock Vitality", "Financial Fitness", "Health & Wellness", and "Inspiration". The main content area features a large image of a smiling couple in a kitchen, with the headline "The John Hancock Vitality Program" and a sub-headline: "A new approach to life insurance that helps protect your financial future while rewarding you for living a healthy life." Below this, there is a section for "Reach a Market that is Hungry for Healthy" with a "Learn More" button. At the bottom, there are sections for "What is NutriSavings" and "NutriSavings Highlights".

The flyer on the right is titled "KA-CHING! THAT'S THE SOUND OF SAVING \$600 EACH YEAR ON GROCERIES." and features a woman holding two grocery bags. The flyer includes the following text:

KA-CHING!
THAT'S THE SOUND OF SAVING \$600 EACH YEAR ON GROCERIES.

IT'S THAT SIMPLE.

1. Register for the healthyFood program with John Hancock and for enrollment at JohnHancockVitality.com.

2. Find the participating grocery store(s) near you.

3. Link your grocery store's frequent shopper number to your Vitality account. (Look for your Vitality account number on your grocery store's frequent shopper card.)


4. Shop for groceries. (Look for your Vitality account number on your grocery store's frequent shopper card.)

5. Help When You Need It. Call 800-333-2888 or visit JohnHancockVitality.com for more information.

Food is Medicine: SNAP, WIC, Meals on Wheels

- Novel technology platforms
- Healthy food incentives
- Food eligibility standards
- Retailer eligibility standards
- Align SNAP with Medicaid, Medicare

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Healthy SNAP: Bipartisan Policy Center



Executive Summary


Leading with Nutrition: Leveraging Federal Programs for Better Health

Recommendations from the BPC SNAP Task Force

SNAP Task Force co-Chairs: Senator **Bill Frist**, USDA
Sec. **Dan Glickman**, USDA Sec. **Ann Veneman**

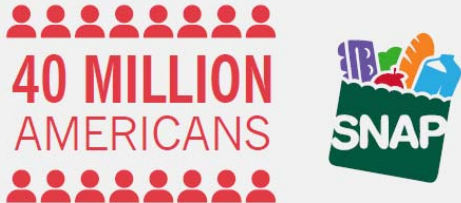
<https://bipartisanpolicy.org/library/leading-with-nutrition-leveraging-federal-programs-for-better-health/>

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Healthy SNAP: Bipartisan Policy Center

The Supplemental Nutrition Assistance Program (SNAP) provides food assistance to more than



Key Recommendations:

1. Prioritize nutrition in SNAP
2. Strengthen SNAP Education
3. Align SNAP and Medicaid
4. Coordinate federal and state agencies and programs

<https://bipartisanpolicy.org/library/leading-with-nutrition-leveraging-federal-programs-for-better-health/>

SNAP Incentives/Disincentives: Health Impacts, Costs?

F&V Incentive
(30% subsidy)



F & V

F&V Incentive
(30% subsidy) +
SSB Restriction



Nuts & Seeds



Whole Grains

SNAP Plus
Healthy foods (30% subsidy)
Unhealthy foods (30% disincentive)



Fish



Plant-based Oils



Sugar Sweetened Beverages



Junk Food

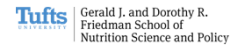


Processed Meat

FDA: Defining “Healthy” Foods

- **Specific healthful foods (2015 DGA):** F&V, nuts, seeds, beans, whole grains, fish, yogurt
- **Fat quality (not quantity):** Ratio of unsaturated to saturated fat
- **Carbohydrate quality:** Ratio of total carbohydrate to natural fiber (approximates starch+sugar vs. whole grains, bran, seeds, etc.)
- **Limits on sodium and added sugar**
- **Only selected micronutrients “of concern”**

Public comments on 21 CFR Part 101 [Docket No. FDA-2016-D-2335]
Use of the Term “Healthy” in the Labeling of Human Food Products, April 24, 2017



PRESS RELEASE
PRESIDENT OF THE BOROUGH OF BROOKLYN
ERIC L. ADAMS
BROOKLYN BOROUGH HALL, 90V JORALEMON STREET BROOKLYN, NEW YORK 11201 PHONE 718.802.3831 FAX 718.802.3778

School Meals

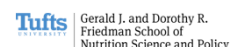
Brooklyn, NY, March 22, 2018: Today, Brooklyn Borough President Eric Adams and Council Member Fernando Cabrera introduced a groundbreaking **New York City Council resolution** that calls on the NYC Department of Education to **ban processed meats from being served in NYC public schools.**

The World Health Organization (WHO) has classified processed meat as a **Group 1 carcinogen**; intake also linked to **diabetes, CVD.**

The NYC Department of Education serves around **950,000 meals to students daily**, including current offerings of processed meats.



<http://www.brooklyn-usa.org/>



Food is Medicine: Selected Partners and Events


- **U.S. House bipartisan *Food is Medicine* Working Group**
 - Lynn Jenkins (R-KS), Roger Marshall (R-KS), Jim McGovern (D-MA), Chellie Pingree (D-ME)
 - Launched Jan 17
 - Next briefing on Medically tailored meals, May 9, Washington DC

- **The Milken Institute**
 - Global Conference 2018, April 29-30, Los Angeles

- **Partnership for a Healthier America**
 - 2018 Summit, May 3, Washington DC

<http://now.tufts.edu/articles/healthy-diets-better-health>

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THE CONVERSATION

Academic rigor, journalistic flair



Want to fix America's health care? First, focus on food

September 12, 2017 10:33pm EDT

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theconversation.com/want-to-fix-americas-health-care-first-focus-on-food-81307

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Health & Nutrition Letter

YOUR GUIDE TO LIVING HEALTHIER LONGER

BROUGHT TO YOU BY

|

An exclusive program for John Hancock life insurance customers

HEALTHY EATING | VITAMINS & SUPPLEMENTS | EXERCISE & MOBILITY | HEALTHY HEART | HEALTHY MIND | HEALTHY AGING | SHOP | ABOUT

Welcome, John Hancock Vitality Program members!

If you're interested in enhancing your health by improving your diet, you've come to the right place. Your membership provides you with free access to the Tufts Health & Nutrition newsletter, where you will find a wide range of articles that will help you get and stay on the right track. You can start eating better and feeling better today!



Caffeine Doesn't Cause Heart Jitters

The popular notion - reflected in doctors' advice and clinical guidelines - that caffeine can cause your heart to "skip a beat" is probably wrong. A new study,



Protein at Breakfast and Lunch Boosts Muscle Mass

Study suggests benefits of spreading out protein intake. Americans' craze for plenty of



Nuts Improve Cholesterol Levels

Study helps explain how nuts combat cardiovascular disease.

Current Issue: April 2016



Cover Story:

Extra Vitamin D No Help in Preventing Seniors' Falls

[Read Article >](#)

[Read Full Issue >](#)

[Back Issue Archive >](#)

NUTRITION 101

The Basics & Glossary

READER POLL What is your favorite fruit for an afternoon snack?

My favorite fruit is the apple! (73 votes) 51%

I really enjoy cantaloupes. (16 votes) 11%

Bananas are by far the best! (45 votes) 32%

I love dates and need one too. (8 votes) 6%

[See Recent Polls](#)

Favorite Recipes

1 of 3



Fish Tacos Without Frying

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