



UC DAVIS HEALTH

An Apple a Day Keeps the Doctor Away 2023:
Eating and Exercising Your Way Out of Medical Problems

SCHOOL OF MEDICINE

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2023 Napa Primary Care Conference
November 8-12, 2023
16 hours CME Credit™

Physicians, Nurses, Physical Therapists,
Athletic Trainers and other medical professionals
www.napaprimarycare.com

DISCLOSURES
Consultant Level 42AI – health technology – not relevant to this talk/topic

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Objectives

- Identify resources for professional development and patient education
- Address common myths about weight, diet and health
- Review activity and nutrition counselling guidelines and evidence for disease prevention
- Understand similarities and differences in contemporary “fad” diets

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Pearls

- Code Blue (2019) CodeBlueDoc.com
- Game Changers (2018) Netflix
- Forks Over Knives (2011, dated, but good) ForksOverKnives.com/the-film/
- Weight Loss over age of 40:
 - Restrict eating to 8-10 hours
 - Biggest meal at breakfast; smallest meal at dinner
- Nature vs Nurture
 - Inherited genes vs inherited behaviors

Leading Causes of Death

[Data](#)

Data are for the U.S.

Number of deaths for leading causes of death

- Heart disease: 695,547
- Cancer: 605,213
- COVID-19: 416,893
- Accidents (unintentional injuries): 224,935
- Stroke (cerebrovascular diseases): 162,890
- Chronic lower respiratory diseases: 142,342
- Alzheimer's disease: 119,399
- Diabetes: 103,294
- Chronic liver disease and cirrhosis: 56,585
- Nephritis, nephrotic syndrome, and nephrosis: 54,358

Source: [Mortality in the United States, 2021 - data table for Figure 4](#)

Lifestyle Medicine

- Addressing the root causes of disease
- Evidence-based therapies in lifestyle behaviors
- Diet, exercise, sleep, social connectivity and stress

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1 NUTRITION
Food is Medicine. Choose predominantly whole, plant-based foods that are rich in fiber and nutrient dense. Vegetables, fruit, beans, lentils, whole grains, nuts and seeds.

2 EXERCISE
Regular and consistent physical activity that can be maintained on a daily basis throughout life - walking, gardening, push ups and lunges - is an essential piece of the optimal health equation.

3 STRESS
Stress can lead to improved health and productivity - or it can lead to anxiety, depression, obesity, immune dysfunction and more. Helping patients recognize negative stress responses, identify coping mechanisms and reduction techniques leads to improved wellbeing.

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4 SUBSTANCE ABUSE
The well-documented dangers of any addictive substance use can increase risk for many cancers and heart disease. Positive behaviors that improve health include cessation of tobacco use and limiting the intake of alcohol.

5 SLEEP
Lack of, or poor quality sleep can lead to a strained immune system. Identify dietary, environmental, and coping behaviors to improve sleep health.

6 RELATIONSHIPS
Social connectedness is essential to emotional resiliency. Studies show that isolation is associated with increased mortality. Considering a patients home and community environment improves overall health.

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Your patients are what they eat.

Learn how food can be the best medicine through 5.5 free hours of continuing education.

Chronic diseases are the leading cause of death and disability in the U.S. But with only a few simple lifestyle changes, they can be sent into remission. Recently highlighted by the White House Conference on Hunger, Nutrition and Health, these free courses will show how better nutrition leads to improved patient outcomes.

As the nation's only medical professional association representing the interdisciplinary field of lifestyle medicine, the American College of Lifestyle Medicine dedicates our expertise to eradicating the root causes of chronic disease.

\$0 - Use WHC22 at checkout!

<https://portal.lifestylemedicine.org/ACLM/Education/Campaigns/White-House/WHConference.aspx?WebsiteKey=5caa7854-d0e3-44fc-a359-e16857e8d551>

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Health Care Provider Skill Sets: Resources

- **Functional Medicine**

One Condition, Many Causes | One Cause, Many Conditions

<https://www.ifm.org/functional-medicine/what-is-functional-medicine/>
- **Preventive Medicine**
 - Medical Specialty
 - Goal of preventing disease, disability and death
 - General Health, Occupational and Aerospace

American College of Preventive Medicine
Physicians dedicated to prevention

American Board of Preventive Medicine

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Skinny ≠ Healthy

Published 01 February 2018

Misclassification of cardiometabolic health when using body mass index categories in NHANES 2005–2012

A.J. Tomiyama^{1,2}, J.M. Haines, J. Haines-Cox & C. Wells

International Journal of Obesity 40, 893–898 (2016) | [Cite this article](#)

206 Accesses | 185 Citations | 1518 Altmetric | [Metrics](#)

Sabrina Strings UC Irvine brief BMI flaw video: <https://www.youtube.com/watch?v=Z-dwCW6m-sY>

Impact of weight bias/obesity stigma in healthcare: <https://nutritionfacts.org/video/the-impacts-of-weight-bias-in-health-care/>

BMI flaw podcast: <https://www.bodykindnessbook.com/2020/06/11/podcast-150-racism-explains-the-origins-of-fat-phobia-and-diet-culture-with-sabrina-strings-and-author-of-fearing-the-black-body/>

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“Vegetarian” ≠ Healthy

> BMJ. 2019 Sep 4;366:i5397. doi: 10.1136/bmj.i5397.

Vegetarian and pescatarian diets are linked to lower risk of ischaemic heart disease, study finds


Elizabeth Mahase¹ ...and increased risk of stroke?1?

Affiliations + expand

PMID: 31488424 DOI: 10.1136/bmj.i5397

Many non-meat foods are healthy
Many non-meat foods are NOT healthy

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Cardiovascular health

- 30 min, 5 times/week of moderate exercise OR
- 25 min, 3 times/week vigorous exercise
- AND 2 days a week of mod-high intensity strength training

Lowering cholesterol and hypertension

- 40 min mod-vigorous activity 3-4 times/week

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Exercise & Nutrition

Final Recommendation Statement


Healthy Diet and Physical Activity for Cardiovascular Disease Prevention in Adults With Cardiovascular Risk Factors: Behavioral Counseling Interventions

November 24, 2020

Recommendation Summary

Population	Recommendation
Adults with cardiovascular disease risk factors	The USPSTF recommends offering or referring adults with cardiovascular disease risk factors to behavioral counseling interventions to promote a healthy diet and physical activity.

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Exercise & Nutrition

Final Recommendation Statement

Weight Loss to Prevent Obesity-Related Morbidity and Mortality in Adults: Behavioral Interventions

September 18, 2018

Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

A This topic is being updated. Please use the link(s) below to see the latest documents available.
Update in Progress for Weight Loss to Prevent Obesity-Related Morbidity and Mortality in Adults: Interventions

Recommendation Summary

Population	Recommendation
Adults	The USPSTF recommends that clinicians offer or refer adults with a body mass index (BMI) of 30 or higher (calculated as weight in kilograms divided by height in meters squared) to intensive, multicomponent behavioral interventions.

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Cancer and Exercise

- **Systematic Review of Exercise Systematic Reviews in Cancer Literature**
- **Conclusions:** Exercise promotes significant improvements in clinical, functional, and in some populations, survival outcomes and can be recommended regardless of the type of cancer.

Stolte NL, Bullins L, Swisher AK, Winters Stone KM, Welch J. A Systematic Review of Exercise Systematic Reviews in the Cancer Literature. Sports. 2019; 11(4):627. doi: 10.3390/sports11040627. PMID: 31042809; PMCID: PMC6579713.

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Cancer and Nutrition

Which Dietary Factors Affect Breast Cancer Mort?

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Cardiovascular Disease

Diabetes

Stroke

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Joint Pain
Chronic Pain
Constipation
Dementia

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Depression
Anxiety
Insomnia

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Food Nutrients and Brain Structure/Function

Dietary Factor	Source	Mechanism of Brain Function
Omega-3 FAs	Essential Fatty Acids (cannot be synthesized) and must be acquired through diet	Omega-3 fatty acids essential for supporting intercellular signaling events & positively influence synaptic function
• Alpha-linolenic acid or ALA [18:3]	Seeds (flax, walnuts, soybean, hemp, chia, etc)	Rates of conversion of ALA to DHA are <1%
• Eicosapentaenoic acid or EPA [20:5]	"marine" FAs (cod, salmon, sardine, seaweed, phytoplankton)	Rates of conversion of EPA to DHA are <5%
• Docosahexaenoic acid or DHA [22:6]	Coldwater oceanic fish	Most abundant n-3 found in mammalian brain. Primary structural component (50% of neuron's plasma membrane is DHA) of the brain. Improve cognition, plasticity, and recovery of neurons after traumatic brain injury; reduces oxidative stress damage that results from trauma Decreases amyloid plaques and tau proteins (in animal models for AD)

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Food Nutrients and Brain Structure/Function

Dietary Factor	Source	Mechanism of Brain Function
Vitamin E	Spinach, nuts	Improved neuro mitochondrial function and decreases oxidative stress (anti-oxidant)
Curcumin	Turmeric (Ginger) Plant-based, ingredient of curry spice	Reduces oxidative stress and amyloid deposition, protects brain from lipid peroxidation and nitric oxide-based radicals in AD disease (improved neuronal function) Enhances recovery events after TBI
Restriction of Calories		Increases BDNF and may protect from hippocampal excitotoxicity-induced neuronal apoptosis

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Eat to Beat Anxiety and Depression*

Whole Grains

SHT **ACh**

Wheat, Oatmeal, Rice, Rye, Oats, Whole-Grain Bread, Wheat-Germ, Speltz, Quinoa
Complex carbs release glucose slowly, fuel fat-burner and provide a steady source of fuel for the body and brain.
Glucose from carbs is the primary source of energy for the brain.
Glucose provides a blood-brain barrier (BBB) barrier.
Glucose release conditions stress in the brain associated with chronic stress of work to maintain depression in the body.

Lean Proteins

CATs **SHT** **ACh**

Beef, Chicken, Eggs, Fish, Turkey
2nd most abundant substance in the body.
Amino acid tyrosine (building block of protein) can boost brain ACh levels.
Tyrosine and other amino acids may release stress, promote longevity or metabolism, and improve with serotonin in the brain to improve feelings of well-being.

Wild Cold Water Fish

CATs **SHT** **ACh**

Herring, Mackerel, Salmon, Sardines, Sea bass, Trout, Tuna
High in omega-3 fatty acids, may reduce symptoms of depression. Omega-3 fatty acids may also be protective against depression, schizophrenia, and ADHD.
Omega-3s have an effect on the production of neurotransmitters including dopamine and serotonin.
Support responses in the brain to boost learning and memory.

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Eat to Beat Anxiety and Depression*

Leafy Greens

ACh

Spinach, Broccoli, Kale, Mustard Greens, Romaine, Swiss Chard
High in folate and other B vitamins, which can reduce levels of depression, fatigue, and anxiety.
Also high in serotonin.

Dairy/Active Cultures

CATs

Milk, Cheese, Kefir, Kumbh, Probiotic Yogurt, Tofu, Yogurt
Probiotic cultures, which help with gut health, which in turn helps with brain health and mood.
Fermented foods with active cultures contain probiotics which have shown to reduce anxiety and stress hormones and affect the mood-protein, GABA.

Chocolate

SHT

Dark Chocolate
Small amounts of dark chocolate can affect the brain and heart and affect the mood-protein, GABA.

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Mind Over Matter

- **Mind Diet:**
 - The Mediterranean-DASH Diet Intervention for Neurodegenerative Delay, or MIND diet, targets the health of the aging brain
- **Mindful Eating:**
 - Eating mindfully means that you are using all of your physical and emotional senses to experience and enjoy the food choices you make

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Whole Food Plant Based Diet

- Has the most medical evidence for preventing and treating:
 - Cardiovascular disease
 - High Blood Pressure
 - Stroke
 - Heart Attack
 - Metabolic/Endocrine disease
 - Diabetes Type II
 - Cancer (many types)

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Ketogenic Diet

- Fat stored in liver → ketones for fuel
- Unsaturated vs saturated fat
- Cardiovascular risk ⚠️
- Nutrient deficiency
 - Vitamin C: Scurvy
 - Selenium: Heart attack
- Supplements help
- Lacks certain pre-biotics
 - Constipation
 - Gut Microbiome
 - Increase GI inflammation

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Paleo Diet

- Low carb/ high protein diet → but NOT true Keto
- Focus on meat, fish, veggies
 - No grains, legumes, dairy
- Vitamin deficiencies
- Cardiovascular risk
- Renal disease risk

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Anti-Inflammatory Diet

- Inflammation vs metaflammation
- anti-inflammatory foods
 - WFPB
 - Mediterranean
 - DASH
- Phytochemical, antioxidants, fiber
- Improved gut microbiome ?
 - Leaky gut

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Objectives (Review)

- Identify resources for professional development and patient education
 - ACLM, ACPM, Funct Med
- Address common myths about weight, diet and health
 - Skinny + Veggie does not always = healthy
 - BMI flawed for individual
- Review activity and nutrition counselling guidelines and evidence for disease prevention
 - AHA, US Prev Services Task Force, Studies
- Understand similarities and differences in contemporary "fad" diets
 - WFPB v Keto v Paleo v AntiInflam

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