

AMERICAN COLLEGE OF Lifestyle Medicine

## The Role of the RDN in Incorporating Therapeutic Lifestyle Interventions in Chronic Disease Prevention, Treatment, and Remission

Melissa Bernstein, PhD, RDN, LD, FAND, DipACLM  
Associate Professor and Chair, Nutrition Department  
College of Health Professions and Chicago Medical School  
Rosalind Franklin University

Kelly Freeman, MSN, AGPCNP-BC, Dip-ACLM  
Director of Workforce Development  
American College of Lifestyle Medicine

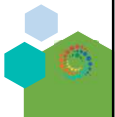


1

## Disclosures

Melissa Bernstein is the author of numerous textbooks on nutrition and serves on the board of directors for the American College of Lifestyle Medicine

Kelly Freeman is the Director of Workforce Development at the American College of Lifestyle Medicine

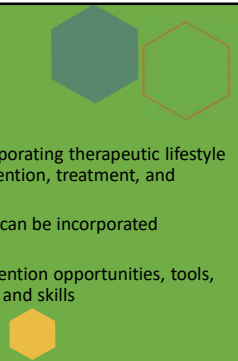


2

AMERICAN COLLEGE OF Lifestyle Medicine


## Objectives

1. Define the role of the RDN in incorporating therapeutic lifestyle interventions in chronic disease prevention, treatment, and remission
2. Explain how lifestyle interventions can be incorporated into nutrition practice
3. Identify therapeutic lifestyle intervention opportunities, tools, and resources to advance knowledge and skills




3

## My Journey: I have not always been a healthy plant-based dietitian





4

## My "Ah-Ha" Moment





**What I eat affects how I feel**



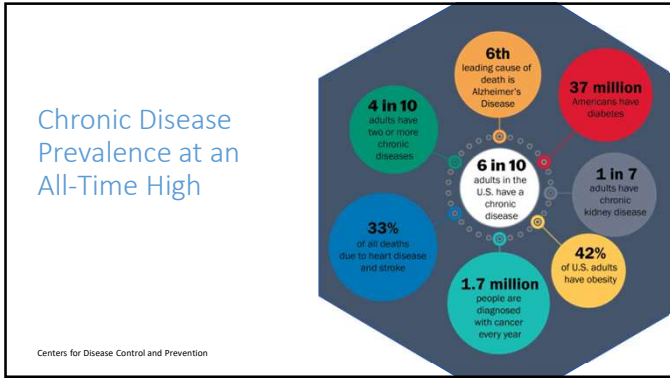
5

## Objective 1

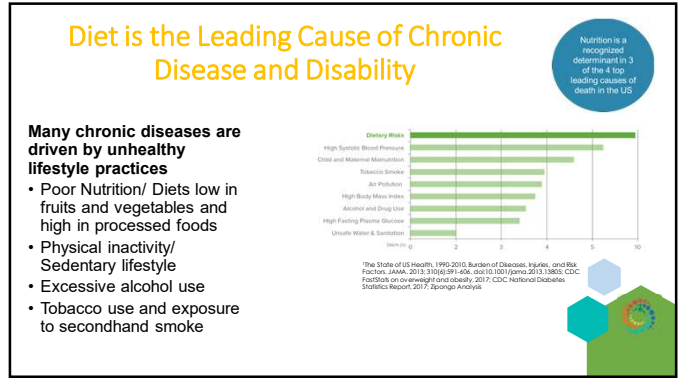
Define the role of the RDN in incorporating therapeutic lifestyle interventions in chronic disease prevention, treatment, and remission

6



7



8

### What can RDNs do about this?

*"If you look at the largest study of human risk factors for disease in history, the number one cause of death in the US is the American Diet. What we put in our mouths is more important than anything else"*  
Dr. Michael Greger

**RDNs can incorporate therapeutic lifestyle interventions in chronic disease prevention, treatment, and remission**

9

### Lifestyle Medicine Is The Solution

**6 KEY DOMAINS OF HEALTH BEHAVIOR:**

- **Nutrition**
- Physical activity
- Restorative Sleep
- Stress management
- Social connection
- Avoiding risky substances

10

### Nutrition

*"Extensive scientific evidence supports a whole food, predominantly plant-based diet as an important strategy in preventing chronic disease, treating chronic conditions, and, in intensive therapeutic doses, reversing chronic illness. Such a diet is nutrient dense, rich in fiber and antioxidants, with a variety of minimally processed vegetables, fruits, whole grains, legumes, nuts, and seeds."*

American College of Lifestyle Medicine. American College of Lifestyle Medicine Announces Dietary Lifestyle Position Statement for Treatment and Potential Reversal of Disease. [www.pwweb.com](http://www.pwweb.com). September 12, 2022. Accessed September 12, 2022.

11

### Plant-Based Diet for the Prevention and Treatment of Chronic Diseases

**Reduced Risk of Chronic Conditions**


- Cardiovascular Disease
- Overweight and Obesity
- Type 2 DM
- Cancer
- Longevity
- GI Health – Gut Microbiome
- Mental Health
  - Dementia/Cognition
  - Depression

12

## Diet and Health

- Dietary Components that are **Healthful**
- Higher intake of fiber from **whole grains** is associated with a lower risk of CHD and diabetes
- Substituting **monounsaturated (plant) fat** for saturated fat reduces LDL without affecting HDL
- Lowering intake of **red meat** will likely decrease the incidence of CHD, diabetes, colon cancer, and possibly premenopausal breast cancer
- Regular consumption of **nuts** is associated with lower risk of CHD and Type 2 Diabetes
- Higher **fruit and vegetable** intake has benefit in cardiovascular disease.
- **Plants** are rich in cancer-fighting antioxidants and phytonutrients

- Dietary Components that are **Harmful**
- High **refined carbs** can raise triglycerides and reduce HDL
- Higher intakes of **refined starches and sugar** (low fiber intake) increase risk of diabetes
- **Trans-fatty acids** increase LDL and decrease HDL, and increase inflammatory markers
- Intake of **red meat**, particularly **processed meat** has been associated with increased risk of diabetes
- **Excess salt** is linked to high blood pressure



Source: Mozur ME, Malmqvist M, Liss A, Sletty P. Nutrition: An Evidence-Based, Practical Approach to Chronic Disease Prevention and Treatment. Supplement to the Journal of Family Practice Vol 71, First Quarter/February 2022. DOI: 10.1097/FPM.0000000000000202

13

## Lifestyle Change as First Treatment Option

Clinical guidelines state that diet and physical activity changes are a critical first line for preventing and treating many chronic conditions (e.g., diabetes, obesity, hypertension), often before any medication is prescribed

Leading national and international organizations reinforce this





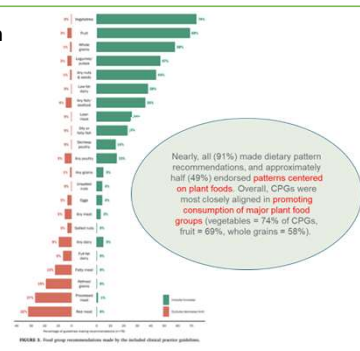

14

## Dietary Recommendations in Clinical Practice Guidelines

**Advances in Nutrition**

Commonalities among Dietary Recommendations from 2010 to 2021 Clinical Practice Guidelines: A Meta-Epidemiological Study from the American College of Lifestyle Medicine

Nearly, all (91%) made dietary pattern recommendations, and approximately half (49%) endorsed patterns centered on **plant foods**. Overall, CPGs were most closely aligned in promoting consumption of major plant food groups (vegetables = 74% of CPGs, fruit = 69%, whole grains = 58%).



15

## 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease

A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Journal of the American College of Cardiology, Volume 74, Issue 10, September 2019

**Primary Prevention: Assess ASCVD Risk in Each Age Group Emphasize Adherence to Healthy Lifestyle**

Age 8-13: **Calculate 10-year ASCVD risk** (if present or risk factor)

Age 20-39: **Estimate lifetime risk** (if present or risk factor)

Age 40-75: **Estimate 10-year ASCVD risk** (if present or risk factor)

Age 75+: **Clinical assessment, risk discussion**

**ASCVD Risk Enhancers:**

- Family history of premature ASCVD
- Previously elevated LDL-C (>190 mg/dL)
- Chronic kidney disease
- Chronic liver disease
- Metabolic syndrome
- Conditions likely to worsen (e.g., pregnancy, autoimmune medications)
- Inflammatory diseases (especially rheumatoid arthritis, psoriasis, IBD)
- Alcohol (e.g., South Asian ancestry)
- UgA1/Brucella:
  - Previously elevated lipoproteins (>175 mg/dL, >3.0 mmol/L)
- Selected individuals if measured:
  - hs-CRP (>2.0 mg/L)
  - Lipid levels >160 mg/dL or >125 mmol/L
  - LDL-C >130 mg/dL
  - Aortic-brachial index (ABI) <0.9

**ASCVD Risk Categories:**

- <5% "Low Risk"
- 5% - <7.5% "Borderline Risk"
- >7.5% - <20% "Intermediate Risk"
- >20% "High Risk"

**Risk Discussion:**

- <5%: Risk discussion to reduce risk factors (Class III)
- 5% - <7.5%: Risk discussion if risk enhancers present; their risk discussion regarding moderate-intensity statin therapy (Class IIa)
- >7.5% - <20%: Risk discussion if risk enhancers + risk enhancers favor statin; initiate moderate-intensity statin therapy to reduce LDL-C by 50% - 60% (Class II)
- >20%: Risk discussion; initiate statin to reduce LDL-C >50% (Class I)

**Notes:**

- If risk decision is uncertain: Consider measuring CAC in selected adults: CAC = zero (zero risk, consider no statin, unless diabetes, family history of premature CHD, or cigarette smoking are present); CAC < 1.00 (zero statin, especially after age 55); CAC > 3.00 or > 1750 (perovels, initiate statin therapy)

16

## Hypertension

2020 International Society of Hypertension Global Hypertension Practice Guidelines

**Established Diagnosis of Hypertension**

Grade 1: BP 140-159/90-109 mmHg

Grade 2: BP ≥160/100 mmHg

**ESSENTIAL HYPERTENSION**

**Flowchart:**

- Established Diagnosis of Hypertension
- Grade 1: Lifestyle advice
- Grade 2: Immediate drug treatment in high-risk patients or those with CVD, CKD, DM or HMO
- Immediate drug treatment in most of all patients
- Drug treatment in low to moderate risk patients without CVD, CKD, DM or HMO after 3-6 months of lifestyle intervention, if BP still not controlled
- Immediate drug treatment in those aged 50-80 years

17

## The Joint National Committee (JNC 8) Guidelines for Hypertension

JNC 8 Hypertension Guideline Algorithm

**Flowchart:**

- Adult aged ≥18 years with HTN
- Let BP guide treatment; emphasize lifestyle on algorithm
- General Population (no diabetes or CKD):
  - Age 140-159 mmHg: BP goal <130/80
  - Age ≥160 mmHg: BP goal <140/90
- Diabetes or CKD present:
  - All Ages: BP goal <130/80
  - All Ages and Asian: BP goal <130/80
  - BP goal <140/90
- Initial thiazide, ACEI, ARB, or CCB, alone or in combo
- All blood pressure goal?
  - Yes: Reduce therapy and adherence
  - No: Titrate medication to maximum doses or consider adding another medication (ACEI, ARB, CCB, Thiazide)
- All blood pressure goal?
  - Yes: Continue to add and monitoring
  - No: Add a medication class not already selected (i.e., beta blocker, aldosterone antagonist, diuretic) and titrate alone medication to max (see back of card)
- All blood pressure goal?
  - Yes: Continue to add and monitoring
  - No: Reduce therapy and adherence; Titrate meds to maximum doses, add another med and/or refer to hypertension specialist

**Initial Drug of Choice for Hypertension (ACEI, ARB, CCB, Thiazide):**

- ACE inhibitor (ACEI)
- Angiotensin receptor blocker (ARB)
- Thiazide diuretic
- Calcium channel blocker (CCB)

**Formulary Description:**

- A:** Start one drug, titrate to maximum dose, and then add a second drug.
- B:** Start one drug, titrate to a second drug before achieving max dose of first.
- C:** Begin 2 drugs of same class, at separate pills or combination pill; initial combination therapy is recommended if BP is greater than 20/10 mmHg above goal.

**Lifestyle changes:**

- Smoking Cessation
- Control blood glucose and lipids
- Diet
  - Eat healthy (i.e., DASH diet)
  - Moderate alcohol consumption
  - Reduce sodium intake to no more than 2,300 mg/day
- Physical activity
  - Moderate-to-vigorous activity 3-5 days a week averaging 40 min per session.

18

**2020 AACE COMPREHENSIVE TYPE 2 DIABETES MANAGEMENT ALGORITHM**

### LIFESTYLE THERAPY RISK STRATIFICATION FOR DIABETES COMPLICATIONS

INTENSITY STRATIFIED BY BURDEN OF OBESITY AND RELATED COMPLICATIONS

Category	Target	Intervention	Support
Nutrition	• Maintain optimal weight • Calorie restriction • Manage the visceral weight • Plant-based diet, high polyunsaturated and monounsaturated fatty acids	• Avoid trans fatty acids, limit saturated fatty acids • Technological aids	• Structured counseling • Meal replacement
Physical Activity	• 150 min/week moderate exercise (e.g., walking, stair climbing) • Strength training • Increase as tolerated	• Structured program • Wearable technologies	• Medical evaluation/ clearance • Medical supervision
Sleep	• About 6-8 hours per night • Basic sleep hygiene	• Screen sleep disturbances • Home sleep study	• Referral to sleep study
Behavioral Support	• Community engagement • Alcohol moderation	• Discuss mood with HCP	• Formal behavioral therapy
Smoking Cessation	• No tobacco products	• Nicotine replacement therapy and medications as tolerated	• Referral to structured program

19

## American Diabetes Association Recommendations for Diabetes Prevention

### Lifestyle Behavior Change for Diabetes Prevention Recommendations

**The Diabetes Prevention Program**  
Several major randomized controlled trials, including the Diabetes Prevention Program (DPP) trial (1), the Finnish Diabetes Prevention Study (DPP2) (2), and the Da Qing Diabetes Prevention Study (Da Qing study) (3), demonstrate that lifestyle behavioral interventions with an individualized risk-based care plan is highly effective in preventing or delaying type 2 diabetes and improving other cardiovascular risk factors such as blood pressure, lipids, and inflammation (4). The strongest evidence for diabetes prevention in the U.S. comes from the DPP trial (2). The DPP demonstrated that intensive lifestyle intervention could reduce the risk of incident type 2 diabetes by 58% over 3 years. Follow-up of these large studies of lifestyle intervention for diabetes prevention showed sustained reduction in the risk of progression to type 2 diabetes: 38% reduction at 30 years in the Da Qing study (3), 47% reduction at 7 years in the DPP trial (2), and 34% reduction at 10 years (5) and 27% reduction at 15 years (6) in the U.S. Diabetes Prevention Program Outcomes Study (DPPOS).

**3.2** Refer adults with overweight/obesity at high risk of type 2 diabetes, as typified by the Diabetes Prevention Program (DPP), to an intensive lifestyle behavior change program to achieve and maintain a weight reduction of at least 7% of initial body weight through healthy reduced-calorie diet and a 150 min/week of moderate-intensity physical activity. **A**

**3.3** A variety of eating patterns can be considered to prevent diabetes in individuals with prediabetes. **B**

**3.4** Given the cost-effectiveness of lifestyle behavior modification programs for diabetes prevention, such diabetes prevention programs should be offered to adults at high risk of type 2 diabetes. A Diabetes prevention programs should be covered by third-party payers, and inconsistencies in access should be addressed.

**3.5** Based on individual preference, certified technology-assisted diabetes prevention programs may be effective in preventing type 2 diabetes and should be considered. **B**

20

## 2016 AACE/ACE guidelines for the management of overweight and obesity in adults

**TABLE 20. Diagnosis and Initial Management of Adult Patients with Obesity. AACE/ACE Evidence of**

BMI, kg/m <sup>2</sup>	Diagnosis	Staging and Treatment
25.0 to 29.9	Overweight	• Healthy lifestyle • Healthy diet (low-calorie/low-fat) • Increase physical activity
30.0 to 34.9	Class I obesity	• Lifestyle therapy • Medication (if needed) • Behavioral therapy • Structured counseling • Meal replacement
35.0 to 39.9	Class II obesity	• Lifestyle therapy • Medication (if needed) • Behavioral therapy • Structured counseling • Meal replacement • Bariatric surgery (if indicated)
40.0 and above	Class III obesity	• Lifestyle therapy • Medication (if needed) • Behavioral therapy • Structured counseling • Meal replacement • Bariatric surgery (if indicated)

21

## AICR RECOMMENDATIONS FOR CANCER PREVENTION

**A Blueprint to Beat Cancer**

To prevent cancer, people should aim to follow as many of the 10 Cancer Prevention Recommendations as possible. However, any change you make that works toward meeting the goals set out in the Recommendations will go some way to reducing your cancer risk.

- BE A HEALTHY WEIGHT**: Keep your weight within the healthy weight and avoid weight gain (BMI 18.5-24.9).
- BE PHYSICALLY ACTIVE**: Be physically active, aim for 150 minutes of moderate-intensity activity each week.
- GET A DIET RICH IN WHOLE GRAINS, VEGETABLES, FRUITS AND BEANS**: Make whole grains, vegetables, fruits and beans important food items in every meal and snack.
- LIMIT CONSUMPTION OF RED AND PROCESSED MEAT**: Eat no more than moderate amounts of red meat, such as beef, pork and lamb. See Table 1 for more information.
- LIMIT CONSUMPTION OF SUGAR-SWEETENED DRINKS**: Drink mostly water and unsweetened drinks.
- LIMIT CONSUMPTION OF 'FAST FOODS' AND OTHER PROCESSED FOODS HIGH IN FAT, STARCHES OR SUGARS**: Limiting these foods helps control calorie intake and maintain a healthy weight.
- LIMIT ALCOHOL CONSUMPTION**: For cancer prevention, it's best not to drink alcohol.
- FOR MOTHERS: BRASTFEED YOUR BABY IF YOU CAN**: Breastfeeding is good for both mother and baby.
- AFTER A CANCER DIAGNOSIS, FOLLOW OUR RECOMMENDATIONS IF YOU CAN**: Check with your health professional about what is right for you.
- DO NOT USE SUPPLEMENTS FOR CANCER PREVENTION**: Do not use supplements for cancer prevention through diet alone.

**American Institute for Cancer Research**  
Not smoking and avoiding other exposure to tobacco and excess sun are also important in reducing cancer risk.  
Following these Recommendations is best to reduce risk of all, but not all, cancers. It may help prevent other non-cancerous diseases.

22

## WHO GUIDELINES FOR RISK REDUCTION OF COGNITIVE DECLINE AND DEMENTIA

**Physical activity interventions**: Physical activity should be recommended to adults with normal cognition to reduce the risk of cognitive decline. Quality of evidence: moderate. Strength of the recommendation: strong.

**Tobacco cessation interventions**: Interventions for tobacco cessation should be offered to adults who use tobacco since they may reduce the risk of cognitive decline and dementia in addition to other health benefits. Quality of evidence: low. Strength of the recommendation: strong.

**Nutritional interventions**: The Mediterranean-style diet may be recommended to adults with normal cognition and mild cognitive impairment to reduce the risk of cognitive decline and/or dementia. Quality of evidence: moderate. Strength of the recommendation: strong.

**A healthy balanced diet should be recommended for all adults based on WHO recommendations on healthy diet**. Quality of evidence: low. Strength of the recommendation: strong.

**Vitamins B and B<sub>12</sub>, polyunsaturated fatty acids and multi-component supplementation** should be recommended to reduce the risk of cognitive decline and/or dementia. Quality of evidence: moderate. Strength of the recommendation: strong.

**Interventions aimed at reducing or avoiding hazardous and harmful drinking** should be offered to adults with normal cognition and mild cognitive impairment to reduce the risk of cognitive decline and/or dementia in addition to other health benefits. Quality of evidence: moderate. Strength of the recommendation: strong.

**Cognitive interventions**: Cognitive training may be offered to older adults with normal cognition and mild cognitive impairment to reduce the risk of cognitive decline and/or dementia. Quality of evidence: very low to low. Strength of the recommendation: conditional.

**Social activity**: There is insufficient evidence for social activity and reduction of risk of cognitive decline/dementia. Social interventions and social support are strongly recommended to good health, with each being throughout the life and social structures should be supported over the life course.

23

## Plant based diets are also good for the Environment

**World Health Organization Director-General calls for plant-based diet shift**

**Food Planet Health**

"Transformation to healthy diets by 2030 will require substantial dietary shifts. Global consumption of fruits, vegetables, nuts and legumes will have to double, and consumption of foods such as red meat and sugar will have to be reduced by more than 50%. A diet rich in plant-based foods and with fewer animal source foods confers both improved health and environmental benefits."


First Author: Michael Kluge, Director-General of WHO

24

### The Benefits of Plant-Based Nutrition Chapter Summary

<https://lifestylemedicine.org/plant-based-nutrition>

- 1. Introduction:** The highest quality dietary pattern that offers optimal nutrition, addresses concerns of saturated and added sugars, sodium, and fat is a diet based on unrefined grains, fruits, whole grains, and legumes.
- 2. Health Advantages & Benefits:** Plant-based diets have numerous health advantages, including weight management, improved blood pressure, cholesterol, and blood sugar control.
- 3. Heart Health:** Plant-based diets are associated with a lower risk of heart disease, stroke, and type 2 diabetes.
- 4. Cancer Prevention:** Plant-based diets are associated with a lower risk of certain types of cancer, including colorectal, breast, and prostate cancer.
- 5. Diabetes Management:** Plant-based diets are associated with improved blood sugar control and a lower risk of type 2 diabetes.
- 6. Kidney Health:** Plant-based diets are associated with a lower risk of kidney disease.
- 7. Bone Health:** Plant-based diets are associated with a lower risk of osteoporosis.
- 8. Liver Health:** Plant-based diets are associated with a lower risk of liver disease.
- 9. Gut Health:** Plant-based diets are associated with a higher intake of fiber, which promotes gut health.
- 10. Overall Health:** Plant-based diets are associated with a lower risk of all-cause mortality.





Source: <https://connect.lifestylemedicine.org/viewdocument/plant-based-nutrition>

25

## Objective 2

Explain how lifestyle interventions can be incorporated into nutrition practice

26

### Food and Health

- It is estimated that nearly one half of all death due to heart disease, stroke, and type-2 diabetes in the United States are linked to diet and poor nutrition (JAMA March 2017)
- This makes diet the largest risk factor (root-cause), overtaking other causes such as tobacco, for driving chronic disease rates and death in the U.S

### Food as Medicine

- Goes beyond healthy eating for preventing disease and promoting general wellness
- It is food used along with (or in some cases without medicines or surgery) a prescribed intervention, for the treatment and reversal of many diseases.

If a poor diet caused the problem...

A healthy diet can correct the problem





27

### Very Few Americans Lead a Healthy Lifestyle


meU

**Only 2.7% of individuals have a "healthy lifestyle,"** defined by:

- Moderate or vigorous exercise for at least 150 minutes a week
- A diet score in the top 40% on the Healthy Eating Index
- A body fat percentage under 20% (for men) or 30% (for women)
- Not smoking

Source: Logstrup PO, Brønnum A, Harbo L, Søren E. Healthy Lifestyle Characteristics and Their Joint Association With Cardiovascular Disease Biomarkers in US Adults. *Mayo Clin Proc.* 2018 Apr;93(4):432-43. doi: 10.1053/j.amcp.2018.03.005. Epub 2018 Feb 20. PMID: 29696902.



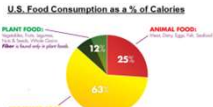
28

### Very Few Americans Eat a Healthy Diet


Figure 13. Dietary Intakes Compared to Recommendations: Percent of the U.S. Population Ages 1 and Older Who Are Below and At or Above Each Dietary Goal.



U.S. Food Consumption as a % of Calories



Source: USDA Economic Research Service, 2016. *How Food Intake Guidelines for Healthy Diet and Health.*






29

### AMERICAN COLLEGE OF Lifestyle Medicine

"For the treatment, reversal and prevention of lifestyle-related chronic disease, the ACLM recommends an eating plan based predominantly on a variety of minimally processed vegetables, fruits, whole grains, legumes, nuts and seeds."

ACLM Dietary Position Statement

30

## Slide 28

---

**me0** can we put an image here- like I did for Nutr?  
melissajabernstein@gmail.com, 2024-03-22T20:16:11.572

### DIETARY SPECTRUM

AMERICAN COLLEGE OF Lifestyle Medicine

**THE AMERICAN COLLEGE OF LIFESTYLE MEDICINE DIETARY POSITION STATEMENT**  
 ACLM recommends an eating plan based predominantly on a variety of minimally processed vegetables, fruits, whole grains, legumes, nuts and seeds.

**WHAT AMERICA EATS**

- Increased risk for Obesity, T2Diabetes, Heart Disease, and some Cancers
- Four out of five is the leading cause of death globally.

**WHOLE FOOD PLANT-BASED EATING PLAN**

- Increase whole plant foods, fruits, vegetables, whole grains, beans, legumes, nuts, seeds, and herbs
- Decrease sweets and snacks, fast food, fried foods, refined grains, refined sugar, meat, dairy, eggs, poultry, high sodium foods
- Increased risk for Obesity, T2Diabetes, Heart Disease, and some Cancers
- Chronic disease treatment and potential reversal

**TIPS FOR IMPROVED NUTRITION AND HEALTH**

- Any movement is better than sitting or standing
- Most assessment found a WFPB eating plan increases impact
- Tailored and sustainable approaches are recommended

31

JAMA Network Open

### Cardiometabolic Effects of Omnivorous vs Vegan Diets in Identical Twins: A Randomized Clinical Trial

Stanford Medicine / Mass Center / Vegan diet improves cardiovascular health

## Twin research indicates that a vegan diet improves cardiovascular health

A Stanford Medicine-led trial of identical twins comparing vegan and omnivorous diets found that a vegan diet improves overall cardiovascular health.

**Abstract**  
**IMPORTANCE:** Existing evidence suggests that, compared with omnivorous diets, a vegan diet is associated with cardiometabolic benefits, but randomized trials for high consumption of plant-based diets are scarce.  
**OBJECTIVE:** To compare cardiometabolic effects of healthy omnivorous and plant-based diets in a randomized clinical trial.  
**DESIGN, SETTING, AND PARTICIPANTS:** The single-center, parallel, double-blind, randomized clinical trial of 20 identical twin pairs was conducted from July 2019 to January 2022. The mean age of the twins at baseline was 49.5 (SD, 10.5) years. The study was approved by the Institutional Review Boards at Stanford University and the University of California, Los Angeles.  
**RESULTS AND CONCLUSIONS:** The healthy omnivorous diet was associated with higher systolic blood pressure, higher LDL cholesterol, and higher triglyceride levels compared with the healthy plant-based diet. The healthy plant-based diet was associated with lower systolic blood pressure, lower LDL cholesterol, and lower triglyceride levels compared with the healthy omnivorous diet.  
**CONCLUSIONS:** This study provides evidence that a healthy plant-based diet is associated with cardiometabolic benefits compared with a healthy omnivorous diet in identical twins.

32

## Design nutrition interventions that can be used in a personalized Lifestyle Medicine approach to patient care

33

## Key Points for Dietitians Prescribing Plant-Based Diets: Well-Planned

AMERICAN COLLEGE OF Lifestyle Medicine

### The Benefits of Plant-Based Nutrition

*"Well-planned plant-based diets can lead to significant improvements in dietary quality and provide a framework for individuals to adjust lifestyle factors to prevent chronic conditions like obesity, hypertension, cardiovascular disease, and type II diabetes."*

*"...However, these diets should be well-planned to meet nutrient requirements and should be high in vegetables, fruits, whole grains, legumes, nuts and seeds, and other whole plant foods. Supplements for vitamin B12, and as needed, vitamin D, should be incorporated."*

34

JAMA Network Open

### Plant-Based Diets Not Always Healthy; Quality Is Key

March 28, 2023

**Original Investigation | Nutrition, Obesity, and Exercise**  
**Association of Healthful Plant-based Diet Adherence With Risk of Mortality and Major Chronic Diseases Among Adults in the UK**

**Abstract**  
**IMPORTANCE:** Plant-based diets have gained popularity for both environmental and health reasons, but a comprehensive assessment of their quality relative to risk of mortality and major chronic disease is lacking.  
**OBJECTIVE:** To assess the association between adherence to a healthful plant-based diet and the risk of mortality and major chronic disease among UK adults.  
**DESIGN, SETTING, AND PARTICIPANTS:** This cohort study included 126 394 middle-aged adults from the UK who were included in the UK Biobank study between 2006 and 2010. The mean age at baseline was 55.5 (SD, 7.5) years. The study was approved by the Institutional Review Boards at the University of Oxford and the University of Liverpool.  
**RESULTS AND CONCLUSIONS:** The findings of this cohort study of 126 394 middle-aged adults from the UK suggest that a healthful PBD was associated with lower risks of CVD, cancer, and total mortality. On the contrary, a plant-based dietary pattern characterized by higher intakes of sugary drinks, snacks and desserts, refined grains, potatoes, and fruit juices was associated with higher risk.  
**CONCLUSIONS:** This study provides evidence that a healthful plant-based diet is associated with lower risks of mortality and major chronic disease compared with an unhealthy plant-based diet in UK adults.

**Graphical Abstract** A comparison of healthy vegetarian diets vs. unhealthy vegetarian diets. Healthy vegetarian diets are high in fiber, vitamins, minerals, and phytochemicals. Unhealthy vegetarian diets are high in refined carbohydrates, added sugars, and sodium.

35

## Plant-Based Diet

- Higher in beneficial nutrients
  - Fiber, Unsaturated Plant Fats, Antioxidants
- Lower in potentially harmful nutrients
  - Sugar, Cholesterol, SFA, Sodium, Food additives and preservatives
- Nutrients of concern for those choosing a WFPB Diet
  - Vitamin B12
  - Vitamin D
- Possible Nutrients of Concern
  - Calcium
  - Zinc
  - Iron

36

## Slide 31

---

**KFO** Revise

Kelly Freeman, 2024-03-28T12:41:07.867



### "Where will I get my protein?"

**Answering the Protein Question When Prescribing Plant-based Diets**

**CONSENSUS**  
 Pershing J. Medicine Family Medicine  
 Case College, ME  
 DISCLOSURES: September 02, 2022

A good starting point for these conversations is to assess how much protein patients are already consuming.

**MYTH:** Most people do not get enough protein.  
**FACT:** The average person consumes too much protein.

**How much protein do you need per day?**  
 56g (150 lbs) / 46g (100 lbs)

The average adult who consumes 80 grams of protein per day, but does not need to weigh that much, is at risk of kidney disease from consuming excess protein, especially when grains, beans, and soybeans are protein sources.

Science supports the use of a whole food, predominantly plant-based dietary pattern for optimal health, including reduced risk for chronic disease, and best practice in treatment of leading chronic disease. But clinicians who prescribe such eating patterns encounter a common concern from patients whose health may benefit.

"Where will I get my protein?"

We've all heard it, and it's understandable. Protein is essential for their health and strength, and animal foods have developed a reputation for being the premier protein sources that humans should prioritize through diet. But widespread misconceptions about human needs for protein have inaccurately equated animal food as the best and only sources of protein.

37

### Protein needs can easily be met by eating a variety of plant foods

**MYTH:** You need to eat animal protein to meet your protein needs.  
**FACT:** Plants foods such as beans, lentils, nuts, whole grains, and veggies provide ample protein, as well as fiber and other essential vitamins, minerals, and phytochemicals not found in animal products such as meat, fish, poultry, eggs, and dairy.

PLANT PROTEIN (per serving)	18g	17g	15g	8g	5g	5g	5g	5g
ADVANTAGES	Red Lentils	Edamame	Black Beans	Almonds	Peanut	Feta	Baked Potato	Spinach
DISADVANTAGES	None	None	None	None	None	None	None	None

**ANIMAL PROTEIN (per serving)**

18g	20g	25g	
Egg	Salmon	Beef	
DISADVANTAGES	Cholesterol	Saturated fat	High in calories

Eating minimally processed whole plant foods such as vegetables, fruits, whole grains, legumes, and nuts lower the risk of diabetes, heart disease, cancer, and promote overall health.

Source: USDA National Nutrient Database

AMERICAN COLLEGE OF Lifestyle Medicine

The American College of Lifestyle Medicine (ACLM) is the nation's medical professional association for physicians, allied health professionals, healthcare executives, and those in professions devoted to transforming health and reducing healthcare through lifestyle medicine.

lifestylemedicine.org

Designed by: Esther Crozier

38

### Key Points for Dietitians Prescribing Plant-Based Diets: Dosage

The position of the ACLM, informed by current best research evidence, is that (1) **sufficiently intensive lifestyle modifications** are capable of producing significant clinical improvements in patients with T2D and (2) that the optimal treatment to bring about remission (defined below) includes a whole food, plant-based (WFPB) dietary pattern coupled with moderate exercise.

The importance of **appropriate dosing** in the context of lifestyle modification can hardly be overstated. **Dosing is of prime therapeutic importance** in a pharmaceutical context; with LM it is no different.

Research shows that **sufficiently intensive dosing** of lifestyle interventions will induce remission in half or more of all subjects with T2D.

**ANALYTIC**  
 Type 2 Diabetes Remission and Lifestyle Medicine: A Position Statement From the American College of Lifestyle Medicine

Adherence Level	Change in Diabetes Remission (Relative to 0%)
Mild Adherence (100-200)	-6.8%
Medium Adherence (118-247)	-3.0%
Least Adherence (270-47)	-0.3%

Figure 2 - Changes in percentage diabetes remission by 5-year adherence levels for the experimental group.

39

### Plants are Powerful

- Americans do not consume fruit and vegetables in high enough quantities
  - Only **1/10** adults meets the federal fruit or vegetable consumption recommendations of 1.5 cups of fruit per day and 2-3 cups of vegetables per day
- Health promoting recommendations for disease prevention and treatment are to consume at least **7-9 servings** of fruit and vegetables per day
  - Ideally the majority of the diet (i.e., a major part of every meal) is made up of plants—fruits and vegetables

Frates B, Bonnet JP, Joseph R, Peterson JA. The nutrition-health connection. In: Frates B, ed. Lifestyle Medicine Handbook: An Introduction to the Power of Healthy Habits. Monterey, CA: Healthy Learning; 2019:178.

40

### Intervention Intensity

**Lifestyle change is not an all-or-nothing proposition, but the higher the level of adherence by patients, the better their results**

Adherence Level	Change in Diabetes Remission (Relative to 0%)
Mild Adherence (100-200)	-6.8%
Medium Adherence (118-247)	-3.0%
Least Adherence (270-47)	-0.3%

Figure 2 - Changes in percentage diabetes remission by 5-year adherence levels for the experimental group.

41

### Disease Severity & Intervention Dosing

**No Disease**      **Mild to Moderate Disease**      **Severe Disease**

**"Hidden Disease"**

Low Risk of Morbidity or Mortality      **Severity of Disease or Risk Factors Spectrum**      High Risk of Morbidity or Mortality

Lifestyle Medicine Dose: **Low Intensity**      Quality of Life      Lifestyle Medicine Dose: **High Intensity**

Source: Dr. Brenda Rex  
 www.lifestylemedicine.org

42

**Sufficient Dosing**

AMERICAN COLLEGE OF Lifestyle Medicine

NUTRITION IN ACTION

Common lifestyle advice from clinicians:

- Eat more fruits and vegetables
- Exercise more

Example of a therapeutic dose of lifestyle medicine that could significantly improve or normalize diabetic biometrics in certain patients with type 2 diabetes:

- Self-care goal: Work toward remission of diabetes with a whole-food, plant-predominant eating pattern.
- Breakfast: No earlier than 8 a.m., 1/2 C. cooked oat or oats, 1/2 C. blueberries, soy milk, M, W, F, and Sat, Tofu scramble, whole food fruit side on T, Th, Sun.
- Lunch: Dark green leafy salad with 1/2 C. cooked quinoa or cooked beans and 2 C. multicolored raw vegetables, light homemade dressing M-F. Vegetable and tofu or bean wrap or burrito Sat and Sun Add 1 C. vegetable soup as desired to satisfy hunger.
- 15-minute walk a half hour after lunch.
- Snack: Apple slices with 1-2 Tbsp hummus or nut butter, if desired.
- Dinner: No later than 6 p.m. Simple dark green leafy salad. Variety of warm, savory dishes as provided on recipe cards. Keep this meal lighter than lunch.
- 15-minute walk a half hour after dinner.

43

**Supporting Your Patients to Make Meaningful Dietary Changes**

Setting goals to improve your eating habits is a great way to eat healthier. An example of a positive nutrition goal is, "I will add 1 cup of berries to breakfast and a small apple or orange as an afternoon snack at least five days this week."

**SMART Goals**

**S** Specific: What specific food would you like to add/change?  
**M** Measurable: How much or how many will you add or change?  
**A** Attainable: Do you have what it takes to follow through?  
**R** Realistic: What can you do? (improvement over perfection)  
**T** Time-Connected: How often or for how long will you make this change?

**Is Your Goal a SMART Goal?**

A SMART resolution is not a basic statement or wish; it is a clear, direct pathway to success, and it's hard to state and you what you want, but what you will do to accomplish it.

Clearly define your goal. Make it specific, measurable, and write down exactly why you want to achieve this goal.

Make your goal measurable. Whatever you want to achieve, make sure you have a way of measuring when you meet your goal. What steps must you take in order to achieve this goal?

Be realistic about how long it'll take to reach your goal, and the steps you're taking to get there.

Your resolution goal can seem hard to be realistic. Writing it down though will put your behind to do the hard keep-up or giving-up.

**Set Healthy Goals**

How to Eat

How to Sleep

How to Move

How to Stay Calm

How to Connect

**Eat Plenty**

- Vegetables
- Marinades
- Fats
- Legumes
- Whole Grains
- Fruits
- Seeds

**Limit/Avoid**

- Sugary drinks (the soda, juice, sweet tea, coffee and energy drinks)
- Processed meats (hot sausage, bacon, salami, bologna, deli meat)
- Processed grains (the crackers, chips, pretzels)
- Candy, pastries, sweets
- Dairy (especially high-fat types with added salt and sugar)
- Red meats
- Alcohol
- Eggs

44

**Lifestyle Medicine = Greater Health Benefits**

**Improvements in**

- Hypertension
- Blood lipids
- BMI- Body weight
- Heart disease
- Mental health
- Depression

**Reduced risk of**

- Dementia
- Musculoskeletal conditions
- Certain forms of cancer
- Stroke
- Obesity
- Depression
- Diabetes
- Heart Disease
- Frailty/Falls

**Remission of**

- Type 2 diabetes
- Metabolic dysfunction-associated steatotic liver disease (MASLD)
- Coronary artery disease (CAD)

45

**Patient Case Study- Meet Ed**

46

**Re-envisioning Clinical Outcomes**

- Health Restoration
- Disease Remission
- Medication De-escalation
- Medication De-prescribing
- Satisfaction with medical care
- Decreased healthcare expenditures
- Quicker recovery times

47

**"Let Food be Thy Medicine"**

Hippocrates  
 -The Father of Medicine-  
 460 BC - 370 BC

48

## Slide 43

---

**me0** QR code pls

melissajabernstein@gmail.com, 2024-03-28T13:11:34.157

## Slide 47

---

**KF0** [@Leslie Casey] Slide 43

Kelly Freeman, 2024-03-06T02:42:56.306

**KF1** [@Kaitlyn Pauly]

Kelly Freeman, 2024-03-06T03:08:28.359

## THE TIME FOR RDNs IS NOW

ORIGINAL RESEARCH & CONTRIBUTIONS  
Special Report  
Nutritional Update for Physicians: Plant-Based Diets  
FAM 2019; 46: 100-110  
DOI: 10.1016/j.fam.2018.11.001

through healthy eating and active living. If we are to slow down the obesity epidemic and reduce the complications of chronic disease, we must consider changing our culture's mind-set from "live to eat" to "eat to live." The future of health care will involve an evolution toward a paradigm where the prevention and treatment of disease is centered, not on a pill or surgical procedure, but on another serving of fruits and vegetables. ❖

49

## LM Nutrition RX

Produce and Plants  
BEFORE  
Pills and Procedures

50

## Lifestyle Medicine Is The Solution

6 KEY DOMAINS OF HEALTH BEHAVIOR:

- Nutrition
- Physical activity
- Restorative Sleep
- Stress management
- Social connection
- Avoiding risky substances

51

## Objective 3

Identify therapeutic lifestyle intervention opportunities, tools, and resources to advance knowledge and skills

52

## The American College of Lifestyle Medicine

53

## Who We Are

**Our mission**  
Advancing evidenced-based lifestyle medicine to treat, reverse and prevent non-communicable, chronic disease



**Our vision**  
A world wherein lifestyle medicine is the foundation of health and all healthcare

54

### Lifestyle Medicine 101 Curriculum

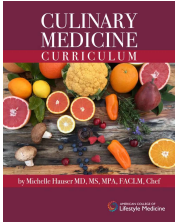

- 13 modules follow the Lifestyle Medicine Handbook by Beth Frates, MD, Jon Bonnet, MD, Richard Joseph, MD and Jim Peterson, PhD
- Accompanied by the Lifestyle Medicine Course Syllabus and Instructor's Manual
- Collaboration with Michelle Tollefson, MD and Gia Merlo, MD

[lifestylemedicine.org/lm101](http://lifestylemedicine.org/lm101)

55

### Culinary Medicine Curriculum

56

### LMed Strategic Partnership

LMed provides open access, evidence-based lifestyle medicine curricular resources to build knowledge, skills and advocacy in clinicians for the prevention and treatment of lifestyle-related chronic disease.




[www.lifestylemedicineducation.org](http://www.lifestylemedicineducation.org)

57

### Foundations of Lifestyle Medicine




**FOUNDATIONS OF LIFESTYLE MEDICINE**  
An introductory curriculum for medical students

Chronic conditions such as heart disease, cancer and Alzheimer's disease are the leading causes of death in the United States and around the world. The good news is that approximately 80% of chronic conditions can be prevented or reversed with simple lifestyle measures. It is more important than ever before for future healthcare professionals to be skilled in working with patients to prevent, treat and reverse chronic disease.

Foundations of Lifestyle Medicine for Medical Students is a comprehensive curriculum designed to help students learn about the role of lifestyle factors in preventing and treating chronic diseases. This thoughtfully developed document is now available as a free resource for educators, students and staff.

58

### Taste of Lifestyle Medicine

**Apply for a Grant:**




- Any health care student or faculty member may apply
- Funding is for a plant-based meal or snacks
- Grants range from \$50-\$250 dollars
- Only one grant per event
- May apply for up to 4 grants in a year
- US Schools are eligible




[Lifestylemedicine.org/tolm](http://Lifestylemedicine.org/tolm)

59

### LM Assessment Tools

Complimentary LM Assessment Tool

60

**Ardmore Institute of Health**  
Home of Full Plate Living

American College of Lifestyle Medicine Designates the Ardmore Institute of Health's Full Plate Living Program a Certified Lifestyle Medicine Program

Full Plate LIVING

61

61

### Example Provider Toolkits

Complimentary Download

**BEYOND THE NUMBERS:**  
A LIFESTYLE MEDICINE APPROACH  
TO PEDIATRIC OBESITY  
TOOLKIT

**IMPLEMENTING LIFESTYLE MEDICINE**  
in Community Healthcare Settings

62

62

### Journal of Family Practice

63

63

### Guidance Documents

Complimentary Access

64

64

### Complimentary Webinars

Remission: Tackling Type 2 Diabetes with Lifestyle Medicine

Tuesday, April 30th | 11:00AM CT  
Remission: Tackling Type 2 Diabetes with Lifestyle Medicine  
Mahima Gulati, MD, DipABLM & Geena Nida, MD, DipABLM

REGISTER NOW

65

65

### Complimentary Patient Resources

66

66

## Scholarships and Grants

67

67

## Lifestyle Medicine and Food As Medicine Essentials Course

**5.5 hours of Free CME/CE Credit**

This Course provides a foundational, evidence-based introduction to the field, focusing on nutrition education for the prevention and treatment of chronic disease.

- Introduction to Lifestyle Medicine module (1 hour)
- Food as Medicine: Nutrition for Prevention and Longevity module (3 hours)
- Food as Medicine: Nutrition for Treatment and Risk Reduction module (1.5 hours)

[lifestylemedicine.org/essentials](https://lifestylemedicine.org/essentials)

68

68

## Implementation Tools and Models

HSC Implementation Brief - Kellyn Foundation  
[ACCESS NOW](#)

HSC Implementation Brief - Midland Health Diabetes Reversal Program  
[ACCESS NOW](#)

HSC Implementation Brief - North Star Health Primary Care within FQHC  
[ACCESS NOW](#)

69

69

## ACLM Academic Pathways

- An opportunity for health professions faculty to add lifestyle medicine (LM) content to their master's and doctorate courses that aligns with the global lifestyle medicine competencies
- Students work on prerequisites toward American College of Lifestyle Medicine (ACLM) certification while still in their educational program

Excellent opportunity for nutrition and dietetics programs

70

70

## Certification

**Demonstrate your knowledge related to implementing therapeutic lifestyle interventions in clinical practice:**  
Join over 6,000 Healthcare Professionals globally who have become Diplomates of ABLM/ACLM

71

71

72

72

## Slide 70

---


**KF0** [@Leslie Casey] Want to add something like this to the Intro to LM slide deck?

Kelly Freeman, 2024-03-06T02:52:37.617

**KF1** [@Kaitlyn Pauly]

Kelly Freeman, 2024-03-06T03:09:19.157





**THANK YOU**

**Melissa Bernstein**  
[melissa.bernstein@rosalindfranklin.edu](mailto:melissa.bernstein@rosalindfranklin.edu)

**Kelly Freeman**  
[kfreeman@lifestylemedicine.org](mailto:kfreeman@lifestylemedicine.org)