Food as a Means of Preventative Medicine: Taking the Challenge

Chef Leah Sarris, Program Director
John Martin, 4th Year Medical Student
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• High incidence of food and obesity-related illnesses such as diabetes, cardiovascular disease and hypertension

• More than one-third of US adults (34.9%) and approximately 17% of children and adolescents are obese.

Centers for Disease Control
Obesity Trends* Among U.S. Adults

BRFSS, 1990, 2000, 2010
(*BMI ≥30, or about 30 lbs. overweight for 5’ 4” person)

Centers for Disease Control and Prevention; www.cdc.gov
Obesity Trends* Among U.S. Adults

BRFSS, 2010

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)

Centers for Disease Control and Prevention; www.cdc.gov
Top 10 Causes of Death in US (CDC)

1. Heart Disease
2. Cancer
3. Chronic Lower Respiratory Disease
4. Stroke
5. Accidents
6. Alzheimer’s Disease
7. Diabetes
8. Kidney Disease
9. Influenza/Pneumonia
10. Suicide

Centers for Disease Control and Prevention; www.cdc.gov
Every Day Occurrences

- High Cholesterol
- Diabetes
- Heart Disease
- Hypertension
Every Day Occurrences

Cholesterol

Diabetes

FOOD

Heart Disease

Hypertension
~600,000 deaths in US every year (1/4 deaths)

Centers for Disease Control and Prevention; www.cdc.gov
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Leading cause of death for both men and women.

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Heart Disease

~600,000 deaths in US every year (1/4 deaths)

Leading cause of death for both men and women.

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$108.9 billion each year.

Centers for Disease Control and Prevention; www.cdc.gov
29.1 million people (9.3% of population)

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$245 billion each year

Mediterranean Diet is about ingredients.
Nine dietary components

*Mediterranean Diet Score from 0 – 9*

depending on the ingredients and amounts consumed daily
Ancel Keys, PhD

(100)
Lyon Heart Study

Prospective study of 605 first heart attack patients

2 groups:

- study given instruction Med Diet
- control told to follow a “prudent” diet.
**Lyon Heart Study**

Prospective study of 605 first heart attack patients

2 groups:

- study given instruction Med Diet
- control told to follow a “prudent” diet.

Study group with a **50 - 70 %** reduction in second event
Adherence to a Mediterranean Diet and Survival in a Greek Population - Antonia Trichopoulou

22,000 study population
Prospective Design
Significant reduction coronary disease AND cancer
A 2 point improvement from 5 – 7 confers a **25% reduction in death from all causes** including heart disease and cancer.

(Trichopoulou *NEJM* 2003; 348: 2599 - 2608)
Mediterranean Diet

9 Components

- Vegetables
- Legumes
- Fruits & Nuts
- Cereals and Whole Grains
- Fish
- Oils/Fats
- Dairy
- Meats
- Alcohol
Mediterranean Diet

1. Vegetables
Vegetables are essential to any healthy diet.

Each additional serving of fruit and vegetables per day reduces your risk of heart disease by 4%.

Male > 10.8 ounces  
Female > 8.9 ounces  

(~2-3 cups/day)
2. Legumes
Legumes are lentils, peas, peanuts, snap beans, bean pods, okra, chick peas…

Eating legumes 4 x or more per week reduces the risk of heart disease by as much as 22%.

Male > 2.1 ounces
Female > 1.75 ounces

(~2 ½ cups/week)
3. Fruits and Nuts
Fruits and Nuts are grouped together in this diet.

Avoid fruit juice and instead eat whole fruit because the added fiber will keep you full.

Male > 8.9 ounces
Female > 7.7 ounces

(~2-3 servings/day)
Mediterranean Diet

4. Cereals and Whole Grains

- Vegetables
- Legumes
- Fruits & Nuts
- Cereals and Whole Grains
- Fish
- Oils/Fats
- Dairy
- Meats
- Alcohol
Whole Grains include foods like corn, popcorn, brown or wild rice, whole/multigrain bread, quinoa…

For cereals and breads, check the ingredient list – make sure the phrases “whole grain” or “whole wheat” are used first and not just “wheat.”

Male > 10.4 ounces
Female > 8.9 ounces

(~2-3 serving/day)
5. Fish & Seafood
Seafood in general is a great choice, but fatty fish is considered ideal because it is high in omega-3 fats.

Male > 1 ounces
Female > .75 ounces

(~2 servings/WEEK)
6. Oils and Fats
It’s the **quality**, not the **quantity** of fats that is important.

Many people think of olive oil when they consider the Mediterranean diet, but it is actually the ratio of unsaturated to saturated fats that is key.

**Ratio of 1.6 : 1**

(unsaturated : saturated)
7. Dairy
Dairy is consumed less in Mediterranean countries and they don’t drink milk as a beverage.

Focus on fermented and reduced-fat dairy products, like yogurt and aged cheese.

Male < 7.2 ounces
Female < 6.9 ounces
8. Meats
Meat is consumed in higher quantities than seafood, but it is leaner.

Avoid processed meats like bologna and hotdogs.

Male < 3.9 ounces  
Female < 3.25 ounces  
(~1 serving/day)
9. Alcohol
Alcohol is part of the Mediterranean diet and is generally consumed at meals.

However, this does not mean that if you do not currently drink you need to start now!

Male ~ 2-2.5 drinks
Female ~ 1-1.5 drinks
Effects of a Mediterranean-Style Diet on the Need for Antihyperglycemic Drug Therapy in Patients With Newly Diagnosed Type 2 Diabetes


4 years, 215 participants – **Prospective**
New onset diabetics
Endpoint: Medication
Effects of a Mediterranean-Style Diet on the Need for Antihyperglycemic Drug Therapy in Patients With Newly Diagnosed Type 2 Diabetes


4 years, 215 participants – **Prospective**

New onset diabetics

Endpoint: Medication

After 4 years only 44% in the study group needed medication

70% of the standard low-fat diet needed medication

26% difference with diet alone
Mediterranean Dietary Pattern and Prediction of All-Cause Mortality in a US Population Results From the NIH-AARP Diet and Health Study (Arch Intern Med. 2007;167(22):2461-2468)

In 1995 - 380,000 members of the AARP – Prospective
No history of cancer, heart disease, diabetes, chronic disease.
Five years of follow-up
Causes of death in the over 12,000 subjects who had died during Correlated with each subject's dietary score.

• For men, those with higher levels of the Mediterranean Diet score (7-9) were 23% less likely to die from any cause, including cancer and heart disease, than those whose diets received the lowest scores (0-3).
• Women saw a 14% lower risk of death from cancer.
• An increase of just one point in the dietary score meant an additional 5% reduction in risk of death from all causes.
Physicians as Salespeople

Physicians Habits

1. Medical Students

Medical Student Nutrition and Culinary Education

A Kitchen Theater to demonstrate cooking techniques and Cooking Stations for hands-on learning.
2. Community Education

Six Week Classes at three different levels (beginner, intermediate, advanced) teaching the community everything from recipes, shopping, nutrition information and hands-on cooking classes.
3. Johnson & Wales University

Collaboration with the leading degree-granting culinary school in America on curriculum development, Masters of Culinary Nutrition program, research and continuing education.
Continuing Medical Education

Education of practicing physicians, nurses, clinical staff, allied health practitioners and staff as well as culinarians.
• Comprehensive knowledge of nutrition & culinary techniques to prepare food consistent with real-world budgets, time constraints and nutritional ideals
• 60 credit hours, including 12 hours hands-on
• MD, DO, PA, RD, APRN, NP, PharmD, RPh
• Partnership with NAACME
• www.culinarymedicinecertified.com
5. Research

A fully equipped Research Kitchen that allows collaboration of investigators both at Tulane and partnership with other research institutions. The space can work for many collaborations including partnering with academic and community resources.
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The Challenge

Breakfast, Lunch, Dinner & Snacks
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Family of 4, 1 week
Breakfast, Lunch, Dinner & Snacks

Family of 4, 1 week

<$150
How do we do this?

- Plan, plan, plan!
- Cross-utilize & repurpose ingredients
- Be flexible at the store (look at circulars)
- Focus on plant-based proteins & bulk grains
- Make 5 minute meals
- Don’t feel like you have to cook 21 meals
- Utilize seasonal & local ingredients
- Ask your grocer for products!
- Don’t be fooled by gimmicks
- Shop the perimeters
The Menu

Breakfast
1. Oatmeal with Nuts x2
2. Cereal with Fruit
3. Eggs & Toast x 2
4. Yogurt Cottage Cheese & Fruit
5. Toast & Peanut Butter
Dinner
1. Vegetarian Chili
2. Tacos with Corn Relish
3. Red Beans & Rice
4. Fish, Rice Pilaf, & Veg
5. Tuna Casserole
6. Roasted Chicken & Sweet Potatoes with Sauteed Greens
7. Chicken & Rice Soup
Lunch
1. Salad with Bean & Rice Patties
2. Tuna Casserole (leftover)
3. Chili Nachos
4. Chicken Salad
5. Sweet Potato & black bean tacos with Greens
6. Peanut Butter & Jelly
7. Chicken Soup (leftover)


Snacks
1. Salted Sunflower Seeds
2. Apples
3. Hardboiled Eggs
4. Popcorn
5. Veggie Sticks with Herb Dip
6. Roasted Broccoli Bites
One Pot Bean Chili
&
Roasted Chicken with Roasted Sweet Potatoes and Sautéed Greens
Reduced risk of:

• All-cause mortality
• Cardiovascular disease mortality
• Cancer mortality

In patients with T2DM:
• Delayed start of anti-hyperglycemic drugs

You are a catalyst for change!

Patients who receive lifestyle advice prior to intervention were more likely to:

• Remember the materials
• Show them to others
• Perceive the materials as applying to them personally

How Do We Apply this?

For patients:
• Start small
• Plan in advance
• Prepare in bulk
• Cross-utilization

For providers:
• Personal behavior → ability to motivate, credibility
How Do We Apply this?
How Do We Apply this?
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How Do We Apply this?
The Goldring Center for Culinary Medicine

TULANE UNIVERSITY
Sign up for our Mailing List!

Website: www.culinarymedicine.org (sign up for cooking classes)

Facebook: Goldring Center for Culinary Medicine

Twitter: @culinary_med

Contact: lsarris@tulane.edu