

# Healthful Aging: Do Diet and Lifestyle Really Matter?

**Gary H. Oberlender, MD, FACP**

**Consultant in Geriatric Medicine**

**[www.SeniorEvaluations.com](http://www.SeniorEvaluations.com)**

**Parsec Financial Longevity Forum**

**June 22, 2022**

**Charlotte, NC**

# Human Genetic and Cultural Evolution (Approx.)

<b><u>Years ago</u></b>	<b><u>Event</u></b>
<b>3,000,000</b>	<b>Homo habilis</b> Earliest known humans (0.05% of age of Earth)
<b>45,000</b>	<b>Homo sapiens</b> Modern humans
<b>10,000</b>	<b>Beginnings of agriculture and settlement living</b>
<b>160</b>	<b>Industrialization of food</b>

# Early Humans

3,000,000 to 45,000 years ago

- **A wandering hunter-gatherer lifestyle centered on food**
  - **Hunters: Wild game, fish, fowl, insects, crustaceans, mollusks**
  - **Gatherers: Fruits, vegetables, roots, berries, nuts, seeds, honey, firewood**

# Early Humans

3,000,000 to 45,000 years ago

- **Daily physical activity**
- **Group living, daily social interactions**
- **Daily exposure to the natural environment**
  - **Seasonal rhythms, abundant sunlight**
- **Dark nights with plenty of sleep**
- **Hunter-gatherer diet: Unprocessed, rich in protein and fat, low in carbohydrates**

McPherson JM, et al. Amer Social Rev, 2006  
Ilardi SS. The Depression Cure, 2009

# Modern Humans

## 45,000 Years Ago to Present Time

- **That's us!!**
- **Genetically we are the same people as our hunter-gatherer ancestors**

# Modern Humans

10,000 Years Ago to Present Time

## ■ Advent of agriculture

### ■ Reliable food sources

- Domestication of livestock
- Development of cereal crops
- Ability to preserve and store hay and grains

### ■ Settlement living

- Tribes--villages--towns--cities--nations
- Gradual industrialization

# Modern Humans

## Industrialized Lifestyle

- **Sedentary lifestyle**
- **Limited social interaction (esp. families)**
- **Disconnect with natural environment**
  - **Controlled living environments**
  - **Artificial light at night**
  - **Limited sunlight exposure: Vit D deficiency**
- **Sleep disturbances**
- **Industrialized diet: Mass produced, processed, additive laden, carbohydrate-rich**

# Evolution of the Human Diet

## Dietary Constituents

	Pre-Agricultural	Modern
Vitamin C mg/day	440	90
Ca <sup>++</sup> mg/day	1,500+	740
Na <sup>+</sup> mg/day	80	6,000+
Fiber gm/day	100+	20
Carbohydrates (%kcal)	20 to 40	55 to 75
Sucrose* (% kcal)	0	19
Protein (% kcal)	33	12 to 16
Fat (% kcal)	21	34 to 42
Ω-3 to Ω-6 ratio	1:3	1:25

\*Sucrose = 50% glucose, 50% fructose

# Disease and Infirmary in Modern Life

- **Obesity**
- **Type 2 diabetes**
- **Arthritis**
- **Cancer**
- **Dementia**
- **Depression**
- **Atherosclerosis**
  - **Coronary artery disease (CAD)**
  - **Congestive heart failure (CHF)**
  - **Stroke and diffuse cerebral atherosclerosis**

# Disease and Infirmary in Modern Life

- **Infrequent in contemporary hunter-gatherer societies**
  - North American Eskimo and Inuit
  - African Masai
  - Australian Bandi

Teicholz N. The Big Fat Surprise  
Simon & Schuster, 2014

# Disease and Infirmary in Modern Life

- **Could there be a common underlying cause?**
- **Chronic inflammation?**
  - **Diet?**
  - **Lifestyle?**
  - **Dietary and environmental toxins?**
  - **Others...?**

# Depression

## Lifestyle Practices That Reduce Risk

- **Regular exercise**
- **Socialization, meditation, prayer**
- **Regular sunlight exposure**
- **Adequate sleep**
- **Balanced nutritious diet**
  - **30% reduced incidence**

Ilardi SS. The Depression Cure, 2009

Amer Geriatr Soc, Geriatr Rev Syst, 10<sup>th</sup> Ed., 2019

Ann Int Med. In the Clinic: Depression, 2021

# Treating Depression

## Multi-Faceted Approach

- **Empathy and education**
- **Counseling and psychotherapy**
- **Exercise**
- **Outdoor activities**
- **Supportive social network**
- **Adequate rest and sleep**
- **Balanced nutritious diet**
- **Antidepressant drug therapy**

# What is a Healthy Human Diet?

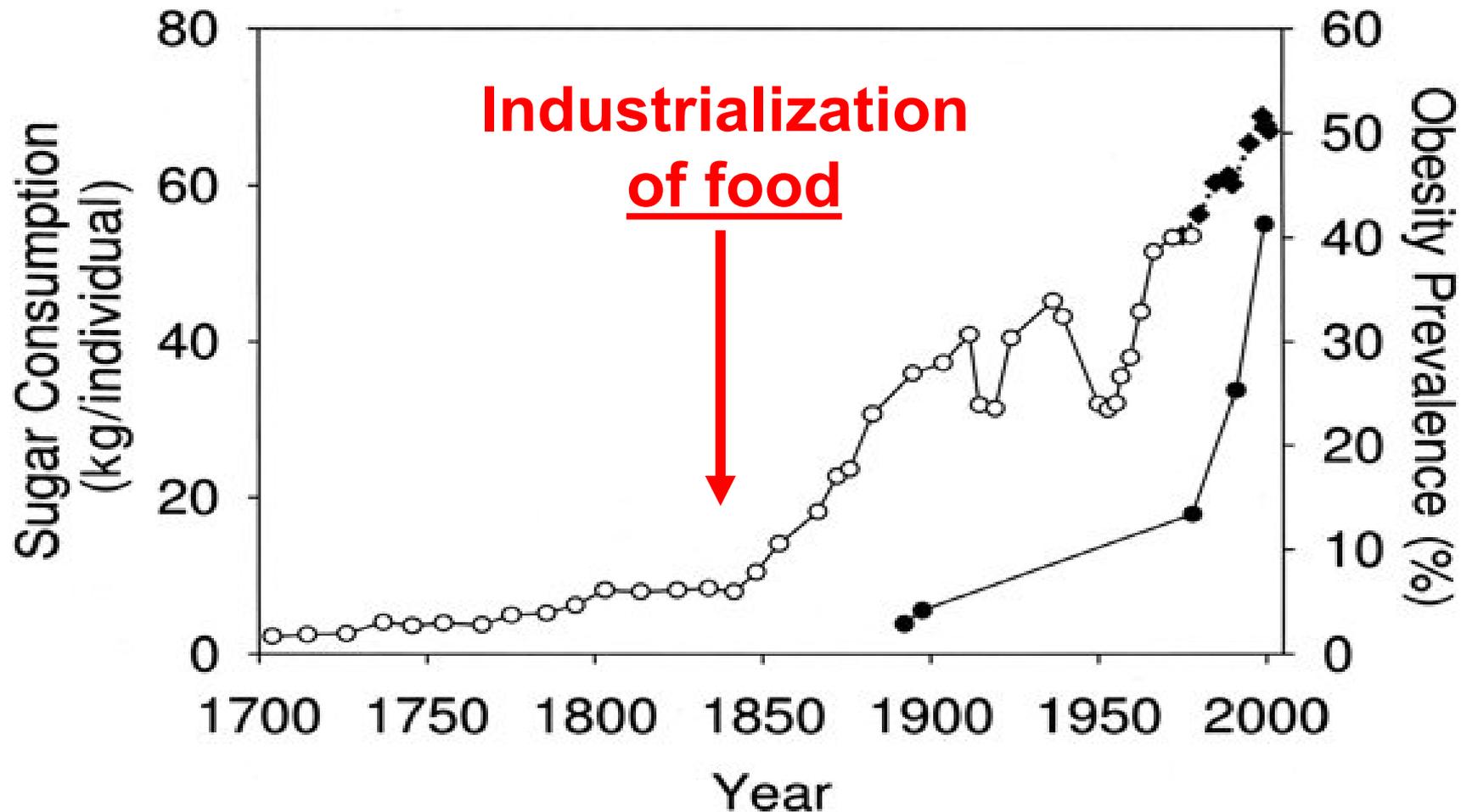
- What evidence based dietary advice can health care providers offer to:
  - Reduce or prevent sickness and infirmity?
  - Maximize chances for a long healthful life?

# Evolution of the Human Diet

## Industrialization of Food

- **Mass produced animal products**
  - **Beef, lamb, pork, dairy products**
    - **Grass-fed and free ranging vs. Grain-fed and kept up**
  - **Poultry and eggs**
    - **Free ranging vs. Cooped**
  - **Seafood**
    - **Wild caught vs. Farm raised**

# Sugar Consumption USA, 1700-2000



# Sweetened Soft Drinks



## High fructose corn syrup

- 65% fructose
- 35% glucose

# Naturally Occurring Fructose

- **Essentially, the only free sugar eaten by hunter-gatherers**
  - Ripe fruit and berries, honey
  - Accompanied by fiber, antioxidants, and other whole food constituents
- **Infrequently encountered by hunter-gatherers**
  - We evolved to store fructose calories when we find them

# Genetics and Epigenetics

- **Genetics**— The genes we inherit
- **Epigenetics**—Diet and other external factors that ***modify gene expression***
  - **Example:**
    - Eating fructose activates genes that shunt calories into storage (fat)
      - Abdomen, thighs, buttocks, hips

# Carbohydrates in the Modern Diet

- **Root vegetables and fruits**
- **Sugars added to processed food**
  - “Snack foods” are essentially sugar and salt
  - Cereals marketed to children are all sugar
- **Sweetened soft drinks**
- **Everything processed from flour**
  - Breads, bagels, pasta, crackers, cakes, cookies, pizza dough...

# Carbohydrates in the Modern Diet

- **Digested and absorbed relatively quickly**
- **Raise blood sugar (glucose)**
- **Require insulin to be metabolized**

# Insulin

- **Hormone secreted by pancreas in response to rising blood glucose**
- **Excessive insulin over time**
  - **Occurs with high carb diets**
  - **Leads to insulin resistance**
    - **Type 2 diabetes--Insulin resistance and high blood glucose**
  - **Greatly accelerates atherosclerosis**

# Heart Disease and Diet

## Mainstream Thinking, 1925 thru 2012

### ■ Facts:

- **Narrowed and blocked arteries cause heart attacks and stroke**
- **“Atherosclerotic plaque” is what narrows and blocks arteries**
- **Atherosclerotic plaque is composed of fat and cholesterol**

# Heart Disease and Diet

## Mainstream Thinking, 1925 thru 2012

### ■ Assumption:

- The fat and cholesterol in atherosclerotic plaque must come from fat and cholesterol in our diets
- Unfortunately, this assumption was based on severely flawed studies

# Heart Disease and Diet

## Mainstream Thinking, 1925 thru 2012

- **“Heart healthy” recommendation:**
  - **Eat a low fat, low cholesterol diet**
- **Challenge:**
  - **Removing fat and cholesterol from food reduces taste and palatability**

# Heart Disease and Diet

## Mainstream Thinking, 1925 thru 2012

### ■ Solution:

- Add sweeteners, carbohydrate thickeners and fillers, and artificial flavors to enhance taste and palatability

### ■ Result:

- *“Low fat” means high carbohydrate*

# Heart Disease and Diet

- **Yes, but I only use artificial sweeteners...**
- **Equal, NutraSweet (Aspartame)**
- **Neotame (Neotame)**
- **Sweet 'N Low, Sugar Twin, (Saccharin)**
- **Splenda (Sucralose)**
- **Sunett, Sweet One (Acesulfame)**

# Artificial Sweeteners and Detoxification

- **Artificial sweeteners are synthetic chemicals that taste sweet**
  - **The body sees them as toxins to be removed**
  - **Stevia**
    - **Naturally occurring zero calorie sweetener**

# Artificial Sweeteners and Detoxification

- **Humans have capacity to neutralize food and environmental toxins**
  - **Evolved in the setting of occasional exposure**
- **What is the effect of daily toxin exposure?**
  - **Could this contribute to inflammation?**

# Dietary Protein and Fat

- **Digested and absorbed relatively slowly**
- **Require very little insulin to be metabolized**
  - **Suppress ghrelin**
    - **The “hunger hormone”**
  - **Stimulate leptin**
    - **The “satiety hormone”**

# Cognitive Decline

- **Aging is generally associated with gradual cognitive decline**
  - **Not universal**
    - **Some people experience cognitive decline while others don't**
  - **Is cognitive decline part of normal aging?**
  - **Or could it be a consequence of our industrialized lifestyle?**

# Diet and Cognitive Decline

- **DASH diet**
  - Unlimited fresh fruits and vegetables
  - Lots of nuts, seeds, whole grains, fish
  - Moderate intake of meat, dairy, red wine
- High compliance with DASH diet **strongly associated with preserved cognitive function**
  - People who eat healthy diets often have other healthful lifestyle habits

# What is a Healthy Human Diet?

- **“Eat real food, not too much, mostly plants”**

Michael Pollan. In *Defense of Food*, 2007

- **“Everything in moderation, including moderation”**

Oscar Wilde. circ. 1885

# Healthful Aging and Sleep



**Remember: We evolved over 3,000,000 years with long dark nights and plenty of sleep**

# Insomnia in Modern Life

- **> 60% of seniors experience intermittent or persistent insomnia**
- **Increases risk of:**
  - **Alcohol abuse**
  - **Weight gain, type 2 diabetes, high blood pressure**
  - **Atherosclerosis**

# Insomnia

## Common Underlying Causes

- **Depression or generalized anxiety**
- **Adverse drug effect**
  - Alcohol, caffeine, antidepressant medication
- **Poorly controlled medical condition**
  - CHF, COPD, diabetes, arthritis, GERD
- **Insufficient dietary fat intake**
  - Middle-of-the-night hunger
- **Poor sleep hygiene**

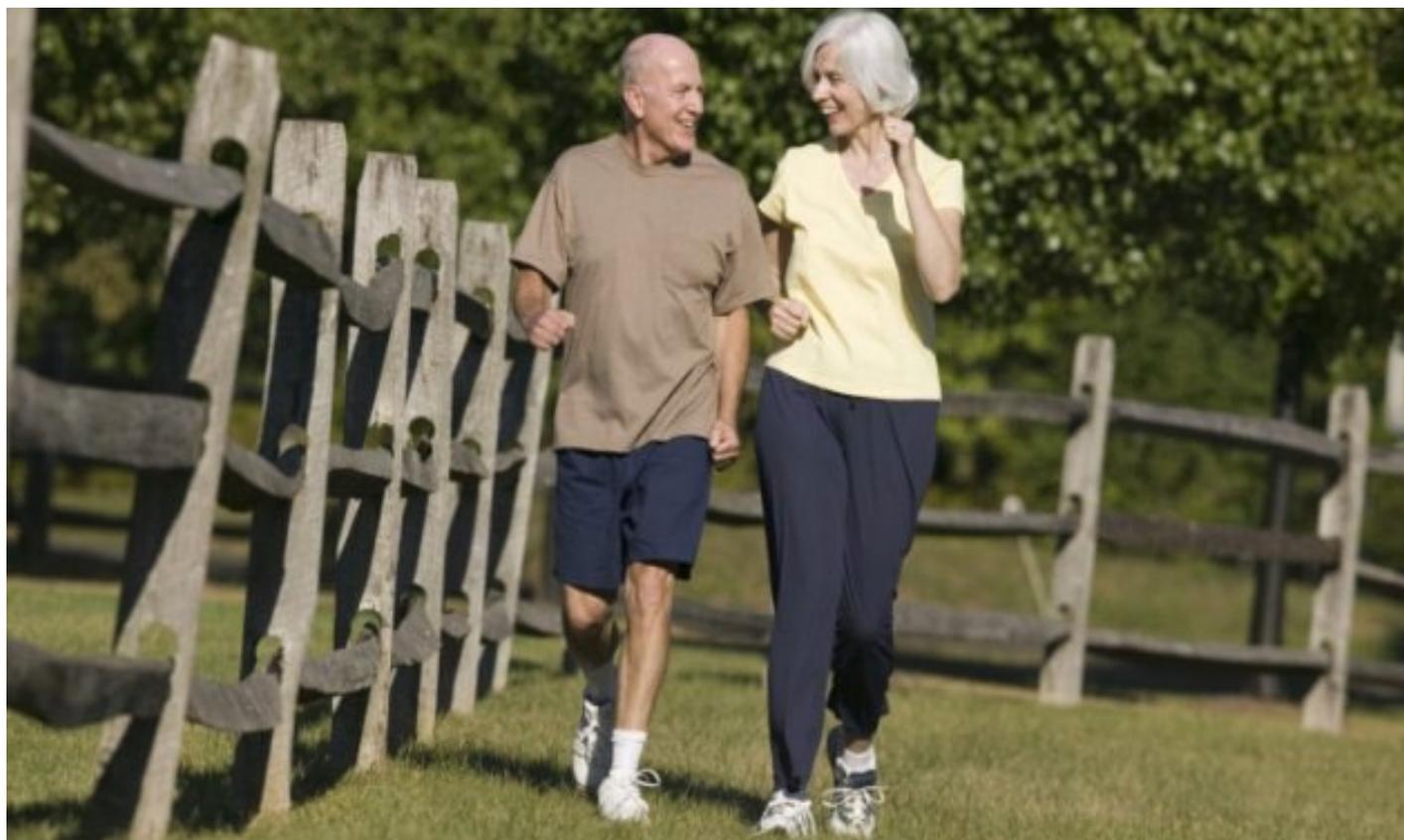
# Poor Sleep Hygiene

- **Evening alcohol use**
- **Bright light stimulation before bed**
  - **TV, computer, iPad, cell phone**
- **Unrealistic expectations**
  - **How much sleep do seniors need?**
  - **Does sleep need to be continuous?**
    - **Cultures with “second sleep”**

# Addressing Your Insomnia

- **Learn about healthy sleep hygiene**
- **Increase your physical activity**
- **Critically assess your alcohol use**
- **Speak with your primary care provider**
  - **Depression and anxiety**
  - **Your current med list**
- **Consider counseling or psychotherapy**

# Healthful Aging and Exercise



# Exercise After Age 65

## “What’s Not to Like?”

- **Reduces cardiovascular risk**
  - **Lowers blood pressure**
  - **Lowers bad (LDL) cholesterol**
  - **Raises good (HDL) cholesterol**
  - **Improves insulin sensitivity**
  - **Prevents type 2 diabetes in pre-diabetics**
  - **Improves sleep**

# Exercise After Age 65

## “What’s Not to Like?”

- **Reduces risk of dementia and depression**
  - **Reduces stress**
  - **Stimulates curiosity and creativity**
  - **Enhances social interaction**
  - **Improves self-image**
  - **Provides pleasure and fun**

# Exercise After Age 65

## “What’s Not to Like?”

- **Improved gait and balance**
  - **Increases strength and stamina**
  - **Reduces risk of falls**
  - **Increases bone density**
  - **Reduces joint pain and improves joint flexibility**
  - **Facilitates weight loss and maintenance of ideal body weight**

# What's The Best Exercise?

- **The exercise you'll do!**
  - **Enjoyable**
  - **Sociable**
  - **Fun**
  - **Feels good afterwards**
- **We evolved to walk**

# Practical Evidence-Based Advice 2022

## 1. Reduce your intake of processed carbohydrates

- Breads, bagels, pasta, crackers, cakes, cookies, pizza dough, pastries, etc.
- Give up soft drinks
- Eat whole grains

# Practical Evidence-Based Advice 2022

## 2. Eat *real food*

- “Food your grandmother would recognize”
- Every day:
  - Fresh fruits, fresh vegetables, berries, and a handful of mixed nuts and seeds

# Practical Evidence-Based Advice 2022

## **3. Eat more protein and don't worry about the fat**

- **Grass fed meats, free ranging poultry and eggs**
- **Wild-caught cold water fish**
  - **Salmon, herring, cod, halibut, shellfish**
- **Whole fat dairy products**

# Practical Evidence-Based Advice 2022

## 4. Get active !!

- **Swimming, biking, pickleball, gardening, *walking* 18 holes....**
- **Group exercise, water aerobics**
- **Exercise outdoors when possible**
  - **Daylight exposure**
  - **Natural environment**

# Practical Evidence-Based Advice 2022

## **5. Improve your sleep**

- **Don't use sleep aids—they are hazardous for seniors !!**
  - **Ambien, Lunesta, Unisom, Belsomra, others**
- **Address your insomnia as noted**

# Practical Evidence-Based Advice 2022

## **6. Socialize, relax, appreciate**

- **Adult education, enjoyable reading, lectures, concerts, plays, community events**
- **Religious functions, prayer, meditation groups**
- **Express gratitude**
  - **Reduces body aches, improves sleep**