



Does an Apple a Day Really Keep the Doctor Away?

DEMYSTIFYING THE
WHOLE-FOOD,
PLANT-BASED DIET

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I have no financial disclosures..

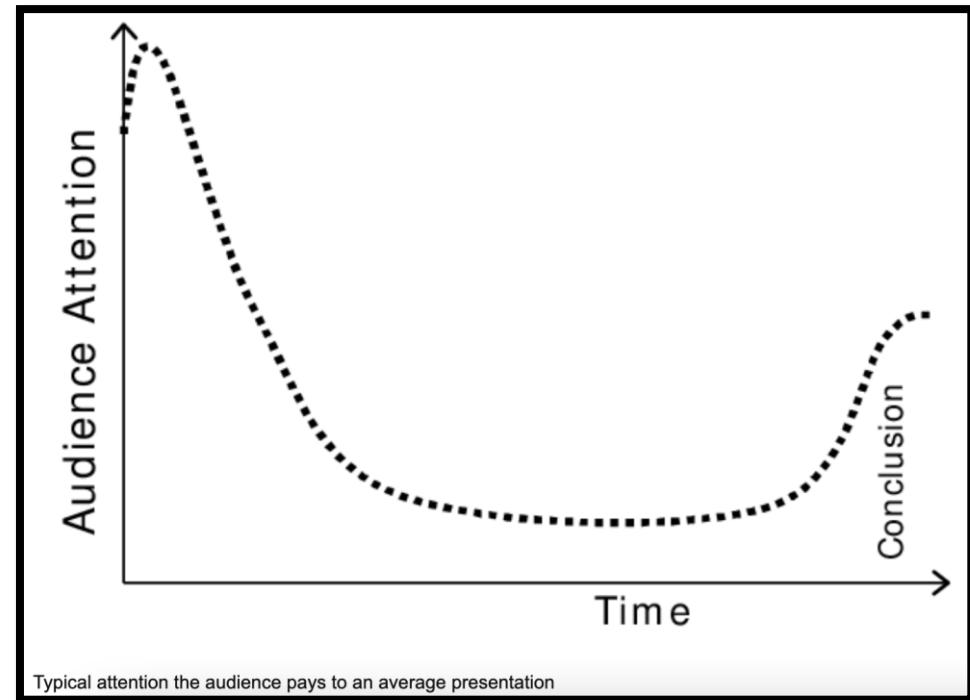


Learning Objectives

1. Describe the effectiveness of a WFPB diet in preventing and treating chronic medical conditions common in older adults
2. Identify common misconceptions regarding the WFPB diet
3. Develop strategies for discussing a WFPB diet with older adults, recognizing the barriers to implementation and how to overcome them

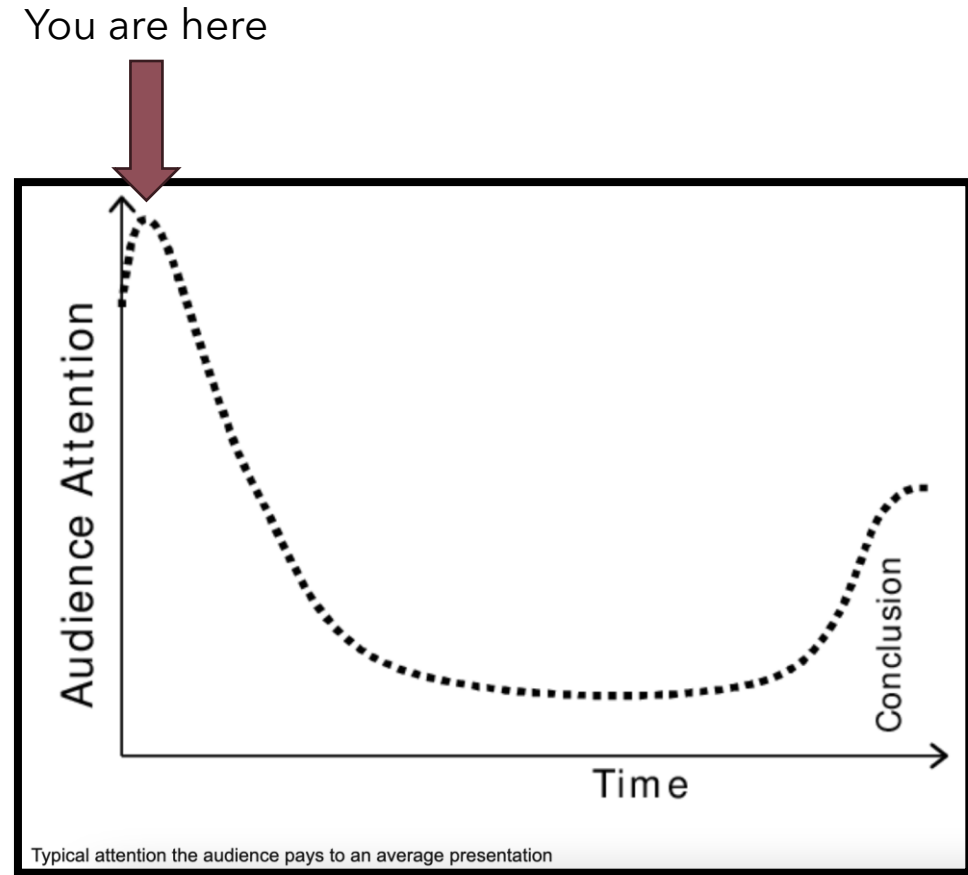
Presentation Roadmap

1. Brief overview of what a WFPB diet is
2. The evidence behind a WFPB diet
3. Common misconceptions about the WFPB diet
4. Barriers to implementing a WFPB diet
5. Approach with patients

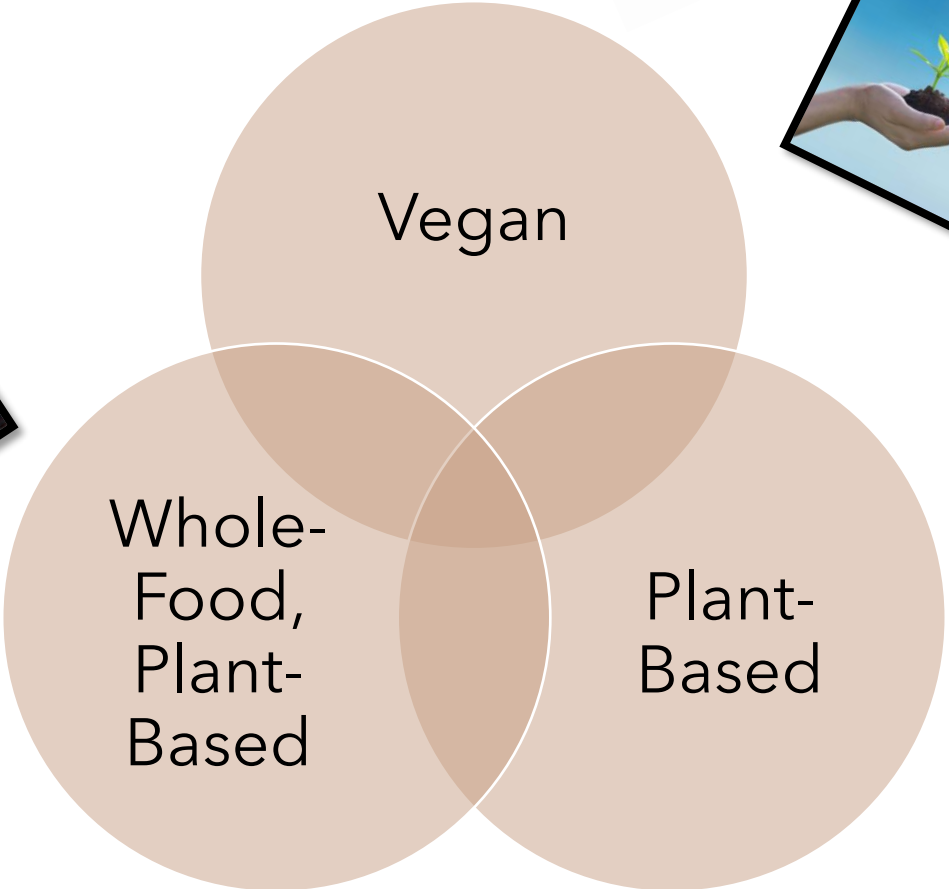


Presentation Roadmap

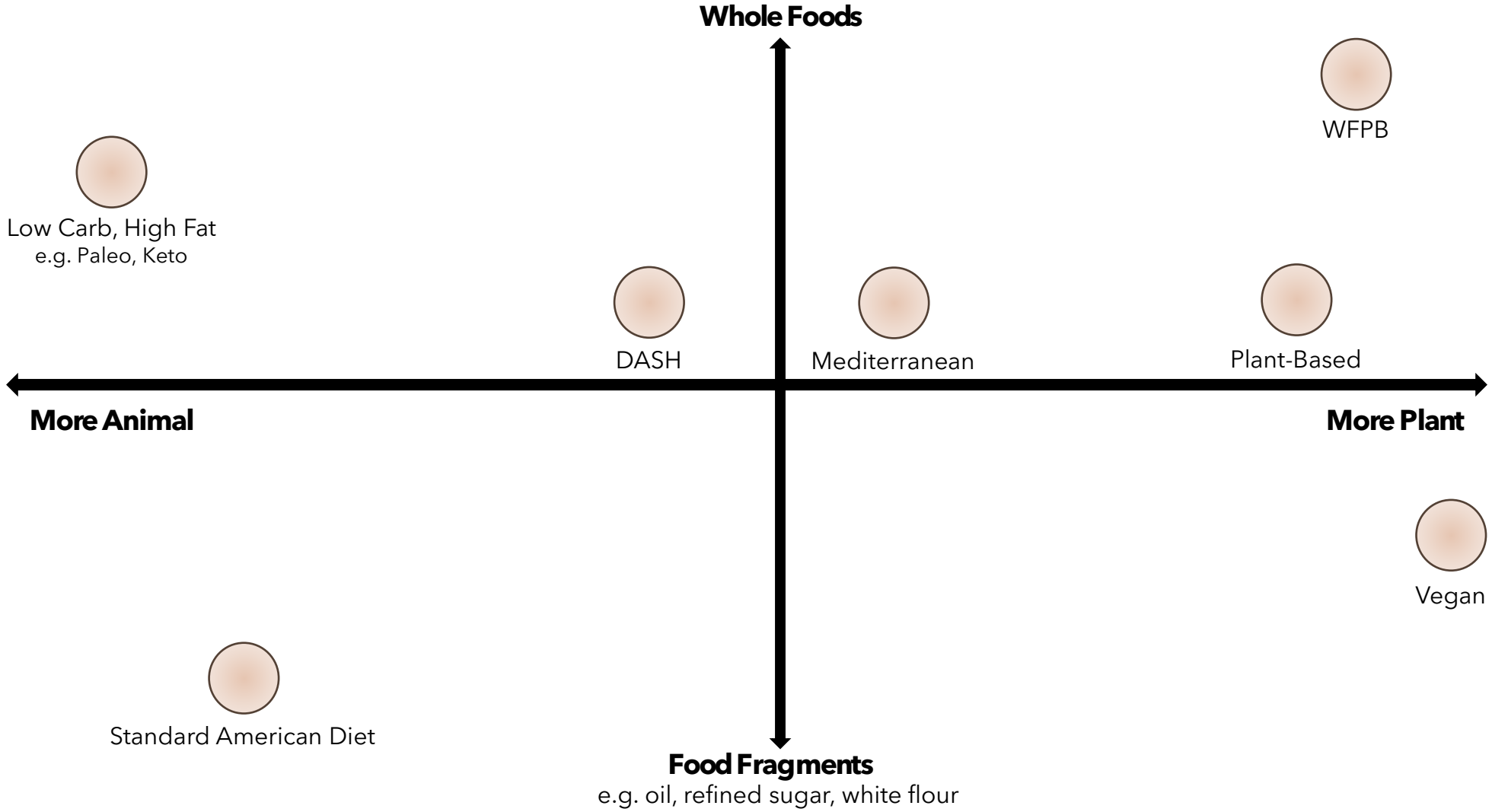
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Terminology

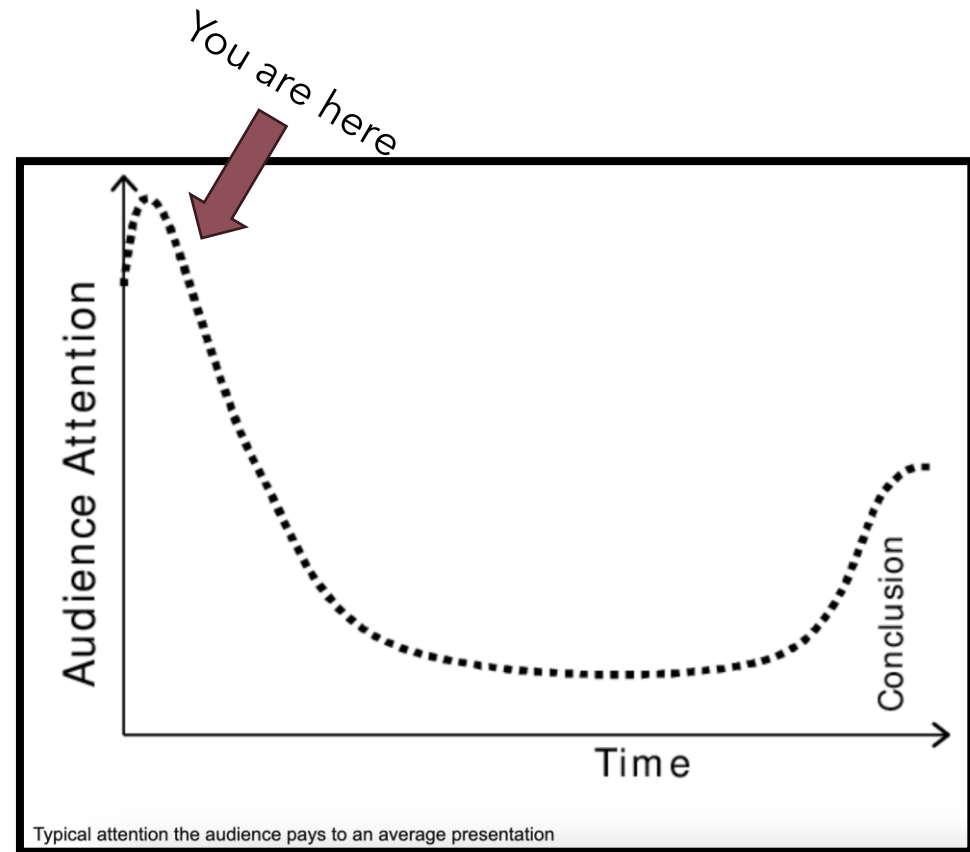


Dietary Spectrum



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Case

- 65 YO male with no PMH except for OA, who sees his PCP annually, presents to the ED with substernal chest pain radiating to his jaw
- EKG without STEs, however elevated and dynamic troponins
- Taken for cath, found to have 90% occlusion of the LAD → received 2 stents
- No medications, no HTN, no diabetes, normal BMI, never smoker
- Diet: high in saturated fats (king-size chocolate bars, pastries, cheese, Polish sausage)

A WFPB diet can prevent, treat, and/or reverse chronic medical conditions common in older adults

- Heart Diseases
- Lung Diseases
- Brain Diseases
- Digestive Cancers
- Infections
- Diabetes
- High Blood Pressure
- Liver Diseases
- Blood Cancers
- Kidney Disease
- Breast Cancer
- Prostate Cancer
- Depression
- Parkinson's Disease



A WFPB diet can prevent, treat, and/or reverse chronic medical conditions common in older adults



DIABETES



HIGH BLOOD
PRESSURE



DEMENTIA

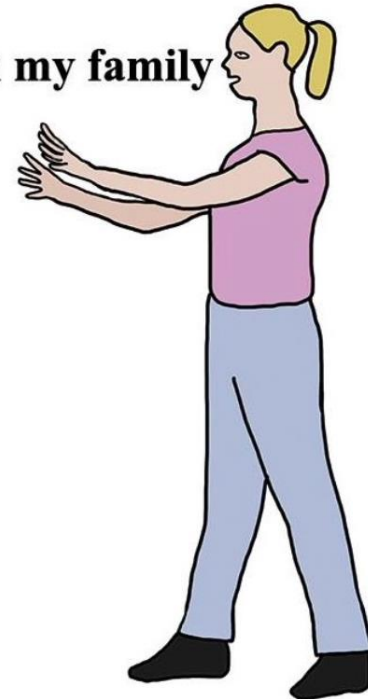


Let's talk about how...

**oh no not a apple
my only weakness**



stay away from my family

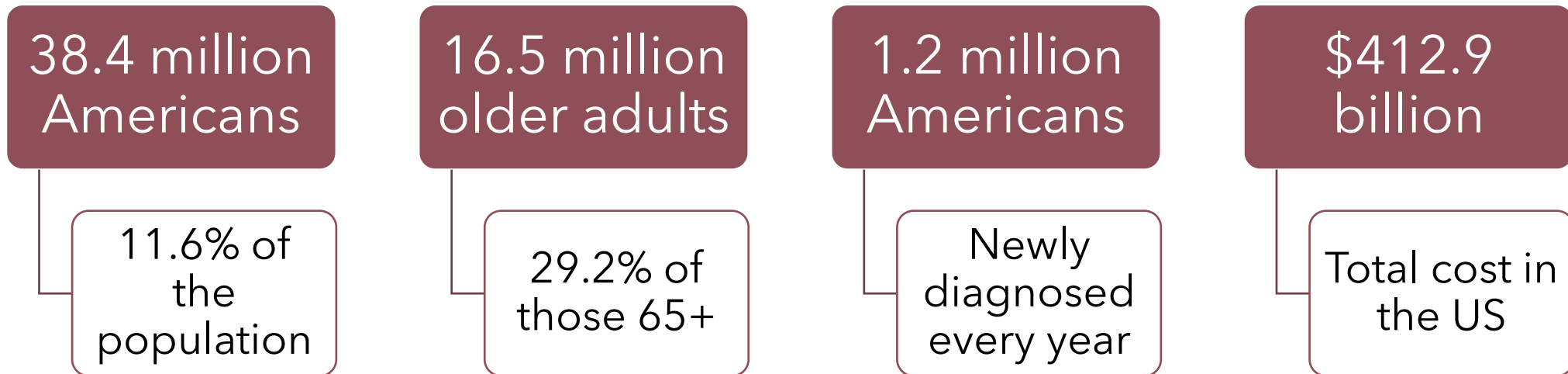




DIABETES



Diabetes is common and costly



Diabetes can be a life-limiting disease, increasing the risk for multiple serious health problems

- Cardiovascular Disease
- Chronic Kidney Disease
- Stroke
- Neuropathy
- Blindness
- Hearing Loss
- Diabetic Ketoacidosis
- Poor Wound Healing
- Limb Loss
- Gingivitis and Periodontitis



T2DM is a disease of insulin resistance due to the accumulation of fat inside muscle and liver cells

- Insulin is the key that allows glucose into cells
- Intramyocellular lipids gunk up the lock
(create toxic breakdown products and free radicals that block the insulin signaling process)
- Increased insulin resistance is seen with high saturated fat consumption, less so than with high carbohydrate intake



Roden M, Price TB, Perseghin G, et al. (1997)

Lee S, Boesch C, Kuk JL, Arslanian S (2013)

Sweeny JS (1927)

T2DM is almost always preventable, often treatable, and sometimes even reversible through diet and lifestyle changes

- Vegans had **78% decreased rates** of diabetes compared to those who ate meat on a daily basis (based on a study of 89,000 Californians)
- A1c levels dropped from an average of **8.2 to 5.8** (after eating a WFPB diet for 7 months)
- Can be **taken off insulin** entirely after just 16 days on a WFPB diet (despite no change in body weight)
- **Better quality of life** and mood scores (assessed after 6 months on a WFPB diet compared to conventional “diabetic diet”)

Fraser GE (2009)

Dunaief DM, Fuhrman J, Dunaief JL, et al. (2012)

Anderson JW, Ward K (1979)

Toumpanakis A, Turnbull T, Alba-Barba I (2018)



HIGH BLOOD PRESSURE



HTN is common and consequential

48.1% of Americans

74.5% of older adults (60+)

Leading risk factor for death

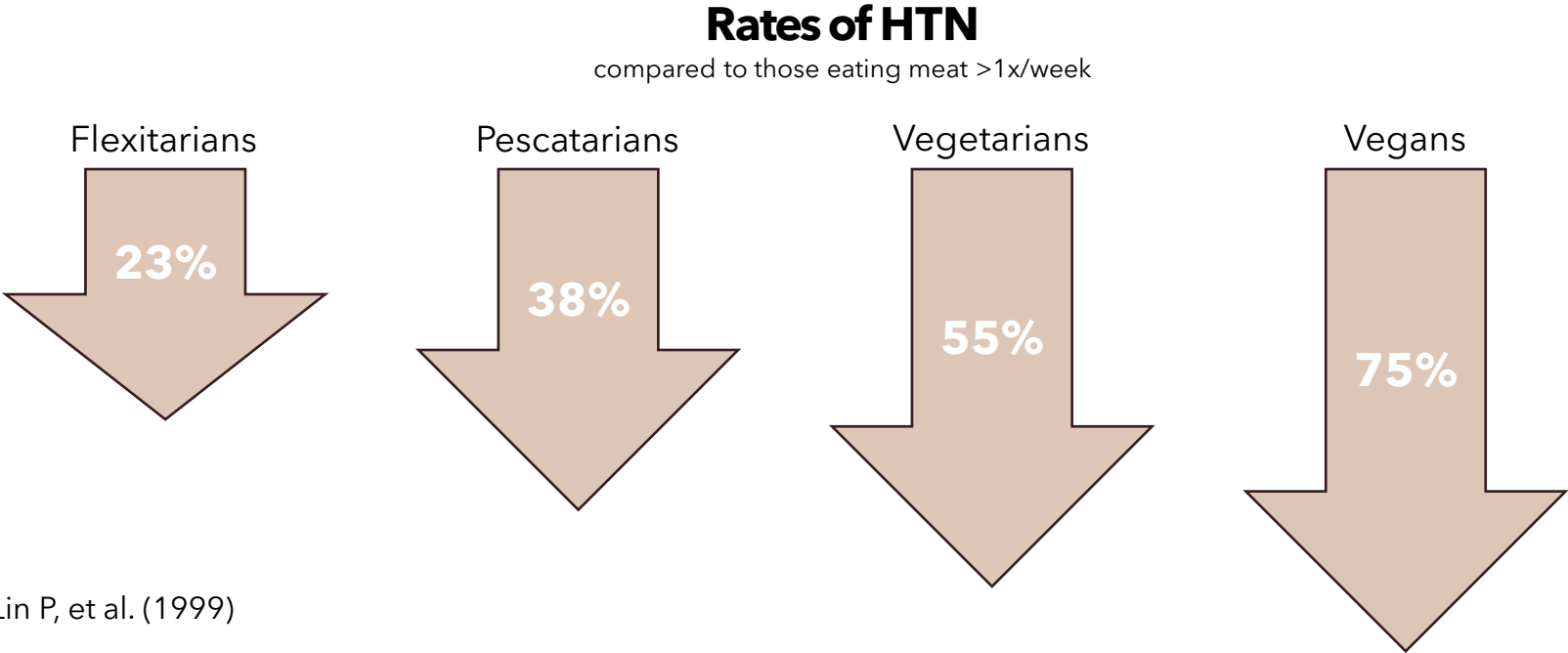
Often asymptomatic

- Aneurysms
Stroke
- CHF
MI
- Kidney Failure



The AHA promotes the DASH diet for palatability, not because it has the most health benefits

- The initial premise of the DASH diet was to “have the BP lowering benefits of a vegetarian diet yet contain enough animal products to make them palatable to nonvegetarians”



Karanja NM, Obarzanek E, Lin P, et al. (1999)
Fraser GE (2009)

A WFPB diet confers benefit even after factoring for weight and activity level



Endurance Runner
Meat Eater

122/72



Sedentary Meat
Eater

132/79



Sedentary Vegan

104/62



Eating whole foods can have the same, if not greater, effect on BP as medications, without the side effects

Flaxseed



Double-Blind, Placebo-Controlled, Randomized Trial

158/82 → 143/75

Rodriguez-Leyva D, Weighell W, Edel AL, et al. (2013)
Tighe P, Duthie G, Vaughan N, et al. (2010)
Kapil V, Khambata RS, Robertson A, Caulfield MJ, Ahluwalia A (2015)

Whole Grains



Randomized Controlled Trial

↓ **5-6 mmHg**
SBP

Beetroot Juice



Double-Blind, Placebo-Controlled, Randomized Trial

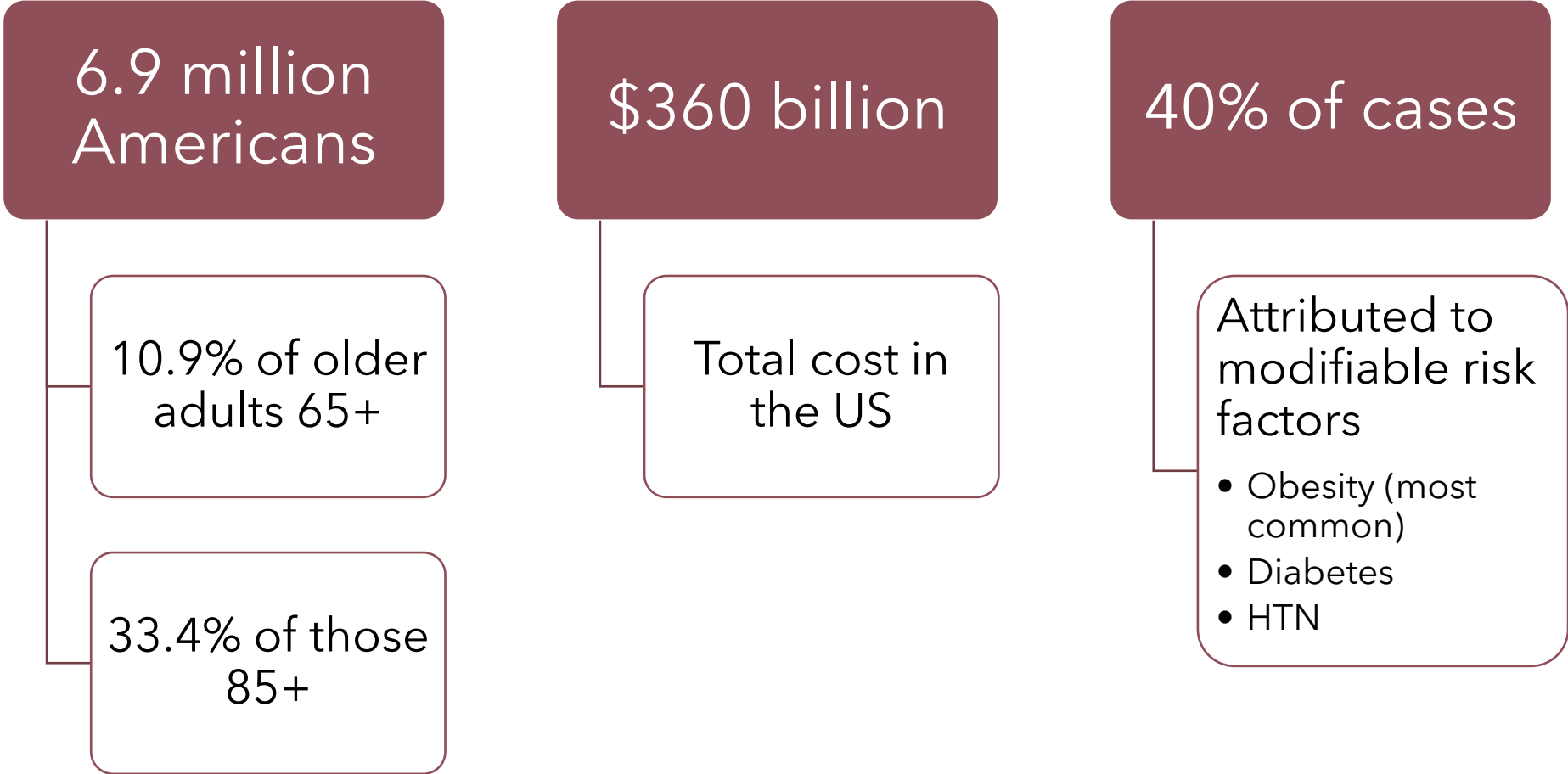
↓ **8 mmHg**
SBP



DEMENTIA



Alzheimer's and other dementias are common and costly, but could be preventable



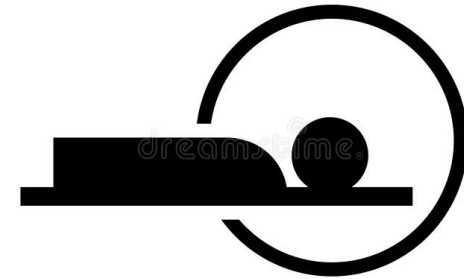
Atherosclerotic plaques play a pivotal role in the development of Alzheimer's disease, not just vascular dementia



Amyloid clusters
on/around cholesterol
crystals



Those with AD have
more cholesterol
buildup than normal
brains



Direct correlation
between LDL and
amyloid burden

Advanced glycation end products (AGEs) - abundant in animal products - are implicated in the pathology of Alzheimer's disease

Of 500+ foods tested:

- #1 BBQ chicken
- #2 Bacon
- #3 Grilled hot dog
- #13 Oven-fried fish
- #14 McDonald's chicken McNuggets
- #15 Grilled chicken
- #17 Baked chicken
- #20 Grilled steak



Cooking Method Matters

Baked apple = 45 units

Raw apple = 13 units

Grilled hot dog = 10,143 units

Boiled hot dog = 6,736 units

Antioxidants found in whole foods provide neuroprotective effects

- Polyphenols inhibit the formation of amyloid plaques and tau tangles in vitro
- Eating berries weekly slows cognitive decline



A WFPB diet can prevent, treat, and/or reverse chronic medical conditions common in older adults



DIABETES

**Saturated fats cause
insulin resistance**



HIGH BLOOD
PRESSURE

**Whole foods can
outperform BP
medications**



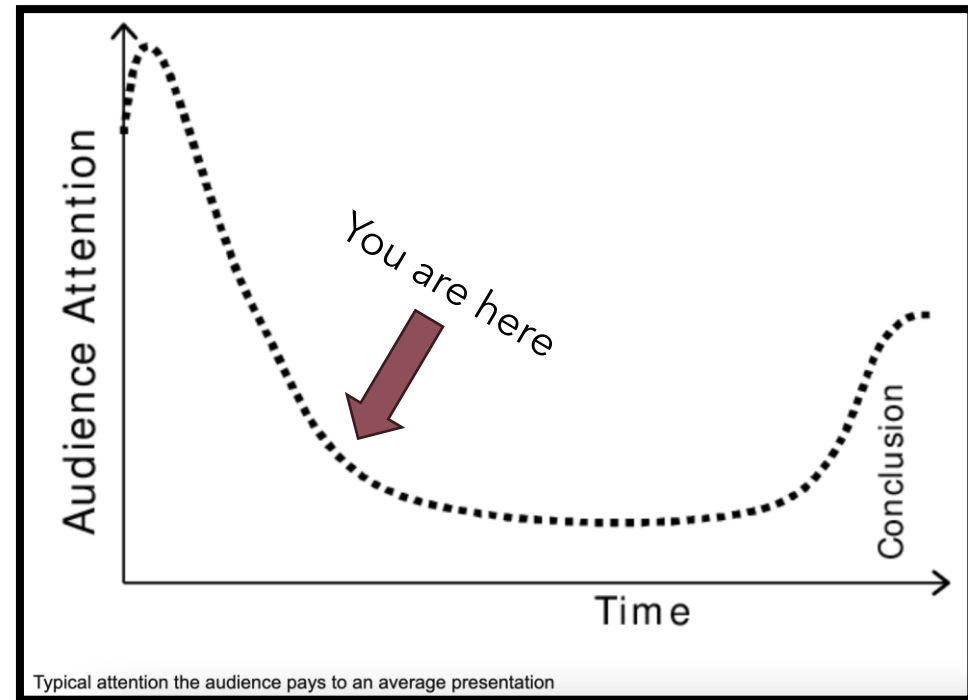
DEMENTIA

**Whole foods are
neuroprotective**



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Myth vs Fact



T or F: A WFPB diet is more expensive than a standard American diet

FALSE



T or F: You cannot get enough protein on a WFPB diet

FALSE



T or F: White meats such as chicken are healthy

FALSE



T or F: Eating a WFPB diet puts you at risk for B12 deficiency

TRUE



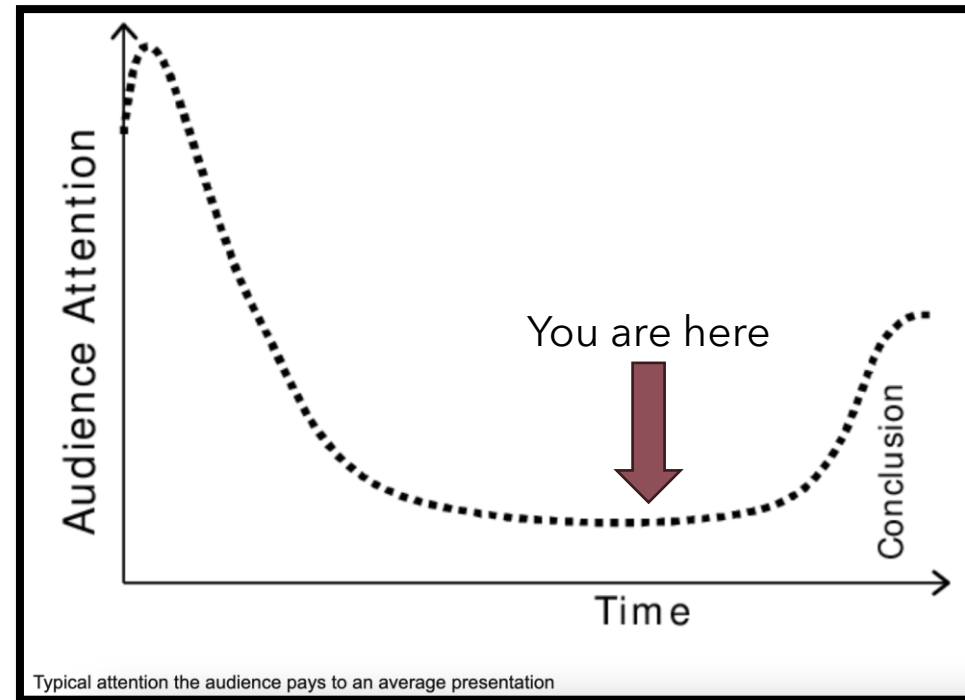
T or F: Consuming dairy is necessary to get sufficient calcium intake for bone health

FALSE



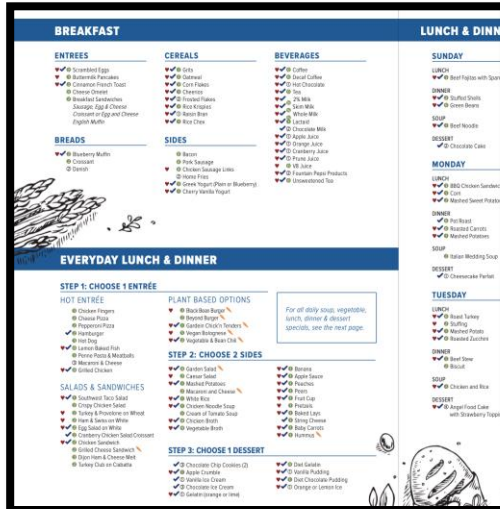
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People receive misinformation and mixed messages from institutions intended to guide us

- USDA Dietary Guidelines for Americans (2020-2025) are heavily influenced by industry
- Hospitals serve foods that contribute to hospitalizations



HOT ENTRÉE

- 3 Chicken Fingers
- 2 Cheese Pizza
- 2 Pepperoni Pizza
- ✓ 2 Hamburger
- 3 Hot Dog
- ♥ ✓ 0 Lemon Baked Fish
- 5 Penne Pasta & Meatballs
- 3 Macaroni & Cheese
- ♥ ✓ 0 Grilled Chicken

PLANT BASED OPTIONS

- ♥ 3 Black Bean Burger
- 2 Beyond Burger
- ✓ 1 Gardein Chick'n Tenders
- 5 Vegan Bolognese
- ♥ ✓ 2 Vegetable & Bean Chili



Hot Entrées

- Grilled Chicken Breast
- Chicken Fingers
- Roasted Turkey
- Lemon Pepper Haddock
- Fish Nuggets
- Pot Roast
- Meatloaf
- Spaghetti with Meatballs or Plant Based Meatballs (V)
- Macaroni and Cheese
- Vegetable Ravioli with Tomato Sauce (V)
- Vegetarian Lasagna (V)
- Mushroom Stroganoff (V)

Providers are ill-equipped to counsel patients on nutrition

1 in 4

Medical schools require a dedicated nutrition course

19.6

Average hours of nutrition instruction over the course of medical school

14%

IM residents felt adequately trained to counsel on nutrition



There are many individual barriers to implementing a WFPB diet that warrant acknowledgment



Food deserts/swamps



Low literacy



Culinary knowledge



Culture



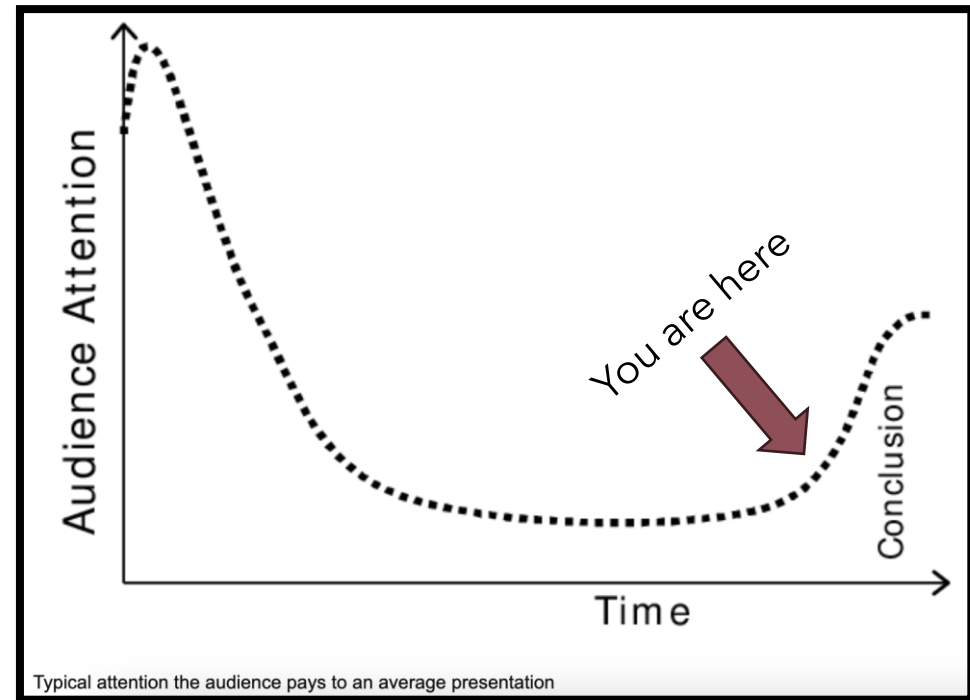
Cooking for others



Institutionalization

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Providers need to recognize and set aside their own preconceived ideas about patients' willingness and ability to implement a WFPB diet

48%

Of patients willing to try a WFPB diet

82.5%

Of patients didn't oppose eliminating processed meat from the hospital menu

Motivational interviewing is strongly supported by current research as an effective means of behavioral counseling



**BE CURIOUS,
NOT JUDGMENTAL.**



Providers should help patients establish SMART goals, document them, and follow up, which improves success rates

Specific

Measurable

Attainable

Relevant

Time-sensitive

Don't let perfect be the enemy of good: Encourage gradual or incremental change over none at all

Red Light → AVOID

Ultra-processed plant foods and processed animal foods

Yellow Light → MINIMIZE

Processed plant foods and unprocessed animal foods

Green Light → MAXIMIZE

Unprocessed plant foods



Empower patients with knowledge through different mediums and utilize an interprofessional team



In-office discussions



Printed handouts



Epic SmartPhrases in checkout instructions



Forks Over Knives documentary



Dieticians



Lifestyle medicine referral

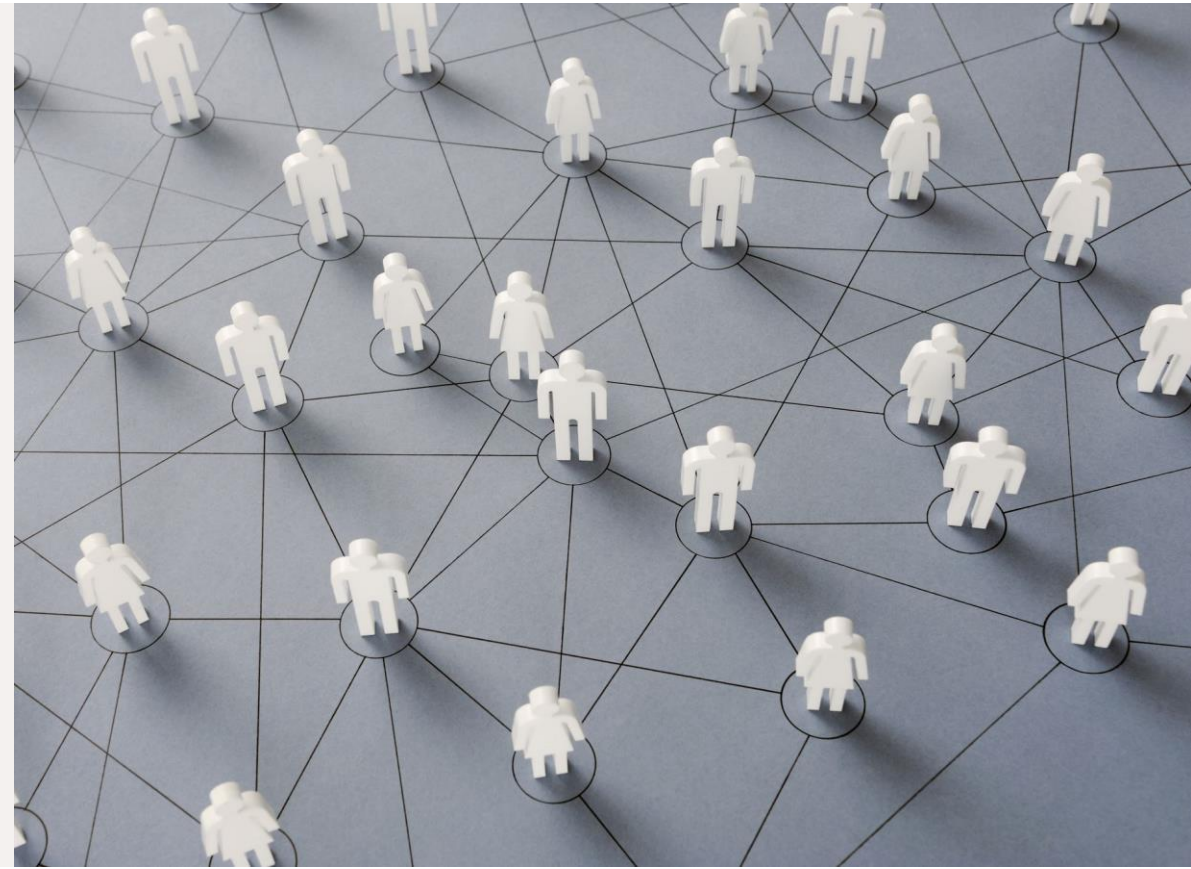


Social worker for community resources



Harness the power of social networks

- Network phenomena
- Lead by example



**"He that takes medicine and neglects diet wastes
the skills of the physician."**

- Traditional Chinese proverb (no date known)

**"Let food be thy medicine and medicine be
thy food."**

- Hippocrates (460 BC-370 BC)

