

“I believe every patient needs a physician who will be an advocate to help them regain their health”.

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No disclosures





Wound Care and WFPB Nutrition

Learn **WHAT** a WFPB diet is and the nutritional effects on wound healing and comorbidities.

Learn **WAYS** to evaluate a patient's need for a change in diet to promote wound healing.

Learn to **APPLY**, educate or refer a patient to appropriate auxiliary healthcare providers for a complete wound care approach of chronic/complicated wounds.

Learning Objectives

With accumulative scientific evidence supporting a healthy diet, whole-food plant-based (WFPB) diets are steadily on the rise.

A WFPB diet consists of **vegetables, fruits, legumes, whole grains, nuts, seeds, herbs, and spices.**

The United States Department of Agriculture,
American Heart Association,
American Institute for Cancer Research,
National Kidney Foundation,
American Diabetes Association all promote WFPB diets,

WFPB vs Vegan

Vegan diets might include processed oils, sugars, and white flour and highly processed carbohydrates.

A vegan diet specifies what the **diet does not contain**, but does not specify what it does contain.

In contrast, a WFPB diet indicates a diet abundant in antioxidant-rich plant foods: vegetables, fruits, whole grains, legumes, nuts, seed, herbs & spices; while avoiding highly processed foods, free oils, sugars, and animal products.

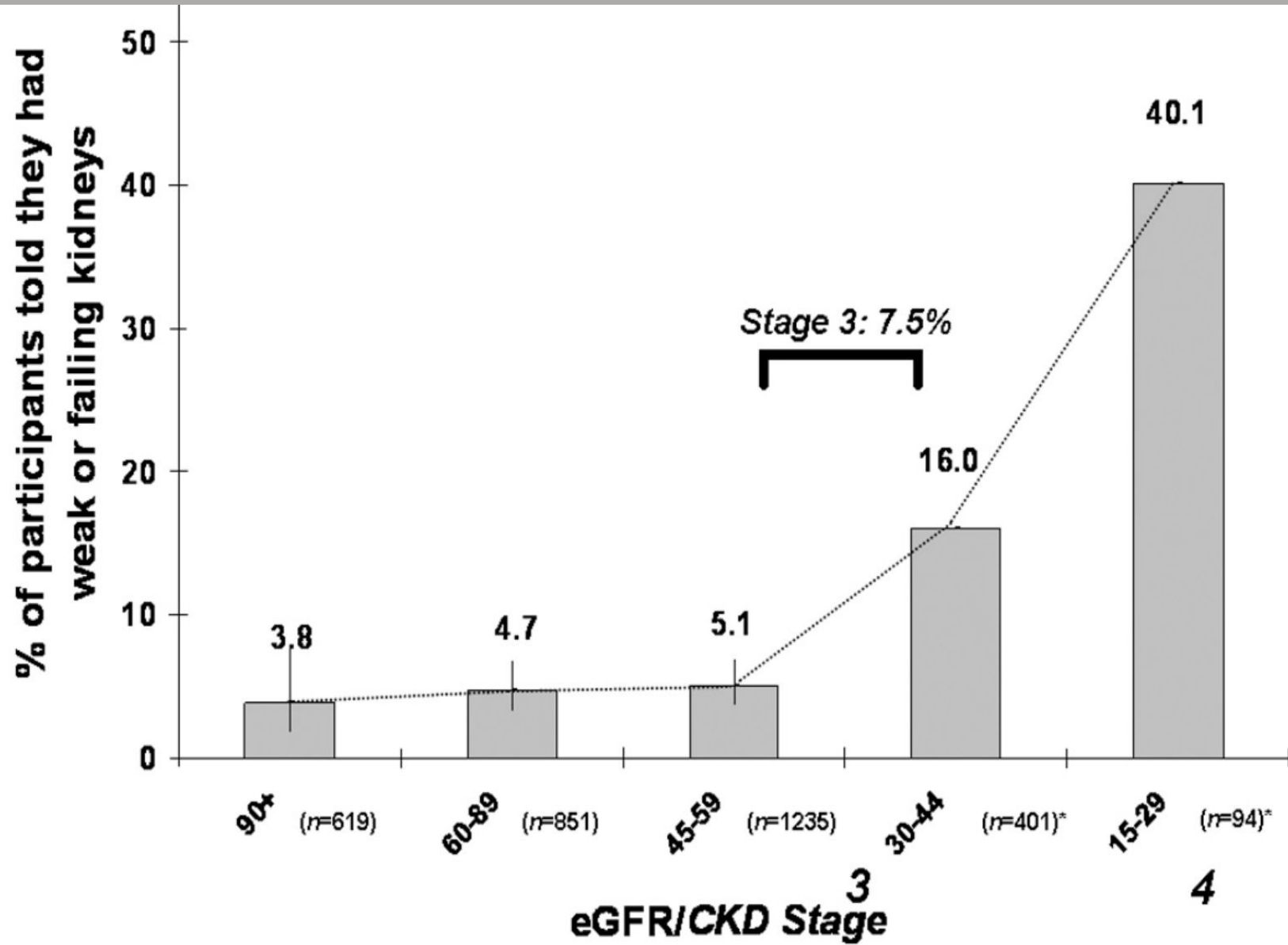
Aside from improved healing with proper nutrition, what benefits are there to my patient?

WFPB diets are associated with:

1. Lowering overall mortality
2. Lowering ischemic heart disease mortality
3. Supporting a healthy weight
4. Reducing medications
5. Reducing obesity
6. Reducing obesity-related inflammatory markers
7. Reducing hyperglycemia
8. Reducing hyperlipidemia
9. Reducing hypertension
- 10. Reversing advanced cardiovascular disease**
- 11. Reversing Type 2 Diabetes.**

Protein

“the most important nutrient factor affecting wound healing”



Percentage of U.S. population with albuminuria (single measurement) or CKD stage 3 or 4 who were aware of their disease, by eGFR. Data from the National Health and Nutrition Examination Survey 1999–2006. Bars, 95% CI. Albuminuria defined by albumin:creatinine ratio obtained from spot urine sample, >30 mg/g; GFR, estimated glomerular filtration rate by MDRD Study formula in ml/min/1.73 m². Modified with permission from Plantinga et al. [4]. *No standard error estimates due to small sample size.

Beans

Lentils

Peas

Peanuts

Nuts

Seeds

Soy foods



WFPBD **lengthen telomeres**, which prevents cellular damage.

AGEs accumulating within the skin can cause a rapid stiffening of collagen & elastin, this can present clinically as skin ulcers and delayed skin healing. AGEs less in WFPB, than SAD.

Dark-colored berries, along with gooseberries, all have **phytonutrients** that are powerful immune boosters and antioxidants.

Chlorophyll also plays a role in regenerating CoQ10.

Cruciferous vegetables are Nitrate-rich veggies. These produce **Nitric Oxide** and dilate the blood vessels and allow better blood flow to the wound.

High protein plants like lentils, beans, quinoa, tofu, edamame, all help to **repair soft tissue & skin**.

Polyphenols have antioxidant properties and potential prevention of certain cancers and cardiovascular and neurodegenerative diseases.

Essential vitamins, including vitamins A, C, and E. It also helps to **eliminate harmful carcinogens**.

Acute effects of diets rich in almonds and walnuts on **endothelial function**.

Uncontrolled glycation reduces the cell’s ability to generate **Nitric Oxide from L-arginine**, which is required for proper cross-linking of collagen fibers.

DIABESITY

OBESITY AND DIABETES = DIABESITY

Obesity is a pandemic that is almost always caused by lifestyle and diet.

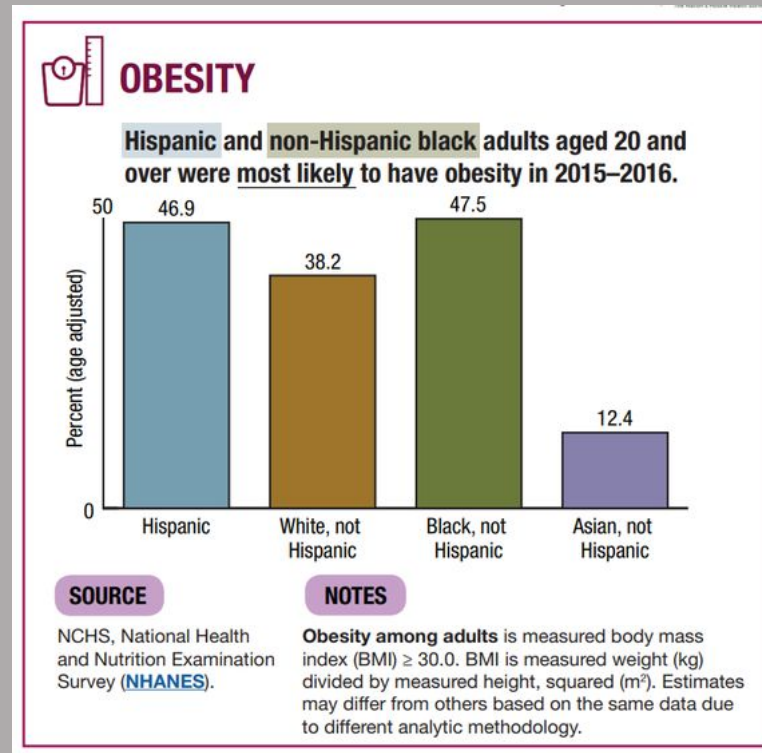
93 million Americans adults are obese,

40% = US

population.

Centers for Disease Control and Prevention

Obesity Medical Cost/yr
\$147-\$210 BILLION



55%, 80%, 70%

Overweight and obesity in **childhood** is associated with \$14.1 billion/yr in additional prescription drug, emergency room & healthcare costs.

UNITED NATIONS GENERAL ASSEMBLY

United Nations General Assembly unanimously passed a resolution declaring diabetes an international public health issue, only the second disease after HIV/AIDS to attain that unenviable status.

December 21, 2006

HIV

WHO IS PROMOTING RISKY
SEXUAL PRACTICES AND IV DRUG
USE?

DIABESITY

FOOD INDUSTRY

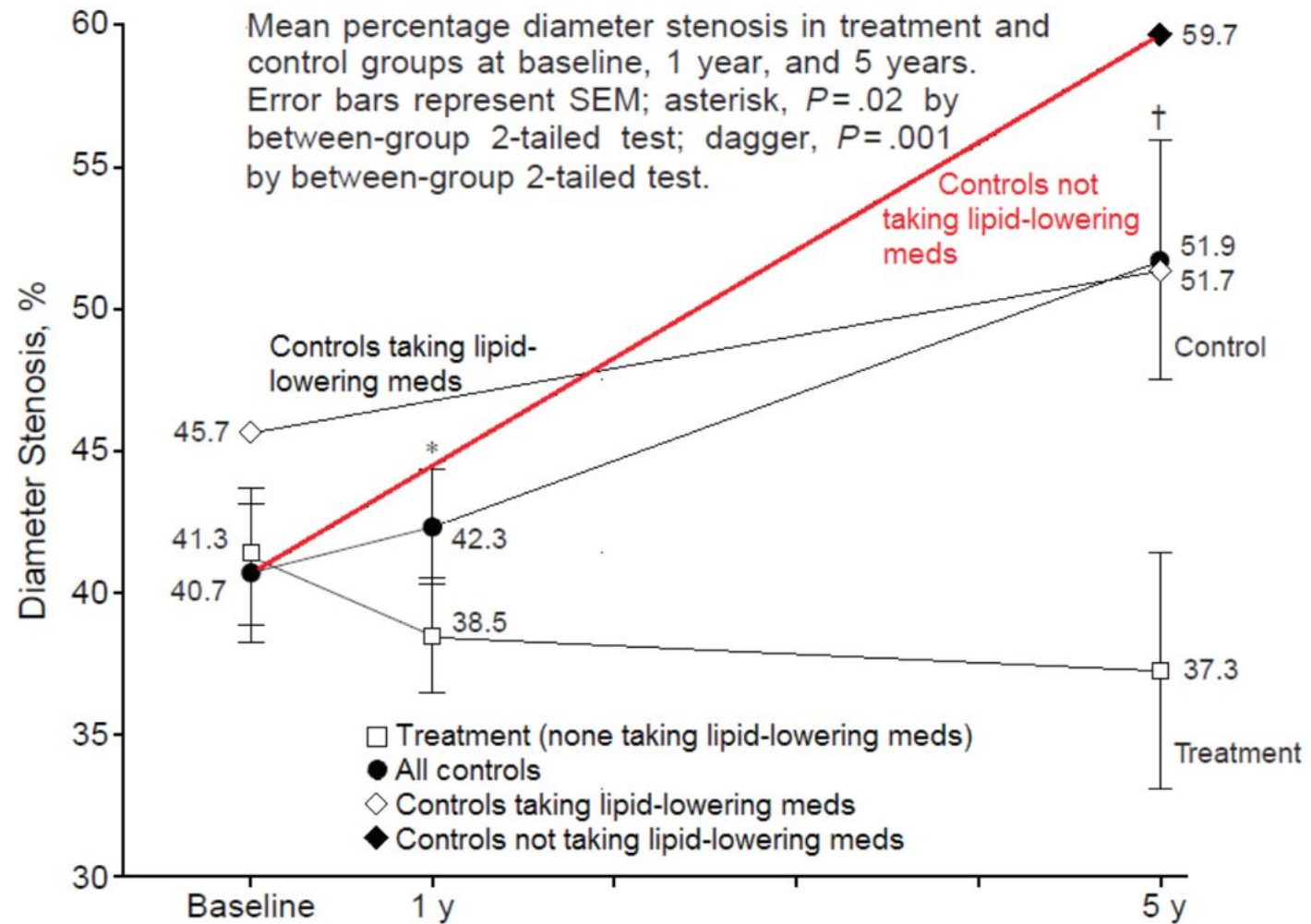




**WHY LIFESTYLE MEDICINE
IS NEEDED IN
ALL MEDICAL FIELDS**

CREATE STRATEGY TO CHANGE
AMERICA'S HEALTHCARE SYSTEM
FROM PREDOMINANTLY 'SICK
CARE' MODEL TO FOCUSED ON
'WELLNESS AND DISEASE
PREVENTION'.

Ornish Lifestyle Heart Trial



Ornish D. *Lancet* 1990.

Ornish D. *JAMA* 1998.

TABLE 2

Outcomes for patients enrolled in nutritional intervention for CVD

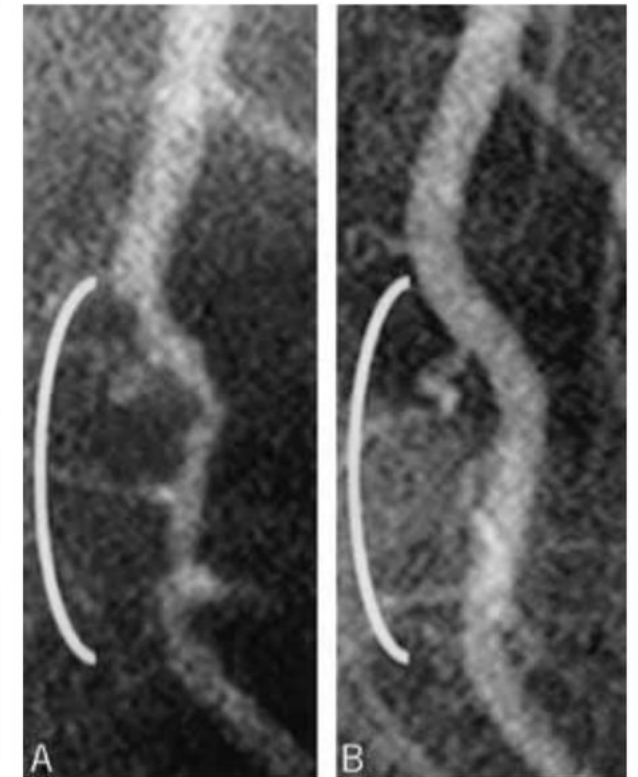
Characteristics	Adherent patients	Nonadherent patients
Total, N (%)	177 (89)	21 (11)
Men, N (%)	164 (93)	16 (76)
Age (mean \pm SD)*	63.0 \pm 10.1	62.3 \pm 9.0
Outcomes		
Improved	144 (81)	0 (0)
Symptom reduction	105 (94) [†]	0 (0)
Reversal [‡]	39 (22)	

ESSELSTYN STUDY (2014)

Esselstyn CB, Jr, Gendy G, Doyle J, Golubic M, Roizen MF. A way to reverse CAD? J Family Pract. 2014 Jul;63(7):356–364b.

FIGURE 2

Reversal of coronary artery disease⁴



Coronary angiography reveals a diseased distal left anterior descending artery (A). Following 32 months of a plant-based nutritional intervention without cholesterol-lowering medication, the artery regained its normal configuration (B).

PORTFOLIO DIET STUDY

28.6%

Compared effectiveness of portfolio diet of cholesterol-lowering foods to statin therapy with usual low-fat diet treatment

30.9%

Diet high in plant sterols, soy protein, viscous fibers and almonds

8.0%

National Diabetes Prevention Program

KNOWLER. NEJM 2002.

Over follow-up of 2.8 years, incidence of diabetes cases per 100 person-years:

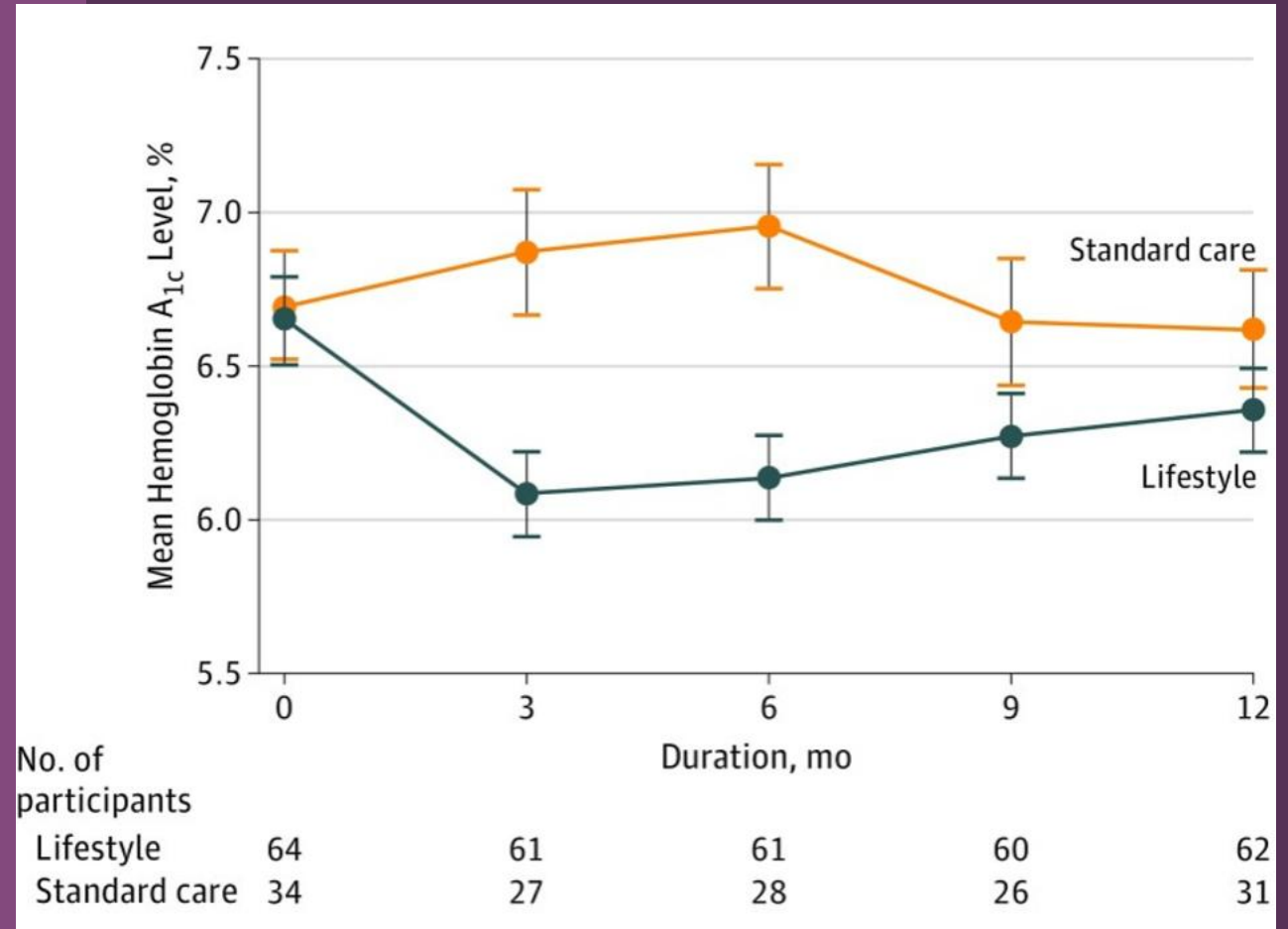
- Lifestyle intervention reduced incidence of diabetes by 58% versus placebo
- Metformin reduced incidence of diabetes by 31% compared to placebo
- To prevent one case of diabetes over three years, 6.9 persons would need to participate in lifestyle intervention and 13.9 would need to receive metformin
- Lifestyle intervention almost twice as effective as metformin

One of first major randomized studies comparing lifestyle interventions to medications in prevention of chronic disease (not about reversal, but about slowing progression of IGT to T2D)

EFFECT OF AN INTENSIVE LIFESTYLE INTERVENTION ON GLYCEMIC CONTROL IN PATIENTS WITH TYPE 2 DIABETES: A RANDOMIZED CLINICAL TRIAL.

UNCLEAR WHETHER A LIFESTYLE INTERVENTION CAN MAINTAIN GLYCEMIC CONTROL

Presentations are communication tools that can be used as demonstrations, lectures, speeches, reports, and more. Most of the time, they're presented before an audience. It serves a variety of purposes, making them powerful tools for convincing and teaching.



ASSOCIATION OF AN INTENSIVE LIFESTYLE INTERVENTION WITH REMISSION OF TYPE 2 DIABETES. "LOOK AHEAD STUDY"

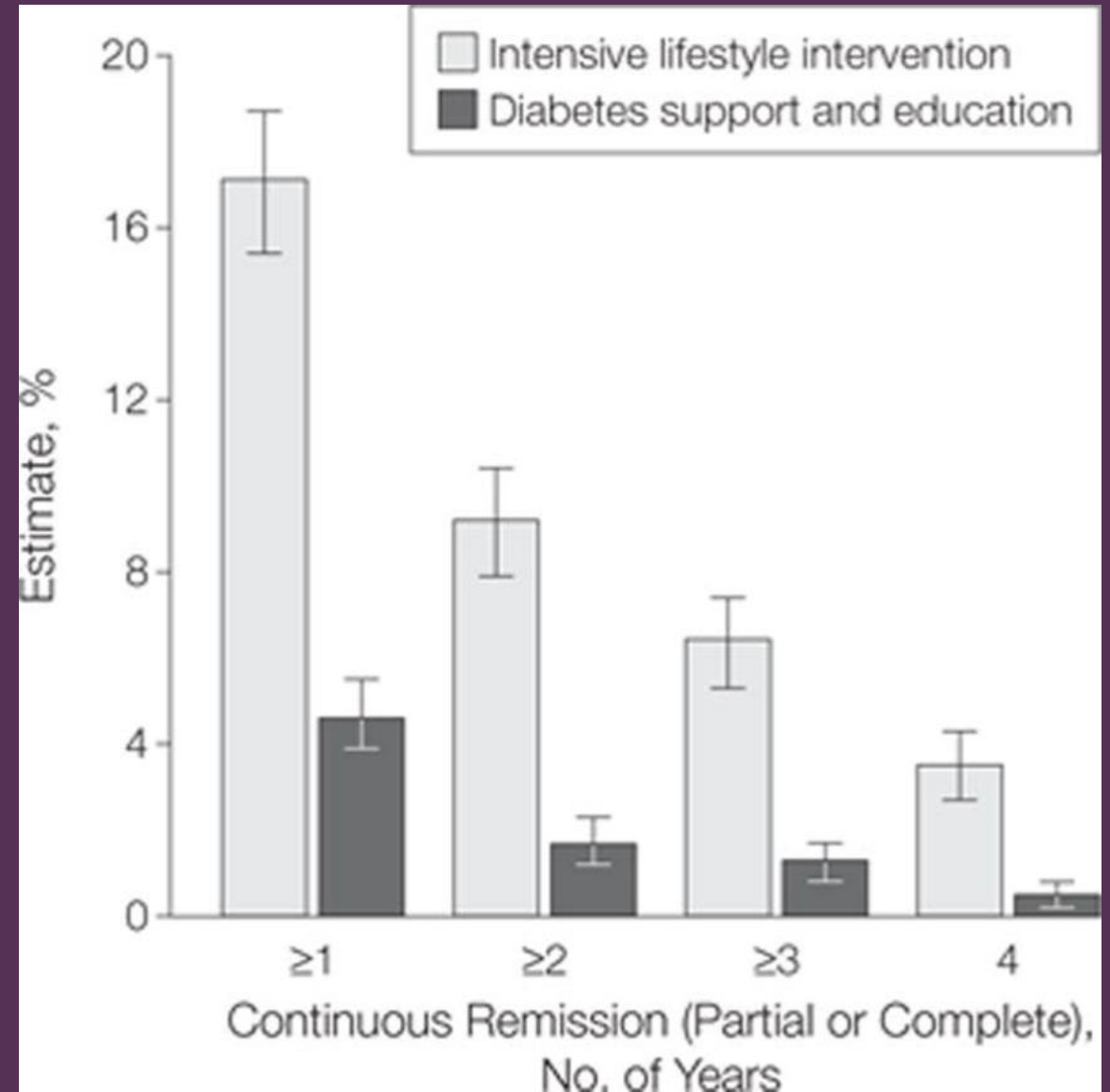
1,2,3,4 YR COMPARISON

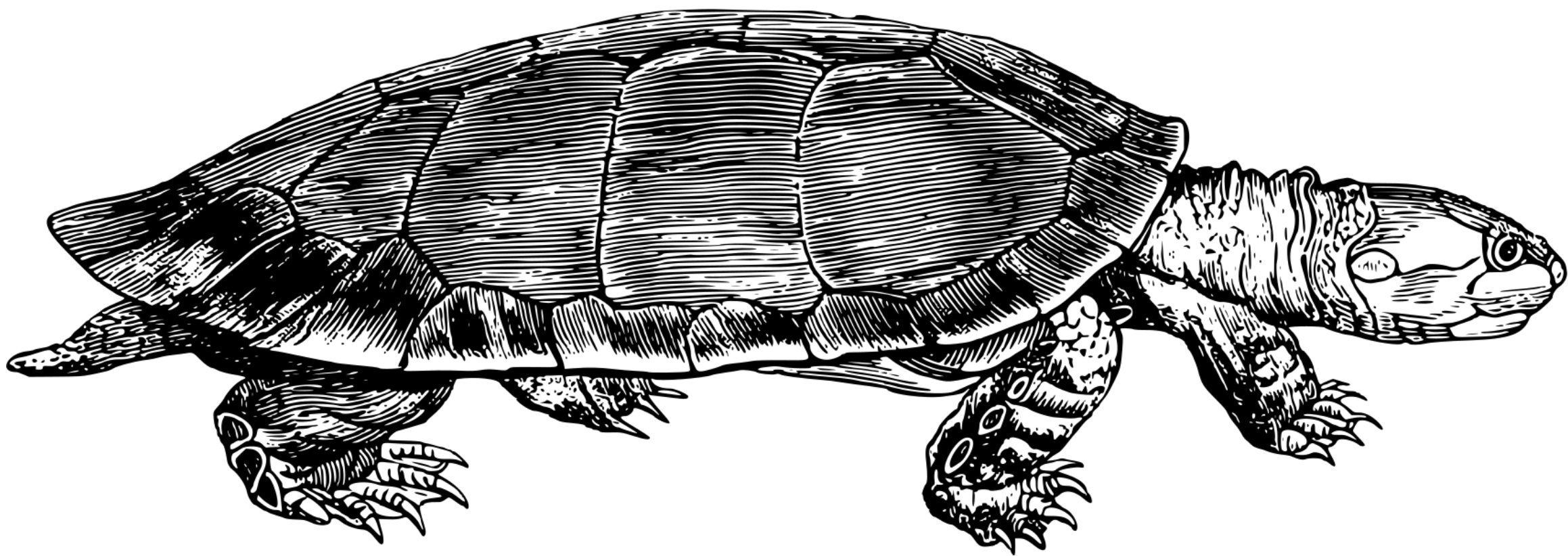
intensive lifestyle intervention (ILI) with a diabetes support and education control condition (DSE) among 4503 US adults with body mass index of 25 or higher and type 2 diabetes.

intensive lifestyle intervention was associated with a greater likelihood of partial remission of type 2 diabetes compared with diabetes support and education. However, the absolute remission rates were modest.

HOW DO WE CREATE POSITIVE CHANGE?

Green et al. JAMA. 2012;Dec 19;308(23):2489-96.





IDENTIFYING UNSECURITY

WITH 97% ACCURACY

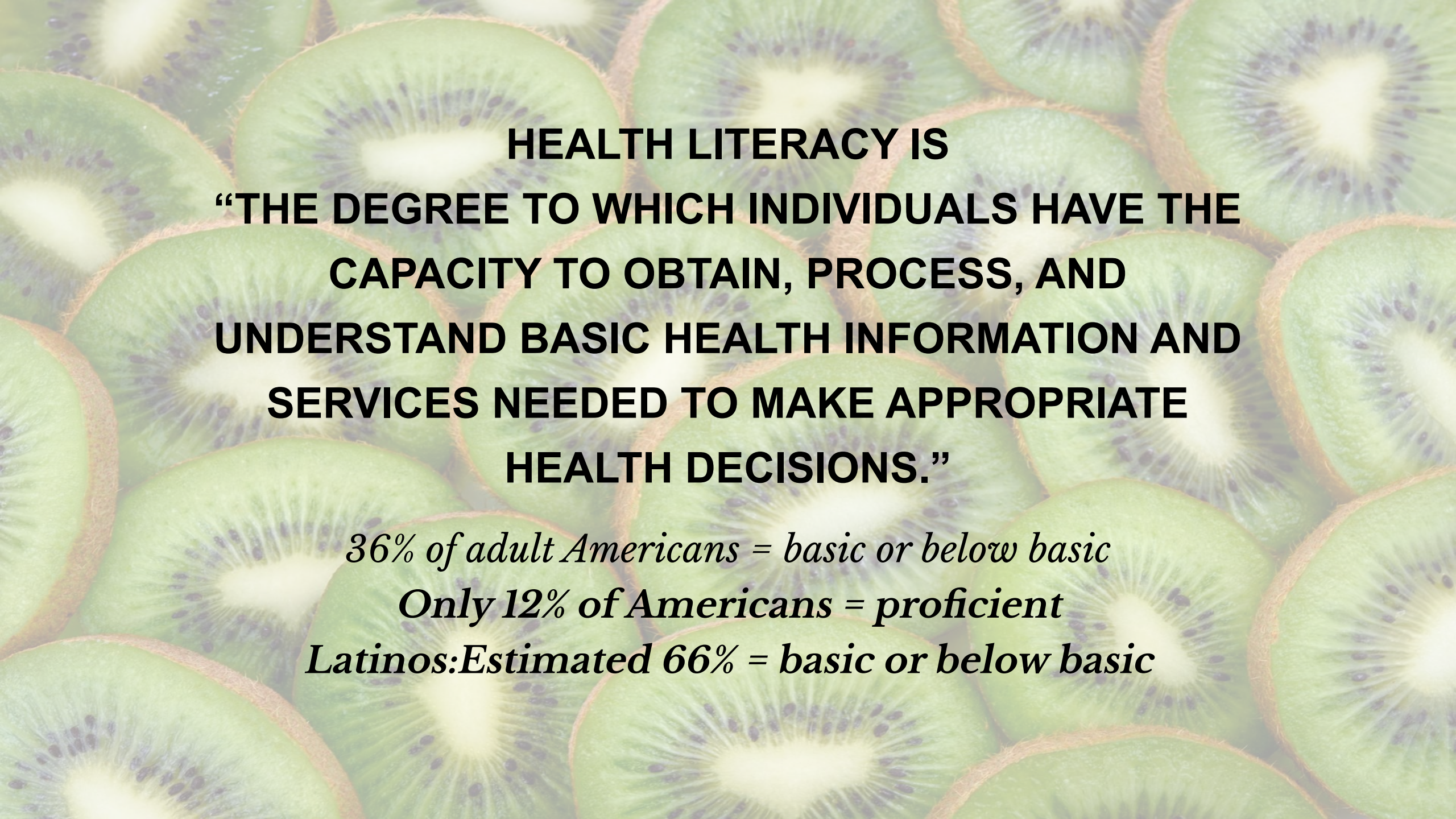
There is food insecurity if the patient answers “often true” or “sometimes true” to one of the following questions:

- “Within the past 12 months, we worried whether our food would run out before we got money to buy more.”
- “Within the past 12 months the food we bought just didn’t last and we didn’t have money to get more.”

EDUCATION

*Low health literacy =
poorer overall health status and
higher mortality rates.*

- *Inability to determine quality of online health information*
- *More hospitalizations*
- *Greater use of emergency care*
- *Less mammography screening and influenza vaccine;*
- *Poorer ability to take medications appropriately;*
- *Poorer ability to interpret labels;*
- *and highest among elderly persons,*

The background of the slide is a repeating pattern of sliced kiwi fruit. The slices are arranged in a slightly overlapping, circular pattern, showing the green flesh, brown skin, and dark seeds. The lighting is soft, giving the kiwi a fresh appearance.

**HEALTH LITERACY IS
“THE DEGREE TO WHICH INDIVIDUALS HAVE THE
CAPACITY TO OBTAIN, PROCESS, AND
UNDERSTAND BASIC HEALTH INFORMATION AND
SERVICES NEEDED TO MAKE APPROPRIATE
HEALTH DECISIONS.”**

36% of adult Americans = basic or below basic

Only 12% of Americans = proficient

Latinos: Estimated 66% = basic or below basic

Nutrition Facts

Serving Size $\frac{1}{2}$ cup
Servings per container 4

Amount per serving

Calories 250 Fat Cal 120

%DV

Total Fat 13g 20%

Sat Fat 9g 40%

Cholesterol 28mg 12%

Sodium 55mg 2%

Total Carbohydrate 30g 12%

Dietary Fiber 2g

Sugars 23g

Protein 4g 8%

*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Ingredients: Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

Score Sheet for the Newest Vital Sign Questions and Answers

READ TO SUBJECT:

This information is on the back of a container of a pint of ice cream.

1. If you eat the entire container, how many calories will you eat?

Answer: 1,000 is the only correct answer

2. If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?

Answer: Any of the following is correct: 1 cup (or any amount up to 1 cup), half the container. Note: If patient answers "two servings," ask "How much ice cream would that be if you were to measure it into a bowl?"

3. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42 g of saturated fat each day, which includes one serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?

Answer: 33 is the only correct answer

4. If you usually eat 2,500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?

Answer: 10% is the only correct answer

READ TO SUBJECT:

Pretend that you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee stings.

5. Is it safe for you to eat this ice cream?

Answer: No

6. (Ask only if the patient responds "no" to question 5): Why not?

Answer: Because it has peanut oil.

ANSWER CORRECT?

yes no

Number of correct answers:

Interpretation

Score of 0-1 suggests high likelihood (50% or more) of limited literacy.

Score of 2-3 indicates the possibility of limited literacy.

Score of 4-6 almost always indicates adequate literacy.

New Label

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
<small>* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	

1

The serving size now appears in larger, bold font and some serving sizes have been updated.

2

Calories are now displayed in larger, bolder font.

3

Daily Values have been updated.

4

Added sugars, vitamin D, and potassium are now listed. Manufacturers must declare the amount in addition to percent Daily Value for vitamins and minerals.

**Coordination of Care with
Multiple Specialists due to
comorbidities affecting
the patient's podiatric
care.**

SMART

SMART IS AN ACRONYM USED TO GUIDE
GOAL SETTING LM RX F&V.

- SPECIFIC: EXAMPLES
- MEASURABLE: SIZE, AMOUNT
- ACHIEVABLE: AGREED, ATTAINABLE
- RELEVANT: REASONABLE, REALISTIC
- TIME BOUND: TIME LIMITED,
TIME-FRAME

**SMARTER, INCLUDES
EVALUATED AND REVIEWED.

SMART

RX: DIET

$\frac{1}{2}$ CUP WELL COOKED
BEANS

- AS A REPLACEMENT FOR
 $\frac{1}{2}$ OF A MEAT-BASED
PROTEIN.

ONCE DAILY FOR 1 MONTH.



“MY GOAL IS TO
STUDY, TRAVEL,
DRINK, AND EAT
WITH OTHERS,
INSPIRING
POSITIVE
CHANGE.”

A Love of Food, Wine, & Medicine



Podiatric Surgical Fellow, Wound Care Expert, Founder,
Women Owned, Restaurateur, Sommelier
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