

NUTRITION FOR ACTIVE SURVEILLANCE

Presented by

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UCSF Helen Diller Family
Comprehensive
Cancer Center
advancing health worldwide

https://urology.ucsf.edu/sites/urology.ucsf.edu/files/uploaded-files/attachments/diet_guide_web.pdf

Health and Wellness: Living with Prostate Cancer

PART 2: DIET RECOMMENDATIONS

Nutrition & Prostate Cancer

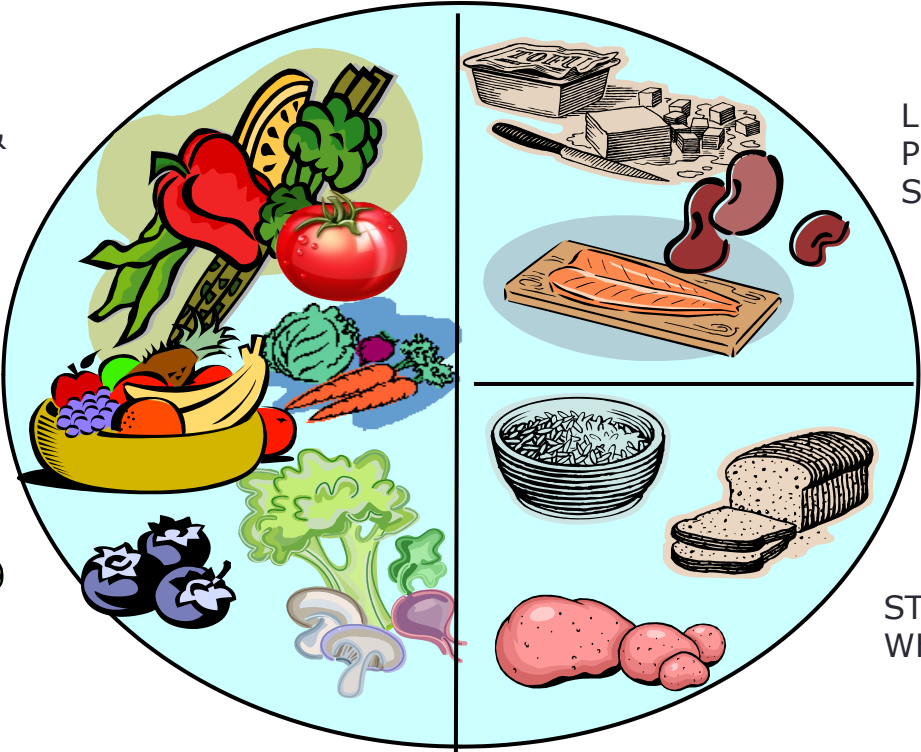
- “There is growing scientific evidence that diet & lifestyle practices may slow the growth and progression of prostate cancer”.

PCF 2015



Healthy Plate

VEGETABLES & FRUITS



LEAN ANIMAL OR
PLANT PROTEIN
SOURCE

HEALTHY FATS



STARCHY VEGETABLES/
WHOLE GRAINS

Phytochemicals: Protective Compounds in the Food We Eat



What Color is Your Diet?

Red (Lycopene; induces enzymes protecting cells from carcinogens)

- Guavas, pink grapefruit, tomatoes*, watermelon

Red/Purple (Anthocyanins; prevent binding of carcinogens to DNA)

- Red peppers, black/blueberries, apples, cherries, cranberries, red/purple grapes, strawberries, plums, eggplant, red wine

Orange (alpha/beta-carotene; improve communication between cells)

- Apricots, cantaloupe, carrots, mango, pumpkin, squash, sweet potato

Orange Yellow (betacryptoxanthin; limonoids; inhibit cholesterol synthesis needed to activate cancer cell growth)

- Yellow grapefruit, nectarine, oranges, papaya, peach, pineapple, tangerine

Green (Sulforphane, isothiocyanate, indoles; stimulate the release of enzymes that break down cancer causing chemicals in the liver)

- Broccoli, bok choy, brussels sprouts, cabbage, cauliflower, kale, swiss chard

Yellow/Green (Lutein and zeaxanthin, folate; repair DNA, stimulate enzymes breaking down carcinogens)

- Avocado, green peppers, corn, peas, collard/mustard/turnip greens, kiwi, cucumbers, honeydew, green beans, spinach, zucchini, romaine lettuce

White/Green (allicin, flavonoids; simulate enzymes that protect the cells from carcinogens)

- Artichoke, asparagus, celery, chives, garlic, green grapes, leeks, mushrooms, onions, green pears, white wine

Dr. David Heber



Food Sources of Lycopene

Product	Serving Size (mg/serving)	Lycopene
Tomato juice	250 mL (1 cup)	25.0
Tomato ketchup	15 mL (1 tbsp)	2.7
Spaghetti sauce	125 mL (1/2 cup)	28.1
Tomato paste	30 mL (2 tbsp)	13.8
Tomato soup (condensed)	250 mL prepared	9.7
Tomato sauce	60 mL (1/4 cup)	8.9
Chili sauce	30 mL (2 tbsp)	6.7
Cocktail sauce	30 mL (2 tbsp)	5.9
Watermelon	368 g (1 slice)	14.7
Pink grapefruit	123 g (1/2)	4.9
Raw tomato	123 g (1 medium)	3.7
Papaya	1 cup	2.6

Source: Heinz Institute of Nutritional Sciences



Table 1. Glucosinolate Content of Selected Cruciferous Vegetables

Food (raw)	Serving	Total Glucosinolates (mg)
Brussels sprouts	½ cup (44 g)	104
Garden cress	½ cup (25 g)	98
Mustard greens	½ cup, chopped (28 g)	79
Turnip	½ cup, cubes (65 g)	60
Cabbage, savoy	½ cup, chopped (45 g)	35
Kale	1 cup, chopped (67 g)	67
Watercress	1 cup, chopped (34 g)	32
Kohlrabi	½ cup, chopped (67 g)	31
Cabbage, red	½ cup, chopped (45 g)	29
Broccoli	½ cup, chopped (44 g)	27
Horseradish	1 tablespoon (15 g)	24
Cauliflower	½ cup, chopped (50 g)	22
Bok choy (pak choi)	½ cup, chopped (35 g)	19

Source: <http://lpi.oregonstate.edu/infocenter/phytochemicals/isothio/>

EWG'S 2019 DIRTY 12™

1. STRAWBERRIES
 2. SPINACH
 3. KALE
 4. NECTARINES
 5. APPLES
 6. GRAPES
 7. PEACHES
 8. CHERRIES
 9. PEARS
 10. TOMATOES
 11. CELERY
 12. POTATOES
- + HOT PEPPERS



EWG'S 2019 CLEAN 15™

1. AVOCADOS
2. SWEET CORN
3. PINEAPPLES
4. SWEET PEAS FROZEN
5. ONIONS
6. PAPAYAS
7. EGGPLANTS
8. ASPARAGUS
9. KIWIS
10. CABBAGE
11. CAULIFLOWER
12. CANTALOUPE
13. BROCCOLI
14. MUSHROOMS
15. HONEYDEW MELONS



Insulin, Glycemic Control, & Disease

- A Western lifestyle -- characterized by low physical activity, & high dietary intake, **animal protein, saturated fats, trans fats, & rapidly digestible carbohydrates** -- is associated with ↑ risks of many chronic diseases, including heart disease, type 2 diabetes, ↓ immune system, cancer, & obesity.
 - May be mediated by alterations in the metabolism of insulin and insulin-like growth factors (IGFs).
 - Insulin & IGF-I may promote tumor development by inhibiting apoptosis, stimulating cell proliferation, stimulating synthesis of sex steroids, changing gene expression, and inhibiting the synthesis of sex hormone-binding globulin (SHBG).

80%

of food items in
U.S. grocery
stores are spiked
with added sugar



1/3

of Americans
will have
diabetes
by 2050

Whole Grains & Legumes

- Amaranth
- Barley
- Buckwheat
- Corn
- Millet
- Oats
- Quinoa
- Rice
- Rye
- Sorghum
- Teff
- Wheat



- Red Beans
- Black Beans
- Edamame
- Fava Beans
- Garbanzo Beans
- Lentils
- Lima Beans
- Black eyed peas
- Pinto Beans



Reading the Nutrition Facts Label

The 10:1 Rule

For every 10 gm of total carbohydrate listed on the label, you want ≥ 1 gm of dietary fiber

Note that for most breads and cereals, look for ≥ 3 gm of dietary fiber/serving

Nutrition Facts			
Serving Size		5 Crackers (16g)	
Servings Per Container		About 28	
Amount Per Serving			
Calories 80		Calories from Fat 40	
		% Daily Value*	
Total Fat 4.5g			7%
Saturated Fat 1g			5%
<i>Trans Fat</i> 0g			
Polyunsaturated Fat 1.5g			
Monounsaturated Fat 2g			
Cholesterol 0mg			0%
Sodium 140mg			6%
Total Carbohydrate 9g			3%
Dietary Fiber less than 1g			1%
Sugars 1g			
Protein 1g			
Vitamin A 0%	•	Vitamin C 0%	
Calcium 0%	•	Iron 2%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
		Calories	2,000 2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Various Names for Added Sugar Used in Processed Foods & Beverages



agave

BARLEY MALT SYRUP

brown sugar

BROWN RICE SYRUP

cane crystals

cane sugar

corn syrup

corn sweetener

crystalline fructose

dehydrated cane juice

dextrose/dextrin

evaporated cane sugar

FRUCTOSE

fruit juice concentrate

high-fructose corn syrup

honey

invert sugar

lactose

maltose/maltodextrin

maple syrup

molasses

nectars

raw/powdered sugar

sorghum syrup

sucrose

turbinado sugar

Lab Values – Glycemic Regulation

Lab	Optimal range
Glucose (fasting)	<90 ng/ml
HgbA1C	<5.4%
Insulin	5-10 ng/ml
C-peptide	0.5-2.0 ng/ml

Diet Strategies to Improve Glycemic Control



Avoid refined flours/grains/sweets ('white' foods)



Healthy fats → ↑ omega-3 fatty acids



Avoid eating carbs alone; combine with protein & healthy fats



Limit starchy carbs to 1-3 servings/day



Limit caloric beverages (avoid HFCS)



Avoid evening snacking; ↓ evening meal size



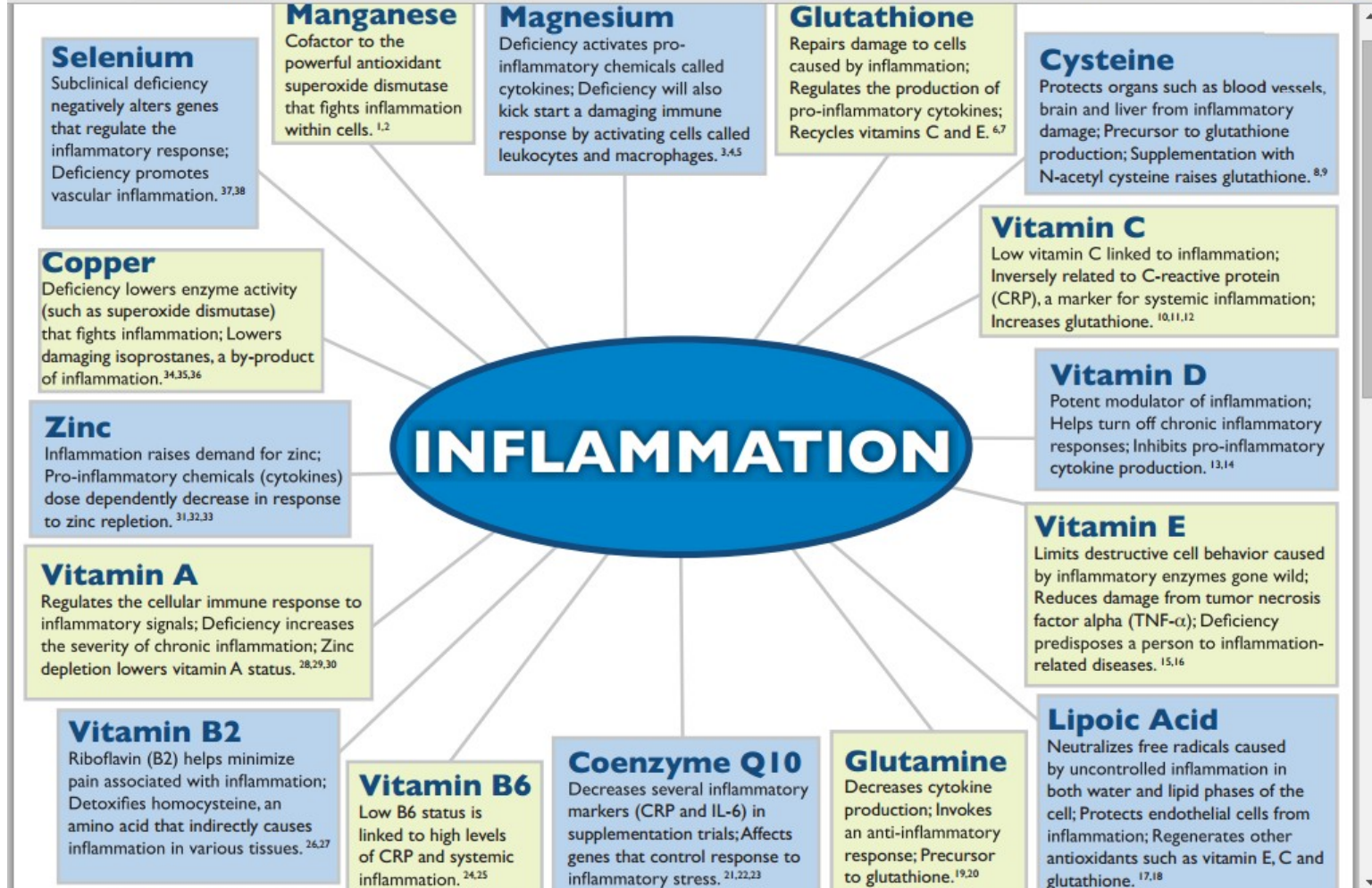
Reduce caffeine intake



Limit or avoid alcohol

Lab Values – Inflammation

Lab	Optimal range
hsCRP	<1.0 ng/ml
Fibrinogen	260-310 ng/ml
ESR	0-15 ml/hr (m); 0-20 ml/hr (f)
Homocysteine	5-9 umol/L

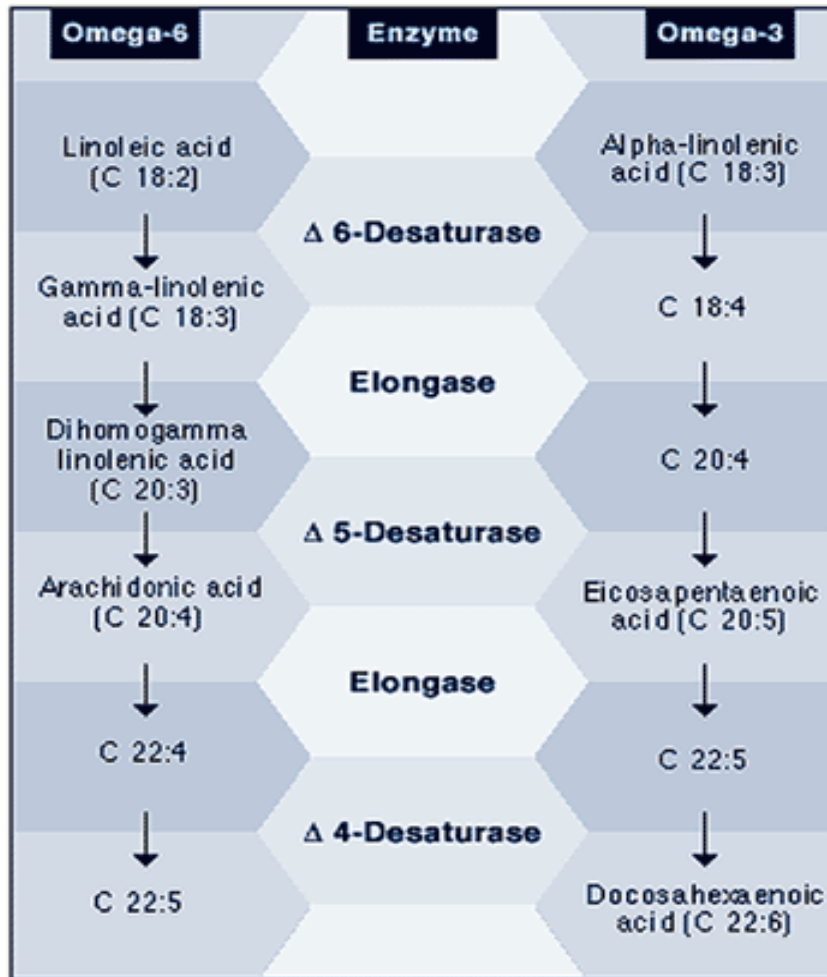


Anti-Inflammatory Foods Pyramid



Adapted from information provided by Dr. Andrew Weil, M.D.

Essential Fatty Acids (EFA)



- # Balance of omega-6 to omega-3 oils is critical to proper prostaglandin metabolism.
- # Most American diets contain excessive omega-6 fats.
- # Consuming a diet rich in omega-3 acids can restore the balance between the two fatty acids & can possibly reverse disease processes.

Effects of EFA Imbalance

Omega-6 Fats

Meats (especially grain-fed), butter, whole milk, egg yolks, sunflower oil, safflower oil, cottonseed oil, corn oil, & processed foods made with these oils



- Promote inflammation
- Foster tumor growth, progression, & angiogenesis
- Suppress immune function

Omega-3 Fats

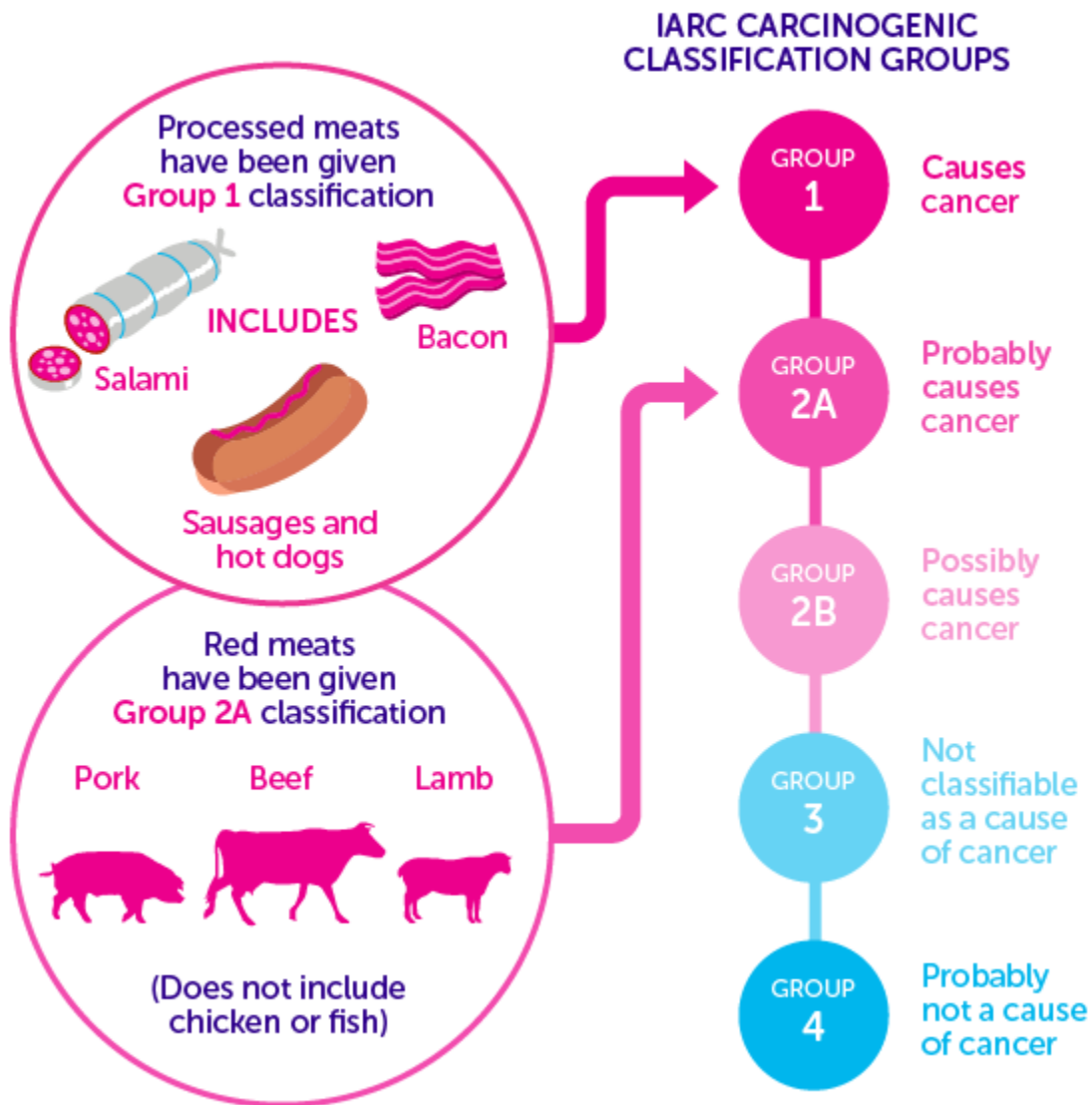
Cold-water fish (i.e., salmon, trout, sardines, herring, black cod), chia seeds, flaxseeds, walnuts, hempseeds, & pumpkin seeds



- Inhibit inflammation
- Inhibit tumor growth & angiogenesis
- Enhance immune function
- Complement chemo & XRT

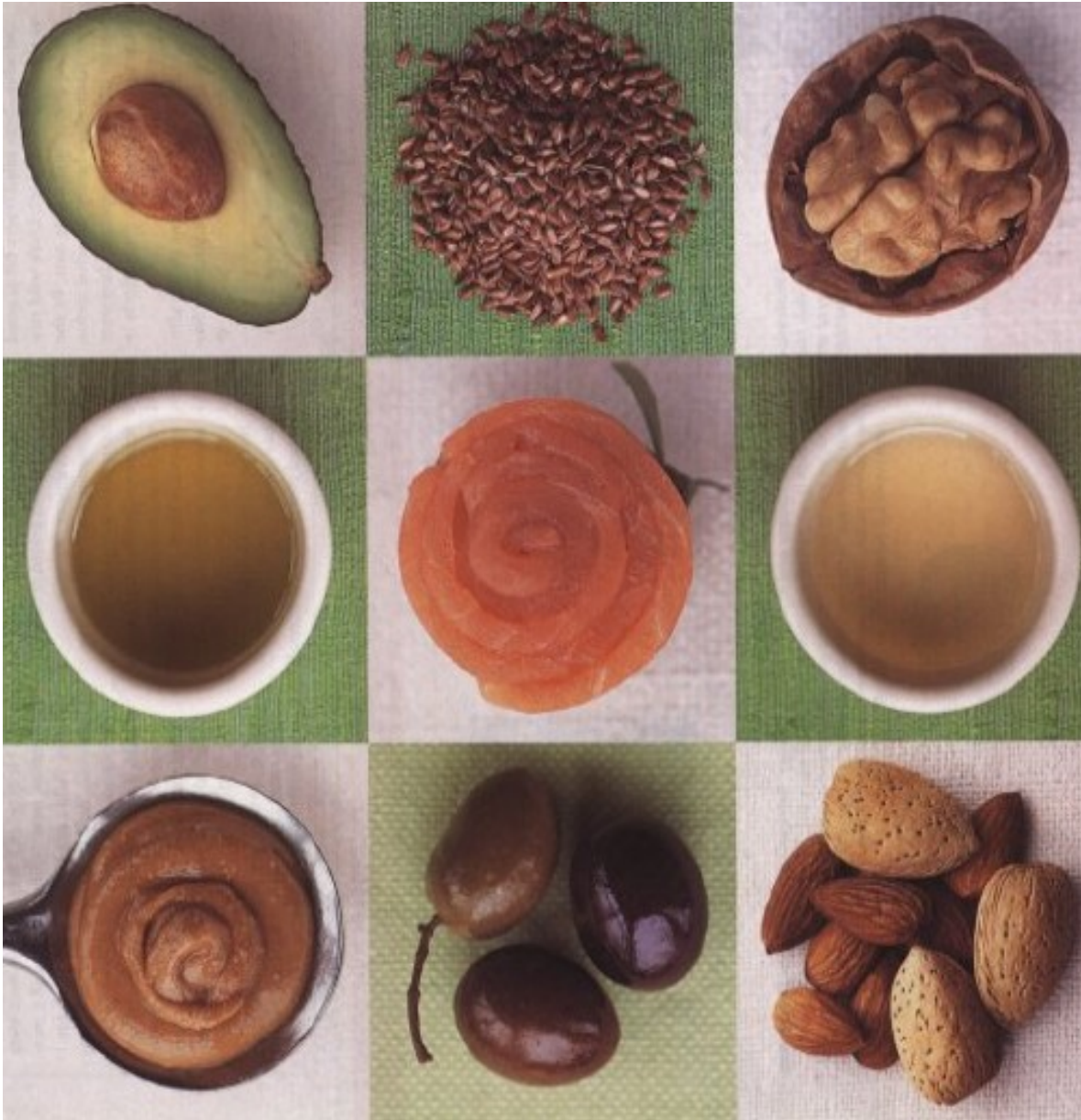
MEAT AND CANCER

HOW STRONG IS THE EVIDENCE?



These categories represent how likely something is to cause cancer in humans, not how many cancers it causes.

Healthy Fats



Omega-3 (EFA-
PUFA)rich foods:

Cold water fatty fish:
salmon, sardines,
black cod, trout,
herring

Ground flax seeds,
walnuts, pumpkin
seeds, chia seeds

Omega-9 (MUFA)
rich foods:

Olive oil, olives,
almonds, avocado,
canola oil,
macadamia nut oil

What Patients Gain with Improved Nutrition



↑ energy

↑ desire for nourishing foods

↓ desire for less nourishing foods

Improved lab values

More stable glucose control

↑ muscle mass/strength/flexibility

Heightened metabolism

Enhanced immune function

Improved health and sense of well-being

Summary Diet for Active Surveillance

Eat	8 to 10 colorful fruit and vegetable servings daily
Consume	30 to 45 grams of fiber daily
Avoid	processed and refined grains/flours/sugar
Lean	protein with every meal; plant protein daily
Limit or eliminate	fatty & processed meats, and dairy
Include	healthy fats like cold-water fish, chia seeds, flaxseeds, walnuts, soybeans, olive oil, avocados
Consume	herbs and spices daily
Limit	alcohol consumption
Drink	1 to 4 cups of green tea daily

Summary Diet for Active Surveillance (cont.)

Ask

your doctor about having a vitamin D blood test (serum 25 (OH)-vitamin D level);
Maintain your level above 40 ng/ml through diet and, if needed, supplements

Drink

plenty of fluids, water or non-caffeinated beverages, daily to help meet fluid needs

Engage

in daily physical activity to help achieve and/or maintain a healthy weight

Consider

yoga, meditation, a support group, or other activities for stress reduction



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Functional
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