

# Nutrition Rx: Foods that Heal and Foods and Moods



Wendy Hileman, MPH, MSW, MS

# Healthy Adventures Foundation's background and mission

- Non-profit
- Specializing in health and wellness programming and development for communities, organizations, groups, and individuals for seniors, adults, employees, and children
- We seek to improve quality of life, while seeking balance in healthy behaviors.
- Provide employee wellness programs for 40 school districts, including MiraCosta College



# My background

- CEO, President of the Board, and Principle Researcher for Healthy Adventures Foundation
- Adjunct professor for Southwestern College
- Ph.D. Candidate in Organizational Psychology  
Master's degrees in Organizational Psychology, Public Health and Social Work.  
Undergraduate degree in Athletic Training.



# Objectives

- Briefly review the basics of healthy eating
- Phytochemical and functional foods that impact health disease and moods



# Basics of healthy eating

- 50-65% of your diet should come from plants
  - 90% from complex carbohydrates
    - Whole grains
    - Vegetables (including herbs)
    - Fruits



# Basics of healthy eating

- Complex carbohydrates should be our primary fuel source
  - Unprocessed or least processed
  - Rich source of fiber



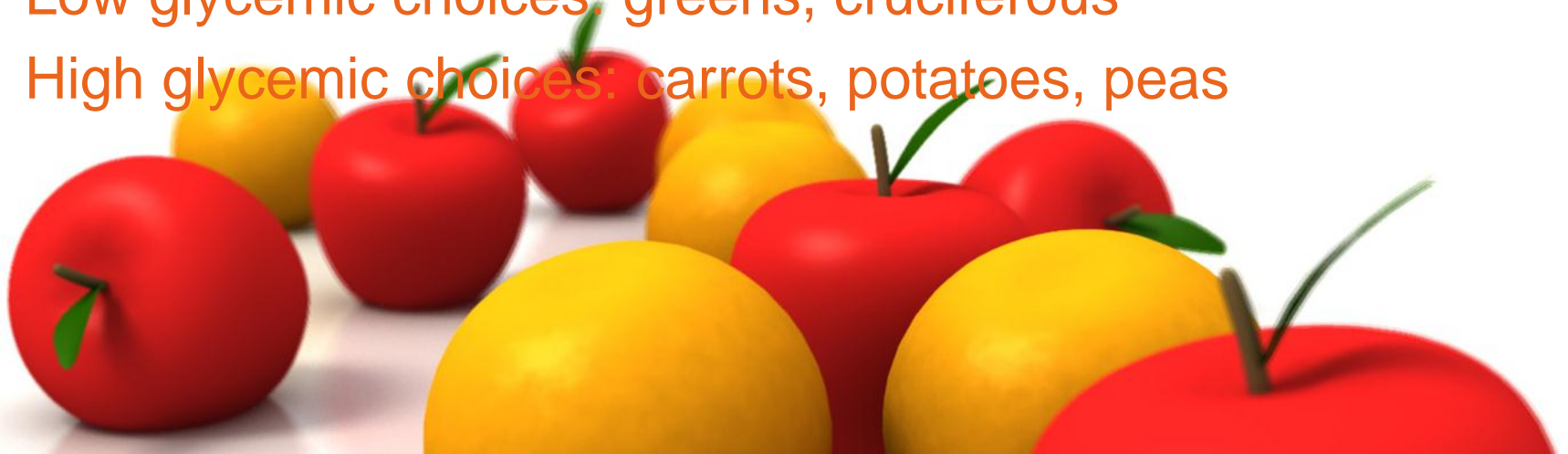
# Basics of healthy eating

- Grains, get creative
  - Quinoa
    - Rich in amino acids
    - Most nutritionally dense grain
  - Wheat berries
    - Mother grain of pasta, bread and flours
    - Unprocessed wheat kernel
  - Buckwheat
  - Rye
  - Oats/Groats
    - Oats with husk = groat
    - Nutritionally dense
    - Higher in protein
  - Couscous
    - Coarsely ground semolina (whole grain)
  - Pasta vs. rice
    - Pasta is a natural whole grain, semolina
    - Pasta is higher in fiber and complex carbohydrates
  - Bulgar wheat
  - Barley



# Vegetables

- Variety
  - Best mix of vitamins and minerals
- Raw or lightly steamed is best to retain optimal vitamin content
- Herbs fit into this category
- Eat ... virtually unlimited
- Low glycemic choices: greens, cruciferous
- High glycemic choices: carrots, potatoes, peas





# Fruits

- Variety
- Chose lower glycemic fruits more often (if you are hypoglycemic, have diabetes or are at risk of diabetes)
- Lower glycemic fruits
  - Berries (of any kind), apples, green bananas, citrus
  - Those with edible skins and seeds tend to be the lowest in glycemic index



# Glycemic Index

- High glycemic foods may contribute to cardiovascular disease with their role in blood lipids
  - Simple sugars, corn syrup, etc.



# Fiber

- 25-35 grams of fiber
- Insoluble fiber - helps with digestion
  - Food sources include wheat bran, whole grain products, vegetables, fruit skins, seeds and nuts
- Soluble fiber - Slows the passage of food through the digestive system which regulates blood cholesterol and glucose levels
  - Food sources include dried beans, oats, barley, some fruits and vegetables



# Foods that impact health

- Fiber-rich foods help alleviate constipation, hemorrhoids, and diverticular disease. Reduce risk for appendicitis.
- May also lower cholesterol which could reduce the risk of heart disease, reduce the risk of cancer of the digestive tract, and may help control diabetes.



# *Evidence Concerning Cancer*

- Fiber may defend against colorectal cancers
  - Fiber attracts water, dilution of potential cancer-causing agents, promote faster evacuation
  - Good source of folate, which may be protective
  - Fiber promotes bacteria growth, which may bind nitrogen, a possible cancer causer.
  - Fiber supplies butyrate from soluble fibers, which may resist chemical injury



# Fiber

- Studies suggest that people with type 2 diabetes who eat a high fiber diet can improve their blood sugar and cholesterol levels
- Similar results have been suggested in some studies in people with type 1 diabetes



# Fats

- Unsaturated - polyunsaturated and monounsaturated should be 90% of your fat intake
- Limit saturated
- Avoid trans fats

Reference: <http://www.diabetes.org/food-and-fitness/food/what-can-i-eat/fats.html>



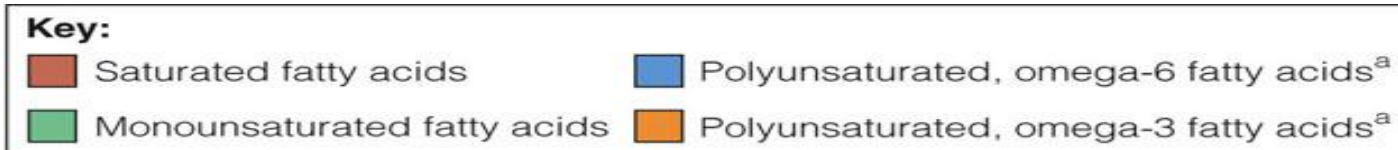
# Unsaturated Fats

- Target poly-, mono-, and un-saturated fats (90% of total fat intake)
  - Polyunsaturated, omega-6
    - Safflower, sunflower, corn, soybean, walnut, and cottonseed
  - Polyunsaturated, omega-3, most important for vascular health
    - Flaxseed, fish oil, walnut, and canola
  - Monounsaturated
    - Olive, canola, peanut

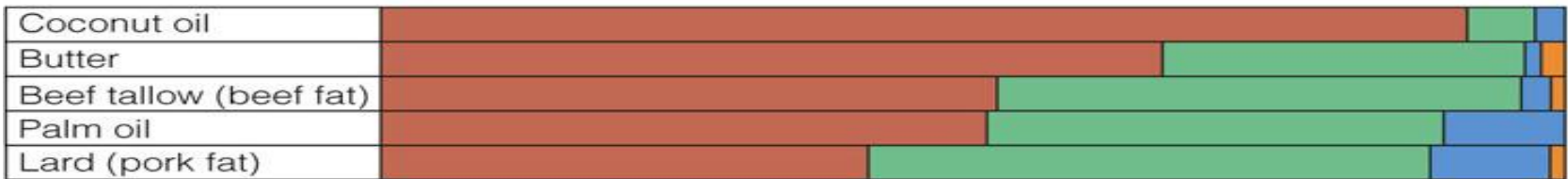




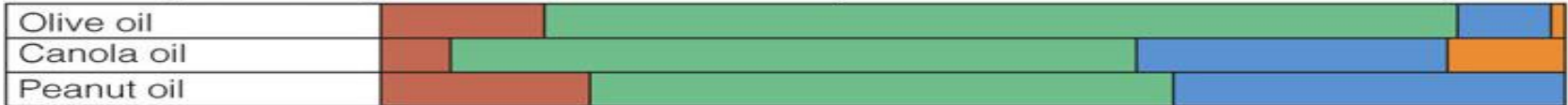
# Saturated versus Unsaturated Fats



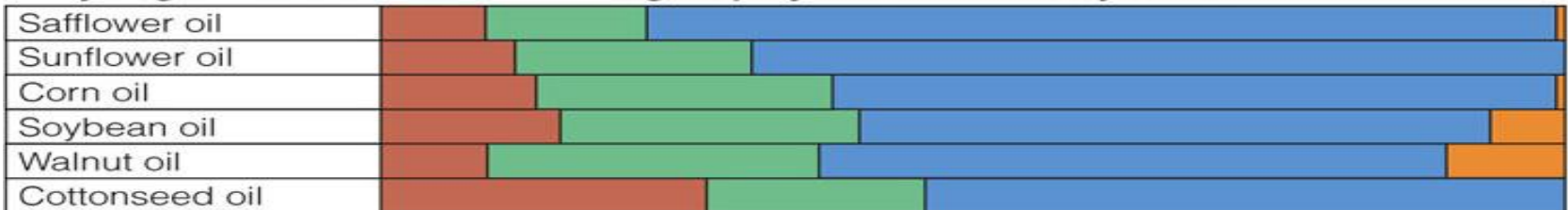
**Animal fats and the tropical oils of coconut and palm contain mostly saturated fatty acids.**



**Some vegetable oils, such as olive and canola, are rich in monounsaturated fatty acids.**



**Many vegetable oils are rich in omega-6 polyunsaturated fatty acids.<sup>a</sup>**



**Only a few oils provide significant omega-3 polyunsaturated fatty acids.<sup>a</sup>**



<sup>a</sup>These families of polyunsaturated fatty acids are explained in a later section.

<sup>b</sup>Fish oil average values derived from USDA data for salmon, sardine, and herring oils.

# Omega-3

- Seeds and nuts
  - Omega-3
    - Natural anti-inflammatory, 2 Brazil nuts = equivalent to Motrin. Rich source of selenium, which is a rich anti-inflammatory, however, not recommended to eat in high doses.
    - Rich in Magnesium, which relaxes the body and calms the nervous system
      - » Pumpkin seeds, almonds, and green leafy vegetables



# Protein

- Fish recommended twice a week (AHA)
- Eggs (perfect protein), whites are fat and cholesterol free
- Lean meats
- Nuts, bean, seeds



# Healthy Food Combinations - Complementary Proteins

Ile

Lys

Met

Trp

Legumes



Grains



Together



# Calcium and Vitamin D

- Calcium sources
  - Sardines, salmon with the bone, collard greens, molasses, spinach, soy beans
- Vitamin D sources
  - Sunlight 15-20 minutes daily without sunscreen
  - Gardening early mornings or late afternoons



# Overall guidelines

- Stick to regular mealtimes, 3 meals and 3 snacks
  - Diminishes cravings and binge eating.
  - Eating every 2-3 hours helps to maintain proper blood sugar
  - Optimizes energy levels.
  - Keeps metabolic rate at its highest potential



# Overall guidelines

- Portion control
  - Fruits
    - Small fruit
    - ½ cup chopped
  - Vegetables
    - 1 cup leafy
    - ½ cup chopped
    - 1 small full-size carrot / celery
- Cereals
  - 1 cup cold cereal
  - ½ cup hot cereal (uncooked)
- Grains
  - 1 slice of bread
  - ½ cup rice
  - 2/3 cup pasta



# Overall guidelines

- Portion control
  - Dairy
    - 8 ounces milk
    - 1 inch cube of cheese
    - ½ cup cottage cheese
    - 1 cup yogurt
  - Meats
    - 3 ounces
    - Size of a deck of cards
  - Legumes
    - ¼ cup uncooked or ½ cup cooked





# Tricks that work

- Using smaller plates helps to reduce portions
- Choose foods you like and add vegetables
  - Lasagna or pasta dishes, add eggplant or zucchini
  - Rice dishes, use half rice and half legumes, such as lentils or red beans
  - Sandwiches, add sliced cucumbers, red and yellow peppers, onion, tomato



# Overall Guidelines

- Eat a variety of plant-based foods
- Low-sodium
- Less processed, close to nature!
- Plenty of fiber
- Unsaturated vs. saturated fats



# Phytochemical foods

- Also known as phytonutrients, phytochemicals are nutrients found in plants.
- Research shows that a plant-based diet can reduce the risk of chronic disease, such as cancer.
- Most phytochemicals have antioxidant activity, which can stabilize free radicals that cause harm to our bodies.



# Phytochemicals in foods

- Hot peppers
- Vibrant colors
- May modulate blood clotting
- Antioxidants – may reduce heart disease, age-related eye disease, cancer, and other diseases



# Phytochemicals in foods

- Turmeric
  - May inhibit enzymes that activate carcinogens
  - May trigger enzymes that block DNA damage from carcinogens
- Cruciferous vegetables



# Phytochemicals in foods

- Cruciferous vegetables
- Citrus fruit peels and oils
- May trigger enzymes that detoxify carcinogens
- May trigger enzymes that detoxify carcinogens



# Phytochemicals in foods

- Chives, garlic, leeks and onions
- Coffee beans, fruits, oats, potatoes, soybeans
- May speed production of carcinogens destroying enzymes
- May create enzymes that make carcinogens water soluble (excretion)



# Phytochemicals in foods

- Whole grains
- Flax seed, whole grains
- Binds to materials, stopping free radical formation (possibly lowering cancer risk)
- May lower estrogen (and hormonal cancer risk), osteoporosis, and heart risks





# Antioxidants

## Highest to lowest

- Blackberries
- Walnuts
- Strawberries
- Artichokes
- Cranberries
- Coffee
- Raspberries
- Pecans
- Blueberries
- Cloves
- Grape juice
- Dark chocolate



# Highest concentration of phytochemicals

- Spices!
- Use your spices to make your food healthier.
- More phytochemicals than foods.



# Functional foods

- All foods are functional in the sense that they have nutrients that provide energy, sustain growth or support vital processes.
- *Functional food* refers to a food that provides additional benefits beyond basic nutritional needs.
- These foods may reduce the risk of disease or promote optimal health.



# Functional foods

Functional Food	Key Component	Potential Health Benefits
Black and green tea	Catechins	Reduce risk for cancer
Fish	Omega-3 fatty acids	Reduce risk for heart disease
Oats	Soluble fiber beta glucan	Reduce cholesterol
Yogurt	Probiotics	Improve gastrointestinal health
Fruits and vegetables	Many different phytochemicals	Reduce risk for cancer and heart disease



# Herbs and their benefit to health

- Herbs and spices have a traditional history of use, with strong roles in cultural heritage, and in the appreciation of food and its links to health.
  - Consuming a half to one clove of garlic (or equivalent) daily may have a cholesterol-lowering effect of up to 9%, by modifying the LDLs. There is level III-3 evidence (National Health and Medical Research Council [NHMRC] levels of evidence).

Tapsell LC, Hemphill I, Cobiac L, Patch CS, Sullivan DR, Fenech M, Roodenrys S, Keogh JB, Clifton PM, Williams PG, Fazio VA, Inge KE. Health benefits of herbs and spices: the past, the present, the future. *Med J Aust.* 2006 Aug 21;185(4 Suppl):S4-24.



# Herbs and their benefit to health

- There is level III-1 evidence that 7.2 g of aged garlic extract has been associated with anticlotting, as well as modest reductions in blood pressure (an approximate 5.5% decrease in systolic blood pressure).
- A range of bioactive compounds in herbs and spices have been studied for anti-carcinogenic properties in animals.
- There is level I and II evidence for the effect of some herbal supplements on psychological and cognitive function.



# Herbs and their benefit to health

- There is very limited scientific evidence on lowering the glycemic-effect of ginseng on type 2 diabetes mellitus.
- There is level II evidence for the use of ginger in ameliorating arthritic knee pain; however, the improvement is modest and the efficacy of ginger treatment is ranked below that of ibuprofen.
- Herbs and spices can be used in recipes to partially or wholly replace less desirable ingredients such as salt, sugar and added saturated fat.



# Cinnamon

- Blood sugar regulation – decreases blood sugar by up to 20 points with 1 teaspoon sprinkled into foods throughout the day





# Foods that impact health - Grains

- 18-year longitudinal study of more than 160,000 women
  - 2 to 3 servings of whole grains a day were 30 percent less likely to have developed type 2 diabetes
  - Combined results with other studies, eating an extra 2 servings of whole grains a day decreased the risk of type 2 diabetes by 21%.

Reference: de Munter JS, Hu FB, Spiegelman D, Franz M, van Dam RM. Whole grain, bran, and germ intake and risk of type 2 diabetes: a prospective cohort study and systematic review. *PLoS Med*, 2007; 4:e261



# Barley and Blood Sugar

- Barley

- *Nutrition Research* (2006) eating barley muffins, men with mild insulin-resistant experienced significant reductions in glucose and insulin responses
- *Journal of the American College of Nutrition* (2006) – eating barley cookies and crackers experienced significant reductions in glucose and insulin responses
- *Diabetes Research and Clinical Practice* (2007) – 30% decrease in HbA1c (average blood glucose level) in type 2 diabetics who consumed a healthy diet including pearl barley that supplied 18 grams of soluble fiber a day.

Reference: <http://www.barleyfoods.org/nutrition.html>



# Colors

- With more colors on your plate, you get more cancer-fighting and immune-boosting nutrients. Always aim for a colorful meal that has many different colors of the rainbow.



# Colors

Colors	Food examples	Phytochemical	Potential Health Benefit
Red	Tomatoes, watermelon	Lycopene	Antioxidant; decrease risk prostate cancer
Orange	Carrots, yams, mangos	Beta-carotene	Supports immune system; antioxidant
Yellow-orange	Oranges, lemons, grapefruits, peaches	Vitamin C, Flavonoids	Inhibit tumor cell growth; detoxify harmful substances
Green	Spinach, kale, collards	Folate	Builds healthy cells
Green-white	Broccoli, brussel sprouts, cabbage	Indoles, lutein	Eliminates excess estrogen and carcinogens
White-green	Garlic, onions, chives, asparagus	Allyl sulfides	Destroy cancer cells; support immune system
Blue	Blueberries, grapes, plums	Anthocyanins	Destroys free radicals
Red-purple	Grapes, berries, plums	Reservatrol	May decrease estrogen production
Brown	Whole grains, legumes	Fiber	Carcinogen removal



# Foods that impact mood

- Journal of Sleep Research, 2008
  - Cherries/Berries
    - Energy – complex carbohydrates
  - Beans/meats
    - High in vitamin B, which promotes wakefulness and improves mood, when eaten early in the day



# Foods that impact mood

- Journal of Sleep Research, 2008
  - Popcorn, turkey, pasta, and plain yogurt
    - Rich in the amino acid, L-tryptophan
      - stimulate serotonin production, lulling you into sleep
  - Spicy foods
    - Serotonin uptake



# Food and taste

- 14 times to become accustomed to a taste
- Try new foods
- Eat in season



# References

- <http://www.mayoclinic.com/health/functional-foods/AN02088>
- <http://www.nutriwatch.org/04Foods/ff.html>
- [http://www.foodinsight.org/Resources/Detail.aspx?topic=Functional\\_Foods\\_Fact\\_Sheet\\_Antioxidants](http://www.foodinsight.org/Resources/Detail.aspx?topic=Functional_Foods_Fact_Sheet_Antioxidants)
- <http://www.ianrpubs.unl.edu/epublic/live/g1610/build/g1610.pdf>
- <http://cancerproject.org/resources/pdfs/2009RainbowPoster.pdf>



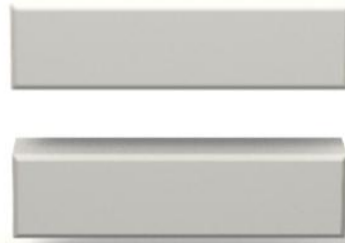


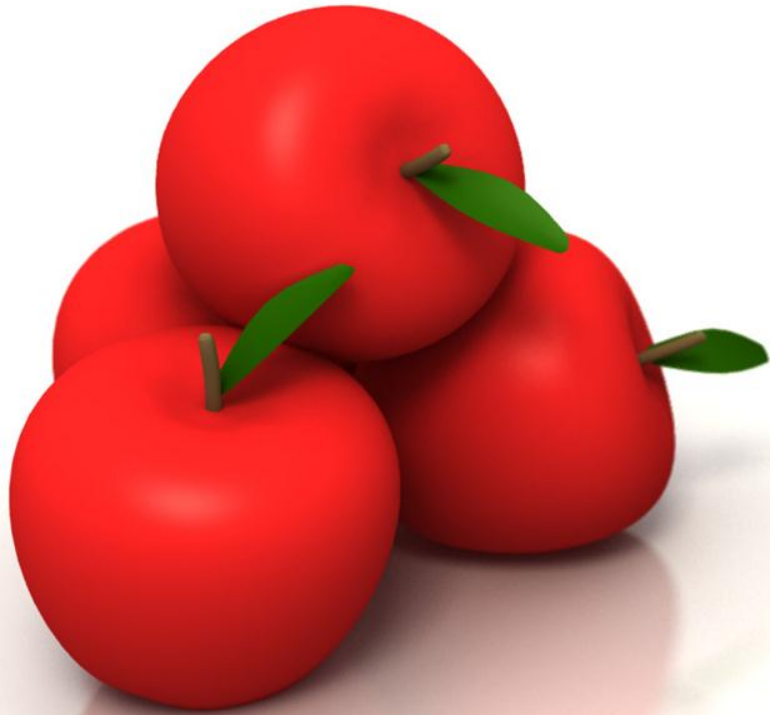
# References

- American College of Sports Medicine
- Hales, Diane (2009). An Invitation to Health. PPT by Andrew Owusu, Ph.D.
- Sizer, Frances & Whitney, Ellie (2008). Nutrition Concepts and Controversies, 11<sup>th</sup> ed. PPT by Judy Kaufman, Ph.D.



# Eat Your Colors!





# The end ... or the beginning?

- Any questions?
- Further contact
  - Healthy Adventures Foundation
  - 619-466-4386
    - Ask to speak to any health coach
  - [Wendy.hileman@gmail.com](mailto:Wendy.hileman@gmail.com)

