Chapter 11

Eating Right: Eight Principles of Food and Health

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Principle #1:
Nutrition represents the combined activities of countless food substances. The whole is greater than the sum of its parts.

- Food enters your mouth
- Saliva and food combine, starting the digestion process
- Each individual ingredient in one recipe/meal has thousands of chemicals
- Different food chemicals interact with one another
- It is impossible to understand how each chemical interacts with one another

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #1 Cont.

- Chemicals from foods react and work together to produce good health
- Cells decide where nutrients go and how much is needed for a reaction
- Our bodies learn how to benefit from the different chemicals
- Some are used and others discarded
- Ingredients vs. Meals

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #2: Vitamin supplements are not a panacea for good health

- Supplements are NOT a substitute for whole foods
- Supplements
  - Don't lead to long-lasting health
  - Can have dangerous side-effects
  - Let consumers continue eating their customary foods
- Consumers believe that they are "buying" health

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #2 Cont.

- Supplements that have been proven to have no know benefits of preventing heart disease and cancer
  - Vitamin A
  - Vitamin C
  - Vitamin E
  - Multivitamins with folic acid
  - Antioxidant combinations
  - Beta-Carotene (recommended against using)
- Nutrients are important when they are consumed as food!

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #3:

There are virtually no nutrients in animal-based foods that are not better provided by plants.

- Eating animals is a markedly different nutritional experience from eating plants.
  - Amounts and kind of nutrients vary
    - Plants have more antioxidants, fiber, vitamins, & minerals
    - Animals have much more cholesterol, fat, protein, Vit. B12, & Vit. D
    - Exception: nuts and seeds
- Should we expect to see distinctly different effects on our bodies depending on which variety of foods we consume?
- Essential nutrients

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #3 cont.

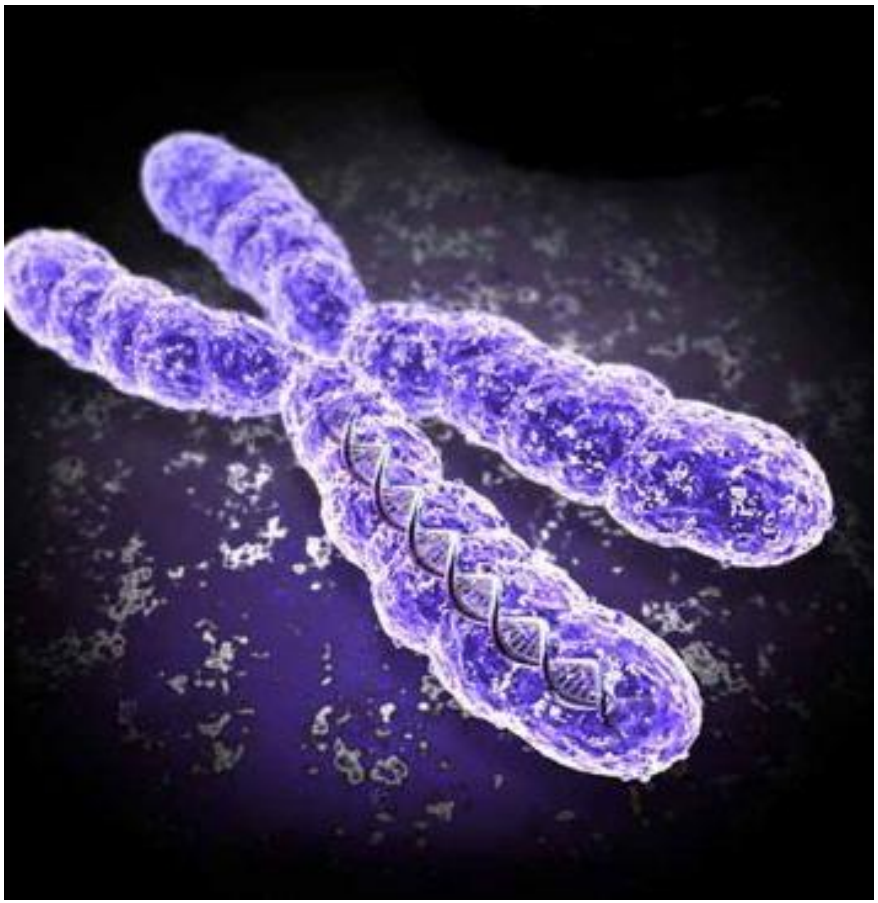
- Problems with Vitamin B12:
  - Not absorbed adequately in our intestines
    - Recommended to consume via food
    - Plants are not a reliable source of B12 in the United States.
- It is estimated that we hold a three-year store of Vit. B12 in our bodies.
    - Suggestions

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #4:
Genes function only by being activated or "expressed."

- Nutrition plays a critical role in determining which genes, good or bad, are expressed.
  - "We can safely say that the origin of every single disease is genetic."
- Not all genes are fully expressed all the time
  - Dormant genes
- What causes some genes to remain dormant, and others to express themselves?
  - The answer: environment, especially diet

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.



Principle #4 cont.

- Genes and disease rates vary among ethnic groups.
  - China research findings
- Disease rates change over time so drastically that it is biologically impossible to put blame on genes.
- Gene expression is controlled by environment, especially nutrition
  - Genetic code represents a biochemical "universe" that interacts with nutrition

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #4 cont.

What explains the difference between 2 different people? Genes.

We all have disease risks due to our different genes

- Control the risks

Optimize our chances of expressing the right genes

- Provide our bodies with the best possible environment
- Optimum nutrition

Campbell, T. C., & Campbell II, T. M. (2016). *The China Study*. Dallas, TX: BenBella Books, Inc.

Principle #5:
Nutrition can substantially control the adverse effects of noxious chemicals.

- Widely held perception that cancer is caused by toxic chemicals that make their way into our bodies in a sinister way.
  - Acrylamide example
- Like genes, activities of chemical carcinogens are primarily controlled by the nutrients we eat
- Nutrition primarily determines whether the disease will ever do its damage

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Principle #6: The same nutrition that prevents disease in its early stages (before diagnosis) can also halt or reverse disease in its later stages (after diagnosis)

- WFPB diet
- Irreversible disease
- An ounce of prevention equals one pound of cure

Principle #7: Nutrition that is truly beneficial for one chronic disease will support health across the board

- Can you make specific diet plans for each disease so that every chapter does not have the same recommendations
- Diseases have much in common
- The same good nutrition will generate health and prevent disease across the board
- WFPB

Principle #7: Nutrition that is truly beneficial for one chronic disease will support health across the board Cont.

- How simple food really is

- Chance to clear public confusion

Principle #8: Good nutrition creates health in all areas of our existence. All parts are interconnected.

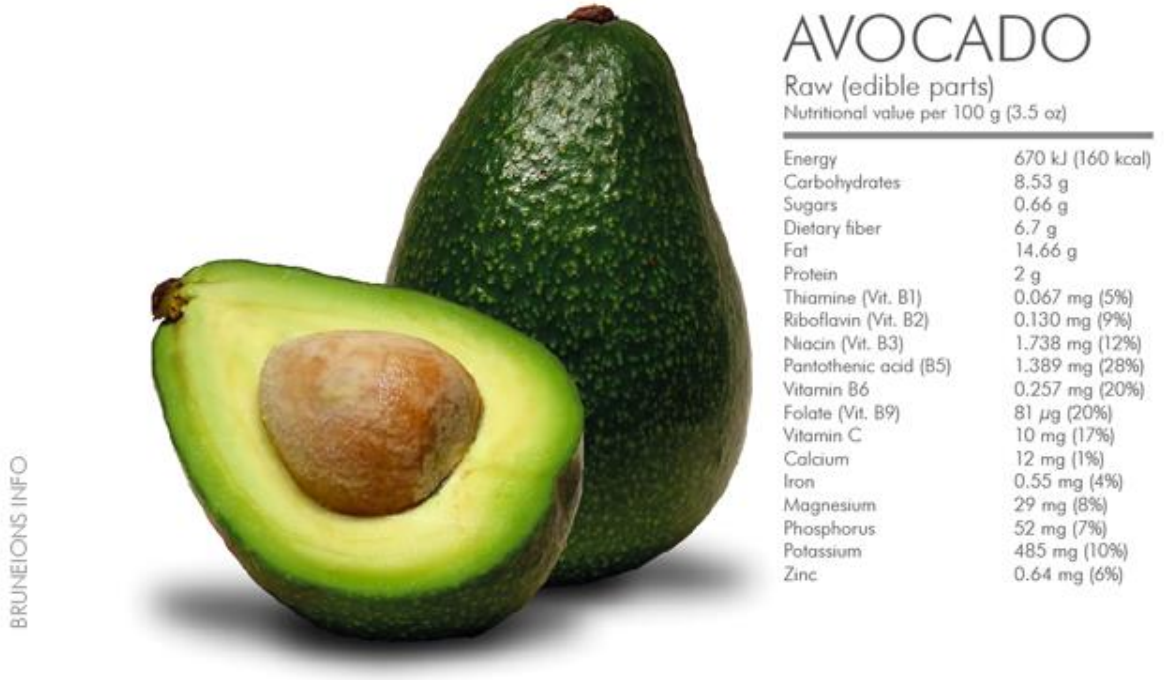
- "Holistic" Health
- Food and nutrition is primary
- Eating is intimate
- All the parts
  - Rat diet and exercise
- Balance
- WFPB diet

The Four Principles We Most Agree With

- Principle #1
- Principle #2
- Principle #4
- Principle #8

Principle #1: Nutrition represents the combined activities of countless food substances. The whole is greater than the sum of its parts.

- All foods contain different amounts of nutrients (protein, fat, carbohydrates, vitamins, and minerals)
- No food is a part of one, single food group
- Proteins break into amino acids
- Fats break into fatty acids and glycerol
- Carbohydrates break into simple sugars
- During digestion, the walls of the small intestine absorbs water and the digested nutrients into your bloodstream



Your Digestive System & How it Works. (2017, December 1). Retrieved from https://www.niddk.nih.gov/health-information/digestive-diseases/digestive-system-how-it-works

Principle #2:
Vitamin supplements are not a panacea for good health

- 2015-2020 DGA
  - "Nutritional needs should be met primarily from foods"
  - Recommended in some cases when nutrients may be consumed in less than recommended amount (Pregnant women taking folic acid)
- Challenges
  - Easy access
  - Mostly self-initiated
  - Billion-dollar industry

U.S. Department of Health and Human Services and U.S. Department of Agriculture. *2015 – 2020 Dietary Guidelines for Americans*. 8th Edition. December 2015. Available at https://health.gov/our-work/food-and-nutrition/2015-2020-dietary-guidelines/.

Principle #4: Genes function only by being activated or "expressed."

- To clarify the basic knowledge about the vital role of nutrition-related genes in various disease states, especially cancer, and the relation between nutrition and gene expression.
- Nutrigenetics and nutrigenomics
  - Humans are affected by both environmental and genetic factors.
  - Nutrition can contribute to disease pathogenesis or appearance either directly or indirectly.
  - The interaction between nutrition, metabolism, and gene expression is mandatory for maintenance of body homeostasis.
  - There is an interacting two-way relationship between nutrition and the human genome.

Elsamanoudy, A, et al, (2016). The role of nutrition related genes and nutrigenetics in understanding the pathogenesis of cancer.

Principle #8: Good nutrition creates health in all areas of our existence. All parts are interconnected

- Holistic approach
  - Herbal medicine
  - Vitamin Supplementation
  - Exercise
  - Spiritual, Mental, and Emotional health
- Mosby's Handbook of Herbs & Supplements

Skidmore-Roth, L. (2010). *Mosbys handbook of herbs & natural supplements*. St. Louis, MO: Elsevier Mosby.

Discussion Question

What are the cultural, ethical, legal and political aspects of selected principles?

Discussion Question

Which of the selected principles would be most challenging to promote?

What are the major obstacles and strategic actions you would take to implement the principles?

References

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