Stone Age Body, Space Age Diet: Nutrition, Metabolism and Mental Health

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All references to diabetes in this presentation refer to Type II Diabetes
Objectives

- Explain to patients ways in which most of us grew up with inaccurate nutrition information
- How can we educate patients as to the changed understanding of fats, CHO and protein in foods, and help them apply this knowledge practically
- What are some ways our understanding of fats has changed, and how might we present this information to patients?
What Is Explained

- Adoption of nutrient dense diets improves health and normalizes weight
- Replacing empty, cariogenic and obesogenic carbohydrates in the diet with natural fats and proteins is essential, not only to tolerating psychotropic drugs, but to overall mental and physical well-being
Atypical Antipsychotics

- Weight gain: Adults, 7% or more in 12 weeks
- Children/Adolescents: 8-15% in 12 weeks (1-1.5 lbs per week)
- Significant rise in triglycerides, blood glucose
Atypical Antipsychotic

Amplify the effects of the Standard American Diet (SAD)

The problem is
America is in a State of Malnutrition

Mal = Badly  Nutri = Nourish
Health in the United States

- No. 1 in the world for percentage of obese persons (30.6%)
- No. 1 in the world in total health expenditures per capita
- No. 22 among industrialized nations for healthy life expectancy

Source: Nationmaster.com
Health in the United States (cont)

- CDC reports ~ 45% (105M) of Americans over 18 years of age have pre-diabetes or diabetes
- Pre-diabetes affects 35% of all adults (82M)
- 10% (23M) of all adults have T2DM
- Total US Adult Population in 2010: 234.5M
One in Three Children Overweight or Obese

One in 5 adults, one in 20 children have NAFLD
Deranged Metabolism’s Impact

- Personal health risk
- National Security risk
- Economic risk
  - 2010 Brookings Institution study: US cost of obesity may exceed $215 billion per year
- In 2010, 2/3 of Americans overweight or obese
- By 2020, 3/4 of Americans will be overweight or obese
Space Age Diets & Mental Health

“The change in traditional diets has already led to increased health problems, such as obesity, cardiovascular disease, and diabetes, while the mental health of circumpolar peoples has also declined substantially during the same time period.”

Int J Circumpolar Health, 2003
Diet Impact (cont)

Eating D-Os
Up to 45% Women Reproductive Age

Loss of Heme Iron:
Cognition
Depression/ADHD
RLS
(Test: Ferritin/CRP)

Credit: iStockphoto/Sharon Dominick
Diet Impact (cont.)

- Mineral losses: Mg, Li, Zn
- Essential vitamins: B12
  - Pearl: Ask if patient is vegetarian/vegan or is s/p gastric bypass surgery
  - Patients over age 65: Atrophic Gastritis
  - PPIs
Diet Impact (cont.)

- **Choline**
  - Liver, egg yolks
  - Precursor to Acetylcholine

- **Cholesterol**
  - Builds Steroid Hormones
  - Antioxidant
  - Precursor to Bile Acids
Statins

- New FDA warnings now include
  - Memory Loss
  - Confusion
  - Diabetes

- Previous studies of low cholesterol
  - Adults <160: Aggression, hostility, anxiety, phobia, psychosis
  - Child/Adolescent <145: Aggression, violence, school suspension
The (Un-) Natural History of Man

From This: 1.8M Yrs.
From This: 35 Yrs.
Woodstock 1969
Woodstock 1999
Vegetarian Gorilla
Omnivore Chimpanzee
Relative gut proportions for extant hominoids (percentage of total gut volume)

From: K. Milton, Nutritional characteristics of wild primate foods: do the diets of our closest living relatives have lessons for us?, pp. 488-498
History of Human Nutrition

- If all of human history was condensed into one year, we only began farming and eating grains yesterday, when dental disease became common and we became shorter/fatter.

- We began consuming processed vegetable oils & trans fats within the past 10 minutes, when heart disease became our No. 1 killer.
Perfect Teeth
Pre-Agriculture

- Native American skulls from US and Canada
- No tooth decay
- Wisdom teeth useful
- Broad dental arches, broad cheek bones
- Fat soluble vitamins contribute to tooth & bone strength/build
Dental Disease Post-Agriculture

- Head of mummy Amenhotep III (1386-1349 BC)
- Front tooth loss secondary to tooth infections
- May contribute to death, age ~38 yrs.
How Americans Got Obese: the Lipid Hypothesis

- The Lipid Hypothesis (LH): Dietary fat raises cholesterol and cholesterol causes heart disease
- Promoted by Ancel Keys in early 1950s, via his 7 Countries Study.
- Keys had data from 22 countries, but failed to report on 15 that didn’t fit his Hypothesis.
**Figure 1A.** Correlation between the total fat consumption as a percent of total calorie consumption, and mortality from coronary heart disease in six countries. Data from Keys.1

**Figure 1B.** - as 1A but with all countries where data were available when Keys published. 1 Australia 2 Italy 3 Canada 4 Ceylon 5 Chile 6 Denmark 7 Finland 8 France 9 W Germany 10 Ireland 11 Israel 12 Italy 13 Japan 14 Mexico 15 Holland 16 New Zealand 17 Norway 18 Portugal 19 Sweden 20 Switzerland 21 Great Britain 22 USA

Data from Yerushalmy and Hilleboe
Ancel Keys/Lipid Hypothesis

- Keys won America’s confidence
  - Named “Father of the Lipid Hypothesis”
  - Featured on the cover of Time (1961)
MONICA Study

- Began in early-to-mid 1980s
- 10 year study
- 22 Countries
- 64,976 men and women, ages 35-64
- No correlation found between total blood cholesterol values and death from heart disease
MONICA Data
as graphed by Dr. Malcolm Kendrick

Comparison between heart-disease rates in men aged 35–74 and average cholesterol levels in 15 populations
Light on Fats, and Carbohydrate Heavy
My Plate (same concept)
USDA Recommendations = Carbohydrate Promotion

- Increased consumption low fat, refined carbohydrates, sweeteners, processed foods (SnackWells, e.g.)
  - Per AHA, US adults avg. 22 tsps., teens 34 tsps., added sugars per day (fructose, e.g.)

- Skim (“blue”) milk widely promoted
  - Non-fat powdered (denatured) milk added as whitener
Industry Creates Dietary Confusion: Smart Choices Program

- Endorsed by top nutritionists at Tufts University and Baylor College of Medicine
- Corporate sponsored: Kellogg’s, PepsiCo, ConAgra, Kraft Foods
Smart Choices Program (cont.)

- 44% sugar
- 96% refined carbohydrate
- Coal tar dyes: Red Dye #40, Yellow Dye #6 (child hyperactivity)
- Seed dye Annatto (allergies)
- Vitamins
- Some fiber
Fake Food
Real Food
You may

what’s next?
FDA TO RETOOL FOOD GUIDE PYRAMID, CITING CONSUMER CONFUSION
Myth of Whole Wheat?
Bread Study,
University of Guelph, Canada

- Whole wheat and whole wheat barley promoted the greatest rises in blood sugar
- White bread promoted less
- Sourdough bread promoted the very least
“Skim milk is one of the most valuable adjuncts of the farm for fattening swine. Used with corn, kafir corn or any of the common grain by-products, an almost ideal ration is formed. Hogs like it, and relish rations mixed with it. As a result of five year’s work in feeding skim milk at the New York station at Cornell, it is concluded that the most economical returns are secured when the milk is fed with corn meal.”

Farmer’s Cyclopedia of Livestock, pg. 545
Supportive Studies

- 9 yr. study: 19,352 Swedish women: In middle age, one serving full fat milk per day --> 15% less weight gain; full fat cheese --> 30% less weight gain (Rosell, et. al. AJCN 2006)

- 3 year study, 12,829 Adolescents: Skim and 1% milk, but not dairy fat, associated with weight gain (Berkey et. al., Arch Ped Adolesc Med 2005)
Control Diet vs. Low Carb (20 g CHO per day), High Fat, Ad Lib Diet

- 10 obese patients with DMII
- 7 days on control diet: Avg 3111 Kcal
- 14 days on LC diet: Avg 2164 Kcal
- Mean 24 hr. plasma glucose normalized.
- 1.65 Kg (3.6 lb) weight loss in 14 days
- Avg HgA1C declined from 7.3 to 6.8%
- Insulin sensitivity improved by 75%
- Triglycerides declined 35%
- Cholesterol declined 10%

Recent News:

“It’s Time to End the Low Fat Myth”
Fewer Carbohydrates, More Natural Fats, with High Quality Proteins

- Brain is 60-70% fat & significant cholesterol--fats vital to function
- Cholesterol basis steroid hormones
- Fats and proteins block hunger
- Fats promote absorption of vitamins and minerals
- Fats slow release of sugar to the blood stream
Doesn't the Brain Need Carbohydrates?

- Ask any Eskimo: The brain functions well on ketones from carnivorous diet
  - Ketones may help in Alzheimer’s
- Gluconeogenesis: Proteins converted to carbohydrates as needed
- Brain functions well on less than 40% dietary carbohydrates

Inuit child fishing with harpoons
Rule of Thumb for Patients: If It Rots Your Teeth, Don’t Eat It

Highly Fermentable Carbohydrates (sticky/sugary foods, dried fruits, refined grains, crackers, potato chips, sodas, etc.) are cariogenic, promote triglycerides, impair metabolism.
Impact of WW II on Health In Japan

![Graphs showing the impact of WW II on health indicators in Japan.](image)
High Carb, Low Fat Diets: The
High Carb, Low Fat Diets

- Universally recommended for tx hyperlipidemia, prevention heart dz
- Lower HDL
- Raise TG
- Drive LDL toward Small, Dense
  - NMR Lipoprotein
- Refined flours, phytates--> Mg Deficiency
Foie Gras (NAFLD)

Omnivore Goose
CHO overfeeding (wet corn mash)
Avoid Food Additives & Preservatives

- Processed meat associated with heart disease, cancer, diabetes
- Food dyes promote hyperactivity in children
- MSG promotes obesity
- Aspartame/Glutamate excitotoxic
Exercise, while essential to health, is not shown to prevent obesity
Balance Omega 3/Omega 6

Wild Game

Pasture Feeding

v. Corn/Grain Feeding
American Psychiatric Association Consensus

2006: APA endorses 1000 mg per day of n-3 fatty acids (DHA + EPA=1000 mg) for depressive, disruptive and psychotic disorders.
Myth of the Vegan Hen

- Per DNA, chicken is the closest living relative of T. Rex
- Omnivore: bugs & greens are staples
- Chicken health translates to human nutrition
- Balanced n-3:n-6 (omega 3:omega 6)
Paleo(lithic) Diet

Worldwide, 73% of H-G societies derive >55-65% of energy from animal foods
Every Lion Knows Offal Isn’t Awful

Organ Meats for Health and Sustainability
Add bone broth and pasture butter.
Home cooking. Shop the perimeter of the supermarket.
Secret to Healthy Environment and Food Supply: Grass Farming

- Joel Salatin model
- Humane animal husbandry
- Pasture rotation
- Livestock Rotation
- Pasture as Carbon Sink
For more information:

The Metabolism Society
nmsociety.org

Book: Nutrition and Physical Degeneration, by Weston A. Price, DDS

Dr. Childers’ blog:
annchilders.blogspot.com
Questions?
Woodstock 1969