Nutrition and Weight Management

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The Fine Print:

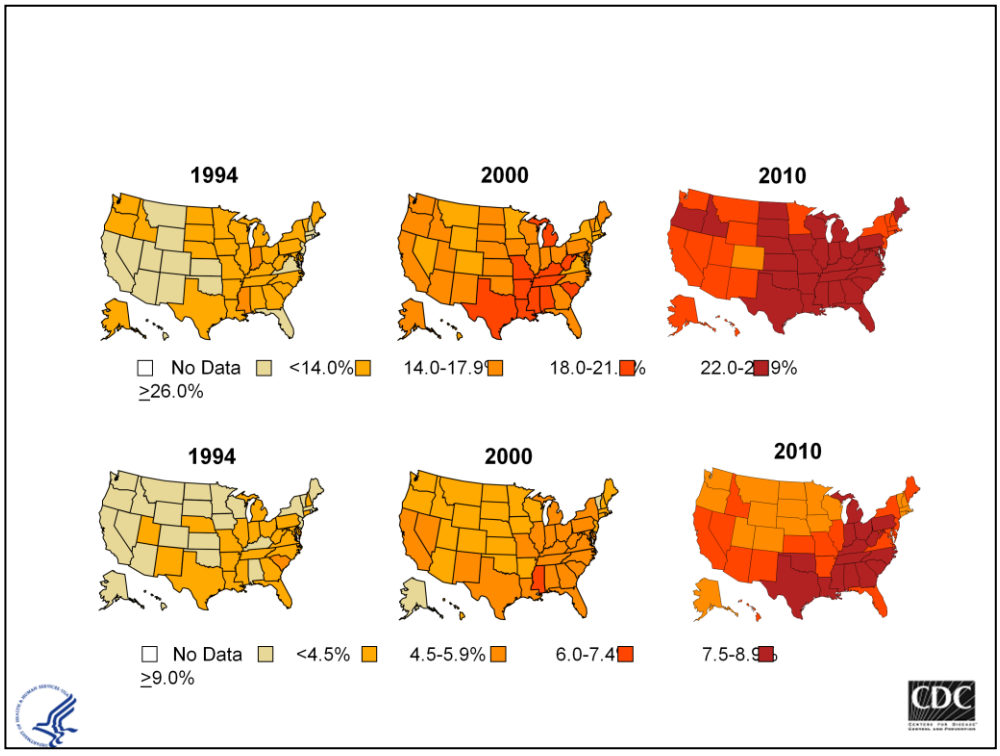
- Be sure to look at the links in the note sections as they often contain the most useful information. They are not just a list of sources.
- The intent of this is for information use only.
- I am not a Registered Dietitian or otherwise certified in nutrition.
- It is far from inclusive and covers mainly what I am interested in and consider important.
- Use on your own responsibility and at your own risk.
- You are responsible to determine the appropriateness of any use beyond personal study based on copyrights of linked materials, quotes etc.
- I have no personal copyright on this intentionally.
- This is to encourage it's free use so feel free to cut it up and/or use it whole.
- If possible give me some credit since, like most practices I can use the exposure and recognition.

Solving the Weight of the Nation

- Two-thirds of adults and one-third of children are overweight or obese. Left unchecked, obesity's effects on health, health care costs, and our productivity as a nation could become catastrophic.
- The staggering human toll of obesity-related chronic disease and disability, and an annual cost of $190.2 billion for treating obesity-related illness, underscore the urgent need to strengthen prevention efforts in the United States. The Robert Wood Johnson Foundation asked the IOM to identify catalysts that could speed progress in obesity prevention.
- The Institute of Medicine evaluated prior obesity prevention strategies and identified recommendations to meet the following goals and accelerate progress
- Integrate physical activity every day in every way
- Market what matters for a healthy life
- Make healthy foods and beverages available everywhere
- Activate employers and health care professionals
- Strengthen schools as the heart of health
- On their own, accomplishing any one of these might help speed up progress in preventing obesity, but together, their effects will be reinforced, amplified, and maximized.

- Click on, Launch Graphic". http://iom.edu/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx

Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation
http://iom.edu/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx
http://www.medscape.com/viewarticle/763786?src=ptalk
http://www.ncbi.nlm.nih.gov/pubmed/22187041



www.cdc.gov/diabetes/statistics/slides/maps_diabetesobesity_trends.pptx

- I want as many people to watch these as possible.
- Please pass them around.

Click here: The Skinny on Obesity (Ep. 1): An Epidemic for Every Body - YouTube

http://www.youtube.com/watch?v=0ndTEu_qDGA

http://www.youtube.com/watch?v=dBnniua6-oM&feature=relmfu

Audience Experience

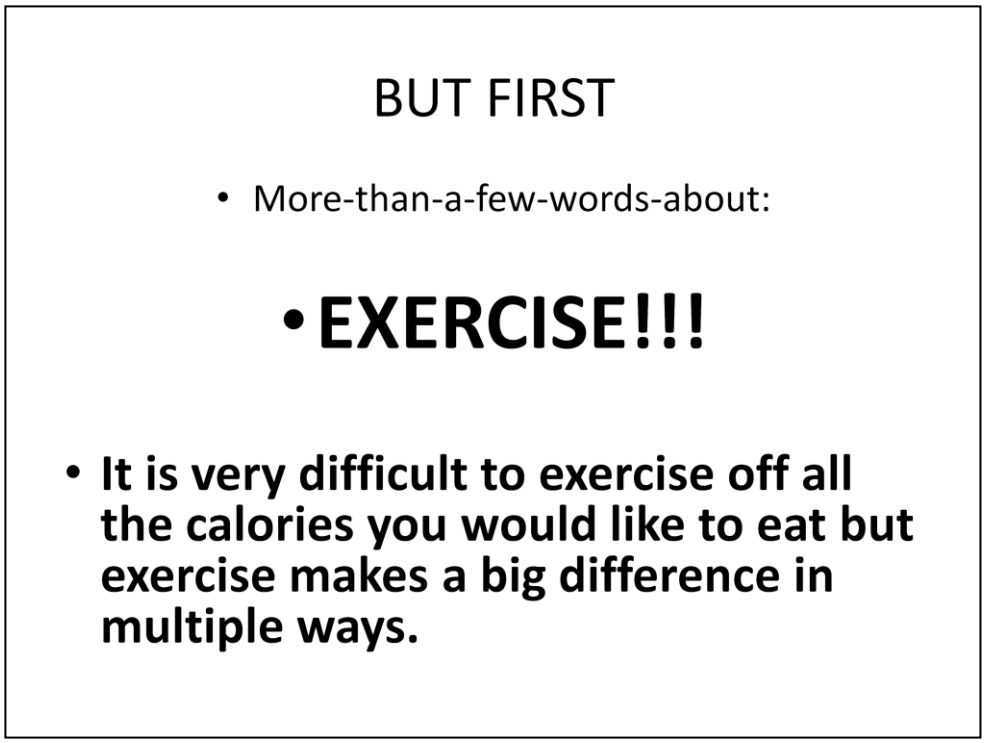
- Raise your hand if you have tried the following diets:
  - Atkins
  - Zone
  - South Beach
  - Low Fat/Pritikin/Dean Ornish, etc…
  - Modified Mediterranean/Omega Diet
  - Weight Watchers
  - Specialized Athletic Nutrition (Recovery Drinks, etc…)
  - Paleo

Audience Experience

- Keep your hand raised if you had a lasting benefit from the diet or feel it was worthwhile:
  - Atkins
  - Zone
  - South Beach
  - Low Fat/Pritikin/Dean Ornish, etc…
  - Modified Mediterranean/Omega Diet
  - Weight Watchers
  - Specialized Athletic Nutrition (Recovery Drinks, etc…)
  - Paleo

Benefits & Weaknesses

- I am going to discuss some of the evidence explaining the benefits & weaknesses of these diets
- Why they work & where they don't
- Recommendations will be made but evidence and opinion are constantly evolving and each of us have our individual metabolisms and pathologies.



Over the past 40 years the average American increased their caloric intake by 20%.

We would have to be running at least 5 miles each day to burn off this excess.

It is easier to skip that 400 calorie plain bagel carb load than run the extra 4 miles it takes to burn it off.

Walk fast.

http://www.ncbi.nlm.nih.gov/pubmed/22462349

Without exercise, calorie restriction becomes less efficient during the first 6 weeks.

http://www.ncbi.nlm.nih.gov/pubmed/22257646

An excellent presentation is:

Exercise: The News You Don't Want to Hear

http://www.huffingtonpost.com/dr-jonny-bowden/exercise-benefits_b_1777630.html

Inactivity

- "Physical inactivity leads to the accumulation of visceral fat and, consequently, to the activation of a network of inflammatory pathways which may promote development of insulin resistance, atherosclerosis, neurodegeneration, and tumor growth."
- "Physical exercise in type 2 diabetic patients with the metabolic syndrome is associated with a significant reduction of hs-CRP and other inflammatory and insulin resistance biomarkers, independent of weight loss. Long-term high-intensity (preferably mixed) training, in addition to daytime physical activity, is required to obtain a significant anti-inflammatory effect."

http://www.tswj.com/2012/584205/abs/

These conditions belong to the "diseasome of physical inactivity".

In contrast, the protective effect of regular exercise against diseases associated with chronic inflammation may to some extent be ascribed to an anti-inflammatory effect.

Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy

"Findings: Worldwide, we estimate that physical inactivity causes 6% (ranging from 3·2% in southeast Asia to 7·8% in

the eastern Mediterranean region) of the burden of disease from coronary heart disease, 7% (3·9–9·6) of type 2

diabetes, 10% (5·6–14·1) of breast cancer, and 10% (5·7–13·8) of colon cancer. Inactivity causes 9% (range 5·1–12·5)

of premature mortality, or more than 5·3 million of the 57 million deaths that occurred worldwide in 2008. If inactivity

were not eliminated, but decreased instead by 10% or 25%, more than 533 000 and more than 1·3 million deaths,

respectively, could be averted every year."

http://www.ncbi.nlm.nih.gov/pubmed?term=Eff%20ect%20of%20physical%20inactivity%20on%20major%20non-communicable

http://www.ncbi.nlm.nih.gov/pubmed/19695853

Stabilize your blood glucose

- When you train and increase your fitness you increase your muscle cells' sensitivity to glucose.
- Your muscles also increase their ability to store glucose as glycogen (a starch type polymer) for later use.
- Both of these factors help to lower blood glucose spikes that occur after eating which, in turn lowers the insulin spike which, in turn helps improve insulin sensitivity, decrease inflammation, conversion to fat etc.

http://www.ncbi.nlm.nih.gov/pubmed/21816445

High-intensity exercise and carbohydrate-reduced energy-restricted diet in obese individuals

- "Continuous high glycemic load and inactivity challenge glucose homeostasis and fat oxidation. Hyperglycemia and high intramuscular glucose levels mediate insulin resistance, a precursor state of type 2 diabetes. The aim was to investigate whether a carbohydrate (CHO)-reduced diet combined with high-intensity interval training (HIIT) enhances the beneficial effects of the diet alone on insulin sensitivity and fat oxidation in obese individuals. Nineteen obese subjects underwent 14 days of CHO-reduced and energy-restricted diet."
- "Fourteen days of CHO-reduced diet improved OGIS and fat oxidation (RER) in obese subjects. The energy-balanced HIIT did not further enhance these parameters, but increased aerobic capacity (VO(2peak)) and preserved lean mass and resistin."

http://www.ncbi.nlm.nih.gov/pubmed/20628884

The effect of high-intensity intermittent exercise on body composition of overweight young males

- To determine the effect of a 12-week high intensity intermittent exercise (HIIE) intervention on total body, abdominal, trunk, visceral fat mass, and fat free mass of young overweight males. Participants were randomly assigned to either exercise or control group. The intervention group received HIIE three times per week, 20 min per session, for 12 weeks.
- Twelve weeks of HIIE resulted in significant reductions in total, abdominal, trunk, and visceral fat and significant increases in fat free mass and aerobic power.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3375095/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3260158/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/21848443

Work for your Heart

- **"Change of energy expenditure from physical activity is the most powerful determinant of improved insulin sensitivity in overweight patients with coronary artery disease participating in an intensive lifestyle modification program."**

http://www.ncbi.nlm.nih.gov/pubmed/22152649

Should high-intensity-aerobic interval training become the clinical standard in heart failure?

http://www.ncbi.nlm.nih.gov/pubmed/22791516

Superior cardiovascular effect of aerobic interval training versus moderate continuous training in heart failure patients: a randomized study.

http://www.ncbi.nlm.nih.gov/pubmed/17548726

Both aerobic endurance and strength training programmes improve cardiovascular health in obese adults.

http://www.clinsci.org/cs/115/0283/cs1150283.htm

Clinical role of exercise training in the management of patients with chronic heart failure.

http://www.ncbi.nlm.nih.gov/pubmed/20216359

GENETICS & EPIGENETICS

- Our genetic make-up changes very slowly over thousands of years; therefore the success of the Paleo Diet etc.
- On the other hand; our genetic code is expressed under the control of material surrounding the chromosomes called epigenetic material.
- Epigenetics can be affected by our immediate choices such as engaging in exercise or by past choices which can be a bit scary.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3138488/pdf/nihms303804.pdf

Affects of exercise on epigenetic methylation.

***NATURE* | NEWS**

A trip to the gym alters DNA

A bout of exercise sees methyl groups removed from metabolic genes.

06 March 2012

From nature.com

Long life passed down through generations

19 October 2011

Active DNA demethylation: many roads lead to Rome

04 August 2010

Nature Reviews DNA Methylation Collection

http://www.ncbi.nlm.nih.gov/pubmed?term=Barr%C3%A8s%2C%20R.%20et%20al.%20Cell%20Metab.%2015%2C%20405%E2%80%93411%20(2012).

The Sins of the Mother AND Father

- At least in mice and probably in humans:
- Overeating by the mother even prior to conception produced epigenetically obesity-prone offspring.
- This was found to be true in the father as well and, since the sperm has minimal contents other than chromosomes and some surrounding epigenetic material which seems to be associated with genes that are involved with development….
- Well, you can see where this is headed. What grandma and grandpa ate and how active or stressed they were may cause problems for their kids and beyond.

http://www.biomedcentral.com/1471-2431/12/93/abstract

http://www.tandfonline.com/doi/abs/10.1080/10937404.2011.578561?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed&

Continued

- "Most disturbing to me is the potential for "transgenerational effects". We know that exposure to pregnant mammals can affect the mother, the fetus, and even the germ cells of the fetus, leading to effects on the third generation (grandchild). Now researchers are considering whether transgenerational inheritance to the fourth generation (great-grandchildren) is possible from a single prenatal exposure."

http://pubs.acs.org/doi/pdfplus/10.1021/es200688s

http://www.elis.sk/index.php?page=shop.product_details&flypage=flypage.tpl&product_id=2663&category_id=93&option=com_virtuemart&vmcchk=1&Itemid=1

http://www.ncbi.nlm.nih.gov/pubmed/22300604

http://www.ncbi.nlm.nih.gov/pubmed/22082482

So; What is the best diet for your purposes and why?

- I have followed nutrition research and fad diets since the early 1970's and tried quite a few from Macrobiotics to Adkins, Pritikin, Dean Ornish, Vegan, Juicing, South Beach, The Zone, The Omega Diet and Paleo.

Most of the originators and authors are woefully ignorant about the subject when they initially publish and are forced to learn at least something after the fact when forced to respond to critics. Thus you can see Adkins which was based on minimal information evolve from a bacon-fest to healthy recommendations over a 30 year period. The Zone-guy was so popular that I was forced to read his second book for my patient's sake. When I noted inconsistencies in his recommendations and tried to contact him for an explanation or help there was no response. When I called their help line I was told that they just recommended increasing protein intake which was in direct conflict with his book's recommendations.

Does the South Beach guy really know the difference between a carbohydrate and alcohol.

Ornish produced positive results with combined aerobics, Pritikin and meditation but failed to determine whether there were better diets, exercise forms or stress control methods for the mix.

My Personal Picks:

- I like The Omega Diet, a modified Mediterranean with the possible exception of its lower protein.
- The Paleo Diet has a lot to offer regarding insights as to evolutionary reasons for what we may do well with and why but just because our ancestors could survive on it does not necessarily mean all of it is best for us. More research on each aspect!
- The Deflame diet by David Seaman, DC has a lot to support it even though it promotes a vitamin company. (See the inflammation slides.)

http://deflame.com/wp-content/uploads/2011/11/Deflaming-Guides-2012.pdf
http://deflame.com/

Local Weight Management Programs:

- By Far; I have had more patients achieve better results with the program at Zacharias Ganey.
- They know what they are doing and have the best support for the injured, postsurgical and elderly.

- http://www.zghealth.com/

http://www.ncbi.nlm.nih.gov/pubmed/21595100

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3000832/?tool=pubmed

If you want to Individualize your plan with a Registered Dietitian, (RD):

- http://www.eatright.org/programs/rdfinder/
- Will help you locate credentialed people.
- Unfortunately, they vary at least as much as other professionals both in their belief systems and overall competency.
- I have liked the work of Tina Shiver, RD
- http://www.tinashiver.com/
- Jane Wilson, RD can help you if you want a vegetarian approach as it is her preference.
- http://va-richmond.doctors.at/dr/jane-wilson-llc-janewilsonllc

http://www.eatright.org/About/Content.aspx?id=7531

A carbohydrate-restricted diet during resistance training promotes more favorable changes in body composition and markers of health in obese women with and without insulin resistance.

- …a 10-week supervised exercise and weight loss program.
- The fitness program involved 30 minutes of circuit-style resistance training 3 days per week. Subjects were prescribed low-fat (30%) isoenergetic diets that consisted of 1200 kcals per day for 1 week (phase 1) and 1600 kcals per day for 9 weeks (phase 2) with higher carbohydrate or higher protein.
- Subjects in the higher protein group experienced greater weight loss (-4.4 kg vs. -2.6 kg), fat loss (-3.4 kg vs. -1.7 kg),

http://www.ncbi.nlm.nih.gov/pubmed/21673483

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2858200/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/21616195

But What About Low-Fat?

- If you read Pritikin or Ornish research papers you notice a bit of “let’s prove our program” bias in approach but at least they are publishing and demonstrating affects.
- The problem seems to be that demonstrating that weight loss and improved health in obese subjects with a combination of exercise and low fat diet in a 2 week research clinic program does not answer much beyond that it works for 2 weeks.
- It does not compare it to a 2 week program with other diets or without the exercise or with sufficient calories to maintain weight etc.
- It also does not answer how well the average public will comply with it in everyday life over years of living.

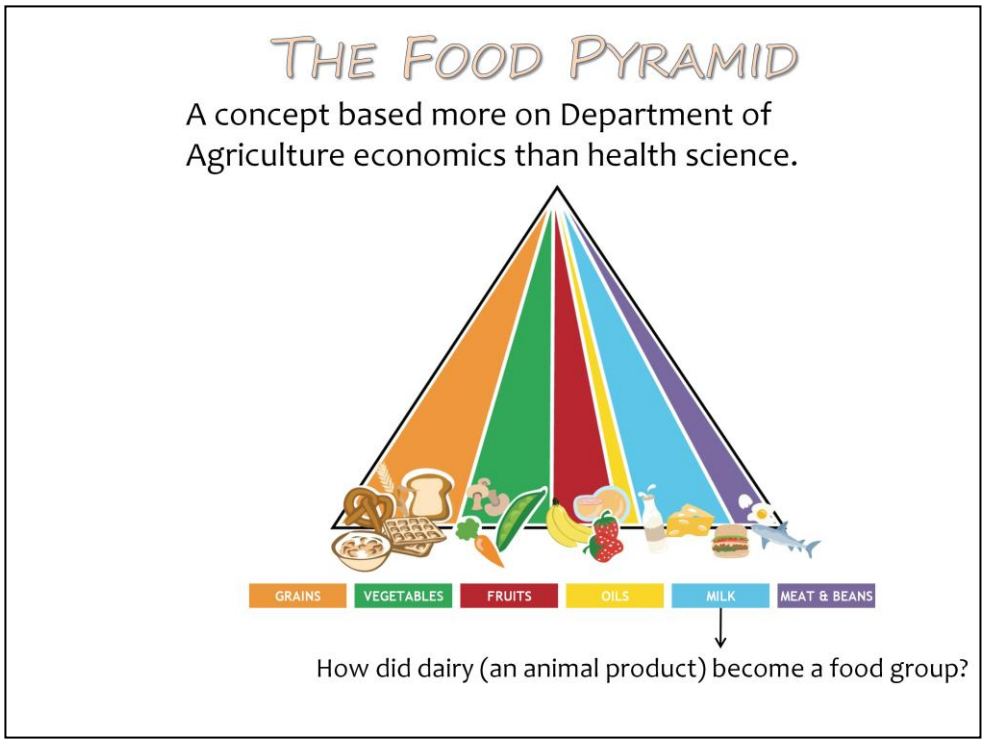
Dean Ornish: In my opinion:

- there is good evidence that a low fat diet combined with sufficient aerobic exercise and low enough calories for weight loss along with stress reduction can improve the average American. It can decrease atherosclerosis, metabolic syndrome/diabetes and probably at least some cancer.
- **The question remains, "Is this the best diet to use in this intervention?" It also remains to be answered whether many people can be induced to comply with it.**
- Is it the best diet for athletes? Is it even best for the average truly healthy person?

Effects of a low-intensity intervention that prescribed a low-carbohydrate vs. a low-fat diet in obese, diabetic participants.

http://www.nature.com/oby/journal/v18/n9/full/oby2009460a.html

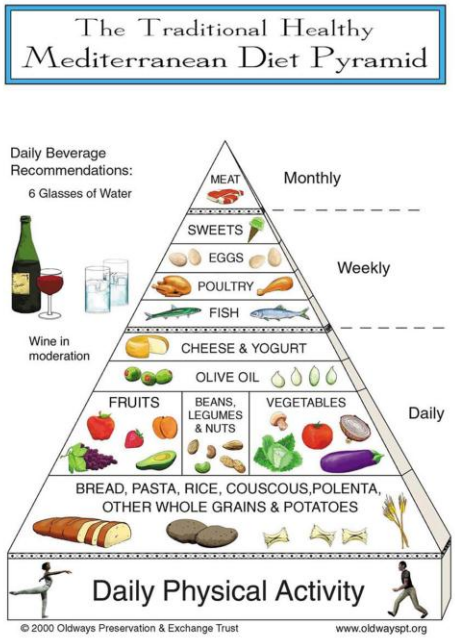
"The low-intensity intervention resulted in modest weight loss in both groups at month 24. At this time, participants in the low-carbohydrate group lost 1.5 kg, compared to 0.2 kg in the low-fat group."



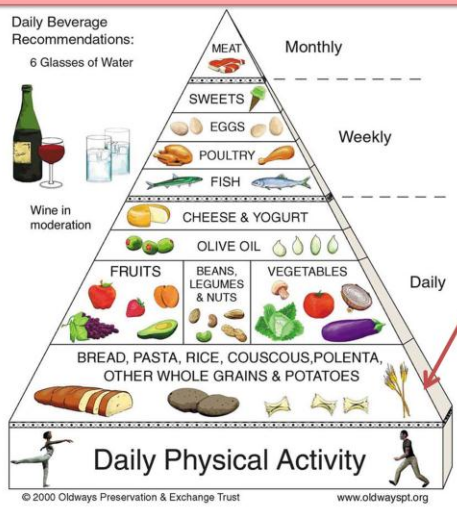
God or someone knows who produced all of these but some will kill you sooner than later.

http://okinawa-diet.com/okinawa_diet/food_pyramid.html

http://www.google.com/search?q=food+pyramid&hl=en&prmd=imvns&tbm=isch&tbo=u&source=univ&sa=X&ei=PwHVT_SnEKTN6QH1hJn7Ag&ved=0CHwQsAQ&biw=1003&bih=636


The Traditional Healthy
Mediterranean Diet Pyramid
Daily Beverage
Recommendations:
6 Glasses of Water
Wine in
moderation
MEAT
Monthly
SWEETS
EGGS
Weekly
POULTRY
FISH
CHEESE & YOGURT
OLIVE OIL
FRUITS
BEANS,
LEGUMES
& NUTS
VEGETABLES
Daily
BREAD, PASTA, RICE, COUSCOUS,POLENTA,
OTHER WHOLE GRAINS & POTATOES
Daily Physical Activity
© 2000 Oldways Preservation & Exchange Trust
www.oldwayspt.org

Revised Mediterranean Diet Pyramid



Pasta, Bread, Rice, etc..should move above Cheese & Yogurt to be consumed less per day

Fantastic Voyage: Live Long Enough to Live Forever, Rodale Books

- "by Ray Kurzweil and Terry Grossman. The basic premise of the book is that if middle aged people can live long enough, until approximately 120, they will be able to live forever—as humanity overcomes all diseases and old age itself."
- *What a load of…. It promises nonsense. It looks like they have some interesting stuff in there but they way over-reach to sell their book. Rodale books has and will continue to tout anything as long as it sells.*
- *"The Singularity is Near" should be enough to tip you off.*

http://en.wikipedia.org/wiki/Fantastic_Voyage:_Live_Long_Enough_to_Live_Forever

They Do Have a Point However:

- In their book *Fantastic Voyage: Live Long Enough to Live Forever*, published in 2004, Ray Kurzweil and Terry Grossman M.D., point out that the guidelines provided in the Harvard Pyramid fail to distinguish between healthy and unhealthy oils. In addition, whole-grain foods are given more priority than vegetables, which should not be the case, as vegetables have a lower glycemic load. Other observations are that fish should be given a higher priority due to its high omega-3 content, and that high fat dairy products should be excluded. As an alternative, the authors postulate a new food pyramid, emphasizing low glycemic-load vegetables, healthy fats, such as avocados, nuts and seeds, lean animal protein, fish, and extra virgin olive oil.
- Sounds like Paleo points to me.
- Be sure to be born in September to November though, if you are serious about living to over 100.

http://en.wikipedia.org/wiki/Food_guide_pyramid

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3379947/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3354762/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3227150/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed?term=Caloric%20restriction%20and%20human%20longevity%3A%20what%20can%20we%20learn%20from%20the%20Okinawans

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3236478/?tool=pubmed

- Jenny Craig, Inc. has lots of advertising and good press but has yet to provide published studies as evidence.
- Nutrisystem has some studies demonstrating good results.
- Once you have lost the weight by eating small expensive packages of dehydrated sawdust;
- How do you transition to eating normally without regaining it?
- The problem is similar with extremely low calorie medical diets.

Holiday Weight Change in a Commercial Weight Loss Program AN Fabricatore, BP Daggy, Y Xiang, Nutrisystem, Inc. Weight gain during the "holiday season," (i.e., from Thanksgiving to New Year's Day) is well documented. Overweight/obese persons in the general population are at greatest risk for weight gain during this period, but weight change results among those actively trying to lose weight during the holiday season have not been published. In the present study, we examined weight change during the holiday season among persons enrolled in a commercial weight loss program that includes home delivery of portioncontrolled entrees and snacks that are supplemented with fresh grocery items (i.e., Nutrisystem®). In the years 2006-2009, active Nutrisystem customers who used the company's web tool to track their weight in the week before Thanksgiving and in the week following New Year's Day were selected. The sample included 10,215 participants (74% female) with a mean age of 46.3 + (standard deviation) 11.7 years, weight of 91.6 + 21.6 kg, and body mass index of 32.2 + 6.6 kg/m2 at the start of the observation period. Reported weight change was -2.5 + 3.2 kg during the holiday season (mean duration = 44.9 days), equivalent to a -2.7 + 3.3% change in initial weight (median = 2.9%). Average weight changes reported during periods of equal length, but beginning 9, 6, and 3 months before Thanksgiving were -4.5 + 2.8%, -4.1 + 2.8%, and -4.4 + 2.8% of initial weight, respectively. These findings suggest that meaningful weight loss is not only possible, but also common, among persons attempting to lose weight during the holiday season. ***This work was funded by Nutrisystem, Inc., which employs all authors.***

Careful Don't Go Overboard: Be sure to get the basics down first.

- There is a fine line between important therapies and products with insufficient evidence to warrant the expense, risk or simply wrecking your digestion with dozens of pills.
- Alternative medicine, neutraceuticals, pills, cleanses, foot cleanses, health food store products; Demand peer reviewed evidence, not anecdotes about desperate case miracle cures.
- You should be able to find multiple studies in pub med or they are just blowing smoke.

http://www.ncbi.nlm.nih.gov/pubmed/21734313

Maintain Perspective
Be Healthy and Happy

- "Healthy obese people wishing to lose weight should be informed that there might be associated risks. A strategy that leads to a stable body mass index with optimized physical and metabolic fitness at any size is the safest weight intervention option."
- "All things considered, shouldn't we put a stop to this preoccupation with our patients' weight and simply encourage them to develop healthy lifestyle habits, to adopt a balanced diet, to practice on a regular basis any form of exercise that they enjoy, even if it is simply walking? Instead of repeating "You should lose weight," shouldn't we help them to become more comfortable with themselves?"

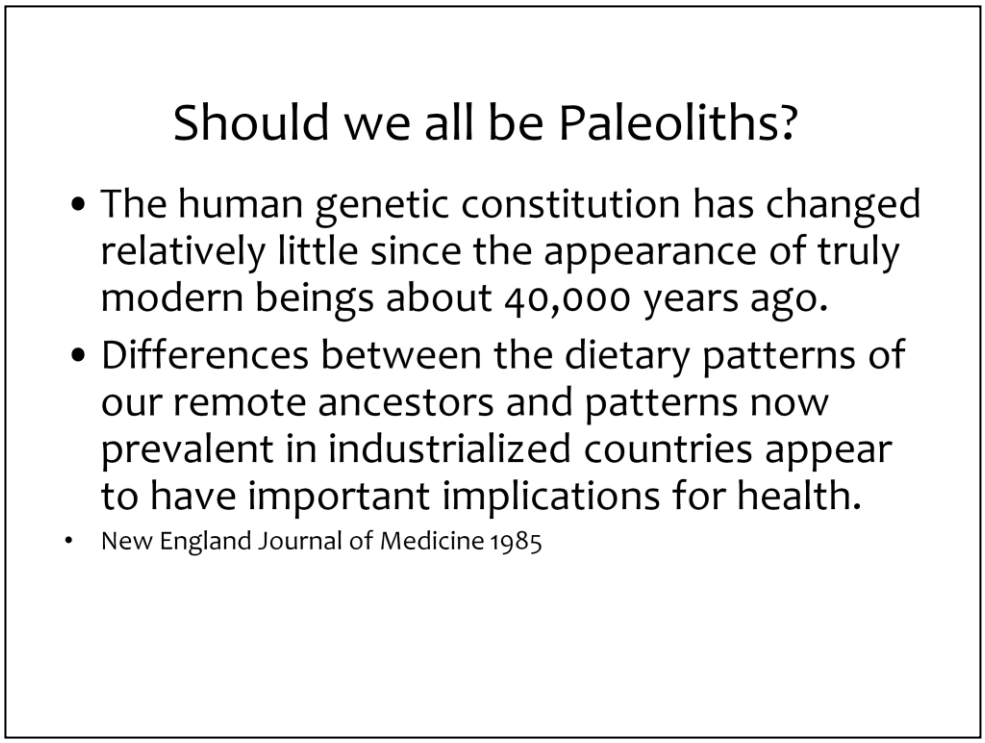
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3352786/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3352771/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2875968/?tool=pubmed

Body Composition and Energy Expenditure Changes During a 25-Week Weight Loss Program A.S. Thomas, MS, RD, Target Metabolism, and J.C. Chezem, PhD, RD, Ball State University.

The Resting Energy Expenditure Decreases with Severe Calorie Cutting.



http://www.ajcn.org/content/91/2/406.long

http://www.ncbi.nlm.nih.gov/pubmed?term=Paleolithic%20nutrition%3A%20twenty-five%20years%20later

Nutr Clin Pract. 2010 Dec;25(6):594-602.

Paleolithic nutrition: twenty-five years later.

Konner M, Eaton SB.

Source

Department of Anthropology, Emory University, Atlanta, GA 30306, USA. antmk@mindspring.com

Abstract

A quarter century has passed since the first publication of the evolutionary discordance hypothesis, according to which departures from the nutrition and activity patterns of our hunter-gatherer ancestors have contributed greatly and in specifically definable ways to the endemic chronic diseases of modern civilization. Refinements of the model have changed it in some respects, but anthropological evidence continues to indicate that ancestral human diets prevalent during our evolution were characterized by much lower levels of refined carbohydrates and sodium, much higher levels of fiber and protein, and comparable levels of fat (primarily unsaturated fat) and cholesterol. Physical

activity levels were also much higher than current levels, resulting in higher energy throughput. We said at the outset that such evidence could only suggest testable hypotheses and that recommendations must ultimately rest on more conventional epidemiological, clinical, and laboratory studies. Such studies have multiplied and have supported many aspects of our model, to the extent that in some respects, official recommendations today have targets closer to those prevalent among hunter-gatherers than did comparable recommendations 25 years ago. Furthermore, doubts have been raised about the necessity for very low levels of protein, fat, and cholesterol intake common in official recommendations. Most impressively, randomized controlled trials have begun to confirm the value of hunter-gatherer diets in some high-risk groups, even as compared with routinely recommended diets. Much more research needs to be done, but the past quarter century has proven the interest and heuristic value, if not yet the ultimate validity, of the model.

A paleolithic diet is more satiating per calorie than a Mediterranean-like diet in individuals with ischemic heart disease.

- "We found marked improvement of glucose tolerance in ischemic heart disease (IHD) patients with impaired glucose tolerance or diabetes type 2 after advice to follow a Paleolithic diet, as compared to a Mediterranean-like diet [1]. To our knowledge, this was the first randomized, controlled study on the health effects of a Paleolithic diet. The Paleolithic diet was based on lean meat, fish, fruits, vegetables, root vegetables, eggs and nuts. Control subjects, who were advised to follow a Mediterranean-like diet based on whole grains, low-fat dairy products, fish, fruit and vegetables, did not significantly improve their glucose tolerance despite significant decreases of weight and waist circumference. "

http://www.nutritionandmetabolism.com/content/7/1/85

Beneficial effects of a Paleolithic diet on cardiovascular risk factors in type 2 diabetes: a randomized cross-over pilot study

http://www.cardiab.com/content/8/1/35

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3253466/pdf/JOBES2012-258624.pdf

A Paleolithic diet confers higher insulin sensitivity, lower C-reactive protein and lower blood pressure than a cereal-based diet in domestic pigs.

http://www.nutritionandmetabolism.com/content/3/1/39

Agrarian diet and diseases of affluence--do evolutionary novel dietary lectins cause leptin resistance?

http://www.biomedcentral.com/1472-6823/5/10

Paleolithic diets as a model for prevention and treatment of Western disease

http://www.ncbi.nlm.nih.gov/pubmed/22262579

Br J Nutr. 2010 Dec;104(11):1666-87. Epub 2010 Sep 23.

Estimated macronutrient and fatty acid intakes from an East African Paleolithic diet.

Kuipers RS, Luxwolda MF, Dijck-Brouwer DA, Eaton SB, Crawford MA, Cordain L, Muskiet FA.

Source

Department of Laboratory Medicine, University Medical Center Groningen (UMCG), University of Groningen, Groningen, The Netherlands. remkokuipers@hotmail.com

Abstract

Our genome adapts slowly to changing conditions of existence. Many diseases of civilisation result from mismatches between our Paleolithic genome and the rapidly changing environment, including our diet. The objective of the present study was to reconstruct multiple Paleolithic diets to estimate the ranges of nutrient intakes upon which humanity evolved. A database of, predominantly East African, plant and animal foods (meat/fish) was used to model multiple Paleolithic diets, using two pathophysiological constraints (i.e. protein < 35 energy % (en%) and linoleic acid (LA) >1.0 en%), at known hunter-gatherer plant/animal food intake ratios (range 70/30-30/70 en%/en%). We investigated selective and non-selective savannah, savannah/aquatic and aquatic hunter-gatherer/scavenger foraging strategies. We found (range of medians in en%) intakes of moderate-to-high protein (25-29), moderate-to-high fat (30-39) and moderate carbohydrates (39-40). The fatty acid composition was SFA (11.4-12.0), MUFA (5.6-18.5) and PUFA (8.6-15.2). The latter was high in α-linolenic acid (ALA) (3.7-4.7 en%), low in LA (2.3-3.6 en%), and high in long-chain PUFA (LCP; 4.75-25.8 g/d), LCP n-3 (2.26-17.0 g/d), LCP n-6 (2.54-8.84 g/d), ALA/LA ratio (1.12-1.64 g/g) and LCP n-3/LCP n-6 ratio (0.84-1.92 g/g). Consistent with the wide range of employed variables, nutrient intakes showed wide ranges. We conclude that compared with Western diets, Paleolithic diets contained consistently higher protein and LCP, and lower LA. These are likely to contribute to the known beneficial effects of Paleolithic-like diets, e.g. through increased satiety/satiation. Disparities between Paleolithic, contemporary and recommended intakes might be important factors underlying the aetiology of common Western diseases. Data on Paleolithic diets and lifestyle, rather than the investigation of single nutrients, might be useful for the rational design of clinical trials

Paleolithic diets as a model for prevention and treatment of Western disease

Perhaps but the body of research is still growing:

- To explore the possibility that a paleolithic-like diet can be used in the prevention of age-related degenerative Western disease.
- **METHODS:**
- Literature review of African Paleolithic foods in relation to recent evidence of healthy nutrition.
- **RESULTS AND DISCUSSION:**
- Available evidence lends weak support in favor and little against the notion that lean meat, fish, vegetables, tubers, and fruit can be effective in the prevention and treatment of common Western diseases. There are no obvious risks with avoiding dairy products, margarine, oils, refined sugar, and cereal grains, which provide 70% or more of the dietary intake in northern European populations. If stroke, coronary heart disease, type 2 diabetes, and cancer are preventable by dietary changes, an ancestral-like diet may provide an appropriate template.

http://www.ncbi.nlm.nih.gov/pubmed/22262579

Exercise like a hunter-gatherer: a prescription for organic physical fitness.
http://www.ncbi.nlm.nih.gov/pubmed/21545934

http://www.ncbi.nlm.nih.gov/pubmed/21139123
http://www.ncbi.nlm.nih.gov/pubmed/15759281

Origins and evolution of the Western diet: health implications for the 21st century

- Paleo Diet
- http://www.ajcn.org/content/81/2/341.long

What about Eating Organic, Filtering Water and Avoiding Plastic Containers?

- "Obesity is strongly linked with exposure to risk factors during fetal and infant development._"There are between fifteen and twenty chemicals that have been shown to cause weight gain, mostly from developmental exposure," says Jerry Heindel, who leads the extramural research program in obesity at the National Institute of Environmental Health Sciences (NIEHS). However, some obesogens have been hypothesized to affect adults, with epidemiologic studies linking levels of chemicals in human blood with obesity.
- Chemical pesticides in food and water, particularly atrazine and DDE (dichlorodiphenyldichloroethylene—a DDT breakdown product), have been linked to increased BMI in children and insulin resistance in rodents._Certain pharmaceuticals, such as the diabetes drug **Avandia®,** have been linked to weight gain in humans and animals,_as have a handful of dietary obesogens, including the soy phytoestrogen genistein and **monosodium glutamate.**

http://ehp03.niehs.nih.gov/article/info:doi/10.1289/ehp.120-a62

http://www.ncbi.nlm.nih.gov/pubmed?term=baillie-hamilton%2C%20paula%20f

http://ehp03.niehs.nih.gov/article/info:doi/10.1289/ehp.1104204

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3138092/

Continued: Don't Forget Pesticides.

- Most known or suspected obesogens are endocrine disruptors. Many are widespread, and exposures are suspected or confirmed to be quite common. In one 2010 study, Kurunthachalam Kannan, a professor of environmental sciences at the University at Albany, State University of New York, documented organotins in a designer handbag, wallpaper, vinyl blinds, tile, and vacuum cleaner dust collected from 24 houses. **Phthalates, plasticizers that also have been related to obesity in humans, occur in many PVC items as well as in scented items such as air fresheners, laundry products, and personal care products.**
- One of the earliest links between human fetal development and obesity arose from studies of exposure to **cigarette smoke *in utero*.** Although secondhand-smoke exposure has decreased by more than half over the past 20 years, an estimated 40% of nonsmoking Americans still have nicotine by-products in their blood, suggesting exposure remains widespread. Babies born to smoking mothers are frequently underweight, but these same infants tend to make up for it by putting on more weight during infancy and childhood. "If a baby is born relatively small for its gestational age, it tries to 'play catch-up' as it develops and grows," explains Retha Newbold, a developmental biologist now retired from the NTP.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3121438/

Environmental Disruption of Metabolism and the Diabetes Epidemic

- Check out the graph comparing increase in synthetic organic chemical production and increase in diabetes.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3121438/

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2932668/

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3005328/

http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0015977

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2840805/

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2840805/

High Protein and Bone Density

- "For Americans and peoples of industrialized countries to achieve the combination of a high-protein diet and a net base-producing diet, a considerable change in food consumption patterns would be required . This change would involve the consumption of greatly increased amounts of bicarbonate precursor–rich plant source foods—such as leafy green vegetables, stalks, roots and tubers, and fruit—and the consumption of greatly reduced amounts of energy-dense, nutrient-limited foods—such as fats and oils and refined carbohydrates—and net acid-producing cereal grains . Such a diet would resemble that of prehistoric hunter-gatherers.
- We hypothesize that the balance between the amount of protein in the diet (anabolic effect) and the net acid load of the diet (catabolic effect) in part determines whether the diet as a whole has a net anabolic or catabolic effect on bone.

http://www.ajcn.org/content/82/5/921.long

“Myths of the Vegans” or “Check your Prejudices”

- A causal association between dietary acid load and osteoporotic bone disease is not supported by evidence and there is no evidence that an alkaline diet is protective of bone health.

- **Causal assessment of dietary acid load and bone disease: a systematic review & meta-analysis applying Hill's epidemiologic criteria for causality**
- **Tanis R Fenton[1,2*], Suzanne C Tough[1], Andrew W Lyon[3,4], Misha Eliasziw[1] and David A Hanley[1,5]**
- *Nutrition Journal* 2011, **10**:41 doi:10.1186/1475-2891-10-41

http://www.ncbi.nlm.nih.gov/pubmed?term=Causal%20assessment%20of%20dietary%20acid%20load%20and%20bone%20disease%3A%20a%20systematic%20review%20%26%20meta-analysis%20applying%20Hill's%20epidemiologic%20criteria%20for%20causality%20

What is a healthy Nordic diet? Foods and nutrients in the NORDIET study

The main difference between Nordic diet and a Swedish reference population was the higher intake of plant foods, fish, egg and vegetable fat and a **lower intake of** meat products, dairy products, **sweets and desserts and alcoholic beverages** with a Nordic diet.

I wonder which factors are important.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3386552/?tool=pubmed

What is modified in a "Modified Mediterranean Diet?"

- When I am using the term, I mean modifications lowering carbohydrates by decreasing grains especially wheat (paying attention to maintain the fiber level) and increasing protein particularly when recovering from intense exercise, injury, surgery or illness.

Many countries in the Mediterranean basin are drifting away from the Mediterranean dietary pattern (MDP). However, countries in Northern Europe and some other countries around the world are taking on a Mediterranean-like dietary pattern.

http://www.ncbi.nlm.nih.gov/pubmed/19689839

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2533524/?tool=pubmed

What about the Omega Diet

- **Artemis P. Simopoulous continues to produce papers and communicate the results of research to the public.**
- Her first books were inspired by the diet of Crete and its health benefits.
- It is a modified Mediterranean diet with relatively low meat and high in omega 3's.

http://ebm.rsmjournals.com/content/235/7/785.long
http://www.ncbi.nlm.nih.gov/pubmed/21865815
http://www.biomedcentral.com/1741-7015/10/50/abstract
http://www.ncbi.nlm.nih.gov/pubmed/22640930
http://www.jacn.org/content/28/5/525.long
http://www.ncbi.nlm.nih.gov/pubmed/22591895

Evolutionary aspects of diet: the omega-6/omega-3 ratio and the brain. Simopoulos AP

- Several sources of information suggest that human beings evolved on a diet that had a ratio of omega-6 to omega-3 fatty acids (FA) of about 1/1; whereas today, Western diets have a ratio of 10/1 to 20-25/1, indicating that Western diets are deficient in omega-3 FA compared with the diet on which humans evolved and their genetic patterns were established. Omega-6 and omega-3 FA are not interconvertible in the human body and are important components of practically all cell membranes. Studies with nonhuman primates and human newborns indicate that docosahexaenoic acid (DHA) is essential for the normal functional development of the brain and retina, particularly in premature infants. DHA accounts for 40% of the membrane phospholipid FA in the brain. Both eicosapentaenoic acid (EPA) and DHA have an effect on membrane receptor function and even neurotransmitter generation and metabolism. There is growing evidence that EPA and DHA could play a role in hostility and violence in addition to the beneficial effects in substance abuse disorders and alcoholism. The balance of omega-6 and omega-3 FA is important for homeostasis and normal development throughout the life cycle.

Mol Neurobiol. 2011 Oct;44(2):203-15. Epub 2011 Jan 29. Simopoulos AP.

The Center for Genetics, Nutrition and Health, 2001 S Street, NW, Suite 530, Washington, DC 20009, USA. cgnh@bellatlantic.net

http://www.ncbi.nlm.nih.gov/pubmed/21279554

Omega 3 Fatty Acids

- Omega 3 fatty acids reduce inflammation throughout the body including joints, vessels and organs from the heart to the skin.
- Omega 3 fatty acids are crucial for neonatal and infant brain development as well as for brain maintenance in seniors.
- Omega 3 fatty acids can reduce oxidative stress in the body by their incorporation into membrane phospholipids which lowers susceptibility to damage from reactive oxygen.

http://www.jlr.org/content/early/2012/07/06/jlr.P024315.long

Olive oil biophenols and women's health.

- "Virgin olive oil is the natural juice of the olive fruit, which plays a major role in the healthy Mediterranean diet. The source of its health effects are the biophenols and squalenes (oleocanthal, tyrosol, hydroxytyrosol, oleuropein) it contains. They provide an exceptional antioxidative activity, removing harmful compounds from the body. Oxidants are essential in the genesis of many diseases and conditions, such as cardiovascular disorders, cancer, osteoporosis, Alzheimer disease, and premenstrual syndrome.
- Oleic acid, an unsaturated fatty acid, has demonstrated a significant effect in the prevention of malignant diseases such as colon cancer and breast cancer. Biophenols from olive oil successfully suppress the synthesis of LDL, a protein that is crucial in the development of cardiovascular disease, by reducing blood pressure and the development of atherosclerotic plaques.
- In addition, there is strong evidence of the antimicrobic effect of the biphenols from olive oil that successfully destroy colonies of microorganisms which may cause respiratory tract, intestinal, and genital tract infections."

Med Glas Ljek komore Zenicko-doboj kantona. 2012 Feb;9(1):1-9. Fistonić I, Situm M, Bulat V, Harapin M, Fistonić N, Verbanac D.

1Gynecology, Obstetrics and Menopause Clinic, 2Clinic for Skin and Venereal Diseases, Clinical Hospital "Sestre milosrdnice", 3Croatian Radio, 4School of Medicine, University of Zagreb, 5Centre for Translational and Clinical Research, Department of Intercellular Communication, School of Medicine, University of Zagreb; Zagreb, Croatia.

http://www.ncbi.nlm.nih.gov/pubmed/22634935

Overall, although some polyphenol-rich foods exert beneficial effects on some biomarkers of cardiovascular health, there is no evidence that this is caused by improvements in antioxidant function biomarkers (oxidative damage or antioxidant capacity).

http://www.ncbi.nlm.nih.gov/pubmed/21451125

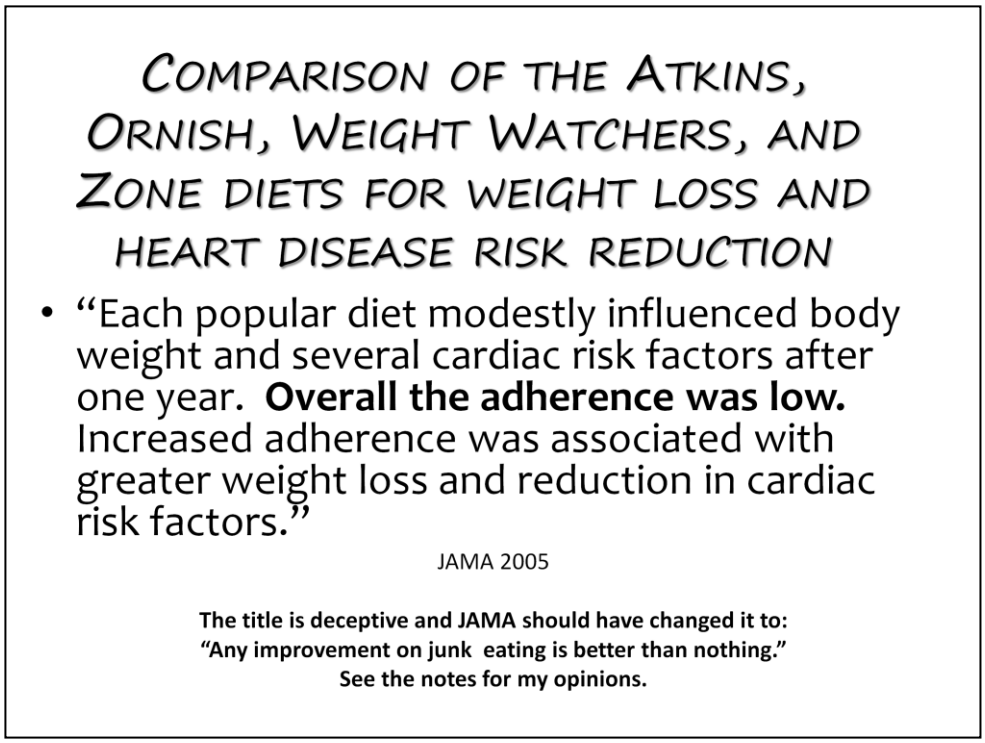
Fiber

Among different diets, the Mediterranean diet stands out due to their benefits on several health benefits, in particular with regard to CVD. Rich in vegetable foods, this diet contributes both quantitatively and qualitatively to essential fiber compounds (cellulose, hemicellulose, gums, mucilages, pectins, oligosaccharides, lignins, etc.).

If you are not allergic to grains you may benefit from their fiber without overindulging in their carbs.

http://www.ncbi.nlm.nih.gov/pubmed/22566302

http://www.ncbi.nlm.nih.gov/pubmed/21633074/



http://www.ncbi.nlm.nih.gov/pubmed?term=Comparison%20of%20the%20Atkins%2C%20Ornish%2C%20Weight%20Watchers%2C%20and%20Zone%20diets%20for%20weight%20loss%20and%20heart%20disease%20risk%20reduction

http://www.ncbi.nlm.nih.gov/pubmed/22257646 In addition, just decreasing calories becomes less efficient over the first 6 weeks, then levels off at a slow discouraging rate (significantly below 3,600 C / pound decrease) which may account for loss of enthusiasm and compliance.

Just based on the abstract:

If you look at the completion percentages, you might wonder of the two extremes(Adkins 53% and Ornish 50%) were less well complied with than The Zone and Weight Watchers at 65% each for good reasons.

You might also look at the standard deviations and consider that the 3.3 Kg loss with Ornish and a 7.3Kg SD compared to 3.0 with Weight Watchers with only 4.9 SD. It looks like a lot less consistency of results with Ornish. Some lost big and some gained big.

If the study showed better compliance and these results you would want to look at the subgroups that benefited from Ornish and those who were harmed the most by it.

2.1 (4.8) kg forAtkins (21 [53%] of 40 participants completed

3.2 (6.0) kg for Zone (26 [65%] of 40 completed
3.0 (4.9) kg for WeightWatchers (26 [65%] of 40 completed
3.3 (7.3) kg for Ornish (20 [50%] of 40 completed

http://www.ncbi.nlm.nih.gov/pubmed/18647427

Diets with high or low protein content and glycemic index for weight-loss maintenance

938 Adults.

- "In this large European study, a modest increase in protein content and a modest reduction in the glycemic index led to an improvement in study completion and maintenance of weight loss."
- "…(71%). Fewer participants in the high-protein and the low-glycemic-index groups than in the low-protein-high-glycemic-index group dropped out of the study."
- "The mean initial weight loss with the low-calorie diet was 11.0 kg. In the analysis of participants who completed the study, only the low-protein-high-glycemic-index diet was associated with subsequent significant weight regain."

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3359496/?tool=pubmed

Exercise Intervention in Childhood Obesity: A Randomized Controlled Trial Comparing Hospital- Versus Home-Based Groups.

- **"OBJECTIVE:**
- The aim of this study was to compare the effect of a hospital clinic group- versus home-based combined exercise-diet program for the treatment of childhood obesity.
- **CONCLUSIONS:**
- The study findings indicate that a simple home-based combined exercise and Mediterranean diet program may be effective among overweight and obese children and adolescents, because it improves body composition, is feasible and can be adopted on a large scale without substantial expenses."

http://www.ncbi.nlm.nih.gov/pubmed/22634075

Public Health Initiatives can Work

- **Eat Smart, Move More, Weigh Less: A Weight Management Program for Adults**

Losing an average of 8 ½ Pounds in a year beats gaining 3 ½.

http://www.cdc.gov/pcd/issues/2011/jul/10_0160.htm
http://www.joe.org/joe/2010february/pdf/JOE_v48_1tt1.pdf

Secrets of Males who Lost Weight at 6 months and kept it off at 12 mo.

- •65 obese males (~35 yrs) were studied in the SHED-IT trial.
- •Self-Help, Exercise and Diet using Information Technology.
- •The trial was the acronym above + questionnaires.
- •The men were divided into 3 groups based on weight loss:
- Group 1 Group 2 Group 3
- lost >5% of bw lost <5% bw but > 5lbs lost <5lbs
- •They were then interviewed. Researchers were shocked:
- Successful dieters who kept the weight off decreased portion sizes, sugary beverage's, snacks & fast foods. They reduced total calories by 30% and calories from fat by 40%.
- Callister, R., Morgan, PJ., Lubans, DR., Collins, CE. Strategies For Successful Weight Loss In Men: Lessons From the SHED-IT Randomized Controlled Trial. Med Sci Sport Exerc. 2010; 42(5) A-647, S-15.

What about the China Study?

- The bottom line is; It belongs in the trash.
- Take the time to read this article / blog.
- It is enjoyable to watch someone take apart a book that is based on prejudice rather than the facts.
- http://rawfoodsos.com/2010/07/07/the-china-study-fact-or-fallac/

And diet Pills? This is between you and your M.D. but please use some common sense and maintain your focus.

- **If all you or your physician read was the, "Conclusion:"**
- "Liraglutide is well tolerated, sustains weight loss over 2 years and improves cardiovascular risk factors."
- **You might want to use it; but consider the rest of the story.**

- "Participants received diet (500kcal deficit per day) and exercise counseling during 2-week run-in." **A bit extreme and not too great a track record.**
- "At year 2, participants on liraglutide 2.4/3.0mg for the full 2 years (pooled group, *n*=184) lost **3.0kg** (1.3–4.7) more weight than those on orlistat (*n*=95; *P*<0.001). Completers on liraglutide 2.4/3.0mg (*n*=92) maintained a **2-year weight loss of 7.8kg from screening**. With liraglutide 3.0mg, 20-week body fat decreased by 15.4% and lean tissue by 2.0%. The most frequent drug-related side effects were mild to moderate, transient nausea and vomiting. With liraglutide 2.4/3.0mg, the 2-year prevalence of prediabetes and metabolic syndrome decreased by 52 and 59%, with improvements in blood pressure and lipids."
- **7.8kg weight loss will improve your risk factors and is good but even ignoring side effects; Is the public really expected to fund 2 years of expensive pills for a measly 17 pounds when the person had already cut their eating by 500 kcal?**
- **You could double the effect by cutting only 100 more per day.**

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3374073/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/15266516

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3283822/?tool=pubmed

Simeons' hCG diet.
(500 kcal per day with the pregnancy hormone human chorionic gonadotropin)

- **Speaking of bogus and the placebo effect.**
- Proposed and promoted in 1954 and thoroughly discredited before 1970.
- This diet made a recent reoccurrence marketed using sublingual drops.
- "10 of these studies showed positive and another 10 studies negative results with regard to hCG-related weight reduction. Two of these studies with positive results were double-blind studies (hCG vs. placebo). Most of them were reports on therapeutical experiences and were not controlled studies. According to these reports the body proportions normalized and the feeling of hunger was tolerable. Four out of 10 studies with negative results were controlled studies (hCG vs. control without hCG), whereas 6 were double-blind studies. These studies showed a significant weight reduction during dieting, but no differences between treatment groups in respect of body weight, body proportions and feeling of hunger. One of them is the only German study conducted by Rabe et al. in 1981 in which 82 randomised premenopausal volunteers had been dieting either with hCG or without hCG injections. In recent publications describing mostly well-documented double-blind studies authors largely reject hCG administration in dieting. Supporters of the hCG diet must prove the efficacy of this method in controlled studies according to the German Drug Law. Until then the opinion of the German steroid toxicology panel is still valid, that hCG is ineffective in dieting and should not be used (Bolt 1982 a, 1982 b)"
- http://www.ncbi.nlm.nih.gov/pubmed/3609673

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1365103/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/3609673

http://www.ncbi.nlm.nih.gov/pubmed/11399238

http://www.ncbi.nlm.nih.gov/pubmed/15458396

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1237915/?tool=pubmed

Human chorionic gonadotropin is of no value in the management of obesity
C. LAIRD BIRMINGHAM,* B Sc, MD, FRCP [c] KEVIN C. SMITH,t B SC
CAN MED ASSOC J, VOL. 128, MAY 15, 1983

DEFLAME DIET

- Many of my patients have improved by including the principles outlined in the "Deflame Diet".
- It is based on good research but be careful of the calories and check with me if you are going to use it extensively.
- Using something like "Weight Watchers" to monitor your intake while using these principles can work well.

COMMENTS ON THE DEFLAME DIET

- Make the basis of your diet a modified Mediterranean diet.
- Look over Dr. Seaman's diet for anti-inflammation ideas. He represents a nutrition company, hence the supplement recommendations.
- I strongly suggest people take supplements but If you decide do so, check with me to determine what is best for you.

http://www.nutritionalwellness.com/archives/2005/mar/03_seaman.php

DEFLAME DIET HINTS

- Although it seems like a good idea I doubt that there has been much research on the benefits of omega 3 eggs.
- Heavy cream from grass fed cows may be good for you in moderation but watch the calories.
- I doubt stout beer is better for you than wine but he thinks so.

The diet-induced proinflammatory state: a cause of chronic pain and other degenerative diseases?

Deflame Diet

- We can no longer view different diseases as distinct biochemical entities. Nearly all degenerative diseases have the same underlying biochemical etiology, that is, a diet-induced proinflammatory state. Although specific diseases may require specific treatments, such as adjustments for hypomobile joints, beta-blockers for hypertension, and chemotherapy for cancer, the treatment program must also include nutritional protocols to reduce the proinflammatory state.

http://www.ncbi.nlm.nih.gov/pubmed/11986578

Effects of Some Common Food Constituents on Cardiovascular Disease

- We reviewed the major publications related to potential effects on cardiovascular risk factors and outcomes of some common dietary constituents: carotenoids, flavonoid-rich cocoa, tea, red wine and grapes, coffee, omega-3 fatty acids, and garlic. Increased intake of some of these has been associated with reduced all-cause mortality or reduced incidence of myocardial infraction, stroke, and hypertension. However, although the evidence from observational studies is supportive of beneficial effects for most of these foodstuffs taken as part of the diet, potential benefits from the use of supplements derived from these natural products remain largely inconclusive
- **"Chocolate consumption in relation to blood pressure and risk of cardiovascular disease in German adults"**

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3262529/?tool=pubmed

http://eurheartj.oxfordjournals.org/content/31/13/1616.long

CHRONIC DISEASE MANAGED WITH ACUTE THERAPIES

78%Of healthcare expenditures are for the management of chronic diseases such as:

1. Diabetes and Metabolic syndrome
2. Hypertension
3. Arthritis
4. Digestive disorders
5. Cancer
6. Cardiac disorders
7. Dementia-related syndromes

- The majority of medical training focuses on treatment of acute problems and less than ½ % of medical research is on prevention.
- If you think they will come up with a miracle cure for the problems you are creating for yourself today, you are in for a big disappointment. They will string you along and rip you off.
- If you don't take responsibility for your own health, no one else will.

http://onlinelibrary.wiley.com/doi/10.1002/art.24891/abstract;jsessionid=E7C1D020351998EAA4A3F8CFF79E20DD.d02t04

http://www.ncbi.nlm.nih.gov/pubmed/19695853

http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-72032009000500009&lng=en&nrm=iso&tlng=en

http://diabetes.diabetesjournals.org/content/60/10/2617.long

http://circres.ahajournals.org/content/95/8/764.long

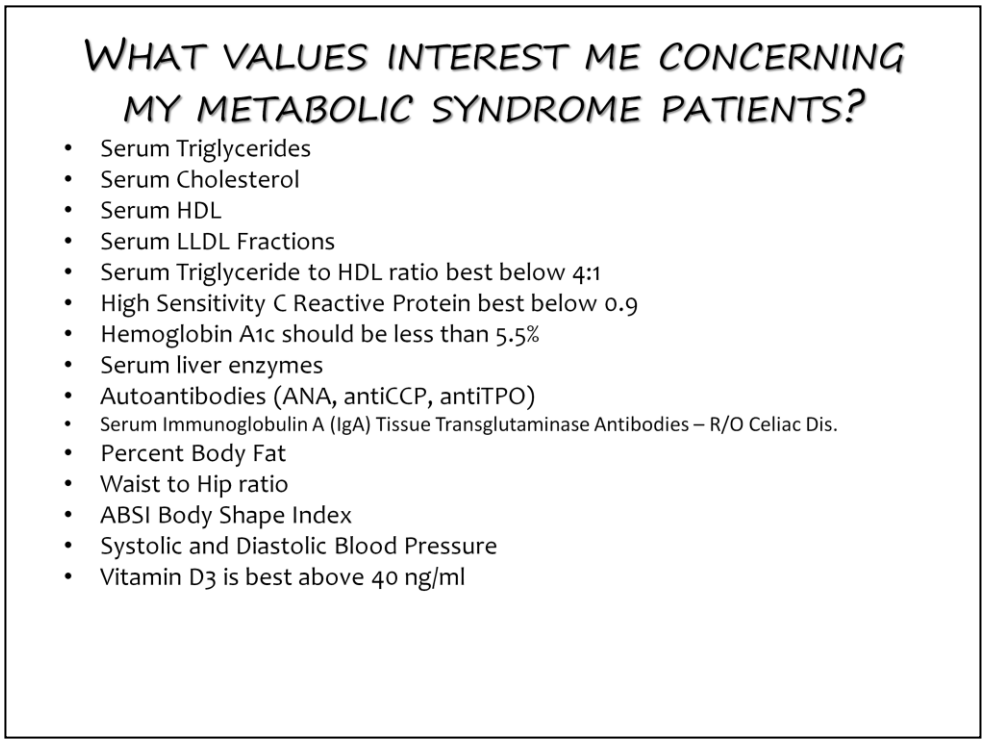
http://www.ncbi.nlm.nih.gov/pubmed/21326098

http://www.ncbi.nlm.nih.gov/pubmed/21446352

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3369476/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed?term=The%20COX-2%20pathway%20is%20essential%20during%20early%20stages%20of%20skeletal%20muscle%20regeneration

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3207928/?tool=pubmed



https://www.jstage.jst.go.jp/article/jat/19/5/19_11445/_pdf

http://www.ncbi.nlm.nih.gov/pubmed/22710793

http://www.ncbi.nlm.nih.gov/pubmed/22687645

http://www.ncbi.nlm.nih.gov/pubmed/22639424

http://www.ncbi.nlm.nih.gov/pubmed/22564866

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3073688/?tool=pubmed

http://stroke.ahajournals.org/content/40/7/2486.long

http://www.ncbi.nlm.nih.gov/pubmed/22850429

A1C :

The prevalence of retinopathy begins to increase at a lower HbA1c level in black Americans than in white Americans. The findings do not support increasing the diagnostic threshold of HbA1c in black persons.

http://www.ncbi.nlm.nih.gov/pubmed/22868832

Black persons have higher HbA(1c) levels than white persons across the full spectrum of glycemia, and the differences increase as glucose intolerance worsens. These findings could limit the use of HbA(1c) to screen for glucose intolerance, indicate the risk for complications, measure quality of care, and

evaluate disparities in health.

http://www.ncbi.nlm.nih.gov/pubmed/20547905

The relative contribution of demographic and metabolic factors far outweighs the contribution of genetic ancestry to HbA(1c) values in African Americans. Moreover, the impact of adjusting for genetic ancestry when classifying diabetes by HbA(1c) is minimal after taking into account fasting glucose levels, thus supporting the use of currently recommended HbA(1c) categories for diagnosis of diabetes in African Americans.

http://www.ncbi.nlm.nih.gov/pubmed/21788574

Japanese:

http://www.ncbi.nlm.nih.gov/pubmed/22891221

Take the Previous Slide's Contents With a Grain of Salt.

- There is a problem with over-testing and screening which can lead us down a n expensive rabbit hole full of nasty side effects.
- Much of the screening and testing we are put through could be reasonably skipped and replaced by the simple directive to, "Get healthy".
- If we honestly and reasonably look at ourselves in the mirror and run a ways, go on an active vacation and lift a few squirming children we should know where we stand and where we would like to be.
- A little more thought and searching should produce a list of actions to move us toward our goals.

http://www.artsandopinion.com/2010_v9_n5/cassels-3.htm

http://commonground.ca/2012/07/cholesterol-drugs/

What is the ABSI?

- See the equation on page 1 of the paper at the first link below.
- ”Death rates increased approximately exponentially with above average baseline ABSI (overall regression coefficient of 33% per standard deviation of ABSI)”
- The BMI (Body Mass Index) is still useful for public health statistical trending.

http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0039504

http://www.shape.com/blogs/weight-loss-coach/absi-replacement-body-mass-index

http://abcnews.go.com/blogs/health/2012/07/19/new-obesity-indicator-better-than-bmi/

Monitor your progress

- You can retest any of the labs that were significant to be certain you are correcting them.
- For most of us a scale; possibly one that provides an estimate of your fat % and a tape measure for waist measurements is sufficient.

Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin.

- Lifestyle changes and treatment with metformin both reduced the incidence of diabetes in persons at high risk. The lifestyle intervention was more effective than metformin.
- June 13, 2011 *(updated June 24, 2011)* — The US Food and Drug Administration (FDA) today warned healthcare professionals to closely monitor patients with diabetes receiving liraglutide injections (*Victoza*, Novo Nordisk) for thyroid C-cell tumors and acute pancreatitis.

http://www.ncbi.nlm.nih.gov/pubmed/11832527

http://www.ncbi.nlm.nih.gov/pubmed?term=In%20vitro%20studies%20of%20eggplant%20(Solanum%20melongena)%20phenolics%20as%20inhibitors%20of%20key%20enzymes%20relevant%20for%20type%202%20diabetes%20and%20hypertension

http://circ.ahajournals.org/content/119/2/351.long

http://www.medscape.com/viewarticle/744477?src=nl_crb

http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm258826.htm

Cholesterol and Statin Drugs

- The manufacturers have been engaged in a disgusting political / public health manipulation to continue broadly marketing their products. Every time they come up with a mechanism of action and purpose that justifies it they are proven wrong and have to pull the, "No this time is different. It is not the cholesterol lowering aspect that is important, It's the increase in HDL that works. Oops, it is not the relationship to hsCRP but it is anti-inflammatory."
- Regardless of the benefits they may demonstrate; It doesn't excuse the large-scale program they created at massive public expense. Any other product or service foisted on us with such premature flimsy evidence would have the perpetrators in front of congress explaining themselves.
- They are now looking for other uses, which is reasonable, just so long as they stop considering adding it to our water (or is that a conspiratory urban legend?).

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3105250/?tool=pubmedhttp://www.ncbi.nlm.nih.gov/pubmed/22207729

If you measure success by the concentrations of cholesterol and LDL in the patient's plasma then statin drugs are successful. Unfortunately, these drugs have the undesirable side effect of also drastically inhibiting the biosynthesis of coenzyme Q10 as well as many other biochemicals necessary for healthy tissues.

We are often faced with a patient absolutely convinced that taking a statin drug to lower plasma cholesterol is the more desirable route to health rather than simply pushing back from the dinner table and walking. Our citizenry is continually being reinforced in this belief by our advertisement-based culture.

"Statin drugs function by inhibiting of mevalonate biosynthesis – a first step of liver synthesis of cholesterol - these drugs also inhibit biosynthesis of more than just cholesterol. Two critically important end-products of the mevalonate pathway are farnesol and geraniol which are required for the post-translational modification of over 100 mammalian enzymes. These enzymes include nuclear lamins, the *ras* family of controlling proteins and another family of GTP-binding proteins (G-proteins), several protein kinases and phosphatases. **These are**

not trivial wall-flowers of metabolism.

Another important end-product of the mevalonate pathway is the heme A of cytochrome c oxidase**.** Heme A is the important site of oxygen reduction – sugar and fat burning to synthesize critically important ATP and GTP – in the energy generating organelle, the mitochondria. Another very important end-product of mevalonate biosynthesis is coenzyme Q10, which is also required by the mitochondria. Small amounts of Co Q10 are biosynthesized in many of our tissues but extra Co Q10 acquired through ingestion is necessary, making the Co Q10 requirement much like a vitamin. Co Q10 has been shown useful for the treatment of Parkinson's and cardiovascular diseases (CVD); significantly slowing disease progressions. So the inhibition of mevalonate biosynthesis by statin drugs can affect many different biochemical processes, some of paramount importance.

Humans exhibit a significant and unsurprising decline in Co Q10 plasma levels, when taking statin drugs and in a dose-dependent manner. This decline has been correlated with myopathy and rhabdomyolysis. Since the US citizenry has been well educated to view high plasma cholesterol as a sin and a laboratory generated number for plasma cholesterol as a worthy goal perhaps all one can really do for the majority of patients is to provide them with advice to take some nutritional supplements containing Co Q10 to counteract only some of the side-effects of statin drugs?"

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[1] Lane, KT and Beese, LS (2006). Structural biology of protein farnesyltransferase and geranylgeranyltransferase type 1. **Journal of Lipid Research 47:** 681-699.

[2] Fu, HW and Casey, PJ (1999). Enzymology and biology of CaaX protein prenylation. **Recent Progress in Hormone Research 54**: 315-342.

[3] Mortensen, SA, *et al.* (1997). Dose-related decrease of serum coenzyme Q10 during treatment with HMG-CoA reductase inhibitors. **Molecular Aspects of Medicine 18(Supplement):** S137-144.

[4] Mabuchi, H., et al. (2005). Reduction of serum ubiquinol-10 and ubiquinone-10 levels by atorvastatin in hypercholesterolaemic patients. **Journal of Atherosclerosis and Thrombosis 12:** 111-119.

[5] http://www.time.com/time/health/article/0,8599,1703827,00.html

Statins Induce the Accumulation of Regulatory T Cells in Atherosclerotic Plaque

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3388131/?tool=pubmed

The immune system in atherosclerosis and in acute myocardial infarction

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3184673/?tool=pubmed

http://commonground.ca/2012/07/cholesterol-drugs/

Mediterranean Diet Lowers Alzheimer's Risk In American Cohort

- "Higher adherence to the Mediterranean diet was associated with significantly lower risk of developing Alzheimer's disease," the authors report. For each additional point to Mediterranean diet scores (indicating increased adherence to the diet), Alzheimer's risk dropped by 9 to 10 percent.
- **Effects of DHA- Rich n-3 Fatty Acid Supplementation on Gene Expression in Blood Mononuclear Leukocytes: The OmegAD Study**
- We suggest that 6 months of dietary n-3 FA supplementation affected expression of genes that might influence inflammatory processes and could be of significance for AD.

Mediterranean Diet and risk of Alzheimer's disease." Scarmeas, Nikolaos; Stern, Yaakov; Tang, Ming-Xin; Mayeux, Richard; Luchsinger, Jose." Annals of Neurology. April 2006; Published online April 2006

http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0035425

http://www.ncbi.nlm.nih.gov/pubmed/22760977

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3359045/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/20182044

"Mediterranean Diet Cut Depression Risk by 30%"

- "Results from a study of more than 10,000 initially healthy Spaniards shows that those who followed the Mediterranean dietary pattern (MDP) — rich in vegetables, fruits, nuts, whole grains, and fish — were less likely to develop depression during the next 4 years than those who ate more meat, meat products, or whole-fat dairy…."The most important fact is that adherence to an overall healthy dietary pattern might be able to reduce the risk of depression."

http://www.ncbi.nlm.nih.gov/pubmed?term=Arch%20Gen%20Psychiatry.%202009%3B66%3A1090%E2%80%931098

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3095504/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3095504/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/22433903

On the Other Hand

- “Consumption of trans-unsaturated fatty acids (or trans-fats) has been linked to a significantly increased risk for depression. On the other hand, olive oil, monounsaturated fatty acids and polyunsaturated fatty acids appear to have a protective effect and lower depression risk, new research suggests.”
-
- “Spanish investigators from the University of Las Palmas de Gran Canaria found that compared with their counterparts who consumed diets low in TFAs, individuals with elevated levels of trans-fats had a 48% increased risk for depression.”
- "Depression affects more than 150 million people worldwide. However, relatively few [longitudinal] studies have analyzed the effect of diet on this disease," said Dr. Sánchez-Villegas.”

From: Medscape Medical News > Psychiatry

Trans-Fats Linked to Increased Depression Risk

Findings Have Major Implications for Americans

Deborah Brauser

More Fish / Less Psychosis?

- At the general population level, Hedelin and colleagues[1] conducted a large-scale epidemiologic study among women in the Uppsala Health Care Region in Sweden to evaluate the association of dietary intake of different fish species and specific polyunsaturated fatty acids with the prevalence of positive psychotic-like symptoms.
- Data were available from more than 33,000 women who reported on dietary habits in 1991/1992 and then reported their experiences of having any psychotic-like symptoms in 2002/2003.
- Among many of their findings, Hedelin and colleagues reported that the intake of omega-3 and omega-6 fatty acids was associated with a decreased relative risk for psychotic-like symptoms, after adjusting for multiple other potentially confounding variables.

1.Hedelin M, Löf M, Olsson M, et al. Dietary intake of fish, omega-3, omega-6 polyunsaturated fatty acids and vitamin D and the prevalence of psychotic-like symptoms in a cohort of 33000 women from the general population. BMC Psychiatry. 2010;10:38.

http://www.ncbi.nlm.nih.gov/pubmed/22239591

http://www.ncbi.nlm.nih.gov/pubmed/21678345

Long-chain omega-3 fatty acids for indicated prevention of psychotic disorders: a randomized, placebo-controlled trial

- **Conclusion:** Long-chain omega-3 polyunsaturated fatty acids (PUFAs)reduce the risk of progression to psychotic disorder and may offer a safe and efficacious strategy for indicated prevention in young people with subthreshold psychotic states.
- **Intervention:** A 12-week intervention period of 1.2-g/d omega-3 PUFA or placebo was followed by a 40-week monitoring period; the total study period was 12 months.

http://www.ncbi.nlm.nih.gov/pubmed/20124114

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3385013/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed?term=Hostility%20of%20drug-free%20patients%20with%20schizophrenia%20and%20n-3%20polyunsaturated%20fatty%20acid%20levels%20in%20red%20blood%20cells

Mediterranean diet, moderate-to-high intensity training and health-related quality of life in adults with metabolic syndrome.

- Mediterranean diet improved some physical and mental domains of health-related quality of life (physical function, vitality, general physical health, emotional role, and self-perception of health) and resulted in weight loss and improvement of MetS risk factors. Moreover, the the same diet plus periodized moderate-to-high intensity training (MeDE) for 12 weeks resulted in greater improvement in these domains and the improvement of physical role, bodily pain, social function, and health profile.
- MeDE increased physical fitness, resulted in a better physiological response to submaximal effort and caused a greater weight loss.
- Conclusions: A model of hypocaloric Mediterranean diet combined with periodized moderate-to-high intensity training may lead to greater improvement through a greater effect on physical and functional fitness, bodyweight, and risk factors than diet alone.

http://www.ncbi.nlm.nih.gov/pubmed/22496276

http://www.ncbi.nlm.nih.gov/pubmed/22633793

Markers of Inflammation in Men With Metabolic Syndrome

- Men, 24-65 years old with a reduction in waist circumference ≥8.5 cm after Mediterranean diet (MedDiet) and weight loss showed significantly greater reductions in inflammation markers than those with a change in waist circumference <8.5 cm.
- Thus, consuming MedDiet even in the absence of weight loss significantly reduces inflammation. However, the degree of waist circumference reduction with weight loss magnifies the impact of the MedDiet on other markers of inflammation associated with metabolic syndrome in men.

http://www.ncbi.nlm.nih.gov/pubmed/22790237

http://www.ajcn.org/content/92/4/967.long

Adherence to a Mediterranean-like dietary pattern reduced mortality, whereas adherence to a CR dietary pattern appeared to increase mortality in elderly Swedish men, especially when only adequate dietary reporters were considered.

Elevated C-reactive protein levels and metabolic syndrome in the elderly

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2710530/?tool=pubmed

“We conclude that in older individuals, Metabolic Syndrome is associated with Low Grade Systemic Inflammation, but the association is mainly supported by a strong independent correlation between waist circumference and high hs.CRP levels. In the absence of this specific MS component, it seems that the contribution of MS to LGSI would be modest at best.”

High-sensitivity C-reactive protein to detect metabolic syndrome in a centrally obese population: a cross-sectional analysis

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3359236/?tool=pubmed

Glucose & Insulin Resistance

- ***Consider this possible scenario which may prove inaccurate but still sounds good for now:***
- When fat cells are overwhelmed by excess glucose they become insulin resistant and create inflammatory chemicals that produce insulin resistance in muscle cells.
- Ideally, your skeletal muscles should take up 85% of your glucose, with 10% stored in your liver and only 5% stored as fat.
- Diabetic muscles can take up less than ½ as much glucose.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3329711/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/22162470

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3048325/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3327714/?tool=pubmed

Insulin Resistance Continued

As this process continues:

- Your blood triglycerides rise
- You develop central obesity, a fat belly, apple shape
- Fat is deposited within your muscle cells
- Fat is deposited in your liver
- Pancreas cells that produce insulin die

http://www.ncbi.nlm.nih.gov/pubmed/21864868

High-protein low-carbohydrate diets: what is the rationale?

Dietary recommendations released by the large majority of international scientific committees and organizations suggest that the diet for the prevention and treatment of the most compelling health problems of our societies (obesity, diabetes, atherosclerosis, cardiovascular diseases and cancer) should be a diet moderately low in caloric content, low in fat content (particularly in saturated fat), poor in total cholesterol and rich in fiber.

Despite this uniformity in official recommendations, alternative diets with low carbohydrate and high protein content continue to be extremely popular within consumers and patients. Recently, new studies seem to suggest that high-protein low-carbohydrate diets may have particularly positive effects on reducing body weight and other risk factors for heart disease. Gannon and Nuttall conducted direct comparisons of high-protein low-carbohydrate diets compared with high-carbohydrate low-protein diets in subjects with type 2 diabetes. They found that high-protein low-carbohydrate diets reduced fasting plasma glucose, 24-h glucose area under the curve and hemoglobin A(1c).

On the basis of these results, a joint committee of the American Diabetes Association, North American Society for the Study of Obesity and the American Society for Clinical Nutrition suggested that a low-carbohydrate diet may be preferred to a low-fat diet for the induction of weight loss and glycemic control in subjects with type 2 diabetes.

What is the rationale? What mechanisms are involved?

- Diabetes Metab Res Rev. 2011 Mar;27(3):230-2. doi: 10.1002/dmrr.1171. Busetto L, Marangon M, De Stefano F.

http://www.ncbi.nlm.nih.gov/pubmed/21309052

http://en.wikipedia.org/wiki/Glycemic_index

A low-GI food will release glucose more slowly and steadily, which leads to more suitable postprandial (after meal) blood glucose readings. A high-GI food causes a more rapid rise in blood glucose levels and is suitable for energy recovery after exercise or for a person experiencing hypoglycemia.

Several lines of recent [1999] scientific evidence have shown that individuals who followed a low-GI diet over many years were at a significantly lower risk for developing both type 2 diabetes, coronary heart disease and age-related macular degeneration than others.

Most breads made with 100% whole wheat or whole meal flour have a GI similar to white bread.

There are quite a few internet sites with glycemic index lists.

A good example is Univ. of Sydney's site.

http://www.glycemicindex.com/foodSearch.php

Bad examples abound including Yahoo's where they sell a variety of processed foods. If you must eat dehydrated processed stuff; Nutrisystem falls into this category.

http://en.wikipedia.org/wiki/Glycemic_index

"Conversely, there are areas such as Peru and Asia, where people eat high-glycemic index foods such as potatoes and high-GI rices, but without a high level of obesity or diabetes.[12] The high consumption of legumes in South America and fresh fruit and vegetables in Asia likely lowers the glycemic effect in these individuals. The mixing of high- and low-GI carbohydrates produces moderate GI values."

More likely, their higher year round activity level permits them to better store glucose as glycogen.

http://en.wikipedia.org/wiki/Glycemic_index

Watch your Volume

- The number of grams of carbohydrate can have a bigger impact than glycemic index on blood sugar levels, depending on quantities. Consuming fewer calories, losing weight, and carbohydrate counting can be better for lowering the blood sugar level.[31] Carbohydrates impact glucose levels most profoundly,[32] and two foods with the same carbohydrate content are, in general, comparable in their effects on blood sugar.[32] A food with a low glycemic index may have a high carbohydrate content or vice versa; this can be accounted for with the glycemic load. Consuming carbohydrates with a low glycemic index and calculating carbohydrate intake would produce the most stable blood sugar levels.

http://en.wikipedia.org/wiki/Glycemic_index

When Fans Drink Sports Drinks

- •12 inactive (5 M, 7 F) subjects (~ 26 yrs.)
- •4 weeks of 760 ml/day energy drink (25.6 oz).
- •Usual diet confirmed by pre-post questioners.
- •Multiple pre-post metabolic and anthropometric measurements were taken.

I Really Do Hate Soft Drinks

- Chronic sugar-sweetened beverage (SSB) consumption is associated with obesity and type 2 diabetes mellitus (T2DM). Hyperglycaemia contributes to metabolic alterations observed in T2DM, such as reduced oxidative capacity and elevated glycolytic and lipogenic enzyme expressions in skeletal muscle tissue. We aimed to investigate the metabolic alterations induced by SSB supplementation in healthy individuals and to compare these with the effects of chronic hyperglycaemia on primary muscle cell cultures.

http://www.ncbi.nlm.nih.gov/pubmed/22733000

Click here: The Skinny on Obesity (Ep. 1): An Epidemic for Every Body - YouTube

http://www.youtube.com/watch?v=0ndTEu_qDGA

http://www.youtube.com/watch?v=dBnniua6-oM&feature=relmfu

No Soft Drinks

- "These studies examined the differences in sweet taste perception and implicit attitude toward sweet between normal-weight and overweight/obese adults; and tested the effects of soft drink consumption on sweet taste, explicit preference and implicit attitude toward sweet in normal-weight subjects."
- "In conclusion, overweight/obese individuals are more implicitly attracted to sweet. One month of soft drink supplementation changed sweet taste perception of normal-weight subjects."

http://www.ncbi.nlm.nih.gov/pubmed/21600942

KETOGENIC?
DON'T GET CARRIED AWAY.

- Severely obese subjects with a high prevalence of diabetes or metabolic syndrome lost more weight during six months on a carbohydrate restricted diet, with a relative improvement in insulin sensitivity and triglyceride levels.
- The Ketogenic diet was associated with several adverse metabolic and emotional effects. The use of Ketogenic diets for weight loss is not warranted.

New England Journal of Medicine 2003 and American Journal of clinical nutrition 2006

LET THEM EAT MEAT:
What is Good for You is Good for your Pet

Recent animal research provides compelling evidence that high-GI carbohydrate is associated with increased risk of obesity.

Kitties and doggies can become obese, develop metabolic syndrome and diabetes. Run with them, not just walk. They were made to eat meat not corn.

http://en.wikipedia.org/wiki/Glycemic_index

What About the Kids?

- *Remember what I said about exercise?*
- "Childhood obesity is a global phenomenon affecting all socio-economic groups, irrespective of age, sex or ethnicity."
- "Discovering that snacks, desserts, and pizza actively contribute so heavily to the diets of this age group, even among children who were part of this intervention, offers valuable insights regarding the need for more aggressive, innovative, and realistic approaches for additional dietary counseling."

http://pediatrics.aappublications.org/content/115/6/1723.long

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3028965/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3263181/?tool=pubmed

Have Mercy.
Set an Example for Your Children.

- **Inflammatory Cytokine Profiles During Exercise in Obese, Diabetic, and Healthy Children**
- Modulation of inflammatory status is considered a key component of the overall health effects of exercise. This may be especially relevant in children with obesity (Ob) or type 1 diabetes (T1DM), in which an imbalance between pro- and anti-inflammatory mediators could accelerate onset and progression of cardiovascular complications.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3184511/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/21443585

TODAY — A Stark Glimpse of Tomorrow

David B. Allen, M.D.

- Solace can still be found in the TODAY study, if its larger message transcends its worrisome findings.
- Illness from childhood over-nutrition is a societal and cultural problem that current medicines treat but cannot resolve.
- For a substantial proportion of those millions of children at risk for largely preventable type 2 diabetes, the findings of the TODAY study reinforce the idea that medications and even procedures will not stave off a lifetime of illness.
- Furthermore, lifestyle changes for youth are undermined by immersion in an obesogenic world, in which personal responsibility appears to be invalidated by the limits of willpower10 with respect to over-nutrition.
- The stark message from the TODAY study is that, tomorrow and beyond, public-policy approaches — sufficient economic incentives to produce and purchase healthy foods and to build safe environments that require physical movement — and not simply the prescription of more and better pills will be necessary to stem the epidemic of type 2 diabetes and its associated morbidity.

http://www.ncbi.nlm.nih.gov/pubmed?term=TODAY%20%E2%80%94%20A%20Stark%20Glimpse%20of%20Tomorrow

http://www.ncbi.nlm.nih.gov/pubmed/22540912

Prevalence of Cardiovascular Disease Risk Factors Among US Adolescents, 1999–2008

- A consistent dose-response increase in the prevalence of each of these cardiovascular disease risk factors was observed by weight categories.
- Among the US adolescents aged 12 to 19 years, the overall prevalence was
- 14% for prehypertension/hypertension,
- 22% for borderline-high/high low-density lipoprotein cholesterol,
- 6% for low high-density lipoprotein cholesterol (<35 mg/dL),
- and 15% for prediabetes/diabetes during the survey period **from 1999 to 2008…. The prevalence of prediabetes/diabetes increased from 9% to 23%.**

http://pediatrics.aappublications.org/content/early/2012/05/15/peds.2011-1082.abstract

http://www.medscape.com/viewarticle/764238?src=ptalk

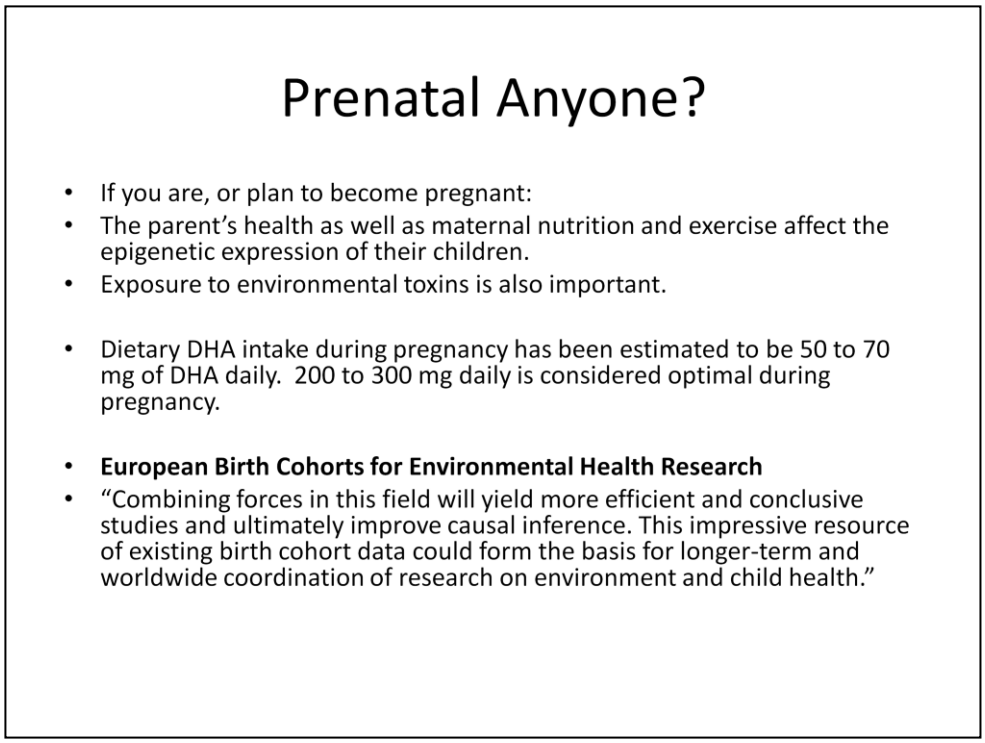
http://www.medscape.com/viewarticle/763786?src=ptalk

Influence of Sports, Physical Education, and Active Commuting to School on Adolescent Weight Status

- **"CONCLUSIONS:** Team sport participation had the strongest and most consistent inverse association with weight status. Active commuting to school may reduce the risk of obesity, but not necessarily overweight, and should be studied further. Obesity prevention programs should consider strategies to increase team sport participation among all students."
- **"Lower levels of physical activity in childhood associated with adult depression"**

http://pediatrics.aappublications.org/content/early/2012/07/11/peds.2011-2898

http://www.ncbi.nlm.nih.gov/pubmed/21147028



http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3261945/?tool=pubmed

http://www.ncbi.nlm.nih.gov/pubmed/21730221

http://www.ncbi.nlm.nih.gov/pubmed/21035539

http://www.ncbi.nlm.nih.gov/pubmed/18226057

Chemical Exposure Creating a "Silent Pandemic" of Neurodevelopmental Disorders?

Caroline Cassels

November 8, 2006 — An online review article published November 8 in the *Lancet* says environmental exposure to toxic chemicals in utero and in the early stages of life may be creating a "silent pandemic" of neurodevelopmental disorders.

In their paper, Philippe Grandjean, MD, from the University of Southern Denmark in Odense, Denmark, and Philip Landrigan, MD, from the Mount Sinai School of Medicine, in New York, call for new, stricter approaches to chemical

testing and controls that recognize the "unique vulnerability of the developing brain."

In conducting their review, the authors used the US National Library of Medicine hazardous substances data bank, supplemented by fact sheets from the US Agency for Toxic Substances and Disease Registry, and the integrated risk information system of the US Environmental Protection Agency to identify industrial chemicals that have proven neurotoxic effects in humans.

"The combined evidence suggests that neurodevelopmental disorders caused by industrial chemicals have created a silent pandemic in modern society," they write.

Significant Impact

The article cites 5 industrial chemicals, including lead, methylmercury, and polychlorinated biphenyls (PCBs), solvents, and pesticides, that are recognized causes of neurodevelopmental disorders.

Exposure to these chemicals during early fetal development can cause brain injury at doses much lower than those affecting adults. Recognition of these risks has given rise to evidence-based programs of prevention, such as the elimination of lead additives in gasoline and house paint. While such initiatives have been effective, most have been initiated only after substantial delays, they point out.

Recent research into lead neurotoxicity has shown that even very low exposures cause large functional decrements in children. Similarly, low prenatal exposure to methylmercury has been shown to have a significant impact, with 1 New Zealand study demonstrating a 3-point decrement in IQ and changes in affect in babies born to women with mercury concentrations in hair of greater than 6 µg/g, they write.

Tip of the Toxic Iceberg

But these "proven" brain-damaging chemicals may just be the tip of a potentially huge neurotoxic iceberg, Drs. Grandjean and Landrigan write.

According to the authors, there are an additional 200 chemicals that are known to cause clinical neurotoxic effects in adults. In addition, despite an absence of systematic testing, many other chemicals have been shown to have neurotoxic effects in animals.

In 1981, 100,000 chemicals in the European Union were registered for commercial use. In the United States, 80,000 are currently registered, yet fewer than half of these substances have been subjected "to even token laboratory testing," they write.

"Nearly 3000 of these substances are produced in quantities of almost 500,000 kg every year, but for nearly half of these high-volume chemicals, no basic toxicity data are publicly available, and 80% have no information about developmental or pediatric toxicity," they write.

An expert committee from the US National Research Council concluded that 3% of developmental disabilities are the direct result of environmental exposure to such substances and that another 25% arise through interactions between environmental factors and individual genetic susceptibility.

However, these estimates, the authors note, were based on scarce information about neurotoxicity and therefore likely underestimate the true prevalence of chemically induced abnormalities.

Lowering the Bar

The absence of testing and the high level of proof required for chemical-control legislation are the main impediments to the prevention of developmental disorders caused by exposure to chemical pollutants, they write.

As a result, Drs. Grandjean and Landrigan are calling for new approaches to control chemical exposures to protect the most vulnerable. The bar on exposure limits for chemicals should be set at values that recognize the unique sensitivity of the developing fetus and young children and aim at protecting brain development, they assert.

This precautionary approach, which is now beginning to be used in the European Union, would mean that any early indication of a potential for a serious toxic effect, such as developmental neurotoxicity, should lead to strict regulation. Restrictions could then be relaxed if it is subsequently proven that the substance is less harmful than initially thought.

In the meantime, the authors say that practicing clinicians should counsel their patients, particularly pregnant women, about avoiding exposure to chemicals of unknown and untested neurotoxic potential.

Lancet. Published online November 8, 2006.

EVOLUTION, STRESS, HUNGER & OBESITY

- **The most common chronic stress during our evolution was famine.**
- **When we are under chronic stress the tendency is for us to store fat and go into hibernation.**
- **This is not the best strategy for a modern human with a problematic boss, a big mortgage a pending divorce.**
- **Or, simply a guy on unemployment.**

Here is a down to earth talk on helping with anxiety.

http://www.youtube.com/watch?v=KYJdekjiAog&feature=related

http://www.ncbi.nlm.nih.gov/pubmed/18236691

AUDIT YOUR LIFE
BE FOCUSED AND SAVE YOURSELFE AND YOUR FAMILY

- What are your major stressors?
- Get at least 8 hours of sleep. Sleep loss makes you fat and shortens your life.
- Don't over-commit.
- Don't live beyond your means.
- Be honest and work on your relationships.
- Learn conflict resolution skills.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3098897/?tool=pubmed

DIET CAN BE A STRESSOR

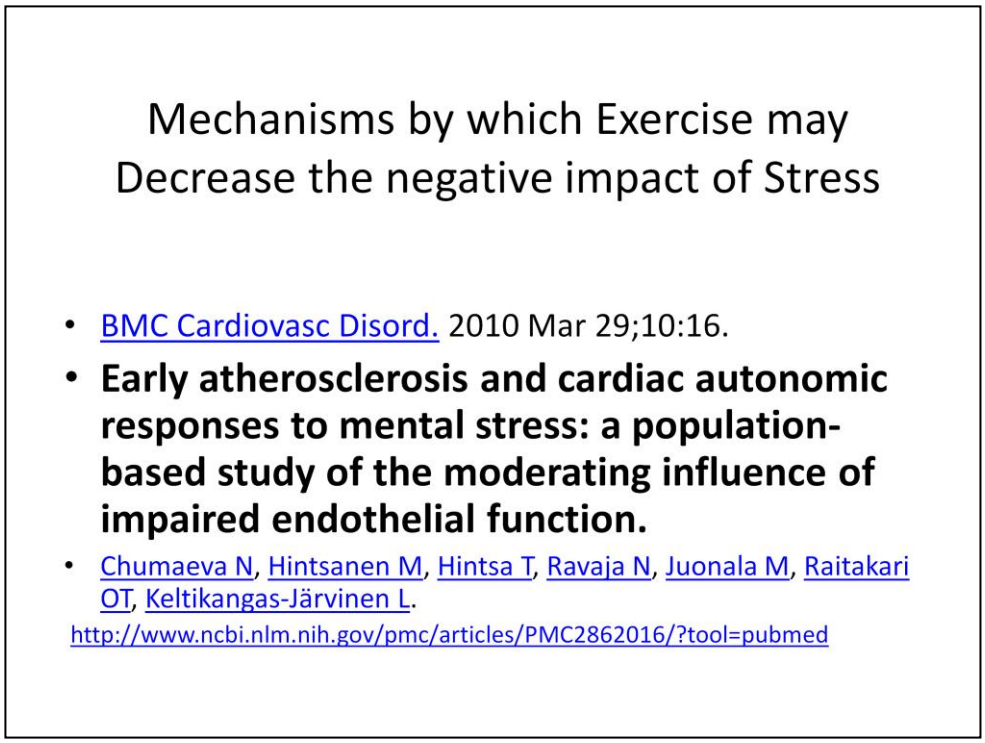
- Obviously, if you are smoking or taking drugs you are stressing yourself chronically.
- Insulin is a stressor so eating a high carbohydrate diet is stressful.
- Pesticides and chemical exposure is stressful, this includes the chemicals added to processed foods, pesticides, herbicides and chemicals leaching out of plastic storage containers and bottles.
- Quite a number of these act similar to female hormones which can cause breast and prostate cancer along with decreased sperm count.

STRESS AND INFLAMMATION FEED EACH OTHER

- This is one of the reasons we want to include high sensitivity CRP in the lab work. It is a measure of low level inflammation. It is a good predictor of cardiovascular problems.
- Inflammation is also associated with ongoing aches and pains and psychological problems like depression.
- Inflammation can be decreased with diet.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2932668/

http://www.ncbi.nlm.nih.gov/pubmed/22771001



Med Hypotheses. 2005;65(5):962-5.

Adventitial dysfunction:
an evolutionary model for understanding atherosclerosis.

Yun AJ, Doux JD, Bazar KA, Lee PY.

Source

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Abstract

Endothelial and smooth muscle dysfunctions are widely implicated in the pathogenesis of atherosclerosis. Modern mechanical and pharmacologic treatments aim to remodel abnormalities of the vessel intima and media. We hypothesize that adventitial dysfunction comprises the dominant source of atherosclerosis by originating many endothelial and smooth muscle abnormalities. The autonomic nervous system innervates the adventitia, and autonomic dysfunction induces many end-organ dysfunctions including inflammation and thrombosis. The link between diabetes and atherosclerosismay operate through adventitial autonomic neuropathy. Smoking may promote atherosclerosis by inducing adventitial autonomic dysfunction related to nicotine-mediated compensatory upregulation of sympathetic bias independent of endothelial injury

induced by purported tobacco toxins. While hypertension is thought to cause atherosclerosis, the two conditions may instead represent independent consequences of autonomic dysfunction. The link between aging and atherosclerosis may operate through adventitial dysfunction induced by autonomic dysregulations. Exercise may ameliorate atherosclerosis by restoring adventitial autonomic function, thereby normalizing adventitial regulation of medial and intimal biology. Feed-forward adventitial vascular baroreceptor and chemoreceptor dysregulation may further exacerbate atherosclerosis as intimal plaque interferes with these sensors. Since penetrating external physical injury likely represented a dominant selective force during evolution, the adventitia may be preferentially equipped with sensors and response systems for vessel trauma. The convergent response of adrenergia, inflammation, and coagulation, which is adaptive for physical trauma, may be maladaptive today when different stressors trigger the cascade. Endoluminal therapies including atherectomy, angioplasty, and stent deployment involve balloon expansion that traumatizes all layers of the vessel wall. These interventions may paradoxically reinitiate the cascade of atherogenesis that begins with adventitial dysfunction and leads to restenosis. Methods to reduce adventitialtrauma, a maladaptive trigger of adventitial dysfunction, may reduce the risk of restenosis. We envision novel mechanical and biopharmaceutical solutions that target the adventitia to prevent or treat atherosclerosis including novel drug delivery strategies, exo-stents that wrap vessels, and neuromodulation of vessels.

Sleep and Weight Gain

"Short sleep duration in young, healthy men is associated with decreased leptin levels, increased ghrelin levels, and increased hunger and appetite,"

"Additional studies should examine the possible role of chronic sleep curtailment as a previously unrecognized risk factor for obesity."

Ann Intern Med. 2004;141:846-850, 885-886

Test Your D Level

- Most U.S. Americans and Canadians do not meet the 2011 Inst. of Medicine recommended daily allowance (RDA) for vitamin D for their age groups from foods.
- Vitamin D has a multitude of effects particularly regarding your immune system, protecting you from infection and preventing auto immune diseases such as multiple sclerosis and lupus.

http://www.ncbi.nlm.nih.gov/pubmed/22747906

Month of birth, vitamin D and risk of immune-mediated disease: a case control study

"A season of birth effect in immune-mediated diseases (ID) such as multiple sclerosis and type 1 diabetes has been consistently reported.

The risk of different ID in the UK is significantly influenced by the season of birth, suggesting the presence of a shared seasonal risk factor or factors predisposing to ID. Gestational UVB and vitamin D exposure may be implicated in the aetiology of ID. "

http://www.biomedcentral.com/1741-7015/10/69

Vitamin D in MS

A vitamin for 4 seasons

http://www.neurology.org/content/suppl/2012/06/20/WNL.0b013e31825fded9.DC2/znl02712000208.pdf

Lower serum vitamin D levels are associated with a higher relapse risk in multiple sclerosis

http://www.neurology.org/content/79/3/261.abstract

Vitamin D and disease activity in multiple sclerosis before and during interferon-β treatment

http://www.neurology.org/content/79/3/267.abstract

Interferon-β and serum 25-hydroxyvitamin D interact to modulate relapse risk in MS

http://www.neurology.org/content/79/3/254.abstract

http://www.ncbi.nlm.nih.gov/pubmed?term=Vitamin%20D3%20and%20Cystic%20Fibrosis%20During%20Pulmonary%20Exacerbation

http://www.ncbi.nlm.nih.gov/pubmed?term=Genomic%20and%20Nongenomic%20Signaling%20Induced%20by%201%CE%B1%2C25(OH)2-Vitamin%20D3%20Promotes%20the%20Recovery%20of%20Amyloid-%CE%B2%20Phagocytosis%20by%20Alzheimer%E2%80%99s%20Disease%20Macrophages%20

http://jech.bmj.com/content/early/2012/03/22/jech-2011-200114.long