

Feet, Forks, & the Fate of our Families

-plying the master levers of medical destiny-

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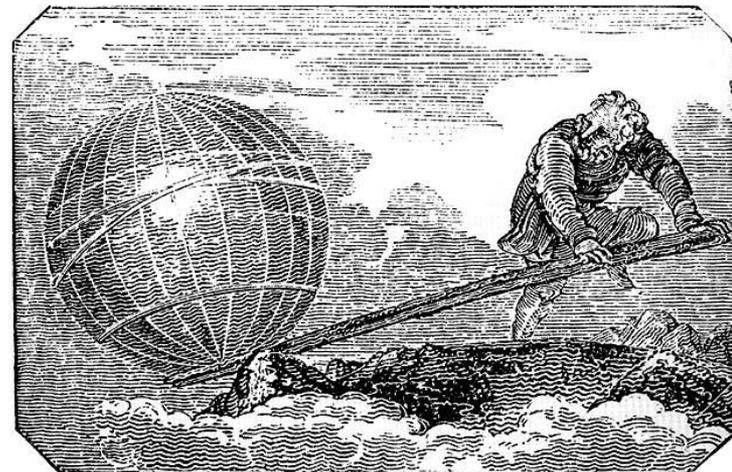


Statewide PHC

Summer Symposium

Waterbury, CT

6-23-10



Point by point-*

- The **Pulpit** (*already Donne*, but just getting started...)
- The **Paradigm Shift**
 - The People in Potsdam
- The **Plight**
- The **Peril**
- The **Promise**
 - The Public
 - The Personal: The Public, in Private Parts
- The **Problem**
- The **(Palatable) Prescription**
- The **Path**
- The **Pact**

*best remembered with: Peter Piper Picked a
Peck of Pickled Peppers...

The Paradigm Shift-

There is Lifestyle... and everything else

- McGinnis JM, Foege WH. **Actual causes of death** in the United States. JAMA. **1993**;270:2207-12
 - Mokdad AH, Marks JS, Stroup DF, Gerberding JL. **Actual causes of death** in the United States, 2000. JAMA. **2004**;291:1238-45
 - Strong K, Mathers C, Leeder S, Beaglehole R. Preventing chronic diseases: how many lives can we save? Lancet. 2005 Oct 29-Nov 4;366(9496):1578-82
 - Epping-Jordan JE, Galea G, Tukuitonga C, Beaglehole R. Preventing chronic diseases: taking stepwise action. Lancet. 2005 Nov 5;366(9497):1667-71
-

The People in Potsdam-

- Ford ES, Bergmann MM, Kröger J, Schienkiewitz A, Weikert C, Boeing H. **Healthy living is the best revenge: findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam study.** *Arch Intern Med.* **2009** Aug 10;169(15):1355-62

and the UK, for that matter:

- Kvaavik E, Batty GD, Ursin G, Huxley R, Gale CR. **Influence of individual and combined health behaviors on total and cause-specific mortality in men and women: the United Kingdom health and lifestyle survey.** *Arch Intern Med.* 2010 Apr 26;170(8):711-8
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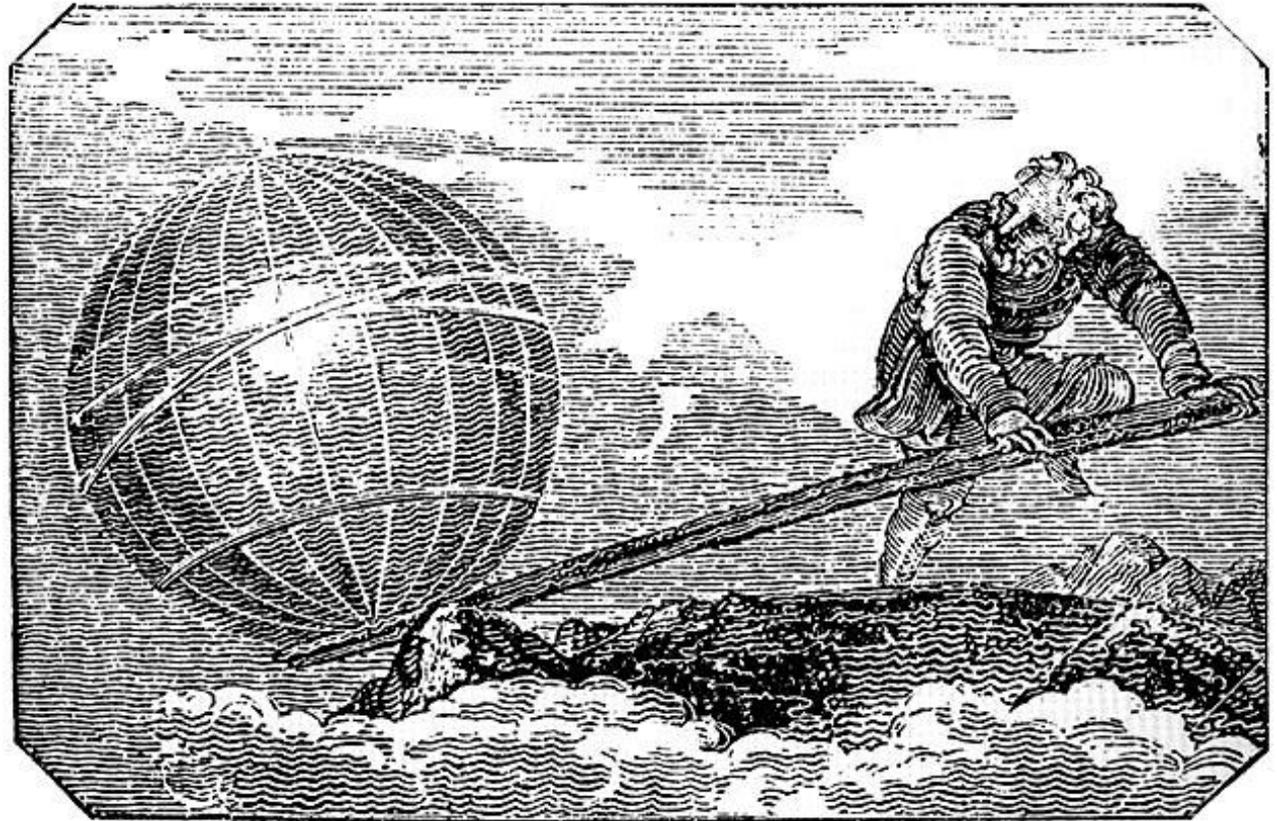
Nurturing Nature: the leverage of living well-

- Ornish D, Magbanua MJ, Weidner G, Weinberg V, Kemp C, Green C, Mattie MD, Marlin R, Simko J, Shinohara K, Haqq CM, Carroll PR. **Changes in prostate gene expression in men undergoing an intensive nutrition and lifestyle intervention.** *Proc Natl Acad Sci U S A.* 2008 Jun 17;105(24):8369-74
-

The Master Levers of Destiny-

- *Feet*
- *Forks*

- *Fingers*



But....

Knowledge, alas, isn't power...

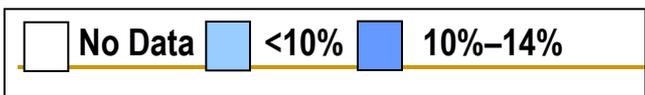
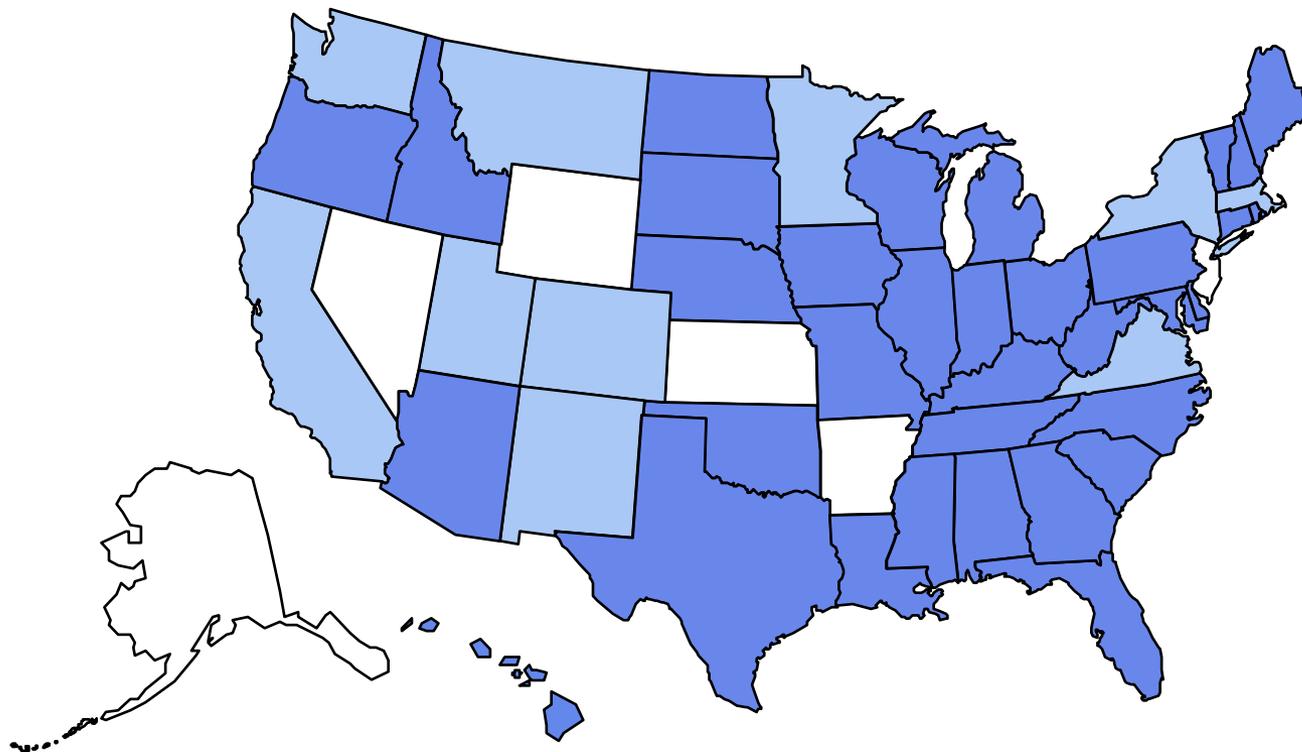
- Katz DL. **Life and death, knowledge and power: why knowing what matters isn't what's the matter.** *Arch Intern Med.* 2009 Aug 10;169(15):1362-3
-

The Plight-

Obesity Trends* Among U.S. Adults

BRFSS, 1990

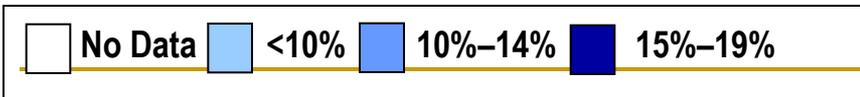
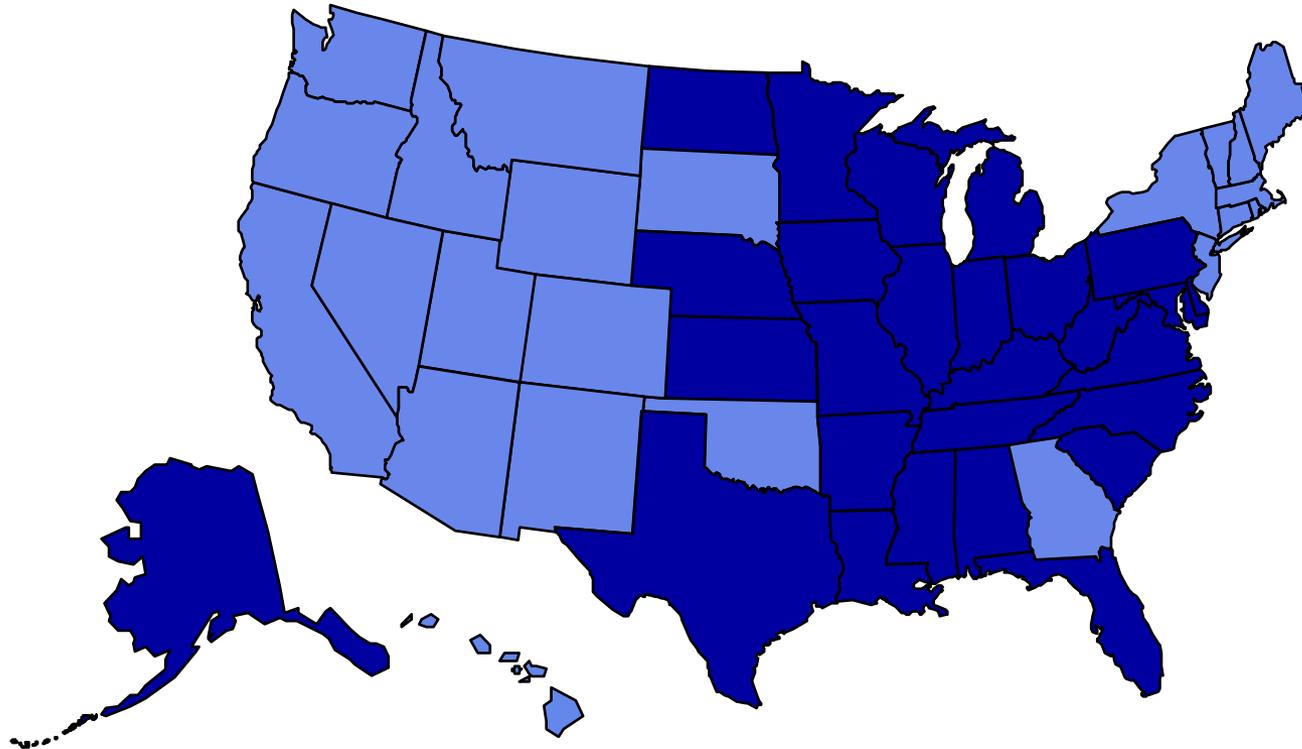
(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1995

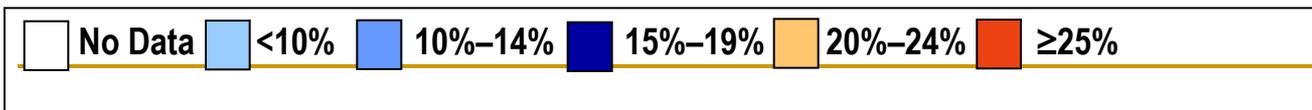
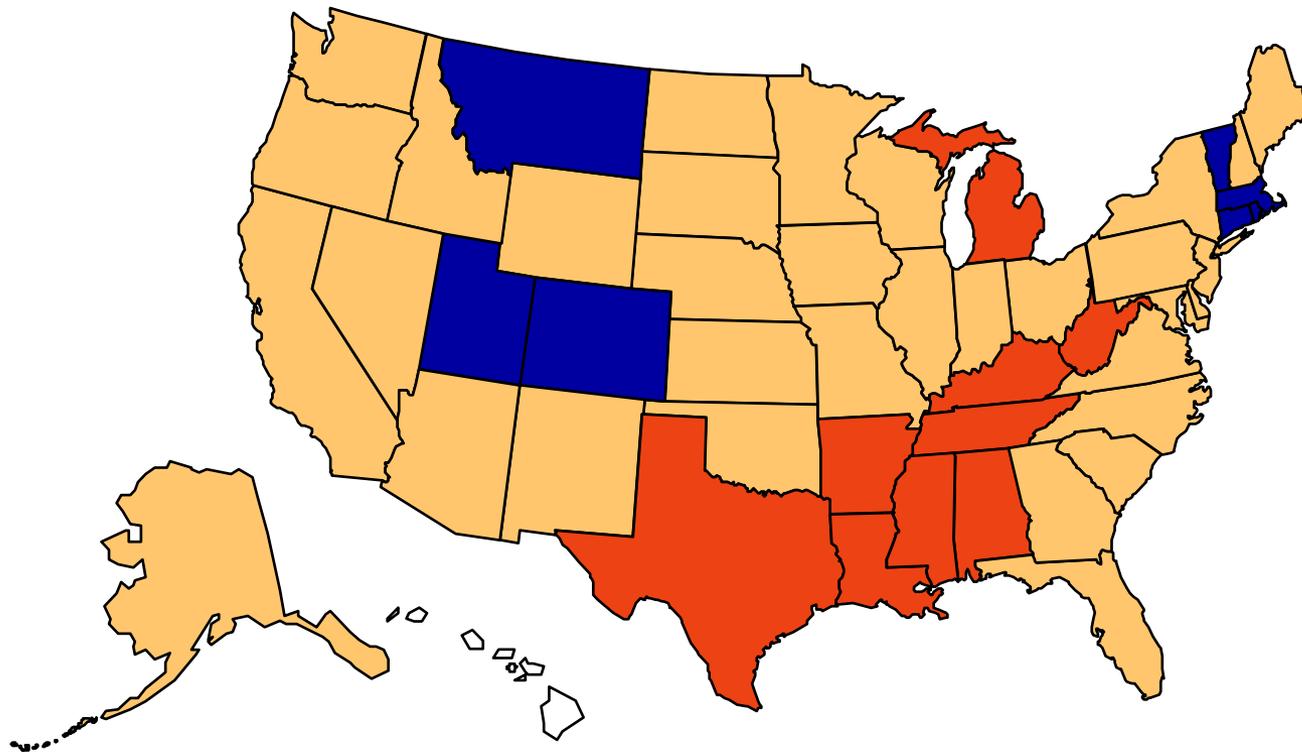
(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2004

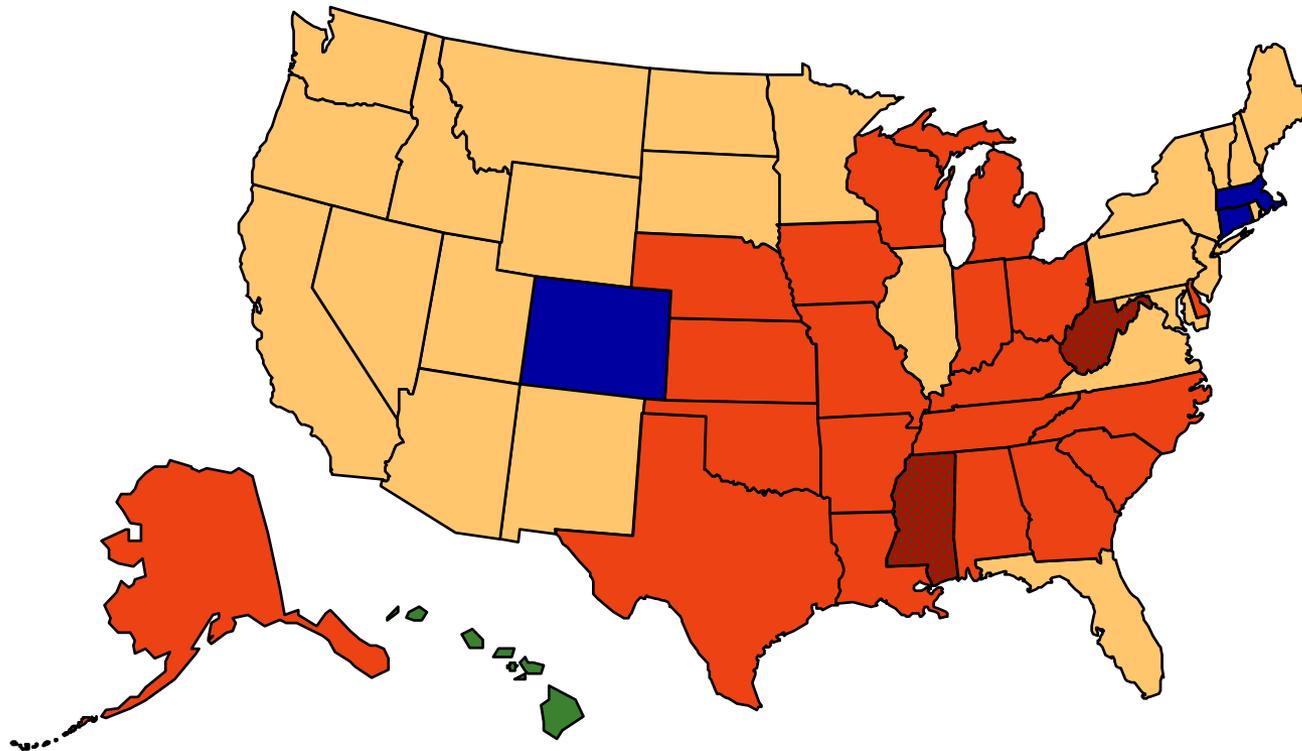
(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2006

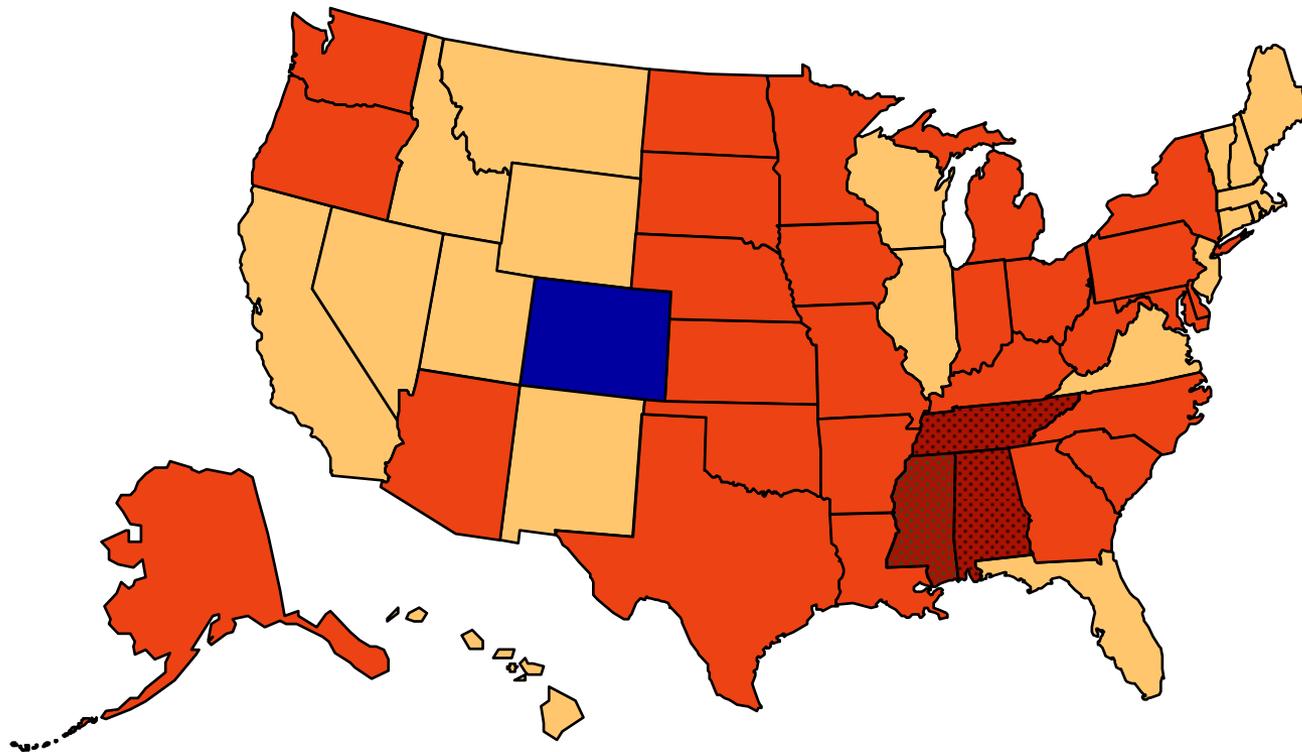
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

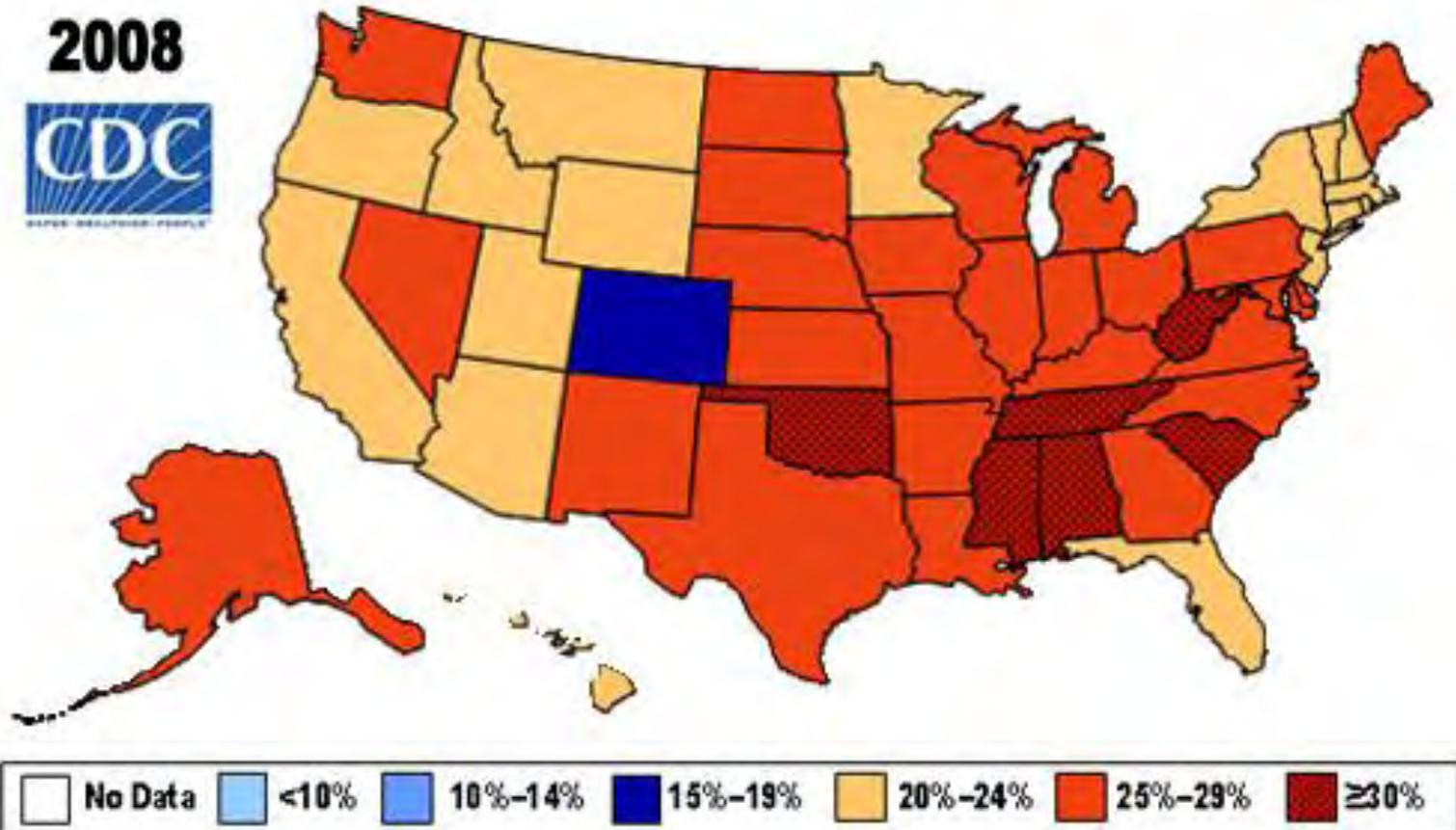
BRFSS, 2007

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends Among U.S. Adults

BRFSS, 2008



Colorado rocks...

- **Colorado, California Cities Dominate Slimmest Cities List**
 - Healthy Habits Abound in Top 10 Least Obese Cities
 - By [Jennifer Warner](#)
WebMD Health News
 - March 5, 2010
 - Top 10 least obese metro areas based on their percentage of obese residents:
 - Fort Collins/Loveland, Colo. (16%)
 - Boulder, Colo. (16.6%)
 - Barnstable, Mass. (16.9%)
 - Colorado Springs, Colo. (17.2%)
 - San Luis Obispo/Paso Robles, Calif. (17.6%)
 - Reno/Sparks, N.V. (17.7%)
 - Santa Cruz/Watsonville, Calif. (17.9%)
 - San Jose/Sunnyvale/Santa Clara, Calif. (19%)
 - San Francisco/Oakland/Fremont, Calif. (19.2%)
 - Denver/Aurora, Colo.* (19.3%) and Bridgeport/Stamford/Norwalk, Conn.* (19.3)
-

But eventually...

- Wang Y, Beydoun MA, Liang L, Caballero B, Kumanyika SK. **Will all Americans become overweight or obese?** estimating the progression and cost of the US obesity epidemic. *Obesity*. 2008;16:2323-30
-

Et tu, Butte?

■ Colorado Slowly Becoming More Obese

2/10

...*the state is losing ground in the battle of the bulge* since being named the least obese state in the nation in 2008. Now, Colorado health officials have added some important statistical information: obesity rates rose faster than in the rest of the country between 1995 and 2008, up 89 percent compared to 67 percent nationwide, points out the Colorado Springs Independent. Worse, over the 13-year period, the number of Coloradans considered obese nearly doubled from about one in 10 to roughly one in five. "That's still lower than the nationwide obesity rate of 26.6 percent, but *Colorado's trend is discouraging*," the Indy writes. --MdY

Trends in Child and Adolescent Overweight

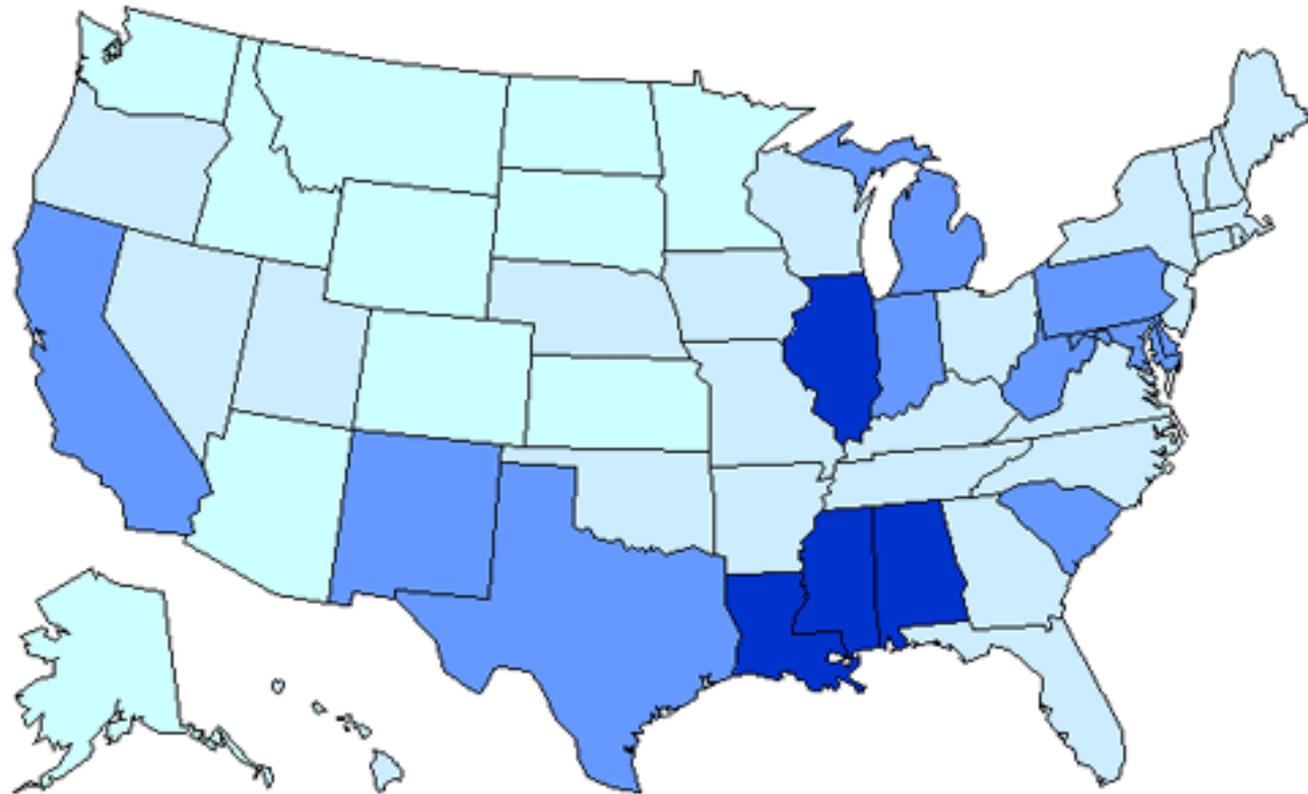


Note: Overweight is defined as BMI \geq gender- and weight-specific 95th percentile from the 2000 CDC Growth Charts.
Source: National Health Examination Surveys II (ages 6-11) and III (ages 12-17), National Health and Nutrition Examination Surveys I, II, III and 1999-2004, NCHS, CDC.

Obesity Portends Diabetes...

Diabetes Trends* Among Adults in the U.S. (Includes Gestational Diabetes)

BRFSS 1996 Source: www.cdc.gov



Missing Data

< 4%

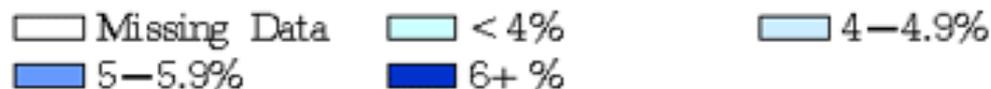
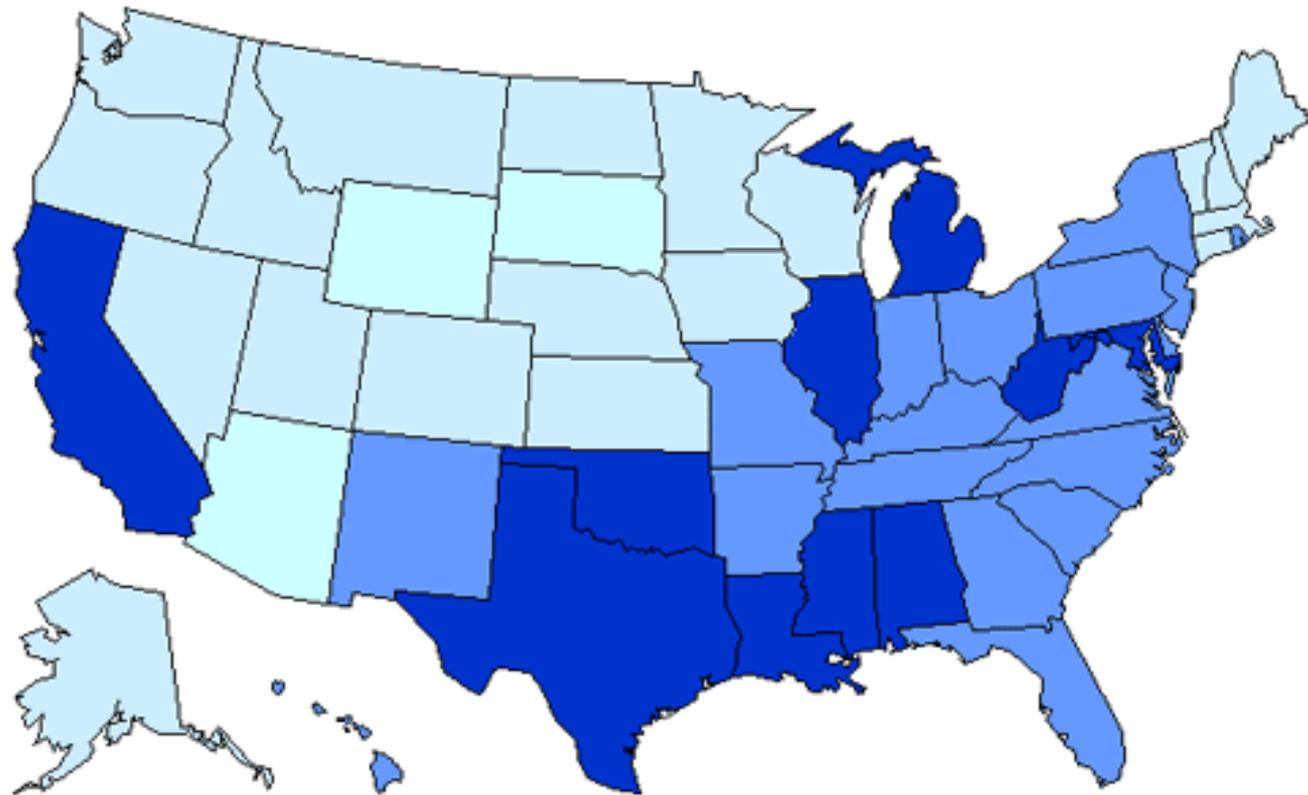
4-4.9%

5-5.9%

6+ %

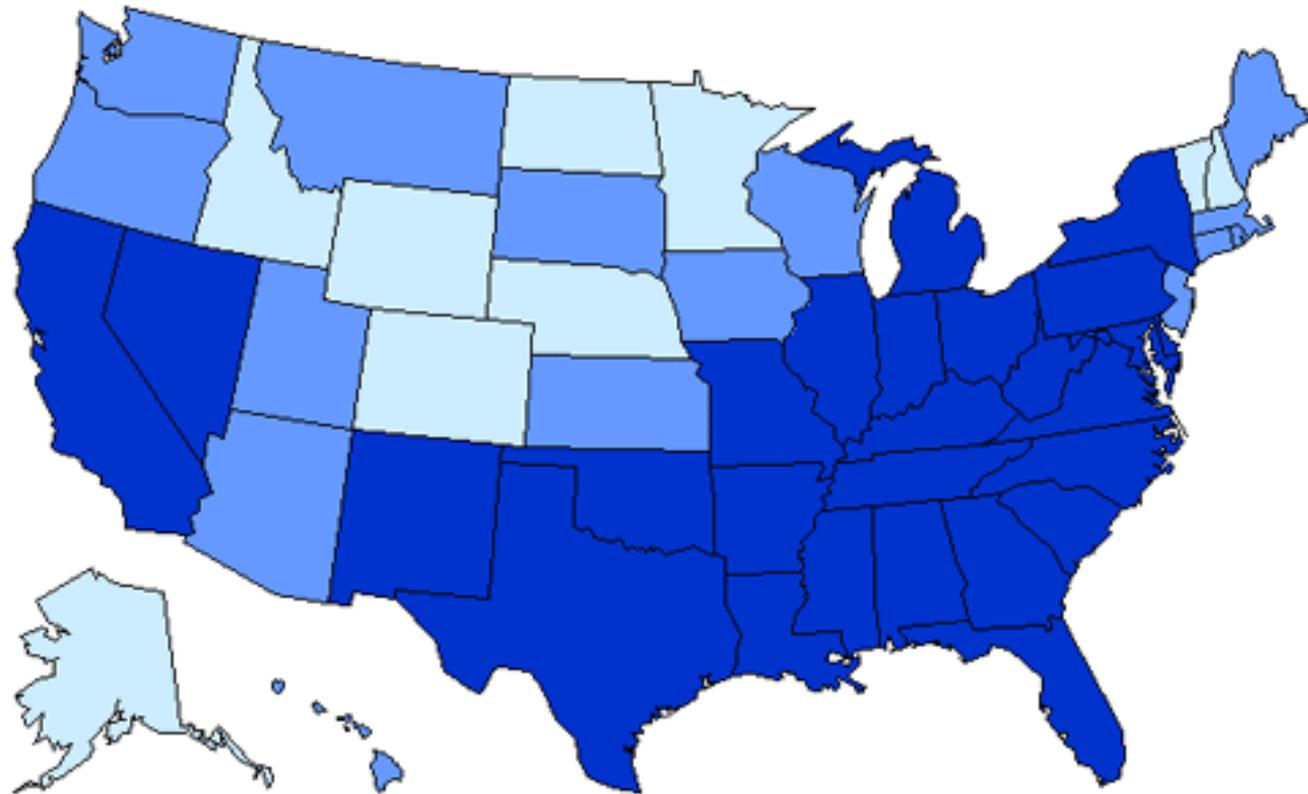
Diabetes Trends* Among Adults in the U.S. (Includes Gestational Diabetes)

BRFSS 1998 Source: www.cdc.gov



Diabetes Trends* Among Adults in the U.S. (Includes Gestational Diabetes)

BRFSS 2000 Source: www.cdc.gov



Missing Data < 4% 4–4.9%
5–5.9% 6+ %

Diabetes on the Rise in U.S. Survey Shows **About 26 Million Americans Have Diabetes**

By [Bill Hendrick](#)

WebMD Health News

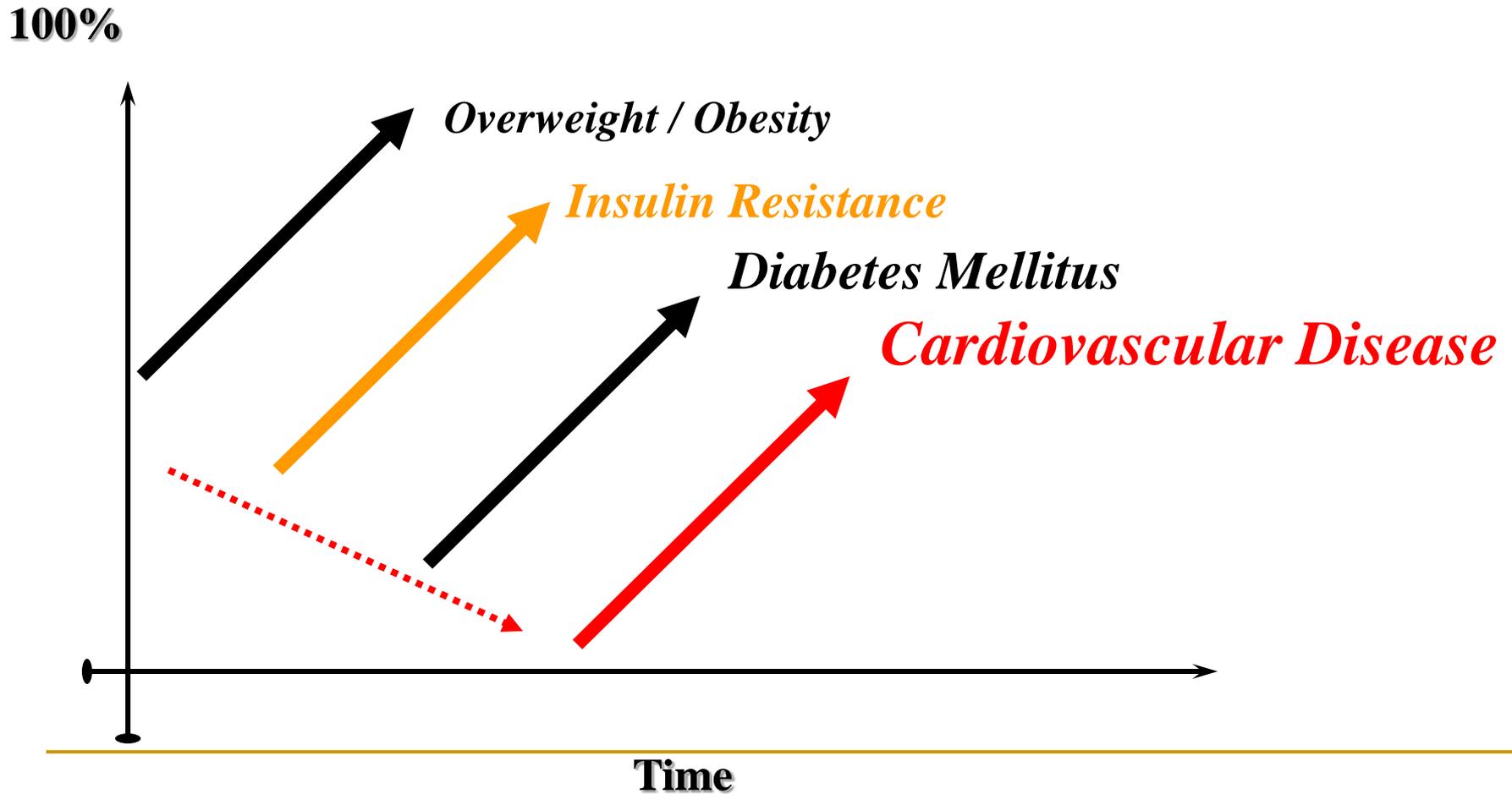
Reviewed by [Brunilda Nazario, MD](#)

Oct. 28, 2009 -- [Diabetes](#) cases are rising rapidly in the U.S., with the disease afflicting 11.3% of American adults in the third quarter of 2009, according to a new Gallup-Healthways Well-Being Index survey. That's an increase from 10.4% in the first quarter of last year.

That means about 26 million Americans have diabetes. Gallup-Healthways notes if current trends continue, **more than 37 million will be living with the disease by the end of 2015.**

Taking stock of *the mess we're in...*

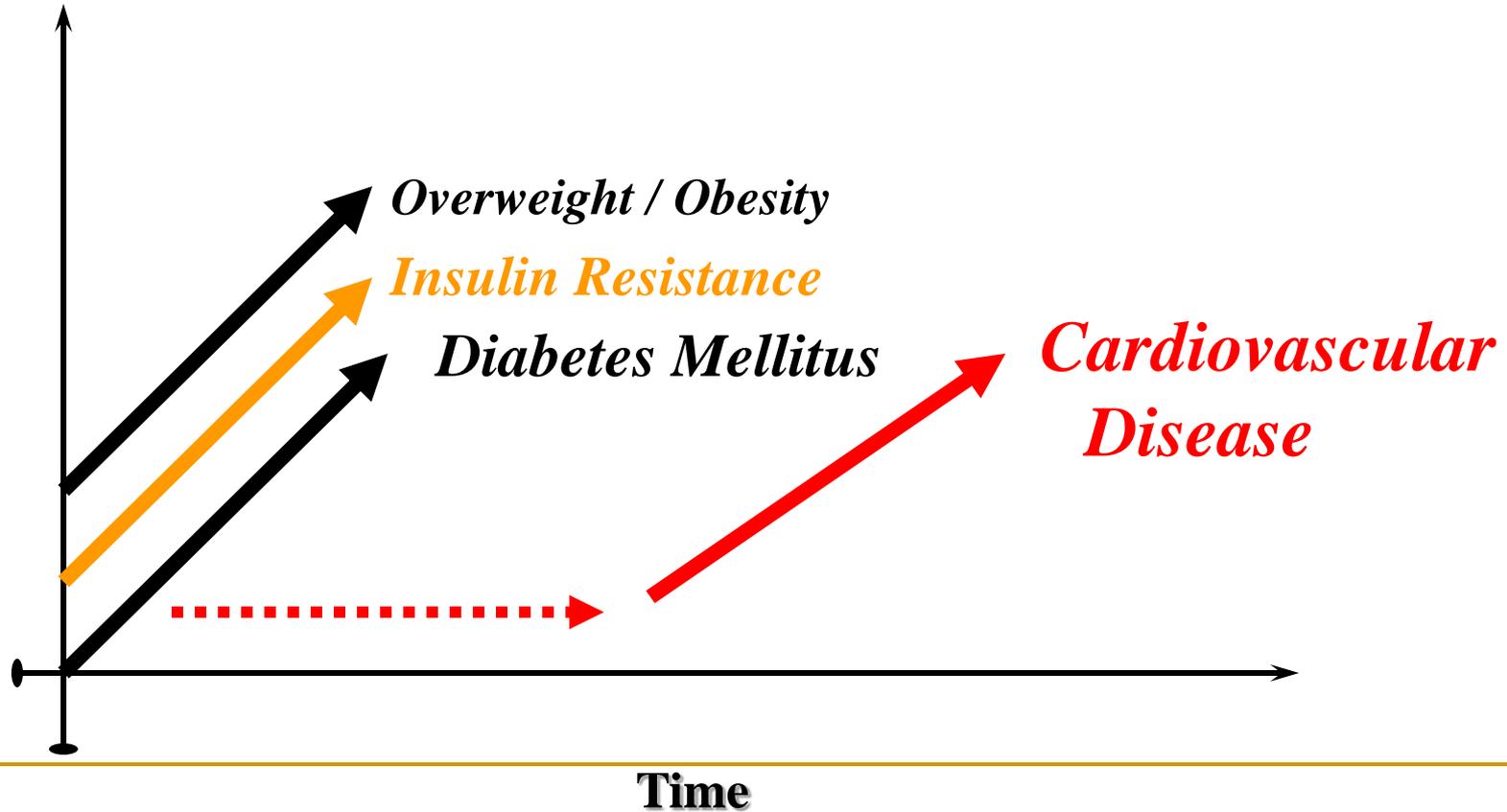
Adult Population



The Peril-

And ***the mess our children Will be in...***

100%



The Writing is on the Wall-

The New York Times
nytimes.com

- November 12, 2008
 - **Child Obesity Seen as Warning of Heart Disease**
 - By PAM BELLUCK
 - NEW ORLEANS — A new study finds striking evidence that children who are obese or have high cholesterol show early warning signs of heart disease.
-

Not JUST lives, but also dollars...

- by 2018 over 100 million Americans will be obese
 - we will be spending roughly \$340 billion annually on obesity, a tripling of current levels
 - per capita spending will rise from \$361 to over \$1400 a year
 - <http://www.fightchronicdisease.org/pdfs/CostofObesityReport-FINAL.pdf>
 - *November, 2009*
-

The Promise-

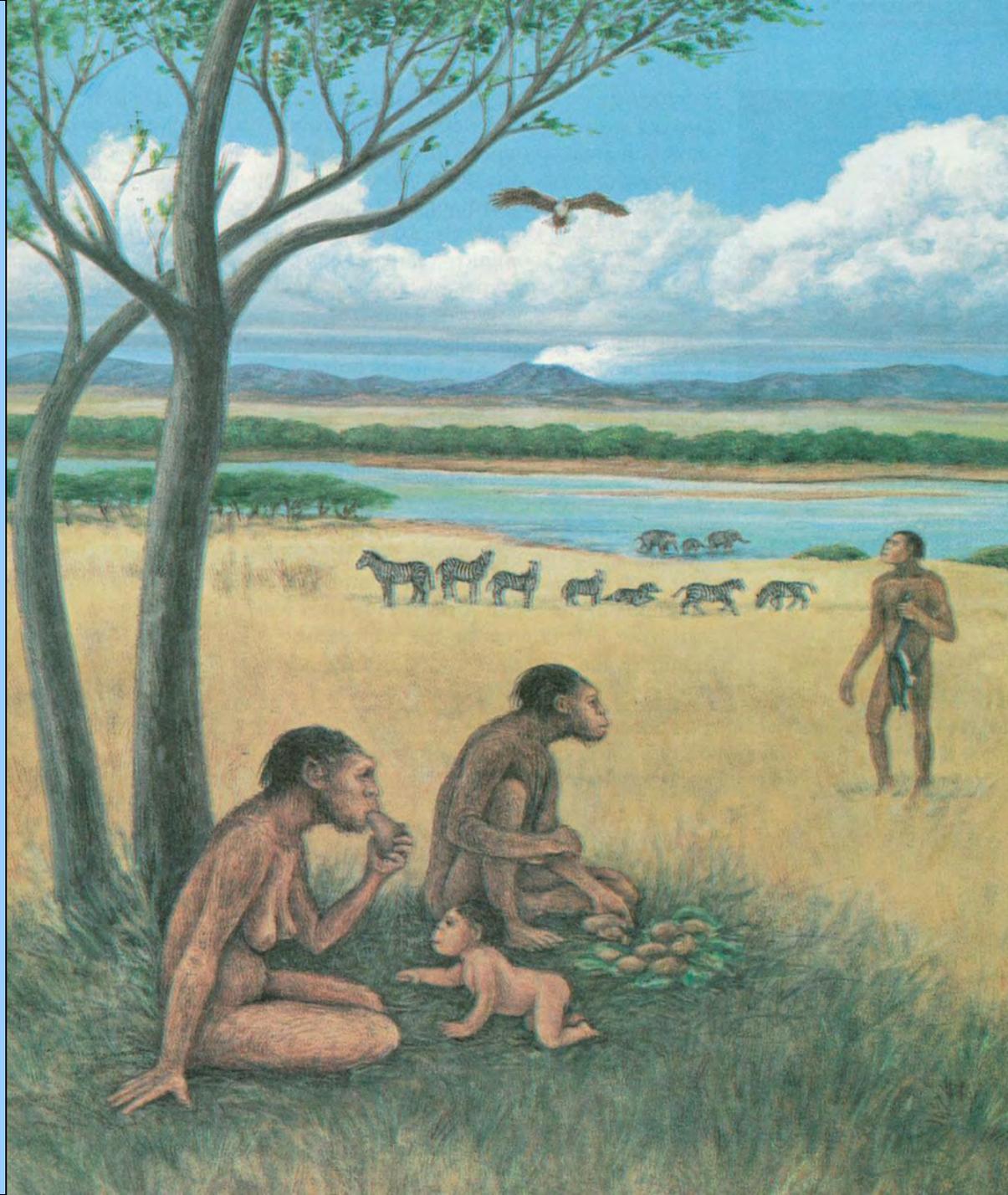
What lifestyle can do...

- 80% reduction in heart disease
 - 90% reduction in diabetes
 - 60% reduction in cancer
 - and so on...
-

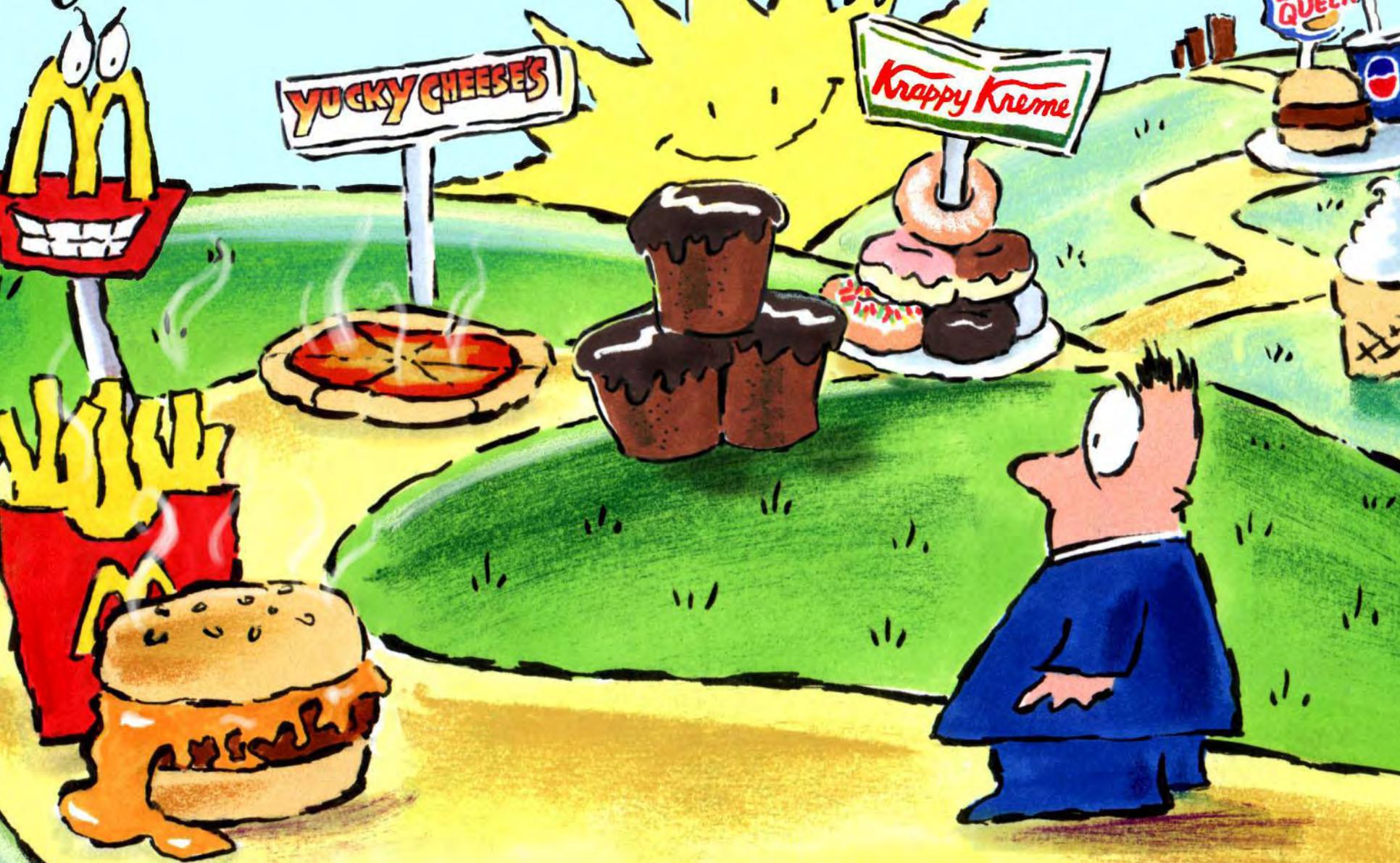
The Public-

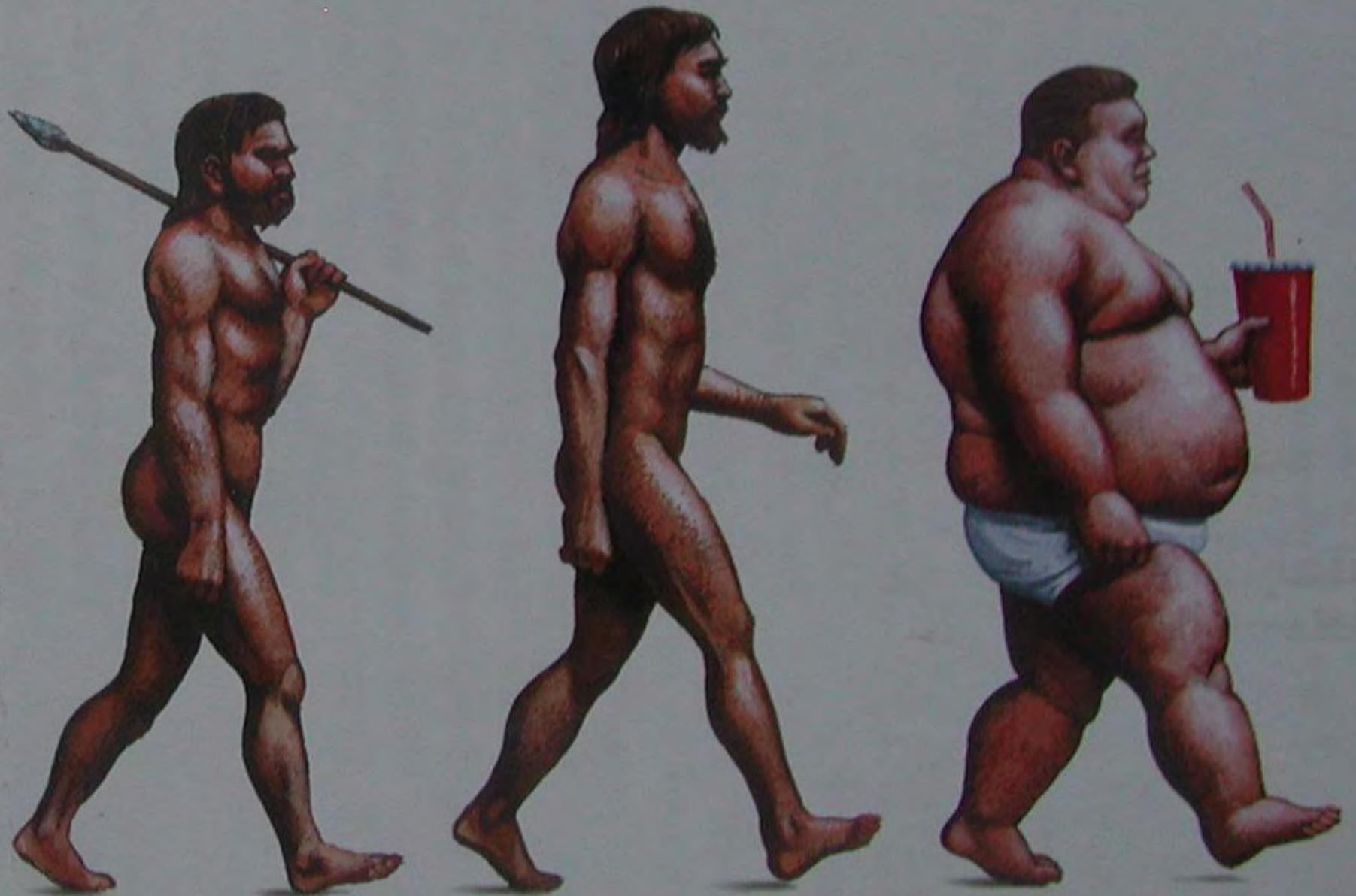
- *in private parts...*

The Problem-



Health. Weight Control. Happiness with Food!











we live where good advice...

- “Eat food, not too much, mostly plants.”
 - Michael Pollan

...can be hard to swallow!-







Even when clear where “there” is-

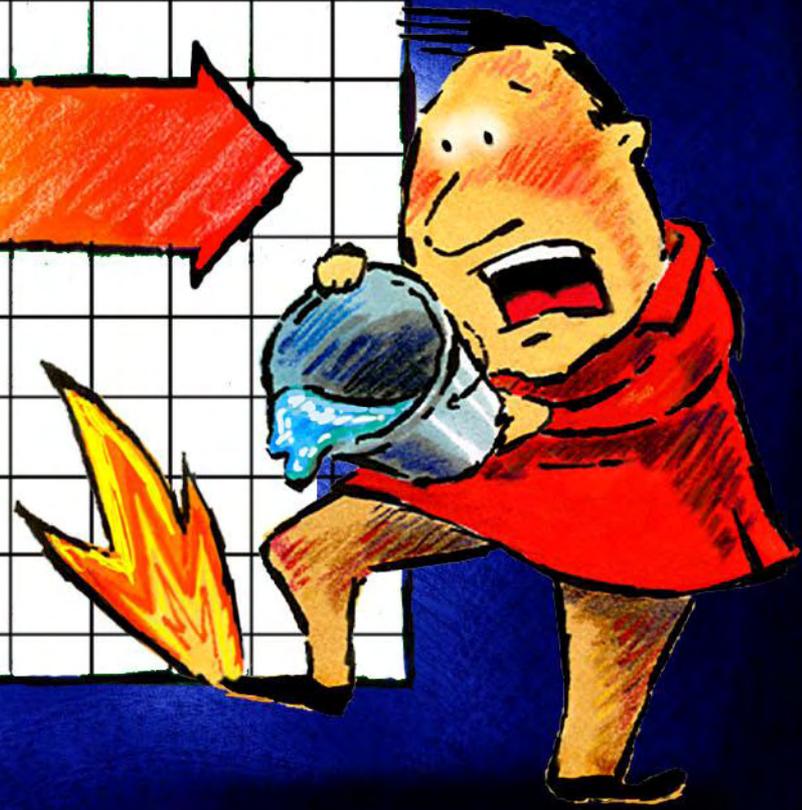
-it may seem...

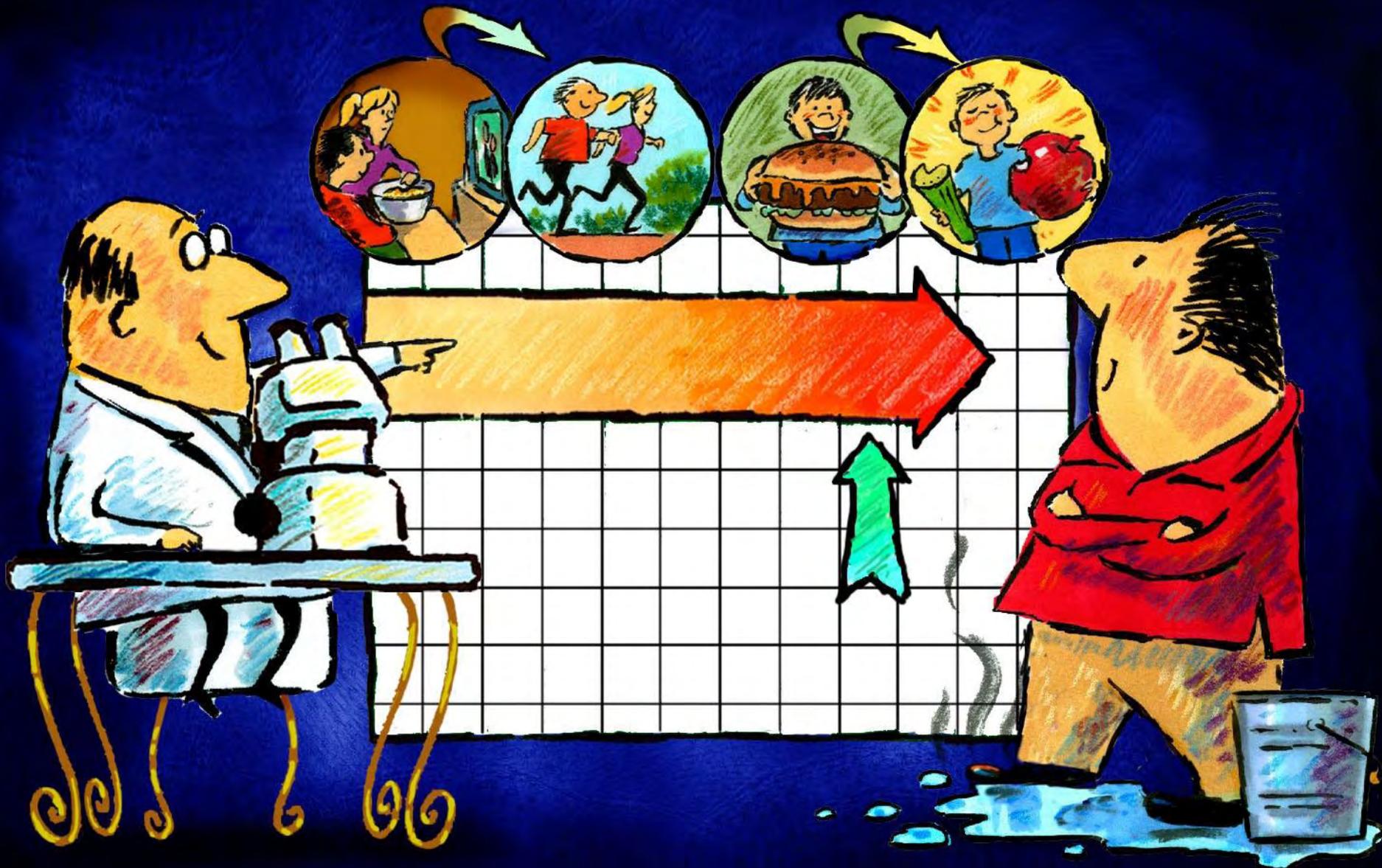
- ❑ you can't get *there* from *here*:



*The Path-
of levers, & levees...*

$$M \frac{d^2 x}{dt^2} = \frac{3}{2} \sqrt{L} (sp) \Omega \sqrt{B_2(x+y)}$$
$$= \frac{3}{2} \sqrt{L} \Omega \sqrt{B_2(x+y)}$$









Fast Food

Junk Food

FOOD MARKETING

vending machines





Suburban Sprawl

Junk Food

Food Marketing

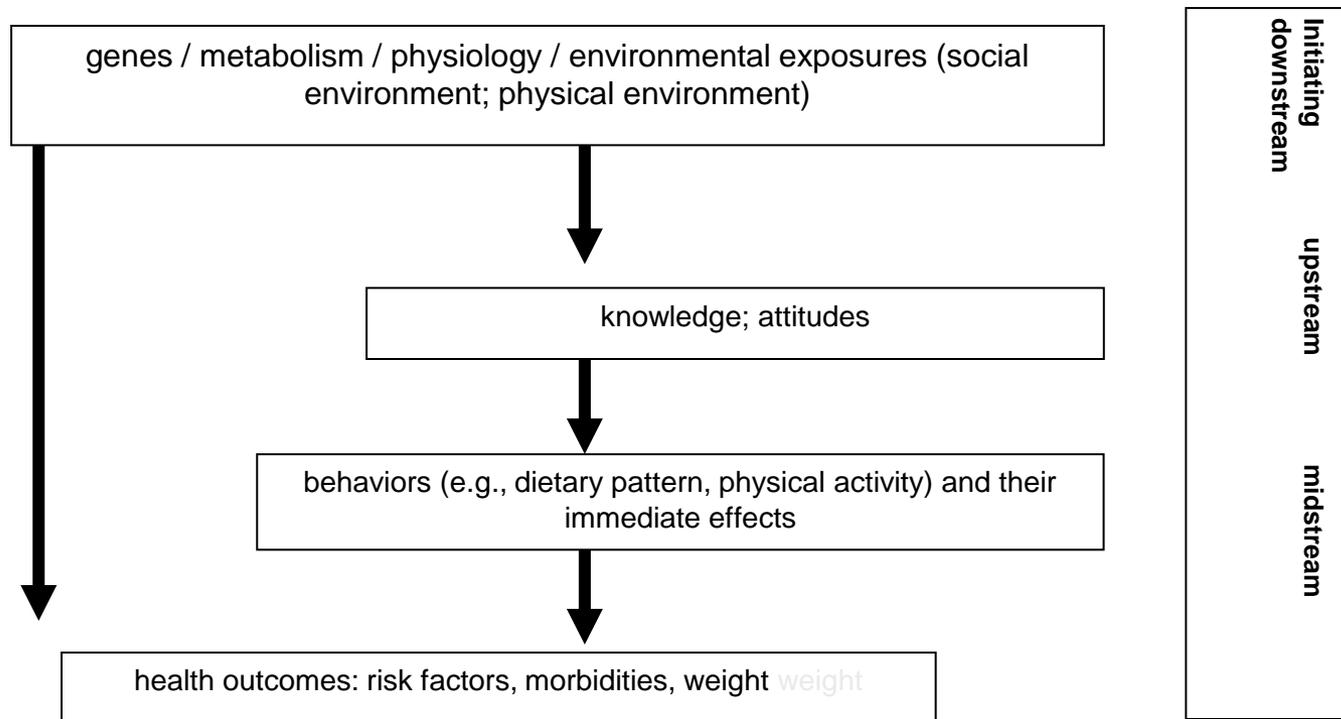
FAST FOOD

P values, and downstream despotism- *failure, from the jaws of success...*

- Anderson LM, Quinn TA, Glanz K, Ramirez G, Kahwati LC, Johnson DB, Buchanan LR, Archer WR, Chattopadhyay S, Kalra GP, **Katz DL**; Task Force on Community Preventive Services. The effectiveness of worksite nutrition and physical activity interventions for controlling employee overweight and obesity: a systematic review. *Am J Prev Med*. 2009;37:340-57
 - **Katz DL**. School-based interventions for health promotion and weight control: not just waiting on the world to change. *Annu Rev Public Health*. 2009 Apr 29;30:253-72
 - **Katz DL**, O'Connell M, Njike VY, Yeh MC, Nawaz H. Strategies for the prevention and control of obesity in the school setting: systematic review and meta-analysis. *Int J Obes* (Lond). 2008;32:1780-9
 - **Katz DL**, O'Connell M, Yeh MC, Nawaz H, Njike V, Anderson LM, Cory S, Dietz W; Task Force on Community Preventive Services. Public health strategies for preventing and controlling overweight and obesity in school and worksite settings: a report on recommendations of the Task Force on Community Preventive Services. *MMWR Recomm Rep*. 2005;54(RR-10):1-12
-

A logic model for obesity. *Initiating factors* include genes/physiology, the social environment, and the physical environment. *Upstream factors* include knowledge and attitudes. *Midstream factors* include behaviors. Health outcomes and actual weight are *downstream factors*. Note that some factors in the model, such as genes, are not necessarily modifiable, and thus may influence health outcomes directly, bypassing midstream factors.

Adapted from: Katz DL. School-based interventions for health promotion and weight control: not just waiting on the world to change. *Annu Rev Public Health.* 2009 Apr 29;30:253-72







Sandbags, in schools...

- The WAY Program: <http://www.wayplanet.com>
 - Planet Health
 - CATCH
 - <http://www.sph.uth.tmc.edu/catch/>
 - WE CAN
 - <http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/live-it/go-slow-whoa.htm>
 - Here's to You, Mr. Robinson-
 - <http://notv.stanford.edu/>
 - PE4Life
 - Take 10!
 - <http://www.take10.net/>
-

Sandbags, at the worksite...

- <http://www.incentahealth.com/>
 - <http://www.cdc.gov/LEANWorks/>
 - Anderson LM, Quinn TA, Glanz K, Ramirez G, Kahwati LC, Johnson DB, Buchanan LR, Archer WR, Chattopadhyay S, Kalra GP, Katz DL; Task Force on Community Preventive Services. **The effectiveness of worksite nutrition and physical activity interventions for controlling employee overweight and obesity: a systematic review.** Am J Prev Med. 2009 Oct;37(4):340-57
-

...and beyond:

- **National Business Group on Health Unveils Employer Toolkit for Childhood Obesity**

WASHINGTON, DC -- (Marketwire) -- 10/21/09 -- Saying that employers can no longer afford to ignore the epidemic of childhood obesity, the National Business Group on Health today announced the launch of "Childhood Obesity: It's Everyone's Business," a toolkit designed to help U.S. employers address the growing problem of overweight and obese children.

- www.businessgrouphealth.org

Sandbags in cyberspace...

A good meal, *less hard to find-*



A screenshot of the Healthy Dining Finder website. The header includes the logo and the tagline "dietitian-approved menu items from fast food to fine dining". A navigation bar contains links for "LEARN MORE", "GET MORE", "PRESS ROOM", and "RESTAURATORS AND OPERATORS". The main content area features a search section with a "search" heading, a "Find a restaurant with healthy dining options" sub-heading, and a search form with fields for "Enter Zip or City, State" and "Select Price Range" (with options for \$5, \$10-\$20, \$20+, and \$40+). A "Start Search" button is prominently displayed. Below the search form, there are links for "Advanced Search" and "Browse All Restaurants". A central image shows two women looking at a computer screen. Below this image, the text "menu items approved by registered dietitians" is displayed. The bottom section is titled "restaurant operators" and includes a call to action: "Participate in Healthy Dining, find out about our state-of-the-art analytics and help us collaborate more easily." It also features a "more on HealthyDiningFinder.com" section with icons for "what's new", "newsletters", "blog", and "spread the word". The footer contains a navigation menu with links for "to dine", "search now", "for restaurateurs", "about us", "contact us", "disclaimer", and "terms", along with the copyright notice "©2009 Healthy Dining. All rights reserved."

Sandbags in Stockholm...

- Healthy people...have more fun! And vice versa?
 - <http://thefuntheory.com/>



Closer to home...

- <http://www.letsmove.gov/>
- http://www.letsmove.gov/tfco_fullreport_may2010.pdf



And in our own back yard-

- **Yale Study Finds More Licensed Characters and Other Packaging Promotions Used to Market Less Nutritious Foods to Kids**
 - Conclusions: Overall, the supermarket environment worsened due to an increase in cross-promotions targeted to children and adolescents and a decline in the nutritional quality of these products. This analysis failed to find improvements in food marketing to youth and highlights the need to expand current industry self-regulatory pledges.
 - Harris JL et al. Marketing foods to children and adolescents: licensed characters and other promotions on packaged foods in the supermarket. *Public Health Nutr.* 2010;13:409-417
 - <http://cspinet.org/new/pdf/marketingreportcard.pdf>
-

Meanwhile, back at the ranch...

Mountain to Muhammed-

- **PHINDER:** *Promising Health
Interventions Inventoried by a Network of
Diverse Experts for Regional Application*
-

No Child Left (*on their*) Behind- Square Peg, Round Hole?

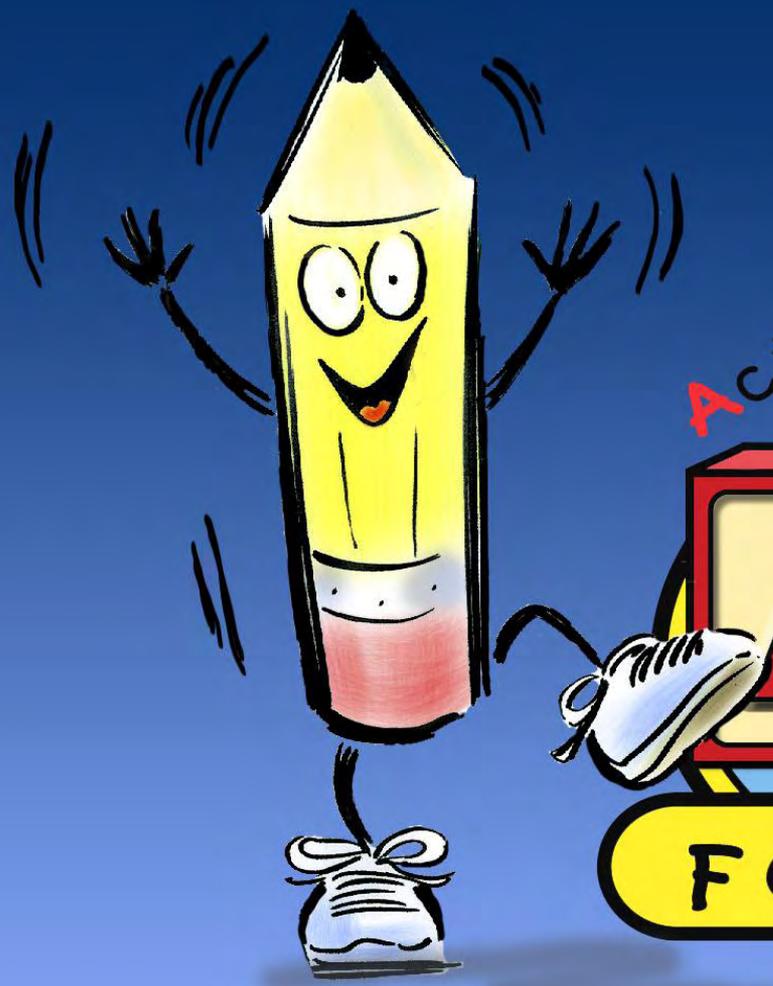
- *As easy as “ABC” for Fitness-*

Activity **B**ursts in the **C**lassroom

Activity Bursts in the Classroom

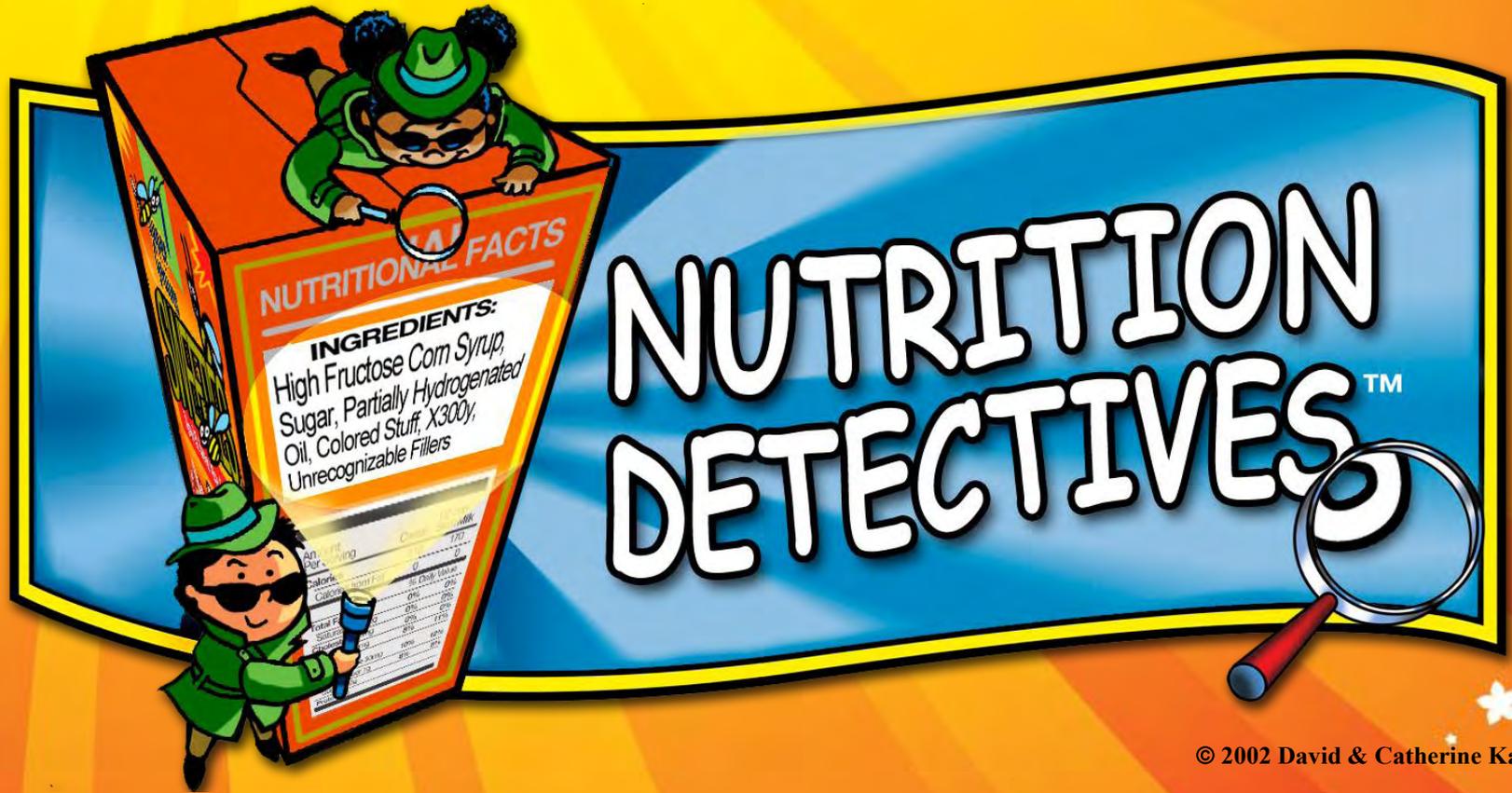


FOR FITNESS



And...so what?

- School District of Independence, MO
- 1,214 students enrolled: 655 intervention, 559 control
- Significant improvement in measures of fitness: abdominal strength, upper body strength- $p < 0.01$
- 17% decline in asthma medication use; $p = 0.03$
- 33% decline in ADHD medication us; $p = 0.07$



NUTRITIONAL FACTS

INGREDIENTS:
High Fructose Corn Syrup,
Sugar, Partially Hydrogenated
Oil, Colored Stuff, X300y,
Unrecognizable Fillers

	Amount Per Serving	% Daily Value*
Total Fat	17g	34%
Sodium	100mg	20%
Total Sugar	10g	20%
Total Fat	17g	34%
Sodium	100mg	20%
Total Sugar	10g	20%
Total Fat	17g	34%
Sodium	100mg	20%
Total Sugar	10g	20%

NUTRITION DETECTIVES™

© 2002 David & Catherine Katz

A Katz & Katz Production



TAKE IT!



LEAVE IT!



Clue 1

Don't be fooled by THE BIG BOLD CLAIMS
on the front of the box!

Use your spy skills



...and look for the
hidden truth in itty
bitty letters on the
label in the back!



What is this **fruit juice** made of?



?

||



Do the ingredients match what you expect to be in this juice?



INGREDIENTS: 100% FRUIT JUICE (FILTERED WATER SUFFICIENT TO RECONSTITUTE APPLE, RED GRAPE AND PASSIONFRUIT JUICE CONCENTRATES), NATURAL FLAVORS, ASCORBIC ACID (VITAMIN C).



Yes
=





**How about
this one?**

Do the **ingredients** match what you expect to be in this drink?



No
=



CONTAINS PURE FILTERED WATER, SWEETENERS (HIGH FRUCTOSE CORN SYRUP, SUGAR), LESS THAN 2% OF: CITRIC ACID (PROVIDES TARTNESS), POTASSIUM CITRATE (REGULATES TARTNESS), MODIFIED CORNSTARCH, PARTIALLY HYDROGENATED SOYBEAN OIL, VITAMIN C (ASCORBIC ACID), NATURAL AND ARTIFICIAL FLAVORS, YELLOW #6, YELLOW #5.



A Katz & Katz Production, 2008, Yale-Griffin Prevention Research Center

Clue 5

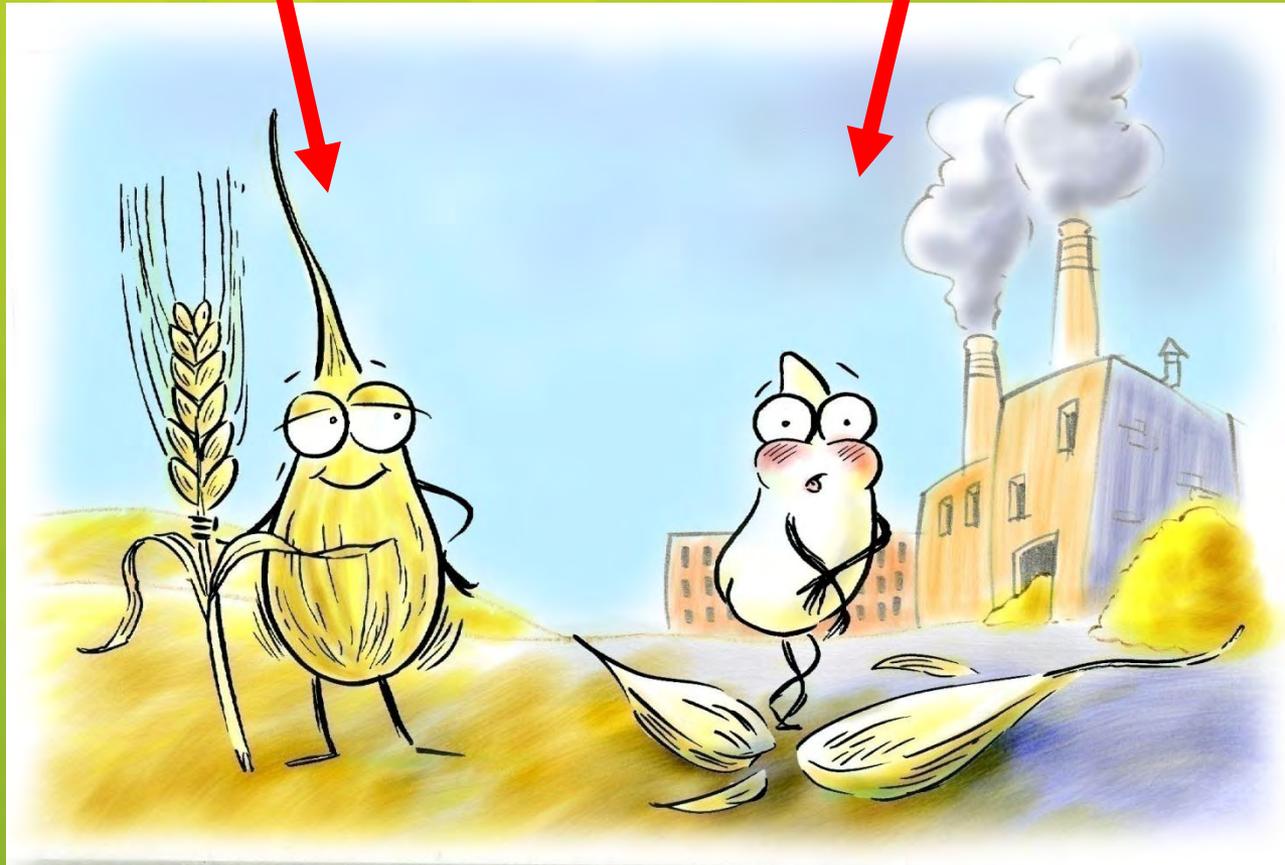
TOP SECRET

FOR YOUR EYES ONLY



A whole grain !

Not a whole grain !



Remember the 5 Clues!



#1- Don't be fooled by THE BIG LETTERS on the front of the package. Look for the facts on the back instead!



#2 - The FIRST ingredient is always the biggest!



#3 - Avoid partially hydrogenated oil & high fructose corn syrup. It's like finding a suspicious character in a crowd!



#4 - Avoid foods with a LONG ingredient list!



#5 - FIBER is your friend, so look out for whole grain imposters!





This DVD is brought to you in part through an unrestricted educational grant from Juice Plus+®.

NUTRITION DETECTIVES® "Teaching Kids to Make Healthy Choices"

Nutrition Detectives is an exciting nutrition education program for elementary school children that is "Teaching Kids to Make Healthy Choices."



Nutrition Detectives DVD

Teaching Kids to Make Healthy Choices

Free w/\$4.95 Shipping & Handling

Please Add \$1 Shipping & Handling for each additional DVD

[Click Here to Order Your FREE
Nutrition Detectives DVD!](#)

And again...so what?

- School District of Independence, MO
- 1,180 students enrolled: 628 students in the intervention group, 552 control
- Significant improvement in nutrition knowledge (food label literacy) in students; $18.1\% \pm 26.9$; $p < 0.01$
 - Greatest effect in 3rd grade: $23.3\% \pm 26.1$
- Significant improvement in nutrition knowledge (food label literacy) in parents; $7.9\% \pm 19.9$; $p < 0.01$

Avoiding (gastric) Bypass- *by Resolving an Impasse.*

■ **O-W-C-H**; *this won't hurt a bit...*

<http://www.turnthetidefoundation.org/owch.htm>

- ***On-line Weight Counseling instruction for Healthcare Providers***; National Obesity Action Forum, Washington, DC; 6/06
 - Katz DL. Behavior Modification in Primary Care: the Pressure System Model. *Prev Med.* 2001;32:66-72
 - Katz DL, Shuval K, Comerford BP, Faridi Z, Njike VY. Impact of an educational intervention on internal medicine residents' physical activity counseling: the Pressure System Model. *J Eval Clin Pract.* 2008;14(2):294-9

Impediment profiling & Goldilocks-

- O'Connell M, Comerford BP, Wall HK, Yanchou-Njike V, Faridi Z, **Katz DL**. Impediment profiling for smoking cessation: application in the worksite. *Am J Health Promot*. 2006;21:97-100
 - Lucan SC, **Katz DL**. Factors associated with smoking cessation counseling at clinical encounters: the Behavioral Risk Factor Surveillance System (BRFSS) 2000. *Am J Health Promot*. 2006;21:16-23
 - O'Connell ML, Freeman M, Jennings G, Chan W, Greci LS, Manta ID, **Katz DL**. Smoking cessation for high school students. Impact evaluation of a novel program. *Behav Modif*. 2004;28:133-46
 - O'Connell M, Lucan SC, Yeh MC, Rodriguez E, Shah D, Chan W, **Katz DL**. Impediment profiling for smoking cessation: results of a pilot study. *Am J Health Promot*. 2003;17:300-3
 - Nawaz H, Adams ML, **Katz DL**. Physician-patient interactions regarding diet, exercise, and smoking. *Prev Med*. 2000;31:652-7
-

TISC Impediment Profiler:

IMPEDIMENT	SCALE	SCORE
Nicotine addiction	Fagerstrom Scale ⁸	≥3/10
Stress	Perceived Stress Scale ²	≥34/64
Anxiety	Beck Anxiety Inventory ³	≥10/63
Depression	Beck Depression Inventory ¹⁶	≥17/63
Chemical dependency	CAGE ¹⁴	≥1/5 positive responses
Weight-concern	Smoking Situations Questionnaire ¹⁵	≥1/7 positive responses
Household smoker	Single question	positive response

I have (had?) a dream...

- Impediment profiling for all: web-based
 - Mapping individualized paths to behavior change
 - Application to eating/weight control...
-

Welcome to the Living Well Navigator!

The Living Well Navigator is a tool to help you discover a healthy lifestyle. It consists of these Screening Questions, which explore your current health situation, plus questionnaires designed to help you identify your personal barriers to weight loss and what you can do to overcome them.

After this screening, you will get a list of recommended Living Well Navigator questionnaires. You will have the option to complete your recommended questionnaires, explore suggested resources, and access any other Living Well Navigator questionnaires.

Note: All questions are required. To indicate this, question headings are marked with an asterisk (*).

Warning: Use the buttons at the bottom of the page to save your data and move from page to page. To save your answers at the end of the questionnaire, click the **Submit Form** or **Update Your Answers** button.

The following screening questions will identify your individual barriers to healthy eating.*

	Yes	No	Unsure
I know what constitutes a healthy diet.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a positive attitude towards healthy eating.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
My eating habits cause me to gain weight.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lack the skills to select and eat healthy foods.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I am knowledgeable about general physiological factors leading to weight gain.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am knowledgeable about physiological factors that cause <u>me</u> to gain weight.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Factors in my home environment cause me to gain weight.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Factors in my work environment cause me to gain weight.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

[Next](#)[Update Your Answers](#)

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Way! The case for Skill power,

- not just will power.

Power & Responsibility, but backwards...



Because people need to know things-
they never knew they never knew!...



Sodium content per 100 calories?



Sodium
242 mg



Sodium
100 mg



Sodium
73 mg



Sodium
131 mg

Added sugar per 100kcal?





Sugar
12 G



Sugar
11 G

Nutrition Quiz – Peanut Butter



Which one of these products is the more nutritious choice?

Nutrition Quiz – Peanut Butter



Answer: Regular Peanut Butter

A little nutty...

Nutrient	Peanut Butter	Reduced Fat Peanut Butter
Sodium	150mg	250mg
Total Carbohydrate/sugar	7g	15g
Added Sugar*	3g	4g
Saturated Fat/Trans Fat	3g/0g	2.5g/0g
Fiber	2g	1g
Calories	190/32g	190/36g

NuVal SCORE







Introducing NuVal™

The Nutritional Scoring System



With what... FDA or IOM should have done:

- July, 2003

- Katz DL. A food supply for dummies. Op-Ed: Hartford Courant; NY Newsday; etc. 10/03

- Feb, 2006: If you want something done...

- *and the rest is history...*
-

ONQI Scientific Expert/Development Panel

- **Chair: Dr. David Katz**, Yale University School of Medicine

 - **Dr Keith Ayoob**, Albert Einstein College of Medicine
 - **Dr Leonard Epstein**, University of Buffalo; inventor, Traffic Light Diet
 - **Dr David Jenkins**, University of Toronto; inventor, Glycemic Index
 - **Dr Francine Kaufman**, USC; Past President, American Diabetes Association
 - **Dr Robert Kushner**, Northwestern University
 - **Dr Ronald Prior**, Arkansas Children's Nutrition Center, USDA HNRC
 - **Dr Rebecca Reeves**, Past President, American Dietetic Association
 - **Dr Barbara Rolls**, Pennsylvania State University
 - **Dr Sachiko St. Jeor**, University of Nevada
 - **Dr John Seffrin**, President & CEO, American Cancer Society
 - **Dr Walter Willett**, Harvard University

 - 16 invitations extended; 14 acceptances

 - Project Coordinators: Debbie Kennedy, PhD; Zubaida Faridi, MD, MPH: PRC
 - Statistician/Data Analyst: Valentine Njike, MD, MPH: PRC
 - Dietitians: Judy Treu, MS, RD; Lauren Rhee, MS, RD: PRC
 - Others consulted
-

The ONQI Algorithm-

Numerator

Fiber
Folate
Vitamin A
Vitamin C
Vitamin D
Vitamin E
Vitamin B12
Vitamin B6
Potassium
Calcium
Zinc
Omega-3 fatty acids
Total bioflavanoids
Total carotenoids
Magnesium
Iron

Denominator

Saturated fat
Trans fat
Sodium
Sugar
Cholesterol

•Macronutrient Adjustors

Fat quality
Protein quality
Glycemic load
Energy density

•Trajectory Scores

•Weighting Coefficients

Categorical stipulations

- Pure foods vs. processed
- Intrinsic vs. added sugars
- Artificial sweeteners
- Etc.

ONQI formula

Something like:

$$(1+UA1) \times (1+UA2) \times (1 + \frac{WP1 \times WS1 \times WR1 \times (\text{adjustedTS1}) + \dots + WP16 \times WS16 \times WR16 \times (\text{adjustedTS16})}{WR16 \times (\text{adjustedTS16})})$$

$$GL \times ED \times (1+WP1 \times WS1 \times WR1 \times (\text{adjustedTS1}) + \dots + WP5 \times WS5 \times WR5 \times (\text{adjustedTS5}))$$

■ *Variables in Formula*

- ❑ TS = trajectory score
- ❑ Wp = weighting coefficient, prevalence
- ❑ Ws = weighting coefficient, severity
- ❑ Wr= weighting coefficient, relative impact
- ❑ UA1= adjuster for biological quality of fat
- ❑ UA2= adjuster for biological quality of protein
- ❑ ED= energy density adjuster
- ❑ GL= glycemic load adjuster
- ❑ Adjusted= pertinent mathematical transformations

And in all its (gore or) glory: 20 pages of mind-numbing computer programming

Vrrrooommm-

- Under the Hood:

- undeniable (& distinctly advantageous) complexity

- At the User Interface:

- turnkey simplicity
-

A Sampling of Scores

Beef & Poultry

Turkey Breast (skinless)	48
Chicken Breast (boneless)	39
Pork Tenderloin	35
Bottom Round Roast (Beef)	34
Flank Steak (Beef)	34
Breast	31
Veal Chop	31
Veal Leg Cutlet	31
Beef Tenderloin	30
Chicken Drumstick	30
Ground Sirloin (Beef 90/10)	30
Pork Chop (boneless center)	28
Chicken Wings	28
Ground Round (Beef 85/15)	28
Lamb Chops (loin)	28
Leg of Lamb	28
Ham (whole)	27
Ground Chuck (Beef 80/20)	26
Pork Ribs, Country Style	25
Beef Spareribs	24
Pork Baby Back Ribs	24

Seafood

Atlantic Salmon Fillet	87
Atlantic Halibut Fillet	82
Catfish Fillet	82
Cod Fillet	82
Tilapia Fillet	82
Oysters	81
Swordfish Steak	81
Prawns	75
Shrimp	75
Clams	71
Monkfish Fillet	64
Bay Scallops	51
Turbot Fillet	51
Lobster	36



Produce

Apricots	100
Asparagus	100
Beans	100
Blueberries	100
Broccoli	100
Cabbage	100
Cauliflower	100
Kiwi	100
Lettuce	100
Mustard Greens	100
Okra	100
Orange	100
Spinach	100
Strawberries	100
Turnip	100
Carrots	99
Grapefruit	99
Pineapple	99
Plums	99
Mango	93
Potatoes	93
Red onions	93
Tangerines	93
Bananas	91
Corn	91
Grapes	91
Honeydew Melon	91
Rhubarb	91
Iceberg Lettuce	82
Bok Choy	81
Passion Fruit	78
Coconut	24

Canned Vegetables

Del Monte Fresh Cut French Style Green Beans No Salt	100
Del Monte Fresh Cut Whole Leaf Spinach	76
Del Monte Fresh Cut Sweet Corn Cream Style No Salt Added	67
Del Monte Fresh Cut Whole Green Beans	59
Green Giant Extra Long Tender Green Asparagus Spears	56
Green Giant Cut Green Beans	52
Del Monte Organic Whole Kernel Corn	50
Green Giant Sweet Peas 50% Less Sodium	48
Le Sueur Very Young Small Sweet Peas	43
Green Giant Super Sweet Yellow & White Whole Kernel Corn	42
Del Monte Organic Sweet Peas	39
Veg-All Homestyle Large Cut Vegetables	35
Del Monte Fresh Cut Sweet Corn Cream Style	32
Green Giant Niblets Whole Sweet Corn	27
Progresso Artichoke Hearts	18
Aunt Nellie's Whole Ruby Red Pickled Beets	3

Frozen Vegetables

Birds Eye Frozen Cauliflower Floret <i>plastic bag</i>	100
Birds Eye Frozen Chopped Spinach <i>box</i>	100
Green Giant Frozen Broccoli Cuts <i>steamable bag</i>	100
Green Giant Frozen Cut Green Beans <i>steamable bag</i>	100
Birds Eye Frozen Peas <i>polybag</i>	96
La Choy Frozen Snow Pea Pods <i>box</i>	96
Birds Eye Steamfresh Frozen Brussels Sprouts <i>steamable bag</i>	94
Birds Eye Frozen Cooked Winter Squash <i>box</i>	91
Green Giant Frozen Mixed Vegetables <i>steamable bag</i>	87
Birds Eye Frozen Asparagus Stir Fry <i>plastic bag</i>	82
Birds Eye Frozen Green Beans & Lightly Toasted Almonds <i>box</i>	68
Green Giant Frozen Cauliflower & 3 Cheese Sauce <i>plastic bag</i>	42
Green Giant Frozen Creamed Spinach in Low-Fat Sauce <i>box</i>	34
Birds Eye Steamfresh Specially Seasoned Southwestern Corn	33
Green Giant Frozen Sweet Baby Peas and Low-Fat Butter Sauce	30
Green Giant Frozen Honey Glazed Carrots <i>box</i>	26
Green Giant Frozen Green Bean Casserole <i>box</i>	23

Cereal



Hodgson Mill Unprocessed Wheat Bran	100
Post Shredded Wheat Original	91
Kashi 7 Whole Grain Puffs	91
Kellogg's All-Bran	76
Kellogg's Special K Protein Plus	60
Quaker Shredded Wheat	56
General Mills Fiber One	52
Kashi Golean High Protein & High Fiber	47
General Mills Cinnamon Toast Crunch	40
Quaker Instant Oatmeal Original	39
General Mills Cheerios	34
Post Shredded Wheat Frosted	31
Kellogg's All-Bran	31
Post HealthyClassics Grape-Nuts	30
Post Honey Bunches Of Oats with Almonds	29
Kashi 7 Whole Grain Flakes	29
General Mills Kix	29
General Mills Wheaties	28
General Mills Whole Grain Total Raisin Bran	27
Post Healthy Classics Raisin Bran	26
Kellogg's Frosted Flakes	26
Kellogg's Corn Flakes	25
Post Fruity Pebbles	24
Kellogg's Mueslix	24
General Mills Corn Chex	24
Cream Of Wheat Instant Hot Cereal	24
Quaker Natural Granola Oats, Honey & Raisins	23
Kellogg's Rice Krispies	23
General Mills Basic 4	23
General Mills Lucky Charms	23
Kellogg's Corn Pops	20
Kellogg's Froot Loops	17
Kashi Strawberry Fields	11
Cap'n Crunch	10
Quaker Instant Grits Butter Flavor	6

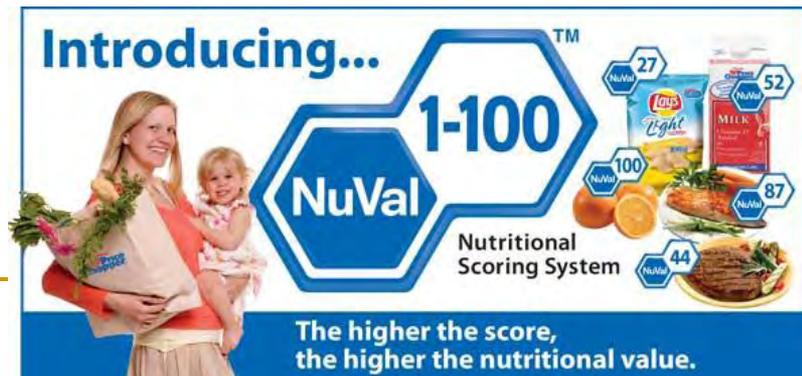
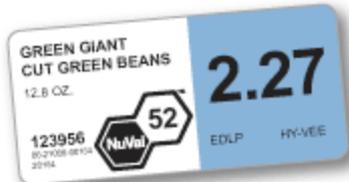
Salty Snacks

Garden of Eatin No Salt Blue Tortilla Chips	52
Terra unsalted potato chips barbecue	41
Garden of Eatin Blue Tortilla Chips	40
Terra Gold Original Potato Chips	33
Snyder's Multigrain Pretzel Sticks Lightly Salted	31
Guiltless Gourmet Chili Lime Tortilla Chips	30
Tostitos Light Restaurant Style	28
Utz Baked Potato Crisps Original	27
Good health peanut butter filled pretzels	26
Doritos Baked Nacho Cheese	25
Frito-Lay Sun Chips Harvest Cheddar	25
Lay's Baked Potato Crisps	25
Baked Ruffles Cheddar & Sour Cream	24
Newman's Own Organic Pretzel Rounds Unsalted	24
Ruffles Thick Cut Original	24
Doritos Cool Ranch	23
Lay's Potato Chips Classic	23
Snyder's Pretzels Honey Wheat o	23
Sunshine cheez-it party mix	20
Newman's Own Organic Pretzel Rounds Salted	19
Fritos Corn Chips Original	16
Cheetos Puffs	14
Rold Gold Petzels Rods	14
Chex Mix Traditional	13
Doritos Nacho Cheese	10
Rold Gold Pretzel Sticks Fat Free	10
Pringles Reduced Fat Original	9
Ruffles Cheddar & Sour Cream	9
Cheetos Crunchy	5
Utz Potato Chips Barbecue	4
Combos Pretzel Cheddar Cheese	3
Bugles Original Corn Snack	2
Glutino Pretzel Twists Gluten Free	1

NuVal *con tempo*



- >50,000 foods scored and audited
- in ~700 supermarkets in 25 states; rolling out to hundreds more this year
- Recently adopted by Kroger, largest independent grocer in U.S.
- Searchable on-line database under development, 2010



NuVal is going to school...

- Independence School District, MO
 - New Haven, CT
 - Palm Beach County, FL
-

...But has already been tested:
proof in the pudding
(and everywhere else)

Katz DL, Njike VY, Rhee LQ, Reingold A, Ayoob KT. Performance characteristics of NuVal and the Overall Nutritional Quality Index (ONQI). *Am J Clin Nutr.* 2010 Apr;91(4):1102S-1108S

Katz DL, Njike VY, Faridi Z, Rhee LQ, Reeves RS, Jenkins DJ, Ayoob KT. The stratification of foods on the basis of overall nutritional quality: the overall nutritional quality index. *Am J Health Promot.* 2009 Nov-Dec;24(2):133-43

Eating to live...

- RR of all-cause mortality, top vs. bottom quintile of NuVal scores
 - ❑ NHS: RR = 0.88; $p < 0.001$ (n ~ = 70,000)
 - ❑ HPFS: RR = 0.87; $p = 0.001$ (n ~ = 40,000)
 - Chiuve S, Willett WC et al. *Harvard School of Public Health*
 - ❑ Abstract presented: *Experimental Biology 2010; Anaheim, CA*
 - ❑ Manuscript under review: *Am J Public Health*
-

Money where mouths are? It's a SNAP

- **FINGER TIPS** grant to USDA, 8/10
 - Directly link measure of nutritional quality to purchasing power of food stamps
 - In any given food category (e.g., bread), use NuVal scores to stratify into quartiles
 - For foods purchased in bottom quartile of overall nutritional quality, \$1 of vouchers would be worth \$1
 - \$1.25 in next quartile
 - \$1.50 in next quartile
 - \$2 in top quartile
 - Grant application covers CT and 7 other states
 - Concept applicable to any assistance program *or to public at large* via public/private partnership involving retailers and loyalty card programs
-

Debunking an urban legend-

Item Type	Type	N	Mean	SD	p value
Bread	Less nutritious	8	\$2.56	\$.80	0.03
	More nutritious	9	\$3.36	\$.28	
Cereal Bars (cost/serving)	Less nutritious	9	\$.64	\$.48	0.05
	More nutritious	8	\$.53	\$.04	
Cereal	Less nutritious	9	\$3.50	\$.30	<0.01
	More nutritious	9	\$2.46	\$.69	
Chips	Less nutritious	9	\$2.87	\$.79	0.06
	More nutritious	8	\$2.17	\$.58	
Cookies	Less nutritious	9	\$3.40	\$.37	<0.01
	More nutritious	8	\$2.76	\$.50	
Crackers	Less nutritious	9	\$2.56	\$.62	0.70
	More nutritious	8	\$2.69	\$.36	
Juices (cost/serving)	Less nutritious	8	\$.26	\$.09	0.07
	More nutritious	7	\$.83	\$1.39	
Peanut Butter	Less nutritious	7	\$2.37	\$.24	0.07
	More nutritious	6	\$3.67	\$1.40	
All Categories (cost/item)	Less nutritious	68	\$2.29	\$1.26	0.76
	More nutritious	63	\$2.31	\$1.24	

The *Palatable* Prescription?-

The falsely alluring alternatives to living well...

Pharmacotherapeutic Phantasies
& Cold Hard Steel-

- ❑ **EU suspends sales of rimonabant: 10/24/08**
 - ❑ **Tesofensine shows promise, but...**
 - ❑ **And then there's brown fat:**
 - April 12, 2009 **The New York Times**
 - Editorial: **Cool Way to Lose Weight?**
 - ❑ **Obesity Surgery Increases by 600 Percent**
 - *Safer Techniques, More Insurance Coverage and Celebrity Patients Make It More Appealing* **ABC News Medical Unit, May 31, 2006**
-

Beware our Birthmark...

- Like Hawthorne's hapless heroine, we all are marked from birth...
- Katz DL. The Scarlet Burger. *Wall Street Journal*, Op-Ed. 11/19/03



The one TRUE Path-

Health. Weight Control. Happiness with Food!



The Pact-

HORTON HEARS A WHO!



By
Dr. Seuss



Thank you!

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