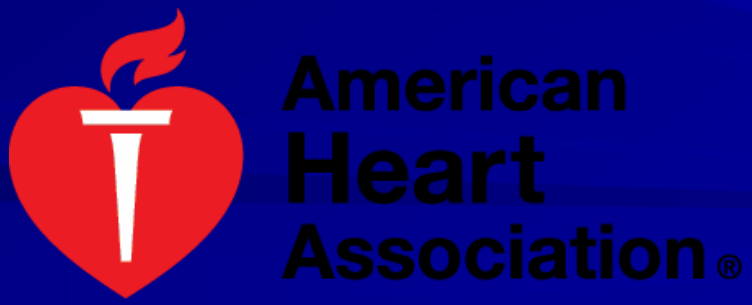
BEAST MODE!!!!!

He practices what he preaches…

The New Science on Weight Loss Maintenance: out of equilibrium, the problem of homeostasis!

Harvey S. Hahn, MD, FACC

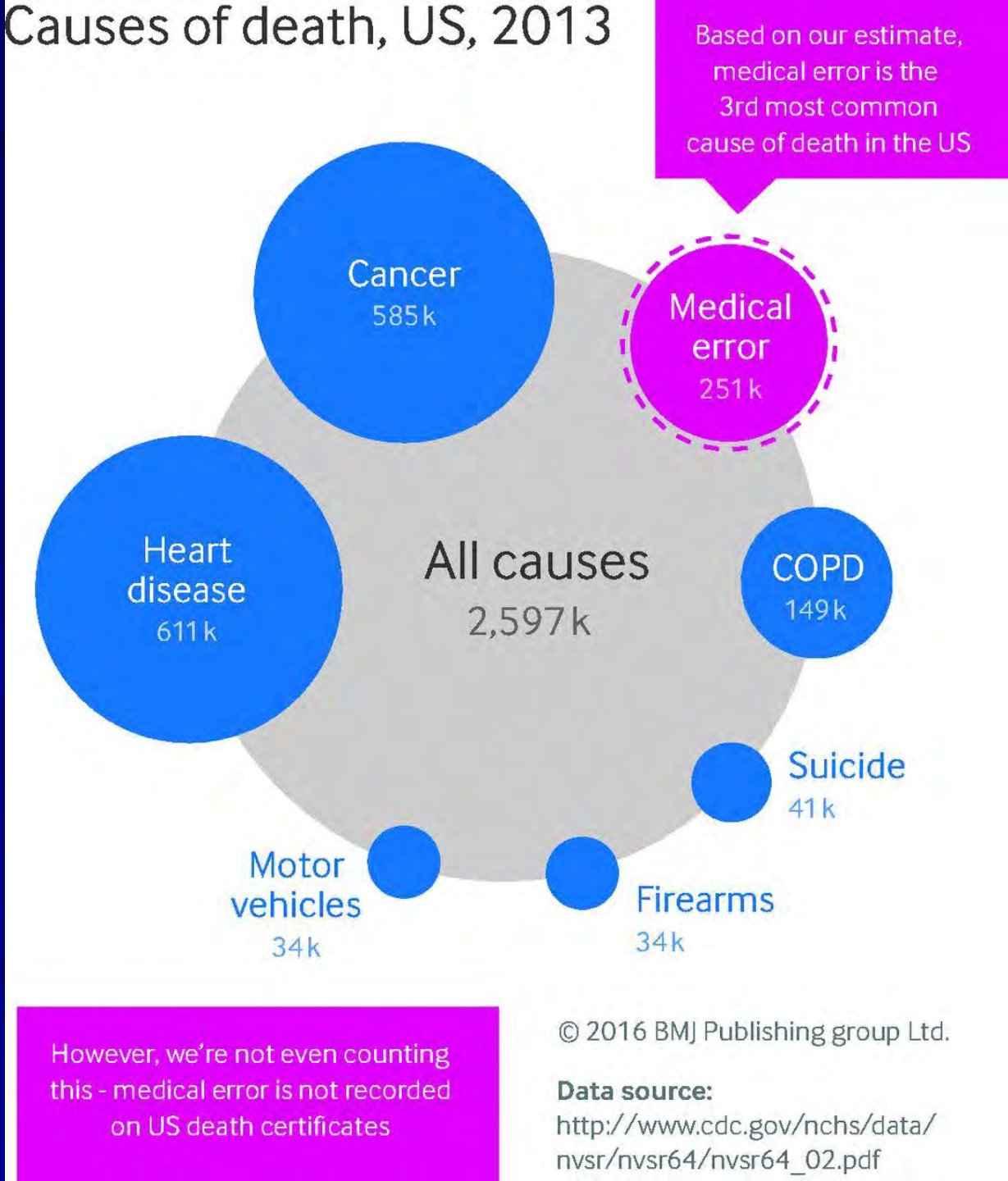
KMC Grand Rounds, August 2016



Objectives

- Discuss WHY it's important to be healthy.
- Learn how to be healthy.
- Understand the issues to losing weight and keeping it off.

Why care?


Causes of death, US, 2013
Based on our estimate, medical error is the 3rd most common cause of death in the US
Cancer
585k
Medical error
251k
Heart disease
611k
All causes
2,597k
COPD
149k
Suicide
41k
Motor vehicles
34k
Firearms
34k
However, we're not even counting this - medical error is not recorded on US death certificates
© 2016 BMJ Publishing group Ltd.
Data source:
http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf

Where should you live if you want to burn more calories?

In reality…

CONTACTS

Dr. Harold Goldstein, California Center for Public Health Advocacy
(530) 400-9106 or hg@publichealthadvocacy.org

Dr. Susan Babey, UCLA Center for Health Policy Research
(310) 794-6961 or sbabey@ucla.edu

EMBARGOED UNTIL MARCH 10, 2016

PREDIABETES

Majority of California Adults Have Prediabetes or Diabetes

A Third of Young Adults Prediabetic, Putting a Generation in Jeopardy

DAVIS, CALIF., MARCH 10, 2016 … Nearly half of California adults – including one out of every three young adults – have prediabetes, a precursor to life-threatening type 2 diabetes, or undiagnosed diabetes, according to a UCLA study released today. The research provides the first analysis and breakdown of California

It’s not just California…

- **"This is the clearest indication to date that the type 2 diabetes epidemic is out of control and getting worse. With limited availability of healthy food in low income communities, a preponderance of soda and junk food marketing, and urban neighborhoods lacking safe places to play, we have created a world where diabetes is the natural consequence.”**
- - Dr. Harold Goldstein, Executive Director of the California Center for Public Health Advocacy

ORIGINAL ARTICLE

MAYO CLINIC

Healthy Lifestyle Characteristics and Their Joint Association With Cardiovascular Disease Biomarkers in US Adults

Paul D. Loprinzi, PhD; Adam Branscum, PhD; June Hanks, PhD, DPT, PT; and Ellen Smit, PhD

TABLE 1. Weighted Mean Proportions (95% CIs) of Healthy Lifestyle Characteristics in US Adults, NHANES 2003-2006 (N=4745)[a,b]

Variable	Entire sample	Sex		Age			Race/ethnicity			
		Men (n=2446)	Women (n=2299)	20-39 y (n=1460)	40-59 y (n=1731)	≥60 y (n=1554)	Mexican American (n=1021)	Non-Hispanic white (n=2486)	Non-Hispanic black (n=911)	Other (n=327)
Nonsmoker	71.5 (69.4-73.5)	**63.2 (60.2-66.1)**	**79.8 (77.6-82.0)**	**68.8 (65.3-72.3)**	**70.4 (67.5-73.2)**	**80.2 (77.4-83.0)**	79.5 (75.7-83.2)	70.4 (67.8-72.9)	69.1 (64.0-74.0)	76.6 (71.1-82.1)
Healthy diet	37.9 (35.3-40.5)	**32.0 (28.9-35.1)**	**43.8 (40.6-46.9)**	**30.4 (26.9-33.7)**	**38.3 (34.4-42.1)**	**54.1 (50.4-57.7)**	**39.4 (35.2-43.5)**	**38.6 (35.4-41.7)**	**24.2 (20.9-27.5)**	**48.0 (42.4-53.6)**
Normal body fat percentage	9.6 (8.4-10.8)	10.5 (9.1-11.8)	8.8 (6.9-10.7)	**15.2 (13.1-17.2)**	**7.4 (6.1-8.7)**	**2.4 (1.1-3.5)**	5.0 (2.8-7.1)	10.0 (8.4-11.4)	10.7 (8.4-12.9)	9.8 (5.4-14.1)
Sufficient physical activity	46.5 (43.2-49.6)	58.9 (55.9-61.7)	34.1 (30.5-37.6)	**59.7 (55.6-63.6)**	**45.9 (42.1-49.7)**	**18.0 (15.4-20.5)**	54.5 (49.9-59.1)	46.4 (42.7-50.0)	43.5 (38.7-48.2)	42.9 (36.5-49.1)
Positive health behaviors (No.)										
0	11.1 (9.7-12.4)	11.8 (10.1-13.5)	10.4 (8.7-11.9)	**9.6 (7.5-11.5)**	**12.6 (10.3-14.7)**	**11.0 (8.5-13.5)**	**6.3 (4.2-8.3)**	**11.6 (10.0-13.2)**	**12.7 (10.1-15.3)**	**8.9 (5.2-12.5)**
1	33.5 (30.6-36.3)	32.7 (29.8-35.6)	34.3 (30.5-38.0)	**32.3 (29.4-35.0)**	**33.8 (29.1-38.4)**	**35.7 (31.8-39.5)**	**29.9 (25.3-34.5)**	**33.3 (29.6-36.9)**	**38.1 (34.7-41.4)**	**32.7 (26.5-38.8)**
2	36.8 (34.8-38.6)	36.7 (34.2-39.0)	36.9 (34.5-39.1)	**36.6 (34.1-39.0)**	**35.0 (31.8-38.1)**	**41.5 (38.2-44.7)**	**43.9 (40.6-47.1)**	**36.0 (33.5-38.5)**	**38.8 (35.5-42.1)**	**33.9 (28.1-39.6)**
3	16.0 (1[illegible])	16.5 (14.4-18.6)	15.4 (13.1-17.6)	**17.7 (15.1-20.2)**	**16.3 (13.5-19.0)**	**11.2 (8.5-13.8)**	**18.8 (14.8-22.8)**	**16.0 (13.5-18.3)**	**9.5 (6.4-12.6)**	**21.3 (15.1-27.3)**
4	2.7 (1.[illegible])	2.2 (1.3-3.0)	3.1 (2.0-4.1)	**3.9 (2.4-5.2)**	**2.4 (1.4-3.2)**	**0.6 (0.0-1.2)**	**1.1 (0.1-2.0)**	**3.0 (2.0-4.0)**	**0.8 (0.2-1.3)**	**3.3 (0.8-5.7)**
Mean	1.6 (1.5-1.7)	1.6 (1.5-1.7)	1.6 (1.5-1.7)	1.7 (1.6-1.8)	1.6 (1.5-1.7)	1.5 (1.4-1.6)	1.7 (1.6-1.8)	1.6 (1.5-1.7)	**1.5 (1.3-1.6)**	1.8 (1.6-1.9)

[a]NHANES = National Health and Nutrition Examination Survey.

[b]Bold indicates statistical significance ($P<.004$). Design-based likelihood ratio tests were used to examine differences for all comparisons except mean number of positive health behaviors, for which a linear regression was computed with men, age 18 to 39 years, and non-Hispanic white individuals serving as the referent groups. For example, the weighted proportion values for sex and nonsmoker are bolded, indicating that the design-based likelihood ratio test showed there was a statistically significant difference in sex across smoking status. Similarly, for the mean number of health behaviors variable, non-Hispanic black individuals (1.5) had significantly fewer positive health characteristics than non-Hispanic white individuals (1.6).

2.7%

PLOS | MEDICINE

RESEARCH ARTICLE

Traditional and Emerging Lifestyle Risk Behaviors and All-Cause Mortality in Middle-Aged and Older Adults: Evidence from a Large Population-Based Australian Cohort

Ding Ding[1,2]*, Kris Rogers[1,3], Hidde van der Ploeg[1,4], Emmanuel Stamatakis[2,5], Adrian E. Bauman[1,2]

1 Prevention Research Collaboration, Sydney School of Public Health, University of Sydney, Camperdown, New South Wales, Australia, **2** Charles Perkins Centre, University of Sydney, Camperdown, New South Wales, Australia, **3** George Institute for Global Health, Sydney, New South Wales, Australia, **4** Department of Public and Occupational Health, EMGO Institute for Health and Care Research, VU University Medical Centre, Amsterdam, the Netherlands, **5** Exercise and Sports Science, Faculty of Health Sciences, University of Sydney, Camperdown, New South Wales, Australia

Table 1. Scoring of risk factors in the lifestyle risk index based on the 45 and Up Study.

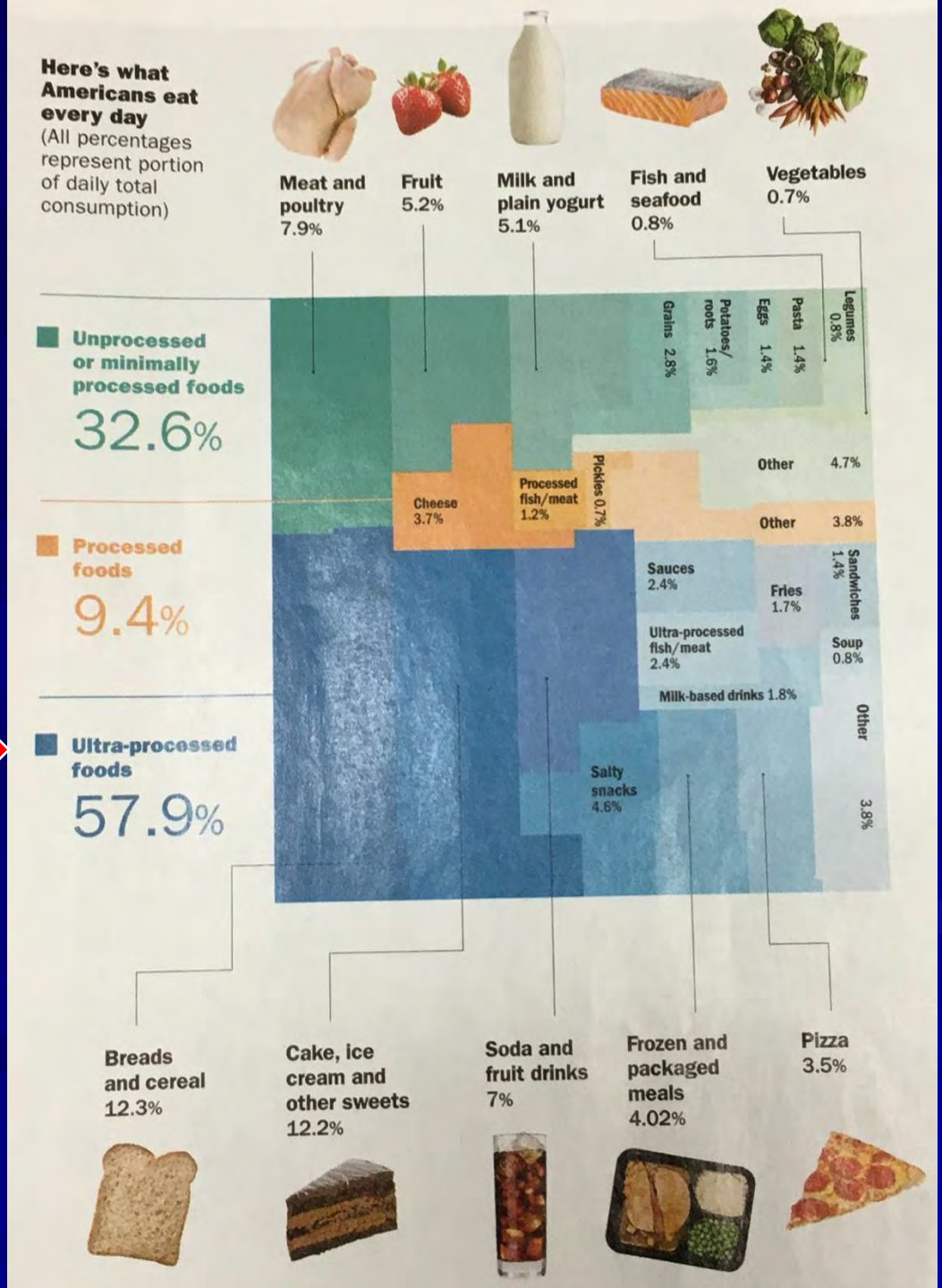
Health Behavior	Scoring Method (1 = At Risk, 0 = Not at Risk)	Percentage "At Risk"
Smoking	1 = current smoker	7.2%
Alcohol use	1 = consuming >14 drinks per week (one drink = one glass of wine, one half pint of beer, or one shot of spirits)[a]	19.1%
Dietary behavior	1 = scoring <6 in a dietary index (0–10) consisting of five food items (vegetable, fruit, fish, processed meat, and types of milk)[b] [18]	17.2%
Physical activity	1 = engaging in <150 min/wk of moderate-to-vigorous-intensity physical activity[c]	22.9%
Sedentary behavior	1 = sitting for >7 h/d[d]	25.0%
Sleep duration	1 = sleeping for <7 or >9 h/d[e]	23.1%

Table 3. Crude cumulative death rates and adjusted hazard ratios for all-cause mortality by lifestyle risk index score among a population-based Australian sample of adults from the 45 and Up Study (2006–2014, *n* = 231,048).

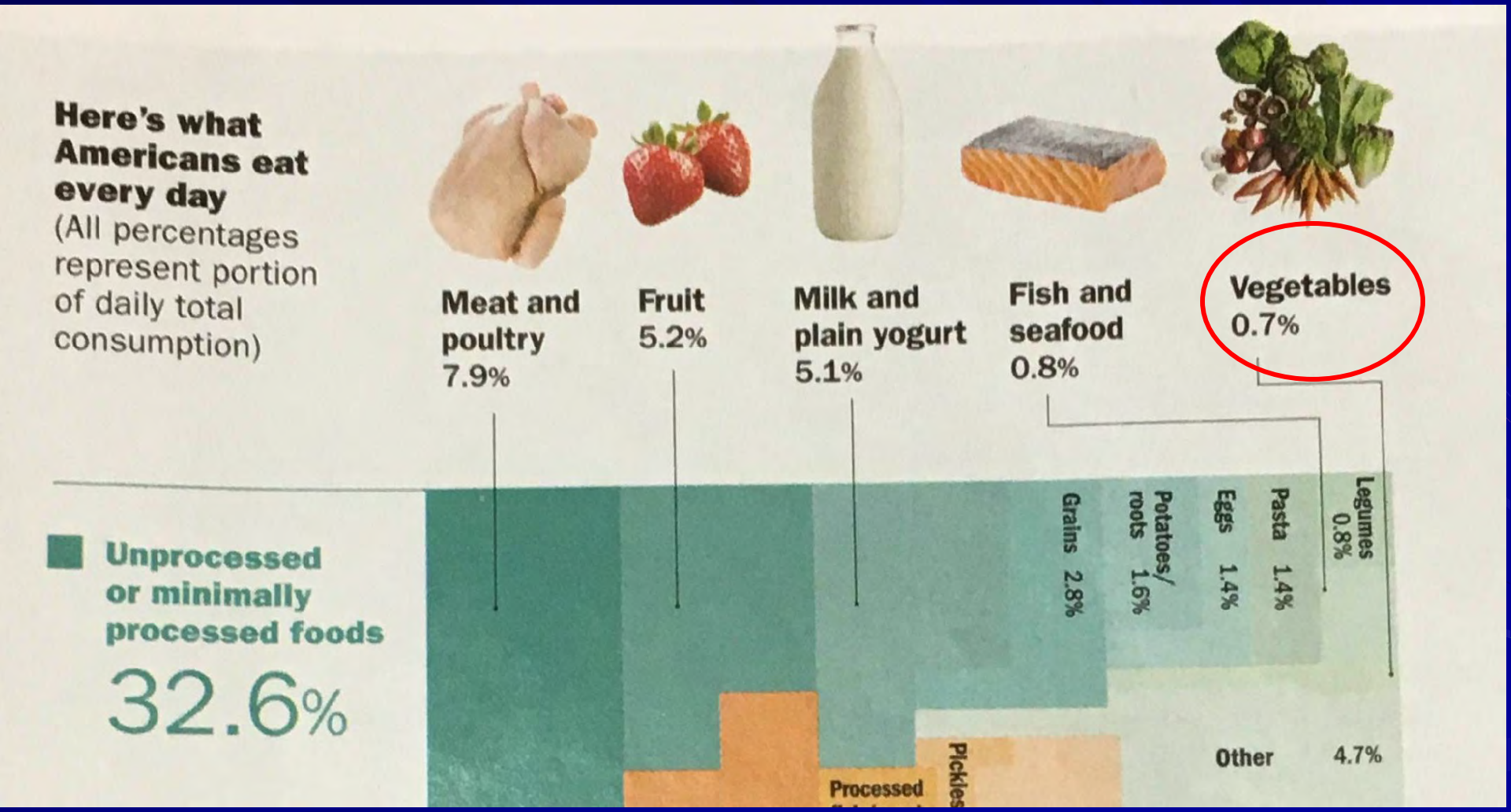
Sample	Lifestyle Risk Index Score						
	0	1	2	3	4	5	6
All participants (*n* = 231,048)							
Cumulative death rate	4.15%	5.90%	8.75%	12.87%	14.74%	17.40%	23.26%
HR (95% CI)	Reference	1.27 (1.21–1.33)	1.73 (1.65–1.81)	2.45 (2.32–2.59)	3.06 (2.82–3.33)	4.61 (3.90–5.46)	5.38 (3.46–8.35)

S.A.D.

Standard American Diet…


Here's what Americans eat every day
(All percentages represent portion of daily total consumption)
Meat and poultry 7.9%
Fruit 5.2%
Milk and plain yogurt 5.1%
Fish and seafood 0.8%
Vegetables 0.7%
Unprocessed or minimally processed foods
32.6%
Processed foods
9.4%
Ultra-processed foods
57.9%
Grains 2.8%
Potatoes/ roots 1.6%
Eggs 1.4%
Pasta 1.4%
Legumes 0.8%
Other 4.7%
Other 3.8%
Cheese 3.7%
Processed fish/meat 1.2%
Pickles 0.7%
Sauces 2.4%
Fries 1.7%
Sandwiches 1.4%
Soup 0.8%
Ultra-processed fish/meat 2.4%
Milk-based drinks 1.8%
Other 3.8%
Salty snacks 4.6%
Breads and cereal 12.3%
Cake, ice cream and other sweets 12.2%
Soda and fruit drinks 7%
Frozen and packaged meals 4.02%
Pizza 3.5%

The Good…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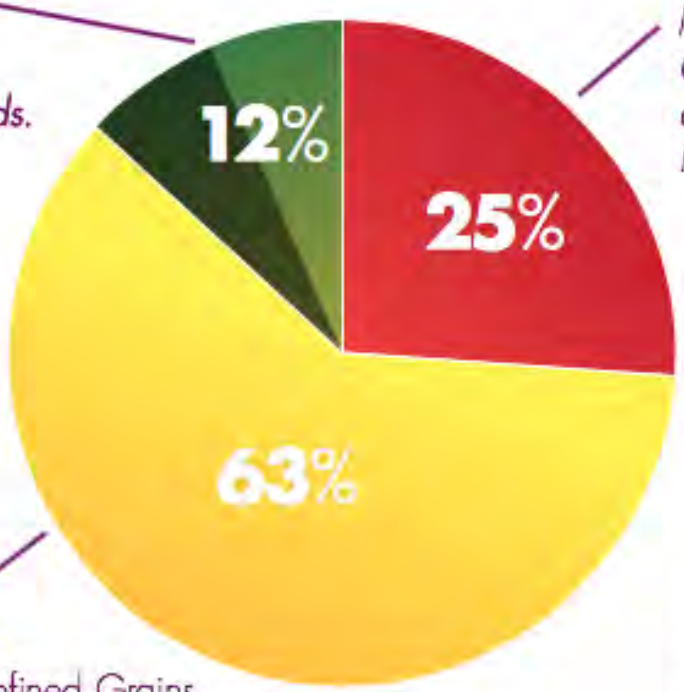
Pasta 1.4%
Eggs 1.4%
Potatoes/ roots 1.6%
Grains 2.8%
Pickles
Processed
Other 4.7%
Unprocessed or minimally processed foods
32.6%

The Bad & the UGLY!

U.S. FOOD CONSUMPTION
AS A % OF CALORIES

PLANT FOOD:
Vegetables, Fruits, Legumes, Nuts & Seeds, Whole Grains
***Fiber** is only found in plant foods.*

NOTE: Up to half of this category may be processed, for example almonds in candy bars, apples in apple pies or spinach in frozen spinach soufflé, and of course these would not be healthy choices. The focus should be on whole unprocessed vegetables, fruits, legumes, nuts and seeds and whole grains.



PROCESSED FOOD:
Added Fats & Oils, Sugars, Refined Grains

ANIMAL FOOD:
Meat, Dairy, Eggs, Fish, Seafood
***Cholesterol** is only found in animal foods. Animal foods are the PRIMARY source of saturated fat.*

GUIDE TO HEALTHY EATING:
Much easier to understand than the USDA Food Pyramid, with no food industry influence.

Eat **LESS** from the animal and processed food groups and **MORE** whole foods from the plant food group.

In general, food from the animal and processed food group contribute to disease, while **WHOLE** foods from the plant group contribute to good health.

Source: USDA Economic Research Service, 2009; www.ers.usda.gov/publications/FB33; www.ers.usda.gov/Data/FoodConsumption/FoodGuideIndex.htm#calories
New York Coalition for Healthy School Food * www.healthyschoolfood.org
Special thanks to Joel Fuhrman, MD, author of ***Disease Proof Your Child: Feeding Kids Right*** * Graphics by MichelleBondo.com

The Hunger Games…

- NEJM article about hunger hormones being up 1 yr post weight loss.

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Long-Term Persistence of Hormonal Adaptations to Weight Loss

Priya Sumithran, M.B., B.S., Luke A. Prendergast, Ph.D., Elizabeth Delbridge, Ph.D., Katrina Purcell, B.Sc., Arthur Shulkes, Sc.D., Adamandia Kriketos, Ph.D., and Joseph Proietto, M.B., B.S., Ph.D.

“I’ ll just work it off…”

The Law of Diminishing Returns…

Constrained Total Energy Expenditure and Metabolic Adaptation to Physical Activity in Adult Humans

Herman Pontzer,[1,2,*] Ramon Durazo-Arvizu,[3] Lara R. Dugas,[3] Jacob Plange-Rhule,[4] Pascal Bovet,[5,6] Terrence E. Forrester,[7] Estelle V. Lambert,[8] Richard S. Cooper,[3] Dale A. Schoeller,[9] and Amy Luke[3]

[1]Department of Anthropology, Hunter College, City University of New York, 695 Park Avenue, New York, NY 10065, USA
[2]New York Consortium for Evolutionary Primatology, New York, NY 10065, USA
[3]Public Health Sciences, Stritch School of Medicine, Loyola University Chicago, 2160 South First Avenue, Maywood, IL 60153, USA
[4]Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
[5]Institute of Social & Preventive Medicine, Lausanne University Hospital, Rue de la Corniche 10, 1010 Lausanne, Switzerland
[6]Ministry of Health, PO Box 52, Victoria, Mahé, Seychelles
[7]UWI Solutions for Developing Countries, The University of the West Indies, 25 West Road, UWI Mona Campus, Kingston 7, Jamaica
[8]Research Unit for Exercise Science and Sports Medicine, University of Cape Town, PO Box 115, Newlands 7725, Cape Town, South Africa
[9]Nutritional Sciences, Biotechnology Center, University of Wisconsin–Madison, 425 Henry Mall, Madison, WI 53705, USA
*Correspondence: herman.pontzer@hunter.cuny.edu
http://dx.doi.org/10.1016/j.cub.2015.12.046

Two theories…

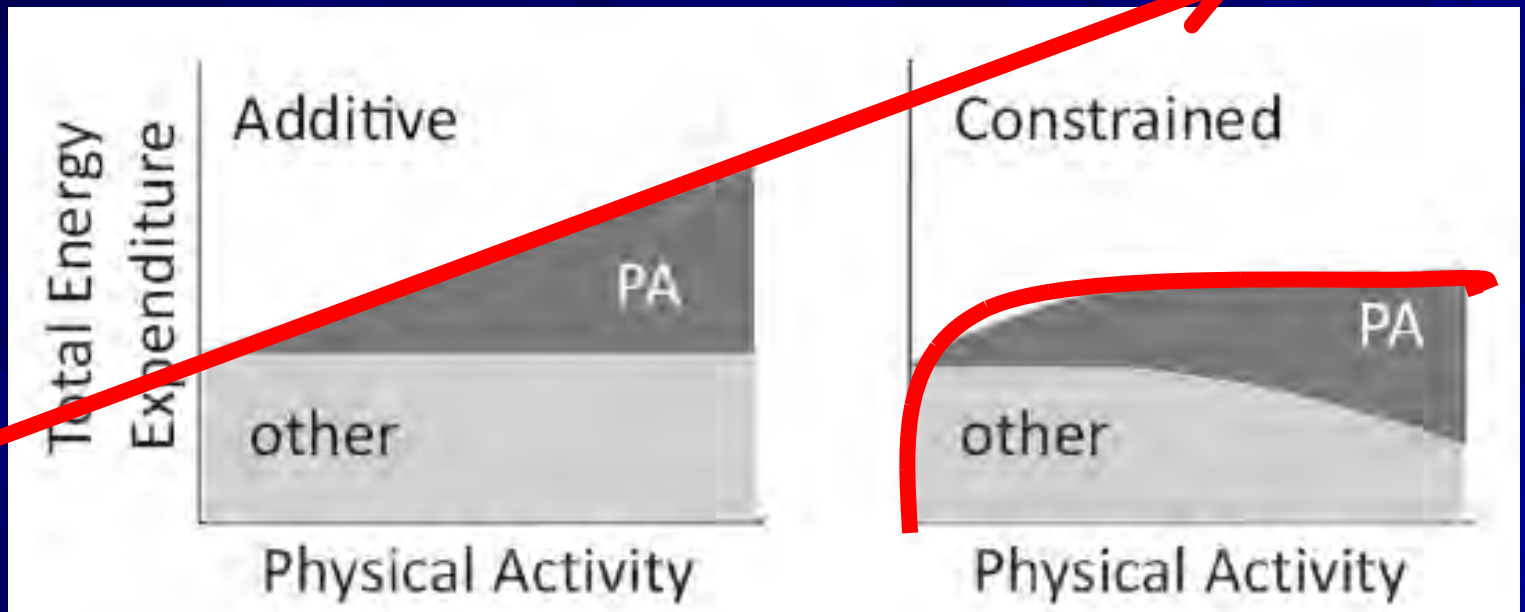


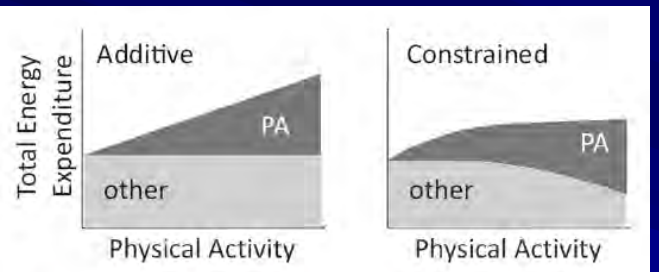
Figure 1. Schematic of Additive Total Energy Expenditure and Constrained Total Energy Expenditure Models

In Additive total energy expenditure models, total energy expenditure is a simple linear function of physical activity, and variation in physical activity energy expenditure (PA) determines variation in total energy expenditure. In Constrained total energy expenditure models, the body adapts to increased physical activity by reducing energy spent on other physiological activity, maintaining total energy expenditure within a narrow range.

The 40% Rule!

- Navy SEAL mantra.
- When you think you're physically done, you actually have about 40% more to give.
- Your body wants to hold energy in reserve 'just in case'.
- Your mind gives up well before your body needs to!

The winner is…



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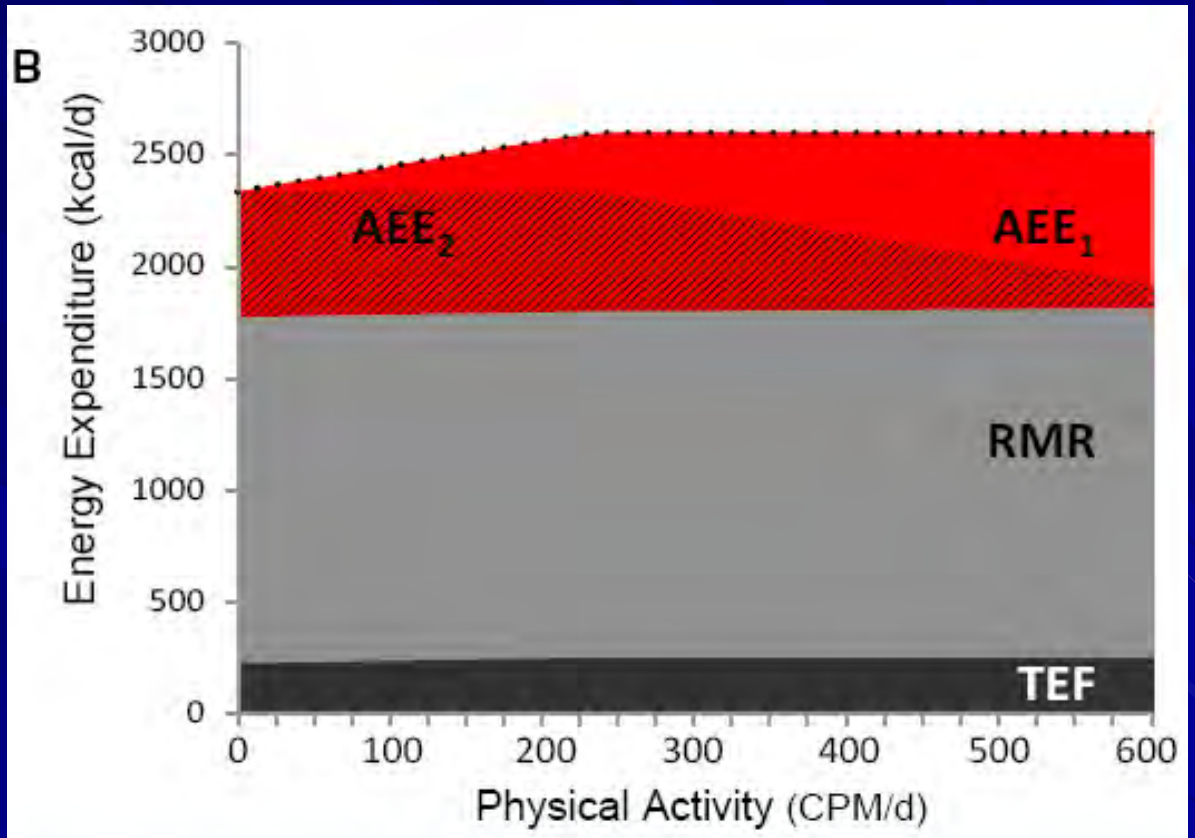


Figure 3. The Effect of Physical Activity on Total Energy Expenditure and Its Components

And the loser is…

Original Article
OBESITY BIOLOGY AND INTEGRATED PHYSIOLOGY

Obesity

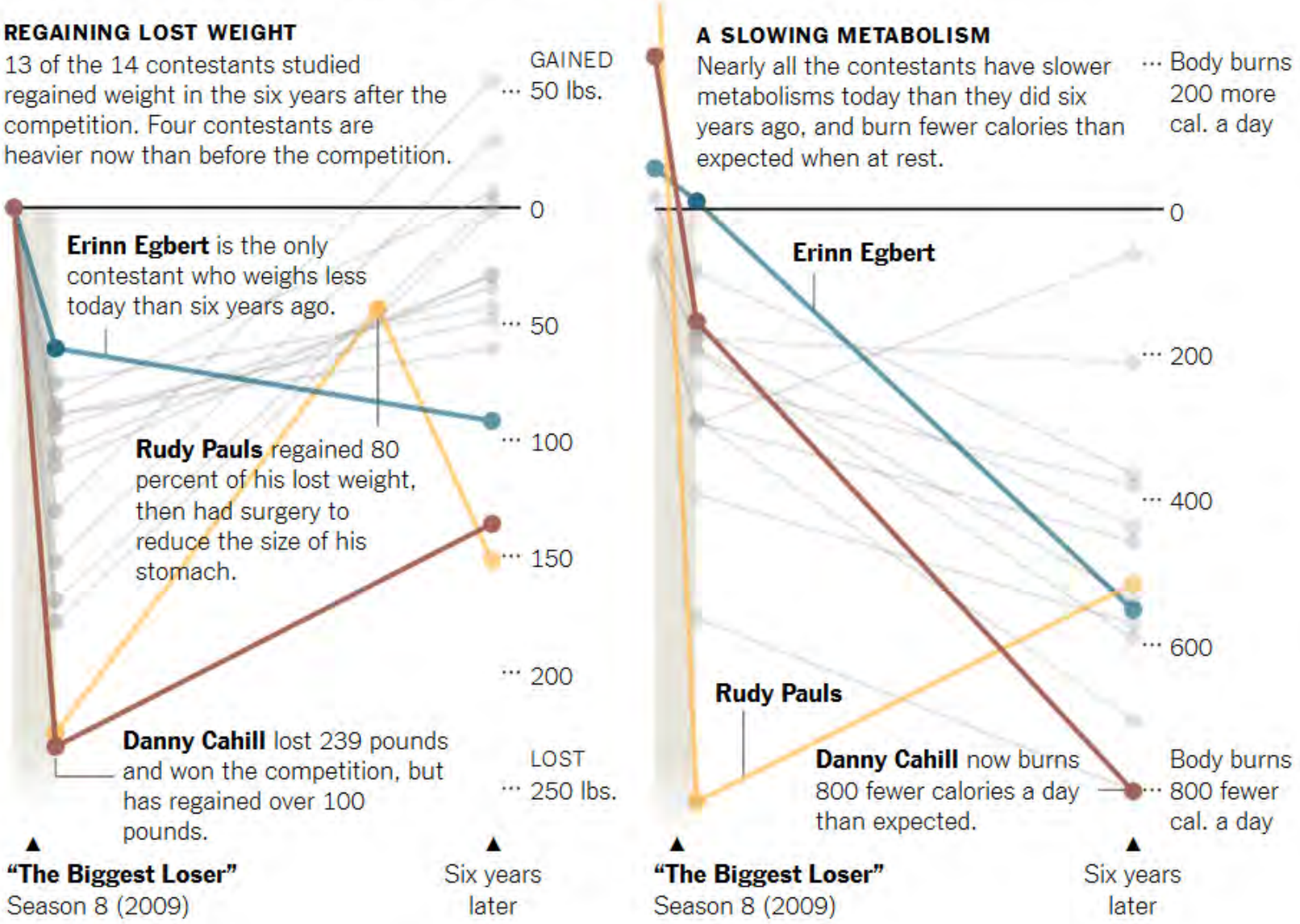
Persistent Metabolic Adaptation 6 Years After "The Biggest Loser" Competition

Erin Fothergill[1], Juen Guo[1], Lilian Howard[1], Jennifer C. Kerns[2], Nicolas D. Knuth[3], Robert Brychta[1], Kong Y. Chen[1], Monica C. Skarulis[1], Mary Walter[1], Peter J. Walter[1], and Kevin D. Hall[1]

Obesity (2016) **00**, 00-00. doi:10.1002/oby.21538

Biggest Losers Fight a Slower Metabolism

A study of contestants from "The Biggest Loser" found their metabolisms slowed during and after the competition, making it difficult to maintain weight loss.



Sources: Obesity; individual contestants

By The New York Times

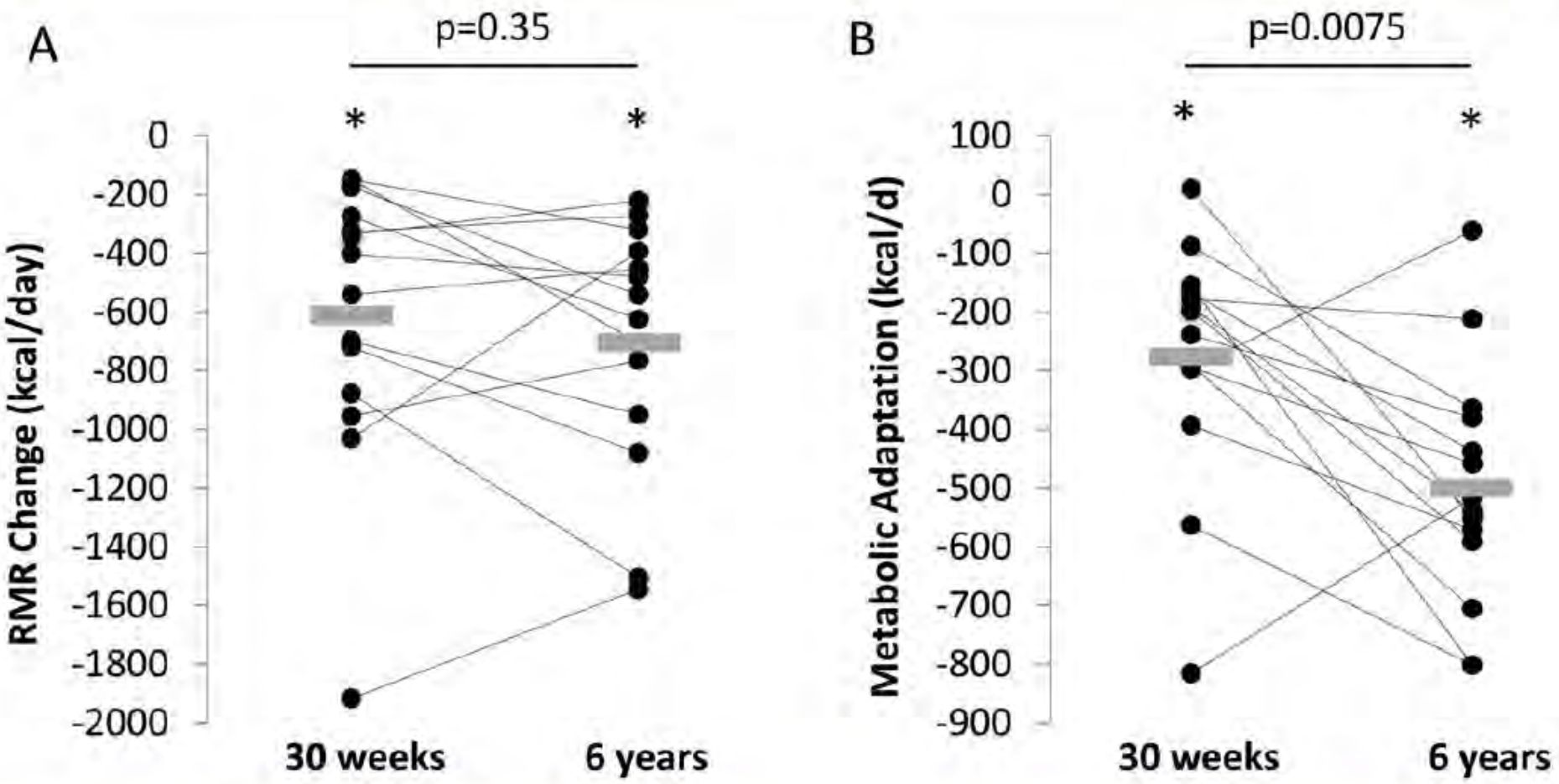


Figure 4 Individual (•) and mean (gray rectangles) changes in (**A**) resting metabolic rate and (**B**) metabolic adaptation at the end of "The Biggest Loser" 30-week weight loss competition and after 6 years. Horizontal bars and corresponding *P* values indicate comparisons between 30 weeks and 6 years. *$P < 0.001$ compared with baseline.

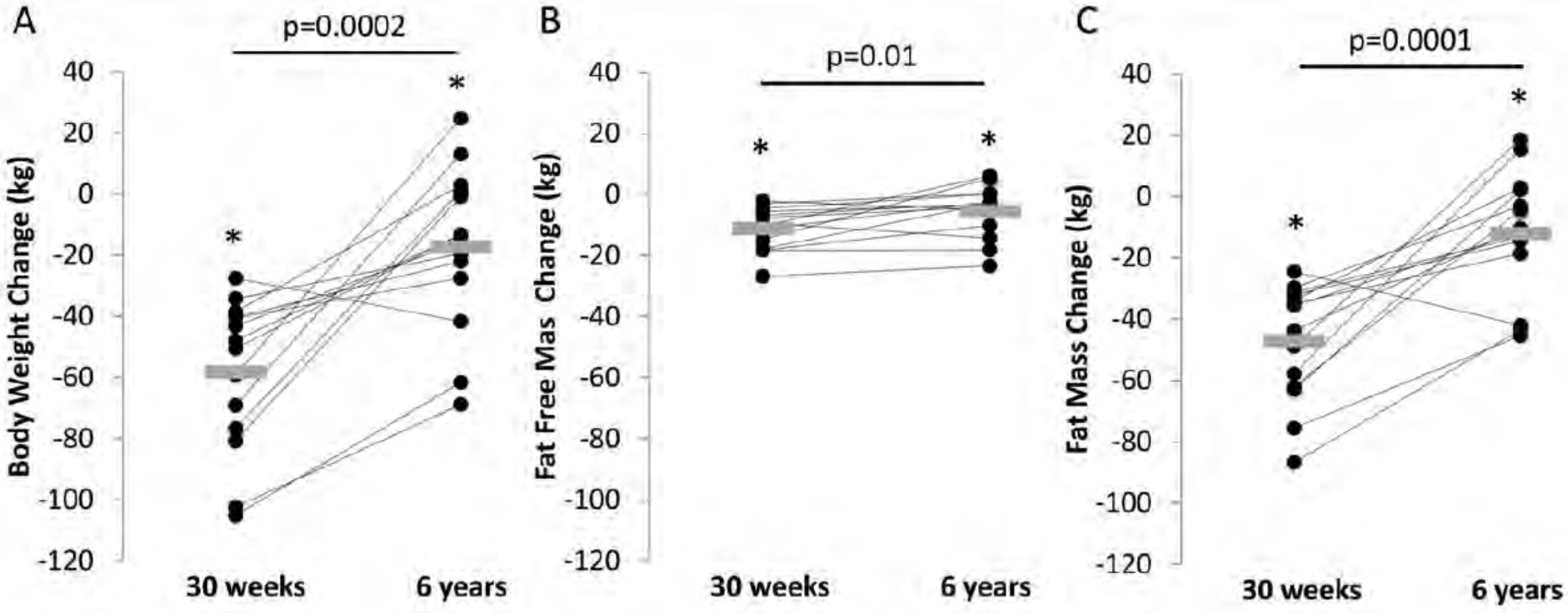


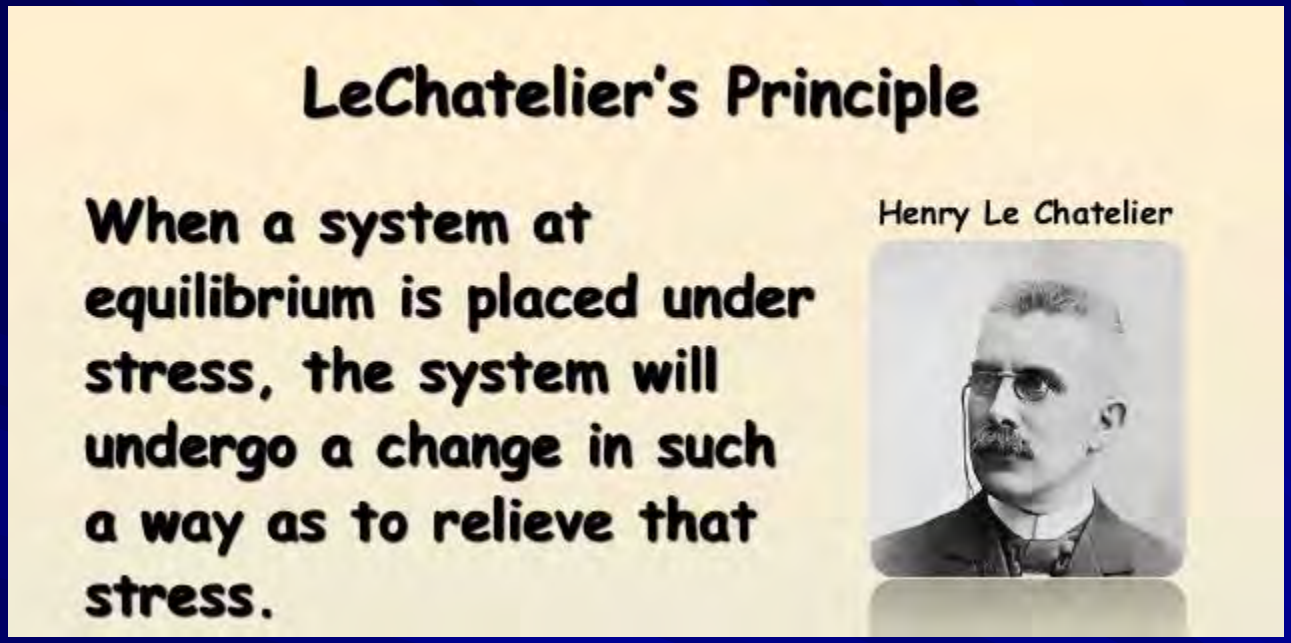
Figure 2 Individual (•) and mean (gray rectangles) changes in (**A**) body weight, (**B**) fat-free mass, and (**C**) fat mass at the end of "The Biggest Loser" 30-week weight loss competition and after 6 years. Horizontal bars and corresponding *P* values indicate comparisons between 30 weeks and 6 years. *$P < 0.05$ compared with baseline.

Why did they fail to keep it off?

- “Reality TV” is NOT real.
- No real gain in muscle mass.
- Serious drop off in exercise program.
- And their metabolic rate dropped significantly.
- Without exercise you can’t cut calories enough!


TO WIN,
WE HAVE TO LOSE.
THE
WEIGHT
OF THE
NATION
PREMIERING MAY 14TH & 15TH
CONFRONTING AMERICA'S OBESITY EPIDEMIC
Take Action / Host a Screening
HBO DOCUMENTARY FILMS.
INSTITUTE OF MEDICINE
CDC
Michael & Susan Dell FOUNDATION
KAISER PERMANENTE.

Equilibrium – homeostasis sucks!



- It is very hard to move off of / adjust your set point.
- What does all these studies really tell us?
- What is the biggest, most glaring message for us?

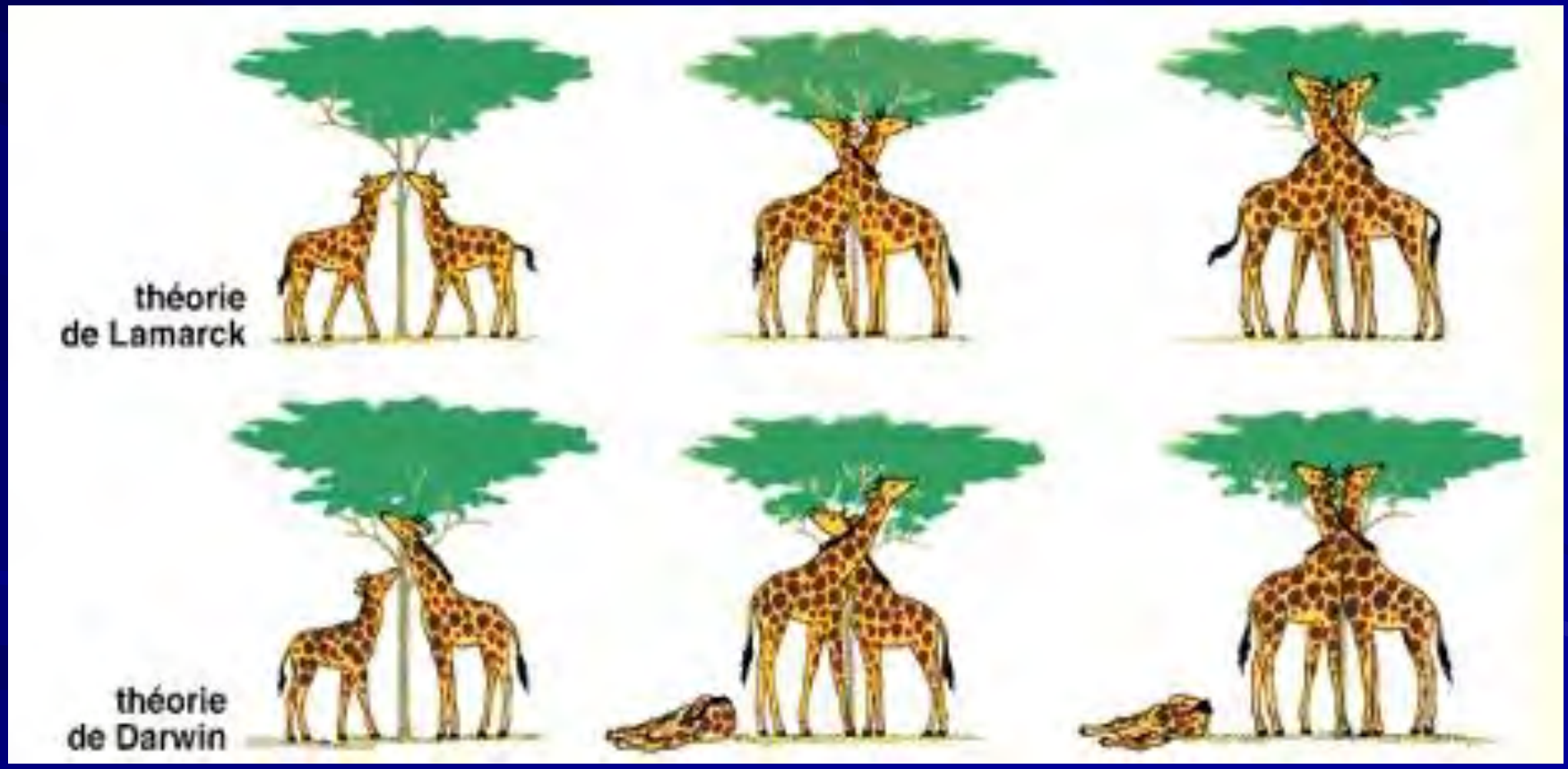
Mission CRITICAL!

Childhood obesity.

Myth-”I can’t fight my ***genes***…”

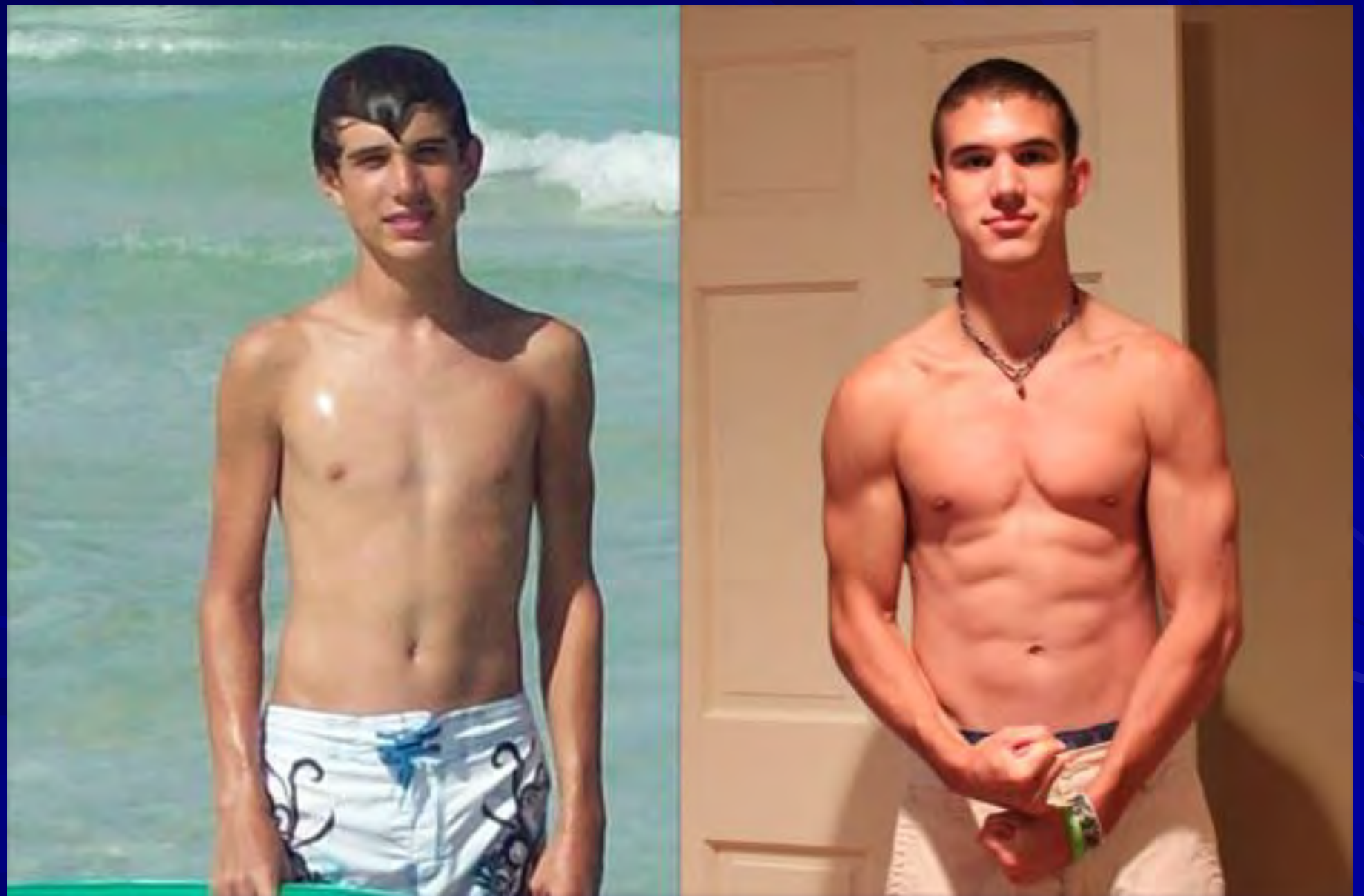
"Genetics loads the gun, but behavior pulls the trigger!"

Darwin vs Lamarck-round #2



Same genes, difference choices.

Same genes, difference choices.



FITFATTWIN Study

BASIC SCIENCES

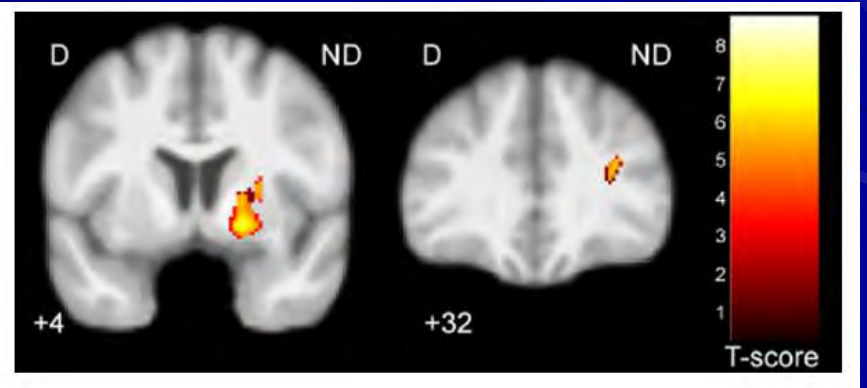
Physical Activity, Fitness, Glucose Homeostasis, and Brain Morphology in Twins

MIRVA ROTTENSTEINER[1], TUIJA LESKINEN[1], EINI NISKANEN[2], SARI AALTONEN[1], SARA MUTIKAINEN[1], JAN WIKGREN[3], KAUKO HEIKKILÄ[4], VUOKKO KOVANEN[1], HEIKKI KAINULAINEN[5], JAAKKO KAPRIO[4,6,7], INA M. TARKKA[1], and URHO M. KUJALA[1]

[1]Department of Health Sciences, University of Jyväskylä, Jyväskylä, FINLAND; [2]Department of Applied Physics, University of Eastern Finland, Kuopio, FINLAND; [3]Department of Psychology, University of Jyväskylä, Jyväskylä, FINLAND; [4]Department of Public Health, Hjelt Institute, University of Helsinki, Helsinki, FINLAND; [5]Department of Biology of Physical Activity, University of Jyväskylä, Jyväskylä, FINLAND; [6]Department of Mental Health and Substance Abuse Services, National Institute for Health and Welfare, Helsinki, FINLAND; and [7]Institute for Molecular Medicine, University of Helsinki, Helsinki, FINLAND

FIT-FAT-TWIN study

- 10 pairs of identical twins.
- 1 twin exercises, the other does not.
- Changes tracked over only 3 yrs.
- Decreased % body fat.
- Improved glucose metabolism.
- Brain growth!



Rottensteinor, et al. Med Sci Sports Exer. 2015

Vance et al. BMC Sports Science, Medicine, and Rehabilitation 2014, 6:6
http://www.biomedcentral.com/2052-1847/6/6

BMC
Sports Science, Medicine & Rehabilitation

RESEARCH ARTICLE Open Access

Cardiac performance, biomarkers and gene expression studies in previously sedentary men participating in half-marathon training

Danica D Vance[1,3†], Gordon L Chen[3†], Mark Stoutenberg[2,6], Robert J Myerburg[3,4], Kevin Jacobs[2], Lubov Nathanson[1], Arlette Perry[2], David Seo[1,5], Pascal J Goldschmidt-Clermont[1,3] and Evadnie Rampersaud[1,5*]

- 10 genes were up-regulated with training.
- 53 genes were down-regulated with training.

Ivabradine / Corlanor

nature COMMUNICATIONS

ARTICLE

Received 21 Jan 2014 | Accepted 1 Apr 2014 | Published 13 May 2014

DOI: 10.1038/ncomms4775

OPEN

Exercise training reduces resting heart rate via downregulation of the funny channel HCN4

Alicia D'Souza[1,*], Annalisa Bucchi[2,*], Anne Berit Johnsen[3,*], Sunil Jit R.J. Logantha[1,*], Oliver Monfredi[1], Joseph Yanni[1], Sukhpal Prehar[1], George Hart[1], Elizabeth Cartwright[1], Ulrik Wisloff[3], Halina Dobryznski[1], Dario DiFrancesco[2], Gwilym M. Morris[1] & Mark R. Boyett[1]

OPEN ACCESS Freely available online PLoS MEDICINE

The Effect of Chromosome 9p21 Variants on Cardiovascular Disease May Be Modified by Dietary Intake: Evidence from a Case/Control and a Prospective Study

Ron Do[1], Changchun Xie[2,3], Xiaohe Zhang[2], Satu Männistö[4], Kennet Harald[4], Shofiqul Islam[2,3], Swneke D. Bailey[1], Sumathy Rangarajan[2], Matthew J. McQueen[2], Rafael Diaz[5], Liu Lisheng[6], Xingyu Wang[7], Kaisa Silander[4,8], Leena Peltonen[4,8†], Salim Yusuf[2], Veikko Salomaa[4], James C. Engert[1,9,10*], Sonia S. Anand[2,3*], on behalf of the INTERHEART investigators

Conclusions: The risk of MI and CVD conferred by Chromosome 9p21 SNPs appears to be modified by a prudent diet high in raw vegetables and fruits.

- Diet can modify your genetic risk of heart attack by 66-98%!

OPEN ACCESS Freely available online PLoS MEDICINE

Physical Activity Attenuates the Genetic Predisposition to Obesity in 20,000 Men and Women from EPIC-Norfolk Prospective Population Study

Shengxu Li[1], Jing Hua Zhao[1], Jian'an Luan[1], Ulf Ekelund[1], Robert N. Luben[2], Kay-Tee Khaw[2], Nicholas J. Wareham[1], Ruth J. F. Loos[1]*

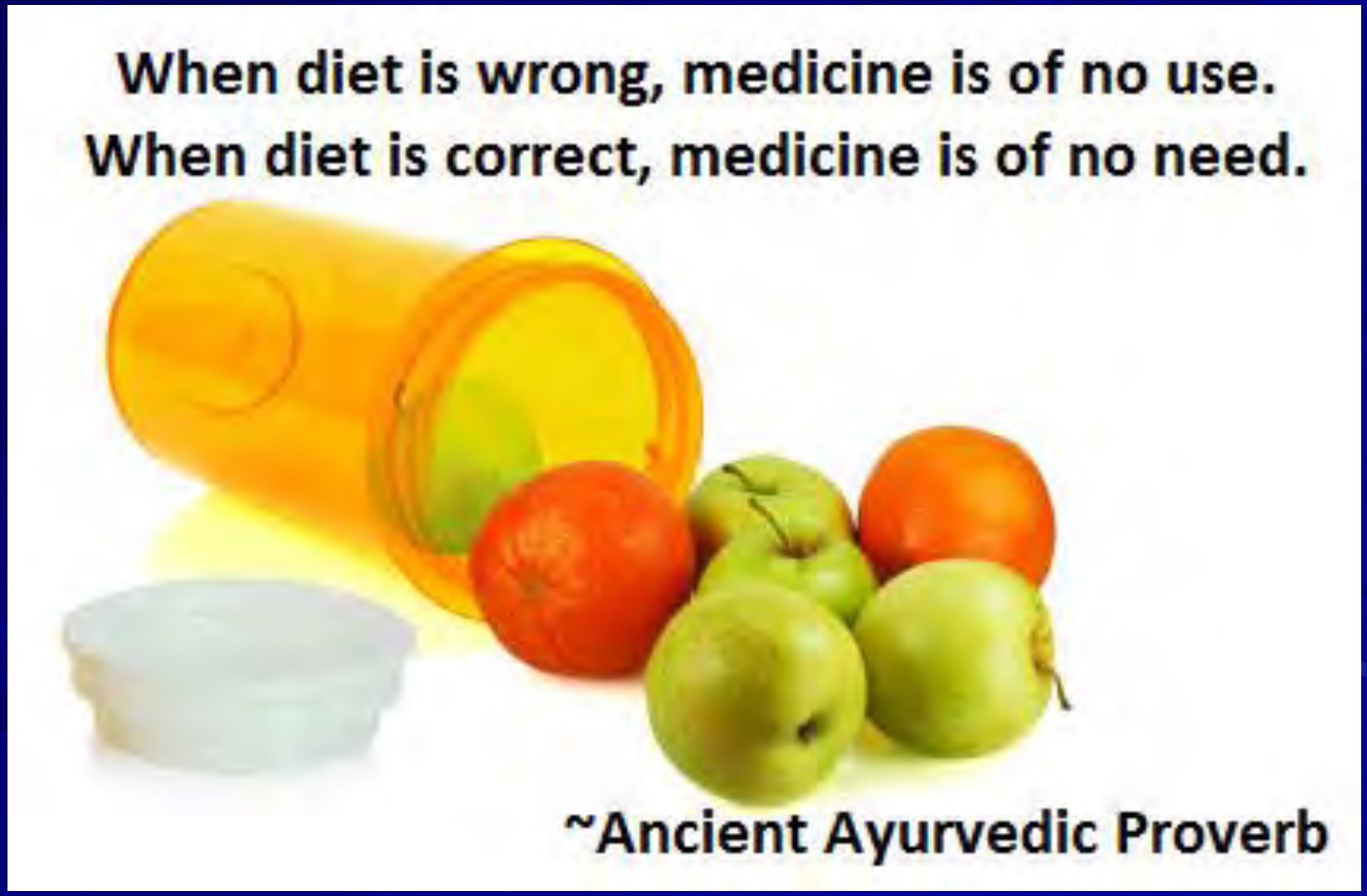
1 MRC Epidemiology Unit, Institute of Metabolic Science, Cambridge, United Kingdom, 2 Department of Public Health and Primary Care, Institute of Public Health, University of Cambridge, Cambridge, United Kingdom

OPEN ACCESS Freely available online PLoS MEDICINE

Physical Activity Attenuates the Influence of *FTO* Variants on Obesity Risk: A Meta-Analysis of 218,166 Adults and 19,268 Children

Exercise modifies the genetic risk by 27-40%.

The 80% rule!

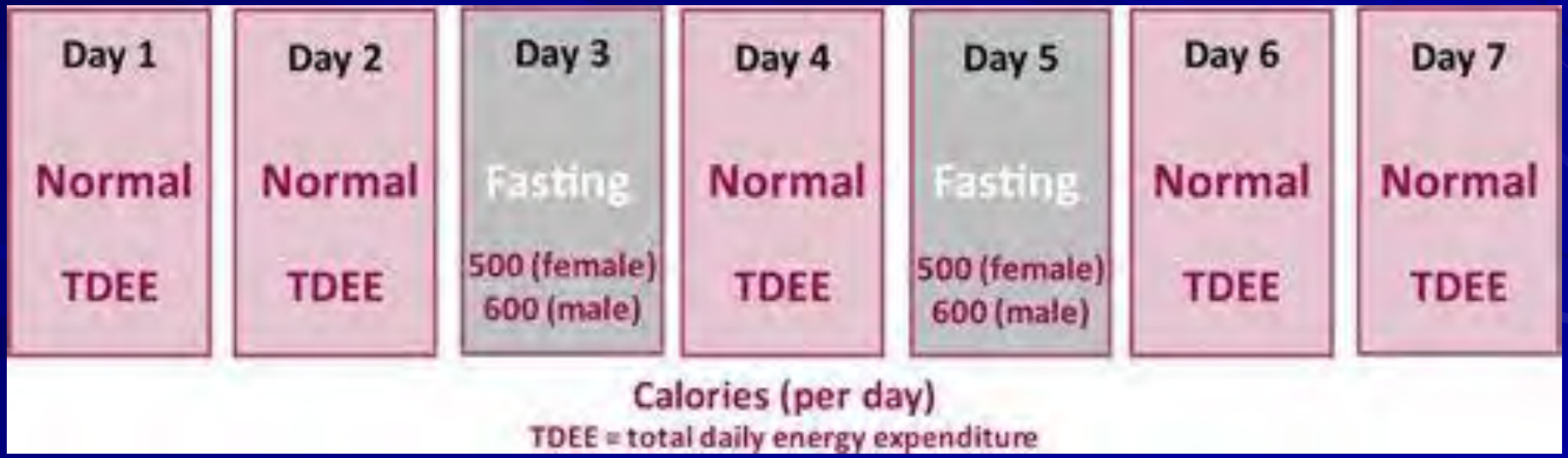

When diet is wrong, medicine is of no use.
When diet is correct, medicine is of no need.
~Ancient Ayurvedic Proverb

CALERIE Study

- Comprehensive Assessment of Long-term Effects of Reducing Intake of Energy
- Reduced caloric intake by 25%.
- Average caloric reduction was ~12%.
- Resulted in 10% wt loss.
- BP dropped by 4%, total cholesterol 6%, CRP 47%.

A.D.F. or 5:2 plan

- Fasting may help prevent dementia by causing a low level stress that stimulates brain stem cell activation!

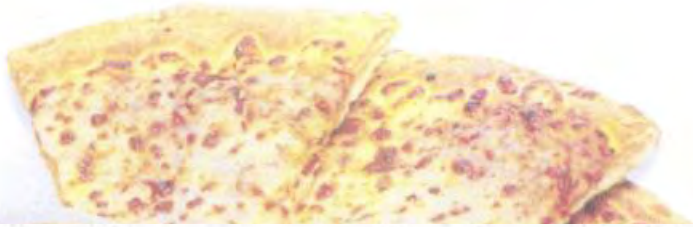


"That's too much of a change!"

- Doesn't have to be a total life makeover.
- 1 single change, over time can make a huge difference.
- Change 1 habit at a time.
- Evolution, not revolution.

Meal No. 1

Cheese Pizza
Breadsticks
Marinara Sauce



Meal No. 2

Cheese Pizza
Breadstick
Marinara Sauce
Salad
Fat-Free Dressing

Meal No. 3

Cheese Pizza
Salad
Fat-Free Dressing
Minestrone Soup
Fruit Salad

Meal No. 1

1/2 lb. Hamburger
w/Cheese
on White Bun
Potato Chips
Cookies

Meal No. 2

1/4 lb. Hamburger
w/Fat-Free
Cheese
on Whole
Wheat Bun
Coleslaw
Baked Beans
Cookies

Meal No. 3

One Half
1/4 lb.
Hamburger
on Whole
Wheat Bun
Roasted
Vegetables
Baked Beans,
Low Fat
Pear

Meal No. 1

3 cups White Spaghetti
2 cups Meat Sauce
Garlic Bread

Meal No. 2

2 cups Whole Wheat Spaghetti
1 cup Meat Sauce
Whole Wheat Ba
Broc

Meal No. 3

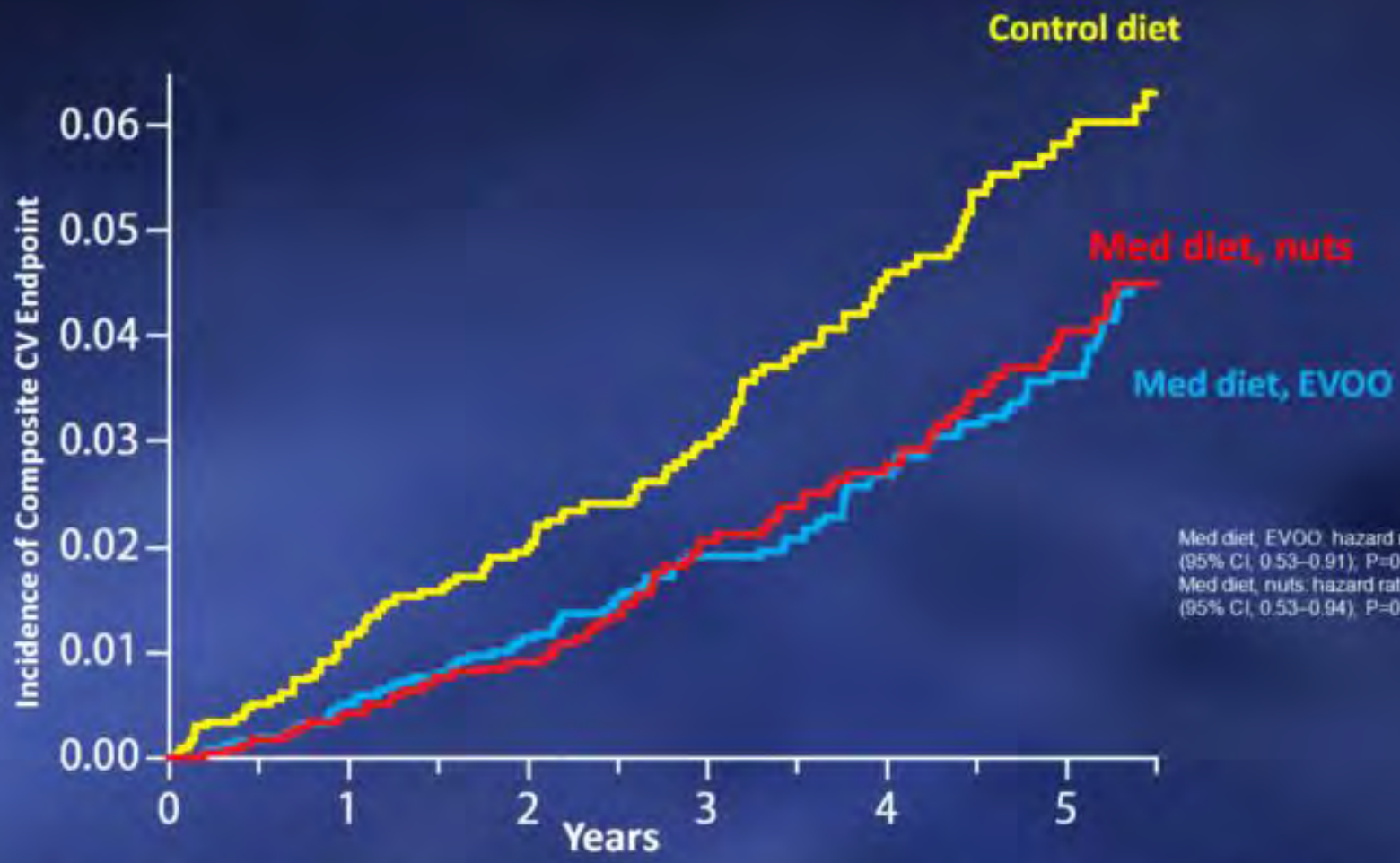
1 cup Whole Wheat Spaghetti
1/2 cup Marinara Sauce
Lentil Soup
Broccoli
Raspberries w/Whipped Topping

- Marlon Gibson weighed 4
- He lost 245 pounds by gr
  food and exercising
- http://www.cnn.com/2013/09/09/h

PREDIMED: Primary Prevention of CVD with a Mediterranean Diet: Primary End Point

EUROPEAN PRIMARY CARE EPCS CARDIOVASCULAR SOCIETY

acute myocardial infarction, stroke, or death from cardiovascular causes



European Primary Care Cardiovascular Society

Estruch, R et al. N Engl J Med 2013.DOI:10.1056/NEJMoa1200303

European Heart Journal
doi:10.1093/eurheartj/eh

LINICAL RESEARCH
Coronary artery disease

Dietary patte
cardiovascula
patients with

or adverse
ly of high-risk
disease

Ralph A. H. Stewart[1]*
Emil Hagström[2], Clae
Karen Chiswell[6], Ola
STABILITY Investigat

colas Danchin[3],
nda Stebbins[6],
hite[1], on Behalf of the

[1]Green Lane Cardiovascular Service, Auckland
Uppsala Clinical Research Center (UCR), Upp
Université Paris Descartes, Paris, France; [4]Medi
McMaster University, Hamilton, ON, Canada;
Therapeutic Area, GlaxoSmithKline, Research

; [2]Department of Medical Sciences, Cardiology,
ublique Hôpitaux de Paris, INSERM U-970,
dicine and Population Health Research Institute,
; and [7]Metabolic Pathways and Cardiovascular

Received 22 April 2015; revised 9 December 201

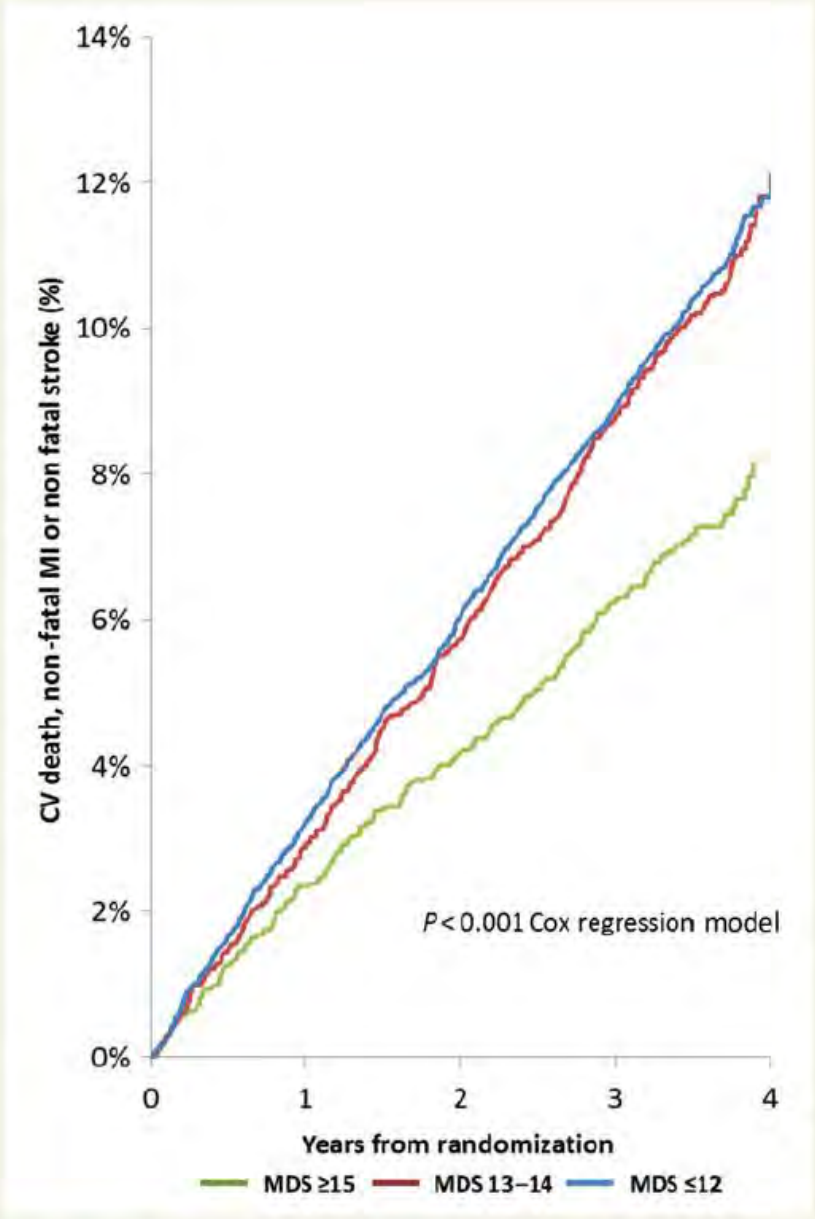


Figure 2 Kaplan–Meier plots of major adverse cardiovascular events by Mediterranean diet score group. CV, cardiovascular; MI, myocardial infarction, MDS, Mediteranean diet score.

Higher compared with lower dietary protein during an energy deficit combined with intense exercise promotes greater lean mass gain and fat mass loss: a randomized trial[1,2]

*Thomas M Longland, Sara Y Oikawa, Cameron J Mitchell, Michaela C Devries, and Stuart M Phillips**

Department of Kinesiology, Exercise Metabolism Research Group, McMaster University, Hamilton, Canada

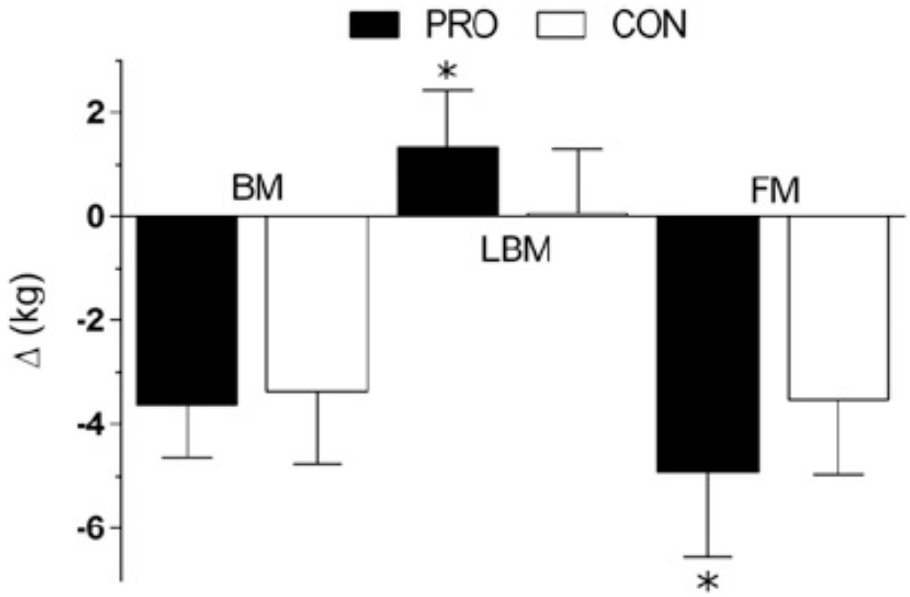
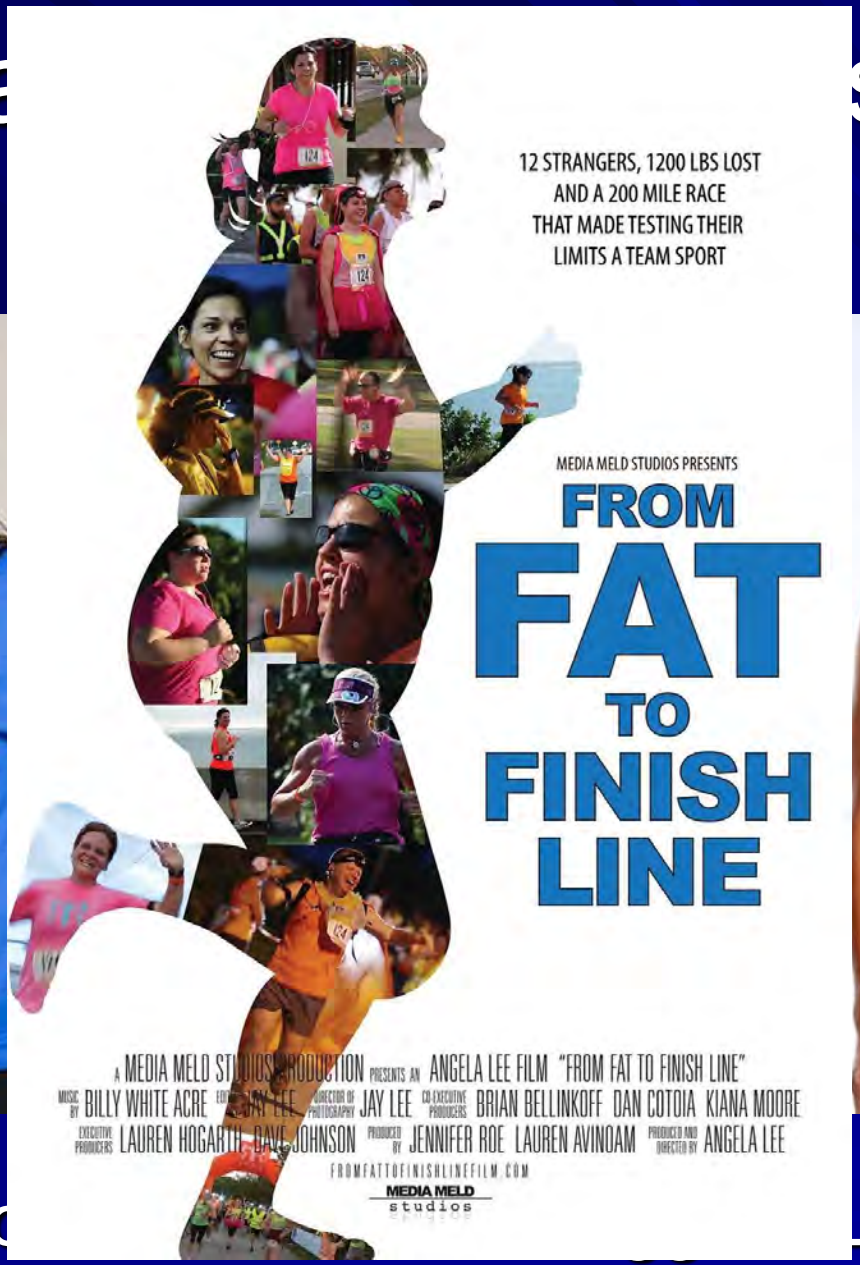


FIGURE 2 Four-compartment model-derived changes in BM, LBM, and FM during the intervention in both PRO and CON groups; data were analyzed with the use of an unpaired *t* test. Values are means ± SDs; $n = 40$ (20/group). *Significantly different from CON ($P < 0.05$). BM, body mass; CON, lower-protein (1.2 g · kg^{-1} · d^{-1}) control diet; FM, fat mass; LBM, lean body mass; PRO, higher-protein (2.4 g · kg^{-1} · d^{-1}) diet.

Am J Clin Nutr doi: 10.3945/ajcn.115.119339.

Ada ser!



- Runner up o oser.

National Weight Control Registry

- Lost >30 lbs, maintained > 3 yrs.
- Ave of 66 lbs lost, ave of 5.5 yrs.
- 98% modified diet.
- 94% increased exercise
  - 90% exercise for ~1 hour a day.
  - >60% just walked.

http://www.nwcr.ws/

Energy Expenditure of Walking and Running: Comparison with Prediction Equations

CAMERON HALL, ARTURO FIGUEROA, BO FERNHALL, and JILL A. KANALEY

Department of Exercise Science, Syracuse University, Syracuse, NY

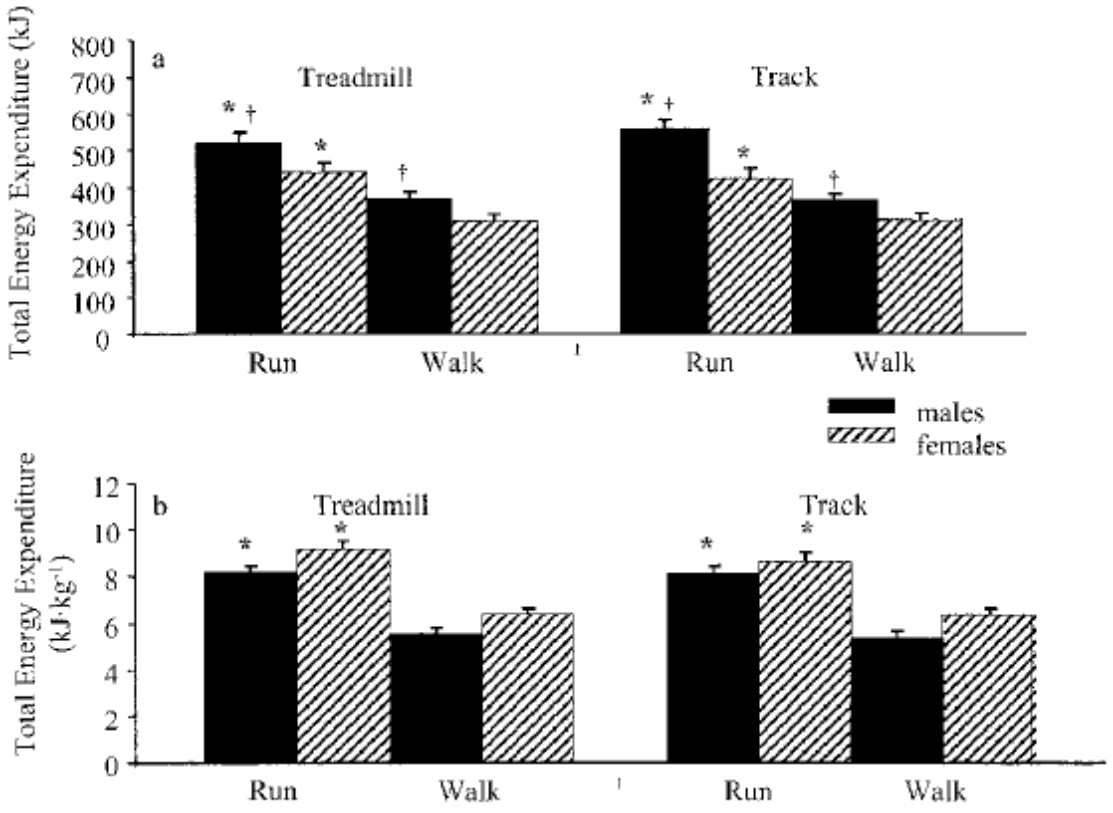


FIGURE 1—Total energy expenditures for 1600 m of walking and running in males and females on the track and treadmill, expressed in total expenditure (a), and normalized to fat-free mass (b). * $P < 0.05$ versus walking; † $P < 0.05$ versus females.

Med. Sci. Sports Exerc., Vol. 36, No. 12, pp. 2128–2134, 2004.

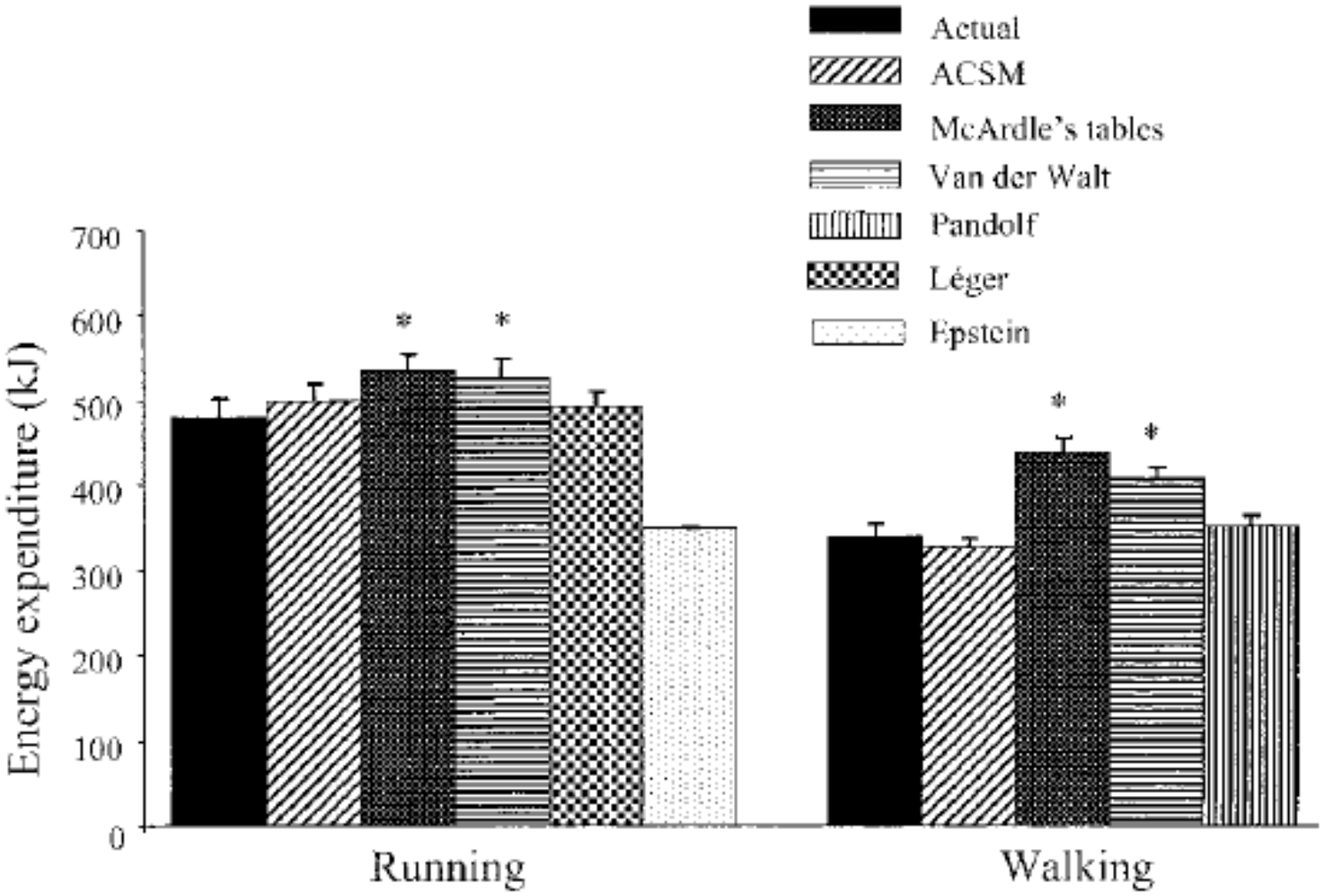
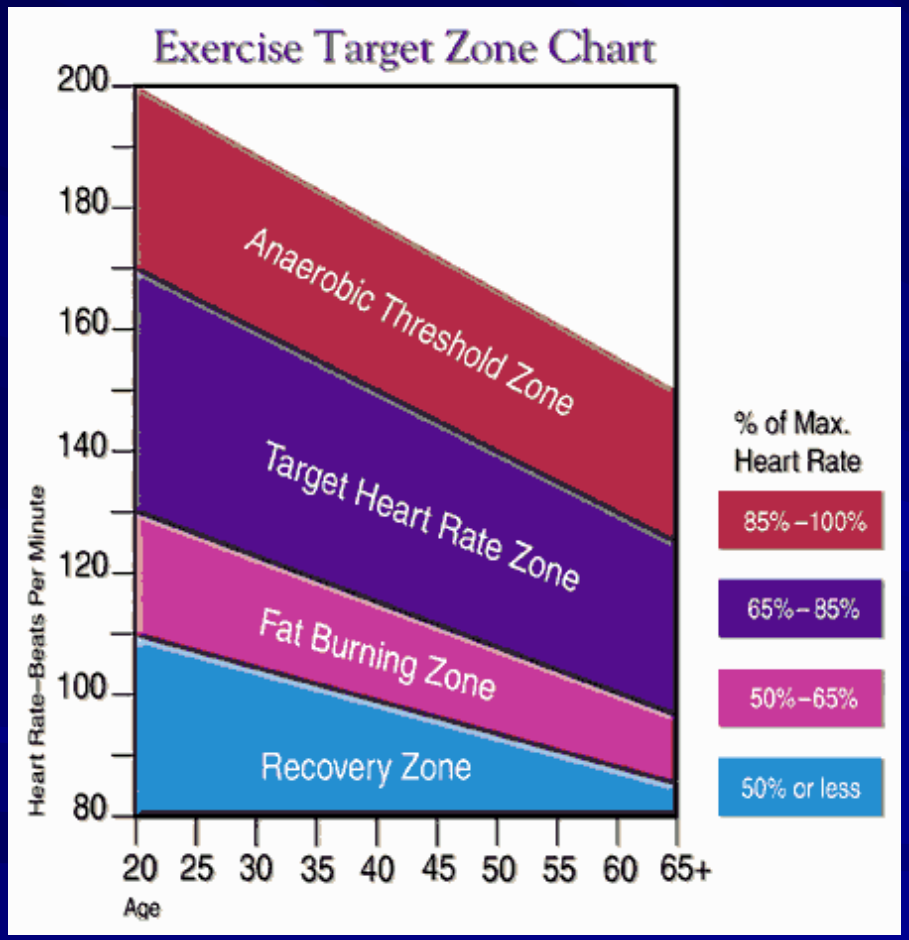


FIGURE 2—Actual total energy expenditure (solid) compared with energy expenditure predictions by ACSM (diagonal lines), McArdle (M) (dotted), van der Walt (horizontal lines), Léger (checkered), and Pandolf (vertical lines) for 1600 m. Values reported in means ± SE. * $P < 0.05$ between actual expenditures and predicted.

Myth: Cardio is the best way to drop weight…



- What do you call doing cardio 5 days a wk?
- *The road to nowhere!*
- Fat burning zone doesn't work-intensity and time matter!
- Can't spot reduce.
- Need to lose % body fat.
- Best way to do this?
- Resistance training.
- Muscles burn/need/use more calories. Increases your metabolism.

Minimum amount of physical activity for reduced mortality and extended life expectancy: a prospective cohort study

Chi Pang Wen*, Jackson Pui Man Wai*, Min Kuang Tsai, Yi Chen Yang, Ting Yuan David Cheng, Meng-Chih Lee, Hui Ting Chan, Chwen Keng Tsao,

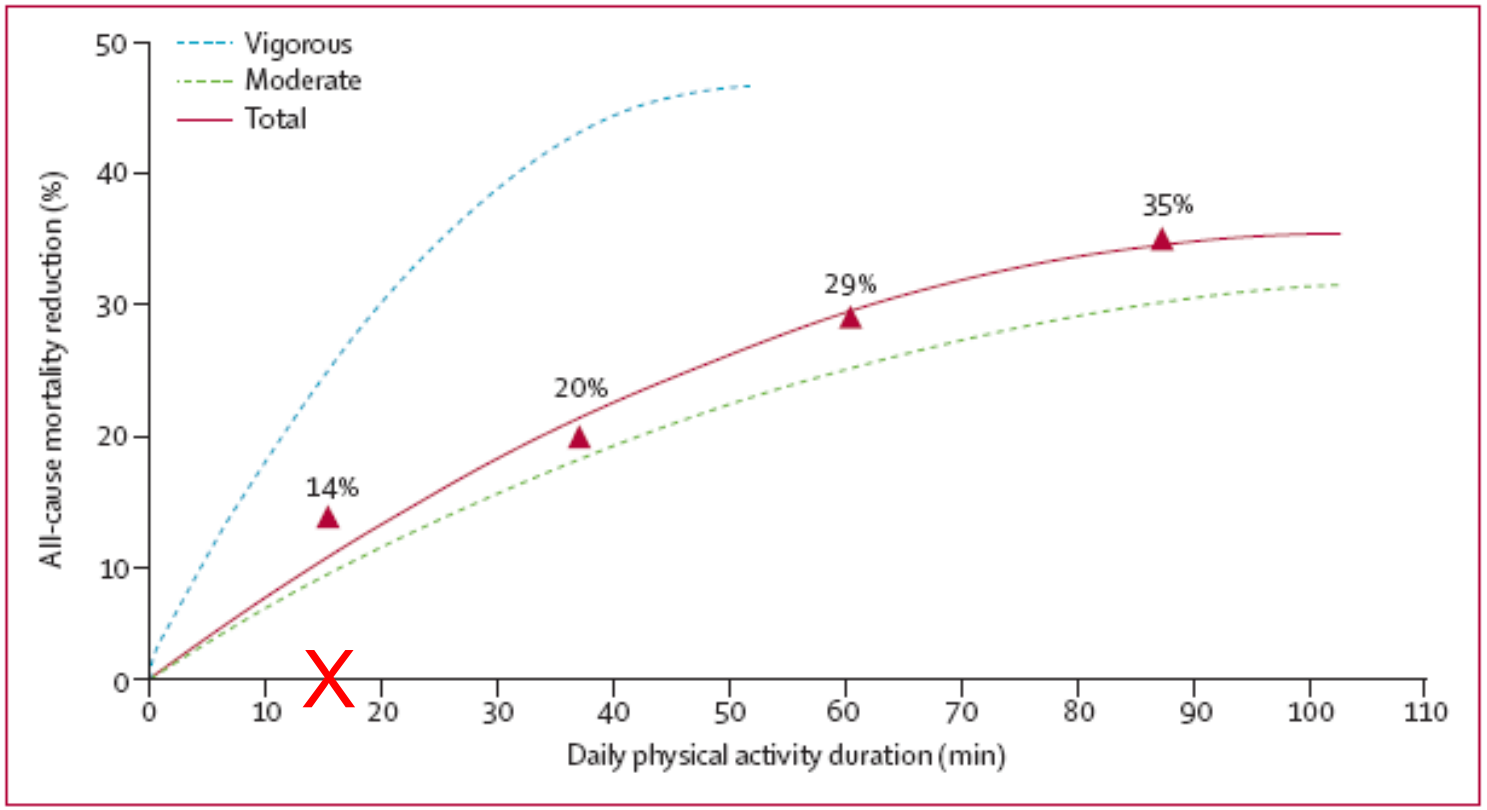


Figure 2: Daily physical activity duration and all-cause mortality reduction

Time and intensity matter!

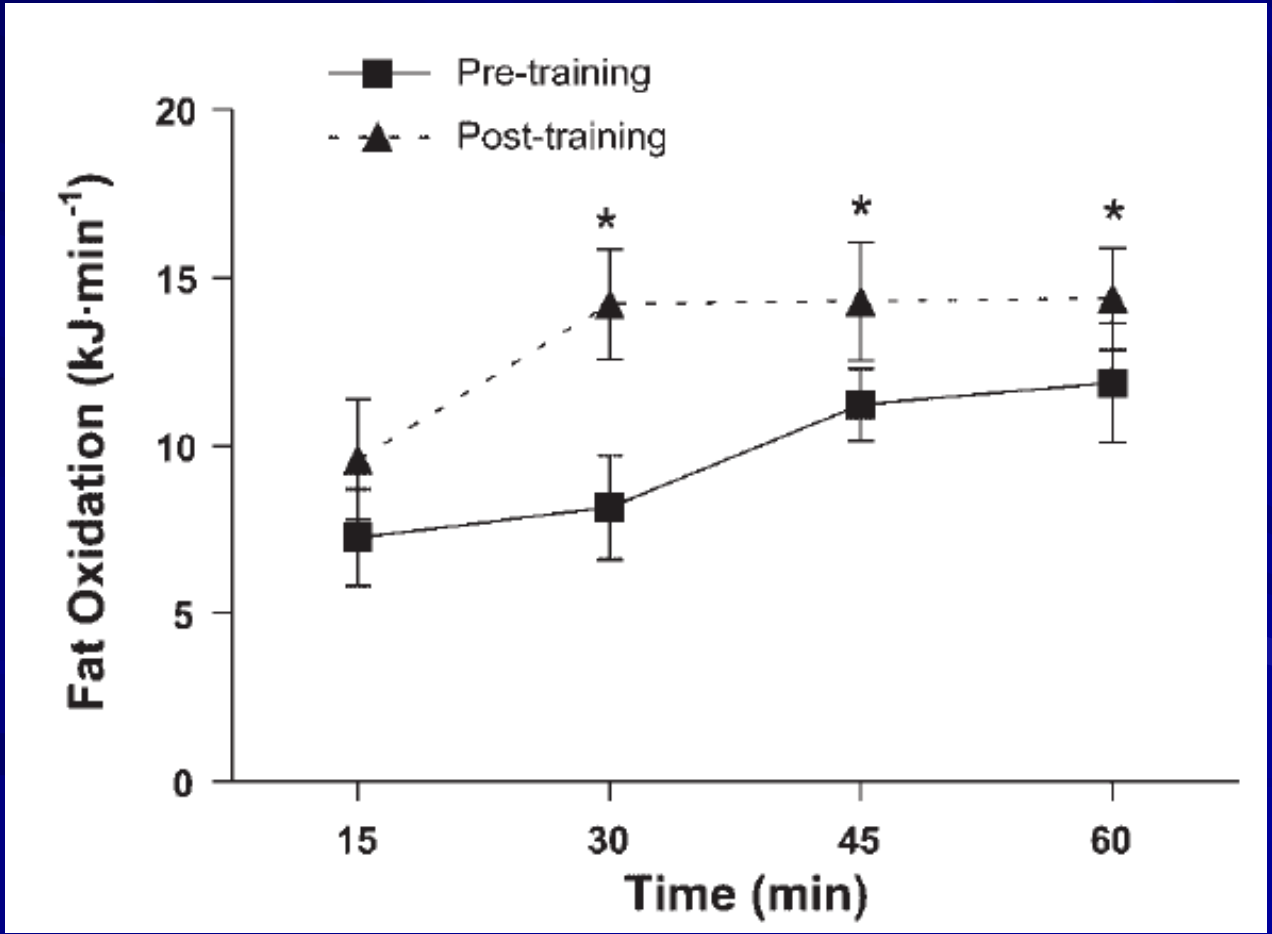
HIIT it!

- High Intensity Interval Training.
- Short bouts of near max effort (really max effort) with longer recovery periods.
- Many different programs, but most studies show that you only need 4-5 cycles to get the benefit!

Two weeks of high-intensity aerobic interval training increases the capacity for fat oxidation during exercise in women

Jason L. Talanian,[1] Stuart D. R. Galloway,[2] George J. F. Heigenhauser,[3] Arend Bonen,[1] and Lawrence L. Spriet[1]

[1]Department of Human Health and Nutritional Sciences, University of Guelph, Guelph, Ontario, Canada, [2]Department of Sport Studies, University of Stirling, Stirling, Scotland; and [3]Department of Medicine, McMaster University, Hamilton, Ontario, Canada



J Appl Physiol 102: 1439–1447, 2007.

2.5 mins a day vs 45?

Physiological Reports

Open Access

Physiological Reports ISSN 2051-817X

ORIGINAL RESEARCH

Total daily energy expenditure is increased following a single bout of sprint interval training

Kyle J. Sevits[1], Edward L. Melanson[2,3], Tracy Swibas[3], Scott E. Binns[4], Anna L. Klochak[4], Mark C. Lonac[4], Garrett L. Peltonen[4], Rebecca L. Scalzo[4], Melani M. Schweder[4], Amy M. Smith[1], Lacey M. Wood[4], Christopher L. Melby[1] & Christopher Bell[4]

1 Department of Food Science and Human Nutrition, Colorado State University, Fort Collins, Colorado
2 Division of Endocrinology Metabolism and Diabetes, University of Colorado Anschutz Medical Campus, Denver, Colorado
3 Division of Geriatrics, University of Colorado Anschutz Medical Campus, Denver, Colorado
4 Department of Health and Exercise Science, Colorado State University, Fort Collins, Colorado

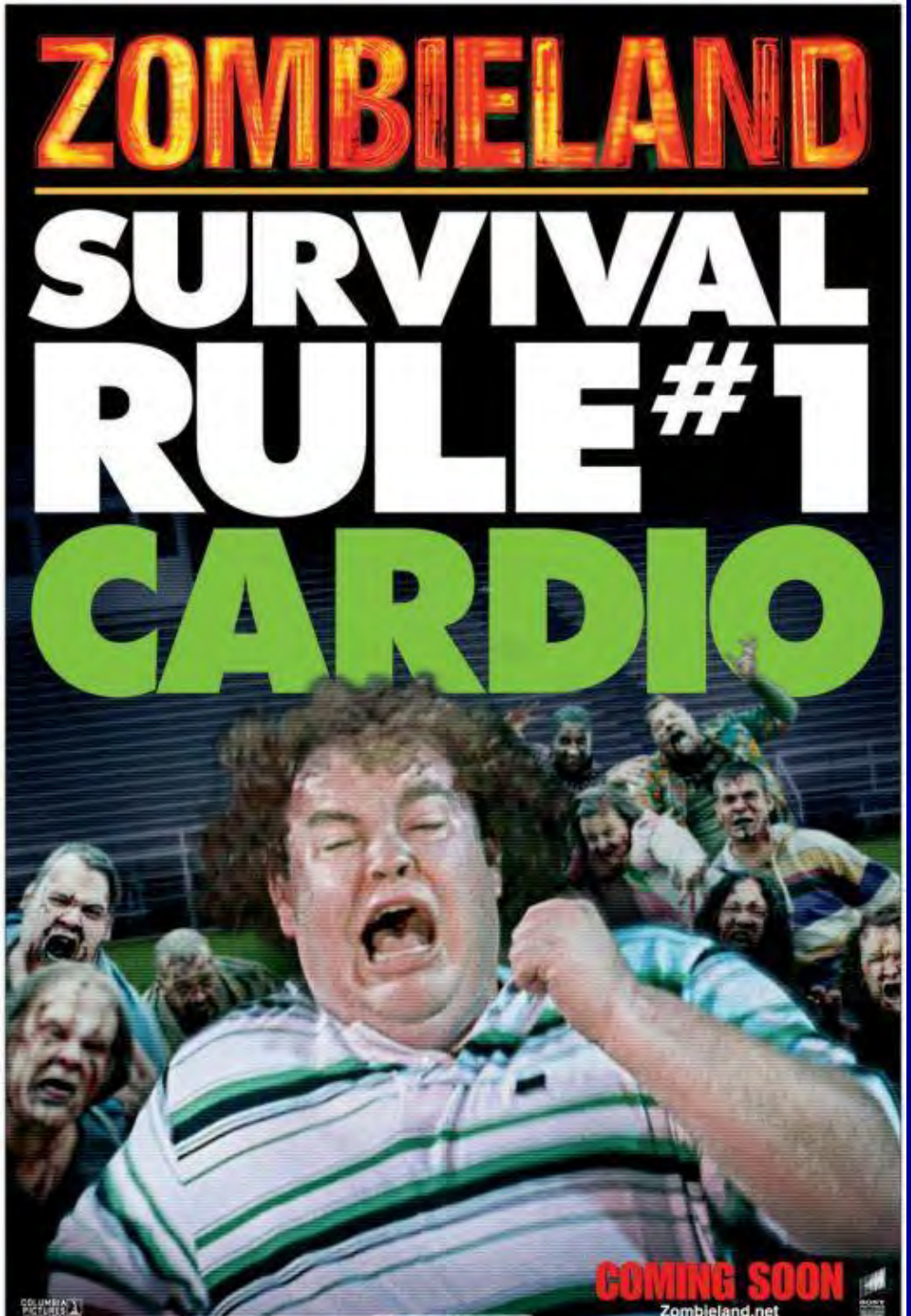
Physiol Rep, 1 (5), 2013, e00131, doi: 10.1002/phy2.131

Barry Brokaw-nurse!

We all need some LSD…

We all need some LSD…

- Long Slow Distance!
- To really start using fat as your energy source (burn fat) you need to go at least 45 min, sometimes 60, but most need 90 mins + to get your glycogen levels low enough to shift to fat.
- This is why the ‘fat burning zone’ does NOT work.
- What’s another reason to run long?


ZOMBIELAND
SURVIVAL
RULE #1
CARDIO
COMING SOON
Zombieland.net


RULE #1
CARDIO

Myth-weights make you BIG and bulky and unfeminine!

Journal of the American College of Cardiology
© 2011 by the American College of Cardiology Foundation
Published by Elsevier Inc.

Vol. 57, No. 18, 2011
ISSN 0735-1097/$36.00
doi:10.1016/j.jacc.2010.12.025

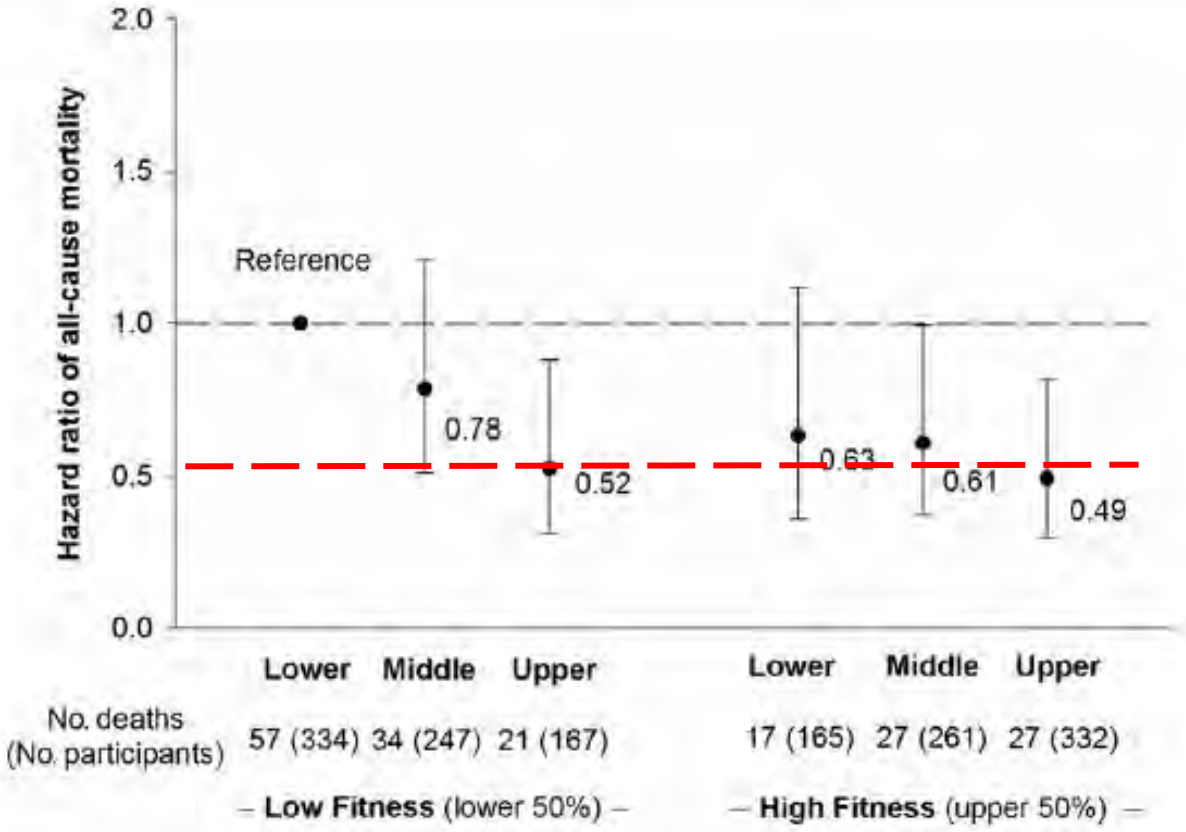
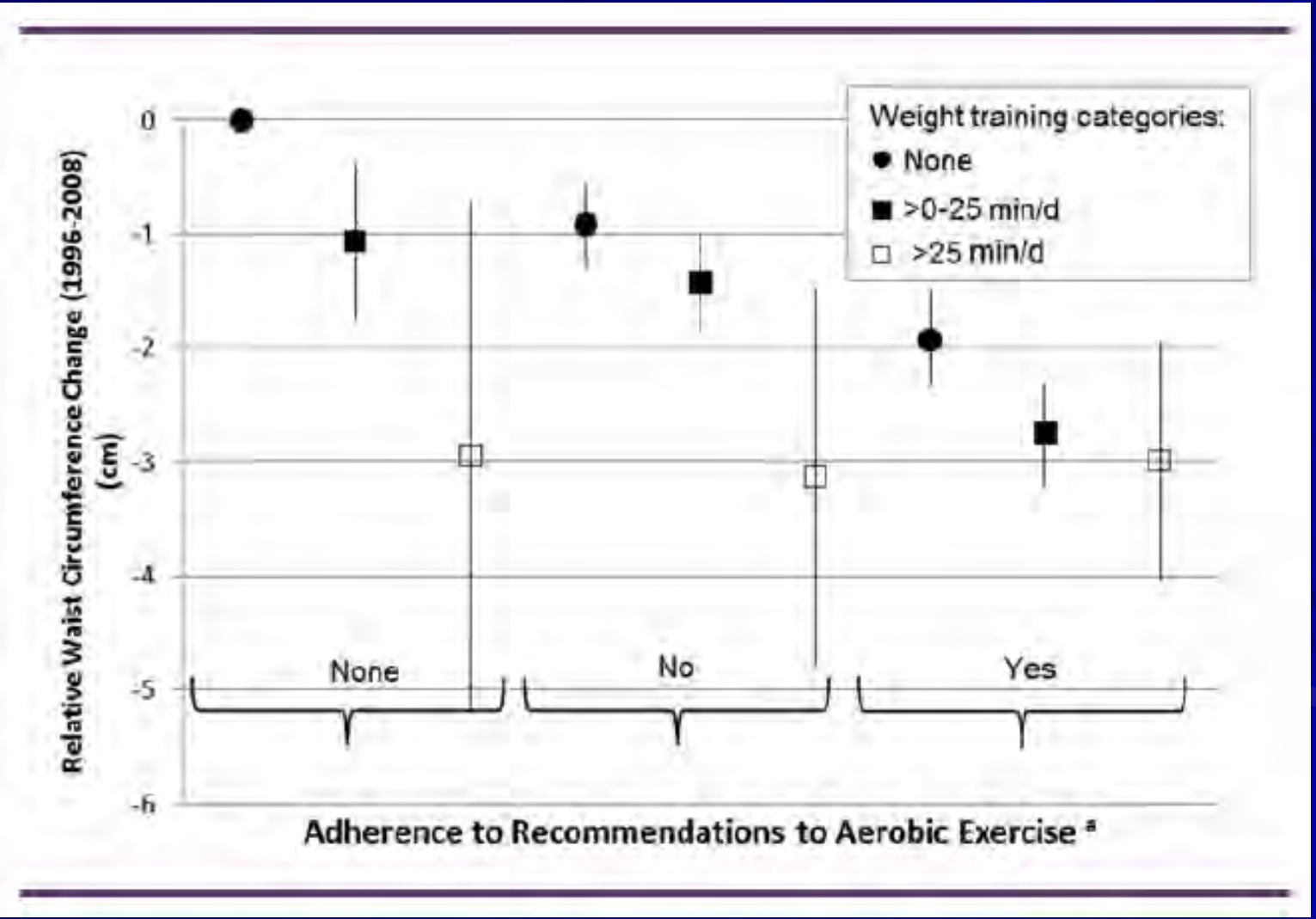


Figure 1 **Muscular Strength, Cardiorespiratory Fitness, and Mortality in Hypertension**

Combined association of muscular strength (thirds) and cardiorespiratory fitness (low fitness, high fitness) with hazard ratio of all-cause mortality after adjustment for age, physical activity, current smoking, alcohol intake, body mass index, systolic and diastolic blood pressure, total cholesterol, diabetes, abnormal electrocardiogram, and family history of cardiovascular disease. **Error bars** represent 95% confidence interval.

Weight Training, Aerobic Physical Activities, and Long-Term Waist Circumference Change in Men

Rania A. Mekary[1,2], Anders Grøntved[1,3], Jean-Pierre Despres[4], Leandro Pereira De Moura[5,6], Morteza Asgarzadeh[1], Walter C. Willett[1,7,8], Eric B. Rimm[1,7,8], Edward Giovannucci[1,7,8], and Frank B. Hu[1,7,8]



Obesity (2014) **00**, 00-00. doi:10.1002/oby.20949

Relation of Muscle Mass and Fat Mass to Cardiovascular Disease Mortality

Preethi Srikanthan, MD, MS[a,*], Tamara B. Horwich, MD, MS[b], and Chi Hong Tseng, PhD[c]

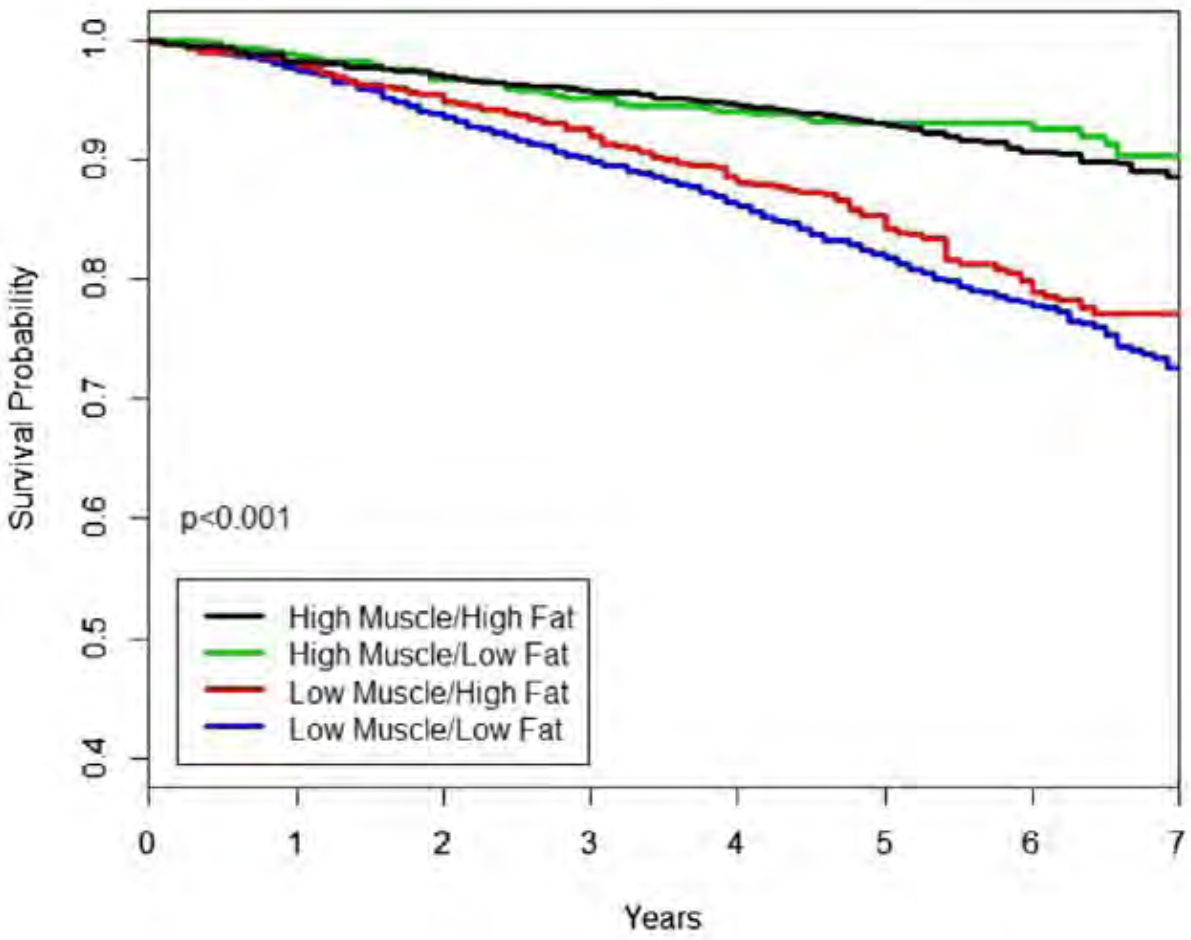
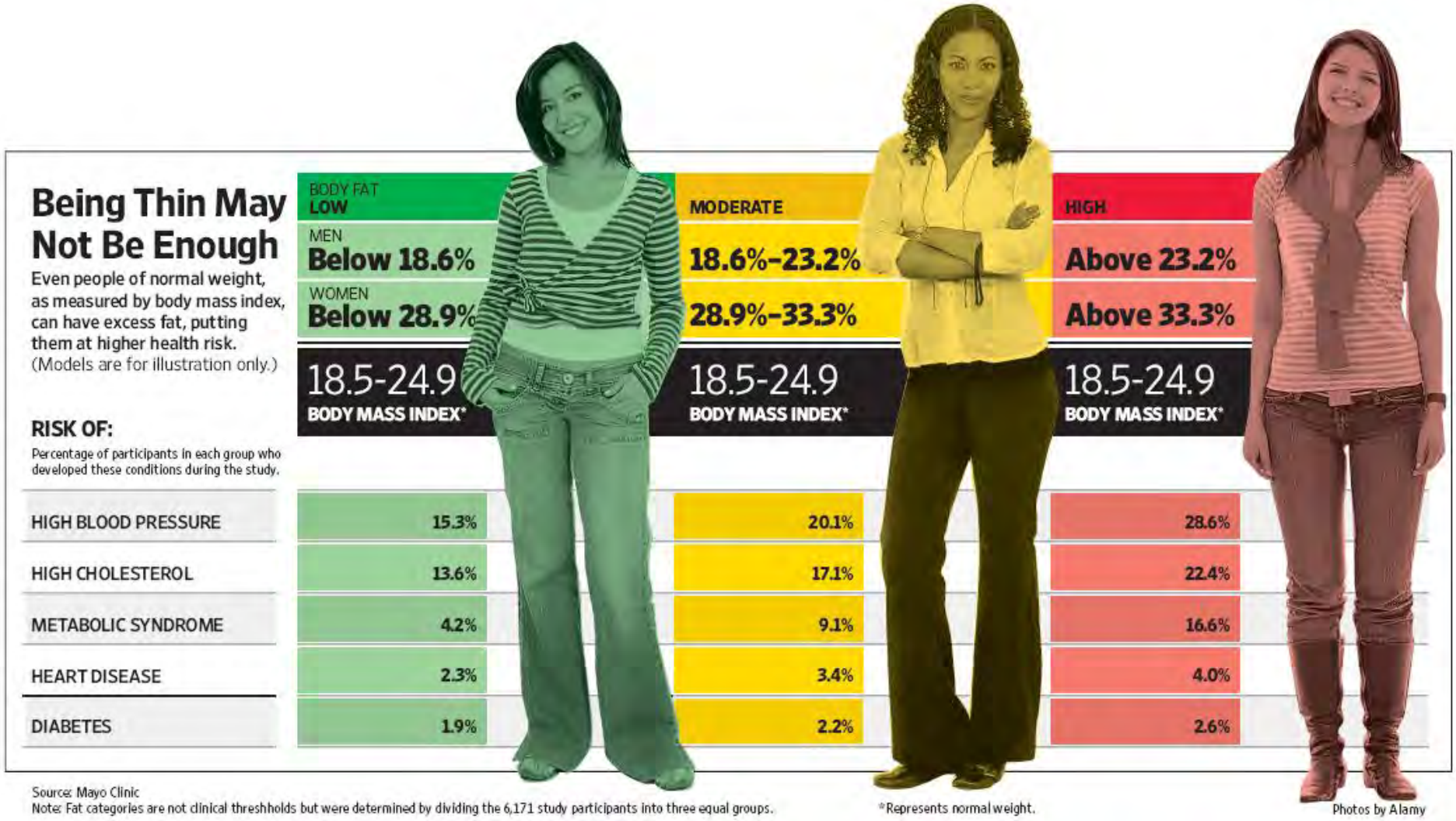


Figure 2. Kaplan-Meier plot of all-cause mortality for the 4 body composition types based on AMMI and TRFI.

(Am J Cardiol 2016;117:1355–1360)

Risk by % fat



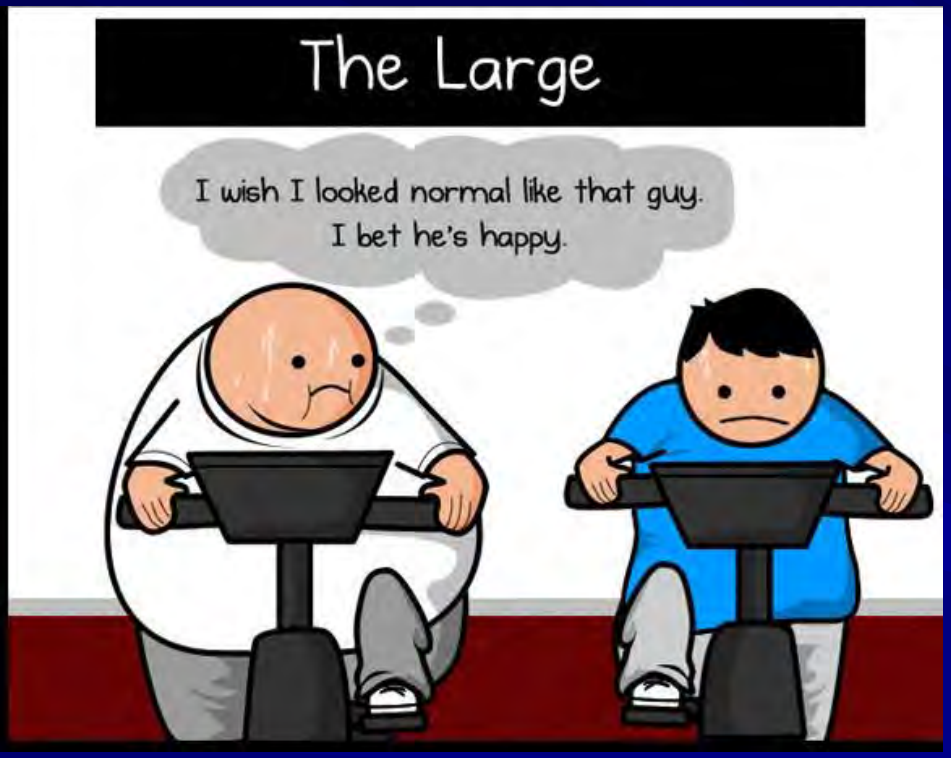
Source: Mayo Clinic
Note: Fat categories are not clinical threshholds but were determined by dividing the 6,171 study participants into three equal groups.

*Represents normal weight.

Photos by Alamy

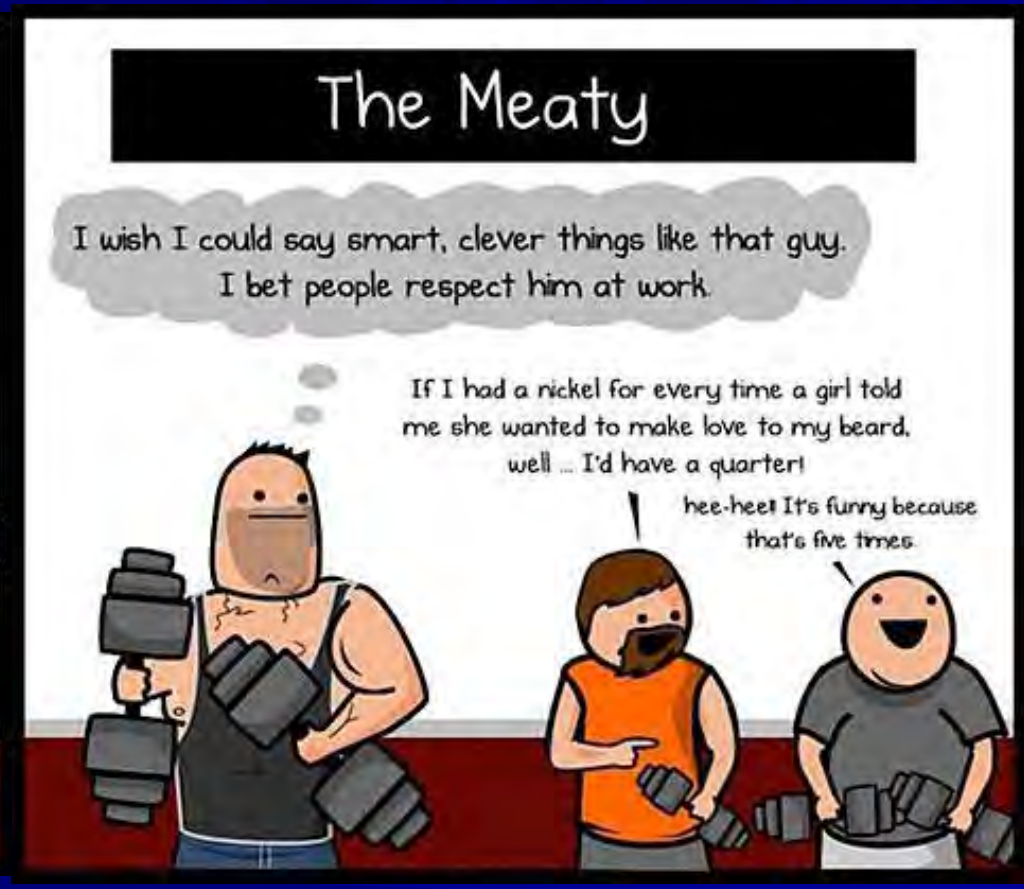
Instant 6 pack!

No one is happy…



NO ONE!


The Lean
I wish I had gimungus meaty muscles like that guy.
I bet girls line up around the block


The Meaty
I wish I could say smart, clever things like that guy.
I bet people respect him at work.
If I had a nickel for every time a girl told me she wanted to make love to my beard, well ... I'd have a quarter!
hee-hee! It's funny because that's five times.

EPOC, not EPIC

- excess post-exercise oxygen consumption.
- This is the Holy Grail of weight loss.
- Can it be done?
- How?

A 45-Minute Vigorous Exercise Bout Increases Metabolic Rate for 14 Hours

AMY M. KNA

[1]Human Perfo
[2]University of
NC; and [3]Bioi
Kannapolis, N

VID C. NIEMAN[1]

apolis, NC;
pus, Kannapolis,
earch Campus,

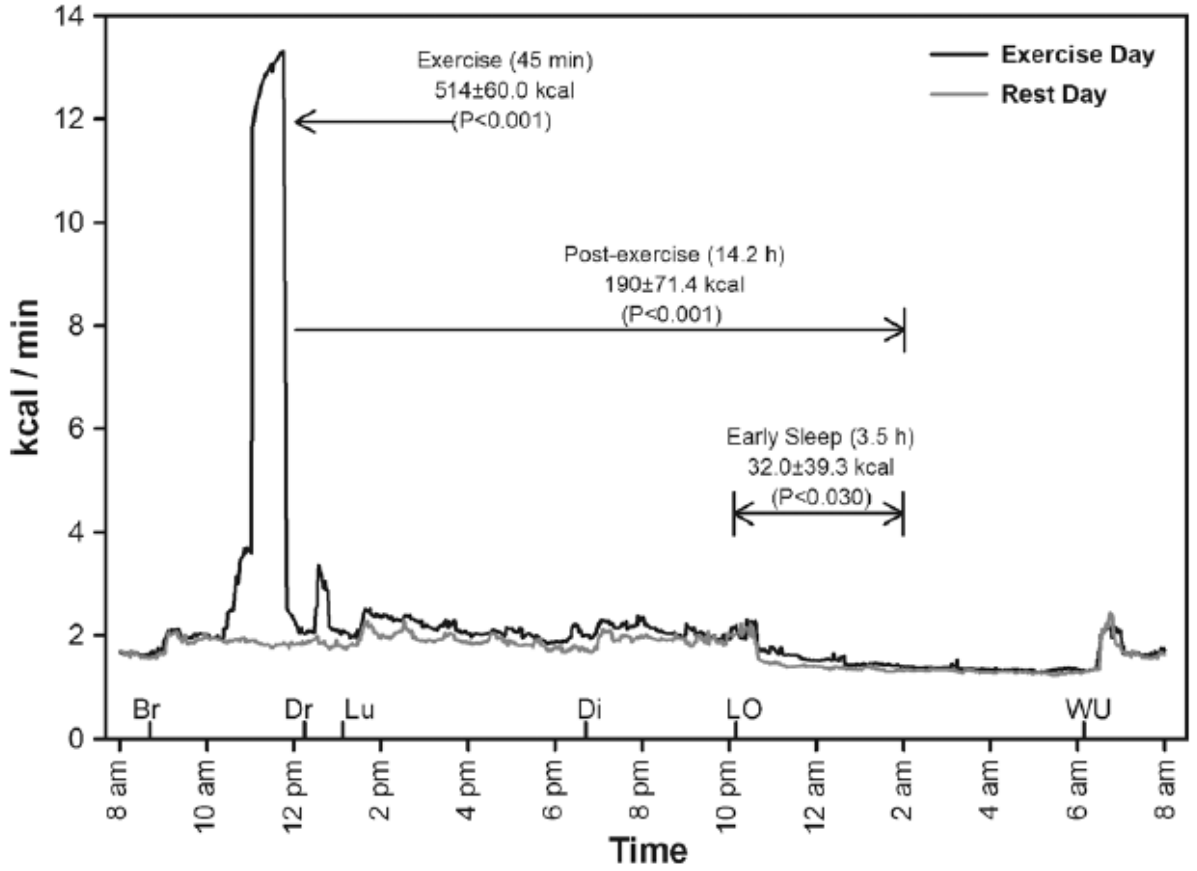


FIGURE 1—Average 24-h energy expenditure on rest and exercise days. Forty-five minutes of cycling resulted in 519 ± 60.9 kcal of energy expended above rest day ($P < 0.001$), whereas 190 ± 71.4 kcal was expended above levels on the rest day for 14.2 h after exercise ($P < 0.001$). Net energy expenditure difference from the start of sleep to 18 h after exercise was 32.0 ± 39.3 kcal ($P = 0.030$).

Med. Sci. Sports Exerc., Vol. 43, No. 9, pp. 1643–1648, 2011.

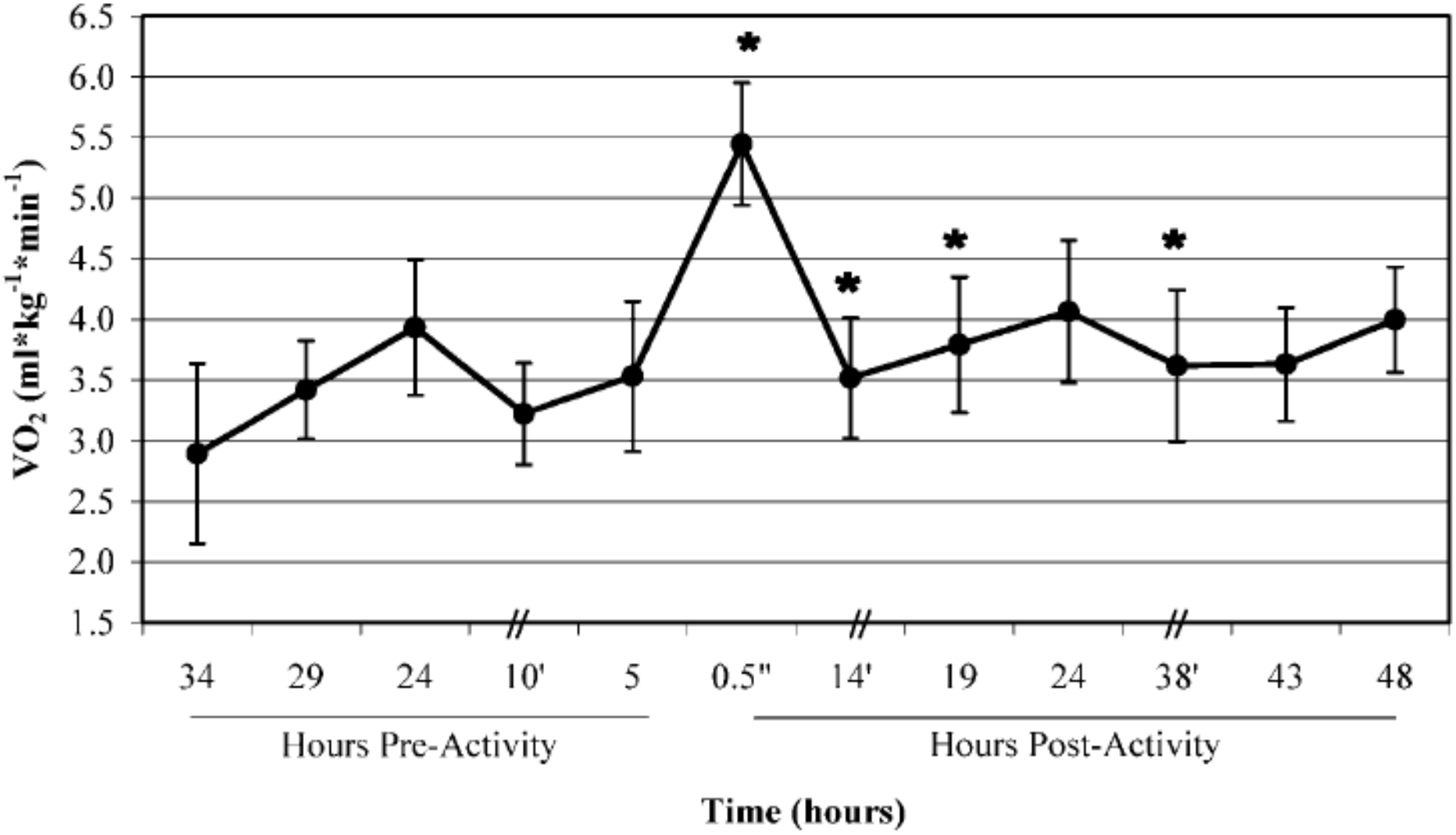
ORIGINAL ARTICLE

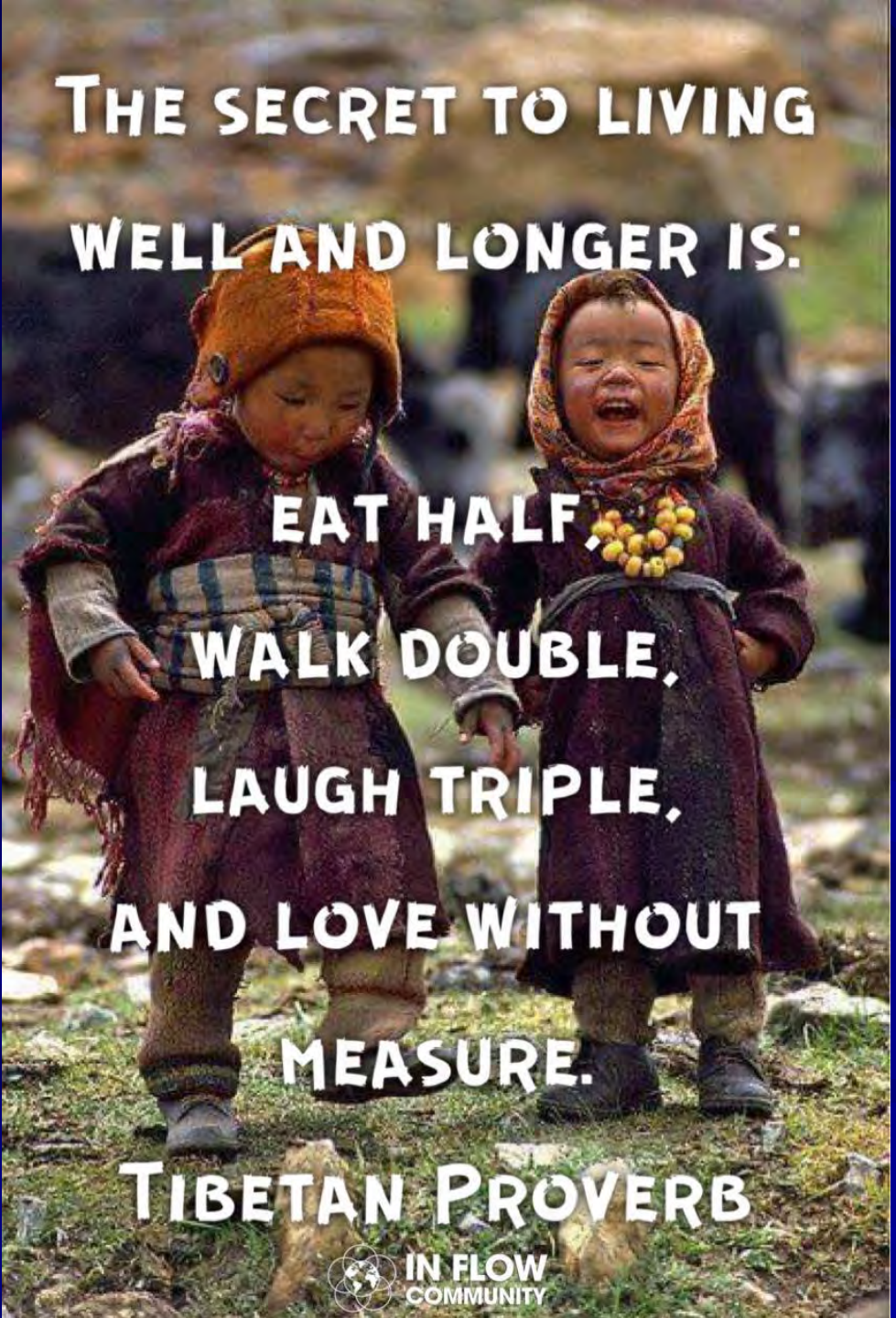
Mark D. Schuenke · Richard P. Mikat
Jeffrey M. McBride

Effect of an acute period of resistance exercise on excess post-exercise oxygen consumption: implications for body mass management

Eur J Appl Physiol (2002) 86: 411–417
DOI 10.1007/s00421-001-0568-y

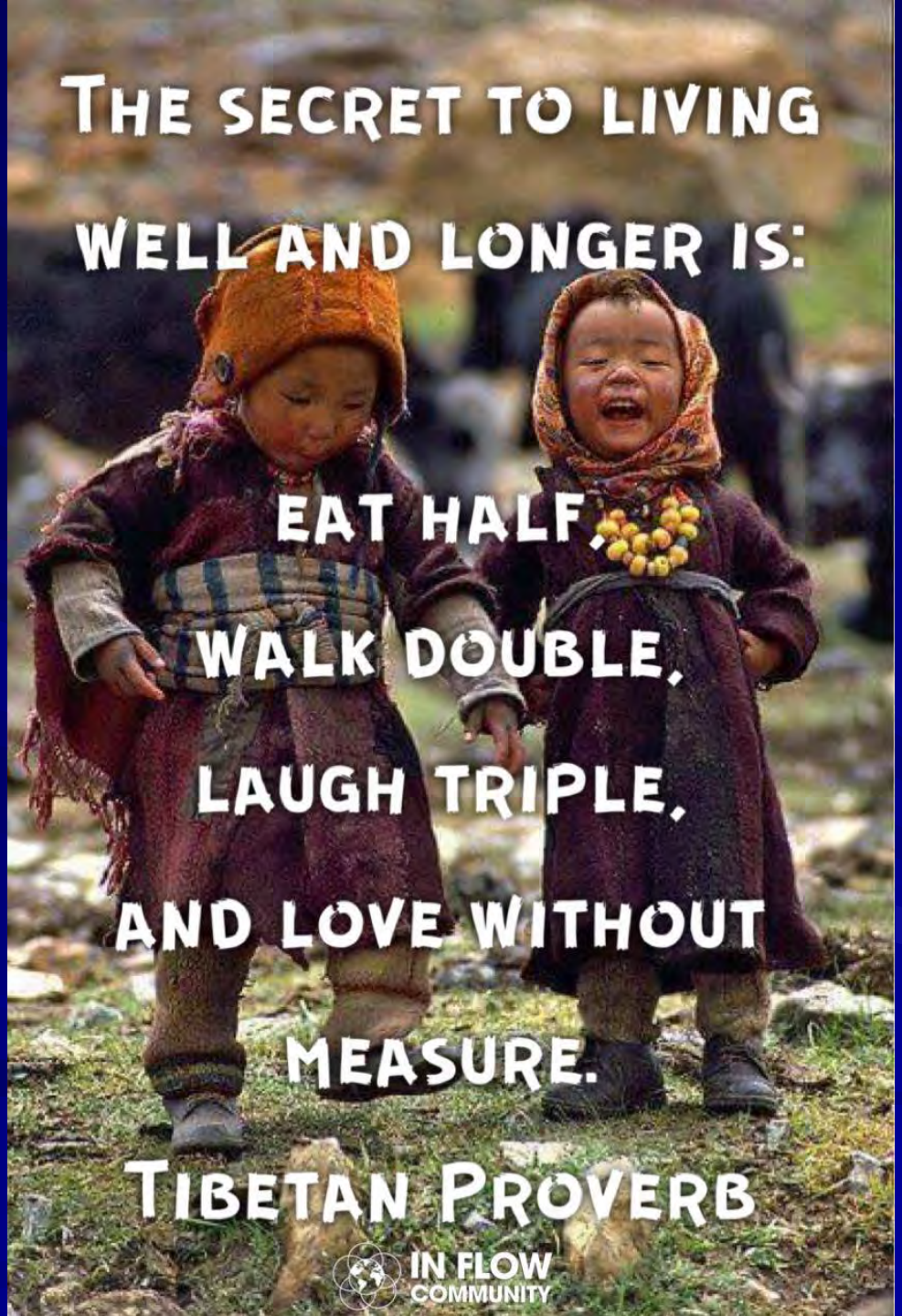
Muscle burns more calories than fat!



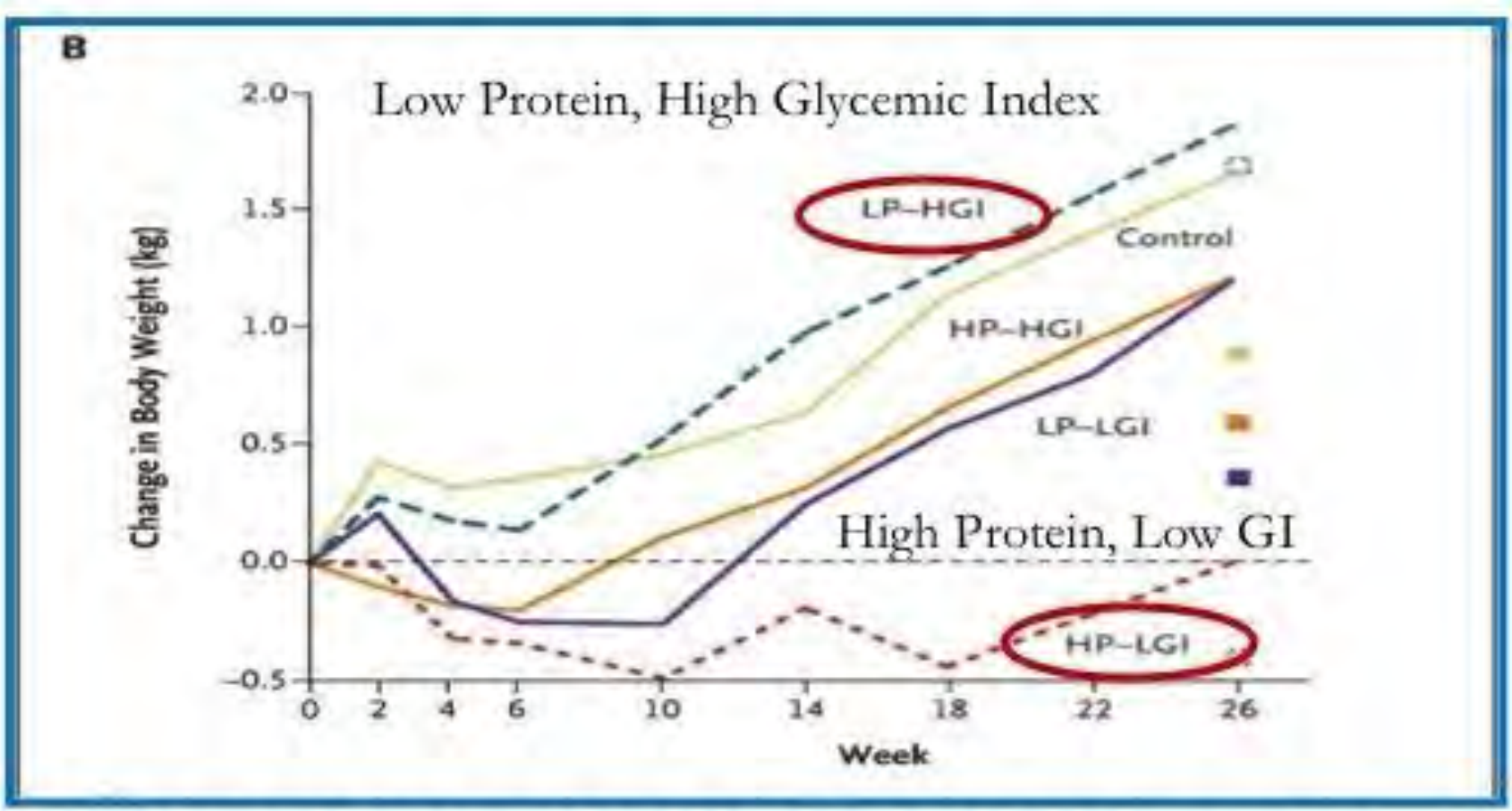


SUMMARY

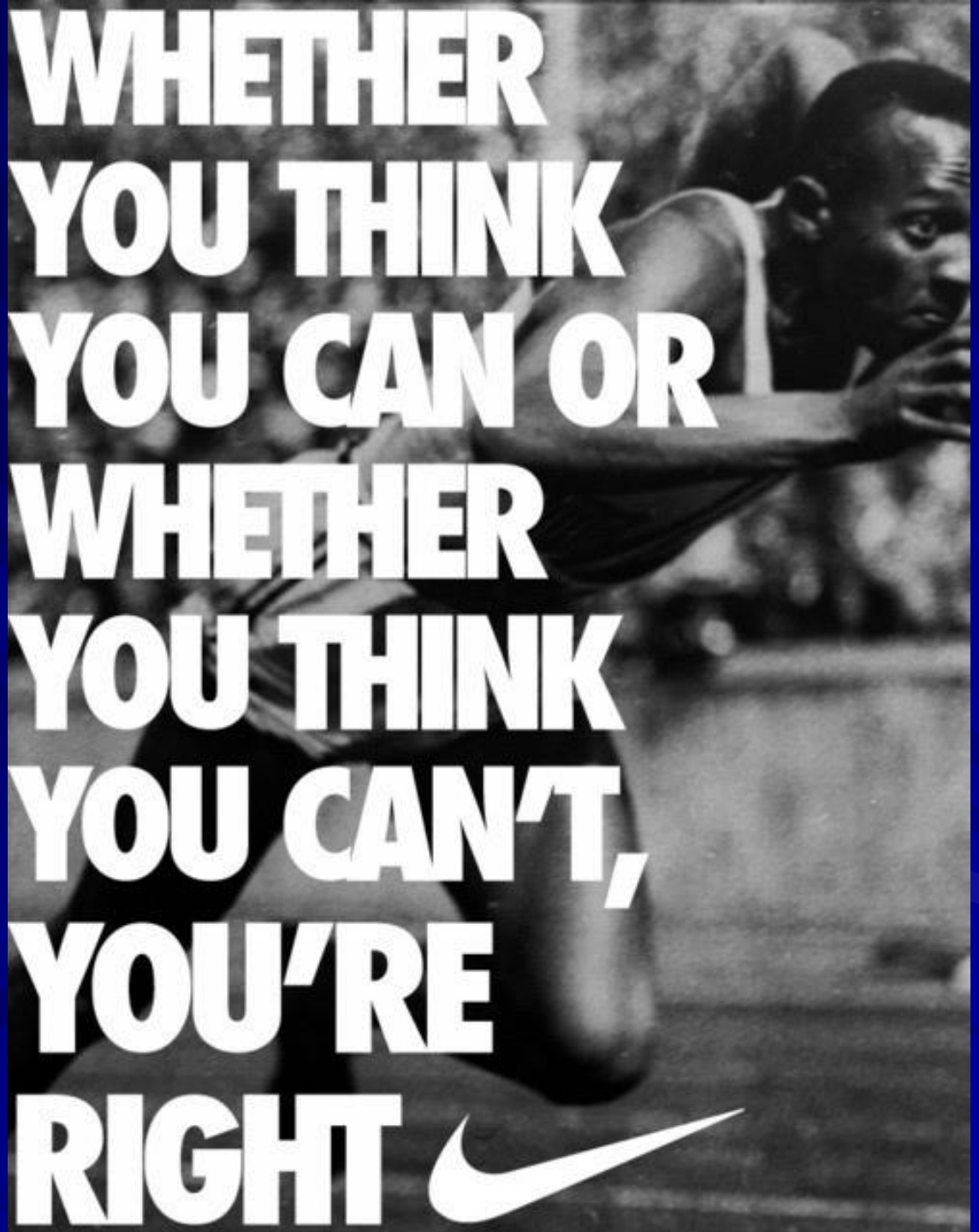
- Your body wants to maintain it's set point (homeostasis).
- Don't worry about weight, worry about fat.
- As you lose weight your metabolism goes down.
- To fight that you need to:
- Build muscle-lift!
- Go hard or go long or BOTH!
- Good luck!


THE SECRET TO LIVING
WELL AND LONGER IS:
EAT HALF,
WALK DOUBLE,
LAUGH TRIPLE,
AND LOVE WITHOUT
MEASURE.
TIBETAN PROVERB
IN FLOW
COMMUNITY

Pick your morphology.

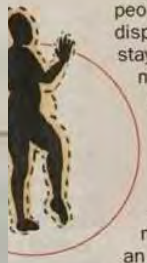


N Engl J Med Nov 25 2010, 363(22):2102-2113 Larsen TM


WHETHER
YOU THINK
YOU CAN OR
WHETHER
YOU THINK
YOU CAN'T,
YOU'RE
RIGHT

set on the body

MOOD AND SURGERY OUTCOMES:
If a person is in a bad mood, their medical procedure may not go as smoothly, a December 2015 study showed. In the study, the researchers looked at 230 people who underwent procedures in which a catheter was inserted into a blood vessel. Before the procedure, people filled out a questionnaire that asked them to rate various adjectives describing how they felt emotionally. The study authors found that people with more negative feelings had a greater incidence of adverse events from the procedure, like slow heart rate or abnormal blood pressure. The research is early, but it's not the first time scientists have seen physical changes from a negative mood.



MINDFULNESS AND BODY FAT:
In an October 2015 study, people with mindful dispositions—an ability to stay focused on the present moment—were found to have less body fat. Men and women with lower levels of mindfulness had a 34% higher prevalence of obesity compared with people with high levels of mindfulness. Though it's only an association, researchers suggest people who are more aware may be more likely to eat healthier and exercise more.

OUTLOOK AND ALZHEIMER'S DISEASE:
The stereotypes a person holds about old age can affect how their brain ages, found a new Yale School of Public Health study. Men and women who viewed aging negatively had a greater loss of hippocampus volume and significantly higher scores of plaques—both indicators of Alzheimer's disease. The researchers say it's the first time this type of risk factor has been linked to the development of brain changes associated with Alzheimer's.

ANGER ATTACK
A 2015 st
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a heart at
two hours
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cially lower

IN LIGHT OF NEW EVIDENCE THAT HAPPY PEOPLE DON'T LIVE longer than their grumpy peers, one might be tempted to drop the pursuit altogether. A recent study published in the *Lancet* followed nearly 720,000 middle-aged women for several years and reported that while those who were happier tended to be healthier, they had no edge when it came to longevity. (Similarly, while unhappiness may be a side effect of illness, research shows that it is not alone capable of making you sick.) On the other hand, evidence shows that attitude can have meaningful—and in some cases measurable—effects on health, even if it can't outright extend one's life. Here's the latest on the mind-body connection.

Surprising effects of mind-set on the body

MOOD AND SURGERY OUTCOMES:
If a person is in a bad mood, their medical procedure may not go as smoothly, a December 2015 study showed. In the study, the researchers looked at 230 people who underwent procedures in which a catheter was inserted into a blood vessel. Before the procedure, people filled out a questionnaire that asked them to rate various adjectives describing how they felt emotionally. The study authors found that people with more negative feelings had a greater incidence of adverse events from the procedure, like slow heart rate or abnormal blood pressure. The research is early, but it's not the first time scientists have seen physical changes from a negative mood.

ANGER AND HEART-ATTACK RISK:
A 2015 study found having an episode of intense anger was associated with an 8.5 times greater likelihood of having a heart attack in the next two hours. Exactly how anger could contribute to a heart attack remains unknown, but the researchers speculate that stress triggers increased heart rate and blood pressure, blood-vessel constriction and clotting, which raise risk.

AWE AND REDUCED INFLAMMATION:
Awe was found in a January 2015 study to reduce compounds that promote inflammation, which is linked to diseases ranging from Type 2 diabetes to arthritis. In the small study, college students filled out questionnaires about how often they experienced certain emotions. They found that happy moods in general were associated with lower inflammation, but the students who experienced awe most often had especially lower levels.

MINDFULNES AND BODY FA
In an October 20 people with mind dispositions—ar stay focused on moment—wer have less bo and women levels of mi a 34% high of obesity c people with mindfulness. an association, suggest people aware may be m healthier and ex

OUTLOOK AND ALZHEIMER'S DISEASE:
The stereotypes a person holds about old age can affect how their brain ages, found a new Yale School of Public Health study. Men and women who viewed aging negatively had a greater loss of hippocampus volume and significantly higher scores of plaques—both indicators of Alzheimer's disease. The researchers say it's the first time this type of risk factor has been linked to the development of brain changes associated with Alzheimer's.

OUTLO ALZHE DISEA
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MINDFULNESS AND BODY FAT:

In an October 2015 study, people with mindful dispositions—an ability to stay focused on the present moment—were found to have less body fat. Men and women with lower levels of mindfulness had a 34% higher prevalence of obesity compared with people with high levels of mindfulness. Though it's only an association, researchers suggest people who are more aware may be more likely to eat healthier and exercise more.

Think positive!

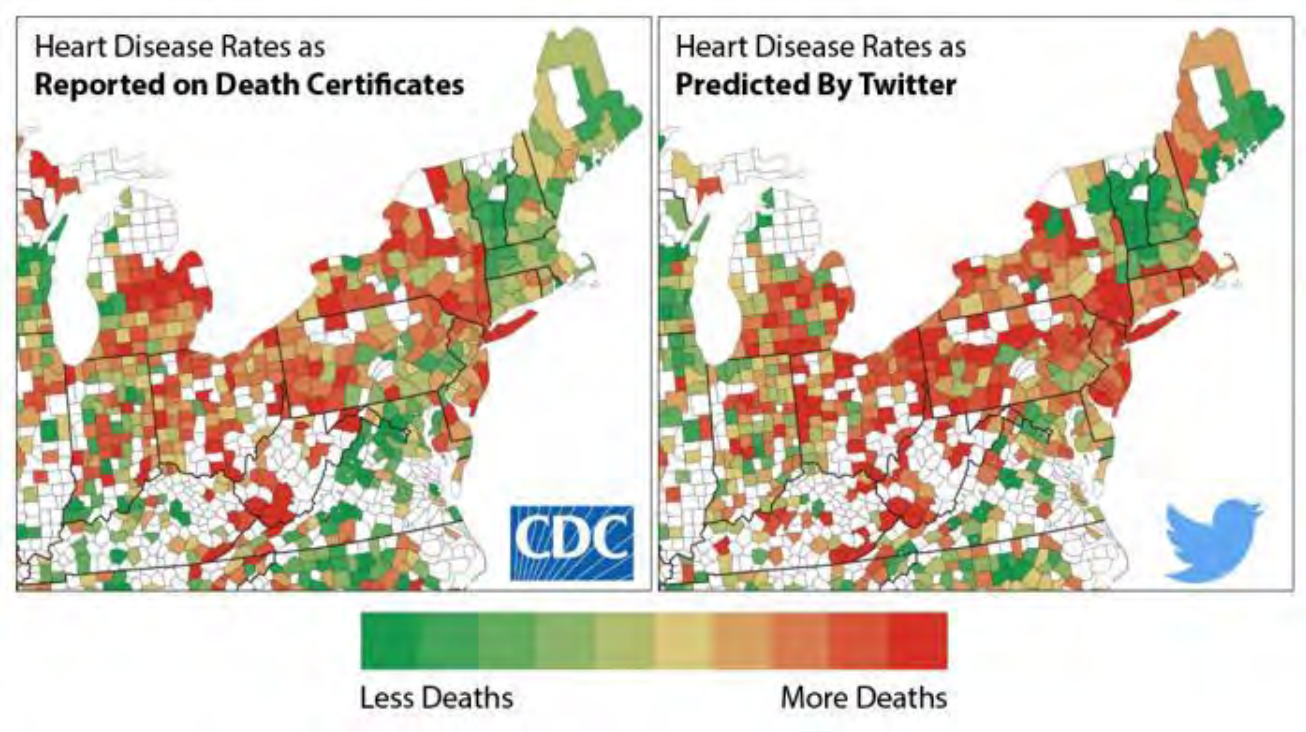
TABLE 2 Optimism and Pessimism as Predictors of Clinical Outcomes

First Author (Ref. #)	Year	n	Follow-Up (yrs)	Endpoints	Adjusted RR (95% CI)*
Pessimism as a risk factor					
Brummet et al. (13)	2006	6,958	40.0	ACM	1.42 (1.13–1.77)
Grossbart et al. (14)	2009	7,216	32.0	ACM	1.32 (1.13–1.77)
Optimism as a buffer					
Kubzansky et al. (15)	2004	1,306	10.0	MI/CV death	0.44 (0.26–0.74)
Giltay et al. (16)	2004	941	9.1	CV death	0.27 (0.12–0.57)
Giltay et al. (17)	2006	554	15.0	CV death	0.45 (0.29–0.68)
Tindle et al. (18)	2009	97,253	8.0	CV death	0.76 (0.64–0.90)
Nabi et al. (19)	2010	23,216	7.0	Stroke	0.52 (0.29–0.93)
Kim et al. (20)	2011	6,044	2.0	Stroke	0.90 (0.84–0.97)†

*Risk ratios are primarily for first versus third tercile or fourth quartile. †For each unit increase in optimism.

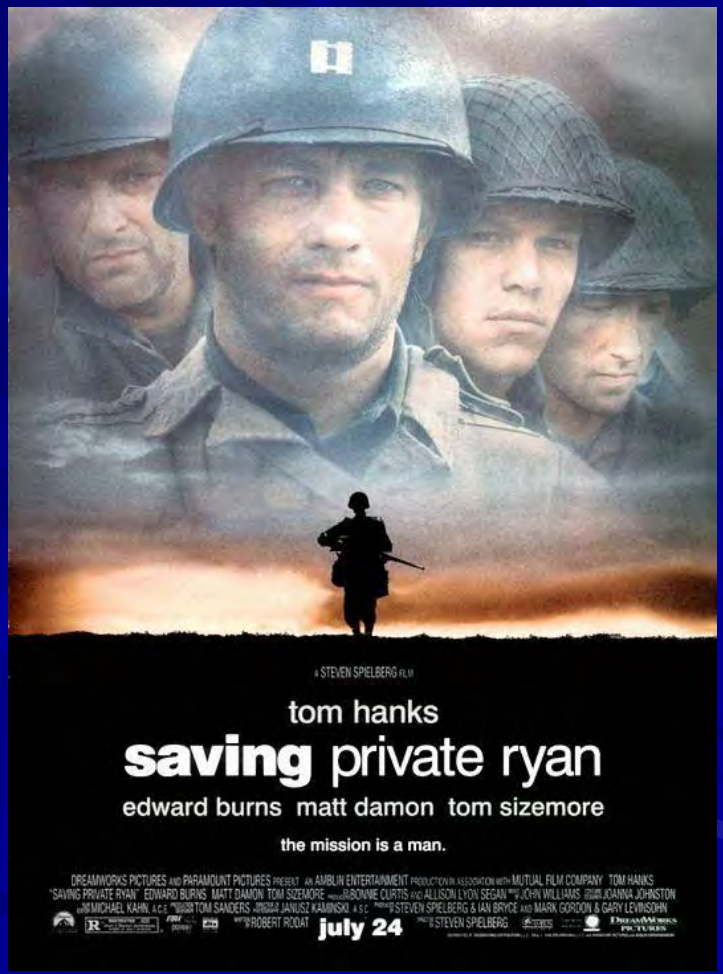
ACM = all-cause mortality; CI = confidence interval; CV = cardiovascular; RR = risk ratio; MI = myocardial infarction.

Don’t press send…



Eichstaedt J, Schwartz H, Kern M, Park G, Labarthe D, Merchant R. “Psychological Language on Twitter Precits County-Level Heart Disease Mortality.” *Psychological Science*, 2015.

Mood matters-just like attitude…



SCIENTIFIC LETTER

Impact of cinematic viewing on endothelial function

M Miller, C Mangano, Y Park, R Goel, G D Plotnick, R A Vogel

Heart 2006;**92**:261–262. doi: 10.1136/hrt.2005.061424

Figure 1 Brachial artery flow mediated vasodilatation at baseline and after a 15–30 minute movie segment causing laughter or mental stress.

Medicine & Science
IN
Sports & Exercise

The Official Journal of the American College of Sports Medicine

. . . Published ahead of Print

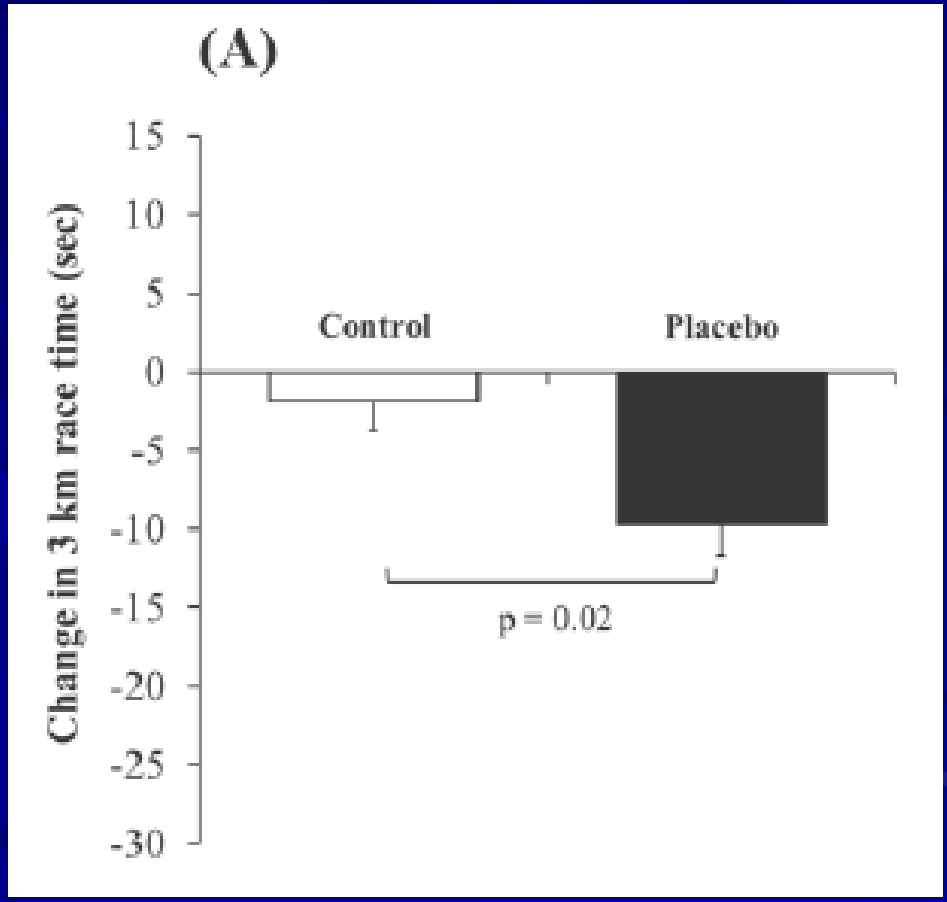
The Effects of an Injected Placebo on Endurance Running Performance

Ramzy Ross[1], Cindy M. Gray[2], and Jason M. R. Gill[1]

[1]Institute of Cardiovascular and Medical Sciences, College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, United Kingdom; [2]Institute of Health and Wellbeing, College of Social Sciences, University of Glasgow, Glasgow, United Kingdom

Placebo effect! Jedi mind tricks?

- OxyRBX placebo trial.
- Told it was a weak EPO analog.
- It was just saline.
- Self injected.



The Unburdening Effects of Forgiveness: Effects on Slant Perception and Jumping Height

Social Psychological and Personality Science
1-8

DOI: 10.1177/1948550614564222
spps.sagepub.com
SAGE

Xue Zheng[1], Ryan Fehr[2], Kenneth Tai[3], Jayanth Narayanan[4], and Michele J. Gelfand[5]

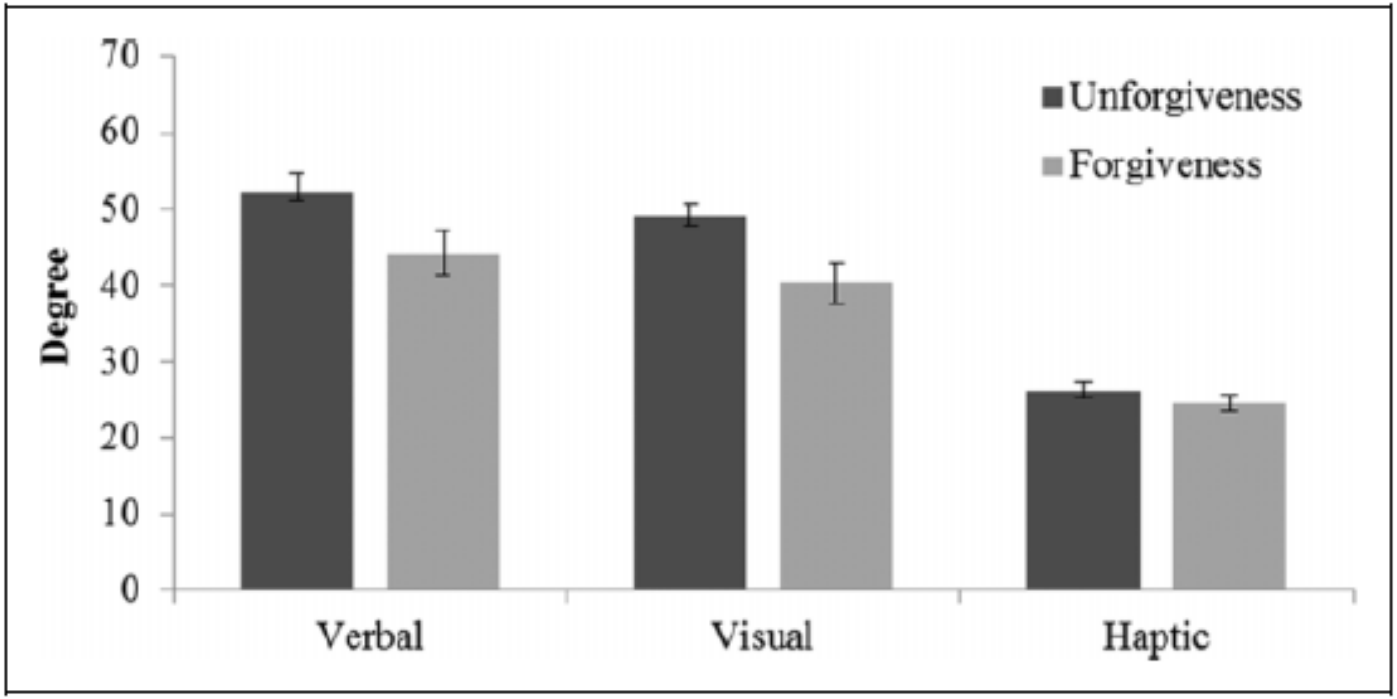


Figure 3. Mean slant estimates in the two conditions in Study 1. Error bars indicate standard errors of means.

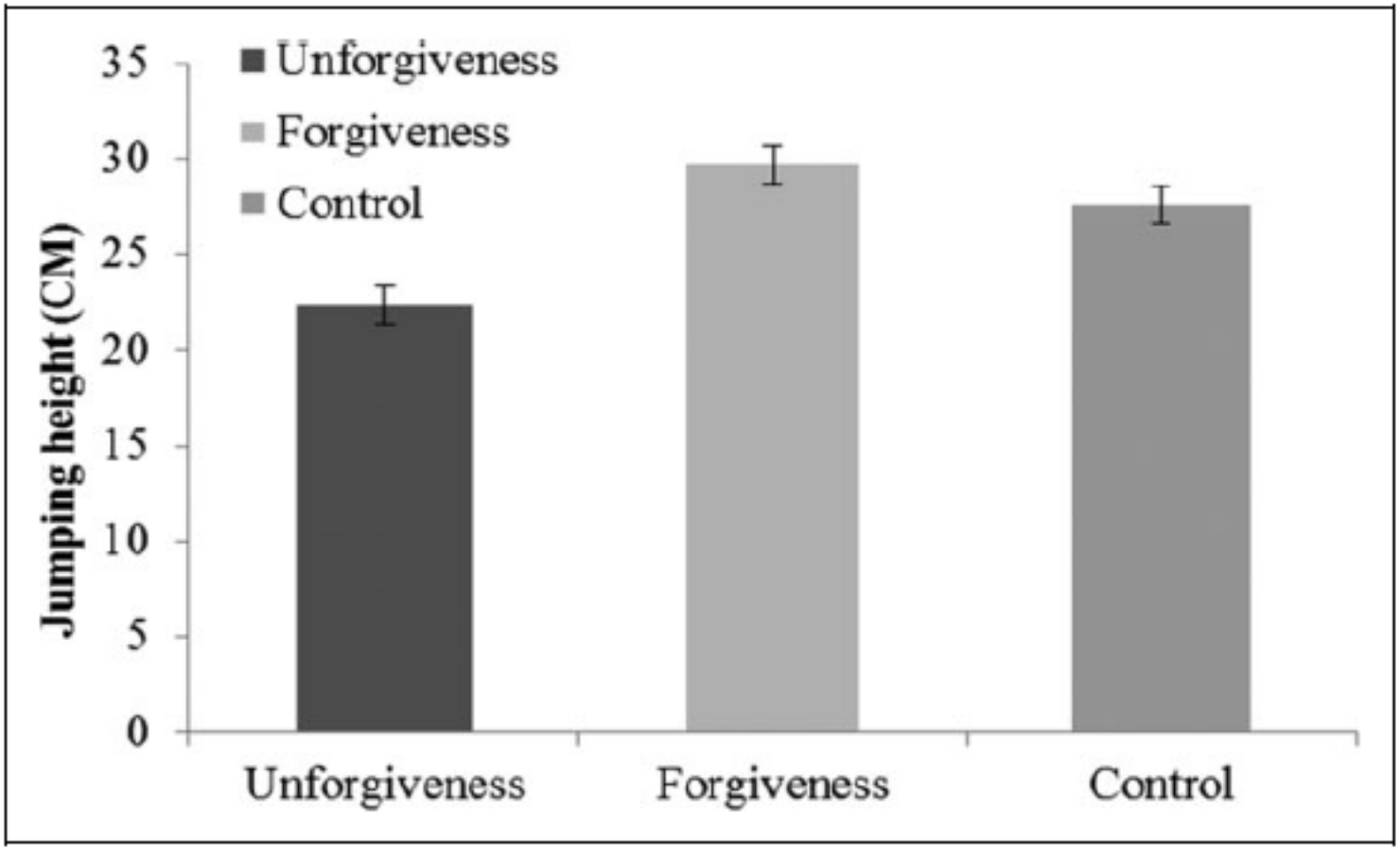


Figure 4. Mean jumping height in the three conditions in Study 2. Error bars indicate standard errors of means.

A functi ell-being

Barbara L. Fredrick
Jesusa M. G. Arev

[a]Department of Psycho of North Carolina
School of Medicine, Ch onsson Comprehensive
Cancer Center, Norman alifornia, Los Angeles,
CA 90095

Edited* by Burton H. S

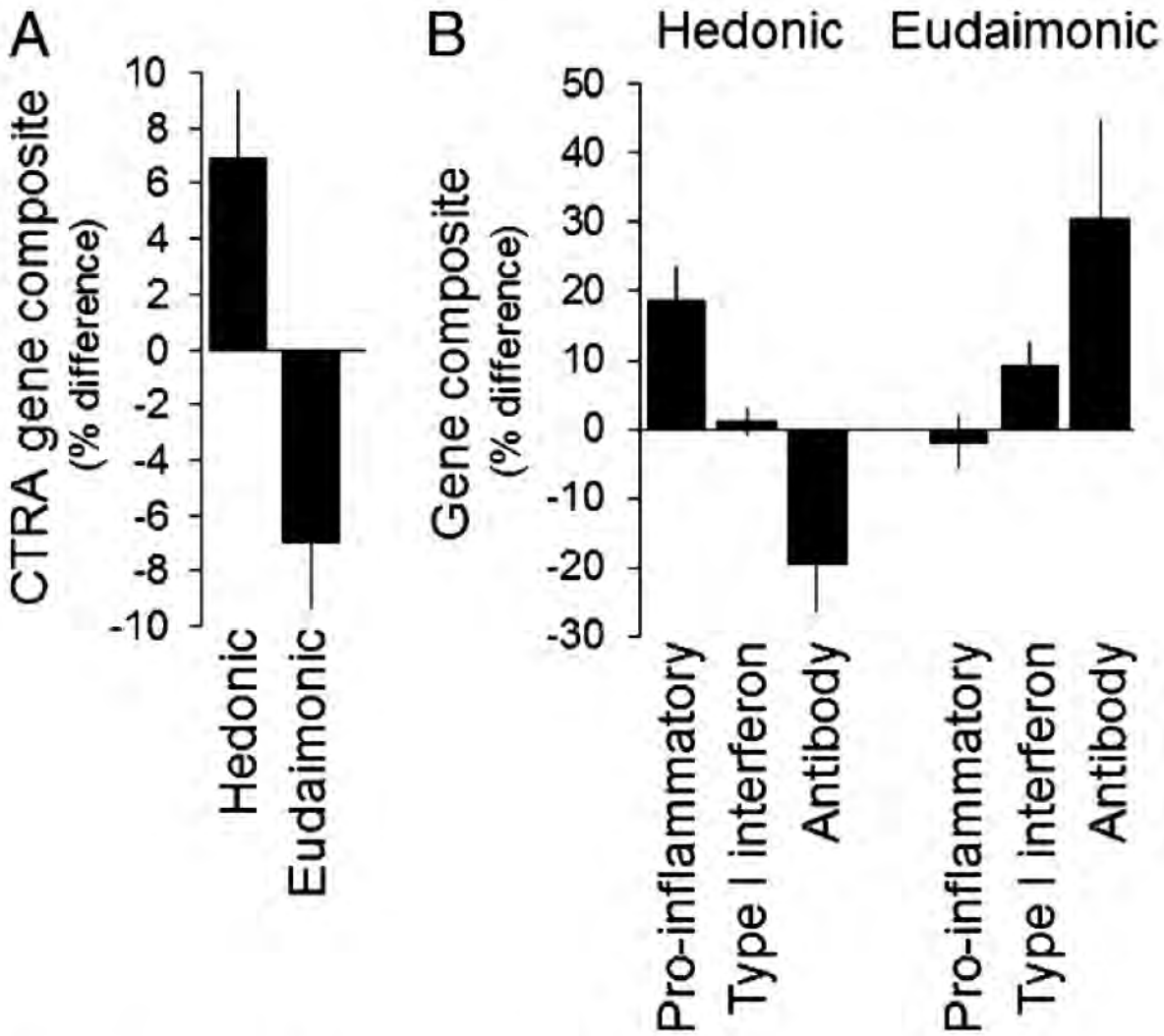


Fig. 2. Expression of the CTRA gene set. (*A*) Linear model-based estimates of mean difference (±SEM) in expression in a 53-gene CTRA contrast score in PBMCs from individuals with low levels (−2 SD relative to sample mean) vs. high levels (+2 SD) of hedonic well-being and eudaimonic well-being (each adjusting for the other and for demographic and behavioral covariates). (*B*) Differential expression of CTRA subcomponents: 19 proinflammatory genes, 31 type I IFN response genes, and three antibody synthesis genes.

Case Study: Vegans are wimps

- Winner of Ultimate Fighter 6.
- Vegan.
- Started due to his allergies.
- PETA spokesperson?

Case Study: Vegans are wimps-2

- 2 x winner of Badwater.
- 135 miles ultramarathon…
- In Death Valley!
- Ran 165 miles in 24 hours-that's 6.5 marathons!
- Vegan!

Patrik Baboumian-Vegans are NOT wimps.

- World's Strongest Man
- Carried 550 kg x 10m
- Lifted a 180 kg log
- Vegetarian since 2005
- Vegan since 2011

Contents lists available at ScienceDirect

Brain, Behavior, and Immunity

journal homepage: www.elsevier.com/locate/ybrbi

Named Series: Diet, Inflammation and the Brain

Measures of adiposity predict interleukin-6 responses to repeated psychosocial stress

Christine M. McInnis [a], Myriam V. Thoma [a], Danielle Gianferante [a], Luke Hanlin [a], Xuejie Chen [a], Juliana G. Breines [a], Suzi Hong [b], Nicolas Rohleder [a,*]

[a] Department of Psychology and Volen National Center for Complex Systems, Brandeis University, Waltham, MA, United States
[b] Department of Psychiatry, University of California San Diego, La Jolla, CA, United States

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ABSTRACT

Objective: Overweight and obese individuals, who comprise approximately two-thirds of the U.S. population, are at increased risk for developing a range of diseases. This increased risk may be due in part to maladaptive stress responses within this group, including heightened low-grade inflammation and HPA axis non-habituation. In this study we tested the relationship between adiposity, plasma interleukin-6 (IL-6) and HPA axis responses to repeated stress.

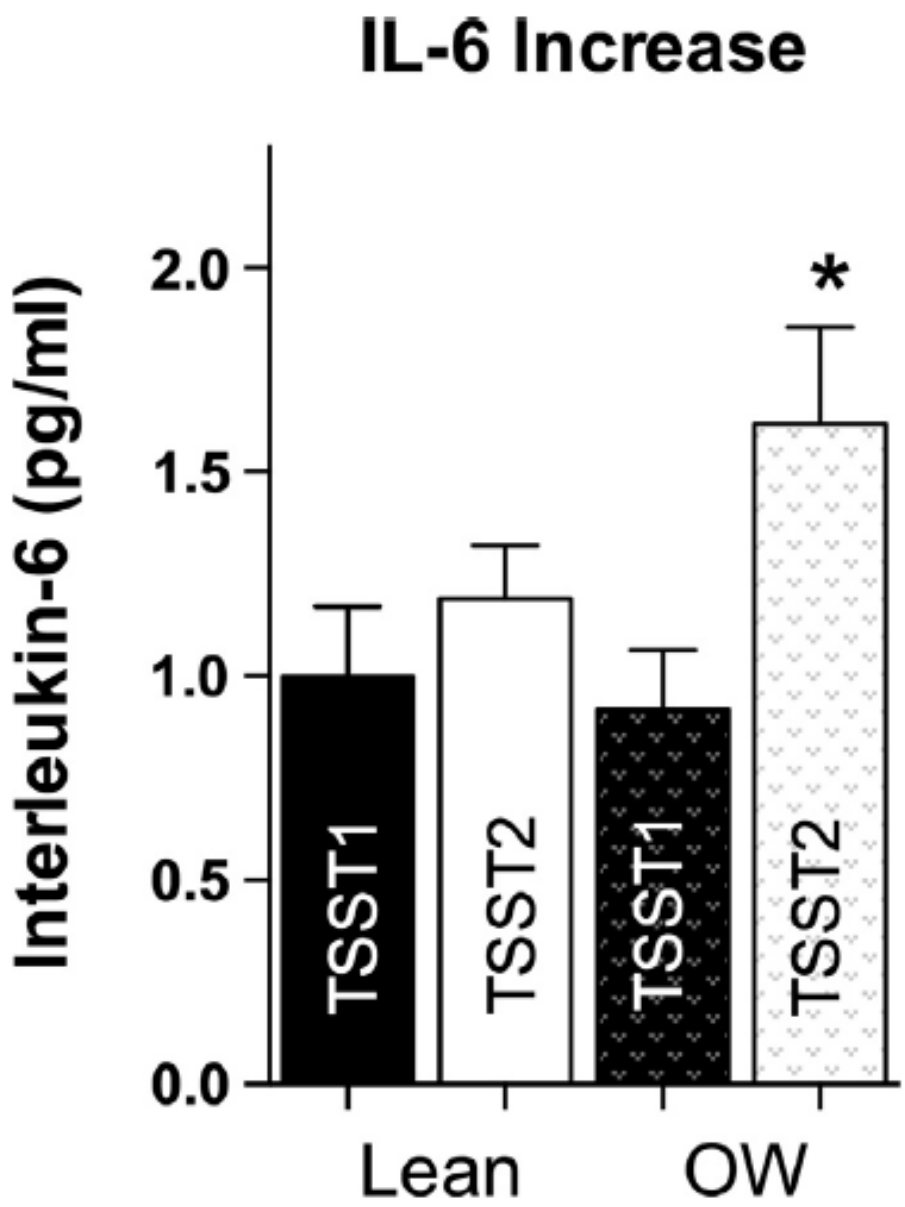


Fig. 3. No difference in IL-6 response to TSST1 and TSST2 in lean individuals, but overweight (OW) individuals had a significantly greater increase in IL-6 in response to TSST2 than TSST1 in overweight individuals.

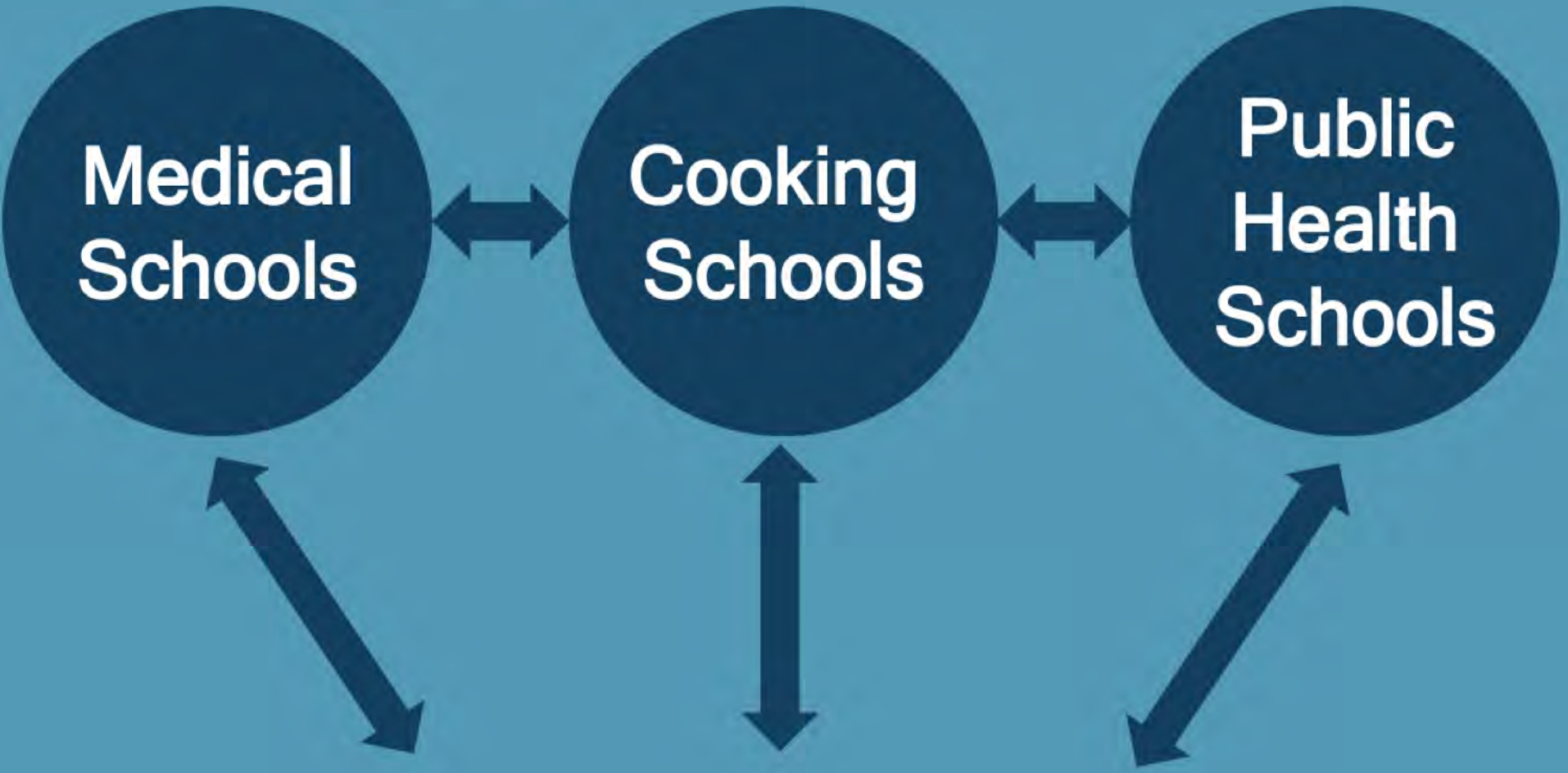
For those that hate ‘rules’…

- ‘In teaching health principles, keep before the mind the great object of reform-that it’s purpose is to secure the highest development of body and mind and soul. Show that the laws of nature, being the laws of God, *are designed for our good; that obedience to them promotes happiness in this life*, and aids in the preparation for the life to come.’

  Ministry of Healing page 146, EG. White

- No one likes rules or limitations, but they are in place to actually make our life better, easier.
- Is it better to spend a lot and go into debt early or be rich later?
- Is it better to eat whatever you want now and have a heart attack or avoid bad foods?

Imagine



Priorities-set them. 1st things 1st!

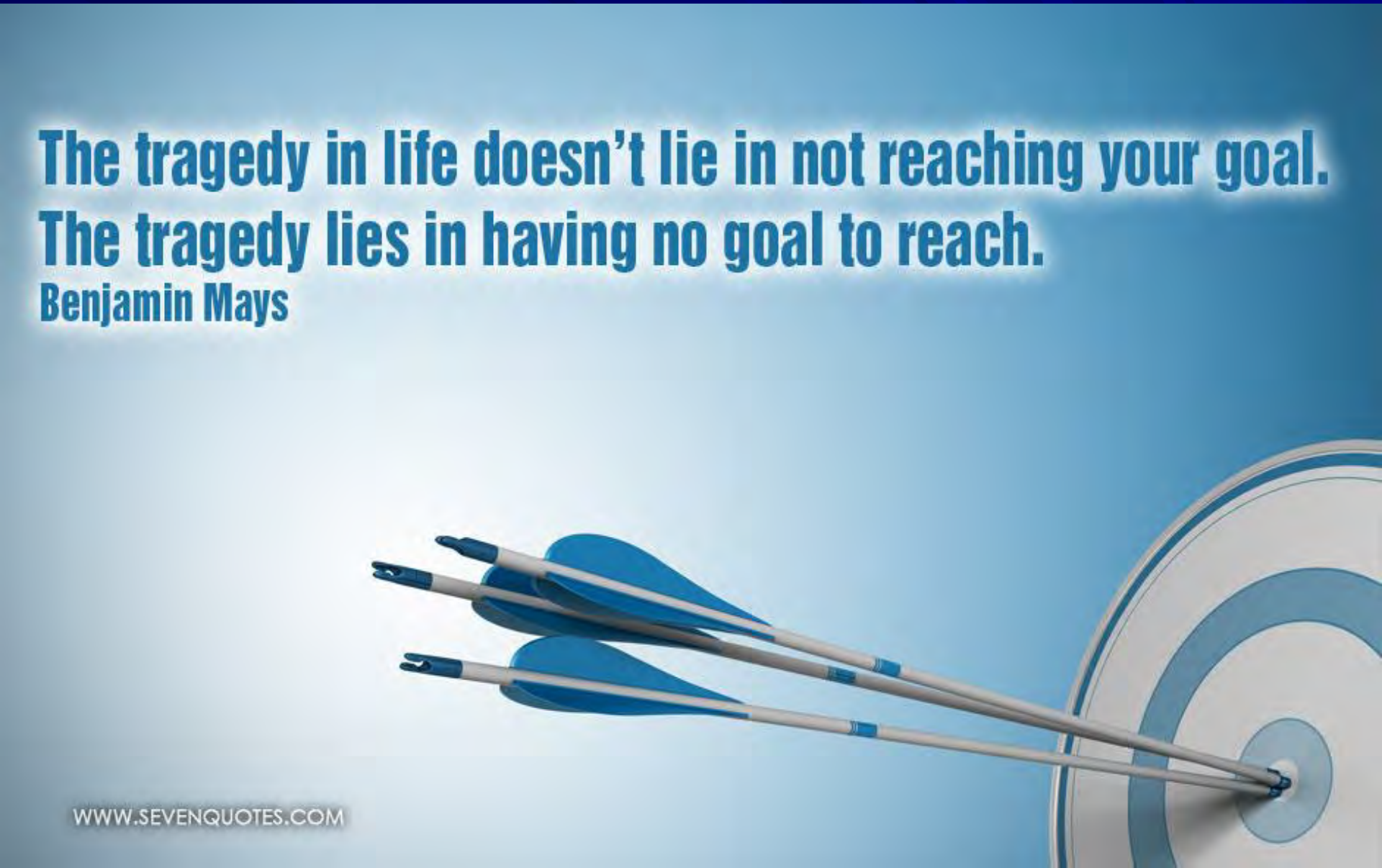
Rationalization…

- “next to breathing, the ability to rationalize is the most important thing we do. Otherwise how could we live with ourselves?”

MS Park

Is the enemy of Accountability!

How to get 2 goal



WORD !

Everything is permissible for me”—but not everything is beneficial.

Everything is permissible for me”—*but I will not be mastered by anything.*

1 Cor. 6:12.

Food is FUEL!
What are you going to put into your tank?

Change your habits, change your life!

- ***Winning is a habit.***
  Watch your thoughts, they become your beliefs.
  Watch your beliefs, they become your words.
  Watch your words, they become your actions.
  Watch your actions, they become your habits.
  Watch your habits, they become your character.
- "Gentlemen, we will chase perfection, and we will chase it relentlessly, *knowing all the while we can never attain it*. But along the way, we shall catch excellence."
- ***We can change.***

YOU shape YOUR destiny with every choice YOU make…

Half of women…

- In the 1011 pt Women's Health Alliance study about ½ the women admitted that they cancel or postphone doctor visits in order to give themselves more time to LOSE WEIGHT!
- ACC 2016.

Association of skirt size and postmenopausal breast cancer risk

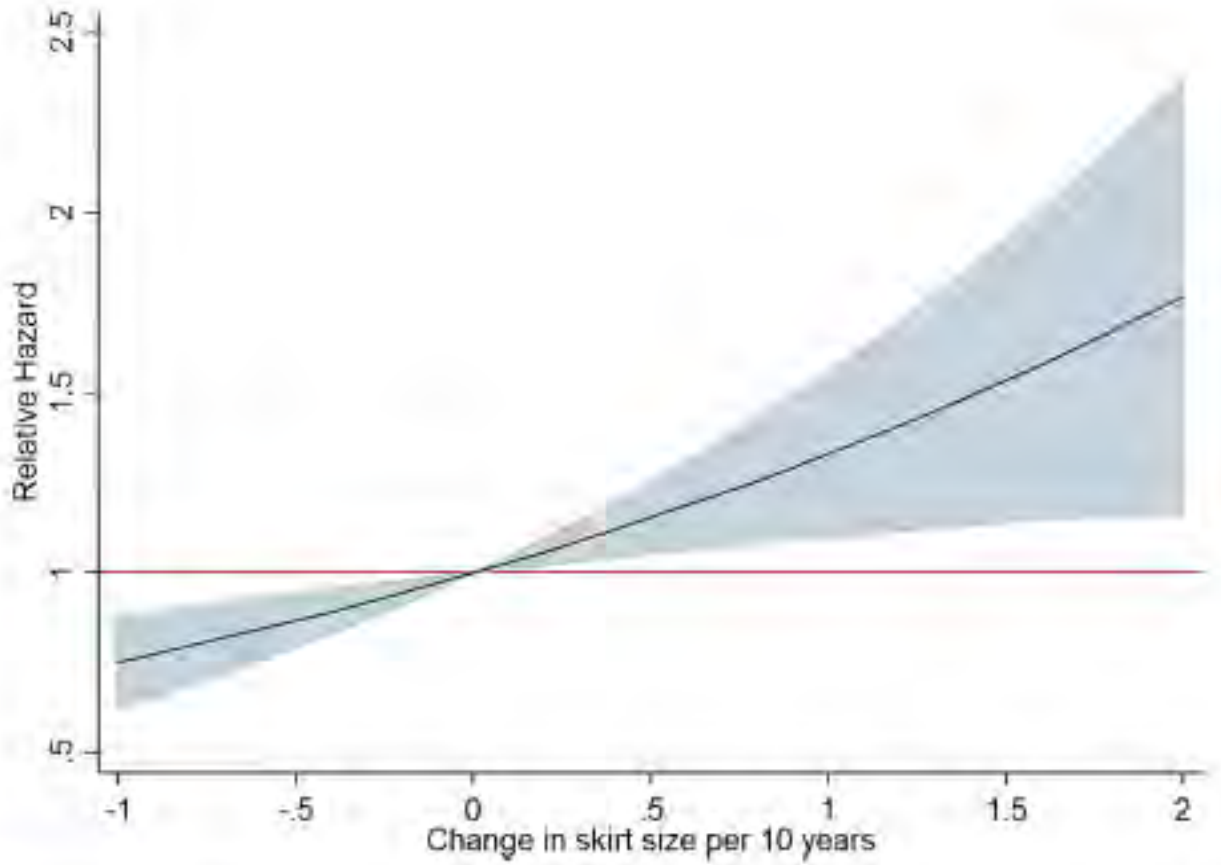


Figure 2 Distribution for skirt size (SS) at 20 s, skirt size at current entry-study, BMI at recruitment and change of skirt size (CSS) every 10 years.

Fourkala E-O, *et al. BMJ Open* 2014;**4**:e005400. doi:10.1136/bmjopen-2014-005400

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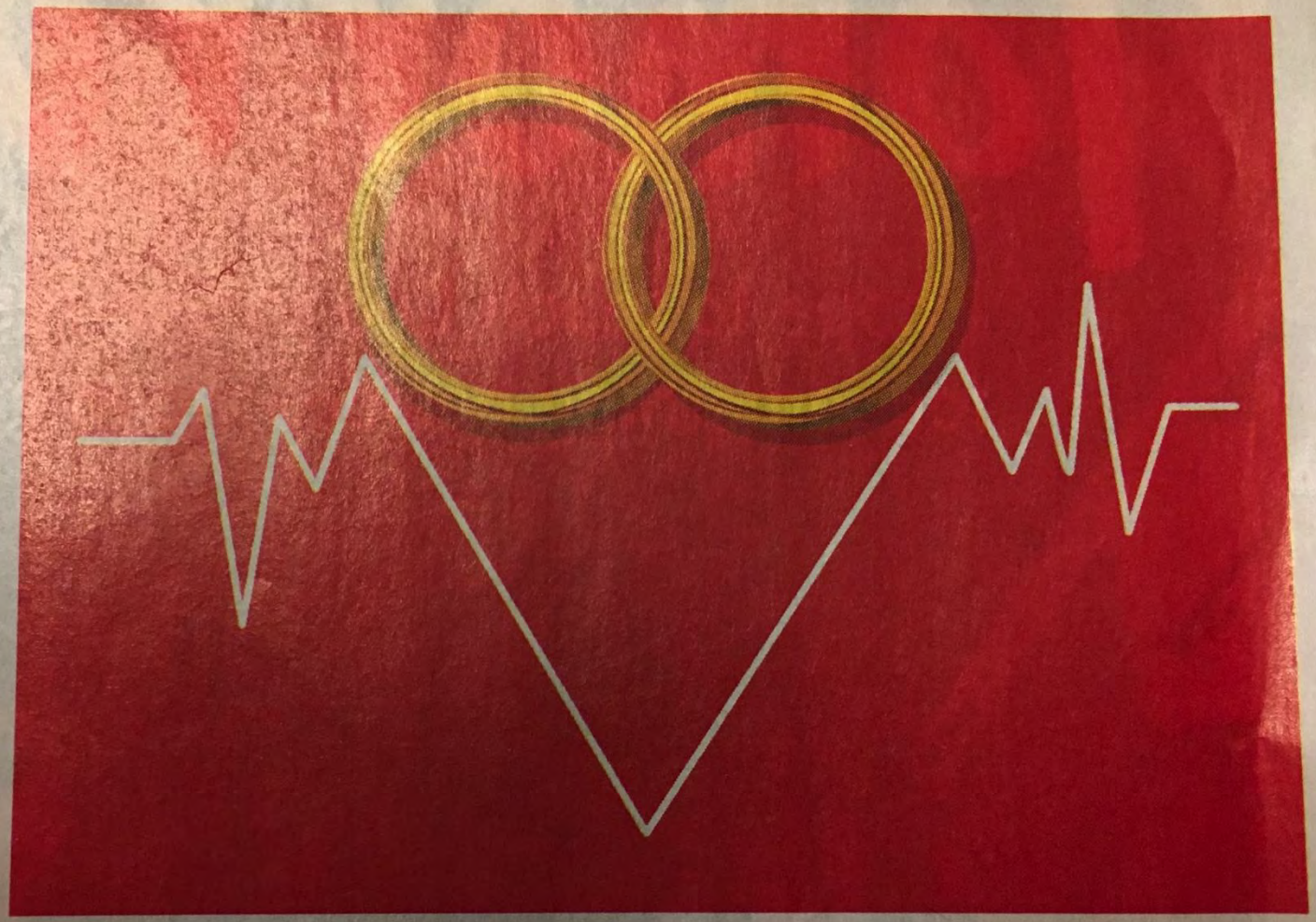


200%
Increase in likelihood that a woman divorced twice or more will have a heart attack, compared with her stably married peers

8.5%
Increase in risk that spouses who say more negative than positive things to each other will have a heart event

+2.3%
Difference in average BMI of married vs. unmarried European men of the same age

The “EASY” way?

- “Just give me a pill doc”
- “Can’t you just put one of those stents in me?”
- “I don’t want to change. That’s too HARD!”

The “HARD” way?

- Eat a little less & a little better.
- Move around more.
- Sleep more.
- Relax!

Which way do you choose?

vs

“Hard”

“Easy”

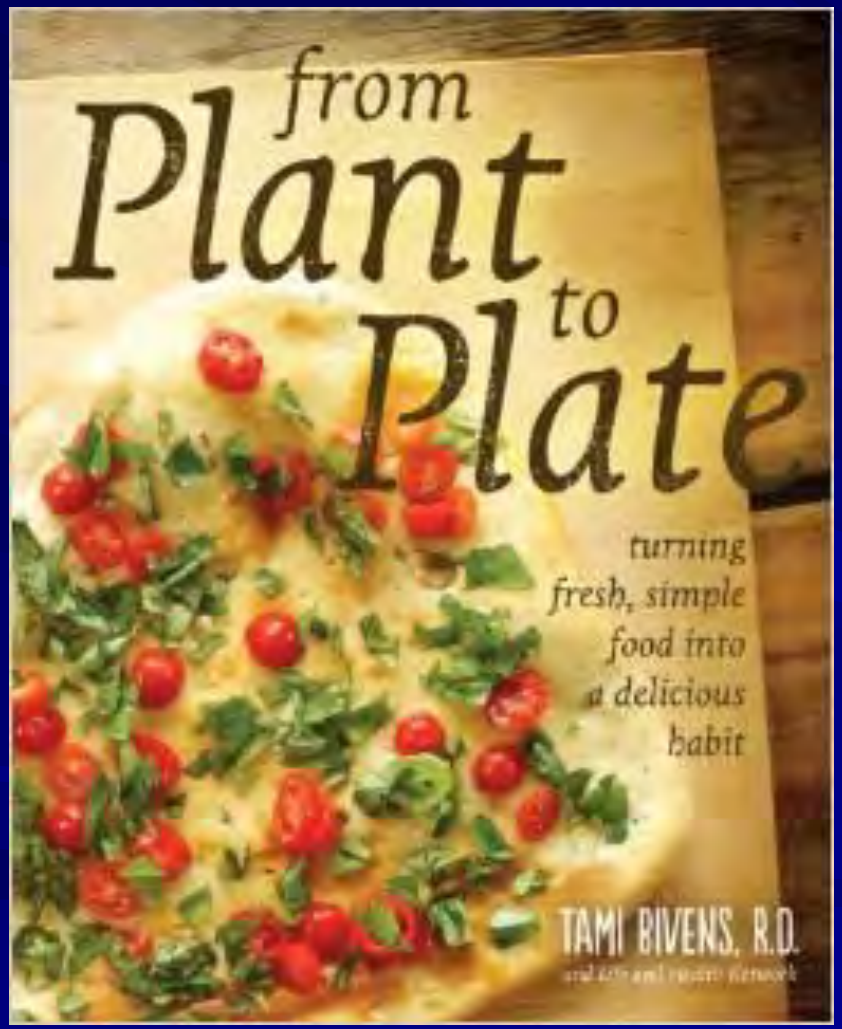
My personal choice!

- Lack of knowledge.
- Lack of skill.
- Lack of time.
- Fear of wasting time.
- Fear of wasting money.
- Calorie density?

Only in America…

could you make cooking into a spectator sport!

Cookbooks…video cookbooks!



- www.lifeandhealth.org

SCRATCH FOOD

MEALS FROM scratch

cal = calories

ww = weight watchers

cal 450 ww 12

Homestyle Meat Lasagna G D E

with Fresh Green Beans

Layers of pasta held together with fluffy Ricotta and gooey Provolone.Topped with our own Roasted Tomato Marinara. Served with Fresh, lightly seasoned Green Beans.

cal 880 ww 23

Mom's Mac n' Cheese G D

with Cinnamon Apples

When simply nothing else will do! The owner's Mother used to make this cheesy classic for all her kids birthdays, paired with slow-cooked, "candied" Apples.

cal 830 ww 18

Old World Chicken Cake G E soy

with Succotash

Chicken Breast bound together with bread crumbs, eggs and seasoning. Served with our Special Succotash of Corn, White Beans, Sweet Potatoes and just a bit of braised Kale.

cal 410 ww 14

Orange Chicken G D E soy

with Grains & Rice Blend and Fresh Broccoli

The subtle sweetness and orange fragrance draws you in and the lightly battered Chicken grabs you . Served with our House Grains and Rice Blend and Fresh Broccoli.

cal 760 ww 19

Homestyle Meatloaf G E soy D

with Mac n' Cheese and Cinnamon Dulce Carrots

Meatloaf that Mom would approve of- with a hint of onion and a traditional brown sugar glaze. We rounded out this dish with our own Mac n' Cheese and Signature Glazed Carrots.

cal 610 ww 16

Chicken Parmesan G D E

with Pasta and Fresh Green Beans

Lightly breaded all natural Chicken Breast served with a healthy scoop of our own Roasted Tomato Marinara. Served over Curly Cavatappi Pasta and lightly seasoned Fresh Green Beans.

cal 340 ww 8

Black Cherri Teriyaki Chicken G soy

with Fresh Broccoli and House Grains & Rice

A unique combination of sweet Black Cherries and savory Soy Sauce drizzled over carved Chicken Breast served with Fresh Broccoli and our our House Grains and Rice Blend.

kids

smaller portions - basic flavors

cal 230 ww

Kids Meat Lasagna G D E

with Fresh Green Beans

Layers of pasta held together with fluffy Ricotta and gooey Provolone. Topped with Kid Friendly Marinara. Served with simply prepared Green Beans.

cal 420 ww

Mom's Mac n' Cheese G D

with Cinnamon Apples

When simply nothing else will do! The owner's Mother used to make this cheesy classic for all her kids birthdays, paired with slow-cooked, "candied" Apples.

cal 320 ww

Homestyle Meatloaf G E soy

with Mac n' Cheese and Carrots

Meatloaf that Mom would approve of- with a traditional brown sugar glaze. We rounded out this dish with our own Mac n' Cheese and simply prepared Carrots.

cal 300 ww

Chicken Parmesan G D E

with Pasta and Green Beans

Lightly breaded all natural Chicken Breast served with our kid friendly Marinara. Served over Curly Cavatappi Pasta with simply prepared Green Beans.

MEALS FROM scratch

cal 632 ww 17

cal = calories

ww = weight watch

healthy lifestyle

lower calorie . diabetic friendly . heart healthy

cal 420 ww 10

Southwestern Chicken Bowl

with House Grains & Rice and Black Bean Mashup

We use Hand Carved, All Natural Chicken Breast. The accompanying Black Bean Mashup consits ofRoasted Corn, Black Beans and Zucchini.

cal 460 ww 11

Roma Chicken Bowl

Whole Grains Risotto & Italian Green Bean Mashup

We combined all of our most nutritous and delicious vegetable and grain combinations to create a perfect meal. We paired it with a nutrient dense blend that includes Green Beans, Navy Beans and Red Peppers.

cal 380 ww 9

Asian Chicken Bowl G D soy

with House Grains & Rice and Asian East Mashup

We use Hand Carved, All Natural Chicken Breast. Served with our House Grains and Rice Blend, and Green Bea Kale and Shiitake Mushrooms in a Miso-Soy Marinade.

cal 370 ww 10

Sesame Flat Iron Steak soy

with Broccoli & Kale Slaw

This inspired dish is a simple, clean presentation Carved, Seasoned Flat Iron Steak over a Ginger and Sesame Slaw of Broccoli, Kale and Cabbage.

cal 80 ww 7

Steak and Green Bean Stew

To meet the classic Southern Tastes of our clientele, we re-enginnered the Green Bean Stew of our youth. We have introduced lean Steak to the mix and replaced tradtional Russet Potatoes with seasoned Sweet Potatoes. Classic Comfort Food !

cal 240 ww 6

Chicken Cabbage Roll E

Scratch Foods has taken the classic Cabbage Roll and cle The soft Cabbage exterior paired with a naturally rich Ton European style sauce enhances the savory Chicken filling

cal 50 ww 5

Carved Chicken and Roasted Vegetables

Simple and Delicious. Tender, all Natural Chicken Breast served with perfectly Roasted Zucchini, Cauliflower, Asparagus and Red Pepper. Seasoned with Fresh Garlic

cal 290 ww 5

Chicken Curry with Vegetables S

served with House Grains and Rice

This Inspired Dish will satisfy your jones for Indian Food, still keep things healthy. All Natural Chicken with classic Garam Masala spice tossed with Peas, Cauliflower and Sw

vegetarian

contains no meat

Spaghetti Squash with Marinara

with Tuscan Vegetables

The natural sweetness of Spaghetti Squash pairs perfectly with the sweetness and acidity of Scratch's fabulous marinara. With the addition of Sweet Potatoes, Kale and Portabellas. This one is clean comfort food !

cal 230 ww 6

Tofu and Broccoli Pad Kapow soy

served with House Grains & Rice

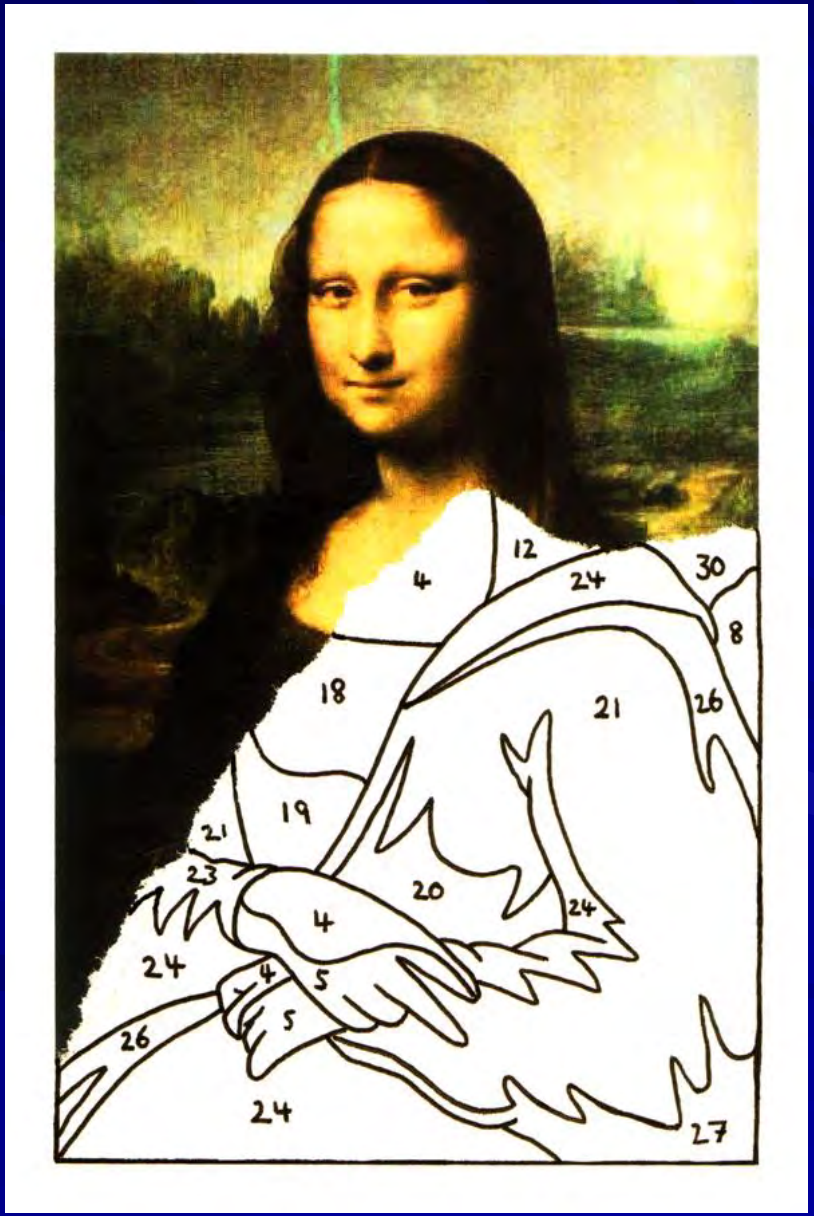
We season and slow roast the tofu to achieve a nice firm Then we toss it with a slightly sweet Asian brown sauce f and broccoli to achieve this classic Thai dish.

American Heart Association®

My Heart. My Life.®

American Cancer Society®

By the numbers…



Cooking by numbers…

TIME march 21,2016

Plated and Blue Apron

February 9-12, 2017 • Napa Valley, California

Healthy Kitchens, Healthy Lives®

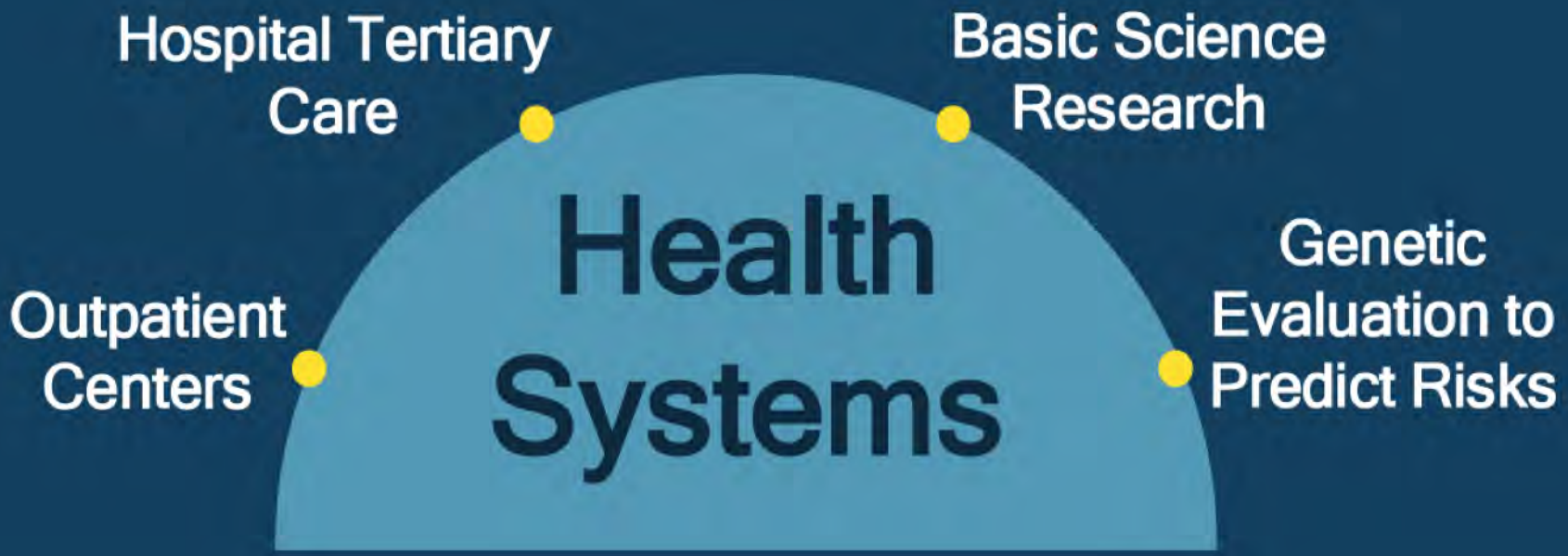
The Culinary Institute of America | HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH Department of Nutrition

Caring for Our Patients and Ourselves

REGISTER
FOR THE CONFERENCE

A Leadership Conference Bridging Nutrition Science, Healthcare, and the Culinary Arts

Slice Shine Design & Development



Adapted from Eisenberg, D Burgess, J
Academic Med 2015

Hospital Tertiary Care

Basic Science Research

Outpatient Centers

Genetic Evaluation to Predict Risks

Exercise Therapy Centers

Mindfulness Centers
Health Coaching
Psychotherapy/Pharm

Teaching Kitchens and New Food Business Innovations

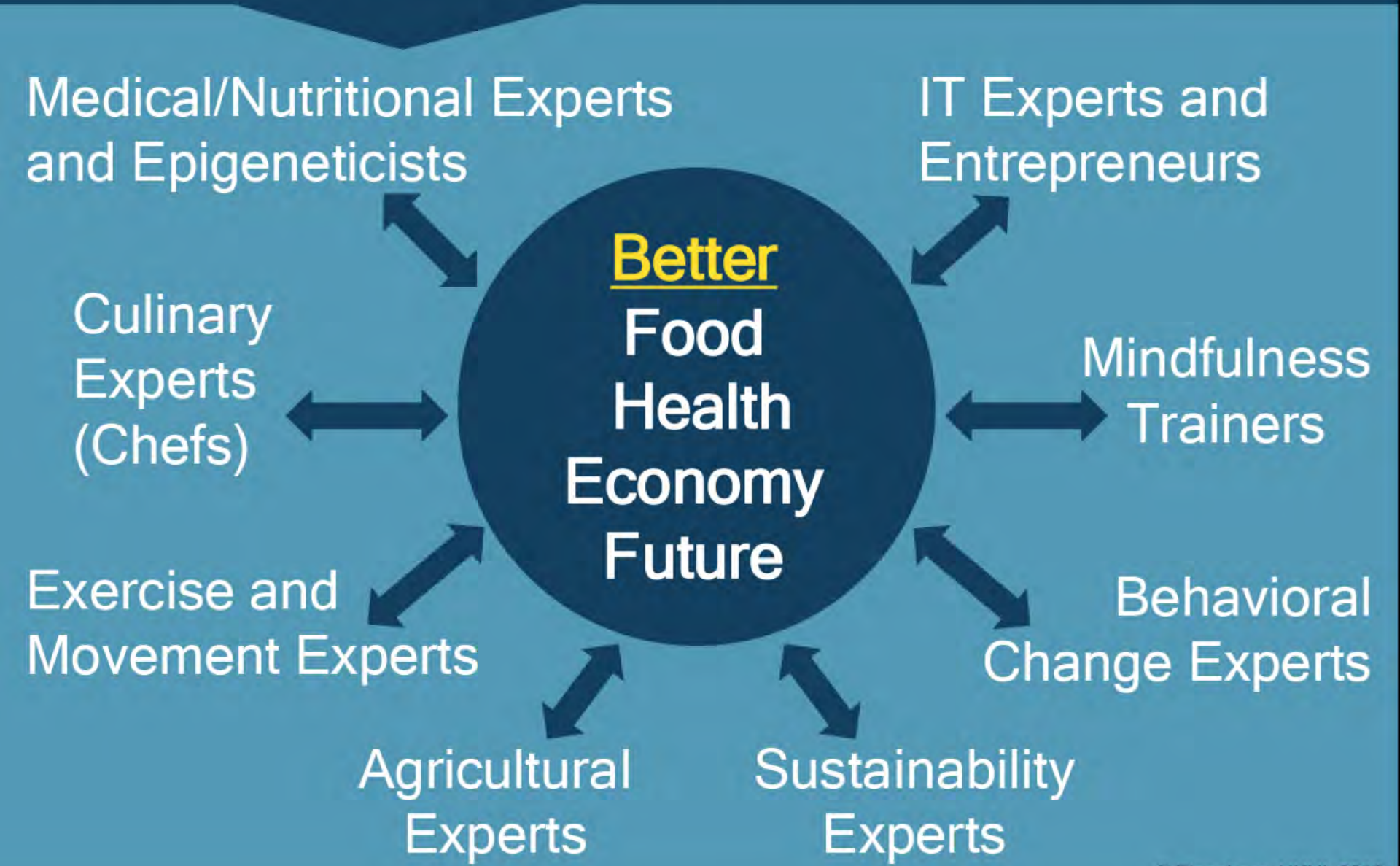
Adapted from Eisenberg, D Burgess, J Academic Med 2015

Sage Advice

"Identify experts from disciplines different from your own, with whom you do not share a common language, but with whom you share a common question. Join them to build a bridge. From this bridge you will make your greatest professional contributions and experience some of your greatest personal satisfaction."

Howard Hiatt, MD, Former Dean,
Harvard School of Public Health

Who Will Build this Futuristic "Bridge"?

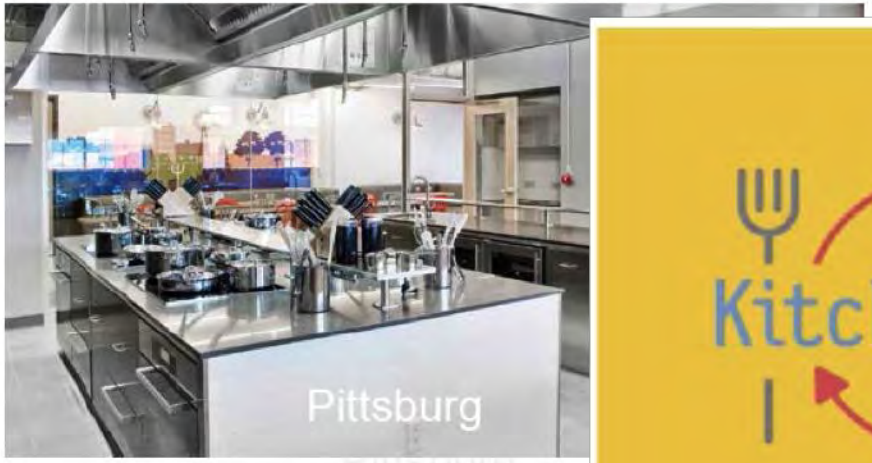


Solution? Let's Google it…

Michelle Hatzis, PhD
Google Food: Global Health & Wellness

Liv Wu
Google Food: Teaching Kitchen

Google's Food program fuels Google's sustainable high performance

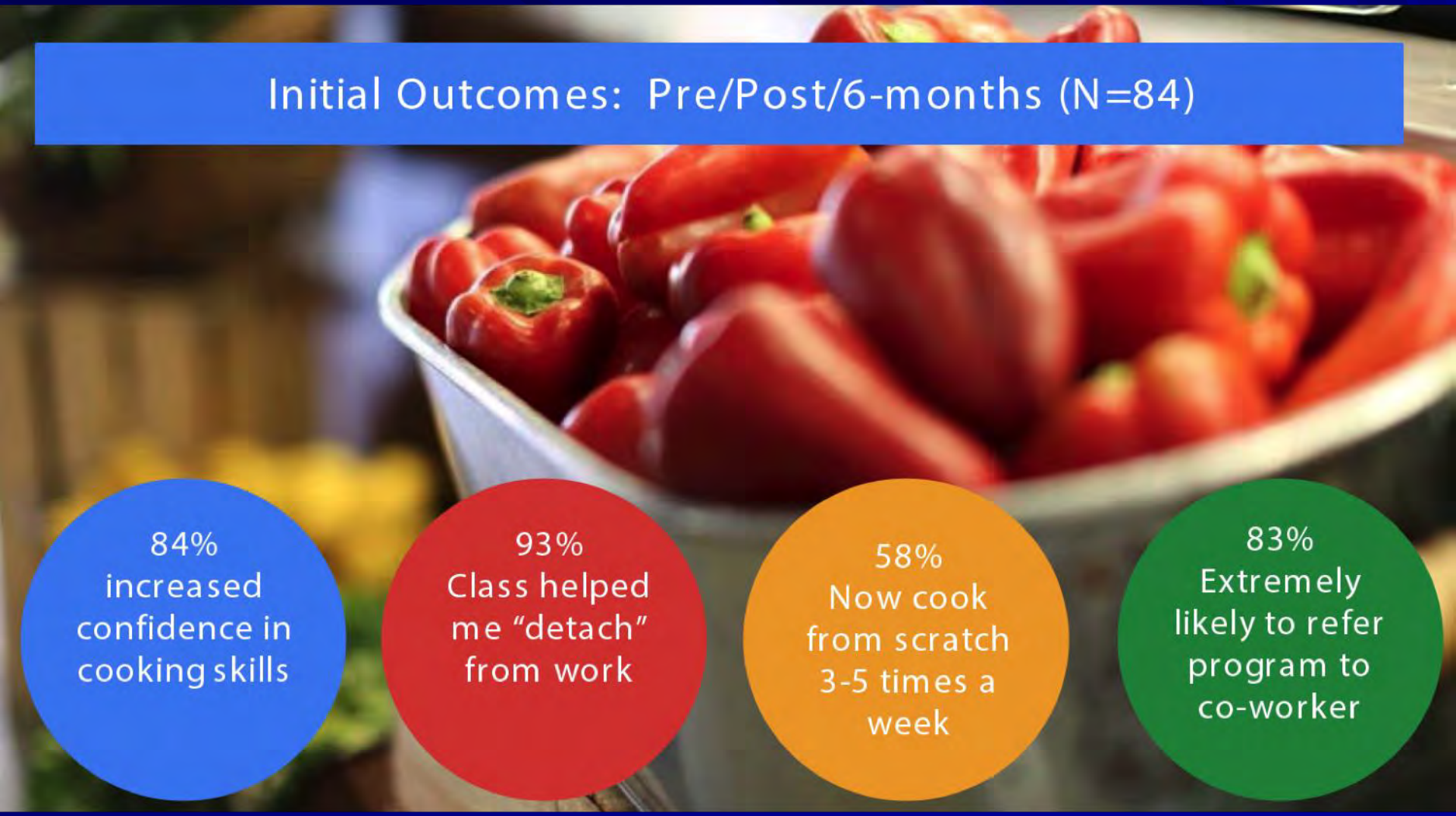


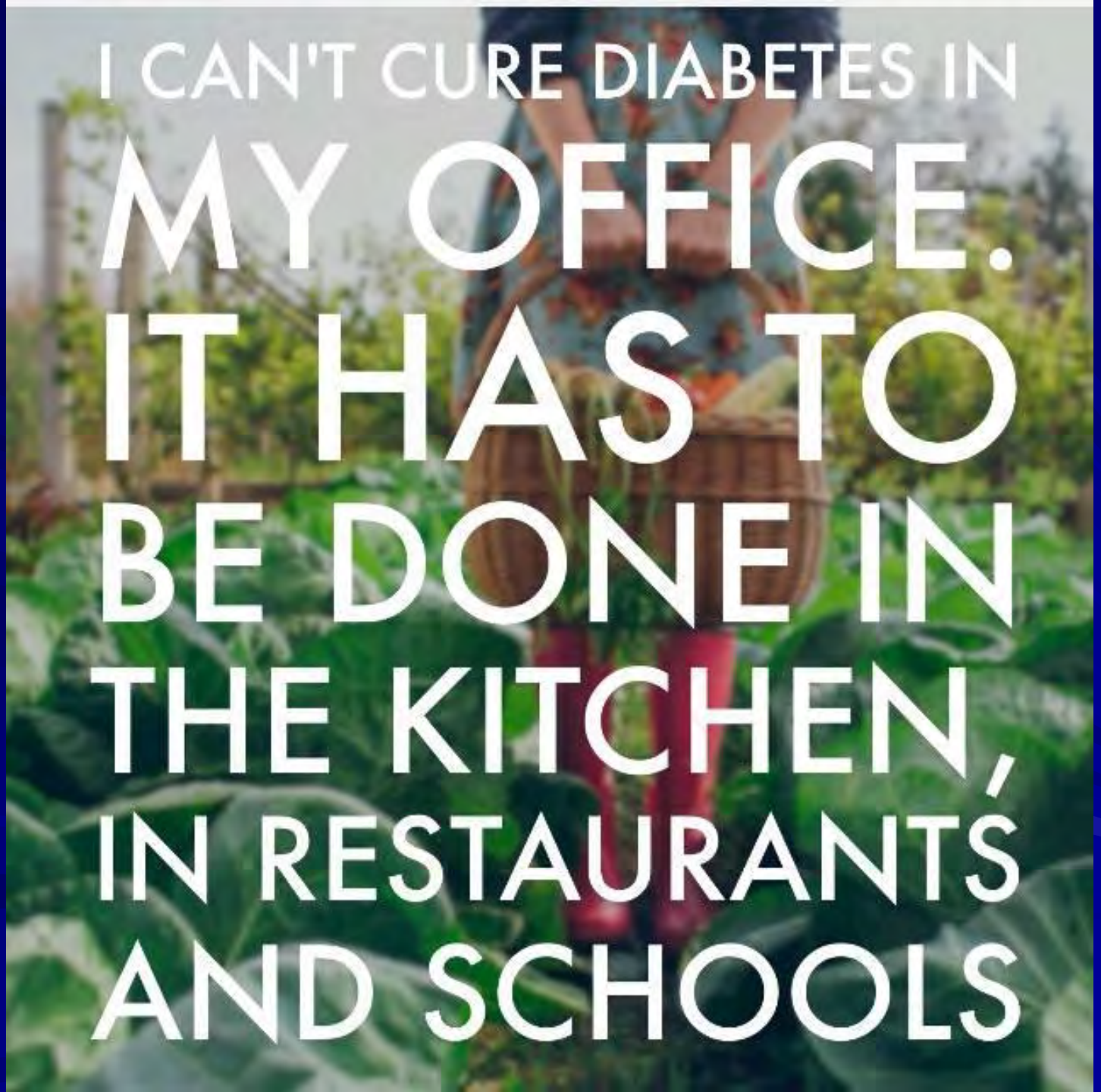
KitchenSync

THE DOWNLOAD ON FOOD

Code for Cooks

Initial Outcomes: Pre/Post/6-months (N=84)




I CAN'T CURE DIABETES IN
MY OFFICE.
IT HAS TO
BE DONE IN
THE KITCHEN,
IN RESTAURANTS
AND SCHOOLS

"Eating healthy costs too much!"

Open Access Research

BMJ Open

Do healthier foods and diet patterns cost more than less healthy options? A systematic review and meta-analysis

Mayuree Rao,[1,2] Ashkan Afshin,[2] Gitanjali Singh,[3] Dariush Mozaffarian[2,3,4]

Costs an extra $550 per person per year (so $2200 a year for a family of four).

This works out to only $1.50 per person per day!

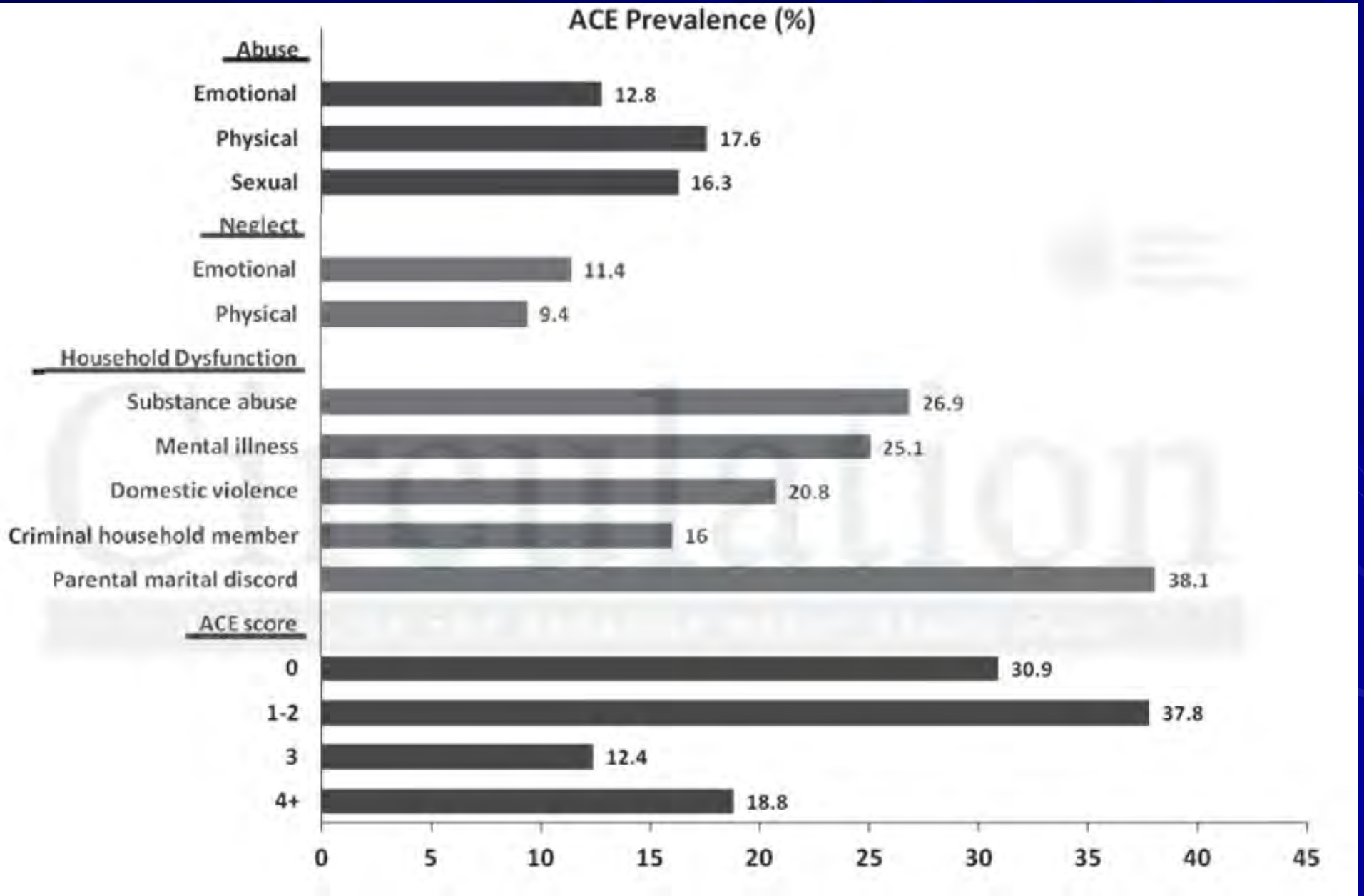
Pe[illegible]ma

ACE

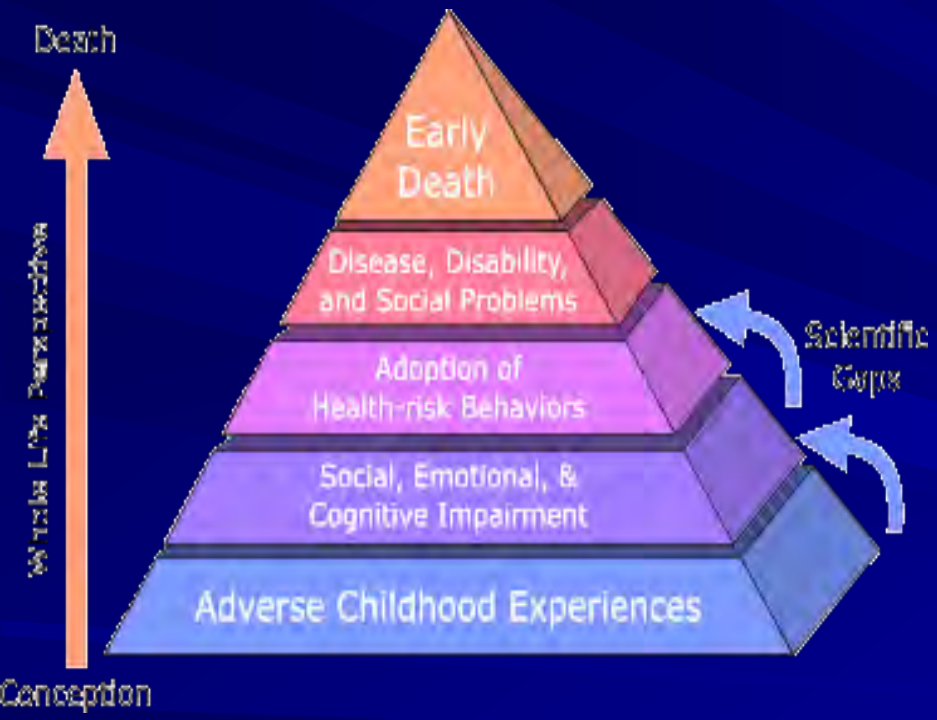
- NOT angiotensin converting enzyme.
- Adverse Childhood Experiences

- "Adverse childhood experiences are the single greatest unaddressed public health threat facing our nation today."
  - Dr. Robert Block, the former President of the American Academy of Pediatrics

See “it” for real...



ACE



- Large 17k study from Kaiser and CDC.
- If ACE>4 chance of COPD 2.5x, hepatitis 2.5x, suicide 12x.
- ACE>7 3x risk of lung CA and 3.5x risk of CAD.
- http://acestudy.org/

Sugar is addictive!

The ‘Bitter’ Truth…

The ‘Bitter’ Truth…

SUGAR

ONE DAY
11.9 teaspoons

ONE WEEK
1.7 cups

ONE MONTH
7.5 cups

ONE YEAR
45.3 pounds

LIFETIME
3,550 pounds

HIGH-FRUCTOSE CORN SYRUP

ONE DAY
1.4 ounces

ONE WEEK
9.8 ounces

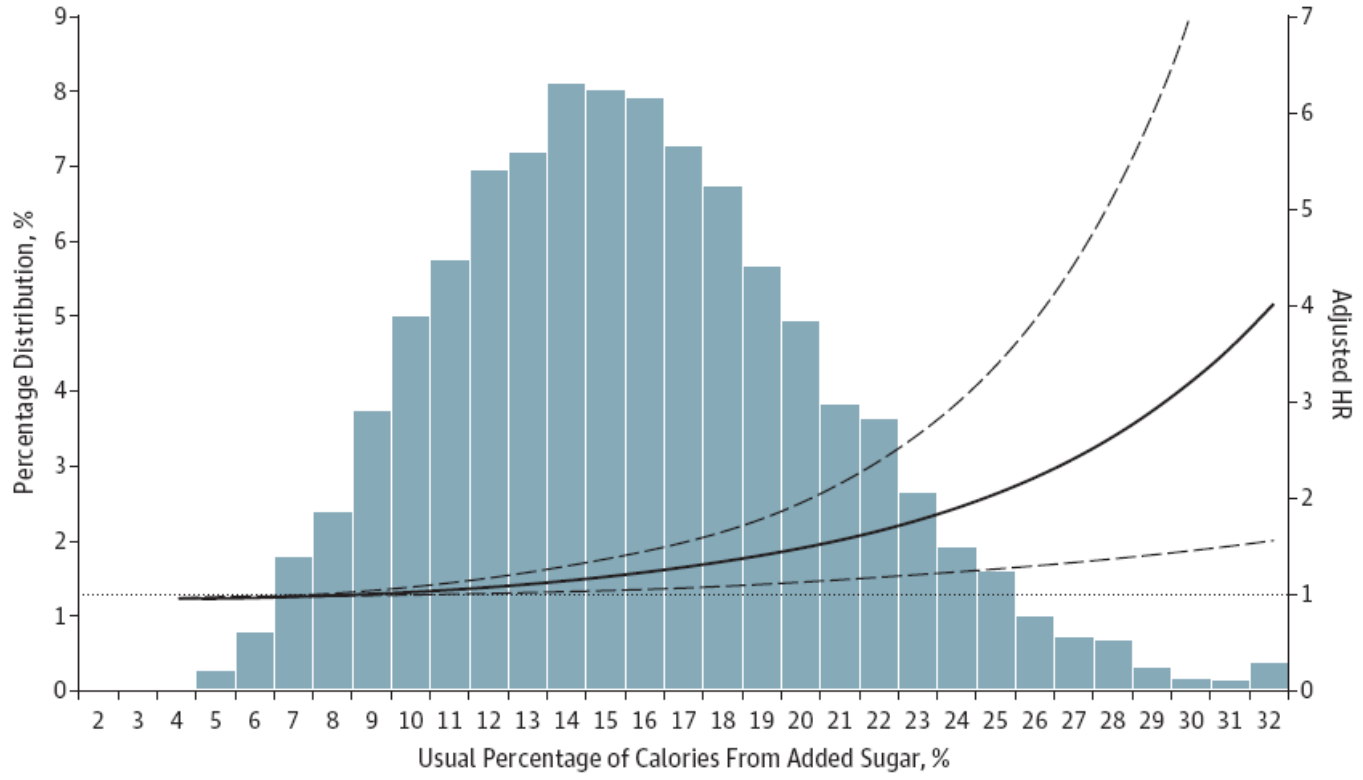
ONE MONTH
5.3 cups

ONE YEAR
4 gallons

LIFETIME
313 gallons

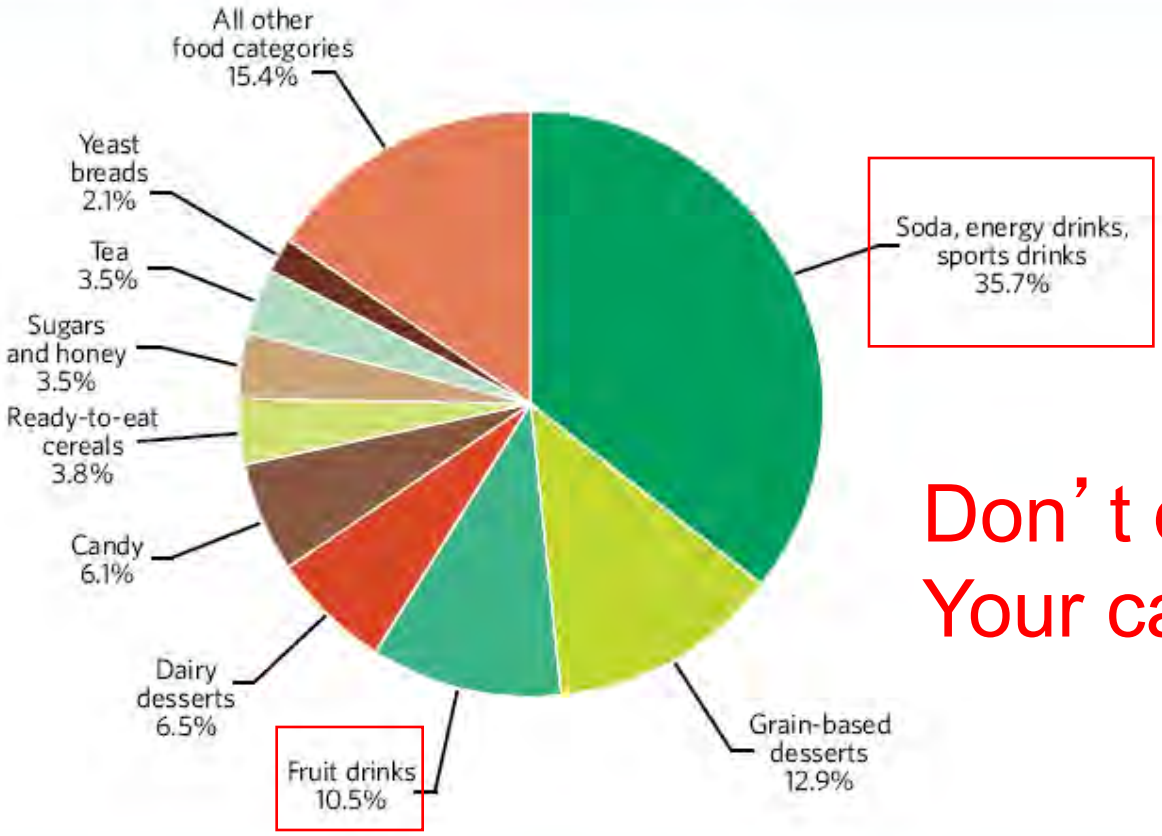
Mountain of sugar…

Figure 1. Adjusted Hazard Ratio (HR) of the Usual Percentage of Calories From Added Sugar for Cardiovascular Disease Mortality Among US Adults 20 Years or Older: National Health and Nutrition Examination Survey Linked Mortality Files, 1988-2006



Histogram of the distribution of usual percentage of calories from added sugar in the population. Lines show the adjusted HRs from Cox models. Midvalue of quintile 1 (7.4%) was the reference standard. The model was adjusted for age, sex, race/ethnicity, educational attainment, smoking status, alcohol consumption, physical activity level, family history of cardiovascular disease, antihypertensive medication use, Healthy Eating Index score, body mass index, systolic blood pressure, total serum cholesterol, and total calories. Solid line indicates point estimates; dashed lines indicate 95% CIs.

FIGURE 3-6. Sources of Added Sugars in the Diets of the U.S. Population Ages 2 Years and Older, NHANES 2005–2006[a]

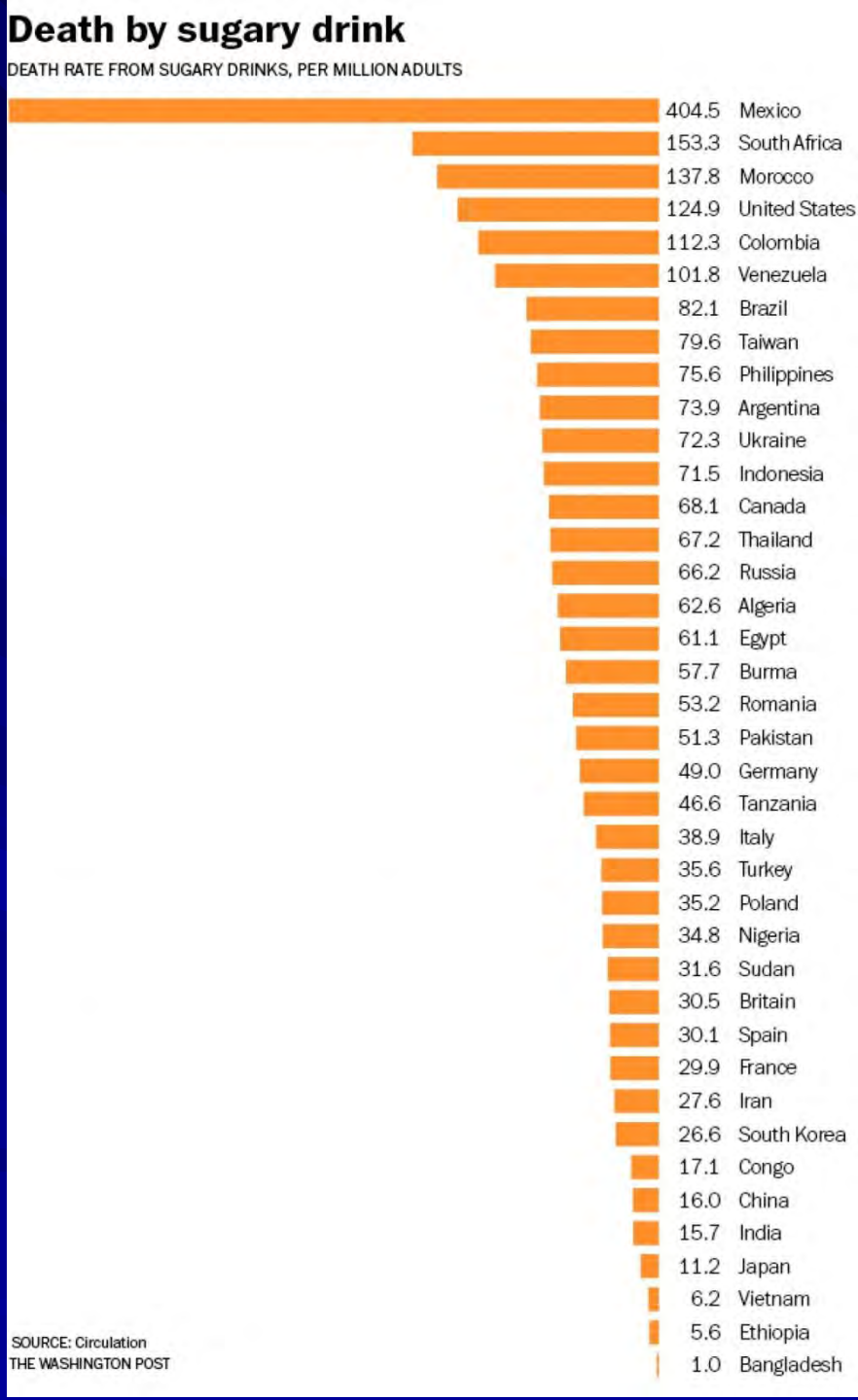


Don't drink
Your calories !

a. Data are drawn from analyses of usual dietary intake conducted by the National Cancer Institute. Foods and beverages consumed were divided into 97 categories and ranked according to added sugars contribution to the diet. "All other food categories" represents food categories that each contributes less than 2% of the total added sugar intake.

Source: National Cancer Institute. Sources of added sugars in the diets of the U.S. population ages 2 years and older, NHANES 2005–2006. Risk Factor Monitoring and Methods. Cancer Control and Population Sciences. http://riskfactor.cancer.gov/diet/foodsources/added_sugars/table5a.html. Accessed August 11, 2010.

Death by Soda!



Drink Water!


How much sugar is in your drink?
vitaminwater
Diet Mtn Dew
Snapple
Nantucket Nectars
Monster Energy 16 oz.
200 calories
13.5
teaspoons
vitaminwater 20 oz.
125 calories
8
teaspoons
Mountain Dew 20 oz.
290 calories
19.25
teaspoons
Snapple Lemon Tea 16 oz.
160 calories
10.5
teaspoons
Gatorade 20 oz.
130 calories
8.5
teaspoons
Nantucket Nectars Cranberry 17.5 oz.
280 calories
17.5
teaspoons

Diet soda is ok? Right…

ARTICLE

doi:10.1038/nature13793

Artificial sweeteners induce glucose intolerance by altering the gut microbiota

Jotham Suez[1], Tal Korem[2]*, David Zeevi[2]*, Gili Zilberman-Schapira[1]*, Christoph A. Thaiss[1], Ori Maza[1], David Israeli[3], Niv Zmora[4,5,6], Shlomit Gilad[7], Adina Weinberger[2], Yael Kuperman[8], Alon Harmelin[8], Ilana Kolodkin-Gal[9], Hagit Shapiro[1], Zamir Halpern[5,6], Eran Segal[2] & Eran Elinav[1]

FROM **LAURIE DAVID** PRODUCER OF **AN INCONVENIENT TRUTH**
AND **KATIE COURIC**

Before you take another bite...

It's time to get real about food.

IN THEATERS MAY 9

NATIONAL BESTSELLER

"Everyone in the field of nutrition science stands on the shoulders of Dr. Campbell, who is one of the giants in the field. This is one of the most important books about nutrition ever written – reading it may save your life."

–Dean Ornish, MD

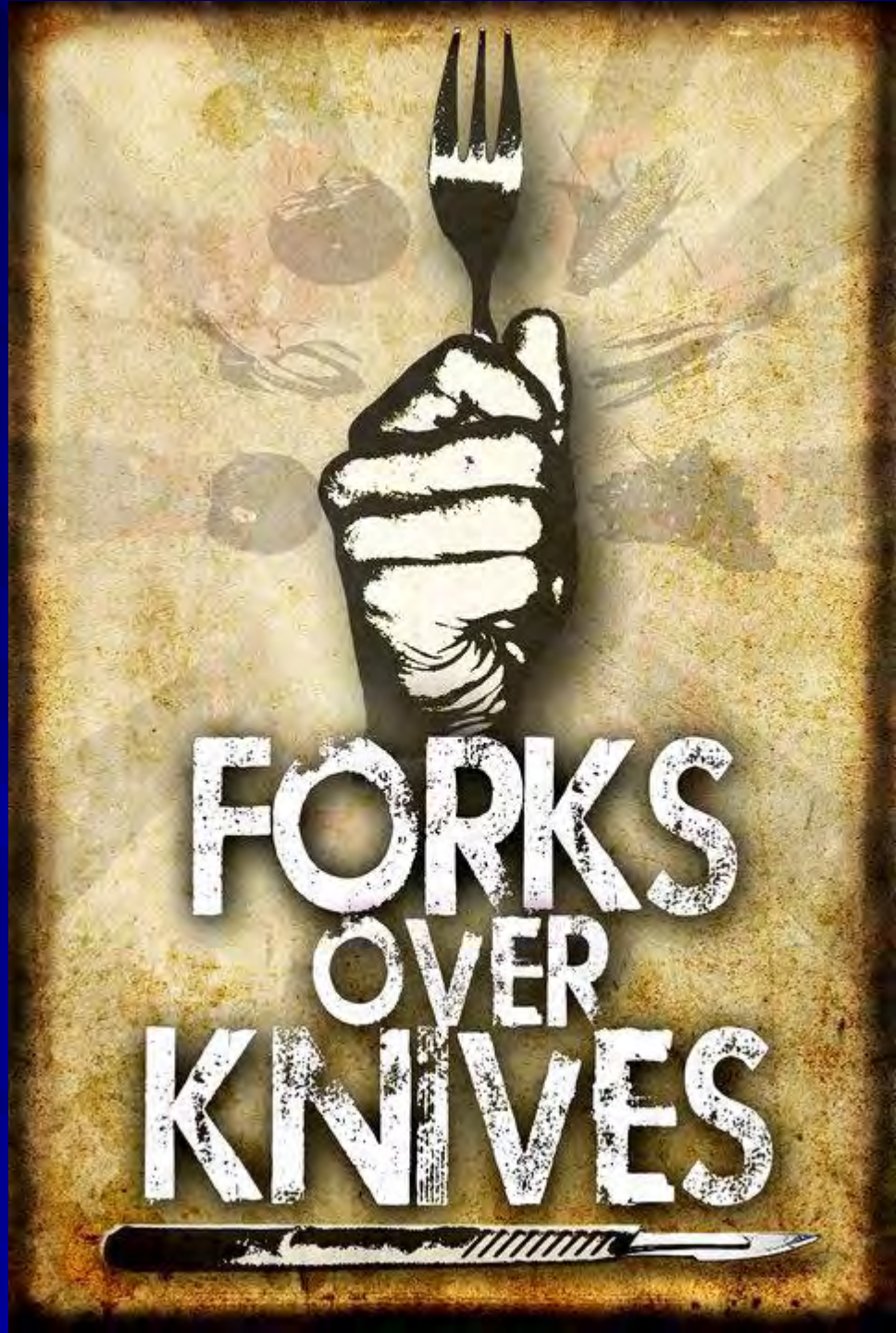
THE MOST COMPREHENSIVE STUDY OF NUTRITION EVER CONDUCTED

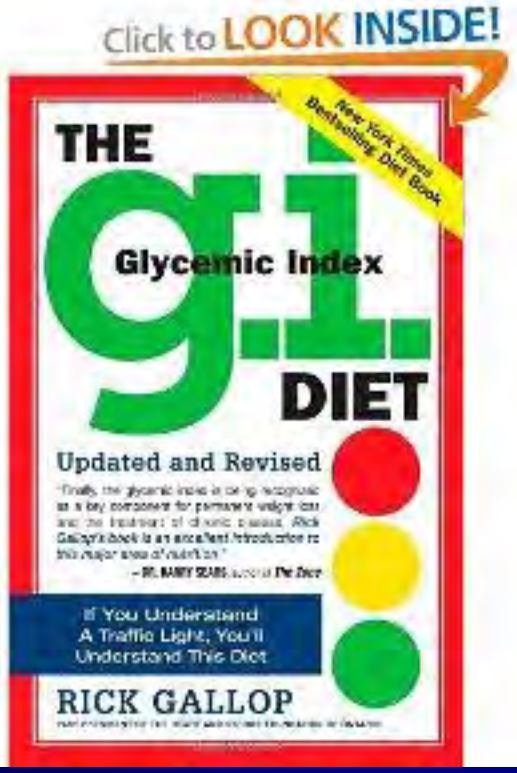
THE CHINA STUDY

STARTLING IMPLICATIONS FOR DIET, WEIGHT LOSS AND LONG-TERM HEALTH

T. COLIN CAMPBELL, PHD
AND THOMAS M. CAMPBELL II

FOREWORD BY JOHN ROBBINS, AUTHOR, *DIET FOR A NEW AMERICA*





High GI

(70 and above)

Medium GI

(55 to 69)

Low GI

(54 or less)

DASH diet

6-8 servings per day of whole grains

4-5 servings per day of vegetables

4-5 servings per day of fruits

2-3 servings per day of fat-free or low-fat dairy

4-5 servings per week of nuts, seeds, legumes

Less than 6 servings per day of lean meat, poultry, fish

Less than 5 servings per week of sweets

2-3 servings per day of fats and oils

Source: National Heart, Lung and Blood Institute

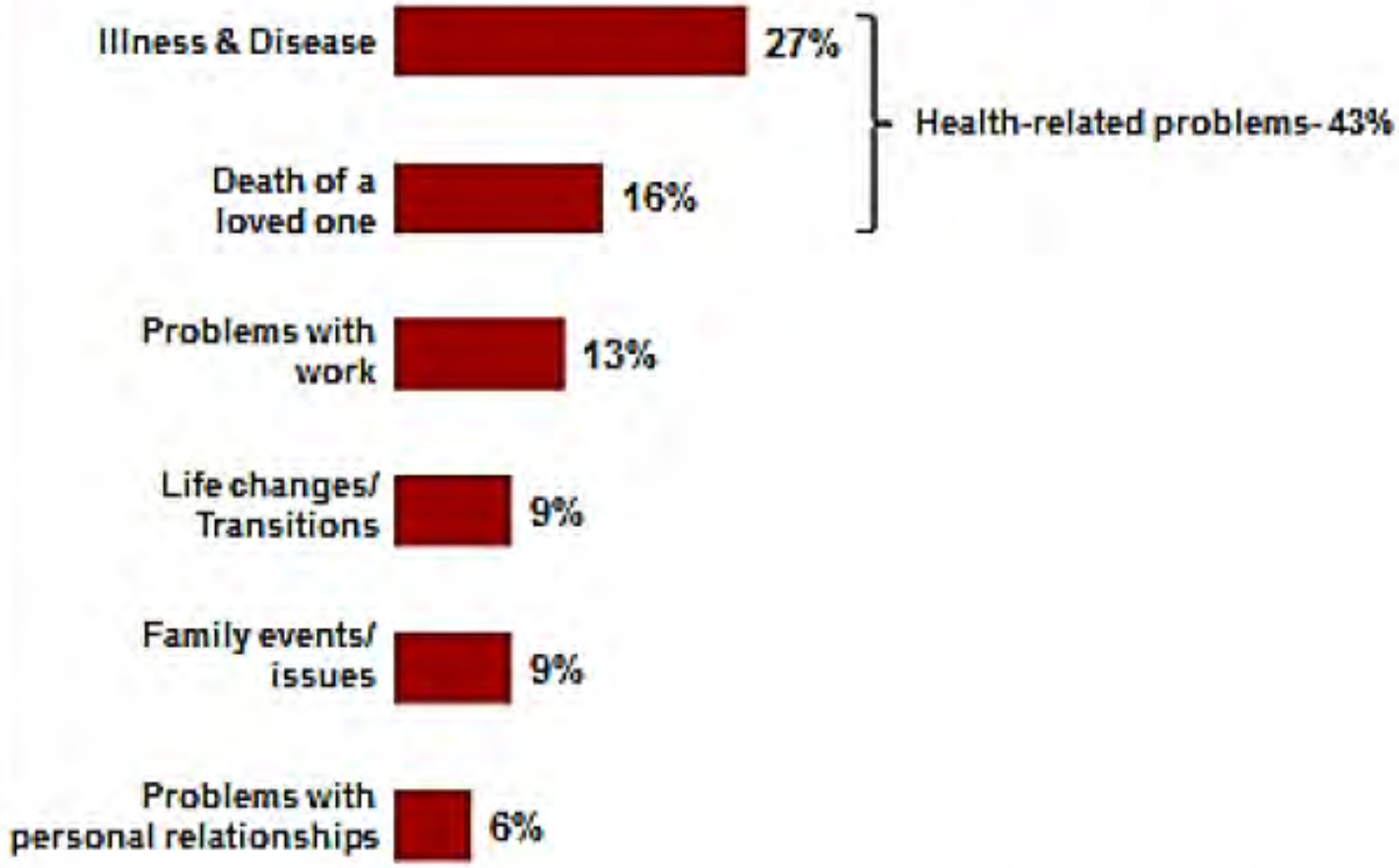
The DASH diet (Dietary Approaches to Stop Hypertension) has been shown to help lower blood pressure and prevent heart disease, stroke, diabetes and even some forms of cancer. It focuses on eating more fresh fruits and vegetables.

This is a guide to how much of each food group you should eat every day, based on eating 2,000 calories per day.

UKHealthCare
Gill Heart Institute

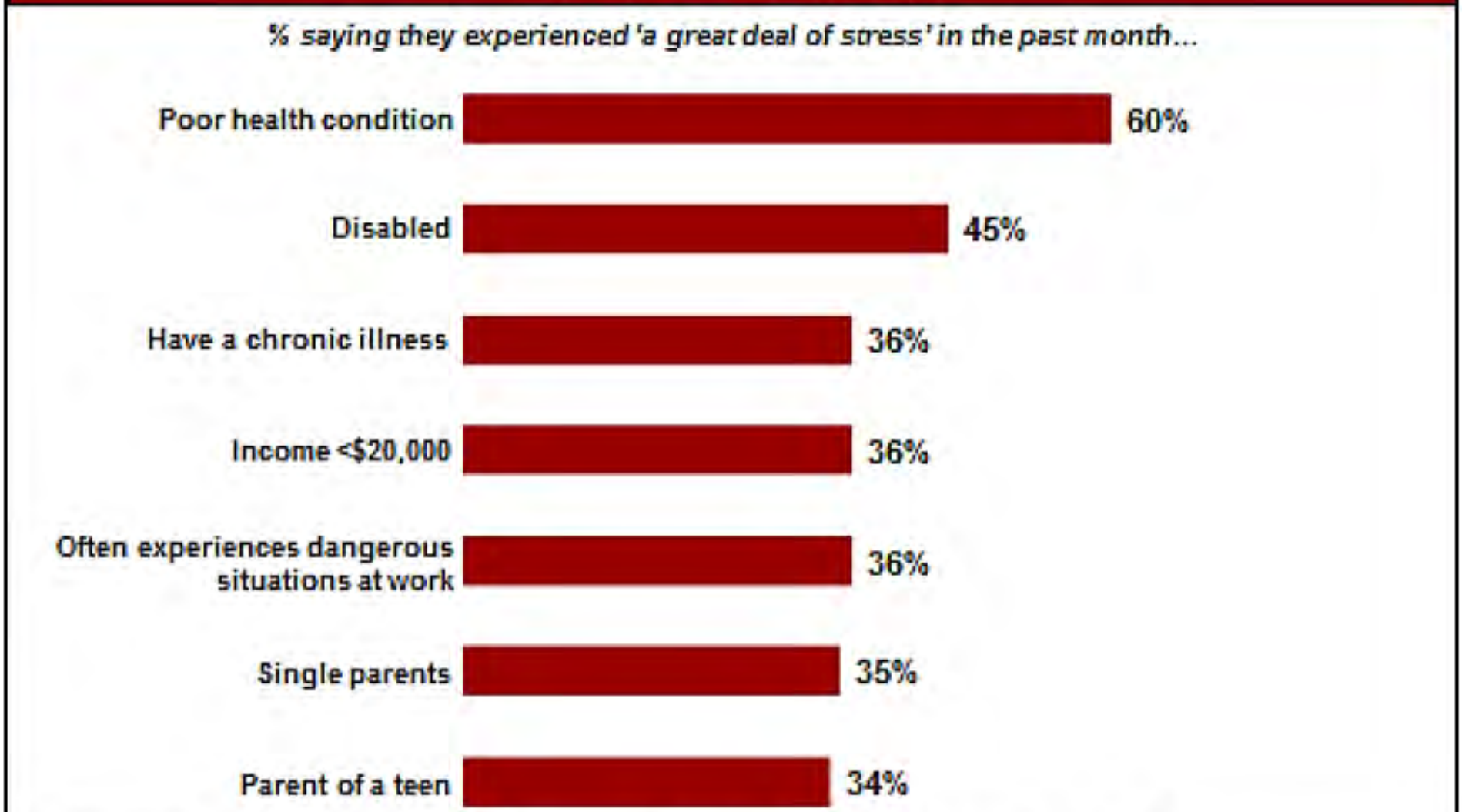
Public's Report about Most Stressful Event/Experience in the Past Year

% saying, in their own words, they had a major stressful event in the past year and it was related to...



NPR/ Robert Wood Johnson Foundation/ Harvard School of Public Health: The Burden of Stress in America, March 5- April 8, 2014

Groups Experiencing High Stress Levels in the Past Month

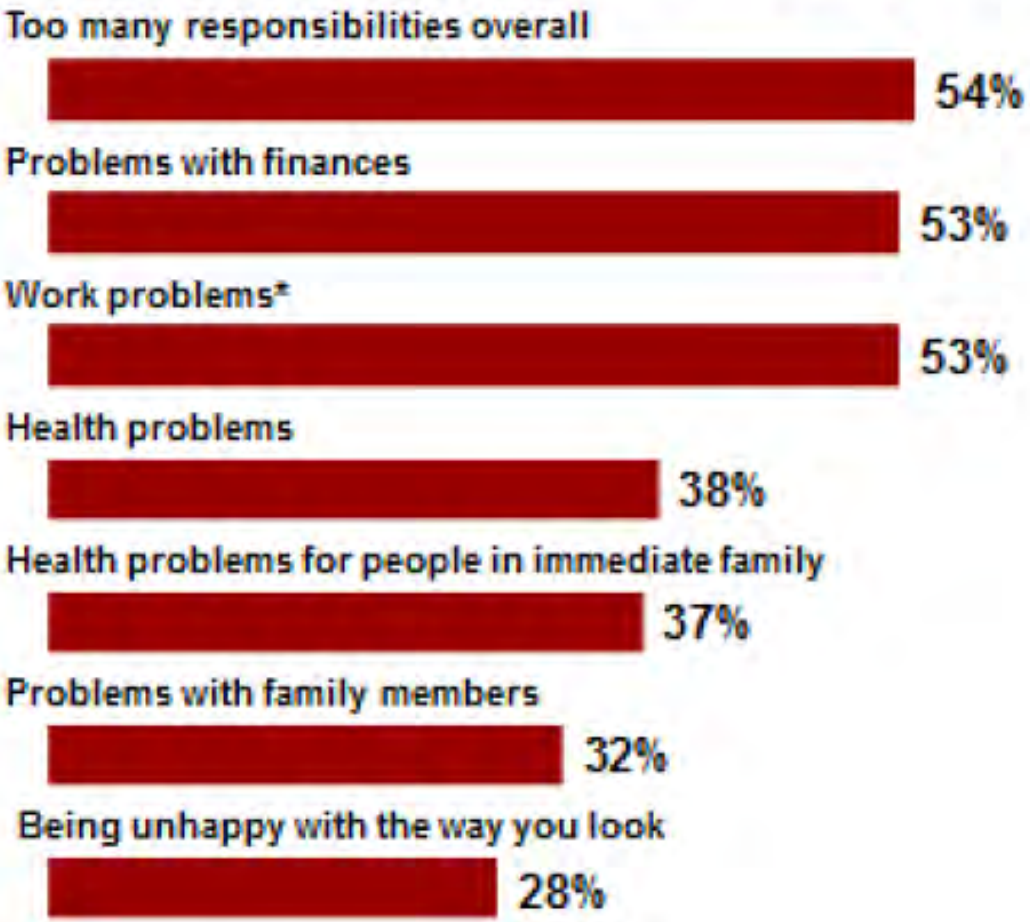


Showing groups with more than a third (33%) of respondents reporting "a great deal of stress" in the past month.

NPR/ Robert Wood Johnson Foundation/ Harvard School of Public Health: The Burden of Stress in America, March 5- April 8, 2014

Most Common Experiences That Contributed to Stress Among People with 'A Great Deal of Stress'

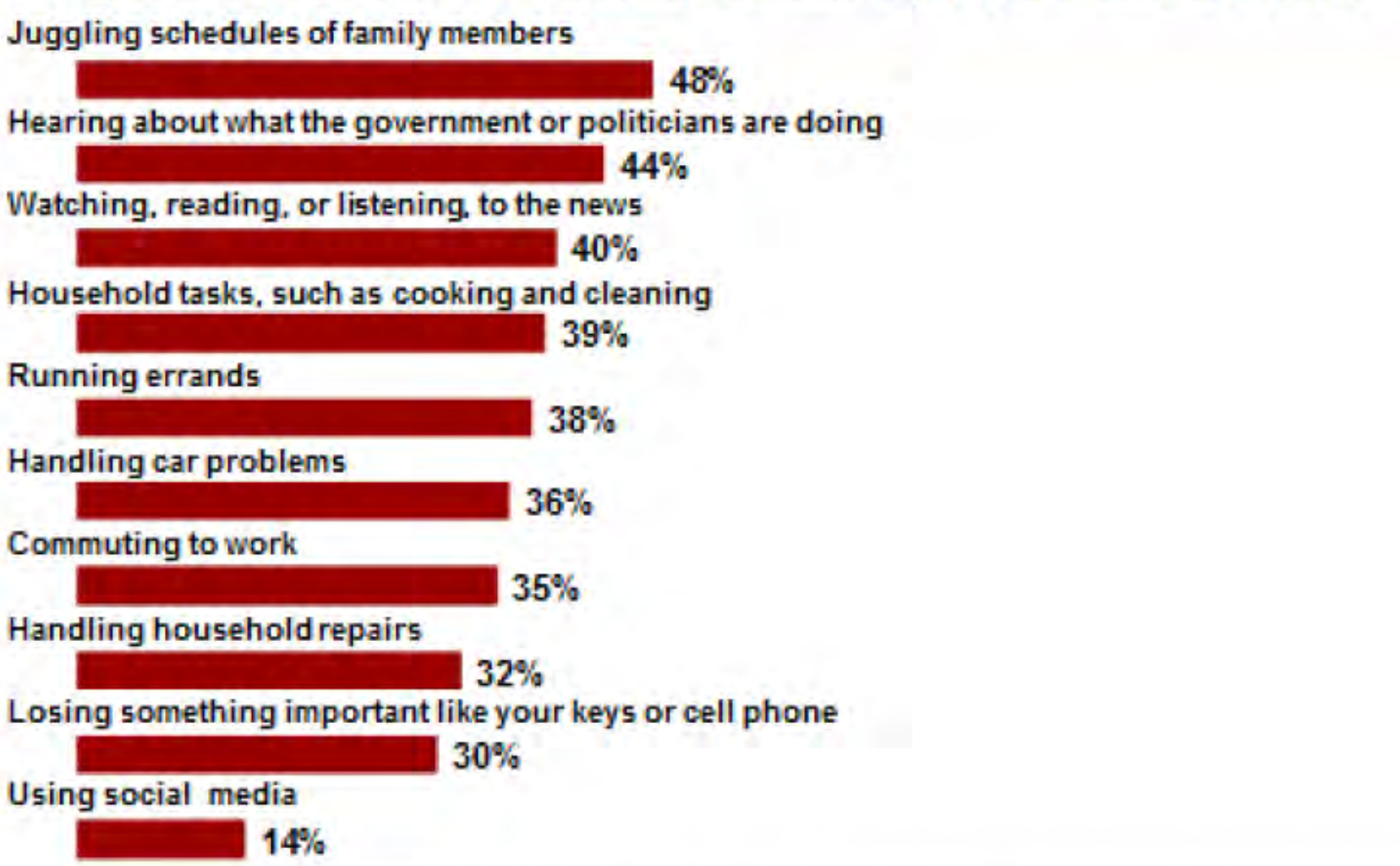
% experiencing 'a great deal of stress in the past month' saying experienced each and 'yes' contributed to stress...



*Asked only of employed, n=308

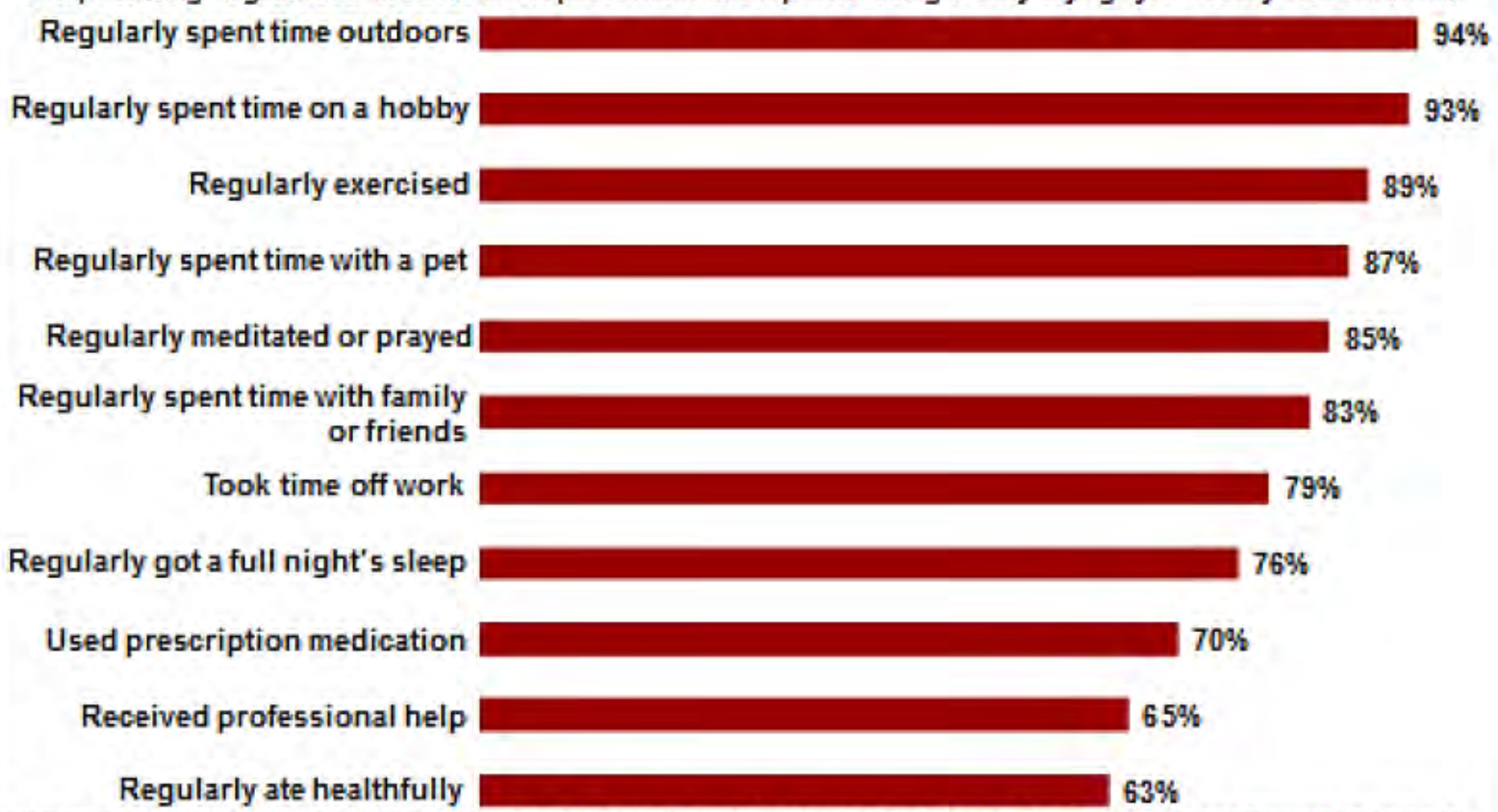
NPR/ Robert Wood Johnson Foundation/ Harvard School of Public Health: The Burden of Stress in America, March 5- April 8, 2014

Top 10 Daily Events that Contribute to Stress in the Past Month Among Those Experiencing 'A Great Deal of Stress'



NPR/ Robert Wood Johnson Foundation/ Harvard School of Public Health: The Burden of Stress in America, March 5- April 8, 2014

Effectiveness of Activities To Reduce Stress Levels Among Those Experiencing 'A Great Deal of Stress' in the Past Month



Information not available due to small sample size for the following: paid a person/service to handle household tasks, and followed a formal self-help program.

NPR/ Robert Wood Johnson Foundation/ Harvard School of Public Health: The Burden of Stress in America, March 5- April 8, 2014

Dose–Response Relation Between Work Hours and Cardiovascular Disease Risk

Findings From the Panel Study of Income Dynamics

Sadie H. Conway, PhD, Lisa A. Pompeii, PhD, Robert E. Roberts, PhD, Jack L. Follis, PhD, and David Gimeno, PhD

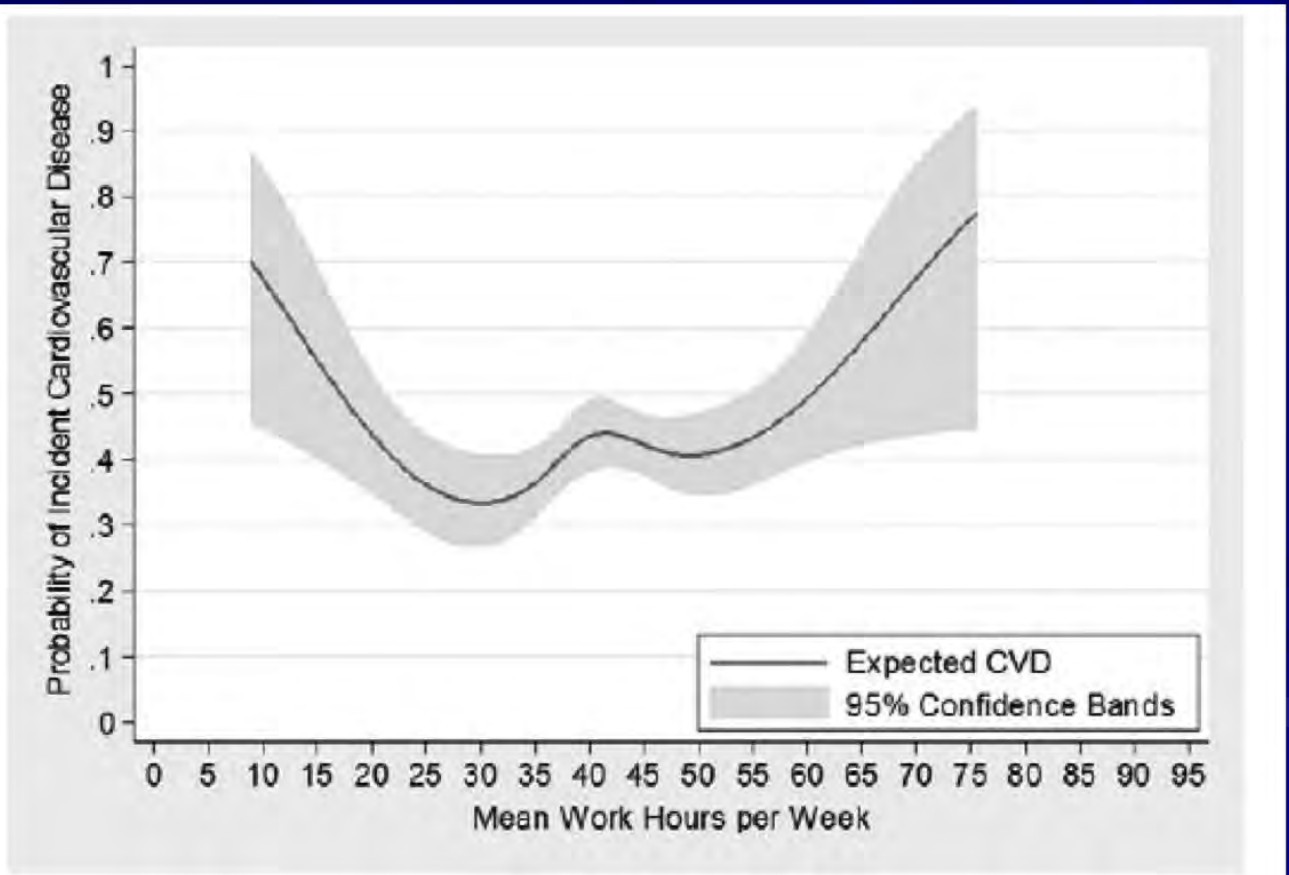


FIGURE 1. Restricted cubic spline model for the relationship between long work hours and incident cardiovascular disease: Panel Study of Income Dynamics, 1986 to 2011.

Published in final edited form as:
Health Psychol. 2012 September ; 31(5): 677–684. doi:10.1037/a0026743.

Does the Perception that Stress Affects Health Matter? The Association with Health and Mortality

Abiola Keller, **Kristin Litzelman**, **Lauren E. Wisk**, **Torsheika Maddox**, **Erika Rose Cheng**, **Paul D. Creswell**, and **Whitney P. Witt**
University of Wisconsin - Madison

Table 1

Frequency of Stress, Perceived Health Impact, and Stress Reduction among U.S. Adults, 1998 NHIS

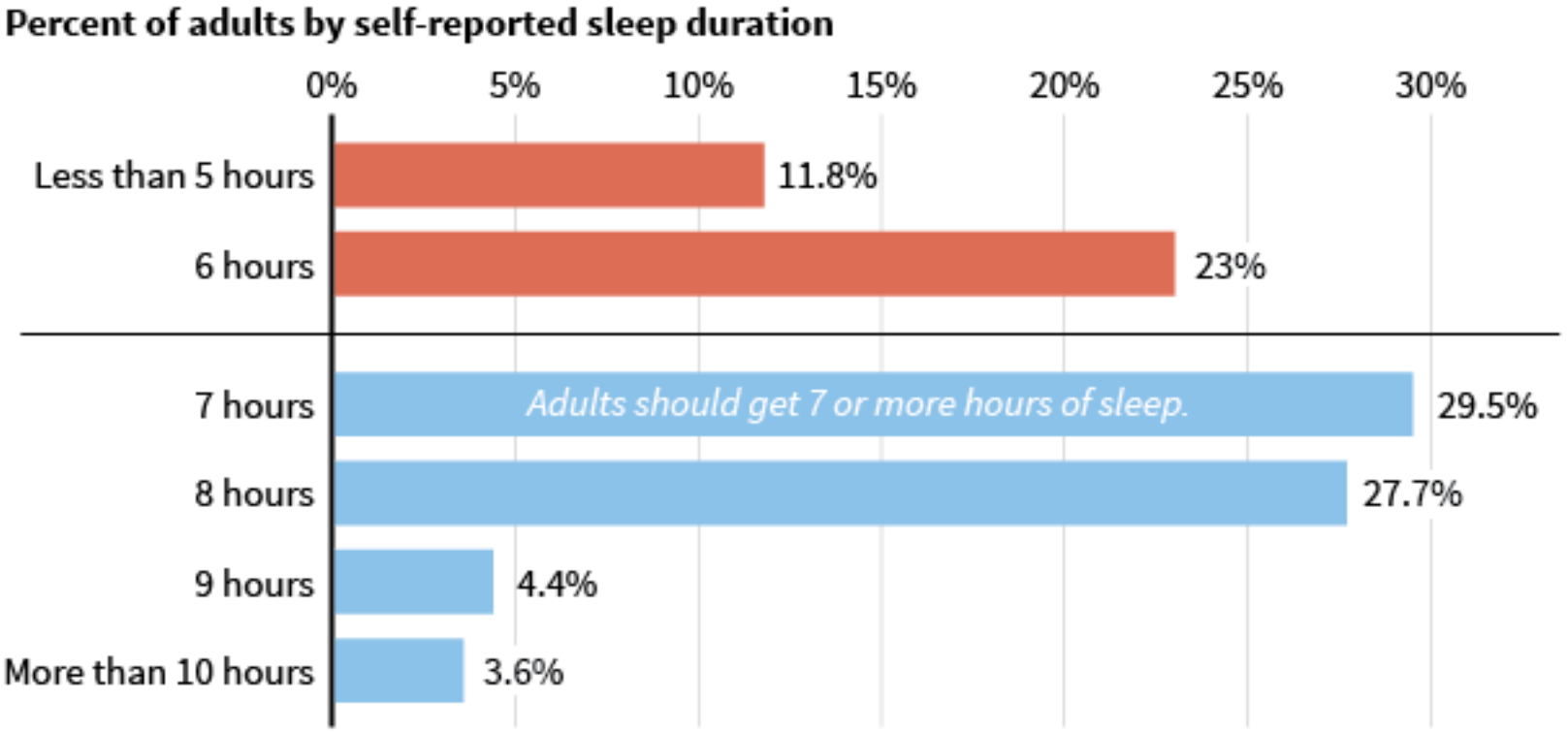
	TOTAL: Weighted N [in thousands] (unweighted N) %
	185,983 (28,753) 100%
Frequency of Stress	
Amount of stress experienced by U.S. adults in the last 12 months	
A lot	37,628 (6,026) 20.2%
Moderate	65,627 (9,663) 35.3%
Relatively little	44,642 (6,871) 24.0%
Almost none	38,087 (6,193) 20.5%
Perceived Health Impact	
How much did stress affect your health?	
A lot	14,500 (2,468) 7.8%
Some	48,176 (7,522) 25.9%
Hardly any, or none	123,306 (18,763) 66.3%
Stress Reduction	
(During the past 12 months), have you taken any steps to control or reduce stress in your life?	
Yes	61,193 (9,489) 32.9%
No	124,790 (19,264) 67.1%

	All-Cause Mortality		
	HR	95% CI	
Almost no stress in last 12 months			
Hardly any, or No perception that stress affects health	1.00	reference	
Some perception that stress affects health	0.96	0.6	1.5
Perception that stress affects health a lot	1.04	0.3	3.7
Little stress in last 12 months			
Hardly any, or No perception that stress affects health	1.00	0.9	1.1
Some perception that stress affects health	0.90	0.7	1.1
Perception that stress affects health a lot	1.10	0.3	3.5
Moderate stress in last 12 months			
Hardly any, or No perception that stress affects health	1.00	0.9	1.1
Some perception that stress affects health	1.15	1.0	1.3
Perception that stress affects health a lot	0.85	0.6	1.2
A lot of stress in last 12 months			
Hardly any, or No perception that stress affects health	0.83	0.6	1.1
Some perception that stress affects health	0.91	0.7	1.1
Perception that stress affects health a lot	1.43	1.2	1.7

Sleep-the new cross training!

TRAIN LIKE AN ATHLETE,
EAT LIKE A NUTRITIONIST,
SLEEP LIKE A BABY,
WIN... LIKE A CHAMPION

More Than A Third Of U.S. Adults Don't Get Enough Sleep

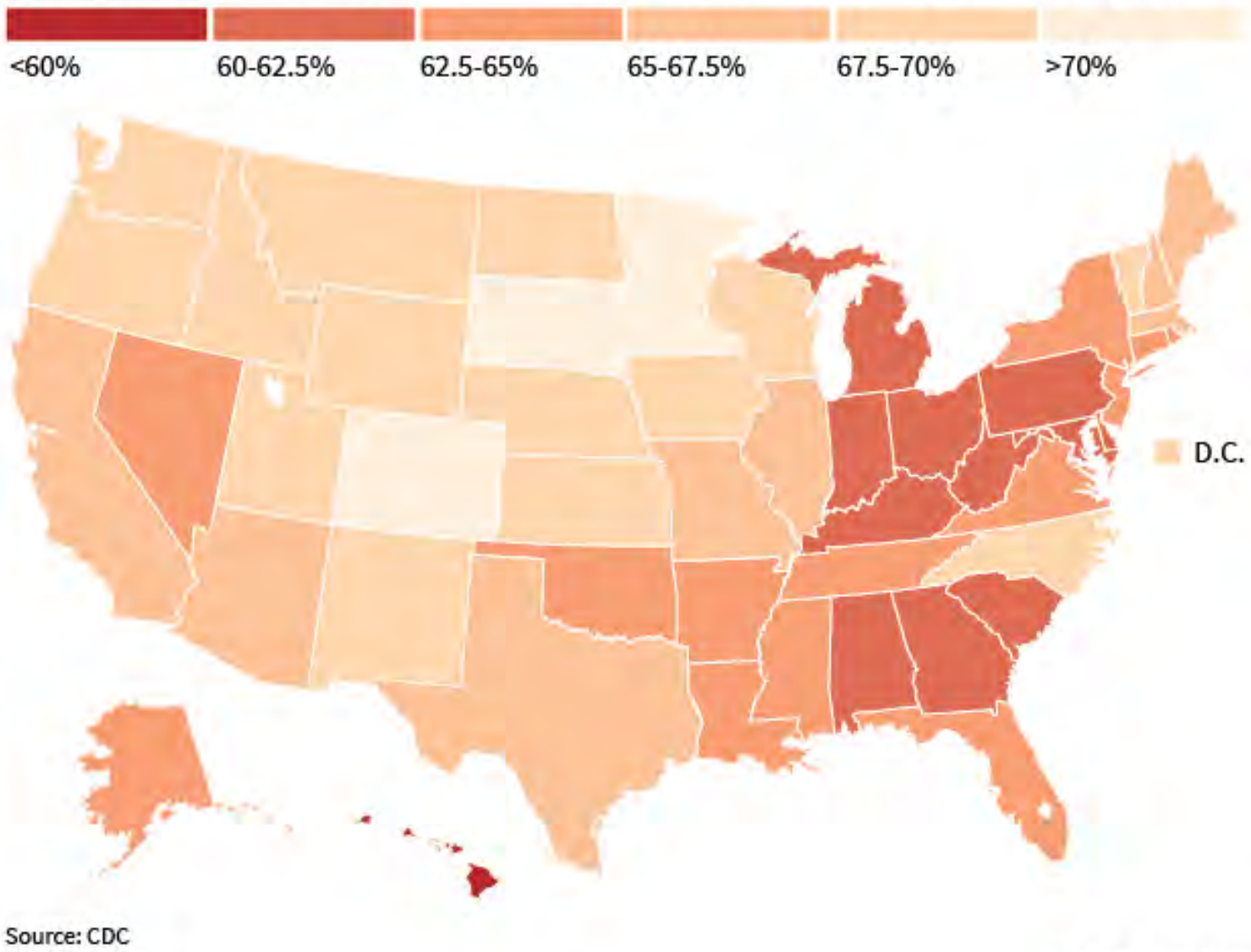


Source: CDC

The Huffington Post

Where Americans Need More Sleep

The CDC recommends adults get at least seven hours a night.



Source: CDC

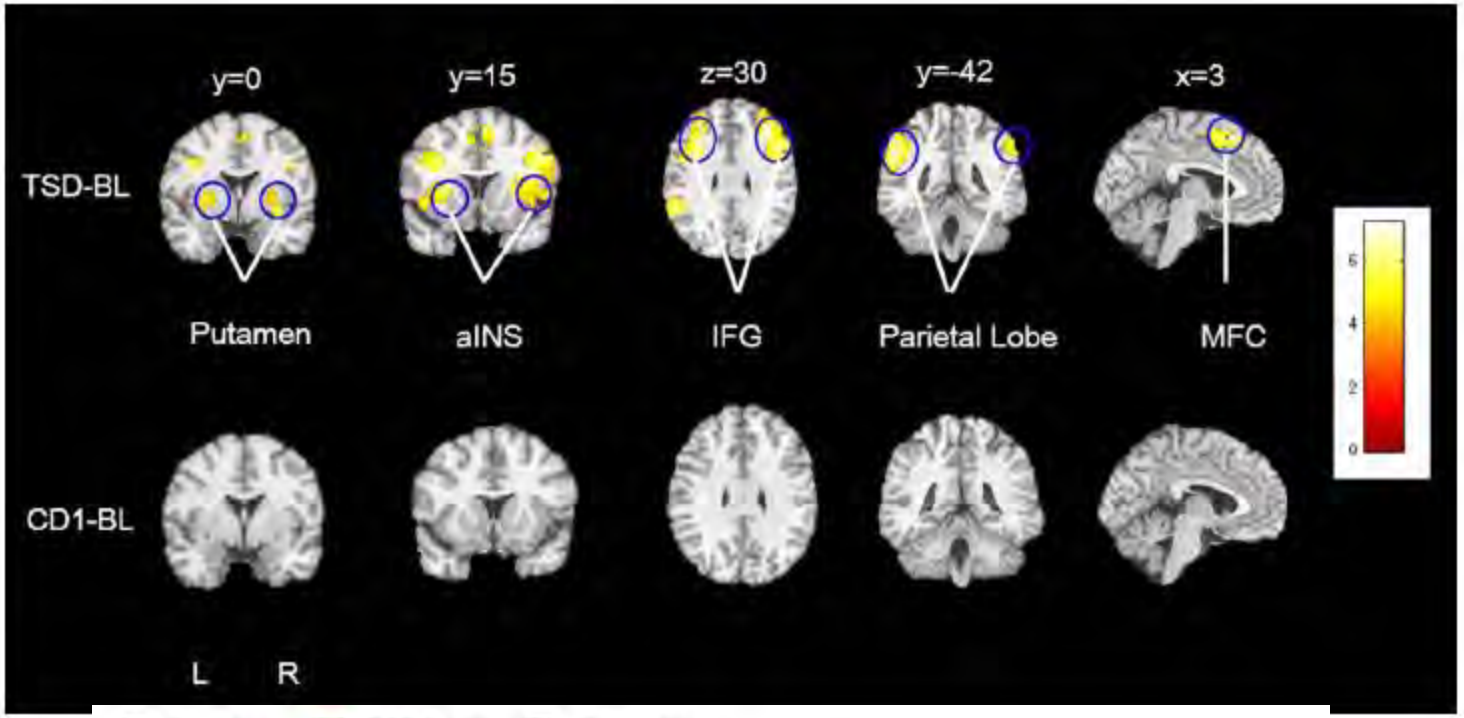
The Huffington Post

Altered salience network connectivity predicts macronutrient intake after sleep deprivation

Zhuo Fang[1]*, Andrea M. Spaeth[2]*, Ning Ma[1], Senhua Zhu[1], Siyuan Hu[1], Namni Goel[3], John A. Detre[1], David F. Dinges[3] & Hengyi Rao[1,3]

[1]Center for Functional Neuroimaging, Department of Neurology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [2]Center for Sleep and Circadian Neurobiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [3]Division of Sleep and Chronobiology, Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA.

- Poor sleep lowers will power.
- It also increases caloric consumption, fat intake, etc the next day.
- How / why?


y=0
y=15
z=30
y=-42
x=3
TSD-BL
CD1-BL
Putamen
aINS
IFG
Parietal Lobe
MFC
L
R
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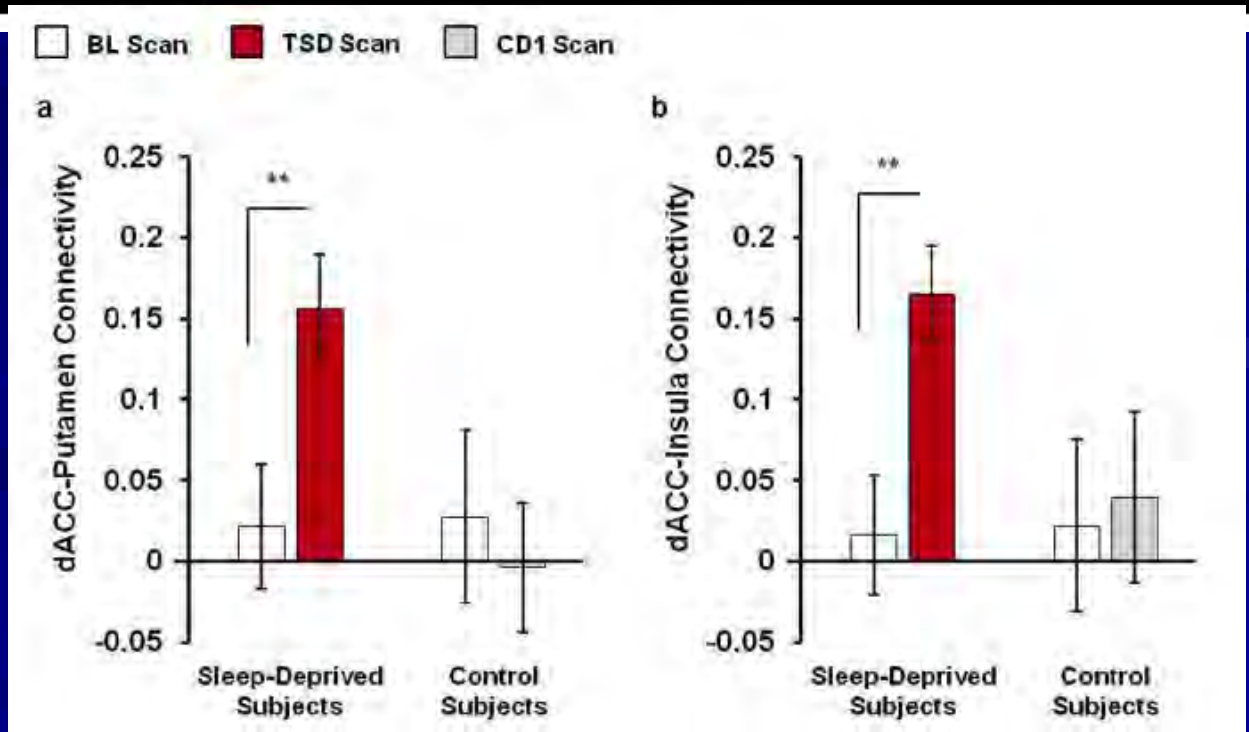
4
2
0


BL Scan
TSD Scan
CD1 Scan
a
b
dACC-Putamen Connectivity
dACC-Insula Connectivity
0.25
0.2
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0.1
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-0.05
**
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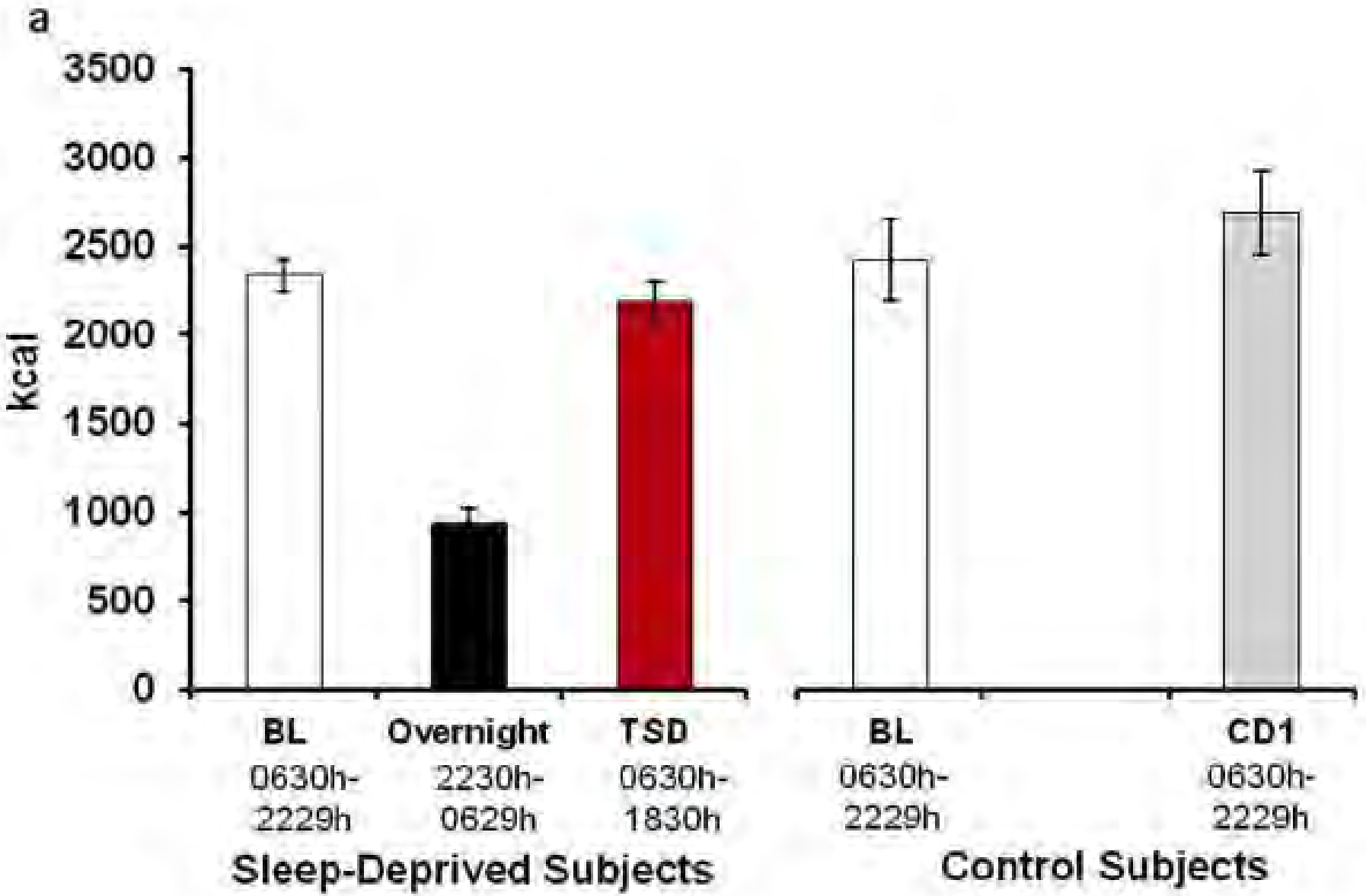
Sleep-Deprived Subjects
Control Subjects
Sleep-Deprived Subjects
Control Subjects


a
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2500
2000
1500
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0
kcal
BL
0630h-
2229h
Overnight
2230h-
0629h
TSD
0630h-
1830h
Sleep-Deprived Subjects
BL
0630h-
2229h
CD1
0630h-
2229h
Control Subjects

Posttraumatic Stress Disorder Is Associated With Worse Endothelial Function Among Veterans

S. Marlene Grenon, MDCM, MMSc, FRCSC; Christopher D. Owens, MD; Hugh Alley, BA; Sandra Perez, BA; Mary A. Whooley, MD; Thomas C. Neylan, MD; Kirstin Aschbacher, PhD; Warren J. Gasper, MD; Joan F. Hilton, PhD; Beth E. Cohen, MD

- Think about childhood trauma (ACE scores).
- Actually seeing “Saving Private Ryan”!

A functi ell-being

Barbara L. Fredrick
Jesusa M. G. Arev

[a]Department of Psycho of North Carolina
School of Medicine, Ch onsson Comprehensive
Cancer Center, Norman alifornia, Los Angeles,
CA 90095

Edited* by Burton H. S

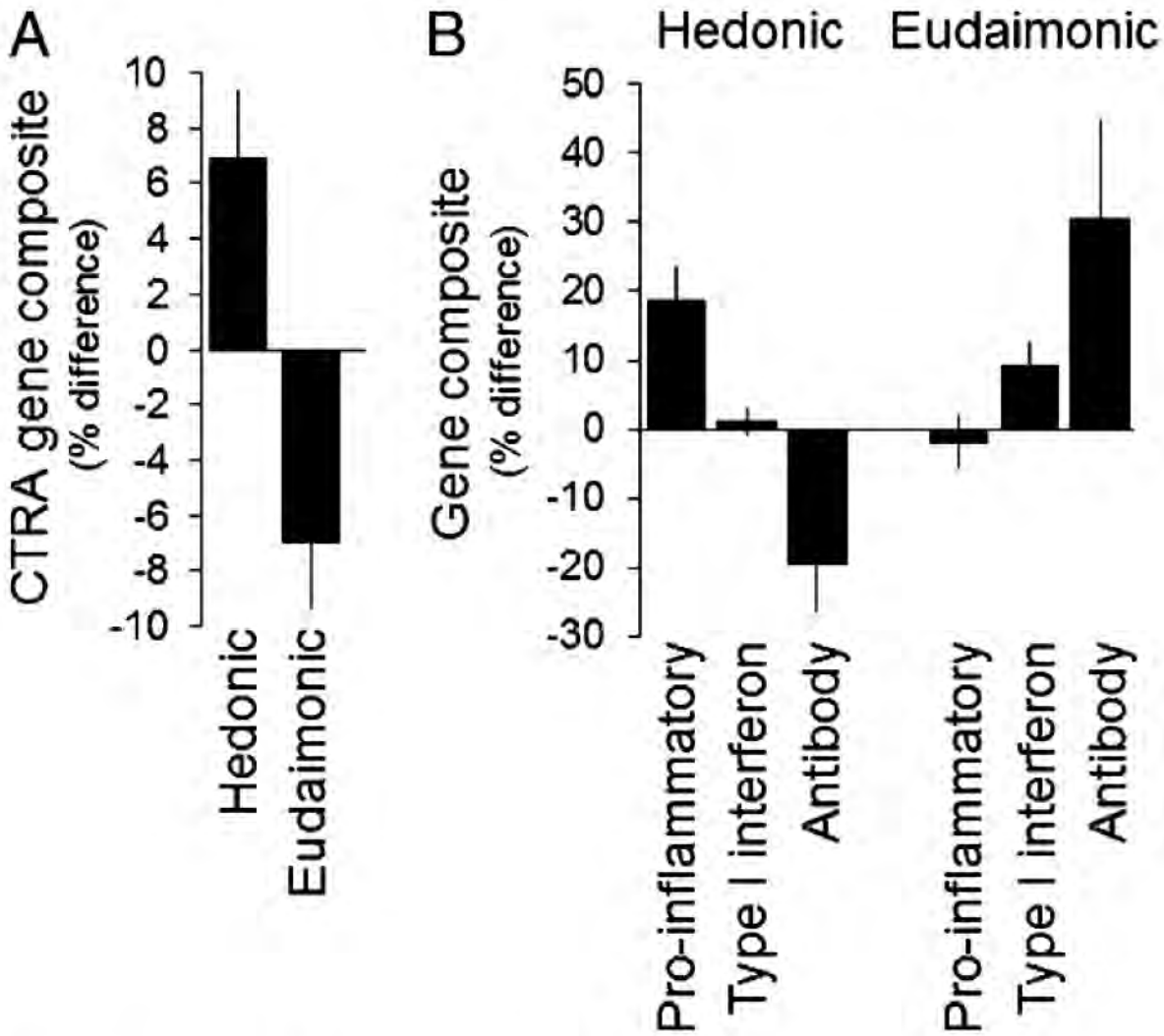

Fig. 2. Expression of the CTRA gene set. (*A*) Linear model-based estimates of mean difference (±SEM) in expression in a 53-gene CTRA contrast score in PBMCs from individuals with low levels (−2 SD relative to sample mean) vs. high levels (+2 SD) of hedonic well-being and eudaimonic well-being (each adjusting for the other and for demographic and behavioral covariates). (*B*) Differential expression of CTRA subcomponents: 19 proinflammatory genes, 31 type I IFN response genes, and three antibody synthesis genes.

IN LIGHT OF NEW EVIDENCE THAT HAPPY PEOPLE DON'T LIVE longer than their grumpy peers, one might be tempted to drop the pursuit altogether. A recent study published in the *Lancet* followed nearly 720,000 middle-aged women for several years and reported that while those who were happier tended to be healthier, they had no edge when it came to longevity. (Similarly, while unhappiness may be a side effect of illness, research shows that it is not alone capable of making you sick.) On the other hand, evidence shows that attitude can have meaningful—and in some cases measurable—effects on health, even if it can't outright extend one's life. Here's the latest on the mind-body connection.

Surprising effects of mind-set on the body

MOOD AND SURGERY OUTCOMES:
If a person is in a bad mood, their medical procedure may not go as smoothly, a December 2015 study showed. In the study, the researchers looked at 230 people who underwent procedures in which a catheter was inserted into a blood vessel. Before the procedure, people filled out a questionnaire that asked them to rate various adjectives describing how they felt emotionally. The study authors found that people with more negative feelings had a greater incidence of adverse events from the procedure, like slow heart rate or abnormal blood pressure. The research is early, but it's not the first time scientists have seen physical changes from a negative mood.

MINDFULNESS AND BODY FAT:
In an October 2015 study people with mindful dispositions—an ability to stay focused on the present moment—were found to have less body fat. Men and women with lower levels of mindfulness had a 34% higher prevalence of obesity compared to people with high levels of mindfulness. Though it's an association, researchers suggest people who are more aware may be more likely to be healthier and exercise more.

OUTLOOK AND ALZHEIMER'S DISEASE:
The stereotypes one holds about old age can affect how their brains work. A study found a new Yale School of Public Health study. Men and women who viewed aging negatively had a greater loss in hippocampus volume, a region significantly higher levels of plaques—both hallmarks of Alzheimer's disease. The researchers say it's the first time this type of risk factor has been linked to the development of brain changes associated with Alzheimer's.

ANGER AND HEART-ATTACK RISK:
A 2015 study found having an episode of intense anger was associated with an 8.5 times greater likelihood of having a heart attack in the next two hours. Exactly how anger could contribute to a heart attack remains unknown, but the researchers speculate that stress triggers increased heart rate and blood pressure, blood-vessel constriction and clotting, which raise risk.

AWE AND REDUCED INFLAMMATION:
Awe was found in a January 2015 study to reduce compounds that promote inflammation, which is linked to diseases ranging from Type 2 diabetes to arthritis. In the small study, college students filled out questionnaires about how often they experienced certain emotions. They found that happy moods in general were associated with lower inflammation, but the students who experienced awe most often had especially lower levels.

AWE AND REDUCED INFLAMMATION:
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European Heart Journal Advance Access published March 3, 2014

European Heart Journal
doi:10.1093/eurheartj/ehu033

CLINICAL RESEARCH
Prevention and epidemiology

Outbursts of anger as a trigger of acute cardiovascular events: a systematic review and meta-analysis†

Elizabeth Mostofsky[1,2], Elizabeth Anne Penner[3], and Murray A. Mittleman[1,2]*

[1]Cardiovascular Epidemiology Research Unit, Department of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, 375 Longwood Avenue, Room 423, Boston, MA 02215, USA; [2]Department of Epidemiology, Harvard School of Public Health, Boston, MA, USA; and [3]Department of Internal Medicine, New York-Presbyterian Hospital/Weill Cornell Medical Center, New York, NY, USA

Received 9 July 2013; revised 8 January 2014; accepted 20 January 2014

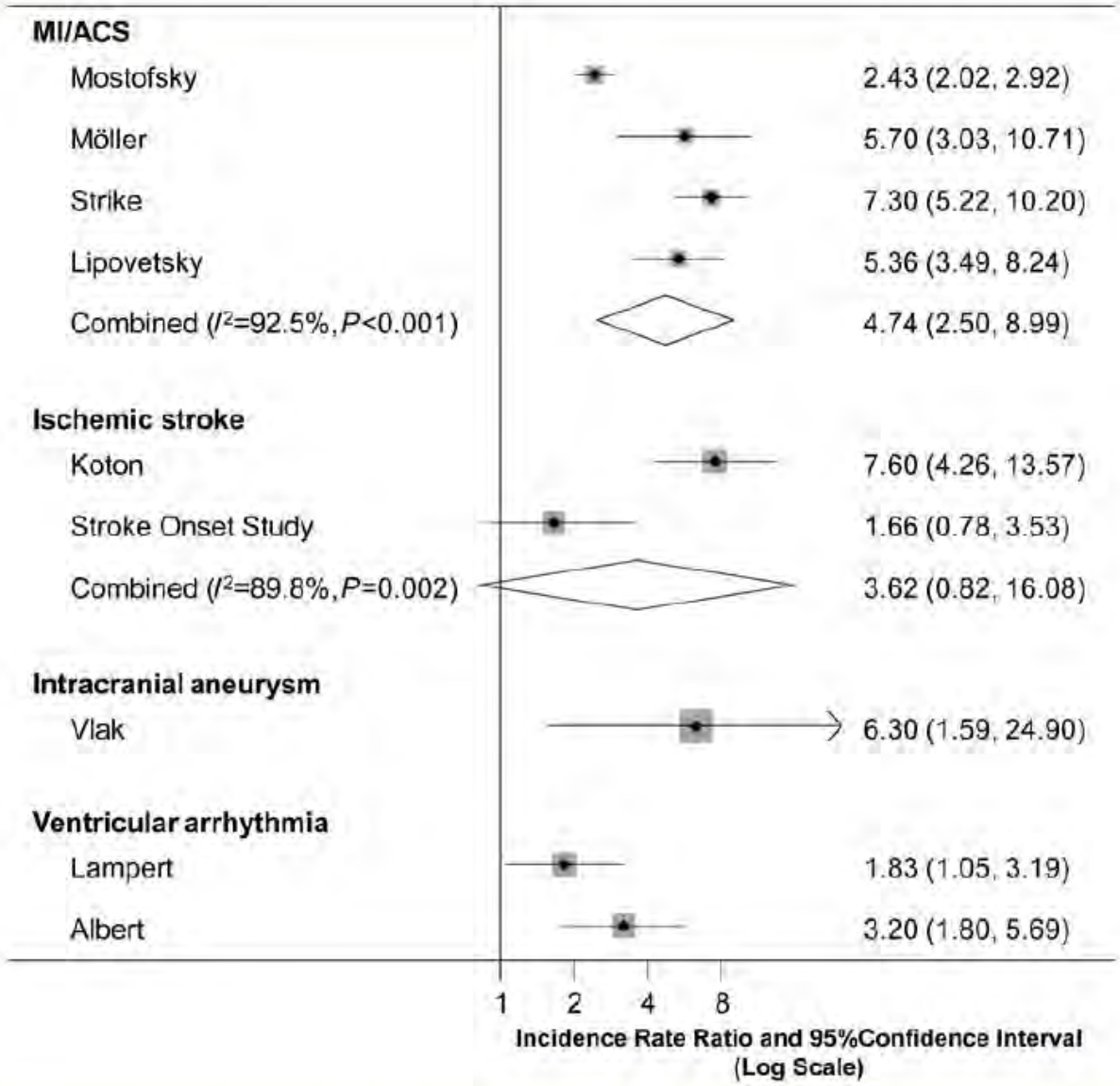

Figure 2 Meta-analysis of the nine studies examining the short-term risk of cardiovascular events in the 2 h* following outbursts of anger. The solid vertical line indicates no association; the diamonds indicate the combined estimates. * = One study (Lipovetzky) reported separate estimates for each hour prior to MI onset. We meta-analyzed these two estimates and included this pooled estimate in our meta-analysis of MI/ACS.

Conflict

- ~10,000 pt Danish study.
- Rare arguments/conflict lead to a 50-100% increase in death from any cause.
- Frequent arguments/conflict lead to a 2-3x risk of death from any cause.
- They thought that this was so strong because of the results of the underlying stress compounded by the arguments themselves.
- *Dr. Rikke Lund et al. May 2014. Journal of Epidemiology & Community Health*

Dean Ornish and CHIP

COMPLETE HEALTH IMPROVEMENT PROGRAM

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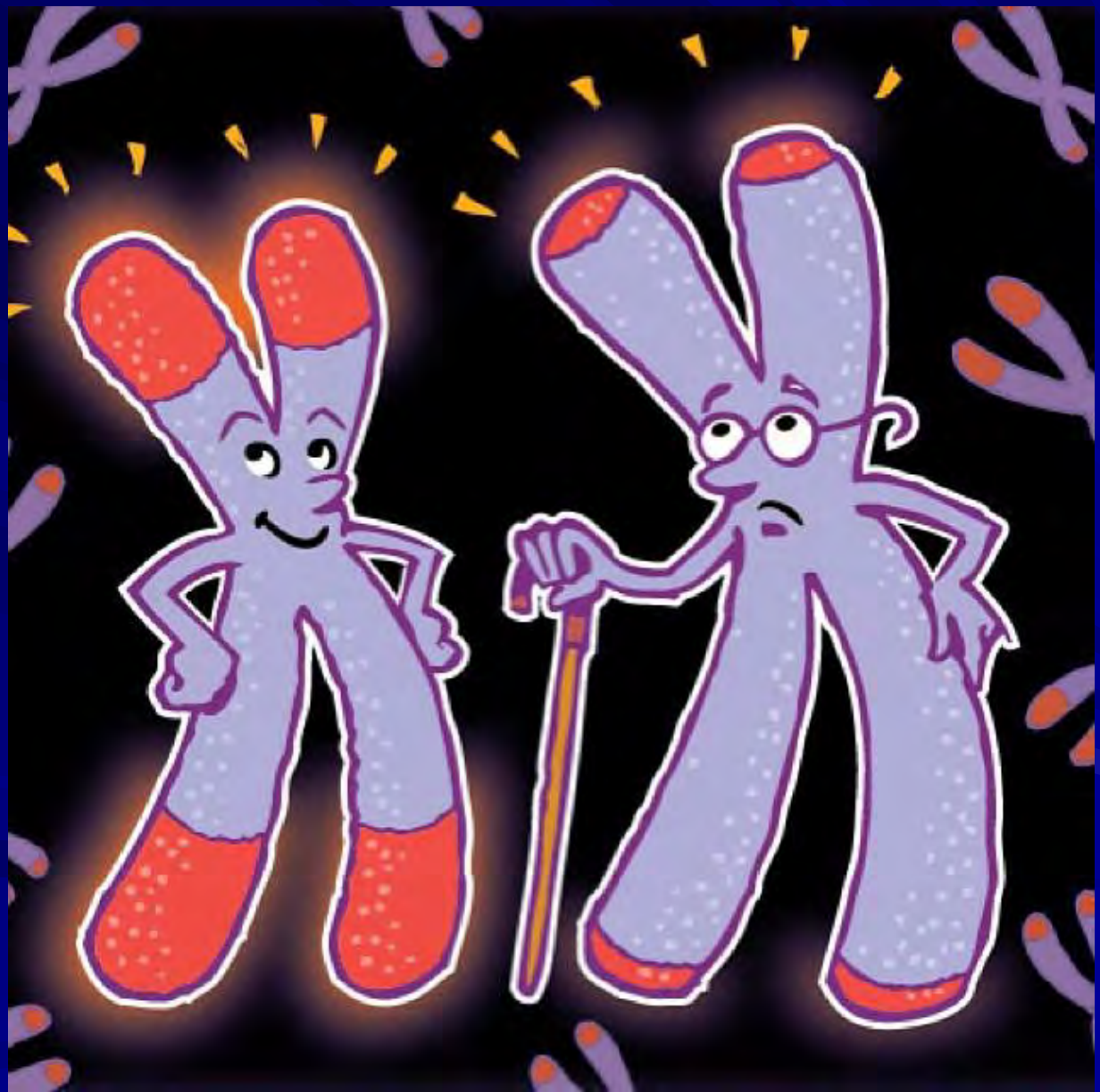
Cellular age



Accelerated telomere shortening in response to life stress

Elissa S. Epel*†, Elizabeth H. Blackburn‡, Jue Lin‡, Firdaus S. Dhabhar§, Nancy E. Adler*, Jason D. Morrow¶, and Richard M. Cawthon‖

*Department of Psychiatry, University of California, 3333 California Street, Suite 465, San Francisco, CA 94143; ‡Department of Biochemistry and Biophysics, University of California, San Francisco, CA 94143; §Department of Oral Biology, College of Dentistry, and Department of Molecular Virology, Immunology, and Medical Genetics, College of Medicine, Ohio State University, Columbus, OH 43210; ¶Department of Medicine and Pharmacology, Vanderbilt University School of Medicine, Nashville, TN 37232; and ‖Department of Human Genetics, University of Utah, 15 North 2030 E Street, Room 2100, Salt Lake City, UT 84112

Contributed by Elizabeth H. Blackburn, September 28, 2004

OPEN ACCESS Freely available online

PLOS ONE

Relaxation Response Induces Temporal Transcriptome Changes in Energy Metabolism, Insulin Secretion and Inflammatory Pathways

Manoj K. Bhasin[1,4,5☯], Jeffery A. Dusek[6☯], Bei-Hung Chang[7,8☯], Marie G. Joseph[5], John W. Denninger[1,2], Gregory L. Fricchione[1,2], Herbert Benson[1,3¶], Towia A. Libermann[1,4,5*¶]

1 Benson-Henry Institute for Mind Body Medicine at Massachusetts General Hospital, Boston, Massachusetts, United States of America, **2** Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, United States of America, **3** Department of Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, United States of America, **4** Department of Medicine, Division of Interdisciplinary Medicine and Biotechnology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, United States of America, **5** BIDMC Genomics and Proteomics Center, Beth Israel Deaconess Medical Center, Boston, Massachusetts, United States of America, **6** Institute for Health and Healing, Abbott Northwestern Hospital, Minneapolis, Minnesota, United States of America, **7** VA Boston Healthcare System, Boston, Massachusetts, United States of America, **8** Department of Health Policy and Management, Boston University School of Public Health, Boston, Massachusetts, United States of America

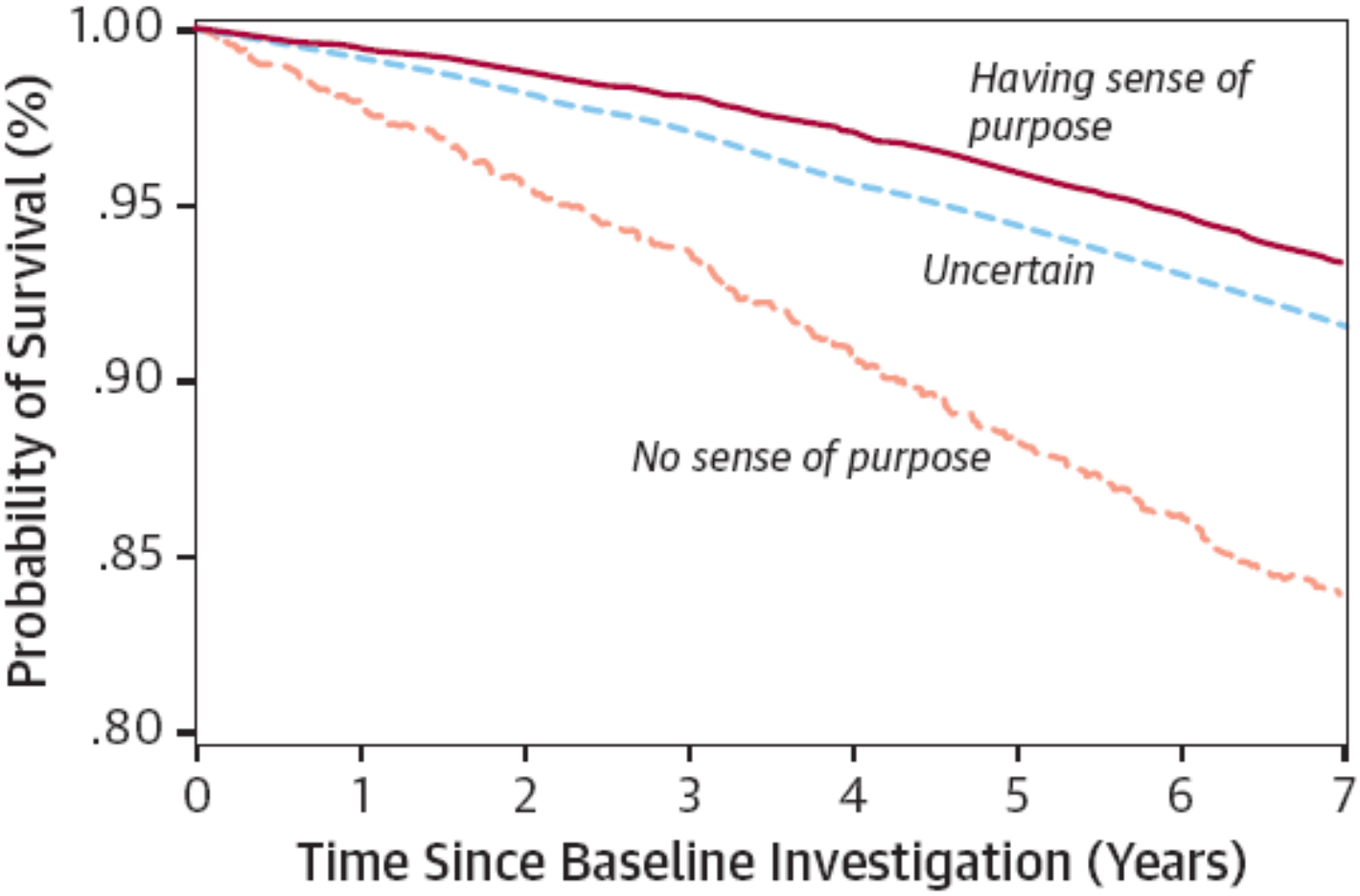


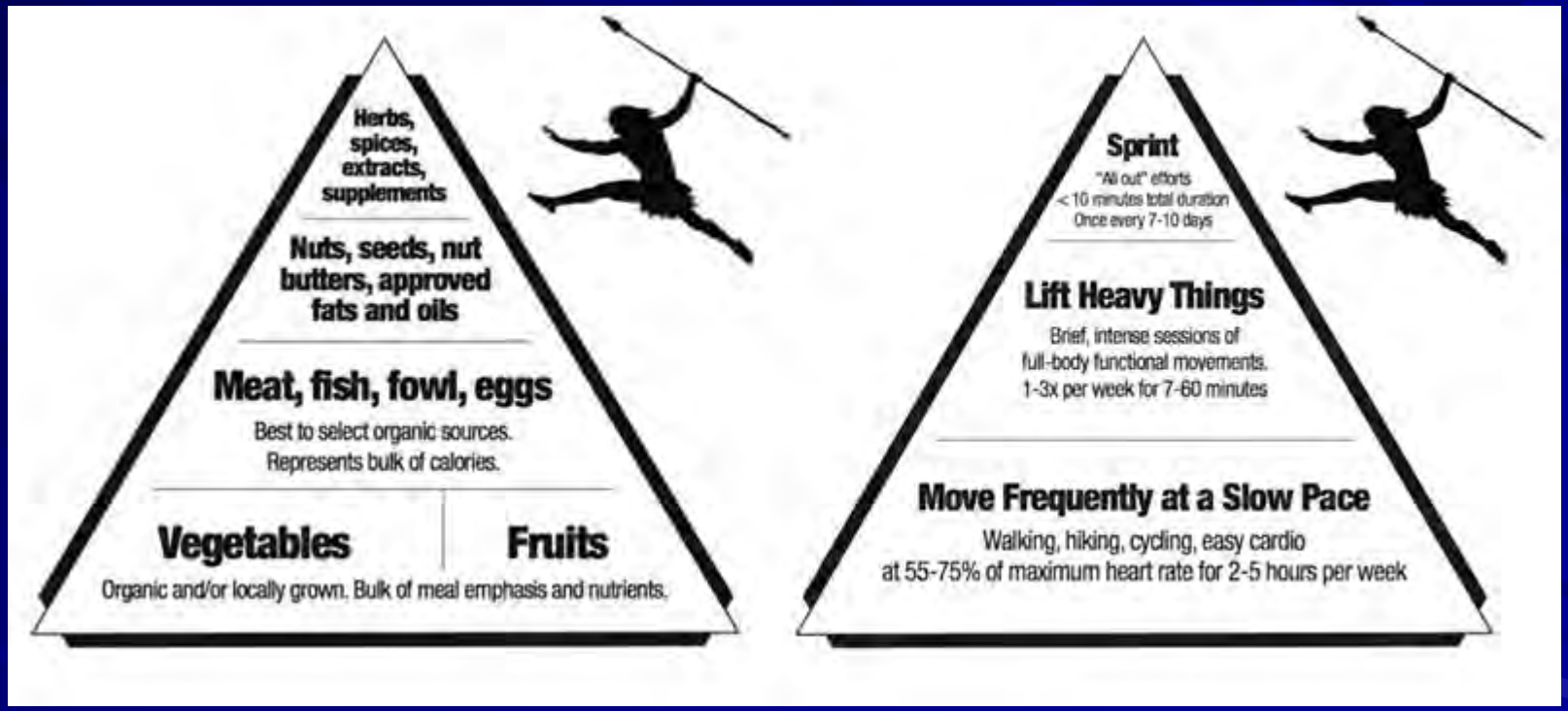
FIGURE 3 **Sense of Purpose and Mortality Risk**

Kaplan Meier curve of all-cause mortality associated with a high, uncertain, and low sense of life purpose. Adapted with permission from Sone et al. (31).

- **“The cave you fear to enter holds the treasure that you seek”** Anonymous

- **“The cave you fear to enter holds the treasure that you seek”** Anonymous

What would Grok do?



Compare and contrast

Differences

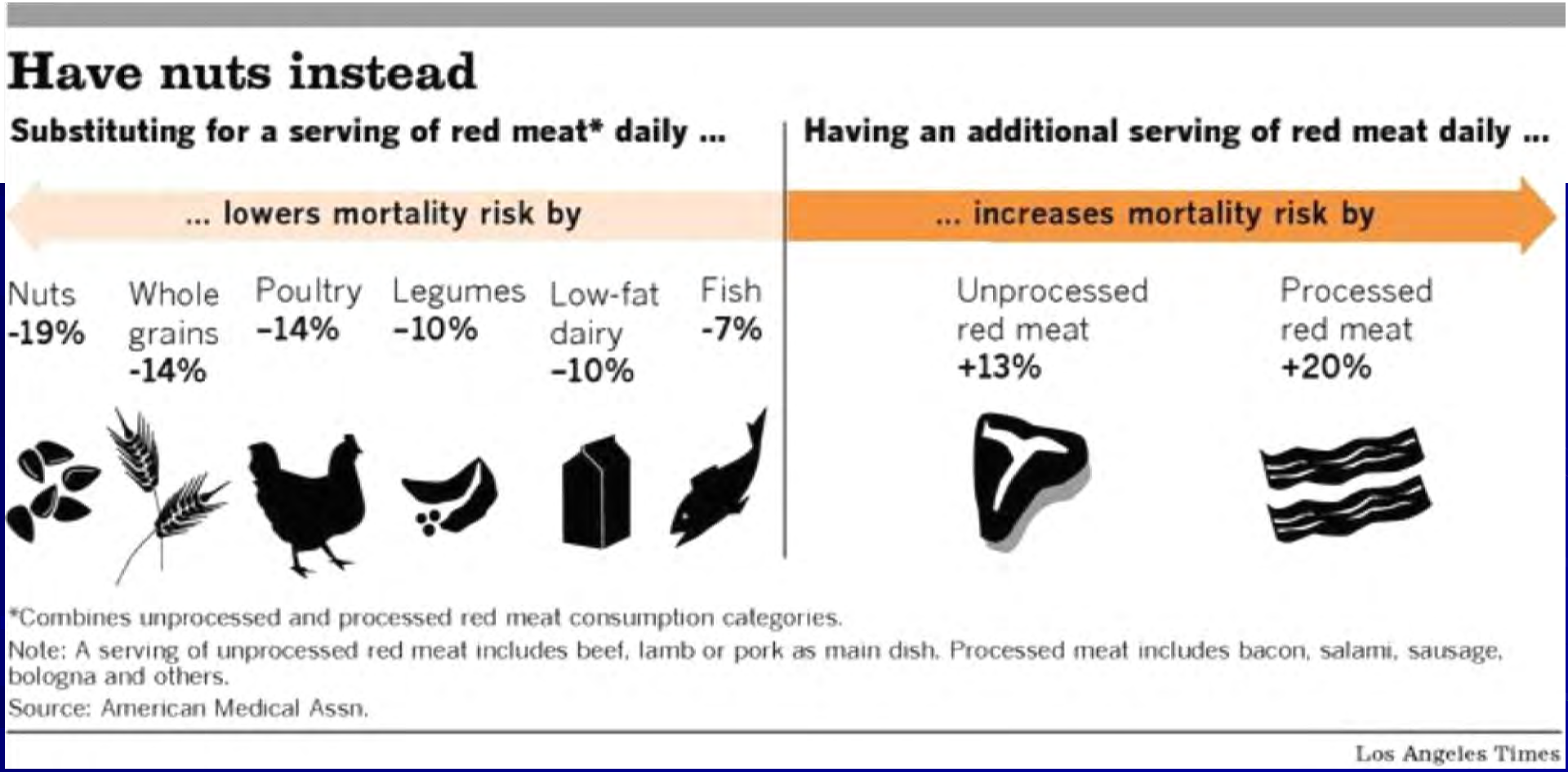
- Meat.
- Oils.
- Fats.

Similarities

- More fruits and veggies.
- Less sugar.
- Less processed foods.

ONLINE FIRST

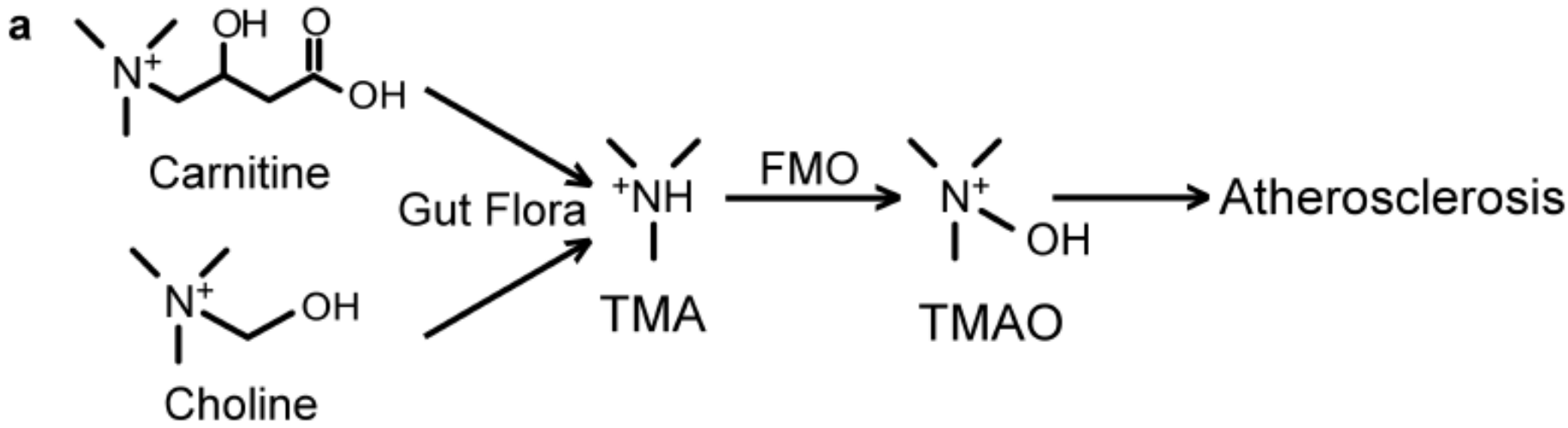
Red Meat Consumption and Mortality

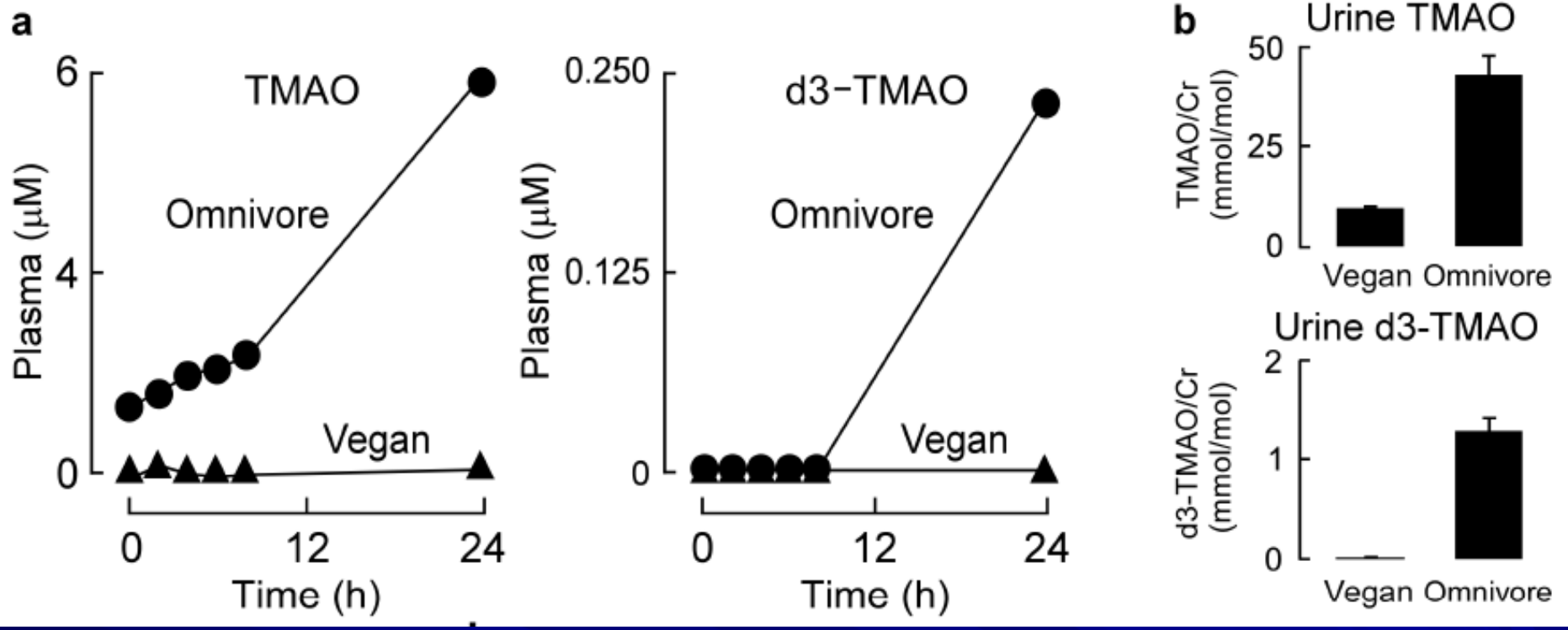


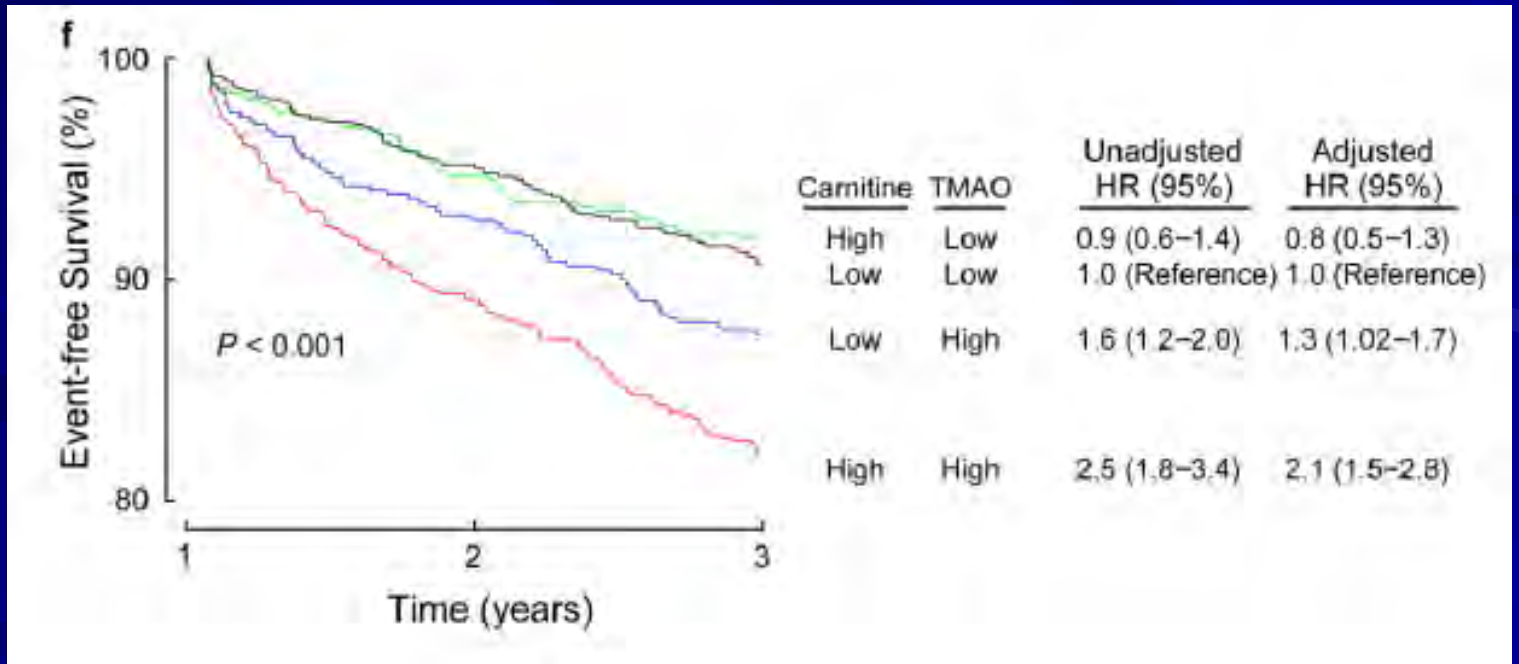
Nat Med. 2013 May ; 19(5): 576–585. doi:10.1038/nm.3145.

Intestinal microbiota metabolism of *L*-carnitine, a nutrient in red meat, promotes atherosclerosis

Robert A. Koeth[1,2], **Zeneng Wang**[1,2], **Bruce S. Levison**[1,2], **Jennifer A. Buffa**[1,2], **Elin Org**[3], **Brendan T. Sheehy**[1], **Earl B. Britt**[1,2], **Xiaoming Fu**[1,2], **Yuping Wu**[4], **Lin Li**[1,2], **Jonathan D. Smith**[1,2,5], **Joseph A. DiDonato**[1,2], **Jun Chen**[6], **Hongzhe Li**[6], **Gary D. Wu**[7], **James D. Lewis**[6,8], **Manya Warrier**[9], **J. Mark Brown**[9], **Ronald M. Krauss**[10], **W. H. Wilson Tang**[1,2,5], **Frederic D. Bushman**[5], **Aldons J. Lusis**[3], and **Stanley L. Hazen**[1,2,5]



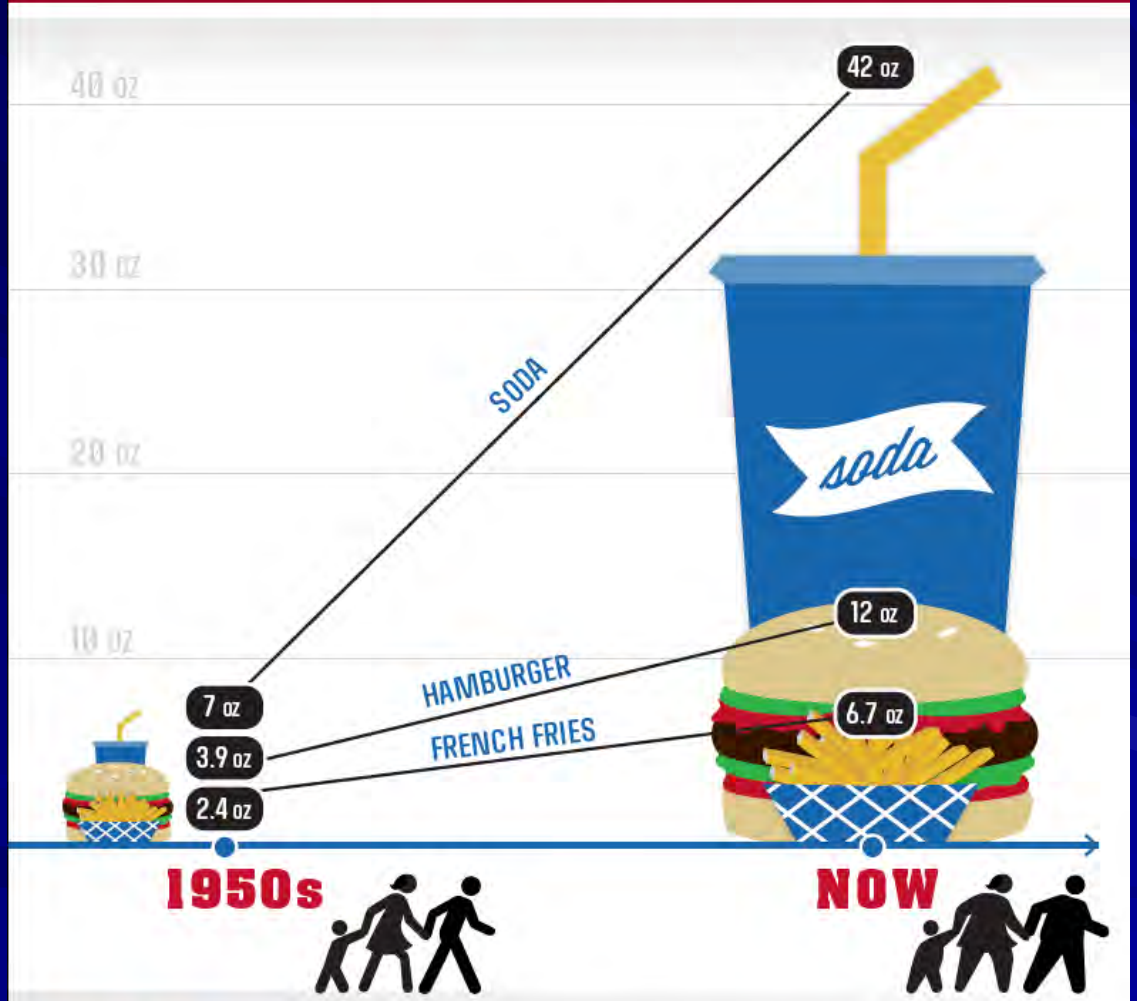




Carnitine	TMAO	Unadjusted HR (95%)	Adjusted HR (95%)
High	Low	0.9 (0.6–1.4)	0.8 (0.5–1.3)
Low	Low	1.0 (Reference)	1.0 (Reference)
Low	High	1.6 (1.2–2.0)	1.3 (1.02–1.7)
High	High	2.5 (1.8–3.4)	2.1 (1.5–2.8)

THE NEW (AB)NORMAL

Portion sizes have been growing. So have we. The average restaurant meal today is more than four times larger than in the 1950s. And adults are, on average, 26 pounds heavier. If we want to eat healthy, there are things we can do for ourselves and our community: Order the smaller meals on the menu, split a meal with a friend, or, eat half and take the rest home. We can also ask the managers at our favorite restaurants to offer smaller meals.



CDC

FOR MORE INFORMATION, VISIT MakingHealthEasier.org/NewAbNormal

Portion distortion!

Bagel

Calorie difference: **210 calories**

3-inch diameter
140 calories

6-inch diameter
350 calories

Cheeseburger

Calorie difference: **257 calories**

333 calories

590 calories

Soda

Calorie difference: **165 calories**

6.5 ounces
85 calories

20 ounces
250 calories

French Fries

Calorie difference: **400 calories**

2.4 ounces
210 calories

6.9 ounces
610 calories