

A hand is holding a large, vibrant bouquet of flowers. The bouquet is composed of several large, multi-petaled orange dahlias, smaller orange and white flowers, and a significant amount of white baby's breath. The flowers are wrapped in white paper. The background is a light-colored, vertically-planked wooden wall.

Mind-Body-Spirit Connections In Modern Healthcare

Lauren Kim, MD
UCLA Family Medicine, PGY3

Nothing to disclose.

Outline:

CONNECTIONS TO OUR:

parents

childhood

microbiome

environment

outside influences

food

healthcare providers

selves

loves ones



GRANT ME SERENITY

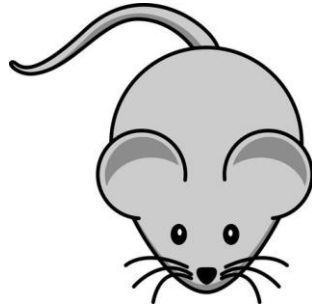
TO ACCEPT THINGS I CANNOT CHANGE,
COURAGE TO CHANGE THE THINGS I CAN,
& WISDOM TO KNOW THE DIFFERENCE



Connections to our parents



Parental trauma expressed in kids



- pups raised by unrelated mice (never smelled CB)
 - when pups smelled it, more jumpy/nervous compared to pups from non-conditioned fathers
 - more sensitivity to that smell (but not to other scents)
 - modifications in DNA coding for olfactory receptor
 - more neurons that respond to CB smell

After undergoing “CBT” (smell without shock) - their pups not heightened to CB scent

Connections to our childhood



ADVERSE CHILDHOOD EXPERIENCES - ACES

What are Adverse Childhood Experiences (ACEs)?
ACEs are potentially traumatic events that occur in a child's life:



Physical Abuse



Emotional Abuse



Sexual Abuse



Domestic Violence



Parental Substance Abuse



Mental Illness



Suicide or Death



Crime or Imprisoned Family

Causing lifelong medical, mental & social suffering



americanspcc.org
The Nation's Voice for Children
*Center for Disease Control

CDC-Kaiser ACE Study (1995-1997)
questionnaires completed at WCCs <18 yo, over 17,000 participants

HOW PREVALENT ARE ACEs?

The ACE study* revealed the following estimates:

ABUSE



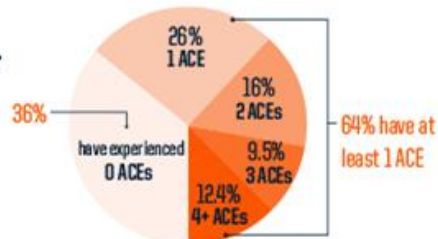
NEGLECT



HOUSEHOLD DYSFUNCTION



Of 17,000 ACE study participants:



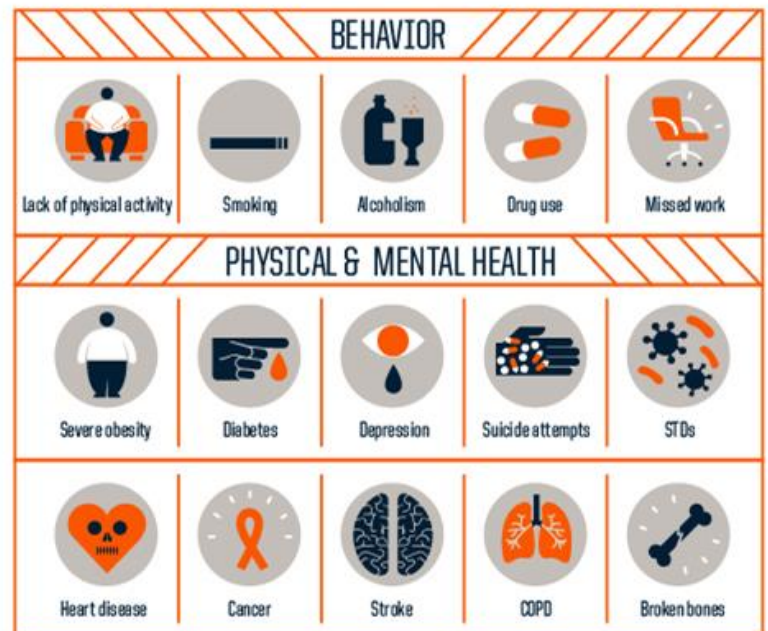
percentage of study participants that experienced a specific ACE

WHAT IMPACT DO ACEs HAVE?

As the number of ACEs increases, so does the risk for negative health outcomes

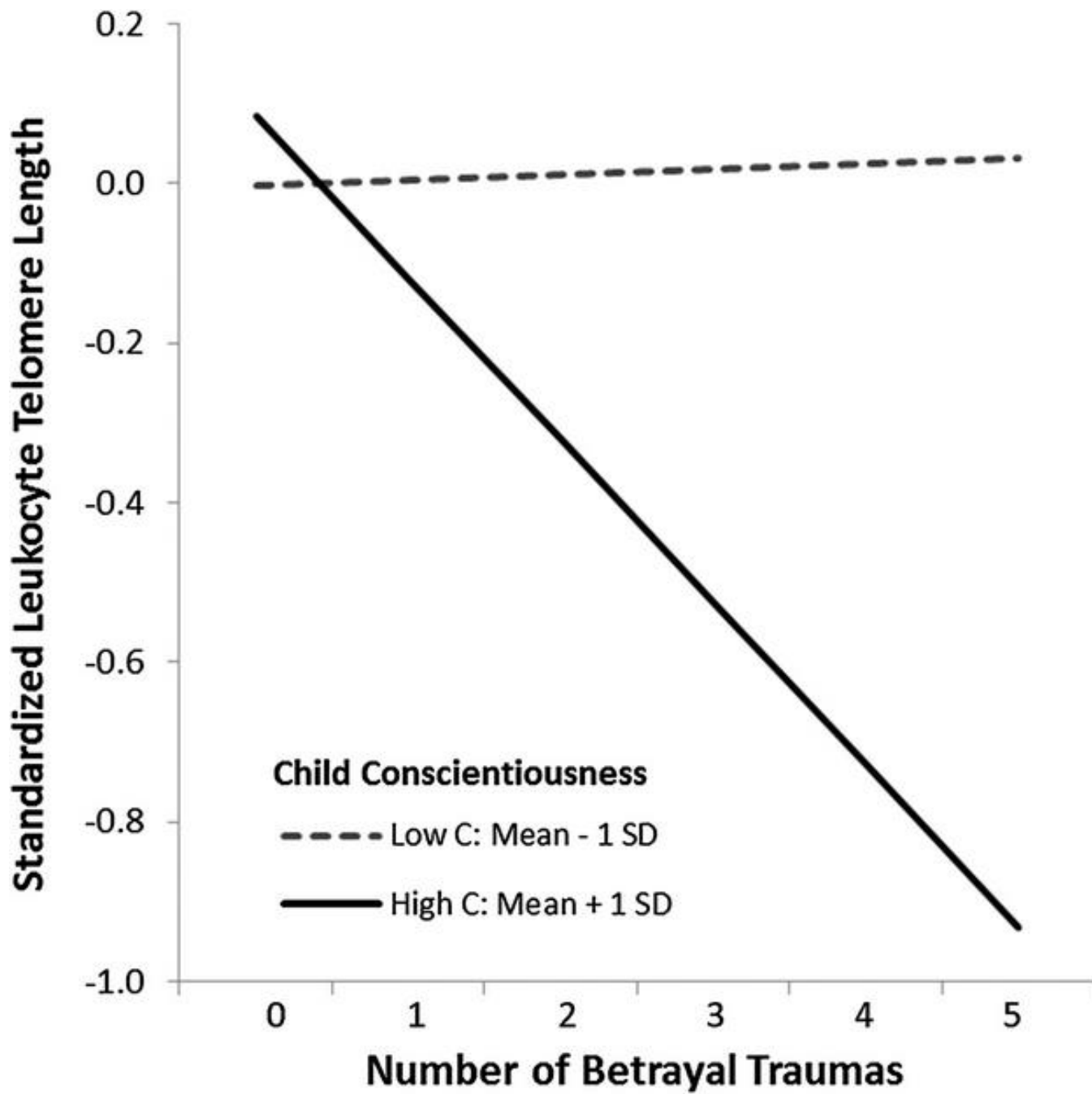


Possible Risk Outcomes:



ACEs & Physiologic Measures

- **Systematic review** (40 articles, ACEs measured retrospectively)
 - measured CRP, IL6, lipid panel, blood pressure, BMI, telomere length, cortisol, DNA methylation, etc...
 - here are some notable ones:



Trauma with Less Betrayal

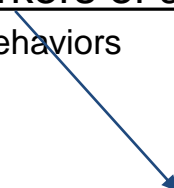
- Been in a major earthquake, fire, flood, hurricane, or tornado that resulted in significant loss of personal property, serious injury to yourself or a significant other, the death of a significant other, or the fear of your own death
- Been in a major accident (car, plane, boat, etc) that resulted in similar consequences.
- Witnessed someone with whom you were not so close undergoing a similar kind of traumatic event.
- Witnessed someone with whom you were not so close deliberately attack a family member that severely.*
- You were deliberately attacked that severely by someone with whom you were not close.
- You were made to have such sexual contact by someone with whom you were not close
- You were emotionally or psychologically mistreated over a significant period of time by someone with whom you were not close.*

Trauma with More Betrayal

- Witnessed someone with whom you were very close committing suicide, being killed, or being injured by another person severely
- Witnessed someone with whom you were very close deliberately attack another family member so severely as to result in marks, bruises, blood, broken bones, or broken teeth.
- You were deliberately attacked that severely by someone with whom you were very close.
- You were made to have some form of sexual contact, such as touching or penetration, by someone with whom you were very close.
- You were emotionally or psychologically mistreated over a significant period of time by someone with whom you were very close

Childhood physical abuse & Biomarkers

- cross section study n>1100
- sig associations b/t childhood physical abuse and markers of allostatic load
 - even after adjusting for education, social relationships, health behaviors



blood pressure
HDL, TGs
CRP, IL-6, ICAM-1,
fibrinogen
fasting glucose
urine epinephrine,
norepinephrine, cortisol
serum DHEA-S
BMI
waist: hip ratio
HR variability

Childhood Trauma & Acute Stress Response

n = 69 adults recruited from community

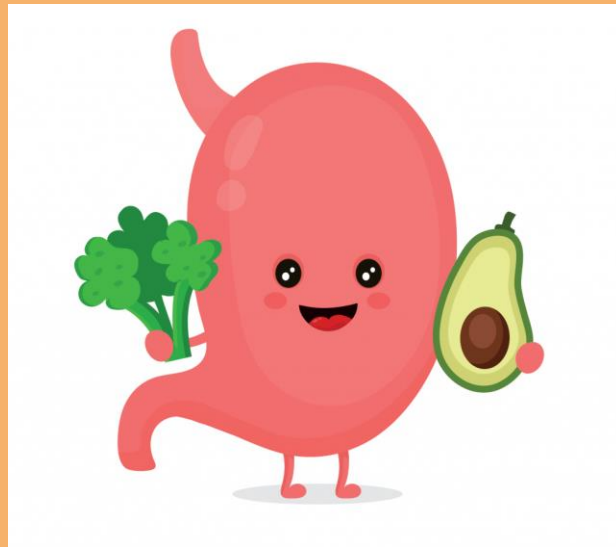
Standardized stress protocol

(anticipation period then

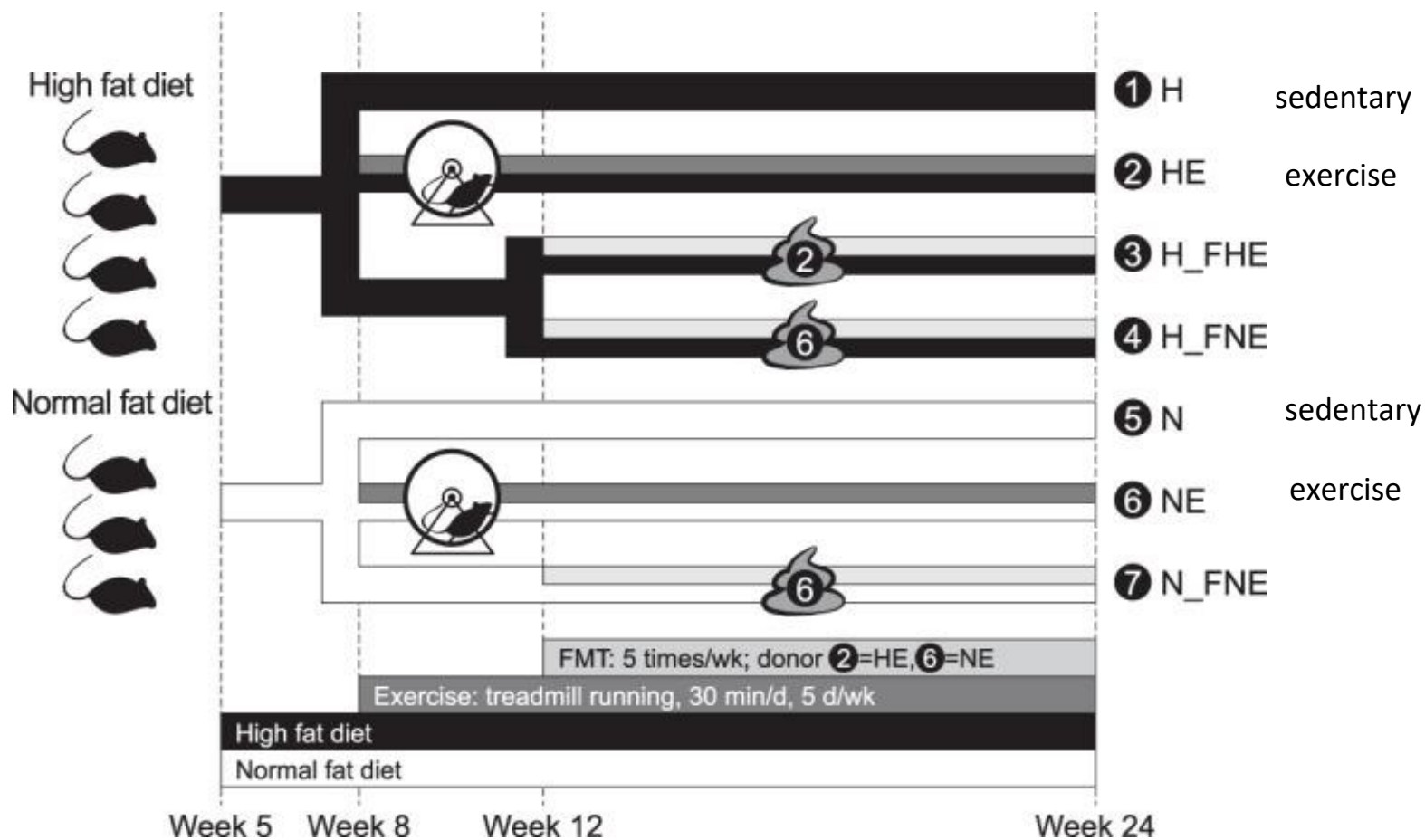
public speaking & mental math in front of judge panel

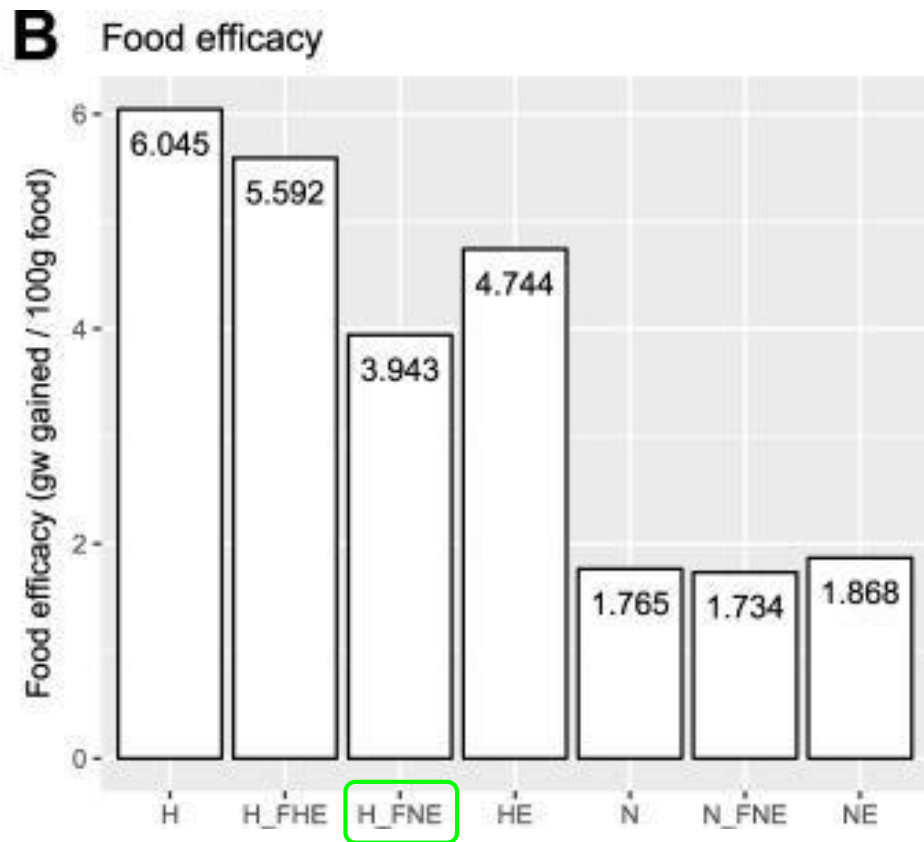
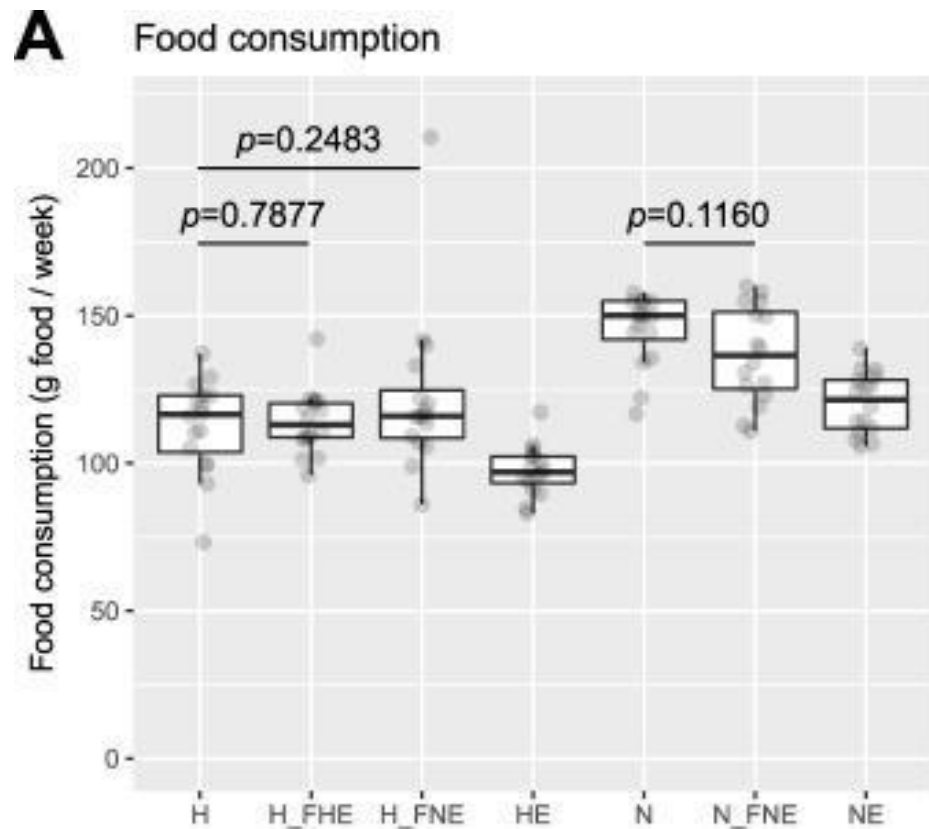
reponse: More trauma a/w **higher IL-6 release throughout & after stressor** compared to controls

Connections to our Gut Microbiome



Fecal Transplant improves recipient health





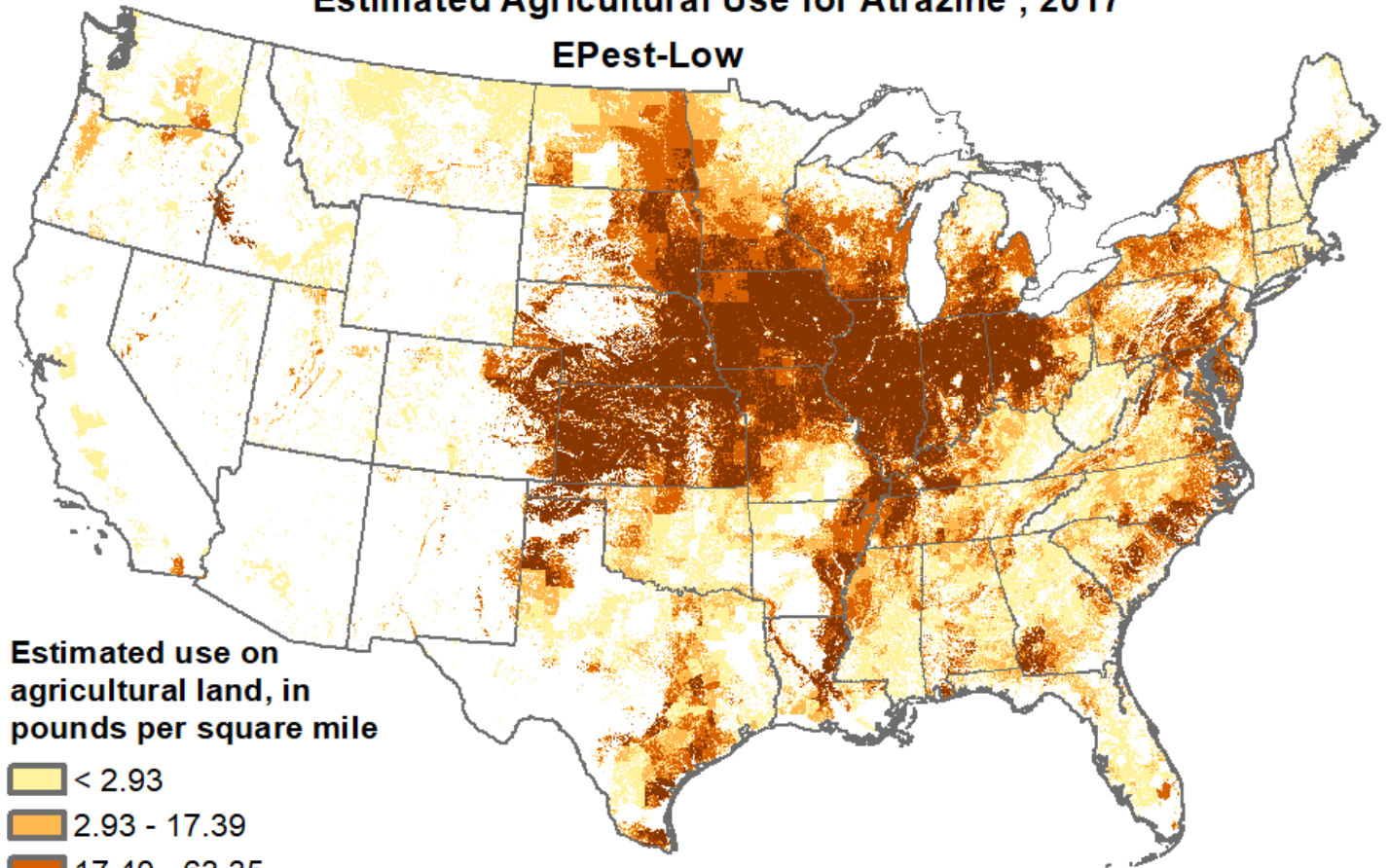
- reduced food efficacy (less weight gained per 100g of food)
- lower LDL, FBG, ALT, TNF/IL-1 expression

Connections to our environment





Estimated Agricultural Use for Atrazine , 2017

EPEst-Low





Estimated use on agricultural land, in pounds per square mile

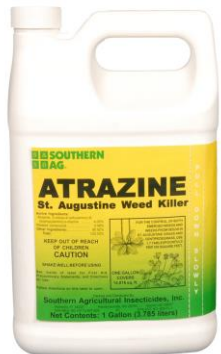
 < 2.93

 2.93 - 17.39

 17.40 - 63.35

 > 63.35

 No estimated use



ATRAZINE (weed killer) - 80 million lbs per year in US

Atrazine & Frogs

Tyrone Hayes (UC Berkeley, integrative biology professor)
exposed male frogs to AZA at 0.1ppb

90%



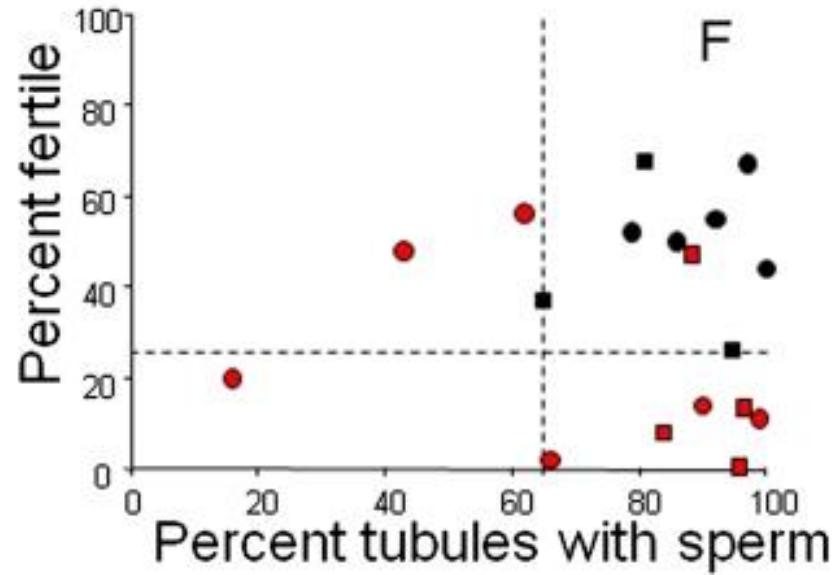
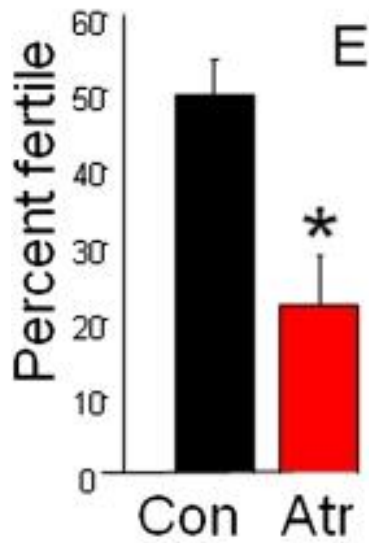
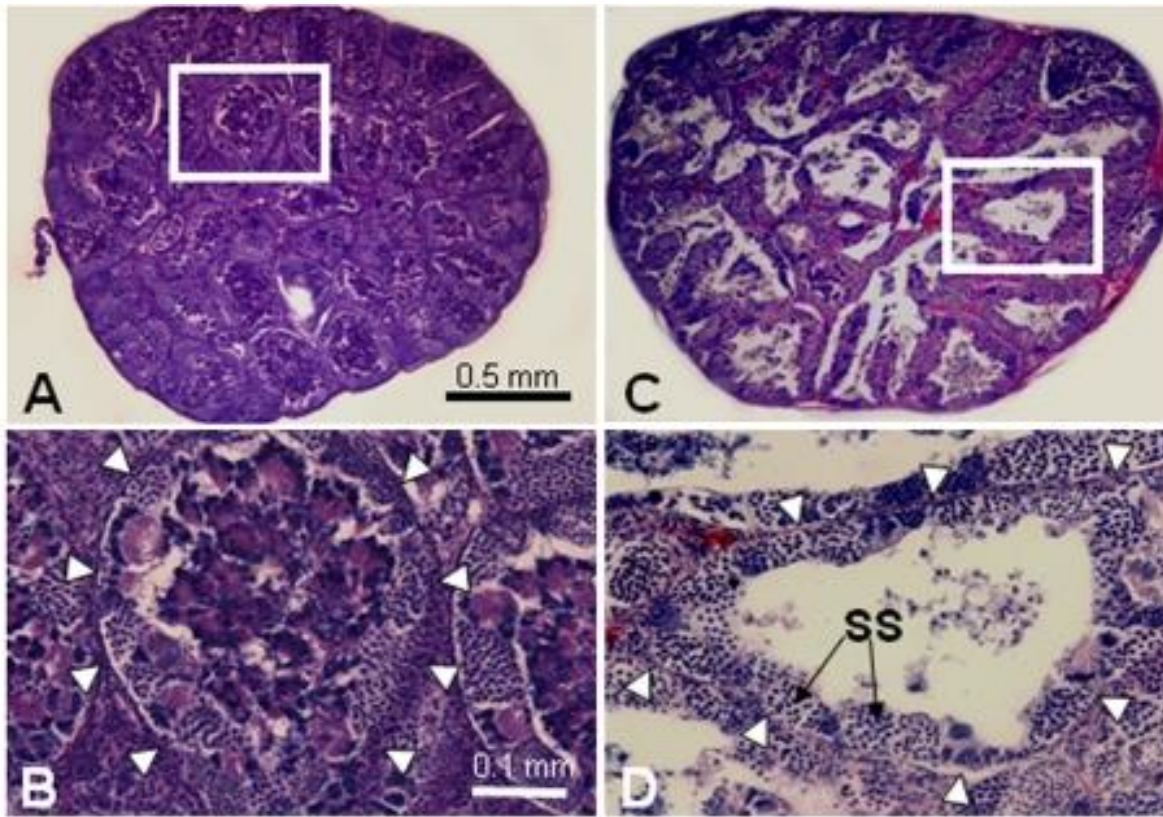
- decreased testosterone
- feminized laryngeal development
- suppressed mating behavior
- lower sperm count
- decreased fertility overall
- always lost when competing with normal males for mating

10%



became reproducing
females
(eggs in testes, can mate with normal males and have male offspring)

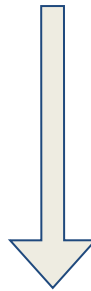
cross sections of testicular tubules



Glyphosate



4 different formulations of Round Up (conc 0.0001% to 2%)
applied to umbilical cord, placenta and embryonic kidney cells in vitro



within 24 hrs

necrosis

via: inhibition of mitochondrial Succinate DH)
measured by: increased adenylate kinase activity (signals that
cytoplasmic membrane has ruptured)

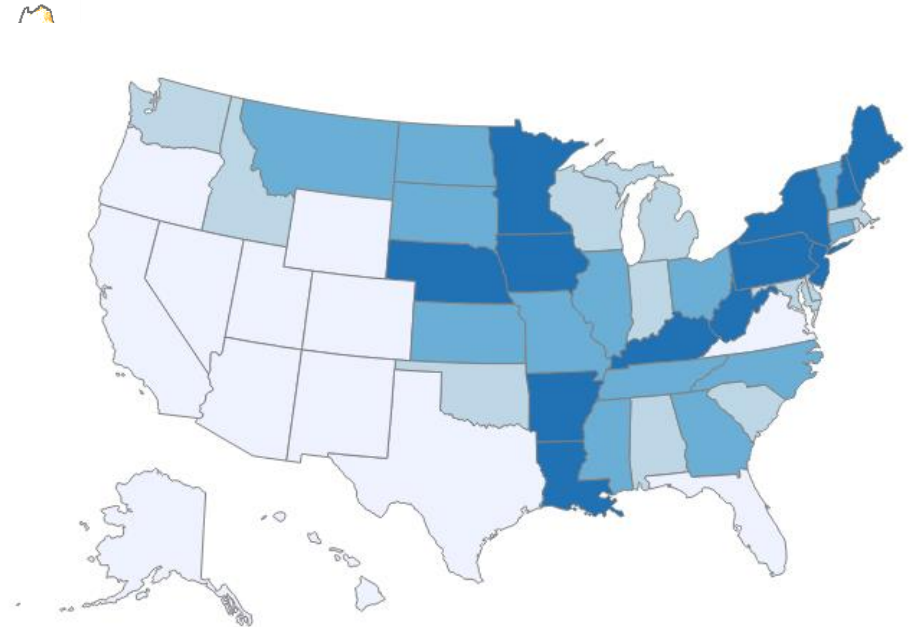
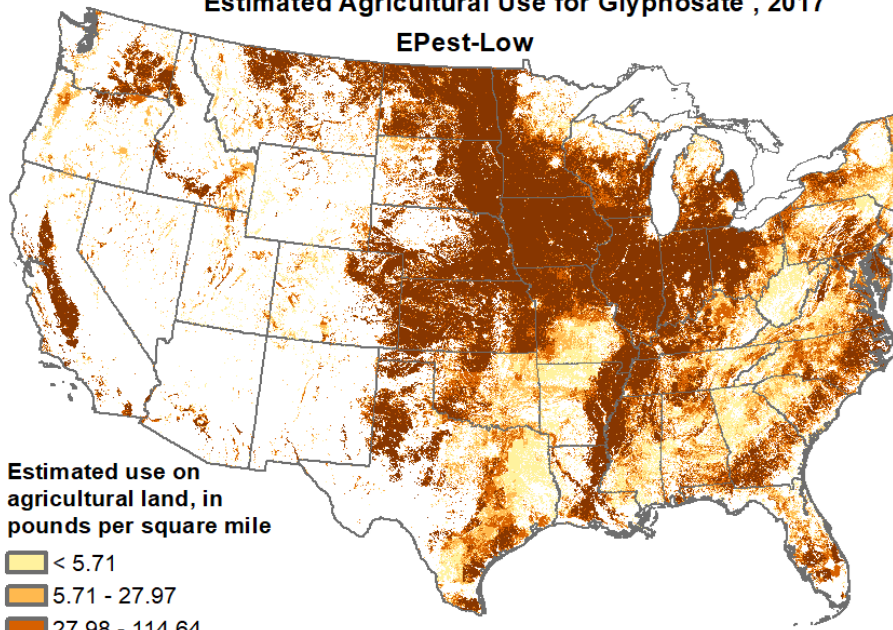
apoptosis

via: caspase 3/7
measured by: DNA fragmented, nucleus shrinkage &
fragmentation

Where is glyphosate used?

Estimated Agricultural Use for Glyphosate , 2017

EPEst-Low



How would you treat a sick fish?



THEORY ONE:
medicate the fish



THEORY TWO:
clean the tank

Connections to Outside Influences

the Opioid push

1990s, shifting attitudes toward pain

1996: Purdue Pharma starts selling OxyContin

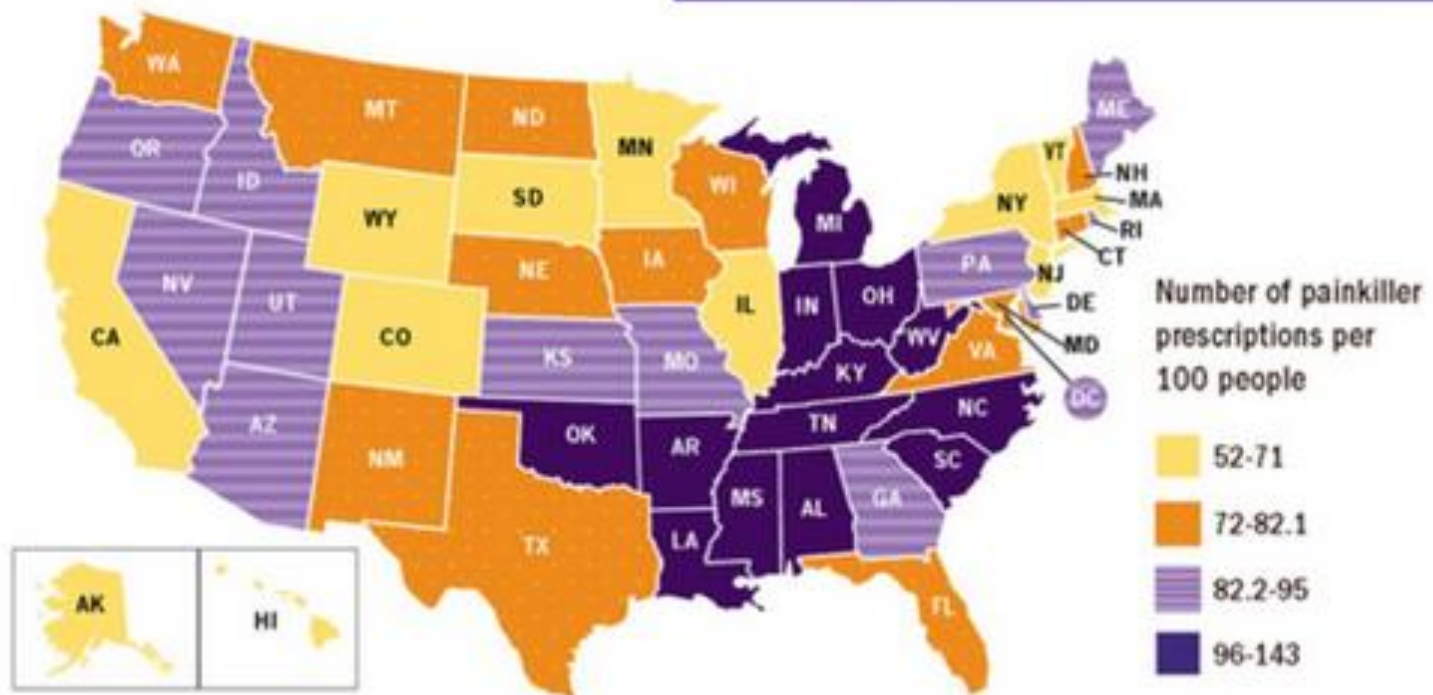
- marketed for chronic, non-cancer pain, safe
- crush → snorted
- or mixed with water → injected

----- (opioid epidemic)-----

2007: Purdue sued for misbranding, paid \$630m

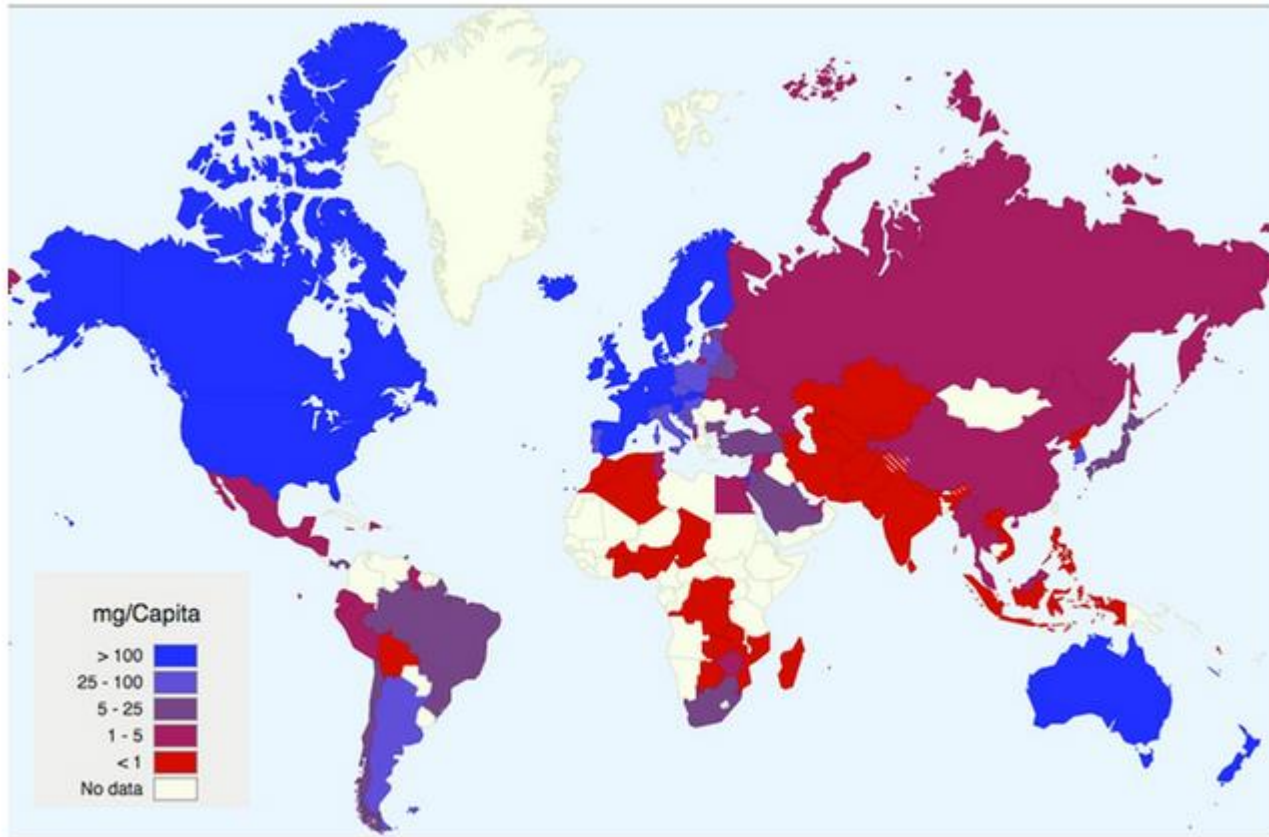
2012 Opioid Rx Map

Some states have more painkiller prescriptions per person than others.



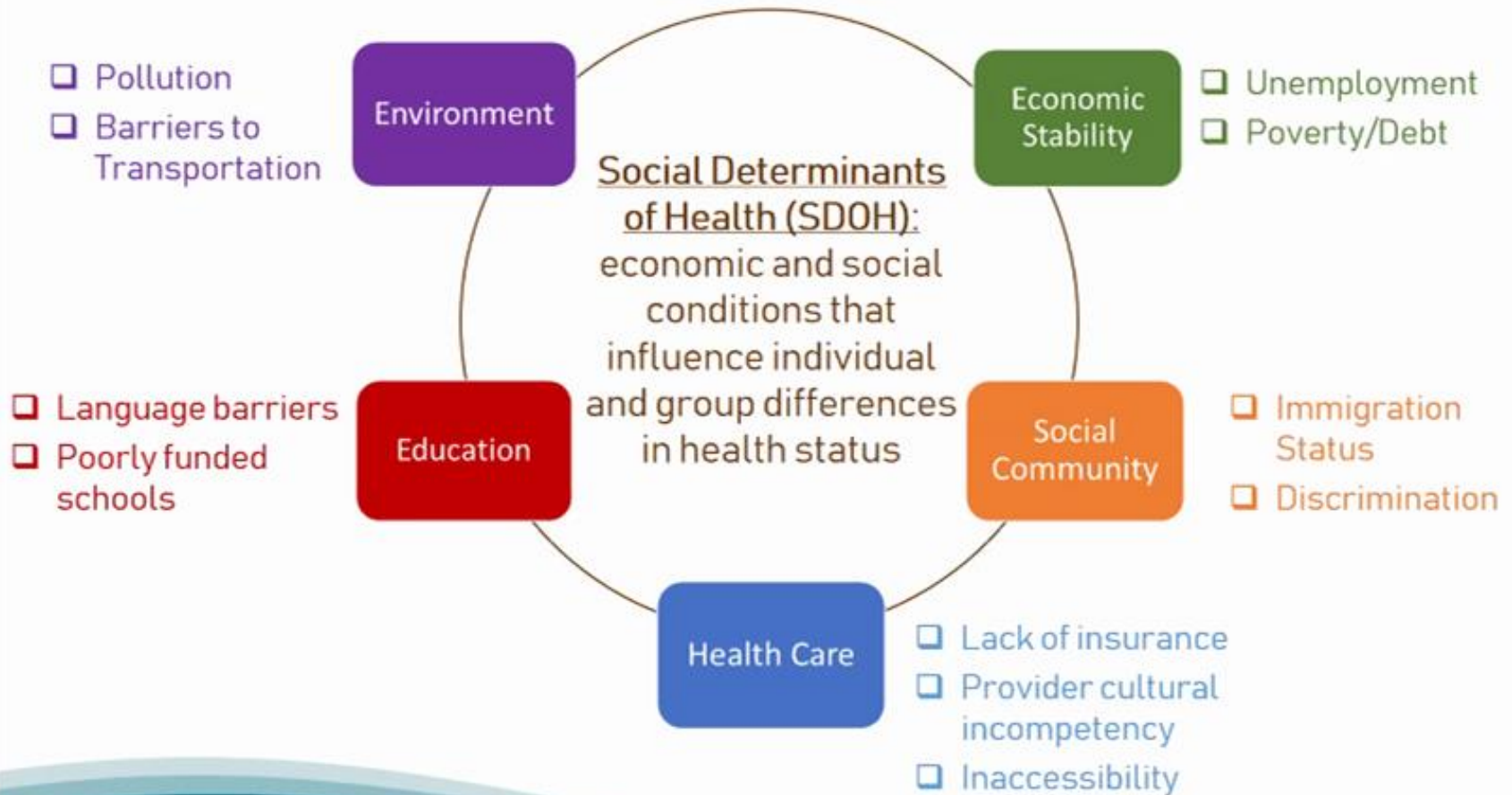
Map from Centers for Disease Control

Leaders in Opioid Rx

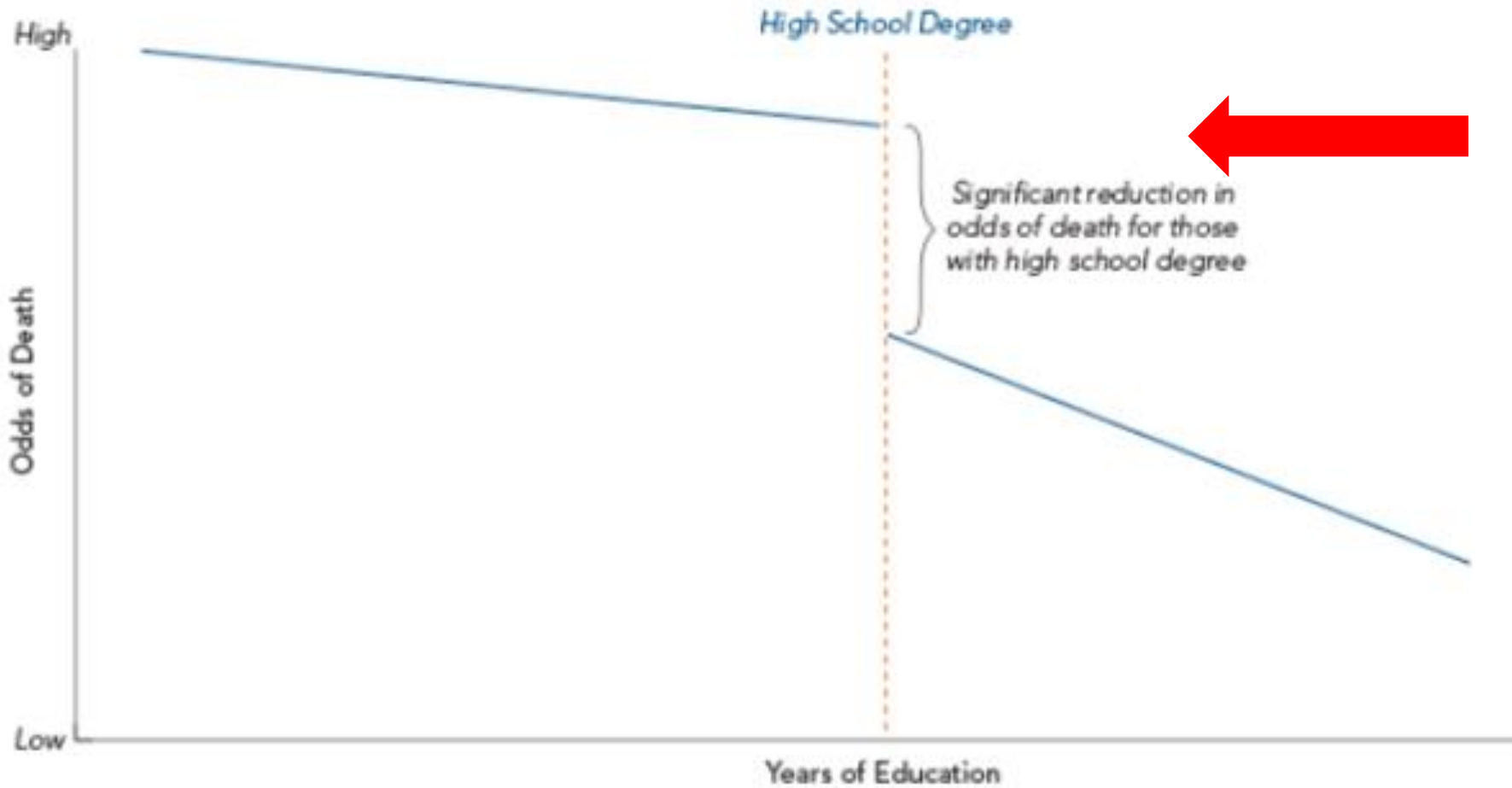


University of Wisconsin

Challenges to Health



Relationship Between Educational Attainment and Mortality for U.S. Adults



Source: Jennifer Karas Montez et al., "Educational Attainment and Adult Mortality

Education

Table 1: Life expectancy, Americans age 25 in 2008 (age 33 in 2015), By education, gender, race and ethnicity

Race/ethnicity	No HS diploma		HS graduate		Some college		College degree or higher	
	Men	Women	Men	Women	Men	Women	Men	Women
<i>Gender</i>								
Whites	68.6	74.2	73.2	79.0	80.3	84.2	81.7	84.7
Blacks	68.2	74.2	69.3	74.7	77.3	81.1	78.2	81.6
Hispanic	78.5	83.4	77.9	82.7	82.5	86.3	84.0	86.3

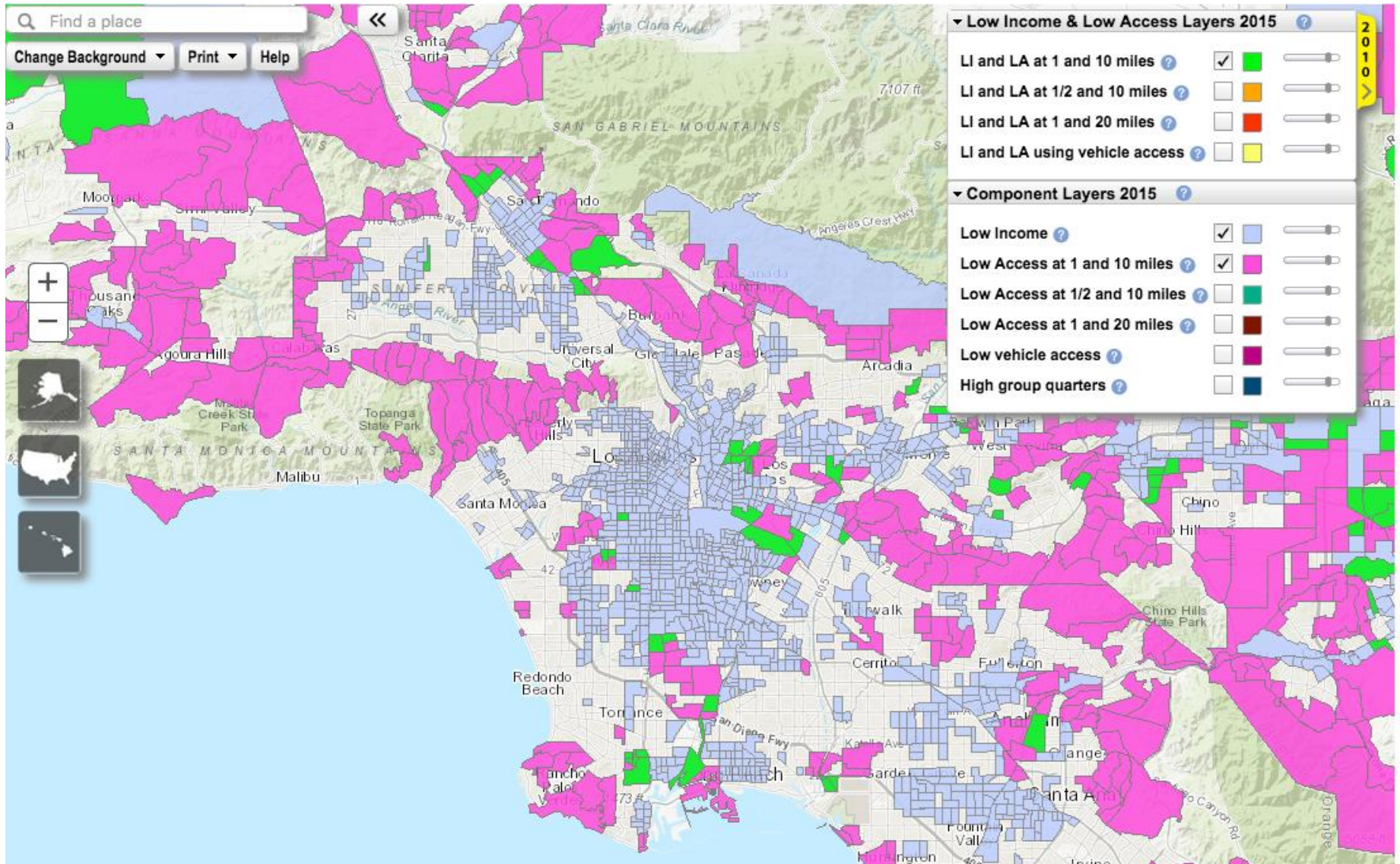
BROOKINGS

Food Deserts

USDA characteristics

- lack access to affordable fruits, veggies, whole grains, etc.
- poverty rate $\geq 20\%$
- at least $\frac{1}{3}$ of the population lives over 1 mi from the nearest large grocery store (urban) or 10 miles (rural)
- often linked to lack of transportation
- approx 20m americans

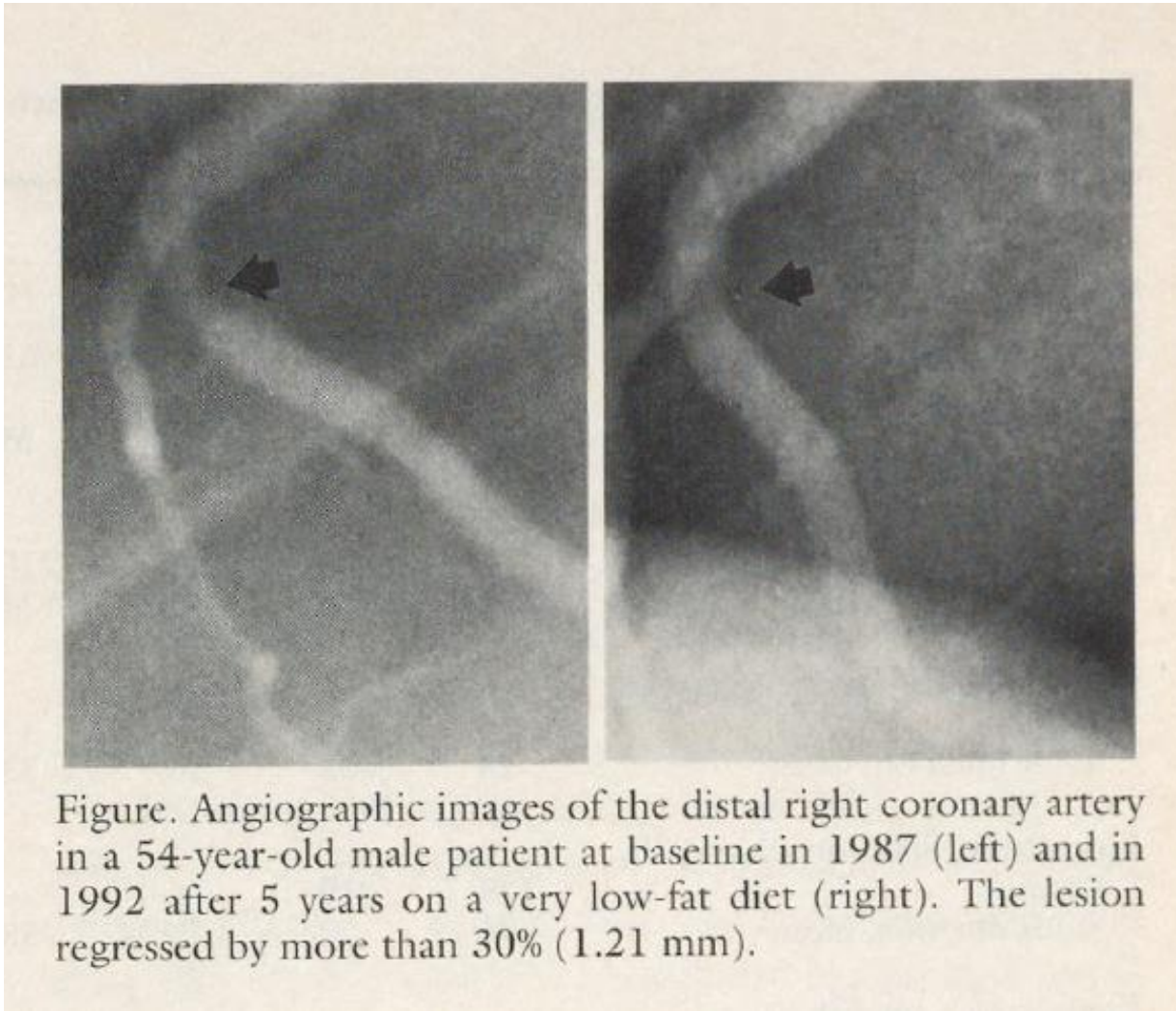
Food Desert Map 2015



Connections to Our Food



5 years: WFPB + Moderate Statin



- n = 22 pts with severe CAD (dx'd by angio), lovastatin 40-60mg + low fat diet x5 years.
- 5 dropped out (10 coronary events), 11/17 finished follow up
 - 11: cholesterol baseline avg 246 → less than 150, no events

FORKSOVERKNIVES.COM



SUCCESS STORIES

I'm Reversing Metabolic Syndrome on a Plant-Based Diet

As a young schoolteacher in the 1980s and early 1990s, I completed several Olympic-distance triathlons. I stopped competing in these events when...



SUCCESS STORIES

I Cut My Weight in Half on a Whole-Food, Plant-Based Diet

I started struggling with obesity during childhood. Despite many attempts to manage my weight, it continually crept up. I was eventually diagnosed...



SUCCESS STORIES

Faced with Gastric Bypass Surgery, I Tried a Plant-Based Diet Instead

I'm from Kansas City and grew up on barbecue. I ate a lot of ribs, chicken, brisket, and pulled pork. I began...

ACC/AHA Food Guidelines

- Vegetables
- Fruits
- Legumes
- Greens
- Whole Grains

- Poultry
- Meat
- Oils
- Dairy
- Sugary Drinks

Partial AHA Sponsor List:



Table 4: Potential Conflicts of Interest on the 2010 Advisory Committee

MEMBER	RELATIONSHIPS WITH INDUSTRY UP TO & INCLUDING 2010
1. Linda V. Van Horn, Ph.D., R.D., L.D. (Chair)	2007 study on the impact of intervention of beverage choice of children funded in part by General Mills.
2. Naomi K. Fukagawa, M.D., Ph.D., (Vice-Chair)	None.
3. Cheryl Achterberg, Ph.D.	Scientific advisor to the Dannon Institute in 1998. Received a \$150,538 grant from Kraft General Foods in 1993-94. Received a \$125,000 grant from Campbell's Soup from 1995-97.
4. Lawrence J. Appel, M.D., M.P.H.	In 2003, listed as a consultant to Tropicana. In 2003, listed as receiving research grants from King Pharmaceuticals.
5. Roger A. Clemens, Dr.P.H.	None.
6. Miriam E. Nelson, Ph.D.	In 2007 listed as having received over \$10,000 from Mission Pharmacal (which makes the calcium supplement Citracal, which is sold by Bayer Pharmaceuticals) and over \$10,000 from Luminari (a producer of health-related multi-media content for General Mills, PepsiCo, Stonyfield Farm, Newman's Own, and other companies). In 2003, listed as being a member of the McDonald's Corp. Global Advisory Council on Healthy Lifestyles.
7. Sharon M. Nickols-Richardson, Ph.D., R.D.	None.
8. Thomas A. Pearson, M.D., Ph.D., M.P.H.	1994 study on chocolate's effect on cholesterol levels supported by the American Cocoa Research Institute (an arm of the Chocolate Manufacturers Association). 1999 study on monounsaturated fats was supported by the Peanut Institute. Research for 2000 study on lipid and lipoprotein responses to different diets partially supported by Abbott Laboratories.
9. Rafael Perez-Escamilla, Ph.D.	None.

<p>10. Xavier Pi-Sunyer, M.D., M.P.H.</p>	<p>In 2005 listed as being on the advisory boards of Hoffmann-La Roche Inc., Abbott Laboratories, Johnson & Johnson, McNeil Nutritionals and Weight Watchers international Inc. 2004 study supported by funding from Abbott Laboratories Inc., Novo Nordisk, Roche, and Sanofi-Synthelabo. In 2005, listed as having received research funding from Eli Lilly and Company, Merck & Co., Novartis AG, and Sanofi-Aventis. In 2004, listed as being a consultant to Eli Lilly, Roche, and Sanofi-Aventis. In 2005, listed as a member of the Clinical Advisory Board of the Grain Foods Foundation. In 1997, listed as being: on the advisory boards of the American Home Products' Wyeth-Ayerst labs and Knoll Pharmaceuticals; consultant to Lilly Pharmaceuticals, Genentech, Hoffman-La Roche, Knoll, Weight-Watchers International, and Neurogen; on Knoll Pharmaceutical's Weight Risk Investigation Study Council, which provides research grants. In 1999, accepted grants or fees from Waner-Lambert on Rezulin, a diabetes drug. Research for 2000 study on the effects of folate and vitamins B-12 and B-6 on serum total homocysteine supported by Campbell Soup Company. 1997 study that compared meal plans and self-selected diet in relation to cardiovascular risk reduction supported by Campbell Soup Company. 1996 study on the benefits of a prepared diet in relation to cardiovascular disease supported by Campbell Soup Company.</p>
<p>11. Eric B. Rimm, Sc.D.</p>	<p>In 2008, listed as receiving funding for obesity and diabetes research from Sanofi-Synthelabo and GlaxoSmithKline.</p>

<p>12. Joanne L. Slavin, Ph.D., R.D.</p>	<p>Co-author of 2002 study on the "effect of whole grain on insulin sensitivity on overweight hyperinsulinemic adults" funded in part by General Mills. 2001 study on the "effects of dietary arabinogalactan on gastrointestinal and blood parameters in healthy human subjects" sponsored by Larex Inc. In 1999 or earlier, conducted research for General Mills. Research for 1998 study on soybeans supported by the Minnesota Soybean Promotion and Research Council and Minnesota Agricultural Experiment Station. 1997 study on soy-protein supported by the Minnesota Soybean Promotion and Research Council and the Minnesota Agricultural Experiment Station.</p>
<p>13. Christine L. Williams, M.D., M.P.H.</p>	<p>Research for 1999 study on bran fiber in childhood supported in part by Kellogg.</p>

Connections to our doctors



Implicit Memory

Edward cloparede, (Neurologist, psychologist)

- Korsakoff pt (no new memories)
- Hid pin in hand, pricked her
- Next day, she declined his hand (but didn't know why)

Implicit Bias

Physicians' implicit pro-white bias correlates with:

- black patients' perceptions of **poorer communication & lower quality care** (1)
- **shorter visits** with oncologist, **less pt centered** decisions, patients **less confident** in treatments, **feeling less supported**(2)

Doctor's self-awareness matters too!

- Explicit/Implicit discordancy → lower pt satisfaction (3)

Time Limitations

Things that exacerbate bias: high stress, frequent distractions, brief visits

What do you do when your patient starts to have a breakdown at minute 14?

Physician Burnout

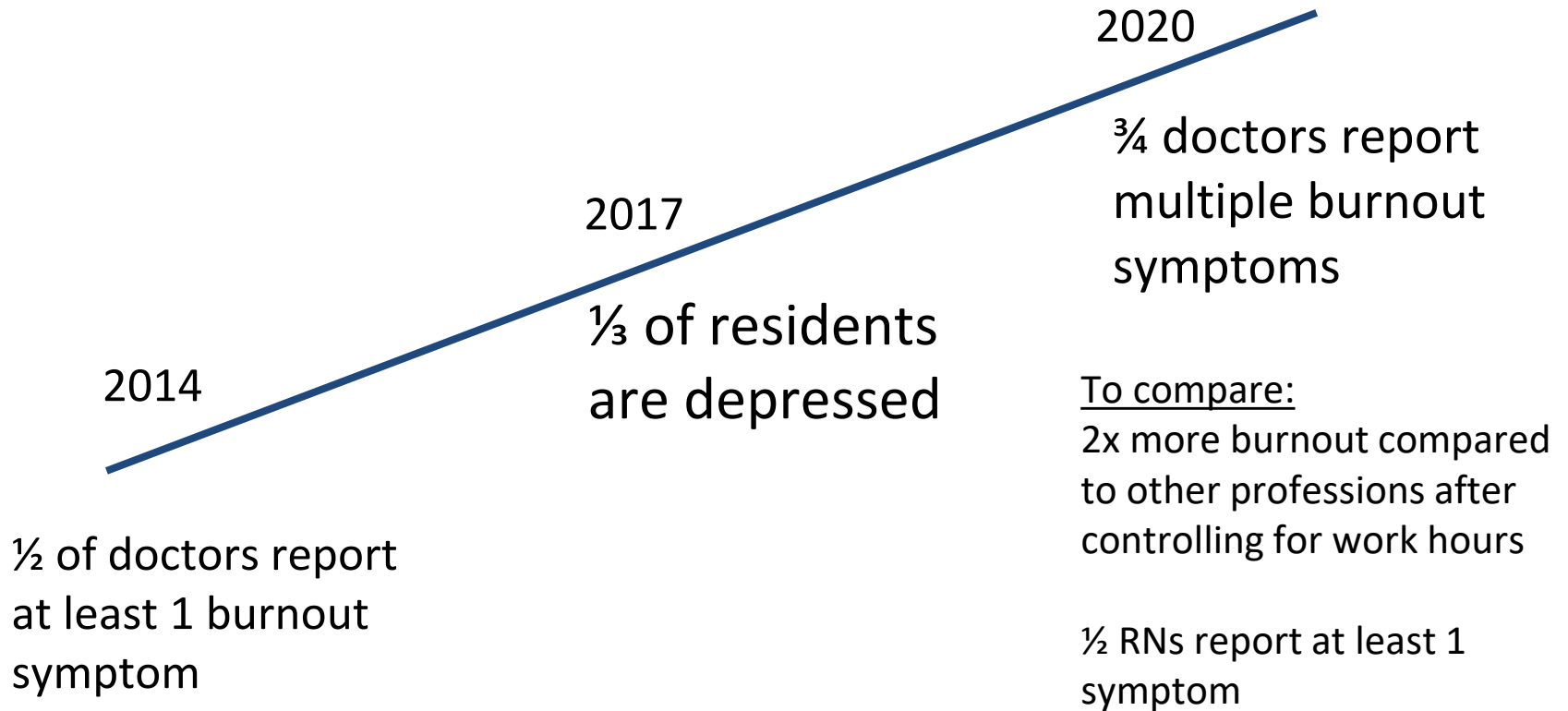


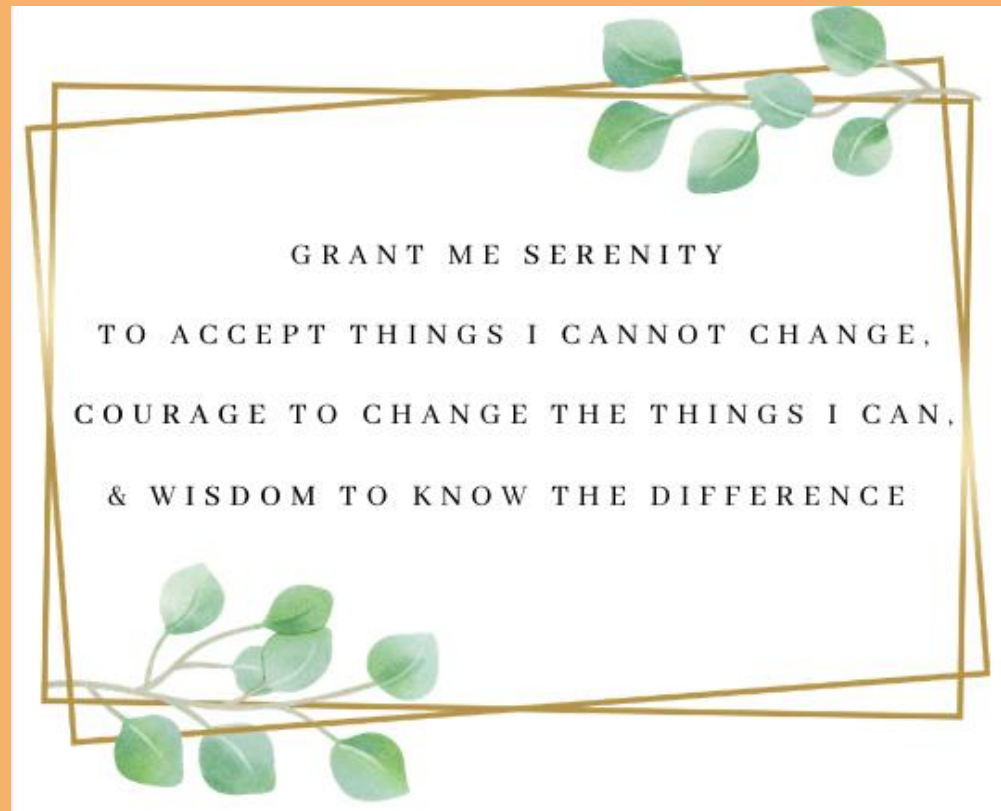
TABLE 1. Incongruence Between Artifacts and Espoused Values in Medicine

Domain	Espoused value (what we say)	Artifact (our behavior)	What it reveals
Culture of our organizations and health care system	Physicians are professionals (we trust them)	Preauthorization and excessive documentation required to justify billing and prevent malpractice suits	We do not trust you
	Physicians are our most highly trained and expensive workers (we should maximize their efforts)	Excessive clerical burden and ineffective use of time	Your time is not valuable
	High-quality care is our top priority	A delivery system that drives fatigue and burnout which erode quality of care	Economic priorities are more important than quality
		Focus on relative value units/ volume/net operating income	Commoditization of physicians and patients
	We value patient autonomy, shared decision making, and tailoring care to individual needs	Visit lengths and limited staff support preclude shared decision making and tailoring care to individual patient needs	Economic priorities are more important than patient agency
	We believe in social justice and fair distribution of resources for our patients and communities	Organizational tactics that tailor access to optimize payer mix and care for highly reimbursed medical conditions rather than patient need	Economic priorities are more important than social justice assumptions

TABLE 1. Incongruence Between Artifacts and Espoused Values in Medicine

Domain	Espoused value (what we say)	Artifact (our behavior)	What it reveals
Professional culture	Self-care is important	Excessive hours, work always first, and often do not take care of ourselves (diet, exercise, sleep, and preventive health care)	Self-care is not important; short-term productivity is more important than sustainability
	Prevention is better than treatment	We do not attend to our own health needs	Physician health is not important
	To err is human	A professional culture of perfectionism, lack of vulnerability, and low self-compassion	Physicians expected to be superhuman
		Belief that mistakes are the fault of the individual and are unacceptable	We have not yet internalized many of the lessons of the quality movement that errors are inevitable in complex systems
	Fatigue impairs performance	Excessive work hours; work even when ill	We do not believe this adage applies to physicians or we are too arrogant to admit it does

Connections To Ourselves



Work Smarter, Not Harder (when possible)

Classification of Tasks: Urgency and Importance

	Urgent	Not Urgent
Important	1	2 goal to spend around 20% of time here
Not Important	3 try to avoid/decrease, delegate if possible	4 eliminate



Mindfulness in Clinical Practice and Physician Self-Care

Physicians with a regular mindfulness practice enjoy reduced:

- Stress response
- Perseveration
- Physical illness
- Depression
- Anxiety
- Burnout

These physicians also experienced improvements in:

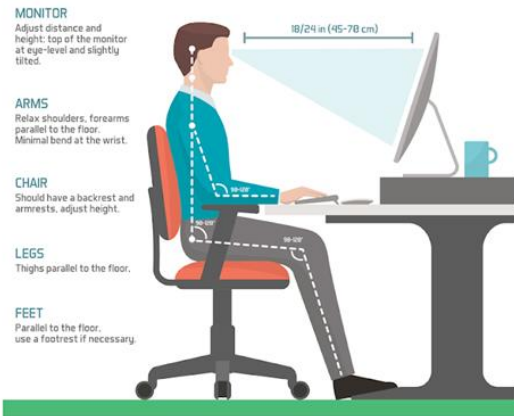
- Perceived empathy
- Patient adherence
- Patient outcomes
- Reduced medical errors

Shapiro SL, et al. *Journal of Behavioral Medicine* 2017;21(6):581-99.
Irving JA, et al. *Complementary Therapies in Clinical Practice* 2009;15:61-66.
Beach MC, et al. *Ann Fam Med*. 2013;11(5):421-428.

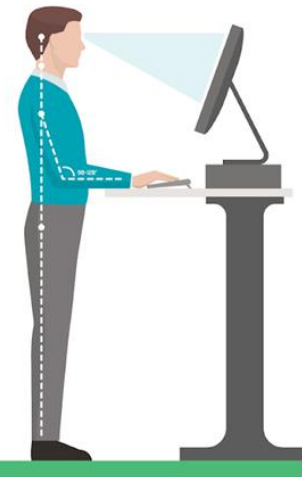
Posture



WRONG SITTING POSTURE



CORRECT SITTING POSITION



CORRECT STANDING POSITION

Power Posing

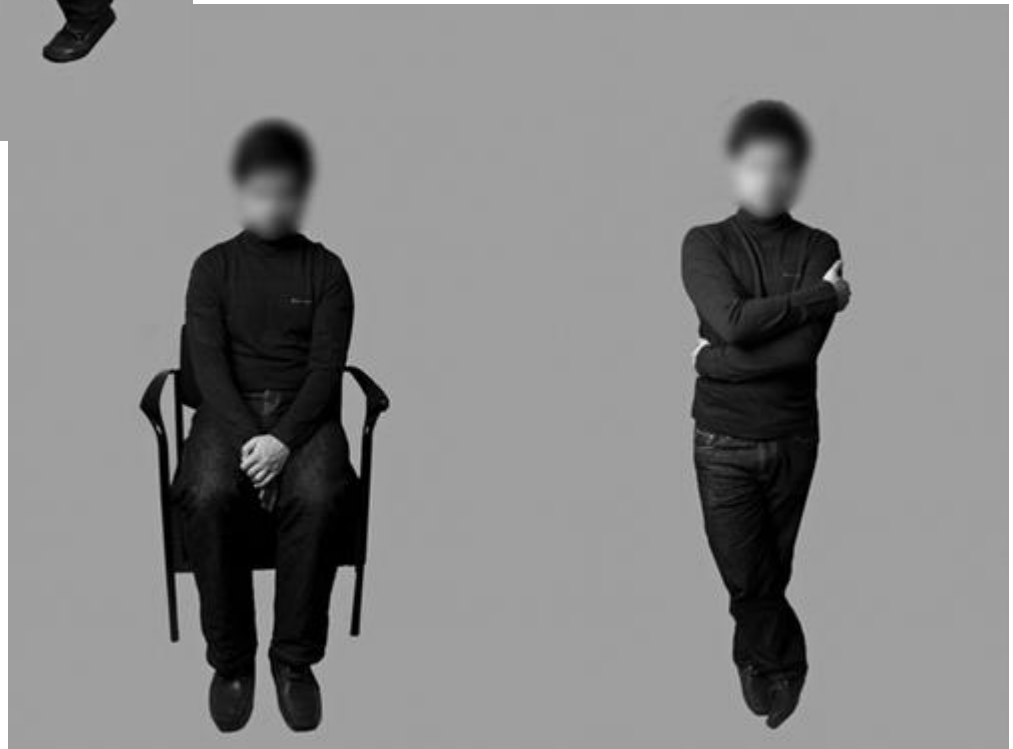


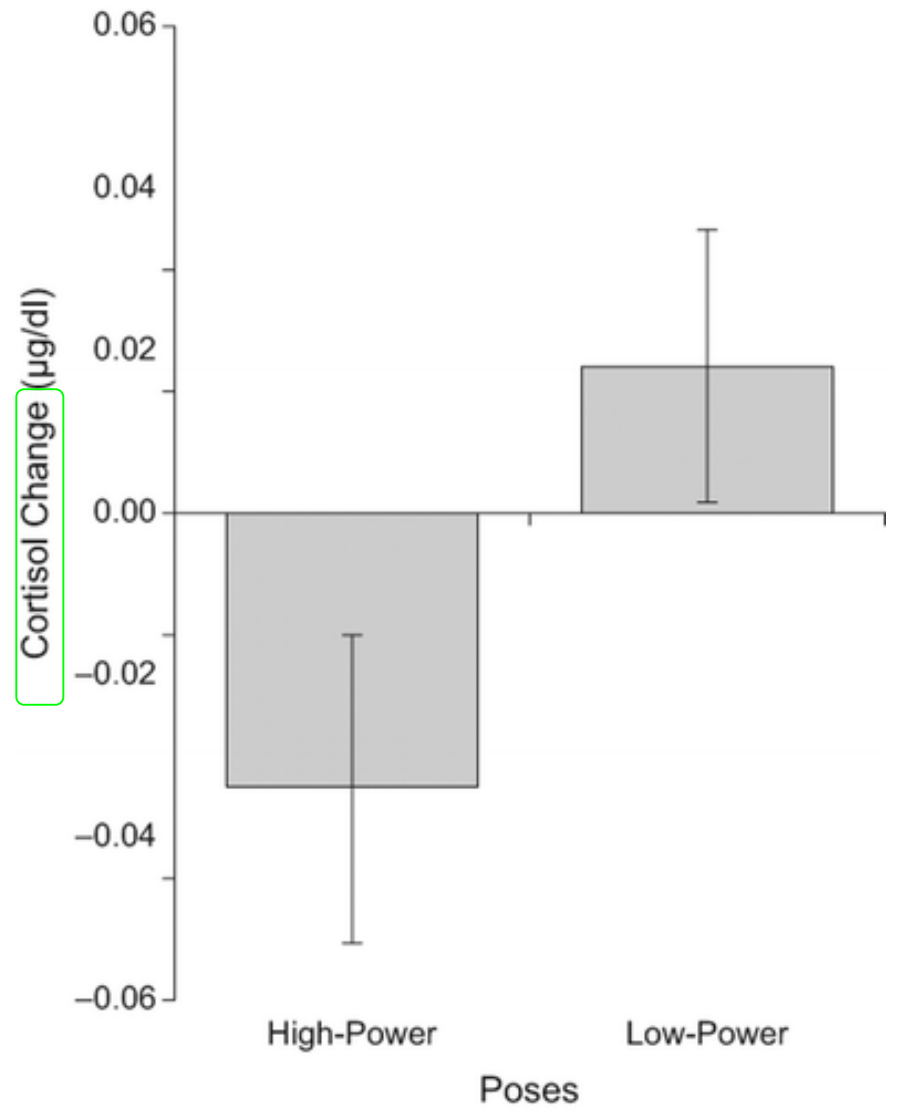
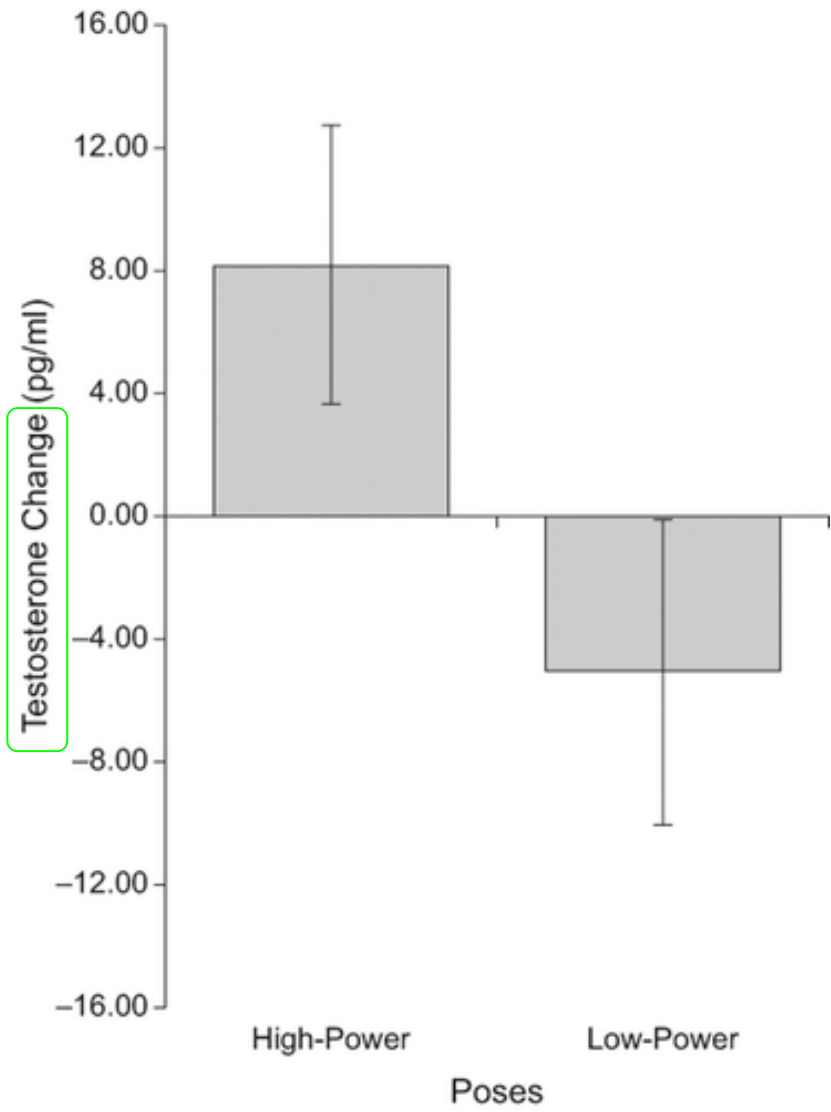
15 min after posing for 1 min

higher testosterone

lower cortisol

fake job interview





Quick Nervous System Regulation



- drink glass of water
- name 6 colors
- count backward from 20
- notice something (temperature, sounds, how the table feels))

Acknowledge Your Emotions



frequent admissions for chest pain



gastritis



chronic NSAID use



severe knee OA



morbid obesity



emotional eating



grief from mom's death

(not acknowledged for 10 years)

Self-Forgiveness

79 Patients in outpatient
treatment for alcohol
abuse

routine treatment for
etoh dependence
(no intervention)

self forgiveness
intervention (4 hrs)

more improvement over time in scores for

1. self-forgiveness
2. self-efficacy to decline a drink

decreased guilt & shame
(for etoh-related offenses)

Connections to Our Loved Ones



Anger & Forgiveness

Anger-induced myocardial ischemia (1)

- pts with CAD → anger recall induces stress perfusion defects on imaging
 - after **10 weeks of forgiveness therapy vs. control therapy**
 - **fewer perfusion defects** with anger recall (pre/post imaging)

Elderly terminal cancer patients (2)

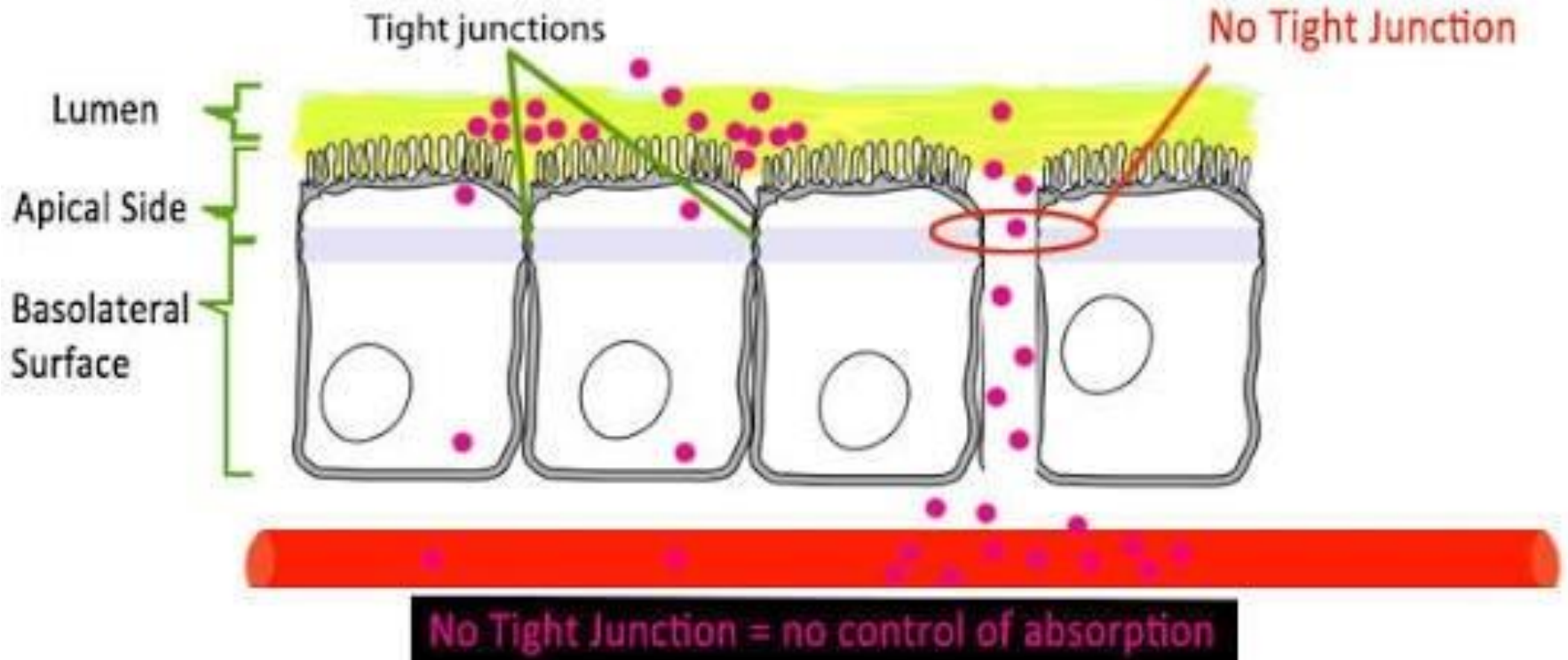
- after 4 weeks of forgiveness therapy (pre/post tests) compared to wait list control group
- **increased hope**
- better **quality of life**
- decreased anger

Made for Connection

<https://www.youtube.com/watch?v=C8AHODc6phg>

- Social community protects against addiction
- rats with cocaine water isolated vs. in social cages

Lumen of Small Intestine



- when junctions damaged → cancerous morph changes
- when epith cells get damaged but junctions remain intact → autophagy

5 things to say before you die



I'M SORRY

I FORGIVE YOU

THANK YOU

I LOVE YOU

GOODBYE

Review:

connections to our **parents**

connections to our **childhood**

connections to our **microbiome**

connections to our **environment**

connections to **outside pressures**

connections to **our influences**

connections to **our healthcare providers**

connections to **our selves**

connections to **our loved ones**

Last thoughts

- Everything is connected!
 - You are exactly where you need to be in this moment
 - Let's grow **strong**, not hard

REFERENCES:

Dias & Ressler (2013). Parental olfactory experience influences behavior and neural structure in subsequent generations. *Nature Neuroscience*. 17, 89-96.

CDC-Kaiser ACE Study

Felitti VJ et al (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults; The Adverse Childhood Experiences (ACE) Study. *Amer Jour Prev Med*; 14(4), 245-258

Deighton S, Neville A, Pusch D, Dobson K. Biomarkers of adverse childhood experiences: A scoping review. *Psychiatry Res*. 2018 Nov;269:719-732. doi: 10.1016/j.psychres.2018.08.097. Epub 2018 Aug 25. PMID: 30273897.

Edmonds et al (2016). Childhood Personality, Betrayal Trauma, and Leukocyte Telomere Length in Adulthood: A Lifespan Perspective on Conscientiousness and Betrayal Traumas as Predictors of a Biomarker of Cellular Ageing. *Eu Journal Personality*. Vol 30(5), 426-437

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Slides not used

Epigenetics & Trauma

- 2015 holocaust study - rachel yehuda
 - survivors had more methylation at FKBP5 gene, a/w AM cortisol levels
 - caution: small sample size (n = 32/22 vs. 8/9), no causation, cross-section study

Social connection (video)

- vietnam veterans & heroine with community

rat study: water or water + cocaine

rat will keep coming back for more until kills itself

1970s psychologist bruce alexander

noticed that rat in cage all alone (nothing to do except take the drug)

“Rat Park” Experiment - tunnels, climbing poles, food, friends, sex

- use it less, almost none use it compulsively, and none of them OD'd died

congressmen visited vietnam (1971), Reported: over 15% of veterans in vietnam = heroin addicts. Nixon commissioned war against drugs - researcher Lee Robins tasked it.

- when soldiers came back, 95% of them stopped
5% kept using. after 3 years, only

“addiction is a symptom of disconnection”

Wayne Campbell

Educational Background

- B.S., Nutritional Sciences at University of Delaware in 1984
- M.S., Nutritional Sciences at University of Maryland in 1987
- Ph.D., Nutritional Sciences at Tufts University in 1993
- Post-Doc., Nutrition/Exercise/Aging at The Pennsylvania State University in 1997

Awards & Honors

- Pfizer Consumer Healthcare † 2018
- Research Excellence Award, C
- University Scholar from Purdu
- Career Research Achievemen
- Undergraduate Honors Mentc
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- Member and Fellow of the Ob
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Education

PhD Tufts University 1993

Research Interests

Our research interests include human nutrition and exercise studies on protein, carbohydrate and energy metabolism, dietary protein and energy requirements, body composition, obesity, weight loss, muscle strength, and muscle function with special emphasis on aging. We are also interested in how nutrition, exercise, and aging impact appetite and ingestive behaviors. Our recent research suggests that older people who habitually consume the Recommended Dietary Allowance for protein experience subtle declines in skeletal muscle size. Thus we seek to find the optimal protein intake for older and elderly people to consume. Our research also focuses on how protein metabolism, body composition, and glucose metabolism change in older people with changes in protein intake, body weight, and exercise (especially strength training). We are also interested in evaluating the effectiveness of compounds that are promoted to have ergogenic properties. The potential importance of the physical form of food (e.g. liquid vs. solid) on appetite, ingestive behaviors, energy balance, and body weight control is also of great interest to our research team.

Our research includes the use of traditional metabolic balance techniques (with strict dietary control possible in a metabolic research kitchen), stable isotope infusion techniques (to measure in vivo acid turnover and incorporation into muscle tissues), whole body composition (hydrostatic weighing, plethysmography, dual x-ray absorptiometry, deuterium oxide dilution), the muscle biopsy technique (to obtain small samples of human skeletal muscle), and indirect calorimetry (to measure resting and exercise energy expenditure). We also highly value collaboration within and outside of Purdue to expand our interests, expertise, and research capabilities, as become available.

Teaching Interests

Topics in Nutrition, Fitness, and Health (F&N 488) - Review of current literature in nutrition as it relates to fitness and health with in-depth analysis of obesity. Exploration of career opportunities in nutrition, fitness, and health. Geriatric Nutrition (F&N 580) - Nutritional needs and problems of the community and institutional food programs.

Grants

National Institutes of Health
US Whey Consortium
National Pork Board
American Egg Board
United States Department of Agriculture

Personal interests of USDA officials may also play a role in these pro-industry changes. In 2004, nearly every major officeholder at the USDA had previously owned, been employed by, or lobbied for agricultural companies and organizations.⁷⁷ The USDA's tendency to choose industry over science may also be evident on the Advisory Committee. The Departments could select members who are less likely to threaten agricultural interests.

Relationships with the food and drug industries are commonplace on the Advisory Committee: three out of 11 members on the 1995 Committee had past or present industry ties (see Table 1);⁷⁸ seven out of 11 members on the 2000 Committee (see Table 2); 11 out of 13 members on the 2005 Committee (see Table 3); and currently nine out of 13 members on the 2010 Committee (see Table 4).⁷⁹ These relationships are substantial. For example, on just the 2000 Committee (see Table 2), members

had past or present ties to: two meat associations;⁸⁰ four dairy associations and five dairy companies;⁸¹ one egg association;⁸² one sugar association;⁸³ one grain association;⁸⁴ five other food companies;⁸⁵ six other industry-sponsored associations;⁸⁶ two pharmaceutical associations;⁸⁷ and 28 pharmaceutical companies.⁸⁸

Hospital Food

CDC Best Practice Guidelines for Financial Sustainability of Healthy Food Service Guidelines In Hospital Cafeterias

interviewed food service directors at 8 hospitals

what are barriers to healthy food options at hospitals?

1. customer complaints & dissatisfactions
 2. need for increased labor skills
 3. increased time needed to prepare healthier food
 4. inadequate selections offered from vendors
- “Six food service directors expressed concern with the financial stress that adopting a healthy food program may place on management and staff, which, in turn, can affect staff morale, productivity, and retention.”

Table 1. Characteristics of Hospital Cafeterias Reported by Food Service Directors (N = 8), Study of Best Practices for Implementing and Sustaining Healthy Food Service Guidelines, 2017

Respondent Identifier	Geographic Location	Number of Hospital Beds	Number of Cafeteria Employees	Payment Model (Self-Operated or Contracted)	Group Purchasing Organization^a	Broadline Distributor^b
P01	West	176	1,200	Self-operated	Entegra	Sysco
P02	Midwest	1,400	14,000	Self-operated	Vizient	US Foods
P03	West	661	7,015	Self-operated	Vizient	US Foods
P04	Midwest	207	2,600	Self-operated	Vizient and Intalare	Gordon Food Service
P05	Midwest	2,000	12,000	Profit	Premier	US Foods
P06	Northeast	1,200	25,000	Self-operated	Premier	US Foods
P07	Northeast	401	Not provided	Self-operated	Premier	Gordon Food Service
P08	West	92	4,800	Neither	Not applicable	US Foods

^a Numerous hospitals or other entities joined together to pool purchasing power to obtain reduced pricing and rebates from manufacturers.

^b A company that provides food and nonfood products to hospitals and functions as an intermediary between manufacturers and the hospital food service operator.

connections to doctors

- implicit bias
- time limitations
- night shifts, ambient lighting, ergonomics, hospital food
- vicarious trauma
- burnout

Vicarious Trauma / Compassion Fatigue

What is Vicarious Trauma?

Vicarious Trauma is an ongoing process of change over time that results from witnessing or hearing about other people's pain and suffering. It may feel overwhelming to hear about an intense trauma so personal reactions are delayed as you focus on the task at hand. Listening to traumatic material can also trigger memories of your own previous traumas. Vicarious trauma is similar to direct trauma. It carries many of the same symptoms and can be treated in many of the same ways.

Who Experiences Vicarious Trauma?

If you are regularly hearing about another person's trauma, then you are at risk of developing vicarious trauma symptoms. This can include medical providers, law enforcement, mental health staff, social workers, and those working in the courts. How you experience vicarious trauma depends on many factors including personality, personal experience, life stressors, social support, and spiritual resources.

Common Reactions to Vicarious Trauma:

- **PHYSICAL:** Feeling on edge, difficulty sleeping, feeling tired, getting sick
- **EMOTIONAL:** Feeling sad or anxious, angry, irritable, lonely or unsupported, unsafe
- **COGNITIVE:** Difficulty concentrating or making decisions, memory problems, disturbing imagery, nightmares, "zoning out"
- **BEHAVIORAL:** Social withdrawal, drinking or smoking more, changes in eating patterns, overprotectiveness
- **RELATIONAL:** Expecting the worst of others, becoming judgmental, relationship problems, loss of friends
- **SPIRITUAL:** Cynicism, discouragement, loss of faith, an attitude of "why bother"

Other Hacks

- SLEEP
- GRATITUDE
- Tiny habits & positive loops
- Food (fiber)
- Culture of appreciation
- generosity, forgiveness

Things to Explore

- hostility/holding a grudge linked to CV disease
- connectedness/twin studies?
- prayer
- psilocybin
- oxytocin promotes prosocial behaviors - generosity, trust, cooperation
- greed is more reciprocated than generosity