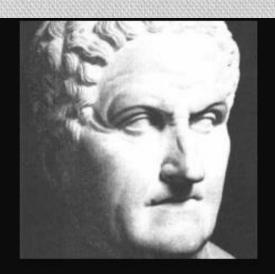




"The good physician treats the disease; the great physician treats the patient who has the disease."

~ Sir William Osler (1849-1919)

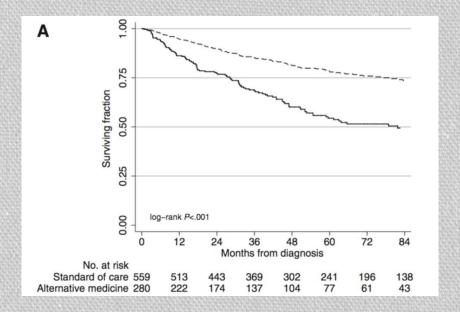


The physician is only nature's assistant.

~ Galen

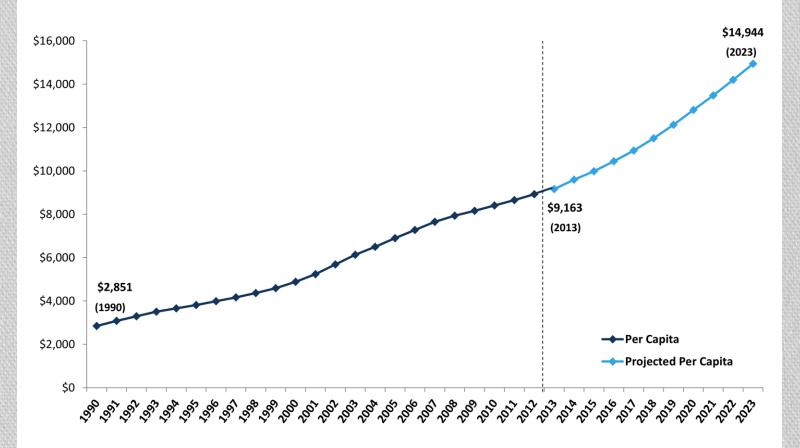
The National institute of Health defines complementary and alternative medicine (CAM) as a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.





*JNCI: Journal of the National Cancer Institute*, Volume 110, Issue 1, 1 January 2018

#### National Health Expenditures per Capita, 1990-2023



SOURCE: Kaiser Family Foundation calculations using NHE data from Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, at <a href="http://www.cms.hhs.gov/NationalHealthExpendData/">http://www.cms.hhs.gov/NationalHealthExpendData/</a> (Historical data from National Health Expenditures by type of service and source of funds, file nhe12.zip; Projected data from NHE Historical and projections 1965-2023, file nhe65-23.zip).



# Integrative Medicine

uses all appropriate therapies, both conventional and alternative, to facilitate the body's innate healing response. IM neither rejects conventional medicine nor accepts alternative therapies uncritically.

Integrative oncology can be defined as the rational, evidence-based combination of conventional therapy with complementary interventions into an individualized therapeutic regimen that addresses the whole person living with or beyond cancer—body, mind and spirit.

 "Everyone has a doctor in him or her; we just have to help it in its work. The natural healing force within each one of us is the greatest force in getting well."

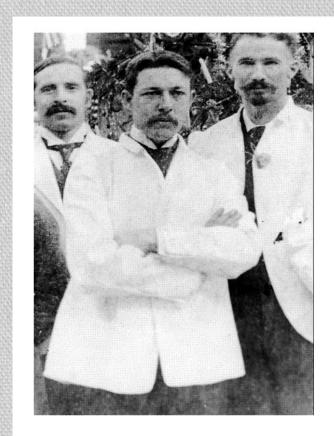
~Hippocrates (460-377 B.C.)

#### Reasons people used CAM

- CAM would improve health when combined with conventional medical treatment, 55%
- CAM would be interesting to try, 50%
- Conventional medicine would not help, 28%
- A conventional medical professional suggested trying CAM,26%
- Conventional medical treatments are too expensive, 13%



# William Coley and the beginnings of cancer immunotherapy



New York Times - July 29, 1908

# ERYSIPELAS GERMS AS CURE FOR CANCER

Dr. Coley's Remedy of Mixed Toxins Makes One Disease Cast Out the Other

MANY CASES CURED HERE

Physician Has Used the Cure for 15 Years and Treated 430 Cases— Probably 150 Sure Cures.

Following news from St. Lov's that two men have been cured of cancer in the City Hospital there by the use of a fluid discovered by Dr. William B. Coley of New York, it came out rester-

Ehrlich and Metchnikoff won nobel prize 3 years later

# Legal implications

- "In the treatment of all the patients in this case, [petitioner] demonstrated that he lacked the basic understanding of the disease from which all the patients were suffering."
- "it is well settled that a patient's consent to or even insistence upon a certain treatment does not relieve a physician from the obligation of treating the patient with the usual standard of care."

Gonzalez v. New York State Department of Health, 232 A.D.2d 886 (1996).

#### **FDA**

 oversees the labeling of drugs and dietary supplements; manufacturing standards (GMPs), testing and drug approval process; and standards for devices and clinical laboratory practices. FDA is a REGULATORY AGENCY

#### FTC

 controls the marketing and advertising of foods, drugs and dietary supplements.
 FTC is an ENFORCEMENT AGENCY.

#### **Common Practices**

- Acupuncture\*
- Ayurveda\*
- Biofeedback\*
- Chelation therapy\*
- Chiropractic care\*
- Deep breathing exercises
- Diet-based therapies
- Vegetarian diet
- Macrobiotic diet
- Atkins diet
- Pritikin diet
- Ornish diet
- Zone diet
- Energy healing therapy\*
- Folk medicine\*
- Guided imagery
- Homeopathic treatment
- Hypnosis\*
- Massage\*
- Meditation

- Megavitamin therapy
- Natural products (nonvitamin
- and nonmineral, such as
- herbs and other products
- from plants, enzymes, etc.)
- Naturopathy\*
- Prayer for health reasons
- Prayed for own health
- Others ever prayed for
- your health
- Participate in prayer group
- Healing ritual for self
- Progressive relaxation
- Qi gong
- Reiki\*
- · Tai chi
- Yoga

- Nutrition
- Mind-body practices
- Manipulation practices
- Spirituality
- Energy practices
- Whole body system practices



 "No illness which can be treated by the diet should be treated by any other means."

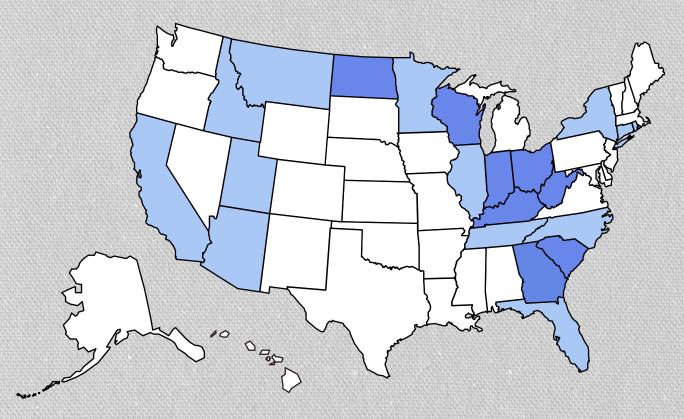
~ Moses Maimonides (1135-1204)

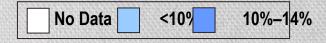
Only Irish Coffee provides in a single glass all four essential food groups: alcohol, caffeine, sugar, fat."

—Alex Levine – Irish actor and musician

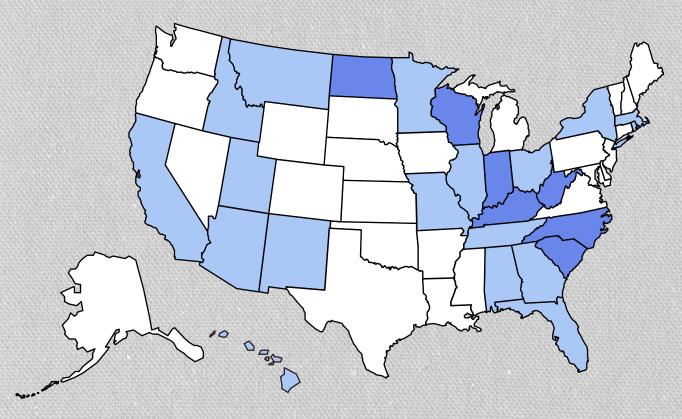
Obesity Trends\* Among U.S. Adults

BRFSS, 1985



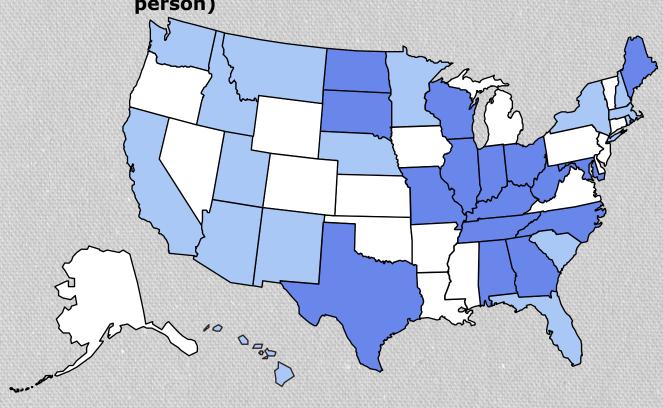


BRFSS, 1986



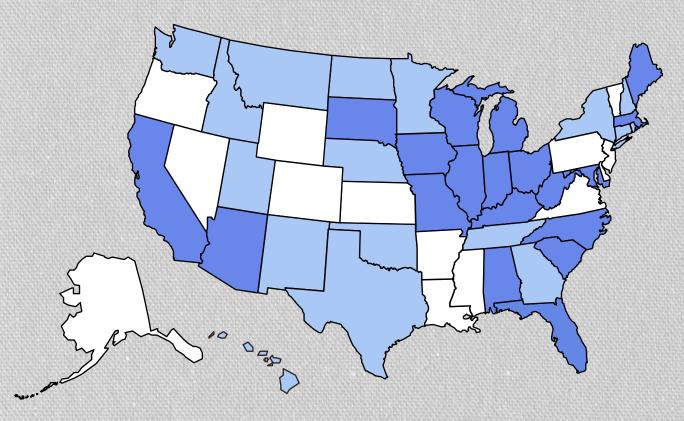






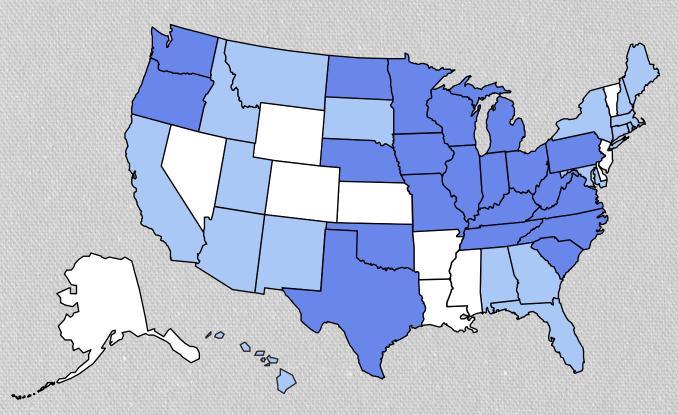


BRFSS, 1988



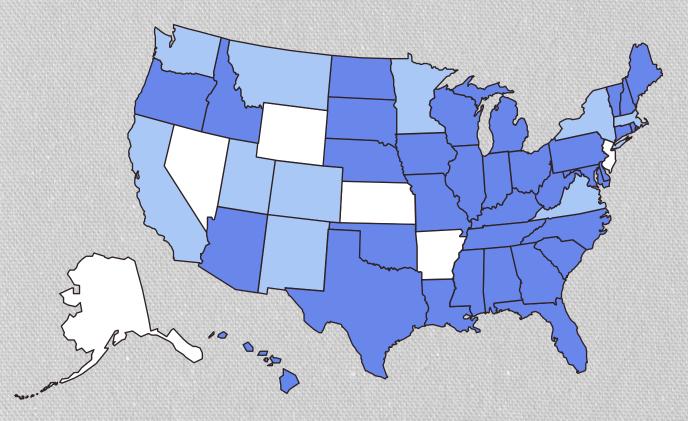


BRFSS, 1989





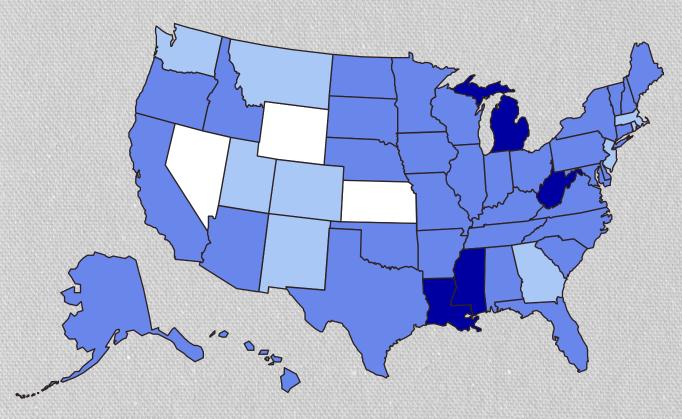
BRFSS, 1990





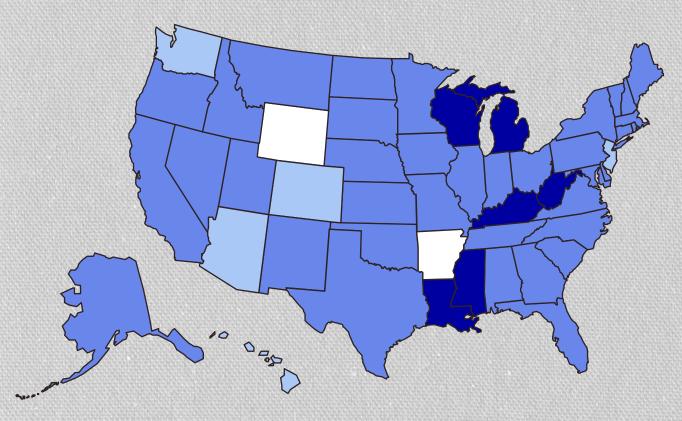


BRFSS, 1991



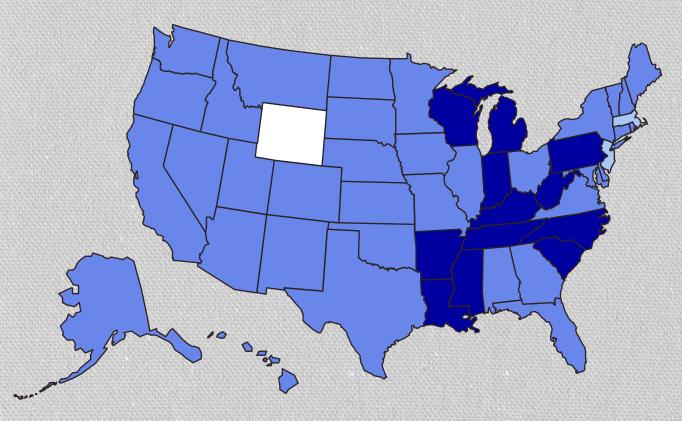


BRFSS, 1992



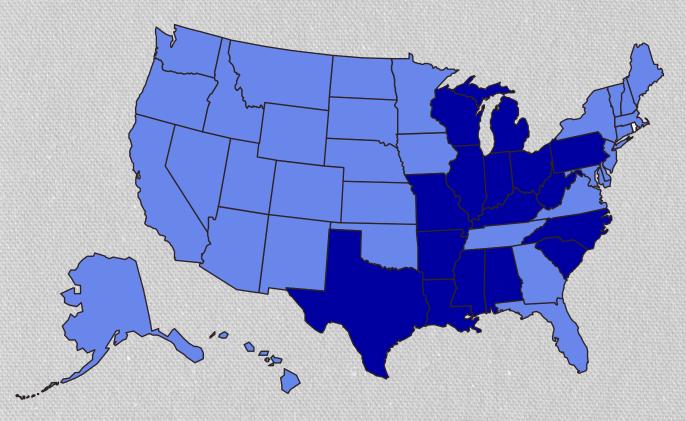


BRFSS, 1993



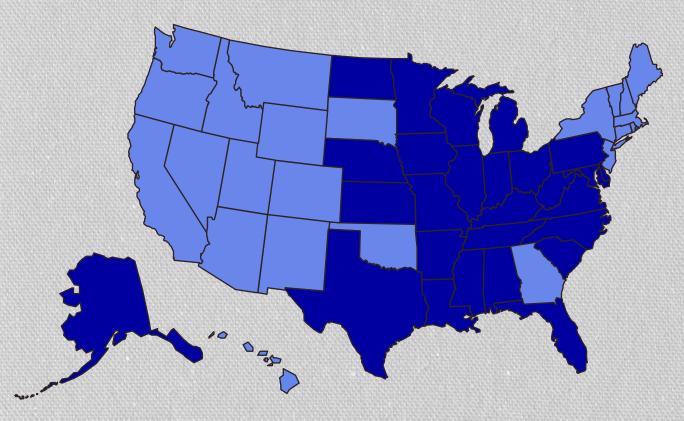


BRFSS, 1994



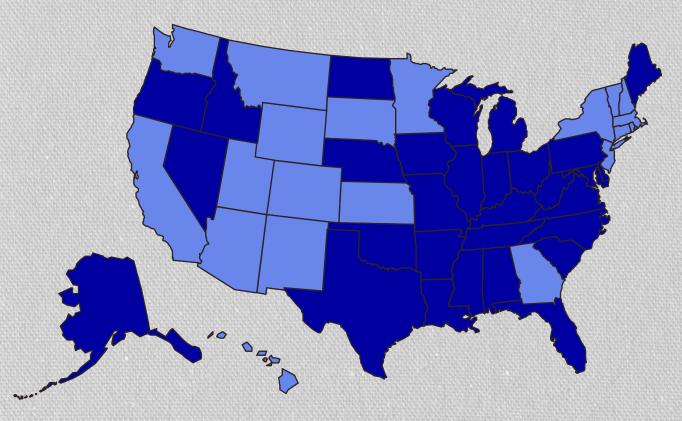


BRFSS, 1995



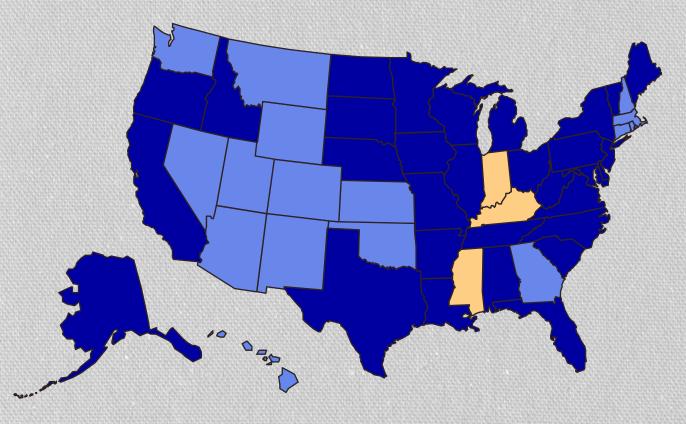


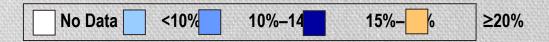
BRFSS, 1996



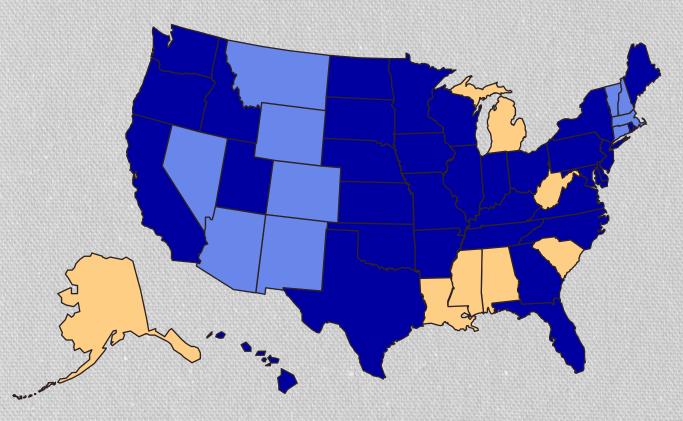


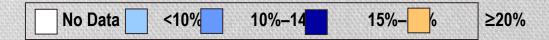
BRFSS, 1997



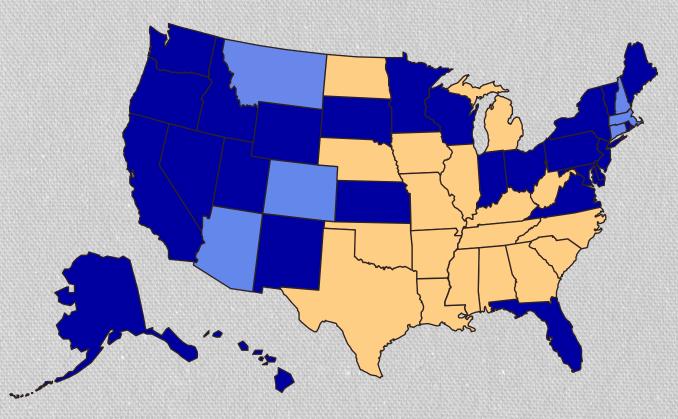


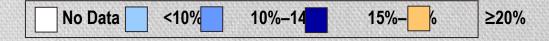
BRFSS, 1998



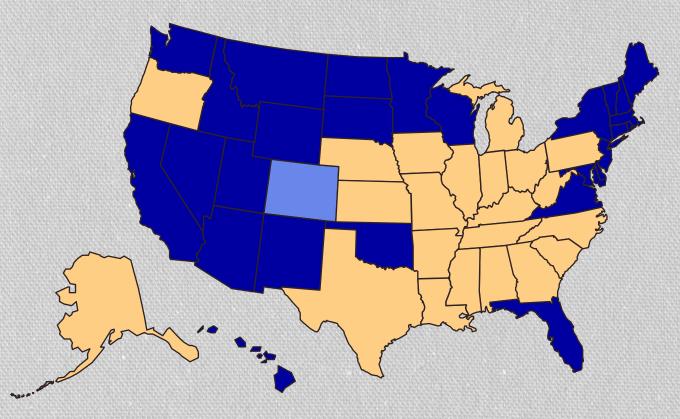


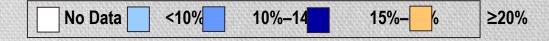
BRFSS, 1999



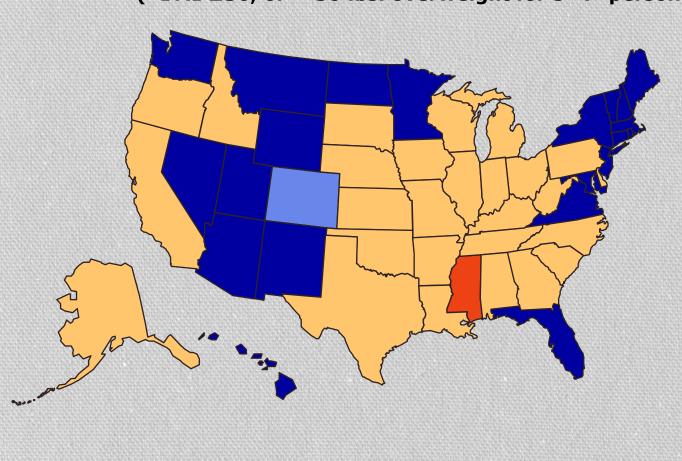


BRFSS, 2000

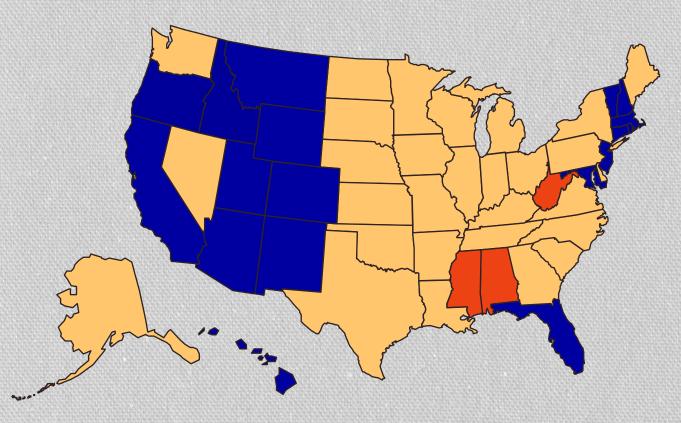




BRFSS, 2001

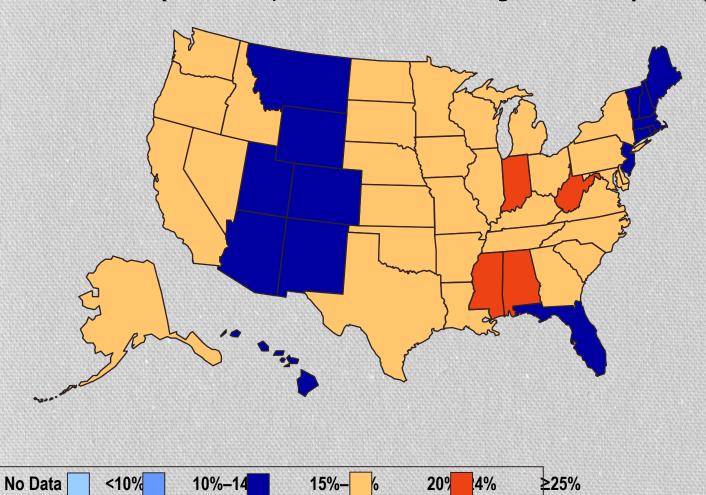




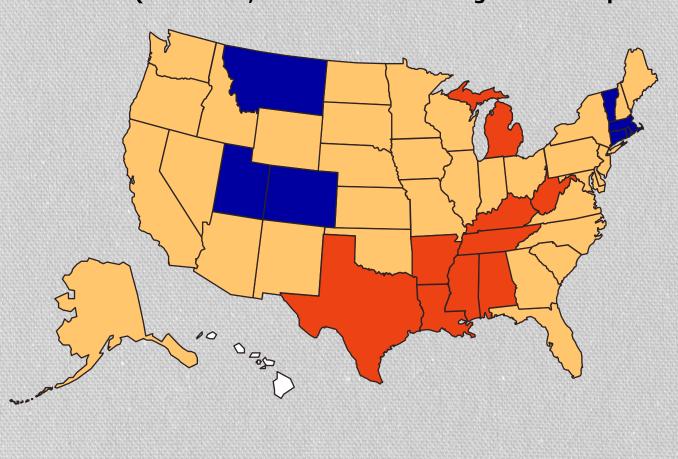




BRFSS, 2003

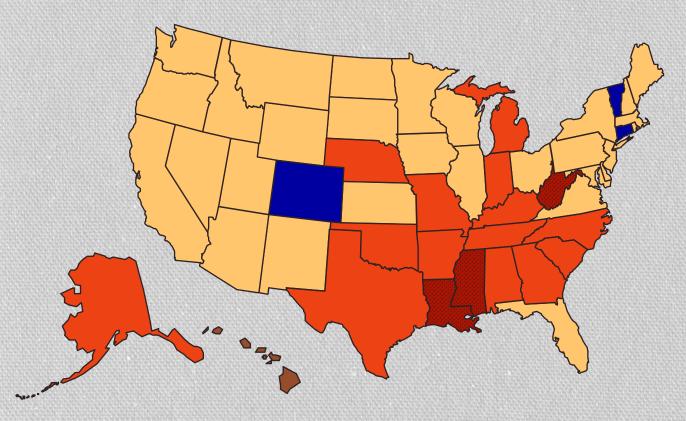


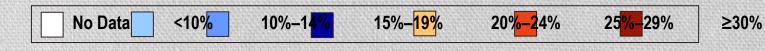
BRFSS, 2004



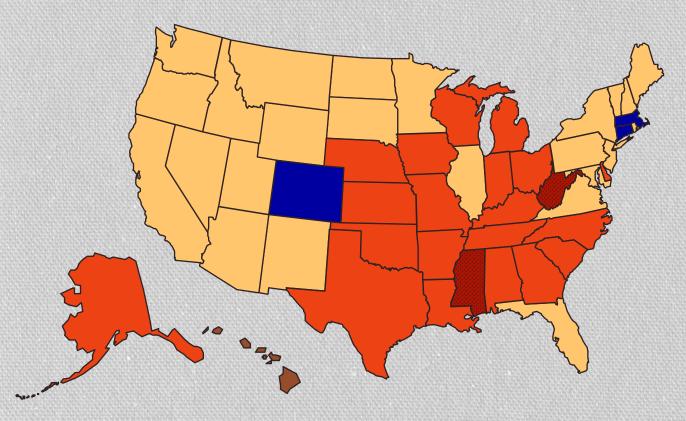


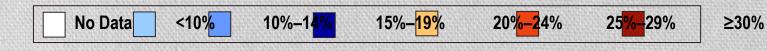
BRFSS, 2005



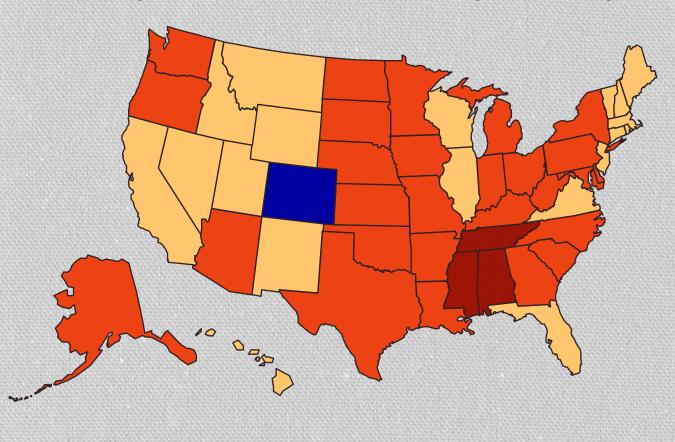


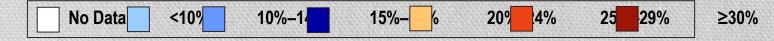
BRFSS, 2006



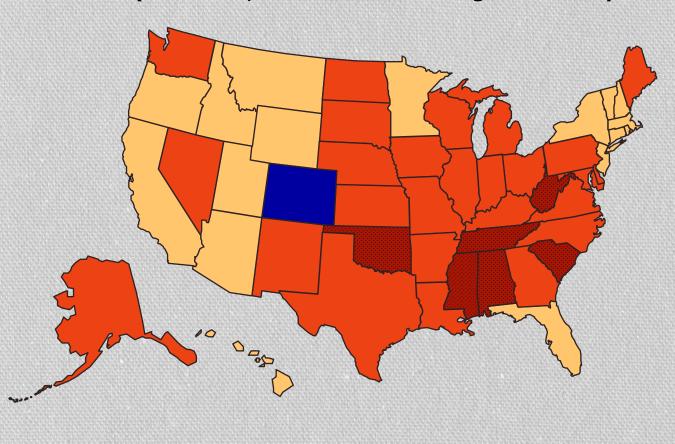


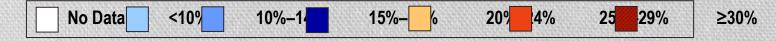
BRFSS, 2007



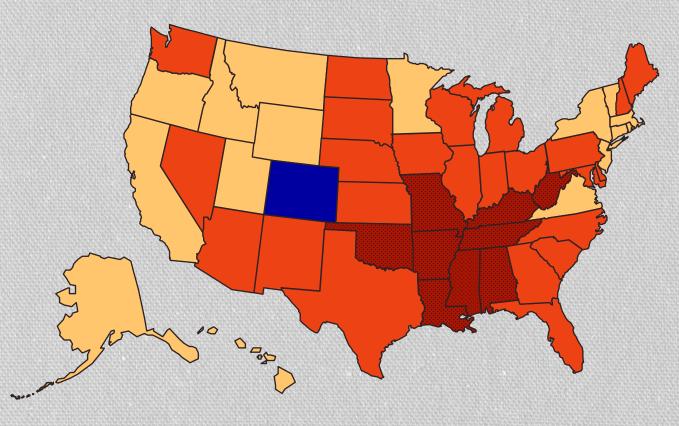


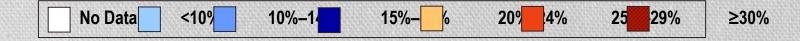
BRFSS, 2008



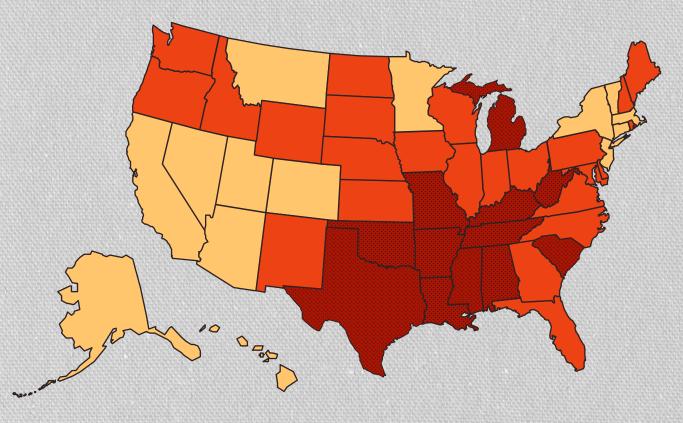


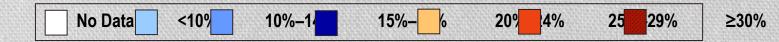
BRFSS, 2009





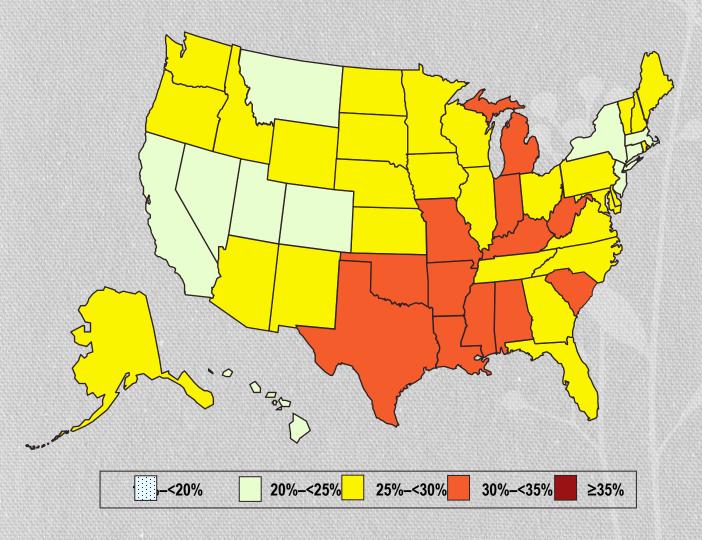
BRFSS, 2010





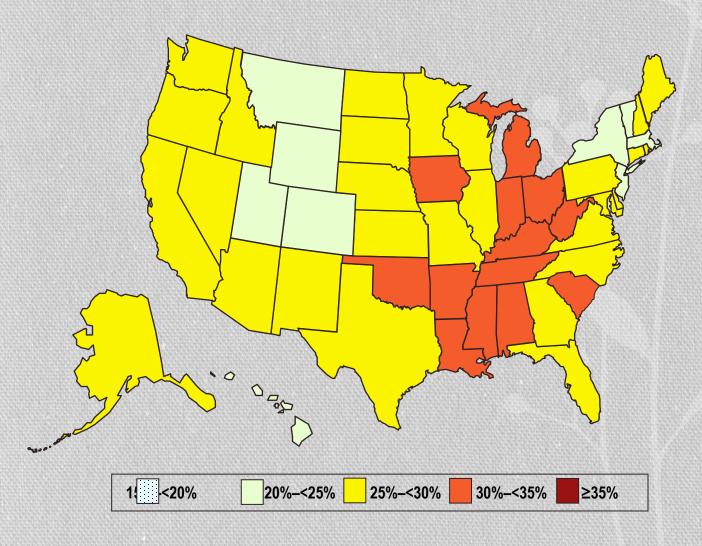
Prevalence\* of Self-Reported Obesity Among U.S. Adults BRFSS, 2011

\*Prevalence reflects BRFSS methodological changes in 2011, and these estimates should not be compared to previous years.

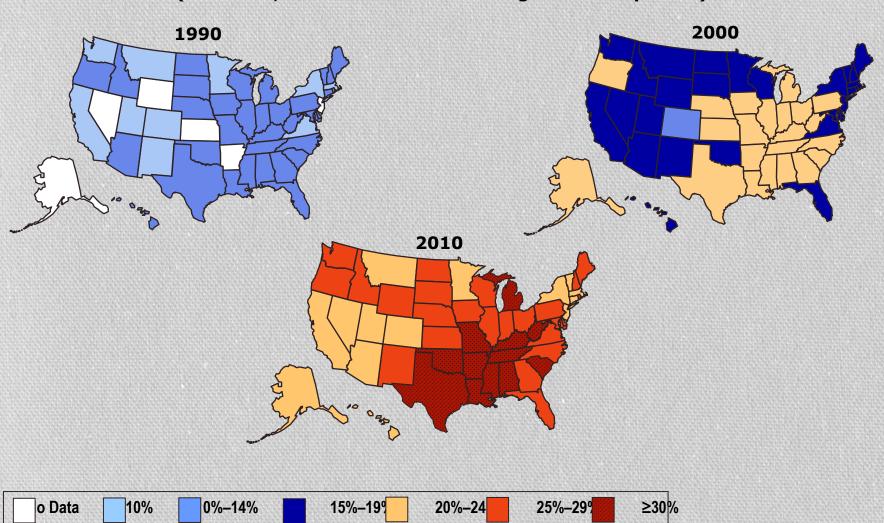


Prevalence\* of Self-Reported Obesity Among U.S. Adults BRFSS, 2012

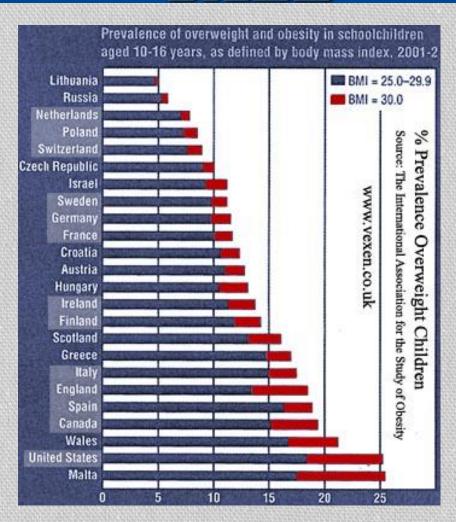
\*Prévalence reflects BRFSS methodological changes in 2011, and these estimates should not be compared to those before 2011.



#### **Obesity Trends\* Among U.S. Adults** BRFSS, 1990, 2000, 2010



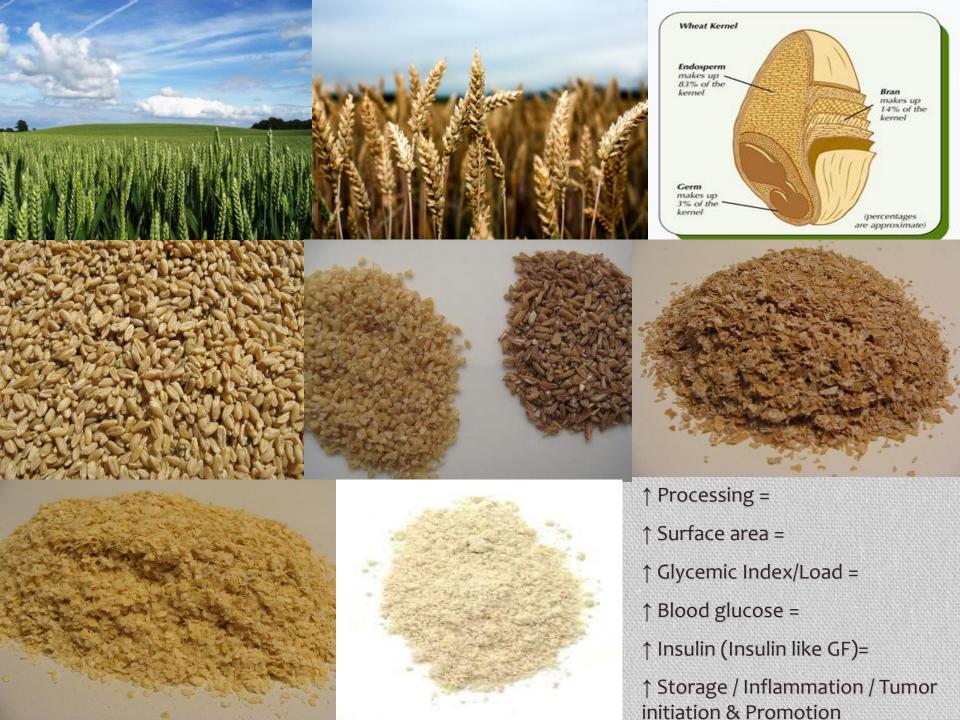
## BIG& Men's Clothing



### SAD diet

- Standard
- American
- Diet





Let food be your medicine, and medicine be your food.

Hippocrates







Take any new reports of diseasepreventing vitamins with a grain of salt. When this is all sorted out, it could turn out that we will all have to take 50 or 60 different nutrients to get a real benefit. "That's a possibility," says Goodman, of the Hutchinson Cancer Research Center. "It's called broccoli."

--Ross PE. Spinach in a pill. Forbes, November 4, 1996; 354-355



#### FINAL STATEMENT AUGUST 1, 2006

#### National Institutes of Health State-of-the-Science Conference Statement

#### Multivitamin/Mineral Supplements and Chronic Disease Prevention May 15–17, 2006

NIH consensus and state-of-the-science statements are prepared by independent panels of health professionals and public representatives on the basis of (1) the results of a systematic literature review prepared under contract with the Agency for Healthcare Research and Quality (AHRQ), (2) presentations by investigators working in areas relevant to the conference questions during a 2-day public session, (3) questions and statements from conference attendees during open discussion periods that are part of the public session, and (4) closed deliberations by the panel during the remainder of the second day and morning of the third. This statement is an independent report of the panel and is not a policy statement of the NIH or the Federal Government.

The statement reflects the panel's assessment of medical knowledge available at the time the statement was written. Thus, it provides a "snapshot in time" of the state of knowledge on the conference topic. When reading the statement, keep in mind that new knowledge is inevitably accumulating through medical research.

Individuals who wish to cite this recommendation stateme National Institutes of Health State-of-the-Science conferer supplements and chronic disease prevention. Ann Intern

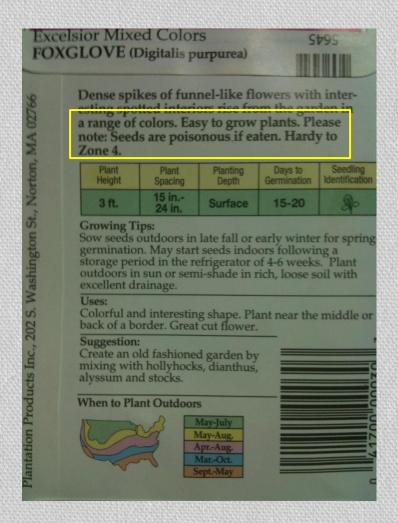
#### Findings by Vitamin/Mineral

#### β-Carotene

Two large trials (1, 2) designed to test lung cancer prevention with  $\beta$ -carotene found a surprising increase in lung cancer incidence and deaths in smokers and male asbestos workers. There was no effect in preventing a number of other types of cancer, including gastric, pancreatic, breast, bladder, colorectal, and prostate cancer as well as leukemia, mesothelioma, and lymphoma. The overall mortality rate was elevated in women, but not men, treated with  $\beta$ -carotene throughout the intervention and postintervention period. A third large trial (3), in healthy American men, found no effect of  $\beta$ -carotene on cancer except an increased risk for thyroid and bladder cancer. Two other  $\beta$ -carotene trials (4, 5) to prevent nonmelanoma skin cancer found no effect on subsequent skin cancer incidence. A large study of healthy American women also found no effect of  $\beta$ -carotene on cancer incidence (6). Four of these  $\beta$ -carotene trials (2, 3, 5, 7) also evaluated cardiovascular disease (CVD) and found no benefits. In healthy women, there was a suggestion of increased stroke risk in 1 study (6) and an increased risk for CVD in women smokers in the Carotene and Retinol Efficacy Trial (CARET) (8).

### **Botanical Medicine**





	Enzyme	Substrate	Inhibitors	Inducers
CYP1A2		Caffeine, Clomipramine, Clozapine, Imipramine, Olanazapine, Ondansatron, Theophylline, Ropinarole, R-Warfarin	Cimetadine, Ciprofloxacin, <b>Echinacea</b> , Ethinyl Estradiol, Fluvoxamine, <b>Ginseng</b> , Isoniazid, Norethindrone	Charcoal-broiled meat, smoking
CYP2C9		Dronabinol, Fluvastatin, Glipizide, Losartan, Montelukast, NSAIDs, Phenytoin, S-Warfarin, Zafirlukast	Efavirenz, Fluconazole,	Barbiturates, Carbamazepine, Griseofulvin, Nafcillin, Phenytoin, Primidone, Rifampin, <b>St. John's</b> <b>Wort</b>
CYP2C19		Carisoprodol, Citalopram, Diazepam, Proton pump inhibitors, R-Warfarin, Tricyclic antidepressants	Efavirenz, Felbamate, Fluconazole, Fluoxetine, Fluvoxamine, <b>Kava Kava</b> (in vivo), Omeprazole	St. John's Wort
CYP2D6		Carvedilol, Codeine, Dextromethorphan, Efavirenz, Flecainide, Fluoxetine, Haloperidol, Hydrocodone, Methamphetamine, Metoprolol, Oxycodone, Paroxetine, Propafenone, Risperidone, Thioridazine, Timolol, Tolterodine, Tramadol, Trazodone, Tricyclic antidepressants, Venlafaxine	Cimetadine, Diphenhydramine, Fluoxetine, Haloperidol, Paroxetine, Propafenone, Propoxyphene,	St. John's Wort
CYP3A4		Amiodarone, Azole Antifungals, Atorvastatin, Benzodiazepines, Bromocriptine, Buspirone, Calcium channel blockers, Carbamazepine, Citalopram, Clarithromycin, Cyclophosphamide, Cyclosporin, Dapsone, Delavirdine, Dexamethasone, Doxorubicin, Ergotamine, Erythromycin, Ethinyl Estradiol, Fentanyl, Finasteride, Indinavir, Lidocaine, Losartan, Methadone, Paclitaxel, Prednisolone, Quetiapine, Quinine, Ritonavir, Sertraline, Sildenafil, Tacrolimus, Tamoxifen, Testosterone, Vinblastine, Vincristine, R-Warfarin, Zolpidem	Cyclosporine, Diltiazem, <b>Echinacea</b> , Erythromycin, Ethinyl Estradiol, Fluconazole,	Barbiturates, Carbamazepine, Cayenne, Dexamethasone, Efavirenz, Garlic, Griseofulvin, Phenytoin, Rifampin, St. John's Wort, Valerian (minimal effect)

### Limitations of Botanical Research

- Lack of standardization
- Similar names with very different plants
- Part of the plant used
- Type of extract
- Concentrations
- Doses
- Difficulty in controlling placebo group

### Mind – Body Medicine

 NCCAM defines mind-body medicine as "...practices (that) focus on the interactions among the brain, mind, body, and behavior, with the intent to use the mind to affect physical functioning and promote health. "

"For this is the great error of our day in the treatment of the human body, that physicians separate the soul from the body".

Plato 380 B.C.



- Relaxation
- Mediation
- Guided Imagery
- Biofeedback
- Hypnosis
- Cognitive Behavioral therapy
- Psycho educational approaches

#### JOURNAL OF CLINICAL ONCOLOGY

#### ORIGINAL REPORT

#### Randomized Controlled Trial of Mindfulness-Based Cancer Recovery Versus Supportive Expressive Group Therapy for Distressed Survivors of Breast Cancer (MINDSET)

Linda E. Carlson, Richard Doll, Joanne Stephen, Peter Faris, Rie Tamagawa, Elaine Drysdale, and Michael Speca

#### ABSTRACT

#### Purpose

To compare the efficacy of the following two empirically supported group interventions to help distressed survivors of breast cancer cope: mindfulness-based cancer recovery (MBCR) and supportive-expressive group therapy (SET).

#### Patients and Methods

This multisite, randomized controlled trial assigned 271 distressed survivors of stage I to III breast cancer to MBCR, SET, or a 1-day stress management control condition. MBCR focused on training in mindfulness meditation and gentle yoga, whereas SET focused on emotional expression and group support. Both intervention groups included 18 hours of professional contact. Measures were collected at baseline and after intervention by assessors blind to study condition. Primary outcome measures were mood and diurnal salivary cortisol slopes. Secondary outcomes were stress symptoms, quality of life, and social support.

#### Results

Using linear mixed-effects models, in intent-to-treat analyses, cortisol slopes were maintained over time in both SET (P = .002) and MBCR (P = .011) groups relative to the control group, whose cortisol slopes became flatter. Women in MBCR improved more over time on stress symptoms compared with women in both the SET (P = .009) and control (P = .024) groups. Per-protocol analyses showed greater improvements in the MBCR group in quality of life compared with the control group (P = .005) and in social support compared with the SET group (P = .012).

#### Conclusion

In the largest trial to date, MBCR was superior for improving a range of psychological outcomes for distressed survivors of breast cancer. Both SET and MBCR also resulted in more normative diurnal cortisol profiles than the control condition. The clinical implications of this finding require further investigation.

Linda E. Carlson, Rie Tamagawa, and Michael Speca, University of Calgary; Peter Faris, Alberta Health Services, Calgary, Alberta; Richard Doll, Joanne Stephen, and Elaine Drysdale, BC Cancer Agency; Elaine Drysdale, University of British Columbia, Vancouver, British Columbia, Canada.

Published online ahead of print at www.jco.org on August 5, 2013.

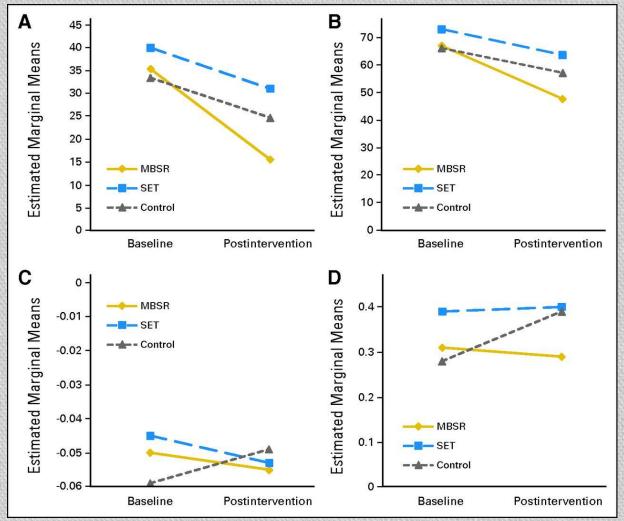
Supported by a grant from the Canadian Breast Cancer Research Alliance. L.E.C. holds the Enbridge Research Chair in Psychosocial Oncology, cofunded by the Canadian Cancer Society Alberta/Northwest Territories Division and the Alberta Cancer Foundation.

The sponsors played no role in study design, execution, analysis, interpretation, or article preparation.

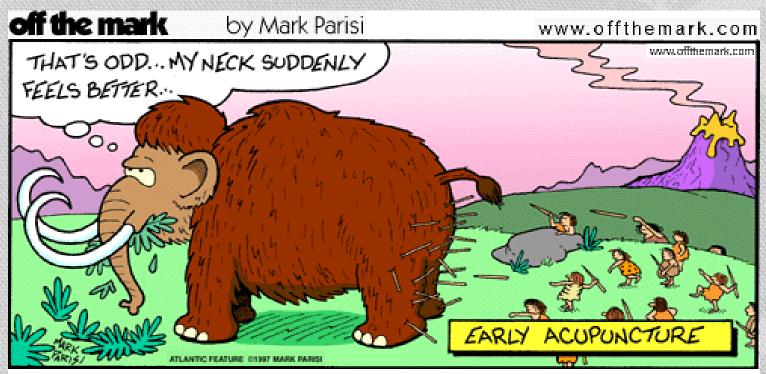
Authors' disclosures of potential conflicts of interest and author contributions are found at the end of this article.

Clinical trial information: NCT00390169.

Corresponding author: Linda E. Carlson, PhD, Department of Psychosocial Estimated marginal means (intent to treat) for (A) Profile of Mood States Total Mood Disturbance; (B) Calgary Symptoms of Stress Inventory; (C) Ln diurnal cortisol slopes; and (D) Ln bedtime cortisol.



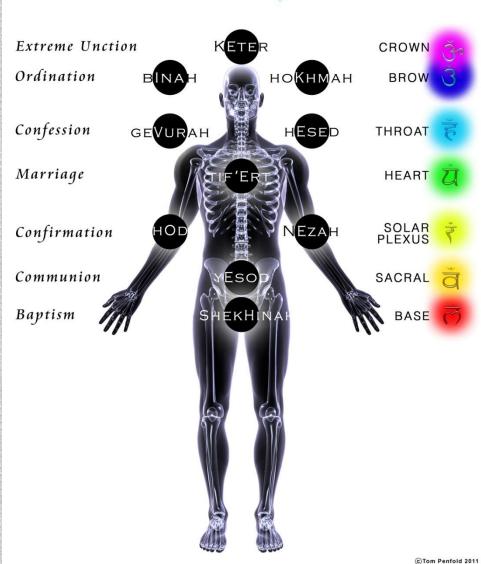
Carlson L E et al. JCO 2013;31:3119-3126



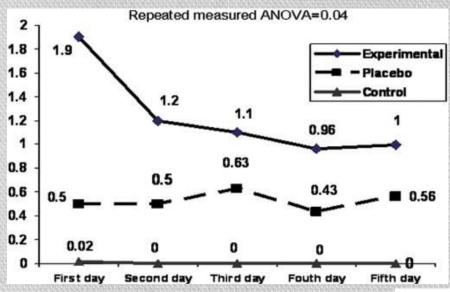
@ Mark Parisi, Permission required for use.



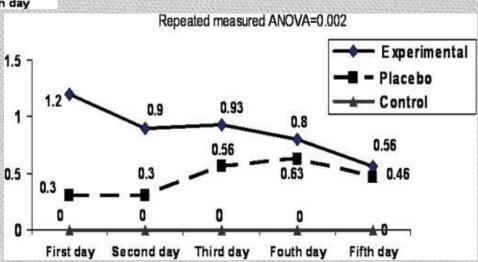




## The Effect of Therapeutic Touch on Pain and Fatigue of Cancer Patients Undergoing Chemotherapy



Evid Based Complement Alternat Med. 2010 September; 7(3): 375–381.

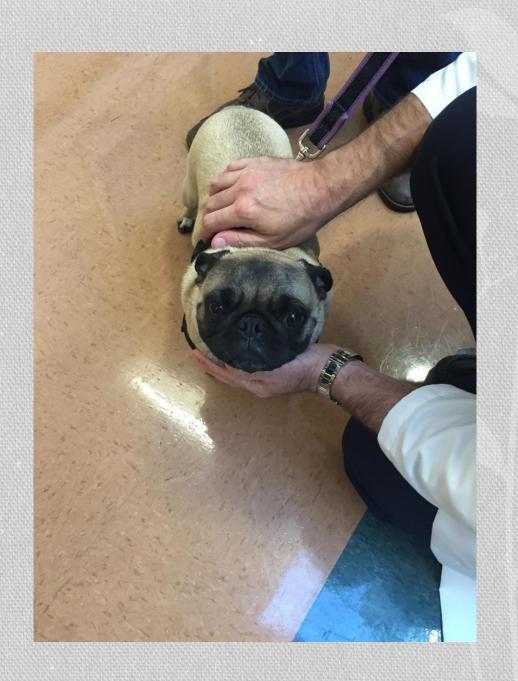


### Limitations











© Mark Parisi, Permission required for use.

### Da-ma

# 大麻



Fig S3B.



Fig. 2. Photomicrographs of ancient cannabis. (A) Photograph of the whole cannabis sample being transferred in laminar flow hood. (B) Photomicrograph of leaf fraement at low power displaying non-elandular and amber sessile glandular trichomes. Note retention of chlorophyll and

- Reports in medical use of over 3000 years
- Dr. W.B. O'Shaughnessy first reports in medical literature 1840
  - Analgesic
  - Sedative
  - Anti-inflammatory
  - Anti spasmodic
  - Anticonvulsant
- Listed in U.S Pharmacopeia 1850-1941
  - extracts marijuana & hashish were the 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> most prescribed medication from 1842-1890s

#### CANNABIS AMERICANA

U. S. P.

#### Physiologically Tested

OUR American variety is the answer to the the question which has so long troubled manufac-

With our material a

finished product can be

turned out at a reasonable



I T is no longer necessary to depend on the foreign variety which is ofhigh cost and slightly superior. The uncertainty of further supplies of it is another factor favoring the American product.

J. L. HOPKINS & CO., 100 William St. New York



- Interest declines in 1900 with the discovery and approval:
  - Opioids
  - Barbiturates
  - ASA
  - Chlorhidrates
- First restriction en 1937
  - Taxed(\$1/oz medicinal use, \$100/oz recreational)
  - AMA only opposition to restrictions
- Restriction to future investigations'
- Delisted from US Pharmacopoeia en 1942

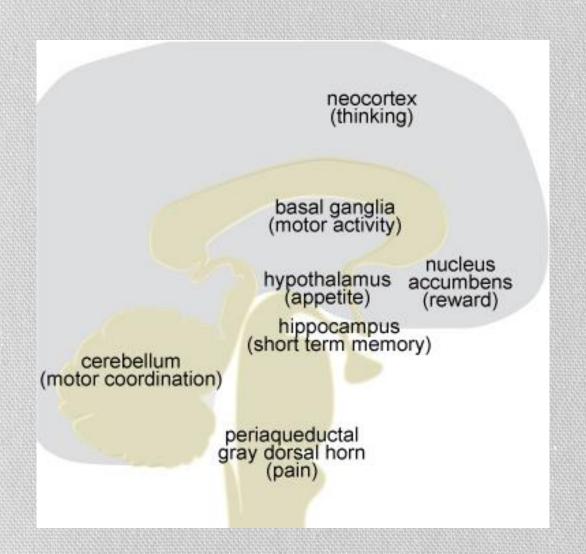


 "Marijuana is the most violence-causing drug in the history of mankind... Most marijuana smokers are Negroes, Hispanics, Filipinos and entertainers. Their satanic music, jazz and swing, result from marijuana usage."

- Over 400 chemical compounds
- Highest concentration in resins from flowers of female plants
  - Delta-9-THC
  - 70 additional cannabinoids
  - delta-8-THC
  - Terpenes y Flavonoids

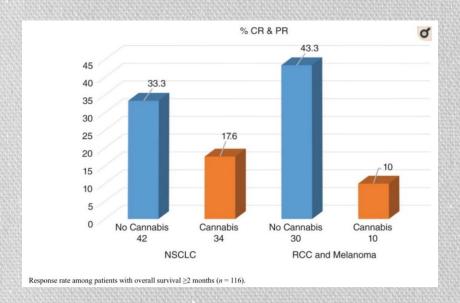


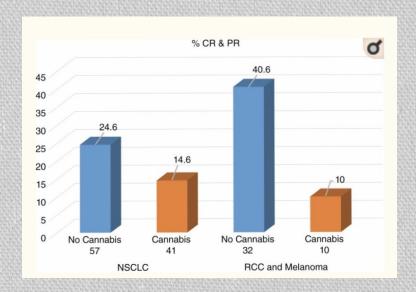
#### Distribution of CB1 & CB2 receptors



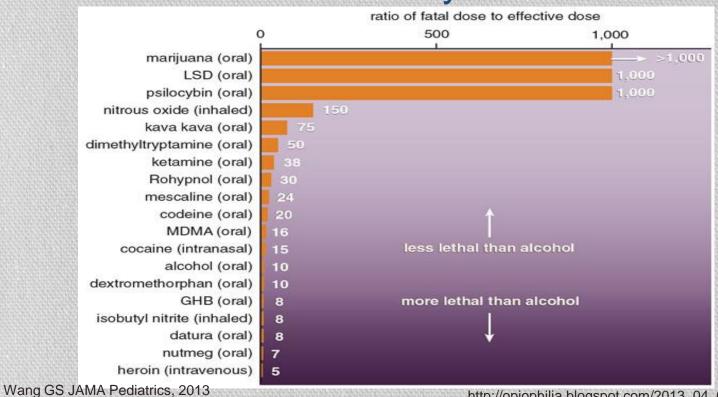
#### CB<sub>2</sub>

- immunologic cells (modulation cell migration)
- microglia (possible role in Alzheimer's?)









- Hallucinations
- Tachycardia
- Labored breathing
- Obtundation

http://opiophilia.blogspot.com/2013\_04\_01\_archive.html



# Marijuana Abuse/Dependency

DRUG	LIFETIME RISK OF DEPENDENCE
Nicotine	32%
Heroin	23%
Cocaine	17%
Alcohol	15%
Marijuana	9%

SOURCE: Bostwick, 2012 (reference list).

## Marijuana's Medical Potential: Research Evidence

- Reduces nausea
- Stimulates appetite
- Pain relief
- Controls muscle pain, spasms
- Reduces tics (Tourette's Syndrome)
- Reduces convulsions (epilepsy)

SOURCE: Ben Amar, 2006 (reference list).

## Research

- Cannabis 16919 articles
- Cannabis Cancer 517
- Cannabis Cancer (Clinical Trial) 19



Control weight



Healthy eating



Appropriate use of supplements



Regular physical activity



Breathing and stress reduction



Guided imagery or self-hypnosis



Connect with family and friends



Engage in spirituality and religion

## **Healing Presence**

- 1. Breath in.
- 2. Breath out all you have been thinking about, or holding.
- 3. **Again, breath in, and breath out, a letting go.** Allow your body to relax, place your hand over your heart and sternum. Feel your feet. Visualize roots going from your feet into the center of the earth, and energy coming up into your feet from these roots.
- 4. Take one more aware breath, into your heart. See if you are aware of a healing presence coming through you.
- 5. Now, enter the room and greet the patient

# Absence of evidence is not evidence of absence

The risk of the intervention is what should drive the required level of evidence

