



COMPLEMENTARY AND ALTERNATIVE THERAPIES

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Faculty Disclosures

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➤ Relevant financial relationships with a commercial interest:

Teva Vernalis Ad Board; Speaker's Bureau; Consultant
Ad Board

Objectives

- Describe current trends in CAM prevalence in the US
- Discuss the spectrum of CAM practices used in the treatment of pediatric asthma and allergy
- Describe the effect of CAM use on the medical plan
- Discuss approaches to taking a CAM history and its integration into conventional medical care

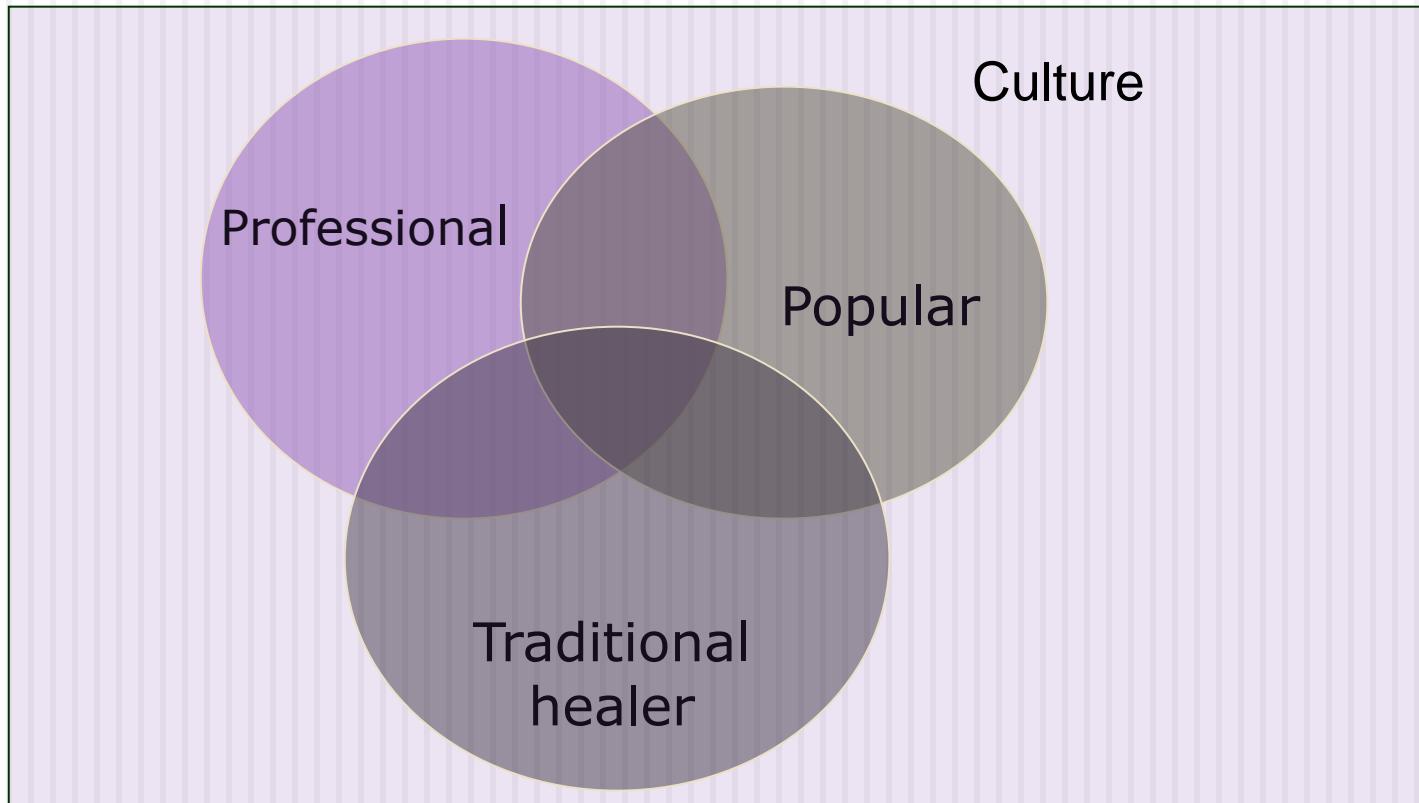
Chronic Illness

- Leading cause of death and disability worldwide
- Nearly 1 in 2 American adults live with a chronic illness
- Management takes place largely at home and is at the discretion of the patient and their family

Self-management

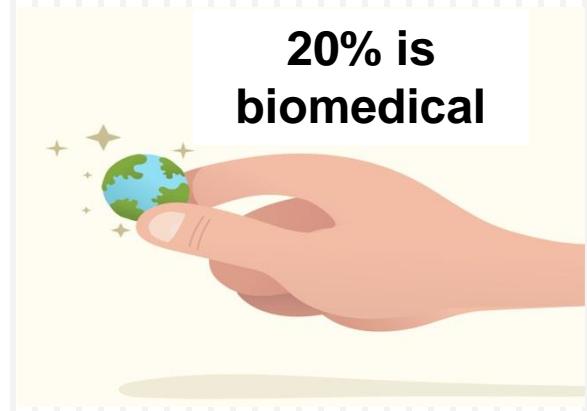
- Support for patient self-management is the basis of patient-centered care
 - Learn to live with illness; empowered and motivated by gaining knowledge, skill and personal experience
 - Focus on patients' concept of health as opposed to externally specified targets

Health care options



Kleinman AC. Patients and Healers in the Context of Culture.
Berkeley CA: University of California Press; 1980.

Health care options- WHO 2002



Hierarchy of resort



Kleinman AC. Patients and Healers in the Context of Culture. Berkeley CA: University of California Press; 1980.

Definitions

- **Complementary medicine** is used **together with** conventional medicine
- **Alternative medicine** is used **in place of** conventional medicine
- **Integrative medicine** combines treatments from conventional medicine and CAM for which there is evidence of safety and effectiveness.

Definitions continued

- CAM is a group of diverse medical and health care systems, practices, and products that are not generally considered to be part of conventional medicine.
- While scientific evidence exists regarding some CAM therapies, for most there are key questions that are yet to be answered, such as whether these therapies are safe and whether they work.

Folk medicines

- Remedies including prayer, healing touch or laying on of hands, charms, herbal teas or tinctures, magic rituals

Shared decision-making and IM



Patient-centered care

- When providers understand patient preferences they can facilitate discussion of the risks and merits
 - offering options to consider jointly
- Helps to reconcile differences
 - leading to mutually agreed upon higher quality decisions that best match patients' needs with evidence-based recommendations

NCCIH Domains

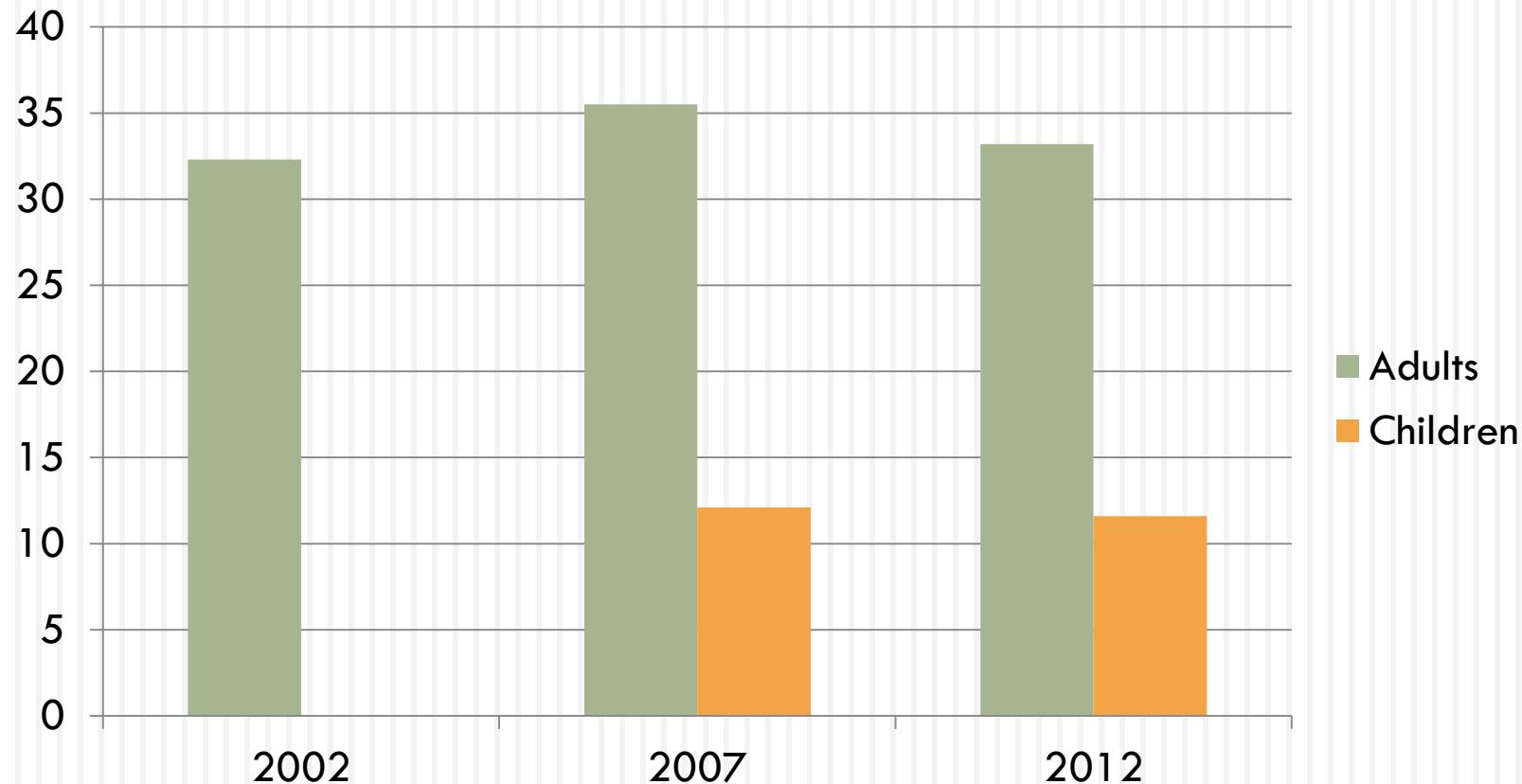
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- ***Natural products***-probiotics, fish oil, herbs
- ***Mind-body***-meditation, acupuncture
- ***Manipulative and Body-Based Practices***-massage, chiropractic care
- ***Movement***-Pilates
- ***Traditional healers***-shaman
- ***Energy healing***-magnets, crystals, Reiki
- ***Whole Medical Systems***-TCM, Ayurveda

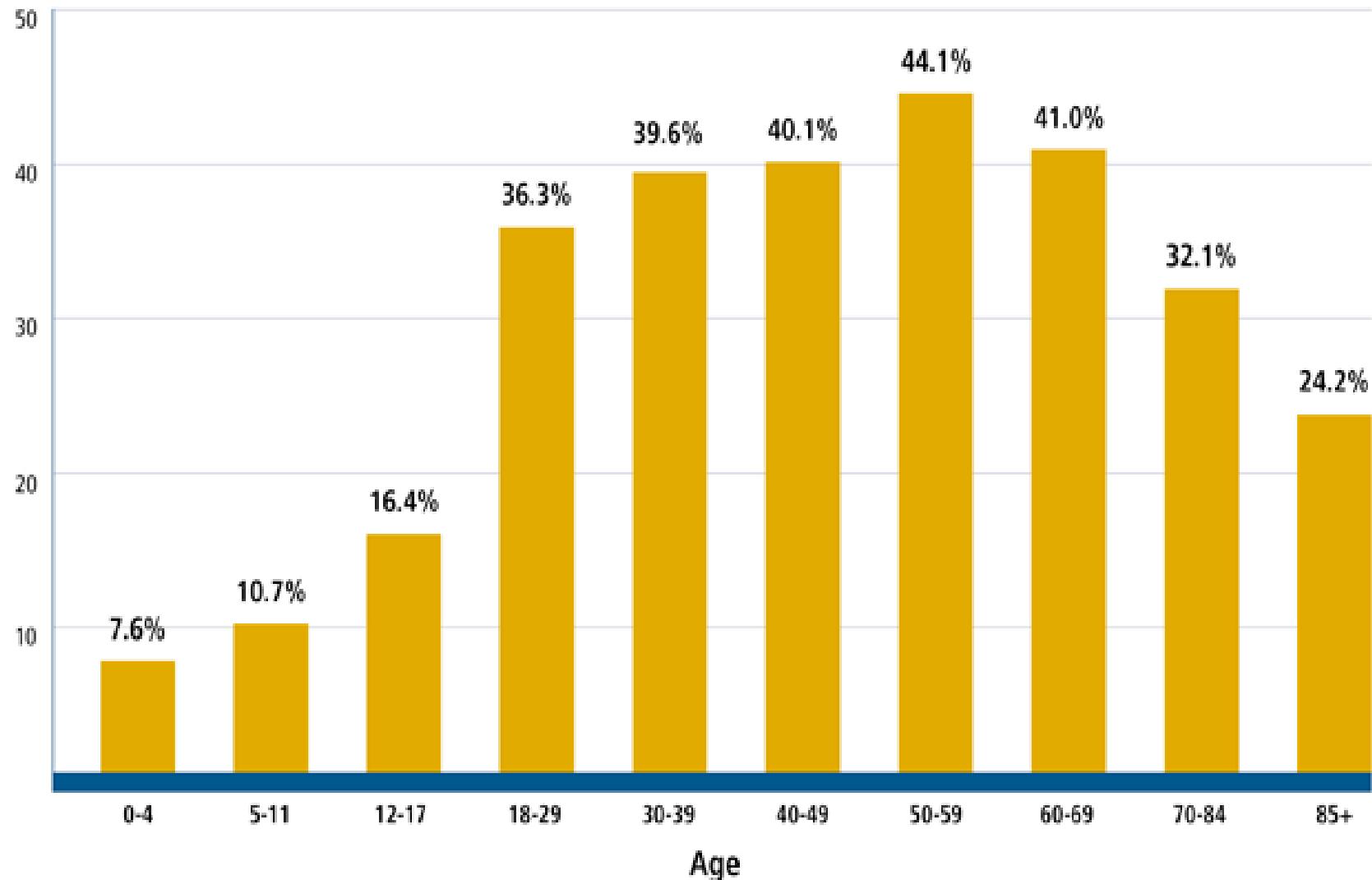
NIH: National Center for Complementary and Integrative Health

- Congress established (1998) out of concern for the safety and efficacy of the use of CAM.
- The mission of NCCIH is to define, through rigorous scientific investigation, the usefulness and safety of complementary and integrative health interventions and their roles in improving health and health care.

CAM use NHIS Survey



CAM Use by Age - 2007



Source: Barnes PM, Bloom B, Nahin R. CDC National Health Statistics Report #12. Complementary and Alternative Medicine Use Among Adults and Children: United States, 2007. December 2008.

2012 NHIS Mind-Body

Adults

Click on any practice below for details

9.5% Yoga

8.4% Chiropractic or
Osteopathic Manipulation

8.0% Meditation

6.9% Massage Therapy

Children

Click on any practice below for details

3.3% Chiropractic or
Osteopathic Manipulation

3.1% Yoga

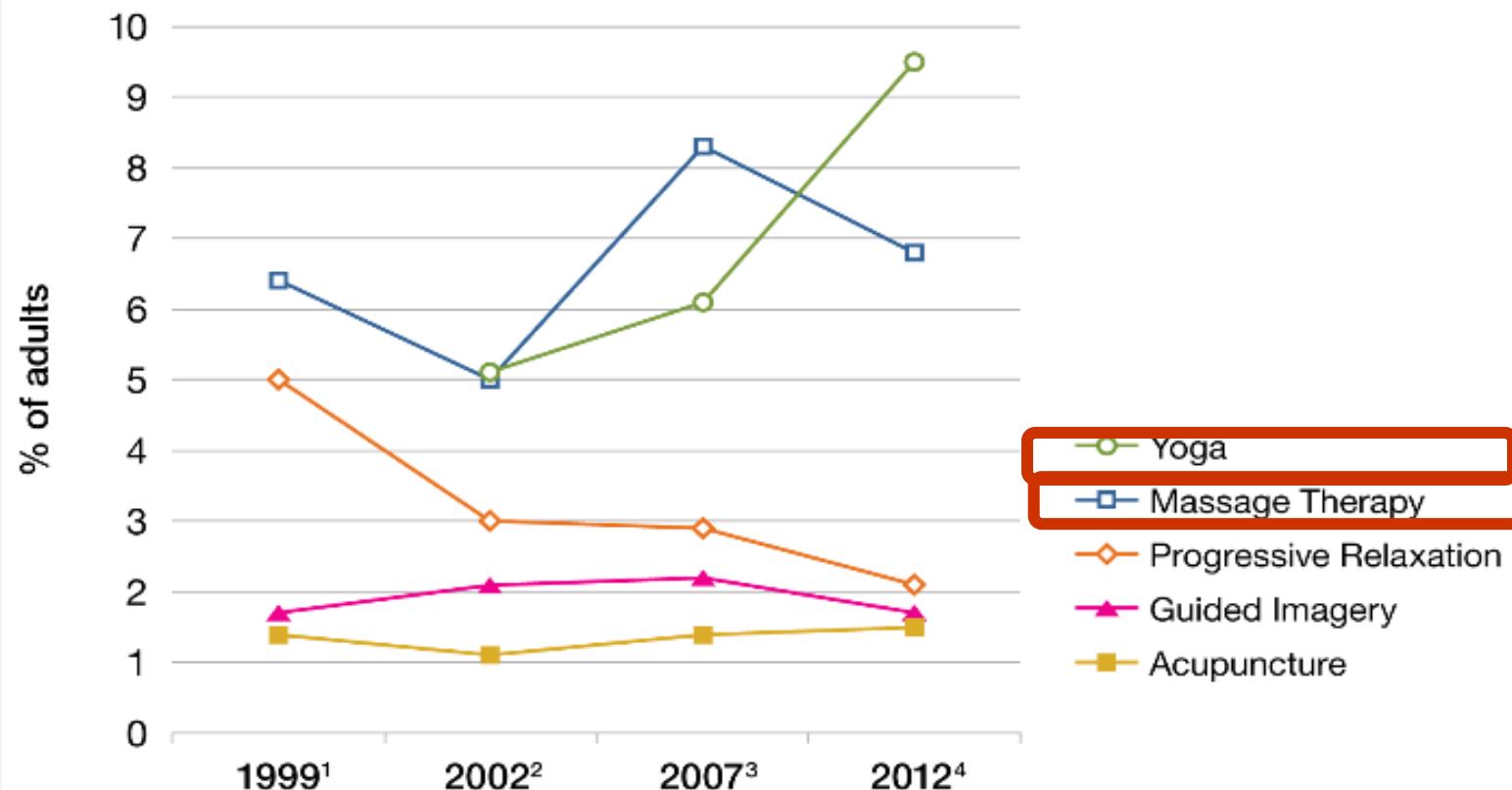
1.6% Meditation

0.7% Massage Therapy

Trends in Mind and Body Practices



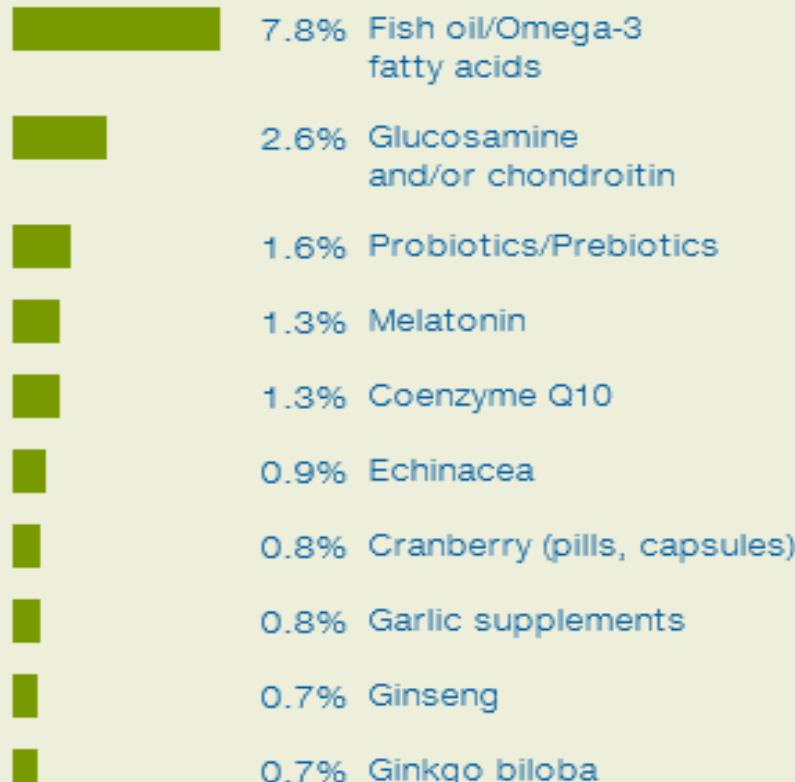
13-year trends for complementary approaches where questions are very similar across years



2012 NHIS Natural Products

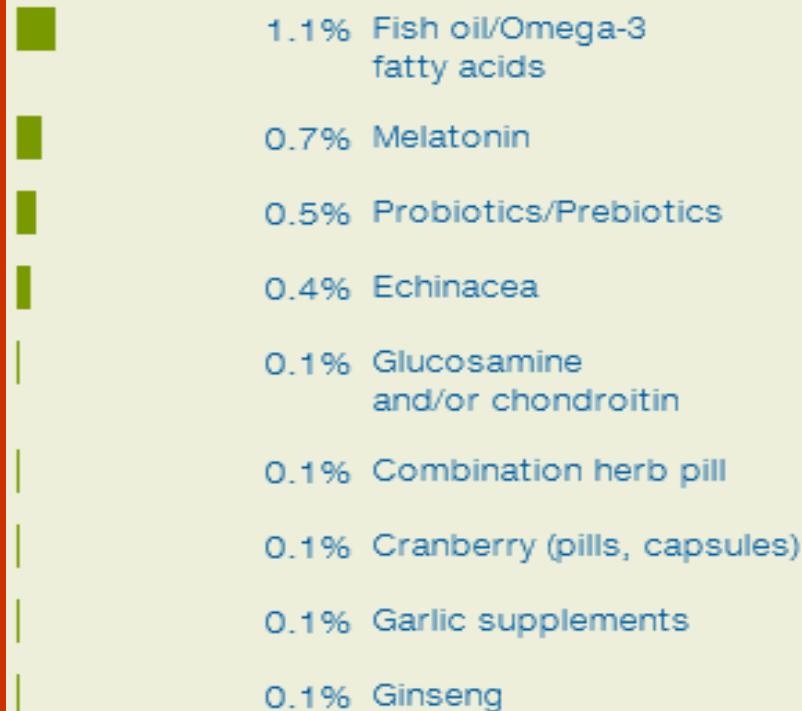
Adults

Click on any product below for details



Children

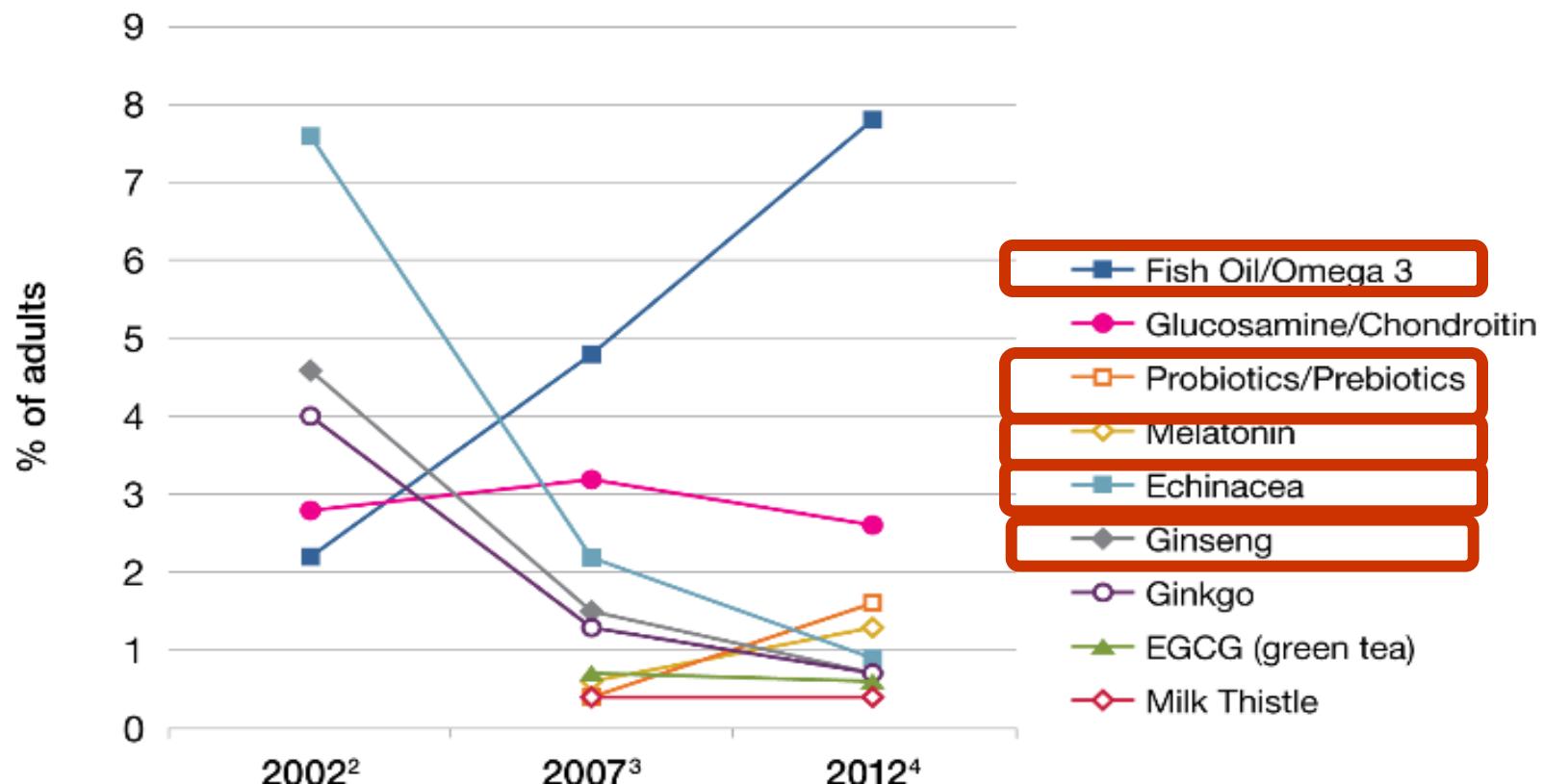
Click on any product below for details



Trends in Natural Products



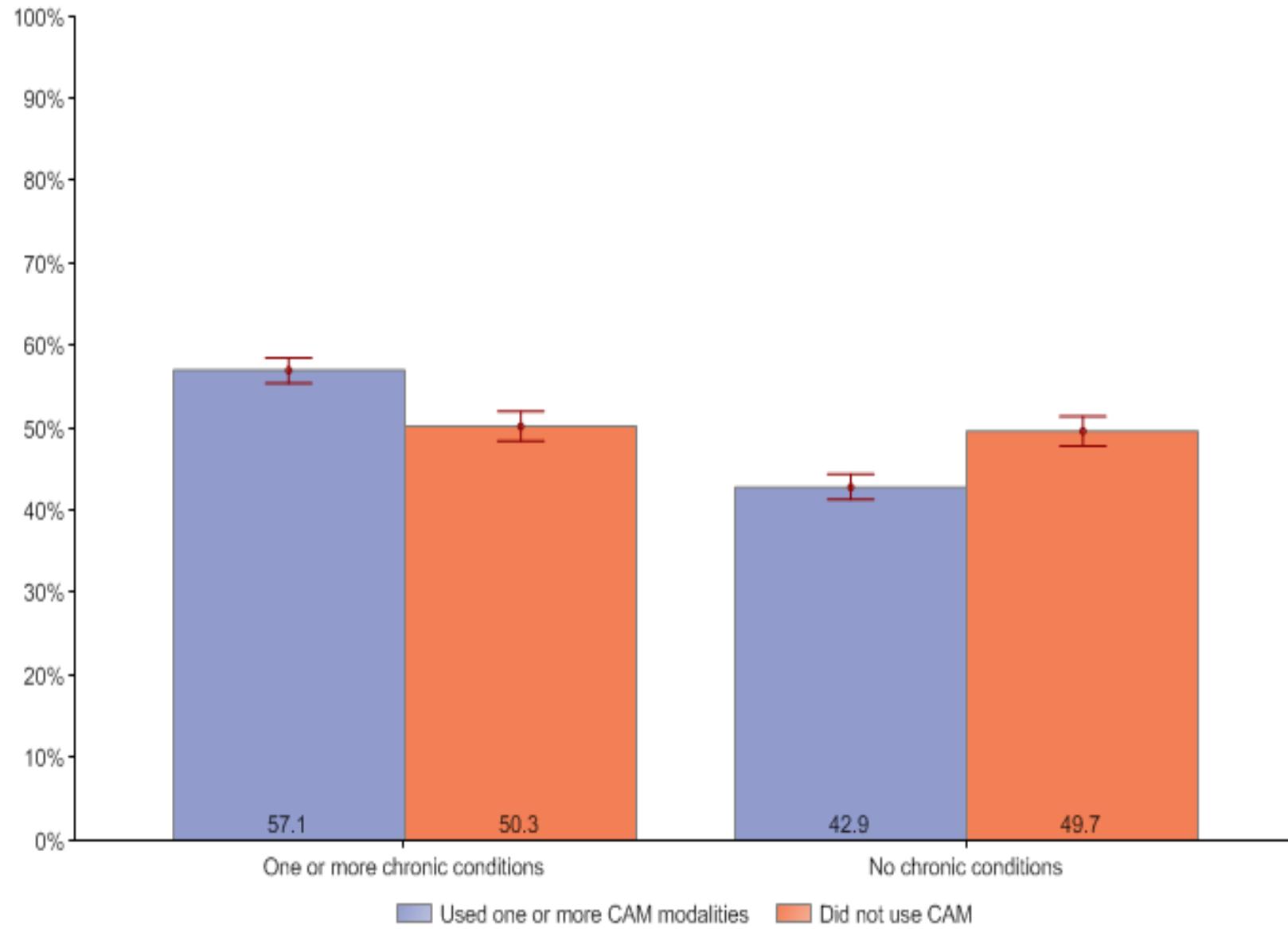
10-year use trends for individual non-vitamin, non-mineral natural products



Children with one or more chronic health conditions

Children age 4-17 years

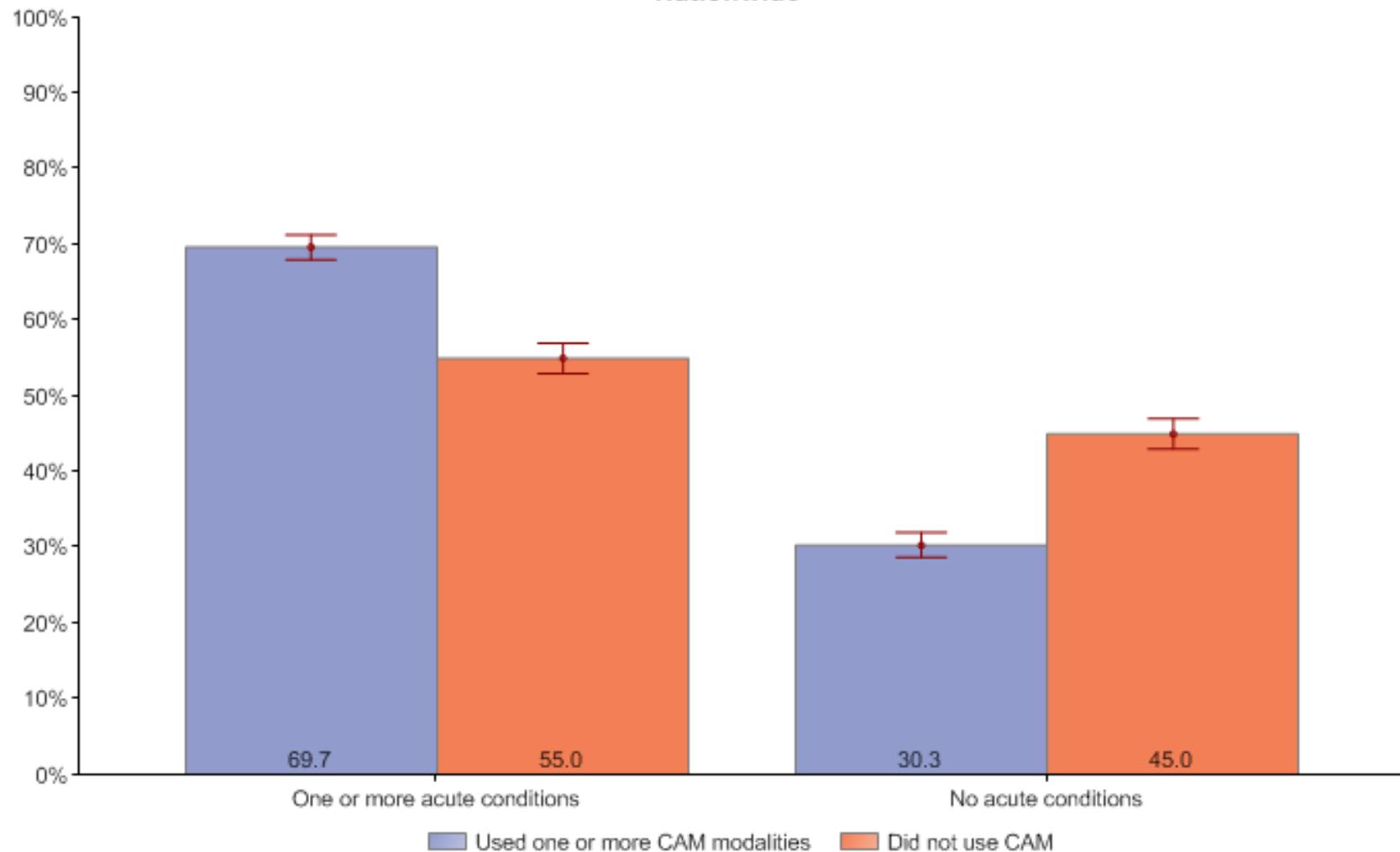
Nationwide



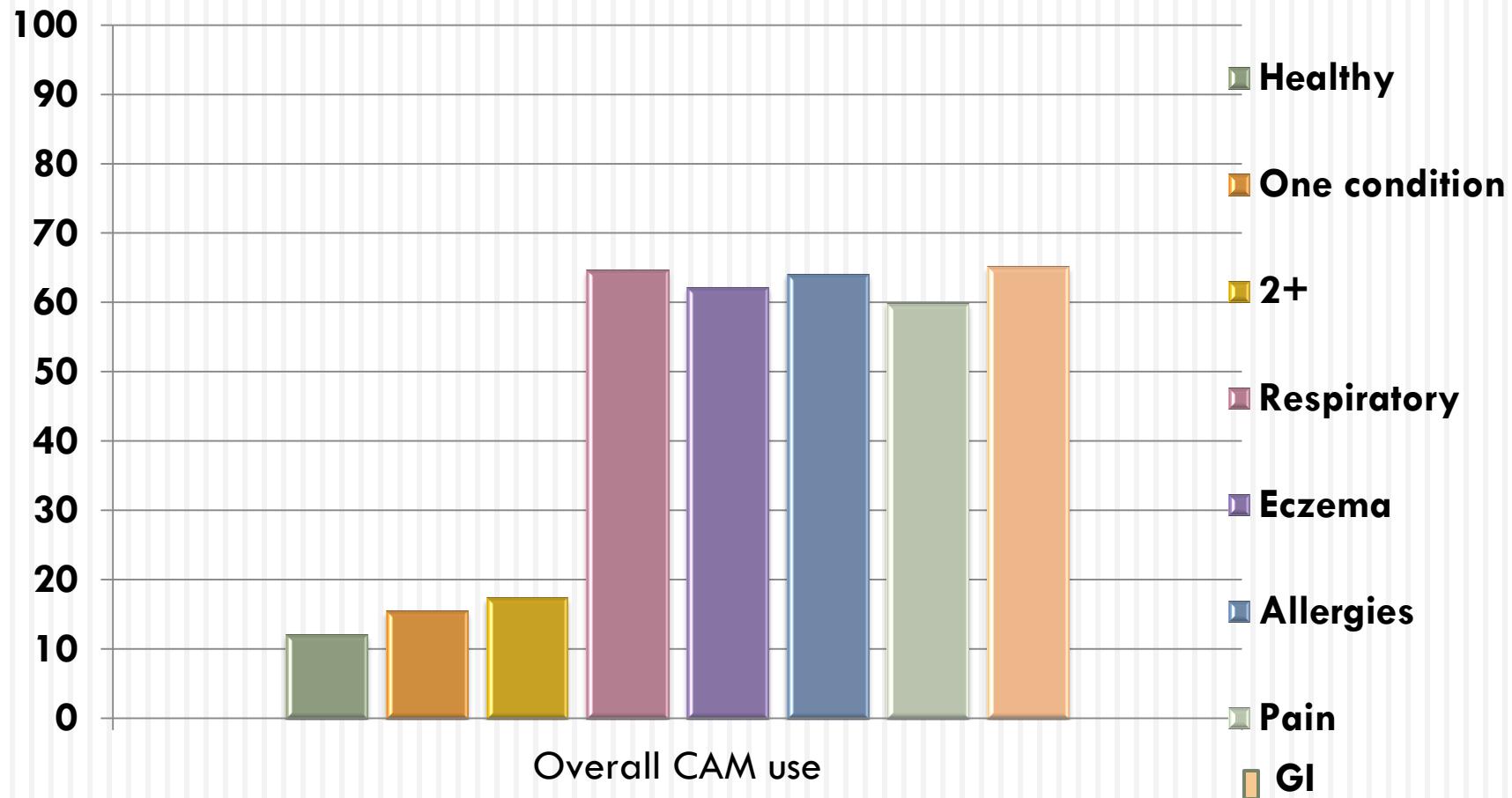
Children with one or more common acute conditions

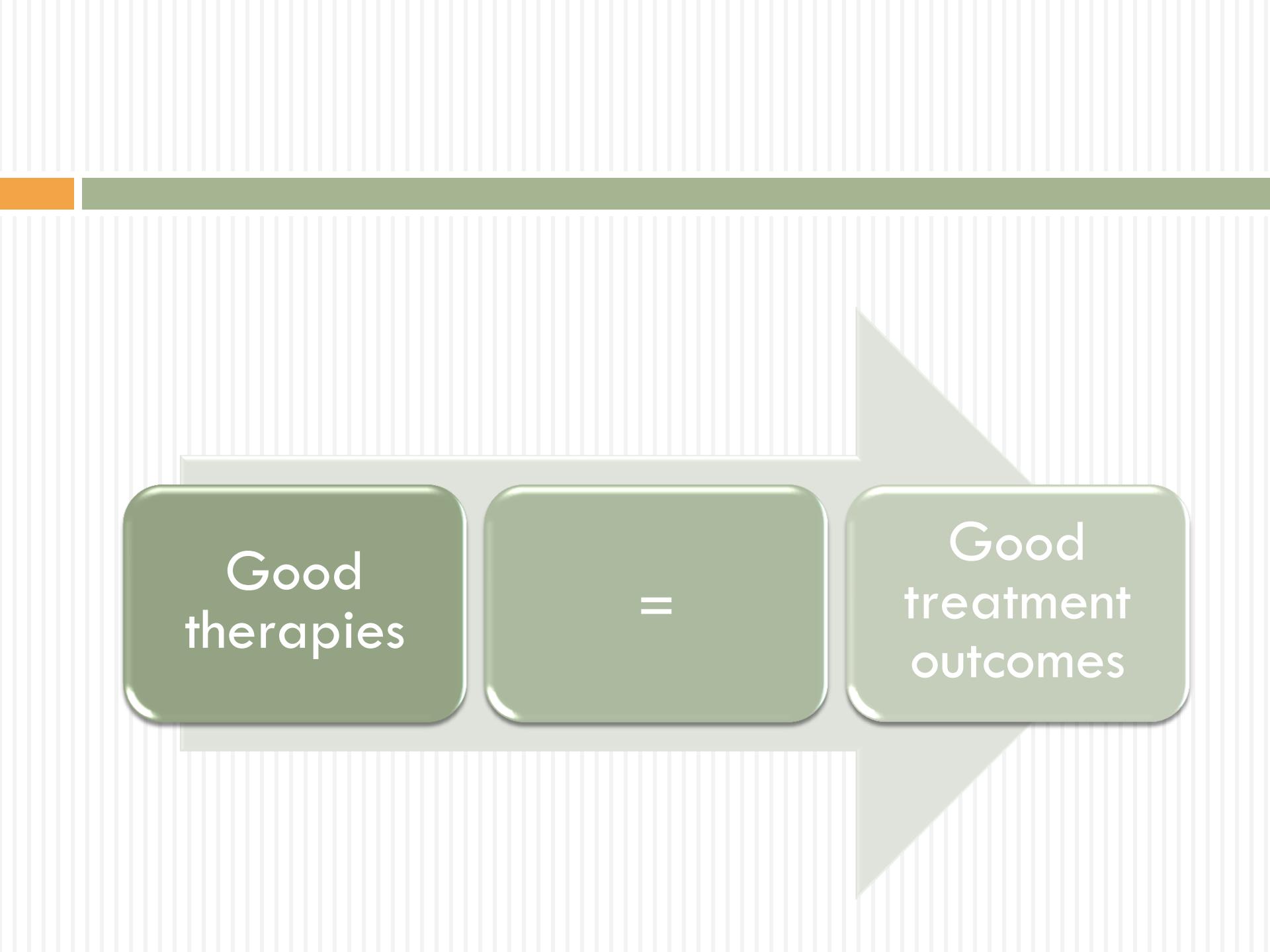
Children ages 4-17 years

Nationwide



<http://childhealthdata.org/browse/survey>

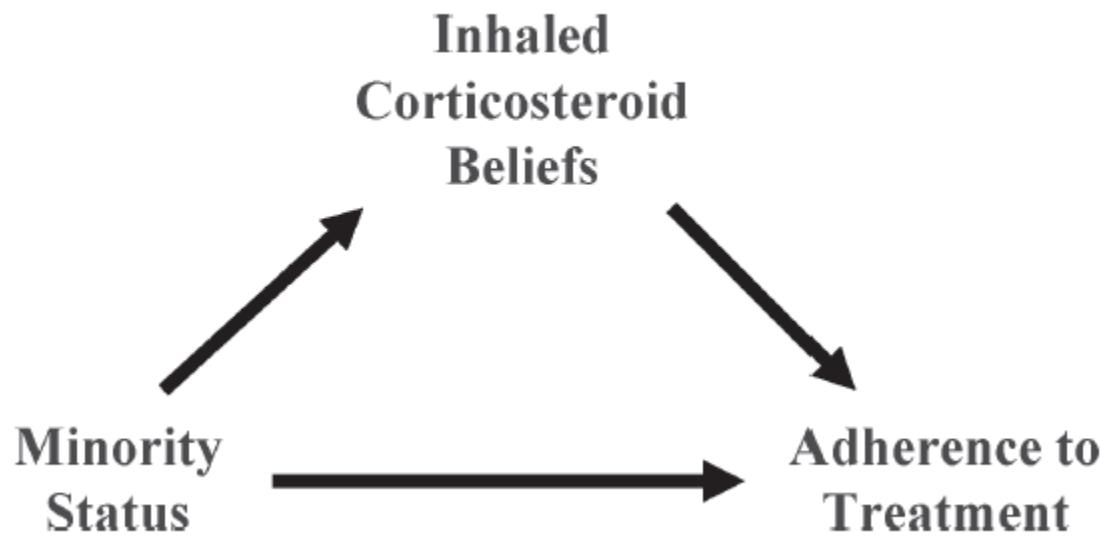




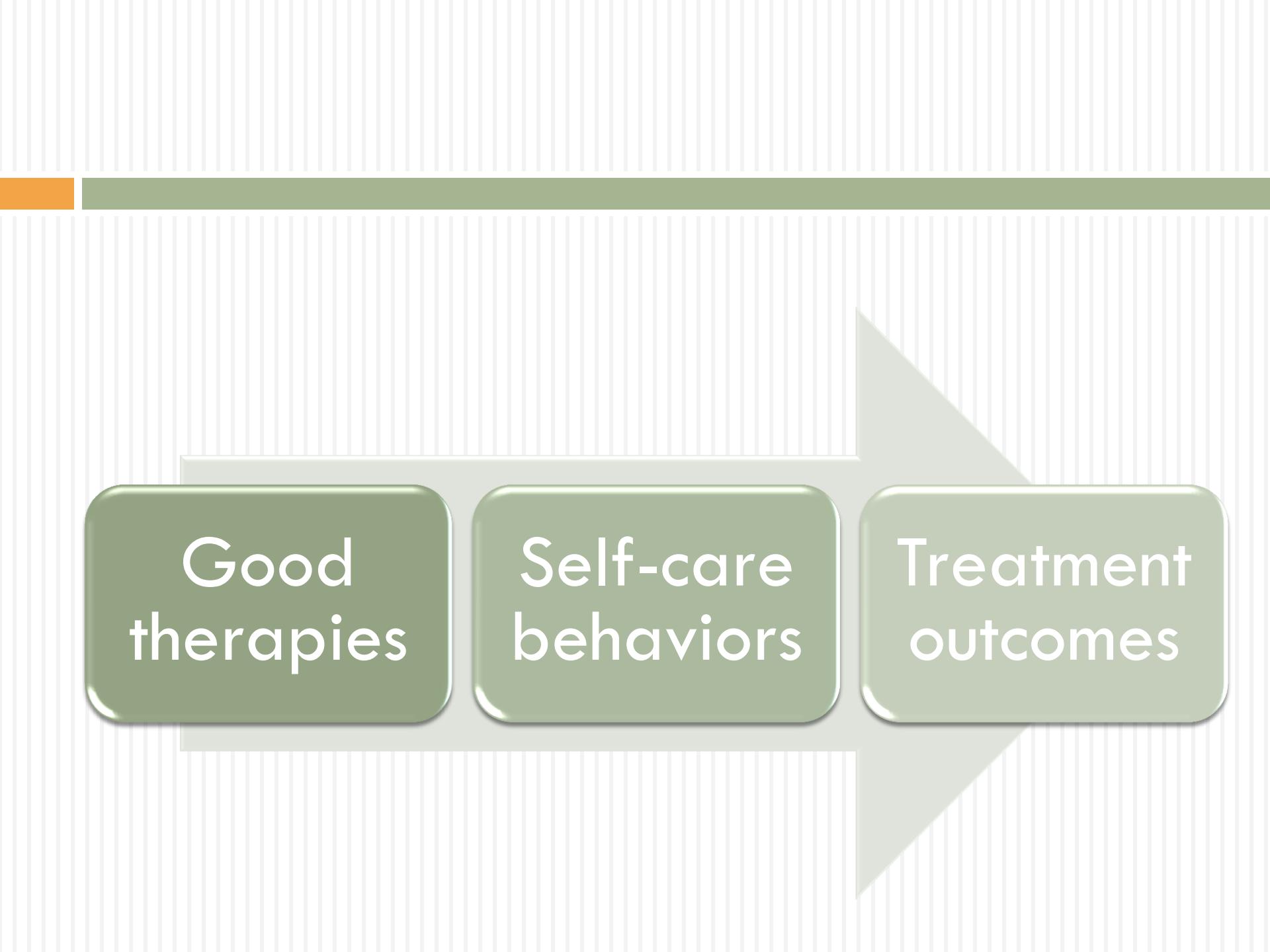
Good
therapies

=

Good
treatment
outcomes



Le, Bilderback, Bender, Wamboldt, Turner, Rand & Bartlett
J Asthma 2008



Good
therapies

Self-care
behaviors

Treatment
outcomes

CAM use and adherence to asthma controllers in children

- CAM use was related to increased adherence to controller medications within NLW families
- For children and families from Latino backgrounds, CAM use was not related to controller medication adherence.

CAM use and adherence to asthma controllers in children

TABLE 4 Results of Multivariate Linear Regression Model Revealed No Relationship Between CAM Use and Adherence

CAM Use Category	CAM Use Year 0	CAM Use Year 1	Adherence Year 2	
			Adjusted percent missed doses/week (95% CI)	Adjusted adherence score (95% CI)
1 (n = 34)	+	+	7.2 (2.0–14.6)	6.8 (5.9–7.8)
2 (n = 153)	—	—	6.5 (5.3–7.9)	7.3 (7.1–7.5)

Model adjusted for severity of asthma, intervention/control status, and percent of missed doses in year 1 as well as clustering by provider.

CAM use and adherence to asthma controllers in adults

Table 2. Results of Multivariable Analyses of Predictors of Adherence to Inhaled Corticosteroids

Variable	Odds ratio (95% confidence interval)
Use of herbal remedies	0.4 (0.2–0.8)
Age	1.0 (0.9–1.0)
Female sex	1.4 (0.7–2.9)
Race	
White	Reference
Black	0.5 (0.2–1.4)
Latino	0.3 (0.1–0.9)
Other	0.5 (0.1–2.2)
High school graduate	2.3 (1.3–4.1)
Time with asthma	1.0 (0.9–1.0)
History of oral steroid use	1.0 (0.5–2.0)
History of intubation	1.6 (0.7–3.7)
English as a native language	0.6 (0.3–1.2)
Comorbidities	
Sinusitis	1.1 (0.6–2.1)
Allergies	1.1 (0.6–1.9)
Depression	0.8 (0.4–1.5)
Anxiety	0.9 (0.4–1.6)



CAM use and clinical outcomes in adults with asthma

TABLE II. CAM-A* instrument items (n = 304)

Item	Item domain	Positive response, no. (%)
(Insert BRAND NAME ICS) controls my asthma	Positive ICS belief	250 (82)
Having air movement from a fan, air conditioner or open window helps my asthma	CAM endorsement	202 (66)
I need my (insert BRAND NAME ICS) every day	Positive ICS belief	227 (75)
It is important to me that I find a natural way to treat my asthma	CAM endorsement	128 (42)
Drinking water helps my asthma	CAM endorsement	128 (42)
I am the best judge of whether I need to take my (Insert BRAND NAME ICS)	Negative ICS belief	127 (42)
Steam or warm things on my chest helps my asthma	CAM endorsement	116 (38)
Praying, or having someone pray for me, helps my asthma	CAM endorsement	114 (37)
My asthma can get worse if I go out with a wet head	CAM endorsement	109 (36)
I make decisions about whether I need my (Insert BRAND NAME ICS) on a day-by-day dose-by-dose basis	Negative ICS belief	106 (35)
Drinking tea (herbal or regular) helps my asthma	CAM endorsement	99 (32)
I am afraid that I will build up a tolerance to (Insert BRAND NAME ICS)	Negative ICS belief	71 (23)
Drinking coffee helps my asthma	CAM endorsement	61 (20)
Using Vicks VapoRub helps my asthma	CAM endorsement	53 (17)
Doctors compensated for writing ICS prescriptions	Negative ICS belief	39 (13)
ICS causes cancer or organ damage	Negative ICS belief	35 (11)
ICS causes side effects	Negative ICS belief	33 (11)

TABLE III. Bivariate comparisons and multivariate logistic regression of factors associated with asthma control

Characteristics	Bivariate comparison		P value	Logistic regression† OR (95% CI), P value
	Controlled asthma (n = 97)	Uncontrolled asthma (n = 207)		
Level of CAM endorsement, mean (SD)	2.9 (2.1)	3.5 (0.15)	.032	1.41 (1.1-2.31), .04
Level of ICS negative belief endorsement, mean (SD)	1.12 (1.19)	1.5 (1.33)	.035	1.4 (0.94-2.1), .099
Age (y), mean (SD)	48.1 (1.53)	50.5 (0.87)	.15	
Sex			.29	
Male	26 (27%)	44 (21%)		
Female	71 (73%)	163 (79%)		
Race			.001	.56
White	28 (29%)	20 (10%)		Referent
Black/African American	63 (65%)	174 (84%)		1.6 (0.55-4.63), .39
Other*	6 (6%)	13 (6%)		2.37 (0.43-12.9), .32
Marital status			.33	
Single	36 (37%)	99 (49%)		
Married	32 (34%)	50 (25%)		
Divorced/separated	19 (21%)	43 (21%)		
Widowed	8 (8%)	11 (5%)		
Occupation			.06	
Unemployed	30 (31%)	99 (49%)		
Manual/service	11 (11%)	27 (13%)		
Skilled professional	35 (36%)	36 (18%)		
Student	4 (4%)	6 (3%)		
Retired	12 (13%)	22 (11%)		
Other (chef, EMS, on disability)	5 (5%)	11 (6%)		
Highest educational level			.001	.011
Some high school	7 (7%)	46 (22%)		Referent
Completed high school/obtained GED/vocational training	31 (32%)	87 (42%)		0.44 (0.15-1.34), .17
Some college	23 (24%)	52 (25%)		0.32 (0.1-1.1), .07
College graduate/postgraduate	36 (37%)	22 (11%)		0.09 (0.02-0.38), .048



Fish oil/Omega-3 fatty acids

- Omega-3 fatty acids are a group of polyunsaturated fatty acids found in fatty fish, vegetable oils; available as dietary supplements



Why are children with asthma using fish oil/omega 3s?

- Potential therapeutic and preventive value in childhood asthma
- recent genetic evidence strongly suggests a pathogenetic role in asthma



What is the evidence that fish oil/omega 3s are effective?

- Mostly observational studies
- Interventions studies are of low quality and yield conflicting results
- Effective
 - High triglycerides
- Likely effective
 - For heart disease
- Possibly effective
 - Asthma
 - improves symptoms and lowers the need for medications in some, but not all, children with asthma
 - can lower the occurrence of asthma in infants and children when taken by women during pregnancy but not during breastfeeding
 - does not seem to improve asthma symptoms in adults

Probiotics



Probiotics

- Live microorganisms (e.g., bacteria) that are either the same as or similar to microorganisms found naturally in the human body and may be beneficial to health

Prebiotics

- Carbohydrates that cannot be digested that serve as food for probiotics



What is the evidence that probiotics are effective?

Role of probiotics in the prevention and treatment of allergic reactions

- The most extensive studies of the modification of allergic reactions have been reported for atopic eczema with *Lactobacillus GG*
- 1 study of *Bifidobacterium animalis* Bb12 reduced the severity of atopic dermatitis

Role of probiotics in the prevention and treatment of allergic reactions

- 1 study of 159 pregnant women with a family history of atopic disease given either *Lactobacillus GG* capsules or a placebo for 2–4 weeks before their expected delivery date
 - Mothers who chose to breast-feed their newborns continued to receive *Lactobacillus GG* or placebo for 6 months
 - There was a 50% reduction in the frequency of atopic eczema in the *Lactobacillus GG* group's first 2 years
 - In follow-up study the *Lactobacillus GG* group still had a significantly lower percentage of atopic eczema 4 years after birth, compared with placebo

Role of probiotics in the prevention and treatment of allergic reactions

- 27 infants with atopic eczema were randomized into 3 groups: *Lactobacillus GG*, *Bifidobacterium lactis Bb12*, or placebo
 - After 2 months, the SCORAD score demonstrated a significant improvement in the skin condition of infants given probiotic supplemented formulas
- 31 infants with atopic eczema who were removed from exposure to cow milk and were given either *Lactobacillus GG* or a placebo showed that treatment with *Lactobacillus GG* resulted in a significant improvement in their eczema

Safety and Side Effects of Probiotics

- Most people do not experience side effects from probiotics or have only mild gastrointestinal side effects such as gas
 - ▣ a recent review of *Lactobacillus* and *Bifidobacterium* noted that the long-term, cumulative effects of probiotics use, especially in children, are unknown, and also pointed to evidence that probiotics should not be used in critically ill patients or in people who have underlying health conditions
- Concerns have also been raised about the quality of probiotic products
 - ▣ Some products have been found to contain smaller numbers of live microorganisms than expected
 - ▣ some products have been found to contain bacterial strains other than those listed as ingredients

What is the evidence that probiotics are effective?

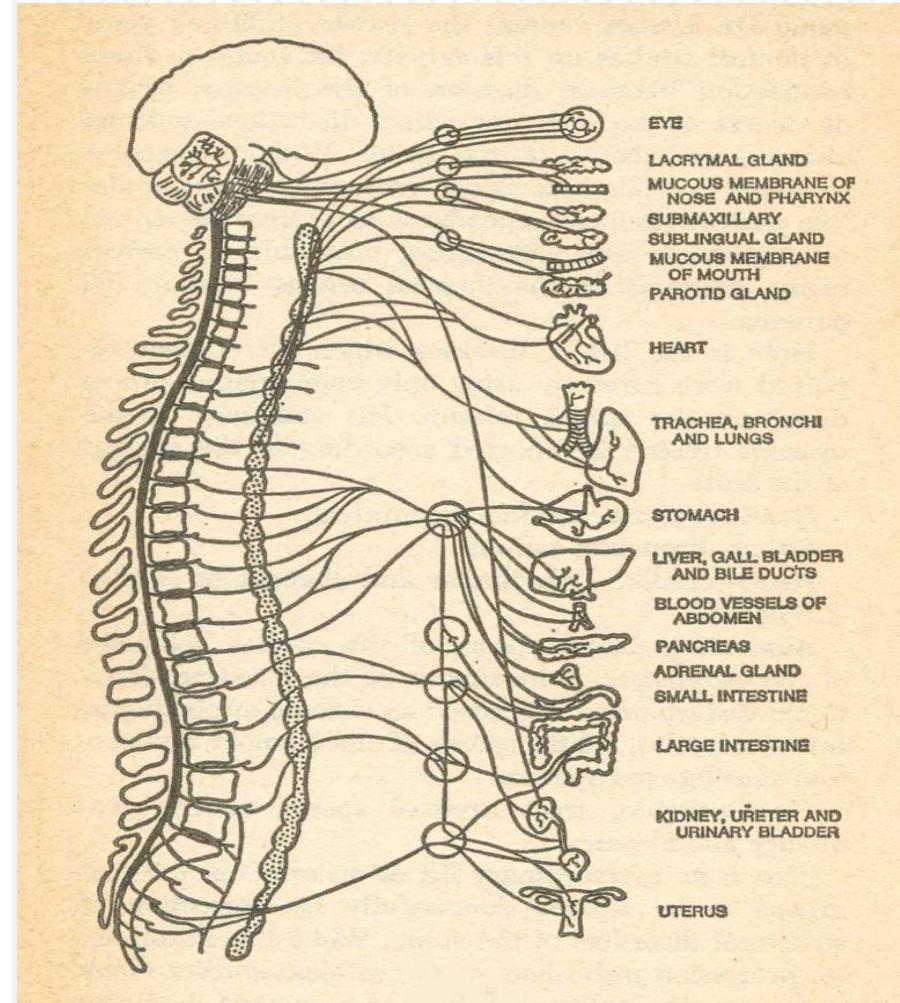
- Likely effective
 - ▣ Treat rotavirus-induced diarrhea
- Possibly effective
 - ▣ Eczema
 - Treating and preventing atopic dermatitis in infants and children who are allergic to cow's milk
 - A combination of freeze-dried *Lactobacillus rhamnosus* and *Lactobacillus reuteri* seems to reduce eczema symptoms in children ages 1 to 13 years

Role of ginseng in the treatment of pediatric asthma

- Medical claims are specific to Asian (Panax) ginseng
- Used for supporting overall health, boosting children's immune system, improving thinking, concentration, memory and work efficiency, physical stamina, athletic endurance and reducing stress
- Possibly effective
 - Improve lung function and some symptoms of COPD

The role of chiropractic care

- Chiropractic is a health care approach that focuses on the relationship between the body's structure—mainly the spine—and its functioning
- Primarily used for back pain, neck pain, and headache



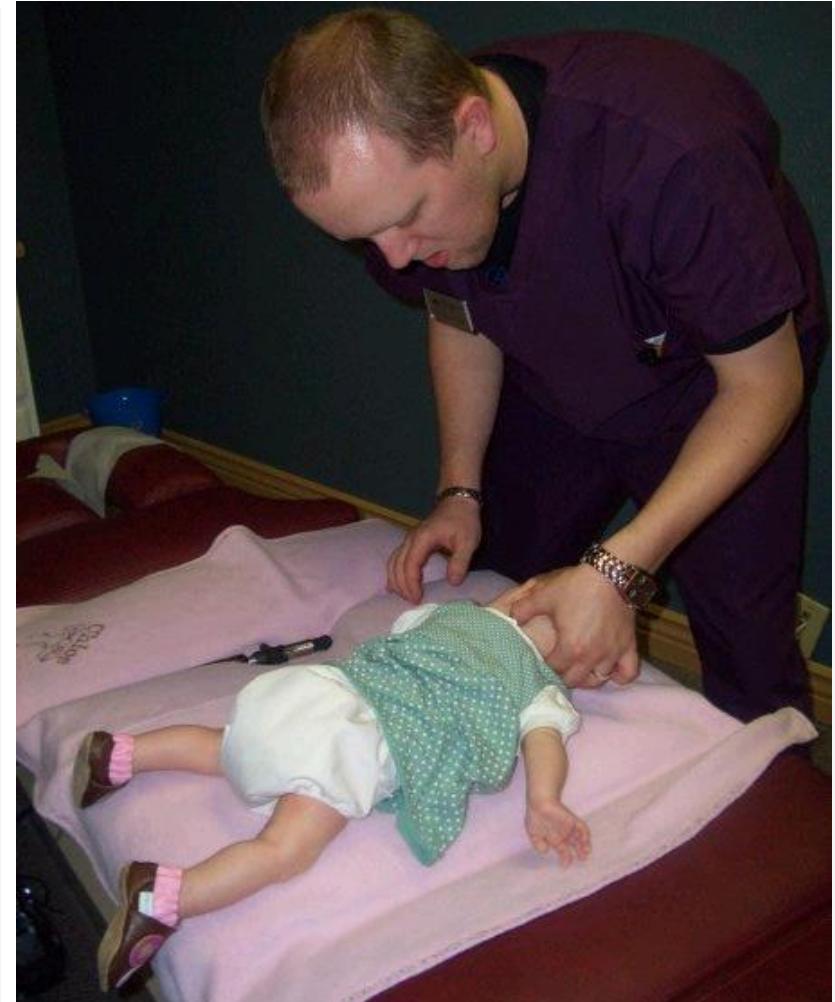
What is the evidence that spinal manipulation therapy (SMT) is effective in pediatric asthma?

Systematic review

Studies that monitored both subjective and objective outcome measures of relevance to both patients and parents tended to report the most favorable response to SMT, especially among children with asthma

Many studies suffered from several methodological limitations

Further research is required



Gleberzon et al J Can Chiropr Assoc. 2012

Role of yoga in children's health

- The evidence base on the efficacy of yoga and other movement therapies in children for any condition consists of a limited number of studies, many with small sample sizes and high risk of bias
- Low rate of side effects; the risk of serious injury from yoga is quite low

Role of meditation in children's health

- Evidence that meditation may reduce blood pressure as well as symptoms of irritable bowel syndrome and flares of ulcerative colitis
- Meditation may ease symptoms of anxiety and depression, and may help people with insomnia
- Meditation also may lower the incidence, duration, and severity of acute respiratory illnesses, such as influenza
- Meditation is generally considered to be safe for healthy people

What is the evidence that massage is effective in pediatric asthma?

- There is evidence that massage may help with back pain and may improve quality of life in adults with chronic medical conditions
- Unclear if massage improves lung function in children with asthma



What is the evidence that massage is effective in pediatric asthma?



- Massage therapy appears to have few risks if it is used appropriately and provided by a trained massage professional

Risky CAM-Echinacea

- ✓ Some people experience allergic reactions, including rashes, increased asthma, and anaphylaxis
- ✓ People are more likely to experience allergic reactions to echinacea if they are allergic to related plants in the daisy family, which includes ragweed, chrysanthemums, marigolds, and daisies.
- ✓ Also, people with asthma or atopy may be more likely to have an allergic reaction when taking echinacea
- ✓ Honey and other members of the ragweed family can also cause reactions, including chamomile and milk thistle



Drug-herb interactions

- ephedra -a component of *ma huang*- can have a synergistic cardiovascular effect when used with albuterol
- licorice made from the *glycyrrhiza* root can prolong the half-life of cortisone, potentiating systemic steroid effects

Risky home or traditional remedies

- Turpentine and Vicks Vaporub ingestion
- Smokehouses

Risky behaviors

- Delays in initiating repetitive albuterol dosing
- Substitution of CAM for SABA and ICS

EHR (Scarton et al., AMIA Annu Symp Proc 2011: 1217-23)



- | | | |
|---|------------------------------------|---|
| <input type="checkbox"/> Alfalfa | <input type="checkbox"/> CoQ10 | <input type="checkbox"/> Ginkgo |
| <input type="checkbox"/> Aloe Vera | <input type="checkbox"/> Creatine | <input type="checkbox"/> Gossypol |
| <input type="checkbox"/> Angelica | <input type="checkbox"/> Dandelion | <input type="checkbox"/> Grapefruit Juice |
| <input type="checkbox"/> Bilberry | <input type="checkbox"/> Digitalis | <input type="checkbox"/> Green Tea |
| <input type="checkbox"/> Butcher's Broom | <input type="checkbox"/> Fenugreek | <input type="checkbox"/> Hawthorn |
| <input type="checkbox"/> Capsicum (Cayenne) | <input type="checkbox"/> Fumitory | <input type="checkbox"/> Irish Moss |
| <input type="checkbox"/> Carnitine | <input type="checkbox"/> Garlic | <input type="checkbox"/> Kelp |
| <input type="checkbox"/> Corn Silk | <input type="checkbox"/> Ginger | <input type="checkbox"/> Khelia |

Next



The following fields are available for entry of any dietary supplements you are taking that are not on the lists in the prior 2 pages.

Supplements selected from the prior pages: Green Tea, St. John's Wort

Other 1: DHEA

[Add Another Supplement](#)

Other 2: Sage

- Sage
- Salmon Oil
- SAMe
- Sarsaparilla
- Saw Palmetto

Next

Integrative Medicine Overview Checklist

Patient Administered

Name:

Date of Birth:

Allergies:

What complementary, alternative, or integrative medical therapies and practices do you use?

Mind & Body Practices	How often?	Natural Products & Biologically-Based Therapies	How often?
<input type="checkbox"/> Acupressure		<input type="checkbox"/> Botanicals	
<input type="checkbox"/> Acupuncture		<input type="checkbox"/> Dietary Supplements	
<input type="checkbox"/> Alexander technique		<input type="checkbox"/> Herbs & herbal products	
<input type="checkbox"/> Aquatic therapy		<input type="checkbox"/> Minerals	
<input type="checkbox"/> Aromatherapy		<input type="checkbox"/> Probiotics	
<input type="checkbox"/> Art therapy		<input type="checkbox"/> Special Diets	
<input type="checkbox"/> Biofeedback		<input type="checkbox"/> Vitamins	
<input type="checkbox"/> Breathing exercises		Other:	
<input type="checkbox"/> Buteyko			
<input type="checkbox"/> Chiropractic manipulation		Whole Medical Systems & Healers	How often?
<input type="checkbox"/> Crystals		<input type="checkbox"/> Ayurveda	
<input type="checkbox"/> Cupping therapy		<input type="checkbox"/> Homeopathy	
<input type="checkbox"/> Electromagnetic field manipulation		<input type="checkbox"/> Hot/cold balance	
<input type="checkbox"/> Guided imagery		<input type="checkbox"/> Humoralism	
<input type="checkbox"/> Hypnosis		<input type="checkbox"/> Naturopathy	
<input type="checkbox"/> Laying on of the hands		<input type="checkbox"/> Spiritual guides	
<input type="checkbox"/> Light therapy		<input type="checkbox"/> Traditional Chinese Medicine	
<input type="checkbox"/> Magnets		<input type="checkbox"/> Traditional healers	
<input type="checkbox"/> Massage		Other:	
<input type="checkbox"/> Meditation			
<input type="checkbox"/> Mental health counseling/talk therapy			
<input type="checkbox"/> Mindfulness-based stress reduction			

Integrative Medicine Index of Natural Products

For Provider or Patient Reference

Name:	Date of Birth:
Allergies:	



<input type="checkbox"/> Acai	<input type="checkbox"/> Eucalyptus	<input type="checkbox"/> Pomegranate
<input type="checkbox"/> Alfalfa	<input type="checkbox"/> European elder/Elderberry	<input type="checkbox"/> Probiotics
<input type="checkbox"/> Aloe	<input type="checkbox"/> European mistletoe	<input type="checkbox"/> Propolis
<input type="checkbox"/> Aloe vera	<input type="checkbox"/> Evening primrose oil	<input type="checkbox"/> Pycnogenol
<input type="checkbox"/> Aristolochic acids	<input type="checkbox"/> Fenugreek	<input type="checkbox"/> Quercetin
<input type="checkbox"/> Asian ginseng	<input type="checkbox"/> Feverfew	<input type="checkbox"/> Red Clover
<input type="checkbox"/> Astragalus	<input type="checkbox"/> Fish oil/EPA/Omega-3 fatty acids	<input type="checkbox"/> Red yeast or red yeast rice
<input type="checkbox"/> Bacillus coagulans	<input type="checkbox"/> Flaxseed or flaxseed oil	<input type="checkbox"/> Roman chamomile
<input type="checkbox"/> Belladonna	<input type="checkbox"/> Folate or folic acid	<input type="checkbox"/> Saccharomyces boulardii
<input type="checkbox"/> Bifidobacteria	<input type="checkbox"/> Garlic	<input type="checkbox"/> S-adenosyl L-methionine (SAMe)
<input type="checkbox"/> Bilberry	<input type="checkbox"/> Ginger	<input type="checkbox"/> Sage
<input type="checkbox"/> Biotin	<input type="checkbox"/> Ginkgo	<input type="checkbox"/> Saw palmetto
<input type="checkbox"/> Bitter orange	<input type="checkbox"/> Ginseng, American	<input type="checkbox"/> Selenium
<input type="checkbox"/> Black cohosh	<input type="checkbox"/> Ginseng, Panax	<input type="checkbox"/> Senna
<input type="checkbox"/> Black psyllium	<input type="checkbox"/> Ginseng, Siberian	<input type="checkbox"/> Spirulina
<input type="checkbox"/> Black tea	<input type="checkbox"/> GLA/Omega-6 fatty acids	<input type="checkbox"/> Soy
<input type="checkbox"/> Bladderwrack	<input type="checkbox"/> Glucosamine hydrochloride	<input type="checkbox"/> St. John's Wort
<input type="checkbox"/> Blessed thistle	<input type="checkbox"/> Glucosamine sulfate	<input type="checkbox"/> Stinging nettle leaf
<input type="checkbox"/> Blond psyllium	<input type="checkbox"/> Goldenseal	<input type="checkbox"/> Sun's Soup (selected vegetables)
<input type="checkbox"/> Blue-green algae	<input type="checkbox"/> Grape seed extract	<input type="checkbox"/> Tea tree oil
<input type="checkbox"/> Blueberry	<input type="checkbox"/> Hawthorn	<input type="checkbox"/> Thunder god vine
<input type="checkbox"/> Boron	<input type="checkbox"/> Green tea	<input type="checkbox"/> Turmeric
<input type="checkbox"/> Bromelain	<input type="checkbox"/> Hoodia	<input type="checkbox"/> Vitamin A
<input type="checkbox"/> Butterbur	<input type="checkbox"/> Horse chestnut	<input type="checkbox"/> Valerian
<input type="checkbox"/> Calcium	<input type="checkbox"/> Horsetail	<input type="checkbox"/> Vitamin B-1 (thiamine)
<input type="checkbox"/> Caffeine	<input type="checkbox"/> Hydrazine sulfate	<input type="checkbox"/> Vitamin B-2 (riboflavin)
<input type="checkbox"/> Calendula	<input type="checkbox"/> Iodine	<input type="checkbox"/> Vitamin B-3 (niacin)

ETHNIC mnemonic

- **Explanation**-how do you explain your illness?
- **Treatment**-what have you tried?
- **Healers**-have you sought care from other (traditional) healers?

- **Negotiate**-until mutually acceptable plan is reached
- **Intervention**-mutually acceptable
- **Collaboration**-with patient, family and healers

Home remedies/folk medicine/cultural beliefs

- ❑ Is there anything you eat or drink (or avoid eating or drinking) for your health?
- ❑ When you have an asthma attack, tell me everything you do to improve your breathing. Walk me though all the steps you take during an attack.
- ❑ Tell me everything you do to prevent an asthma attack. How about in hot weather? Cold weather?

Beliefs about conventional treatments and providers

- Do you have any concerns about the safety of, or need for, this treatment?
- Do you have any concerns about why I prescribed this treatment for you?

Safety

B. Safe but efficacy inconclusive.

Tolerate, encourage caution, closely monitor effectiveness

A. Safe but efficacious.

Recommend and continue to monitor

D. Not efficacious with serious risk.

Avoid and actively discourage

C. Efficacious but safety inconclusive.

Consider tolerating, encourage caution, closely monitor safety

Efficacy

Figure 1. Clinical decision making based on risk versus efficacy. Adapted from Cohen MH and Eisenberg DM.³⁸

Patient centered care that includes CAM supports self-management

- Focuses on patients' concept of health
- Aligns patient and provider goals