



CAM approaches for chronic pain

Where's the evidence?



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Disclosure

- ▶ I have no commercial financial relationships to disclose
- ▶ I do not intend to discuss an off-label/investigative use of a commercial product/device
- ▶ Views expressed in this presentation are mine and do not reflect the position or policy of the VA or the US government



Objectives

- ▶ Identify potential benefits and harms of common CAM approaches to chronic pain management
- ▶ Recognize gaps in evidence for CAM approaches to chronic pain management
- ▶ Provide information to patients with chronic pain about CAM pain management options

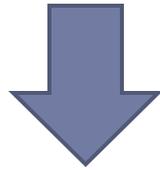


What is CAM?

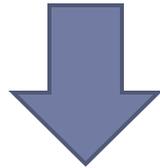
- ▶ “Health care approaches developed outside of mainstream Western, or conventional, medicine”
 - ▶ Complementary
Used with conventional medicine
 - ▶ Alternative
Used instead of conventional medicine
 - ▶ Integrative
Coordinated use of conventional and complementary approaches

CAM at NIH

▶ 1992 Office of Alternative Medicine



▶ 1999 National Center for Complementary and Alternative Medicine (NCCAM)



▶ 2015 National Center for Complementary and Integrative Health (NCCIH)

CAM includes diverse approaches

- ▶ **Natural products**
 - ▶ Dietary supplements
- ▶ **Mind-body practices**
 - ▶ Yoga
 - ▶ Meditation
 - ▶ Massage
 - ▶ Acupuncture
- ▶ **Systems of care**
 - ▶ Homeopathy
 - ▶ Naturopathy
 - ▶ Traditional healing practices



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- } Studies mostly negative
- } Impossible to study



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 - ▶ **Systems of care**
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 - ▶ Traditional healing practices
- Studies mostly negative
- Most promising
- Impossible to study



Why talk about CAM for chronic pain?

- ▶ CAM is commonly used in general population and by veterans
- ▶ Pain is a major reason for use of CAM
- ▶ Conventional pharmacologic and interventional therapies are limited in effectiveness and associated with harms & costs



Why talk about CAM for chronic pain?

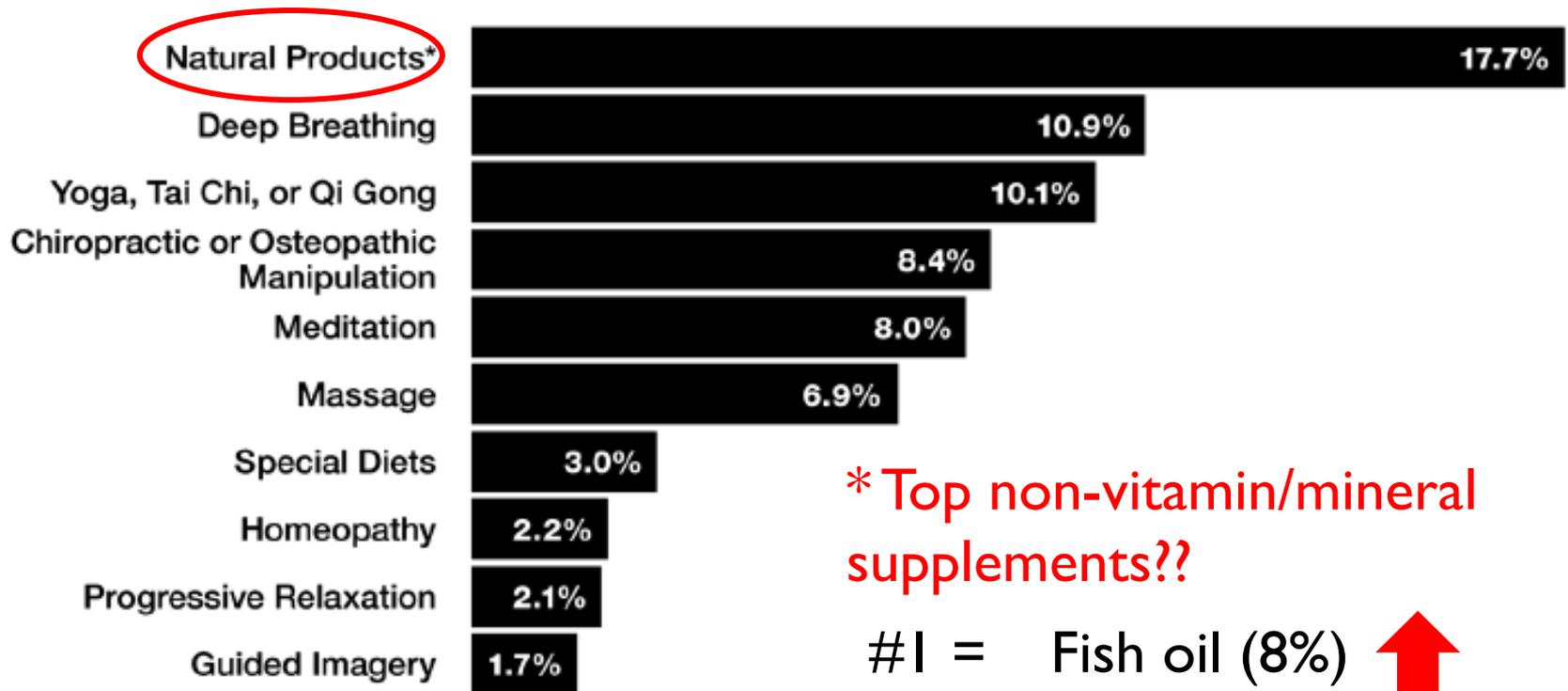
- ▶ Content of some CAM approaches overlap with those of core evidence-based “conventional” therapies that are first line for most common chronic pain conditions
 - ▶ Evidence-based exercise therapies
 - ▶ Diverse exercise therapies for low back pain
 - ▶ Strength training & aerobic exercise for knee & hip OA
 - ▶ Graded exercise for fibromyalgia
 - ▶ Evidence-based psychological therapies
 - ▶ Individual, group, and telephone cognitive behavioral therapies

Why talk about CAM for chronic pain?

- ▶ Alternative delivery system for core pain self-management content
 - ▶ Capacity
 - ▶ Convenience
 - ▶ Cost
 - ▶ Preference for non-medicalized therapy
- ▶ Matching therapies to patient preferences is likely to increase long-term adherence and effectiveness of multimodal pain treatment



10 most common complementary health approaches among adults—2012



* Top non-vitamin/mineral supplements??

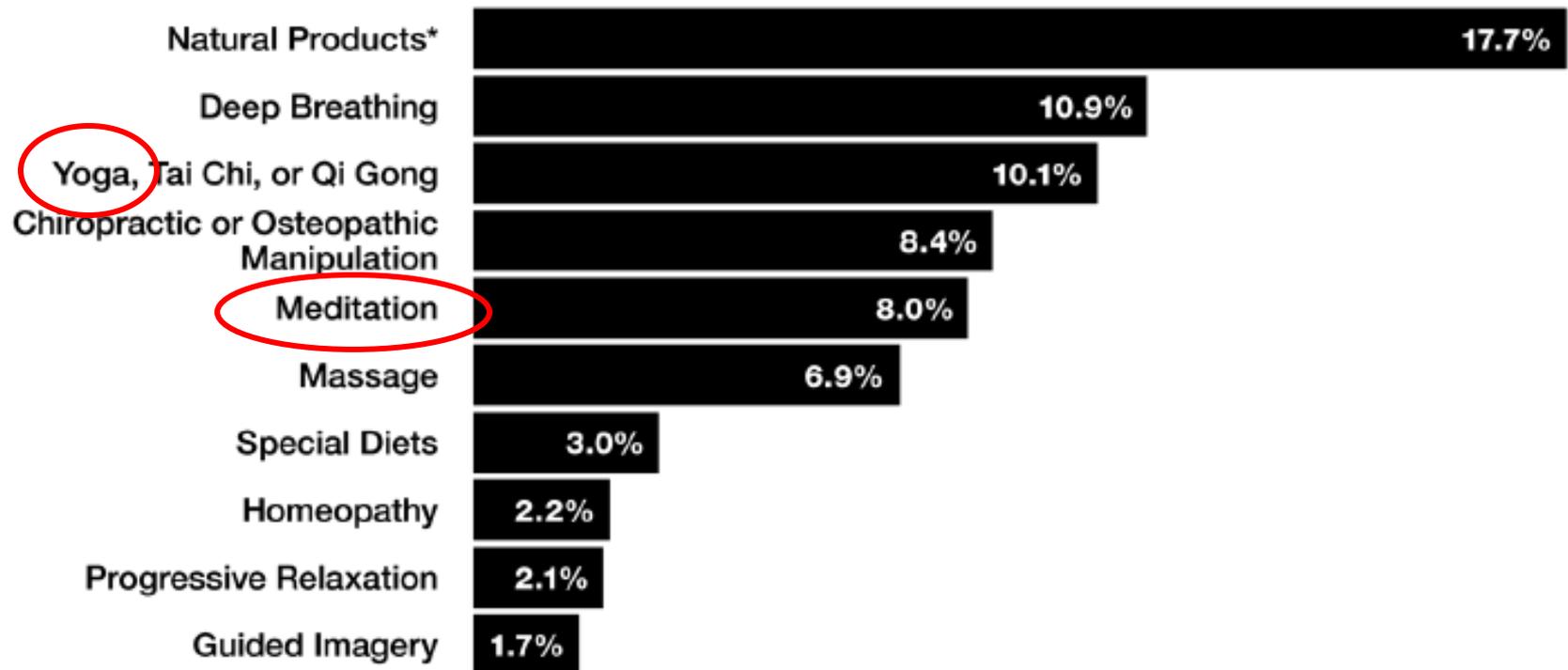
#1 = Fish oil (8%) ↑

#2 = Glucosamine/
chondroitin (3%) ↓

*Dietary supplements other than vitamins and minerals.

Sources: Clarke TC, Black LJ, Stussman BJ, Barnes PM, Nahin RL. Trends in the use of complementary health approaches among adults: United States, 2002-2012. National health statistics reports; no 79. Hyattsville, MD: National Center for Health Statistics. 2015.

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CAM use among military & veterans

	Military non-patient	Military/veteran patient
Herbs	7-16%	26-36%
Acupuncture	1-2%	8-10%
Biofeedback	<1%	4-10%
Chiropractic	5-9%	3-30%
Exercise/movement tx	7-36%	36%
Homeopathy	<1-1%	6-9%
Massage	14-25%	31-58%
Relaxation	11-21%	20-31%



Meditation for chronic pain

Meditation basics

- ▶ **Meditation: variety of techniques used by about 8% of US adults**
 - ▶ Mantra meditation: uses repetition of word/phrase to focus attention
 - ▶ Mindfulness meditation: present-focused and accepting of experience (including pain)



MBSR

- ▶ **Mindfulness-based stress reduction (MBSR)**
 - ▶ Developed for clinical settings
 - ▶ Aims to improve self-management of pain, stress, etc.
 - ▶ Not condition-specific
 - ▶ Structured 8-week program
 - ▶ Orientation session (2.5 hours)
 - ▶ Weekly classes (2.5-3.5 hours)
 - ▶ All-day silent retreat during the sixth week (7.5 hrs)
 - ▶ Daily homework



MBSR components

- ▶ “Formal” mindfulness meditation practices
 - ▶ Body scan
 - ▶ Sitting meditation
 - ▶ Walking meditation
 - ▶ Yoga
- ▶ “Informal” practices (mindfulness in everyday life):
 - ▶ Awareness of pleasant and unpleasant events
 - ▶ Awareness of breathing
 - ▶ Deliberate awareness of routine activities and events
 - ▶ Daily homework: 45 minutes/day of *formal* practice and 5-15 minutes/day of *informal* practice

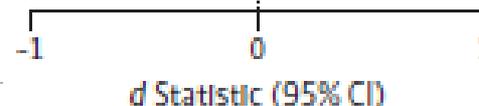
Review of meditation RCTs

- ▶ **Best quality review included trials with active controls**
 - ▶ 47 trials of various techniques for diverse conditions
 - ▶ 5 trials enrolled patients with chronic pain
 - ▶ 9 trials reported pain outcomes

Review of meditation RCTs

Outcome	Meditation Program	Clinical Population	Favors Meditation	Favors Control
Anxiety	Mindfulness	Various (n = 647)	-----●-----	
	Mantra	Various (n = 237)	-----●-----	
Depression	Mindfulness	Various (n = 806)	-----●-----	
	Mantra	Various (n = 440)	-----●-----	
Stress/Distress	Mindfulness	Various (n = 735) ^a	-----●-----	
	Mantra	Select (n = 239)	-----●-----	
Negative Affect	Mindfulness	Various (n = 1140) ^b	-----●-----	
	Mantra	Various (n = 438) ^c	-----●-----	
Positive Affect	Mindfulness	Various (n = 293)	-----●-----	
	TM (mantra)	CHF (n = 23)	-----●-----	
Quality of Life	Mindfulness	Various (n = 346)	-----●-----	
Attention	Mindfulness	Caregivers (n = 21)	-----●-----	
Sleep	Mindfulness	Various (n = 578)	-----●-----	
Substance Use	TM	CAD (n = 201)	-----●-----	
Pain	Mindfulness	Select (n = 341)	-----●-----	
	TM (mantra)	CHF (n = 23)	-----●-----	
Weight	TM (mantra)	Select (n = 297)	-----●-----	

47 trials
3515 participants



Review of meditation RCTs

- ▶ **Mindfulness meditation (MBSR)**
 - ▶ Moderate evidence for small effect on pain c/w active control, SMD = 0.33 (0.03-0.62)
 - ▶ Low evidence for no effect c/w other treatment
 - ▶ No harms reported
 - ▶ Theoretical risk of psychological harms (but studied in multiple psychiatric conditions)

Evidence: meditation

- ▶ **New large well-conducted RCT (2016)**
 - ▶ Adults >65 years with LBP (n=282)
 - ▶ Tested 8 weekly 90-minute “meditation sessions modeled on the MBSR program” vs. 8-week group health education control
 - ▶ Follow-up duration: 6 months
 - ▶ Primary outcome: Roland Morris Disability Questionnaire

RMDQ

- ▶ Checklist of 24 items
- ▶ Score range: 0-24
- ▶ Clinically relevant change: 2-5 points

Example items:

1. I stay at home most of the time because of my back
2. I change position frequently to try and get my back comfortable
3. I walk more slowly than usual because of my back
4. Because of my back I am not doing any of the jobs that I usually do around the house



Evidence: meditation

▶ Results

- ▶ Meditation better than control over 6 mos ($p=0.01$)
- ▶ Table: Mean between-group difference (MBSR vs. control)

	MBSR	Control	Difference
8 weeks	-3.5	-2.3	-1.1 points
6 months	-3.4	-2.8	-0.4 points

- ▶ 49% in each group had clinically meaningful improvement at 6 months

Practice advice: meditation

- ▶ Limited evidence from clinical trials for any specific condition
- ▶ May be a good alternative to psychological therapies for some patients
- ▶ MBSR developed for clinical populations (medical and mental illness), has a long track record in clinical settings, and is likely low risk





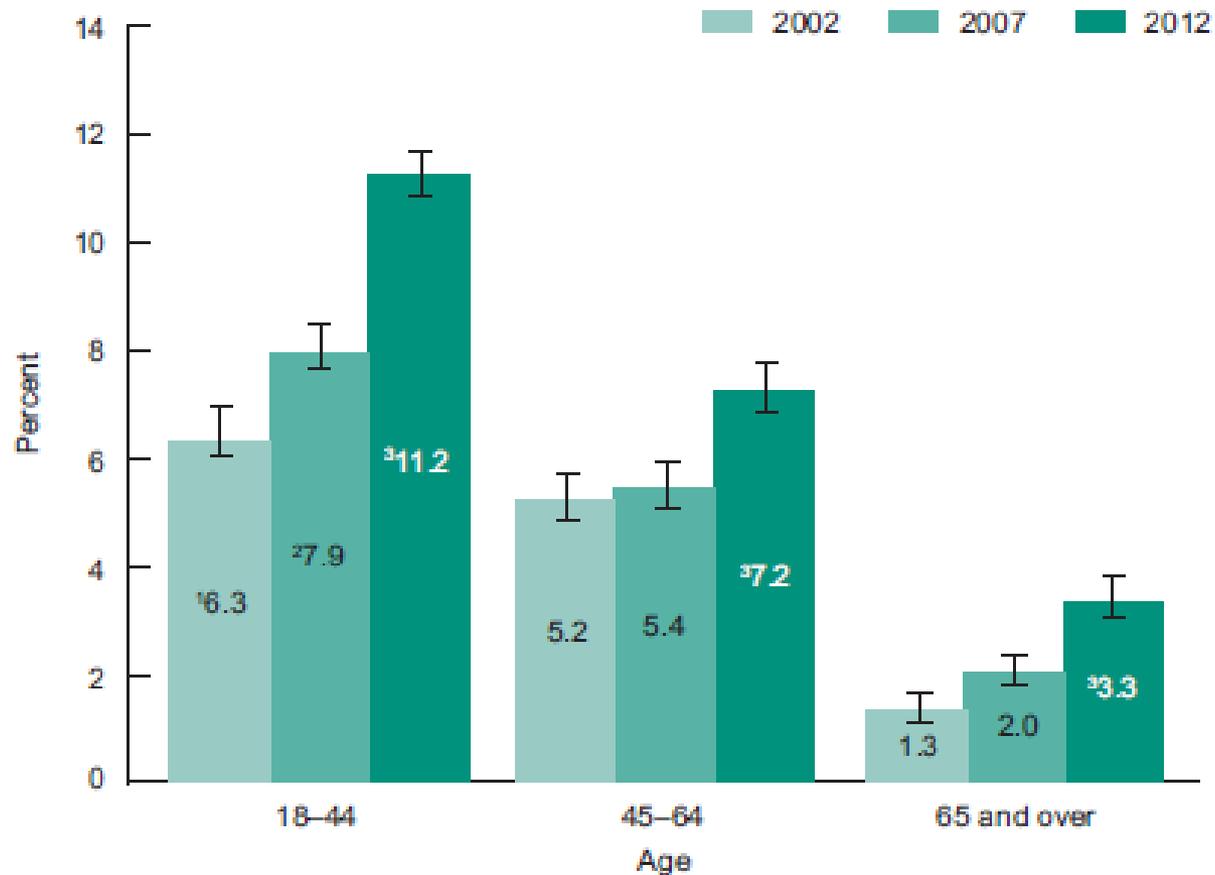
Yoga for chronic pain

Yoga basics

- ▶ **Traditional holistic mind-body practice**
 - ▶ Physical movement/postures
 - ▶ Breathing
 - ▶ Meditation/guided relaxation
 - ▶ Philosophy
- ▶ **Many schools and styles**



Use of yoga by age group





yoga veterans

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Veterans Yoga Project - Mindful Resilience Yoga Therapy ...

www.veteransyogaproject.org/ ▾

Overview of the **Veterans Yoga Project**, a non-profit organization whose mission is to support the mindful use of **yoga** therapy to aid recovery and promote ...

[Get Trained](#) - [About](#) - [Contact](#) - [Get Involved](#)

Yoga for Vets: Home

www.yogaforvets.org/ ▾

Yoga For Vets lists all **yoga** studios and teachers that offers 4 free **yoga** lessons to any military **veteran** of war. Free **Yoga**.

yoga-for-veterans - Give Back Yoga Foundation

<https://givebackyoga.org/mindful-yoga-therapy.../yoga-for-veterans/> ▾

yoga-for-veterans ... Nutrition, **Yoga** and a Holistic Perspective on Adult ADD/ADHD ·

Discover the Benefits of **Yoga** With A Free App From Gaiam: June 19-21 ...

Yoga for Veterans | Free & Discounted Practice Resources

givebackyoga.org/resources-for-veterans/ ▾

The Give Back **Yoga** Foundation supports **yoga** for **veterans** by offering free or discounted resources to help vets and servicemembers start a personal practice.

Veterans Yoga Project | Facebook

<https://www.facebook.com/veteransyogaproject.org> ▾

Veterans Yoga Project. 2571 likes · 684 talking about this. **Veterans Yoga Project** is devoted to enhancing access to **yoga** resources for **Veterans** with...

Yoga Now Standard Treatment for Vets with PTSD | Public ...

www.pri.org.../yoga-now-standard-treatment-... ▾ Public Radio International ▾

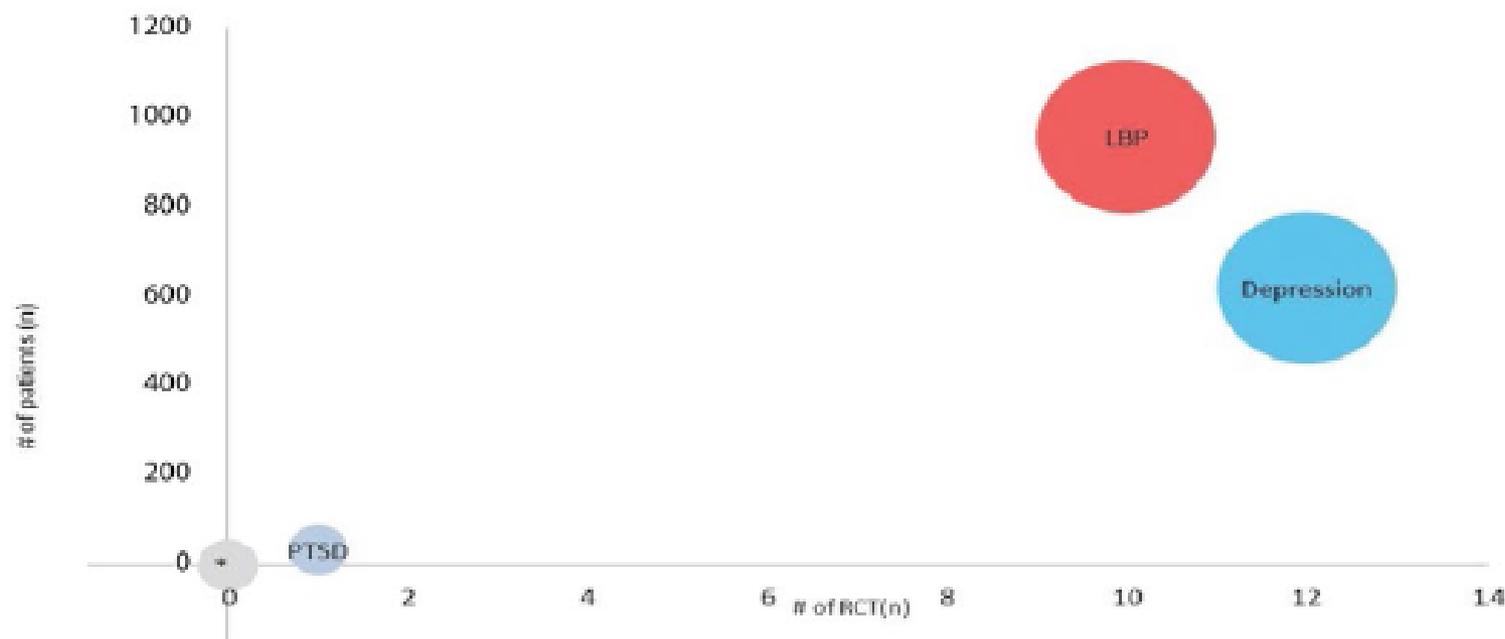
Mar 21, 2013 - **Yoga's** not usually the first thing that springs to mind when thinking about treatment for post traumatic stress disorder in **veterans**. But from the ...

Mindful Yoga Therapy Veterans Post Traumatic Stress ...

mindfuleyogatherapy.org/ ▾

Evidence Map of Yoga for High-Impact Conditions Affecting Veterans

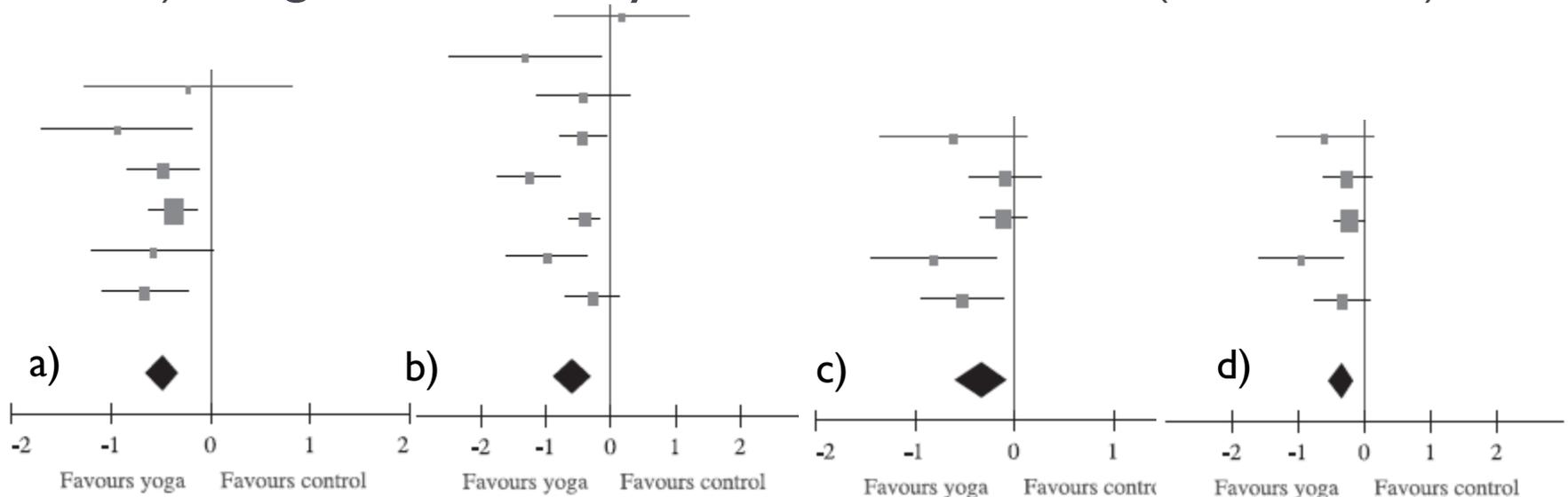
Figure ES-1. RCTs Evaluating Yoga



Yoga for LBP meta-analysis

▶ 8 RCTs of at least fair quality

- ▶ a) Short-term pain SMD -0.48 (-1.09, -0.23)
- ▶ b) Short-term disability SMD -0.59 (-0.87, -0.30)
- ▶ c) Long-term pain SMD -0.33 (-0.59, -0.07)
- ▶ d) Long-term disability SMD -0.35 (-0.75, -0.15)



Yoga for LBP conclusions

- ▶ Strong evidence for improvement in short-term pain & disability
- ▶ Moderate evidence for improvement in long-term pain & disability
- ▶ No difference compared with exercise therapy (3 trials)

Evidence: yoga

- ▶ 2 large well-conducted RCTs (2011)
 - ▶ Adults with LBP recruited from generalist settings (n=228, n=313)
 - ▶ Tested 12 weekly yoga classes vs. usual care; one had an active exercise comparison group (stretching class)
 - ▶ Follow-up duration: 6 months (1); 12 months (1)
 - ▶ Primary outcome: Roland Morris Disability Questionnaire

Evidence: yoga

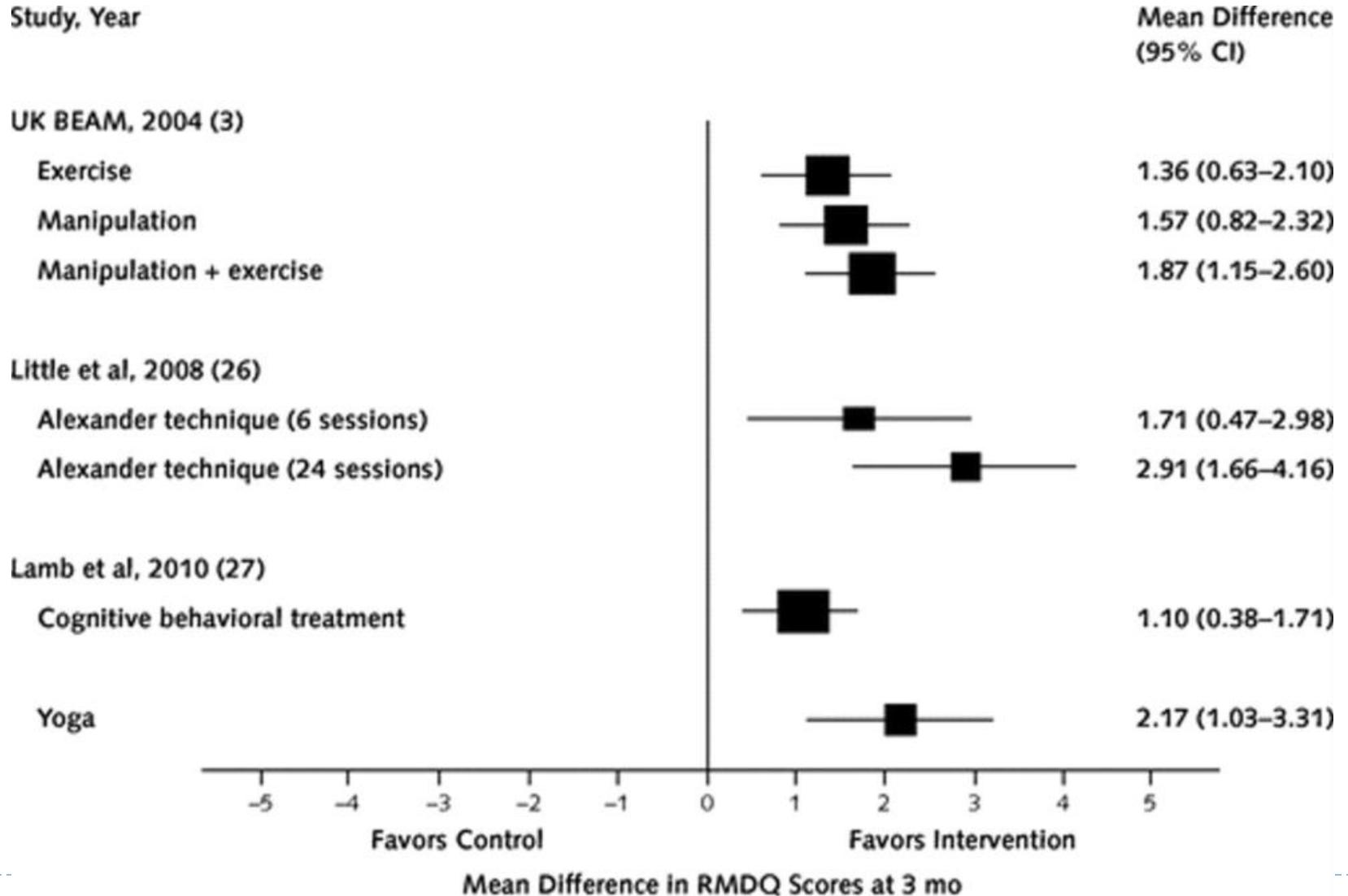
▶ Results

- ▶ Both RCTs: Yoga significantly better than control
- ▶ Table: Mean between-group difference (yoga vs. control)

	Tilbrook	Sherman
3 mos	-2.2 points	-3.4 points
6 mos	-1.5 points	-3.6 points
12 mos	-1.7 points	

- ▶ One trial reported proportion with 50% improvement: 69% of yoga group, 50% of stretching group, 30% of control

Effect size for yoga & other interventions



Generalizability of yoga evidence?



Tilbrook HE et al, Ann Intern Med
2011;155:569-78



Minneapolis VA
Veterans Yoga
Program



Adverse events in 2 yoga trials

▶ Yoga (n=156)

- ▶ 7 mild-moderate increased back pain
- ▶ 1 severe increased back pain
- ▶ 3 other pain
- ▶ 1 minor injury (not related)

▶ Control (n=157)

- ▶ 1 death
- ▶ 1 serious injury (not related)

▶ Yoga (n=87)

- ▶ 13 mild-moderate increased back pain

- ▶ 1 herniated disc

▶ Stretching (n=75)

- ▶ 13 mild-moderate increased back pain

▶ Control (n=45)

- ▶ 1 mild-moderate increased back pain

Adverse events in the literature

- ▶ **Systematic review of case reports: 76 unique cases**
 - ▶ Musculoskeletal (n=27): fractures, ligament tears
 - ▶ Ophthalmologic (n=9): glaucoma, orbital vein occlusion
 - ▶ Neurologic (n=14): peripheral neuropathy, stroke, headache
 - ▶ Pulmonary (n=3): pneumothorax, pneumomediastinum
- ▶ **Yoga postures involved in AEs**
 - ▶ Headstand or shoulder stand (n=13)
 - ▶ Lotus position (n=3)
 - ▶ Forceful breathing techniques (n=4)
- ▶ **Survey of >2000 Australian yoga practitioners: 21% reported h/o injury (most minor musculoskeletal)**
 - ▶ Most common cause: head/shoulder stands, lotus pose

Practice advice: yoga

- ▶ Good evidence for improved function in back pain
- ▶ As with all exercise programs, benefit is expected to be higher with regular practice & persistence
- ▶ To reduce risk of harm, seek classes oriented towards people with physical limitations & taught by therapeutically-oriented instructors
 - ▶ Look for: “gentle,” “restorative,” “chair,” “senior”
 - ▶ Avoid: “power,” “flow,” “hot”
 - ▶ Talk with the teacher in advance, ask for guidance



Conclusions

- ▶ Level of evidence for meditation and yoga approaches is low to moderate
 - ▶ Better for yoga
- ▶ Size of benefit is small to medium
 - ▶ This also applies to conventional therapies
- ▶ Harms are relatively minor/infrequent
- ▶ Efficacy of conventional and complementary non-pharmacologic therapies may be similar, but evidence is stronger for conventional exercise therapies & CBT
 - ▶ Best approach is multi-modal and individualized





Questions?

