



Evidence Brief: The Comparative Effectiveness of Selected Complementary and Integrative Health (CIH) Interventions for Preventing or Reducing Opioid Use in Adults with Chronic Neck, Low Back, and Large Joint Pain

Supplemental Materials

April 2016

Prepared for:

Department of Veterans Affairs
Veterans Health Administration
Quality Enhancement Research Initiative
Health Services Research & Development Service
Washington, DC 20420

Prepared by:

Evidence-based Synthesis Program (ESP)
Coordinating Center
Portland VA Health Care System
Portland, OR
Mark Helfand, MD, MPH, MS, Director

Investigators:

Kim Peterson, MS
Johanna Anderson, MPH
Lauren Ferguson
Katherine Mackey, MD



VA
HEALTH
CARE | Defining
EXCELLENCE
in the 21st Century

TABLE OF CONTENTS

Existing Guidelines	1
Search Strategies	1
Systematic Reviews	1
Acupuncture	1
Massage.....	2
Meditation	9
Tai Chi	13
Yoga.....	15
Primary Studies.....	18
Acupuncture.....	18
Massage.....	20
Meditation.....	22
Tai Chi	24
Yoga.....	25
Grey Literature.....	27
List of Excluded Studies	31
Evidence Tables	34
Data Abstraction of Included Primary Studies	34
Data Abstraction of RCTs.....	34
Quality Assessment of Included Primary Studies.....	38
Quality Assessment of RCTs	38
Strength of Evidence For Included Studies.....	42
Peer Review Comment Table	44
References.....	53

EXISTING GUIDELINES

Guideline	Reference to non-pharmacological or alternative care?	Type of reference to CAM (nonspecific, general, or specific)	Recommended timing of use
<i>Opioid-specific guidelines</i>			
APS-AAPM ¹	Yes	Nonspecific - "continuing discussion with the patient regarding alternatives to COT (strong recommendation, low-quality evidence)"	Throughout--"continuing discussion"
Canadian National Use Guideline Group ²	Yes	Nonspecific - for adolescent patients, opioid therapy may be considered when "non-opioid alternatives have failed"	Alternative options must be tried prior to opioid treatment
CDC ³	Yes	Nonspecific – "Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for chronic pain."	Initiation – preferred therapy
ICSI ⁴	Yes	Nonspecific - "Physical, psychological, interventional or other appropriate non-opioid therapies"	During initiation
UMHS ⁵	Yes	Nonspecific - "referral for individual behavioral and psychological intervention may be all that is required"	Initiation ("Begin with [non-pharmacologic therapies] (eg, exercise, heat, sleep hygiene))
VA/DoD ⁶	Yes	Nonspecific - mentions "adjuvant therapies" and "non-pharmacologic modalities", but doesn't mention CAM in general or any specific types of CAM	During initiation, titration, and for exacerbations.
UDOH ⁷	Yes	Nonspecific - "Alternatives to opioid treatment should be tried...before initiating opioid treatment" Physical therapy provided as example of non-pharma alternatives	Recommended trying prior to use

Guideline	Reference to non-pharmacological or alternative care?	Type of reference to CAM (nonspecific, general, or specific)	Recommended timing of use
ASIPP ⁸	Yes	Nonspecific - "To establish medical necessity for OT, it is essential to have information of multiple modalities of treatments available including conservative, various other alternatives, and consultations (including physical and behavioral modalities, interventional pain management techniques, and others) if necessary"	When establishing medical necessity (Initiation?)
AGS ⁹	No	N/A	N/A
WA State AMDG ¹⁰	Yes	Specific – Mindfulness, meditation, yoga, acupuncture "In addition to medication, therapies should include physical activation and behavioral health interventions"	Unclear – No reference to timing with opioids
<i>General chronic pain guidelines</i>			
APS/ACP ¹¹	Yes	Specific - "For patients who do not improve with self-care options, clinicians should consider addition of non-pharmacologic therapy with proven benefits--acupuncture, massage therapy, spinal manipulation, yoga, cognitive-behavioral therapy, or progressive relaxation"	Unclear - No reference to timing with opioids
AAPM ¹²	Yes	Specific - Yoga, Mindfulness, Meditation, Relaxation, Acupuncture, Massage	During - "Therapy for chronic pain ranges from single modality approaches for the straightforward patient to comprehensive interdisciplinary care for the more challenging patient. Therapeutic components such as pharmacologic, interventional, psychological and physical have been found to be most effective when performed in an integrated manner. Continuation or modification of pain management depends on the physician's evaluation of progress toward treatment objectives. If the patient's progress is unsatisfactory, the physician should assess the appropriateness of continued use of the current treatment plan and consider the use of other therapeutic modalities."

Guideline	Reference to non-pharmacological or alternative care?	Type of reference to CAM (nonspecific, general, or specific)	Recommended timing of use
ICSI ¹³	Yes	Specific - Acupuncture Nonspecific - Complementary therapies, complementary medicine management, non-pharmacologic management, Exercise therapy	During - "Medications are not the sole focus of treatment in managing pain. They should be used when needed to meet overall goals of therapy in conjunction with other treatment modalities: psychosocial and spiritual management, rehab and functional management, non-pharmacologic and complementary medicine, and intervention management."
Colorado DWC ¹⁴	Yes	Specific - Acupuncture, Nonspecific - "Interdisciplinary rehabilitation programs" (programs that evaluate and treat multiple conditions including neurological and psychological issues example)	Unclear - Non-operative therapeutic procedures listed first in the guidelines, however no indication as to the order recommended
VA/DoD ¹⁵	Yes	Specific - Massage, Acupuncture, Yoga	Unclear - No reference to timing with opioids; Algorithm lists discussing pharmacologic and non-pharmacologic treatment options in the same step
AGS ¹⁶	Yes	Specific - Mindfulness, Acupuncture	During - "used as adjunctive therapies"
ASIPP ¹⁷	No	NA	NA
NICE ¹⁸	Yes	Specific - Manual therapy including spinal therapy and massage; Also recommend "movement instruction" and "stretching"	Unclear - "Provide people with advice and information to promote self-management of LBP; Take into account the person's expectations and preferences when considering recommended treatments"

APS: American Pain Society; AAPM: American Academy of Pain Medicine; ICSI: Institute for Clinical Systems Improvement; UMHS: University of Michigan Health System; VA: Veteran Affairs; DoD: Department of Defense; UDOH: Utah Department of Health; AGS: American Geriatrics Society; ASIPP: American Society of Interventional Pain Physicians; ACP: American College Physicians; DWC: Division of Workers Compensation; NICE: National Institute for Health and Care Excellence; CDC: Centers for Disease Control and Prevention; AMDG: Agency Medical Directors' Group

SEARCH STRATEGIES

SYSTEMATIC REVIEWS

Acupuncture

Ovid MEDLINE

Search Strategy:

-
- 1 exp Acupuncture/ or acupuncture.mp. (15370)
 - 2 Cochrane database of systematic reviews.jn. or search.tw. or meta-analysis.pt. or Medline.tw. or systematic review.tw. (267064)
 - 3 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (403904)
 - 4 1 and 2 and 3 (467)
 - 5 limit 4 to yr="2013 -Current" (41)

Cochrane Database of Systematic Reviews

Search Strategy:

-
- 1 acupuncture.mp. [mp=title, abstract, full text, keywords, caption text] (448)
 - 2 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, short title, abstract, full text, keywords, caption text] (3966)
 - 3 1 and 2 (316)
 - 4 limit 3 to last 3 years (124)

PubMed

((("acupuncture"[MeSH Terms] OR "acupuncture"[All Fields] OR "acupuncture therapy"[MeSH Terms] OR ("acupuncture"[All Fields] AND "therapy"[All Fields]) OR "acupuncture therapy"[All Fields]) AND ("pain"[MeSH Terms] OR "pain"[All Fields])) AND systematic[sb] AND ("2013/01/01"[PDAT] : "2015/12/21"[PDAT]))

-168 articles on 12/21/2015

Message

Ovid MEDLINE

Database: Ovid MEDLINE(R) without Revisions <1996 to January Week 1 2016>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <January 18, 2016>

Search Strategy:

-
- 1 Massage/ (2977)
 - 2 massage therapy.mp. (793)
 - 3 massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (6868)
 - 4 1 or 3 (6868)
 - 5 2 or 3 (6868)
 - 6 reflexology.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (319)
 - 7 3 or 6 (6960)
 - 8 effleurage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (33)
 - 9 3 or 8 (6872)
 - 10 3 or 6 or 8 (6964)
 - 11 petrissage.mp. (14)
 - 12 10 or 11 (6964)
 - 13 tapotement.mp. (4)
 - 14 anma.mp. (11)
 - 15 3 or 14 (6875)
 - 16 6 or 8 or 15 (6971)
 - 17 aquatic bodywork.mp. (1)

18 3 or 17 (6869)

19 ashitsu.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

20 ayurvedic massage.mp. (4)

21 3 or 20 (6868)

22 balinese massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

23 bowen technique.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (8)

24 3 or 23 (6873)

25 Breema.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

26 biodynamic massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (2)

27 3 or 26 (6868)

28 champissage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

29 craniosacral therapy.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (40)

30 3 or 29 (6893)

31 esalen massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

32 foot massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (44)

33 3 or 32 (6868)

34 Hilot massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

35 Kum Nye.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

36 lomilomi.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (5)

37 3 or 36 (6869)

38 lymphatic drainage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1751)

39 manual lymphatic drainage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (133)

40 3 or 39 (6972)

41 medical massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (11)

42 3 or 41 (6868)

43 metamorphic technique.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

44 myofascial release.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (121)

45 3 or 44 (6957)

46 postural integration.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1)

47 3 or 46 (6869)

48 namaste massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

49 prostate massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (43)

50 3 or 49 (6868)

51 shiatsu.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (64)

52 3 or 51 (6905)

53 sports massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (23)

54 3 or 53 (6868)

55 stone massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1)

56 structural integration.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (119)

57 3 or 56 (6982)

58 swedish massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (52)

59 3 or 58 (6868)

60 tantric massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (0)

61 thai massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (27)

62 3 or 61 (6868)

63 Chinese massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (19)

64 traditional chinese massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (5)

65 63 or 64 (19)

66 3 or 63 (6868)

67 Trager approach.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1)

68 trigger point massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (5)

69 3 or 68 (6868)

70 tui na.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (13)

71 3 or 70 (6871)

72 Watsu.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (5)

73 3 or 72 (6872)

74 (effluerage or anma or aquatic bodywork or bowen technique or craniosacral therapy or lomilomi or manual lymphatic drainage or myofascial release or postural integration or reflexology or shiatsu or structural integration or tui na or watsu).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (827)

75 massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (6868)

76 74 or 75 (7349)

77 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (398856)

78 76 and 77 (1751)

79 Cochrane database of systematic reviews.jn. or search.tw. or meta-analysis.pt. or Medline.tw. or systematic review.tw. (262068)

80 78 and 79 (212)

81 (pregnancy or cancer or child or newborn or infant).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (2363442)

82 80 not 81 (154)

Cochrane Database of Systematic Reviews

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to January 13, 2016>

Search Strategy:

 1 (effluerage or anma or aquatic bodywork or bowen technique or craniosacral therapy or lomilomi or manual lymphatic drainage or myofascial release or postural integration or reflexology or shiatsu or structural integration or tui na or watsu).mp. [mp=title, abstract, full text, keywords, caption text] (82)

2 massage.mp. [mp=title, abstract, full text, keywords, caption text] (316)

3 1 or 2 (341)

4 (pain or chronic pain or knee pain or ankle pain or hip pain or elbow pain or shoulder pain or back pain or low back pain or neck pain).mp. [mp=title, abstract, full text, keywords, caption text] (3940)

5 3 and 4 (268)

6 (cancer or pregnancy).mp. [mp=title, abstract, full text, keywords, caption text] (3454)

7 5 not 6 (135)

8 (child or infant or newborn).mp. [mp=title, abstract, full text, keywords, caption text] (3069)

9 7 not 8 (107)

CINAHL

#	Query	Limiters/Expanders	Results
S5	S3 AND S4	Limiters - Publication Type: Meta Analysis, Systematic Review Search modes - Boolean/Phrase	154

S4	pain OR neck pain OR back pain OR low back pain OR elbow pain OR shoulder pain OR hip pain OR knee pain OR ankle pain	Search modes - Boolean/Phrase	182,782
S3	S1 OR S2	Search modes - Boolean/Phrase	14,844
S2	massage	Search modes - Boolean/Phrase	13,538
S1	effluerage or anma or aquatic bodywork or bowen technique or craniosacral therapy or lomilomi or manual lymphatic drainage or myofascial release or postural integration or reflexology or shiatsu or structural integration or tui na or watsu	Search modes - Boolean/Phrase	1,837

Meditation

Conducted the week of 1/4/2016-1/8/2016

Ovid MEDLINE

Search Strategy:

-
- 1 exp Meditation/ (1775)
 - 2 meditation.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (3117)
 - 3 exp Mindfulness/ (689)
 - 4 mindfulness.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (2861)
 - 5 (pain or chronic pain or knee pain or ankle pain or hip pain or elbow pain or shoulder pain or back pain or low back pain or neck pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (403904)
 - 6 2 or 4 (4943)
 - 7 5 and 6 (521)
 - 8 Cochrane database of systematic reviews.jn. or search.tw. or meta-analysis.pt. or Medline.tw. or systematic review.tw. (267064)
 - 9 7 and 8 (50)
 - 10 limit 9 to yr="2014 -Current" (20)
 - 11 cancer.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (950774)
 - 12 10 not 11 (14)

Cochrane Database of Systematic Reviews

Search Strategy:

-
- 1 meditation.mp. [mp=title, abstract, full text, keywords, caption text] (124)

- 2 mindfulness.mp. [mp=title, abstract, full text, keywords, caption text] (90)
- 3 (pain or chronic pain or knee pain or ankle pain or hip pain or elbow pain or shoulder pain or back pain or low back pain or neck pain).mp. [mp=title, abstract, full text, keywords, caption text] (3966)
- 4 1 and 2 and 3 (27)
- 5 limit 4 to last 2 years (15)
- 6 cancer.mp. [mp=title, abstract, full text, keywords, caption text] (2112)
- 7 5 not 6 (7)

CINAHL

Search ID#	Search Terms	Search Options	Results
S8	S5 AND S6	Limiters - Publication Type: Meta Analysis, Review, Systematic Review; Published Date: 20140101-20161231	11
S7	S5 AND S6		497
S6	S3 OR S4		182, 371
S5	S1 OR S2		5,288
S4	ankle pain OR knee pain OR hip pain OR elbow pain OR shoulder pain OR neck pain OR back pain OR low back pain		34,771
S3	pain OR chronic pain		182,371
S2	meditation		3,638
S1	mindfulness		2,484

PsycINFO

Search Strategy:

-
- 1 exp Meditation/ (3530)
 - 2 meditation.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (6180)
 - 3 exp Mindfulness/ (5275)

4 mindfulness.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (7347)

5 1 or 2 (6180)

6 3 or 4 (7347)

7 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (79675)

8 meta-analysis/ or systematic review/ or meta-analysis as topic/ or "meta analysis (topic)"/ or "systematic review (topic)"/ or exp technology assessment, biomedical/ (3789)

9 ((systematic* adj3 (review* or overview*)) or (methodologic* adj3 (review* or overview*))).ti,ab. (19049)

10 ((quantitative adj3 (review* or overview* or synthes*)) or (research adj3 (integrati* or overview*))).ti,ab. (7218)

11 ((integrative adj3 (review* or overview*)) or (collaborative adj3 (review* or overview*)) or (pool* adj3 analy*)).ti,ab. (3019)

12 (data synthes* or data extraction* or data abstraction*).ti,ab. (1458)

13 (handsearch* or hand search*).ti,ab. (842)

14 (mantel haenszel or peto or der simonian or dersimonian or fixed effect* or latin square*).ti,ab. (3244)

15 (met analy* or metanaly* or technology assessment* or HTA or HTAs or technology overview* or technology appraisal*).ti,ab. (659)

16 (meta regression* or metaregression*).ti,ab. (770)

17 (meta-analy* or metaanaly* or systematic review* or biomedical technology assessment* or bio-medical technology assessment*).mp,hw. (35317)

18 (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw. (14326)

19 (meta-analysis or systematic review).md. (25796)

20 (comparative adj3 (efficacy or effectiveness)).ti,ab. (1514)

21 (outcomes research or relative effectiveness).ti,ab. (2934)

22 ((indirect or indirect treatment or mixed-treatment) adj comparison*).ti,ab. (145)

23 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 (64496)

24 2 or 4 (11661)

25 7 and 23 and 24 (36)

26 limit 25 to yr="2014 -Current" (11)

PubMed

Search ((meditation OR mindfulness)) AND (pain OR "chronic pain" OR "knee pain" OR "ankle pain" OR "hip pain" OR "elbow pain" OR "shoulder pain" OR "back pain" OR "low back pain" OR "neck pain") Filters: Systematic Reviews; Publication date from 2014/01/01 to 2016/01/06

Results: 22

Tai Chi

Ovid MEDLINE

Database: Ovid MEDLINE(R) without Revisions <1996 to December Week 5 2015>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <January 11, 2016>

Search Strategy:

-
- 1 Tai Ji/ (708)
 - 2 tai chi.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1010)
 - 3 1 or 2 (1090)
 - 4 Pain/ (70617)
 - 5 exp Pain/ (204677)
 - 6 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (398419)
 - 7 5 or 6 (428674)
 - 8 3 and 7 (146)
 - 9 Cochrane database of systematic reviews.jn. or search.tw. or meta-analysis.pt. or Medline.tw. or systematic review.tw. (261616)
 - 10 8 and 9 (35)
 - 11 limit 10 to yr="2014 -Current" (10)
 - 12 (tai chi or taichi or tai ji or taiji or taijiquan or shadow boxing).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1142)
 - 13 1 or 2 or 12 (1142)
 - 14 7 and 9 and 13 (35)

Cochrane Database of Systematic Reviews

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to January 08, 2016>

Search Strategy:

-
- 1 (tai chi or taichi or tai ji or taiji or taijiquan or shadow boxing).mp. [mp=title, abstract, full text, keywords, caption text] (84)
 - 2 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, abstract, full text, keywords, caption text] (3938)
 - 3 1 and 2 (59)
 - 4 limit 3 to last 2 years (35)

CINAHL

#	Query	Limiters/Expanders	Last Run Via	Results
S3	S1 AND S2	Limiters - Publication Type: Meta Analysis, Systematic Review; Published Date: 20140201-20160131 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	4
S2	tai chi or tai-chi or tai ji or tai-ji or taiji or t'ai chi or t' ai chi or taijiquan or shadow boxing	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	1,540
S1	pain OR neck pain OR back pain OR low back pain OR elbow pain OR shoulder pain OR hip pain OR knee pain OR ankle pain	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	182,540

PubMed

Search #	Query	Results
#3	#1 AND #2	11
#2	Search (pain OR "neck pain" OR "back pain" OR "low back pain" OR "shoulder pain" OR "elbow pain" OR "hip pain" OR "knee pain" OR "ankle pain") Filters: Systematic Reviews; Publication date from 2014/02/01 to 2016/01/11	4076
#1	Search ("tai chi" OR "tai-chi" OR "tai ji" OR "tai-ji" OR "taiji" OR "t'ai chi" OR "t ai chi" OR "taijiquan" OR "shadow boxing") Filters: Systematic Reviews; Publication date from 2014/02/01 to 2016/01/11	64

Yoga

Run: Week of 1/11/16-1/15/16

Ovid MEDLINE

Search Strategy:

-
- 1 exp Yoga/ (1342)
 - 2 yoga.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (2521)
 - 3 hatha.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (118)
 - 4 vinyasa.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (8)
 - 5 3 or 4 (123)
 - 6 2 or 5 (2521)
 - 7 astanga.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (6)
 - 8 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (398472)
 - 9 1 or 2 (2521)
 - 10 2 and 8 (391)
 - 11 Cochrane database of systematic reviews.jn. or search.tw. or meta-analysis.pt. or Medline.tw. or systematic review.tw. (261673)
 - 12 10 and 11 (51)
 - 13 limit 12 to yr="2014 -Current" (15)
 - 14 limit 13 to english language (13)

Search Strategy:

-
- 1 yoga.mp. [mp=title, abstract, full text, keywords, caption text] (162)
 - 2 (astanga or ovinyasa or hatha).mp. [mp=title, abstract, full text, keywords, caption text] (16)
 - 3 1 or 2 (162)
 - 4 (pain or knee pain or ankle pain or hip pain or chronic pain or elbow pain or shoulder pain or neck pain or back pain or low back pain).mp. [mp=title, abstract, full text, keywords, caption text] (3938)
 - 5 1 and 4 (113)
 - 6 limit 5 to last 2 years (33)

CINAHL

#	Query	Limiters/Expanders	Last Run Via	Results
S7	S5 NOT S6	Limiters - Publication Type: Meta Analysis, Systematic Review; Published Date: 20140701-20160131 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	2
S6	Cancer OR pregnancy OR child	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	785,393
S5	S2 AND S4	Limiters - Publication Type: Meta Analysis, Systematic Review; Published Date: 20140701-20160131 Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	6
S4	pain OR neck pain OR back pain OR low back pain OR elbow pain OR shoulder pain OR hip pain OR knee pain OR ankle pain	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	182,540

S3 S1 OR S2	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	5,407
S2 yoga	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	5,407
S1 (MH "Yoga+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	5,011

PubMed

history [Download history](#)

Search	Add to builder	Query	Items found
#11	Add	Search (((yoga AND systematic[sb] AND ("2014/07/01"[PDat] : "2016/01/13"[PDat]))) AND ((pain OR "neck pain" OR "low back pain" OR "back pain" OR "hip pain" OR "elbow pain" OR "shoulder pain" OR "knee pain" OR "ankle pain" OR "joint pain"))) AND systematic[sb] AND ("2014/07/01" [PDat] : "2016/01/13"[PDat]))) NOT (((pregnancy OR cancer OR child)) AND systematic[sb] AND ("2014/07/01" [PDat] : "2016/01/13"[PDat])) Filters: Systematic Reviews; Publication date from 2014/07/01 to 2016/01/13	4
#10	Add	Search (pregnancy OR cancer OR child) Filters: Systematic Reviews; Publication date from 2014/07/01 to 2016/01/13	13232
#9	Add	Search ((yoga AND systematic[sb] AND ("2014/07/01"[PDat] : "2016/01/13"[PDat]))) AND ((pain OR "neck pain" OR "low back pain" OR "back pain" OR "hip pain" OR "elbow pain" OR "shoulder pain" OR "knee pain" OR "ankle pain" OR "joint pain")) Filters: Systematic Reviews; Publication date from 2014/07/01 to 2016/01/13	9
#8	Add	Search yoga Filters: Systematic Reviews; Publication date from 2014/07/01 to 2016/01/13	96

PRIMARY STUDIES

Acupuncture

Database: Ovid MEDLINE(R) without Revisions <1996 to January Week 4 2016>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <February 03, 2016>

Search Strategy:

-
- 1 exp Acupuncture Therapy/ or exp Acupuncture/ or acupuncture.mp. (16323)
 - 2 (chronic pain or non-cancer pain or neck pain or shoulder pain or back plain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (60940)
 - 3 1 and 2 (1194)
 - 4 limit 3 to yr="2015 -Current" (111)
 - 5 limit 4 to english language (98)
 - 6 (cancer or pregnancy or labor or infant\$ or newborn\$).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1812077)
 - 7 5 not 6 (93)
 - 8 limit 3 to (english language and yr="2009 -Current") (552)
 - 9 8 not 6 (521)
 - 10 (comment or letter or case report or editorial).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1251839)
 - 11 9 not 10 (429)
 - 12 (news or historical article or patient education).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (352160)
 - 13 11 not 12 (418)
 - 14 (surgery or postoperative or post-traumatic stress disorder or mental health or mental illness).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (955471)

15 13 not 14 (388)

16 (chronic pain or non-cancer pain or neck pain or shoulder pain or back pain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (72816)

17 1 and 16 (1312)

18 limit 17 to (english language and yr="2009 -Current") (597)

19 6 or 10 or 12 or 14 (3933781)

20 18 not 19 (414)

Message

Database: Ovid MEDLINE(R) without Revisions <1996 to January Week 4 2016>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <February 03, 2016>

Search Strategy:

- 1 (chronic pain or non-cancer pain or neck pain or shoulder pain or back plain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (60940)
- 2 (cancer or pregnancy or labor or infant\$ or newborn\$).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1812077)
- 3 (effluerage or anma or aquatic bodywork or bowen technique or craniosacral therapy or lomilomi or manual lymphatic drainage or myofascial release or postural integration or reflexology or shiatsu or structural integration or tui na or watsu).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (832)
- 4 massage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (6902)
- 5 3 or 4 (7387)
- 6 1 and 5 (522)
- 7 6 not 2 (489)
- 8 limit 7 to (english language and yr="2014 -Current") (100)
- 9 (case report\$ or comment or letter).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1766260)
- 10 8 not 9 (89)
- 11 (chronic pain or non-cancer pain or neck pain or shoulder pain or back pain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (72816)
- 12 5 and 11 (594)

13 12 not 2 (546)

14 limit 13 to (english language and yr="2014 -Current") (109)

15 14 not 9 (98)

Meditation

Database: Ovid MEDLINE(R) without Revisions <1996 to January Week 4 2016>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <February 03, 2016>

Search Strategy:

- 1 (chronic pain or non-cancer pain or neck pain or shoulder pain or back plain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (60940)
- 2 (cancer or pregnancy or labor or infant\$ or newborn\$).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1812077)
- 3 exp Meditation/ (1758)
- 4 meditation.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (3069)
- 5 meditat\$.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (3609)
- 6 3 or 4 or 5 (3609)
- 7 1 and 6 (126)
- 8 7 not 2 (116)
- 9 limit 8 to (english language and yr="2013 -Current") (47)
- 10 (case report\$ or comment or letter).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1766260)
- 11 9 not 10 (44)
- 12 (chronic pain or non-cancer pain or neck pain or shoulder pain or back pain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (72816)
- 13 6 and 12 (135)
- 14 2 or 10 (3355938)

15 13 not 14 (117)

16 limit 15 to (english language and yr="2013 -Current") (47)

Tai Chi

Database: Ovid MEDLINE(R) without Revisions <1996 to January Week 4 2016>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <February 03, 2016>

Search Strategy:

- 1 (chronic pain or non-cancer pain or neck pain or shoulder pain or back pain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (60940)
- 2 (tai chi or taichi or tai ji or taiji or taijiquan or shadow boxing).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1143)
- 3 1 and 2 (38)
- 4 (cancer or pregnancy or labor or infant\$ or newborn\$).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1812077)
- 5 limit 3 to yr="2010 -Current" (28)
- 6 limit 5 to english language (26)
- 7 6 not 4 (22)
- 8 (chronic pain or non-cancer pain or neck pain or shoulder pain or back pain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (72816)
- 9 2 and 8 (43)
- 10 limit 9 to (english language and yr="2010 -Current") (31)
- 11 10 not 4 (27)

Yoga

Database: Ovid MEDLINE(R) without Revisions <1996 to January Week 4 2016>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <February 03, 2016>

Search Strategy:

1 (chronic pain or non-cancer pain or neck pain or shoulder pain or back plain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (60940)

2 (cancer or pregnancy or labor or infant\$ or newborn\$).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1812077)

3 exp Yoga/ (1346)

4 yoga.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (2546)

5 hatha.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (121)

6 vinyasa.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (8)

7 5 or 6 (126)

8 4 or 7 (2546)

9 astanga.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (6)

10 3 or 4 (2546)

11 8 or 9 (2550)

12 1 and 11 (152)

13 limit 12 to (english language and yr="2010 -Current") (112)

14 13 not 2 (106)

15 (case report\$ or comment or letter).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (1766260)

16 14 not 15 (102)

17 (chronic pain or non-cancer pain or neck pain or shoulder pain or back pain or low back pain or elbow pain or hip pain or knee pain or ankle pain).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (72816)

18 11 and 17 (184)

19 limit 18 to (english language and yr="2010 -Current") (137)

20 2 or 15 (3355938)

21 19 not 20 (121)

GREY LITERATURE

Grey Literature Search – Opioids Rapid Review

“Opioid Epidemic”

A. Guidelines

- a. Guidelines.gov
- b. New CDC guideline currently being drafted- listed below under “CDC”
- c. Nuckols 2014 review of guidelines- already identified

B. Organizations’ websites

- a. RWJF
- b. [Samueli Institute](#)- “a nonprofit organization in Alexandria, Virginia, with a mission that includes applying academic rigor to research on healing, well-being and resilience; and translating evidence into action for the US military and large-scale health systems.
 - i. President of the Samueli Institute is Wayne B. Jonas, MD, a retired US Army lieutenant colonel
 - ii. Referenced in a few different articles; Dr. Jonas seems to partner with Eric Schoomaker
- c. [UCSF Osher Center for Integrative Medicine](#)
 - i. This program is part of the UCSF Medical Center, but I’m not sure how integrated it is into other practices, like primary care. Given that it’s physically part of the space, I would think there would be higher rates of referral, but I don’t see anything that indicates that on their website.
 - ii. According to their “Integrative Medicine Consultation” webpage, their providers are trained and board-certified in both traditional and alternative medicine, but do not serve as PCPs. They will work with PCPs, but in place of.
 - iii. **They make no mention of opioids.**
 - iv. This seems like something that the patient must seek out and initiate, but I’m wondering if other centers at UCSF mention the Osher Center as an option instead of medication.
 1. UCSF’s [Pain Medicine department](#) links to the Osher Center as a “related clinics and centers”.
 - a. They list the Osher Center in resources both for patients and for providers, implying that both groups can request/should be aware of the Osher Center’s services.
 - d. [PAINS Project: “Never Only Opioids: The imperative for early integration of non-pharmacological approaches and practitioners in the treatment of patients with pain” Fall 2014, policy brief](#)
 - i. [Article](#) about the policy brief.
 - ii. This organization focuses on alleviating chronic pain in many different modalities and recognizes the burden of medication-only solutions to pain. Their focus is on public health initiatives to reduce the individual and societal burden of pain, and if that happens to involve CAM, they are supportive. But they are not solely focused on CAM interventions, and it

looks like the bulk of their work in the area is focused in the policy brief listed above.

C. Government websites

- a. The White House: \$1.1 billion towards opioids and heroin epidemic as of February 2, 2016
 - i. <https://www.whitehouse.gov/the-press-office/2016/02/02/president-obama-proposes-11-billion-new-funding-address-prescription>
 - ii. Specifically discusses medication-assisted treatments, does not mention any other treatment or prevention strategy specifically anywhere (therapy, CAM, etc)
- b. CDC
 - i. [Draft CDC Guideline for Prescribing Opioids for Chronic Pain](#)
 1. The comment period ended 1/13/2016 for public comments
 2. Not totally clear on the timeline- it still needs to go through a Federal Partner Review and Peer Review process
- c. NIH
 - i. NIH's National Center for Complementary and Alternative Medicine (NCCAM), the National Institute on Drug Abuse (NIDA) and the VA HSRD have provided \$21.7 million over 5 years (article dated late 2014) to "explore nondrug approaches to managing pain and related health conditions such as post-traumatic stress disorder (PTSD), drug abuse, and sleep issues".
 1. 13 projects throughout the country
 - a. Several include CAM interventions that we are interested in- mostly meditation
 2. [NIH and VA address pain and related conditions in U.S. military personnel, veterans and their families: Research will focus on nondrug approaches](#)
 3. [This link](#) goes to the list of programs
- d. IOM
 - i. Report: [Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education and Research](#) (June 2011)
 1. This report does discuss opioids and CAM modalities, however the interface for finding these references within the full text report is very difficult to use. It's hard to tell (**yet**) how much the report discusses these two concepts *together*.
- e. VA HSRD
- f. DoD
- g. Clinicaltrials.gov

D. Known authors

- a. Amy S.B. Bohnert PhD
 - i. Look at studies in progress
 - ii. 84 documents in Scopus
 1. Many of her most highly cited articles are about suicide in veterans, with some link to substance abuse or pain
 - iii. 991 "cited by" references
 - iv. Look at her contributing authors

1. Scopus says:

- a. Mark Andrew Ilgen (42)
- b. Frederic C. Blow (22)
- c. Dana Ganoczy (12)
- d. Marcia M. Valenstein (11)
- e. Kara Zivin Zivin (10)

- b. Karen Sherman
- c. Lynn DeBar

E. Search for what individual states are doing

- a. The CDC gave \$20 million to 16 states to study prevention strategies aimed at fostering safe prescribing practices
 - i. Minnesota: [Joint Statement on Pain Management](#)
 - ii. Oregon: [From Pills to Pins: How Oregon is Changing How It Deals with Back Pain](#)
 1. [Refers to the Quest Center in Portland](#)
 - iii. Which states, what are they doing, has anything been assessed yet?

F. Conferences and meeting proceedings

- a. [American Pain Society Complementary and Alternative Medicine Special Interest Group](#)
 - i. This year's conference is in May
 - ii. [Database of previous abstracts](#)- these are pretty searchable. I looked at the 2015 group and searched for each of the interventions. A number of abstracts came up, but none were spot-on. Looking at past years might be useful.
- b. COIN conference
- c. IHI conference abstracts (Institute for Healthcare Improvement)

G. Findings from Google that could be related/useful

- a. http://www.huffingtonpost.com/john-weeks/open-letter-to-barack-oba_2_b_9152892.html
 - i. John Weeks- An Open Letter to Barack Obama on Your \$1.1 billion Opioid Initiative: The Imperative for Integrative Medicine
 1. Published 2/5/2016
 - ii. This article has a wealth of references to useful websites/programs/information
- b. [A Call to Action on Integrative Health and Medicine Policy: Advancing the Legacy of US Senator Tom Harkin](#)
 - i. Symposium at Georgetown University 9/29/2014
 - ii. Eric Schoomaker gives the keynote speech again (article above says it's an 'expanded' version of the speech we already saw)
 1. References opioids in his talk, but no research
 - iii. "Non-discrimination in healthcare"- a phrase that seems to refer to equating insurance coverage of Western medicine and CAM; possibly refers specifically to language in the ACA
 - iv. Josephine Briggs talk "Building the Capacity for Real World Effectiveness Research for Integrative Health" (she's the director of the National Center for Complementary and Integrative Health) references opioids

- c. Betty Ford high-level addiction programs

H. Programs that support/provide CAM interventions instead of/in concert with pharmaceutical pain relief

a. [Las Vegas Recovery Center](#)

- i. Not associated with any medical center
- ii. Focused on getting people off opiates by using holistic approaches to pain relief, including “physical, emotional, psychological and spiritual” approaches
- iii. It’s an inpatient program
 - 1. Starts with a “medically managed withdrawal and detoxification” process
 - 2. Interventions we are interested in:
 - a. Massage
 - b. Meditation
 - c. Acupuncture
 - d. Yoga
- iv. There is some sort of assessment going on, but the graphs that are provided as the [Pain Outcome Profile Reports](#) don’t really give any context as to what is being analyzed. In my opinion, they are presented in a vacuum and look like pain levels are decreasing, but it’s hard to tell why, exactly.
- v. In an explanation of [who gets admitted](#) to the program, there is no reference to physician referrals.

b. RiverMend Health Centers- Georgia - [Non-Opioid Pain Management Program](#)

- i. RiverMend Health Center is a behavioral health and addiction treatment program; does not explicitly talk about referrals from medical doctors or how patients can get into this program
- ii. Focuses on people who are addicted to pain medication or people who are seeking alternative treatments for their chronic pain
- iii. Includes:
 - 1. Acupuncture
 - 2. Meditation
 - 3. Yoga
 - 4. Massage

LIST OF EXCLUDED STUDIES

Primary studies reporting medication use but no opioid-specific outcomes

#	Citation
1.	Brinkhaus B, Witt CM, Jena S, et al. Acupuncture in patients with chronic low back pain: a randomized controlled trial. <i>Archives of Internal Medicine</i> . 2006;166(4):450-457.
2.	Carlsson CP, Sjölund BH. Acupuncture for chronic low back pain: a randomized placebo-controlled study with long-term follow-up. <i>The Clinical journal of pain</i> . 2001;17(4):296-305.
3.	Cherkin DC, Eisenberg D, Sherman KJ, et al. Randomized trial comparing traditional Chinese medical acupuncture, therapeutic massage, and self-care education for chronic low back pain. <i>Archives of Internal Medicine</i> . 2001;161(8):1081-1088.
4.	Cherkin DC, Sherman KJ, Avins AL, et al. A randomized trial comparing acupuncture, simulated acupuncture, and usual care for chronic low back pain. <i>Archives of Internal Medicine</i> . 2009;169(9):858-866.
5.	Childs JD, Fritz JM, Flynn TW, et al. A clinical prediction rule to identify patients with low back pain most likely to benefit from spinal manipulation: a validation study. <i>Annals of internal medicine</i> . 2004;141(12):920-928.
6.	Christensen B, Iuhl I, Vilbek H, Bülow HH, Dreijer N, Rasmussen H. Acupuncture treatment of severe knee osteoarthritis. A long-term study. <i>Acta Anaesthesiologica Scandinavica</i> . 1992;36(6):519-525.
7.	Coan RM, Wong G, Coan PL. The acupuncture treatment of neck pain: a randomized controlled study. <i>The American journal of Chinese medicine</i> . 1981;9(04):326-332.
8.	Coan RM, Wong G, Ku SL, et al. The acupuncture treatment of low back pain: a randomized controlled study. <i>The American journal of Chinese medicine</i> . 1980;8(01n02):181-189.
9.	de Abreu Venancio R, Guedes Pereira Alencar Jr F, Zamperini C. Botulinum toxin, lidocaine, and dry-needling injections in patients with myofascial pain and headaches. <i>CRANIO®</i> . 2009;27(1):46-53.
10.	de Abreu Venâncio R, Guedes Pereira Alencar Jr F, Zamperini C. Different substances and dry-needling injections in patients with myofascial pain and headaches. <i>CRANIO®</i> . 2008;26(2):96-103.
11.	Dyson-Hudson TA, Shiflett SC, Kirshblum SC, Bowen JE, Druin EL. Acupuncture and Trager psychophysical integration in the treatment of wheelchair user's shoulder pain in individuals with spinal cord injury. <i>Archives of physical medicine and rehabilitation</i> . 2001;82(8):1038-1046.
12.	Ferreira ML, Ferreira PH, Latimer J, et al. Comparison of general exercise, motor control exercise and spinal manipulative therapy for chronic low back pain: a randomized trial. <i>Pain</i> . 2007;131(1):31-37.
13.	Foster NE, Thomas E, Barlas P, et al. Acupuncture as an adjunct to exercise based physiotherapy for osteoarthritis of the knee: randomised controlled trial. <i>Bmj</i> . 2007;335(7617):436.
14.	Grant DJ, Bishop-Miller J, Winchester DM, Anderson M, Faulkner S. A randomized comparative trial of acupuncture versus transcutaneous electrical nerve stimulation for chronic back pain in the elderly. <i>Pain</i> . 1999;82(1):9-13.
15.	Haake M, Müller H-H, Schade-Brittinger C, et al. German Acupuncture Trials (GERAC) for chronic low back pain: randomized, multicenter, blinded, parallel-group trial with 3 groups. <i>Archives of Internal Medicine</i> . 2007;167(17):1892-1898.
16.	Harrison RE, Page JS. Multipractitioner upledger craniosacral therapy: descriptive outcome study 2007–2008. <i>The Journal of Alternative and Complementary Medicine</i> . 2011;17(1):13-17.
17.	Hemmilä HM. Bone setting for prolonged neck pain: a randomized clinical trial. <i>Journal of manipulative and physiological therapeutics</i> . 2005;28(7):508-515.
18.	Hoiriis KT, Pflieger B, McDuffie FC, et al. A randomized clinical trial comparing chiropractic adjustments to muscle relaxants for subacute low back pain. <i>Journal of manipulative and physiological therapeutics</i> . 2004;27(6):388-398.
19.	Hurley DA, McDonough SM, Dempster M, Moore AP, Baxter GD. A randomized clinical trial of

	manipulative therapy and interferential therapy for acute low back pain. <i>Spine</i> . 2004;29(20):2207-2216.
20.	Hurwitz EL, Morgenstern H, Kominski GF, Yu F, Chiang L-M. A randomized trial of chiropractic and medical care for patients with low back pain: eighteen-month follow-up outcomes from the UCLA low back pain study. <i>Spine</i> . 2006;31(6):611-621.
21.	Ilbuldu E, Cakmak A, Disci R, Aydin R. Comparison of laser, dry needling, and placebo laser treatments in myofascial pain syndrome. <i>Photomedicine and Laser Therapy</i> . 2004;22(4):306-311.
22.	Jull G, Stanton W. Predictors of responsiveness to physiotherapy management of cervicogenic headache. <i>Cephalalgia</i> . 2005;25(2):101-108.
23.	Jull G, Trott P, Potter H, et al. A randomized controlled trial of exercise and manipulative therapy for cervicogenic headache. <i>Spine</i> . 2002;27(17):1835-1843.
24.	Jüni P, Battaglia M, Nüesch E, et al. A randomised controlled trial of spinal manipulative therapy in acute low back pain. <i>Annals of the rheumatic diseases</i> . 2009;68(9):1420-1427.
25.	Kennedy S, Baxter G, Kerr D, Bradbury I, Park J, McDonough S. Acupuncture for acute non-specific low back pain: a pilot randomised non-penetrating sham controlled trial. <i>Complementary therapies in medicine</i> . 2008;16(3):139-146.
26.	Konrad K, Tatrai T, Hunka A, Vereckei E, Korondi I. Controlled trial of balneotherapy in treatment of low back pain. <i>Annals of the rheumatic diseases</i> . 1992;51(6):820-822.
27.	Lehmann TR, Russell DW, Spratt KF, et al. Efficacy of electroacupuncture and TENS in the rehabilitation of chronic low back pain patients. <i>Pain</i> . 1986;26(3):277-290.
28.	Meade T, Dyer S, Browne W, Townsend J, Frank A. Low Back Pain of Mechanical Origin: Randomized Comparison of Chiropractic and Hospital Outpatient Treatment 1. <i>Journal of Orthopaedic & Sports Physical Therapy</i> . 1991;13(6):278-287.
29.	Mendelson G, Selwood TS, Kranz H, Loh TS, Kidson MA, Scott DS. Acupuncture treatment of chronic back pain: a double-blind placebo-controlled trial. <i>The American journal of medicine</i> . 1983;74(1):49-55.
30.	Meng C, Wang D, Ngeow J, Lao L, Peterson M, Paget S. Acupuncture for chronic low back pain in older patients: a randomized, controlled trial. <i>Rheumatology</i> . 2003;42(12):1508-1517.
31.	Molsberger AF, Mau J, Pawelec DB, Winkler J. Does acupuncture improve the orthopedic management of chronic low back pain—a randomized, blinded, controlled trial with 3 months follow up. <i>Pain</i> . 2002;99(3):579-587.
32.	Niemistö L, Lahtinen-Suopanki T, Rissanen P, Lindgren K-A, Sarna S, Hurri H. A randomized trial of combined manipulation, stabilizing exercises, and physician consultation compared to physician consultation alone for chronic low back pain. <i>Spine</i> . 2003;28(19):2185-2191.
33.	Ongley M, Dorman T, Klein R, Eek B, Hubert L. A new approach to the treatment of chronic low back pain. <i>The Lancet</i> . 1987;330(8551):143-146.
34.	Petrie J, Hazleman B. A controlled study of acupuncture in neck pain. <i>Rheumatology</i> . 1986;25(3):271-275.
35.	Poole H, Glenn S, Murphy P. A randomised controlled study of reflexology for the management of chronic low back pain. <i>European Journal of Pain</i> . 2007;11(8):878-887.
36.	Romoli M, Windt Dvd, Giovanzana P, et al. International research project to devise a protocol to test the effectiveness of acupuncture on painful shoulder. <i>The Journal of Alternative and Complementary Medicine</i> . 2000;6(3):281-287.
37.	Salter GC, Roman M, Bland MJ, MacPherson H. Acupuncture for chronic neck pain: a pilot for a randomised controlled trial. <i>BMC musculoskeletal disorders</i> . 2006;7(1):1.
38.	Sangdee C, Teekachunhatean S, Sananpanich K, et al. Electroacupuncture versus diclofenac in symptomatic treatment of osteoarthritis of the knee: a randomized controlled trial. <i>BMC complementary and alternative medicine</i> . 2002;2(1):1.
39.	Santilli V, Beghi E, Finucci S. Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. <i>The Spine Journal</i> . 2006;6(2):131-137.
40.	Scharf H-P, Mansmann U, Streitberger K, et al. Acupuncture and knee osteoarthritis: a three-armed randomized trial. <i>Annals of internal medicine</i> . 2006;145(1):12-20.

41.	Sherman KJ, Cherkin DC, Erro J, Miglioretti DL, Deyo RA. Comparing yoga, exercise, and a self-care book for chronic low back pain: a randomized, controlled trial. <i>Annals of internal medicine</i> . 2005;143(12):849-856.
42.	Sherman KJ, Cherkin DC, Hawkes RJ, Miglioretti DL, Deyo RA. Randomized trial of therapeutic massage for chronic neck pain. <i>The Clinical journal of pain</i> . 2009;25(3):233.
43.	Sherman KJ, Cherkin DC, Wellman RD, et al. A randomized trial comparing yoga, stretching, and a self-care book for chronic low back pain. <i>Archives of Internal Medicine</i> . 2011;171(22):2019-2026.
44.	Thomas K, MacPherson H, Thorpe L, et al. Randomised controlled trial of a short course of traditional acupuncture compared with usual care for persistent non-specific low back pain. <i>Bmj</i> . 2006;333(7569):623.
45.	Tilbrook HE, Cox H, Hewitt CE, et al. Yoga for chronic low back pain: a randomized trial. <i>Annals of internal medicine</i> . 2011;155(9):569-578.
46.	Tsai P-F, Chang JY, Beck C, Kuo Y-F, Keefe FJ. A pilot cluster-randomized trial of a 20-week Tai Chi program in elders with cognitive impairment and osteoarthritic knee: effects on pain and other health outcomes. <i>Journal of pain and symptom management</i> . 2013;45(4):660-669.
47.	Tsai P-F, Chang JY, Beck C, Kuo Y-F, Keefe FJ, Rosengren K. A supplemental report to a randomized cluster trial of a 20-week Sun-style Tai Chi for osteoarthritic knee pain in elders with cognitive impairment. <i>Complementary therapies in medicine</i> . 2015;23(4):570-576.
48.	Tsang RC-C, Tsang P-L, Ko C-Y, Kong BC-H, Lee W-Y, Yip H-T. Effects of acupuncture and sham acupuncture in addition to physiotherapy in patients undergoing bilateral total knee arthroplasty—a randomized controlled trial. <i>Clinical Rehabilitation</i> . 2007;21(8):719-728.
49.	Vas J, Perea-Milla E, Méndez C, et al. Efficacy and safety of acupuncture for chronic uncomplicated neck pain: a randomised controlled study. <i>Pain</i> . 2006;126(1):245-255.
50.	White PF, Craig WF, Vakharia AS, El-sayed AG, Ahmed HE, Hamza MA. Percutaneous neuromodulation therapy: does the location of electrical stimulation effect the acute analgesic response? <i>Anesthesia & Analgesia</i> . 2000;91(4):949-954.
51.	Williams K, Abildso C, Steinberg L, et al. Evaluation of the effectiveness and efficacy of Iyengar yoga therapy on chronic low back pain. <i>Spine</i> . 2009;34(19):2066.
52.	Williams KA, Petronis J, Smith D, et al. Effect of Iyengar yoga therapy for chronic low back pain. <i>Pain</i> . 2005;115(1):107-117.
53.	Witt C, Brinkhaus B, Jena S, et al. Acupuncture in patients with osteoarthritis of the knee: a randomised trial. <i>The Lancet</i> . 2005;366(9480):136-143.
54.	Witt CM, Jena S, Brinkhaus B, Liecker B, Wegscheider K, Willich SN. Acupuncture in patients with osteoarthritis of the knee or hip: a randomized, controlled trial with an additional nonrandomized arm. <i>Arthritis & Rheumatism</i> . 2006;54(11):3485-3493.
55.	Wreje U, Nordgren B, Åberg H. Treatment of Pelvic Joint Dysfunction in Primary Care—a Controlled Study. <i>Scandinavian journal of primary health care</i> . 1992;10(4):310-315.
56.	Yeung CK, Leung MC, Chow DH. The use of electro-acupuncture in conjunction with exercise for the treatment of chronic low-back pain. <i>The Journal of Alternative & Complementary Medicine</i> . 2003;9(4):479-490.
57.	Yokoyama M, Sun X, Oku S, et al. Comparison of percutaneous electrical nerve stimulation with transcutaneous electrical nerve stimulation for long-term pain relief in patients with chronic low back pain. <i>Anesthesia & Analgesia</i> . 2004;98(6):1552-1556.
58.	Zaproudina N, Hänninen OO, Airaksinen O. Effectiveness of traditional bone setting in chronic neck pain: randomized clinical trial. <i>Journal of manipulative and physiological therapeutics</i> . 2007;30(6):432-437.

EVIDENCE TABLES

DATA ABSTRACTION OF INCLUDED PRIMARY STUDIES

Data Abstraction of RCTs

Author Year N Setting	Pain type, duration	Patient Characteristics	Intervention(s)	Treatment regiment, duration, setting, follow-up	Opioid use outcomes	Other outcomes: pain, functional capacity, quality of life, adverse events
Cherkin 2011 ¹⁹ N=401 Integrated healthcare system	Nonspecific chronic low back pain ≥ 3 m	35.67% male Age = 47y 86.34% white	Relaxation massage (RM) Structural massage (SM) Usual care (UC)	Once per week in office treatment for 10 wks for 50-60 min + recommended at- home exercises Follow-up at 10, 26, and 52 wks	% narcotic analgesic use in past week (95% CI): 10-wks: 4.6 (3.0 to 7.3) SM vs 5.0 (3.0 to 8.5) RM vs 5.8 (3.4 to 9.9) UC; P = .69 26-wks: 5.0 (3.4 to 7.5) SM vs 4.6 (2.7 to 8.1) RM vs 5.2 (3.1 to 8.7) UC; P = .93 52-wks: 4.8 (3.1 to 7.3) SM vs 4.9 (3.1 to 7.9) RM vs 4.9 (2.7 to 8.7) UC; P = .99	Pain: Change from baseline SB score (points out of 10): 10 wks: -1.8 SM vs -2.1 RM vs - 0.6 UC; 26 wks: -1.4 SM vs -1.3 RM vs -1.2 UC; 52 wks: -1 SM vs -1.7 RM vs -1.6 UC Functional capacity: Change from baseline RDQ score (points out of 23): 10 wks: -3.6 SM vs -5.6 RM vs - 1.5 UC; 26 wks: -3.4 SM vs -5.2 RM vs -2.3 UC; 52 wks: -2.9 SM vs -5.6 RM vs -3.1 UC Adverse events: 4% RM and 7% SM of patients reported adverse events

Author Year N Setting	Pain type, duration	Patient Characteristics	Intervention(s)	Treatment regiment, duration, setting, follow-up	Opioid use outcomes	Other outcomes: pain, functional capacity, quality of life, adverse events
Esmer 2010 ²⁰ N=25 Spine and rehabilitation center	Failed back surgery syndrome: persistent leg and/or back pain despite history of surgery ≤ 2 y	56% male Age = 55.08y 100% white	Mindfulness-based stress reduction (including meditation)	Once per week in classroom for 1.5- 2.5h for 8 wks + one additional 6h session in sixth week; required homework assignments + encouraged daily meditation using guided audiotapes Follow-up at 12 and 40 wks	Change in analgesic medication use at 12-wks (4- point scale: 0 = no analgesic to 4 = daily narcotics): -1.5 intervention vs 0.4 control (P < .001)	Pain: Change in VAS at 12-wks (30-point scale): -6.9 intervention vs -0.2 control (P < .021) Functional capacity: Change in RMDQ at 12-wks (24-point scale): -3.6 intervention vs 0.1 control (P < .005) Quality of life: Change in CPAQ at 12-wks (108-point scale): 7.0 intervention vs 6.7 control (P < .014)
Saper 2013 ²¹ N=95 Academic hospital and 5 affiliated community health centers	Nonspecific chronic low back pain ≥ 12 wks	28% male Age=47.5y 17% white	Yoga	Once or twice weekly, 75 min yoga class in classroom for 12 wks + daily home practice for 30 min with audio CD and handbook Follow-up at 12 wks	% opiate use change from baseline at 12 wks: 0 once/wk class vs 2 twice/wk class (estimated from Figure 4). No significant change in from baseline. No significant between group differences	Pain: Intensity (scale NR) Mean change from baseline at 12 wks: -2.1 (-2.9 to -1.3) once/wk class vs -2.4 (-3.1 to -1.8) twice/wk classes Functional capacity: Change in RMDQ (23 point scale) at 12 wks: -5.1 (-7.0 to -3.2) once/wk class vs -4.9 (-6.5 to -3.3) twice/wk class Quality of life: Change in SF-36 physical at 12 wks: 6.4 (3.9 to 9.2) once/wk class vs 6.3 (4.1 to 8.4) twice/wk class Adverse events: 27% once/wk class vs 34% twice/wk class participants (P = 0.47)

Author Year N Setting	Pain type, duration	Patient Characteristics	Intervention(s)	Treatment regiment, duration, setting, follow-up	Opioid use outcomes	Other outcomes: pain, functional capacity, quality of life, adverse events
Sator-Katzenschlager 2004 ²² N= 61 University-based pain center	Chronic low back pain ≥ 6 m	30% male Age=53.6y Race NR	Auricular acupuncture with electrical stimulation with P- Stim™ device (EA) or without (CO)	Once per wk at home for 48h for 6 wks Follow-up at 3 m after series	Consumption of tramadol rescue medication during entire investigation (# tablets): EA = 6 vs CO = 150 (P < .001)	Pain: VAS at 18 wks (estimated from Figure 2A): 1 EA vs 4 CO (P < 0.05) Functional capacity: Return to full-time work: 77% EA vs 25% CO (P = 0.0032) Quality of life: Well-being impairment VAS at 18 wks (estimated from figure 2B): 1 EA vs 5 CO (P < 0.05) Adverse events: none
Weiner 2013 ²³ N=190 VA Pittsburgh Healthcare System	Knee OA with moderate intensity pain ≥ 3 m	84.7% male 66.6 y 70.5 % white	Periosteal stimulation therapy w/ boosters (PST & PST) vs PST w/ no boosters (PST & control) vs control PST w/ no boosters (control)	PST or control PST for 30 min 1once/wk for 10 wk followed by 6 m of boosters or no boosters Follow-up at 3, 6, & 9 m follow-up	Baseline adjusted differences compared w/ control: 10 wks: PST & PST = 0.018 (-0.19 to 0.23) PST & control = -.27 (-0.48 to -0.054)	Baseline adjusted differences compared with control: Pain: WOMAC score: 10 wks: PST & PST = 1.1 (CI -.34 to 2.5); PST & control = 1.3 (CI - .10 to 2.8) Functional capacity: WOMAC difficulty performing daily activities (Scale 0-68): 10 wks: PST & PST = 2.5 (-1.9 to 6.9); PST & control = 1.8 (-2.6 to 6.2) SF-36 mental health composite: 10 wks: PST & PST = -0.34 (- 2.9 to 2.2); PST & control = - 0.46 (-3.1 to 2.1) Adverse events: 4 adverse events attributable to PST and control PST

Author Year N Setting	Pain type, duration	Patient Characteristics	Intervention(s)	Treatment regiment, duration, setting, follow-up	Opioid use outcomes	Other outcomes: pain, functional capacity, quality of life, adverse events
Zheng 2008 ²⁴ N=35 Pain management center	Non- malignant pain > 3 m	51.5% male 49.7 y Race NR	Electroacupuncture (REA) or sham electroacupuncture (SEA)	30 min. treatment & 20 min stimulation time twice/wk for 6 wks Follow-up at 16 & 20 wks	OLM consumption (mg/wk morphine equivalent) 8 wks: 281.4 REA vs 219.1 SEA (P < .001) 20 wks: 344.7 REA vs 239.0 SEA (P = .022)	Pain: average (scale NR) 8 wks: Change from baseline -0.8 REA vs -0.7 SEA (P = .001) Adverse events: 33 REA vs 19 SEA

SB: Symptom Burden Scale; RDQ: Roland Disability Questionnaire; VAS: Visual Analog Scale; RMRQ: Roland Morris Disability Questionnaire; CPAQ: Chronic Pain Acceptance Questionnaire; SF-36: Short Form-36 Health Survey; WOMAC: Western Ontario & McMaster Universities Osteoarthritis Index; OA: Osteoarthritis; NR: Not Reported

QUALITY ASSESSMENT OF INCLUDED PRIMARY STUDIES

Quality Assessment of RCTs

Author Year	Adequate sequence generation?	Adequate allocation concealment?	Blinding of participants, personnel and outcome assessors?	Formal assessment of adequacy of the blind?	Incomplete outcome data adequately addressed?	Study reports free of suggestion of outcome reporting bias?	Study free of other sources of bias?	Risk of bias?
Cherkin 2011 ¹⁹	Low; Randomized to treatment/control, then statistician-generated randomization blocked on massage therapist	Low; Centralized	High; Therapist personnel unblinded, massage participants blinded as to type of massage received, usual care participants unblinded	High; Opioid use assessed weekly by unblinded patients; no sham group	Low; 5-9% lost to follow-up. Multiple imputation to account for missing values.	Low; Primary and secondary outcomes were stated in protocol and completed as stated.	Unclear; Patients in relaxation massage group had higher RDQ at baseline, although the difference (>1) is not clinically relevant according to the definitions of the study (>2).	High

Author Year	Adequate sequence generation?	Adequate allocation concealment?	Blinding of participants, personnel and outcome assessors?	Formal assessment of adequacy of the blind?	Incomplete outcome data adequately addressed?	Study reports free of suggestion of outcome reporting bias?	Study free of other sources of bias?	Risk of bias?
Esmer 2010 ²⁰	Unclear; No description of how random assignments were generated	Unclear; Not described	High; Participants unblinded	Unclear; Statistical analysis of patient-completed questionnaires was performed by statistician blinded to patient intervention status.	High; High attrition rate between randomization and analysis (11/21 from control; 4/19 from intervention) with no explanation given of how that was incorporated in analysis. Numbers reported in flow diagram do not add up, and the text of the study seems to ignore the intervention-side attrition rate when reporting on intervention compliance rates.	Unclear	Low; No significant differences at baseline between analyzable intervention and control groups.	High
Saper 2013 ²¹	Low; Computer created randomization schedule	Unclear; Not described	High; Participants and study staff who scheduled classes unblinded	High; All outcome data provided from participants through questionnaires; no sham	Low; 96% follow-up	Low	High; Low and differential adherence: once-weekly=65% vs twice-weekly=44%, P = 0.040; not adjusted for in analysis	High

Author Year	Adequate sequence generation?	Adequate allocation concealment?	Blinding of participants, personnel and outcome assessors?	Formal assessment of adequacy of the blind?	Incomplete outcome data adequately addressed?	Study reports free of suggestion of outcome reporting bias?	Study free of other sources of bias?	Risk of bias?
Sator-Katzenschlager 2004 ²²	Low; Computer-generated random number tables	Unclear; Not described	Low; Patients and investigators. Everyone wore the device, stimulator activated independent technician. Both groups believed they were receiving stimulation: 100% vs 97%	Low	Unclear; Early discontinuation: EA=6% for noncompliance and CO=13% for lack of efficacy. Stated that all 61 were analyzed but no info about how missing data imputed	Low	Low; Higher baseline pain in control group (8.0 vs 7.5; P = 0.021). But magnitude of difference small and in opposite direction of overestimating EA	Unclear
Weiner 2013 ²³	Low; Computer generated stratified randomization	Low; Allocation determined for each participant once deemed eligible w/ next assignment concealed within electronic database until next participant was deemed eligible	Unclear; Research assistant doing scheduling masked; do not explicitly use the language that participants are “blinded or masked”, however they give in-depth explanation of 3 groups and how they tried to “control for treatment expectancy,” No detail on adequacy of the blind	Unclear; Research coordinator who collected outcome data was kept masked to treatment groups; however medication use was patient-reported, with no verification – and we are unclear about patient blinding	Low; Even though attrition was low (~7% overall, 2% to 10%), used multiple imputation in sensitivity analyses	Low; Clinical registration protocol made available and both primary and secondary outcomes clearly described and reported	Unclear; Characteristics similar in all 3 groups except scores on the catastrophizing scale of the Cognitive Strategies Questionnaire and WOMAC pain at baseline, with those in the PST and control PST boosters group having more catastrophizing and the control PST group having more knee pain.	Unclear

Author Year	Adequate sequence generation?	Adequate allocation concealment?	Blinding of participants, personnel and outcome assessors?	Formal assessment of adequacy of the blind?	Incomplete outcome data adequately addressed?	Study reports free of suggestion of outcome reporting bias?	Study free of other sources of bias?	Risk of bias?
Zheng 2008 ²⁴	Low; Computer-generated block randomization	Unclear; Methods of concealment not described	Low; Participants and personnel blinded. Blinding assessed and no significant differences between groups.	Unclear; Blinding of outcome assessors not described	Unclear; 22-47% lost to follow-up. Used LOCF in intention to treat analysis	Unclear	Unclear; greater starting MED in intervention group? 461.6 MED/week versus 295.5 MED/week	Unclear

RDQ: Roland Disability Questionnaire WOMAC: Western Ontario & McMaster Universities Osteoarthritis Index; LOCF: Last observation carried forward; MED: morphine equivalent dose

STRENGTH OF EVIDENCE FOR INCLUDED STUDIES

SOE Grade	Study Design: No. Studies (N)	Study Limitations	Directness	Consistency	Precision	Reporting Bias	Other Issues	Findings
<i>Acupuncture</i>								
	1 RCT, N=61 ²²	Unclear	Direct	Unknown	Imprecise	Undetected	None	∓ Opioid consumption (# tablets) throughout intervention: EA = 6 vs. CO = 150 (P < .001)
	1 RCT; N=35 ²⁴	Unclear	Direct	Unknown	Imprecise	Undetected	None	No difference; reduction in opioid MED 39% vs 26%; NSD
	1 RCT; N=190 ²³	Unclear	Direct	Unknown	Imprecise	Undetected	None	Opioid consumption (baseline adjusted differences in # weekly doses compared to control) at 10 wks: Reduced for PST without boosters, but not with boosters = PST+PST: 0.018 (-0.19 to 0.23) ∓ PST+control: -0.27 (-0.48 to -0.054)
<i>Massage</i>								
	1 RCT; N=401 ¹⁹	High	Direct	Unknown	Imprecise	Undetected	None	= narcotic analgesic consumption (% narcotic analgesics in past week, change from baseline) at 10 wks: SM = -12.4 vs RM = -12.0 vs UC = -7.2 at 52-wks: SM = -12.2 vs RM = -12.1 vs UC = -8.1

SOE Grade	Study Design: No. Studies (N)	Study Limitations	Directness	Consistency	Precision	Reporting Bias	Other Issues	Findings
<i>Meditation</i>								
Insufficient	Mindfulness-based stress reduction (MBSR) or usual care in patients with failed back surgery syndrome: 1 RCT; N=25{Esmer, 2010 #19	High	Direct	Unknown	Imprecise	Undetected	None	∓ Analgesic medication use at 12-wks (4-point scale: 0 no analgesic - 4 daily narcotics): MBSR = -1.5 vs. Control = 0.4 (P < .001)
<i>Yoga</i>								
Insufficient	Yoga once vs twice weekly in patients with low back pain: 1 RCT; N=95 ²¹	High	Direct	Unknown	Imprecise	Undetected	None	= Opiate (% change from baseline) at 12 wks: Yoga 1x/wk = 0 vs. Yoga 2x/wk = 2; NS

MED: morphine equivalent dose; OA: Osteoarthritis

PEER REVIEW COMMENT TABLE

Comment #	Reviewer #	Comment	Author Response
<i>Are the objectives, scope, and methods for this review clearly described?</i>			
1	1	Yes	None
2	2	Yes	None
3	3	Yes	None
4	4	Yes	None
5	5	Yes	None
6	6	Yes	None
7	7	Yes	None
8	8	Yes	None
<i>Is there any indication of bias in our synthesis of the evidence?</i>			
9	1	No	None
10	2	No	None
11	3	No	None
12	4	No	None
13	5	No	None
14	6	No	None
15	7	No	None
16	8	No	None
<i>Are there any <u>published</u> or <u>unpublished</u> studies that we may have overlooked?</i>			
17	1	No	None
18	2	No	None
19	3	No	None
20	4	Yes - No studies directly relating to CIH/opioids but perhaps some studies missed that relate to background and discussion information - I have attached what may be of interest or what may add to the accuracy or completeness of the document	<i>We thank the reviewer for providing these very recent citations – we have added all suggested citations.</i>
21	5	No	None
22	6	No	None
23	7	Might look into work from the Cleveland Clinic on interdisciplinary rehab programs and reduced opioid dose, Same with Stanford and work by Beth Darnall.	<i>Added that we are aware of these programs, but that we were unable to identify clear descriptions of their approaches to using specific CIH interventions or data on their effectiveness</i>
24	8	No	None

Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report.

25	1	On page 6 lines 35-36 reference is made to the National Center for Complementary and Integrative Health and to the National Center for Complementary and Alternative Medicine. The way it is written seems to imply that these are two different organizations rather than one organization that has undergone a recent name change.	<i>Removed National Center for Complementary and Alternative Medicine.</i>
26	2	ES line 7: Awkward lead in -- I would state that the increase in opioid prescribing over the past two decades has been accompanied by dramatic increase in problems related to opioid use, including overdose-related death, dependence, and misuse. As a result, there is intense interest in non-opioid alternatives for treating chronic pain.	<i>Revised as suggested.</i>
27	2	ES line 26: Separate this into two sentences	<i>Done.</i>
28	2	Table ES1: 2 nd row: Confusing row in table -- not clear what comparisons are for down arrows, what do = sign mean?	<i>Replaced symbols with words and made other improvements</i>
29	2	Page 13, line 29: Is one is looking at opioid use as an outcome, could one argue that sham controls are less necessary since we don't necessarily care if some of the effect is due to placebo if it reduces the use of opioids?	<i>We appreciate this reviewer's point. But, this section is referring only to the potential methodological limitations of these studies, which is only one of our considerations about the usefulness of the evidence. Regardless of how we view the importance of the sham controls, the bigger problem with this evidence is that it was generally comprised of single small studies with limited applicability.</i>
30	2	Page 16, line 22: what are shams for massage?	<i>Light touch</i>

31	3	<p>The target population and interventions are clearly defined. The outcome—opioid use—is not a clinical outcome, it’s more of a treatment process variable. Also, opioid use isn’t clearly defined; it could mean physician prescribing, patient consumption, or both. The topic is somewhat odd in its focus on the ability of one category of clinical interventions (CIH therapies) to prevent use of another category of clinical interventions (opioid medications). The cause and effect relationship isn’t clear here as it is for most ESP reviews. Should we assume the mechanism is that CIH interventions would effectively treat pain so physicians would prescribe fewer or lower dose opioids or so patients would take fewer of their prescribed opioids? Are we interested in patient-level effects, prescriber-level effects, policy-level effects, or all three? Clarity on these issues would improve the relevance and utility of the report.</p>	<p><i>We appreciate the reviewer’s point about the outcome of opioid use, but think that the rationale of evaluating non-opioid interventions for pain with the goal of reducing opioid use will be intuitive for most prescribers. The recent CDC guideline on opioid prescribing also highlights this goal. The report abstract starts with “Primary care clinicians find managing chronic pain challenging. Evidence of long-term efficacy of opioids for chronic pain is limited. Opioid use is associated with serious risks, including opioid use disorder and overdose.”</i></p> <p><i>Added clarification to opioid use outcome inclusion criteria that we intended to include both physician prescribing and patient consumption. We also added clarification to the Introduction section about the potential mechanism of CIH for reducing opioid use.</i></p>
32	3	<p>The text related to opioid dosing is inaccurate and contradictory in places. On the last paragraph of page 4, “higher doses” are described in parentheses as 100-120 ME mg, although the data presented in the next sentence demonstrates increased risk of death starting at 20 ME mg. On page 5, guidelines’ “upper dosing thresholds” are described as “generally 90-120 mg MED, but some up to 200 MED.” On page 7, a link is described between overdose and an “80-120 MED threshold.” 80 mg is used subsequently in the text as a cutoff for high dose or threshold for risk. Studies examining dose-death associations have categorized dose in a variety of ways for a variety of reasons, but I am aware of no evidence that suggests an actual inflection point or “threshold” for overdose risk. Rather, evidence seems to suggest that risk increases as dose increases, starting with very low doses. The new CDC guidelines describe in detail the rationale for their recommendations of additional caution at 50 mg and avoidance of prescribing >90 mg, while acknowledging that there is no threshold for risk. For the purposes of this review, it may be best to avoid choosing a dose cutoff. If one is selected, it should be much more clearly justified.</p>	<p><i>Agreed. Removed suggested dose threshold of 80-120 MED. Added new CDC guidelines as a reference and acknowledgement that risk generally increases with dose and there is no evidence of a “universal” threshold for risk</i></p>
33	3	<p>Page 4, 4th paragraph, 1-2 sentences: The causes of increased opioid prescribing are a matter of hot debate, but I’m not aware of changes in laws and regulations that played a major role. The role of the Joint Commission’s pain standards in this prescribing practice change is controversial. More commonly stated causes are misleading and aggressive promotion of new opioid products (e.g., Oxycontin) and advocacy for more aggressive treatment of pain. Speculating on this matter is likely to detract from the purpose of the report.</p>	<p><i>Changed to: “The causes of increased prescribing have been widely debated and are likely numerous.”</i></p>

34		Page 5, lines 30-31: I don't believe reliable estimates of chronic pain in male and female VHA patients have been published. The citation is not specific.	<i>Changed to: Chronic pain may occur in up to 50% of Veterans treated in primary care.[Kerns 2013]</i>
35	3	Page 5, final paragraph, first sentence: The lack of evidence for opioids should not make it more difficult to develop "evidence-based guidance for chronic non-cancer pain management." There are many studies that provide evidence on many different treatments for chronic pain. The difficulty is in developing guidance on when and how to use opioids.	<i>Changed to: Developing evidence-based guidance on how and when to use opioids for chronic non-cancer pain management is difficult...</i>
36	3	Page 6, paragraph 3: It seems obvious that opioid-specific guidelines would focus on opioids; by definition, other therapies are outside their scope. "Chronic pain" is not one condition, but an umbrella term that covers an experience common to a number of conditions, such as chronic back pain, osteoarthritis pain, fibromyalgia, peripheral neuropathic pain, and headache. Guidelines addressing specific chronic pain conditions are the appropriate place to look for recommendations on use of CIH in chronic pain. (This comment also applies to key message #2)	<i>We appreciate the reviewer's point, but as clinicians are also obligated to discuss alternatives when consenting for opioid treatment, opioid-specific guidelines generally address considering alternatives. Our point is that CIH is not cited specifically as an alternative as other non-opioid treatments such as CBT are.</i>
37	3	Page 6, last paragraph, first sentence: These statements seem to lack any basis in the literature: "(1) CIH is under-utilized in opioid users and (2) compared to usual care, magnitude of pain reduction for CIH is comparable to opioids" What evidence suggests that CIH is under-utilized in opioid users? What is the magnitude of pain reduction for opioids vs. usual care and for CIH vs. usual care	<i>Changed to: "Select CIH interventions may be reasonable non-opioid treatment options in general because (1) CIH is possibly under-utilized in opioid users and (2) compared to usual care, magnitude of pain reduction for CIH is potentially comparable to opioids, but without serious side effects." The rest of this paragraph provides the supporting details and citations for these statements.</i>
38	3	Highlighting a hypothetical connection of opioid dose reduction with heroin use seems overly speculative.	<i>Supported by: Compton WM, Jones CM, Baldwin GT. Relationship between Nonmedical Prescription-Opioid Use and Heroin Use. New England Journal of Medicine. 2016;374(2):154-163.</i> <i>Cicero TJ, Ellis MS, Harney J. Shifting Patterns of Prescription Opioid and Heroin Abuse in the United States. New England Journal of Medicine. 2015;373(18):1789-1790.</i>
39	3	Methods: Overall, the eligibility criteria, search strategies, and analysis methods are appropriate and well described.	<i>No action needed.</i>
40	3	Results: Overall, the results are clearly described and summarized. I am not aware of any studies that were overlooked or incorrectly included/excluded.	<i>No action needed.</i>

41	3	Comment: Table 2 uses “opioid,” “opiate” and “narcotic.” This may be a purposeful choice to use terms from the original studies. If not, it would be best to stick with “opioid.”	<i>Yes, this was a purposeful choice to use terms from the original studies</i>
42	3	Discussion: In general, the key messages are broader than seems appropriate for this narrowly focused evidence review and go well beyond the findings. For example, #6 seems to be opinion-based and is not supported by citations. I recommend keeping key recommendations more focused on the research findings and gaps identified.	<i>Moved #6, potential barriers to implementation, to the Future Research section.</i>
43	3	I found the future research section to be rather confusing overall. It seems to call for research with potentially limited clinical, practice, or policy relevance. Reducing opioid use is not a clinical outcome. Pain, pain related function, quality of life, overdose deaths, and opioid harm events are clinical outcomes. Do we really want clinical studies designed to determine CIH effectiveness for reducing opioids? Or do we want studies designed to determine CIH effectiveness for treatment of common clinical pain conditions to also assess possible secondary effects on opioid consumption or prescribing? Perhaps reducing opioid prescribing may be more appropriately considered a policy relevant outcome. In that case, studies of CIH access/coverage policies that can look effects on opioid prescribing practices and ultimately opioid harm outcomes may be indicated.	<i>Agree that we want studies that evaluate a complete set of key outcomes. Revised to: “There is a need for more research assessing CIH interventions’ value in addressing the opioid epidemic by simultaneously evaluating a complete set of key outcomes, including their impact on pain, pain-related function, quality of life, harms, and on new or ongoing opioid use or stopping opioids entirely.”</i>
44	3	The future research section provides very specific recommendations for how opioid use (consumption in this case) should be assessed (i.e., daily patient reports), but does not provide any citations to support the recommendations.	<i>Changed to: “Patient self-report methods for measuring measure opioid use varied substantially across studies, generally without providing a rationale for how methods were selected: recall periods ranging from multiple times daily up to monthly, proportion of patients with any use, daily, or less than daily use, and number of weekly doses. To determine how to select and strengthen patient self-report methods for measuring opioid use, we suggest considering use of well-validated processes, optimized question response formats and recall periods, taking steps to address social desirability concerns, avoiding interview-based assessments, and accounting for self-report challenges such as cognitive functioning, burden, and setting.[Stirratt 2015]”</i>

45	4	I have rated the report as fair - not because of the quality of the evidence review, background, discussion, or other sections, but rather for the paucity of useful information it contains. Hardly any of the key questions could be addressed, so the reader is left with more questions than answers. Probably the most useful conclusion that can be made is that which was made on p 22 (**a lot** of research is needed about the effectiveness of CIH interventions as they relate to opioid use). I agree this is an important avenue for future work in pain management. Thank you for the opportunity to review.	<i>No action needed.</i>
46	4	ES: The text in lines 11-14 appears to be in conflict with text lines 19-42. If the evidence base regarding effectiveness of select CIH interventions is so limited, how can one come to any conclusion regarding their relative effectiveness to that of opioid	<i>The sections noted relate to different outcomes. Lines 11-14 relate to CIH's effects on pain; whereas, lines 19-42 relate to CIH's effects on opioid use. Regardless, we tempered our statements about the comparative efficacy of opioids and CIH on pain to better reflect the indirectness of the evidence base.</i>
47	4	Table ES1, row 1: Needs clarification - I do not understand what "up to 8 times 50mg daily means" Does it mean "up to 400mg daily"?	<i>Yes, changed.</i>
48	4	Table ES1, row 2, opioid type: I understand this to mean: that the opioid is unknown, and that the unknown opioid was only given at average of one-half dose per week? If I am correct I do not understand how a valid comparison or degree of influence could be made with such sketchy information.	<i>Agree this is a major deficiency and have called for future studies to report opioid type, dose, and frequency.</i>
49	4	Table ES1, row 2: How was QOL measured	<i>Added measurement method of SF-36 physical component</i>
50	4	Table ES1, row 3: NMP could mean almost any type of acute or chronic pain Dose is defined as mg/wk, then expressed below as mg/DAY (for REA and SEA) - should be consistent - which should it be?	<i>Yes, study did not specify pain types. But added that it was chronic pain. Corrected mg/wk to mg/d</i>
51	4	Page 4, line 37: While codeine is indeed a Sch II opioid it is rarely used in that manner - it is usually combined with acetaminophen (and is then no longer a CII). I would suggest substituting morphine here.	<i>Changed to morphine</i>
52	4	Page 4, line 54: On page 2, line 24, a range of 80-100 was stated - seems like the ranges used should be consistent, as they are all related to risk for opioid OD death. Later on page 7 line 17 another range of 80-120 is quoted.	<i>Removed ranges. See response to comment #32.</i>
53	4	Page 5, line 21: "importance"	<i>Corrected</i>
54	4	Page 5, line 34: Consider listing a few or these co-morbidities, especially those that might respond to CIH interventions	<i>Added: patient demographics and comorbidities (e.g., alcohol or substance use and other mental health and medical disorders)</i>

55	4	Page 5, line 39: Perhaps this sentence should read "Developing EB guidance for USE OF OPIOIDS for chronic non-cancer pain management is difficult..." Also bear in mind that consensus guidance often is about what is NOT recommended as well as what is recommended, so negative studies can be used as well as positive ones.	<i>Revised as suggested.</i>
56	4	Page 5, line 47: Was it Nuckols et al. who decided which of the guidelines were of "fair-to-good" quality? If so, may want to re-phrase. "According to Nuckols et al., nine fair to good-quality guidelines...."	<i>Changed to "According to Nuckols et al., nine fair to good-quality guidelines...."</i>
57	4	Page 5, line 57: The unintended consequence is actually increased incidence/rates of opioid use disorder - the increased rate of heroin use is a result of this	<i>Changed to "the emergence of withdrawal symptoms that may lead to aberrant opioid-seeking behaviors that may result in use of illicit opioids;[Ballantyne 2012]"</i>
58	4	Page 6, line 5: There is a lot of work done and in progress within VA to determine what are risk factors and who is at risk of opioid OD or serious opioid-related resp depression. There is more to it than dose of opioid - this is hinted at in the text with reference to SUD, psychiatric illness, etc.. See Zedler et al. Pain Medicine 2015; 16: 1566-1579, Park et al BMJ 2015; doi: 10.1136/bmj.h2698 + other publications by Bohnert's group: PMID: 26807540 and 26761386,	<i>Added: "In Veterans receiving opioids, receipt of benzodiazepines has been associated with an increased risk of overdose death[Park 2015] and mental health disorders, pharmacotherapy, impaired drug metabolism or excretion, pulmonary disorders, specific opioid characteristics, and recent hospital visits have been associated with serious opioid-induced respiratory depression.[Zedler 2015]"</i> <i>Added PMID 26807540 (Bohnert 2016) to support statement that evidence has not yet identified a clear dose "threshold" for overdose risk</i> <i>Added PMID 26761386 (Ilgen 2016) as citation for link between high opioid dose and suicide.</i>
59	4	Page 6, line 39: The CDC Guidelines were published on March 15 and, as far as I can tell, only CDC recommendation #1 addressed non-pharmacological therapies, and then only mentioned PT, weight loss, and CBT. Based on this new information - this sentence should be re-worked. The 'non-mention' of CIH modalities in the CDC guidance reinforces what was said in the preceding paragraph, lines 23-33	<i>Added CDC guideline.</i>
60	4	Page 6, line 52-29: If direct comparisons between opioids and CIH are lacking, how can one conclude that CIH interventions are a reasonable alternative to opioid therapy OR that magnitude of pain reduction between CIH and opioids is comparable?	<i>Yes, we tempered our statements about the comparative efficacy of opioids and CIH on pain to better reflect the indirectness of the evidence base.</i>

61	4	Page 7, line 10: If a more rigorous analysis of the evidence for CIH in pain is to come, then possibly some of the statements earlier in this paragraph are premature?	<i>Yes, we tempered our statements about the comparative efficacy of opioids and CIH on pain to better reflect the indirectness of the evidence base.</i>
62	4	Page 7, line 16: I would say the main goal should be more patient centric: to achieve or maintain pain relief; to improve function, to reduce side effects/risk. If stopping opioid helps to achieve one or more of those goals, then OK See Berna et al. Tapering Long-Term Opioid Therapy in CNCP Mayo Clinic Proceedings 2015; 90(6) 828-42.	<i>Changed to: "The goal of reducing opioid use is to reduce risk of overdose deaths, dependence, misuse and other serious complications. In some cases, this means stopping opioids entirely."</i>
63	4	Page 7, line 25: Again - the risk of reducing opioid dose/use is the emergence of OUD-behaviors - use of illegal narcotics is the end-result. See Ballantyne et al. edit Arch Int Med 172 (17): Sept 24, 2012 pages 1342-3	<i>Changed to "the emergence of withdrawal symptoms that may lead to aberrant opioid-seeking behaviors that may result in use of illicit opioids;[Ballantyne 2012]</i>
64	4	Page 21, line 9-11: with so little comparative data how can this statement be made?	<i>Changed to: "Limited evidence suggests that select CIH interventions may be reasonable non-opioid treatment options in general because, compared to usual care, magnitude of pain reduction for CIH is potentially comparable to opioids, but without serious side effects"</i>
65	4	Page 21, line 9: "increase" or refine?	<i>Changed to 'clarify'</i>
66	5	I found Table ES1 somewhat difficult to interpret, including information provided in the last three columns. Perhaps the authors could consider editing for improved clarity.	<i>Yes, we edited to improve clarity.</i>
67	6	Apparently this is the first of a number of planned reviews of alternatives to opioid therapy in preparation for a Nov conference sponsored by the VAHSR&D. The select things covered in this report will hopefully be supplemented by evidence on chiropractic, behavioral therapies like cognitive-behavioral therapy, and others. It would be useful in the background to briefly describe what all will be ultimately included. The terminology (CHI) throws you off a little since it does not include all of the alternatives that are promising.	<i>Defining the scope of additional work is a key goal of the April 2016 SOTA planning meeting.</i>
68	6	The three articles on acupuncture are actually not classic acupuncture but electrical stimulation through acupuncture needles, or electro-acupuncture, which is considered quite different from classic acupuncture. The report should call this out, and should make the point that what is being reported here is NOT the impact of classic acupuncture on opioid dose.	<i>Added this clarification.</i>
69	6	The 2015 WA opioid guideline includes a new section on non-pharmacological alternatives to opioids-this should perhaps be referenced since it is the only major guideline to date to address this: http://www.agencymeddirectors.wa.gov/Files/2015AMDGOpioidGuideline.pdf	<i>Added.</i>
70	7	Please make sure to define all abbreviations.	<i>Done</i>

71	7	please avoid the use of "opioid users" and use "patients prescribed opioids" throughout the text	<i>Done</i>
72	7	Table ES1: what is REA and SEA? PST, EA and CO also need to be explained in the notes section	<i>Added.</i>
73	7	Page 5, line 10: what is drug substitution? do you mean medication assisted treatment?	<i>This is a term used by King 2014. It seems to mean that people with a substance use disorder may substitute prescription opioids for illicit drugs.</i>
74	7	Page 5, line 13: define SES	<i>Done</i>
75	7	Page 5, line 16: are you saying that these things caused more deaths? Usually we say that they mitigate death.	<i>Yes, this is a summary of the King et al systematic review published in American Journal of Public Health in 2014 that identified these factors as potentially linked to increased risk of opioid-related mortality.</i>
76	7	Page 6, line 40: The CDC guideline is now published. This should be updated.	<i>Added.</i>
77	7	Page 12, line 43: opioid use - or opioid dose?	<i>Our point here was to identify the studies that measured opioid use versus those that evaluated overall analgesic use.</i>
78	7	Page 13, line 11: would look into the Cleveland Clinic's work (Ed Covington) or Seddon Savage at Dartmouth's Silver Hill Hospital. To my knowledge, they both use meditation to help with opioid dose reduction and reduced reliance on medication. Also, the Stanford program with Beth Darnall might have some data.	<i>Changed to: "We are also aware of programs that routinely use multidisciplinary approaches to help reduce reliance on pharmacological treatments for pain.[Silver Hill Hospital, the Cleveland Clinic and the Stanford Pain Management Center] But, we were unable to identify clear descriptions of their approaches to using specific CIH interventions or data on their effectiveness."</i>
79	7	Page 14, line 43: would you translate this to daily dose? A weekly MED doesn't really have much meaning.	<i>Done</i>
80	7	Page 15, line 40: again, better if this is translated to MED per day	<i>Done.</i>

REFERENCES

1. Chou R, Fanciullo GJ, Fine PG, et al. Clinical Guidelines for the Use of Chronic Opioid Therapy in Chronic Noncancer Pain. *Journal of Pain*. 2009;10(2):113-130.
2. Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain. McMaster University Michael G. DeGroote National Pain Centre 2010.
3. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain—United States, 2016. *JAMA*. 2016.
4. Acute Pain Assessment and Opioid Prescribing Protocol. Institute for Clinical Systems Improvement 2014.
5. Managing Chronic Non-Terminal Pain in Adults, Including Prescribing Controlled Substances. University of Michigan Health System 2015.
6. Management of Opioid Therapy for Chronic Pain. Department of Veterans Affairs/Department of Defense 2010.
7. Utah Clinical Guidelines on Prescribing Opioids for Treatment of Pain. Utah Department of Health 2009.
8. American Society of Interventional Pain Physicians (ASIPP) Guidelines for Responsible Opioid Prescribing in Chronic Non-Cancer Pain: Part 2 - Guidance. American Society of Interventional Pain Physicians 2012.
9. Pharmacological Management of Persistent Pain in Older Persons. American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Older Persons 2009.
10. Washington State Agency Medical Directors' Group. *Interagency Guidelines of Prescribing Opioids for Pain* 2015.
11. Chou R, Qaseem A, Snow V, et al. Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College Physicians and the American Pain Society. *Journal of Pain*. 2007;147(7).
12. Chronic Pain Medical Treatment Guidelines. American Academy of Pain Medicine 2009.
13. Hooten W, Timming R, Belgrade M, et al. Assessment and Management of Chronic Pain. Institute for Clinical Systems Improvement 2013.
14. Low Back Pain Medical Treatment Guidelines. State of Colorado Department of Labor and Employment Division of Workers' Compensation 2007.
15. Diagnosis and Treatment of Low Back Pain. Department of Veterans Affairs/Department of Defense 2008.
16. The Management of Persistent Pain in Older Persons. American Geriatrics Society 2002.
17. Laxmaiah M, Abdi S, Atluri S, et al. An Update of Comprehensive Evidence-based Guidelines for Interventional Techniques in Chronic Spinal Pain. Part 2: Guidance and Recommendations. *Pain Physician Journal*. 2013;16:S49-S283.
18. Low back pain in adults: early management. National Institute for Health and Care Excellence 2009.
19. Cherkin DC, Sherman KJ, Kahn J, et al. A comparison of the effects of 2 types of massage and usual care on chronic low back pain: a randomized, controlled trial. *Annals of internal medicine*. 2011;155(1):1-9.
20. Esmer G, Blum J, Rulf J, Pier J. Mindfulness-based stress reduction for failed back surgery syndrome: a randomized controlled trial. *The Journal of the American Osteopathic Association*. 2010;110(11):646-652.

21. Saper RB, Boah AR, Keosaian J, Cerrada C, Weinberg J, Sherman KJ. Comparing once-versus twice-weekly yoga classes for chronic low back pain in predominantly low income minorities: a randomized dosing trial. *Evidence-Based Complementary and Alternative Medicine*. 2013;2013.
22. Sator-Katzenschlager SM, Scharbert G, Kozek-Langenecker SA, et al. The short-and long-term benefit in chronic low back pain through adjuvant electrical versus manual auricular acupuncture. *Anesthesia & Analgesia*. 2004;98(5):1359-1364.
23. Weiner DK, Moore CG, Morone NE, Lee ES, Kwoh CK. Efficacy of periosteal stimulation for chronic pain associated with advanced knee osteoarthritis: a randomized, controlled clinical trial. *Clinical therapeutics*. 2013;35(11):1703-1720. e1705.
24. Zheng Z, Guo RJ, Helme RD, Muir A, Costa C, Xue CC. The effect of electroacupuncture on opioid-like medication consumption by chronic pain patients: A pilot randomized controlled clinical trial. *European Journal of Pain*. 2008;12(5):671-676.