

Welcome to UVM ECHO Chronic Pain

Facilitators: Mark Pasanen MD, Liz Cote

Faculty: Carlos Pino MD, Rich Pinckney, MD, Patti Fisher MD,
Charles MacLean MD, Sanchit Maruti MD, Michael Goedde, MD, Jill Warrington MD



Introduction to ZOOM

- Mute microphone when not speaking
 - If using phone for audio, please mute computer
- Position webcam effectively (and please enable video)
- Test both audio & video
- Use “chat” function for:
 - Attendance—type name and organization of each participant upon entry to each teleECHO session
 - Technical issues
- We need your input!
 - Use “raise hand” feature; the ECHO team will call on you
 - Please speak clearly



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No Relevant Disclosures

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The University of Vermont
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Non-opioid Management of Pain

Charles MacLean, MD
Mark Pasanen, MD



Outline/Objectives:

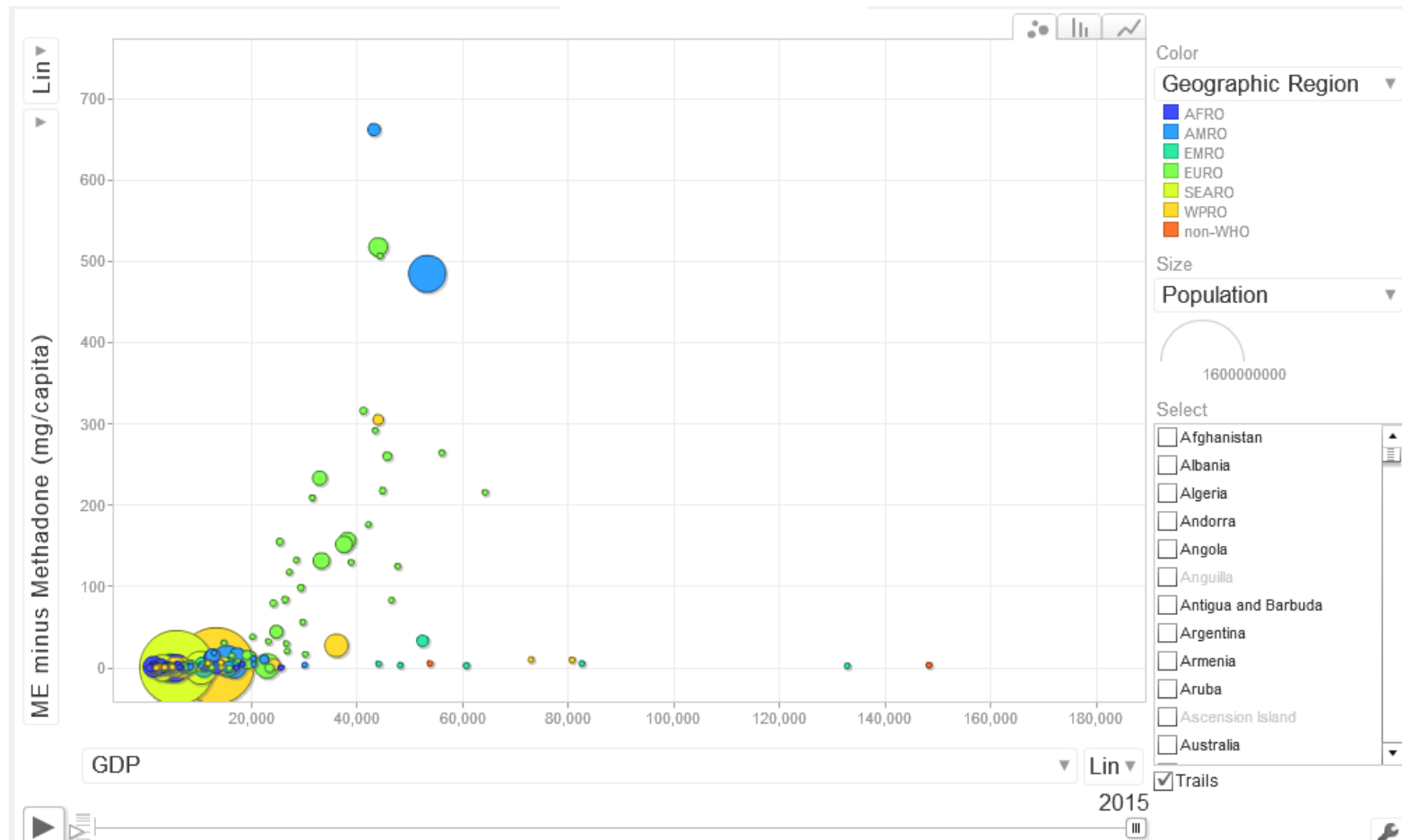
- Review primary and secondary literature
- Review current “best-practice” guidelines
- Discuss pragmatic considerations and solutions



Context



International Comparisons



- <https://ppsg.medicine.wisc.edu/chart>
 - ME without methadone by GDP (linear)

Primary and secondary literature

Cochrane

- <http://www.cochrane.org/>
 - Search “pain” and other filters



PubMed

■ Yoga

- Any study=4521
 - Pain=651
 - RCT=133

■ Example:



A Randomized Trial Comparing Yoga, Stretching, and a Self-care Book for Chronic Low Back Pain

Karen J. Sherman, PhD, MPH; Daniel C. Cherkin, PhD; Robert D. Wellman, MS; Andrea J. Cook, PhD; Rene J. Hawkes, BS; Kristin Delaney, MPH; Richard A. Deyo, MD, MPH

Background: Chronic low back pain is a common problem lacking highly effective treatment options. Small trials suggest that yoga may have benefits for this condition. This trial was designed to determine whether yoga is more effective than conventional stretching exercises or a self-care book for primary care patients with chronic low back pain.

Methods: A total of 228 adults with chronic low back pain were randomized to 12 weekly classes of yoga (92 patients) or conventional stretching exercises (91 patients) or a self-care book (45 patients). Back-related functional status (modified Roland Disability Questionnaire, a 23-point scale) and bothersomeness of pain (an 11-point numerical scale) at 12 weeks were the primary outcomes. Outcomes were assessed at baseline, 6, 12, and 26 weeks by interviewers unaware of treatment group.

Results: After adjustment for baseline values, 12-week outcomes for the yoga group were superior to those for

the self-care group (mean difference for function, -2.5 [95% CI, -3.7 to -1.3]; $P < .001$; mean difference for symptoms, -1.1 [95% CI, -1.7 to -0.4]; $P < .001$). At 26 weeks, function for the yoga group remained superior (mean difference, -1.8 [95% CI, -3.1 to -0.5]; $P < .001$). Yoga was not superior to conventional stretching exercises at any time point.

Conclusion: Yoga classes were more effective than a self-care book, but not more effective than stretching classes, in improving function and reducing symptoms due to chronic low back pain, with benefits lasting at least several months.

Trial Registration: clinicaltrials.gov Identifier: NCT00447668

Arch Intern Med. 2011;171(22):2019-2026.

Published online October 24, 2011.

doi:10.1001/archinternmed.2011.524

Limitations of Published Research

- Narrow target populations
 - Almost always exclude complex patients
- Isolated interventions
- Short duration
- Outcomes measured



Guidelines and Evidence-based Summaries

Acknowledgements

- Vermont Academic Detailing Program
- Transforming the Treatment of Chronic Pain
 - US Dept of Veterans Affairs
 - https://www.va.gov/PAINMANAGEMENT/Opioid_Safety_Initiative_OSI.asp





Turn of the
20th Century

End
of the
20th Century

Present



Transforming the Treatment of Chronic Pain

Moving Beyond Opioids

VA



U.S. Department of Veterans Affairs
Veterans Health Administration
PBM Academic Detailing Service

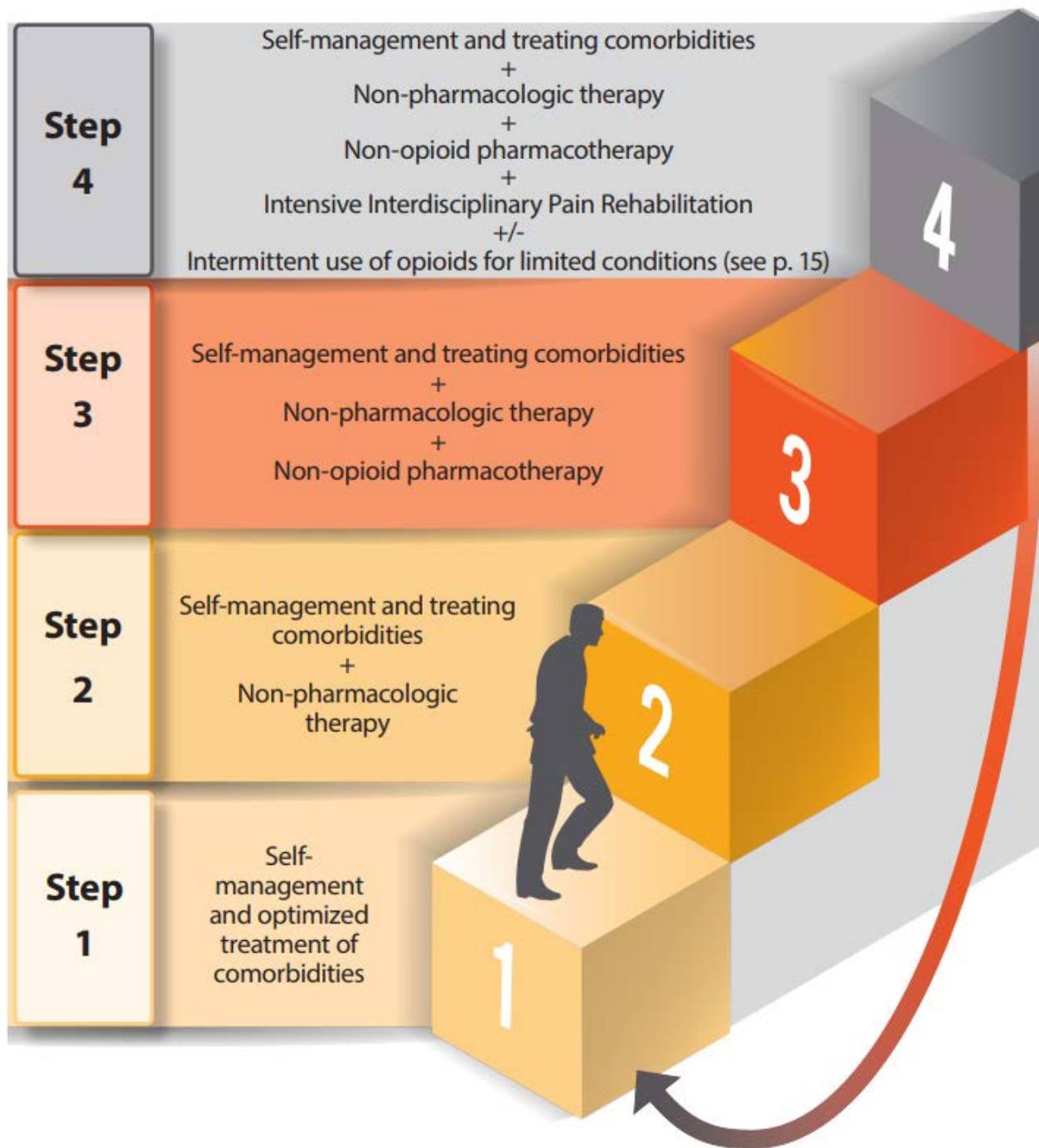


Figure 7. Non-pharmacologic Therapies⁷⁻²⁶





<p>Psychosocial Interventions</p> 	<p>Complementary and Integrative Health (CIH) Therapies</p> 	<p>Rehabilitation Therapies</p> 	<p>Exercise</p> 
<ul style="list-style-type: none">• Cognitive-Behavioral Therapy (CBT)• Acceptance and Commitment Therapy (ACT)• Progressive relaxation therapy• Mindfulness-based Therapies• Pain School• Behavior groups	<ul style="list-style-type: none">• Acupuncture• Massage• Chiropractic therapy• Ice and heat therapy• Meditation	<ul style="list-style-type: none">• Physical therapy• Occupational therapy	<ul style="list-style-type: none">• Stretching• Tai chi• Swimming• Hiking• Walking• Yoga• Chair exercises

Table 1. Evidence-Base for Managing Non-specific, Chronic Low Back Pain*

<u>Moderate</u> benefits for pain and/or functional outcomes	<u>Small</u> benefits for pain and/or functional outcomes*	<u>No benefit</u> for pain and/or functional outcomes	<u>No data</u> specific for <u>chronic</u> low back pain
<ul style="list-style-type: none"> • diflunisal^{3,4} • naproxen sodium^{3,4} • tramadol⁵⁻⁹ • acupuncture^{10,11} • cognitive behavioral therapy¹²⁻¹⁴ • exercise therapy^{15,16} • massage¹⁷ • spinal manipulation¹⁸ • yoga^{19,20} <p>*etoricoxib²¹, rofecoxib²², and valdecoxib²³ showed moderate benefits for pain but are not available in the US</p>	<ul style="list-style-type: none"> • duloxetine 60mg daily²⁴ (Dose used in trial) • opiates²⁵ 	<ul style="list-style-type: none"> • desipramine^{26,27} • imipramine^{27,28} • maprotiline^{27,29} • fluoxetine^{26,27} • paroxetine^{27,29,30} • trazodone^{27,31} • bupropion^{27,32} • glucosamine³³ • pregabalin³⁴ • traction¹ <p><u>Harmful</u></p> <ul style="list-style-type: none"> • firm mattress¹ 	<ul style="list-style-type: none"> • acetaminophen* • skeletal muscle relaxants¹ • systemic corticosteroids¹ • local injections³⁵ • botulinum toxin injections³⁵ • transcutaneous electrical nerve stimulation (TENS)¹

*Data from Randomized, Placebo-controlled trials of nonspecific, chronic low back pain

*Chou et al. suggest small benefits of acetaminophen, however the data for this recommendation was generalized from data that did not include patients with non-specific, chronic back pain¹

Definitions of Benefits³⁶

Large: Mean >20-point improvement on a 100-point visual analog scale (VAS) or equivalent (pain outcomes), >5 points on the Roland–Morris Disability Questionnaire (RMDQ) or equivalent (function outcomes) or standardized mean difference (SMD) >0.8 (all outcomes)

Moderate: Mean 10- to 20-point improvement on a 100-point VAS, 2-5 points on the RMDQ, or SMD 0.5-0.8

Small: Mean 5- to 10-point improvement on a 100-point VAS, 1-2 points on the RMDQ, or SMD 0.2-0.5

Table 2. Non-Pharmacologic Therapies for Chronic Low Back Pain

Intervention	Description	Pain Benefits	Function Benefits	Cost per session
Acupuncture	One trial showed pain significantly different from a wait-list control but not significantly different from sham acupuncture ¹¹	Moderate ^{10,11}	Moderate ¹⁰	\$65-\$75
Cognitive behavioral therapy	Data support CBT is beneficial in helping patients return to work ¹⁴	Moderate ¹²	Moderate ^{12,13}	\$60-\$100
Exercise therapy (physical therapy)	<p>"a series of specific movements with the aim of training or developing the body by a routine practice or as physical training to promote good physical health"⁴⁰</p> <p>Data are for healthcare settings that were individually designed and delivered (as opposed to independent home exercises). Exercise programs commonly included strengthening or trunk stabilizing exercises</p>	Moderate ¹⁵	Small ¹⁵	\$65-\$75
Massage	Study permitted commonly used therapies such as Swedish, deep-tissue, neuromuscular, and trigger and pressure point techniques but excluded energy techniques (e.g. Reiki, therapeutic touch) ¹⁷	Moderate ⁴¹	Moderate ^{17,42}	\$65-\$70

Table 2. Non-Pharmacologic Therapies for Chronic Low Back Pain

Intervention	Description	Pain Benefits	Function Benefits	Cost per session
Spinal Manipulation	Adjustment which may be performed by Chiropractors, Osteopathic physicians and others trained in this technique Data refer to both manipulation or mobilization (manipulation differs from mobilization in that it focuses on a different range of motion of the involved joint) ¹⁸	Moderate ¹⁸	Moderate ¹⁸	\$75
Yoga	Iyengar Yoga ²⁰ and Viniyoga ⁴³ have benefits “emphasis on precise structural alignment, the use of props, and sequencing of poses, and by the incorporation of all aspects of Astanga Yoga into the practice of postures and breath control” ²⁰ “Each class included breathing exercises, 5 to 11 postures (lasting approximately 45-50 minutes), and guided deep relaxation” ⁴³	Moderate ²⁰	Moderate ^{19,43}	\$10-\$12

Definitions of Benefits³⁶: **Moderate**: Mean 10- to 20-point improvement on a 100-point VAS, 2-5 points on the RMDQ, or SMD 0.5-0.8, **Small**: Mean 5- to 10-point improvement on a 100-point VAS, 1-2 points on the RMDQ, or SMD 0.2-0.5

Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians

Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Robert M. McLean, MD; and Mary Ann Forciea, MD; for the Clinical Guidelines Committee of the American College of Physicians*

Description: The American College of Physicians (ACP) developed this guideline to present the evidence and provide clinical recommendations on noninvasive treatment of low back pain.

Methods: Using the ACP grading system, the committee based these recommendations on a systematic review of randomized, controlled trials and systematic reviews published through April 2015 on noninvasive pharmacologic and nonpharmacologic treatments for low back pain. Updated searches were performed through November 2016. Clinical outcomes evaluated included reduction or elimination of low back pain, improvement in back-specific and overall function, improvement in health-related quality of life, reduction in work disability and return to work, global improvement, number of back pain episodes or time between episodes, patient satisfaction, and adverse effects.

Target Audience and Patient Population: The target audience for this guideline includes all clinicians, and the target patient population includes adults with acute, subacute, or chronic low back pain.

Recommendation 1: *Given that most patients with acute or subacute low back pain improve over time regardless of treatment, clinicians and patients should select nonpharmacologic treatment with superficial heat (moderate-quality evidence), massage, acupuncture, or spinal manipulation (low-quality evidence). If pharmacologic treatment is desired, clinicians and patients should select nonsteroidal anti-inflammatory drugs or skeletal*

muscle relaxants (moderate-quality evidence). (Grade: strong recommendation)

Recommendation 2: *For patients with chronic low back pain, clinicians and patients should initially select nonpharmacologic treatment with exercise, multidisciplinary rehabilitation, acupuncture, mindfulness-based stress reduction (moderate-quality evidence), tai chi, yoga, motor control exercise, progressive relaxation, electromyography biofeedback, low-level laser therapy, operant therapy, cognitive behavioral therapy, or spinal manipulation (low-quality evidence). (Grade: strong recommendation)*

Recommendation 3: *In patients with chronic low back pain who have had an inadequate response to nonpharmacologic therapy, clinicians and patients should consider pharmacologic treatment with nonsteroidal anti-inflammatory drugs as first-line therapy, or tramadol or duloxetine as second-line therapy. Clinicians should only consider opioids as an option in patients who have failed the aforementioned treatments and only if the potential benefits outweigh the risks for individual patients and after a discussion of known risks and realistic benefits with patients. (Grade: weak recommendation, moderate-quality evidence)*

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For author affiliations, see end of text.

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Annals.org

ACP Guideline Recommendations - 2017

- 1. Acute & subacute
 - Heat, massage, acupuncture, spinal manipulation
- 2. Chronic
 - Start with exercise, rehab, acupuncture, MBSR, Tai Chi, yoga, motor control exercise, progressive relaxation, EMG biofeedback, laser, operant therapy, CBT, or spinal manipulation
- 3. Non-responsive chronic
 - NSAIDS first-line
 - tramadol/duloxetine second line
 - Opioids only for failures and after weighing risks/benefits



Effective Health Care Program

Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review

Evidence Summary

Introduction

Chronic pain substantially impacts physical and mental functioning, productivity, quality of life, and family relationships; it is the leading cause of disability and is often refractory to treatment.^{1,2} Chronic pain is often defined as pain lasting 3 months or longer or persisting past the normal time for tissue healing, though definitions vary.^{1,3} Chronic pain affects millions of adults in the United States, with an annual cost in personal and health system expenditures conservatively estimated at \$560 billion to \$635 billion.¹ Chronic pain is multifaceted and is influenced by multiple factors (e.g., genetic, central nervous system, psychological, and environmental factors) and complex interactions, making pain assessment and management a challenge.

Many pharmacological and nonpharmacological treatments are available for management of chronic pain and include a variety of noninvasive as well as surgical and interventional procedures. The National Pain Strategy (NPS) report² and 2011 Institute of Medicine (IOM) report¹ describe the need for evidence-based strategies for the management of chronic pain that address the biopsychosocial nature of this problem, including nonpharmacological treatment. Recently, guidelines on opioid use for chronic pain by the Centers for Disease Control and Prevention (CDC)⁴ included

Purpose of Review

To assess which noninvasive nonpharmacological treatments for common chronic pain conditions improve function and pain for at least 1 month after treatment.

Key Messages


- Interventions that improved function and/or pain for at least 1 month when used for—
 - **Chronic low back pain:** Exercise, psychological therapies (primarily cognitive behavioral therapy [CBT]), spinal manipulation, low-level laser therapy, massage, mindfulness-based stress reduction, yoga, acupuncture, multidisciplinary rehabilitation (MDR).
 - **Chronic neck pain:** Exercise, low-level laser, Alexander Technique, acupuncture.
 - **Knee osteoarthritis:** Exercise, ultrasound.
 - **Hip osteoarthritis:** Exercise, manual therapies.
 - **Fibromyalgia:** Exercise, CBT, myofascial release massage, tai chi, qigong, acupuncture, MDR.
 - **Chronic tension headache:** Spinal manipulation.
- Most effects were small. Long-term evidence was sparse.
- There was no evidence suggesting serious harms from any of the interventions studied; data on harms were limited.



Categorization of treatments

- Exercise
 - Including PT
- Mind-body
 - Yoga, tai chi, quigong
- Psychologic
 - CBT, biofeedback, relaxation, acceptance and commitment therapy
- Multi-disciplinary programs
- Mindfulness
- Musculoskeletal manipulation
 - Chiropractic or osteopathic
- Physical modalities
 - Traction, ultrasound TENS, laser, heat/cold, magnets, etc.
- Acupuncture

Table A. Chronic low back pain: effects of nonpharmacological interventions compared with usual care, placebo, sham, attention control, or waitlist

Intervention	Function Short-Term	Function Intermediate-Term	Function Long-Term	Pain Short-Term	Pain Intermediate-Term	Pain Long-Term
	Effect Size SOE	Effect Size SOE	Effect Size SOE	Effect Size SOE	Effect Size SOE	Effect Size SOE
Exercise	slight +	none +	none +	slight ++	moderate +	moderate +
Psychological Therapies: CBT primarily	slight ++	slight ++	slight ++	slight ++	slight ++	slight ++
Physical Modalities: Ultrasound	insufficient evidence	no evidence	no evidence	none +	no evidence	no evidence
Physical Modalities: Low-Level Laser Therapy	slight +	none +	no evidence	moderate +	none +	no evidence
Manual Therapies: Spinal Manipulation	slight +	slight +	no evidence	none +	slight ++	no evidence
Manual Therapies: Massage	slight ++	none +	no evidence	slight ++	none +	no evidence
Manual Therapies: Traction	none +	no evidence	no evidence	none +	no evidence	no evidence
Mindfulness Practices: MBSR	none +	none +	none +	slight ++	slight +	none +
 Mind-Body Practices: Yoga	slight ++	slight +	no evidence	moderate +	moderate ++	no evidence
Acupuncture	slight +	none +	none +	slight ++	none +	slight +
Multidisciplinary Rehabilitation	slight +	slight +	none +	slight ++	slight ++	none +

AHRQ Key Messages-1

- **Chronic low back pain:** Exercise, psychological therapies (primarily CBT), spinal manipulation, low-level laser therapy, massage, MBSR, yoga, acupuncture, multidisciplinary rehabilitation
- **Chronic neck pain:** Exercise, low-level laser, Alexander Technique, acupuncture
- **Knee osteoarthritis:** Exercise, ultrasound
- **Hip osteoarthritis:** Exercise, manual therapies

AHRQ Key Messages-2

- **Fibromyalgia:** Exercise, CBT, myofascial release massage, tai chi, qigong, acupuncture, multidisciplinary rehab
- **Chronic tension headache:** Spinal manipulation

AHRQ Key Messages-3

- Most effects were small
- Long-term evidence was sparse
- There was no evidence suggesting serious harms from any of the interventions studied; data on harms were limited

Comprehensive Approaches

- UVMHC Pain Management
- DHMC Pain Management Center
- UVM Mind-Body program
 - CBT++

Comprehensive programs are relatively scarce



Extender Strategies

- 250 Veterans, 12 months
- Intervention:
 - Automated symptom monitoring
 - Medication advancement algorithm
- Outcome
 - Improved pain & “pain interference”

Original Investigation

Telecare Collaborative Management of Chronic Pain in Primary Care A Randomized Clinical Trial

Kurt Kroenke, MD; Erin E. Krebs, MD; Jingwei Wu, MS; Zhangsheng Yu, PhD; Neale R. Chumbler, PhD; Matthew J. Bair, MD

IMPORTANCE Chronic musculoskeletal pain is among the most prevalent, costly, and disabling medical disorders. However, few clinical trials have examined interventions to improve chronic pain in primary care.

OBJECTIVE To determine the effectiveness of a telecare intervention for chronic pain.

DESIGN, SETTING, AND PARTICIPANTS The Stepped Care to Optimize Pain Care Effectiveness (SCOPE) study was a randomized trial comparing a telephone-delivered collaborative care management intervention vs usual care in 250 patients with chronic (≥ 3 months) musculoskeletal pain of at least moderate intensity (Brief Pain Inventory [BPI] score ≥ 5). Patients were enrolled from 5 primary care clinics in a single Veterans Affairs medical center from June 2010 through May 2012, with 12-month follow-up completed by June 2013.

INTERVENTIONS Patients were randomized either to an intervention group ($n = 124$) or to a usual care group whose members received all pain care as usual from their primary care physicians ($n = 126$). The intervention group received 12 months of telecare management that coupled automated symptom monitoring with an algorithm-guided stepped care approach to optimizing analgesics.

MAIN OUTCOMES AND MEASURES Primary outcome was the BPI total score, which ranges from 0 (“no pain”) to 10 (“pain as bad as you can imagine”) and for which a 1-point change is considered clinically important. Secondary pain outcomes included BPI interference and severity, global pain improvement, treatment satisfaction, and use of opioids and other analgesics.

RESULTS Overall, mean (SD) baseline BPI scores in the intervention and control groups were 5.31 (1.81) and 5.12 (1.80), respectively. Compared with usual care, the intervention group had a 1.02-point lower (95% CI, -1.58 to -0.47) BPI score at 12 months (3.57 vs 4.59). Patients in the intervention group were nearly twice as likely to report at least a 30% improvement in their pain score by 12 months (51.7% vs 27.1%; relative risk, 1.9 [95% CI, 1.4 to 2.7]), with a number needed to treat of 4.1 (95% CI, 3.0 to 6.4) for a 30% improvement. Secondary pain outcomes also improved. Few patients in either group required opioid initiation or dose escalation.

CONCLUSIONS AND RELEVANCE Telecare collaborative management increased the proportion of primary care patients with improved chronic musculoskeletal pain. This was accomplished by optimizing nonopioid analgesic medications using a stepped care algorithm and monitoring.

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Author Video Interview at jama.com

Supplemental content at jama.com

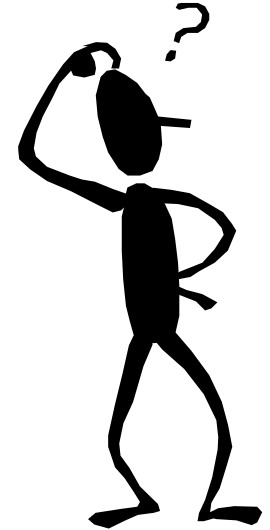
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Pragmatic Considerations

- Benefit versus harm
 - Relatively ineffective treatments may be very reasonable as long as potential for harm is low
- Combined modalities are not studied
 - Steno study analogy
- Kitchen sink risk
- To what degree do complex psychosocial co-morbidities contribute to chronic pain?



Discussion



- What do you have available in your practice?
 - Integrated behavioral health
 - Integrated complementary therapies
 - Easy access to effective specialty care
 - Other
- What approaches have you found to be successful?
- What would an ideal system look like for you?
 - Specialty-centric versus integrated system for chronic pain
 - Hub and Spoke system for chronic pain

