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Integrative Medicine & Health: A Multidimensional Approach to Pain Management.

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March 22, 2017

Financial Disclosure

I, N. Anton Borja,
DO NOT have a financial interest/arrangement or
affiliation with one or more organizations that could
be perceived as a real or apparent conflict of
interest in the context of the subject of this
presentation.



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Learning Objectives

- † Discuss the rationale for recommending Integrative medicine therapies in pain management.
- † Summarize the Mechanotransduction theory and the role fibroblasts play in Acupuncture treatment.
- † Examine the evidence behind 3 Integrative medicine therapies used to treat pain.
- † ***Breath & Smile!***



What's in a name?

❖ Conventional medicine:

- ❖ The kind of medicine most Americans still encounter in hospitals and clinics.
- ❖ Primarily uses synthetic drugs, and surgery to treat symptoms and diseases.

❖ Alternative medicine:

- ❖ Using a non-mainstream approach instead of conventional medicine (*NIH*).

What's in a name?

† Complementary medicine:

- † Using a non-mainstream approach **together** with conventional medicine (*NIH*).





Integrative Medicine & Health

- ❖ **Integrative medicine** is healing-oriented medicine that takes account of the whole person (mental, physical, spiritual, community, socio-economic status, etc.) including all aspects of lifestyle.
- ❖ Emphasizes the therapeutic relationship between practitioner and patient.
- ❖ Informed by evidence, and makes use of all appropriate therapies both conventional and complementary.

Integrative Medicine & Health

- ❖ Integrative medicine neither rejects conventional medicine nor accepts alternative therapies uncritically.
- ❖ Good medicine is based on good science; inquiry-driven and open to new (and old) modalities.
- ❖ Effective interventions that are natural, less invasive, and more cost-effective should be used whenever possible.
- ❖ Health promotion and the prevention of illness are paramount.



ACADEMIC CONSORTIUM
FOR **INTEGRATIVE**
MEDICINE & HEALTH

- ❖ +70 Academic medical centers and affiliate institutions
- ❖ Mission: ***Advance the principles and practices of Integrative healthcare within academic institutions***

- ❖ The Ohio State University
- ❖ University of Arizona
- ❖ University California Los Angeles
- ❖ University California San Francisco
- ❖ Stanford University
- ❖ Columbia University
- ❖ Harvard University
- ❖ Yale University
- ❖ George Washington University
- ❖ Boston University
- ❖ And more!

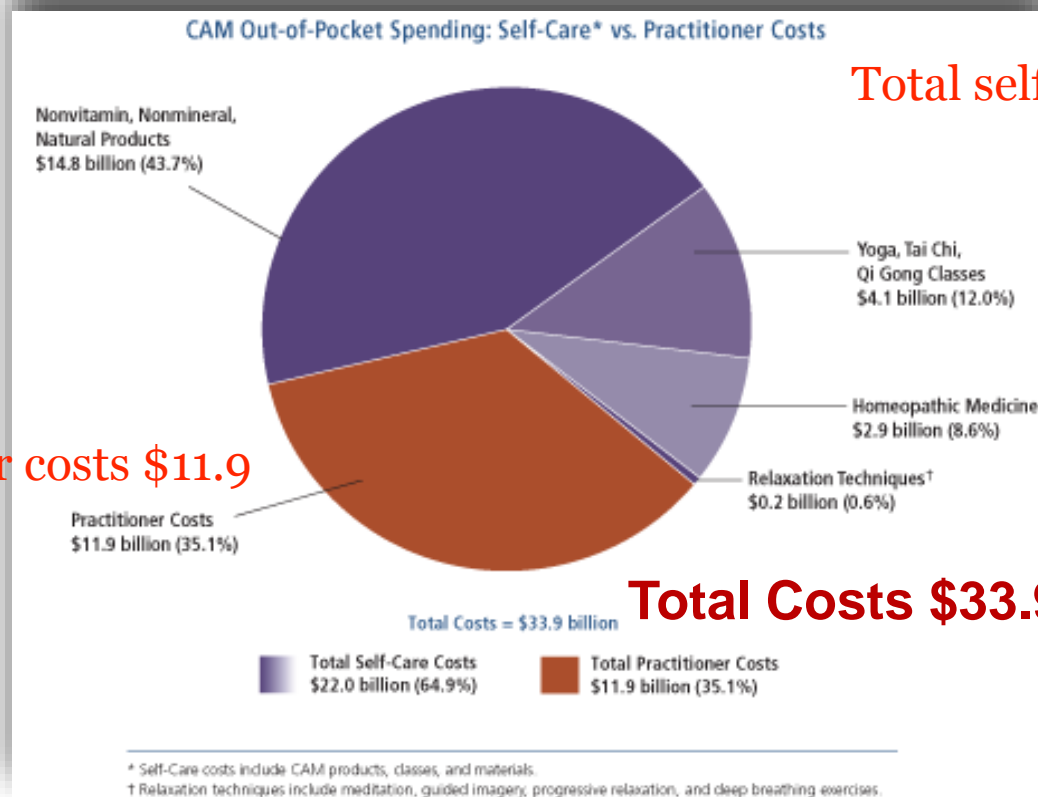
Integrative & Complementary Health in the U.S.

- ❖ Center for Disease Control, through the National Center for Health Statistics annually conducts the **National Health Interview Survey (NHIS)**.
- ❖ Major source of information on the health of Americans.
- ❖ Every 5 years, NHIS includes questions about complementary health approaches.
 - ❖ Data collected: 2002, 2007, 2012.

Integrative & Complementary Health in the U.S.

- ❖ Key Findings from 2012 NHIS:
- ❖ **33% of U.S. adults** used Integrative & complementary health approaches.
- ❖ **12% of U.S. children** used Integrative & complementary health approaches.
- ❖ **~\$34 Billion** spent out-of-pocket annually by consumers on these therapies and products.

National Health Expenditure Data 2007, U.S. Dept. Health & Human Services

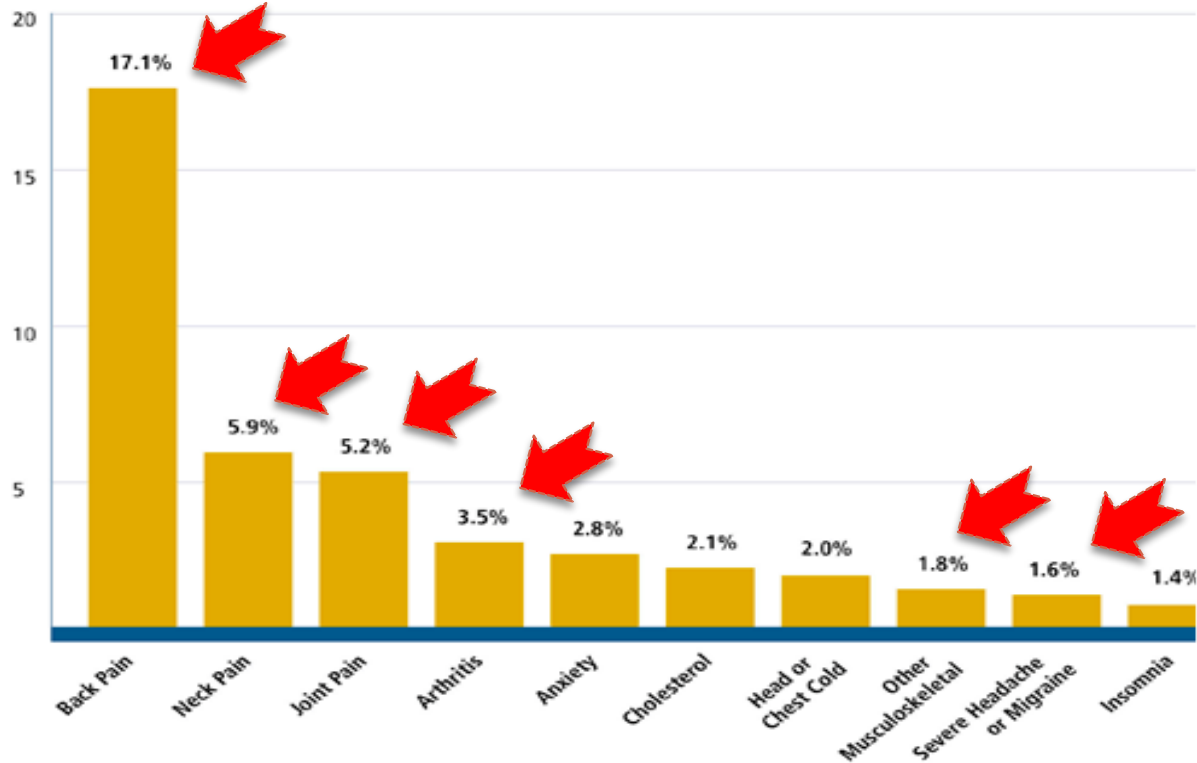


Total self care \$22 billion

Practitioner costs \$11.9 billion

Total Costs \$33.9 billion

Diseases/Conditions for Which CAM Is Most Frequently Used Among Adults - 2007



Source: Barnes PM, Bloom B, Nahin R. *CDC National Health Statistics Report #12. Complementary and Alternative Medicine Use Among Adults*

OSU Integrative Medicine

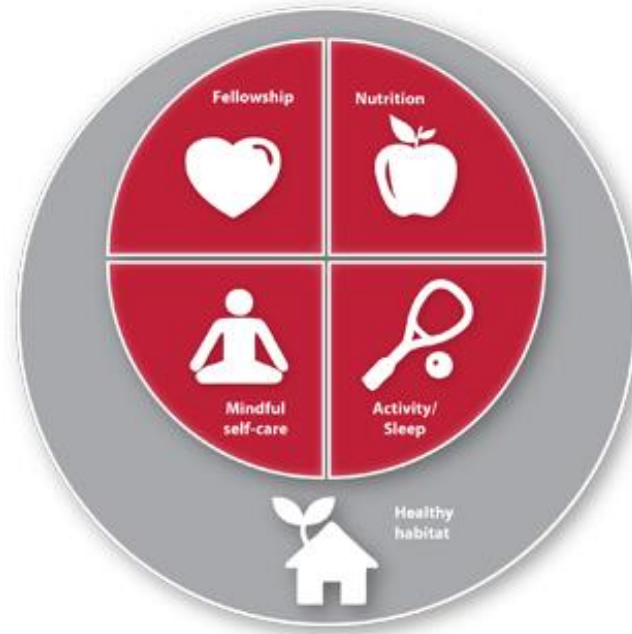


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Foundations of Integrative Therapy

Healthy Habits in a Health Habitat (H4)



OSU Integrative Medicine Modalities

- ❖ Acupuncture & Chinese Medicine
- ❖ Ayurveda
- ❖ Behavioral and mental health counseling
- ❖ Chiropractic
- ❖ Integrative medical evaluation
- ❖ Mind-Body therapies
- ❖ Nutrition counseling & dietary guidance
- ❖ Osteopathic Manual Treatments (OMT)
- ❖ Stress management
- ❖ Therapeutic massage
- ❖ Classes

OSU Integrative Medicine Hospital Consults

- ❖ Integrative Medicine consults available at The James and OSU Hospitals.
 - ❖ Physician or Nurse generated consults.
 - ❖ Monday – Friday.
- ❖ Inpatient Acupuncture, Osteopathic Manual Treatments (OMT) and Massage Therapy.
- ❖ Mind-Body practices online.
- ❖ Goal of treating symptoms and also improving clinical experience.
 - ❖ Treat pain, nausea, sleep difficulty, fatigue and other symptoms.
 - ❖ Reduce stress, depression & anxiety.
- ❖ ***To provide a temporary moment of relief, from anything distressing or trying - respite.***

Multidimensional Approach to Treatment of Pain.



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Integrative Medicine & Health in Pain Management

- ❖ Chronic pain is associated with impairment of function and quality of life.
- ❖ 25.3 million American adults (11.2%) experience daily chronic pain. (NHIS, 2012)
- ❖ ~40 million American adults (17.6%) experience severe levels of pain. (NHIS, 2012)
- ❖ Current management using pharmacotherapy, and physical therapy are frequently inadequate to manage pain.
- ❖ Or pain management = narcotics = can of worms!

Integrative Medicine & Health in Pain Management

- ❖ Large body of evidence on the benefits of Integrative medicine for treatment of pain.
- ❖ 1/3 of American adults use Integrative treatments.
- ❖ Majority of these adults use these modalities to treat pain conditions.

American College of Physicians 2017 Practice Guideline for Treating Low Back Pain

- ❖ **Recommendation 1**: Given that most patients with acute or subacute LBP improve over time, clinicians & patients should should select nonpharmacologic treatment with ***superficial heat, massage, acupuncture or spinal manipulation.***

American College of Physicians 2017 Practice Guideline for Treating Low Back Pain

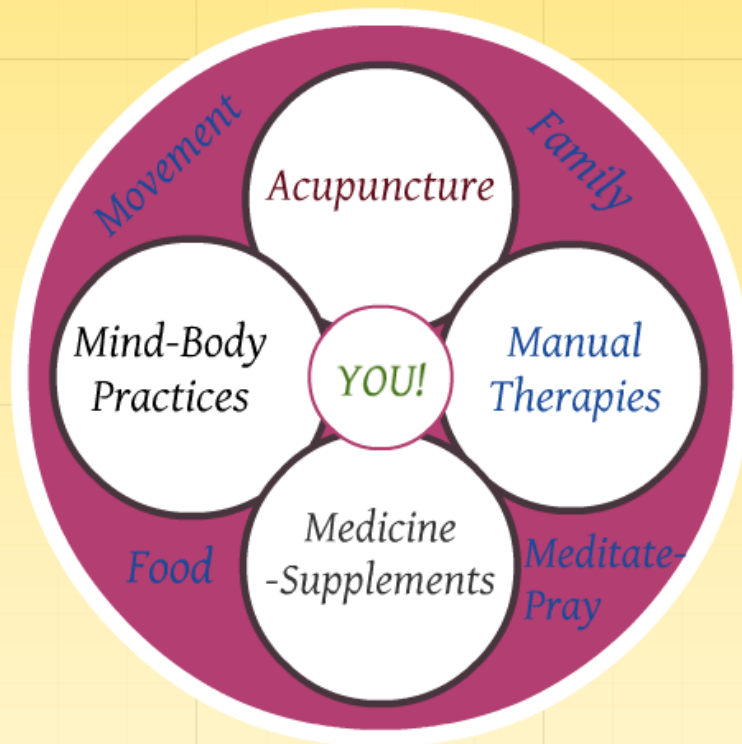
❖ **Recommendation 2:** With chronic LBP, clinicians & patients should initially select nonpharmacologic treatment with ***multidisciplinary rehabilitation, acupuncture, mindfulness based stress reduction, tai qi, yoga, motor control exercise, progressive relaxation, electromyography, biofeedback, low-level laser therapy, behavioral therapy, or spinal manipulation.***

❖ **Recommendation 3:** In chronic LBP with inadequate response...consider NSAIDs as first line, or tramadol or duloxetine as second-line therapy.

American College of Physicians 2017 Practice Guideline for Treating Low Back Pain

- ❖ Clinicians should avoid prescribing costly therapies; those with substantial potential harms, **such as long-term opioids.**
 - ❖ Qaseem A., et al. *Noninvasive Treatments for Acute, Subacute and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. Ann Intern Med [Epub ahead of print 14 February 2017] doi:10.7326/M16-2367.*

OSU Integrative Medicine Multidimensional Pain Treatment



Passive vs. Active treatments

- ❖ Passive Treatment: A patient passively receives a treatment.
 - ❖ Almost everything we do is a passive treatment.
- ❖ Active Treatment: A patient must invest their own time, mindset and commitment to treatment:
 - ❖ Diet changes, exercise, meditation practice, involvement.
Aka: Self efficacy!



VS



Ethical Framework for Therapies

		EFFECTIVE	
		YES	NO
SAFE	YES	Use/Recommend (2+ L.RCTs)	Tolerate
	NO	Monitor Closely	Advise Against

Cohen M. and Kemper K. *Pediatrics*, 2005

Acupuncture



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History of Acupuncture

- ❖ Huang Di Nei Jing - *Yellow Emperor's Classic of Internal Medicine*.
 - ❖ Written approximately 400 BCE.
- ❖ Earliest written evidence of Acupuncture.
- ❖ Attributed to Shen Nong, the father of Chinese Medicine.

History of Acupuncture

- ❖ Earliest archaeological evidence of Acupuncture are *Bian* stone needles.
 - ❖ Approximately 4000 years old.
- ❖ One of the earliest written descriptions of *Bian* stone needles are in the book: '*Commentary on the Spring and Autumn Annals*', 550 BCE.

Bian Stone Needles



History of Acupuncture in the West

- ❖ Girolamo Cardano (1508-1576) first European to write about Chinese needle therapy.
- ❖ 1800s: Interest in Acupuncture in the U.S. and Europe.
 - ❖ ‘Lumbago treated by Acupuncturation’ in the British medical journal, Lancet, May 6, 1837.
- ❖ Continued interest in Europe, but U.S. medical community lost interest.

History of Acupuncture in the U.S.

Sir William Osler

- ❖ "Father of modern medicine".
- ❖ One of four founders of Johns Hopkins Hospital.
- ❖ Physician & Acupuncturist.



Sir William Osler

"In acute cases, [Acupuncture] is the most efficient treatment [for sciatica and lumbago].... I can corroborate fully... as to its extraordinary and prompt efficacy in many instances."

The principles and practice of medicine : designed for the use of practitioners and students of medicine, 1892.

History of Acupuncture in the U.S.

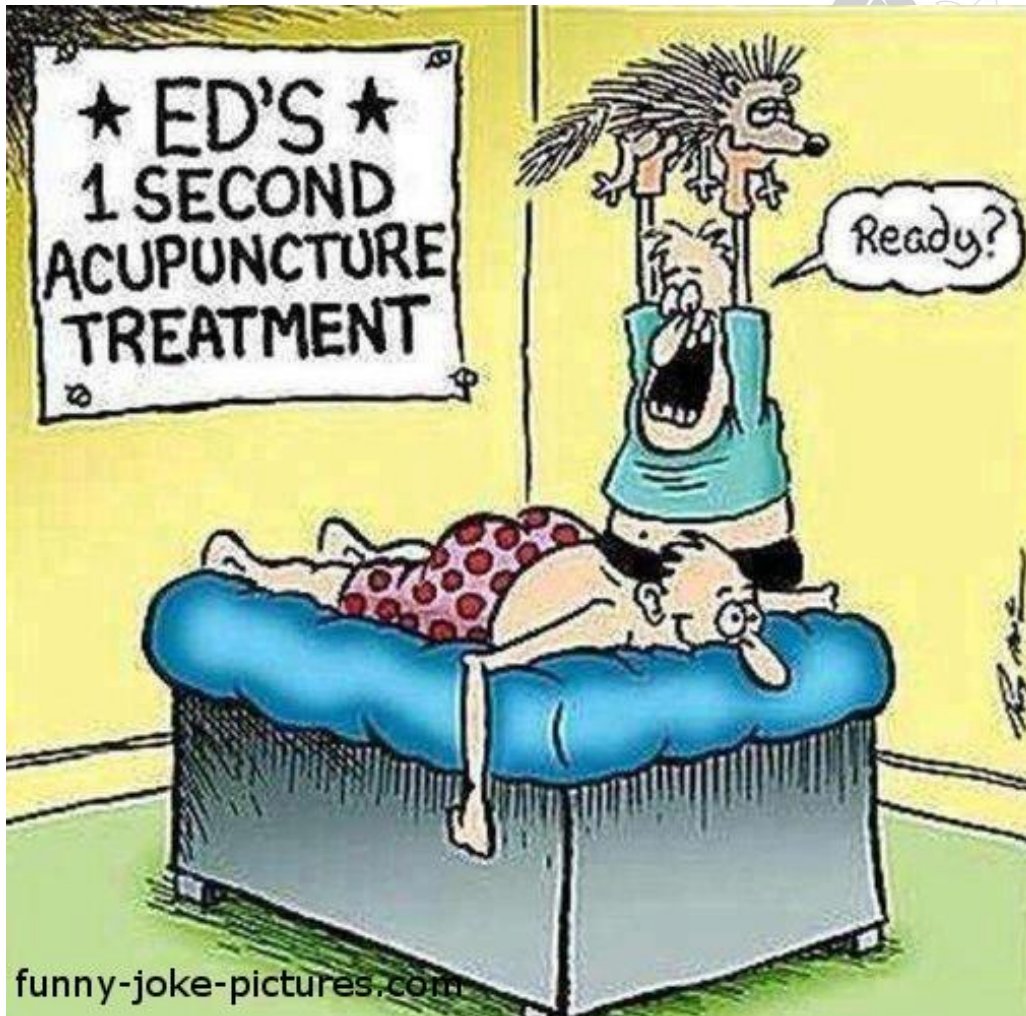
- ❖ In 1971, James Reston, a NY Times reporter, accompanied Henry Kissinger to China and developed acute appendicitis.
- ❖ Reston got an operation AND Acupuncture during his hospital stay.
- ❖ Wrote an article introducing many Americans to Acupuncture.

The Science of Acupuncture



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funny-joke-pictures.com

The Physiology of Acupuncture

- ❖ **Endorphin theory:** Releases endorphins for pain control.
- ❖ **Gate Control theory:** Increases impulses from A Beta nerve fibers block pain signals from A Delta (acute intense pain) & C (chronic throbbing pain) nerve fibers.
- ❖ **Circulation theory:** Increases constriction and/or dilation of local blood vessels.

The Physiology of Acupuncture

- ❖ **Effect of Acupuncture on neurovascular bundles.**
- ❖ **Mechanotransduction of fibroblasts with Acupuncture.**
- ❖ **Segmental anatomic response to Acupuncture.**
- ❖ **Neuromodulation effect of Acupuncture.**

What is De Qi?

- ❖ Patients receiving acupuncture experience a multi-sensation experience described as numbness, soreness, distention, heaviness, dull pain.
 - ❖ “A tooth ache” at the needling site.
- ❖ Symptomatic indicator of the acupuncture “working”.
 - ❖ Triggering neurological and other physiological responses within the body.

Effect of Acupuncture on Neurovascular Bundles



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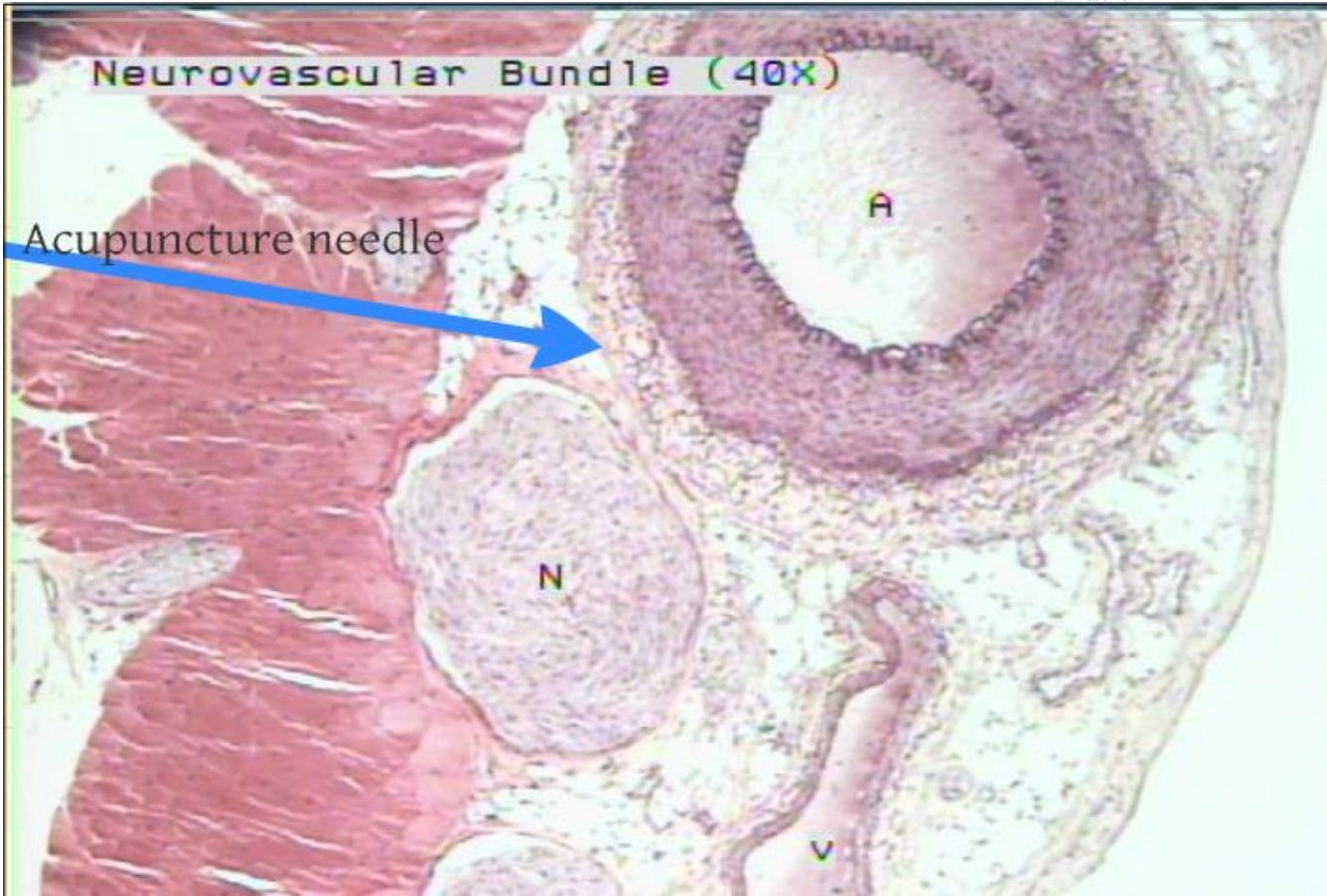
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Neurovascular bundle

- ❖ Grouping of nerve and blood vessels.
- ❖ Often the nerves are responsible for dilation of blood vessels.
- ❖ A term applied to the body nerves, arteries, veins and lymphatics that tend to travel together in the body.

Effect of acupuncture on neurovascular bundles

- ❖ Acupuncture activates thin nerve fibers which release vasoactive neuropeptides and nitric oxide from their peripheral terminals.
- ❖ Activation leads to vasodilatation and increased blood flow.
 - ❖ *Hsiao, Sheng-Hsiung et al. A Neurovascular Transmission Model for Acupuncture-induced Nitric Oxide. Journal of Acupuncture and Meridian Studies , Volume 1 , Issue 1 , 42 - 50. Sept. 2008.*



Mechanotransduction of Fibroblasts with Acupuncture

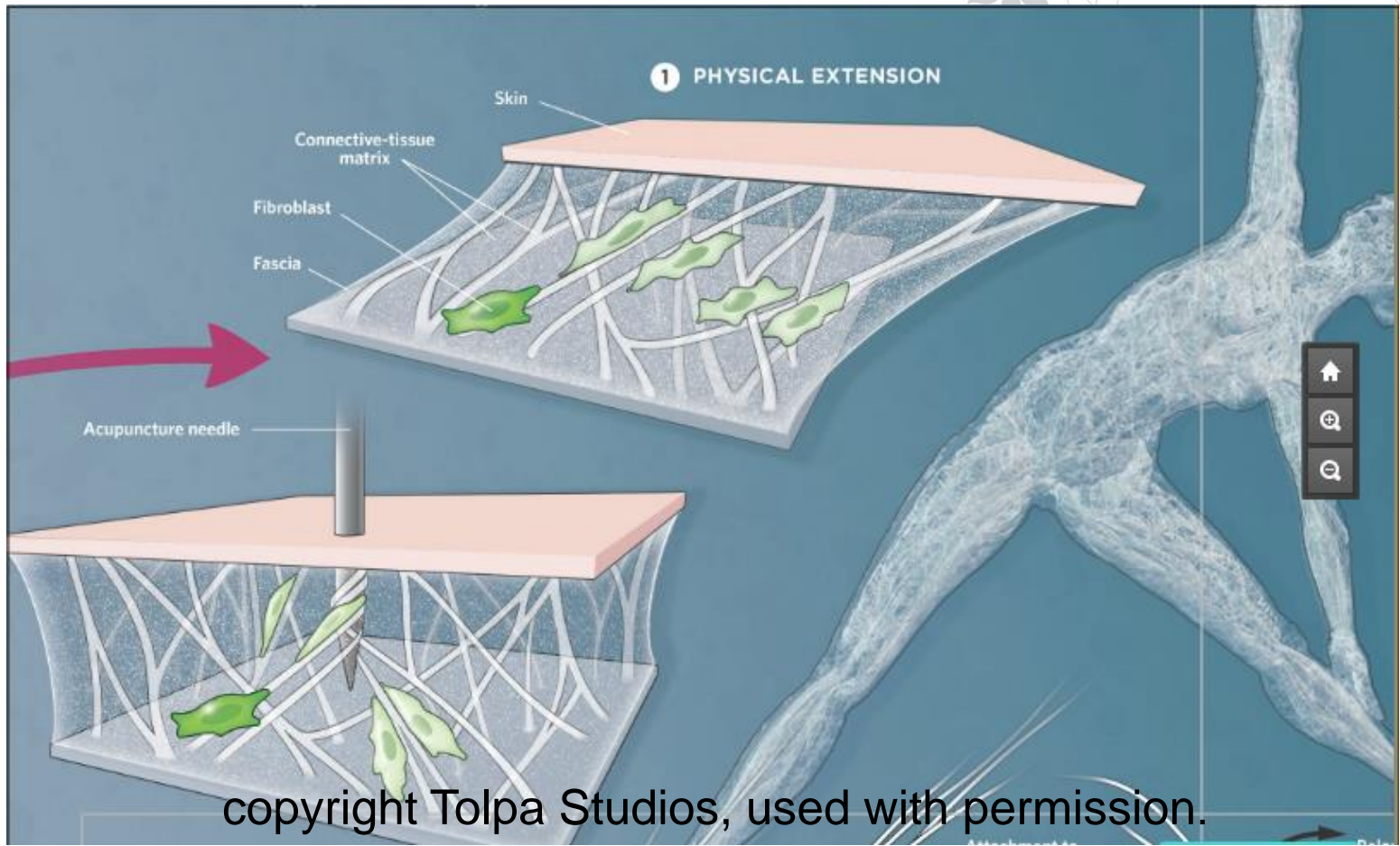


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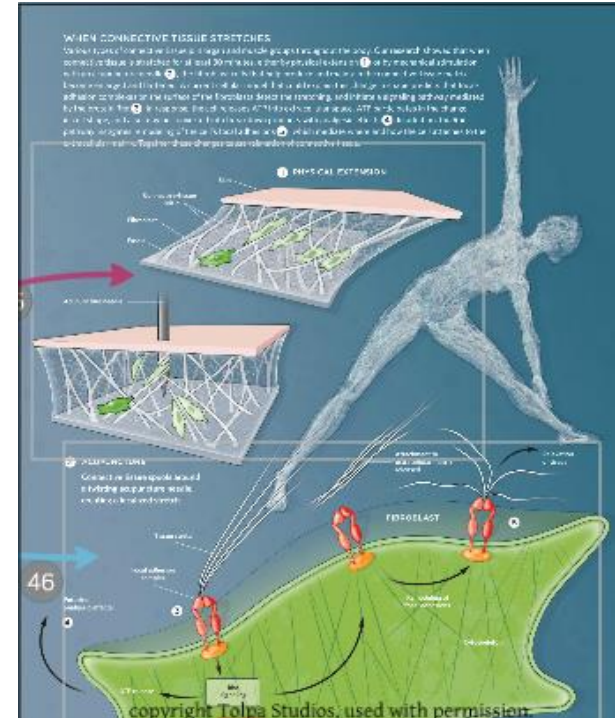
Mechanotransduction of Fibroblasts with Acupuncture

- ❖ Fibroblasts play a major role in the response to acute injury.
- ❖ Chronic inflammation causes fibroblasts to increase deposition of collagen.
 - ❖ > collagen >tissue tension >contractures that restrict range of motion>pain.
- ❖ Acupuncture, yoga and manual therapy causes elongation of fibroblasts.



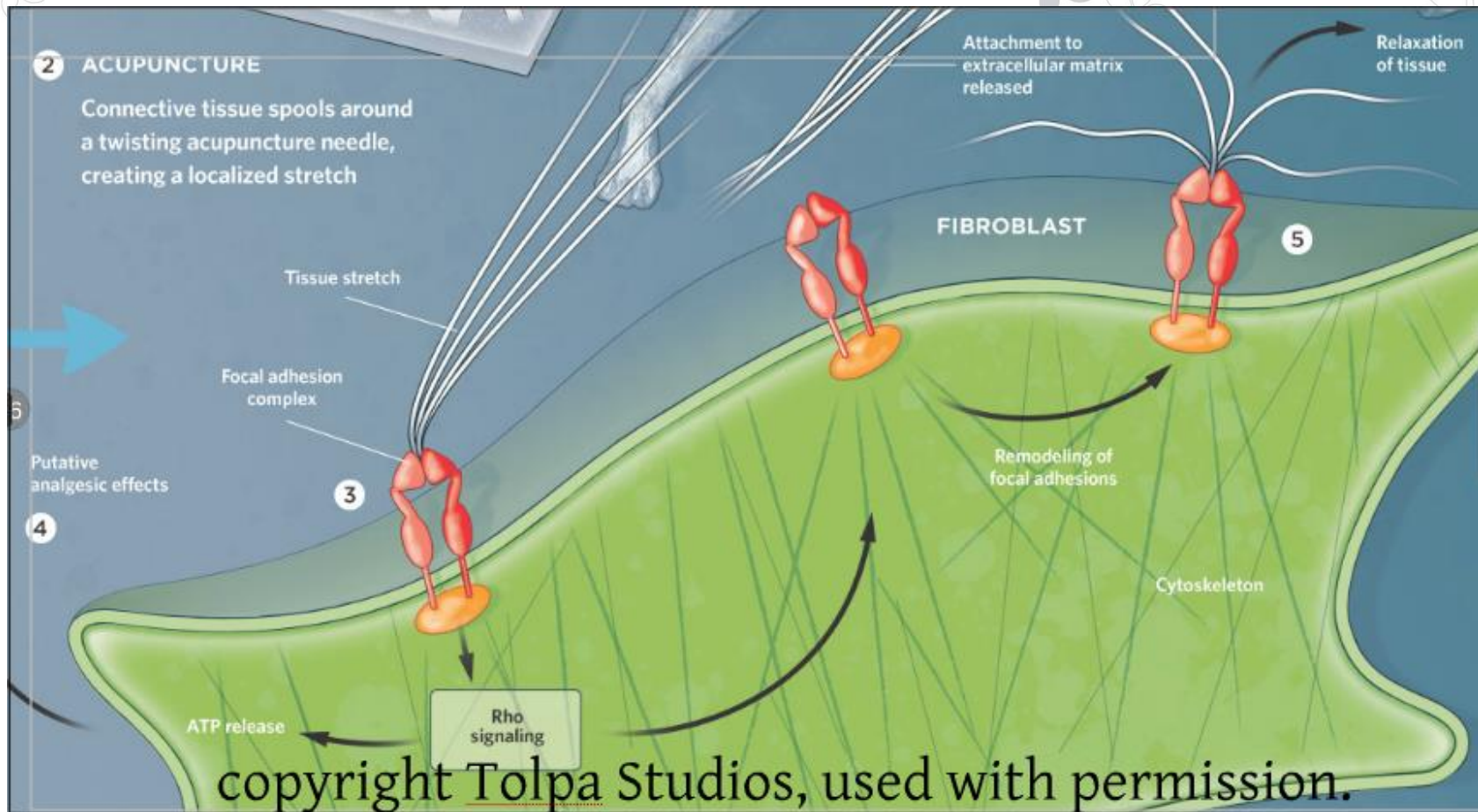
Mechanotransduction of fibroblasts with acupuncture

- ❖ Stimulation of protein Rho pathway signals ATP release.
- ❖ ATP changes cell shape causing relaxation of connective tissue. Breakdown ATP products also may have analgesic effects.
- ❖ *Langevin, Helene M. The Science of Stretch. The Scientist. May 1, 2013.*



2 ACUPUNCTURE

Connective tissue spools around a twisting acupuncture needle, creating a localized stretch



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Segmental Anatomic Response to Acupuncture



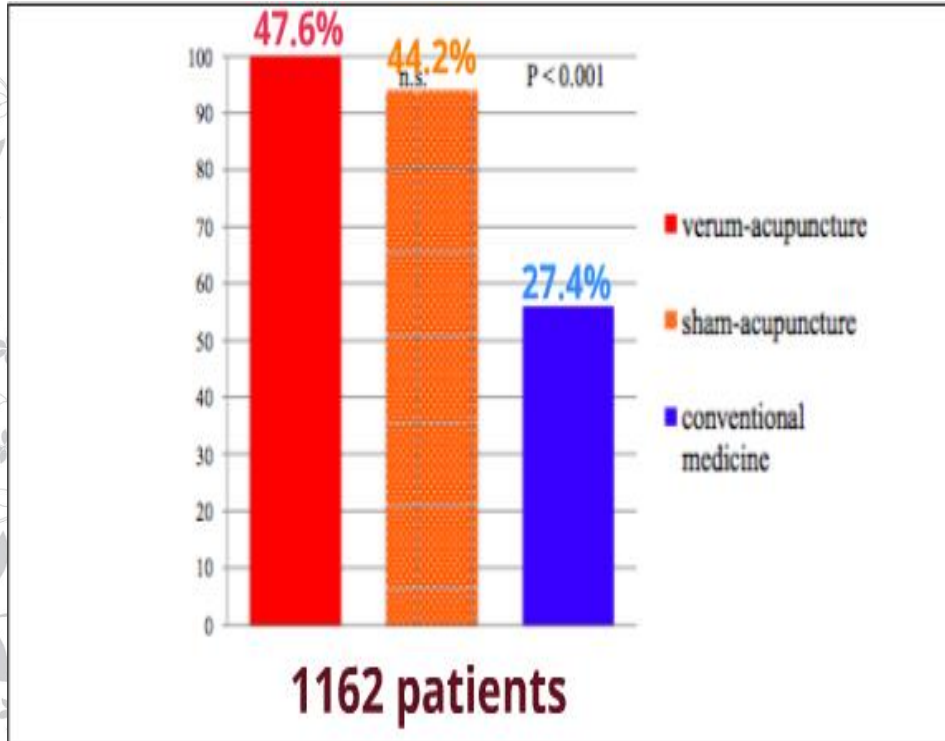
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GERAC

- ❖ German Acupuncture Studies on Chronic Low Back pain (GERAC) 2007.
- ❖ Double-blinded randomized trial of 1162 patients with chronic low back pain.
- ❖ Verum (true) acupuncture vs. Sham acupuncture vs. conventional care (drugs, Physical Therapy, exercise).
- ❖ Primary outcome: Response at 6 mos. defined as 33% improvement or better on 3 pain-related items on the Von Korff Chronic Pain Grade Scale.

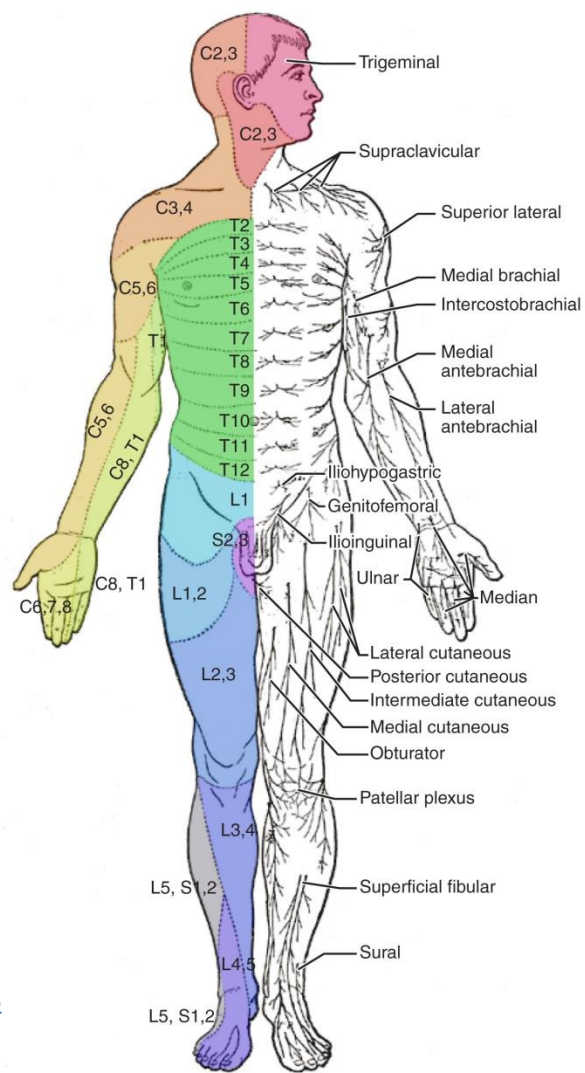
GERAC Results



- ❖ Response rate: 47.6% verum group, 44.2% sham group, and 27.4% conventional group.
- ❖ Effectiveness of acupuncture, either verum or sham, was almost twice that of conventional therapy.
- ❖ 3.4% difference between verum and sham.
- ❖ Why?

Segmental Anatomic Response to Acupuncture

- ❖ Dermatome: area of skin innervated by a single spinal nerve.
- ❖ Myotome: muscles that a single spinal nerve innervates
- ❖ Segmental anatomy include:
 - ❖ Spinal nerve
 - ❖ Sympathetic/parasympathetic nerves
 - ❖ Viscerotome & Sclerotome & Myotome & Dermatome
- ❖ Spinal nerves relay sensation (ie. pain) from a region of skin and muscle to the brain.



Source: [Courtesy of Wikimedia Commons](#)

Segmental Anatomic Response to Acupuncture

- ❖ Acupuncture usually hits one dermatome and one or more myotomes.
- ❖ This initiates a process of autoregulation.

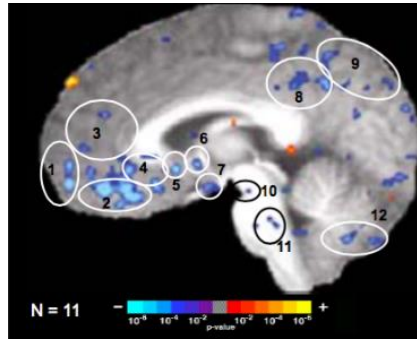
Segmental Anatomic Response to Acupuncture

- ❖ An acupuncture needle penetrating the skin will stimulate the segmental anatomic response.
- ❖ Creates a neurological response which can improve symptoms, such as decreasing pain.

Is there 'real' Acupuncture?

- ❖ There is no placebo in acupuncture other than a deactivated laser in some distance to the skin.
- ❖ Any kind of acupuncture that touches the skin has a certain effect.
 - ❖ *Lund I, Lundeberg T. Are minimal, superficial or sham acupuncture procedures acceptable as inert placebo controls? Acupuncture in Medicine. 2006;24(1):13-5.*

Neuromodulation effect of Acupuncture



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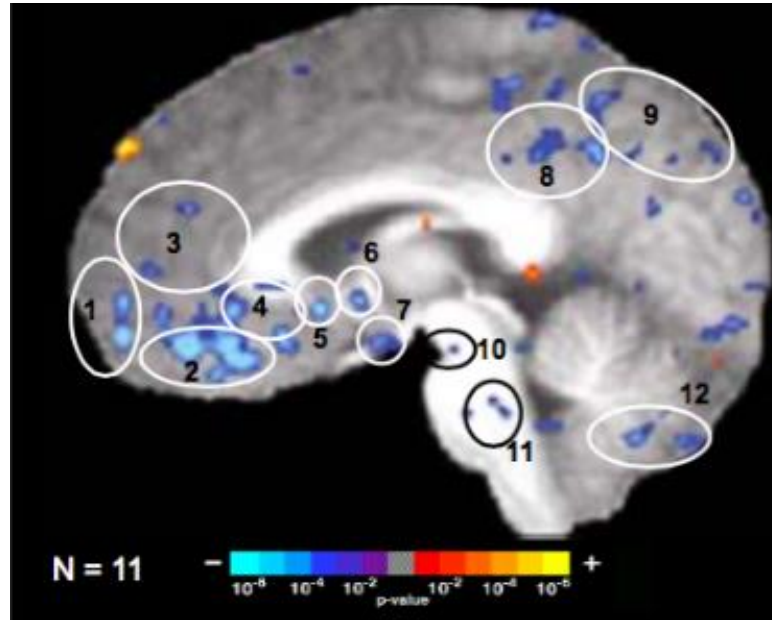
Neural Mechanisms of Acupuncture as revealed by fMRI

- ❖ Acupuncture evokes brain activation in sensorimotor areas & deactivation in limbic-paralimbic network.
- ❖ Modulates connectivity in several areas of the brain associated with emotions, memory, sensory processing, pain-blocking, autonomic response and affective brain regions.

Neuromodulation effect of Acupuncture

- ❖ **Acupuncture may achieve differential brain modulations & bear the corresponding therapeutic effects through dynamic reconfiguration of the neural networks.**
- ❖ *Qin, et al. fMRI Connectivity analysis of Acupuncture effects on an amygdala-associated brain network. Mol. Pain. 2008.*

Ctrl+Alt+Del





The Research Behind Acupuncture



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Acupuncture: World Health Organization

- ❖ Conditions for which acupuncture has been proved through controlled trials to be an effective treatment:
 - ❖ *+Adverse reactions to radiotherapy and/or chemotherapy +Allergic rhinitis + Biliary colic +Depression +Dysentery, acute bacillary +Dysmenorrhea +Acute epigastric pain(peptic ulcer, acute and chronic gastritis) +Facial pain +Headache +Hypertension +Essential Hypotension +Primary Induction of labor +Knee pain +Leukopenia.*

Acupuncture: World Health Organization

- ❖ *+Low back pain +Malposition of fetus +Morning sickness +Nausea and vomiting +Neck pain +Pain in dentistry (dental pain and temporomandibular dysfunction) +Arthritis of shoulder +Postoperative pain +Renal colic +Rheumatoid arthritis +Sciatica +Sprain +Tennis elbow.*

Acupuncture: World Health Organization

❖ Conditions which the therapeutic effect of acupuncture has been shown but further evidence is needed.

❖ **>70 conditions**

❖ Conditions for which there are only individual controlled trials reporting some therapeutic effects, but for which acupuncture is worth trying because treatment by conventional and other therapies is difficult.

❖ **>10 conditions**

Acupuncture: Cochrane Summaries

- ❖ **Migraines:** Acupuncture is at least as effective as, or possibly more effective than, prophylactic drug treatment, and has fewer adverse effects.
 - ❖ Linde K, et al. Acupuncture for migraine prophylaxis. 2009.
- ❖ **Osteoarthritis:** Trials of Acupuncture for peripheral joint osteoarthritis suggest statistically significant and clinically relevant benefits.
 - ❖ Manheimer E, et al. Acupuncture for peripheral joint osteoarthritis. 2010.

Acupuncture: Cochrane Summaries

- ❖ **Tension Headaches:** Acupuncture could be a valuable non-pharmacological tool in patients with frequent episodic or chronic tension-type headaches.
 - ❖ Linde K, et al. Acupuncture for tension-type headache. 2009.
- ❖ **Neck pain:** Moderate evidence that those who received acupuncture reported less pain at short term follow-up than those on a waiting list.
 - ❖ Trinh K, et al. Acupuncture for neck disorders. 2006.

Acupuncture Trialists' Collaboration: Meta-analysis, 2012.

- ❖ Acupuncture Trialists' Collaboration, meta-analysis of 17,922 patients.
- ❖ Investigated use of Acupuncture for back and neck pain, osteoarthritis, shoulder pain, or chronic headache.
- ❖ Statistically significant differences between acupuncture versus a no-acupuncture controls.

Acupuncture Trialists' Collaboration: Meta-analysis, 2012.

❖ **“Provides the most robust evidence to date that acupuncture is more than just placebo and a reasonable referral option for patients with chronic pain.”**

❖ *Vickers AJ, Cronin AM, Maschino AC, et al. Acupuncture for chronic pain: individual patient data meta-analysis. Archives of Internal Medicine. September 10, 2012.*

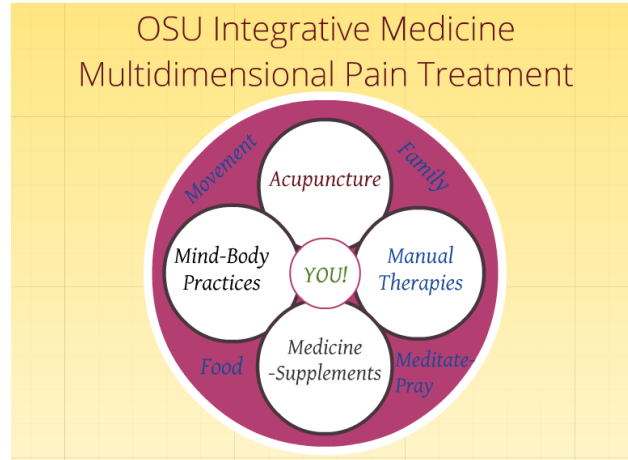
Acupuncture versus Morphine in ED, 2016.

- ❖ 300 patients in an Emergency Department
- ❖ Primary outcome: measure the degree of pain relief (>50% pain reduction from baseline) in 60 minutes.
 - ❖ Acupuncture treatment based on predetermined protocols.
 - ❖ 0.1 mg/kg morphine starting dose, and titrated 0.005 mg/kg q 5 minutes until outcome reached. 15 mg morphine max.

Acupuncture versus Morphine in ED, 2016.

- ❖ 92% success rate in acupuncture group versus 78% morphine group.
- ❖ Resolution time:
 - ❖ Acupuncture (16+/- 8 mins) vs Morphine (28 +/- 14 mins).
- ❖ Adverse effects:
 - ❖ Acupuncture (4 pts) vs Morphine (85 pts- dizziness).
- ❖ ***Grissa, MH, et al. Acupuncture vs intravenous morphine in the management of acute pain in the ED. Am J of Emerg Medicine. <http://dx.doi.org/10.1016/j.ajem.2016.07.028>.***

Manual Therapies



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Manual Therapies

- ❖ Osteopathic Manual Treatments (OMT)
- ❖ Chiropractic Manipulation
- ❖ Massage Therapy
- ❖ Traditional Asian Medicine: Tuina, Acupressure
- ❖ Therapeutic Touch/Reiki
- ❖ Reflexology

The Importance of Touch on Development

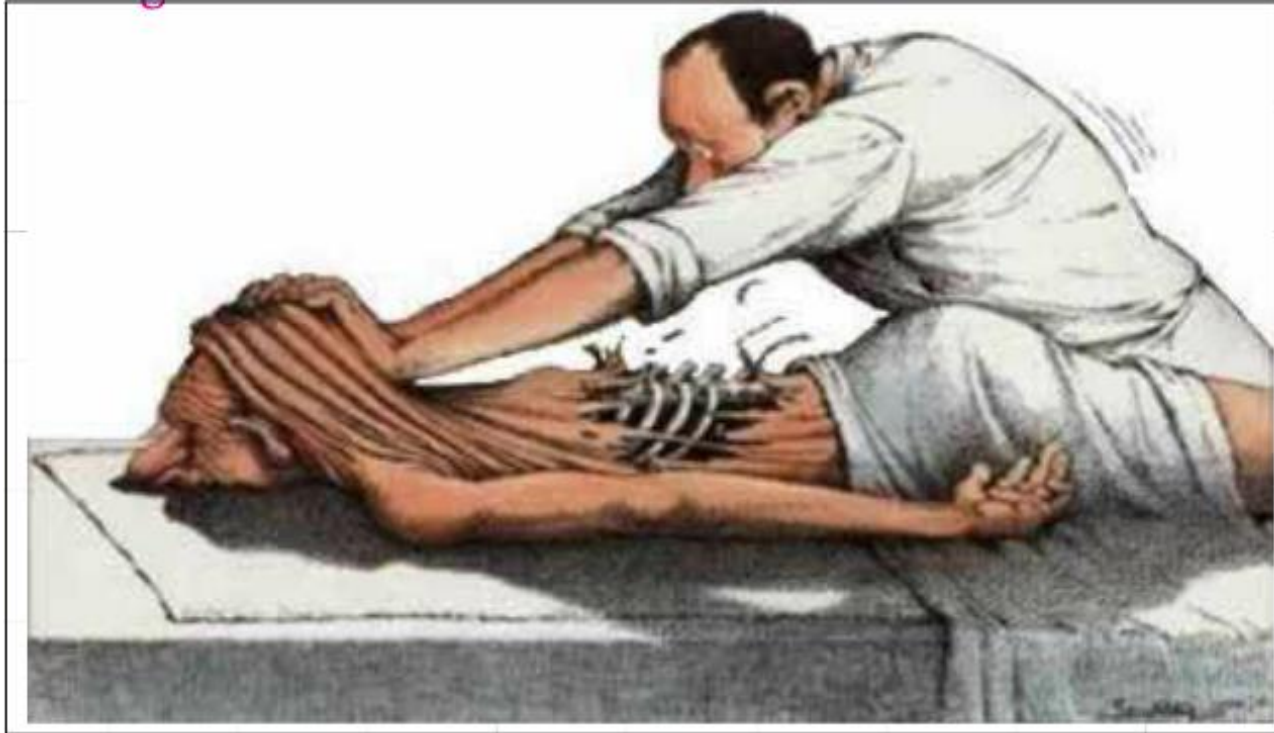
- ❖ Touch is an important modality for growth and development.
- ❖ Positive effects of mechanosensory stimulation have been demonstrated in a wide range of organisms: worm larvae, rat pups, and human infants.
- ❖ Developmental delay is often seen in children receiving inadequate or inappropriate sensory stimulation.

❖ *Ardiel EL, Rankin CH. The importance of touch in development. Paediatrics & Child Health. 2010;15(3):153-156.*

Manual Therapies: Cochrane Summaries

- ❖ Spinal Manipulative Therapy (SMT) for chronic low-back pain: as effective as other therapies for chronic back pain, such as, standard care, PT, exercise therapy. *Rubenstein, et al. 16 February 2011.*
- ❖ Combined Chiropractic interventions for low-back pain: slightly improved pain & disability in short term, & pain in medium term for acute and subacute LBP. *Walker BF, et al. 14 April 2010.*
- ❖ Massage for low-back pain: better than inactive controls for pain and function in the short term. *Furlan AD, et al. 2 September 2015.*

Not good manual therapy.



Mind Body Practices



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Mind Body Practices

- ❖ Mind body practices focus on the interactions among the brain, mind, body and behavior. (*NIH*)
- ❖ Types of Mind Body Practices:
 - ❖ Biofeedback
 - ❖ Cognitive Behavioral Therapy
 - ❖ Creative or expressive arts therapies
 - ❖ Guided imagery
 - ❖ Meditation
 - ❖ Mindfulness
 - ❖ Prayer
 - ❖ Many more..

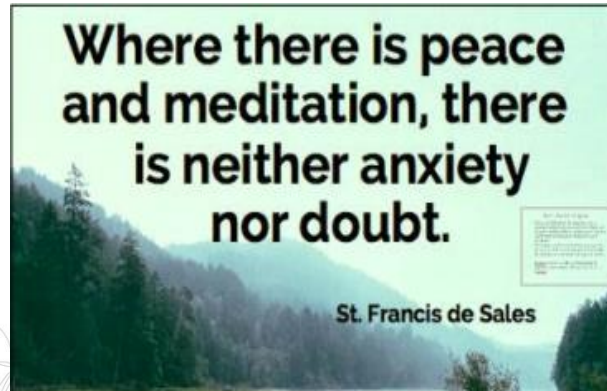
Association of Depression & Anxiety with Pain: Netherlands Study

- ❖ Patients with depression &/or anxiety with more severe symptoms have more disabling pain than persons without a depressive or anxiety disorder
 - ❖ *De Heer EW, Gerrits MMJG, Beekman ATF, et al. The Association of Depression and Anxiety with Pain: A Study from NESDA. Sun HS, ed. PLoS ONE. 2014;9(10):e106907. doi:10.1371/journal.pone.0106907.*

Mindfulness Based Stress Reduction & Cognitive Therapy

❖ Studies indicate that Mindfulness Based Stress Reduction (MBSR) and Mindfulness Based Cognitive Therapy (MBCT) have broad-spectrum antidepressant and anti-anxiety effects and decrease general psychological distress.

❖ *J Psychiatr Pract.* 2012 Jul;18(4):233-52. doi: 10.1097/01.pra.0000416014.53215.86.



Mind Body Practices: Cochrane Summaries

- ❖ Behavioral treatment for Chronic low back pain: There is moderate evidence that in the short term patients with chronic LBP can benefit from the following therapies:
 - ❖ Operant -acknowledge external factors associated with pain can reinforce it.
 - ❖ Cognitive - dealing with thoughts, feelings, beliefs, or a combo of the three, that trigger the pain.
 - ❖ Respondent -interrupts muscle tension with progressive relaxation techniques or biofeedback.
- ❖ *Henschke N. et al. 7 July 2010.*

Multidimensional Treatment



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Multidimensional Treatment

Integrative Health

- 30 min focused attention meditation *AND*
- 30 min mod-intensity aerobic exercise



Mental and Physical Training (MAP)



- 22 patients with MDD.
- 30 patients non-depressed.
- 40% reduction in depression sxs in patients with MDD.
- Non-depressed pts felt happier!

Translational Psychiatry (2016) 6, e726; doi:10.1038/tp.2015.225
Published online 2 February 2016



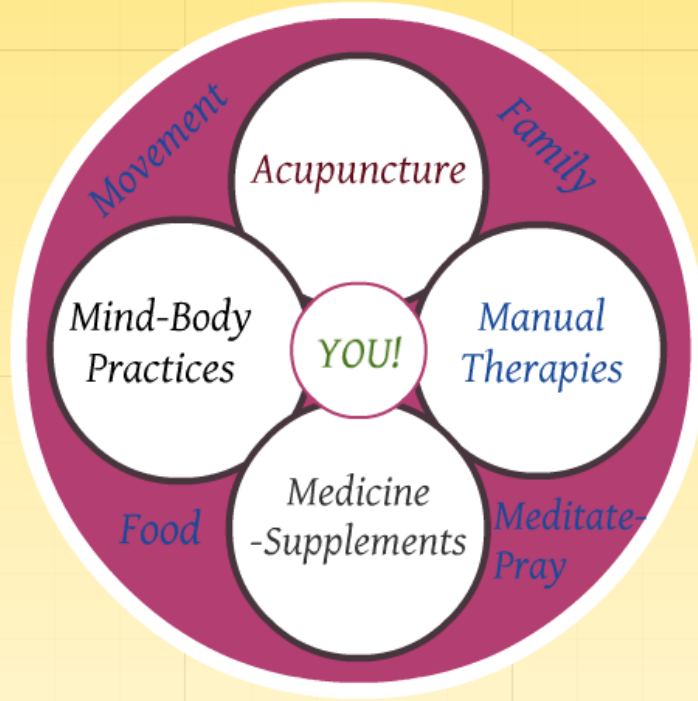
Multidimensional Treatment

Acupuncture & Counseling in Depression

Randomized controlled trial of acupuncture and counseling for patients presenting with depression, both interventions were associated with significantly reduced depression at 3 months when compared to usual care alone.

MacPherson H, Richmond S, Bland M, Brealey S, Gabe R, et al. (2013) Acupuncture and Counseling for Depression in Primary Care: A Randomized Controlled Trial. [PLoS Med 10\(9\): e1001518](https://doi.org/10.1371/journal.pmed.1001518). doi:10.1371/journal.pmed.1001518

OSU Integrative Medicine Multidimensional Pain Treatment



Tai Qi



Randomized Control Trial: Tai Qi

- ❖ 44% reduction in pain and other symptoms in tai qi group versus no change in control group.
- ❖ *Wang C, Schmid CH, Rones R, et al. A randomized trial of tai chi for fibromyalgia. N Engl J Med. 2010;363(8):743-754.*

Balneotherapy

- ❖ The treatment of conditions through the use of hot or cold mineral baths.
- ❖ Latin: Balneum, “bath”.
- ❖ Ancient treatment, and one of the longest utilized.



Balneotherapy: Cochrane Summaries

- ❖ Spending time in a mineral bath compared to no treatment may improve pain and quality of life.
- ❖ Spending time in both a sulfur bath and a dead sea bath compared to no treatment may improve pain one month after treatment.
 - ❖ *Bierma-Zeinstra SMA, Boers M, Cardoso JRosa, Lambeck J, de Bie R, de Vet HCW. Balneotherapy for osteoarthritis. Cochrane Database of Systematic Reviews 2007, Issue 4. Art. No.: CD006864. DOI: 10.1002/14651858.CD006864.*

Food as Medicine – Anti-inflammatory diet

OLDWAYS
HEALTH THROUGH HERITAGE

Mediterranean Diet Pyramid

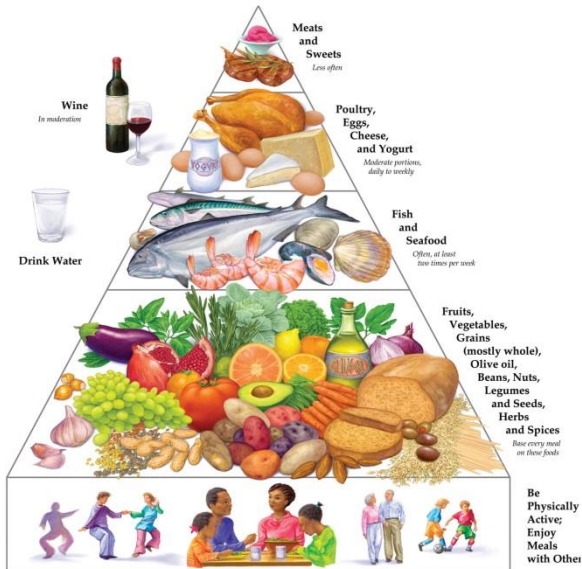


Illustration by George M. Malin
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- ❖ A predominantly plant-based diet such as the Mediterranean diet has an anti-inflammatory effect on the body.
- ❖ The Mediterranean diet has been shown to decrease the risk of cardiovascular disease and primary heart attack.
- ❖ Can an anti-inflammatory diet decrease pain?

OSU: Food as Medicine – Anti-inflammatory diet

- ❖ Higher body fat was associated with self-reports of greater pain, and dietary practices consistent with better health and anti-inflammatory effects were associated with lower self-reported pain.
 - ❖ Emery, Charles F. et al. *Dietary intake mediates the relationship of body fat to pain*. *Pain*. Volume 158(2), February 2017, p 273–277.

Food in Traditional Medicine

"If you have a good diet, you do not need acupuncture or herbs."

"If you have a bad diet, you do not need acupuncture or herbs."

Shen Nong, Father of Chinese Medicine



CLOSE TO HOME JOHN McPHERSON

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3-21 McPherson

OSU Integrative Medicine



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"You gotta be kidding! Your back *still* hurts?!"

Its NOT
magic!
there are no
magic pills.

Final Thoughts

- ❖ Integrative Medicine is not fringe medicine, it is a new paradigm which is patient-centric, can improve current medical practice, improve patient care, and has strong patient interest.
- ❖ A Multi-dimensional approach to pain can be effective for pain control and is a safer approach for patients.
- ❖ An Integrative Medicine & Health approach would incorporate therapies like: acupuncture, manual therapies, mind-body practices, medication/supplements, exercise, nutrition and lifestyle changes.

For More Information

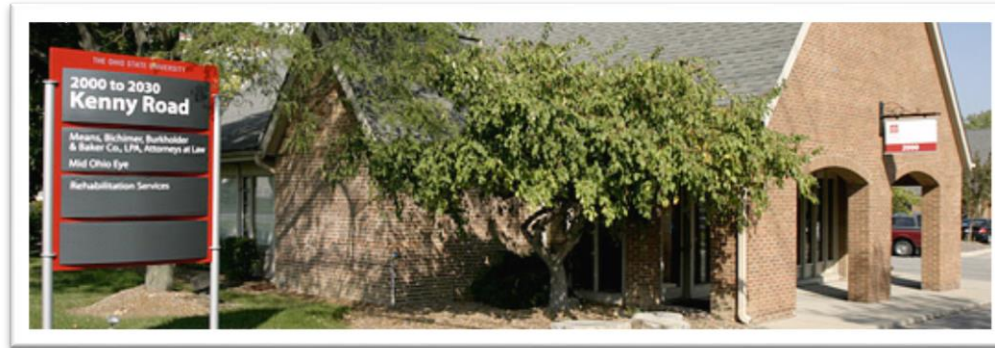
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Thank You

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