



Thinking Outside the Box: The Benefits of Alternative & Complementary Medicines

Chairperson:

Thomas Winters, MD, FACOEM,
FACPM

Principal & Chief Medical Officer
Occupational & Environmental
Health Network

Monday, March 25th, 2024

3-3:40pm



2024

**Work Related Injuries
Workshop**

The Benefits of Acupuncture

Janice E. Gellis, MD

Staff Physician Department of
Surgery, Section of Pain
Management
White River Junction VAMC
Assistant Professor of
Anesthesiology
Geisel Medical School at
Dartmouth

Disclosures

- I have nothing to disclose.

What is acupuncture?



Acupuncture

- Originated in China
- Over 2500 years old
- Many types of acupuncture
 - Chinese Medicine
 - Japanese acupuncture
 - Korean hand acupuncture
 - Auricular acupuncture

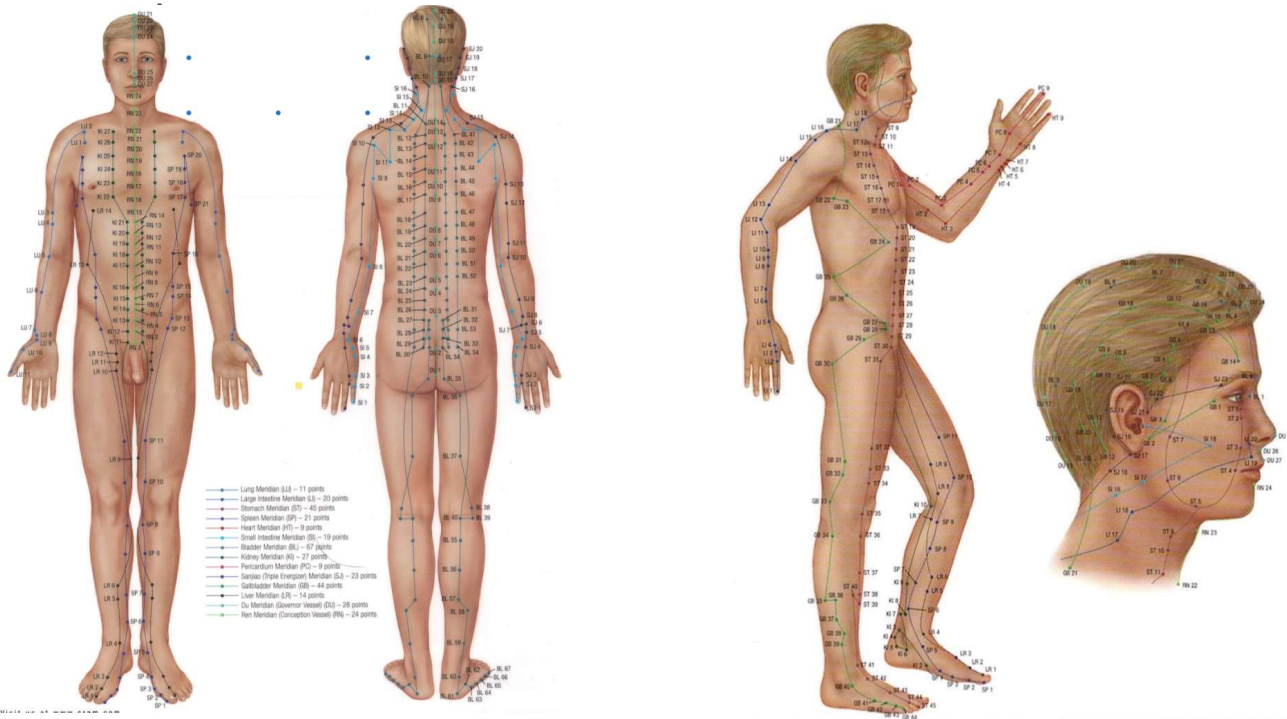


Gellis, JE. Pain Medicine. 2017, 419-427

Helms, J.M., *Acupuncture energetics: a clinical approach for physicians*. 2007: Thieme.

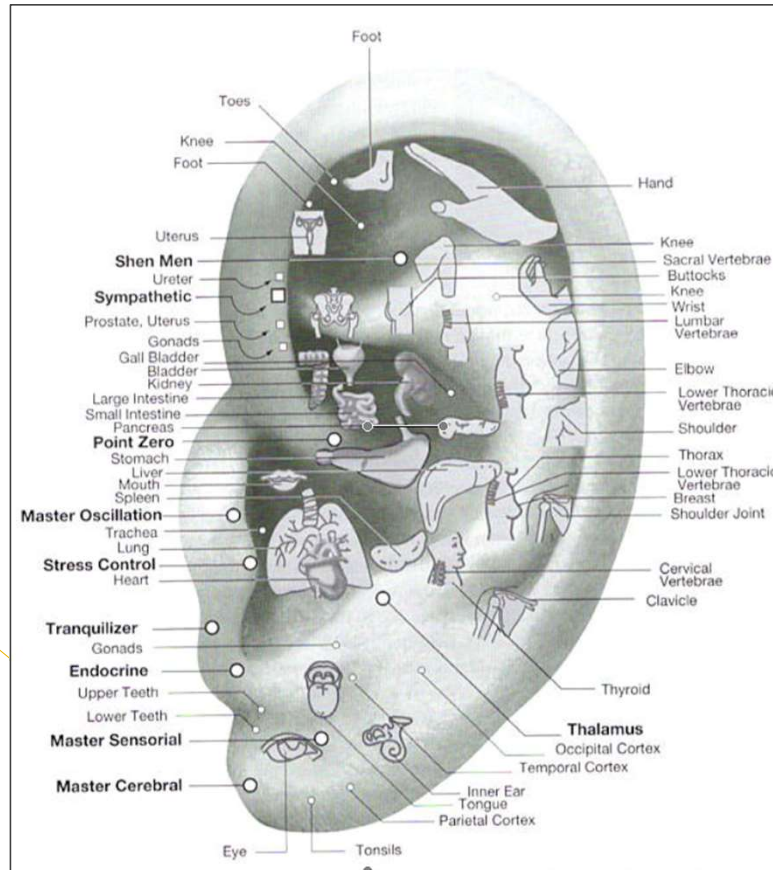
Chinese medicine construct

- When healthy, an abundant supply of qi or "life energy" flows through the body's



	Lung Meridian (LU) – 11 points
	Large Intestine Meridian (LI) – 20 points
	Stomach Meridian (ST) – 45 points
	Spleen Meridian (SP) – 21 points
	Heart Meridian (HT) – 9 points
	Small Intestine Meridian (SI) – 19 points
	Bladder Meridian (BL) – 67 points
	Kidney Meridian (KI) – 27 points
	Pericardium Meridian (PC) – 9 points
	Sanjiao (Triple Energizer) Meridian (SJ) – 23 points
	Gallbladder Meridian (GB) – 44 points
	Liver Meridian (LR) – 14 points
	Du Meridian (Governor Vessel) (DU) – 28 points
	Ren Meridian (Conception Vessel) (RN) – 24 points

Meridians and acupuncture points



Chinese medicine construct

- If the flow of qi is blocked or imbalanced: disease, illness or pain can ensue
- Acupuncturists access acupuncture points on the meridians to affect the flow of Qi
 - Insertion of fine needles
 - Moxibustion
 - Electro-acupuncture
 - Placement of seeds or pellets
- May also incorporate Chinese herbal formulations to affect Qi

Acupuncture needles



Matchstick
4.2mm



Medical Syringe
2.9mm



Sewing Needle
1mm

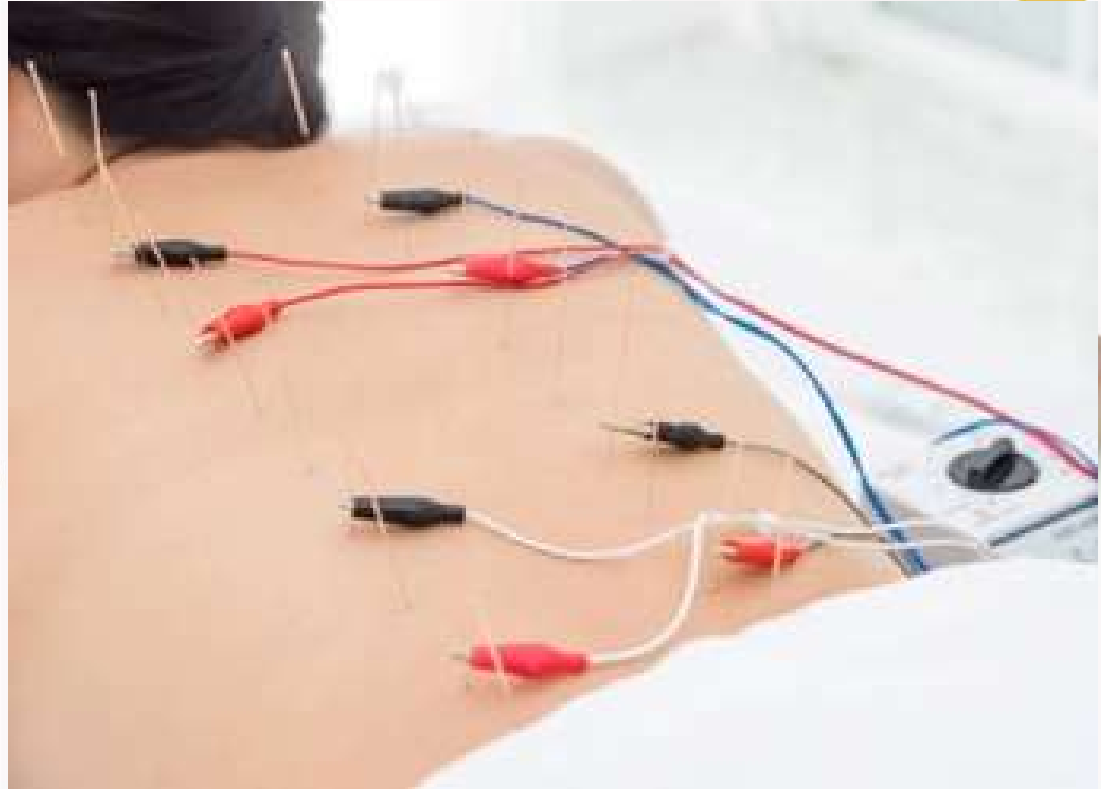


Acupuncture Needle
.25mm

Electro-acupuncture



Moxa



Ear seeds



Ear tacks



How does acupuncture work?



How does acupuncture work?

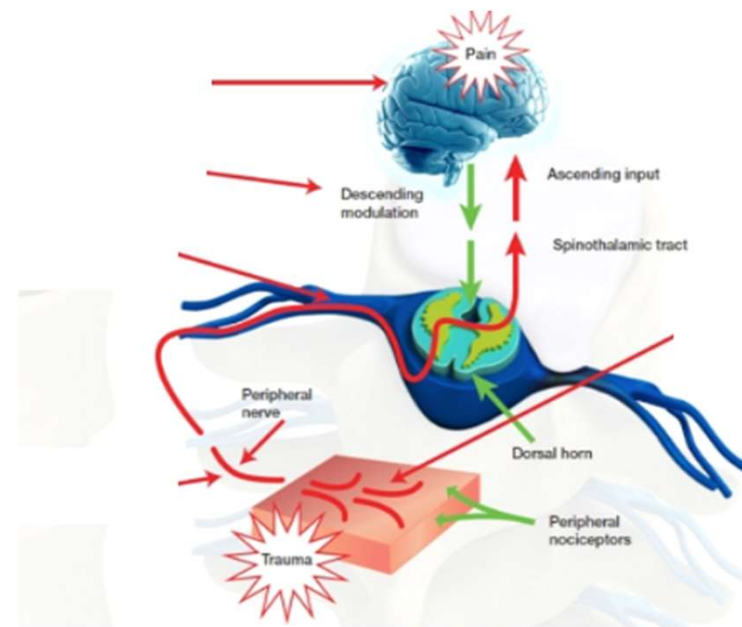
Meridians and acupuncture points

- Acupuncture meridians tend to be located along fascial planes between muscles, or between a muscle and bone or tendon.
- Acupuncture points have been studied and have been found to have morphologic characteristics.
- Needle manipulation in acupuncture points
 - Has specific effects on the tissue
 - Causes bioelectrical or biochemical effects
 - These effects travel along a loose CT tissue network that correlates with acupuncture meridians.

How does acupuncture work?

Neuroscience

- Can modulate neurotransmitters involved in nociception
 - serotonin
 - norepinephrine
 - beta-endorphin
 - enkephalin
 - substance P
- Effects Nitric oxide (NO) and ATP
- Enhances descending inhibitory system
- Form of neuromodulation



Ulloa L.S, et al. Trends in Molecular Medicine, 2017. **23**(12): 1103-1120.

Helms, J.M., *Acupuncture energetics: a clinical approach for physicians*. 2007: Thieme

Robinson, N. *Interactive Medical Acupuncture Anatomy*, 2016, Teton New Media: Jackson, WY. p. 4-9

Xiao L.Y. et al. Neuromodulation: Technology at the Neural Interface, 2018. **21**(8): p. 762-776. .

How does acupuncture work?

Neuroscience

- Studies using functional MRI show that acupuncture can cause changes in the brain.
- Can affect areas that affect pain perception, mood, well being.
- Can affect brain connectivity.

Huang, W., et al. PLoS ONE, 2012. 7(4): e32960.

Cai, R.-L., et al. Journal of Integrative Medicine, 2018. 16(1): 26-33.

What does acupuncture treat?



What does acupuncture treat?

- Several large randomized controlled trials and meta-analyses demonstrating acupuncture to be a more effective treatment for several types of chronic pain than standard care (drugs, surgery, physical therapy).
- Effective for a wide range of complex conditions

Vickers et al. JAMA, 2014. 311 (9):955-956

Vickers AJ et al. Archives of Internal Medicine, 2012. 172(19):1444.

Haake M, Müller H-H, Schade-Brittinger C, et al. Archives of Internal Medicine, 2007. 167(17):1892-1898.

Witt C. Lancet, 2005;366(9480):136

JAMA. 2014 March 5; 311(9): 955–956. doi:10.1001/jama.2013.285478.

Acupuncture for chronic pain

Andrew J. Vickers, D.Phil and

Memorial Sloan-Kettering Cancer Center, New York, New York, USA

Klaus Linde, MD

Technical University, Munich, Germany

Meta-analysis of acupuncture for chronic pain, restricted to high quality trials, with data available for 17,922 participants from 29 of 31 eligible trials

Acupuncture was associated with greater reductions in pain than control in all comparisons.

2024

**Work Related Injuries
Workshop**

What does acupuncture treat?

World Health Organization

- Abdominal pain (in acute gastroenteritis or due to gastrointestinal spasm)
- Labour pain
- Lactation, deficiency
- Male sexual dysfunction, non-organic
- Ménière disease
- Neuralgia, post-herpetic Neurodermatitis
- Obesity
- Opium, cocaine and heroin dependence Osteoarthritis
- Pain due to endoscopic examination
- Pain in thromboangiitis obliterans
- Polycystic ovary syndrome (Stein–Leventhal syndrome) Postextubation in children
- Postoperative convalescence
- Premenstrual syndrome
- Prostatitis, chronic
- Pruritus
- Radicular and pseudoradicular pain syndrome Raynaud syndrome, primary
- Recurrent lower urinary-tract infection
- Reflex sympathetic dystrophy
- Retention of urine, traumatic
- Schizophrenia
- Sialism, drug-induced
- Sjögren syndrome
- Sore throat (including tonsillitis)
- Spine pain, acute
- Stiff neck
- Temporomandibular joint dysfunction
- Tietze syndrome
- Tobacco dependence
- Tourette syndrome
- Ulcerative colitis, chronic
- Urolithiasis
- Vascular dementia
- Whooping cough (pertussis)
- Female urethral syndrome
- Fibromyalgia and fasciitis
- Gastrokinetic disturbance
- Gouty arthritis
- Hepatitis B virus carrier status
- Herpes zoster (human (alpha) herpesvirus 3) Hyperlipaemia
- Hypo-ovarianism
- Insomnia
- Adverse reactions to radiotherapy and/or chemotherapy
- Allergic rhinitis (including hay fever)
- Biliary colic
- Depression (including depressive neurosis and depression following stroke)
- Dysentery, acute bacillary Dysmenorrhoea, primary
- Epigastralgia, acute (in peptic ulcer, acute and chronic gastritis, and gastrospasm)
- Facial pain (including craniomandibular disorders)
- Headache
- Hypertension, essential
- Hypotension, primary
- Induction of labour
- Knee pain
- Leukopenia
- Low back pain
- Malposition of fetus, correction of Morning sickness
- Nausea and vomiting
- Neck pain
- Pain in dentistry (including dental pain and temporomandibular dysfunction)
- Periarthritis of shoulder
- Postoperative pain
- Renal colic
- Rheumatoid arthritis
- Sciatica
- Sprain
- Stroke
- Tennis elbow
- Acne vulgaris
- Alcohol dependence and detoxification
- Bell's palsy
- Bronchial asthma
- Cancer pain
- Cardiac neurosis
- Cholecystitis, chronic, with acute exacerbation
- Cholelithiasis
- Competition stress syndrome
- Craniocerebral injury, closed
- Diabetes mellitus, non-insulin-dependent
- Earache
- Epidemic haemorrhagic fever
- Epistaxis, simple (without generalized or local disease) Eye pain due to subconjunctival injection
- Female infertility
- Facial spasm

Diseases, symptoms or conditions for which acupuncture has been proved— through controlled trials—to be an effective treatment:

- Depression (including depressive neurosis and depression following stroke)
- Facial pain (including craniomandibular disorders)
- Headache
- Knee pain
- Low back pain
- Nausea and vomiting
- Neck pain
- Pain in dentistry (including dental pain and temporomandibular dysfunction)
- Periarthritis of shoulder
- Postoperative pain
- Sciatica
- Sprain
- Stroke
- Tennis elbow

Diseases, symptoms or conditions for which the therapeutic effect of acupuncture has been shown but for which further proof is needed:

- Abdominal pain (in acute gastroenteritis or due to gastrointestinal spasm)
- Bell's palsy
- Cancer pain
- Cardiac neurosis
- Earache
- Eye pain due to subconjunctival injection
- Facial spasm
- Fibromyalgia and fasciitis
- Insomnia

Disease and disorders that can be treated with acupuncture

- Neuralgia, post-herpetic
- Neurodermatitis
- Obesity
- Opium, cocaine and heroin dependence
- Osteoarthritis
- Pain in thromboangiitis obliterans
- Postoperative convalescence
- Pruritus
- Radicular and pseudoradicular pain syndrome
- Raynaud syndrome, primary
- Reflex sympathetic dystrophy
- Spine pain, acute
- Stiff neck
- Tobacco dependence

Complications and side effects

- Infection
- Pneumothorax
- Syncope or vagal reaction
- Organ puncture
- Bruising
- Temporary exacerbation of symptoms
- Retained needles
- Contact dermatitis
- Anxiety
- Lightheadedness
- Agitation
- Heightened emotions

Precautions

- Avoid electrical stimulation in patients with pacemakers.
- Caution in pregnancy: certain points can stimulate uterine contractions.
- Moxibustion can cause burns, skin color changes, associate with basal cell carcinoma.

Acupuncture treatment

- History
- Exam
- Formulation of an acupuncture diagnosis
- Formulation of treatment plan
- How this is formulated can vary with different types of acupuncture
 - Chinese traditional medicine,
 - Traditional Chinese Medicine
 - Five Element Acupuncture



2024
Work Related Injuries
Workshop

Thank you



The heart asks pleasure first
And then, excuse from pain-

Emily Dickinson
Complete Poems 1924

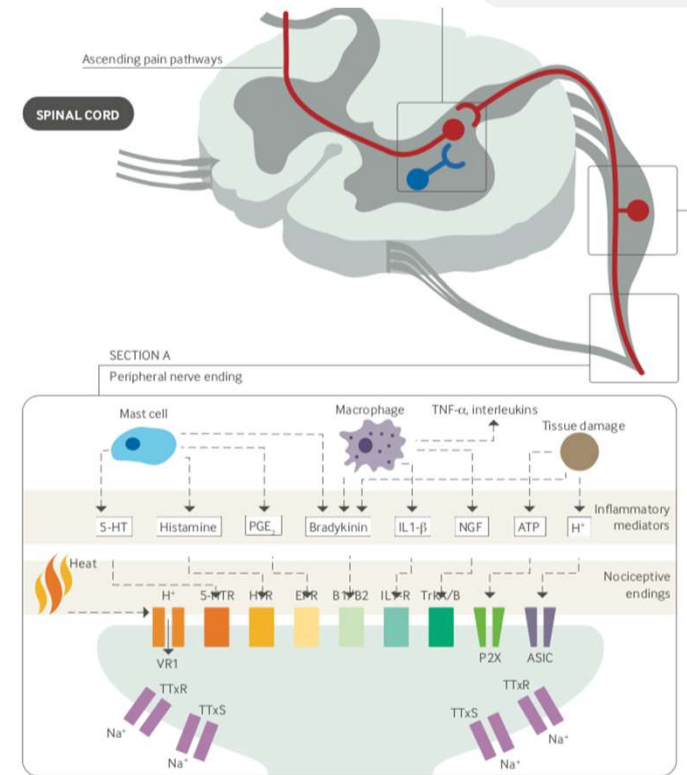
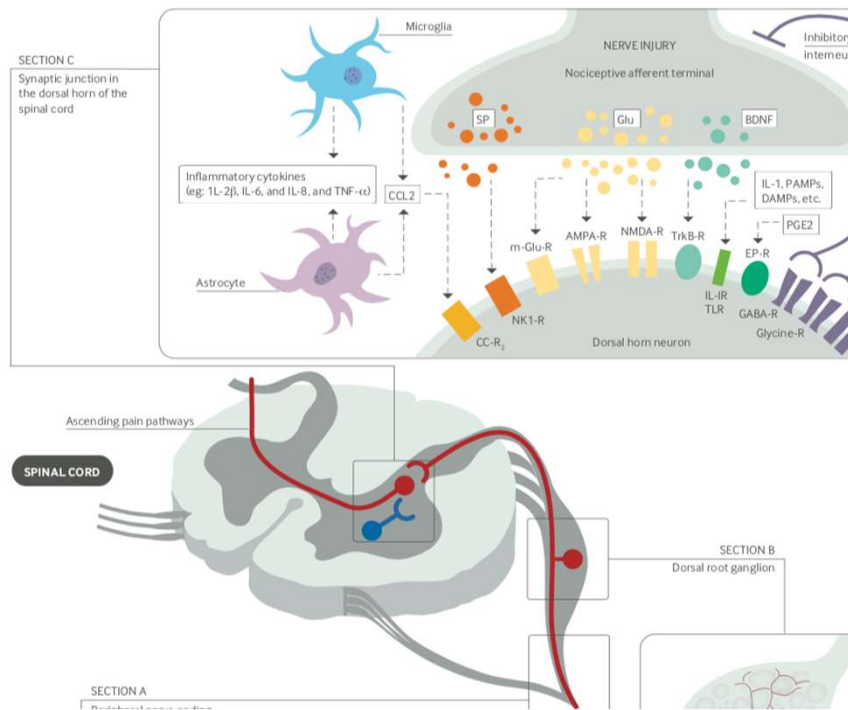
References

- Bossy, J., *Morphological data concerning the acupuncture points and channel network*. Acupunct Electrother Res, 1984. **9**(2): p. 79-106.
- Cai, R.-L., et al., *Brain functional connectivity network studies of acupuncture: a systematic review on resting-state fMRI*. Journal of Integrative Medicine, 2018. **16**(1): p. 26-33.
- Chan, M.W.C., et al., *Safety of Acupuncture: Overview of Systematic Reviews*. Scientific Reports, 2017. **7**(1).
- Cohen, S.P. and J. Mao, *Neuropathic pain: mechanisms and their clinical implications*. BMJ, 2014. **348**: p. f7656.
- Dorsher, P.T., *Acupuncture for chronic pain*. Techniques in Regional Anesthesia and Pain Management, 2011. **15**(2): p. 55-63.
- Gellis, J.E., *Complementary, Alternative, and Integrative Therapies (CAIT)*, in *Pain Medicine: An Essential Review*, R.J. Yong, et al., Editors. 2017, Springer International Publishing: Cham. p. 419-427.
- Haake, M., *German Acupuncture Trials (Gerac) For Chronic Low Back Pain<subtitle>Randomized, Multicenter, Blinded, Parallel-Group Trial With 3 Groups</subtitle>*. Archives of Internal Medicine, 2007. **167**(17): p. 1892.
- Helms, J.M., *Acupuncture energetics: a clinical approach for physicians*. Third ed. 2007: Thieme.
- Huang, W., et al., *Characterizing Acupuncture Stimuli Using Brain Imaging with fMRI - A Systematic Review and Meta-Analysis of the Literature*. PLoS ONE, 2012. **7**(4): p. e32960.
- Langevin, H.M. and J.A. Yandow, *Relationship of acupuncture points and meridians to connective tissue planes*. The Anatomical Record, 2002. **269**(6): p. 257-265.
- MacPherson, H., et al., *Acupuncture research: strategies for establishing an evidence base*. 2007: Elsevier Health Sciences.
- Robinson, N., *Section 1: The Science of Acupuncture Neuromodulation in Interactive Medical Acupuncture Anatomy*, C.C. Cann, Editor. 2016, Teton New Media: Jackson, WY. p. 4-9.
- Ulloa, L., S. Quiroz-Gonzalez, and R. Torres-Rosas, *Nerve Stimulation: Immunomodulation and Control of Inflammation*. Trends in Molecular Medicine, 2017. **23**(12): p. 1103-1120.
- Vickers, A.J., et al., *Acupuncture for chronic pain: individual patient data meta-analysis*. Arch Intern Med, 2012. **172**(19): p. 1444-53.
- Vickers, A.J. and K. Linde, *Acupuncture for chronic pain*. JAMA, 2014. **311**(9): p. 955-6.
- Witt, C., et al., *Acupuncture in patients with osteoarthritis of the knee: a randomised trial*. The Lancet, 2005. **366**(9480): p. 136-143.
- Xiao, L.-Y., et al., *Applications of Acupuncture Therapy in Modulating Plasticity of Central Nervous Syst*



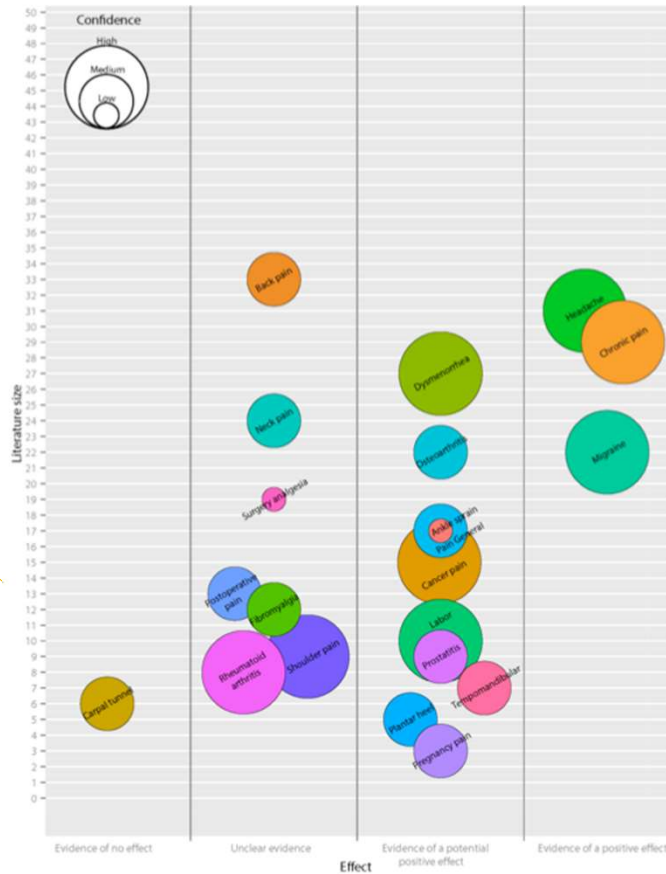
**Additional slides (not
part of talk)**

How does acupuncture work?



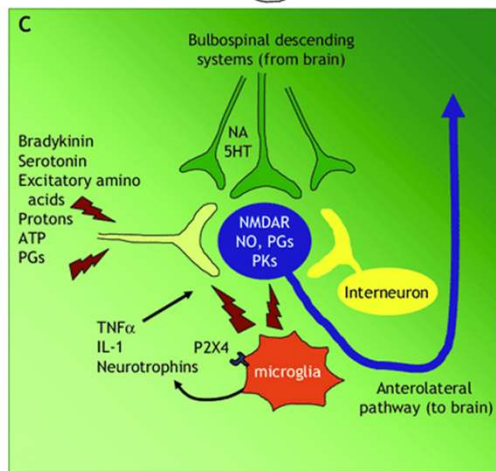
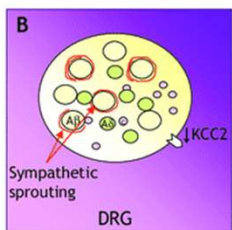
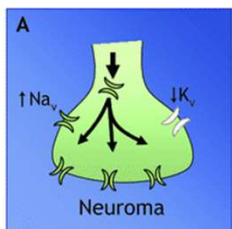
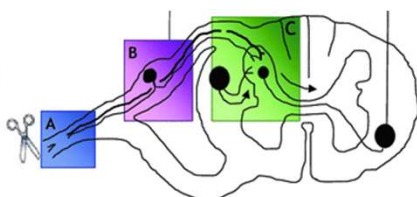
From: Cohen, S.P. and J. Mao. BMJ, 2014. 348: f7656.

EVIDENCE MAP OF ACUPUNCTURE FOR PAIN



- The bubble plot shows an estimate of the evidence base for pain-related indications judging from systematic reviews and recent large RCTs.
- 59 systematic reviews for 21 distinct indications relevant to the outcome pain
- X-axis: estimated effect
- Y-axis: number of RCTs included in largest review
- Bubble size is the confidence in the estimate

Injury-induced nerve changes in the periphery, dorsal root ganglia and spinal cord contribute to neuropathic pain syndromes





2024

**Work Related Injuries
Workshop**

The Benefits of Massage Therapy

James Rosenblum, LMT



2024

**Work Related Injuries
Workshop**

The Benefits of Reiki

Laura Sullivan

Reiki Teacher, Ayurvedic Educator
Joyful Wellbeing, Winchester, MA

Reiki is Becoming Mainstream

- Practiced across the globe
- Hospitals
- Nursing homes
- Hospice
- Homeless Shelters





Reiki is a non-invasive mind-body practice that relaxes the body and mind and promotes healing

$$E=MC^2$$

- Everything is energy
- We are energetic beings
- Our bodies have bioelectric fields



Benefits of Reiki

- Reduced Pain
- Better sleep
- Reduced anxiety and depression
- Helps with cancer symptoms
- Promotes mindful awareness



