



# Acupuncture for Chronic Pain

The Pain Society of the Carolinas  
Annual Meeting  
10/24/2015, Greenville, SC

**Jongbae J. Park, KMD, PhD, L.Ac.**

Director, Asian Medicine and Acupuncture Research  
Department of Physical Medicine and Rehabilitation  
Center for Pain Research and Innovation

# Scope of Presentation

- Asian (Chino-Asian) ways : Body, Pain & Acupuncture
- Evidence Update
- My studies: Retrospective Chart Review & Acup Needling on cytokines and analgesia in patients with TMD and overlapping pain



# Relieving PAIN in America

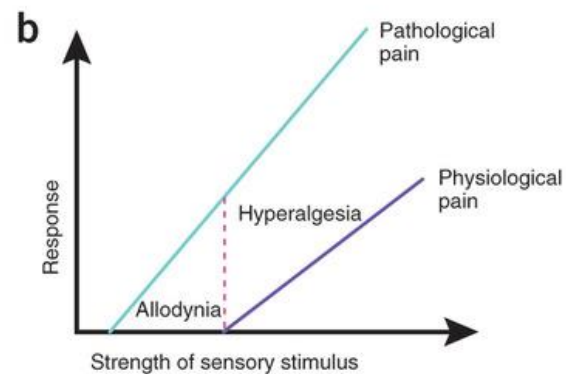
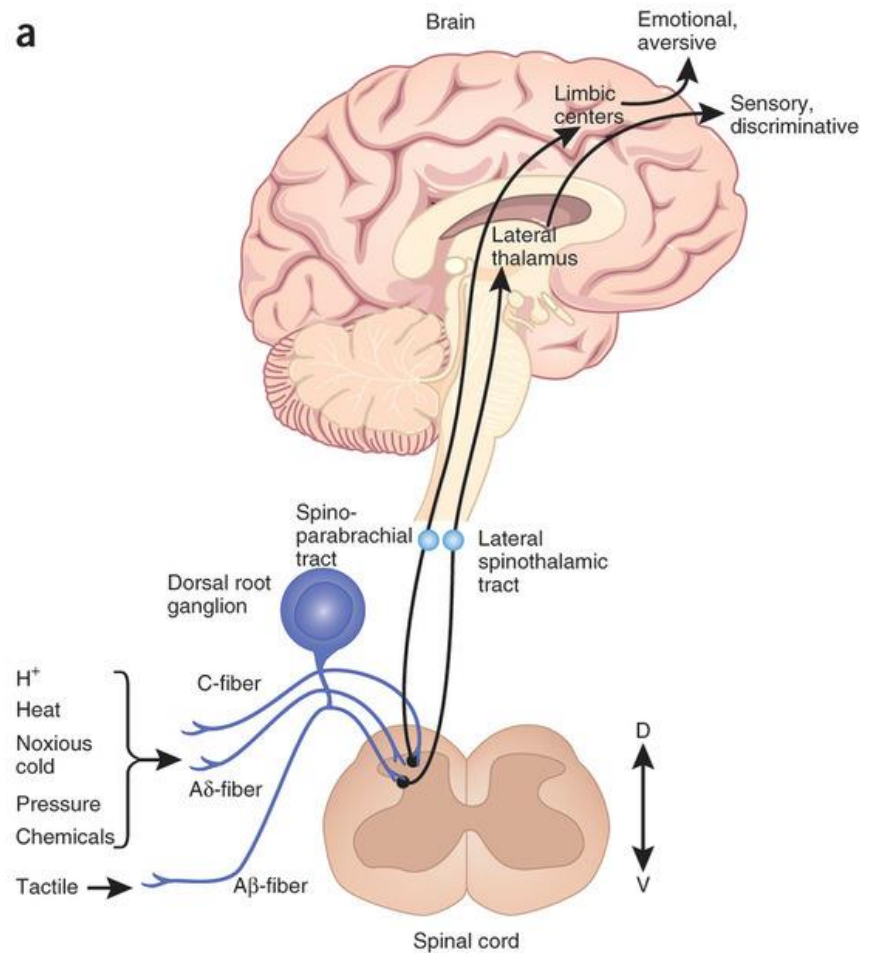
A Blueprint for  
Transforming Prevention,  
Care, Education,  
and Research

INSTITUTE OF MEDICINE  
OF THE NATIONAL ACADEMIES

There is crisis in the impact of and response to pain in America.

Individually and collectively, we have a moral imperative to address this crisis.

It is our hope that this report will help stimulate a concerted response to this crisis.

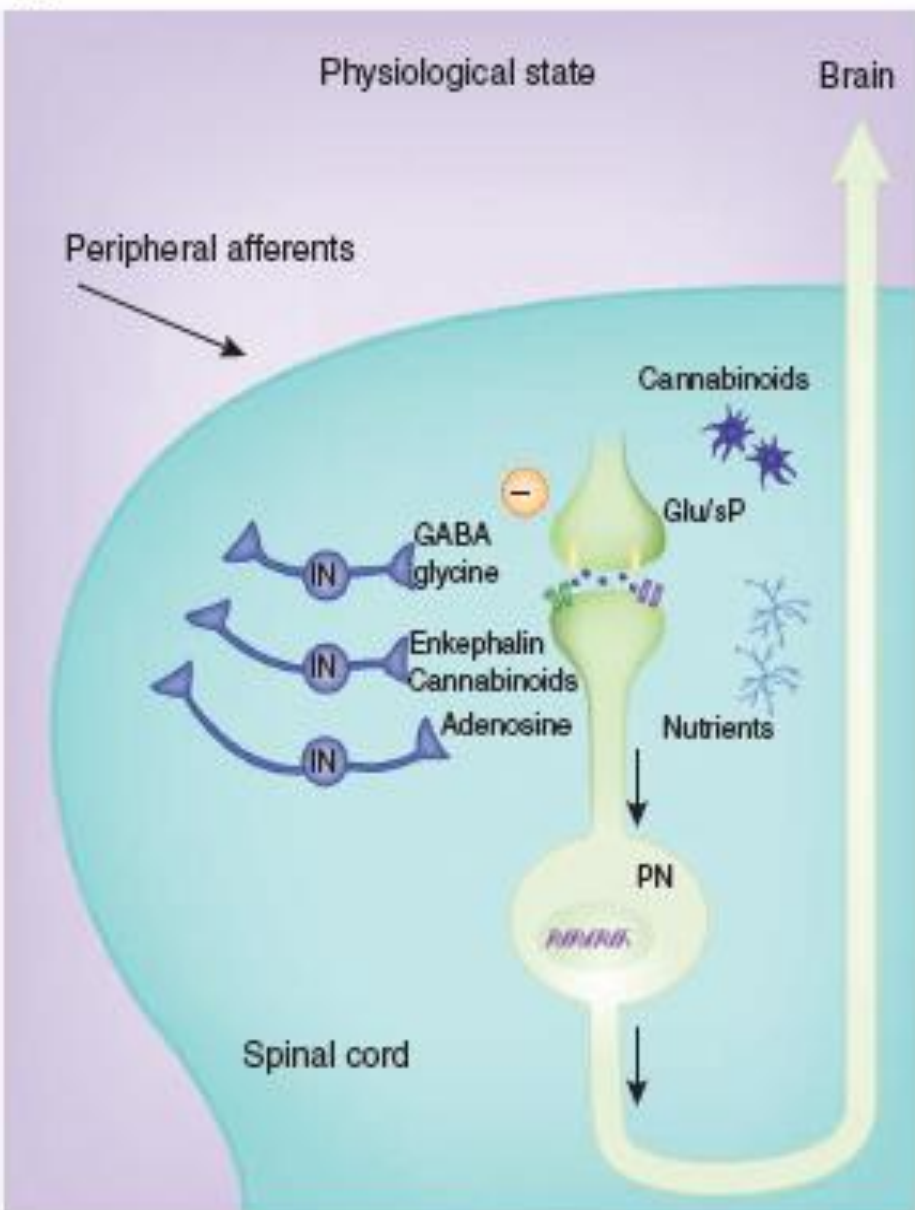


Kuner, Nature Medicine 2010

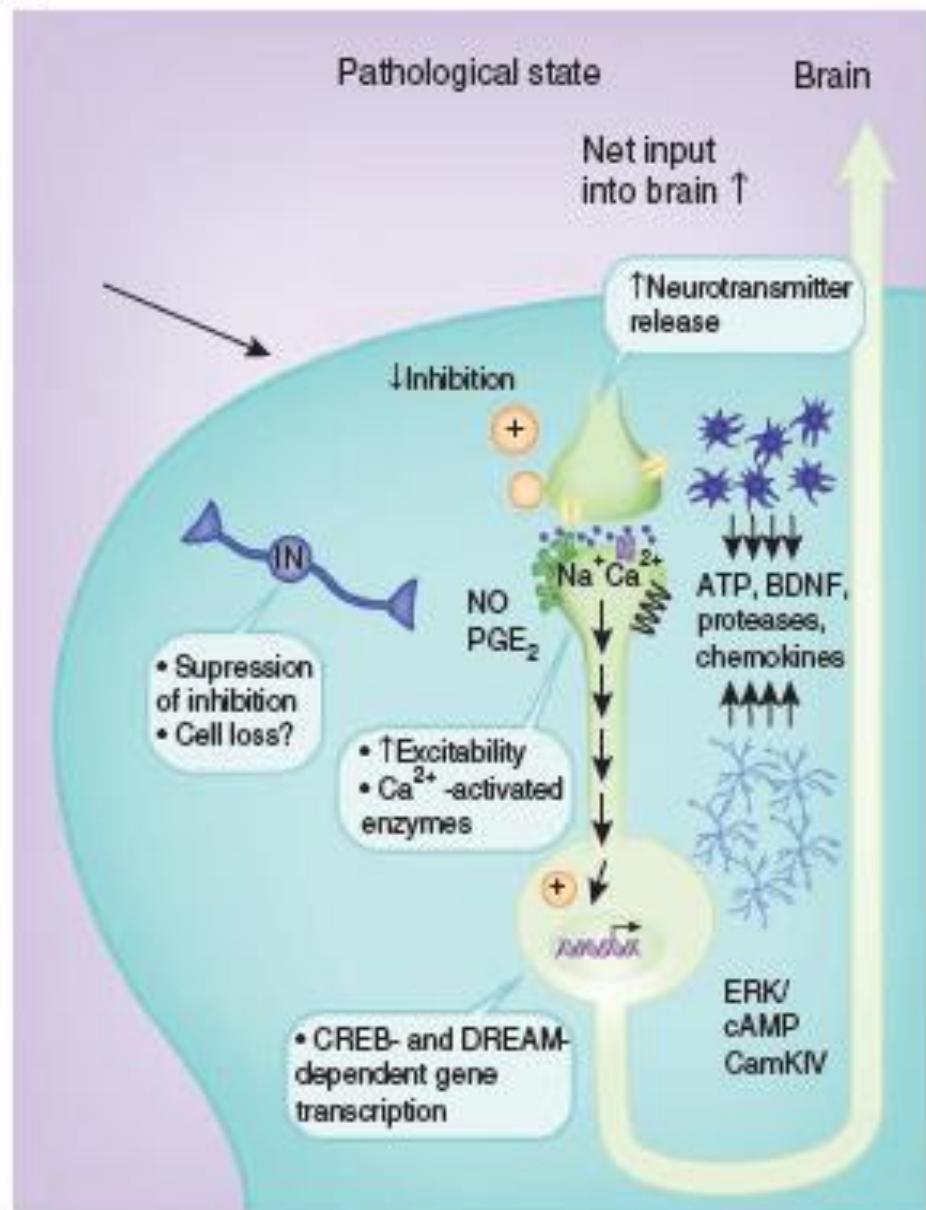


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a



b



Microglia

IN: Inhibitory interneuron

NMDAR

 $\text{P}_2\text{X}_3$  receptors

Astrocytes

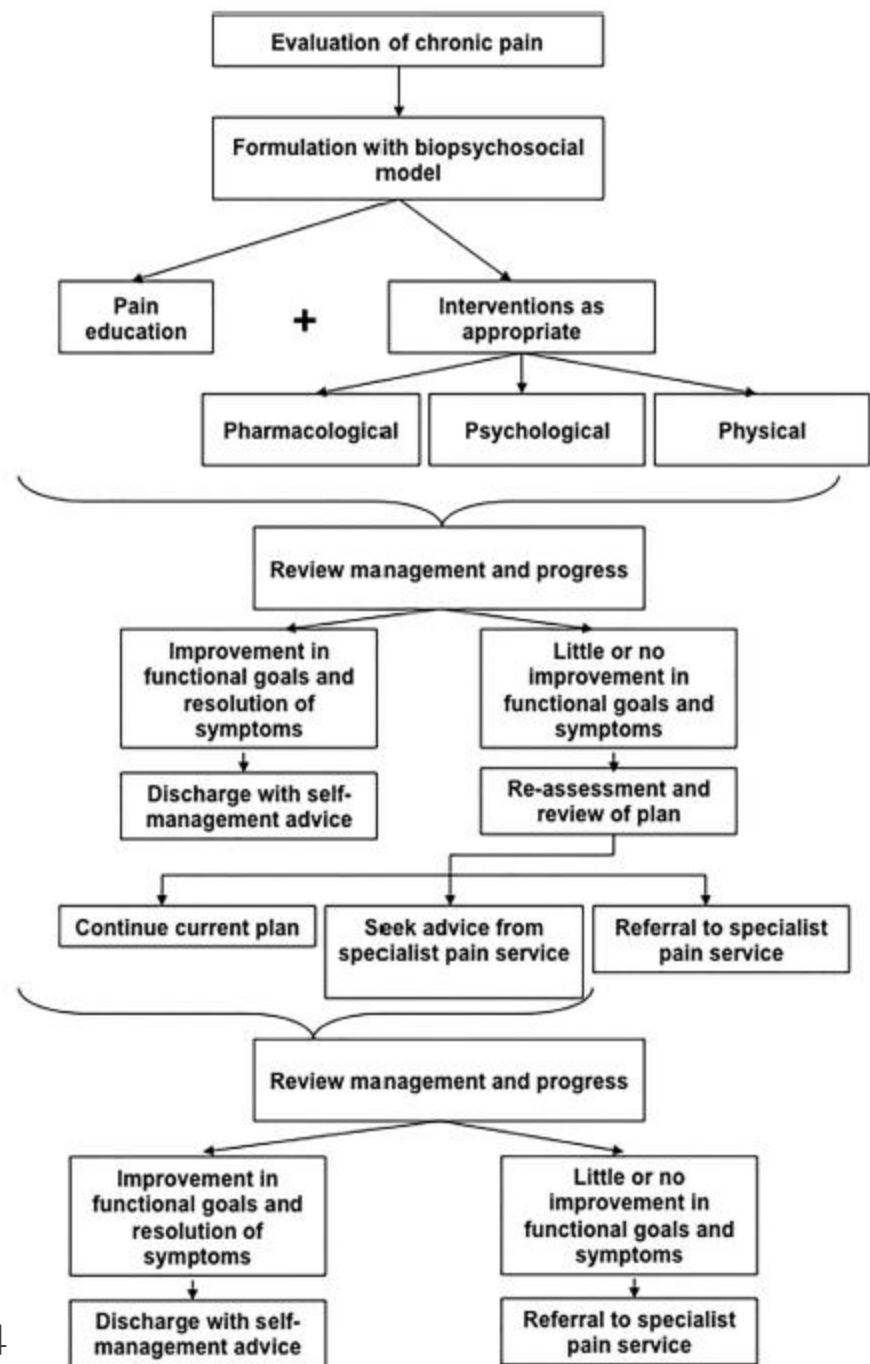
PN: Projection neuron

AMPA



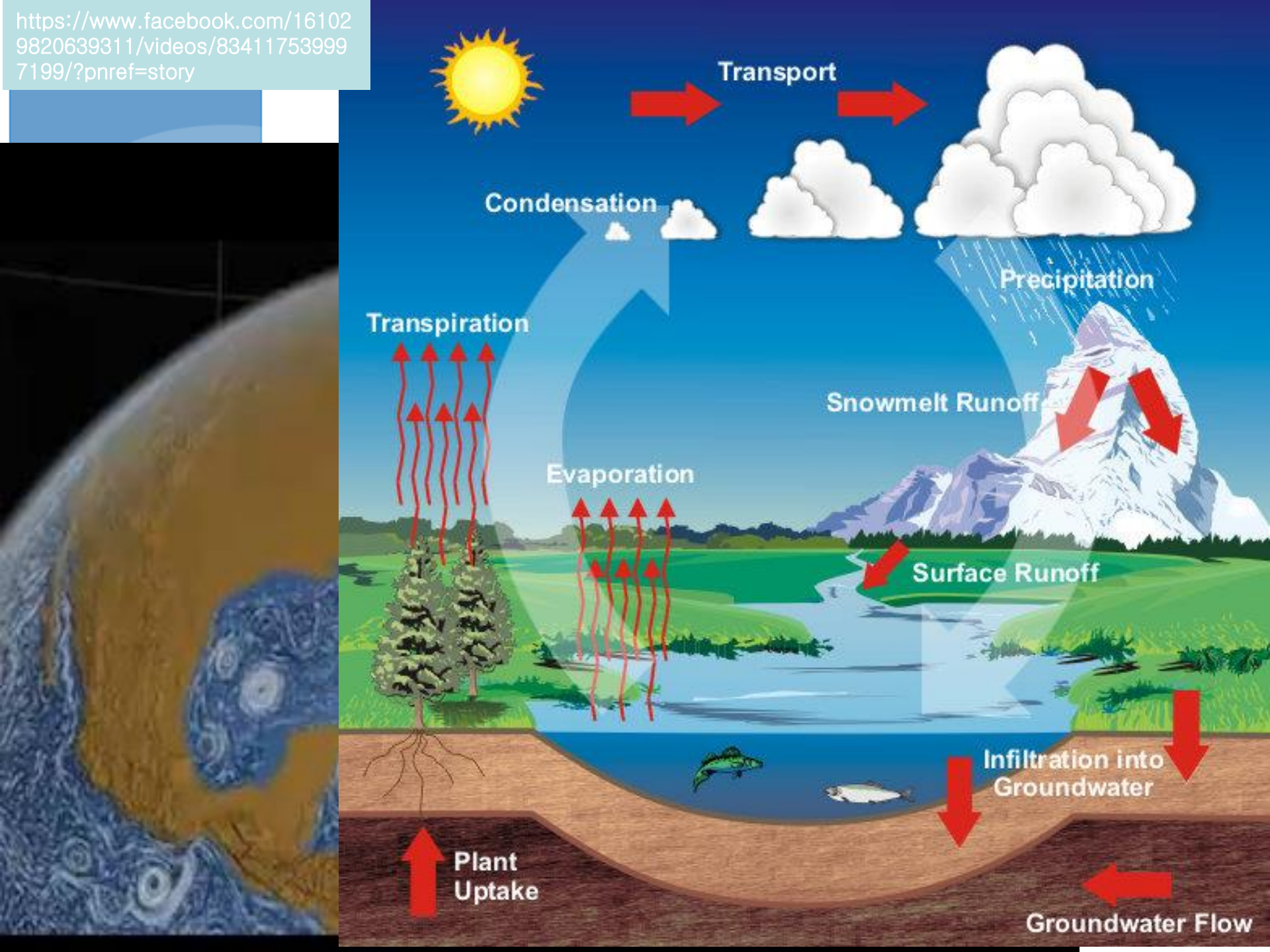
# ??? : no (defined) proximate cause

- Not traceable to a physical source
- Bothersome reminder of a past injury
- surgical site that healed long ago
- Burn site healed
- whole-body pain that has never stopped since a round of chemo far in the past

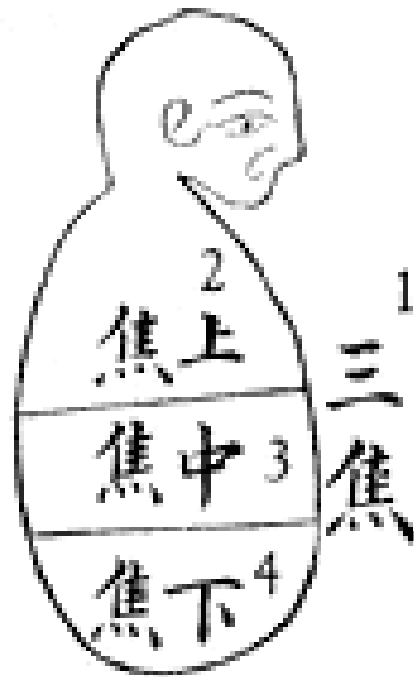


Rajapakse et al. BMJ 2014









TRIPLE BURNER  
三焦



Canon of Internal Medicine (黃帝內經)

Preserving Heavenly Health and Vitality – Chapter 1

Preserving Health in Accordance with the Seasons – Chapter 2

Human Vitality Connects with Nature – Chapter 3



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通卽不痛  
不通卽痛



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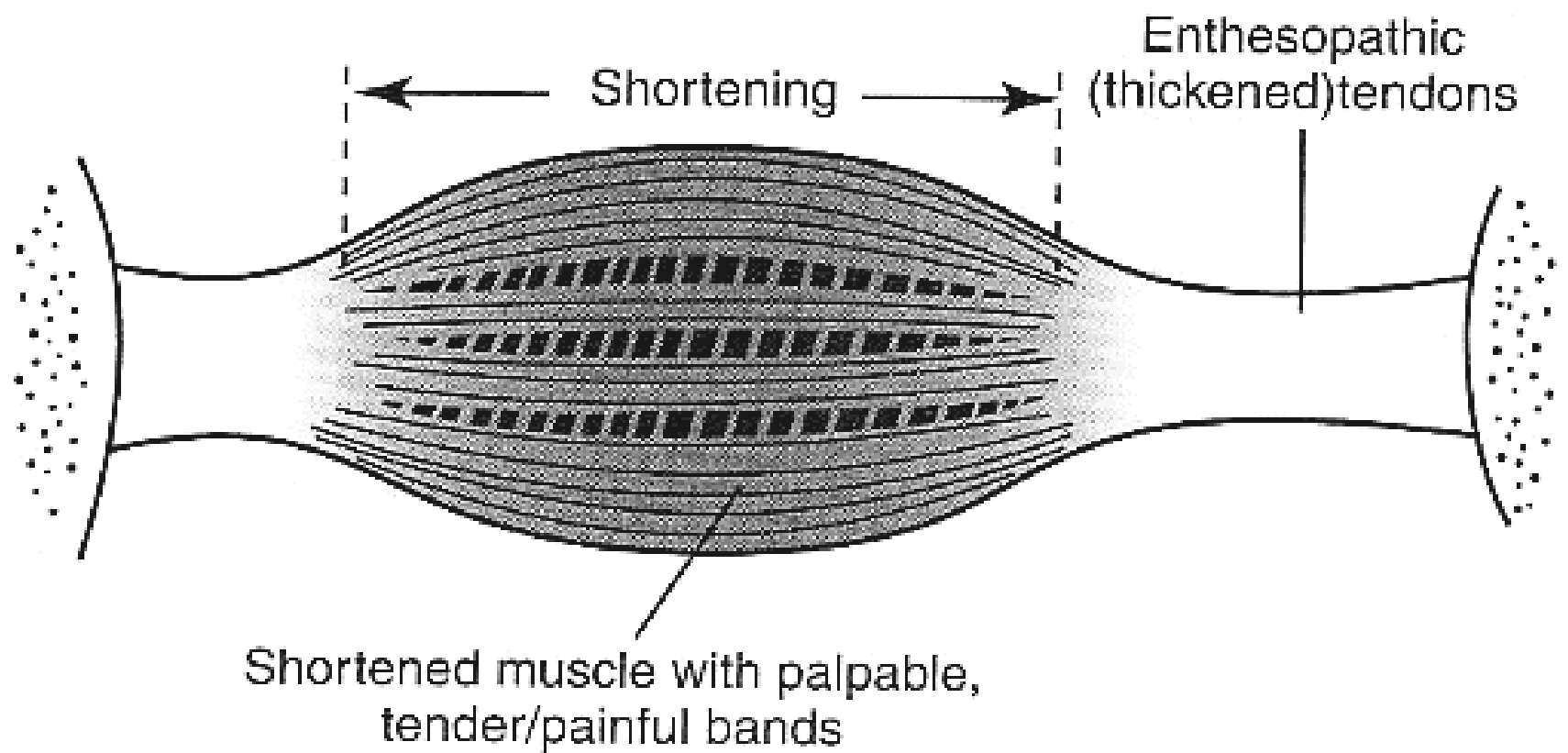
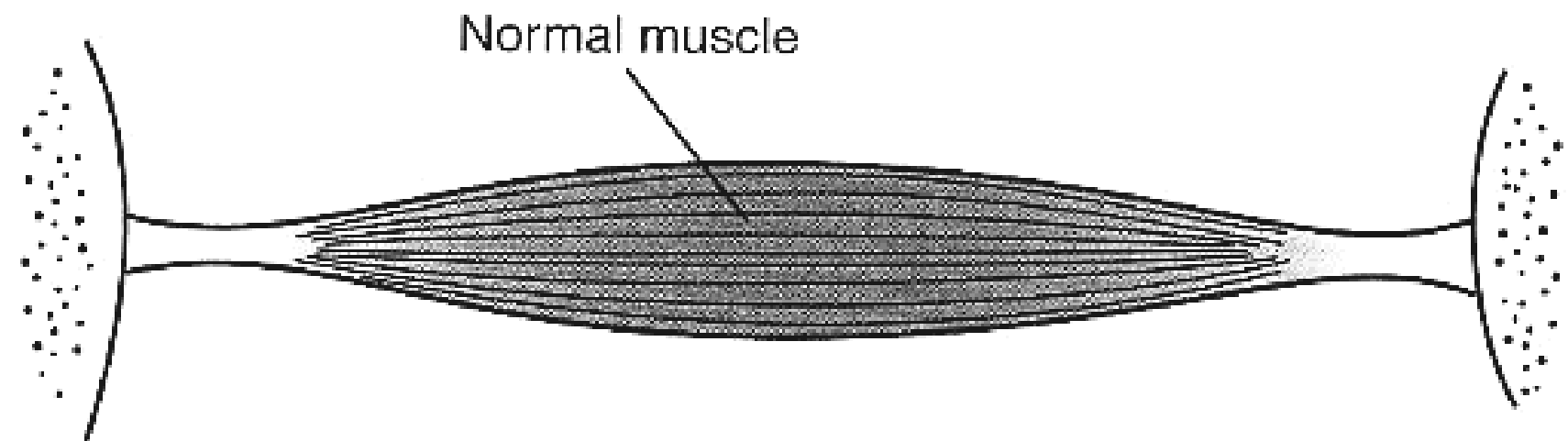
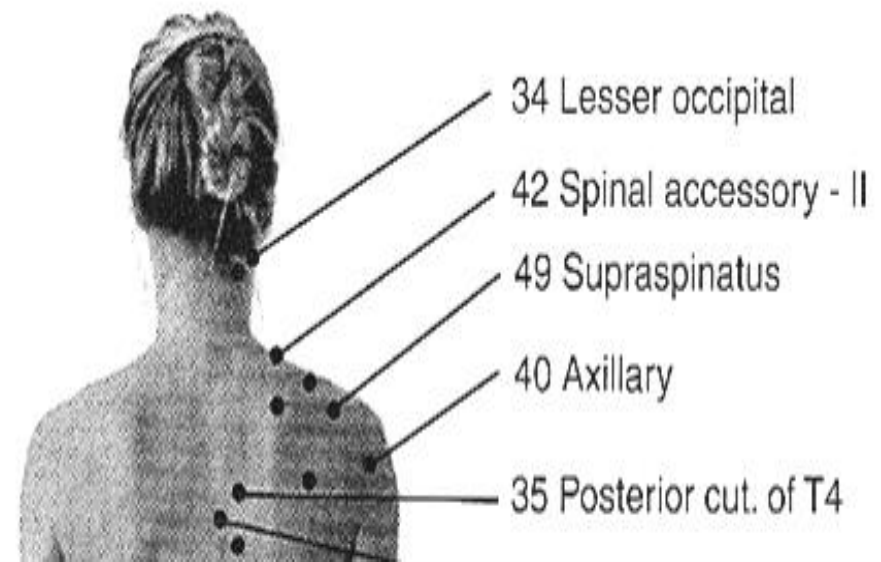
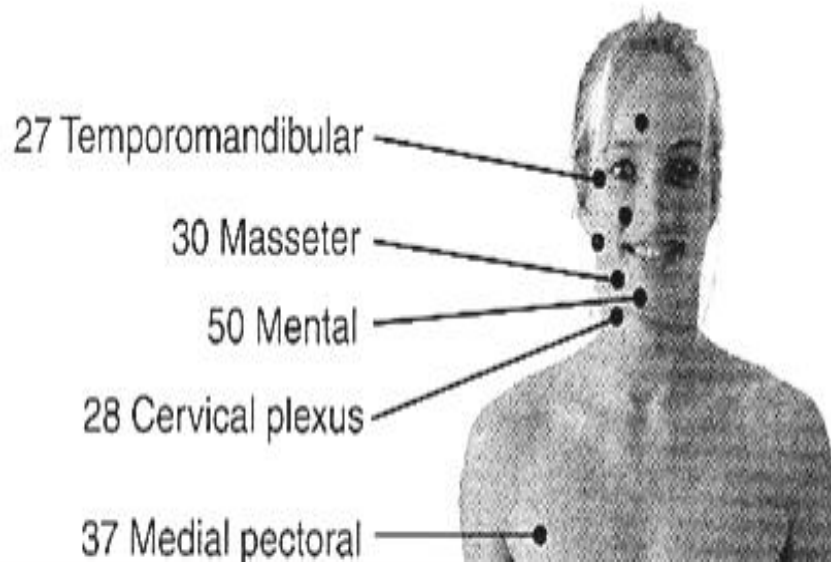


Table . Significant Analyte Differences in Gastrocnemius, Comparison of Groups (average at 2 and 3min)

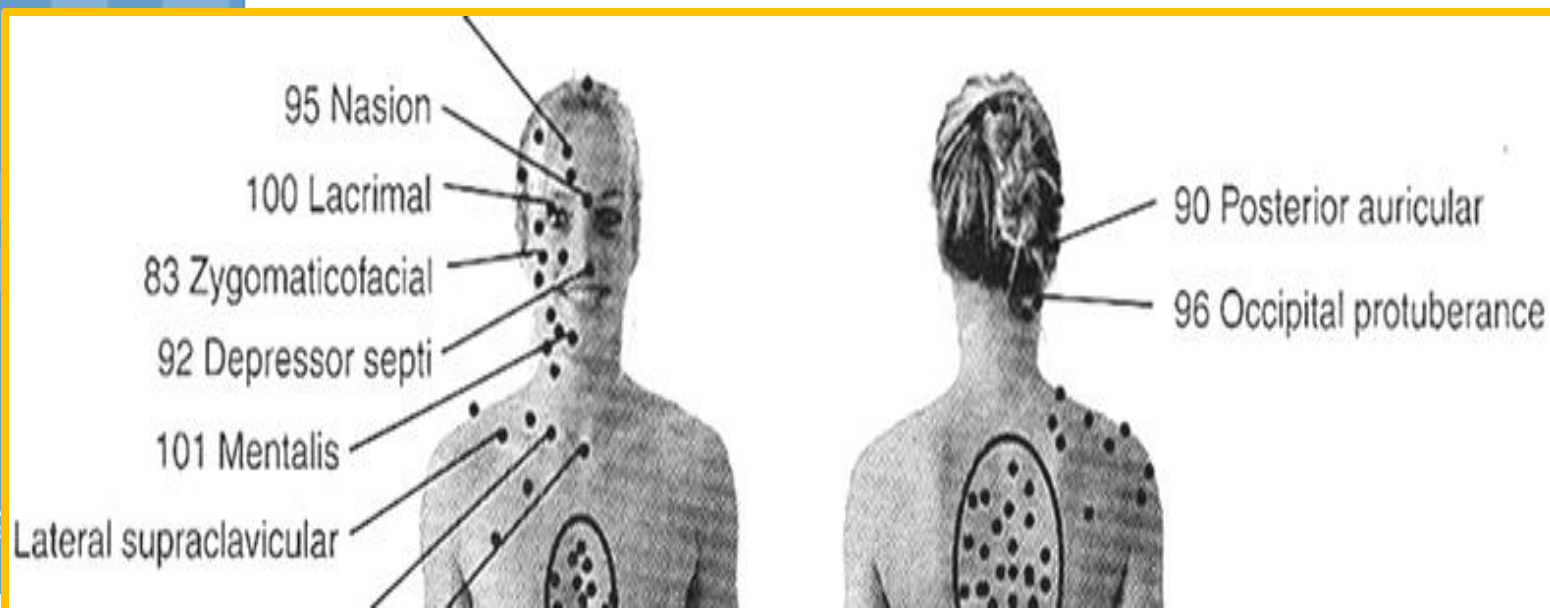
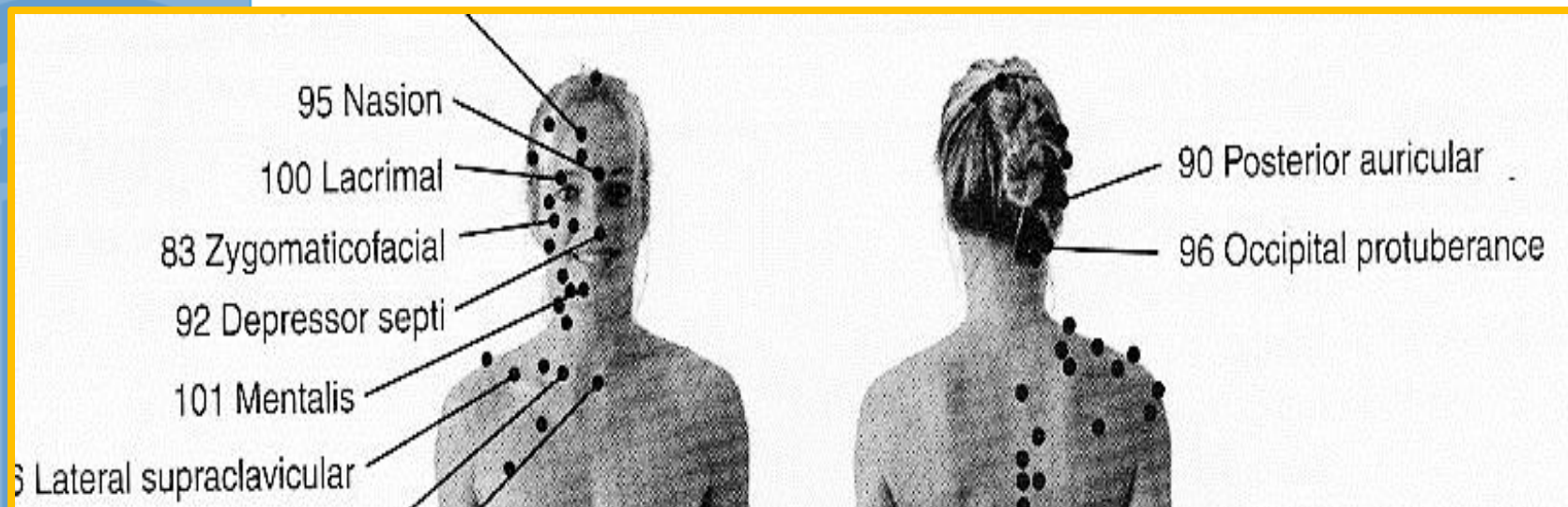
Analyte	Differences	$\alpha$ -Level ( <i>P</i> )
pH	Active < latent, normal	<.01
SP, CGRP, TNF- $\alpha$ IL-1 $\beta$ , IL-6, IL-8, norepinephrine	Active > latent, normal	<.01
Bradykinin	Active > normal	<.01
5-HT	Active > latent > normal	<.05



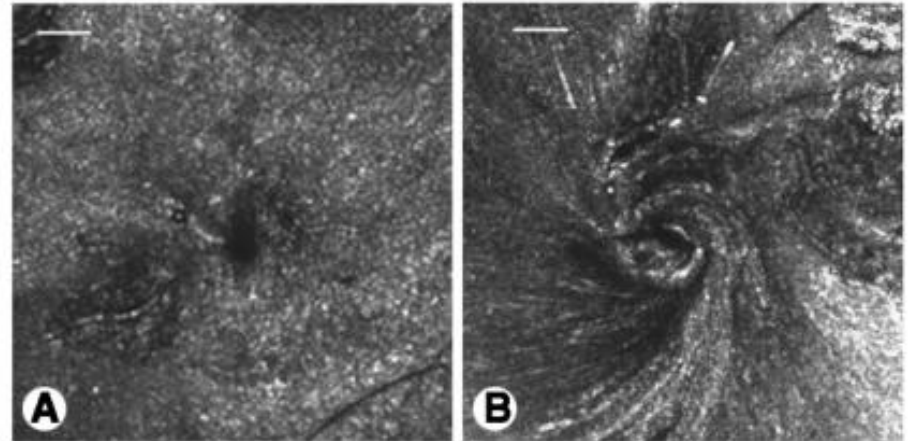
# Increasing sensitized Acupoints



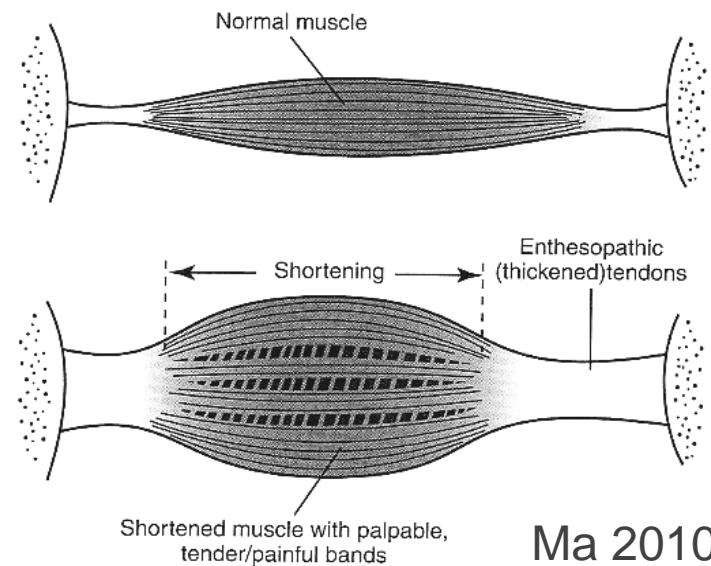
# Increasing sensitized Acupoints



# After needling

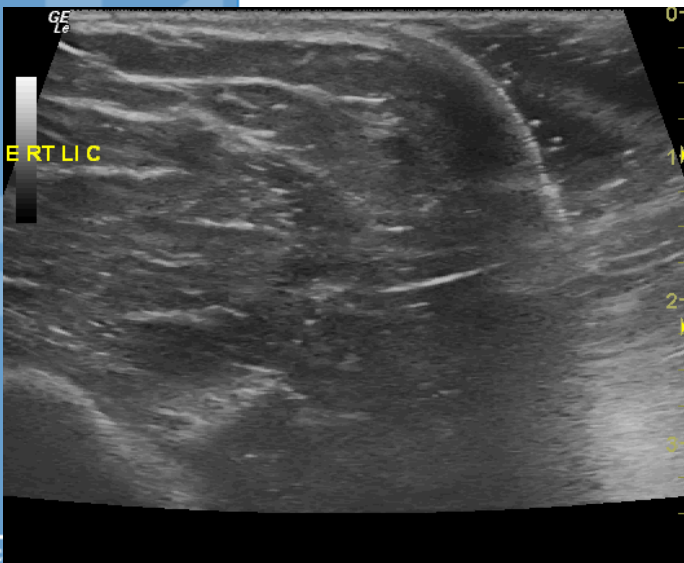


Langevin et al.



Ma 2010

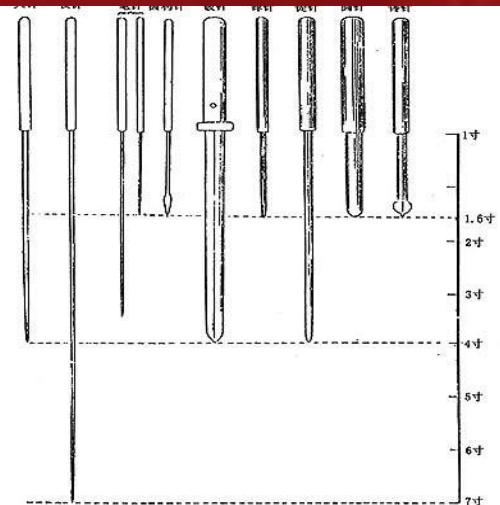
Park



Park



# Acupuncture Needles





# Acupuncture Myths

- » always uses filament-like stainless steel needle
- » acts slow, therefore, it is hard to know the outcome following the treatment.

# "A Miracle"

A miracle.

4/2/2009

If you would have asked me four months ago about acupuncture I would not have very much information to tell you. Without knowledge I was beginning to loose hope. I was constantly tired and unable to get through a whole day. I would wake up bloated and have constant migraines. last between 1 to 12 days. Doctors would perscribe me all the medicine they could and none of it would help only make things worse. I was in desperate need of finding another way to get better. My mother and I researched

Being able to be a patient of Dr. Park is a blessing. Since week two of our treatment he changed my diet completely by taking away Gluten and wheat products away and caffiene. we found out I was consuming 5 to 6 liters

is not even nearly close to being completed. I have improved alot and have more energy. My Stomach has started working. Our goal is to have 5 or less migraines a year, and I have faith we will achieve it.

# Acupuncture Myths

- » always uses filament-like stainless steel needle
- » acts more slowly than drug. Hence drug first then acupuncture.
- » improves the balance of *qi*, invisible & intangible mystical entity.

氣

# Various Qi

穀氣



寒氣



狂氣





# De-Mythified Acup.

- » Diverse tools/methods have been used to achieve similar direction of outcomes as acupuncture.
- » May see instant or delayed outcomes depending on how soon normal vitality flow is restored.
- » Cultural crosstalk may demythify qi and acupuncture, and Asian Medicine in general.
- » Physical/physiological effect of acupuncture within clinical context remain to be studied.
- » Quality of acupuncture studies are on its right track to improve. Blind criticism against the quality of acupuncture is not supported.

# Mechanism of Acupuncture

Pri

- Mechanical
- Thermo-stimulating
- Micro-injury creation

Sec

- Chemical
- Electrical
- Hemo- & Peri-hemorheological

Sys

- Neuro-Hormonal
- Lymphatics
- Psychological
- Myofascial network



# Rethink

- Is it acupuncture, as stimuli, or bodily response in healing to explain the effect of acupuncture?
- Are acupuncture points/regions permanent or evolving and disappearing ?
  - » Wherever vitality flow is stagnated/blocked. Tissues are tight and sensitized.
- Other modalities within the Chino-Asian medicine have been used to improve vitality flow to achieve similar outcome including medicine, food, breathing, posture, and exercise.

# Acupuncture for Chronic Pain

Andrew J. Vickers, DPhil; Klaus Linde, MD

JAMA March 5, 2014 Volume 311, Number 9

**CLINICAL QUESTION** Is acupuncture associated with reduced pain outcomes for patients with chronic pain compared with sham-acupuncture (placebo) or no-acupuncture control?

## Evidence Profile

**No. of randomized clinical trials:** 31 (29 had individual patient data available for inclusion in the primary analysis, 11 had a sham-acupuncture control, 10 had a no-acupuncture control, and 10 were studies of 3 groups including both sham-acupuncture and no-acupuncture control.)

**Study years:** Conducted, 1996-2008

**No. of participants:** 14 597 for studies in which a no-acupuncture control was used; 5230 for studies in which a sham-acupuncture control was used

**Men:** 5624 (30.5%) **Women:** 12 535 (68%)

Missing data on 275 participants (1.5%)

**Race/ethnicity:** Unavailable

**Age, median (interquartile range)[range], y:** 51 (39-63)[17-95]

**Settings:** Community- and hospital-based

**Countries:** United States, United Kingdom, Germany, Spain, Sweden

**Comparisons:** Acupuncture vs no-acupuncture control and acupuncture vs sham-acupuncture control

**Primary outcome:** A variety of different pain and function scores were used in the original trials; these were converted to standardized differences in the meta-analysis

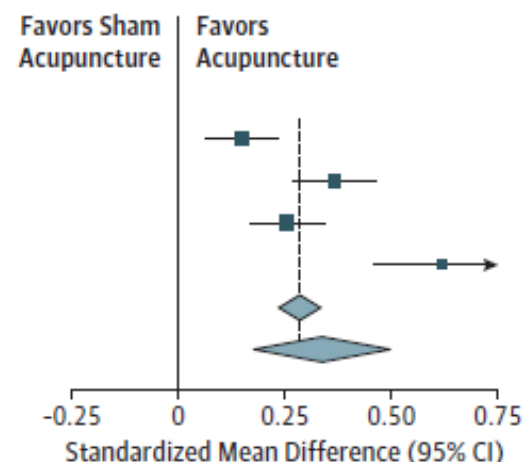




**Figure. Results of the Individual Patient Data Meta-analysis**

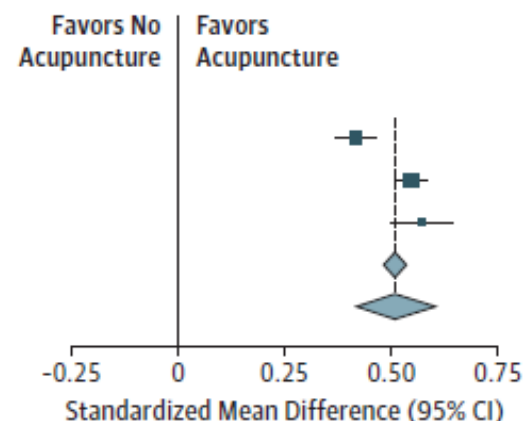
**A** Acupuncture vs sham acupuncture

Pain Type	Trials	Total No. of Participants		Standardized Mean Difference (95% CI)
		Sham Acupuncture	Acupuncture	
Headache	4	683	799	0.15 (0.07-0.24)
Musculoskeletal	8	708	804	0.37 (0.27-0.46)
Osteoarthritis	5	799	830	0.26 (0.17-0.34)
Shoulder	3	312	295	0.62 (0.46-0.77)
Overall (fixed-effects estimate)				0.29 (0.24-0.33)
Overall (random-effects estimate)				0.34 (0.18-0.50)



**B** Acupuncture vs no acupuncture

Pain Type	Trials	Total No. of Participants		Standardized Mean Difference (95% CI)
		No Acupuncture	Acupuncture	
Headache	5	2224	2408	0.42 (0.37-0.46)
Musculoskeletal	7	3739	4000	0.55 (0.51-0.58)
Osteoarthritis	6	1062	1164	0.57 (0.50-0.64)
Overall (fixed-effects estimate)				0.51 (0.48-0.53)
Overall (random-effects estimate)				0.51 (0.42-0.60)



# Acupuncture Is Safe in Children..

The New York Times

Nov.22, 2011

REVIEW ARTICLES

## The Safety of Pediatric Acupuncture: A Systematic Review

**AUTHORS:** Denise Adams, PhD,\* Florence Cheng, MD,\*  
Hsing Jou, MD,\* Steven Aung, MD, PhD,\* Yutaka Yasui,  
PhD,\* and Sanita Vohra, MD, MSc\*\*

abstract

FREE

**CONTEXT:** Acupuncture is increasingly used by children because the

one in 10 children mild side effects, like bruising and pain and numbness at the puncture site. Serious side effects, like infections and nerve impairment, were rare.

acupuncture in adults found similar complication rates, with serious side effects: 5/1000,000 Tx.

Adams et al. Pediatrics 2011

# UK NHS Guideline

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Page last updated at 23:05 GMT, Tuesday, 26 May 2009 00:05 UK

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## NHS to give back pain acupuncture

Patients with persistent low back pain should be offered acupuncture, massages or exercises on the NHS, says guidance.

It is the first time the National Institute for Health and Clinical Excellence has explicitly backed the use of complementary therapies.

The rationing watchdog said evidence suggests they help and will be cost effective if doctors stop providing less proven back services like X-rays

  
Back pain is exceedingly common

[Lock rate FDIC](#)  
[citi](#)

<http://news.bbc.co.uk/2/hi/health/8068427.stm>, May 26, 2009



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# MYMOP Change Over Time After Receiving Acupuncture Treatment

MYMOP scale [Best – Worst: 0-6]	MYMOP at Initial and Follow-Ups, mean (SD)				
	Initial	1st FU, [n]	1 <sup>st</sup> FU- Initial	4th FU, [n]	4 <sup>th</sup> FU – Initial
TMD Pain	3.50 (1.55)	3.16 (1.39), [26]	-0.34 (1.60)	2.54 (1.05), [14]	-1.25 (1.25)
Related pain (neck pain, headache, low back pain)	3.35 (1.56)	2.95 (1.16), [21]	-0.52 (1.99)	2.29 (1.05), [14]	-1.21 (1.86)
Affected Activity	3.38 (1.66)	3.03 (1.59), [19]	-0.69 (1.82)	2.30 (1.69), [10]	-1.33 (1.44)
Well Being	2.83 (1.43)	2.63 (1.32), [26]	-0.19 (1.23)	1.64 (0.93), [14]	-1.11 (1.39)
MYMOP profile	3.30 (1.16)	2.97 (0.94), [26]	-0.34 (0.98)	2.16 (0.78), [14]	-1.28 (1.19)



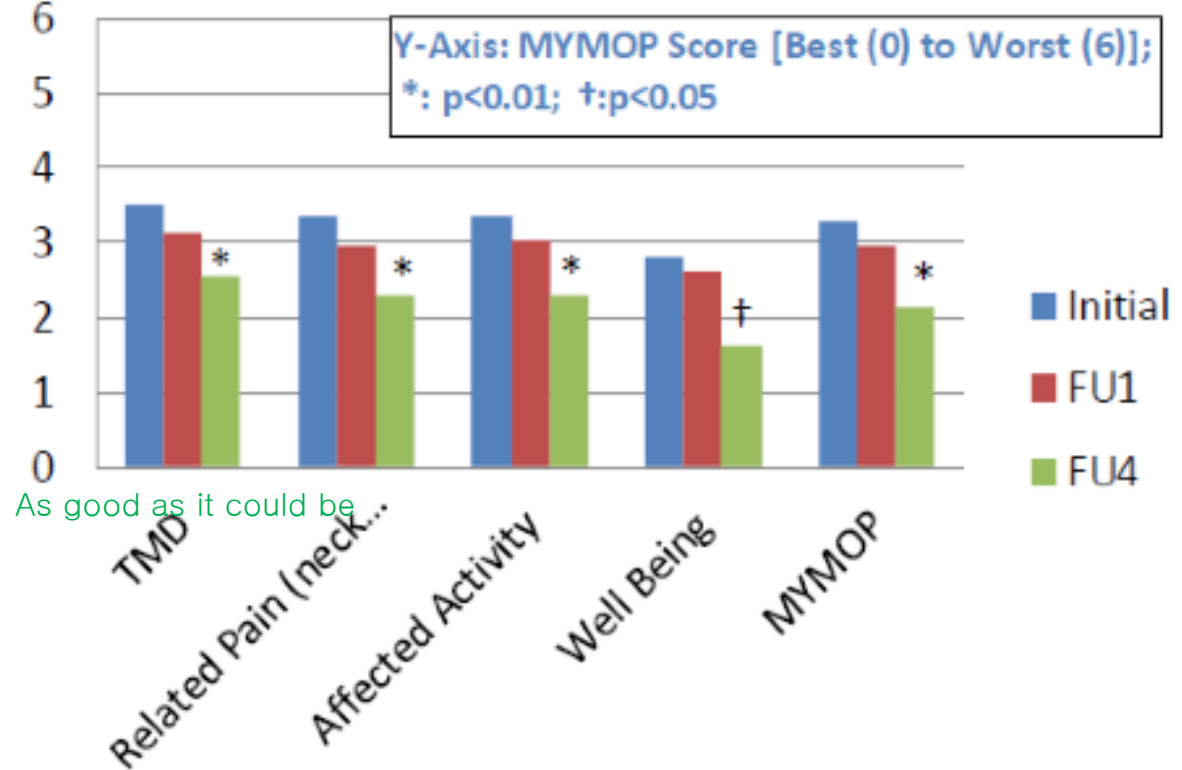
# Outcomes of TMD Patients Following Acupuncture

TMD pain at the initial assessment ( $3.50 \pm 1.55$ ) and after four treatment visits ( $2.54 \pm 1.05$ ) showed statistically significant improvement ( $p < 0.01$ ).

Wellbeing and MYMOP profile scores followed the same pattern with wellbeing improving from  $2.83 \pm 1.43$  to  $1.64 \pm 0.93$  ( $p < 0.05$ ) and MYMOP profile scores improving from  $3.30 \pm 1.16$  to  $1.28 \pm 1.19$  ( $p < 0.01$ ).

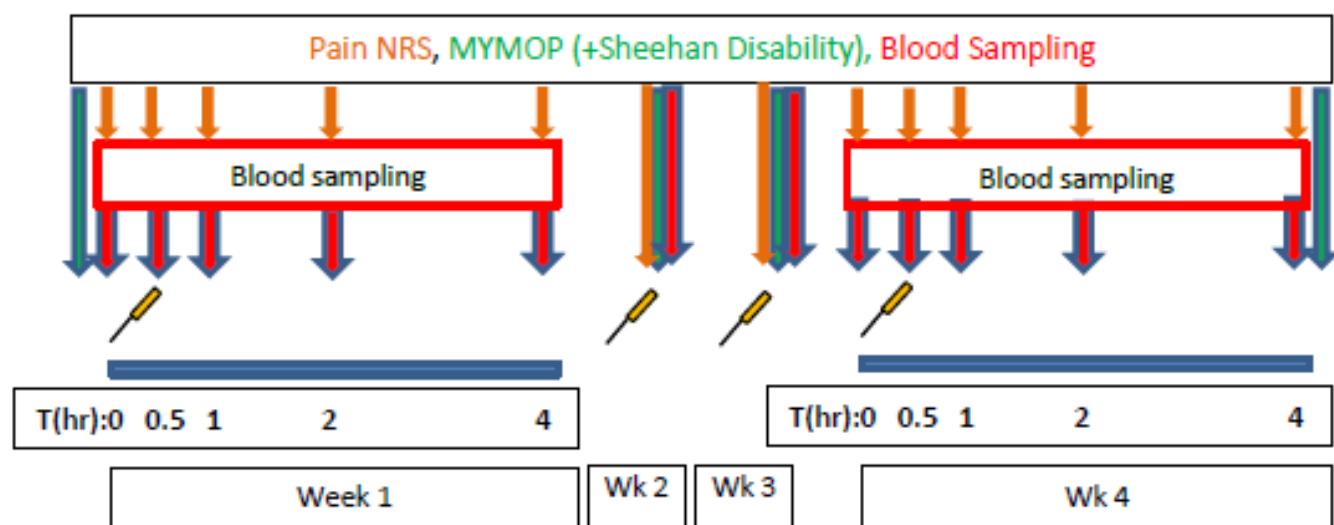
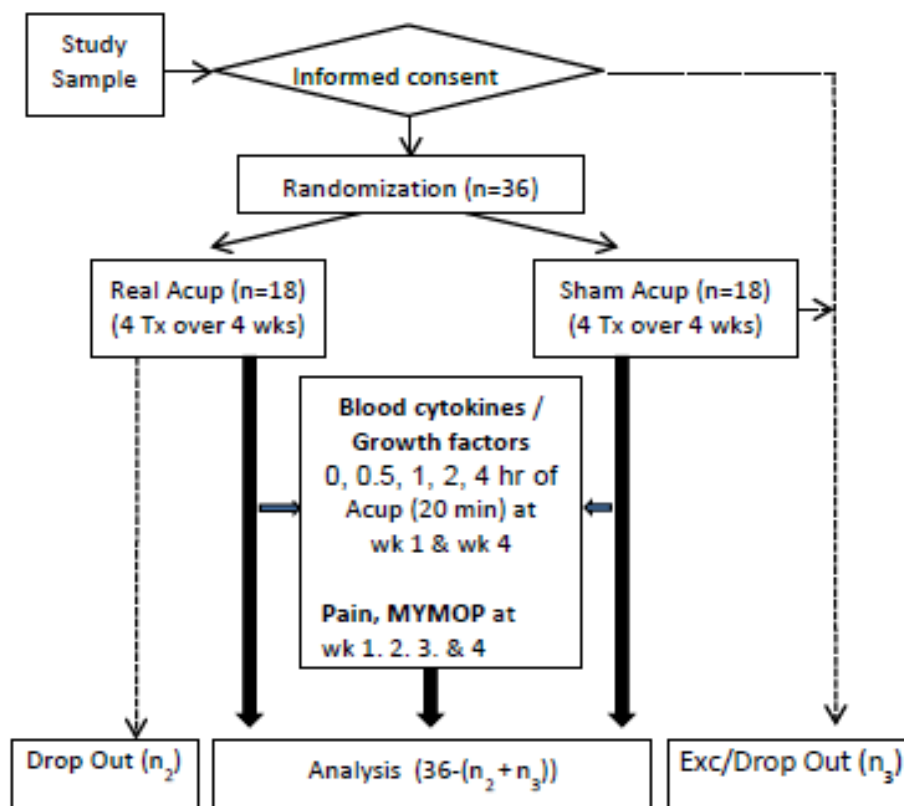
The degrees of change for TMD Pain ( $1.25 \pm 1.25$ ), Wellbeing ( $1.82 \pm 1.75$ ), and MYMOP profile score ( $1.28 \pm 1.19$ ) between the initial assessment and fourth follow up were all higher than the clinically meaningful minimal difference (0.5-1.0).

As bad as it could be

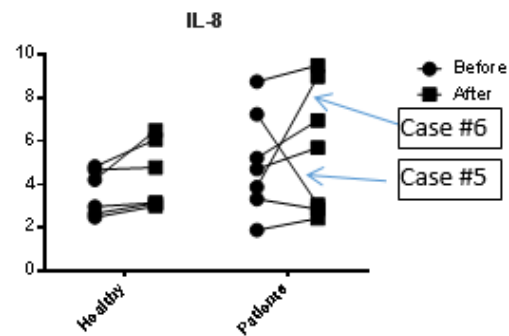
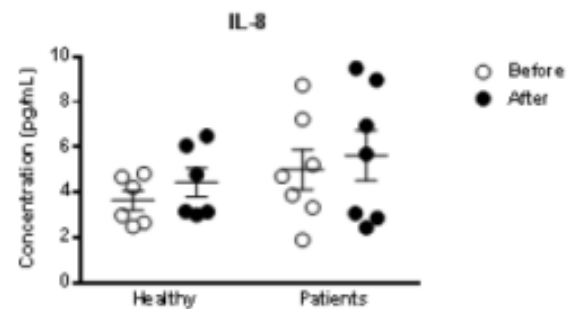
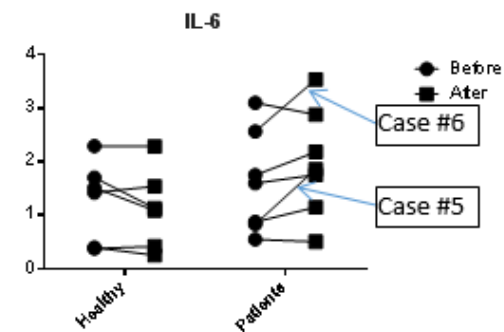
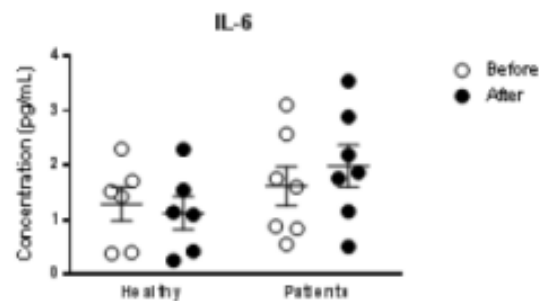
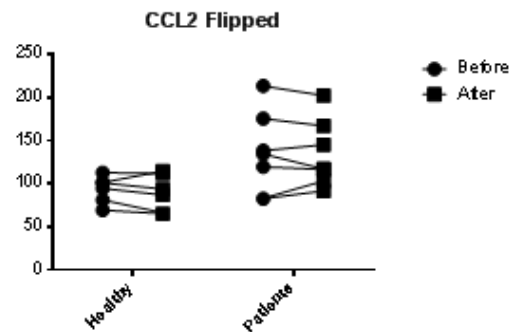
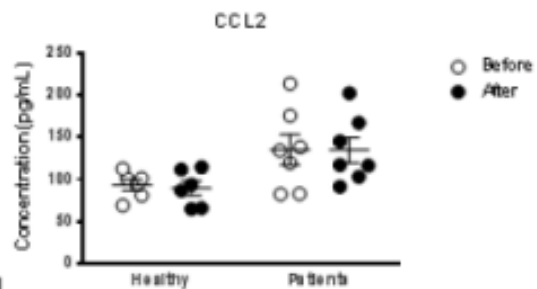


## Clinical Outcomes After 4 Acupuncture Visits





# Cytokine Assay





# Acknowledgment:

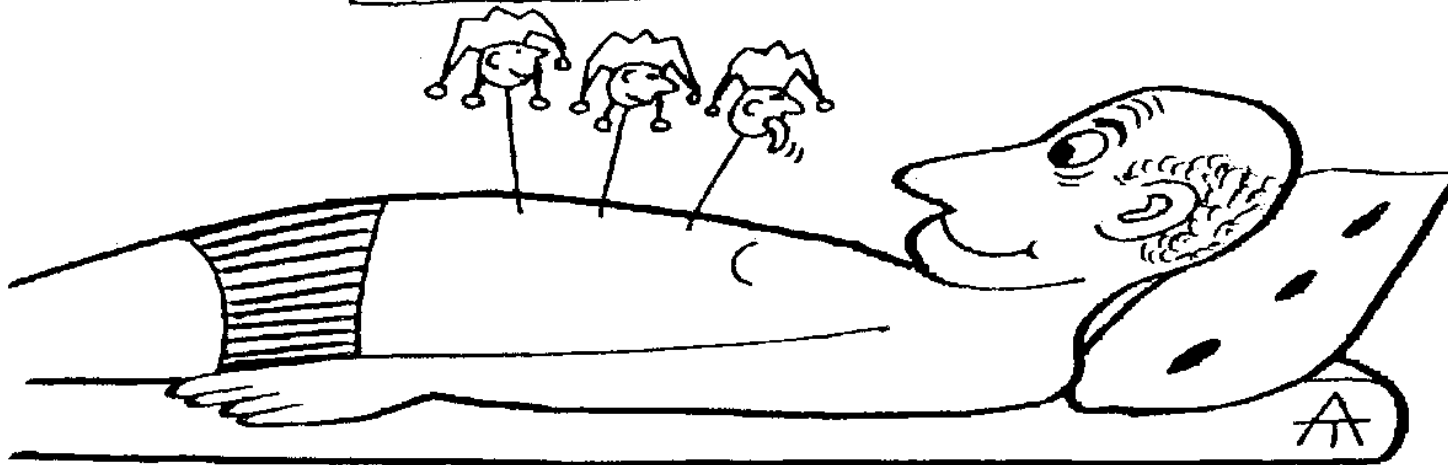
Albrecht Molsberger, William Maixner, Pei-Feng Lim, Andrea Nackley, Eric Bair

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[acupuncture@med.unc.edu](mailto:acupuncture@med.unc.edu)