

# SESSION



# NOTES

NORTHWESTERN HEALTH SCIENCES UNIVERSITY





**Jason Hao, DOM, MBA**

Chinese Scalp Acupuncture for Difficult Neurological Disorders

Part 1

---

---

---

---

---

---

---

---



Scalp Acupuncture For Complex Neurological Disorders

头针治疗神经系统疑难病症

美国神经针灸研究院 郭吉康

Jason Hao,  
Neuro-acupuncture Institute

---

---

---

---

---

---

---

---

Grand Master, Pro. Shentian Sun  
针灸国医大师 孙申田教授





---

---

---

---

---

---

---

---

**Dr. Jason Jishun Hao, MTCM, MBA**  
**郝吉顺 教授, 中医学硕士, 企业管理硕士**

President, Neuroacupuncture Institute, USA  
 美国神经针灸研究院 院长

Former Chairman of Acupuncture  
 Committee, National Certification  
 Commission for Acupuncture and Oriental  
 Medicine, USA

曾为美国国家针灸中医执照颁发委员会  
 针灸委员会 主席

Former President of the board of director,  
 Southwest Acupuncture College, USA

曾为美国西南针灸学院 董事会 董事长

Artist, Chinese painting & calligraphy  
 擅长国画, 书法

WFOTCM textbook Editor in-chief  
 世中联英文核心教材《针灸学》主编主译



www.neuroinstituteacupuncture.org

---

---

---

---

---

---

---

---

---

---

**Newspapers, TV, Journal Reports**  
**多家美国报纸, 杂志, 电台, 广播报道**




---

---

---

---

---

---

---

---

---

---



**Contents 讲座内容**

- General Review of Anatomy and Physiology of Brain
- 大脑神经生理回顾。
- The Stimulating Areas and Indication of CSA
- 头针穴区定位和主治
- The Scalp Acupuncture Techniques 头针针技
- Clinical Application of Scalp Acupuncture 头针应用
- Demonstration of Treatment
- 治疗示范
- Discussion 讨论




---

---

---

---

---

---

---

---

---

---

### Scalp Acupuncture History 头针历史



- 1950 Began research 开始研究
- 1972 Discovered by Dr. Jiao, Shunfa- 焦顺发, 方云鹏
- 1977 First introduced in Chinese Acupuncture text book
- 四版《针灸学》介绍焦氏头针
- 1980 Developed by Dr. Sun, Shentian 孙申田 and Dr. Yu, Zhishun 于致顺
- 1987 Introduced at First International Acupuncture Conference in Beijing
- 1987年在北京召开第一届世针联大会
- 2007 Rejuvenated by Dr. Jason Hao at 20th International Acupuncture Conference in Beijing 1987年在北京召开第一届世针联大会
- 2011年 英文版《中国针灸治疗学》美国出版
- 2011 《Chinese Scalp Acupuncture》

---

---

---

---

---

---

---

---

### Dr. Jiao, Shunfa 焦顺发教授




---

---

---

---

---

---

---

---

### Grand Master, Pro. Shentian Sun 国医大师 孙申田教授




---

---

---

---

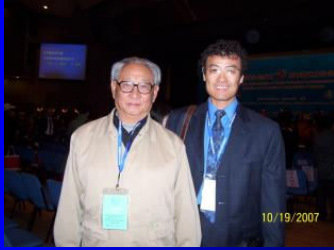
---

---

---

---

### Dr. Yu, Zhishun 于致顺教授



---

---

---

---

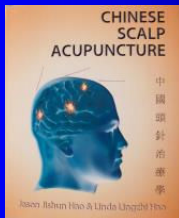
---

---

---

---

### Scalp Acupuncture 头针



Scalp acupuncture is a contemporary acupuncture technique integrating traditional needling method with modern knowledge about representative areas of the cerebral cortex. The techniques have great success in the patients with stroke, MS, TBI, PTSD, phantom pain, cerebral palsy, Autism, Long COVID, and other central nervous system disorders.  
头针为现代针灸方法，将传统针刺手法与西医神经学、神经科学结合而成。头针对神经系统疑难病症具有卓越疗效，如中风、多发性硬化症、脑损伤、癫痫、小儿脑瘫、自闭症、新冠后遗症，及新冠疫苗不良反应等。

---

---

---

---

---

---

---

---

### Clinical Applications 头针应用

- Blood vessel disorder
- Infection disorders
- Genetic and degenerative disorders
- Traumatic Disorders
- Tumor and cancer
- Other: poison, malnutrition, and immunity disorders
- 脑血管疾患
- 脑变性退化疾患
- 脑损伤
- 脑感染
- 脑肿瘤术后



---

---

---

---

---

---

---

---

**The Application of Scalp Acupuncture for Central Nerve System Disorders According to Clinical Study**  
**头针临床多用于中枢神经系统疾病**

Scalp acupuncture has proven to be the most effective technique for treating central damage, including stroke, multiple sclerosis, cerebral palsy, autism, PTSD, traumatic brain injury, Parkinson's disease, and phantom limb.  
 临床研究证明头针对 中风, 多发性硬化症, 小儿脑瘫, 自闭症, 脑震荡, 脑损伤后遗症, 帕金森氏症, 幻肢痛, 长新冠有卓越疗效。




---

---

---

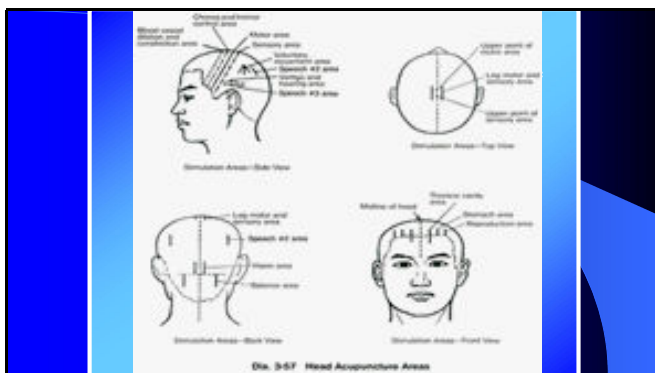
---

---

---

---

---




---

---

---

---


---

---

---

---

**Anatomy of Brain 脑解剖, 生理**




---

---

---

---

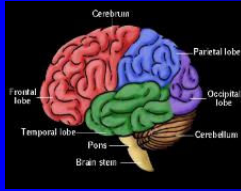
---

---

---

---

Anatomy and Physiology 脑解剖和生理



- Cerebrum 大脑
  - Frontal lobe 额叶
  - Parietal lobe 顶叶
  - Occipital Lobe 枕叶
  - Temporal lobe 颞叶
- Interbrain 间脑
- Cerebellum 小脑
- Brain stem 脑干

---

---

---

---

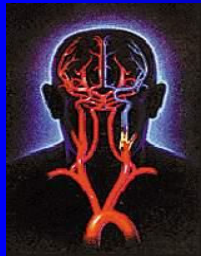
---

---

---

---

Blood Supply of The Brain 脑血液循环



- The human brain is only about 2% the total body weight.
- It received 15-20% of the body's blood supply.

---

---

---

---

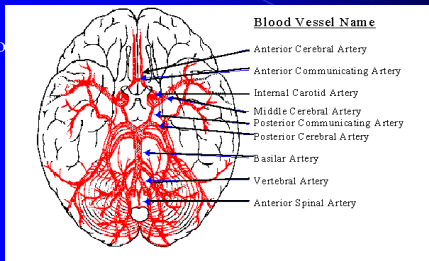
---

---

---

---

Base of the Brain 大脑底部血液供应



Base of

---

---

---

---

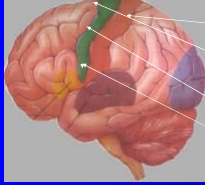
---

---

---

---

### Stimulation Area 头针刺激区



- 1. Sensory area 感觉区
- 2. Foot motor & sensory area 足运感区
- 3. Tremor area 震颤区
- 4. Motor area 运动区

---

---

---

---

---

---

---

---

### Motor & Sensory Area 运动区和感觉区



图1 脑半球功能区

---

---

---

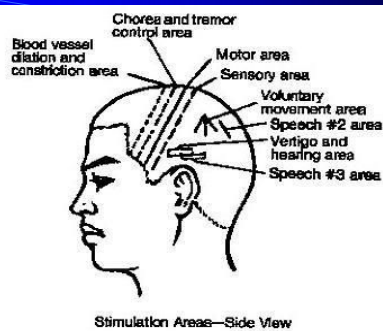
---

---

---

---

---




---

---

---

---

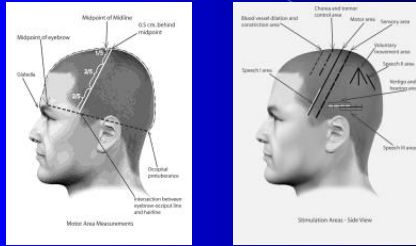
---

---

---

---

### The Location of Scalp Areas 焦氏头针定位, 区域




---

---

---

---

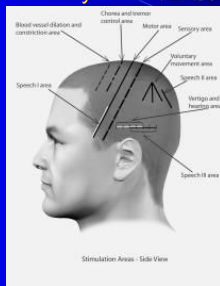
---

---

---

---

### Motor & Sensory Area 运动区, 感觉区




---

---

---

---

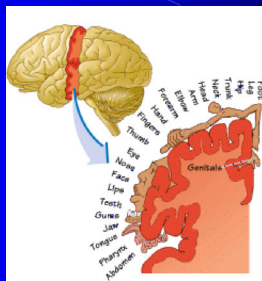
---

---

---

---

### Frontal dissection 大脑切片




---

---

---

---

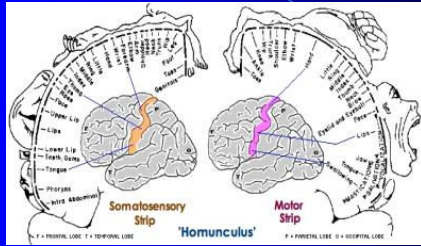
---

---

---

---

Frontal dissection of cerebral hemisphere  
大脑切片示意图



---

---

---

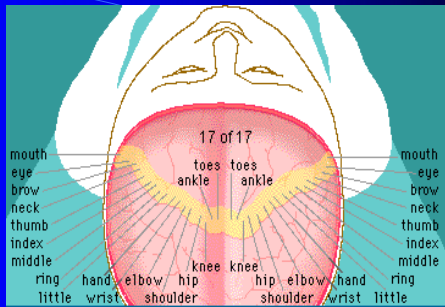
---

---

---

---

---



---

---

---

---

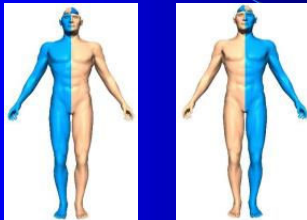
---

---

---

---

Motor & Sensory Area 大脑支配对侧运动和感觉



---

---

---

---

---

---

---

---

### Indication of Motor Area 运动区适应症

Paralysis or weakness of face, trunk & limbs

- Stroke 中风
- Multiple Sclerosis 多发性硬化症
- Traumatic brain injury 脑外伤
- Cerebral Palsy 小儿脑瘫
- Parkinson's disease 帕金森氏症
- Encephalitis and meningitis 脑炎, 脑膜炎
- Acute myelitis 脊髓炎
- Progressive myoatrophy
- Multiple neuritis
- Poliomyelitis
- Periodic paralysis




---

---

---

---

---

---

---

---

### RECOVERED STROKE 完全恢复的中风病人



- Right paralysis
- Aphasia
- Face paralysis
- Balance problem

---

---

---

---

---

---

---

---

### A Stroke Patient First Treatment 中风病人第一次治疗神奇疗效



- A 68-year-old female stroke
- Left side paralysis
- Aphasia
- Balance off

---

---

---

---

---

---

---

---

### A Stroke Patient on Oct. 23,2019



- A 68-year-old female stroke
- Left side paralysis
- Aphasia
- Balance off

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

### 头针治疗面瘫




---

---

---

---

---

---

---

---

头针治疗中风后遗症



---

---

---

---

---

---

---

---

头针治疗中风后遗症



---

---

---

---

---

---

---

---

Recovered 6-year-old Cerebral Palsy  
头针治愈6岁脑瘫儿童



---

---

---

---

---

---

---

---

年龄 age	性别 Sex	疾病 Disease	表现 S&S	穴位 Scalp Areas	疗 数 TX	疗效 Result
1.5 year-old 岁 CP	男 m	胎儿 中风 stroke	颈直, 失语 Stiff, aphasia	足运感区, 震脚区 FMS, tremor	3次	痊愈 cured
5 year-old 岁 CP	男 m	产期脑损伤 TBI	平衡障碍 语言不清 Ataxia, aphasia	足运感区, 平衡区, 语言1区 FMS, balance, Speech I	16次	痊愈 cured
6 year-old 岁 CP	男 m	胎儿中风 stroke	语言障碍, 共济失调 Ataxia Aphasia weakness	足运感区, 平衡区, 语言1区, 2区 FMS, balance, Speech I & II	14次	痊愈 cured
12 year-old 岁	female	胎儿中风 stroke	右上肢, 右 脚瘫痪 Paralysis Vision field loss	上1,5 和中2,5 运 动区 Motor, FMS	15次	痊愈 cured
14 year-old 岁	男 m	胎儿中风 stroke	右上肢, 瘫 痪 paralysis	中2,5 运动区 Motor, FMS	9次	明显好转 Significant improved

---

---

---

---

---

---

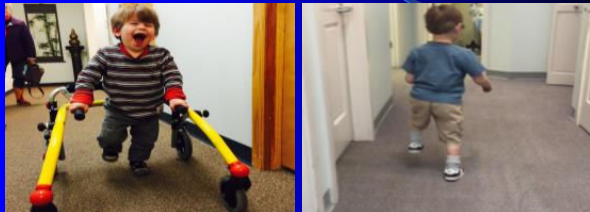
---

---

四岁脑瘫儿童2年前不能坐和站立, 失语。现在运动自如, 语言正常。这是郝医生治愈的第7个脑瘫患儿。

2016年10月能够奔跑的喜悦

2017年8月能够无助行走的欢欣




---

---

---

---

---

---

---

---

Cerebral Palsy 小儿脑瘫




---

---

---

---

---

---

---

---

### RECORVED AUTISM 自闭症



- Could not communicate
- Only say sample words
- Trouble focusing

---

---

---

---

---

---

---

---

### Neurological Mechanisms of Recovery from Stroke 中风康复机理

#### Early Recovery 早期

- Improvement on local circulation
- Resolution of cerebral edema
- The absorption of damaged tissue

#### Late Recovery 晚期

- Unmasking of neural pathways/reativation of unfunctional pathways
- Developing a lternative pathway/redundancy of CNS circuitry
- Regenerative collateral sprouting/formation of new synapse
- Changes in sensitivity of synaptic transmission

---

---

---

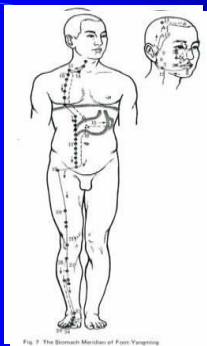
---

---

---

---

---



Scalp Acupuncture points  
 Distal points  
 Local points  
 Eye Acupuncture

Fig. 7 The Branches of Fuxi Yangming

---

---

---

---

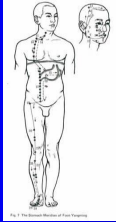
---

---

---

---

### 中风治疗方法



- Scalp Acupuncture points
- Distal points Local points
- Eye Acupuncture
- Chinese herbs

---

---

---

---

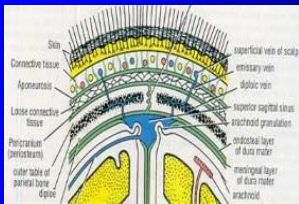
---

---

---

---

### Five Layers of Scalp 头皮结构



- Skin 皮肤
- Connective tissue 结缔组织
- Aponeurosis 帽状腱膜
- Loose areolar tissue 帽状腱膜下疏松结缔组织层
- Pericranium 颅骨膜

---

---

---

---

---

---

---

---

### Sensory Area Indications 感觉区适应症

- Abnormal sensations of face, trunk, and limbs 头面、躯干、四肢感觉异常
- Loss of sensation or pain, tingling, numbness 疼痛、麻木、电击感
- Phantom pain, complex regional pain, residual limb pain 幻肢痛、截肢局部痛、复杂性区域痛
- TMJ, trigeminal neuralgia, migraine headache, cluster headache, 三叉神经痛、颞和关节痛、偏头痛
- Shingles, sciatica, gout, plantar fasciitis, fibromyalgia, neuropathy, and paresthesia 坐骨、末梢神经炎、神经痛、痛风、脚跟痛

---

---

---

---

---

---

---

---

Patient with Phantom Pain 头针治疗幻肢痛



---

---

---

---

---

---

---

---

The Patient with Complex Regional Pain Syndrome 头针治疗复杂性区域疼痛综合症



---

---

---

---

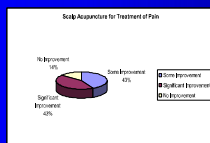
---

---

---

---

The Seminar at Walter Reed Army Medical Center in Washington, D.C. 在美国华盛顿军医中心治疗幻肢痛



- After only one treatment per patient, three of the seven patients instantly felt pain relief and showed significant improvement and no pain (43%), three patients showed some improvement (43%), and only one patient showed no improvement (14%); thus yielding a total effective rate of 86%.

仅一次头针治疗，七位伤员中三位疼痛立即消失(43%)，三位疼痛减轻(43)，只有一位无改善(14%)。总有效率为(86%)。使军医专家们惊愕和兴奋。

---

---

---

---

---

---

---

---

A Patient with Shingle 头针治疗带状疱疹



---

---

---

---

---

---

---

---

TBI & PTSD 头针治疗脑损伤



Neck injury, Neck pain, headache, anxiety, Depression, insomnia, fatigue

---

---

---

---

---

---

---

---

TBI & PTSD 头针治疗脑损伤



---

---

---

---

---

---

---

---

### Chorea and Tremor Area 舞蹈震颤区



---

---

---

---

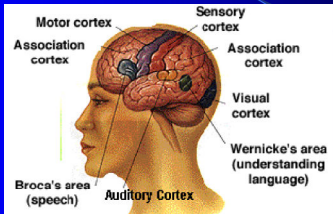
---

---

---

---

### Chorea and Tremor Area 舞蹈震颤区



---

---

---

---

---

---

---

---

### Chorea & Tremor Area



---

---

---

---

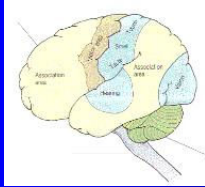
---

---

---

---

### Hearing and dizziness area 晕听区



- Hearing area 听区
- Dizziness and vertigo area 眩晕区

---

---

---

---

---

---

---

---

### Hearing and dizziness area



---

---

---

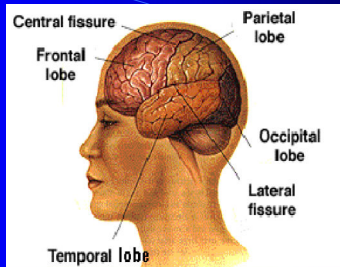
---

---

---

---

---



---

---

---

---

---

---

---

---

### Hearing & Dizziness Area



---

---

---

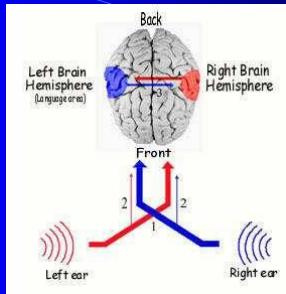
---

---

---

---

---



---

---

---

---

---

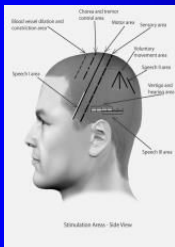
---

---

---

### Blood Vessel Area 血管舒缩区

### Praxia Area 运用区



- Blood vessel Dilation and Constriction area
- 血管舒缩区
- Praxia area 运用区

---

---

---

---

---

---

---

---

Blood Vessel Area 血管舒缩区



---

---

---

---

---

---

---

---

Praxia Area 运用区



---

---

---

---

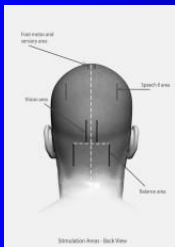
---

---

---

---

Vision and Balance Area 视区, 平衡区



- Vision area 视区
- Balance area 平衡区

---

---

---

---

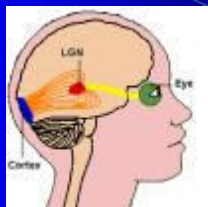
---

---

---

---

### Vision Area 视区




---

---

---

---

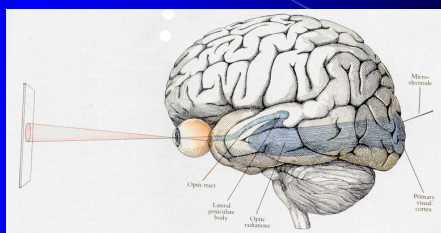
---

---

---

---

### Vision Area 视区




---

---

---

---

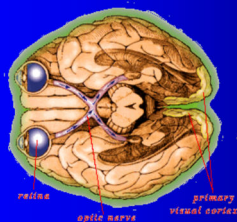
---

---

---

---

### Vision Area 视区交叉



Using the CVM1 T3D, University of Texas researchers created the first model of the visual cortex to simulate self-organization of neuron-to-neuron connections.

---

---

---

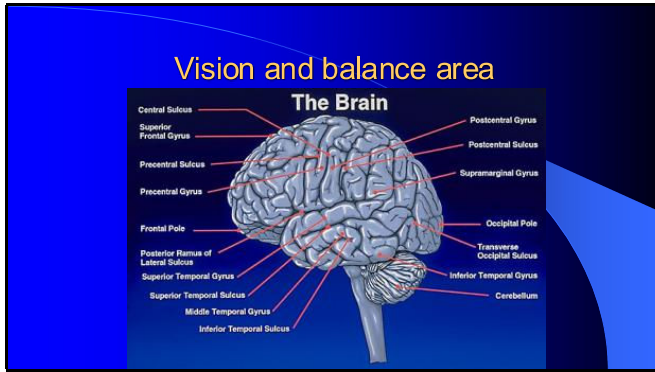
---

---

---

---

---




---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

### MS Case Treated by Scalp Acupuncture 头针治疗多发性硬化病人



- A 65-year-old lawyer with multiple sclerosis for 20 years and disable for 12 years.
- Leg weakness, fatigue, poor balance, vision problem.
- 该病人初诊时患多发性硬化病20年12不能工作, 平衡障碍, 严重乏力, 视力障碍。4次治疗后, 全部症状消失。

---

---

---

---

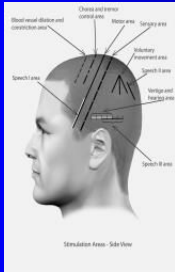
---

---

---

---

### Speech Areas 语言区



- Speech I area 语言1区
- Speech II area 语言2区
- Speech III area 语言3区

---

---

---

---

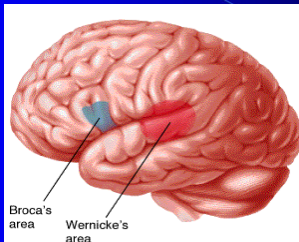
---

---

---

---

### Speech Areas 语言区



---

---

---

---

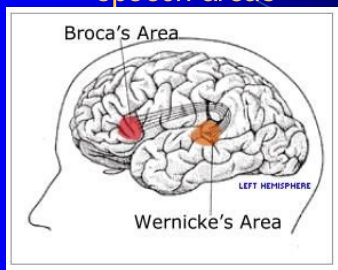
---

---

---

---

### Connecting between speech areas



---

---

---

---

---

---

---

---

### Indications of Speech Areas 语言区适应症

- Speech I Area-- Expressive (motor) aphasia  
运动性失语
- Speech II Area -- Nominal aphasia  
命名性失语
- Speech III Area -- Receptive (sensory) Aphasia  
感觉性失语
- Speech I, II, III Areas -- Global aphasia  
全脑性失语

---

---

---

---

---

---

---

---

### Traumatic Brain Injury

脑损伤后, 失语, 瘫痪, 吞咽困难



---

---

---

---

---

---

---

---

### Traumatic Brain Injury 3 months



---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

**LONG COVID SYMPTOMS 长新冠**

治疗前舌像  
Tongue before treatment

智三针  
足运动感觉区  
Head III Needles

听力I区, II区  
Hearing I & II

治疗后舌像  
Tongue after treatment

---

---

---

---

---

---

---

---

**Foot motor and sensory area 足运动感觉区**

Stimulation Areas—Top View

Stimulation Areas—Top View

---

---

---

---

---

---

---

---

### Foot motor and sensory area



---

---

---

---

---

---

---

---

### Foot Motor & Sensory Area



---

---

---

---

---

---

---

---

### Indication of Foot Motor & sensory Area 足运动感觉区适应症

- Paralysis, pain and numbness of leg and foot 下肢瘫痪, 感觉病变
- Urine disorders 尿病征
- Bowel disorders 大便病征
- Impotence, spermatorrhea, low libido 性功能病症
- Prolapse of uterus, uterus bleeding 各种下垂, 崩漏
- Cervical syndrome, lumbar degeneration 脊柱病变
- Skin diseases 皮肤病
- ADHD, ADD
- Post-traumatic stress disorder, Post-concussion syndrome
- 脑损伤, 脑震荡
- Restless leg syndrome, Dementia 不宁腿, 老年痴呆
- Fibromyalgia 多发性肌纤维痛
- Seizure 癫痫

---

---

---

---

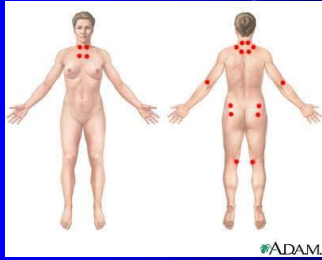
---

---

---

---

### Fibromyalgia




---

---

---

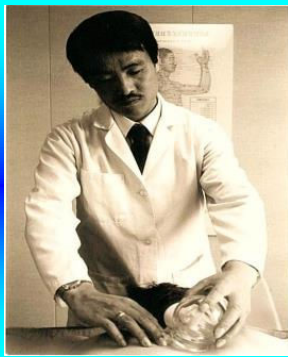
---

---

---

---

---




---

---

---

---

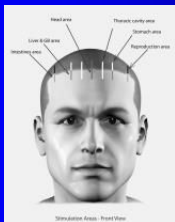
---

---

---

---

### Internal organs areas 内脏区



- Head area 头区
- Thoracic cavity area 胸腔区
- Stomach area 胃区
- Genital area 生殖区
- Liver and gall bladder area 肝胆区
- Intestine area 肠区

---

---

---

---

---

---

---

---

## CONCLUSION 结语

Scalp acupuncture treatment for neurological disorders is accessible, less expensive, safer, more effective, and caused fewer side effects. Scalp acupuncture not only benefits patients with neurological disorders, but also significantly contributes to our understanding of neurological disorders. Furthermore, it may help to discover the mechanisms of neurological disorders and will lead to the discovery of further advancements in the treatment of neurological disorders.

大量临床研究证明头针治疗神经、精神系统疾病是可行的，且具有花费小，简单，易行，安全，有效和无副作用等优点。头针能成功地治疗瘫痪、失语等病患不仅给病人和家属送来福音，而且对医学界认识神经、精神疾病作出了值得注目的贡献。此外，它的成功亦可帮助医学界探寻头针的机理，以致进一步发现治理神经、精神疾病更有效方法。

---

---

---

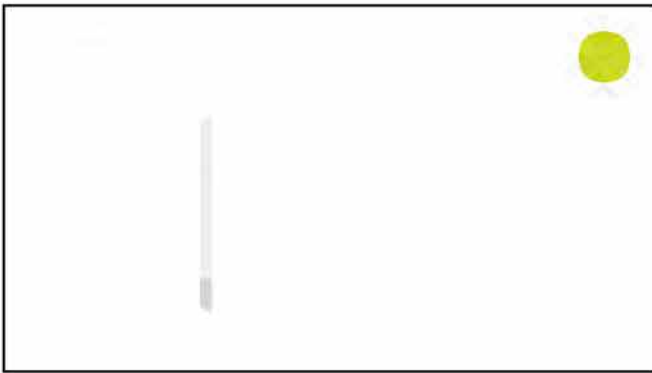
---

---

---

---

---




---

---

---

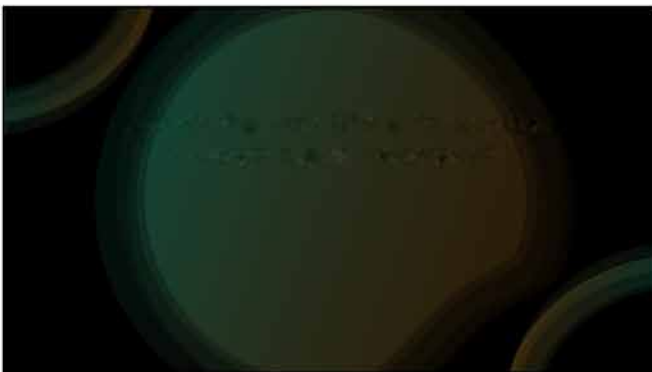
---

---

---

---

---




---

---

---

---

---

---

---

---



1

---

---

---

---

---

---

---

---



2

---

---

---

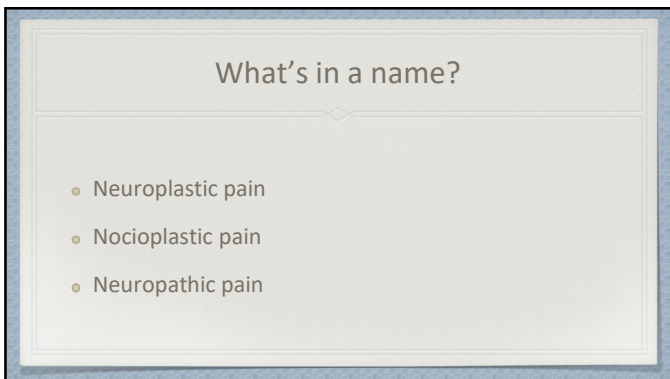
---

---

---

---

---



3

---

---

---

---

---

---

---

---

### Types of Pain (Oversimplified)

- Structural (bones and articulations)
- Soft Tissue (muscle, connective, peripheral nerve)
- Neuroplastic (central nervous system)

4

---

---

---

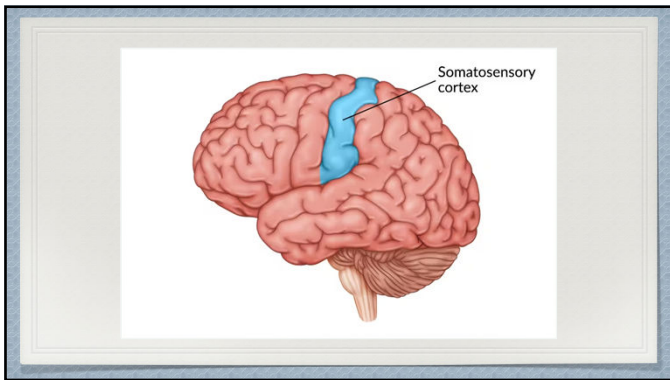
---

---

---

---

---



5

---

---

---

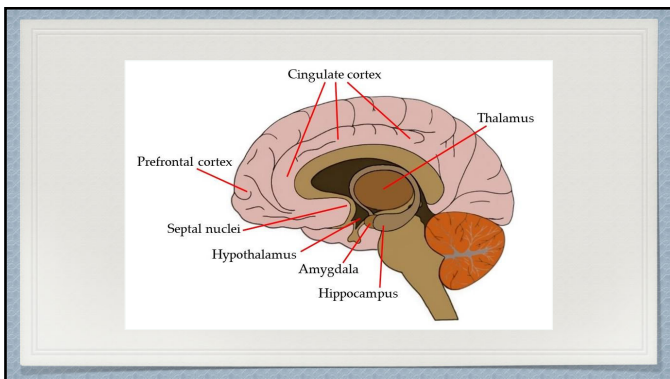
---

---

---

---

---



6

---

---

---

---

---

---

---

---



7

---

---

---

---

---

---

---

---

### Clinical Manifestations

- MUSK pain (but not bi syndrome)
- Fibromyalgia
- Headaches/Migraines
- Gastrointestinal (stress pattern)
- Phantom Limb

8

---

---

---

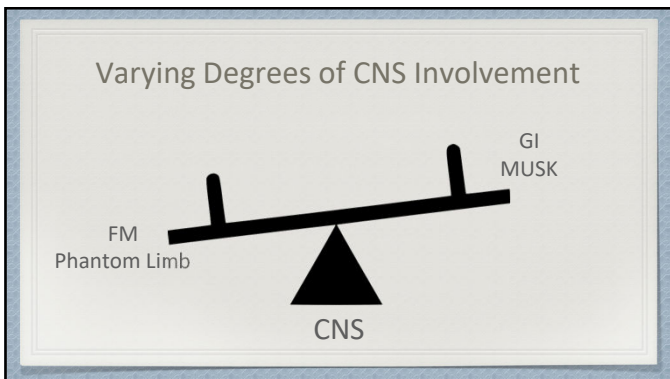
---

---

---

---

---



9

---

---

---

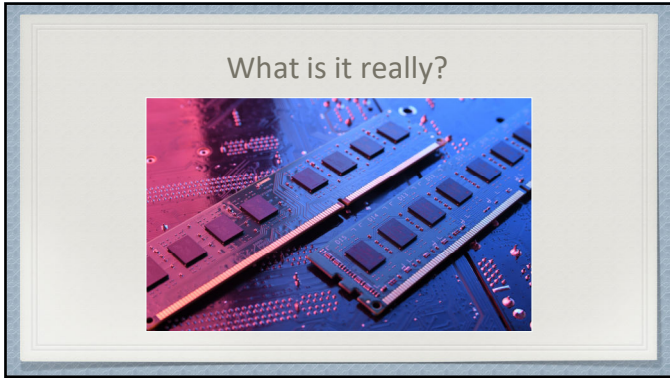
---

---

---

---

---



10

---

---

---

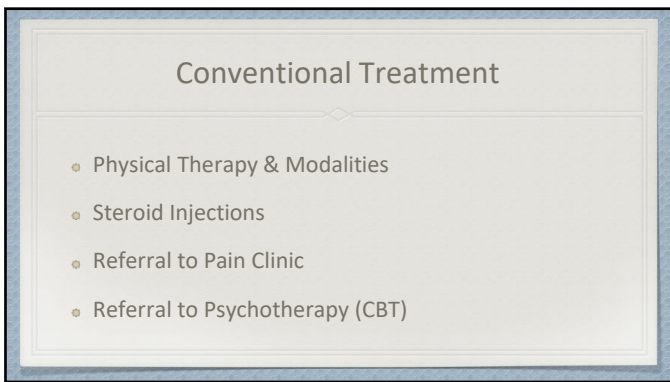
---

---

---

---

---



11

---

---

---

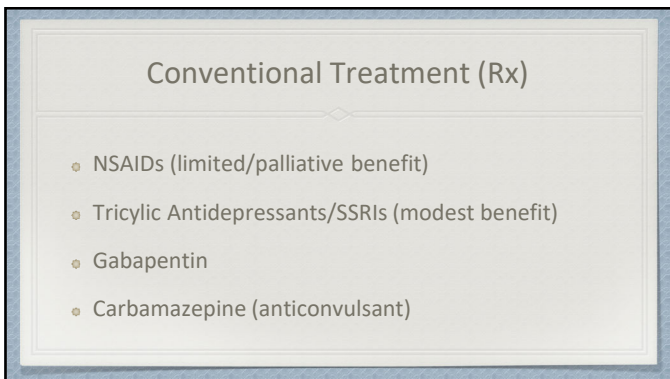
---

---

---

---

---



12

---

---

---

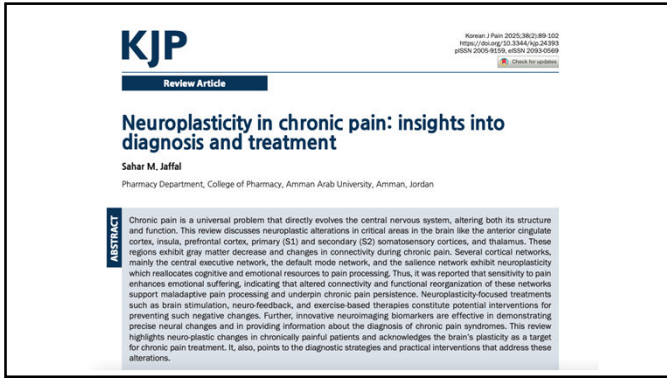
---

---

---

---

---



13

---

---

---

---

---

---

---

---

---

---



14

---

---

---

---

---

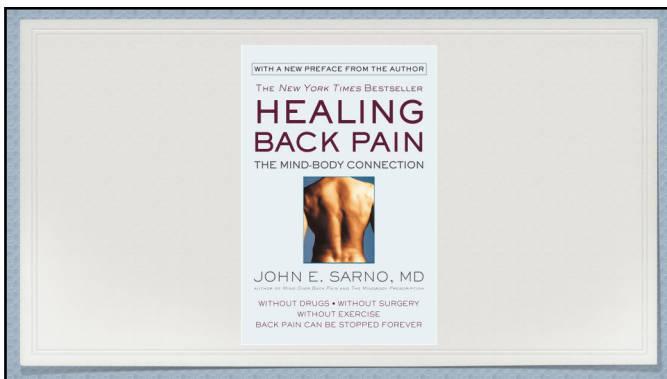
---

---

---

---

---



15

---

---

---

---

---

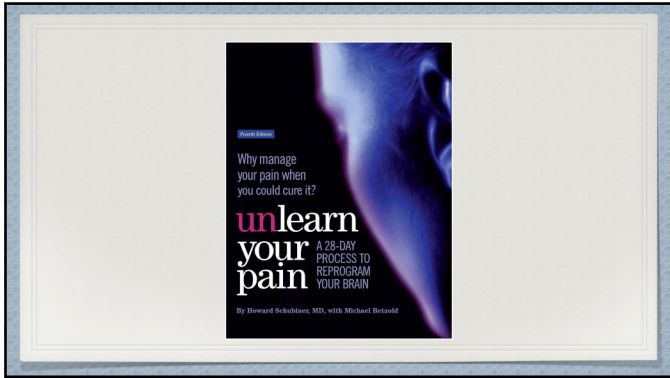
---

---

---

---

---



16

---

---

---

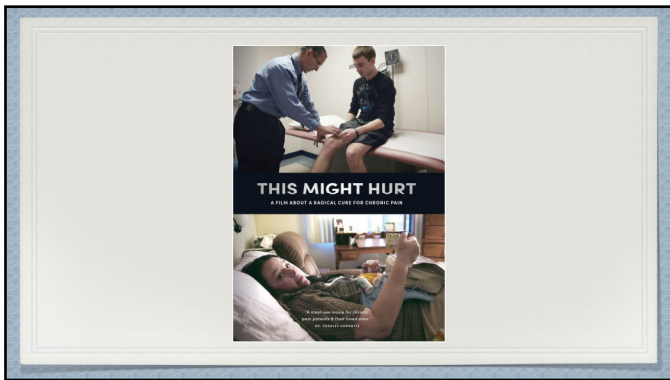
---

---

---

---

---



17

---

---

---

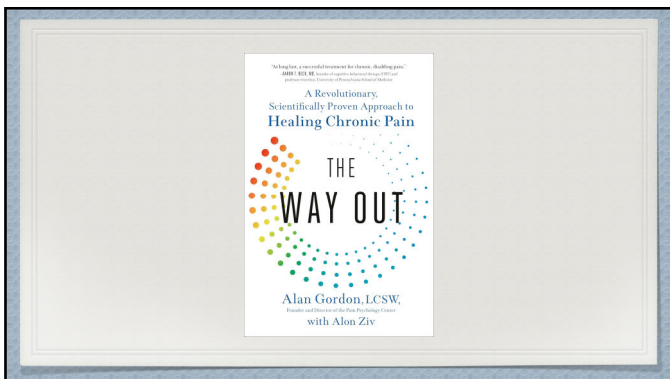
---

---

---

---

---



18

---

---

---

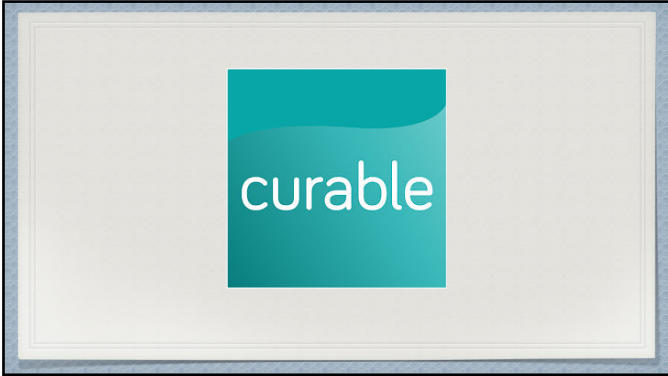
---

---

---

---

---



19

---

---

---

---

---

---

---

---



20

---

---

---

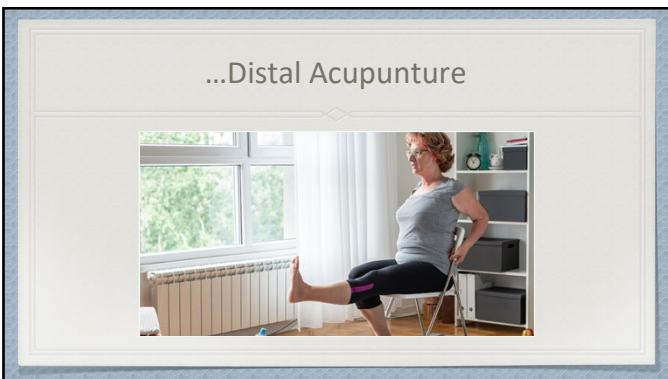
---

---

---

---

---



21

---

---

---

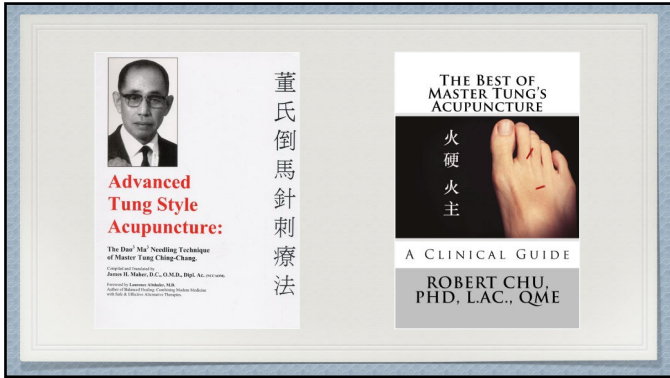
---

---

---

---

---



22

---

---

---

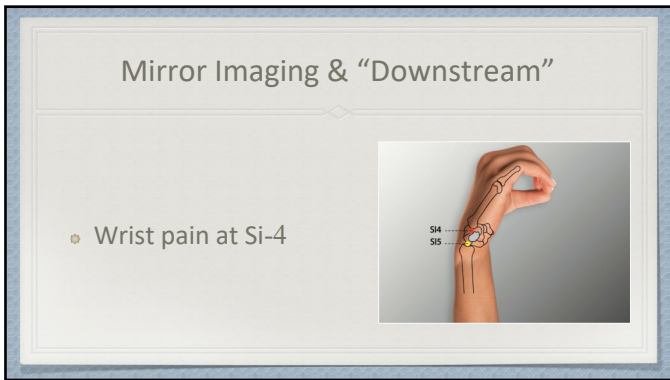
---

---

---

---

---



23

---

---

---

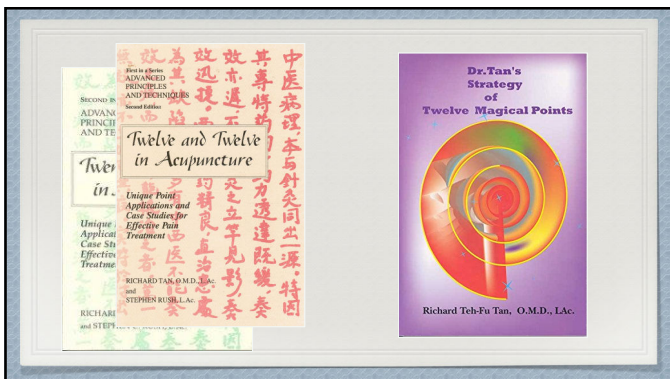
---

---

---

---

---



24

---

---

---

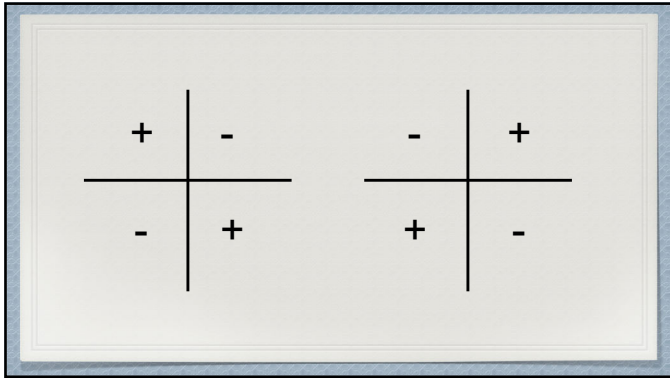
---

---

---

---

---



25

---

---

---

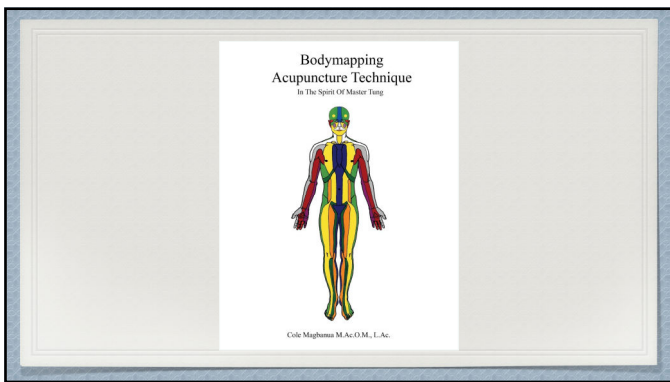
---

---

---

---

---



26

---

---

---

---

---

---

---

---

Channel Relationships (Cole M.)

- For Limbs—name pairs
- For Head and Torso—clock opposite

27

---

---

---

---

---

---

---

---

### Name Pairs

- Taiyang: BL & Si
- Shaoyang: GB & TB
- Yangming: St & Li
- Taiyin: Sp & Lu
- Shaoyin: Ki & Ht
- Jueyin: Liv & Pc

28

---

---

---

---

---

---

---

---

### Follow the Anatomy (Limbs)

- Hand - Foot
- Wrist - Ankle
- Elbow - Knee
- Shoulder - Hip

29

---

---

---

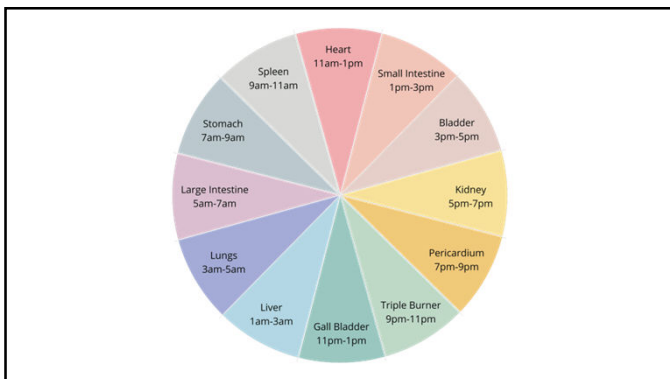
---

---

---

---

---



30

---

---

---

---

---

---

---

---

Analogous Imaging (Head & Torso)

- Hand & Foot: Head
- Wrist & Ankle: Neck
- Elbow & Knee: Abdomen
- Alternate: Front & Back

31

---

---

---

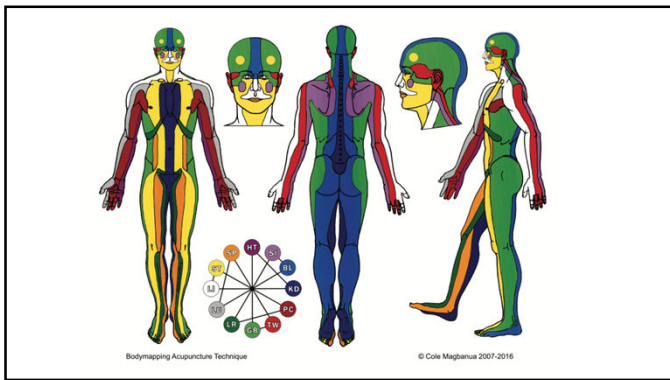
---

---

---

---

---



32

---

---

---

---

---

---

---

---

Distal vs. Local?

33

---

---

---

---

---

---

---

---



34

---

---

---

---

---

---

---

---

My Experience

- Distal for the head and torso (with caveats)
- Local for the limbs (with caveats)

35

---

---

---

---

---

---

---

---

Caveats: Head and Torso (for local)

- Tinnitus
- Loss of smell
- Some neck pain (local and distal)
- Some low back pain (local and distal)
- Gastrointestinal symptoms (local and distal)

36

---

---

---

---

---

---

---

---

Caveats: Limbs (for distal)

- Shoulder pain
- Heel pain (occasionally)
- Carpal tunnel syndrome

37

---

---

---

---


---

---

---

---

Waking Up or Calming Down?



38

---

---

---

---


---

---

---

---

Stroke?



39

---

---

---

---

---

---

---

---

Always Local



40

---

---

---

---

---

---

---

---

TCM Understanding

41

---

---

---

---

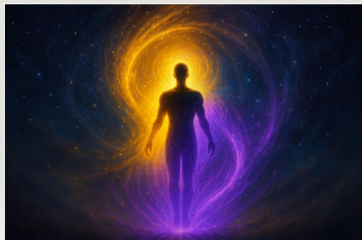
---

---

---

---

What are we doing with acupuncture?



42

---

---

---

---

---

---

---

---

Can we tonify with acupuncture?



43

---

---

---

---

---

---

---

---

### Protocols - Head and Neck

44

---

---

---

---

---

---

---

---

### Headache

- GB: Zong Bai (ZB) + distal GB points
- BL: Lu-10 + distal BL points
- St: Pc-8 + distal St points
- TB: Sp-4 + distal TB points
- Vertex: Liv-3 + tonification

45

---

---

---

---

---

---

---

---



46

---

---

---

---

---

---

---

---

**Case Study (Tom)**

- Severe HA pain and numbness (tongue, fingers)
- Dx: Cluster HAs → MS → Lyme → CADASIL
- Suicidal with intensity of pain episodes
- Hx: migraines in high school; numbness @ age 23
- Age 37; Nov 2022 start of treatment

47

---

---

---

---

---

---

---

---

**Case Study (Tom)**

Si-3, Li-11	Lu-10, Pc-8 ZB x2
Sp-9, Liv-3	GB-34, St-36 BL-59, 62 Sp-4?

- 1/26/23
- Distal →

48

---

---

---

---

---

---

---

---

### Eye Pain

- GB: ZB + GB-37, 41, 42
- St: Pc-8 + St-43
- BL: Lu-10 + BL-67

49

---

---

---

---

---

---

---

---

### Ear Pain

- TB: Sp-5, 9 + TB-2, 3 (or threaded)
- GB: ZB + GB-41, 42
- Si: Liv-3, 4

50

---

---

---

---

---

---

---

---

### Sinus Pain

- St: Pc-8
- Li: Li-1, 3, 4 (Ki-2?)
- BL: Lu-10
- GB: ZB

51

---

---

---

---

---

---

---

---

**Tooth/Jaw Pain**

- St: Pc-8 + St-36, 43
- Li: Li-1, 3, 4
- Si: Liv-3

52

---

---

---

---

---

---

---

---

**Ex: Right Upper Tooth Pain**

Li-4		Pc-8
St-36, 43		Liv-3

53

---

---

---

---

---

---

---

---

**Neck Pain**

- GB: Ht-5 → 7
- TB: Sp-6a
- BL: Lu-7, 8, 9, 10
- St: Pc-6a
- Si: Liv-3, 5a; Si-3
- Li: Sp-6
- GV: Si-3; GV-14
- CV: Lu-7; GV-14

54

---

---

---

---

---

---

---

---

**Case Study (Jenny)**

- Left neck pain; O: 2 months prior
- Q: shooting pain through occipital region; limited ROM
- Related Hx: recent HTN at onset; Rx

55

---

---

---

---

---

---

---

---

**Case Study (Jenny)**

- 1st: GV-14 (in and out)
- 2nd: Distal →
- 3rd: Left GB-20

Lu-10, 9 Ht-5, ZB	Si-3
Liv-3	GB-34 BL-59, 62

56

---

---

---

---

---

---

---

---

**Protocols - Torso to Pelvis**

57

---

---

---

---

---

---

---

---

### Upper Back Pain

- Zhong Zi, Zhong Xian (either side of Lu-10)
- Liv-3, 5
- Si-3, 6

58

---

---

---

---

---

---

---

---

### Mid Back Pain

- Tender spots along Lung channel in forearm ( $\approx$  Lu-6)
- Ear diaphragm

59

---

---

---

---

---

---

---

---

### Low Back Pain



60

---

---

---

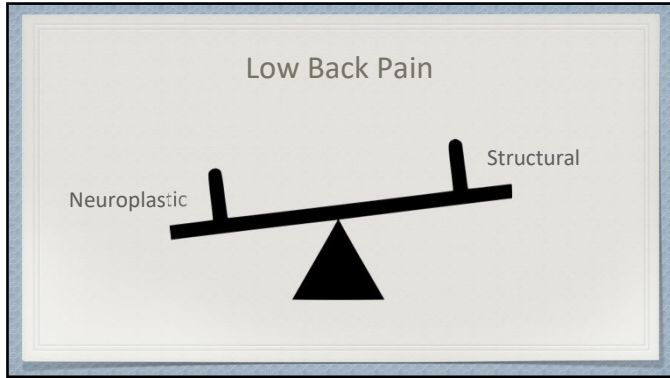
---

---

---

---

---



61

---

---

---

---

---

---

---

---

**PLOS ONE**

RESEARCH ARTICLE

### The associations between magnetic resonance imaging findings and low back pain: A 10-year longitudinal analysis

Julchi Tonosu<sup>1</sup>, Hiroyuki Oka<sup>2\*</sup>, Akiro Higashikawa<sup>1</sup>, Hiroshi Okazaki<sup>1</sup>, Sakae Tanaka<sup>3</sup>, Ko Matsudaira<sup>2</sup>

1 Department of Orthopedic Surgery, Kanto Rosai Hospital, Kanagawa, Japan, 2 Department of Medical Research and Management for Musculoskeletal Pain, 22nd Century Medical and Research Center, Faculty of Medicine, The University of Tokyo, Tokyo, Japan, 3 Department of Orthopedic Surgery, Faculty of Medicine, The University of Tokyo, Tokyo, Japan

\*oka-h@y.u-tm.ac.jp

Check for updates

Abstract

62

---

---

---

---

---

---

---

---

**Spine** SPINE Volume 47, Number 3, pp 201-211  
© 2021 The Author(s). Published by Wolters Kluwer Health, Inc.

DIAGNOSTICS

OPEN

### Association of Lumbar MRI Findings with Current and Future Back Pain in a Population-based Cohort Study

Richard Kasch, MD,<sup>a</sup> Julia Truthmann, PhD,<sup>b</sup> Mark J. Hancock, PhD,<sup>c</sup> Christopher G. Maher, DMedSc,<sup>d</sup> Markus Otto, PhD,<sup>e</sup> Christopher Nell, MD,<sup>f</sup> Niklas Reichwein,<sup>g</sup> Robin Bülow, MD, MSc,<sup>h</sup> Jean-François Chenot, MD, MPH,<sup>i</sup> Andre Hofer, MD,<sup>j</sup> Georgi Wassilew, MD,<sup>k</sup> and Carsten Oliver Schmidt, PhD<sup>l</sup>

**Study Design.** Population-based cohort study.  
**Objective.** We examined associations between common lumbar degenerative changes observed on magnetic resonance imaging (MRI) and present or future low back pain (LBP).  
**Results.** MRI findings were present in persons with and without back pain at baseline. Higher proportions were found in older

63

---

---

---

---

---

---

---

---

Randomized Controlled Trial > JAMA Psychiatry. 2022 Jan 1;79(1):13-23.  
doi: 10.1001/jamapsychiatry.2021.2669.

### Effect of Pain Reprocessing Therapy vs Placebo and Usual Care for Patients With Chronic Back Pain: A Randomized Clinical Trial

Yoni K Ashar <sup>1 2 3</sup>, Alan Gordon <sup>4</sup>, Howard Schubiner <sup>5 6</sup>, Christie Ulpi <sup>4</sup>, Karen Knight <sup>7</sup>, Zachary Anderson <sup>2 3 8</sup>, Judith Carlisle <sup>2 3 9</sup>, Laurie Polisky <sup>2 3</sup>, Stephan Geuter <sup>2 3 10</sup>, Thomas F Flood <sup>11</sup>, Philip A Kragel <sup>2 3 12</sup>, Sona Dimidjian <sup>2 13</sup>, Mark A Lumley <sup>14</sup>, Tor D Wager <sup>2 3 15</sup>

Affiliations + expand  
PMID: 34586357 PMCID: PMC8482298 DOI: 10.1001/jamapsychiatry.2021.2669

**Abstract**  
**Importance:** Chronic back pain (CBP) is a leading cause of disability, and treatment is often ineffective. Approximately 85% of cases are primary CBP, for which peripheral etiology cannot be identified, and maintenance factors include fear, avoidance, and beliefs that pain indicates injury.

---

---

---

---

---

---

---

---

---

---

64

---

---

---

---

---

---

---

---

---

---

65

### Low Back Pain (Distal)

- BL-40, 60 (+ bleed BL-40)
- Ki-5 and 3 Emperors
- LK, DB, ZB
- Er Jiao Ming
- BL-67 (bleed)
- Si-3 (BL-62)
- GB-41
- GV-20

---

---

---

---

---

---

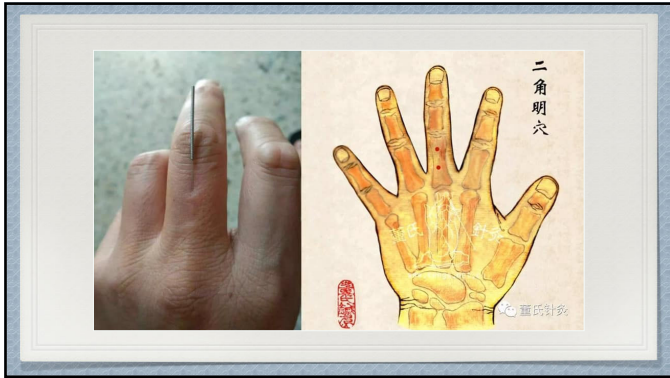
---

---

---

---

66



67

---

---

---

---

---

---

---

---



68

---

---

---

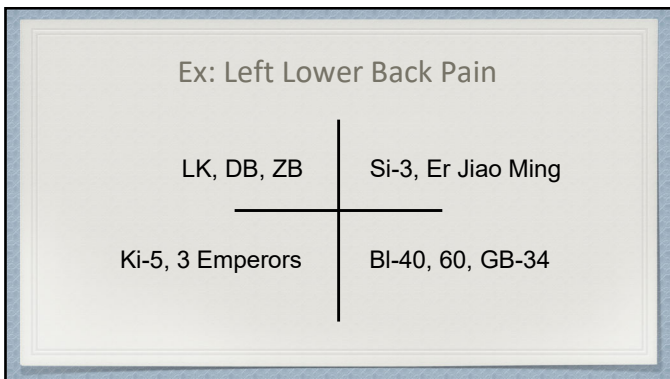
---

---

---

---

---



69

---

---

---

---

---

---

---

---

### Low Back Pain (Local)

- BL-23, 52
- Hua Tuo Jia Ji points
- Cupping

70

---

---

---

---

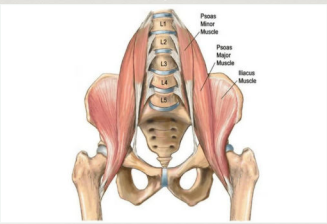
---

---

---

---

### Local or Distal?



The diagram shows a posterior view of the lumbar spine and pelvis. Labels on the right side include: Psoas Minor Muscle, Psoas Major Muscle, and Sacrospinous Muscle. The vertebrae are numbered L1 through L5.

71

---

---

---

---

---

---

---

---

### Low Back Pain (Systemic)

- Tx constipation
- Avoid caffeine/rehydrate
- Work with stress/trauma (Sarno)

72

---

---

---

---

---

---

---

---

### Case Study (Rich)

- Imaging Dx DDD and stenosis
- R: down BL channel (hamstrings)
- Q: sharp, electrical; T: worse at night and in bed
- Hx of right leg trauma, subsequent drop foot

73

---

---

---

---

---

---

---

---

### Case Study (Rich)

- Si-3, Bl-60, 62, 2, LK, Yao Tong, Ki-5, Sp-6
- Scar therapy →
- B5NP, GV-20



74

---

---

---

---

---

---

---

---



75

---

---

---

---

---

---

---

---

Hip Pain

- BL-62, 59, 7
- GB-42, 41, 34, 31, 20\*
- St-36
- LK, DB, ZB, Pc-8 (Yao Tong)

76

---

---

---

---

---

---

---

---

Case Study (Rich #2)

- Acute right hip pain (GB channel)
- O: injury 3 weeks prior

77

---

---

---

---

---

---

---

---

Case Study (Rich #2)

LK, ZB

---

---

---

---

---

---

---

---

BL-62, 59, St-36  
GB-31, 34, 42

78

---

---

---

---

---

---

---

---

### Groin Pain

- C: Xin Men →
- C: LK, DB, ZB
- I: Liv-3, 5, Sp-4, 9  
St-36

(c) 2019 OahuTCMNotes

79

---

---

---

---

---

---

---

---

### Sciatica

- C: LK, DB, ZB
- I: BL-2
- Walk around...then I: BL-62, 59, GB-34

80

---

---

---

---

---

---

---

---

### GI Pattern: GERD

Xu Li

- Right: Pc-6
- Left: St-36, 43 (12)

81

---

---

---

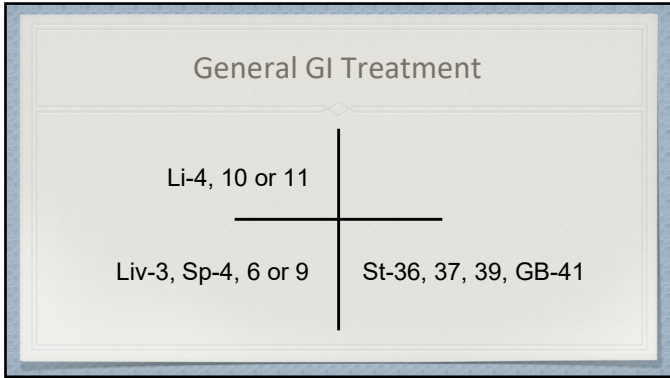
---

---

---

---

---



82

---

---

---

---

---

---

---

---

- ### Menstrual Pain
- Hands: LK
  - Legs: Sp-4, 6; Liv-3; GB-41
  - Fingers: Return to Nest, Gyn points

83

---

---

---

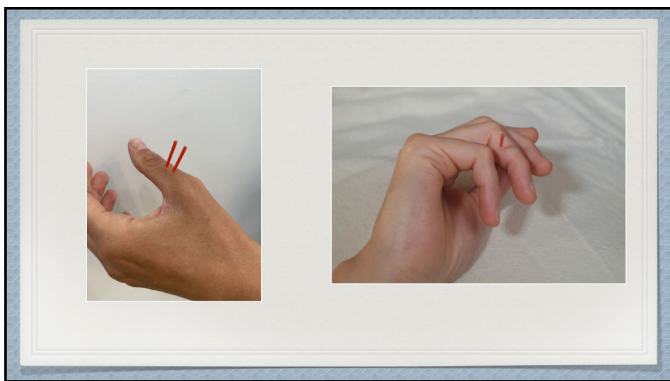
---

---

---

---

---



84

---

---

---

---

---

---

---

---

### Case Study (Laura)

- Day 2 of cycle: intense lower right pelvic pain
- Pelvic pain radiating to right lower back
- Right side (GB) HA
- Extremely stressful last month

85

---

---

---

---

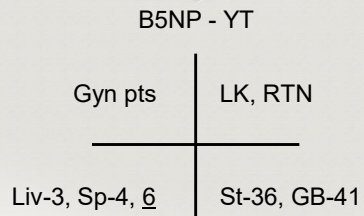
---

---

---

---

### Menstrual Pain (lower right)



86

---

---

---

---

---

---

---

---

### Calming the CNS

- GV-20, 24
- Si Shen Cong
- Si-3 (Lu-7)
- B5NP



87

---

---

---

---

---

---

---

---

B5NP

- Left ear: Shen Men, Zero/Center
- Yin Tang
- Right ear: Sympathetic, Liver → Kidney

88

---

---

---

---

---

---

---

---



89

---

---

---

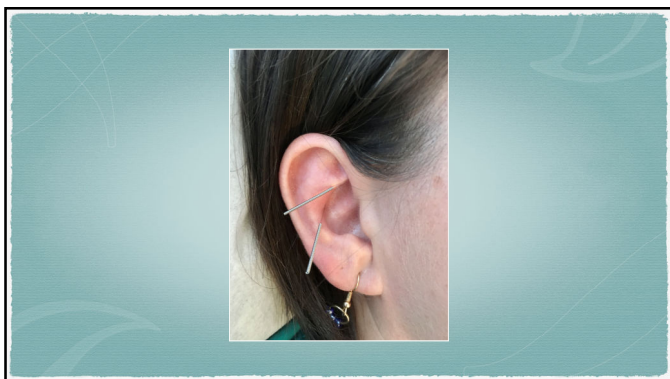
---

---

---

---

---



90

---

---

---

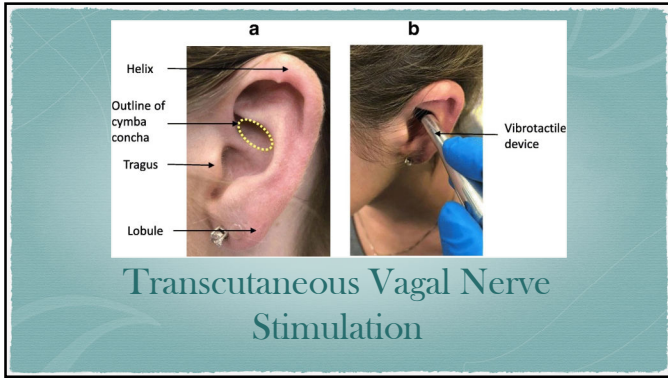
---

---

---

---

---



91

---

---

---

---

---

---

---

---



92

---

---

---

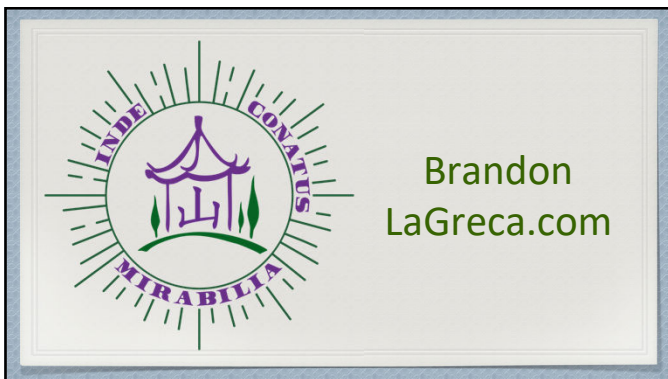
---

---

---

---

---



93

---

---

---

---

---

---

---

---



94

---

---

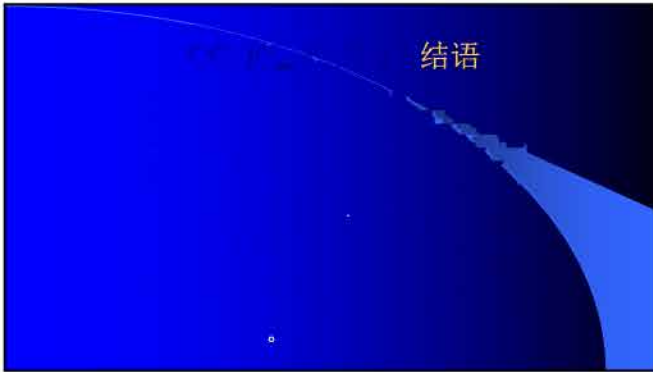
---

---

---

---

---




---

---

---

---



---

---

---

---

NORTHWESTERN UNIVERSITY HEALTH SCIENCES UNIVERSITY

**Alane Lucht, DC, PhD, LADC, LPCC**

Boundaries ad Ethics in Practice:  
A Psychological Perspective

---

---

---

---

---

---

---

---

**Boundaries and Ethics in Practice:  
A Psychological Perspective**

Dr Alane Lucht DC, PhD, LADC, LPCC

---

---

---

---

---

---

---

---

### Introduction and Overview

Importance of boundaries and ethics in personal and professional contexts

#### Objective

- Define boundaries and ethics
- Identify the origin of ethics and boundaries
- Recognize the psychology and physiology of boundaries
- Understand boundary crossing and ethical violations
- Identify good boundaries and ethics in practice

---

---

---

---

---

---

---

---

### Information: My Perspective

#### Healthcare field since 1992

- Massage therapy
- Yoga instructor
- Chiropractor
  - Acupuncture certification
- Mental health provider

#### NWHSU since 2016

- Mental health courses, trauma-informed care

---

---

---

---

---

---

---

---

### What are Boundaries?

A way to distinguish between me and my environment via feedback

The distance at which we can care for ourselves and nurture relationships

Often unaware unless they are crossed, threatened, or violated

Idiosyncratic and personal, contextual, fluid, and adaptable

Limits that protect personal and professional well-being

Clarifying responsibilities and maintaining respect for self and others

---

---

---



---

---

---

---

---

 <p><b>Rigid</b></p>	<p><b>Absolute and uncompromising</b></p> <ul style="list-style-type: none"> <li>• Stays distant, detached, and avoidant</li> <li>• Difficulty asking for/receiving help</li> <li>• Overly protective and defensive</li> </ul>
 <p><b>Healthy</b></p>	<p><b>Values based</b></p> <ul style="list-style-type: none"> <li>• Able to hear and say “yes” and “no” within context</li> <li>• Communicates values, wants, and needs</li> <li>• Respects other people’s opinions, values, and boundaries</li> </ul>
 <p><b>Porous</b></p>	<p><b>Overly flexible and negotiable</b></p> <ul style="list-style-type: none"> <li>• Fears rejection, people pleaser, overshares information</li> <li>• Overly involved in other people’s problems, struggles with autonomy</li> <li>• Accepts disrespect or abuse from others</li> </ul>

---

---

---

---

---

---

---

---

### Where do Boundaries Come From?

**Family – Creation of the sense of self**

- Caregivers modeling behavior
- Role is to provide a safe environment to learn through exploration
  - Appropriate touch, safe interactions, respectful communication
- Developmental milestones and boundary formation
- Supportive interactions establish safe/secure personal boundaries

**Personality and Temperament – Traits influence setting and maintaining personal boundaries**

- Understanding personality helps to understand interactions
- Personal experiences and interactions provide opportunity to know the self better

**Social and Cultural Norms – Establishes structure and cues**

- Expectations of self and other, set by culture about behavior

---

---

---

---

---

---

---

---

### Formation of Healthy Boundaries

**Stages of boundary development through life**

- The earliest interactions – how are we met?
  - Bonding – mutual closeness
  - Attunement – sense of being cared for
  - Attachment – sense of safety when distressed
- Separation and individuation
  - The “terrible” two’s
  - Teenage angst

**Characteristics of healthy vs. unhealthy boundaries**

- Healthy – knowing I can stand up for myself and still be safe
- Unhealthy - needing to put up walls for safety or believing there is no way to feel safe

---

---

---

---

---

---

---

---

## The Psychology Of Boundaries

### Social and Cultural Influences – Psychoanalysis

- Boundaries and how we manage setting and maintaining
- Therapeutic relationship and power differentials
  - How individuals are treated, influence understanding appropriate behavior
  - How ruptures are responded to

### Emotion Regulation

- Ability to set and maintain boundaries is tied to our capacity to regulate our own emotions
- Skills are impacted by development: Emotional intelligence, self-esteem, and sense of autonomy
- When we can regulate our emotions, we are better positioned to establish good personal boundaries and strategies to manage

---

---

---

---

---

---

---

---

## The Physiology Of Boundaries

### Somatic Awareness – Crucial to development of boundaries

- Knowing and trusting our selves
- Helps to differentiate situations
  - Mindset and boundaries – rigid, porous, healthy

### Nervous System – Sensing and evaluating

- Exteroception and interoception help locate the source of discomfort
- Neuroception support detection of safety
  - Is this person or situation safe, unsafe, or threatening

### Response – How we take in and interpret stimuli

- Brain stem, thalamus, insula, somatosensory areas, anterior cingulate cortex
- Chemicals include epinephrine (stress response), dopamine (motivation), serotonin (mood), and oxytocin (connection)

---

---

---

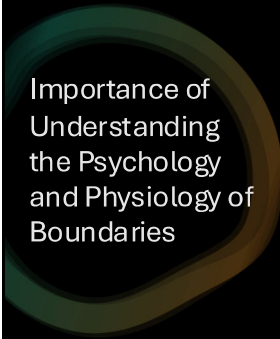
---

---

---

---

---



## Importance of Understanding the Psychology and Physiology of Boundaries

### Nervous System Detection

- How the nervous system responds
  - External cues and internal response
    - Arrest and startle – muscle tension
    - Defensive orienting - hypervigilance
    - Mobilization - restlessness
    - Success - relaxation
    - Integration – sense of accomplishment
- Physiological markers of boundary breaches
  - Elevated heart rate, rapid and/or shallow breathing
  - Increased levels of cortisol
  - Immune and GI dysfunction

---

---

---

---

---

---

---

---

## Responses to Boundary Rupture: Impact on Mental and Emotional Health

### Healthy—development of healthy boundaries

- Success—speaking your mind even if your voice shakes
- Integration—I did it once, I can do it again

### Unhealthy—rigid or porous boundaries

- Stuck in fight, flight, freeze, fawn
  - Muscle tension = wear and tear, chronic pain
- Hypervigilance = difficulty settling, relaxing, and sleeping
- Mobilization = difficulty with concentration and focus

### Coping mechanisms and their implications

- Strategies to maintain safety and manage autonomic arousal
- Internal vs External locus of control

### Negative impact on relationships and personal well-being

- Diminished sense of self
- Long-term effects on trust and safety

---

---

---

---

---

---

---

---

---

---

## Boundaries and Emotions

Helps to help safeguard our well-being  
 Fosters healthy relationships  
 Recognizing emotions and needs allows us to communicate effectively

**Anger:** This can arise when our boundaries are crossed, signaling the need for us to stand up for ourselves.

**Frustration:** Often felt when we perceive disrespect, indicating that our limits are not being acknowledged.

**Fear:** Encourages us to evaluate and reinforce our boundaries for our personal safety and emotional health.

**Sadness:** Can be experienced when we feel a loss or betrayal, recognizing the impact of broken trust.

**Grief:** Arises from acknowledging unmet needs or potential experiences we've missed due to boundary issues.

**Guilt:** May occur if we realize we have overstepped someone else's boundaries, highlighting the importance of empathy and awareness.

**Disappointment:** Serves as a cue to reassess and possibly redefine our relationships when our expectations are not met.

---

---

---

---

---

---

---

---

---

---

## Reasons Why Boundaries Get Crossed

### Lack of awareness

- Limited self-awareness of how their actions impact others

### Poor communication skills

- Misreading non-verbal cues

### Social and cultural differences

- Personal space differences
- What's appropriate in one, isn't necessarily so in another
- Individualism or collective harmony

### Entitlement

- Narcissistic attributes

### Emotional needs or desire for intimacy

- Seeking closeness for self-soothing
- Misjudging comfort of others

### Manipulation or control

- Deliberate use of power

### Previous experience

- Misreading similar circumstances

### Social influence

- Behavior not normally considered ok

---

---

---

---

---

---

---

---

---

---

### Reasons Why Boundaries Get Crossed

- Desire for approval
  - Fear of rejection, seek validation'
  - Hope for change
  - Avoidance of conflict
  - Compliance = harmony/acceptance
- Low self-esteem
  - Beliefs about self-efficacy
  - "It never occurred to me to say no"
- Misunderstanding
  - Lack of clarity
  - Not set, stated, or maintained
  - Belief that certain behaviors are ok
- Overly empathetic
  - Prioritizing others over self
  - Overly accommodating
- Previous conditioning
  - Violations as normal experience
- Impatience or overcommitted
  - Being rushed for time
  - Burned-out
- Seemingly innocuous behavior
  - Jokes or innuendoes
  - Non-essential touching

---

---

---

---

---

---

---

---

### What Are Good Boundaries?

- Clearly communicated, realistic, and flexible
- Consideration for self and others within context
- Allow for connection without overextending or losing oneself
- Self-awareness and self-care
- Helpful to lower risk of occupational burn-out
- Being able to state your needs and wants without unnecessary expectation that the other person fulfills them
- Can be challenging for anyone

---

---

---

---

---

---

---

---



### What Can You Do?

- Self-reflection, awareness, increased emotional intelligence
  - Recognition and response when tests do or crossed
- Clear communication
  - Maintains fairness, reduces favoritism
- Professional policies
  - Adherence to scope and ethical guidelines
- Emotion regulation, humility and compassion
  - May need external support
- Pay attention to feedback
  - Implicit and explicit
- Modeling healthy boundaries
  - Demonstration to others, supports healthy expression
- Addressing violations promptly and respectfully
  - Be assertive, reaffirm professional relationship and necessary limits

---

---

---

---

---

---

---

---

## What are Ethics?

### Definition:

- Moral principles that govern a person's behavior or the conducting of an activity
- The branch of knowledge that deals with moral principles

### Differences of ethics in personal and professional contexts

- Guidance for behavior, integrity, and accountability
- Protection of stakeholders
- Professional credibility
- Principles, standards, and codes of conduct that govern the behavior and responsibilities of individuals within a specific profession

---

---

---

---

---

---

---

---

## Importance of Ethics in Practice

- Ethical dilemmas and decision-making processes
- Impact of ethics on societal norms and interpersonal relationships
- Maintain standards – established guidelines for behavior, uphold quality and reputation of a profession
- Promote values – honesty, integrity, respect, responsibility
- Protect the public – safety of services, confidentiality, avoidance of conflicts of interest
- Foster trust – between professionals, clients, and society at large

---

---

---

---

---

---

---

---

## Where do Ethics Come From?

### Sources of Ethical Guidelines

- Legal standards and regulations
- Licensing boards and governing bodies
- Professional codes of conduct
- Personal values and moral philosophies

### Overview of Key Ethical Guidelines

- Respect, integrity, competence, and confidentiality
- Importance of adhering to ethical standards in practice

---

---

---

---

---

---

---

---



## Key Ethical Guidelines

- Informed consent – initial intake, on-going
- Confidentiality – builds trust, complies with standards
- On-going training – staying up-to-date
- Cultural competence – respecting differences
- Integrity and honesty – clear representation of qualifications and treatment outcomes
- Patient autonomy – supporting choice without undue pressure
- Non-maleficence and beneficence – do no harm and act in the patient/client’s best interest
- Boundaries – therapeutic relationship

---

---

---

---

---

---

---

---

## Reasons for Ethical Violations

**Financial Incentives:** Some practitioners may recommend unnecessary treatments or products to increase their income, prioritizing profit over patient well-being

**Lack of Proper Training or Oversight:** Inadequate education or insufficient supervision can lead to misunderstandings about ethical standards and best practices

**Blurring Professional and Personal Relationships:** Developing overly personal relationships with patients may compromise objectivity and lead to inappropriate behavior or boundary violations

**Cultural Misunderstandings:** Differences in cultural norms or beliefs about healing practices can sometimes result in actions that cross ethical lines, either unintentionally or due to miscommunication

**Pressure to Produce Results:** Facing pressure to deliver quick or dramatic improvements, practitioners might exaggerate benefits, make false claims, or use questionable techniques that breach ethical guidelines

---

---

---

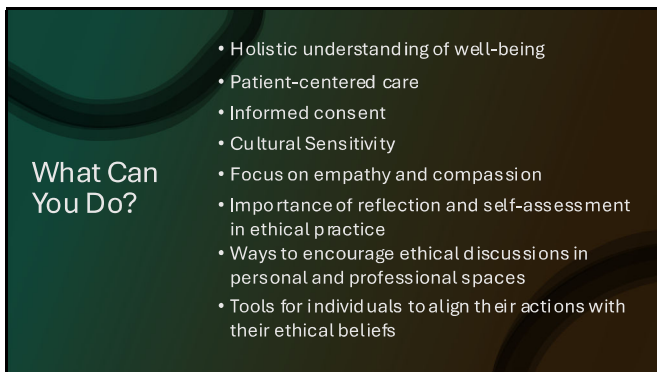
---

---

---

---

---



## What Can You Do?

- Holistic understanding of well-being
- Patient-centered care
- Informed consent
- Cultural Sensitivity
- Focus on empathy and compassion
- Importance of reflection and self-assessment in ethical practice
- Ways to encourage ethical discussions in personal and professional spaces
- Tools for individuals to align their actions with their ethical beliefs

---

---

---

---

---

---

---

---

## Conclusion

- Boundaries and ethics are essential in both personal and professional settings to ensure healthy relationships, self-protection, and effective practice
- Healthy boundaries are shaped by early family dynamics, social and cultural norms, personality, and life experiences; they enable individuals to stand up for themselves while maintaining respect and connection with others
- The ability to set and maintain boundaries is closely linked to emotional regulation and somatic awareness, involving both psychological and physiological processes
- Ethical practice relies on clear codes of conduct, informed consent, cultural competence, confidentiality, and a commitment to integrity; ethical violations often stem from poor training, blurred relationships, or external pressures
- Practitioners can foster ethical, boundary-respecting environments through self-reflection, clear communication, adherence to professional guidelines, and ongoing self-assessment

---

---

---

---


---


---

---

---

NORTHWESTERN UNIVERSITY HEALTH SCIENCES UNIVERSITY





Sophia Bouwens,

L.Ac., M.S. Ac.

**Acupuncture:**  
The Ancient Practice of Neuromodulation

Part 1

---

---

---

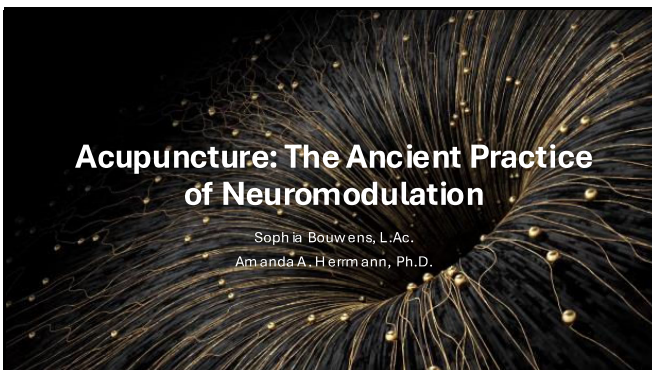
---

---

---

---

---



## Acupuncture: The Ancient Practice of Neuromodulation

Sophia Bouwens, L.Ac.  
Amanda A. Hermann, Ph.D.

---

---

---

---

---

---

---

---

### Today's Presentation

Acupuncture as ancient neuro-modulatory practice.

- Welcome audience through:
  - What is acupuncture (ancient and modern lens).
  - Talk about the nervous system:
    - Anatomical.
    - Functional.
  - Diagnostic considerations.
  - Overlap TCM and MFN – Modern paradigm from an ancient practice of neuromodulation perspective.
  - State of research supporting this view.
  - Current developments and work to explore this view.
  - Q&A and discussion.




---

---

---

---

---

---

---

---

### Thank you

NWHSU – Great River Symposium.

Marley Schaberg, Barbara Gosse, John Pirog, Dr. Ma, Dr. Ayla Wolf, and all my great teachers.

Neuro Ninjas – Dr. Ayla Wolf, Clayton Shiu, Poeny Chiang, and many others.

Devin Durst and his team for sharing his story.




---

---

---

---

---

---

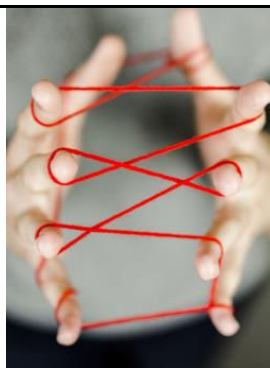
---

---

### Presentation Goals

Engage the audience to better understand:

- Acupuncture's influence on the nervous system.
- How to approach neurological conditions using TCM framework and point prescriptions.
- Current state of research with acupuncture with relation to the nervous system.
- Have an evidence-informed way of viewing the practice of acupuncture that can support acupuncturists to engage the medical community at large to further the integration of acupuncture into frontline care.




---

---

---

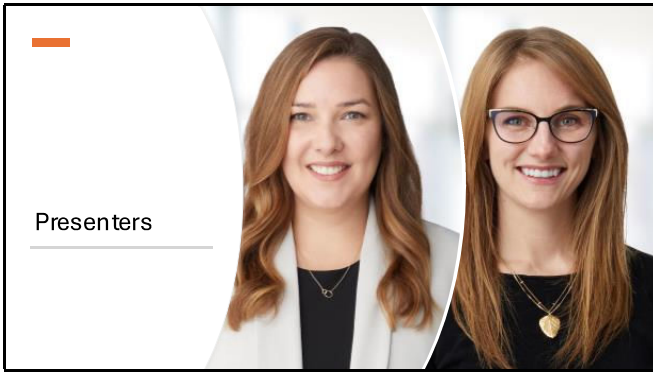
---

---

---

---

---




---

---

---


---

---

---

---

---



### My Journey

**Sophia Bouwens, L.Ac.**

- B.S. in Neuroscience, University of St. Thomas, 2010
- Masters in Acupuncture from Northwestern Health Sciences University in 2014
- Saved DALYI - March 2015
- Post-Graduate Training in Applied Clinical Neuroscience through the Center for Health, 2018-2024
- Research Acupuncturist at Health Partners Research Institute, 2019-present
- Acupuncturist for Regions Hospital at NSC, March 2021-present
- Private Practice since 2014

---

---

---

---

---

---

---

---


## What is Acupuncture?

**Acupuncture:**

The stimulation of specific points on the body, by insertion of very fine, sterile, stainless-steel needles to elicit a predictable physiological response.

—National Certification Board for Acupuncture and Herbal Medicine

How Small are Acupuncture Needles?



Micro-Needle: 0.25mm

Needle of Suture: 1.5mm

Sewing Needle: 1mm

Hypodermic Needle: 25mm

© 2019 National Certification Board for Acupuncture and Herbal Medicine. All rights reserved. 1/19

**Comes from Traditional East Asian Medicine (TEAM)**

---

---

---

---

---

---

---

---

### Traditional East Asian Medicine Framework

2,000-5,000 years old:  
Precedes microscope and biomolecular understanding of the body.

Holistic framework:  
Body systems work together in predictable ways for optimal function.

Language barrier in terminology.

---

---

---

---

---

---

---

---

### A Note on Qi

"Where the Qi goes, Blood flows"  
-Nei Jing, 2000 B.C.E.  
Bing, W. A. And Wu, J. W. L. (1992)

Qi = Function

---

---

---

---

---

---

---

---

### De Qi

---

---

---

---

---

---

---

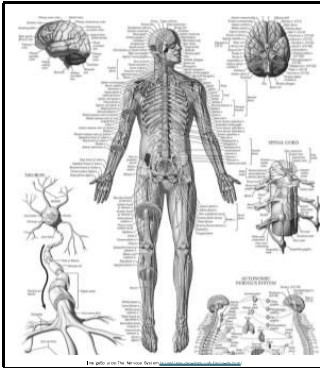
---

## The Nervous System

Sensory IN → Motor OUT

**Parts of the Nervous System:**

- Peripheral Nervous System .
- Cranial Nerves .
- Central Nervous System:
  - Cerebrum, Cerebellum, Brainstem, and Spinal Cord
- Autonomic Nervous System :
  - Immune.
  - Digestive.
  - Hormonal.
  - Circadian Rhythms.




---

---

---

---

---

---

---

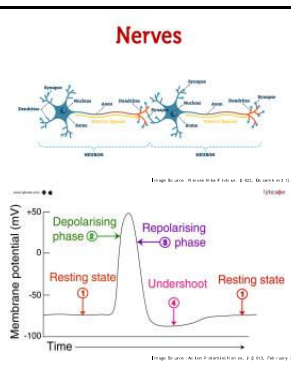
---

## Nerves

**Nerves require:**

- Nutrients.
- Oxygen.
- Stimulation.

What happens when we do acupuncture?




---

---

---

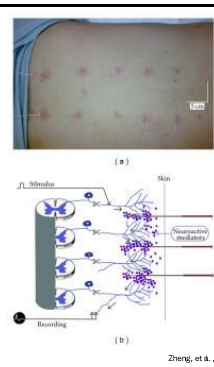
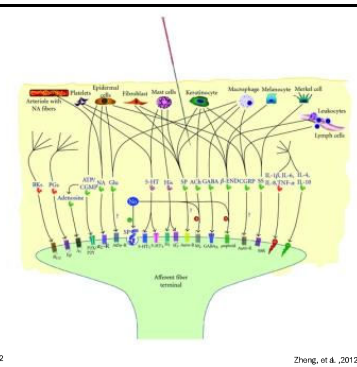
---

---

---

---

---

Zheng, et al., 2012

---

---

---

---


---

---


---

---







Responsible for connecting the Central Nervous System to the rest of the body.



Peripheral nerves relay sensory and motor information.



Autonomic nerves relay information to/from vital organs.



**PERIPHERAL NERVOUS SYSTEM**

Image 1722a)

---

---

---

---

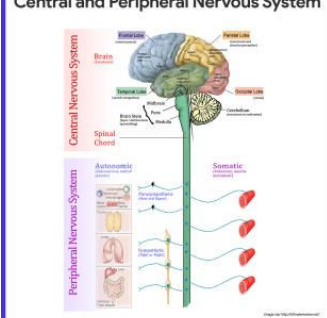
---

---

---

---

### Central and Peripheral Nervous System



Caption: (Marieb, © 2017, Jun 14)

---

---

---

---

---


---

---

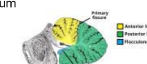
---

### Central Nervous System Overview

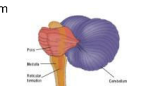
**Cerebrum** (04:46:24, 04:47:04)



**Cerebellum**



**Brainstem**



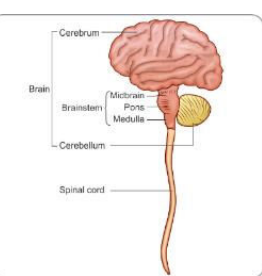


Image: (© 2017, Marieb)

---

---

---

---

---

---

---

---

## Cerebrum

**Frontal Lobe:**  
Executive functioning.  
Motor activity and motor planning.

**Parietal Lobe:**  
Sensory perception.  
Spatial awareness.

**Temporal Lobe:**  
Sound.  
Speech.  
Balance.

**Occipital Lobe:**  
Visual processing.

---

---

---

---

---

---

---

---

## Cerebellum

**Motor control**  
Posture  
Balance  
Precise actions

**Cognitive functions; attention, language**  
Emotional regulation

**Coordination of internal organ function**

COORDINATION

---

---

---

---

---

---

---

---

## Brainstem

**Ponto-Medullary-Reticular Formation (PMRF)**

1. NTS  
Sympathetic tone
2. PAG/RVM  
Inhibits pain ipsilaterally
3. Vestibular Nuclei  
Excites extensor muscles on same side
4. Mesencephalic Medullary Reticular Formation  
Inhibits flexors on same side

---

---

---

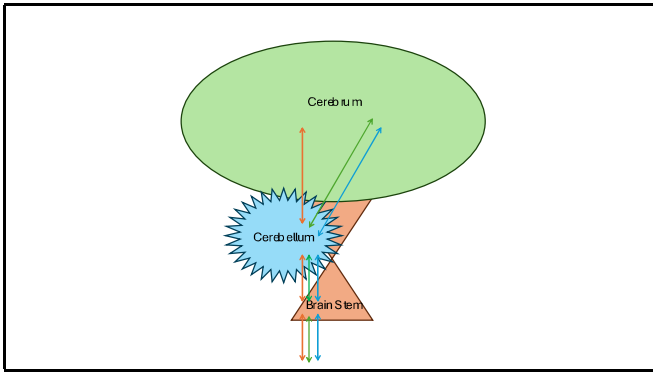
---

---

---

---

---



---

---

---

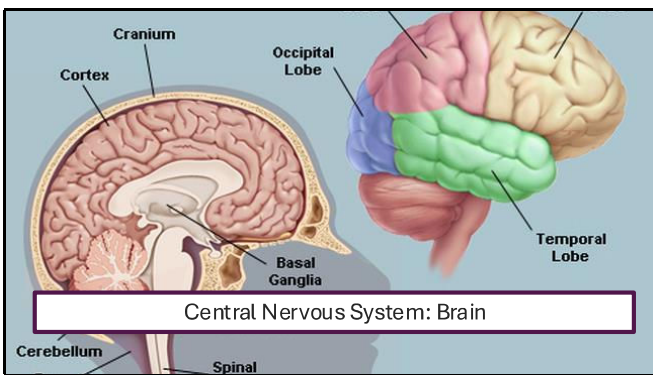
---

---

---

---

---



---

---

---

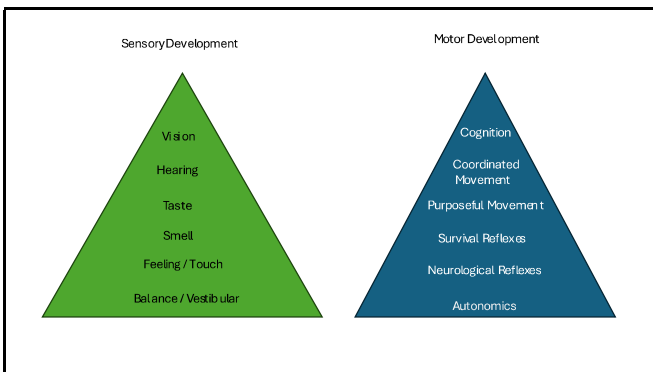
---

---

---

---

---



---

---

---

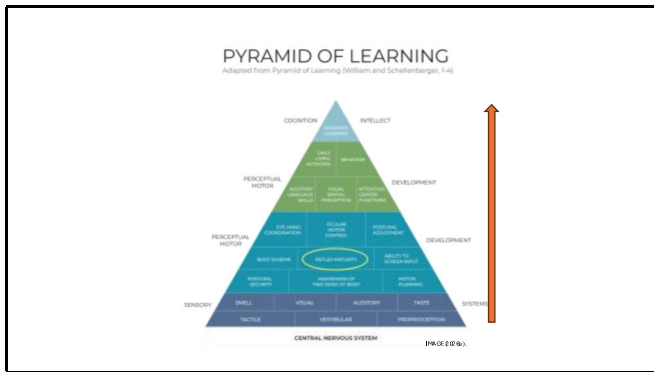
---

---

---

---

---




---

---

---

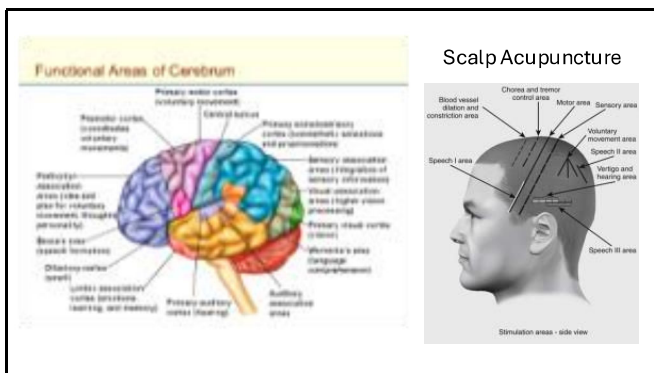
---

---

---

---

---




---

---

---

---

---

---

---

---

### The Frontal Lobe

- INHIBITION
- Motor planning
- Social engagement
- Speech
- Functioning—Planning, problem-solving, Executive reasoning, and goal-directed behavior
- Working memory and attention
- Visual attention

---

---

---

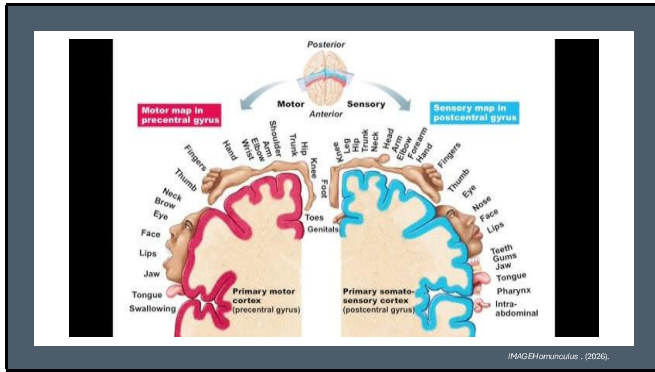
---

---

---

---

---




---

---

---

---

---


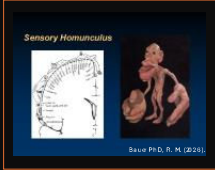
---

---

---

### The Parietal Lobe

- MAPPING
- Somato sensory Cortex.
- Sensory Awareness.
- Place in space  
Left from right


---

---

---

---

---


---

---

---

### The Temporal Lobe

- Processing auditory information.
- Memory formation.
- Language comprehension.
- Emotional regulation.




---

---

---

---

---

---

---

---

## The Occipital Lobe

- Processing Visual Information.



www.thephoria.com/05.ppt, 2011, December 29.

---

---

---

---

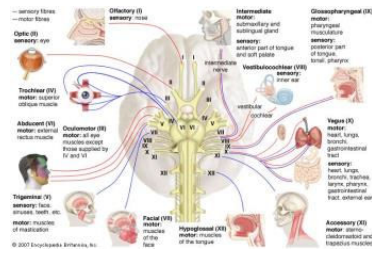
---

---

---

---

## Cranial Nerves




---

---

---

---

---

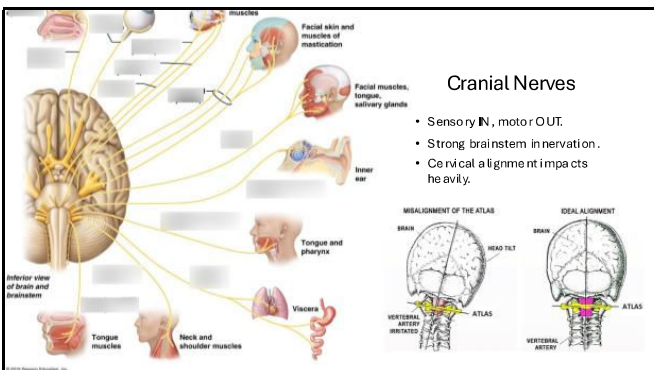
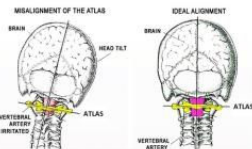
---

---

---

## Cranial Nerves

- Sensory IN, motor OUT.
- Strong brainstem innervation.
- Cervical alignment impacts heavily.




---

---

---

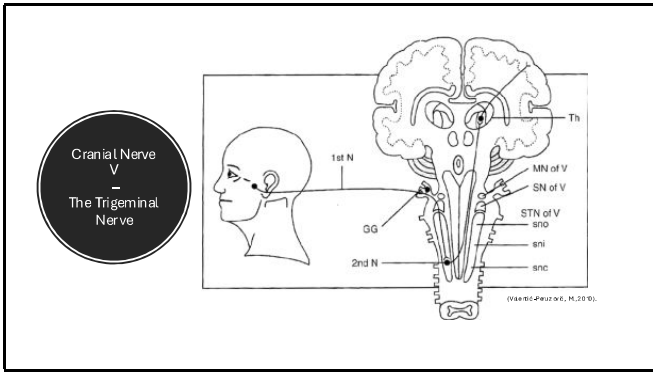
---

---

---

---

---




---

---

---

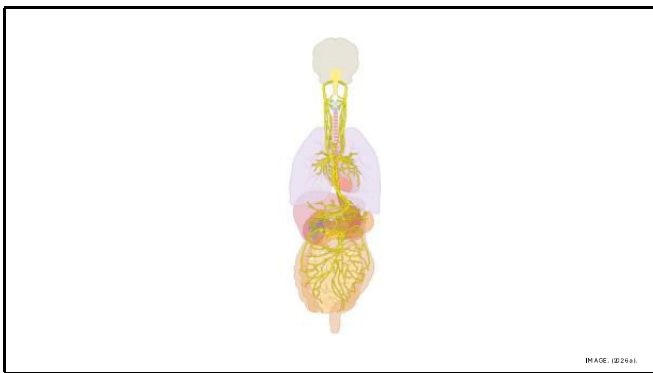
---

---

---

---

---




---

---

---

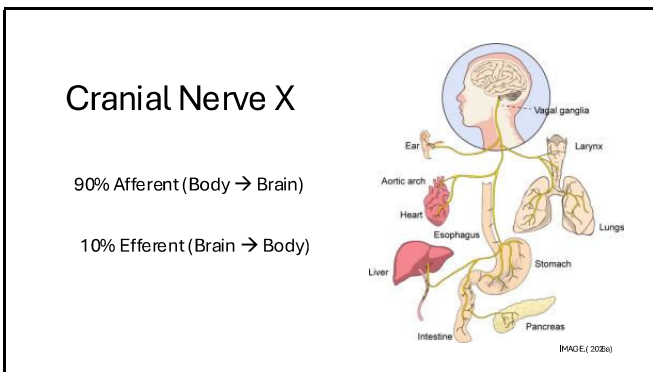
---

---

---

---

---




---

---

---

---

---

---

---

---

## The Autonomic Nervous System

- Parasympathetic:
  - Rest and Digest
  - YIN
- Sympathetic:
  - Fight / Flight / Freeze
  - YANG




IMAGE COURTESY OF MEDICAL STUDENT BLOG (2015, October 3)

---

---

---

---

---

---

---

---

## The Autonomic Nervous System

- Two divisions: parasympathetic and sympathetic.
- Considered both centrally and peripherally connected.
- Can be tested to find imbalances:
  - Dysautonomia
- Foundational for many other functions of the nervous system to operate.

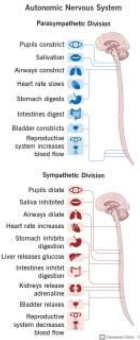


IMAGE (2020)

---

---

---

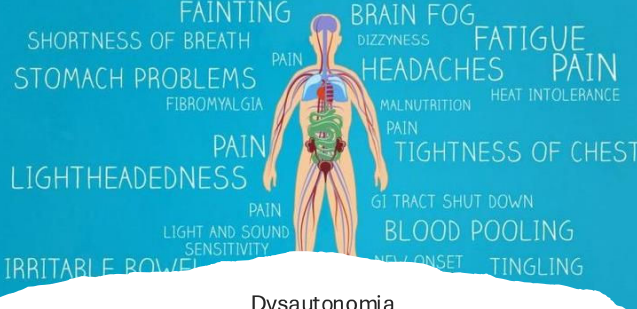
---

---

---

---

---



**Dysautonomia**

Cochran, B. (2016, Mar 22)

---

---

---

---

---

---

---

---

## Auricular Vagal Activation



Figure 5: The innervations of the auricular branch of the vagus nerve are marked by green color which is mainly distributed in auricular concha.

(Tian, Yu Y., 2018)

---

---

---

---

---

---

---

---

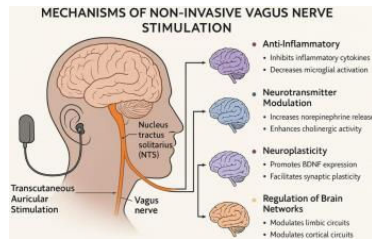
---

---

## Auricular Vagal Stimulation

Recent systematic reviews and meta-analyses suggest that tVNS and cvVNS may offer therapeutic benefits across various conditions. These include:

- Reducing seizure frequency in epilepsy.
- Alleviating depressive symptoms.
- Reducing smoking.
- Enhancing motor recovery after stroke when paired with rehabilitation.
- Additionally, emerging evidence suggests the potential application of tVNS for neuropsychiatric complications of Long COVID.



Frontiers in Neurology, 2023

---

---

---

---

---

---

---

---

---

---

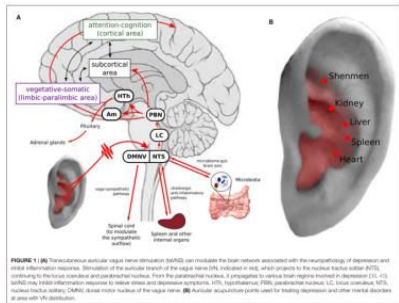


FIGURE 1 | (A) Transcutaneous auricular vagus nerve stimulation (tVNS) can modulate the brain network associated with the neurophysiology of depression and antidepressant response. Stimulation of the auricular branch of the vagus nerve (AVN) indicates its role, which projects to the nucleus tractus solitarius (NTS), connecting to the nucleus reticularis and parabrachial nucleus. From the parabrachial nucleus, it projects to various brain regions involved in depression (LC, etc.). tVNS may induce antidepressant response to reduce stress and depression symptoms. NTS, Nucleus tractus solitarius; PBN, parabrachial nucleus; LC, locus coeruleus; NTS, nucleus tractus solitarius; tVNS, transcutaneous vagus nerve stimulation. (B) Auricular acupuncture points used for treating depression and other mental disorders in areas with AVN distribution.

(Kong, J., et al., 2018)

---

---

---

---

---

---

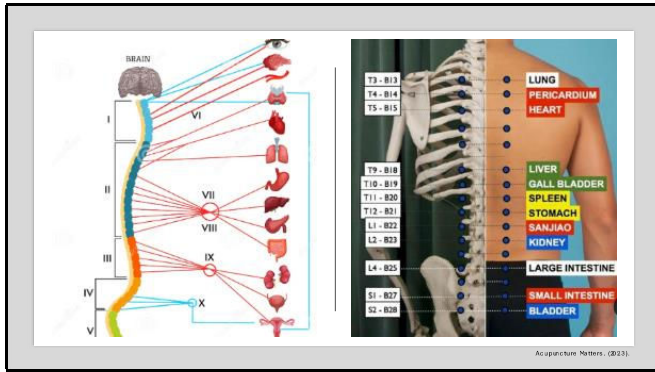
---

---

---

---






---

---

---

---

---

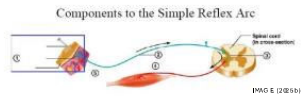
---

---

---

### Reflex Testing

- Motor control is built off reflex activation
- An important testing for nervous system integrity
- Muscle fiber → Spinal cord segment → Medulla Oblongata → Motor cortex
  - Impaired reflexes can be the result of
    - Spinal
    - Peripheral
    - Cortical




---

---

---

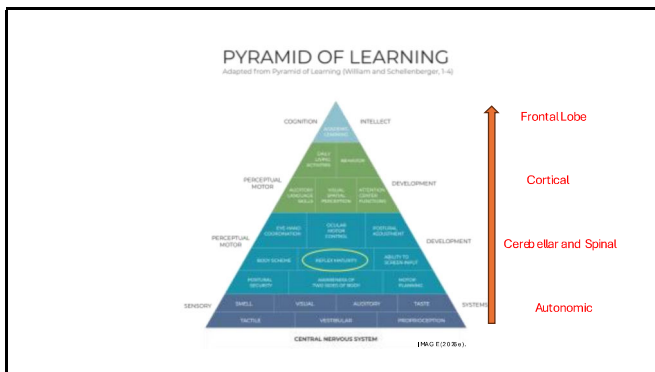
---

---

---

---

---




---

---

---

---

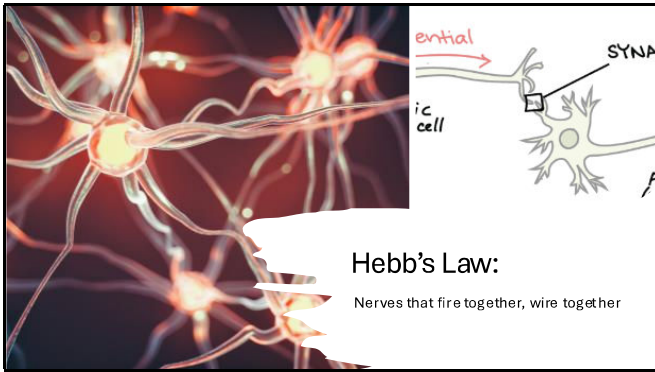
---

---

---

---






---

---

---

---

---

---

---

---

### Electro-Acupuncture

• Studies suggest that different stimulation frequencies could produce different brain changes and neurotransmitter releases ( Han JS. Acupuncture: neuropeptide release produced by electrical stimulation of different frequencies. *Prog Brain Res*. 2003)

Different frequencies for different effects:

- 2-10 Hz → 80000 endorphins, good for chronic pain, depression.
- 25 Hz cerebellar-thalamo-cortical pathways (coordination and movement) (Madden, V. et al., 2023)
- 80-100 Hz → 800000 dynorphins (sensory modulation)
- Mixed Modulatory pathways i.e. 2-10 Hz → cortical desensitization
  - Fibromyalgia
  - PTSD
  - Motor and movement

---

---

---

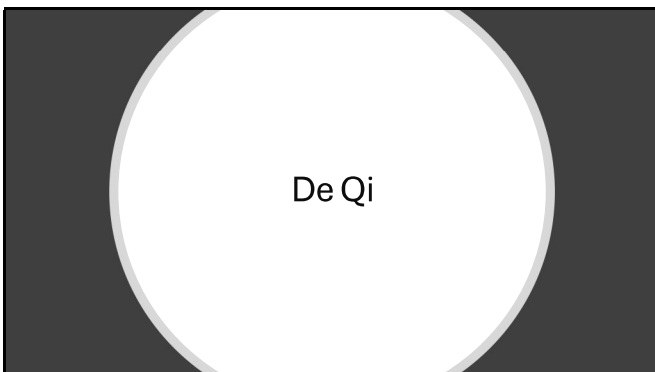
---

---

---

---

---




---

---

---

---


---

---

---


---

### Treating Common Nervous System Conditions



**Types of diagnoses**

TBI  
Stroke  
Neuro autoimmune (PD, MG, MS, etc.)  
Dysautonomia  
Pain



**Level of Lesion/ Dysfunction**

Consider etiology and parallel with TCM theory and diagnoses.  
Plan timing your intervention for the stage patient is in (parallel to TCM for ac's 5 phases: yin/yang, excess/deficiency).

---

---

---

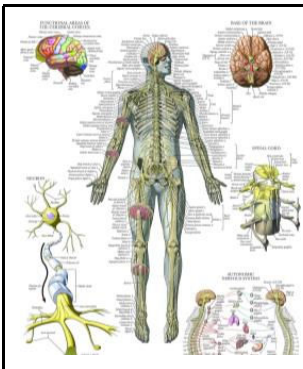
---

---

---

---

---



### Nerves require:

- Blood (nutrients)
- Oxygen
- Stimulation

---

---

---

---

---

---

---

---

### Acupuncture

#### Impact on Neural Networks

Acupuncture works in somatotopic and dose-dependent ways. Knowing the pathophysiology of what is contributing most to neurologic conditions, can be beneficial for forming appropriate treatment strategies for minimizing risk factors and slowing decline.

Acupuncture has been shown to enhance the functional correlations in brain regions, including the hippocampus (HP), thalamus, fusiform gyrus in patients (Feng, Y., et al., 2012).

Accumulating evidence has suggested acupuncture as a promising treatment for nervous system conditions, by modulating cerebral functional connectivity (Li, Hui et al., 2020; Feng, Y., et al., 2012; Chen, S., et al., 2013; Bai, L. et al. 2013).

---

---

---

---

---

---

---

---

# Acupuncture Points

## Large Intestine 4 (LI-4)



**Classical Indications:**  
"Powerfully moves Qi and Blood to stop pain".

**Neurological Effects:**  
Activation of Periaqueductal Gray (PAG) in midbrain.

## Pericardium 6 (PC-6)



**Classical Indications:**  
Nausea, palpitations, dizziness, calming effect.

**Neurological Effects:**  
Activation of insula, hypothalamus, and flocculonodular lobe of cerebellum (nodulus and uvula).

## Gall Bladder 34 (GB-34)



**Classical Indications:**  
Dispel exterior & interior wind, treats tremors.

**Neurological Effects:**  
Enhanced Functional Connectivity between the Bilateral Primary Motor Cortex, increased neural responses in regions including the substantia nigra, caudate, thalamus, and putamen.

---

---

---

---

---

---

---

---

Acupuncture

## Neural Regeneration Research

Neural Regen Res. 2020 Aug; 15(8): 1510-1517.  
Published online 2020 Jan 28.  
doi: 10.4103/1873-5374.287932. PMID: 31929133

**Acupuncture promotes functional recovery after cerebral hemorrhage by upregulating neurotrophic factor expression**

Duo Li<sup>1</sup>, Qiu-Jie Chen<sup>1</sup>, Wei-Zou MD<sup>1</sup>, Jia-Qin Sun<sup>1</sup>, Jue-Feng Guo<sup>1</sup>, Jia-Qun Dou<sup>1</sup> and Wei-Tang<sup>2</sup>

<sup>1</sup>Third Department of Acupuncture, First Affiliated Hospital, Heilongjiang University of Chinese Medicine, Harbin, Heilongjiang Province, China

<sup>2</sup>Department of Acupuncture, Third Affiliated Hospital, Beijing University of Chinese Medicine, Beijing, China

\*Correspondence to: Wei Zou: [zouweizou2013@163.com](mailto:zouweizou2013@163.com)

**Author contributions:** Study design and experimental filmmaker: DL, WZ, XYS; manuscript writing: QJC; statistical analysis: XPT; data analysis: XND, WTT; molecular organisms analysis: XYS. All authors approved the final version of the paper.

Received 2019 Mar 13; Revised 2019 Mar 20; Accepted 2019 Sep 10.

© Neural Regeneration Research

---

---

---

---

---

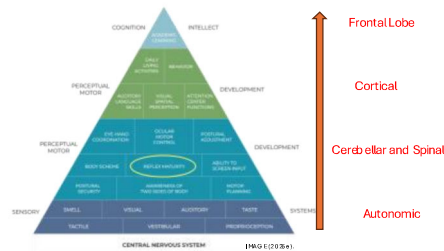
---

---

---

## PYRAMID OF LEARNING

Adapted from Pyramids of Learning (Williams and Scherberger, 1-6)




---

---

---

---

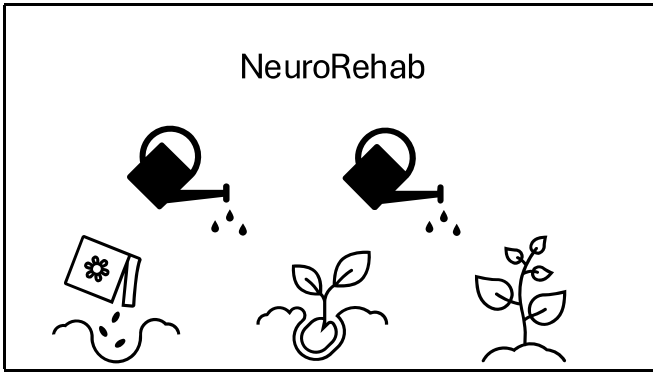
---

---

---

---





---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

### Acupuncture


A useful tool for cerebral blood flow enhancement during post-stroke rehabilitation.

**Acupuncture Affects Regional Blood Flow in Various Organs** Ueda, S., Hotta, H. eCAM, 2008

**Effects of Acupuncture Needling with Specific Sensation on Cerebral Hemodynamics and Autonomic Nervous Activity in Humans** Takano, K., et al., *International Review of Neurobiology* Vol. 111, Ch.2, 2013

**The Effect of Electroacupuncture with Different Frequencies on Muscle Oxygenation in Humans** Kimura, K., et al., *Evidence-Based Complementary and Alternative Medicine*, 2015

**A Neuroanatomical Basis for Electroacupuncture to Drive the Vagal-Adrenal Axis** Liu, S., et al., *Nature* 2021




---

---

---

---

---

---

---

---

### Acupuncture for Stroke Recovery

Number one use of acupuncture in China: **STROKE**

Acupuncture can be an effective intervention for stroke-related conditions, including but not limited to:

- Foot drop
- Gait analysis and correction
- Swelling
- Speech aphasia, dysphasia, and dysarthria
- Subluxed shoulder and decreased shoulder range of motion
- Hand and grip strength difficulty grasping
- Insomnia
- Depression
- Headaches
- Limb spasticity and flaccidity
- Tingling Sensations
- Paralysis
- Proprioception disruption
- Balance issues
- Motor continuity problems
- Dysphagia/ swallowing deficits

179

---

---

---

---

---

---

---


---

### Acupuncture Points

**Large Intestine 4 (LI4)**

**Classical Indications:**  
"Powerfully moves Qi and Blood to stop pain".


**Neurological Effects:**  
Activation of Periaqueductal Gray (PAG) in midbrain.



**Gall Bladder 34 (GB-34)**

**Classical Indications:**  
Dispel exterior & interior wind, treats tremors.


**Neurological Effects:**  
Enhanced Functional Connectivity between the Bilateral Primary Motor Cortices, increased neural responses in regions including the substantia nigra, caudate, thalamus, and putamen.



**Pericardium 6 (PC-6)**

**Classical Indications:**  
Nausea, palpitations, dizziness, calming effect.

**Neurological Effects:**  
Activation of insula, hypothalamus, and flocculonodular lobe of cerebellum (nodulus and uvula).



---

---

---

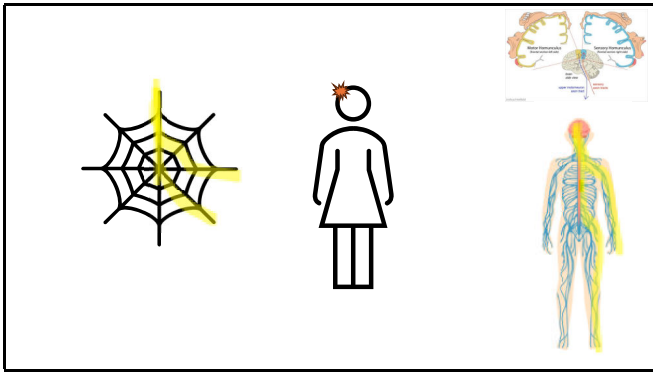
---

---

---

---

---




---

---

---

---

---

---

---

---

### Acupuncture Points

**Large Intestine 4 (LI-4)**

**Classical Indications:**  
"Powerfully moves Qi and Blood to stop pain".

**Neurological Effects:**  
Activation of Periaqueductal Gray (PAG) in midbrain.

**Gall Bladder 34 (GB-34)**

**Classical Indications:**  
Dispel exterior & interior wind, treats tremors.

**Neurological Effects:**  
Enhanced Functional Connectivity between the Bilateral Primary Motor Cortices, increased neural responses in regions including the substantia nigra caudate, thalamus, and putamen.

**Pericardium 6 (PC-6)**

**Classical Indications:**  
Nausea, palpitations, dizziness, calming effect.

**Neurological Effects:**  
Activation of insula, hypothalamus, and flocculonodular lobe of cerebellum (nodulus and uvula).

---

---

---

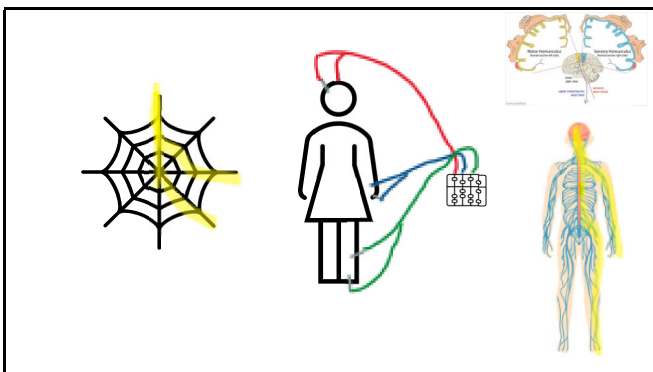
---

---

---

---

---




---

---

---

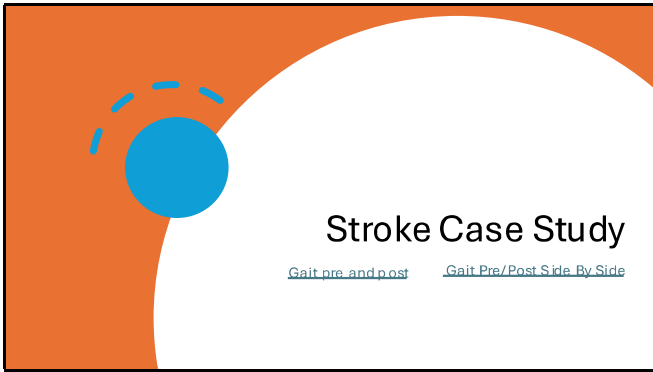
---

---

---

---

---



---

---

---

---

---

---

---

---

### Pain – Complex Regional Pain Syndrome

- Level of Lesion / Dysfunction
  - Considerations and parallels with TCM theory and diagnoses
  - Planning your intervention for the stage patient is in (parallels to TCM 4 levels, 5 phases, yin/yang, excess/deficiency)

---

---

---

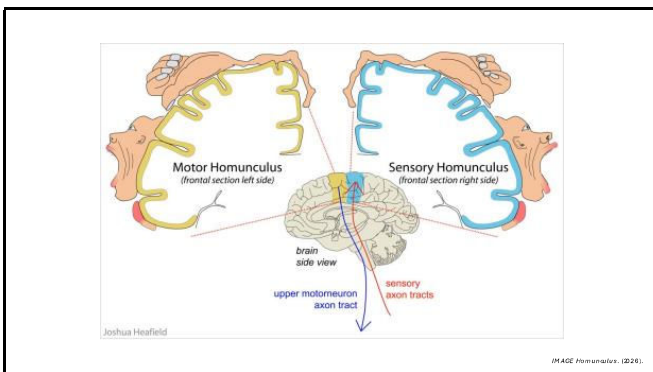
---

---

---

---

---



---

---

---

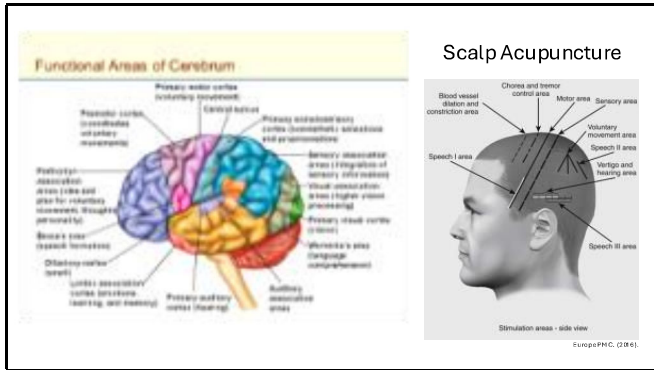
---

---

---

---

---




---

---

---

---

---

---

---

---



Traumatic Brain Injury

---

---

---

---


---

---


---

---


### Traumatic Brain Injury




**Area of trauma** →  
Blood status




**Mechanism of trauma**  
Traumatic neck injury  
Dysbarotrauma



**Symptoms**



**How long?**



**Assess nervous system function**  
Brainstem  
Cerebellum  
Cortex  
Spine

---

---

---

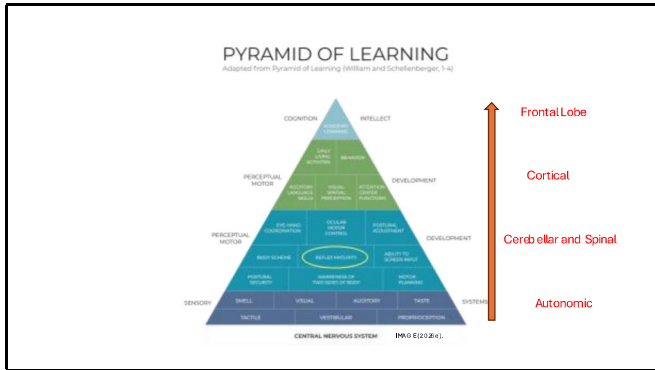
---

---

---

---

---



---

---

---

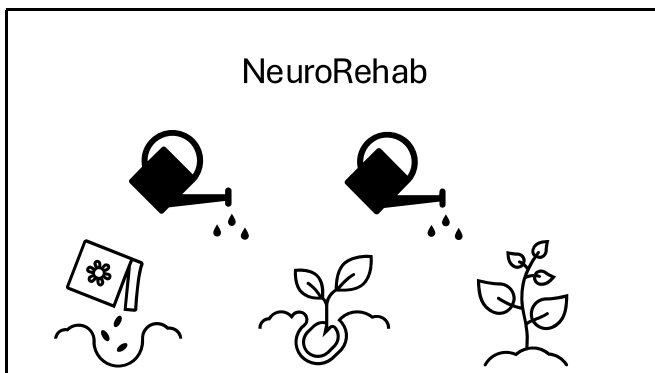
---

---

---

---

---



---

---

---

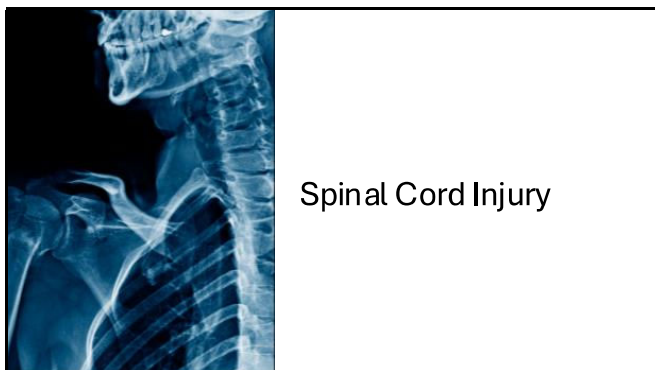
---

---

---

---

---



---

---

---

---

---

---

---

---

### Considerations for Spinal Cord Injury

- Level of lesion
- Mechanism of trauma
- Timeline
- Reflex activation
- Diaschisis

---

---

---

---

---

---

---

---

### Effects of Spinal Cord Injuries and Secondary Injuries

- Symptoms of Injuries
- Motor dysfunction
  - Sensory dysfunction
  - Pain
  - Neurogenic bowel and bladder
  - Pressure ulcers
  - Spasticity
  - Osteoporosis
  - Orthostatic hypotension
  - Sexual dysfunction



- Secondary Injuries
- Oxidative stress
  - Neuronal apoptosis
  - Inflammatory response
  - Microcirculation dysfunction
  - Gliosis formation

---

---

---

---

---

---

---

---

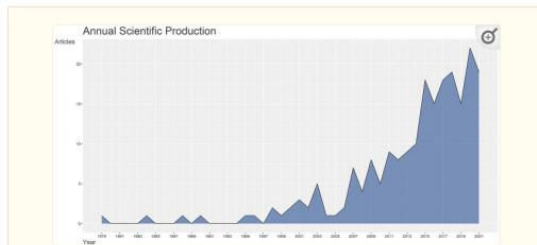


Figure 1

1979-2021 Annual scientific production in the field of acupuncture for SCI.

(Heang Y, et al., 2022)

[A bibliometric of research trends in acupuncture for spinal cord injury: Quantitative and qualitative analysis](https://doi.org/10.2196/2022.10.12)

---

---

---

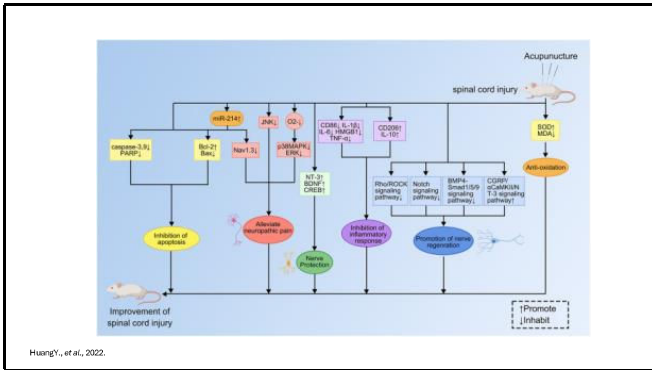
---

---

---

---

---




---

---

---

---

---

---

---

---

### Integration and Implementation

**Effect of Acupuncture (Acu) Therapy Combined with Rehabilitation Training on Incomplete Spinal Cord Injury: A Randomized Clinical Trial**  
 FengXiong, Jinglang Lu, Hongxia Pan, Fong Wang, Yinyin Huang, Yiyi Liu, Linglin Li, Ronggang Zheng, Yong Wang, Changji He and Wei Qian.  
 Evidence-Based Complementary and Alternative Medicine, 2021  
<https://doi.org/10.1155/2021/5611529>

**Incomplete SCI** – Inclusion criteria with a wide capture

**3 groups – 24 pts / g**

- Group 1 – Intermittent Acupuncture** : Acu 3x/week + Rehab training
- Group 2 – Continuous Acupuncture** : Acu 5x/week + Rehab training
- Group 3 – No acupuncture** : No acu + Rehab training

**Primary outcome**: ASIA Score @ Baseline vs 4 weeks  
**Secondary outcome**: MBI, Sensory Score  
**Outcome assessors**: Rehab therapists other than acupuncturists

**RESULTS**:  
 Significantly improved ASIA score and MBI @ 4 weeks  
 No sig diff in sensory score

➡ Acu 5x/week > Acu 3x/week > No acu

---

---

---

---

---

---

---

---

### Case Study

- 43 y/o male – Spinal injury at C4-C5, with spinal cord injury at C5 after falling from a tree.
- 7 years post injury.
- Tetraplegic.
- Upper body main focus are a of exercise and recovery, broke L scapula with injury (prior to SCI had injury in R shoulder).
- Change in body temperature regulation.

---

---

---

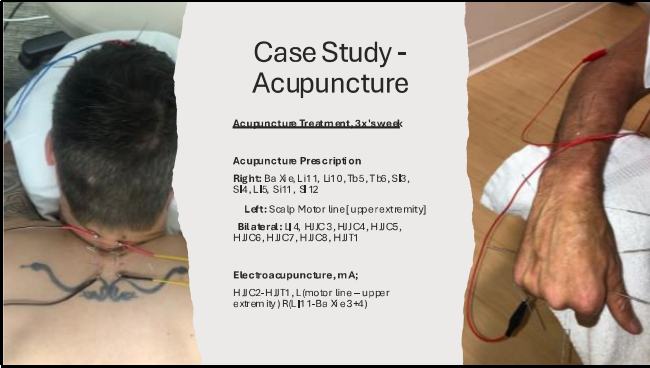
---

---

---

---

---



**Case Study - Acupuncture**

**Acupuncture Treatment, 3x/week**

**Acupuncture Prescription**

**Right:** Ba Xie, LI11, LI10, Tb5, Tb6, SB, SM, LB, SI1, SI2

**Left:** Scalp Motor line [upper extremity]

**Bilateral:** U4, HJC3, HJC4, HJC5, HJIC6, HJIC7, HJIC8, HJT1

**Electroacupuncture, mA:**  
HJC2-HJT1, L (motor line - upper extremity) RL II 1-Ba Xie3-4)

---

---

---

---

---

---

---

---

**Case Study Results / Review**

**Outcomes:**

- Improved (decreased) spasticity in RUE in the morning.
- Improved bladder and bowel control and regularity.
- Improved energy and alertness.

**Limitations:**

- Short intervention period (<4 weeks).
- Only 10 of 12 visits completed due to sickness and transportation.
- Disruption in use of EA due to heart rate dropping, 7 of 10 with estim.

---

---

---

---


---

---

---

---

**PRE-RUE Hand function**



**POST-RUE Hand function**




---

---

---

---

---

---

---

---

# NeuroImmune – Myasthenia Gravis

---

---

---

---

---

---

---

---

---

---

### NeuroImmune Applications for Myasthenia Gravis

- miR-145** Increasing evidence shows that dysregulation of inflammatory response is closely related not only with MG but also with many autoimmune diseases – so up to date can be helpful in lowering the inflammatory response (Huda, R., 2023).
- miR-145** A cupric urea can improve the level of mitochondrial fission and fusion. This balance can promote the synthesis and function of mitochondrial ATP, thereby enhancing muscle strength (Xue, H., et al., 2024).
- miR-145** Acupuncture can activate the cholinergic receptor and activate the cholinergic anti-inflammatory pathway (CAP), thereby exerting an anti-inflammatory effect and delaying the progression of myasthenia (Xue, H., et al., 2024).
- miR-145** Acupuncture can reduce the expression of FoxO3a transcription factors in atrophic skeletal muscle tissue. Inhibiting the activation of FOXO3a, it can reduce the expression of Muscle Atrophy Factor (MAF) and Muscle Ring Finger 1 (MURF1) mRNA, thereby preventing the degradation of muscle proteins, increasing the cross-sectional area of muscle fibers, and improving the degree of skeletal muscle atrophy (Xue, H., et al., 2024).

---

---

---

---

---

---

---

---

---

---

### The effectiveness and safety of acupuncture for the treatment of myasthenia gravis: a systematic review and meta-analysis of randomized controlled trials

Xue Zhang<sup>1</sup>, Wensu Ding<sup>2</sup>, Zhen Wang<sup>3</sup>, Xiali Gu<sup>4</sup>, Wenzeng Zhu<sup>5</sup>

<sup>1</sup>Chen Institute of Chinese Medical Science, Chengde University, Heilong Jiang 161015, China; <sup>2</sup>Chen Institute of Chinese Medical Science, South Area of Chengde University, Heilong Jiang 161015, China; <sup>3</sup>Chen Institute of Chinese Medical Science, North Area of Chengde University, Heilong Jiang 161015, China; <sup>4</sup>Chen Institute of Chinese Medical Science, East Area of Chengde University, Heilong Jiang 161015, China; <sup>5</sup>Chen Institute of Chinese Medical Science, West Area of Chengde University, Heilong Jiang 161015, China

**Background:** The systematic review of acupuncture as a treatment for myasthenia gravis (MG) has been published in English. The aim of this study is to evaluate the efficacy and safety of acupuncture in treatment for MG.

**Methods:** We searched for randomized controlled trials (RCTs) in seven major electronic databases (English) and Chinese databases, including conference papers and Chinese Research and Reports (China), were also included in supplementary searches. The primary outcome was the clinical effect score (CES) response rate. The secondary outcome was the safety of acupuncture. The quality of the evidence was assessed using GRADE and PRISMA 2020.

**Results:** Chinese RCTs involving a total of 177 participants were included. Mean included trials had a high risk of bias in allocation concealment and blinding. There were no significant differences in the primary outcome between the acupuncture and control groups. The secondary outcome was also not significant. The quality of the evidence was low to very low.

**Conclusion:** This study indicates that acupuncture may be effective in the treatment of MG. However, the quality of the evidence is low to very low. Further research is needed to confirm the efficacy and safety of acupuncture in the treatment of MG.

**Keywords:** myasthenia gravis; acupuncture; systematic review; meta-analysis; randomized controlled trial

Received: 01/11/2024; Accepted for publication: 04/11/2024  
doi:10.1016/j.ajtmr.2024.100000

---

---

---

---

---

---

---

---

---

---

### Sources

1. [The Role of the Brain in Memory](#) - A comprehensive overview of the neural mechanisms underlying memory storage and retrieval.

2. [Memory and the Brain](#) - A detailed look at the hippocampus and its role in forming new memories.

3. [The Biology of Memory](#) - Explores the molecular and cellular processes involved in long-term potentiation (LTP).

4. [Memory and the Brain: A Review](#) - A critical analysis of current research on the neural basis of memory.

5. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

6. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

7. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

8. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

9. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

10. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

11. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

12. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

13. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

14. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

15. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

16. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

17. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

18. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

19. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

20. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

21. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

22. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

23. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

24. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

25. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

26. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

27. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

28. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

29. [The Role of the Brain in Memory: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.

30. [Memory and the Brain: A Review](#) - A summary of the current state of knowledge on the neural basis of memory.



**Acupuncture Research at HealthPartners Institute Neuroscience Research Center**

Amranda Herrmann, PhD  
 Acupuncture and Chinese Medicine (Great River) Symposium  
 Northwestern Health Sciences University  
 March 14, 2026

 **HealthPartners Institute**

---

---

---

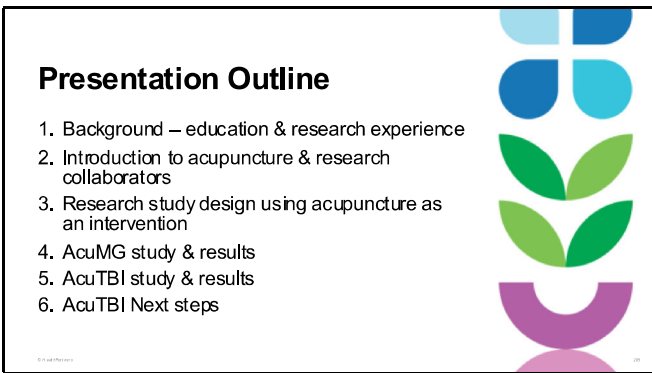
---

---

---

---

---



**Presentation Outline**

1. Background – education & research experience
2. Introduction to acupuncture & research collaborators
3. Research study design using acupuncture as an intervention
4. AcuMG study & results
5. AcuTBI study & results
6. AcuTBI Next steps

---

---

---

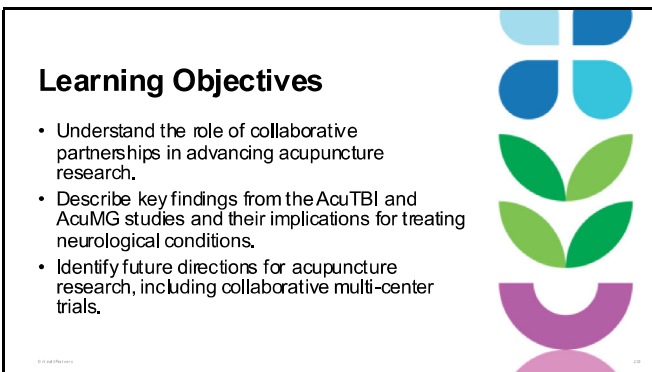
---

---

---

---

---



**Learning Objectives**

- Understand the role of collaborative partnerships in advancing acupuncture research.
- Describe key findings from the AcuTBI and AcuMG studies and their implications for treating neurological conditions.
- Identify future directions for acupuncture research, including collaborative multi-center trials.

---

---

---

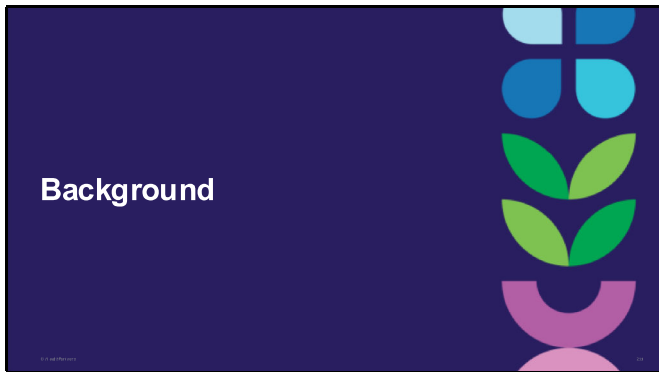
---

---

---

---

---




---

---

---

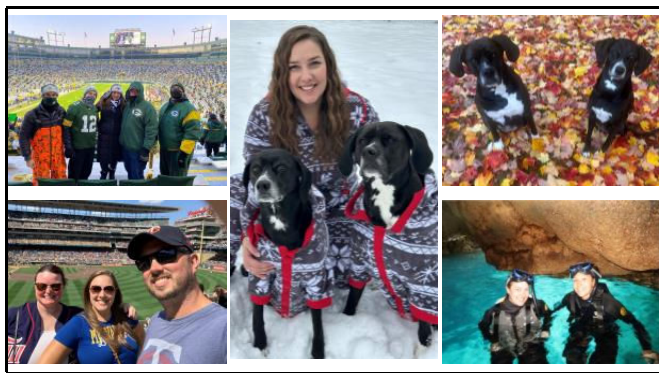
---

---

---

---

---




---

---

---

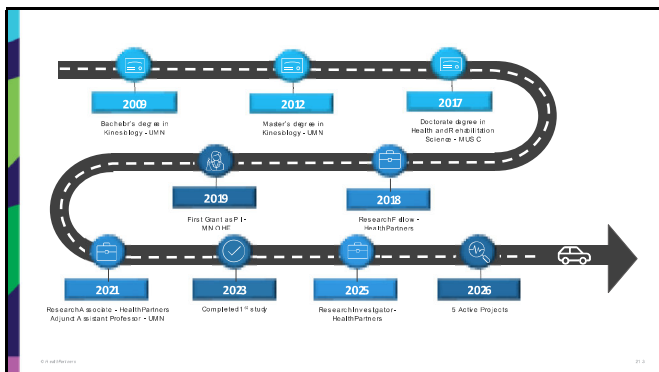
---

---

---

---

---




---

---

---

---

---

---

---

---

# Introduction to acupuncture & research collaborators




---

---

---

---


---

---


---

---

## Research Collaborators




**Leah Hanson, PhD**  
Senior Director of Neuroscience Research




**Marny Farrdl, PT**  
Former Director of Rehabilitation



**Gaurav Gulani, MD**  
Neurologist



**Gwendolyn Kosevich, NPT**  
Physical Medicine & Rehabilitation



**Steven Jackson, MD, MBA**  
Chair, Physical Medicine & Rehabilitation

**Other Research Staff:**  
 Ella Chrenka, MS – Bioscience  
 Aleta Svitak, MS – Research Operations Manager  
 Bethany Crouse, PhD – Project Manager  
 Samantha Sherman, BS – Clinical Research Coordinator  
 Clarissa Howe, BS – Clinical Research Coordinator

---

---

---

---


---

---


---

---


## Acupuncturists




**Elle Tansey, DACM, L.Ac.**  
Regions Hospital, Neuroscience Center




**Sophia Bouwens, L.Ac., Dipl. OM (NCBHAM)**  
Neuroscience Center, Healing Response Acupuncture



**Lixin Qin, RN, L.Ac.**  
Twin City Acupuncture, HP Como Clinic



**Ayla Wolf, DAOM, L.Ac., Dipl. OM (NCBHAM)**  
Healing Response Acupuncture



**Michael Kozl, L.Ac., Dipl. Ac (NCBHAM)**  
Healing Response Acupuncture

---

---

---

---

---

---

---

---

### Treatment Locations




**HealthPartners Neuroscience Center**  
295 Phalen Boulevard,  
St Paul, MN 55130



**HealthPartners St. Paul Clinic Como**  
2500 Como Ave,  
St Paul, MN 55108



**Healing Response Acupuncture & Functional Neurology**  
11550 Stillwater Blvd N, Suite 101  
Lake Elmo, MN 55042



---

---

---

---


---

---

---

---

### Research study design using acupuncture as an intervention




---

---

---

---

---

---

---

---

### My path to conducting acupuncture research

1. Created partnerships with physician specialists, rehabilitation services, and acupuncturists
2. Reviewed the current state of the scientific literature (PubMed)
  - a. Animal studies
  - b. Human studies
  - c. Systematic reviews & meta-analyses
3. Experienced acupuncture for the 1<sup>st</sup> time (2019 – right before 1<sup>st</sup> study began)
4. Acupuncturists developed protocols for specific patient populations
  - a. All points were justified using scientific literature
  - b. All points were agreed upon by acupuncturists
5. Refined research protocol as needed
  - a. Allowed for needles to be removed or left out due to extreme pain/discomfort (up to 2)
  - b. Allowed for protocol deviations when necessary (1 patient – changed protocol due to new symptoms)
6. Continuing Education
  - a. Attend & present at National Conferences to learn more about acupuncture research
    - International Congress on Integrative Medicine and Health
    - Society for Acupuncture Research
  - b. Completed the Introduction to Chinese Medicine Philosophy Course through the American College of Acupuncture & Oriental Medicine and online trainings/webinars through the Society for Acupuncture Research

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---




---

---

---

---

---


---

---

---

### Background

- Myasthenia gravis (MG) is a rare autoimmune disease affecting 8-10 people per 1 million people each year.<sup>1</sup>
- Symptom management includes medications; however, there are potential issues.
- A recent systematic review reported that acupuncture was shown to have a positive treatment effect and may enhance the efficacy of medications (13 RCTs; N=775).<sup>2</sup>



Goal: To examine the effect of acupuncture on quality of life (QOL) and activities of daily living (ADLs) in people with MG.

---

---

---

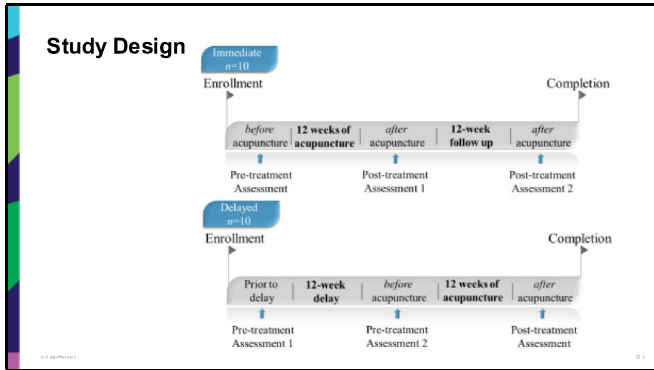
---

---

---

---

---




---

---

---

---

---

---

---

---

### Eligibility Criteria

Inclusion	Exclusion
Age 18-80	Non-English speaking
Diagnosis of MG	Participation in acupuncture treatment outside of the study, while enrolled
	History of any other serious neurological, psychiatric, chronic pain disorders, or seizures
	History of bleeding diathesis, other bleeding disorders, or syncope with needle puncture
	Recent or active substance use disorder
	Women who are currently pregnant, lactating, or planning to become pregnant during the study
	Any other medical conditions that could affect their ability to participate in acupuncture treatments for the study duration (as determined by study investigators)
	Active participation or past participation <3 months in any other interventional study

---

---

---

---

---

---

---

---

### Intervention

**SYMPTOM SEVERITY SCALE**

Please indicate your typical level of symptom severity using the following scale:

Symptom	Not Present	Mild	Moderate	Severe
Drooping eyelids/ptosis				
Fatigue				
Double vision				
Weakness of upper limbs				
Weakness of lower limbs				
Fatigue with exertion				
Constipation				
Cold hands and feet				
Difficulty chewing				
Difficulty with upward gaze				
Difficulty walking				
Difficulty swallowing				
Choking with eating				
Choking with drinking				
Hoarseness of voice				
Difficulty with digestion				
Loose stools/diarrhea				
Bloating				
Difficulty breathing				
Hot hands and feet				
Night sweats				
Difficulty coordinating eye movements/strabismus				
Difficulty speaking/hoarse speech				
Weakness in knees				
Weakness in back				
Soreness of back				

---

---

---

---

---

---

---

---

### Intervention

#### Acupuncture Points

**Base Treatment - All Patients**

- 1. LI11
- 2. PS
- 3. ST36
- 4. SP6
- 5. GB30
- 6. SP4
- 7. UB2
- 8. YuYao
- 9. TB23
- 10. UB7
- 11. UB
- 12. UB

Treatment Start Time \_\_\_\_\_  
 Treatment Stop Time \_\_\_\_\_  
 End of Treatment Needle Count \_\_\_\_\_

**If symptoms are more Yang deficiency pronounced add:**

- 1. Du 20
- 2. Si Shen Gong
- 3. SP9
- 4. UB7

**If symptoms are more Yin deficiency pronounced add:**

- 1. UB
- 2. UB3

**If symptoms are more Stagnation pronounced add:**

- 1. UB
- 2. UB3

---

---

---

---

---

---

---

---

---

---

### Enrollment

---

---

---

---

---

---

---

---

---

---

### Demographics

	Overall	Immediate Start	Delayed Start	p-value
<b>Number of Participants</b>	24	10	14	
<b>Age</b> (yrs, Mean ± SD)	62 ± 13	66 ± 12	59 ± 13	0.16
<b>Gender</b>				0.68
	Female	12 (50%)	4 (40%)	8 (57%)
<b>Race and Ethnicity</b>				0.55
	White	21 (87%)	8 (80%)	13 (93%)
	Black or African American	3 (13%)	2 (20%)	1 (7%)
<b>Time since diagnosis</b> (yrs, Mean ± SD)	8 ± 9	6 ± 5	10 ± 11	0.84
<b>Diagnosis Classification</b>				0.65
	Yang deficiency	9 (45%)	4 (50%)	5 (42%)
	Yin deficiency	6 (30%)	2 (25%)	4 (33%)
	Stagnation pronounced	4 (20%)	1 (12.5%)	3 (25%)
	Base treatment	1 (5%)	1 (12.5%)	0 (0%)
	Withdrawn before treatment	4	2	2

---

---

---

---

---

---

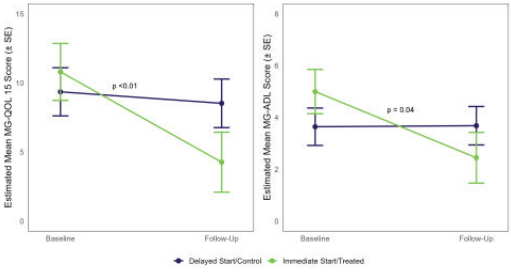
---

---

---

---

**Results<sub>(1)</sub>**




---

---

---

---

---

---

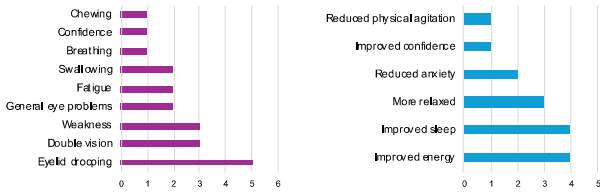
---

---

---

---

**Results<sub>(2)</sub>**




---

---

---

---

---

---

---

---

---

---

**Results<sub>(3)</sub>**

Adverse Events	Definitely related	Probably related	Potentially related	Unlikely to be related	Not related	Total
<b>Severity of Event</b>						
Mild	6	6	6	3	5	26
Moderate	3	1	5	5	4	18
Severe	1	0	1	2	5	9
<b>Total</b>	<b>10</b>	<b>7</b>	<b>12</b>	<b>10</b>	<b>14</b>	<b>53</b>

---

---

---

---

---

---

---

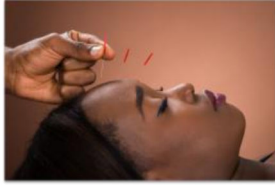
---

---

---

### Conclusions

- In this pilot study, acupuncture improved QOL and ADLs for people with MG.
- People with MG self-reported improvements in both their symptoms of MG and other aspects of their life.
- Acupuncture was overall safe and tolerated in people with MG.
- Larger trials in this population are needed to further examine the efficacy of acupuncture treatment on symptoms of MG.




---

---

---

---

---

---

---

---

### References

1. Gilhus NE. Myasthenia Gravis. *N Engl J Med*. Dec 29 2016;375(26):2570-2581. doi:10.1056/NEJMe1602678
2. Zhang X, Ding W, Wang Z, Gu X, Zhu W. The effectiveness and safety of acupuncture for the treatment of myasthenia gravis: a systematic review and meta-analysis of randomized controlled trials. *Ann Palliat Med*. Nov 20 198(5):576-585. doi:10.21037/apm.2019.10.10

---

---

---

---

---

---

---

---

### Acupuncture Treatment for Chronic Post-Traumatic Headache in Individuals with Mild Traumatic Brain Injury.




---

---

---

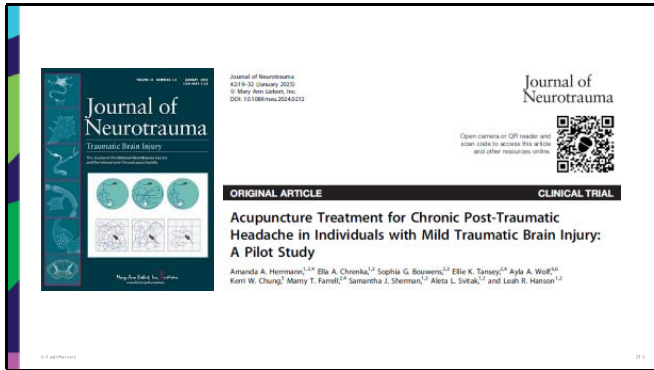
---

---

---

---

---




---

---

---

---

---

---

---


---

---

---

### Background

- It has been estimated that approximately 17.1 million Americans experience a traumatic brain injury (TBI) each year, with up to 90% experiencing headache in the acute period in the first three months<sup>1</sup>, and up to ~60% in the chronic phase<sup>2</sup>
- Chronic post-traumatic headache (CPTH) lacks FDA approved pharmacological treatments
- In a recent study, 87% of CPTH patients reported that they are not satisfied with their current treatment status<sup>3</sup>
- Acupuncture has been researched and used as a treatment for a variety of pain conditions, including headaches
- However, research on acupuncture treatment for CPTH is extremely limited, especially publications in English
- Given the lack of consensus on the level of acupuncture treatment needed, the primary goal of this study was to establish the effects of a low vs. high dose of acupuncture




---

---

---

---

---

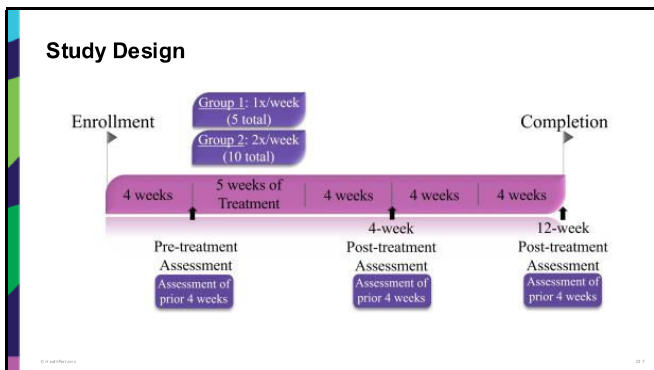
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

## Eligibility Criteria

Inclusion	Exclusion
Age 18-70	Non-English speaking
Diagnosis of mTBI (as defined by ICHD3: a. Either no loss of consciousness, or loss of consciousness of <30 minutes duration, b. Glasgow Coma Scale (GCS) > 13, and c. Symptoms and/or signs diagnostic of concussion)	Participation in acupuncture treatment outside of the study, while enrolled
Diagnosis of mTBI <3 months and <2 years at the time of study enrollment	History of pre-existing primary headache, defined as more than 12 days of tension-type headache annually and/or more than one migraine attack per month in the last year
Suffering from CPTSD of any etiology (e.g., tension or migraine), with chronic defined as developed within 7 days of injury and lasting >3 months from the time of injury	History of any other serious neurological, psychiatric, chronic pain disorder or seizures
	History of bleeding diathesis, other bleeding disorders, or syncope with no identifiable cause
	History of cardiac arrhythmia or current pacemaker, neurostimulator, or other implanted stimulation device
	Recent or active substance use disorder
	Women who are currently pregnant, lactating, or planning to become pregnant during the study
	Any other medical conditions that could affect their ability to participate in acupuncture treatments for the study duration (as determined by study investigators)
	Active participation or past participation <3 months in any other interventional study

---

---

---

---

---

---

---

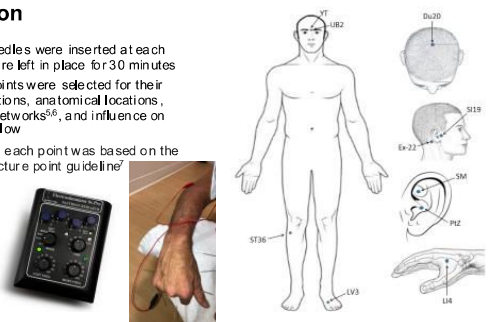
---

---

---

## Intervention

- A total of 18 needles were inserted at each session and were left in place for 30 minutes
- Acupuncture points were selected for their classical indications, anatomical locations, effect on pain networks<sup>5,6</sup>, and influence on cerebral blood flow
- The location for each point was based on the WHO's acupuncture point guideline<sup>7</sup>




---

---

---

---

---

---

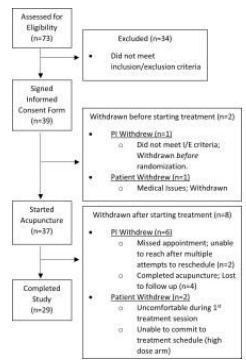
---

---

---

---

## Enrollment




---

---

---

---

---

---

---

---

---

---

### Demographics

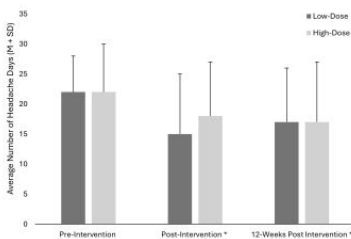
	Overall	Low-Dose	High-Dose	p-value
<b>Number of Participants</b>	38	18	20	
<b>Sex – Female</b>	29 (76%)	14 (78%)	15 (75%)	-
<b>Age</b> (years, Mean ± SD)	45 (13)	44 ± 14	47 ± 12	0.55
<b>Race</b>				0.43
White	29 (76%)	12 (67%)	17 (85%)	
Black/African-American	5 (13%)	3 (17%)	2 (10%)	
Other	4 (11%)	3 (17%)	1 (5%)	
<b>Ethnicity – Latino</b>	1 (3%)	1 (6%)	0 (0%)	0.47
<b>mTBI diagnosis to enrollment</b> (months, median (IQR))	8 (5, 12)	7 (5, 11)	9 (5, 13)	0.84

© 2024 Phoenix

21

### Results

- No significant difference in number of headache days or headache intensity between study arms
- However, we found a significant decrease in both headache days and headache intensity for all study participants at 4 weeks and 12 weeks post-treatment
- Regardless of study arm, participants reported a significant decrease from pre-treatment in pain interference at 4 weeks and 12 weeks post-treatment
- Sleep quality showed no significant differences associated with acupuncture treatment

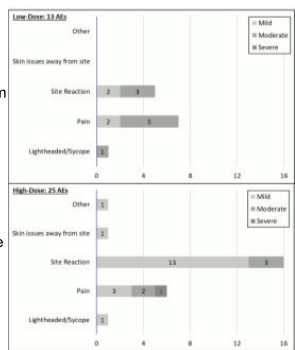


© 2024 Phoenix

21

### Adverse Events (AEs)

- 35 (37%) of the AEs occurred in the low-dose arm and 60 (63%) in the high-dose arm
- Only one severe AE, definitely or probably related to treatment was recorded, which was a report of pain for a participant in the high-dose arm
- Site reaction was the most common type of AE reported definitely or probably related in the high dose arm (64%)
- Pain (54%) and site reaction (38%) were the most common types of AEs reported definitely or probably related to treatment in the low dose arm
- No SAEs were reported



© 2024 Phoenix

### Conclusions

- There was no difference in average number of headache days or headache pain intensity from pre- to post-treatment between the two groups (5 treatments vs. 10 treatments).
- Acupuncture improved the average number of headache days and headache pain intensity in individuals with CPTH.
- Acupuncture was safe and well-tolerated in individuals with CPTH.
- There were no significant differences between or within groups for PSQI, TBI-QOL results showed improvements in pain interference and headache pain for both groups from baseline to follow up.




---

---

---

---

---

---

---

---

### References

1. Faul M, Xu L, Wald MM, Coronado V. Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations and Deaths, 2002-2006. Atlanta, Georgia: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2010.
2. Dwyer B. Posttraumatic Headache. *Semin Neurol* 2018;38(6):619-626. doi:10.1055/s-0038-1673692
3. Nampiaparampil DE. Prevalence of chronic pain after traumatic brain injury: a systematic review. *Jama* 2008;300(6):711-9. doi:10.1001/jama.300.6.711
4. Ashra H, Hjeij A, Alkhasli HM, et al. Resistant post-traumatic headache attributed to mild traumatic brain injury: Deep phenotyping and treatment patterns. *Cephalalgia: an international journal of headache* 2020;40(6):554-564. doi:10.1177/0333102420908665
5. Theysohn N, Choi KE, Gizewski ER, et al. Acupuncture-related modulation of pain-associated brain networks during electrical pain stimulation: a functional magnetic resonance imaging study. *Journal of alternative and complementary medicine (New York, N.Y)* 2014;20(12):893-900. doi:10.1089/acm.2014.0106
6. Zhang G, Qu S, Zheng Y, et al. Key regions of the cerebral network are altered after electroacupuncture at the Baihui (GV20) and Yintang acupuncture points in healthy volunteers: an analysis based on resting fMRI. *Acupuncture in medicine: journal of the British Medical Acupuncture Society* 2013;31(4):383-8. doi:10.1136/acupmed-2012-010301
7. WHO Standard Acupuncture Point Locations in the Western Pacific Region. World Health Organization, Western Pacific Region; 2008.

---

---

---

---

---

---

---

---

### AcuTBI Next Steps




---

---

---

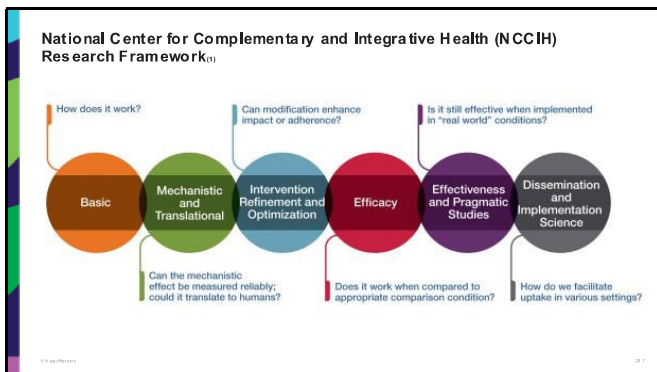
---

---

---

---

---




---

---

---

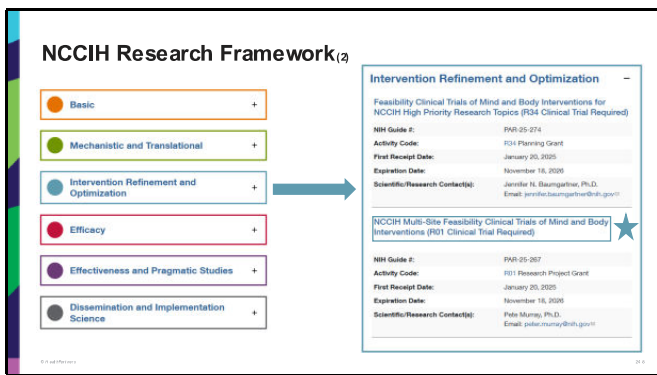
---

---

---

---

---




---

---

---

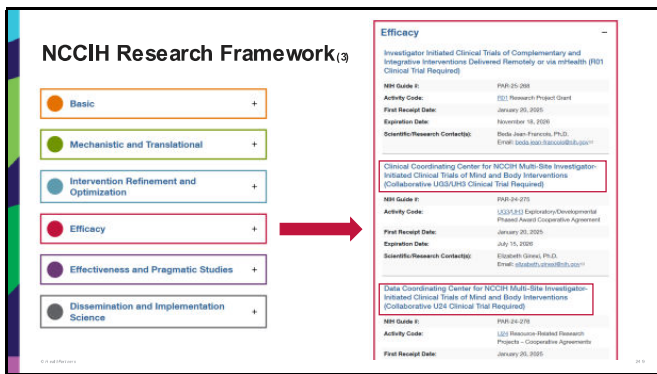
---

---

---

---

---




---

---

---

---

---

---

---

---



**NCCIH PAR-25-267 (3)**

Goals (including, but not limited to):

- Demonstrate **feasibility** of **recruitment rate, randomization, and retention** of participants **across multiple sites**.
- Assess whether the **intervention** can be **delivered with fidelity across sites**, and/or assess whether minor intervention adaptation is useful to enhance adherence, outcome selection, and/or fidelity.
- Demonstrate **acceptability** and/or **adherence** to a protocolized multi-component **intervention across sites**.
- Demonstrate **feasibility** in **measuring outcomes** within designated time frames, **training interventionists**, and delivering the intervention with **fidelity across sites**.
- Demonstrate **participant adherence to the intervention** throughout the study **across sites**.
- Demonstrate **consistent collection** of clinical data including **follow-up data across sites**.
- Assess **feasibility** of strategies for **integrating** a mind and body **approach into multiple health care systems** to inform the execution of future pragmatic or implementation research trials.
- Determine **appropriate control/comparison** condition for future large-scale study.

---

---

---

---

---

---

---

---

---

---

**Feasibility of a Multi-Site Clinical Trial of Acupuncture for Chronic Post-Traumatic Headache After Mild Traumatic Brain Injury (AcuTBI).**




---

---

---

---

---

---

---

---

---

---

**Proposed Study & Specific Aims**

The goal of this study is to determine whether acupuncture + usual care vs. usual care alone can be feasibly implemented across two sites, HealthPartners Institute and the National University of Natural Medicine.

**Aim 1: Examine feasibility of the acupuncture intervention training.**

- **Practicality** and **fidelity** to the training as measured by acupuncturists' successful completion of training activities and achievement of TCM diagnostic consistency.
- **Acceptability** of the training as measured by acupuncturists' self-reported facilitators/barriers to training participation.

**Aim 2: Examine feasibility of the acupuncture intervention.**

- **Practicality** of the intervention as measured by participant intervention adherence and fidelity to the acupuncture protocol delivery.
- **Acceptability** of the intervention as measured by participants' self-reported facilitators/barriers to intervention participation.

**Aim 3: Examine feasibility of the AcuTBI multi-site trial.**

- **Practicality** of the trial as measured by enrollment, randomization, retention, and data collection rates and fidelity to comparator arms.
- **Acceptability** of the trial as measured by participants' self-reported facilitators/barriers to study participation.

---

---

---

---

---

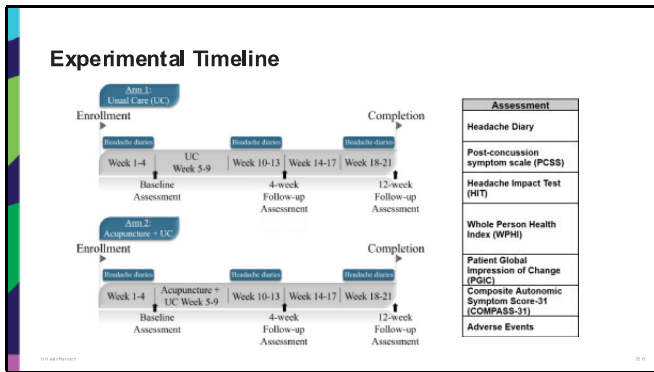
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

### Study Sites/Treatment Locations



**National University of Natural Medicine Health Center**  
3025 S Corbett Ave,  
Portland, OR 97201



**HealthPartners Neuroscience Center**  
295 Phalen Blvd,  
St. Paul, MN 55130



**Healing Response Acupuncture & Functional Neurology**  
11550 Stillwater Blvd N, Suite 101  
Lake Elmo, MN 55042

---

---

---

---

---

---


---

---


---

---


### Internal Collaborators




**Meghan JaKa**  
PhD  
Co-PI  
Senior Evaluation Scientist, Supervisor, Center for Evaluation and Survey Research HealthPartners



**Sarah Mahasin**  
MD  
Co-I, Study Physician  
HealthPartners



**Bethany Crouse**  
PhD  
Project Manager  
HealthPartners



**Rachael Rivard**  
MPH  
Statistician  
HealthPartners

---

---

---

---

---

---

---

---

---

---

### External Collaborators



**Scott Mist, PhD, L.Ac.**  
Site PI, Senior Research Investigator  
National University of Natural Medicine



**Joshua Goldenberg, ND**  
Co-I, Associate Director of Research  
National University of Natural Medicine



**Michele Maers, DC, MPH, PhD**  
Co-I, Executive Director of Research and Innovation  
Northwestern Health Sciences University



**Amy LaFrance, MPH**  
Community Co-I, President & Principal Consultant  
EcoPlant, LLC

---

---

---

---

---

---

---

---

### Review



---

---

---

---

---

---

---

---

### Learning Objectives

- Understand the role of collaborative partnerships in advancing acupuncture research.
  - Form collaborative interdisciplinary partnerships at the initial stages
    - Enhance study design credibility through diverse perspectives
    - Merge traditional clinical approaches with modern scientific methodologies
- Describe key findings from the AcuTBI and AcuMG studies and their implications for treating neurological conditions.
  - Acupuncture improved QOL and ADL in people with MG
  - Acupuncture reduced headache frequency and intensity in people with mTBI
- Identify future directions for acupuncture research, including collaborative multi-center trials.
  - NCCIH resources for funding
  - Next steps include multi-site feasibility AcuTBI trial



---

---

---

---

---

---

---

---

# 醒脑开窍

## Xing Nao Kai Qiao “Activate the Brain and Open the Orifices” Treatment Method for Stroke in the First Affiliated Teaching Hospital of Tianjin University of Traditional Chinese Medicine

Larissa Vados, PhD, LAc.

1

---

---

---

---

---

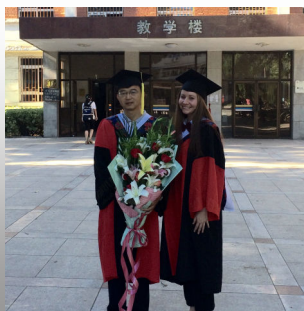
---

---

---

### Larissa Vados, PhD, LAc

- Graduated from NWHSU in 2012 with Master's of Acupuncture and Oriental Medicine
- Graduated from Tianjin University of Traditional Chinese Medicine in 2015 with PhD in Acupuncture, Tuina & Moxibustion
- Research focused on Acupuncture for stroke recovery



2

---

---

---

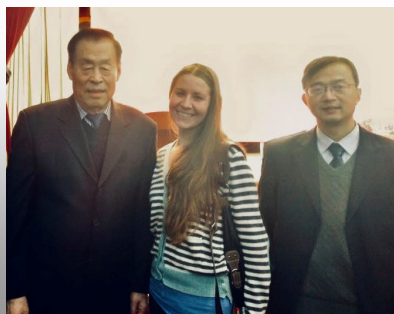
---

---

---

---

---



Influential teachers:  
Shi Xuemin, Wang Shu,  
Du Yuzheng

3

---

---

---

---

---

---

---

---

## Overview

- Intro to XNKQ
- Overview of inpatient treatment method as practiced in Tianjin
- Overview of outpatient treatment method as practiced in Tianjin
- XNKQ Method & Point Manipulations
- Research on XNKQ

4

---

---

---

---

---

---

---

---

## Learning Objectives

By the end of this lecture, participants will be able to:

- 1.Describe the core concepts and clinical rationale behind the XNKQ acupuncture method for stroke treatment.
- 2.Describe how XNKQ is implemented in Tianjin's inpatient and outpatient clinical settings.
- 3.Identify the primary acupuncture points, treatment methods, and technical procedures used in the XNKQ method.
- 4.Describe the relevant neuroanatomy associated with nerve stimulation at the main XNKQ points.
- 5.Identify additional acupuncture points commonly paired with XNKQ to address frequent stroke-related sequelae.
- 6.Summarize foundational research findings and clinical outcomes related to the use of XNKQ in stroke treatment.

5

---

---

---

---

---

---

---

---

## Stroke in Traditional Chinese Medicine

Common pathology and etiology of stroke according to TCM:

- Stroke is a complex disease, often times with deficiency at its root and excess in its manifestation.
- In TCM, the etiology and pathogenesis of stroke are often associated with wind, fire, phlegm, blood stasis, and/or yin, blood and qi deficiencies. It can be caused and influenced by several factors:
  - **Decline of vital qi** due to old age, chronic illness, over work or overstrain. The deficiency of qi leads to poor circulation of blood in the brain, depriving the vessels of proper nourishment. Deficiency of yin and blood cannot anchor the yang, leading to the uprising of yang and stirring of internal wind.
  - **Improper diet**, including excessive intake of fatty, sweet and/or rich foods and a preference for alcohol can lead to impairment of spleen and stomach. Disturbance of the transportation and transformation functions of these organs leads to accumulation of damp and phlegm. When damp and phlegm accumulate and stagnate over a long period of time, this can lead to the accumulation of heat. Phlegm-damp or phlegm-fire then block the meridians and orifices, leading to onset of stroke.

6

---

---

---

---

---

---

---

---

**Common pathology and etiology of stroke according to TCM:**

- **Emotional disturbance can lead to the depression of liver qi**, which transforms to fire over time. This can lead to internal wind and hyperactivity of yang rising upward. Emotional disturbances can also cause excessive heart fire which gives way to the sudden rise of yang.
- **Deficiency of qi, blood, and/or yin** can allow for an attack of exogenous wind, leading to stirring up of liver wind.
- Traditional treatment methods often focus on yangming meridians, as they are abundant in both qi and blood, therefore stimulation of points along this meridian is thought to have a better effect on regaining motor function.

7

---

---

---

---

---

---

---

---

**Xing Nao Kai Qiao 醒脑开窍-**  
**“Activate the Brain and Open the Orifices”**

8

---

---

---

---

---

---

---

---

- Developed by professor Shi Xuemin in 1970s at Tianjin University of Traditional Chinese Medicine (TUTCM).
- The technique Xing Nao Kai Qiao - 醒脑开窍 - “Activate the Brain and Open the Orifices,” has been utilized in the treatment of thousands of patients since its origin.
- Today it is widely used to treat patients with stroke and other neurological conditions.
- It is widely studied and utilized at the First Teaching Hospital of TUTCM, where more than 2,000 patients receive acupuncture every day.
- Shi Xuemin promoted the idea that the main cause of stroke is located in the brain, which also shares an important link with the shen in TCM. The disease manifestation shows in the zang-fu organs and meridians.
- Xing Nao Kai Qiao is based mainly on the theory of underlying Liver and Kidney Yin Deficiency, as well as blockage of the orifices.

9

---

---

---

---

---

---

---

---

**Pathology and Etiology of Stroke according to XNKQ**

- "When the orifices are blocked and the shen hidden, the patient may become withdrawn or unconscious and cannot react to outside stimulus. If shen cannot lead the qi, the patient is unable to control their muscles and limbs, resulting in spasticity or flaccidity."
- In TCM, the concept of Shen (神) has both narrow and broad meanings. In the narrow sense, shen refers specifically to mental functions such as thinking, consciousness, emotional state, and cognitive ability. In the broader sense, shen encompasses all external manifestations of life activities and also governs the proper functioning of all vital processes.
- Shi Xuemin has said Shen encompasses the functioning of all zang-fu organs.
- Therefore, stroke can be considered as "blockage of the orifices and hidden shen, with impaired guidance of qi" regardless of whether there is an apparent disturbance or loss of consciousness.

10

---

---

---

---

---

---

---

---

---

---

**Pathology and Etiology of Stroke according to XNKQ**

- According to Shi Xuemin, various pathological factors—such as blood stasis, liver wind, and phlegm-dampness—obstruct the orifices of the brain.
- Shi Xuemin emphasized that these common pathological mechanisms exist despite differing causes. Main treatment principle does not differ: awaken the brain and shen, unblock the orifices, nourish Liver and Kidney, restoring consciousness, and regaining control of muscles and limbs.
- Main treatment method therefore does not differ based on specific TCM pattern, however, different adjunct points may be used for different presentations, as well as Chinese herbal medicine variations based on pattern diagnosis and symptom presentation.

11

---

---

---

---

---

---

---

---

---

---

**XNKQ as Practiced in Tianjin**

12

---

---

---

---

---

---

---

---

---

---

**First Teaching Hospital of Tianjin University of Traditional Chinese Medicine - North Campus**

**Opened in 1991**



13

---

---

---

---

---

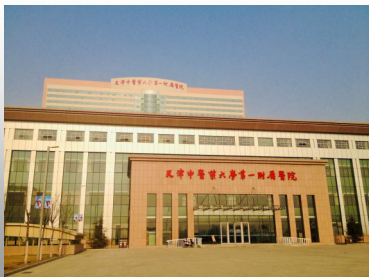
---

---

---

**First Teaching Hospital of Tianjin University of Traditional Chinese Medicine - South Campus**

**Opened in 2014**



14

---

---

---

---

---

---

---

---

**First Affiliated Teaching Hospital of Tianjin University of Traditional Chinese Medicine**

- Combined total of 2,600 inpatient beds between two campuses
- Over 3 million outpatient/emergency visits per year
- 65,000 inpatient visits per year
- Over 50 clinical, teaching and research departments (including: emergency medicine, acupuncture & moxibustion, tuina, neurology, cardiology, nephrology, gastroenterology, pediatrics, etc)
- Specialization in treatment of stroke and other neurological diseases
- Protocol for hypertension

15

---

---

---

---

---

---

---

---

Overview of inpatient treatment method as practiced in Tianjin:

- Daily treatment for inpatient stay - one course = 2 weeks, then discharge.
- Includes XNKQ acupuncture 5-6 days per week (original method recommends treatment 2x/day for 10 days)
- Often will return for 3-5 courses of treatment depending upon severity and outcomes

16

---

---

---

---

---

---

---

---

Overview of inpatient treatment method as practiced in Tianjin:

- Cupping
- Moxa boxes: back and/or abdomen mostly
- Herbal medicine and pharmaceuticals
- Some patients also do PT (exercise and also hands on therapies like Tuina).
  - Unlike in US, many patients opt out of PT, choosing main treatment modalities of acupuncture, due to the additional cost of PT

17

---

---

---

---

---

---

---

---

Overview of outpatient treatment method as practiced in Tianjin:

- After completing inpatient courses of treatment, patients will often return for frequent outpatient treatments if symptoms persist
- Frequency of treatment varies, usually from 3-5 days per week
- XNKQ acupuncture
- Often blood letting + cupping used on affected limbs or face
- Herbal medicine and pharmaceuticals
- All patient needs can be met on campus

18

---

---

---

---

---

---

---

---

XNKQ Method:

19

---

---

---

---

---

---

---

---

**Xing Nao Kai Qiao Method**  
**Treatment Principles**

- Activate the brain (shen), restore consciousness
- Open the orifices
- Tonify Kidney and Liver
- Remove stasis from channels
- In XNKQ method, yin and du meridians are main focus, as opposed to a focus on yang meridians in other stroke treatment methods

20

---

---

---

---

---

---

---

---

**Main Points**

- PC6 - Nèiguān (内关): Regulates the mind and opens the orifices to revitalize the heart/shen and awaken consciousness
- GV26 - Rénzhōng (人中): Regulates the Du meridian and Yang Qi, awakens the mind, and opens the orifices
- SP6 - Sānyīnjiāo (三阴交): Nourishes the Yin of the Liver and Kidney

21

---

---

---

---

---

---

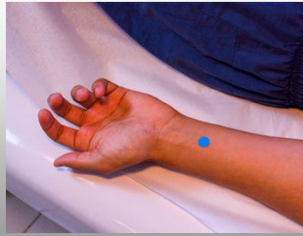
---

---

### Point Manipulation

PC6 - NÈIGUĀN (内关)

- Perpendicular acupuncture
  - 0.5–1 cun with reducing method of rapid rotation and lifting-thrusting for 1 minute
  - Desired effect is for patient to feel electrical sensation down to fingertips, may have spasm
- Innervation:
  - Branches of the medial and lateral cutaneous nerve
  - Median nerve
  - Interosseous nerve




---

---

---

---

---

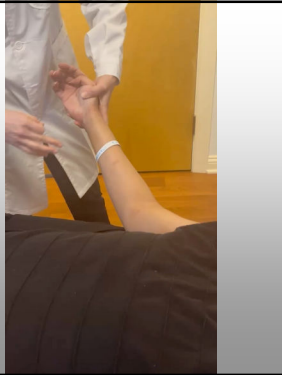
---

---

---

22

### PC6 MANIPULATION




---

---

---

---

---

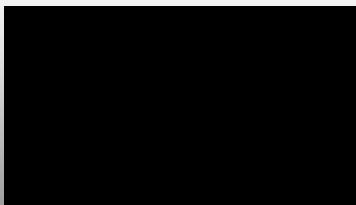
---

---

---

23

### PC6 MANIPULATION




---

---

---

---

---

---

---

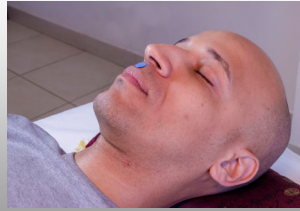
---

24

### Point Manipulation

GV26 - RÉNZHŌNG (人中)

- Oblique insertion toward the nasal septum, depth 0.3–0.5 cun
- Bird pecking technique until tearing occurs
- Especially used if loss of consciousness, somnolence, lack of mental clarity



25

---

---

---

---

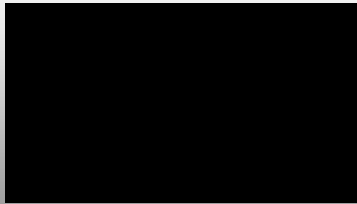
---

---

---

---

### GV26 MANIPULATION



26

---

---

---

---

---

---

---

---

### Point Manipulation

SP6 - SĀNYĪNJIĀO (三阴交)

- Oblique insertion 1–1.5 cun, 45° angle along posterior border of tibia, reinforcing method of lifting-thrusting with 3 spasms of the limb
- Innervation:
- Medial cutaneous branches of the saphenous nerve
- Tibial nerve



27

---

---

---

---

---

---

---

---

**SP6 MANIPULATION**



28

---

---

---

---

---

---

---

---

**SP6 MANIPULATION**



29

---

---

---

---

---

---

---

---

**Auxiliary Points**

- Regulate Qi and Blood
- Open the channels, improve circulation and mental state
- Used in the treatment of peripheral sequelae to restore function

30

---

---

---

---

---


---

---

---

**HT1 – JÍQUÁN (极泉)**

- HT1 at 1–2 cun below the original position, following the path of the meridian.
- Perpendicular acupuncture 1 to 1.5 cun with reducing lifting and thrusting method, until provoking 3 spasms in the limb.
- Innervation:
  - Intercostobrachial nerve
  - Radial nerve
  - Ulnar nerve
  - Median nerve
  - Medial cutaneous nerve



31

---

---

---

---

---

---

---

---

**HT1 MANIPULATION**



32

---

---

---

---


---

---

---

---

**HT1 MANIPULATION**



33

---

---

---

---

---

---

---

---

**LU5 – CHÍZÉ (尺澤)**

- Perpendicular acupuncture at 1 cun, with the elbow flexed at 120 degrees, reducing method of lifting and thrusting until 3 spasms occur in the affected limb.
- Innervation:
  - Radial nerve
  - Lateral cutaneous nerve



---

---

---

---

---

---

---

---

34

**LU5 Stimulation**



---

---

---

---

---

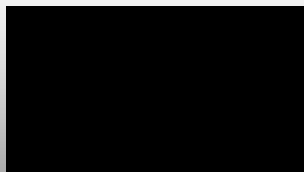
---

---

---

35

**LU5 MANIPULATION**



---

---

---

---

---

---

---

---

36

**BL40 - WÉIZHŌNG (委中)**

- Patient in supine position, lower limb is lifted.
- Perpendicular insertion 0.5-1 cun with reducing method of lifting-thrusting, provoking 3 spasms in the limb.
- Innervation:
- Posterior femoral cutaneous nerve
- Tibial nerve



---

---

---

---

---

---

---

---

37

**BL40 Stimulation**



---

---

---

---

---

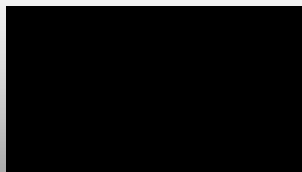
---

---

---

38

**BL40 MANIPULATION**



---

---

---

---

---

---

---

---

39

**CEREBRAL PERFUSION**  
**GB12 WANGU (完骨), GB20 FENGCHI (风池), BL10 TIANZHU (天柱)**

- Points that eliminate wind and, according to research, increase cerebral perfusion.
- GB20: Insert the needle toward the outer canthus of the opposite eye to a depth of 1-1.5 cun.
- GB12, BL10: Perpendicular 1-1.5 cun, stimulation with high-frequency rotation for 1 minute

Innervation:

- 3rd cervical nerve
- Greater occipital nerve
- Suboccipital nerve
- Lesser occipital nerve



40

---

---

---

---


---

---

---

---

**GB12, GB20, UB10**



41

---

---

---

---

---

---

---


---

**SPEECH AND SWALLOWING**  
**GB12 WANGU (完骨), GB20 FENGCHI (风池), SJ17 (颞风)**

- Points stimulate the larynx and esophagus.
- Punctured in direction of laryngeal protuberance 2-2.5 cun with reinforcing method of twirling - perception of the stimulus in the throat.

Innervation:

- 3rd cervical nerve
- Greater occipital nerve
- Suboccipital nerve
- Lesser occipital nerve
- Facial nerve



42

---

---

---

---

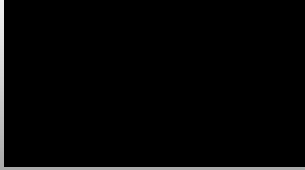
---

---

---

---

**GB12, GB20, SJ12**



43

---

---

---

---

---

---


---

---

**SPEECH AND SWALLOWING**

SHANGLIANQUAN (上廉泉), PANG  
SHANGLIANQUAN (旁上廉泉)

- 1.5–2 cun, towards the root of the tongue, with reducing method of lifting and thrusting



44

---

---

---

---

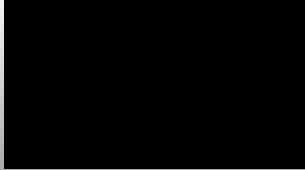
---

---

---

---

SHANGLIANQUAN,  
PANGSHANGLIANQUAN



45

---

---

---

---

---


---

---

---

**SPEECH AND SWALLOWING - JINJIN YUYE (金津, 玉液)**

- Prick Jinjin and Yuye causing small amount of bleeding
- The bleeding can also be performed on the dorsum of the tongue.
- These points open the orifices of the tongue
- 3 cun needle to puncture posterior pharyngeal wall



46

---

---

---

---

---

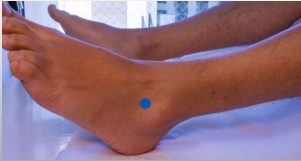
---

---

---

**DROP FOOT AND IMPROVEMENT OF DORSIFLEXION**  
 GB40 - QIUXU (丘墟) TO KI6 - ZHAOHAI (照海)

- Acupuncture at GB40 to a depth of 1.5–2 cun in the direction of KI6 until the sensation of distention in local area.
- Innervation:
- Lateral dorsal cutaneous nerve of the foot
- Intermediate dorsal cutaneous nerve of the foot
- Medial cutaneous branches of the saphenous nerve



47

---

---

---

---

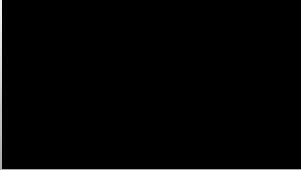
---

---

---

---

**GB40-KI6**



48

---

---

---

---

---


---

---

---

**L14 - HÉGŪ (合谷) – TO STIMULATE THE INDEX FINGER AND THE THUMB**

- Needle depth 1-1.5 cun, Direct needle toward the index finger and then toward the thumb- can use 2 needles
- Stimulate with rapid lifting-thrusting until fingers extend freely
- Innervation:
- Superficial branches of the radial nerve



49

---

---

---

---

---

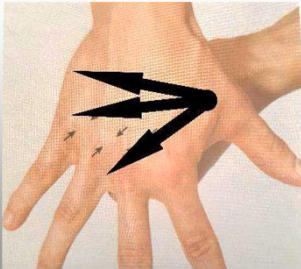
---

---

---

**L14 - HÉGŪ (合谷) – TO STIMULATE THE HAND AND SPASTICITY**

- Acupuncture in the classic position, deep, with lifting and thrusting stimulation at different angles, to activate the whole hand and relax the muscles.
- Innervation:
- Superficial branches of the radial nerve
- Deep branches of the ulnar nerve



50

---

---

---

---

---

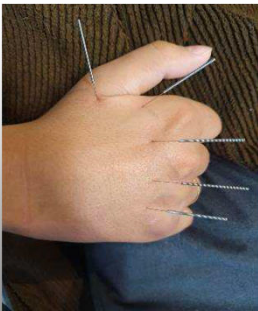
---

---

---

**SHANG BAXIE – (上八邪) – TO STIMULATE THE HAND AND FINGERS**

- Different location from the classic Baxie points.
- They are located slightly proximal from classic Baxie and metacarpal heads
- Acupuncture directed toward the hand to stimulate it, and toward the fingers to stimulate digital movements.



51

---

---

---

---

---

---

---

---



52

---

---

---

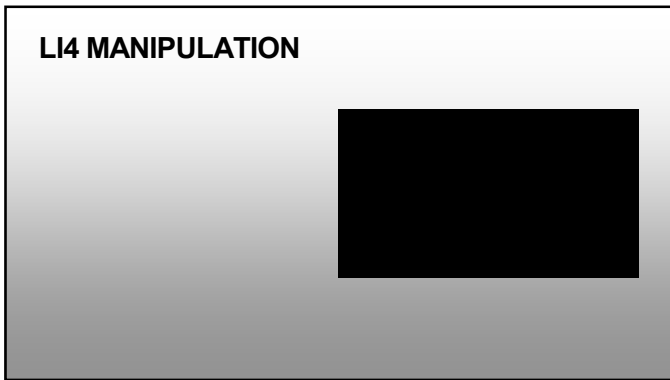
---

---

---

---

---



53

---

---

---

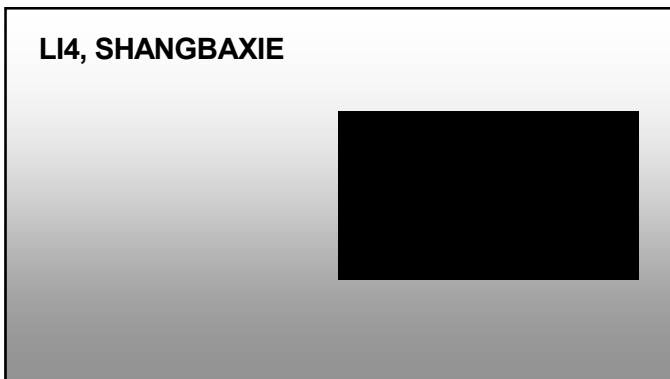
---

---

---

---

---



54

---

---

---

---

---

---

---

---

### Bāfēng (八风)

- Classic location or slightly proximal from classic location



55

---

---

---

---

---

---

---

---

### Sp 10- Xue Hai (血海)

(Not in official method, but utilized frequently)

- Lifting thrusting technique until muscle contraction of vastus medialis
- Innervation:
- Anterior cutaneous branches of the femoral nerve



56

---

---

---

---

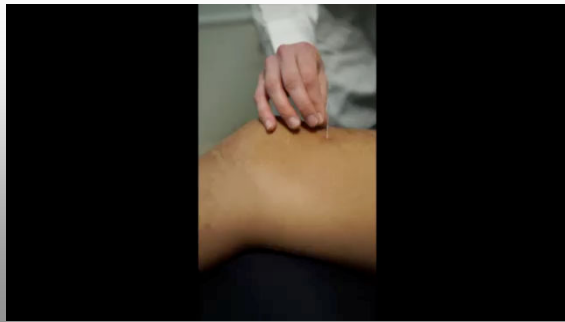
---

---

---

---

### SP10 MANIPULATION



57

---

---

---

---

---

---

---

---

### Facial Paralysis

- Local points: Yuyao, ST2, ST4, ST5, ST6, ST7, SI18, REN24, GV26, etc.
- 1.5-3 cun needles from ST4-ST6
- 1.5-3 cun thread Taiyang toward ST6
- Needle BL2 and SJ23 toward one another
- Thread ST5 superior




---

---

---

---

---

---

---

---

58

### Facial Paralysis

Gb14 - Yang Bai (阳白)

- Technique: Surround with 4 needles
- Can also do same technique at ST2 Si Bai (四白)




---

---

---

---

---

---

---

---

59

### Facial Paralysis

- Bleeding + cupping on facial points




---

---

---

---

---

---

---

---

60

### Xing Nao Kai Qiao in Practice

- Main Points:
  - GV26, PC6, Sp6
  - Can use GV20, Sishencong, GV23, Yintang and/or ST2 in place of GV26 if not indicated (clear shen, conscious)

61

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Cognition

- Use points to unblock the orifices and to stimulate the shen and brain
  - PC6, GV26, Sp6
  - GV20, GV23, Yintang, Sishencong, ST2
  - GB12, GB20, BL10

62

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Hemiplegia

- Stimulate motor development and neuroplasticity, unblock the meridians, activate the flow of qi and blood
  - Gb12, GB20, BL10
  - Upper limbs: HT1, LU5, PC6, Bizhong, LI4, Shangbaxie
  - Lower limbs: BL40, GB40, SP6, SP10, Bafeng

63

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Upper Limb Spasticity

- HT1, LU5, PC6, Bizhong
- LI4, Shangbaxie, LI Sequence Needling, SJ5

64

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Lower Limb Spasticity; Drop Foot

- BL40, SP6
- ST36, GB34, SP9, SP10, ST40, GB39
- GB40, Bafeng

65

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Speech and Dysphagia

- Stimulate the shen, open the orifices of the tongue, unblock the meridians: Tong Guan Li Qiao 通关利窍:
  - PC6, GV26, SP6
  - Gb12, Gb20, SJ17
  - 3 cun needle to puncture posterior pharyngeal wall (severe dysphagia)
  - Jinjin, Yuye
  - Shanglianquan, Pangliangquan
  - Bloodletting of the tongue with superficial puncture

66

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Balance and Tremors

- PC6, GV20, GV23, Sishencong
  - Some research showing PC6 can influence vagal activity; improving vagal tone has been shown to reduce tremors
- GB20, GB12, BL10
- Key points in the limbs: nourish qi, yin and blood

67

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Facial Paralysis

- GB14: 4-needles
- Yuyao, Taiyang, ST2, ST4, ST6, ST7, SI18, REN24, GV26
- Threading:
  - 1.5-3 cun needles from ST4-ST6
  - 1.5-3 cun thread Taiyang toward ST6
  - 1-1.5 cun BL2 and SJ23 toward one another

68

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Constipation

- WAISHUIDAO, WAIGUILAI: 2 cun lateral to ST28, ST29
- Perpendicular insertion 2.5-3 cun, reducing twirling technique for 1 minute.

69

---

---

---

---

---

---

---

---

### Xing Nao Kai Qiao in Practice

#### Urinary Retention

- REN3, REN4 perpendicular insertion 1.5-2 cun, reinforcing method of twirling for 1 minute
- REN2 perpendicular insertion 1-1.5 cun with reinforcing method of twirling for 1 minute
- Moxa applied on REN3 and REN4 needles (or moxa box)

70

---

---

---

---

---

---

---

---

### Tianjin Protocol for Hypertension

- Primary points:
  - ST9 - Twirling with reinforcing method 1 minute
  - LI11 - Twirling with reinforcing method 1 minute
  - LI4 - Twirling with reducing method 1 minute
  - ST36 - Twirling with reinforcing method 1 minute
  - LIV3 - Twirling with reducing method 1 minute

71

---

---

---

---

---

---

---

---

### Hypertension Research

- Gao, X., Ma, F., Zhao, Q., Zhang, Y., & Du, Y. (2016). *Acupuncture method of "Huoxue Sanfeng, Shugan Jianpi" for morning blood pressure in patients with cerebral infarction combined with essential hypertension: A randomized controlled trial.* Zhongguo Zhen Jiu, 36(5), 459–462.
- Sixty-eight patients were randomly divided into an observation group and a control group. The patients in the two groups were treated with acupuncture method of XNKQ and oral administration of a calcium channel blocker. In addition, patients in the observation group were treated with Tianjin acupuncture method for hypertension.

72

---

---

---

---

---

---

---

---

### Hypertension Research

#### Results

- After 30 treatments, the reduction of systolic pressure and diastolic pressure in the observation group was significantly superior to that in the control group (both  $P < 0.05$ ).
- After 30 treatments, the control rate of morning blood pressure in the observation group was significantly higher than that in the control group.
- Conclusion:
  - Acupuncture method of "Huoxue Sanfeng, Shugan Jianpi", characterized with standard manipulation criteria, can effectively control morning blood pressure in patients with cerebral infraction combined with essential hypertension.
  - Important for prevention of stroke recurrence.

73

---

---

---

---

---

---

---

---

### Research on XNKQ

74

---

---

---

---

---

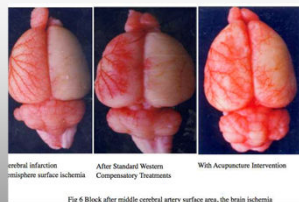
---

---

---

#### Perfusion & Vascular Evidence

- TTC staining of brain sections after middle cerebral artery occlusion (MCAO)
- Acupuncture intervention may reduce infarct volume in MCAO animals compared to untreated ischemic controls, suggesting a neuroprotective and perfusion-enhancing effect.



75

---

---

---

---

---

---

---

---

### Perfusion & Vascular Evidence

Zhang W, Han L, Wen Y, Su L, Li Y, Luo X. *Electroacupuncture reverses endothelial cell death and promotes angiogenesis through the VEGF/Notch signaling pathway after focal cerebral ischemia-reperfusion injury*. Brain Behav. 2023 Mar;13(3):e2912.

- **Findings:** EA treatment of PC6, GV26, and SP6 can significantly improve the neurological function of MCAO/R rats, reduce the volume of cerebral infarction, and modulate the ultrastructure of endothelial cells and microvessels in pathological states.

76

---

---

---

---

---

---

---

---

---

---

### Perfusion & Vascular Evidence

Du, Y., Shi, L., Li, J., Xiong, J., Li, B., & Fan, X. (2011). *Angiogenesis and improved cerebral blood flow in the ischemic boundary area were detected after electroacupuncture treatment to rats with ischemic stroke*. Neurological Research, 33(1), 101–107

- **Findings:** Electroacupuncture increased significantly the regional cerebral blood flow, and reduced markedly the neurological scores compared with control group (P<0.01).
- This result suggests that the effect of electroacupuncture might be closely associated with promoting angiogenesis in the cerebral ischemic condition.

77

---

---

---

---

---

---

---

---

---

---

### Randomized Controlled Trial

#### XNKQ vs Conventional Care

Guo, X., Zhang, X., Sun, M., Yu, L., Qian, C., Zhang, J., Xu, W., Xie, Y., Xu, T., & Jin, Z. (2022). *Modulation of brain rhythm oscillations by Xingnao Kaiqiao acupuncture correlates with stroke recovery: A randomized control trial*. Journal of Integrative and Complementary Medicine, 28(5)

- This randomized controlled trial (n = 20) found that XNKQ acupuncture, when added to conventional care for subacute ischemic stroke, resulted in greater improvement in motor function and modulation of brain electrical activity (decreased delta, increased alpha EEG power), correlated with clinical recovery.
- Conventional care: antiplatelet therapy, lipid-regulating therapy, plaque-stabilizing therapy, and other symptomatic treatments.

78

---

---

---

---

---

---

---

---

---

---

## Randomized Controlled Trial

### XNKQ vs Conventional Acupuncture

Song Z, Huang Q, Guo Y, Song X, Zhang X, Xiao H. Xingnao Kaiqiao Acupuncture Method Combined with Temporal Three-Needle in the Treatment of Acute Ischemic Stroke: A Randomized Controlled Trial. *Comput Intell Neurosci*. 2022 Jun 29;2022:8145374.

- In a randomized study with 72 patients, the group receiving XNKQ plus Temporal three-needle acupuncture showed greater reduction in neurological deficit scores and better improvements in activities of daily living compared with conventional acupuncture (scalp + body).

79

---

---

---

---

---

---

---

---

---

---

## Meta-Analysis

Yang ZX, Xie JH, Liu DD. *Xingnao Kaiqiao needling method for acute ischemic stroke: a meta-analysis of safety and efficacy*. *Neural Regen Res*. 2017 Aug;12(8):1308-1314.

- A systematic review of 12 clinical trials (acute ischemic stroke) reported that the XNKQ method was associated with reduced disability rate, increased activities of daily living (Barthel Index), and overall better clinical efficacy compared with controls, with no significant difference in mortality.
- All studies except one (Guo, 2012) had a high risk of performance bias because of the unblinded nature of open comparison and did not report whether the outcome assessors were blinded. Thus, more high-quality randomized controlled trials are needed to provide reliable evidence of the efficacy and safety of XNKQ acupuncture in the treatment of acute ischemic stroke.

80

---

---

---

---

---

---

---

---

---

---

## fMRI

Nierhaus T, Chang Y, Liu B, Shi X, Yi M, Witt CM, Pach D. *Somatosensory Stimulation With XNKQ Acupuncture Modulates Functional Connectivity of Motor Areas*. *Front Neurosci*. 2019 Mar 11;13:147.

- In healthy volunteers, XNKQ needling changed brain functional connectivity in motor regions, assessed by fMRI, suggesting that part of its effect may involve central nervous system modulation.
- 4 groups:
  - XNKQ stimulation, XNKQ location but no stimulation, non-acupoint stimulation, non-acupoint no stimulation
  - When needles were stimulated, there were changes in how strongly some brain regions were connected compared with no stimulation.
  - When comparing the full XNKQ acupuncture to a similar stimulation at non-acupoint points, they saw reduced connectivity in several subcortical motor-related areas. Reduced connectivity is often positive for neuro patients - stroke, Parkinson's etc.
  - Findings support the importance of the stimulation component of the acupuncture intervention and hint toward the modulation of functional connectivity by XNKQ acupuncture, especially in areas involved in motor function. As a next step, similar mechanisms should be validated in stroke patients suffering from motor deficits.

81

---

---

---

---

---

---

---

---

---

---

**Key Research Takeaways:**

- XNKQ acupuncture has some clinical RCT support for stroke recovery effects (motor function, neurological scores).
- Systematic reviews suggest improvements in activities of daily living and disability rates.
- Animal models show preliminary evidence for increased perfusion and angiogenesis
- Larger, high-quality trials (e.g., multimodal MRI and sham-controlled studies) are underway.

82

---

---

---

---

---

---

---

---

**Research Limitations**

**Study Design Limitations**

- Small sample sizes
- Lack of rigorous randomization and blinding
  - Many clinical studies do not clearly describe allocation concealment.
  - Investigator/assessor blinding is often missing, increasing risk of bias.
- Inconsistent controls
  - Some studies compare XNKQ to no treatment, sham acupuncture, or conventional therapy inconsistently.
  - Sham points often are not physiologically inert, confounding results.
- Heterogeneous protocols
  - Points, stimulation parameters, session number, and timing vary widely.
  - This makes meta-analysis and reproducibility difficult.

83

---

---

---

---

---

---

---

---

**Research Limitations**

**Mechanistic Gaps**

- Unclear causality
  - Studies show Vascular Endothelial Growth Factor (VEGF) increase, rCBF increase, neuroprotection, but it's unclear if these directly cause functional recovery.
- Focus on single pathways
  - Many studies highlight one pathway without showing interaction with other mechanisms.
  - Stroke recovery is multifactorial, so single-pathway conclusions are limited.

84

---

---

---

---

---

---

---

---

### Research Limitations

#### Translational Gaps

- Animal models often MCAO in young healthy rats, not elderly patients with comorbidities (hypertension, diabetes).
- Human stroke is heterogeneous: lesion size, collateral status, comorbidities differ.
- Positive effects may not translate to clinical efficacy.

85

---

---

---

---

---

---

---

---

### Research Limitations

#### Outcome Measures

- Varying outcome measures used
- Short-term treatment period and follow-up
  - Many trials assess outcomes at 2–4 weeks, not long-term recovery, and utilize short-term treatment periods.

86

---

---

---

---

---

---

---

---

### Future Research

Needed to validate efficacy:

- Stronger RCTs
- Standardized protocols
- Vascular imaging
- Long-term follow-up

87

---

---

---

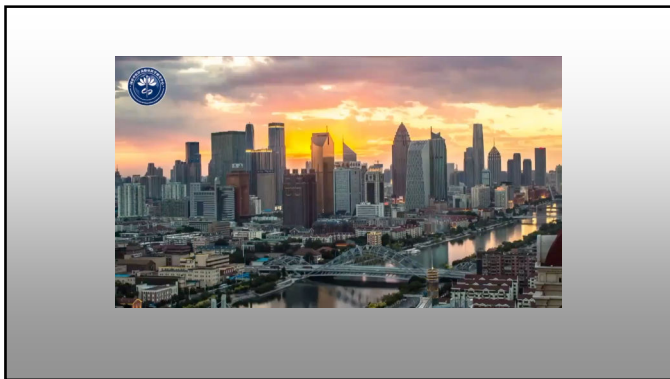
---

---

---

---

---



88

---

---

---

---

---

---

---



89

---

---

---

---

---

---

---

Thank you!

90

---

---

---

---

---

---

---




---

---

---

---


---

---

---


---

NORTHWESTERN UNIVERSITY HEALTH SCIENCES UNIVERSITY



**Shuqing Ding**  
PhD, L.Ac.

How Acupuncture Treats Pelvic Floor Dysfunction: An Evidence-Informed, Interdisciplinary Approach




---

---

---

---

---

---

---

---

AN EVIDENCE-INFORMED INTERDISCIPLINARY APPROACH

## How Acupuncture Treats Pelvic Floor Dysfunction

Understanding Muscular, Fascia, and Brain-Gut Axis Intergration

**Dr. Shuqing Ding**

- L.Ac., Dipl. O.M.N.C.C.A.D.M.P., BCB-PM, D.Phil
- Pelvic Floor specialist, Colorectal Surgeon (China)
- Clinical Supervisor at Northwestern Health Sciences University
- Co-founder of Zero Distance Acupuncture and Ding Pelvic Health




---

---

---

---

---

---

---

---

**Why This Topic Matters**

Clinical Challenge	Missing Link	Acupuncture Advantages
<ul style="list-style-type: none"> <li>Rising refractory PFD</li> <li>Patients with persistent symptoms despite conventional treatments</li> </ul>	<ul style="list-style-type: none"> <li>Growing interest in nonpharmacologic options</li> <li>Integrative acupuncture lenses</li> </ul>	<ul style="list-style-type: none"> <li>Alternative solution</li> <li>Non-pharmacological</li> <li>Fit the psychosomatic root cause</li> <li>minimally invasive surgery</li> </ul>

**Key Insight:** Understanding pelvic floor dysfunction expands your differential for patients who have exhausted conventional approaches.

---

---

---

---

---

---

---

---

**What is Pelvic Floor Dysfunction**

---

---

---

---

---

---

---

---

**1. Four Major Dysfunctions**

- Bowel:** constipation, incomplete, IBS, fecal incontinence, distention
- Urinary:** frequency/urgency, incomplete emptying, incontinence
- Pelvic floor pain**
- Sexual** disorder

The diagram shows a cross-section of the pelvic floor. Three green boxes labeled 'Anterior', 'Middle', and 'Posterior' are positioned around a central circular image of the pelvic floor muscles. Arrows point from each box to the corresponding region in the image.

---

---

---

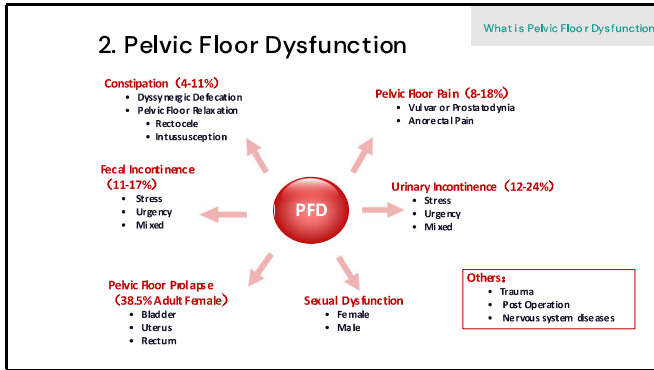
---

---

---

---

---




---

---

---

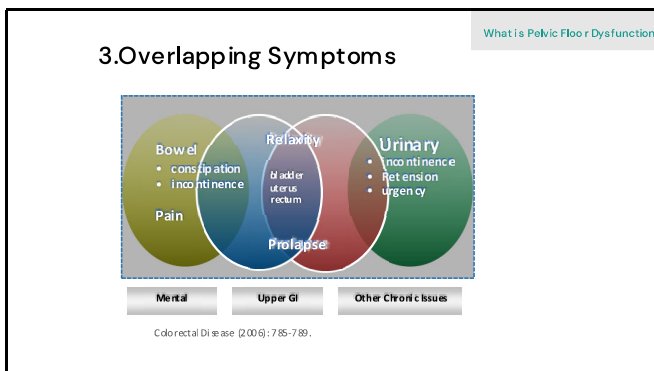
---

---

---

---

---




---

---

---

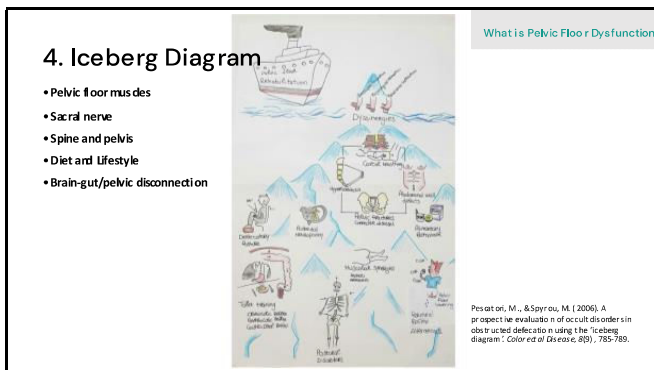
---

---

---

---

---




---

---

---

---

---

---

---

---

**Two Diagnostic Categories in Pelvic Floor Dysfunction**

**1. Extra-Pelvic Contributors (of Case 1)**

**Divergence from Outside the Pelvis**

- This can occur by a reflexogenic reflex.
- Dysfunction in adjacent regions creates referred pain.

- **Lumbar Spine**  
Spinal nerves L1-S4 provide innervation to pelvic organs & dysfunction creates referred pain or facilitation.
- **Hip & SI Region**  
Sensory dysfunction and/or irritability by the pelvic floor leads to pain.
- **Deep Hip Muscles: Utricle**  
Iliopsoas, obturator internus, adductor, and deep gluteators are all connected to the floor fascia. Irritability.

**2. Intra-Pelvic Neuromuscular Dysfunction**

**Primary Dysfunction Within the Pelvis**

- Irritation of pelvic plexus, bowel, bladder, and reproductive symptoms.
- Direct dysfunction of pelvic floor structures.

- **Muscle Tension or Dysregulation**
- **Sacral Nerve and Pudendal Irritation**  
Pelvic parasympathetic (S2-S4)
- **Gut-Brain axis: network**  
Involves Vagus, ANS, Immune/Endocrine systems, and gut microbes.

---

---

---

---

---

---

---

---

---

---

**Case 1 – Chronic pelvic pain**

- 42y female, Pelvic electrical “buzzing” 6 months
  - **Labia majora, Sacrum, down to left leg and foot**
  - **Intensity: 7/10**
  - Worse for 2 weeks when lying down → sleep disruption
- MRI normal
- Significant health anxiety
- Current Management
  - Anti-anxiety medication, Sleep aid, Gabapentin per day
  - Meditation before bedtime
  - Prior chiropractic care, PT, and massage → no sustained benefit
- **Normal bowel, urinary, and sex**

---

---

---

---

---

---

---


---

---

---

**Case 1 – Chronic pelvic pain**

- Tongue: Puffy with thin coating, tip red and **shaking**
- Pulse: soft and forceful



---

---

---

---

---

---

---

---

---

---

### Exam Findings: Spine & Mobility

- **Lumbar ROM**
  - Flexion preserved
  - Extension restricted
- **From Chiropractic**
  - Pelvis Left AS EX
  - Left post fibula and cuboid
  - Right lateral tibia



Photo used with patient consent

---

---

---

---

---

---

---

---

### Exam Findings: Myofascial Tenderness

- **Segmental findings**
  - **From Acupunctrist**
    - Thoracic: T4–T7 (Du 9-11, Upper Jiao)
    - Lumbosacral: L4–S1



Photo used with patient consent

---

---

---

---

---

---

---

---

### Exam Findings: Myofascial Tenderness

- **Left:** Psoas major, iliacus
- **Right:** Gluteus maximus
- **Bilateral:** Coccygeus



Photo used with patient consent

---

---

---

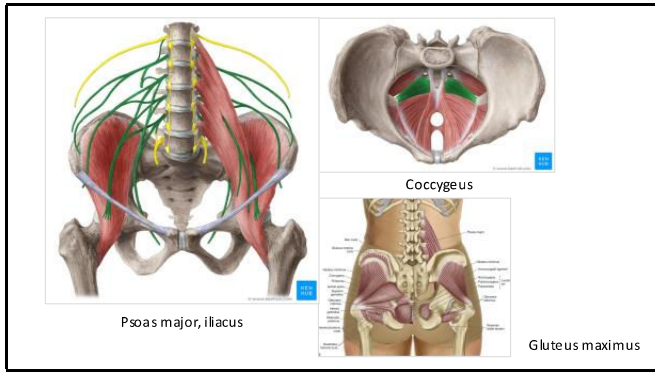
---

---

---

---

---




---

---

---

---


---

---

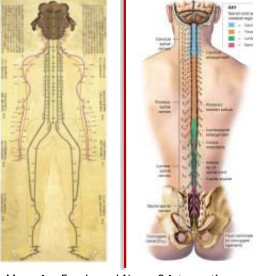
---

---


**When East Meets West**



**1. Interdisciplinary**  
Acupuncture in Integrative Medicine



Muscular, Fascia, and Nerve S. Integration



**2. Mind-Body Protocol**

- Precise Anatomy
- Interaction
- Personalized

---

---

---

---

---

---

---

---

**Case 1 Chronic pelvic pain**  
Phase 1 – Supine

- **Local / Myofascial Focus**
  - Left psoas major & iliacus
  - Gentle fascial tension release
  - L: ST2 5, ST2 7, GB 27, LV 10, SP10, SP9, SP6
- **Scalp / Central Regulation**
  - DU20 (Baihui), Yintang
  - DU24 (Shenting)
  - Pelvic line (scalp)
- **Auricular**
  - Shenmen




Photo used with patient consent

---

---

---

---

---

---

---

---

### Case 1 Chronic pelvic pain Phase 2 – Prone

- **Heart Regulation Zone T4-T7:**
  - DU11 (Shendao) – T5
  - DU10 (Lingtai) – T6
  - Qi relief, autonomic regulation, anxiety, sleep, **calm chest**
- **Liver Regulation Zone**
  - T8–T9
  - DU8 (Jinsu) – T9
  - Myofascial tone, emotional stress, viscerosomatic reflexes
- **Kidney & Pelvic Regulation Zone**
  - L4–S2
  - DU3 (Yaoyangguoan) – L4
  - DU2 (Yaoshu)
  - B12 (dachangshu), B15 (huyang) E-stim
  - Pelvic floor, sacral neuromodulation, chronic pain etc.




Photo used with patient consent

---

---

---

---

---

---

---

---

### Case 1 Chronic pelvic pain Treatment Response Timeline

- **After 1st Session**
  - Pelvic buzzing sensation absent for ~5 hours after session
  - Reduced sleep aid
- **After 2nd Session (Integrative chiropractic + acupuncture)**
  - Symptom intensity reduced to from 7 to 3/10
  - Sleep through the night
- **After 3rd Session**
  - Significant reduction in muscle-related tenderness on examination
  - Treatment emphasis shifted to central regulation and health-related anxiety
- **After 4th Session**
  - Pelvic buzzing sensation ~70% overall improvement

**Key Clinical Insight**  
Peripheral modulation → central regulation, neuromodulatory approach.

---

---

---

---

---

---

---

---

### Two Diagnostic Categories in Pelvic Floor Dysfunction

**1. Extra-Pelvic Contributors**

Driver of Pain Outside the Pelvis

- This can occur in any of the following:
- Dysfunction in adjacent regions causes referred pain.

- **Lumbar Spine**  
Spinal segments L1-L5 provide innervation to pelvic region & dysfunction may segmental facilitation/segmental inhibition
- **Hip & SI Region**  
Sacroiliac joint dysfunction and hip instability alter pelvic floor loading patterns
- **Deep Hip Muscle Ulcer**  
Hip flexors, gluteus medius, adductor magnus are typically covered by pelvic floor fascia

**2. Intra-Pelvic Neuromuscular Dysfunction (Case 2)**

**Primary Dysfunction Within the Pelvis**

- pelvic pain based on altered, and/or inappropriate, responses
- Direct dysfunction of pelvic floor structures

- **Miscellaneous or Dysynnergia**
- **Sacral Nerve and Pudendal Nerve Irritation**  
Pelvic plexus innervation: S2-S4
- **Gut (Pelvic Floor)-Brain axis: network**  
Involves GAGANS (gut, autonomic nervous system) and neural circuitry

---

---

---

---

---

---

---

---





Wang team

### Acu. for Pudendal Nerve: Sacral Four-Point Technique

**Mechanism:**  
Pudendal nerve stimulation activates S2-S4 neural center (injection/defecation/sex), modulated by stimulation parameters and genital state.

Int Urogynecol J (2014) 25: 397-402  
Reproduced with permission from Dr. Wang Spou

---

---

---

---

---

---

---

---

---

---

### Scalp Acu. for Brain Modulation - Jiao's Style

"The book contains 400 illustrations and 10 tables with 700 Chinese characters and 1000 English words. It is a comprehensive reference for Chinese scalp acupuncture. The book is published by the People's Health Publishing House, Beijing, China. The first edition was published in 1982. The second edition was published in 1995. The third edition was published in 2005. The fourth edition was published in 2015. The fifth edition was published in 2020. The sixth edition was published in 2025."/>

---

---

---

---

---

---

---

---

---

---

### Case 2 – Chronic pelvic pain+Bowel+Urinary+Sexual dysfunction 12y

#### 1. Layered needling for ENS

- Superficial fascia layer
- Peritoneal layer
- Retroperitoneal layer
- Multiple layers, with different dose-effect relations hips
- Stimulation intensity: Matched to the patient's tolerance level or neural sensitivity.

Photo used with permission from Dr. Wang Spou

---

---

---

---

---

---

---

---

---

---

Case 2 – Chronic pelvic pain+Bowel+Urinary+Sexual dysfunction 12y



---

---

---

---

---

---

---

---

Case 2 – Chronic pelvic pain+Bowel+Urinary+Sexual dysfunction 12y



- Sensory area: upper 1/5
- Motor area: upper 1/5
- Tremor control area
- Mental & Emotional area
- alternate: foot motor & sensory area

---

---

---

---

---

---

---

---

Case 3- 58y, urinary and fecal incontinence 30y after childbirth



Xialiao (BL34)  
 Zhongjiao (BL33)  
 Zhibian (BL54)  
 Huiyang (BL35)  
 0.35/0.40\*300mm  
 Electroacupuncture: 2Hz  
 continuous wave 20min

---

---

---

---

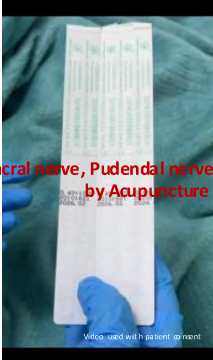
---

---

---

---

Case 3: 58y, urinary and fecal incontinence 30y after childbirth  
 need ling techniques demo.



**Sacral nerve, Pudendal nerve modulation  
by Acupuncture**

Video used with patient consent

---

---

---

---

---

---

---

---

**Take Home Messages: How Acupuncture Treats Pelvic Floor Dysfunction**

- **A. Neuromodulation**
  - Segmental regulation (BL32–34 → S2–S4)
  - Down regulates the pelvic guarding reflex
  - Balancing sympathetic/parasympathetic tone
- **B. Muscle & Fascia Regulation**
  - Release superficial and deep pelvic muscles
  - Improve pelvic diaphragm mobility
- **C. Visceral–Somatic Interaction**
  - Treat constipation, urinary incontinence, sexual dysfunction etc.
  - Modulate gut–brain–pelvic axis
- **D. Key Acupuncture Techniques**

---

---

---

---

---

---

---

---

**From Multidisciplinary to Interdisciplinary**

- Different experts → **shared understanding** → one patient
- Parallel practice → **true collaboration**
- Acupuncturists working **with**, not beside, other disciplines

**The Future of Acupuncture**

- **Evidence** supports
- **Education** spreads
- **Collaboration** sustains

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## WHERE SIGNAL LIVES

### Neural Crossroads and Fascial Convergence in High-Impact Acupuncture

Great River Symposium  
2026

[www.sto-ohheart.com](http://www.sto-ohheart.com)




---

---

---

---

---

---



---

---

## THE THREE MODEL STACK

1. Classical: Spirit embodiment and functional maps.
2. Simplicity: Economy of intervention; few points, many effects.
3. Neuro-acupuncture: Precision, laterality, and neural substrate.

[www.sto-ohheart.com](http://www.sto-ohheart.com)


---

---

---

---

---

---

---



---

## MECHANO-TRANSDUCTION

The conversion of mechanical force into cellular signaling.

Needle-grasp (De Qi) winds collagen fibers, deforming fibroblasts and triggering chemical cascades.

[www.sto-ohheart.com](http://www.sto-ohheart.com)


---

---

---

---


---

---


---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM  
www.stcdkheart.com



## PIEZOELECTRICITY IN THE MATRIX



Fascia as a semiconductor. Mechanical deformation of the connective tissue matrix generates micro-electrical currents to reset resting tone.

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM

## FREQUENCY AS PRECISION PHARMACOLOGY

2 Hz Systemic endorphin release (Homeostasis).  
100 Hz Segmental dynorphin release (Gating).  
Dense-Disperse (DD): Prevents neurological habituation.



2026

www.stcdkheart.com

---

---

---

---

---

---

---

---

## FUNCTIONAL NEUROANATOMY



1. **Nucleus Tractus Solitarius (NTS):** The Autonomic Gate Keeper
2. **Periaqueductal Gray (PAG):** The Opioid Command Center
3. **Trigeminal Cervical Nucleus (TCN):** The Switchboard
4. **Dorsal Motor Nucleus:** The Parasympathetic Engine



www.stcdkheart.com

---

---

---

---

---

---

---

---

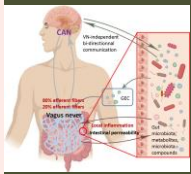
DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## NUCLEUS TRACTUS SOLITARIUS (NTS)

**Deep Mechanism:**

- Primary sensory relay for the Vagus Nerve (CN X) and the Glossopharyngeal Nerve (CN IX)
- Receives input from points like ST36, LU9, P6
- Sends inhibitory signals to the sympathetic "fight or flight" output
- Shifts body from energy expending to energy conservation

[www.stockheart.com](http://www.stockheart.com)




---

---

---

---

---

---

---

---

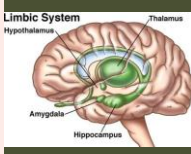
DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## PERIAQUEDUCTAL GRAY (PAG)

**Deep Mechanism:**

- Interface between the limbic system and lower brainstem. Points include LI4, HT7
- VLPAG is activated by the De-Qi sensation
- Releases enkephalins to primary afferent synapses, essentially "closing the gate" at the spinal level
- Why acupuncture analgesia lasts long after needles are removed

[www.stockheart.com](http://www.stockheart.com)




---

---

---

---

---

---

---

---

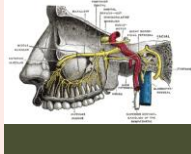
DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## TRIGEMINAL CERVICAL NUCLEUS (TCN)

**Deep Mechanism:**

- Column of gray matter that merges the Trigeminal Nerve (CN V) with the upper cervical nerves (C1-C3)
- Share second-order neurons
- Receives input from points like DU20 and DU24
- It's why these points treat tension-type and occipital headaches

[www.stockheart.com](http://www.stockheart.com)




---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM  
www.stb-dkheart.com



## ANATOMY TRAIN LOGIC

**Myofascial Meridians:**

- Superficial Back Line (SBL)-DU20, BL57, KI
- Superficial Front Line (SFL)-RT7, P6, SP6, K3
- Lateral Line (LL)-GB34, GB30
- Targeting corridors of force transmission.

---

---

---

---

---

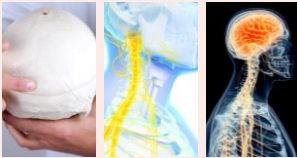
---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## DU-20 BAIHUI



- **Anatomy:** Galea Aponeurotica; Greater Occipital Nerve.
- **Mechanism:** Downregulation of the Default Mode Network (DMN).
- **TCM Function:** Extinguishes Liver Wind, ascends Clear Yang, and stabilizes the Shen.

www.stb-dkheart.com

---

---

---

---

---


---

---

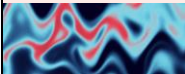
---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## PEARL: THE VERTEX RESET



If the vertex is physically locked, descending inhibition fails.



www.stb-dkheart.com

---

---

---

---

---

---

---

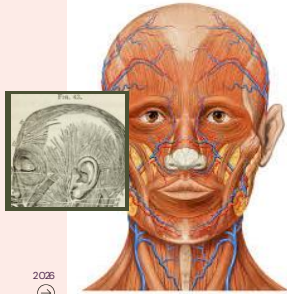
---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

# DU-24 SHENTING

- **Anatomy:** Supraorbital Nerve (V1).
- **Mechanism:** Enhances functional connectivity in executive control networks and suppresses emotional centers.
- **TCM Function:** Calms the Mind, benefits the nose and eyes and clears Brain heat.

www.sto-ohheart.com



2026




---

---

---

---

---

---

---

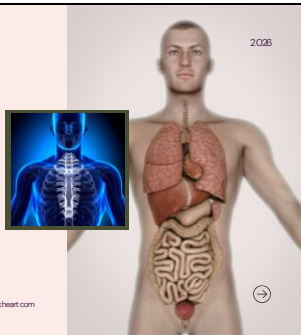
---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

# REN-17 SHANZHONG

- **Anatomy:** Sternal Fascia; 4th Intercostal Nerve.
- **Mechanism:** Modulation of the Cardiac and Pulmonary Plexuses via the Deep Front Line.
- **TCM Function:** Regulates Qi, unbinds the chest, and benefits the breasts (Hui-Meeting point of Qi).

www.sto-ohheart.com



2026




---

---

---

---

---

---

---

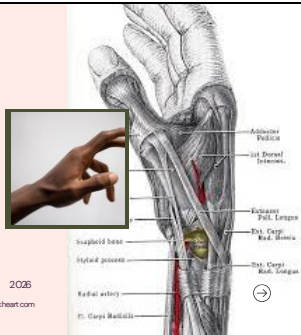
---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

# LI-4 HEGU

- **Anatomy:** 1st Dorsal Interosseous; Superficial Radial Nerve.
- **Mechanism:** Potent activation of the Periaquelecular Gray (PAG) for systemic pain relief.
- **TCM Function:** Releases the Exterior, expels Wind, and clears heat (Command point of the face).

www.sto-ohheart.com



2026




---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM

## PEARL: ECONOMY OF INTERVENTION



Seniority is simplicity.

Precise stimulation of key anatomical crossroads produces broader systemic change than high-volume needling.



[www.stoakheart.com](http://www.stoakheart.com)




---

---

---

---

---



---

---

---


DR. STEPHEN THOMPSON, DC, DACM, FAIHM

## PC-6 NEIGUAN

- **Anatomy:** Median Nerve; Transverse Carpal Ligament.
- **Mechanism:** Direct access to the Nucleus of the Solitary Tract (NTS) in the brainstem.
- **TCM Function:** Unbinds the chest, calms the Shen, and harmonizes the Stomach.

[www.stoakheart.com](http://www.stoakheart.com)




---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM

## HT-7 SHENMEN




- **Anatomy:** Ulnar Nerve; FCU Tendon.
- **Mechanism:**
  - Amygdala downregulation;
  - Modulation of the fear and anxiety response.
- **TCM Function:**
  - Nourishes Heart Blood,
  - Calms the Spirit, and
  - Clears Heart fire.

[www.stoakheart.com](http://www.stoakheart.com)




---

---

---

---

---

---

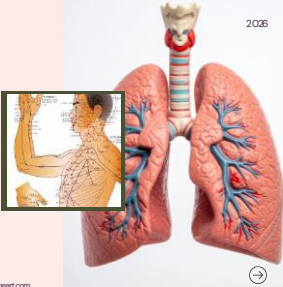
---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## LU-9 TAIYUAN

- **Anatomy:** Radial artery perivascular plexus.
- **Mechanism:** Influence on peripheral vascular resistance and sympathetic vascular tone.
- **TCM Function:**
  - Tonifies Lung Qi/Yin
  - Transforms phlegm
  - Hui-Meeting point of Vessels



www.sto-ohheart.com

---

---

---

---


---

---

---

---


DR. STEPHEN THOMPSON, D.C., DACM, FAIHM  
www.sto-ohheart.com



## LATERALITY & PRECISION

Principle: Neural input is a command, not a suggestion.

**Side-selection (laterality) differentially affects hemispheric processing in the brain.**




---

---

---

---

---

---

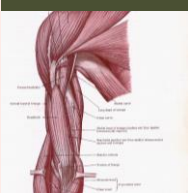
---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## DISSECTION: UPPER ARM LINE

**Observations:**  
Continuity of the Deep Front Arm Line from the thumb, through the bicep, to the pectoralis minor.



GREAT RIVER SYMPOSIUM

www.sto-ohheart.com

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM  
www.sto-ckheart.com



⊖

## PART 1 SYNTHESIS

**Summary:**  
Structure, and many acupoint names, dictates function.  
Mechanical restrictions in the transition zones create neurological noise in the signal.

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## PART 2: THE FOUNDATION & GROUNDING

**THE LOWER BODY FOCUS**

- **Theme:** Grounding, Metabolism, and Stability.
- **Principle:** You cannot stabilize the nervous system without the legs



www.sto-ckheart.com ⊕

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## GB-30 HUANTIAO

- **Anatomy:** Sciatic Nerve/L4-S1, Gluteus Max, and Piriformis
- **Mechanism:** Release of endorphins, regulate motor tone and pelvic circulation
- **TCM Function:**
  - Releases the Exterior
  - Benefits the hips and legs
  - Meeting of the GB and UB Meridians



www.sto-ckheart.com ⊕

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## ST-36 ZUSANLI



- **Anatomy:** Deep Peroneal Nerve; Crural Fascia.
- **Mechanism:** Vagal-immune reflex activation and upregulation of opioid receptors in the brain.
- **TCM Function:** Tonifies Qi and Blood, harmonizes the Stomach, and strengthens the body.

www.sto-ckheart.com

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## ST-36 & THE VAGUS



**Clinical Logic:** Pinging the peroneal corridor to upregulate the anti-inflammatory vagal-immune reflex.

www.sto-ckheart.com

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## GB-34 YANGLINGQUAN



- **Anatomy:** Fibularis Longus, crural fascia, common peroneal nerve, L4-S2 levels
- **Mechanism:** Release of endorphins, signals the midbrain PAG, modulates motor control centers in the cerebellum
- **TCM Function:**
  - Harmonize LV and GB
  - Benefits the sinews and joints
  - Clear damp heat

www.sto-ckheart.com

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## UB-57 CHENGSHAN

- Anatomy:** Gastrocnemius and soleus, crural fascia, medial sural nerve, and tibial nerve
- Mechanism:** Accesses S1/S2 spinal nerves regulate venous return and pelvic floor tone, helps manage anal sphincter and levator ani muscles
- TCM Function:**
  - Relaxes the sinews
  - Clear heat and invigorate blood
  - Empirical point for hemorrhoids

www.sto-ckheart.com





---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

2025

## SP-6 SANYINJIAO

**Anatomy:** Tibial Nerve, Deep Front Line (DFL).

**Mechanism:** Intersection of the L4-S3 segments; modulation of pelvic and hormonal regulation.

**TCM Function:** Tonifies the Spleen/Stomach, resolves dampness and harmonizes the Liver and Kidney.

www.sto-ckheart.com





---

---

---

---

---

---

---

---



DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## PEARL: SENSORY GROUNDING

Grounding is sensory and psychological.

IF THE FEET ARE DISCONNECTED,  
THE NERVOUS SYSTEM DOESN'T  
FEEL SAFE.

www.sto-ckheart.com


---

---

---

---

---

---

---


---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## KI-3 TAIXI

- **Anatomy:** Tibial Nerve; Medial malleolus septum.
- **Mechanism:** High-density sensory signaling to the PAG and hypothalamus for systemic recovery.
- **TCM Function:** Tonifies Kidney Yin/Yang, clears deficiency heat, and anchors Qi.

www.sto-ckheart.com




---

---

---

---

---

---

---


---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## STABILITY BEFORE MOBILITY

**Principle:** Calm irritated tissue and joints (pain/instability) to reduce the total load on the central nervous system.

www.sto-ckheart.com




---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM

## KI YONGQUAN

- **Anatomy:** Medial Plantar Nerve; SBL Origin
- **Mechanism:** Direct input to the Reticular Activating System (RAS) to lower arousal levels.
- **TCM Function:** Descends excess from the head tonifies Yin, and rescues Yang.

www.sto-ckheart.com




---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## LR-3 TAICHONG

- Anatomy:** Deep Peroneal Nerve, 1st Metatarsal space.
- Mechanism:** Modulation of the Anterior Cingulate Gyrus (ACC) to change the emotional perception of pain.
- TCM Function:** Spreads Liver Qi, subdues Liver Yang, and clears the head/eyes.

www.sto-dkheart.com




---

---

---

---

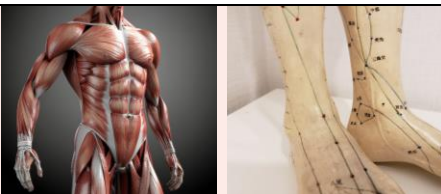
---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM  
www.sto-dkheart.com



## THE DEEP FRONT LINE (DFL)

**Anatomy:** The internal fascial chain connecting the arches of the feet to the pelvic floor, diaphragm, and tongue.

**TCM Function:** Corresponds to the "Internal Branch" of the Yin channels (Liver, Spleen, Kidney).

⊖

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

## DISSECTION: TIBIAL/PERONEAL SPLIT

**Observations:**

- The bifurcation of the sciatic nerve into the tibial and peroneal/fibular highways.

www.sto-dkheart.com



GREAT RIVER SYMPOSIUM

⊕

---

---

---

---


---

---

---

---


DR. STEPHEN THOMPSON, DC, DACM, FAIHM  
www.sto-ckheart.com



## ACUPOINTS VS. TRIGGERS

→

**Comparison:**  
 Trigger Points = Local tissue 'knots.'  
 Acupoints = Systemic 'switches' located at neural-fascial crossroads.




---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM  
www.sto-ckheart.com



## TCM PATTERN CORRELATION

→

**Integration:**  
 Linking 'Liver Qi Stagnation' to DMN overactivity.  
 Shifting neural states through mechanical intervention.




---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM



## CLINICAL RED FLAGS

**Safety First!**

- The Sternal Hole (Ren 17)
- Tarsal Tunnel Compression (Kidney 3)
- Silent DVT (BL57/ST36)



www.sto-ckheart.com →

---

---

---

---

---

---

---



---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

# CLINICAL DIFFERENTIALS

## Hand Pain

- L4 vs. Cervical Radiculopathy
  - Differentials: Carpal Tunnel Syndrome vs. C6/C7 Disc Herniation

[www.sto-dkheart.com](http://www.sto-dkheart.com) 

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026

# CLINICAL DIFFERENTIALS

## Frontal Headaches

- DU 24 vs Local Issues
  - Differential: Frontal Sinusitis, Tension-Type Headache, or Ophthalmic Shingles (Prodrome stage)




[www.sto-dkheart.com](http://www.sto-dkheart.com) 

---

---

---

---

---

---

---


---

DR. STEPHEN THOMPSON, D.C., DACM, FAIHM 2026


# CLINICAL DIFFERENTIALS

## Nausea

- Pericardium 6 vs. Gallbladder/Cardiac
  - Motion Sickness/Morning Sickness vs. Myocardial Infarction




Case study: The silent killer

[www.sto-dkheart.com](http://www.sto-dkheart.com) 

---

---

---

---


---

---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAHM  
www.sto-dkheart.com



⊖

## NEURO-FASCIAL SUMMARY

**Accuracy** = Nerve + Fascial Plane.  
**Precision over volume** is the key to lasting clinical results.

---

---

---

---

---

---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAHM

## STRUCTURE & SIGNAL



**CLOSING:**  
We use mechanical fixes for neurological problems.  
Restore proper architecture to restore the signal.



www.sto-dkheart.com

⊕

---

---

---

---


---

---

---

---


DR. STEPHEN THOMPSON, DC, DACM, FAHM



⊕

## FINAL Q&A

WHERE SIGNAL LIVES.




---

---

---

---


---

---


---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM  
www.stockheart.com



## BIBLIOGRAPHY



Xia (2010), Mayor (2007), Myers (Anatomy Trains),  
Hopwood (2010), Rao (2024), Cai (2024).

---

---

---

---

---


---

---

---

DR. STEPHEN THOMPSON, DC, DACM, FAIHM 2026

# THANK YOU



612-314-3321  
drthompson@stockheart.com

@stockheartmpls  
www.stockheart.com

---

---

---

---

---

---

---

---

Shuqing Ding  
E-mail: zerodistanceacupuncture@gmail.com



---

---

---

---

---

---

---

---

NORTHWESTERN UNIVERSITY HEALTH SCIENCES UNIVERSITY



**Mark Brinson**  
DOM, L.Ac.

Ethical Repacking of Herbs  
and Shoulder Girdle Pain Resolution

Part 1

---

---

---

---

---

---

---

---

Pain Resolution: Shoulder, Ribs, and Upper Thoracic  
using Acupuncture and Tui Na



**Mark T. Brinson, DOM, L.Ac.,**  
Master Herbalist

---

---

---

---

---

---

---

---

### Mark T. Brinson, DOM, LAc, Master Herbalist

Mark T. Brinson, DOM is a globally recognized expert in integrative Traditional Chinese Medicine, combining acupuncture, herbal medicine, osteopathic principles, and manual therapies to help patients get better—fast.

He is the founder of *Saint Acupuncture & Wellness*, a thriving clinic based in a rural Georgia town of just 15,000 people, which has served a patient base of over 30,000. Over the years, Mark has helped establish more than 15 clinics across the country, sharing his expertise in both clinical excellence and operational success.

These days, most of his energy is devoted to *Saint Apothecary*, home of the cult-favorite *Evil Bone Water*. What began as a small-batch remedy mixed on a porch seven years ago has grown into a global brand, now supplying over 2,600 clinics in more than 10 countries and growing at a rate of 40% each year.

With 35 years of clinical experience, Mark is passionate about openly sharing the lessons—both wins and mistakes—his learned along the way. Whether it's helping practitioners succeed in clinic, guiding product development, or scaling ethical, impactful businesses, his goal is simple: to help as many people as possible.

Through an unconventional social media approach he has reached over 100,000 people. Mark freely mentors others on how to achieve clinical results and financial success—always rooted in a business model built on mutual benefit. His greatest hope is to empower others to heal more people, build thriving practices, and do so with integrity and abundance. Mark and his team have one singular mission, to help you and TCM succeed.

---

---

---

---

---

---

---

---

---

---

### Intro: Who I am

Dr. Mark Brinson is the founder of Evil Bone Water, a doctor of Oriental medicine, and a respected leader in the acupuncture community. His mission is simple: empower practitioners and transform patient care.

### Evil Bone Water Story

What began on a clinic porch with a single batch of liniment has grown into a movement. From hand-mixing herbs for local patients to brewing hundreds of gallons for acupuncturists across the country, Evil Bone Water has stayed true to its mission: powerful medicine, crafted with care.




---

---

---

---

---

---

---

---

---

---

### Ethical Repackaging

### Intro and Objectives- Why Repackage

### Historical Context

### Legal, Ethical and Professional Boundaries

### Assessment of Risk

### Ethical Decision Making

---

---

---

---

---

---

---

---

---

---

### Liability and Standards

- Quality Control and Sourcing
- Labeling and Disclosure
- Liability and Risk, Trademark violations
- Case Studies and Discussion
- Ethical VS Unethical

---

---

---

---

---

---

---

---

### The Shoulder – Anatomy, Points, Tools, and Theory

Acu Points: DU20, GB20, GB34, Stomach 38, LI4, SI9

Tools: Activator, Cups, Seven Star Hammer

Theory: The shoulder is incredibly complex with dozens of structures that can be seen. There is something that is common to injury but these injuries, especially if the symptoms have gone on longer than the healing process should be. Most muscles should heal in a few weeks. Ligaments, tendons, and joint can take 6-8 weeks, but if symptoms perpetuate longer than that, the commonly they share is the way the body facilitates to protect that site. Typically, by misaligning the upper thoracic vertebrae – either left to right, right to left, or most often, back to front or front to back. And pull along with it, so one of the first 3-4 ribs. This will manifest as not only pain at the site of injury but also pain at the angle of the neck into the shoulder and often down the arm by correcting these misalignments and stabilizing those joints, the shoulder most of the time becomes pain-free or the pain is greatly isolate to the exact spot where healing is still occurring.

- Anatomy
- C7 and T1 how patient of T2-5 to determine what plane or rotation they are in.
  - Location of Palpation of ribs 1, 2, and 3.
  - Anterior location of rib 1 and the Acromioclavicular Joint (AC Joint).
  - Aside note about the clavicle and the shape of the ribs.




---

---

---

---

---

---

---

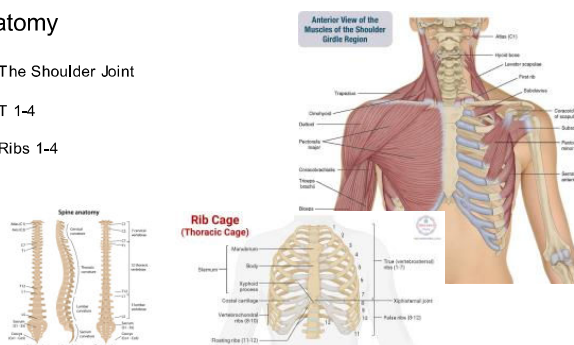
---

### Anatomy

The Shoulder Joint

T 1-4

Ribs 1-4




---

---

---

---

---

---

---

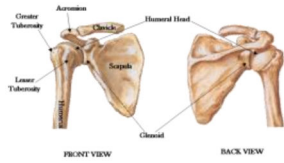
---



### Demonstration of Upper Rib Techniques

Supine – Lifted Arm Technique

Prone – Shoulder Roll Technique




---

---

---

---

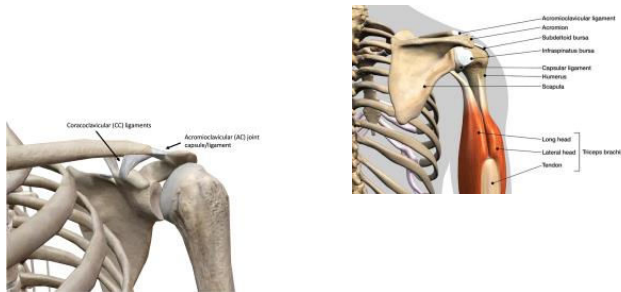
---

---

---

---

### Putting it Altogether: Demo of AC Joint and Shoulder




---

---

---

---

---

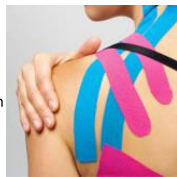
---

---

---

### Now the Magic Part...Making it Stay!

Stabilization of the Thoracic Spine and Rib Heads is sometimes the tough part depending on how long they have been out. This is where Chiropractic does a very poor job. We, however, have tools and tricks that can greatly enhance stabilization typically happening between 1 and 4 sessions. Acupuncture, Cupping, possibly Seven Star and Kinesio Tape can all be your friends here.




---

---

---

---

---

---

---

---

### Topicals Strategy, Cupping, and Kinesio Tape

Topicals Strategy: The layering of Medicinals: liniment, oil, cream, balm, plaster.

Cupping: Static Cupping Directly over the joints that were misaligned.

Kinesio Tape: Can be used as a great take home treatment, particularly when that patient that already has lax ligaments.



---

---

---

---

---

---

---

---

### Demonstration and Exchange

---

---

---

---

---

---

---

---

### Herbal Strategies in Differentiation

Jin Gu Die Da Wan  
Jian Zhou Tong Pian  
Chuan Xiong Cha Tiao Pian  
Tian Ma Gou Teng Wan  
Du Hou Ji Sheng Qi Pian



---

---

---

---

---

---

---

---