

Post-Stroke Acupuncture: key points for diagnosis and treatment at acute, subacute and chronic stages

Claudia Citkovitz PhD, LAc
Director of Acupuncture Services
NYU Lutheran Medical Center, Brooklyn NY

Purpose of this Talk

- AM - To introduce an integrated Chinese and Western approach to diagnosis and treatment planning in stroke
- PM - To provide a straightforward reference manual for how best to help a patient, friend or loved one who suffers a stroke or intracranial hemorrhage

Outline - AM

- Introduction, Review of Western terminology and diagnosis in acute stroke
- Points of Interface with Chinese Medicine
 - Etiology/onset
 - Local and systemic recovery
 - Functional rehabilitation
 - Chronic Care and Prevention
- Other practical questions
 - What effects to expect in which patients
 - How to talk to docs (as time allows)

BRIEF INTRO

Inpatient Acupuncture at NYU Lutheran

- 460 bed hospital in Brooklyn NY
 - Diverse patients (Hispanic, Chinese, +), 80% Medicaid/care
- Program running since 2003, funded by education
 - PCOM internships; externships for DAOM @ other schools
 - CEU intensives, training program (Citkovitz.com); ProD
- Past Research
 - Chart review: Stroke patients experienced a wide range of benefits (hiccups, mood, sleep, pain)
 - Survey of Rehab staff: Perceptions of acupuncture improved with exposure

Stroke Study 2012-2014

- PhD at University of Westminster (2015)
 - Supervised by Volker Scheid (history, plurality)
 - Focused on 'research methodology'
- All the usual problems of studying acupuncture are especially bad in stroke
 - Heterogeneity of patient presentation and course of recovery requires individual approach
 - Placebo makes no sense
 - 'Insufficient evidence' to guide clinical practice

Stroke Study 2011-2014

‘Development and assessment of a manual for acupuncture during acute post-stroke care’

1. Manual Development 2011-2012
 - Based on what we were doing that was already seen as working, plus ongoing self-evaluation
2. ‘Concurrent cohort’ study, 48 patients
 - Motor recovery mainly in ‘moderates’; sleep, bowels
3. Qualitative research: patient and Rehab staff
 - Seen as helpful in many areas including participation

After this Talk

- My hope is that you will be able to
 - Better understand patients’ and loved ones’ condition, prognosis and care required in the event of a stroke
 - Apply your own diagnostic and treatment methods to the concepts and strategies described

REVIEW OF TERMINOLOGY AND DIAGNOSIS IN ACUTE STROKE CARE

First Signs of Stroke



- Symptoms such as weakness, speech disturbance, numbness and loss of vision. If blood flow is not restored quickly, permanent brain damage occurs

'Time is Brain'

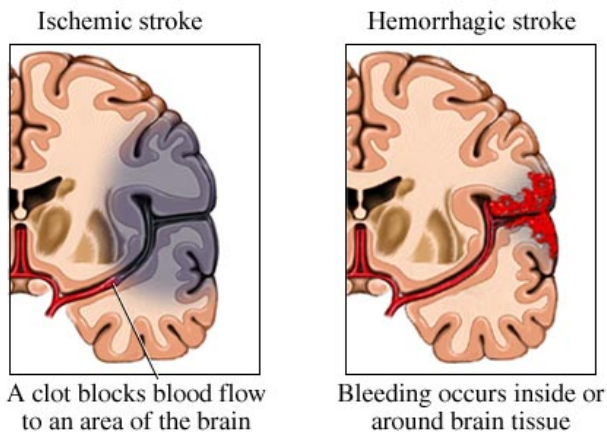
- “In each minute, 1.9 million neurons, 14 billion synapses, and 12 km (7.5 miles) of myelinated fibers are destroyed. Compared with the normal rate of neuron loss in brain aging, the ischemic brain ages 3.6 years each hour without treatment.”

– Saver, J. L. (2006). *Time is brain—quantified*. *Stroke*, 37(1), 263-266.

Stroke Mortality

- 30-day stroke mortality rates among people 45 to 64 years old
 - Ischemic stroke: 8%- 12%
 - Hemorrhagic strokes 37% - 38%
- Stroke is the **4th** leading cause of death in the USA, and the **2nd** leading cause of long-term disability
 - In China, it's the leading cause of death
 - Worldwide, the leading cause of disability

Two Main Types of Stroke

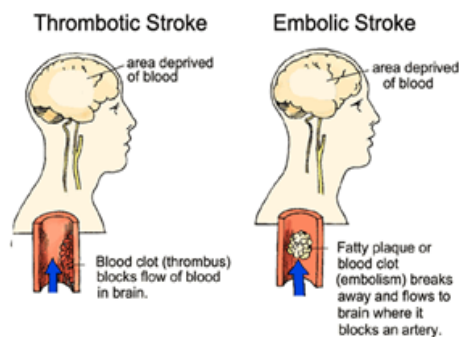


1. Ischemic (blocked) - 83%
2. Hemorrhagic (burst) - 17%

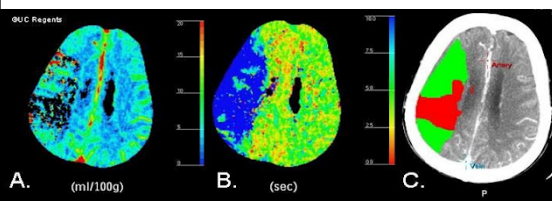
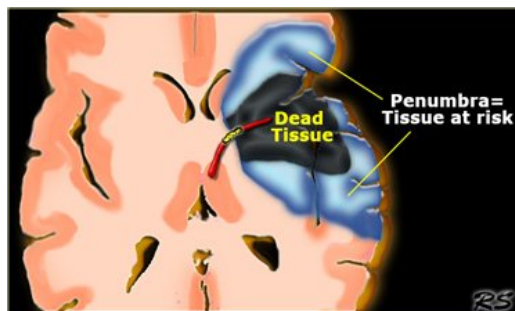
Ischemic Stroke (83%)

In ischemic stroke, blockage occurs in a major blood vessel, depriving the area distal to the blockage of oxygen.

- a) **Thrombotic Stroke**-a clot, or, thrombus, forms within a blood vessel in the brain until it gets so big that it blocks blood flow.
- a) **Embolic Stroke** - an object travels in the bloodstream until it gets stuck in the brain and blocks blood flow.
- a) **Lacunar or Small vessel stroke** – occlusion of vessel branches by thrombus or embolus



The Ischemic Penumbra

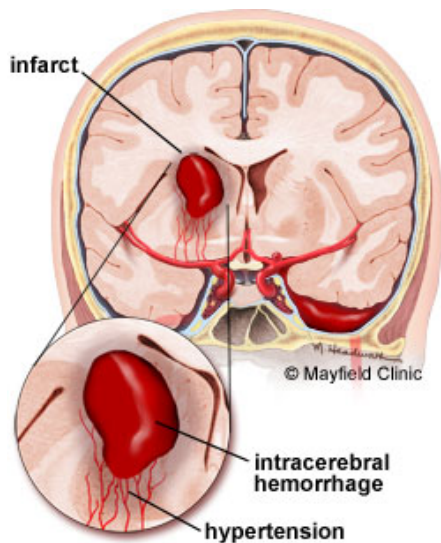


- **Ischemic Penumbra:** The ischemic zone that surrounds a central core of infarction.
- At $<18\text{cc}/100\text{g}/\text{min}$ there is a loss of electrical activity in the neuron.
- Here, the right Middle Cerebral Artery is occluded. Collateral circulation from the right Anterior Cerebral Artery distributes variable amounts of blood to the right MCA territory.
- The Penumbra may be clinically symptomatic but can be reversed if blood flow is restored within 3-6 hours

Treatment of Ischemic Stroke

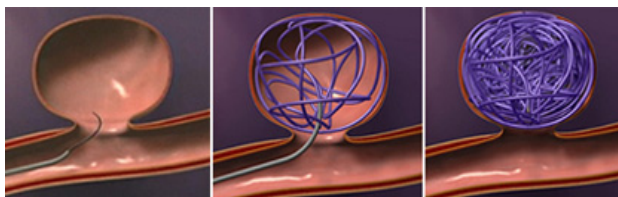
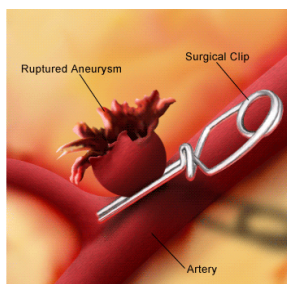
- Tissue Plasminogen Activator (tPA)
 - This intravenous “clot busting” therapy restores blood flow
 - However it carries a meaningful risk of hemorrhage (~6%), while benefit declines quickly as cells die off.
 - Therefore its risk/benefit ratio is most favorable in the first 3 to 4.5 hours after onset.
- Less than 10% of patients receive tPA
 - An additional 15% eligible for thrombectomy but $<5\%$ receive it

Hemorrhagic Stroke (17%)



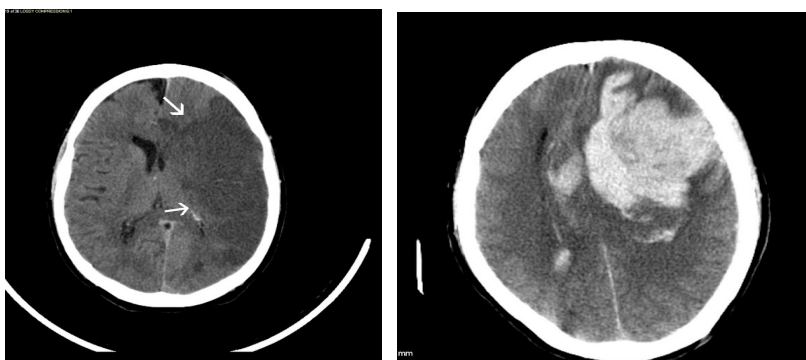
- In hemorrhagic stroke, a blood vessel in the brain ruptures (with or without trauma). Two categories are key:
 - **Intracerebral hemorrhage (ICH):** A blood vessel within the brain tissue, usually due to hypertension
 - **Subarachnoid hemorrhage (SAH)** A blood vessel on the surface of the brain, usually due to trauma

Treatment of Hemorrhagic stroke



- Brain surgery to repair or remove the damaged vessel
- Clip or coil the aneurysm

CT Diagnosis: Ischemic or Hemorrhagic?



- CT Scan is used ASAP to distinguish ischemic vs hemorrhagic stroke
 - Dark patch on left is ischemic, bright on right is a bleed
 - Distinction is vital as tPA is deadly for hemorrhagic stroke
- CLINICAL EXAMINATION ALONE IS NOT RELIABLE

Summary of Common Stroke Types and Characteristics

Stroke Type	Ischemic 85%			Hemorrhagic 15%	
	Thrombotic	Embolic	Lacunar	ICH	SAH
Frequency (%)	35	30	20	10	5
Factors associated with onset	Occurs during sleep	Occurs while awake	Thrombotic or embolic	90% occur without stress	Occurs during activity (often strenuous)
Biomedical causes/etiology	Clog builds up from plaque/atherosclerosis	Blood clot or other embolus, usually from heart or carotid artery	Thrombus or embolus in small vessels – hypertension, smoking	Hypertension	From trauma, ruptured aneurysms and AVM (vascular malformations)
Presentation	Gradual more than sudden	Sudden more than gradual - +/- seizures	Sudden or gradual	Sudden or gradual - Local or general sx - +/- seizures	Sudden onset - WORST HEADACHE EVER - +/- seizures

Stroke Type and Recovery

- Hemorrhagic strokes appear worse at first
 - So given the same initial deficit, recovery is better
- Thrombotic strokes recover slower than embolic
 - Arteries are clogged systemically, not just in the area that caused the acute problem
- Up to 20% of infarcts become hemorrhagic
 - **Usually within 48 hours, so don't treat <2 days**
 - Risk factors:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200641/>

ETIOLOGY AND ONSET

CM Etiologies of Thrombotic Strokes

- Atherosclerosis = phlegm + blood stasis (proportions differ)
 - Phlegm is on a spectrum from hot/dry to cold/damp
 - Usually presents with hyperlipidemia (HLD) and/or diabetes (DM)
 - Vessel damage from hypertension (HT) shows as blood stasis
- Thrombotic stroke reflects systemic clogging, not just local
 - Prognosis is worse for both recovery and recurrence
 - This is the cause of TIA's, which strongly predict stroke
- Common CM etiologies include:
 - Phlegm heat with Liver Qi
 - Liver yang rising with yin or Blood xu
 - Phlegm damp +/- obesity, edema, cardiac problems

CM Etiologies of Embolic Strokes

- Emboli of cardiac origin are most common
 - Blood clots form easily with atrial fibrillation (usually Heart yang xu)
 - Patent foramen ovale (congenital malformation = jing)
- Embolus may be plaque from carotid artery atherosclerosis
 - Same etiology, systemic pathology as thrombus
 - May also be dissection injury in healthy patient
- Non-constitutional etiologies = best prognosis
 - Air bubbles in scuba divers, fat blobs in femur fracture

CM Etiologies of Lacunar Stroke

- Can be thrombotic or embolic
 - Strongly associated with cigarette smoking
- More commonly associated with deficient etiologies, esp yin xu, blood dryness
 - Also note it is typically the MCA artery which is gallbladder territory
- Prognosis for recovery is worse due to deep location of lesion

CM Etiologies of Hemorrhagic Strokes

- Intracranial (ICH) and Subarachnoid (SAH) are often arteriovenous malformations (AVM)
 - Consider jing. More common in Chinese patients
 - SAH patient may present with history of migraine
- ICH often results from chronic hypertension
 - This may be the historical Chinese ‘heart fire’ etiology which I don’t see so much
 - Differential DX yang rising vs deficient Qi not managing blood

Stroke Types with Chinese Medical Etiology

Stroke Type	Ischemic 85%			Hemorrhagic 15%	
	Thrombotic	Embolic	Lacunar	Intracranial	Subarachnoid
Frequency (%)	35	30	20	10	5
Factors associated with onset	Occurs during sleep	Occurs while awake	Thrombotic or embolic	90% occur without stress	Occurs during activity (often strenuous)
Biomedical causes/ etiology	Clog builds up from plaque/ atherosclerosis	Blood clot or other embolus, usually from heart or carotid artery	Thrombus or embolism in small vessels – hypertension, smoking	Hypertension	From trauma, ruptured aneurysms and AVM (vascular malformations)
Presentation	Gradual more than sudden	Sudden more than gradual - +/- seizures	Sudden or gradual	Sudden or gradual - Local or general sx - +/- seizures	Sudden onset - WORST HEADACHE EVER - +/- seizures
Chinese medical etiology	Phlegm and blood stasis, DDX heat/cold; systemic stagnation	Usu blood stasis more than phlegm; DDX cardiac, carotid or not constitutional	Thrombotic or embolic; often liver yang with underlying xu often yin or blood dryness	Often AVM, more common in Chinese patients; DDX yang rising vs AVM, SP Qi xu not holding	If not trauma then assume jing and/or Qi xu

CM and Stroke Onset

- ‘Sudden reversal’; ‘Qi rushing up’
 - Chapter 62, “If the Qi can be redirected downwards, the patient will live; if not, he will die”
- In bleeds, high cranial pressure may be fatal
 - Trepanning is the first known major surgery
- In ischemia, some cranial pressure is useful
 - Penumbra needs more blood
 - BP usually rises spontaneously, though excessive rise may cause hemorrhage

Key Action Questions

- Should we raise or lower Qi to head?
 - **Probably neither**, until the situation is known – but may need to urgently descend Qi (see next slide)
 - Once stabilized, both benefit from **gently** raising clear yang while descending turbidity (Du20/24 LI4 SP6)
 - **Ischemic patients** benefit from Qi/blood raised to meninges and lesion area for 7-10 days, **if BP is stable**
- Should we use revival points at onset? **(No.)**
 - Shi xuan or Du26 are OK if it might be a faint
 - However in stroke, consciousness is not a priority; most important is to get help and monitor pulse

What to Do for Stroke Symptoms or Sudden Reversal

- **Dial 911**
 - Take pulse; if frighteningly forceful/superficial, then lower the Qi with GB20/21, Liv3/Kid1
 - Can pinch Ear Apex or bleed venules
- **IF THERE IS SEIZURE AND HELP HAS NOT YET ARRIVED, PROTECT HEAD THEN USE GB21 TO DROP THE QI TO KID1**
 - Du20/26 touch can sometimes calm seizure

Once Diagnosed & Stabilized (2 days!)

- All Strokes: Raise clear yang, descend turbid
 - SP6 PC6 Du20/24
 - +Du26 pecking if unconscious or spirit clouded
 - +Du16 30mm **Feel Qi but don't manipulate**
 - +LI4 if constipation
- Ischemic Stroke: Increase cranial circulation to shrink Ischemic Penumbra
 - Stronger stim on Du20/24; scalp massage
 - **Confirm BP is stable before treating**

IN THE HOSPITAL: RECOVERY AND REHABILITATION

3 Main Steps

1. Local Recovery: Restore flow/brain repair
 - Differentiate hemorrhagic/ischemic stroke
 - Target Qi/Blood to the injured area
2. Systemic Recovery: Restart the 'Qi machine'
 - Clean up acute messes
 - Identify and treat underlying constitutional imbalances
3. Rehabilitation: Identify, prioritize and treat functional deficits

1: Regulate Cranial Qi/Blood flow

- Ischemic stroke:
 - Days 2-7, BP high/stable, clear cytotoxic edema
 - Days 7-21, clear vasogenic edema
 - Target blood flow to lesion, raise clear/descend turbid
- Hemorrhagic stroke:
 - Before bleeding is stabilized (with caution if at all): help lower ICP
 - Once stabilized, target blood flow to lesion, raise clear/descend turbid, gently move blood stasis

2: Restore Function of 'Qi Machine'

- A. Clean up acute messes
 - Phlegm misting orifices or harassing lung
 - Constipation/urinary retention (+/- UTI)
 - Fecal and/or urinary incontinence
- B. Identify and treat underlying constitutional imbalances
 - Is there still wind? (Usually not)
 - How much blood stasis/how much phlegm?
 - Underlying deficiencies

3: ID, Prioritize & Address Deficits

- A. Critical functions first:
 - Shen – if nonverbal, look for presence, clear eyes, recognizing family, reliable yes/no
 - Transform phlegm, raise clear Yang, activate HT
 - Speech – differentiate aphasia (using language) vs dysarthria (forming sounds)
 - Treat dysarthria physically like swallowing
 - Swallowing – free up sky window points
 - distinguish lips, tongue, upper/lower throat, tight/lax/incoordinated/asymmetrical

3: ID, Prioritize & Address Deficits

B. Motor function from proximal to distal

- Start with balance and trunk stability
 - Balance may be poor, trunk may be floppy or leaning; patient may 'push' with good leg onto bad
 - Use 8 extras, scalp balance points
- Treat lower extremity return first (it's more important; returns faster in MCA stroke anyway)
 - Glutes and hamstrings first, then quads (especially vastus medialis to stabilize)
 - Nourish/activate the relevant channels

3: ID, Prioritize & Address Deficits

C: Upper extremity return

- In middle cerebral artery stroke (50%), arm lags behind leg and may not return
 - Return is often complicated by laxity of rotator cuff -> subluxation -> pain (use ST38!)
- Recovery is generally proximal->distal, but may jump
 - Look for elevation, protraction/retraction first
 - Flexion returns before extension

General Principles to Remember

- Keep it simple.
 - As though speaking to someone semi-conscious
- It's fine to just treat what you see.
 - To my knowledge, there is not a magic 'root treatment' that will unlock the case
 - Our job is to clean up messes and restore Qi flow
- It's fine to just use what you know.
 - Advanced techniques are great, but you can make a big difference with zang-fu and channel work

CHRONIC CARE AND PREVENTION

Chronic Care, post 1-2 months

- There is a truism that 90% of recovery is achieved in the first 21 days
 - This is a self-fulfilling prophecy, and I have seen many counter-examples
- Jill Bolte Taylor (My Stroke of Insight):
 - She considers herself fully recovered
 - She considers that it took fully 8 years
- AS LONG AS THERE IS PROGRESS ON SOMETHING, IT'S WORTH CONTINUING

2 Main Challenges of Chronic Care

- Spasticity – starts around ~1 month
 - Used to think it was an innervation problem
 - Now we know it's the *fascia* tightening up!
 - Prevention is best; treat with thin needles into fascia, I go with channel flow (Lu3, Liv/KD)
- Depression - ~50% prevalence
 - Experts argue whether it's a comorbidity or part of having a stroke
 - Circulate Qi, 4 gates; also check anxiety, insomnia
 - Encourage exercise, Qigong

Otherwise, Same Treatment Goals

- The majority of chronic stroke patients have unresolved systemic recovery and rehab
- Recovery:
 - Check insomnia, bowels, depression/anxiety, pain
- Rehabilitation:
 - Consult the default priority list, but mainly work with what the patient needs

Keeping Momentum for Outpatients

- Chronic stroke survival is hard work
 - Progress is incremental and slow, but there is much less care and support unless they're rich
- Our job may be to set goals, monitor and cheer on progress
 - It's key to find something that can improve
 - Can incorporate 2-3 treatment goals
- If possible, treat 3 times/week (2 is OK)
 - Can do all treatment planning the first day

Remember Secondary Prevention!

- 60% of stroke patients will die in 5 years
 - Stroke, heart disease, pneumonia, accident, suicide
- Chinese Medicine can be very helpful
 1. Break the cycle of inactivity/stagnation/fatigue
 2. Get their digestion back online (constipation!!!)
 3. Circulate Blood/fluids, treat depression!
 4. Keep Zong Qi strong

**TALKING TO HOSPITAL AND
NURSING STAFF**

Start by Listening

- Establish a rapport (and identity in their minds) FIRST, before introducing the idea that you want to do anything
- Pay attention to their verbal and nonverbal cues: when they are still worrying and unsure, in general you will not get a 'yes' to treat
 - An important exception to this is if prognosis is poor, in which case you have every right to do everything in your power

Useful Places to Start

- A recent Cochrane review shows it may be helpful
 - http://www.cochrane.org/CD004131/STROKE_acupuncture-stroke-rehabilitation
- In China, acupuncture is used for stroke more than pain or anything else
- Suggest (if it's true) that acupuncture has been a help and comfort to the patient in the past
 - If nothing else, it's effective for anxiety and depression which are common post stroke
- **'Here's the protocol I plan to use'**
 - <https://www.dropbox.com/s/3prbnrg14pesne7/Full%20Stroke%20Manual%202014.pdf?dl=0>

“How Can You Help?”

- In ischemic and stable hemorrhagic stroke
 - Reduce swelling/inflammation; increase local circulation to clear metabolic waste, increase angiogenesis
- Address specific deficits
 - Motor function, dysphagia, perhaps aphasia
- Systemic/experiential effects
 - Constipation, urinary retention/incontinence
 - Improve mood, attention (depression/anxiety)

Which Effects, Which Patients?

- Healthier patients respond better generally
- For motor function, prognosis relates to intactness of corticospinal tracts
 - Some intact fibers in primary motor cortex
 - Good prognosis, with or without us
 - No intact fibers in primary motor cortex but some in supplementary motor cortex
 - WE ARE MOST LIKELY TO MAKE A DIFFERENCE HERE
 - No intact fibers – flaccid with no return in 21 days
 - Least chance of recovery (but always worth trying!!!)

‘How many treatments?’

- ‘As with any severe/chronic illness, as many as possible’. ‘I wish it were magic, but it’s not’.
 - While in hospital, as close to daily as possible
 - Alternate yin/yang channels using balance method, scalp sides using Zhu/Jiao
- In chronic care, 2-3x week is best
 - No need to make new treatment plan each session; can just set plan and run it
 - Can book ‘off peak’ hours to keep cost low

‘What results will we see?’

- In acute care, look for:
 - Systemic recovery, eg bowel function, sleep
 - Better mood/attention during therapy sessions
 - Hopefully, better gains during therapy
- ‘How will we know it’s the acupuncture?’
 - “You won’t, our goal is to help the brain do therapy better”. Although...
 - Sometimes there is a big change during treatment
 - The therapists know well what’s usual recovery, and remark when acu patients do much better – which they often do 😊

Email these Links to Yourself
(then download PDF's to your phone!)

- So you know where they are if you need them
<https://www.dropbox.com/sh/nuzhrab0diff18x/AABtkVEjnAQEt4A7BeMGV4via?dl=0>
- Full text of my PhD
 - In case you're suffering insomnia
 - <http://westminsterresearch.wmin.ac.uk/16057/>

THANK YOU!!!!

- Jack Miller & PCOM
- Frederick Zamora

**TREATMENT MANUAL
FOR
ACUPUNCTURE DURING STROKE RECOVERY AND REHABILITATION**

VERSION 3: SEPTEMBER 2012

Introduction	3
Overview of the Manual and General Approach	5
Safety Considerations	8
Medical escalation and the urgent need for vigilance	8
Clean needle technique at the bedside	8
Cautions and contraindications	8
Seizures	8
Limb precautions and pacemakers	8
Bruising and bleeding	8
Cardiac conditions	9
Acupuncture “Dosage” - needle selection, stimulation and retention	9
Needle Selection	9
Needle sensitivity in stroke	9
Retention of needles	10
Treatment approaches used in this manual	10
TCM body and scalp acupuncture – Shanghai system	10
Zhu’s Scalp Acupuncture	12
Xing Nao Kai Qiao	12
Balance Methods	12
Using the Patient Intake and Assessment Worksheet	13
Preliminary information gathering from medical record: Page 1 (top)	13
Bedside examination: Page 1 (middle/bottom)	13
Constitutional Assessment Worksheet (page 2)	16
Treatment Planning (page 3)	16
Using the Recovery and Rehabilitation Worksheets	17
The first treatment	17
Refractory cases	17
The Index of Syndromes:	17
Finishing the treatment	17
Assessment and Treatment Planning Worksheet	19
Stroke Recovery Worksheet	22
Stroke Rehabilitation Worksheet	23
Index of Syndroms and Treatment Approaches	24

Introduction

Acute post-stroke care is one of the most rewarding areas for acupuncture treatment, but it is also one of the most challenging. Challenges include the severity of the illness, the large number of Western interventions under way, the great variation in patients' diagnoses and treatment needs, and the fact that those needs change greatly over the course of the 2-4 weeks that patients typically remain in the Neurology and Acute Rehabilitation units.

For all of these reasons, use of this manual is not recommended without the 2- or 3-day training programs in its use offered through Lutheran Medical Center and other educational institutions.

This manual covers treatment of patients who have suffered ischemic stroke. At the onset of this condition, blood flow is blocked by occlusion of one or more vessels, and the directly affected cells die of en masse, forming an "ischemic core." Over the following 7-10 days, cells downstream from the blockage continue to struggle with hypoxia and buildup of metabolic waste, even as the rest of the brain begins to heal and make new connections. During this time of stroke recovery, hospital care focuses on medically stabilizing the patient and controlling blood pressure -- which is typically high and labile -- without lowering it so much that cranial circulation drops. During stroke rehabilitation, the patient works with rehabilitation therapists in Speech/Swallowing, Physical Therapy and Occupational Therapy. Each of these areas represents an important dimension of the patient's well-being and what will become their new life. Depending on the size and location of the stroke, and the patient's age, health status and emotional makeup, the patient's journey through these stages will vary greatly from person to person, and may overlap.

Over the last 9 years at this institution, LMC's acupuncture team has found acupuncture to be beneficial in helping the patient to progress -- in different ways for different patients, and to varying degrees for reasons that are not always apparent. The goal of this manual, therefore, is not to lay down a specific "best practice" point prescription which can only have general applicability. Instead, we hope to create a template for clinical assessment and decision-making that will allow acupuncturists to draw on skills of individualized diagnosis and treatment developed in other settings, for accurate and effective use in the complex clinical picture described above. The manual does contain recommended point selections for specific clinical presentations. However its emphasis is on determining which treatment principles to apply when, by sequentially addressing general treatment goals and prioritizing them relative to the patient's needs as a whole. All of the guidelines given in this manual are suggestions.

When using the manual in routine care, experienced acupuncturists who have been trained in use of the manual and developed some practical familiarity with the manual's approach are encouraged to incorporate point combinations from their own practice, if they believe such substitution will better serve a particular patient's recovery. They are

then encouraged to email us with the case history and results! In this way, the manual will continue to grow based on clinical experience among the community of practitioners who have chosen to pursue this challenging but highly rewarding area of practice.

- The Lutheran Medical Center Acupuncture Team, September 2012
Patricia Cassidy, Claudia Citkovitz, Sally Rappeport, Paul Ryan, Maryanne Travaglione
Email us at: CCitkovitz@LMCMC.COM

Overview of the Manual and General Approach

Three core worksheets guide the patient encounter, as follows:

The **ASSESSMENT AND TREATMENT PLANNING (ATP) WORKSHEET** looks and functions much like an ordinary paper chart used in clinical practice. Its first page streamlines the traditional clinical exam, focusing on key clinical signs and symptoms that guide the choices made in the flowsheets described below, and holding all that information in one place to guide treatment planning. The second page of the worksheet guides constitutional assessment, showing 8 major syndromes (and three subgroups) commonly seen in stroke recovery patients at LMC.

The **RECOVERY WORKSHEET** introduces the primary priorities of stroke recovery:

1. **Stabilize Qi/Blood flow to the head:** this is integrative care, in which we use our concept of Qi flow to support the MD's treatment goal of maintaining stable and somewhat elevated blood pressure to ensure optimum blood circulation – and, particularly in the first 7-10 days, clearance of metabolic waste. Treatment approaches here also cover absent, clouded or agitated spirits, or remaining symptoms of wind (relatively few in ischemic stroke).
2. **Regulate the Center:** this is a key component of the manual's approach. Our experience is that stroke in Chinese medicine is characterized by massive disruption of Central Qi flow, and that to be effective, treatment must focus on restoration of digestive function and fluid metabolism.
3. **Balance the Constitution:** restoration of appropriate upward and downward movement in the center relies on an understanding of the current state of yin, yang, Qi, Blood and fluids. Key diagnostic signs and symptoms for commonly seen patterns of disharmony in ischemic stroke are shown on the second page of the ATP worksheet described above, along with suggested treatment approaches.

These first three problems may present together or separately; they can and should be addressed together in treatment planning for the first 7-10 days following stroke. One or more of these problems may persist long past the first week of recovery, in which case recovery treatments can be combined with the rehabilitation treatments described below.

The **REHABILITATION WORKSHEET** can be used after 10 days post stroke, or earlier if the patient is progressing well. It is structured more loosely than the Recovery worksheet, but continues the overall progression of treatment priorities as seen below.

Treatment priorities for rehabilitation are:

4. **Speech and Swallowing:** because of their devastating effect on the patient's morale and quality of life, these deficits should be addressed aggressively until resolved.

5. Balance and Trunk Stability: these problems most commonly presents in strokes that are deeper in the brain or more severe, and can be assessed and treated as a continuing problem of central Qi, often using extraordinary meridians as well as contemporary scalp and auricular approaches.
6. Lower Extremity Motor Recovery: In the most common type of ischemic stroke, the lower extremity typically recovers sooner and more completely than the upper. For this reason, it is useful to promote lower motor recovery as soon as possible (given higher priorities above). Standing and walking provide a deeply meaningful boost to the patient's morale, and facilitate faster recovery by circulating Qi and Blood. Recovery in general moves from distal to proximal muscle groups, starting with the hamstring and gluteals. In milder strokes, recovery of dorsiflexion can mean the difference between wearing or not wearing a foot brace for life, and may also be worth focusing on towards discharge.
7. Upper extremity motor recovery: Once lower extremity recovery is under way, it is useful to switch to upper extremity recovery as soon as possible to give the best chance of upper extremity return – with always the possibility of returning to the lower extremity if progress stalls.

Inevitably, there will be situations where a patient either does not respond to the first-line treatments on the two core flowsheets, or initially presents in a way that is not adequately addressed by the assessments and treatments shown. (Lack of response is defined as three successive treatments with no improvement in either the problem or the associated OM signs/symptoms). The **INDEX OF STROKE SYNDROMES** contains what we think of as the 'best available evidence' for what may help in treating stroke. This is a combination of: excerpts from textbooks that the team has found helpful; several kinds of research literature; and advice gleaned from classes with a few experts like Shi Xue-Min and Zu Ming-Qing. The team thought of this structure as a way to reproduce the usual 'research' process of an experienced clinician: treat what you see, using the approaches that usually work for you; then if that doesn't help (or if the case is outside your experience base) go to your bookshelf, then the internet, then call or email trusted colleagues for assistance.

Taken together, the 3 core worksheets of the manual plus the Index are intended to guide the majority of treatments. There will always be difficult cases for which you are encouraged to (A) look for research or texts that have come out subsequent to this manual; (B) email us with questions; and (C) begin to rely on your own clinical experience, which will extend the principles learned in successful treatments to understanding what's needed in more difficult cases.

Below are a few more general tips on using this manual:

One general and very useful principle of motor recovery is to regard the affected limb as deficient of Qi in its primary meridians, and full of static blood (combined with some proportion of phlegm) in the luo. Treatment thus aims to fill and 'light up' the large

meridians, particularly Yangming, Taiyang and Taiyin; while pushing through stagnation in the flesh. Palpation of affected channels should aim to identify areas of deficiency to supplement and areas of excess to move.

A second principle of motor recovery is that of Dao Yin, as taught by Dr. Zhu. During scalp needling (using any system) it is important to bring the patient's awareness to the area by performing tui na and instructing the patient to guide both awareness and breath to the area while needles are being stimulated. The instruction should then continue as the patient uses the affected limb (ideally in PT or OT).

One final principle useful in pulling all these treatment priorities together is that the treatment should balance the patient's big-picture priorities, in relation to her life after rehabilitation – but that acupuncture's most useful contribution on a given day may be to facilitate the work of the primary rehabilitation therapists. (For instance, addressing nausea, headache or shoulder pain so that Occupational Therapy can progress).

Safety Considerations

Medical escalation and the urgent need for vigilance

Patients who have recently suffered a stroke are at elevated risk for recurrence, or for conversion of ischemic to hemorrhagic stroke. **Before and after the session, assess the patient's responsiveness to touch and verbal stimuli, as well as speech quality and, smile.** These should be grossly equivalent to or better than previous assessments. If there is a downward change, immediately notify the Registered Nurse (RN) who will either be aware of the change (e.g. due to change in medication) or will continue escalation to medical personnel. Make sure you or other trusted personnel are at the patient's bedside throughout needle retention, and observe any changes in status such as involuntary movement or sudden unresponsiveness (versus drifting off to sleep). At LMC, **any pain of 8/10 or greater must also be reported to the RN.**

Clean needle technique at the bedside

Clean needle technique (CNT) is important for any patient, but particularly so for these elderly and vulnerable patients in the hospital environment where presence of blood-borne pathogens and drug-resistant bacteria must be assumed at all times. The Council of Colleges' CNT manual, 6th edition, should be followed.

Cautions and contraindications

Seizures

Seizures with acupuncture treatment are rare, but have been reported. Patients are more prone to seizures post stroke, although in most cases these are small focal seizures that present as brief periods of unresponsiveness. **It is important both to check the medical record and to ask the patient whether they have any history of seizure activity before or since the stroke.** If yes, confirm that the patient understands the small but real risk of another seizure. Treat patient in supine position in bed, and alert the nurse to the situation, making sure that she is available to help secure the patient and call the Rapid Response team if necessary. Make sure you or other LMC personnel are at the patient's bedside throughout needle retention, and observe any changes in status such as involuntary movement or sudden unresponsiveness (versus drifting off to sleep).

Limb precautions and pacemakers

Treatment procedures must be modified for patients with limb precautions and those who have pacemakers. **Do not insert needles into any limb that is edematous or marked with a limb precaution band.** If the limb precaution is due to removal of lymph nodes, also avoid needling that quadrant of the torso. **Patients with pacemakers must not receive electrical stimulation** but can be treated with acupuncture.

Bruising and bleeding

Do not needle patients within 48 hours of acute anticoagulation therapy (tPA etc). After ischemic stroke nearly all patients receive prophylactic anticoagulation therapy such as

Lovenox, Coumadin or Plavix and aspirin. **Anticoagulation therapy is not contraindication for acupuncture.** However bruising or bleeding for these patients may be greater than for typical outpatients. Scalp and ear points in particular should always be pressed for **90 seconds** after removal; other points should be pressed for **10 seconds**, and an **additional 90 seconds if there is bleeding**. Pressure should always be applied with **cotton swabs** rather than cotton balls, as these provide greater pressure and more protection from blood-borne pathogens.

Cardiac conditions

Past history of atrial fibrillation, myocardial infarction, any other heart surgery (stent placement, CABG graft, etc), angina or **any cardiac condition is a contraindication for use of electrical stimulation.**

Acupuncture “Dosage” - needle selection, stimulation and retention

Needle Selection

As a default, the team uses 34 gauge needles (1” and 1.5” as appropriate). We also carry 32 gauge needles for robust patients and 38 gauge needles for vacuous or needle sensitive patients. Additionally, for scalp acupuncture we prefer Dr. Zhu’s specialized scalp acupuncture needles (36 gauge, 0.8”)¹, though 0.5” auricular needles can be used.

Needle sensitivity in stroke

Stroke patients in general are less needle sensitive than the outpatient population. This manifests in two ways:

1. Even without diagnosed sensory impairment, stroke patients often have very little needle sensation on the affected side. They may also suffer hemineglect, in which the affected side occupies little if any perceptual space despite unimpaired sensation. In either case this reduced needle sensitivity allows the treating acupuncturist to use large needles with strong stimulation to restore flow. However, **care should be taken to recheck sensitivity at the beginning of each treatment**, as normal sensitivity often returns within 3-5 treatments. Also, **if these patients have motor function they must be supervised closely during needle retention, as they will tend to move the limb incautiously.**
2. In general, the team has found patients with phlegm or congested fluids to have very low needle sensitivity, to the degree that larger needles and more stimulation may be required to have a treatment effect. By contrast, patients with vacuity of blood or yin are often more needle sensitive and require smaller needles with less stimulation.

A small proportion of patients suffer increased sensation on the affected side. Particularly with damage to the thalamus, central post-stroke pain (CPSP) may occur

¹ <http://www.scalpacupuncture.org/products/needles-2/>

and **can be exacerbated with ipsilateral needling**. See the Syndrome Index for more information on CPSP.

Retention of needles

In general, the team's experience has been that hospitalized acute stroke patients fare better with short needle retention and frequent restimulation, rather than longer retention as in clinical practice. Default 'settings' for needle retention should be as follows:

- patients with slack dan tian, visible emaciation or other signs of significant vacuity: after insertion of last needle, retain for approximately 16-18 minutes, restimulating twice.
- Patients with resilient dan tian, robust appearing form: retain for approximately 23-25 minutes.
- All others: retain for approximately 20-22 minutes.

Treatment approaches used in this manual

An important feature of this manual is that it allows the practitioner to select and combine treatment approaches drawn from a variety of sources. These are briefly described below, for the purpose of operationalizing the selection process and application in the context of the manual. These descriptions will serve as a reminder for acupuncturists who have taken the training, but **they do not replace training in use of the manual, nor are they equivalent to training in other systems.**

TCM body and scalp acupuncture – Shanghai system

Unless otherwise specified, body and scalp acupuncture are to be practiced using point locations, depths and attention to *de qi* as described in the Shanghai text, Fundamentals of Chinese Medicine (Wiseman et al., 1996).

For scalp acupuncture, this manual mainly uses the Motor and Sensory lines, which are based on the Western anatomical concept of somatotopic representation of the body on the surface of the brain. Also used are the Balance points, which are in the area of the cerebellum. For scalp acupuncture, this system should be used as directed in the Rehabilitation Worksheet, and also in the following instances:

1. When the patient presents with motor impairment or sensory impairment only. (If both are affected, use the Zhu system below). In this instance, **the Shanghai location of the motor or sensory lines should be used, but needle selection and stimulation should be as for the Zhu system described below.**
2. With electrical stimulation for severe cases: when there has been no motor return in the upper and/or lower extremity (i.e. dense paresis) and at least two previous treatments using Zhu style needling have been tolerated without excessive needle sensitivity **and the patient has no history of seizure activity or cardiac condition**

- a. Upper extremity: place scalp needles at the top and bottom of the 3rd fifth of the motor line (forearm and hand). Connect these with one lead. Place needles at TE9 (or nearby ashi trigger point where tapping elicits a twitch response) and at LI4 and Ba Xie (perpendicular insertion with knuckles held bent at a 90 degree angle, 1-1.5 cun depth). Connect TE9 and LI4 with a second lead and start stimulation at 2hz continuous frequency, raising amplitude to the maximum level that is genuinely comfortable for the patient. A twitch response of the forefinger or (ideally) wrist extensors should be elicited. At this point, start stimulation on the second lead until the stimulus is perceptible but mild for the patient. Continue stimulation for 20 minutes, moving the lead from LI4 to the closest Ba Xie point after 5 minutes, and continuing to move it laterally at 5-minute intervals.
 - b. Lower extremity: place scalp needles at the top and bottom of the 1st fifth of the motor line (lower extremity). Connect these with one lead. Needle perpendicularly to 1 cun at ST36 and ST38 (located directly on the belly of the tibialis anterior muscle). Connect them with a second lead and start stimulation at 2hz continuous frequency, raising amplitude to the maximum level that is genuinely comfortable for the patient. A twitch response of the tibialis anterior should be elicited. If there is no movement and the patient's maximum comfort level has been reached, recheck location. At this point, start stimulation on the second lead until the stimulus is perceptible but mild for the patient. Continue stimulation for 20 minutes.
3. With long needle threading for severe cases: when there has been no motor return in the upper and/or lower extremity (i.e. dense paresis) and at least two previous treatments using Zhu style needling (see below) have been tolerated without excessive needle sensitivity and the patient either is not eligible for electrical stimulation or has not responded to three such treatments. **Previous history of seizure activity is a contraindication for this treatment.**
 - a. Using a 30 gauge 1" or 1.5" needle as appropriate, thread the lower or upper extremity area as described in the Shanghai text, from superior to inferior.
 4. With electrical stimulation for distal extremity motor return: use the electrical stimulation procedure described above for the following situations:
 - a. Physical or occupational therapist reports slow return of dorsiflexion or wrist extension
 - b. Patient (or therapist) reports poor fine motor control of upper extremity

Zhu's Scalp Acupuncture

This is an alternative system of scalp acupuncture developed by Mingqing Zhu, an early graduate of the Shanghai school. It has some similarities to the Shanghai system, but is conceived as a yin/yang microsystem representing the body holographically on the surface of the scalp.

Another key difference between Zhu and Shanghai style acupuncture is the type and depth of needle. The Zhu system uses **small needles: 0.8" x 36 gauge** is a common size, used for scalp acupuncture at LMC and recommended for use with this manual. However, auricular needles (0.5" x 36 gauge) can be substituted. Rather than threading a large area on the scalp, the Zhu system uses multiple needles following the same line with little space between them. Needle stimulation is another difference between Zhu and Shanghai styles. Where the Shanghai system uses rapid twirling, the Zhu system calls for rapid low amplitude thrusts to supplement (80-120 per minute). For draining, the movement (and Qi intention) is reversed. For scalp needling within this manual, this is the default style except as described above.

Xing Nao Kai Qiao

Shi Xuemin's well known 'xing nao kai qiao' (awaken the brain, open the orifices) method is based on the treatment principle of restoring the flow of Qi to the head using yin channels (principally SP6 and PC6) as well as Du Channel points (16, 20, and pecking stimulation at Du26). Several of his treatment approaches are used in the Recovery Worksheet, as well as several treatment approaches that appear both in Dr. Shi's texts and in the 1601 compilation, the Zhen Jiu Da Cheng (Great Compendium of Acupuncture and Moxibustion) (Yang, 1987). One of our team members (CC) attended a training with Dr. Shi and was introduced to his specialized needling technique. This is a light, rapid twirling (120/minute) with very small amplitude and periodic light flicking to enliven the channel; the technique is supported by standing meditation practice. This manual does not assume that practitioners have the ability to perform this technique. The point combinations shown have been used with supplementing, moving or even technique as they are described in the manual.

Balance Methods

All of the acupuncturists participating in this manualization process used some type of meridian balancing method in our inpatient and outpatient practices. The best known of these is Richard Tan's method as described in his book, "Acupuncture 1, 2, 3" (Tan, 2007) and in the training program for this manual. Commonly used to circulate Qi in pain patients, the method mainly consists of devising a 'balanced' treatment where yin and yang surfaces of the four extremities are needled in alternating fashion, as when master points for Du and Ren or yin qiao and yang qiao vessels are needled. It has been the experience of three team members (PC, CC, SR) that use of this yin/yang alternating strategy on appropriate points can also circulate the fluids and Blood with positive effects in internal medicine. This strategy is used as a default for point selection throughout the manual, both for suggested point combinations and for use where the

practitioner is selectively combining strategies. Specific guidance on implementation is provided below:

1. Where there is pain, use a balance method preferentially. As described in Acupuncture 1, 2, 3, identify ashi points at homologous (e.g. contralateral wrist for wrist pain) analogous (e.g. ipsilateral ankle for wrist pain) or opposite points (e.g. ipsilateral or contralateral shoulder or hip for wrist pain) on related channels. This order (i.e. direct to indirect) should be followed in palpating for ashi points. The order of related channels, located on the Intake Worksheet, should also be followed. When a balance treatment is used for pain, retain the needles an extra 10 minutes, restimulating every 10 minutes. Supplement this treatment with retained ear seeds, ipsilateral at tender points corresponding to the painful area, plus Shenmen and Zero. Counsel the patient to press the seeds rhythmically for 90 seconds when awakened by pain, and every 4 hours or more often if desired.
2. Contraindications: Balance type treatments are **contraindicated** in the following situations
 - a. Dizziness or agitation
 - b. Vomiting or severe nausea
 - c. Extreme debility
 - d. Signs of wind stirring (tics, tremors; deviated tongue is not a contraindication)
 - c. Auricular

Using the Patient Intake and Assessment Worksheet

Preliminary information gathering from medical record: Page 1 (top)

Working from the patient medical record, gather as much information about the case as possible, using the tick boxes at the top of the Worksheet as a guide to key information, and noting anything else of interest in the blank space at the bottom right. This should include:

1. Patient age, sex, comorbidities, significant history, meds
2. Stroke type, location, size, time and circumstances of onset
3. Rehab goals as per therapists
4. Preliminary constitutional picture – above plus Body mass index? Hypertension? Diabetes? Cholesterol? Depression? Substance abuse?
5. Preliminary treatment goals, as stated in the Interdisciplinary Patient Evaluation or the initial notes of the rehabilitation physician and physical, occupational and speech therapists. Also note on any specialist consultations that have been made and their findings: neurology, cardiology, internal medicine, etc.

Bedside examination: Page 1 (middle/bottom)

This is guided by the Page 1 of the Assessment Worksheet, which is very crowded in an attempt to collect a large amount of data in a form that can someday be analyzed by

computer. To save space, we use numbers 1, 2 and 3 as a way around the modifiers 'slightly' and 'very'. A 'very slow' pulse can be notated by circling 'slow' and '3'; 'slightly slow' is '1' and 'slow' would be '2'. The order and nature of information requested serves two purposes: first, it provides the key diagnostic indicators used on Page 3 of the Worksheet. Second, it should inform your own understanding of how the Qi mechanism is disrupted in stroke, to help in understanding and treating those patients who either do not respond to manualized treatments or did not fit its diagnostic criteria to begin with.

1. Pulse: note beats per minute (bpm) as well as any qualities that you notice (the blank at the top right of the box is for one dominant quality that you notice without trying; the space at the bottom is for anything you'd like to add on consideration.
 - a. Please note that in stroke patients, the seemingly disparate qualities of 'slippery' and 'wiry' often present together. Appearing together they can be considered as a single dominant quality suggesting the presence of phlegm
 - b. The "eight parameters" of pulse. Practitioner interpretations of the 28 pulse qualities can vary greatly, and in treating complex cases at the hospital we have frequently found them more confusing than helpful. The 'pulse basics' of rate, level, size and force can be easier to hold on to, and clearer in their implications for diagnosis. It's a good habit to assess them in this order as well: you need to locate the pulse in order to count it, then while you are counting the pulse you can think about its size and force.
 - c. Left> <Right: This is a cryptic way of asking whether one side is more forceful than the other. It is common for the affected side pulse to be weaker, but sometimes it is more forceful. The team has not yet arrived at any brilliant insight into the meaning of this reversal.
 - d. Pulse grid: in this box, you can chart any pulses that deviate greatly from the 'eight parameters' picture given above. For example, it is not uncommon for the left Chi position to be nearly absent from a pulse that is otherwise forceful. It is not necessary to chart minor positional variations. Also, it is assumed unless otherwise specified that the chi pulse is slightly deeper and less forceful than the guan and cun, that the cun pulse is slightly more superficial, and that the left guan is slightly more wiry than the right, which is slightly more slippery. (In stroke patients this is commonly reversed, or the right guan is very vacuous, or the right chi is very slippery; these are all examples of what you might indicate in the box or under 'other qualities/notes').
2. Tongue: This box uses the same system of 1-3 to replace 'slightly' and 'very.' Simply circle and grade all qualities that apply; there is space below for specific notes, e.g. "peeled spot at L side"
 - a. Sublingual veins (SLV): these are commonly dark and distended in stroke indicating blood stasis, with distention on the affected side increasing over time as the condition becomes chronic. It may be difficult for stroke patients to show the underside of their tongues, due to tongue stiffness and/or dentures. Two attempts is enough.
 - b. Tongue coat: A very thick coat is extremely common, in keeping with the impaired Qi transformation of the condition. Reduction in this coat with treatment is also common – but if you see a change do check as to

whether the tongue has also been cleaned by the speech therapist.

Also, sudden appearance of a green color does not indicate new onset illness but only that the patient has had a swallowing test.

3. Abdominal Palpation: This examination is central to our understanding of the patient's basic weakness or robustness, and the function of the central Qi. Distention indicates blockage, while tone ranges from too tight to too slack. Overall temperature helps clarify the severity of yin and yang xu, while hot and cold spots can indicate stomach cold or stasis generating heat. Indicate locations of tightness/tenderness under "ashi@" (e.g. right ribside indicating Liver Qi), as well as hot and cold spots.
 - a. Dan Tian: the state of the Dan Tian in particular (as distinct from the whole abdomen) is a key indicator of Kidney vitality, as seen in the Assessment sheet. A vital, springy quality is considered normal. A slack quality at Ren 4-6, or excessive tightness/tenderness at the level of ST30-Ren2 (a 'bow tie') indicate vacuity. Cold indicates yang xu.
4. Temperature: The three lines of this box indicate overall body sensation, upper extremity, and lower extremity. Simply circle all that apply, and score 1-3 as appropriate.
 - a. For Objective/Subjective, inquire whether the patient is 'always hot, always cold or just normal'. (If hot or cold, ask whether this has changed since the stroke, obtain a 1-3 qualifier, and note in the margin.
 - b. Upper extremity: RUE indicates right and LUE indicates left; select a temperature and circle both if bilateral, scoring 1-3 as appropriate
 - c. Lower extremity: as for upper extremity.
5. Sweating: indicate temperature and time
6. Gastrointestinal (GI) and urinary symptoms: Inquire about these closely. Lack of appetite (LOA) is common, as is constipation.
 - a. Urinary retention is also common, though the patient is not the best reporter of this problem: check the nursing notes.
 - b. Nocturia is common; inquire how many times per night and whether it disturbs sleep
 - c. Color – the patient may not know, but a catheter bag is often present
2. Stroke symptom inventory
 - a. Differential diagnosis as needed
 - b. Assess patient priorities
 - c.
3. Pain: Headache, shoulder and neck pain are common after stroke. Inquire as to all sources of discomfort and obtain 1-10 scores. **Any pain score over 8/10 must be reported to the nurse** caring for the patient, though likely s/he is already aware.
4. Observation:
 - a. Form is robust, thin, heavy (or obese); flesh tone may additionally be firm or slack
 - b. Bearing is upright, stiff or slack, or in some cases crooked.
 - c. Color is pale, red, grey, blue, yellow or qing, scored 1-3
 - d. Shen is dull, clouded, scattered, agitated, scored 1-3. It is assessed mainly but not exclusively through eye contact. 'Dull' indicates lethargy or poor responsiveness; 'clouded' indicates a patient who maintains eye contact and appears to be emotionally present, but has cognitive confusion or difficulty speaking. 'Scattered' indicates a sense that the

patient is not emotionally present or able to maintain eye contact, though there may be transient moments of connection.

Constitutional Assessment Worksheet (page 2)

This page of the worksheet should be largely self-explanatory. It links the signs and symptoms gathered on page one to the treatment planning on page 3. For each of the syndromes listed, key clinical signs encountered in post-stroke care are listed. It is to be expected that patients will show signs of at least two and often three or four syndromes. For that reason, the points listed under Points/Strategy do not constitute recommended stand-alone prescriptions. Rather, they are to be combined or incorporated into the Recovery and Research treatment priorities identified on the worksheets described below. There will be considerable overlap, particularly between recovery treatments and constitutional treatments. For newer practitioners, or for use of the manual in a research context where tighter standardization is required, the points/strategies are listed in approximate order of importance and can be considered for integration in that order. Instructions for constructing the treatment are given below under treatment planning.

Treatment Planning (page 3)

The bulk of the treatment planning within this treatment manual is accomplished via stepwise progress through the Recovery and Rehabilitation worksheets (see below). The treatment recommendations from those worksheets are combined on the ATP worksheet. **The summary of this process below will serve as a reminder for acupuncturists who have been trained in use of the manual, but is not a substitute for such training.**

1. Identify the first two Treatment Goals from the Treatment Goals bar at the top of Page 1 of ATP Worksheet
2. Identify the primary constitutional disharmony to be addressed (this will be the one with the most clinical signs pointing to it).
3. Copy the suggested treatment approaches for each of these treatment priorities onto the Treatment Planning section of the ATP Worksheet, at the bottom of page 3. Cross out redundant points.
4. Write the resulting point prescription on the stick figure, Balance method style (see above). Start with yang points on the affected arm first and alternate per treatment (the first few treatments may have only head and torso points).
5. Double check the treatment: in general you need one or two arm points and two or three leg points, for a maximum of 14 needles, 9 in weak or needle sensitive patients.
 - a. If not then what can you add from additional recommended points or secondary diagnoses
 - b. If balance is contraindicated (e.g. for dizziness, see above) treat bilaterally. This may require letting go of the second treatment goal.
 - c. For mild cases, you can move on to rehabilitation goals as soon as either the center or the constitution improves.

Using the Recovery and Rehabilitation Worksheets

The Recovery worksheet governs treatment during the first 10 post stroke. Its priority is first regulating upbearing and downbearing in the head and center, and then addressing any root and branch constitutional disharmonies that present. Once some of this recovery work is done, it becomes possible to incorporate rehabilitation priorities into the treatment, again in a stepwise fashion from the acutely distressing difficulties of aphasia and dysphagia, to balance and trunk stability, and finally to lower and upper extremities.

The first treatment

As shown in the worksheet, the primary treatment priority for the first 10 days is bringing Qi and Blood to the head to nourish injured cells and carry away metabolic waste. In addition, because many stroke patients are new to acupuncture, the treatment should begin with SP6 and Du20, as non-challenging points that will allow the practitioner to assess the patient's needle sensitivity. If three needles is enough (as occasionally happens) then the three needles will still constitute a clinically appropriate intervention.

Refractory cases

For severe strokes, the first 10 days of treatments will likely be restricted to head, center and constitution. It is also not unusual for recovery of GI and urinary function to remain impaired well into the rehabilitation period and beyond. After the initial 10-day recovery period, once the same combination of treatment priorities has been used for three treatments with no perceived clinical effect, the practitioner should consult the Index.

The Index of Syndromes:

The Index contains everything that the acupuncture team found in searching their libraries and the internet during the manual construction and study period. It constitutes the 'best available evidence' to date. It is the team's plan in future to augment this evidence with cases from our own records – as well as those of other practitioners using the manual.

Finishing the treatment

At the conclusion of the treatment, the following items are important:

1. Reassess level of responsiveness. It should be similar or better than at the commencement of the treatment. If it is not, or if there is any question at all, ask the nurse for a second opinion. There is no harm in this extra vigilance.
2. Reassess the pulse. Particularly if you have used electrical stimulation, be on the alert for reduction in strength of pulse or irregularity of rhythm. If the force of the pulse is reduced (even if it was pathologically forceful before) **ask the nurse to take a blood pressure reading and compare to the patient's two previous readings** in the medical record.

3. If pain or discomfort was reported at the beginning of the session, ask for a post-treatment level and record both.

Tan, R. (2007). *Acupuncture 1, 2, 3*. San Diego.

Wiseman, N., Ellis, A., & Zmiewski, P. (1996). *Fundamentals of Chinese medicine* (Vol. 127): Paradigm publications Brookline, Massachusetts.

Yang, J. (1987). *Great Compendium of Acupuncture and Moxibustion* (Zhen Jiu Da Cheng). *People's Health Publishing, Beijing, China*.

Preliminary Information Gathering:

PMH: Smoking History Diabetes Hypertension Cholesterol A-fib Sickle Cell Trait
 OCP/Estrogen
 Migraines Vertigo/Tinnitus TIA Surgery/hardware _____ Other _____

HPI: Type Location Side Size of stroke Time Date & Circumstance of onset Old stroke?
 Hospitalization course Intubation Pneumonia UTI H/T Fever Procedures (esp. tPA, PEG)

Treatment Goals (circle all that apply, or add "Other" in Notes):

1. Stabilize Head	1. Day 1-10 or first tx	2. Regulate Center	1. Constipation	3. Balance Constitution	1. Deficiency * Yang/ Qi * Yin/ Blood	4a. Speech	1. Aphasia (Can't find words)	4b. Swallowing	5. Balance & Trunk Stability	6. Lower Extremity	1. No Return	7. Upper Extremity	1. No Return
	2. Spirit Clouded		2. Diarrhea or Fecal incont.		2. Stagnation * Qi * Blood		2. Dysarthria				2. Weakness		2. Weakness
	2. Spirit Scattered		3. Urinary incontinence		3. Accumulation * Water * Phlegm * Heat		(Physical Diff.)				3. Stasis		3. Stasis
3. Agitation, Insomnia	4. Urinary retention												4. Pain

Bedside examination:

Pulse: ___ bpm Quality: _____		Tongue (circle & grade 1-3)		Palpation:																															
Deep	3 2 1 0 1 2 3	Sup.		Abdomen:	Distention? 1 2 3																														
Slow	3 2 1 0 1 2 3	Fast		Tone: (taut)	3 2 1 0 1 2 3 (slack)																														
Narrow	3 2 1 0 1 2 3	Wide		Temp: (hot)	3 2 1 0 1 2 3 (cold)																														
Forceless	3 2 1 0 1 2 3	Forceful		Ashi @:	_____																														
Left > < Right <table border="1"> <tr> <td>Cun</td> <td>Shi</td> <td>Xu</td> <td>Shi</td> <td>Xu</td> </tr> <tr> <td></td> <td>3 2 1</td> <td>1 2 3</td> <td>3 2 1</td> <td>1 2 3</td> </tr> <tr> <td>Guan</td> <td>Shi</td> <td>Xu</td> <td>Shi</td> <td>Xu</td> </tr> <tr> <td></td> <td>3 2 1</td> <td>1 2 3</td> <td>3 2 1</td> <td>1 2 3</td> </tr> <tr> <td>Chi</td> <td>Shi</td> <td>Xu</td> <td>Shi</td> <td>Xu</td> </tr> <tr> <td></td> <td>3 2 1</td> <td>1 2 3</td> <td>3 2 1</td> <td>1 2 3</td> </tr> </table>		Cun	Shi	Xu	Shi	Xu		3 2 1	1 2 3	3 2 1	1 2 3	Guan	Shi	Xu	Shi	Xu		3 2 1	1 2 3	3 2 1	1 2 3	Chi	Shi	Xu	Shi	Xu		3 2 1	1 2 3	3 2 1	1 2 3	Body: Sm < WNL < Lg Scalloped Deviated R/L Pale - Red - Blue Cracks: Horizontal Vertical Coat: WNL - Thick Peeled - Dry Wet - Tofu Coat Color: White - Grey Yellow - Black Other: _____ Tip: _____		Masses @: _____ Hot/Cold@: _____ DanTian: Vital Slack 'Bow tie' Other _____	
Cun	Shi	Xu	Shi	Xu																															
	3 2 1	1 2 3	3 2 1	1 2 3																															
Guan	Shi	Xu	Shi	Xu																															
	3 2 1	1 2 3	3 2 1	1 2 3																															
Chi	Shi	Xu	Shi	Xu																															
	3 2 1	1 2 3	3 2 1	1 2 3																															
----- Other Qualities/Notes -----		SLV: R > L <input type="checkbox"/> Dark <input type="checkbox"/> Thick <input type="checkbox"/> WNL																																	
		Notes:																																	

Temperature:

Cold/Hot	Objective	Subjective
Cold/Hot	RUE	LUE
Cold/Hot	RLE	LLE

Pain? 1-10 scale

Observation:

Form Bearing Color Shen

Sweating:

Cold	Hot	Day
Cold	Hot	Night

Location: _____

Notes:

GI:

LOA	Nausea	Heartburn
Incont.	Const.	Vomiting

Urination:

Incontinence	Retention	Nocturia
--------------	-----------	----------

x/Night, color _____

Insomnia:

Premorbid	1 2 3
Current	1 2 3

Disturbed - Reason: _____

CONSTITUTIONAL ASSESSMENT WORKSHEET

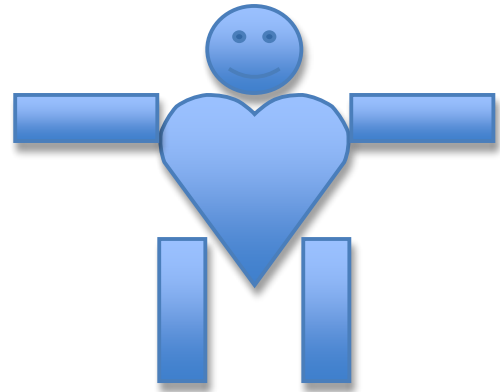
#	Pattern	Key Clinical Signs (should see at least 2)	Points/Strategy	Stimulation
1	Qi Xu	Scalloped tongue, pulse is slack or lacks force, rapid pulse with no heat signs; soft/spongy abdominal flesh; weakness/fatigue, orthostatic hypotension	LI10/ST36/SP3/ Lu9; CV6/12	Sup
2	Blood xu	Pale tongue; dry flaky skin; pulse volume is small (vessel is thin or narrow); tight sinews; blood loss , anemia or sickle cell trait	LI10/ST36/SP10 /Lu9; Liv8, SP6	Sup
3	Yin xu	Small, red, dry, peeled or cracked tongue; empty heat (in 5 hearts, worse w/fatigue or with KD signs below); tight rectus; rapid pulse with small volume (vessel is thin or narrow)	Kid6/SP6, R4 (B)	Sup
4	Yang xu	cold belly or subjectively cold (patient or assessor); diarrhea or incontinence with slow pulse; pale puffy tongue; pitting edema	Warm ming men/Dan Tian; Kid3/7 (B)	Sup
4a	Kidney Qi xu	Nocturia, urinary frequency or incontinence; soft dan tian or "bow tie"; age over 70	CV4, Kid 7 (B)	Sup
5	Qi zhi	Pulse has tense or wiry quality; tight or tender hypochondrium	LI4/GB34/Liv3/ PC6	Drain or even
6	Xue yu	Distended/dark or many branches on sublingual veins; tongue bluish or with macules; stasis macules or spider veins on legs; choppy pulse quality	Liv3, SP10, GB34, LI4, PC6	Drain or even
7	Accumulation of Yin (Water)	Edema; soft puffy flesh; swollen tongue; watery fluid in lungs; congestive heart failure; cold signs or absence of heat signs	Warm ming men/Dan Tian; Kid7/R9, SP9, SP6(KD aspect)	Bilateral, Sup KD; SP9 drain or even
7a	Accumulation of Yin (Phlegm)	Thick tongue coat; overweight or obese; audible phlegm rale; cough with sputum; cognitive or sensory impairment	LI4/TH10, ST36/40, SP3/8 Lu7/PC5	Drain or even (sup SP3)
8	Accumulation of Yang (Full Heat)	Yellow rooted tongue moss; red tongue large or normal size; rapid pulse with large volume	LI4/11, ST40/44, SP5, Lu5	Drain or even
8a	Accumulation of Yin & Yang (Damp Heat)	Body odor; thick yellow tongue coat; body discharge (vaginal, pus, weeping sores); cloudy dark urine; feverishness in afternoon (with other signs); bitter taste in mouth	LI4/11, GB34/ST44; SP5/9, Lu5/7	Drain or even

Treatment Planning:

Balance Method

ZHU/ SHANGHAI Scalp:

LU	SP	UB	LI	UB	LR	_____ Zhu Arm
LI	ST	LR	LU	KI	ST	_____ Zhu Leg
ST	LI	PC	SP	PC	LI	_____ Zhu Hip
SP	LU	SI	ST	SJ	HT	_____ Zhu Shoulder
HT	KI	GB	SI	GB	SP	Zhu Other:
SI	UB	SP	HT	LR	UB	
UB	SI	LU	KI	LU	SI	Sh. Motor: 1 2 3 4 5
KI	HT	SJ	UB	LI	PC	Sh. Sensory: 1 2 3 4 5
PC	LR	ST	SJ	ST	KI	Balance:
SJ	GB	KI	PC	SP	GB	Other:
GB	SJ	HT	LR	HT	SJ	
LR	PC	LI	GB	SI	LU	



Needles In: # _____ Time _____ Needles Out: # _____ Time _____ Any issues? _____

Tx given: _____

TxPriority 1: _____

TxPriority 2: _____

Constitution or TxPriority 3: _____

Recovery Flowsheet Rehab Flowsheet Constitutional Flowsheet Index Other _____

Source/Rationale for Other: _____

Response (& timing): _____

Response to previous Tx: _____

Follow-Up after Tx: _____

Additional Notes:

STROKE RECOVERY WORKSHEET

1.	STABILIZE QI/BLOOD FLOW TO HEAD - ALL PATIENTS, FIRST 10 DAYS	Normal BP Systolic > 160	Du 20, Yin tang, Du16 (in/out; de qi no manipulation), SP6 & PC6 (bilateral) GB 20, Lv3->Ki1, Sp 6, Du 20, Si shen cong (even, bilateral)	
1a.	STABILIZE QI/BLOOD FLOW TO HEAD - Additional concerns	Wind (seizures, shaking twitching)	St2 downward, no manipulation; GB20/31 (even)	
		Clouded	Du26 peck; P5,SSC(drain) Sp6(even)	
		Scattered	P8/K1(affected side only), R4/6 (even)	
		Agitation (tx above plus)	SSC/YT(even), ear seeds ESM, Amygdala, M. cerebral	
2.	REGULATE THE CENTER Begin with tuina (round rubbing) to restart the Qi mechanism <i>Needling technique: supplement, drain or even technique as specified. "(Pt)" indicates that the points should be drained if the patient is generally replete, supplement if vacuous, or even if not clearly one or the other.</i> <i>Alternate needling sides, with all head needles bilateral and body needles partitioned by upper/lower yin/yang. Start with hand yang on affected side on Day 1 and alternate.</i>	Constipation	General	LI4, St 37/25 (Pt); if no result add estim ST25/27
			Phlegm-heat+	LI11, St40, SP15 (drain)
			Liver Qi +	Sp15, TH6, GB34 (drain) Liv3 (Pt)
			Cold +	Warming therapy on Ren 4 + Du4
			Weak+	R4/12 (sup)
		Urinary Retention	General	R3/5/9 drain, Kid7/Ht5 (sup)
			If infection+	UB67, Lv5, GB34, Du23x3 (drain)
		Diarrhea	General	LI4, ST25, Kid3, Du20/20.5 (sup)
			Cold+	Warming therapy on R4/Du4
		Urinary incontinence	General	Du20, Kid7, R4 (sup)
			Cold+	Warming therapy on R4/ Du4
		4.	TREATMENT WORKSHEET Use this space to put together your treatment – write in points from each section as appropriate, then cross out any that are redundant. Use the space below to plan a treatment with 1-3 points on each limb, using Balance method unless bilateral needling is indicated.	1. Stabilize the head
1a. Spirit issues and/or Wind				
2. Regulate the Center				
3. Constitutional treatment (primary)				
5. Secondary Constitutional tx.				
6. Other (write rationale below)				

STROKE REHABILITATION WORKSHEET

Look and palpate for Qi xu stagnation in the channels and blood stasis in the Luo. **DO NOT NEEDLE ALL THE POINTS SUGGESTED:** use as a guide for palpation, for each channel draining the 3 most excess points (on yang channels on robust patients only) or supplementing the 2 most deficient for weak patients. In general, follow the order of points suggested, tracing the path of recovery from proximal to distal.

4a	<u>SPEECH</u>	Aphasia (can't think of the words)	Du23 Du24 Ht5 Ht7		
		Dysarthria (physical difficulty)	<u>During therapy</u>	Du23, Du24, Lower 1/5 of motor and sensory line	
			<u>Body points</u>	Ht5, Ki2, jinjin/yuye, assess Ht/ Ki/ Ren	
4b	<u>SWALLOWING</u>	<u>During therapy</u>	Lower 1/5 of motor line, sensory if needed		
		<u>Body points</u>	GB12, GB20, SJ17, Lu7, K2, palpate Ren/GB/SJ/Chong/Lu/St/K (if tight in neck, check distal wrist/ankle points to release)		
5	<u>BALANCE & TRUNK STABILITY</u>	<u>During therapy</u>	Balance points, Du20, treat central qi (see Recovery worksheet)		
		<u>Body points</u>	Du 20, see recovery worksheet, assess 8 extras		
6	<u>LOWER EXTREMITY</u>	<u>During therapy</u>	Upper 1/5 of motor line, sensory if deficit		
		<u>Key body points</u>	GB30 UB40 SP6 (supp if weak; if strong drain at Shi Xuemin location)		
		<u>Palpate channels</u>	<u>UB</u>	UB53, UB40, UB58, UB59	
			<u>ST</u>	ST31, ST36, ST 41	
	<u>GB/LV</u>	GB30, GB34, LV8, GB40>>K6, LV3			
7	<u>UPPER EXTREMITY</u>	<u>If shoulder pain:</u>	Contralateral St38, Dr. Zhu shoulder area; SI6, SI10, jian qian, also drain excess and supp def as described below		
		<u>During therapy</u>	Second 2/5 of motor line, sensory if deficit		
		<u>Key body points</u>	Ht1, Lu5, (for pain SI10, jian qian)		
		<u>Palpate channels</u>	<u>LI</u>	LI14, LI11, LI4	
			<u>LU</u>	Lu2, Lu3, Lu5, Lu9, Lu10	
			<u>SJ</u>	SJ14, SJ10, SJ6, SJ5	
<u>PC</u>	PC1, PC3, PC4				
	<u>SI</u>	SI11, SI10, SI9, trigger point on triceps below SI9, SI6, SI5, SI4			

APHASIA/DYSARTHRIA

Brief medical background:

“One of the most devastating conditions after stroke is aphasia, a disturbance in language function, which affects about 27% of all stroke patients. About half of the initially affected patients still suffer from aphasia one year after stroke. Apart from the emotional burden associated with aphasia, language dysfunction in the post-acute or chronic phase after a stroke is a major reason for failure of vocational rehabilitation. Impaired communication ability commonly represents an obstacle to vocational and professional reintegration, thus incurring health care costs and losing potential contributors to the ‘social contract’.” (Baumgaertner et al., 2013)

Evidence basis: Overall Grade = B

NHS Grade	Citation <i>Book Title</i>	Treatment Approach <i>Study Design, Population</i>	Study Results <i>Notes</i>
POST STROKE			
1-	(Luo et al., 2008)	‘Tiao Shen Fu Yin’: Sishencong, GB14, DU24, RN23, UB15, 44, DU11, HT4 <i>RCT (N=60); Broca's aphasia</i>	(+)
1-	(L. Wang et al., 2011)	Constitutional treatment plus: Jinjin, Yuye, Speech function scalp area, RN23 <i>RCT (N=120) vs usual care alone</i>	(+)
1-	(Xu et al., 2010)	RN23, Jinjin, Yuye, GB12, 20, SJ17 <i>RCT (N=61) – DYSARTHRIA</i>	(+)
1-	(H. M. Zhang, 2007)	‘Cluster needling’ - threading parallel lines 1 & 2 cun outside DU20-21, DU21-22, plus usual care <i>RCT (N=56) – APHEMIA</i>	(+)
1-	(G. Li & Yang, 2011)	Electrical stimulation at SJ8 <i>RCT (N=21)</i>	(+) ‘Significant’ change in signal activation of speech centers
4+	(X.-M. Shi, 2006, pp. 667-668)	Xing nao kai qiao: Du 16 (in & out); Du20; Du26 (peck until eyes water); PC6 SP6	

4+	(Flaws, 2010, p. 112) <i>The Treatment of Modern Western Diseases with Chinese Medicine</i>	Presentation: Drool flows by itself. Tongue is mostly wry & deviated. Tongue fur is thin and slimy, pulse slippery and moderate. Treatment Principle: Break phlegm and disinhibit orifices; quicken blood transform stasis. Acupoints: Du20/16, LI4 Sp6, Rn23, HT5, Du15.	
4+	(P.-X. Huang & Liu, 2008, p. 48)	B10 benefits marrow and supplements brain; Jinjin Yuye, R23 promote movement of tongue	
4+	*(Hopwood & Donnellan, 2010, pp. 112-113)	Deviation of the tongue and aphasia: Ear Shenmen; R24; D15; HT5 Loss of voice: PC11, LI17	
4	V. Scheid *(personal communication, October 10, 2011)	Important to differentiate aphasia (shen, HT organ, constitutional treatment) vs dysarthria (stiff tongue, HT channel, channel-based treatment)	

CONSTIPATION

Brief medical background:

“Constipation occurs frequently in the elderly with a prevalence as high as 28%. Its prevalence among stroke patients is even higher, ranging from 30% to 60%. Such large difference in the results can be attributed to the adoption of different time points, use of different diagnostic criteria for constipation, and the enrollment of patients with different characteristics.” (Su et al., 2009)

Evidence Basis: Overall Grade = B

NHS Grade	Citation Book Title	Treatment Approach Study Design, Population	Study Results Notes
ACUTE STROKE			
1-	(Xiao et al., 2011)	Acupoints: LU11, LI1, ST40, ST25, SJ6, plus others. <i>RCT (N=160) – Phlegm-heat syndrome only</i>	(+) Best results with acupuncture plus herbal therapy
GENERAL POPULATION			
1-	(C. W. Wang et al., 2010)	ST25 deep needling with electrical stimulation <i>RCT (N=95) – FUNCTIONAL CONSTIPATION</i>	(+)
1-	(Z. L. Zhang et al., 2007)	Electroacupuncture at SJ6 for cases of Qi stagnation or deficiency <i>RCT (*N=35)</i>	(+)
2	(Ding et al., 2009)	Acupuncture and moxibustion on two alternating groups of acupoints. Group one: ST25, SP15, SP15, RN6, RN4, ST36, ST37. Group two: BL25, UB23, UB31-34; Sishencong. <i>RCT (N=30)</i>	(+)
2	(L. J. Wang & Wang, 2011)	Alternating point sets: Set 1: Tianshu (ST 25), Daheng (SP 15), Qihai (CV 6), Guanyuan (CV 4), Zusanli (ST 36), Shangjuxu (ST 37) and Sanyinjiao (SP 6). Set 2: Zhongliao (BL 33), Xialiao (BL 34), Dachangshu (BL 25), Shenshu (BL 23) and Pishu (BL 20). All treatments: Qihai (CV 6), Zusanli (ST 36), Dachangshu (UB 25) and Pishu (UB 20) <i>RCT (N=100, Acupuncture vs Acu & Moxa)</i>	(+) Acupuncture & Moxa better than acupuncture alone

4+	(X.-M. Shi, 2006, p. 669)	ST40 bilateral 1 cun reducing, twirling 1 minute ST28/29, Waishuidao (EX-CA4)/Waiguilai (EX-CA5) oblique 1.5-2 cun medial/inferior reducing (with exhale) 1 minute; retain 20 minutes. "Most of the patients will move the bowels 1 hour after the acupuncture session, and the bowel movements will be normal after one consecutive week of acupuncture treatments"	
4+	(X. M. Shi, 2011)	ST36/40 for constipation of any etiology.	
4+	(Deadman et al., 2007)	ST: 22/25/37/40/41/44 SP: 2/3/5/13/15/16 UB: 25/26/27/28/32/33/34/39/51/56/57 KI: 1/4/6/7/14/15/16/17/18 TE: 5/6, Gb27/34, Liv1//2/3/13, CV: 6	
4+	(Maciocia, 2008)	Heat: Li4/11, Sj6, St28/29/44, Sp14/15 Liv Qi Stagnation: R6/10, GB34, 4 gates, Sp15 Deficiency: St36, Sp6/15, R4, UB21/23/25, K3/6/7 Cold: R6/8, KI8, Ub23/25/26	

DYSPHAGIA

Brief Medical Background:

“(Dysphagia) is one of the causes of morbidity following a cerebrovascular accident. The evaluation of swallowing disorders and their rehabilitative modalities are evolving topics. The benefit to the patient, in terms of improvement in quality of life, cannot be underestimated. Many studies have attempted to assess the utility and efficacy of the various methods used to tackle the problem. As with many other neurological disorders, stroke often leads to an impairment of the swallowing mechanism. There is a proven high incidence of aspiration with the potential to cause pneumonia. This is a significant factor causing mortality in stroke. Hence, care needs to be taken by the treating stroke team to prevent this complication.

The initial management of dysphagia in stroke often consists of the insertion of a nasogastric tube (NGT). This is followed by bedside assessment of the return of normal swallowing process, and decision for NGT removal. While this suffices in most cases, occasionally there exists a doubt about aspiration.” (Radhakrishnan et al., 2013)

Evidence Basis: Overall Grade = B-

NHS Grade	Citation, Book Title	Treatment Approach / Study Design - population	Study Results / Notes
CHRONIC STROKE			
1-	(Akamatsu et al., 2009)	Electrical stimulation to ST36 and KD3 to decrease latency time in swallowing reflex <i>RCT (N=12)</i>	+
GENERAL STROKE			
1-	(Z. Huang et al., 2010)	Acupuncture (GB20, LI18, forehead needles, plus others) vs electrical stimulation vs rehabilitation <i>RCT (N=97)</i>	(+)
1-	(Jing et al., 2007)	Shallow needling of RN23 vs deep needling of RN23 vs multiple deep needles at RN23 <i>RCT (N=111)</i>	(+) Deep needling better than shallow; multiple deep needles better than single
1-	(M. Li et al., 2009)	Comparison of two different groups of acupuncture points: five-needle-in-nape (DU15, UB10, Zhiqiang) vs RN23, HT5, KD6 <i>RCT (n=60)</i>	(+) FNN versus other group
4+	(X.-M. Shi, 2006, p. 671)	GB20 2.5-3 cun towards larynx ‘by vibrating slowly’, then reinforcing with high frequency/small amplitude. Then TH17/GB12, same technique	
4+	(Flaws, 2010, p. 112)	For deviated mouth, ST4, Rn24 Du26.	
4+	(X. M. Shi, 2011)	GB20/12, SJ17	Cf Great Compendium

DYSPHORIA

(Depression, Anxiety, Frustration, Low Motivation; see also FATIGUE)

Brief medical background:

“Post stroke depression (PSD) is a common complication of stroke that negatively interferes with outcome of stroke patients. Patients with PSD has [sic] more functional disability, poorer rehabilitation outcomes, reduced quality of life and increased mortality. According to previous published data, mainly from developed countries, PSD has a high prevalence among stroke patients, ranging from 20 to 50%. The report also indicate that depression persists 3–6 months after stroke.” (W.-N. Zhang et al., 2013)

“Apathy and depression are important neuropsychiatric symptoms that can occur after a stroke and may be the core symptoms in some stroke patients. It has been reported that in the acute phase of a stroke, 15.2-71% of patients demonstrate apathy. Three to six months after a stroke the incidence of apathy has been reported to be 26.7% versus 5.4% in controls. Cognitive dysfunction has been found to be related to apathy; however, some patients with moderate to severe dementia do not show apathy so cognitive dysfunction per se does not produce apathy. Some patients with post-stroke depression develop apathy; however, apathy should probably be regarded as different from depression and it requires distinct prognostic and therapeutic strategies. For example, it has been found that in patients with a stroke, crying and sadness were associated with a subjective feeling of depression whereas apathy was not. The situation may be more complex, however, as a relationship between depression and apathy could develop over time. A recent study found that 3 months after a stroke there was no significant overlap between apathy and depression, but one year later there was a significant overlap.” (Yang et al., 2013)

Evidence Basis: Overall Grade = B

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
POST-STROKE			
1-	Chou, 2009	Cognitive impairment and QOL: electroacupuncture at PC6 and HT7 <i>RCT (n=38)</i>	+
1-	(He & Shen, 2007)	PC6, DU26, DU20, YT, plus SP6 affected side for depression <i>RCT (n=256)</i>	(+) CF xing nao kai qiao
1-	(Dong et al., 2007)	'Point-through-point' electroacupuncture for depression <i>RCT (n=108)</i>	(+)
1-	(H. J. Li et al., 2011)	DU20, Yintang, Sishencong, LV3 <i>RCT (n=43) verum vs fluoxetine + minimal needling non-acupoints</i>	(+)
1-	(S. K. Liu et al., 2006)	Sishencong, Anmian, PC6, HT7, ST36, SP6, LV3, KD6, UB62 <i>RCT (n=560) acupuncture versus Prozac 20mg</i>	(+)

1-	(Nie et al., 2011)	Acupuncture (with moxa) at RN12, LV13, ST36, SP9, UB20, and UB21 <i>RCT (n=63) acupuncture vs fluoxetine 20mg</i>	(+)
1-	(J. P. Wu, 2010)	Sishencong, DU20, DU24, plus pattern differentiation <i>RCT (n=300) vs fluoxetine 20mg</i>	(+)
1-	(P. Wu & Liu, 2008)	Anxiety: electroacupuncture at DU20, DU24, YT, DU26, LI4, LV3, HT7, PC6 <i>Control trial (n=67) verum vs alprazolam for anxiety</i>	(non-inferior)
1-	(Guo et al., 2009)	Depression, cognition and quality of life with Ling Gui Ba Fa (stems and branches) acupuncture <i>RCT (N=80 men only), acupuncture vs Sertraline</i>	(+)
GENERAL POPULATION			
4+	(X. M. Shi, 2011)	Liv3 LI4 for dysphoria, also hyperlipidemia. SP6 Rn4 PC6 yintang Du20. Technique: peck yintang (will leave these in to prevent suicide); supplement SP6.	
4+	*(Deadman et al., 2007) <i>A Manual of Acupuncture</i>	H5, Liv5; Melancholy P4, Lu3, Sp5	
4	(Zhu & Siu, 2007, p. 3) <i>Color Atlas of Zhu's Scalp Acupuncture</i>	Head and face area; Upper jiao area	

FATIGUE

Brief medical background:

“Fatigue is a common and distressing consequence of stroke. Its aetiology is poorly understood. Fatigue starts early after stroke and is more common in patients with minor stroke than transient ischaemic attack, indicating that the stroke lesion itself may contribute to its development. Some studies have reported an association between post-stroke fatigue (PSF) and stroke lesion location...The presence of brain changes associated with ageing [atrophy and white matter lesions (WML)] may also contribute to the development of fatigue....Significant fatigue has been reported in over 50% of patients on admission, 59% of patients at 10 days and 92.3% of patients (95% confidence intervals 78.3-100) at 1 month after stroke. This early period is a critical one for starting rehabilitation, and if fatigue delays rehabilitation it may worsen prognosis.” (Kutlubaev et al., 2013)

Evidence Basis: Overall Grade = D (no studies of acupuncture for fatigue in stroke)

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
4+	(Maciocia, 2008)	<p><u>Def:</u> (LU): Lu9, St36, R6/12/17, Ub13/43, Du12, Sp6 (SP) Sp3, St36, R12, Ub17/20/21, St44, Du20 (HT) 5/6/7, P6/7, Ub15, R4/6/14/15, Du14, K3/6 (Ki Yang def) K3/7, R4, Ub20/23, Sp6 (Blood def) H7, P6, R4/14/15, Ub17/18/20, St36, Sp6, Liv8 (Liv yin def) R4, Liv8, Sp6, St36 (Ki yin) K3/6, Lu7, R4, Ub23/52 <u>Excess:</u> (Liv Qi Stag) Gb34, Liv3/13/14, P6, Sj6 (Liv Yang Rise/Fire/Wind) Liv2/3/8, Sp6, Ki3, R4, P7, Ht7, Du16, GB20, Si3, Ub62 (Phlegm) R12, St36, Ub20, St8, Du20, Lu5 (Damp) Sp6/9, Ub22, R9, Lu7, Li4/11, Ub20, R12</p>	
4	(Zhu & Siu, 2007, p. 4)	Middle jiao area	

Additional Approaches

INCONTINENCE (FECAL)

Brief medical background:

“Bowel dysfunction is a common and distressing condition after stroke, but there are virtually no intervention studies in this important clinical area. Fecal incontinence (FI) affects $\geq 56\%$ of individuals acutely after stroke, 11% at 3 months, and $\geq 22\%$ at 12 months. Constipation is recognized as a serious problem in clinical practice, affecting 60% of those in stroke rehabilitation wards. FI may develop months after acute stroke and can be transient, consistent with constipation overflow as a possible cause” (Harari et al., 2004).

Recent research has used electrical stimulation of sacral and tibial nerves (at Kid7) for fecal as well as urinary incontinence.

Evidence Basis: (Overall grade is B including tibial nerve stimulation, otherwise D)

NHS Grade	Citation, <i>Book Title</i>	Treatment Approach <i>Study Design, Population</i>	Study Results / Notes
1+	(Thomas et al., 2013)	Electrical stimulation of tibial nerve (percutaneous and transcutaneous) <i>Review (13 studies, N=273)</i>	+ Studies were heterogeneous and quality was variable
1	(George et al., 2013)	30 minutes of percutaneous electrical stimulation of tibial nerve (ie e-stim at KD7) <i>RCT (N=30)</i>	+
1	(Booth et al., 2013)	30 minutes of percutaneous electrical stimulation of tibial nerve (ie e-stim at KD7) <i>RCT (N=30)</i>	(+) Significant in urinary incontinence, strong trend in FI (p=0.1)
3	Scaglia M, 2009	Acupuncture at UB32/35 <i>Pre/post (N=30)</i>	+
4	*(Wiseman et al., 1996, p. 196)	Kidney Yang xu: periodic discharge of slimy stool; physical cold, fear of cold, reduced eating, frequent voidings of clear urine; pale enlarged tongue with white fur; pulse sunken and fine. UB23/20, ST36, Liv13, ST25, Moxa Du4/R4/R12 Vacuity fall: involuntary passing of stool without awareness; dull shen; Qi xu including poor appetite, palpitations, SOB, low voice, bright white complexion; swollen scalloped pale tongue; sunken fine forceless pulse.	

		GV20/1, UB25/57, SP6, CV6 (supplementing needle and moxa)	
4	*(O'Connor & Bensky)	Raise the yang Qi and activate the area: Du1/20, UB57; UB30 Ear: distal segment of rectum; subcortex	

INCONTINENCE (URINARY)

Brief background:

Urinary incontinence (UI) is common among stroke survivors and is associated with higher levels of mortality, disability, and discharge to institutional care than in continent survivors. In previously continent stroke survivors at 1 week, UI was found in 35% in one study . Higher rates have been found at the time of maximum stroke severity [4] and in older people. These rates have been shown to decline to as low as 19% by 6 months although half of those who were incontinent at presentation died during that time. Being younger, having a lacunar stroke and greater functional independence are associated with an increased likelihood of regaining continence. Other factors that influence continence in stroke include cognitive impairment, the ability to communicate, mobility and conscious level. (Wilson et al., 2008)

Evidence Basis: Overall Grade = B-

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
1-	(H. L. Liu & Wang, 2006)	RCT (n=82) moxibustion with ginger and salt at CV8	(+)
4+	(X.-M. Shi, 2006, pp. 669-670)	CV3 perpendicular 1-1.5 cun reinforcing 1 minute SP6 perpendicular 2.5-3 cun reinforcing 1 minute, then <u>reducing</u> 1 minute	Same treatment for retention and incontinence
4+	(Zhu & Siu, 2007, p. 4)	Lower jiao area	
4+	(Deadman et al., 2007)	Lu5,St22, Sp6/9/11, Ht5,/7/8, Ub23/26/27/28/32/39/40, Ki3/6/11, Gb34/41, Liv1/2/3/8/9/10, R1/2/4	
4+	(Maciocia, 2008)	Qi def: Lu7,UB13/23/53, Du 12/20 Sp def: Ub20,St36, R12 Ki yang def: Ub23/28,Du4,K7, R4 Yin def: R4,K3, Sp6 Liv Fire: Liv2,Ht7,yin tang, Sp6	

INSOMNIA

Brief medical background:

“In addition to physical and cognitive impairment, the occurrence of sleep disorders is an important aspect that needs to be considered in the clinical approach to patients with stroke. The rehabilitation process, for example, which occurs from the initial stage following the stroke, is continuous and prolonged in many cases, and may be compromised if patients experience poor sleep quality or sleep disturbances, mainly because sleep is a function that interferes significantly in the learning and memory consolidation processes. Studies on patients with stroke show the occurrence of disturbed sleep, the main disorder being obstructive sleep apnea syndrome, which occurs in 60% to 90% of patients. Complaints of insomnia and excessive daytime somnolence are also found in this clinical population. Campos et al. (2005) showed various episodes of dozing at different times and poor sleep quality in chronic stage stroke patients.” (Rocha et al., 2013)

Evidence Basis: Overall Grade = D (more studies to come)

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
4+	*(Maciocia, 2008)	<p><u>Deficiency:</u> <i>(Blood):</i> St36, Sp6, H7, R14, Ub15, Yin Tang <i>(Yin):</i> Ht7, Ub15, R14, Sp6, St36, R4 <i>(HT/KI disharm):</i> Ht 6 red, All reforc: Ht7, P7, R4/15, Sp6, K3/6, Ub15/23/44/52 <i>(Ht/Gb Def):</i> Ht7, GB40 <i>(Liv yin def):</i> Liv8, R4, Sp6, K3/6, Ub15/23/44/52</p> <p><u>Excess:</u> <i>(Liv Fire) Red.</i> Liv2/3, Gb12/13/15/20/44, Sp6, Ub18, Du 24, Ub1/4/7/62, K6 <i>(Ht Fire):</i> Ht 7/8, Sp6, Li11, R15, Du 19 Ub15/44 <i>(Phlegm Heat):</i> St40, R9/12, Ub20, Sp6/9, Li11, St8, Gb12, St45, Sp1 <i>(Residual Heat in Diaphragm) :</i> Lu10, H8, Ub17, St40, Li11, Sp6, R15</p>	

MOTOR IMPAIRMENT – HEMIPARESIS, HEMIPLEGIA

Brief medical background:

“Following a stroke, patients frequently suffer severe disability and marked limitations in activities of daily living. Postural instability is one of the major deficits following a stroke, with associated increased risk of fall; a consequence of this problem is reduced mobility, increased disability and even mortality. Stroke subjects who retain the ability to stand show delayed and disrupted equilibrium reactions, exaggerated postural sway in both sagittal and frontal planes, reduced weight-bearing on the paretic limb and increased risk of falling. The clinical and social impact of postural instability has produced a great deal of research in this field that allowed the development of several functional tests and laboratory methods (posturography) to explore the extent of balance dysfunction.” (Sawacha et al., 2013)

Evidence Basis: Overall Grade = D

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
4+	(Flaws, 2010, pp. 111-112)	Boost qi transform stasis, extinguish wind and free flow of channels/vessels. Du20/16 (drain), LI4, SP6 (sup). In mild cases, there is numbness; in severe cases, no sensitivity. Body and limbs are paralyzed and weak. Tongue purple dark, fur white slimy. Pulse slippery, moderate, forceless. "According to Ling Shu, fengfu/bai hui govern flow if Qi and blood in sea of marrow. When drained, they transform stasis, extinguish wind, transform phlegm in the head. Supplementing LI4 boosts Qi, SP6 nourishes blood; together they harmonize yin/yang, free the luo."	
4+	(Jarrett, 2003, p. 41)	Course channels free collaterals GB20 H1 Lu5 LI4 baxie SJ5 LI11/15 p39: XNKQ above plus: clenched fingers p39 add LI4; inability to extend/stretch add LI11; Pei-xin: needle LI4 towards LI3, drain lift thrust; drain baxie with lifting, thrusting and rotation; drain SJ5 with lifting thrusting; supplement GB20 with rotation drain H1 Lu5 with lifting thrusting.	

MOTOR IMPAIRMENT – LOWER EXTREMITY

Brief medical background:

The ability to walk at the speeds and distances needed for home and community ambulation is an especially important and readily measured outcome after hemiplegic stroke and spinal cord injury (SCI). Six months after stroke, patients with persistent hemiparesis walk approximately one third as fast and only 40% the distance of age-matched healthy persons. (Dobkin et al., 2004)

Evidence Basis: Overall Grade = C

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
1-	(G. Liu et al., 2010)	Electroacupuncture at UB20, 23, 24, 25, and individual points, to evaluate effect on gait biomechanics <i>RCT (n=21) vs usual care alone</i>	(+) NS for Fugl-Meyer and BI, significant for 'single-foot supporting phase'
4+	(X. M. Shi, 2011)	ST30. UB40 is main point; also SP6b - behind tibia to waken the luo, move local blood stasis Weak vastus medialis weak: surrounding needles. Tibia - tendinomuscular meridian. GB34/39 plus ashi for pretibial myoatrophy. SP6b & GB40=>K6 for strephenopodia (spastic ankle eversion)	
4+	(X.-M. Shi, 2006, p. 670)	Strephenopodia and Foot drop: needle GB40 3 cun perpendicular through to KD6, even method	
4+	(Flaws, 2010)	4-6 points from: ST31/32/36/41; GB30/31/34/39. Contraction of knee, UB40 Liv8. Swelling/numbness of toes, Ba feng. Leg/foot twist to inside, SP4/6, KD3/6. If to outside, GB39/40, UB60/62. If foot bends downward, ST41/37, GB40, Liv4.	
4+	(Jarrett, 2003)	SP6 B40 GB31/34 drain with lifting/thrusting; UB30 manipulate until electrical sensation reaches toes UB60 drain with rotation. Club foot: KD9 UB60 ST41 GB40	
4+	(Hopwood & Donnellan, 2010, p. 111)	Yang: GB30/31/34, ST31 B36 Bafeng; Yin SP10/6, Lv2, Ki3 Bafeng; Sp9 if edema	
4+	(Zhu & Siu, 2007, p. 6)	Lower limb area	
4	(Y. Zhang, 2004)	Effect of needling technique used at UB54	Direction of needling affects efficacy of point - needle along the channel for lower limb flaccidity

MOTOR IMPAIRMENT – UPPER EXTREMITY

Brief medical background:

“Recovery of upper extremity movement and function is a major concern facing individuals who have upper extremity paresis after stroke. Of the 80% of patients experiencing acute paresis of the upper extremity after stroke, only approximately one-third achieve full functional recovery. Predicting functional recovery for these patients is highly important to provide focused, cost-effective rehabilitation. Although there are several good models for predicting mortality, life satisfaction, discharge destination, or likelihood of independent function, only a few models have tried to predict recovery of upper extremity function specifically.... We have recently found that the simple measure of active range of motion (AROM) can account for 82% of the variance in upper extremity function in people with hemiparesis <1 month after stroke.” (Beebe & Lang, 2009)

Evidence Basis: Overall Grade = B

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
1-	(Cheng et al., 2011)	Acupuncture at TH3 and TH5 plus usual rehab <i>RCT (n=60), vs usual rehab alone</i>	(+)
1-	(Shang et al., 2008)	LI15, SJ14 <i>RCT (n=120), acupuncture alone vs usual rehab alone vs both</i>	(+)
3	(L. C. Wang et al., 2008)	Hand spasm: PC6, lifting/thrusting/twirling (or rapidly twirling) five minutes, twice per day plus usual rehab <i>RCT (n=172) 5 arms randomized to different treatments, no placebo control</i>	(+)
4+	(Deadman et al., 2007)	Atrophy - TH10 Contraction-St32, LI15, Si4 No AROM - Lu5/6, LI13/14/15/16, St12, SI2/9, TE2/13, GB20/22/29 Liv13 Paralysis -Li10, P3, Sj5,Sj8/14 Weak - Li14, Si10	
4+	(Flaws, 2010)	3-5 points from: LI15/14/11/10, TH5. For contraction: PC5/6, Lu5. Difficult flexion of wrist: TH4. Thumb: LI5. Swelling or numbness of fingers: Ba xie.	
4+	(X. M. Shi, 2011)	LI11 Ht1 Lu5 LI4. 3 yin channels = ulnar, radial, median nerves.	
4+	(Zhu & Siu, 2007, p. 6)	Upper limb area	
4+	(Hopwood & Donnellan, 2010, p. 111)	Extensors (Yang aspect): GB21 LI15/11 TH5, GB10 Baxie (&LI17); p111 Flexors (yin aspect): LU10 PC8 H8 Baxie	
4+	(X.-M. Shi, 2006, p. 670)	Frozen shoulder: LI15 + 2 cun either side, 1.5-2 cun obliquely towards the articular cavity with reducing method, retain 20 minutes. Cupping/bleeding on painful points, up to 2-3ml per day.	

PAIN

Brief medical background:

“Central post-stroke pain (CPSP) is a neuropathic pain syndrome that can occur after a cerebrovascular accident. This syndrome is characterised by pain and sensory abnormalities in the body parts that correspond to the brain territory that has been injured by the cerebrovascular lesion. The presence of sensory loss and signs of hypersensitivity in the painful area in patients with CPSP might indicate the dual combination of deafferentation and the subsequent development of neuronal hyperexcitability. The exact prevalence of CPSP is not known, partly owing to the difficulty in distinguishing this syndrome from other pain types that can occur after stroke (such as shoulder pain, painful spasticity, persistent headache, and other musculoskeletal pain conditions).” (Klit et al., 2009)

“Glenohumeral subluxation (GHS) is a frequent complication in patients with post-stroke hemiplegia: it is reported to be present in 17–66% of patients with hemiplegia following stroke. GHS usually develops immediately after stroke when flaccid paralysis prevents normal muscle response and stabilizing mechanisms to loading. Although emphasis has been placed on the reduction of GHS and several studies were aimed at the treatment of the hemiplegic GHS, its role among post-stroke complications is still controversial. Some investigators found an increased incidence of sympathetic reflex dystrophy in the upper limb associated with GHS and others found a correlation between GHS and rotator cuff injury. Some investigations reported dysfunction of brachial plexus and other peripheral nerves in patients with GHS, but other studies have not found evidence of that. Moreover, the relation between GHS and shoulder or arm pain is still debated.” (Paci et al., 2005)

Evidence Basis: Overall Grade = C

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
POST-STROKE THALAMIC PAIN			
2-	(Jiang et al., 1999)	Electroacupuncture at Huatuoji points <i>Case control (n=60) vs carbamazepine</i>	noninferior
4+	(Oleson, 2013)	Thalamus, Brain, Master Cerebral, Zero, Shenmen	
POST-STROKE SHOULDER PAIN			
2	* (Lu et al., 2010)	Electroacupuncture at LI15, SJ14, SI9 plus individual points plus rehabilitation, versus rehabilitation alone <i>Case control (n=60)</i>	(+)
4+	(X. M. Shi, 2011)	GB34/SP9, SI14/15, supplement or disperse according to palpation and strength of patient	
4+	(Zhu & Siu, 2007, p. 6)	Shoulder area	
4+	(Hopwood & Donnellan, 2010, p. 111)	Subluxation: eyes of shoulder, SI11, LI11, SJ9, ba xie	

URINARY RETENTION

Brief medical background:

Fifty-one consecutive patients with recent unilateral, ischemic, hemispheric stroke admitted to a neurorehabilitation unit were studied prospectively to determine the causes of post-stroke urinary retention. Elevated post-void residual urine volumes (PVR) were correlated with position of voiding (in bed or on commode), presence of incontinence, infarct location, and functional status. Urodynamic studies and cystoscopy were performed on all patients with elevated PVR. Twenty-two patients (43 percent) had elevated PVR. Urinary retention was associated with large infarcts, urinary incontinence, and functional disability ($p < 0.05$), but not with age, sex, side of stroke, time from stroke to study entry, or position of voiding. Urodynamic studies revealed bladder outlet obstruction in 32 percent, bladder hyporeflexia in 27 percent, and combined bladder outlet obstruction and bladder hyporeflexia in 5 percent. Of eight patients in whom urodynamic studies and cystoscopy did not reveal an obvious cause for urinary retention (bladder hyperreflexia in 27 percent, normal study in 9 percent), seven were either aphasic or demented. We conclude that there are multiple causes of urinary retention following acute stroke. In cognitively impaired or aphasic patients, PVR may not provide an accurate indicator of urinary retention. (Gelber et al., 1994)

Evidence Basis: Overall Grade = B-

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
1-	(Yun et al., 2007)	RCT (n=39) moxibustion RN3, 4, 6	(+)
4+	(X.-M. Shi, 2006, pp. 669-670)	CV3 perpendicular 1-1.5 cun reinforcing 1 minute SP6 perpendicularly 2.5-3 cun reinforcing 1 minute, then <u>reducing</u> 1 minute	Same treatment for retention and incontinence
4+	(Hicks, 2013)	Lu Heat: Lu5,7,R3, LI11 Ht Heat: H8, Si2, R3, Ub28, Ki2 Mid/low Damp heat: R3/12, UB20/22/28, Sp6/9, R3, Central Qi def: Du20, R6/12, Ub20/28, Sp6, R3 Stag of Essence: Sp6/10, Ub17, Liv5, R6, St 29 Ki yang def: Ub23/28, du4, R4	
4+	(X. M. Shi, 2011)	UB54, towards perineum. For Cystitis, Rn4/SP6.	
4+	(Zhu & Siu, 2007, p. 4)	Retention: Lower jiao area UTI: add lower abdomen area	

WIND

Brief medical background:

Deviated eyes: “The spontaneous horizontal deviation of the eyes is a striking symptom in acute stroke. Correspondingly, its evaluation is part of different clinical stroke scales, including the National Institutes of Health Stroke Scale, the European Stroke Scale, or the Scandinavian Stroke Scale.” (Berger et al., 2006) “Conjugate eye deviation, sustained shift in horizontal gaze toward the affected hemisphere, is a well-recognized finding in acute stroke. Several supranuclear lesions, such as in the cortical frontal eye fields or in the brainstem paramedian pontine reticular formation, can cause conjugate eye deviation.” (Simon et al., 2003)

Facial and tongue deviation: “Bilateral strokes involving the pyramidal tract may produce supranuclear or pseudobulbar palsy without significant somatic motor dysfunction. However, recent reports have shown that unilateral lesions may cause supranuclear dysarthria with or without lower facial paresis, without significant motor weakness. These case reports have been described under various headings, including isolated facial palsy, supranuclear facial palsy, pure dysarthria, and isolated dysarthria.¹⁰” (Kim, 1994)

Evidence Basis: Overall Grade = D

NHS Grade	Author, Year (or Text)	Approach	Results/Notes
4+	(Deadman et al., 2007)	Du16,P7, Ub11/12/13/4567, Li6, Lu10,M-LE-34,LI 15 (<i>Windstroke</i>) LI 10/15, St36, Ub15/23/40, P6/8/9, GB2/13/15/21/40, Liv2, Du16/20, R4, Si Shen Cong, Shixuan, Ub62, P5	
4+	(Jarrett, 2003)	Deviation of mouth/eyes: GB20 taiyang ST4/7 LI4; Benefit marrow supplement brain course/regulate sinew vessels; supplement GB20 to benefit marrow supplement brain. Taiyang towards ST6. Drain ST6/7. Drain LI4 on unaffected side to fortify spleen transform dampness, course sinew channels	
4+	(X. M. Shi, 2011)	ST2 for wind: needle downward to go deeper. For epilepsy (incl caused by hemorrhage): R12, ST2, SI3, B62, Du1, Yintang. Technique: Lift/thrust, don't turn. SI3, use the crease. UB62, just tap in. Rationale: ST2 moves Qi/Blood in Yangming, also use to move blood/remove stasis (ST36 is overused).	
4+	(Hopwood & Donnellan, 2010)	Pathogenic wind GB20/12, SJ17	

REFERENCES

- Akamatsu, C., Ebihara, T., Ishizuka, S., Fujii, M., Seki, K., Arai, H., . . . Seki, T. (2009). Improvement of swallowing reflex after electrical stimulation to lower leg acupoints in patients after stroke. *Journal of the American Geriatrics Society*, *57*(10), 1959-1960. doi: 10.1111/j.1532-5415.2009.02470.x
- Baumgaertner, A., Grewe, T., Ziegler, W., Floel, A., Springer, L., Martus, P., & Breitenstein, C. (2013). FCET2EC (From controlled experimental trial to = 2 everyday communication): How effective is intensive integrative therapy for stroke-induced chronic aphasia under routine clinical conditions? A study protocol for a randomized controlled trial. *Trials*, *14*, 308. doi: 10.1186/1745-6215-14-308
- Beebe, J. A., & Lang, C. E. (2009). Active range of motion predicts upper extremity function 3 months after stroke. *Stroke; a journal of cerebral circulation*, *40*(5), 1772-1779.
- Berger, M. F., Pross, R., Ilg, U., & Karnath, H. (2006). Deviation of eyes and head in acute cerebral stroke. *BMC neurology*, *6*(1), 23.
- Booth, J., Hagen, S., McClurg, D., Norton, C., MacInnes, C., Collins, B., . . . Tolson, D. (2013). A feasibility study of transcutaneous posterior tibial nerve stimulation for bladder and bowel dysfunction in elderly adults in residential care. *Journal of the American Medical Directors Association*, *14*(4), 270-274.
- Cheng, X. K., Wang, Z. M., Sun, L., & Li, Y. H. (2011). [Post-stroke hand dysfunction treated with acupuncture at Zhongzhu (TE 3) and Waiguan (TE 5)]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, *31*(2), 117-120.
- Deadman, P., Al-Khafaji, M., & Baker, K. (2007). *A manual of acupuncture*. : California: Eastland Press.
- Ding, S. Q., Ding, Y. J., & Wang, X. F. (2009). [Study on thirty patients with slow-transmission constipation treated by acupuncture and moxibustion]. *Zhongguo Zhong xi yi jie he za zhi Zhongguo Zhongxiyi jiehe zazhi = Chinese journal of integrated traditional and Western medicine / Zhongguo Zhong xi yi jie he xue hui, Zhongguo Zhong yi yan jiu yuan zhu ban*, *29*(11), 1031-1034.
- Dobkin, B. H., Firestine, A., West, M., Saremi, K., & Woods, R. (2004). Ankle dorsiflexion as an fMRI paradigm to assay motor control for walking during rehabilitation. *NeuroImage*, *23*(1), 370-381.
- Dong, J. P., Sun, W. Y., Wang, S., Wu, Z. Q., & Liu, F. (2007). [Clinical observation on head point-through-point electroacupuncture for treatment of poststroke depression]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, *27*(4), 241-244.
- Flaws, B. (2010). *The treatment of modern Western diseases with Chinese medicine : a clinical manual*. Boulder, CO: Blue Poppy Press.
- Gelber, D. A., Jozefczyk, P. B., Good, D. C., Laven, L. J., & Verhulst, S. J. (1994). Urinary retention following acute stroke. *Neurorehabilitation and neural repair*, *8*(2), 69-74.
- George, A., Kalmar, K., Sala, S., Kopanakis, K., Panarese, A., Dudding, T., . . . Vaizey, C. (2013). Randomized controlled trial of percutaneous versus transcutaneous posterior tibial nerve stimulation in faecal incontinence. *British Journal of Surgery*, *100*(3), 330-338.
- Guo, R. Y., Su, L., Liu, L. A., & Wang, C. X. (2009). [Effects of Linggui Bafa on the therapeutic effect and quality of life in patients of post-stroke depression]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, *29*(10), 785-790.
- Harari, D., Norton, C., Lockwood, L., & Swift, C. (2004). Treatment of constipation and fecal incontinence in stroke patients randomized controlled trial. *Stroke; a journal of cerebral circulation*, *35*(11), 2549-2555.
- He, J., & Shen, P. F. (2007). [Clinical study on the therapeutic effect of acupuncture in the treatment of post-stroke depression]. *Zhen ci yan jiu = Acupuncture research / [Zhongguo yi xue ke xue yuan Yi xue qing bao yan jiu suo bian ji]*, *32*(1), 58-61.

- Hicks, A. (2013). *Principles of Chinese medicine* (2nd ed.). London: Singing Dragon.
- Hopwood, V., & Donnellan, C. (2010). *Acupuncture in neurological conditions*. Edinburgh: Churchill Livingstone.
- Huang, P.-X., & Liu, M.-C. (2008). *Stroke and Parkinson's Disease*. Beijing, PRC: People's Medical Publishing House.
- Huang, Z., Huang, F., Yan, H. X., Min, Y., Gao, Y., Tan, B. D., & Qu, F. (2010). [Dysphagia after stroke treated with acupuncture or electric stimulation: a randomized controlled trial]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 30(12), 969-973.
- Jarrett, L. S. (2003). *The clinical practice of Chinese medicine*. Stockbridge, Mass.: Spirit Path Press.
- Jiang, Z., Li, C., & Li, Y. (1999). Treatment of postapoplectic thalamic spontaneous pain by electroacupuncture at huatuojiaji points. *Journal of traditional Chinese medicine = Chung i tsa chih ying wen pan / sponsored by All-China Association of Traditional Chinese Medicine, Academy of Traditional Chinese Medicine*, 19(3), 195-199.
- Jing, B., Bao-dong, L., Zhi-yong, W., Wei-bin, G., & Wang, L. C. (2007). [The role of different needling manipulation in adjusting swallow-period obstacle of dysphagia after stroke]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 27(1), 35-37.
- Kim, J. S. (1994). Pure dysarthria, isolated facial paresis, or dysarthria-facial paresis syndrome. *Stroke; a journal of cerebral circulation*, 25(10).
- Klit, H., Finnerup, N. B., & Jensen, T. S. (2009). Central post-stroke pain: clinical characteristics, pathophysiology, and management. *The Lancet Neurology*, 8(9), 857-868.
- Kutlubaev, M. A., Shenkin, S. D., Farrall, A. J., Duncan, F. H., Lewis, S. J., Greig, C. A., . . . Mead, G. E. (2013). CT and Clinical Predictors of Fatigue at One Month after Stroke. *Cerebrovascular diseases extra*, 3(1), 26-34.
- Li, G., & Yang, E. S. (2011). An fMRI study of acupuncture-induced brain activation of aphasia stroke patients. *Complementary therapies in medicine*, 19 Suppl 1, S49-59. doi: 10.1016/j.ctim.2010.11.004
- Li, H. J., Zhong, B. L., Fan, Y. P., & Hu, H. T. (2011). [Acupuncture for post-stroke depression: a randomized controlled trial]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 31(1), 3-6.
- Li, M., Sun, J. H., Lu, J. W., Liu, L. Y., & Geng, H. (2009). [Observation on therapeutic effect of five-needle-in-nape acupuncture for treatment of poststroke pseudobulbar paralysis dysphagia]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 29(11), 873-875.
- Liu, G., Lu, C. S., & Yuan, L. X. (2010). [Study on electroacupuncture improving the single-foot supporting phase rate of stroke patients]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 30(6), 446-448.
- Liu, H. L., & Wang, L. P. (2006). [Randomized controlled study on ginger-salt-partitioned moxibustion at shenque (CV 8) on urination disorders poststroke]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 26(9), 621-624.
- Liu, S. K., Zhao, X. M., & Xi, Z. M. (2006). [Incidence rate and acupuncture-moxibustion treatment of post-stroke depression]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 26(7), 472-474.
- Lu, J., Zhang, L. X., Liu, K. J., Wang, T., Lu, J. H., Chen, X. M., . . . Jiang, X. Y. (2010). [Clinical observation on electroacupuncture combined with rehabilitation techniques for treatment of shoulder subluxation after stroke]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 30(1), 31-34.
- Luo, W. P., Tan, J. L., & Huang, H. Y. (2008). [Clinical observation on treatment of cerebral infarction-induced broca aphasia by Tiaoshen Fuyin acupuncture therapy combined with language training]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 28(3), 171-175.
- Maciocia, G. (2008). *The practice of Chinese medicine : the treatment of diseases with acupuncture and Chinese herbs* (2nd ed.). Edinburgh ; New York: Churchill Livingstone/Elsevier.

- Nie, R. R., Huang, C. H., & Fu, W. B. (2011). [Observation of therapeutic effect on post stroke depression treated by differentiation of spleen and stomach]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 31(4), 325-328.
- O'Connor, J., & Bensky, D. *Acupuncture: A Comprehensive Text*, 1981 Eastland Press. Seattle, WA.
- Oleson, T. (2013). *Auriculotherapy manual: Chinese and Western systems of ear acupuncture*: Elsevier Health Sciences.
- Paci, M., Nannetti, L., & Rinaldi, L. A. (2005). Glenohumeral subluxation in hemiplegia: An overview. *Journal of rehabilitation research and development*, 42(4), 557.
- Radhakrishnan, S., Menon, U. K., & Anandakuttan, A. (2013). A combined approach of bedside clinical examination and flexible endoscopic evaluation of swallowing in poststroke dysphagia: A pilot study. *Annals of Indian Academy of Neurology*, 16(3), 388.
- Rocha, P. C., Barroso, M., Dantas, A. A. T., Melo, L. P., & Campos, T. F. (2013). Predictive factors of subjective sleep quality and insomnia complaint in patients with stroke: implications for clinical practice. *Anais da Academia Brasileira de Ciências*, 85(3), 1197-1206.
- Sawacha, Z., Carraro, E., Contessa, P., Guiotto, A., Masiero, S., & Cobelli, C. (2013). Relationship between clinical and instrumental balance assessments in chronic post-stroke hemiparesis subjects. *J Neuroeng Rehabil*, 10(1), 95.
- Shang, Y. J., Ma, C. C., Cai, Y. Y., Wang, D. S., & Kong, L. L. (2008). [Clinical study on acupuncture combined with rehabilitation therapy for treatment of poststroke shoulder-hand syndrome]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 28(5), 331-333.
- Shi, X.-M. (2006). *Shi Xue-min's Comprehensive Textbook of Acupuncture and Moxibustion*. Beijing, PRC: People's Medical Publishing House.
- Shi, X. M. (2011). *Acupuncture for Stroke and other Neurological Conditions Lecture conducted from the New York College of Traditional Chinese Medicine* (Vol. May, 2011). Mineola, NY.
- Simon, J. E., Kennedy, J., Pexman, J. W., & Buchan, A. M. (2003). The eyes have it: conjugate eye deviation on CT scan aids in early detection of ischemic stroke. *Canadian Medical Association Journal*, 168(11), 1446-1447.
- Su, Y., Zhang, X., Zeng, J., Pei, Z., Cheung, R. T. F., Zhou, Q. P., . . . Zhang, Z. (2009). New-onset constipation at acute stage after first stroke incidence, risk factors, and impact on the stroke outcome. *Stroke; a journal of cerebral circulation*, 40(4), 1304-1309.
- Thomas, G., Dudding, T., Rahbour, G., Nicholls, R., & Vaizey, C. (2013). A review of posterior tibial nerve stimulation for faecal incontinence. *Colorectal Disease*, 15(5), 519-526.
- Wang, C. W., Li, N., He, H. B., Lu, J. Q., & Liu, Z. S. (2010). [Effect of electroacupuncture of Tianshu (ST 25) on the rational symptoms of functional constipation patients and evaluation on its efficacy satisfaction: a single-center, prospective, practical and randomized control trial]. *Zhen ci yan jiu = Acupuncture research / [Zhongguo yi xue ke xue yuan Yi xue qing bao yan jiu suo bian ji]*, 35(5), 375-379.
- Wang, L., Liu, S. M., Liu, M., Li, B. J., Hui, Z. L., & Gao, X. (2011). [Post-stroke speech disorder treated with acupuncture and psychological intervention combined with rehabilitation training: a randomized controlled trial]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 31(6), 481-486.
- Wang, L. C., Wang, Z. Y., Kang, X. Z., & Jia, L. J. (2008). [Comparative study on effects of different acupuncture manipulation methods at neiguan (PC 6) on hand spasm in the patient of stroke]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 28(7), 503-506.
- Wang, L. J., & Wang, L. L. (2011). [Randomized controlled study on chronic functional constipation treated with grain-shaped moxibustion and acupuncture]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 31(4), 320-324.
- Wilson, D., Lowe, D., Hoffman, A., Rudd, A., & Wagg, A. (2008). Urinary incontinence in stroke: results from the UK National Sentinel Audits of Stroke 1998–2004. *Age and ageing*, 37(5), 542-546.

- Wiseman, N., Ellis, A., & Zmiewski, P. (1996). *Fundamentals of Chinese medicine* (Vol. 127): Paradigm publications Blookline, Massachusetts.
- Wu, J. P. (2010). [Clinical observation on acupuncture treatment of 150 cases of post-stroke depression according to syndrome differentiation]. *Zhen ci yan jiu = Acupuncture research / [Zhongguo yi xue ke xue yuan Yi xue qing bao yan jiu suo bian ji]*, 35(4), 303-306.
- Wu, P., & Liu, S. (2008). Clinical observation on post-stroke anxiety neurosis treated by acupuncture. *Journal of traditional Chinese medicine = Chung i tsa chih ying wen pan / sponsored by All-China Association of Traditional Chinese Medicine, Academy of Traditional Chinese Medicine*, 28(3), 186-188.
- Xiao, L., Wang, L. Y., Cui, Q., Xu, Y., & Yao, L. H. (2011). [Clinical observation of integrated acupuncture and herbal medicine for constipation of excess fu syndrome due to phlegm heat in acute cerebral infarction]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 31(5), 400-404.
- Xu, J. M., Li, H. L., Lu, H. Y., Chen, Z. G., Liu, L. Q., & Jing, S. (2010). [Effect of acupuncture on the speech and acoustics level in patients with dysarthria]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 30(7), 537-541.
- Yang, S.-r., Hua, P., Shang, X.-y., Hu, R., Mo, X.-e., & Pan, X.-p. (2013). Predictors of early post ischemic stroke apathy and depression: a cross-sectional study. *BMC psychiatry*, 13(1), 164.
- Yun, S. P., Jung, W. S., Park, S. U., Moon, S. K., Park, J. M., Ko, C. N., . . . Bae, H. S. (2007). Effects of moxibustion on the recovery of post-stroke urinary symptoms. *The American journal of Chinese medicine*, 35(6), 947-954.
- Zhang, H. M. (2007). [Clinical treatment of apoplectic aphemia with multi-needle puncture of scalp-points in combination with visual-listening-speech training]. *Zhen ci yan jiu = Acupuncture research / [Zhongguo yi xue ke xue yuan Yi xue qing bao yan jiu suo bian ji]*, 32(3), 190-194.
- Zhang, W.-N., Pan, Y.-H., Wang, X.-Y., & Zhao, Y. (2013). A prospective study of the incidence and correlated factors of post-stroke depression in China. *PloS one*, 8(11), e78981.
- Zhang, Y. (2004). The needling technique and clinical application of point Zhibian. *Journal of traditional Chinese medicine = Chung i tsa chih ying wen pan / sponsored by All-China Association of Traditional Chinese Medicine, Academy of Traditional Chinese Medicine*, 24(3), 182-184.
- Zhang, Z. L., Ji, X. Q., Zhao, S. H., Li, P., Zhang, W. Z., Yu, S. H., . . . Liu, Z. F. (2007). [Multi-central randomized controlled trials of electroacupuncture at Zhigou (TE 6) for treatment of constipation induced by stagnation or deficiency of qi]. *Zhongguo zhen jiu = Chinese acupuncture & moxibustion*, 27(7), 475-478.
- Zhu, M. Q., & Siu, M. (2007). *Color Atlas of Zhu's Scalp Acupuncture*. San Diego, CA.

SUMMARY OF TREATMENT PRINCIPLES FOR ACUPUNCTURE DURING STROKE RECOVERY

Step/Timing	Differential Diagnosis	Biomedical Events and Treatment	Treatment Principle	Scalp	Auricular	Body Needles	Tui Na
1, Regulate Cranial Qi/Blood Flow Days 2-10	Ischemic Stroke	BP and ICP needs to stay high/stable; cells in penumbra are developing cytotoxic edema d/t hypoxia	Raise clear/descend turbid	Du20/24, adjacent channel points to lesion	Master Cerebral; ipsilateral lesion location; Also Constipation or relevant Zang Fu points	~SP6/PC6 +/- Du26 pecking or HT6x ~Distal points by channel	Open sky window areas esp GB20-21; affected limbs; back shu points
	Hemorrhagic Stroke (ICH, SAH)	Bleeding should have been stabilized with low ICP (better not to interfere, but also important to know in case your help is needed and to support intention)	With caution and once stabilized, target blood flow to region, raise clear/descend turbid, gently move blood stasis	Du20/24, adjacent channel points to lesion	Master Cerebral; ipsilateral lesion location; Also Constipation or relevant Zang Fu points	~SP6/10/PC6/ HT6x ~Du26 pecking if spirit is clouded ~Distal points by channel	Open sky window areas esp GB20-21; affected limbs; back shu points
2, Restore fuction of 'Qi Machine' A, Clean up Acute Messes ASAP (can add to or combine with treatments above)	All Strokes (can alternate or combine with treatments above)	Unless stroke is mild, there will be disruption of bladder/bowel function; need to restart Qi Mechanism. If cold signs, try to warm center (hydroc packs, rice bags, or waring hands on dan tian/ming men)	Constipation: promote Qi flow in Yangming; stimulate Vagus, parasympathetic	(Zhu middle/lo wer jiao)	Constipation, sympathetic, zero, SP, LI, relevant Zang Fu points	Choose from: LI4/11, Lu7, ST36/40, ST25/26 (+estim if refractory); TH6 GB41 Kid3/4 SP6 Liv3/8, PC6	Abdominal Round Rubbing; hip rocking; shu points
			Urinary Retention: free UB flow, stimulate Sacral nerve	3x Du20, Zhu lower jiao	Sympathetic, UB	RN3/5/9, Lu7, KD7estim	Dan Tian warming, hop rocking, shu points
			Urinary Incontinence: raise Qi, strengthen KD	3x Du20, Zhu lower jiao	Sympathetic, UB	RN4/6/9, Kid3	Dan Tian warming, hop rocking, shu points
			Fecal Incontinence: raise Qi, strengthen KD, stimulate Sacral nerve	3x Du20, Zhu lower jiao	Zero, Spleen	Kid7estim plus supplement Qi/yang as appropriate	Dan Tian warming, hop rocking, shu points
			Common result of urinary retention and/or catheterization	Urinary Tract Infection	Zhu lower jiao	UB, KD, bleed ear apex venules if heat	DDX cold, heat damp! ~if cold, warm with hot pack or hands, supplement yang/qi ~If heat, clear from LV and/or KD; GB34 Rn3/5/9
Common result of dysphagia, also congested fluids (Qi ji not working)	Phlegm harrassing lung	Zhu upper jiao	Lung, LI, SP, diaphragm, constipation, bleed ear apex if heat	Choose from: Rn17, Lu5/7, LI4/11, ST36/40, SP3	Percussion at back shu points; open shoulers to diaphragm		
2, Restore fuction of 'Qi Machine' B, ID and treat underlying constitutional imbalances Anytime (can add to or combine with treatments above)	All Strokes (can alternate or combine with treatments above)	Patient presentation varies widely. The most common constitutional types are: ~Phlegm heat with Liver Qi ~Liver yang rising & yin or Blood xu ~Phlegm damp +/- obesity, edema, cardiac problems	~Is there still wind? ~How much Phlegm vs Blood Stasis? ~Supplement underlying deficiencies	Adjacent points over lesion	Zang fu points as indicated	~Wind: ST2, GB20/31, LV3->KD1 ~Circulate Qi xform phlegm: R LI4/10or11, SP6/20; L LU5/7 ST36/40 (alternate sides) ~Circulate Qi move blood: L PC3/6 GB34/40or41 R TH5or6/10, Liv 3/8, SP6x/10 (alternate sides) ~can combine or alternate phlegm/blood tx	Round rubbing shu points and chafing channels to supplement; acupressure to drain

STROKE REHABILITATION WORKSHEET – subacute and chronic (AKA Step 3: Identify and Prioritize Deficits)

In general, follow the path of recovery from proximal to distal with most focus on the area currently recovering or identified as a treatment goal by PT, OT and Speech Language therapists. Look and palpate for deficiency in the channels and blood stasis in the Luo.

Treatment Goal		Indication and Needling (key treatments in bold)		Tui Na
S P E E C H	Aphasia (can't find words)	Du15*/Ht5 ; Du20/24, Rn23; address constitution plus: phlegm +PC5; heart fire blazing +Kid2(bilateral), Ht8 PC8 (affected side)		Kneading, sinew dividing @forearm, palm
	Dysarthria (physical difficulty)	<u>During therapy</u>	Lower 1/5 of motor and sensory line (as tolerated) or Zhu head/face (Du23/24)	
SWALLOWING (Dysphagia)		<u>Body points</u>	Ht5, 6x/Kid4, also swallowing points	Grasping @ neck, traps, sky window areas
		<u>During therapy</u>	Lower 1/5 of motor line, sensory if deficit; alternate with Zhu head/face (Du23/24)	
SWALLOWING (Dysphagia)		<u>Body points</u>	GB12, GB20, SJ17, outer JJ/YY, Ren23 (can thread GB12->20)	
BALANCE & TRUNK STABILITY		<u>During therapy</u>	Jiao Balance points, Du20	Above plus: LE Liv/GB channels; lumbus, gluteus
		<u>Body points</u>	Du 20, see recovery worksheet; supplement Dai mai (GB41/31/26, Du4/Rn4)	
LOWER EXTREMITY		<u>During therapy</u>	Upper 1/5 of motor line, sensory if deficit	Liv/GB channels; lumbus, gluteus
		<u>Early Motor Return</u>	GB30; UB40 'vitalizing' intention	
		<u>Motor return or weakness</u>	ST31/36/41 (sup); if foot drop, tui na on ST line; can estim ST36-38 to twitch	Grasping, Rolling, Thumb Pressing, shaking, fouflage
		<u>Blood stasis signs (stiffness)</u>	SP6 Shi Xuemin tech: needle towards GB39, stim to disperse blood in Luo	
		<u>Stiff Ankle</u>	GB40->Kid6 (or 2 needles +estim)	Above & rotating, thumb pressing ankle w traction
UPPER EXTREMITY		<u>During therapy</u>	Second 2/5 of motor line, sensory if deficit	Palm press shoulder plus kneading & grasping traps, biceps/triceps; gentle fouflage/shaking
		<u>Key body points (motor recovery)</u>	Ht1, Lu5; LI4/11/15; TH9, Ba Xie	
		<u>Weak patient</u>	LI4/10/15 (sup)	
		<u>Shoulder Elevation, Ab/Adduction</u>	During OT: Zhu shoulder, ST38	kneading & grasping biceps, triceps
		<u>Biceps return</u>	Lu3/Jian Qian, 3rd 5 th motor line	
		<u>Triiceps return</u>	SI8.5/9 & 3rd 5 th motor line	Kneading and grasping forearm
		<u>Wrist extension</u>	TH9/5 & motor 2 nd 5 th ; + stiffness stim LI5/SI4	
		<u>Finger movement</u>	Ba Xie manual stim; stim with TH9 and motor 2 nd 5 th	Kneading @carpals; rotate fingers, wrist
		<u>Shoulder pain:</u>	Contralateral St38, Dr. Zhu shoulder area (45 degrees back from Du20; SI6, SI10/Jian qian (estim 2hz & shoulder)	Palm press shoulder plus knead & graspin traps, arm

*needle these points with extreme caution or use Tui Na