

SYNOPSIS OF SCALP ACUPUNCTURE

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THE NATURE OF SCALP ACUPUNCTURE

Scalp acupuncture is one of several specialized acupuncture techniques with a specific body location, taking its place alongside ear, nose, hand, foot, and wrist/ankle acupuncture. The more general acupuncture therapy is often called body acupuncture.

Although the scalp has numerous traditionally-identified acupuncture points along several of the major meridians (notably the stomach, bladder, gallbladder, triple burner, and governing vessel), modern scalp acupuncture differs from traditional acupuncture therapy. There are three basic features of scalp acupuncture that differentiate it from body acupuncture:

1. Treatment zones have been mapped onto the scalp that are associated with body functions and broad body regions. The zones include a few standard acupuncture points, but the treatment principle for point selection is usually not based on the traditional indication for the point or associated meridian. In general, within a defined zone, the forward part of the zone (nearer the face) is used to treat the upper body, while the rear portion of the zone is used to treat the lower body. Functional zones, such as sensory, memory, and motor, are usually located at the back and sides of the scalp.
2. In scalp acupuncture, the needles are to be inserted within a thin layer of loose tissue beneath the scalp surface, at a low angle of about 15–30 degrees, involving an insertion distance of about 1 cun [the cun is a variable unit of measure based on body size; about one inch for an adult]. Standard acupuncture of scalp points normally involves subcutaneous insertion up to a depth 1/2 cun or less (about 0.3–0.5 inches for an adult) at a high angle of 60–90 degrees.
3. For scalp acupuncture, the needles are to be subjected to rapid stimulation, which may be carried out in a variety of ways, including pulling/thrusting, twirling, and electro-stimulation. Standard acupuncture applied to scalp points usually involves less rapid stimulation or moxibustion as the main stimulation technique. When using manual manipulation in modern scalp acupuncture, it is common to stimulate the needles for 2–3 minutes at a time, with a rest period of 5–10 minutes between stimulations.

The fundamentals of scalp acupuncture therapy were reviewed by Lu Shoukang, of the Beijing College of Acupuncture, Moxibustion, Orthopedics, and Traumatology, in the *Journal of Traditional Chinese Medicine* (1). According to this review, the technique is predominantly a small-needle therapy in which *shu* points in the scalp are treated. *Shu* points refer to “stream” points where the qi of the internal organs is infused. In the system of body acupuncture, there are 5 *shu* points (one for each element) on each of the 12 meridians (below the elbow or below the knee) plus the back *shu* points, which are each located in the vicinity of one of the internal organs. According to the theory of channels and collaterals, *shu* points in the head can be used to treat diseases of the whole body.

Lu claims that more than 80 diseases are currently treated by this therapeutic method, which is particularly effective in treating disorders of the central nervous system and various acute and chronic pain syndromes. He mentions specific examples: neurasthenia, anxiety neurosis, and other psychological and psychosomatic disorders, peri-arthritis of the shoulders, ischialgia, pain in

the back and loin, painful heels, and other pain syndromes, hemiplegia, aphasia, senile dementia, and other brain disorders.

During the 1970's, scalp acupuncture was developed as a complete acupuncture system. Three major contributors to the development of this system, Jiao Shunfa, Fang Yunpeng, and Tang Songyan, each proposed different diagrams and groupings of scalp acupuncture points. For example, Jiao divided the scalp points into motor and sensory areas, Fang into writing (speech) and reading (memory) centers, and Tang into upper, middle, and lower burner areas. Several different methods of needling were proposed. Jiao advocated rapid twirling with penetrating and transverse needling; Fang favored the slight twirling method and oblique needling; while Tang recommended long-duration needle retention with superficial stimulation of the needles, using the lifting and thrusting method.

Thus, scalp acupuncture is not really a single system, but a multiplicity of systems still in development, with a 30-year history of practical experience. A standard of nomenclature for acupuncture points has been developed (adopted in 1984 and reconfirmed in 1989), indicating 14 therapeutic lines or zones based on a combination of the thoughts of the different schools of scalp acupuncture. However, it is often necessary to carefully review the zones relied upon by an individual practitioner, as few have adopted the unified pattern.

As Lu states in his article, Professor Zhu Mingqing (who had been associate professor at Lu's department in Beijing before emigrating to the U.S.) has developed a popular version of scalp acupuncture. "In recent years, Zhu's scalp acupuncture has been a craze in Japan, America, and China. As a school of scalp acupuncture therapy, Zhu's method is actually derived from the standard scheme [adopted in China] and based on the clinical experience of Zhu Mingqing. In Zhu's scalp acupuncture, 8 therapeutic zones are used [actually, 9 zones], and the manipulation is characterized by forceful, small-amplitude lifting and thrusting of the needle, associated with massage [of the body part to be affected] and physical and breathing exercises. In fact, the therapeutic zones in Zhu's scalp acupuncture are determined on the basis of the standard scheme."

Dr. Zhu has been working as an acupuncturist since graduating from the College of Chinese Medicine in Shanghai in 1964. He served as assistant director of the Scalp Points Research Group of the Chinese Acupuncture Association from 1987 to 1989. Since coming to the U.S., he has worked closely with Dr. Eva Munwu Chau, former president of the California Acupuncture Association. In 1991, Zhu established the Chinese Scalp Acupuncture Center of the U.S.A. in San Francisco, and, in 1992, he published an English-language book on his methods: **Zhu's Scalp Acupuncture** (2), now out of print. He currently provides treatments for several neurological disorders at Zhu's Acupuncture Medical & Neurology Center, in San Jose, California (see Appendix 2 for more on Zhu's experiences in the U.S.).

Dr. Zhu traces the origins of modern scalp acupuncture to the work of Huang Xuelong, who in 1935 introduced the concept that there is a relationship between the scalp and the cerebral cortex. Several acupuncturists pursued this line, seeking points and zones on the scalp that would treat diseases of the brain. Initial results of clinical work indicated that acupuncture applied to the scalp had good effect on diseases that were associated with cerebral damage, such as stroke. Its applications were then extended to virtually all other diseases, but a focus on nervous system disorders is still dominant. Other physicians in China trace the acceptance of scalp acupuncture as a new system to the development of ear acupuncture, which is also thought to be especially useful for neurological disorders due to the location of needling at the head.

ZHU'S SCALP ACUPUNCTURE

According to Dr. Zhu, *Baihui* (GV-20) is the basis for all of the scalp points. Quoting from the *Ling Shu*: "The brain is the sea of marrow. Its upper part lies beneath the scalp, at the vertex, at point *Baihui*." The point's Chinese name indicates that it is the great meeting place (literally: hundred meetings). Traditionally, this point is treated to stabilize the ascending yang; it is also needed in order to clear the senses and calm the spirit.

The Governing Vessel enters the brain at point *Fengfu* (GV-16). The external pathway of the Governing Vessel is used to divide the left and right sides of the scalp. The left side governs qi and the right side governs blood. Needling of the left side has a greater impact on disorders of the left side of the head and neck, but of the right side of the body below the neck, and conversely.

In Zhu's system of acupuncture, there are three main zones (designated the *Eding* zone, *Dingzhen* zone and *Dingnie* zone) subdivided into a total of 11 portions, and three secondary zones, each divided into two portions (designated *Epang* 1, *Epang* 2, front zone of *Dingjie*, back zone of *Dingjie*, *Niehou* and *Nieqian*). The zone names are simply based on anatomical descriptions. Following is a review of the primary scalp acupuncture zones (See Appendix 1 for a picture of the zones).

Eding Zone

Ding refers to the top of the head, and *E* (pronounced "uh") refers to the forehead. The *Eding* zone runs from the forehead to the top of the head. This is a zone that runs along the governing channel, covering a narrow band from a point 1/2 cun in front of GV-24 (at the forehead/scalp border) back to GV-20. The width is 1 cun and the length is 5 cun. The *Eding* zone governs the yin side (front) of the body, running from the perineum (GV-20 area of needling) to the head (GV-24 area of needling). The zone is divided into four regions.

Eding 1 is the anterior quarter of the region, extending from GV-24 forward by 1/2 cun. This region is used to treat the whole head and neck region. The effects of treatment in this region include calming the spirit, opening the orifices, arousing the mind, and brightening the eyes. To treat, insert the needle along the side of the zone that corresponds with the side of the head or neck that is affected. That is, although treatment usually includes one needle in the center of the zone (along the GV line), if the problem is on the right side of the head or throat, place the needle on the right side of the zone. For example, treating blurred vision in the right eye, place one needle in the right side of the *Eding 1* zone or insert the needle at the center of the zone and direct it to the right side of the zone. The direction of needling is usually towards the face.

Eding 2 is the second quarter of the zone, extending from GV-24 to GV-22. This region is primarily used to treat disorders of the chest region. The functions include opening the chest and regulating qi, opening the lungs, stopping wheezing, and calming the spirit. If the problem is on one side of the body, needle the side of the zone on the opposite side (contralateral).

Eding 3 is the third quarter of the zone, extending from GV-22 to GV-21. This region is primarily used to treat disorders of the middle burner (including treatment of acute appendicitis). The functions include stopping vomiting and diarrhea, regulating the liver qi, and regulating the gallbladder. To treat, use the contralateral side.

Eding 4 is the last quarter of the zone, extending from GV-21 to GV-20. This region is used to treat the lower burner and the lower limbs. The functions include regulating the menses, strengthening the kidneys and promoting urination. Needle on the contralateral side; if the disorder is central, as in bladder dysfunction, needle the central line of the zone or both sides. The direction of needling is usually towards the back of the head.

As described above, Zhu follows the principal that if the disorder affects the left or right side of the body, then treatment that is intended to affect the head or neck is done on the same side of the zone as the side of the disorder (ipsilateral), but if it is below the neck, then the needle is placed on the opposite side of the zone. This approach has been followed by many scalp acupuncture specialists in China. However, a few researchers claim that clinical evidence does not support the need to treat one side or the other; rather, one can alternate sides on subsequent days. At this time, there is probably insufficient data to demonstrate that one or the other approach is significantly better. Alternate side needling might be better tolerated by the patient when daily needling is used. For those following Zhu's technique, treating one side according to location of symptoms would be consistent with his extensive clinical experience.

Dingzhen Zone

Zhen (pronounced "jun") refers to pillow, and indicates the back of the head. The *Dingzhen* zone runs from the top of the head to the back of the head, between GV-20 and GV-17. The zone is 1 cun wide. It governs the spine, the yang aspect of the body (back). It can be divided into 4 regions, equally spaced from each other. This region is mainly used for pain.

Dingzhen 1 (starting at GV-20) governs the back of the head and the neck.

Dingzhen 2 governs the vertebrae C-7 (seventh cervical, base of the neck) through T-10 (10th thoracic).

Dingzhen 3 governs the vertebrae T-10 through L-5 (fifth lumbar).

Dingzhen 4 (ending at GV-17) governs the sacrum and coccyx. Needling here is painful, so it is rarely used.

The *Eding* and *Dingzhen* zones together form a central line from the front to the back of the scalp. In mapping the zones to the body structure, this line represents a continuum from head to abdominal base repeated twice, first covering the front of the body (the more frontal points) and then the back of the body. The meeting point of the two zones, GV-20, can be used to treat the entire body, depending on the aim of the needle.

Dingnie Zone

Nie (pronounced "nyeh") refers to the temple. The *Dingnie* zone runs from the center top of the head to the temple, at an angle (aiming to the cheekbones). It is located on a line from GV-21 to 1/2 cun anterior to ST-8. The zone is 1 cun wide. It can be divided into 3 equal parts, and each part is used as a representation of a body region that can be treated within the zone.

Dingnie 1 governs the lower limbs. The homunculus for this zone looks like a person is kneeling with their foot and thigh on top of each other (near GV-21), and their knees pointing towards ST-8. This zone does not include the hip joint.

Dingnie 2 governs the upper limbs. The homunculus for this zone like a person with their elbows bent. The elbow zone is near the region between *Dingnie 1* and 2. The upper arm (not including the shoulder) and wrist are mapped near the intersection between *Dingnie 2* and 3.

Dingnie 3 (near ST-8) governs the head. It covers motor-sensory problems. This zone is rarely used as it can be painful to needle; *Eding 1* is usually used instead.

Mapping from the frontal hairline back, the top of the body is forward. Also, the sensory zone is toward the forward part of the *Dingnie* zone, while the motor zone is toward the back of the *Dingnie* zone. Needling of this zone may include insertion from GV-21 towards ST-8 or in the reverse direction.

Epang Zone

Pang (pronounced “pong”) means along the side. The *Epang* zone is a series of short segments along the border of the forehead/scalp on either side of the central line. This zone is actually comprised of short and narrow segments running from the top of the forehead into the hair zone.

Epang 1 is used to treat acute diseases of the middle burner. It is located 1/2 cun on either side of GB-15. The zone is 1/2 cun wide.

Epang 2 is used to treat acute diseases of the lower burner. It is located halfway between GB-13 and ST-8. The zone is 1 cun long and 1/2 cun wide.

This mapping of the body runs from the center line (GV, the *Eding* zone governing head and throat) to the side, progressing from head to middle warmer to lower warmer.

Dingjie Zone

Jie (pronounced “jeah”) refers to being closely bound to something: this is a zone adjacent to GV-20. *Dingjie* has a front zone—*Dingjiejian*—and a back zone—*Dingjiehou*. *Qian* (pronounced “chian”) means forward, and *hou* (pronounced “how”) means back. The *Dingjie* zone is a set of four short segments arrayed from the top of the head to the front and back sides of the head. These are short lines radiating forward and back to the sides from GV-20, the meeting spot between the end of the *Eding* zone (corresponding to the genital area) and the beginning of the *Dingzhen* zone (corresponding to the head and neck). The front *Dingjie* zone treats an area of the body just above that treated by the end of the *Eding* zone, and the back *Dingjie* zone treats an area just below that treated by the beginning of the *Dingzhen* zone.

Front Zone of *Dingjie*: This zone is located on a line from GV-20 to BL-7. This area is used to treat the hips and inguinal area.

Back Zone of *Dingjie*: This zone is located on a line from GV-20 to BL-8. It is used to treat the area above the scapula, the upper trapezius region.

Nieqian and Niehou Zones

Nie (pronounced “nyeah”) refers to the temple. The *Nieqian* (meaning forward temple) zone is near the temple, above and to the front of the sideburn, while the *Niehou* (meaning back temple) zone is set back from the temple (over the top of the ear). The zones at the sides of the head are rarely used because the needling tends to be painful.

***Nieqian Zone*:** This zone is located on a line from GB-4 to GB-6. It is used to treat *shaoyang* disorders (those that are deemed half-inside and half-external in nature, and those affecting the liver/gallbladder areas, such as hypochondrium and sides of the chest), side-of-the-face problems, menstrual-related migraines.

***Niehou Zone*:** This zone is located on a line from GB-9 to TB-20. It is mainly used to treat diseases of the ear.

MAPPING OF THE BODY WITHIN THE ZONES

The *Dingnie* zones, which extend at angles towards the front of the head (from GV-21 to ST-8 on either side) from the central *Eding* zone, overlap the central zone. The mapping of body parts to the zones places the foot at the beginning of the *Dingnie* zone (at GV-21) and the head at the end of the *Dingnie* zone (at ST-8): *Dingnie* zone #1 is used for treating the legs; *Dingnie* zone #2 is used for treating the arms; *Dingnie* zone #3 is used for treating the head. However, because *Dingnie* zone #3 is more painful to needle and, because treatment of the head is adequately accomplished in the *Eding* zone #1; *Dingnie* #3 is seldom used by Dr. Zhu.

To visualize the mapping, imagine a person squatting down with arms bent, placing the elbow on the knee, with the hand by the shoulder. The beginning of *Dingnie* #1 is at the base of the foot, this overlaps with the upper thigh due to the squatting position, and then it maps upward to the knee; the zone then continues up the arm from the elbow towards the hand and shoulder, including the forearm in that same space (*Dingnie* #2); finally, it follows up the head (*Dingnie* #3). The foot location of the *Dingnie* zone #1 extends all the way to the far side of the *Eding* zone (the *Eding* zone runs along the governor vessel; the zone covers 1/2 cun on either side of GV; when needling *Dingnie* to treat the foot, the point of the needle, threaded into the scalp, rests at the junction of the beginning of *Dingnie* zone #1, where it meets the far side of *Eding*. Therefore, the needle enters the scalp behind the *Dingnie* zone. *Dingnie* zone #1 does not include the hips, and *Dingnie* zone #2 does not include the shoulder girdle; to treat those parts of the body, Dr. Zhu relies primarily on the *Dingnie* zones. Aside from the standard zones, palpation of the scalp for tender points helps Zhu to identify the specific needling sites within the selected zone. The *Eding* zone is the most frequently used of the scalp zones, with the *Dingnie* zones being used additionally for treating affected limbs.

When treating a neurological problem that affects the extremities, the needles are directed, along a zone, towards the opposite extremity. Thus, for example, if the left leg is affected, the needle will be directed outward along *Dingnie* #1 on the right side of the scalp. Only for problems of the head and neck is the needling done on the same side of the scalp as the disorder. For disorders that are not specific to a body location, such as hypertension or epilepsy, needling may be done on both sides of the zone.

If the disorder to be treated is associated with a degenerative disease involving a kidney deficiency syndrome (common in elderly patients and those with chronic, degenerative diseases), then *Eding* zone #4 is usually needled. A typical needling pattern is: one needle in the center of the zone, and one needle on either edge of the zone, about 0.5 cun apart from the central needle; for a total of 3 parallel needles in the zone, with the central needle leading the other 2 by about 0.5 cun, producing an arrow formation; the outer 2 needles are directed towards the part of the zone that corresponds to the kidney, while the inner needle is directed toward the part of the zone corresponding to the genitals.

Dr. Zhu sometimes uses a “crossing” technique for needle positioning, mainly in treating cases of severe pain. He selects a zone site for treatment, and inserts one needle along the zone and then inserts a second needle perpendicular to that one, going across the zone and crossing over the first needle. As an example for right-knee pain, a needle is first directed along *Dingnie* #1 towards the left temple, and then a second needle is inserted across that one. The second needle is stimulated by the draining method. In cases of quadriplegia, another crossing technique is used. The first needle is inserted across the zone (e.g., from the left part of the zone to the right part of the zone, at about a 45 degree angle), and then a second needle, crossing over the first (e.g., from the right part of the zone to the left part of the zone). In some cases, a series of cross-over needles are inserted along the length of a zone (this may incorporate as many as 3 pairs of needles).

THE NEEDLING TECHNIQUE

The needle size often mentioned in Chinese texts for scalp acupuncture is 26, 28, or 30 gauge, which is suitable for rapid twirling techniques. For Zhu’s needle stimulation technique (thrust and pull method), a somewhat finer needle gauge of 32 or 34 is suitable for most cases, and the insertion length is approximately 1 cun. A 30 mm (1.2 inch) needle with a wound head is thought to be the best. The needle must be long enough so that it is not inserted up to the handle, but short enough that there will not be any bending during insertion and manipulation. The angle of

insertion is typically 15–25 degrees. The patient should not feel pain, though there are some rarely used scalp points along the sides of the head, mentioned above, that typically produce pain.

The needle is inserted along the practitioner's nail pressing the skin. Press besides the treatment zones with the nail of the thumb and first finger of the left hand, hold the needle with the right hand, and keep the needle tip closely against the nail. By avoiding the hair follicle, one can minimize pain during insertion. The direction of needling is usually based on the mapping of the body within the zone being treated: the needle is aimed (along the line of the zone) toward that portion of the zone most closely corresponding to the area of the body that is affected by the injury or disease.

Although the distance from the skin surface to the skull is very short, there are several tissue layers: the skin, hypodermis, galea aponeurotica and occipito-frontalis muscles, subaponeurotic space, and pericranium. The subaponeurotic space is a loose layer of connective tissue that is ideal for penetration during scalp needling: the needle slides in smoothly and does not cause pain, yet the desired needling sensation is strong. If the angle of needling is too shallow, the needle will penetrate the skin and muscle layers and it will be difficult to get a smooth insertion.

Upon inserting the needles, stimulation is applied for 1–2 minutes (see below for stimulation technique). The needles are manipulated again after intervals of 10–15 minutes, for 1–2 minutes each time, throughout the duration of the patient visit, which may be as long as 2–3 hours. Sometimes, the interval between needle stimulation sessions is longer due to insufficient staff time when there are numerous patients, but usually within 30 minutes.

The needles should remain in the scalp for a minimum of 4 hours (except for treatment of acute symptoms, in which case, 0.5–1 hour is sufficient) and up to a maximum of 2 days. However, for children and weak adults, the time of retention should be shorter. Dr. Zhu generally prefers long-term needle retention of 1–2 days; this is in contrast to the method of Jiao Shunfa, who advocated removing the needles after the basic manipulations. At Zhu's clinic, the scalp needles are often left in place when the patient leaves, and are not removed until the next visit, which is 24–48 hours later. At that time, new needles are inserted at different points. If several parts of the body are affected by the illness or injury, the points selected may be rotated through a cycle aimed at treating each of the different body parts.

There are two basic needling methods for manipulating the qi, designated *jinqi* and *chouqi*, that have been elucidated by Dr. Zhu. Both are based on ancient techniques and involve a rapid, short distance movements. *Jinqi* (*jin* means move forward) is a tonifying, thrusting method. "Thrust the needle quickly with violent force, but the body of the needle doesn't move, or no more than 0.1 cun in." Following the thrust, the needle is allowed to settle back to its original position. *Chouqi* (*chou* means to withdraw) is a sedating, reducing method. It is based on forceful movement and a lifting motion. "Lift the needle quickly with violent force, but the body of the needle doesn't move, or no more than 0.1 cun out." Again, after the pull, the needle settles back to its original position.

Lu Shoukang mentions in his article that he prefers using the small-amplitude, forceful lifting method, rather than the twirling method, because "it saves the operator effort and gives the patient less suffering." He describes his preferred method as follows: "When inserted to a certain depth (about 1 cun), the needle is forcefully lifted outwards or thrust inwards. The direction [angle] of lifting or thrusting is the same as that of the insertion. The outward and inward force exerted on the needle should be sudden and violent as if it is the strength from the whole body of the operator. The lifting and thrusting amplitude should be small, no more than 1 *fen* [1/10 cun]. After lifting and thrusting continuously for three times, the needle body is sent back to the

original place (about one cun) and significant therapeutic effects will be obtained after the maneuver is repeated for 2–3 minutes.”

For the majority of neurological disorders, the tonification technique (*jinqi*) is used, with a series of rapid, very small-amplitude, in-out needle movements. The emphasis is on the forward movement, then allow the needle to naturally pull back to the starting position. In cases of pain syndromes, the draining method (*chouqi*) is used, with the same kind of rapid, limited distance movements, but with the emphasis on outward movement, then allowing the needle to settle back in to the starting position. During the stimulations, it is important for both the practitioner and the patient to focus on the breath (this is an aspect of *qigong* therapy that is incorporated into the treatment). There should be no talking during needle stimulus: all attention is on the needling and its effects. The mental focus is on “directing the breath” to the body part that is to be affected.

Regarding repetitions of the stimulus, Zhu says: “Repeat many times until revival of qi and effect is achieved.” He usually does not specify a manipulation duration, but rather bases the duration on observed response. He claims that by using the small amplitude manipulation method rather than the twirling method, one has the advantages of “large amount of stimulation, saving effort, less pain sensation, and strong needling sensation,” yet the therapeutic effects are achieved quickly. The method is also easy to master, though success may depend on the qi of the practitioner when utilizing the forceful but small amplitude manipulations. Dr. Zhu does not rely on moxa, due to the problems associated with large amounts of smoke in the group treatment setting and lack of adequate ventilation at the Neurology Center. He does use heat lamps to provide heat to an affected body part, when it is deemed valuable.

The affected part of the body is to be moved during needle stimulation. If the person cannot make the movement on their own, then the patient will visualize moving the breath to the affected part and, when possible, an assistant will move the body part. After the needle stimulation, the patient is encouraged to continue the movements. In cases where the legs are involved, the patient walks, if possible (several patients at Zhu’s clinic would walk around the block, others might walk the length of the room). Dr. Zhu expressed the belief that a function of scalp acupuncture is to improve or re-establish the connections from the central nervous system to the peripheral nervous system. The sending of signals between these two parts of the nervous system during treatment is critical. The intention of the patient to move the affected body part (or the mental practice of moving the breath to the body part) sends signals from the central nervous system to the periphery, while actual movements of the body part send signals back from the periphery back to the central system.

Before withdrawing the needles, Zhu recommends manipulating the needle again while the patient performs breathing exercises. When it is time to remove the needles, press the skin around the point with the thumb and index finger of the left hand, rotate the needle gently and lift slowly to the subcutaneous level. From there, the withdrawal should be rapid, and the punctured site should be pressed for a while with a dry cotton ball to avoid bleeding.

Body points are sometimes used as an adjunct to the scalp acupuncture therapy. Dr. Zhu uses relatively few body points (typically 1–3, if any), but emphasizes obtaining the qi sensation with propagation of qi sensation towards the affected part. Examples of body points are ST-36 for lower limb weakness, or LI-11 or GB-20 for arm weakness. If a body part affected by disease or injury involves very localized pain or spasm, Dr. Zhu might use body points primarily for local treatment (rather than somewhere else along a meridian affecting the area), and usually with deep needling. Body points are sometimes selected because of failure to obtain the desired qi reaction when using scalp points. The body needles are also retained during the full length of the patient’s

long scalp acupuncture treatment, for up to two hours, not just 20–30 minutes as is often the case with standard acupuncture therapy.

In most cases, treatment is given every day (at least 5 days per week) for 1–2 weeks, then every other day for another 1–2 weeks, followed by twice per week treatment for as long as necessary. The frequency of treatment may be adjusted according to the severity of the condition and rate of improvement. According to Lu, for best results in treating hemiplegia due to stroke, scalp acupuncture should initially be performed twice per day. For other chronic conditions, daily treatment or every other day treatment is recommended for the initial therapeutic plan, to be followed-up by less frequent treatments once progress has been made.

CONCLUDING NOTES

It is evident that after 30 years, scalp acupuncture is still evolving in its techniques and applications. In America, Dr. Zhu and his students have developed the techniques to suit the Western patients (see Appendices 2, 3, and 4). In reviewing the Chinese literature (see Appendix 5), one can draw certain general conclusions. Most authors suggest that utilizing scalp and body acupuncture together is a valuable method. The recommended frequency of treatment is high, from once or twice per day to once every other day, with a course of treatment typically involving 10–12 consecutive sessions, followed by a break of 2–4 days, sometimes 5–7 days. Needle insertion, manipulation, retention, and removal are approached with differing techniques. An expressed concern is to minimize pain for the patient and also to make the procedure practical for the acupuncturist. Thus, the frequently-mentioned method of rapid needle twirling may be replaced, in some cases, by other methods (including electrical stimulation) because of the potential for causing pain for the patient and fatigue and irritation for the acupuncturist. At least one study compared the efficacy of twirling (manual and machine-aided) and electrical stimulation and the conclusion was that both were useful. The twirling method with large needles remains a common practice in China.

In all cases, it is considered important to obtain an appropriate needling sensation (not pain); often, this is to be accomplished by utilizing needle manipulation at least two to three times in the course of a single session (for 2–3 minutes each time). The manipulation is usually rapid, with frequency of twirling in the range of 150–300/minute or electrical stimulation reported in the range of 150–700/minute. Total duration of needle retention in most cases is 20–45 minutes, though some patients are sent home with needles in place (as Dr. Zhu recommends), for retention of several hours up to a maximum of 2 days.

Indications for scalp acupuncture include virtually all the usual indications for body acupuncture, but the main applications are stroke, paralysis, pain, and emergency situations (Zhu has published a book regarding the latter: **A Handbook for Treatment of Acute Syndromes by using Acupuncture and Moxibustion** (3), which includes scalp and other acupuncture techniques). Contraindications for scalp acupuncture include very high blood pressure (220/120), heart disease, infection, post-operative scars in the acupuncture zone, some cases of pregnancy (mainly habitual miscarriage), persons who are extremely nervous, and infants whose fontanels have not closed.

In a report from Harbin (18), several aspects of scalp acupuncture for stroke patients were commented upon, which largely match the methodology and interpretation expressed by Zhu:

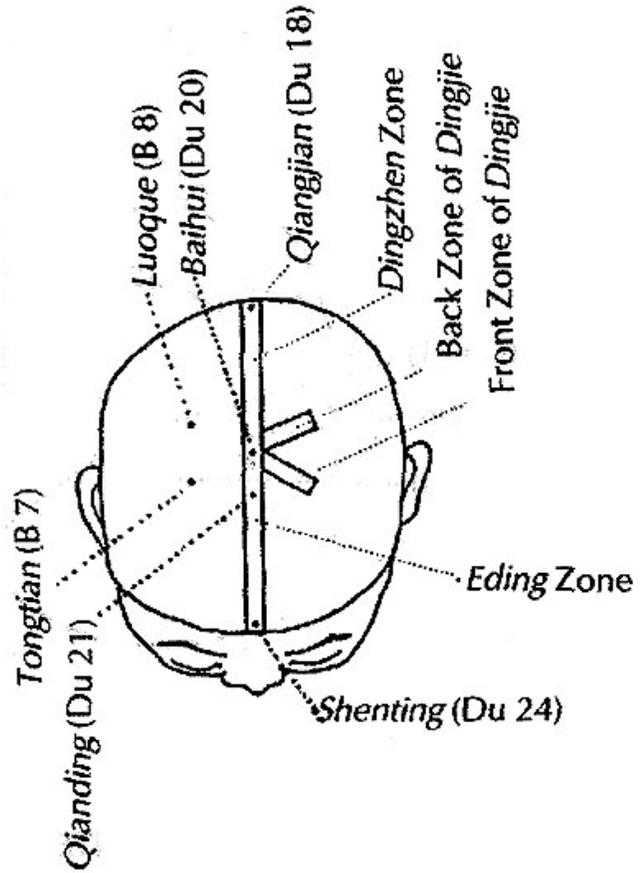
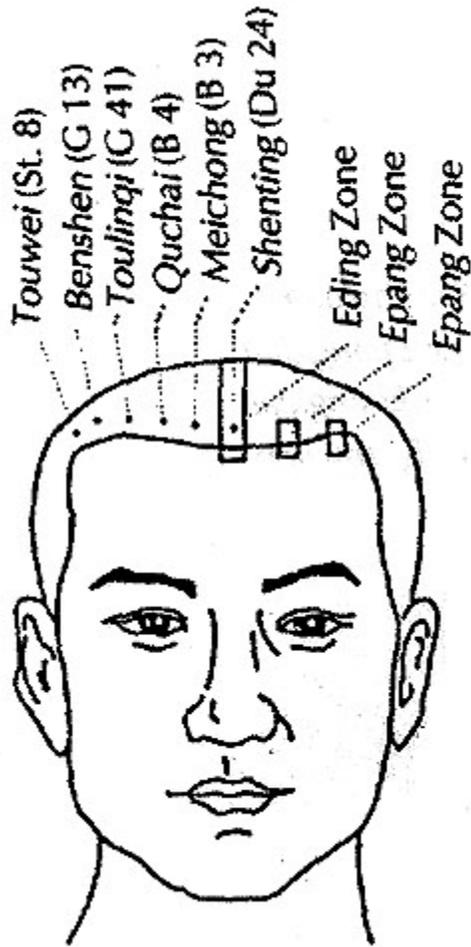
1. The needle runs in the layer of loose connective tissue between the galea and the pericranium.

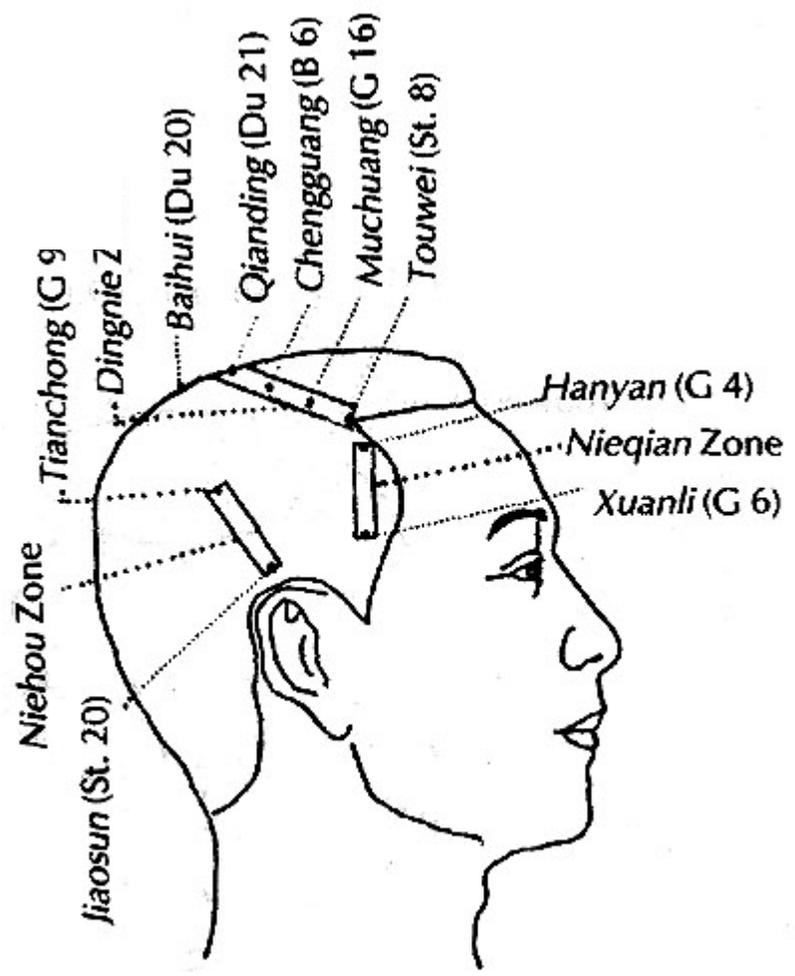
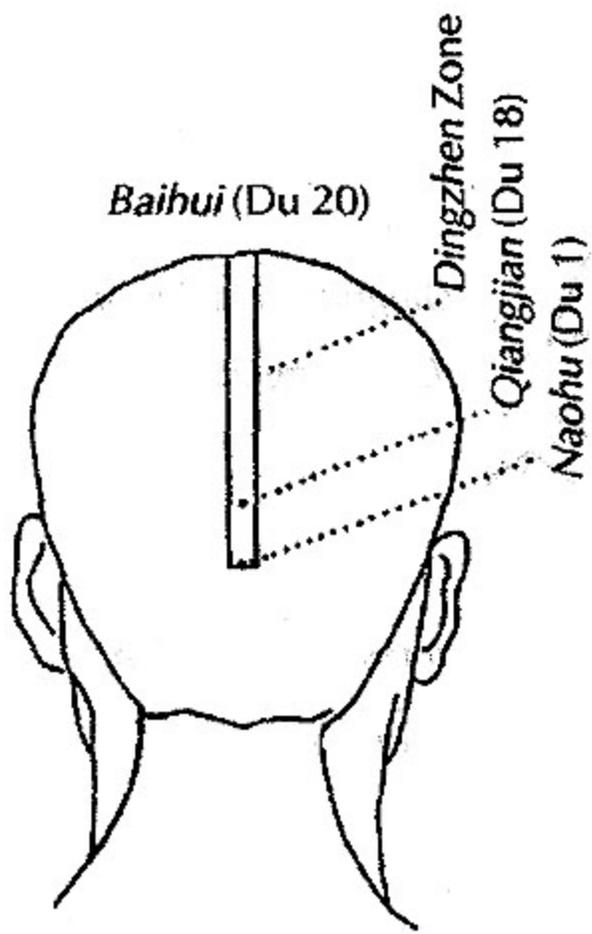
2. The response of “getting qi” is more importantly measured by observing an improvement in movement or sensation of the affected part of the body rather than a needling sensation like the one that is generated when the affected parts are directly needled.
3. Scalp points are especially effective because they are close to the part of the body that is affected, namely the brain.
4. Prolonged stimulation time, with rapid needling speed, gives better results. For example, constant needle twirling [the stimulation method more often used in China] for 3 minutes gave superior results to constant twirling for half a minute.
5. The effect of scalp needling is to stimulate the cerebral cortex; it can reverse the imposed inhibitory mechanisms on nerve function, revive cells that are not completely destroyed, and enhance the function of nerve cells that are subjected to ultra-low oxygen levels.

In general, Chinese clinical reports indicate a high degree of effectiveness; cases and situations leading to better or poorer outcome have been elucidated. In America, there is less tendency to provide daily acupuncture, which might reduce the effectiveness. Given the general unfamiliarity with acupuncture, there is more likelihood of patients waiting to try acupuncture as a last resort rather than a first effort, so that the chances of improvement are more limited. The scalp acupuncture technique taught by Dr. Zhu has been used at ITM’s An Hao Natural Health Care Clinic in Portland to treat a multiple sclerosis (see Appendix 3 for protocol details), peripheral neuropathy, migraine headache, and Bell’s palsy. Good results were attained in cases where body acupuncture had not been sufficiently effective.

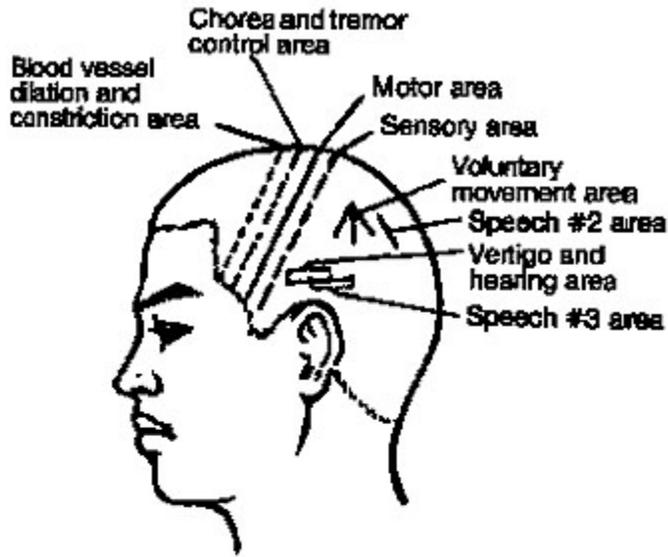
APPENDIX 1: Zone Charts

Acupuncture Zones in Zhu's Acupuncture.

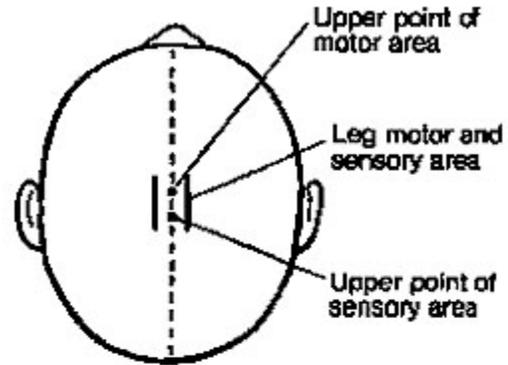




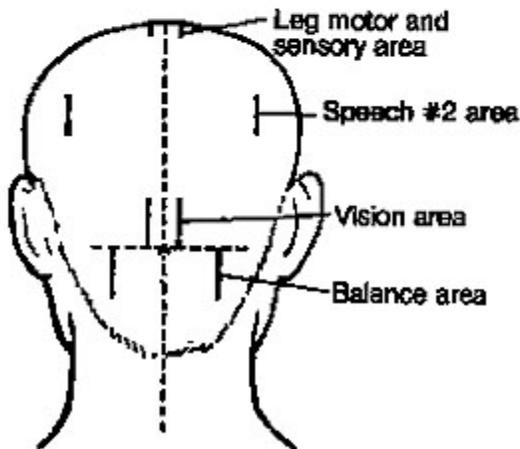
APPENDIX 1, continued: Zone Charts



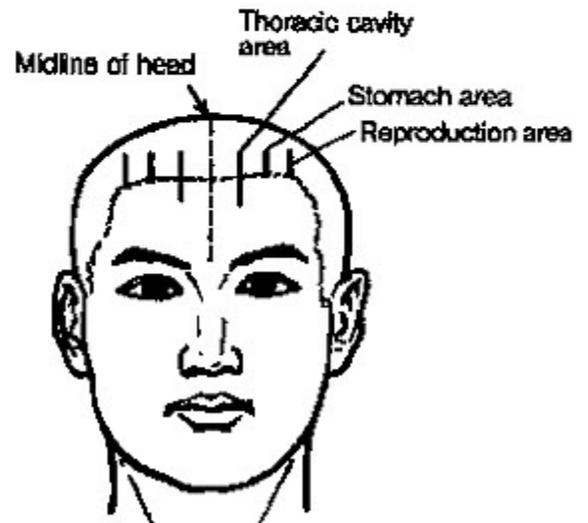
Stimulation Areas—Side View



Stimulation Areas—Top View



Stimulation Areas—Back View



Stimulation Areas—Front View

**Acupuncture Zones Based on Motor/Sensory, Speech/Hearing, and Other Divisions
(not used in Zhu's acupuncture system).**

Appendix 2: Dr. Zhu's Work in America

Dr. Mingqing Zhu opened his neurology clinic for scalp acupuncture therapy in Santa Cruz, California in October, 1997, after offering his services for 6 years in San Francisco. Santa Cruz is a small beach town about 85 miles south of San Francisco that supports an acupuncture college—the Five Branches Institute. The neurology clinic shares space in the same building as the college, serving also as a training center for acupuncture students. Another acupuncture clinic is also in the same building, staffed by several experienced Western practitioners, and provides the more standard variety of acupuncture therapy. Although Zhu has learned English, his work is aided by a translator who can speed up and clarify the communications. Still, many of his house calls are made without this help.

While Zhu's work has gotten some favorable press, his efforts at helping those with neurological problems remains an uphill battle. In California, medical insurance generally covers the cost of acupuncture, but insurers have repeatedly refused to pay for other medical expenses associated with Zhu's work, such as special exercise equipment developed for those with paralysis, herbal treatments, and extended physical therapy. The main hospital in neighboring San Jose, after initially letting him work on in-patients, has since refused to continue such permission, viewing his techniques unfavorably, despite the overwhelming support of those receiving the treatments. Medical doctors have scoffed at his claims to be able to help quadriplegics by scalp acupuncture.

His clinic is a small facility with one main room, having a dozen chairs for patients to sit on while receiving scalp acupuncture, and a pair of curtained-off segments of the room for beds so that patients can receive acupuncture while lying down. There is a small office, which often turns into a treatment room, and one small private treatment room off the office. At this facility, about 20 patients visit each day, staying for 2–3 hours: after the needles are inserted, Zhu stimulates the needles from time to time. The room becomes quite crowded as most of the patients come with helpers. The clinic is usually open only 4–5 hours a day; much of the rest of Zhu's long and grueling work day is spent making home visits to those who are so severely impaired that they can't travel to the clinic. He also teaches at the college.

His treatment technique relies almost exclusively on scalp acupuncture, sometimes using a dozen or more needles in the scalp at one time for the more severely debilitated patients. Although the needling is sometimes painful, he has adapted the treatment so that even babies and young children accept it. Zhu rarely prescribes herbs, but primarily relies on frequent scalp acupuncture therapy (daily or every other day). He has a few patent remedies available at his clinic and has access to crude herbs for making decoctions, or preparing topical applications, from the college pharmacy.

Zhu treats a wide range of neurological problems, including cerebral palsy, epilepsy, injury-induced paraplegia, multiple sclerosis, and post-stroke syndrome, as well as disorders that seem to fall beyond the ability of neurologists to pin them down with a name. The results of Zhu's work are somewhat difficult to elucidate. With the absence of support from the community of neurologists who could provide detailed monitoring, and the limited assistance available during patient treatment (which doesn't permit careful documentation of the cases), the extent and nature of the responses are not well established. At Zhu's clinic, patients report notable improvements compared to their earlier conditions. In a few cases of quadriplegia, Dr. Zhu is using a video camera to illustrate the extent of changes in patient capabilities. Dr. Zhu has moved his clinic to San Jose in 2001. For more information on Dr. Zhu and his clinic, write: Zhu's Acupuncture Medical & Neurology Center, 100 O'Connor Drive, Suite 20, San Jose, CA 95128, or call 408-885-1288 or email master@scalpacupuncture.org.

APPENDIX 3: Scalp Acupuncture Protocol for Multiple Sclerosis

The following protocol was developed by Dr. Edythe Vickers, based on the teachings of Dr. Mingqing Zhu, and is being used at the Institute for Traditional Medicine.

1. If the primary lesions are in the brain, insert needle in *Eding Zone 1*, needling along the GV line towards the face. This is intended to improve vision (e.g., to relieve optic neuritis) and increase mental clarity. If the primary lesions are in the neck, then insert the needle in *Dingzhen Zone 1*, which governs the neck.
2. Insert needle from *Eding Zone 3* to *Eding Zone 4*, needling along the GV line towards the back of the head. This is intended to tonify the kidney/liver system that is weak in nearly all persons with multiple sclerosis. If the patient is suffering from a bladder disorder (typically, there is inability to completely empty the bladder, and there may also be incontinence; many individuals rely on a catheter), then needle only within *Eding Zone 4*. This latter treatment is the same as selected by Chen and Chen (4) for treatment of enuresis.
3. Use two additional needles to complete the treatment. For persons who are not highly symptomatic, the two needles may be placed parallel to the needle in *Eding Zones 3 and 4*, about 1/4 inch on either side of the central needle. This will enhance the tonification of the liver/kidney system and strengthen the legs, bladder, and abdominal organs. For persons who have weakness, tingling sensation, or other disorders affecting the arms and hands, needle instead *Dingnie Zone 2*, with the needle aiming towards the face (towards ST-8). If the problem affects one side of the body, needle the opposite side of the scalp, but if it affects both sides, needle both sides of the scalp. For persons with weakness and numbness in the legs, use *Dingnie Zone 1*, with the needle towards the GV-21. For persons with aching and numbness in the shoulders, needle the *Dingjie Zone*. Again, needle either one side or both sides, as appropriate.

Use the thrusting technique (*jinqi*) in most cases, as this will tonify the deficiency. The manipulation should be carried out until the patient notices a change in their condition. When treating the arm or leg scalp zones, have the patient attempt movement of the body part while the needle is manipulated. For bladder disorders, have the patient breathe deeply (to the lower abdomen, *Dan Tian*), which should focus attention on the area being treated and help to produce a warming sensation. When treating *Eding 1* (for the eyes), have the patient gently rub their palms over the eyes.

If an effect is not noted (clarifying of vision, change in sensation or strength in affected limbs) within about 3 minutes of manipulation time, check that the needling location and needle placement are correct; if correct, it may be necessary to try the lifting method (*chouqi*) instead, especially if there is pain. It may also be valuable to treat body points, such as ST-36 and GB-34 for the legs and LI-4 and LI-11 for the arms. Once a response is noted, the needle manipulation can be ceased. Patients with leg weakness should attempt to walk for a few minutes. After about 15 minutes (from the previous manipulation), the needles should be manipulated again. At the end of the third manipulation, the patient will be instructed to retain the needles for a period of several hours, up to two days, and then remove the needles themselves or with the aid of someone who can assist them. The needles used for body acupuncture are removed at the end of the in-clinic treatment session.

Appendix 4: Treatment Method at Vitality Center

Holly Gahn, L.Ac., O.M.D., has been using scalp acupuncture for several years and currently practices at Vitality Center in Lake Forest, California. She described her basic treatment techniques as follows, indicating that there are a number of other procedures that she may utilize to complete the treatment:

Treatment Course. On the first day, the patient is treated in the morning and in the evening; for the next nine days, the patient is treated once daily. Then, treatment continues at the rate of three times per week until the condition has resolved or the patient has reached what appears to be the maximum level of improvement.

Point Selection. The motor, sensory, balance, vision, and speech areas are utilized as appropriate. For unilateral paralysis, use the contralateral side, but use bilateral treatment of the zones for bilateral paralysis. In cases of generalized brain damage (as occurs with anoxic brain damage), Zhu's *Eding* zone is used predominantly, along with GV-24 and UB-3 bilaterally. If the patient's scalp becomes sensitive to needling, as might occur with frequent needling of the same zone, it is helpful to alternate (from one treatment to the next) between the motor and sensory points and the *Eding* zone.

Needling Procedure. Needles are inserted one cun obliquely into the subaponeurotic space. Needles point downwards and are angled off towards the affected limb. It is stimulated by small-amplitude, lift and thrust technique at rapid frequency (200 times per minute if possible). Body needles are also inserted, using standard procedures. Both the scalp and body acupuncture needles are retained for 20–30 minutes and stimulated every 2–3 minutes during this time.

Neuromuscular Re-education. Immediately after the basic needle treatment, the body needles are removed, but the scalp needles are retained. The patient is taken through a series of exercises while the scalp needles are being stimulated simultaneously. If the patient is comatose or otherwise unable to perform these, the practitioner (or assistant) performs the otherwise passive motions for the patient. The patient, all the while, is encouraged to try to think about doing the exercises, to visualize it, to visually watch the movements (if possible). Verbal encouragement is even given to those who are comatose. As soon (in the treatment course) as the patient is able to perform the movements, they are encouraged to do so, even if the movement is slight. Electrostimulation may be utilized (frequency is 200/minute) in place of manual stimulation. As they become stronger, the practitioner adds resistance to each exercise (weights can be added), thus requiring the patient to apply greater strength (and, in some cases, more muscle groups) to the task. The effort put forth by the patient is of utmost importance.

For Comatose Patients. Needle PC-8 and KI-1 bilaterally plus GV-26. The needles should be stimulated strongly (manual) for 10 minutes. Then add PC-6 and SP-6 with strong stimulation before proceeding to needle the rest of the body and scalp.

APPENDIX 5: Commentaries and Clinical Observations from the Chinese Literature

1. About needling techniques and duration.

For peripheral facial paralysis, Cui Yunmeng (7) suggests using a .38 mm needle and a 75 mm length. The needle is twirled at a speed of 200 times per minute. Needles are retained for 20–30 minutes, being twirled twice. Needling is done in the facial motor area of the scalp, on the same side as the affected part.

For treatment of hemiplegia, Wang, et al., (6) give extensive details regarding point selection (a combination of scalp and body points). Acupuncture is given once daily for 40 minutes, with 10 days as one treatment course, and a rest of 3 days between courses. After insertion, the needle is twisted for 5 minutes at a speed tolerable to the patient who is advised to exercise the limbs as best he can. Electric acupuncture is then used at a frequency of 150–200 pulses/minute for the head points and 100 pulses/minute for the body points.

Lu Shoukang (1) says that: “In scalp acupuncture there are many types of manipulation. The common one is the rapid needle-twirling method, that is, after being inserted to the lower layer of the galea aponeurotica, the needle is tightly held by the thumb and index fingers, and rapidly twirled for about 200 times per minute. This manipulation requires a high frequency and continuous movement and lasts 2–3 minutes each time. Within half an hour, the manipulation should be done 2–3 times. Owing to the fact that by this method the needle often twines the muscular fibers and causes pains, it is not well accepted by the patient. Furthermore, the metacarpophalangeal joint of the operator fatigues easily. For this, the finger twirling is replaced by electric twirling, in which the patient is given pulse electric stimulations with dense and loose waves and a current intensity tolerable by the patient.”

For the treatment of post-stroke syndrome, Pang Hong (9) reports the following method, based on the teachings of K.Y. Chen: “Scalp acupoints were needled with the reinforcing or the reducing method as indicated. For reinforcement, the filiform needle was inserted at an angle of 15–30 degrees to the scalp, slowly and forcefully to beneath the aponeurosis. Pressure was applied to the point for one minute, and the needle was quickly withdrawn after a retention of 10 minutes. For reduction, the manipulations were similar, except that after 10 minutes of retention the needle was withdrawn slowly, when the skin formed a mound around the retreating needle. For either reinforcement or reduction, the needling took 15 minutes, including the 10 minute period of needle retention. Courses of treatment were 10 daily sessions, with efficacy appraised after three courses.” He went on to comment that: “For the promotion of myodynamia and motile functions, the method of slow-rapid reinforcing-reducing was significantly better than the method of flat twisting. The application of reinforcing and reducing manipulations would shorten the therapeutic course, promote the therapeutic efficacy, and decrease the rate of disability. The method of slow-rapid reinforcing-reducing in scalp acupuncture had the advantages of causing less pain and inducing proper occurrence of the needling sensation; therefore, it was well received by the patients.” With regard to the selection of points, Pang Hong claims that: “For the treatment of apoplexy, the selection of acupoints on either the healthy or the affected side makes no difference in therapeutic efficacy.” In his clinical work, he treated both sides, alternating sides from one session to the next.

In a teaching round on apoplexy (10), Professor Guo describes his technique for scalp acupuncture: “Size 28 needles are commonly used, usually of the length of 2 cm. First, locate the upper point of the motor area, and with the left hand fixed on it, insert the needle obliquely towards the lower point at an angle of 15 degrees with the skin surface. Holding the needle with the right first three fingers, insert the needle quickly until it reaches the loose cellular tissue beneath the scalp. Then turn the needle horizontally with respect to the skin surface, and push it to a depth of

about 1.5 cm. Twist and rotate the needle but never lift and thrust it. Hold the needle between the medial surface of the terminal part of the right index finger and the palmar surface of the terminal part of the right thumb. With repeated extensions and flexions of the interphalangeal joint of the index finger, one rotates the needle in one direction till it turns two rounds and then in the other direction for another two rounds. One may rotate this way 200 times for one minute, repeat rotating 5–10 minutes later, and retain the needle till 30 minutes after the insertion (including the time of rotating). With rotating of the head of the needle, the patient usually reports the feeling of local heat, numbness, and tics. There may sometimes be radiation of such feelings to contralateral and homolateral limbs. In general, therapeutic effects are achieved with mere appearance of local needling feeling; nevertheless, still better results will be had if the feelings radiate to the limbs. You may produce all the needling feelings with electrical stimulation. To do this, one inserts a 1 cun needle into the upper point of the motor area and pushes it horizontally towards the lower point, and then insert a 1.5 cun needle at the division point between the upper 1/5 and middle 2/5 [of the motor area]. With these needles connected to corresponding electrodes in the electroacupuncture apparatus, one then passes electricity, often in a frequency of 3/sec [180/minute] with a tolerable intensity for 20 minutes.”

Qu Hong and his colleagues (8) described their scalp acupuncture technique for treating pseudobulbar paralysis as follows: “A filiform needle was rapidly inserted for a depth of 1–1.5 cun in the direction of the motor/sensory area, followed by rapid twistings for 0.5–1 minute until the appearance of the needling sensation. The needle was retained for 40 minutes, with small amplitude twistings for another 0.5–1 minute before withdrawal....Practice has shown that needling on the motor and sensory areas simultaneously, and on the affected side and the healthy side simultaneously produces better curative effects. In light of the experience of Professor Shi Xuemin, the authors adopted deeper insertion of the needles both on the scalp and on the body. Retention of the needles enhanced vasodilation of the cerebral vessels to increase cerebral circulation more than simple twistings of the needles for the recovery of nervous functions. The authors therefore lengthened the needle retention to 40 minutes.”

Liu Chunhui and Wang Ying (11) reported on their experience of treating acute apoplexy during a medical visit to Yemen. For scalp acupuncture, they reported that: “The needles were twirled once every 10 minutes at a rate of 200 times per minute, followed by retaining them for 30 minutes. The patients were asked to exercise the limb during the needle manipulation.” The manipulation was applied every 10 minutes and acupuncture (body plus scalp) was administered each morning and afternoon for a treatment course of 12 days, with an interval of 3 days between courses (using 1–6 courses).

Wu Chengxun (12) reported on using three techniques of needle manipulation. Manual twirling was done with a frequency of 200–500 times per minute and the twirling was performed every 3–5 minutes; a needle twirling machine was applied at a frequency of 300 times per minute and applied in the same fashion; an electroacupuncture device was used with a frequency of 500–700 waves per minute, with continuous stimulation for 10 minutes. After the stimulations were applied, needles were retained for several minutes so that the total duration of needling was 25 minutes. The treatment was performed daily for 12 days, and then a rest period of five to seven days was allowed before resuming another course of 12 days treatment. With a total of 1228 cases of hemiplegia so treated, it was determined that there was no significant difference in the outcome for the three methods of stimulation.

Ji Nan and colleagues (13) used scalp and body acupuncture to treat sequelae of stroke and cerebral injury, claiming improvement in all but 3 of 128 patients, with treatments deemed markedly effective in 42.8% of the total group. Needles were inserted, as appropriate to the condition being treated, into zones designated motor area, sensory area, vasomotor area, and

speech zones I, II, and III. For paralysis, they used the method of treating the side opposite the affected limb. The scalp needles were connected to a therapeutic instrument which delivered “sparse and dense waves” over an interval of twenty minutes for each session. For each session 1 or 2 scalp areas and 2–4 body points (such as ST-36, LI-10, LI-11, LI-15, GB-34, or SI-9, getting qi and then allowing 20 minutes retention) were treated. Sessions were once daily for 10 days as a course of treatment, applying 2 courses as the standard.

Zhang Naizheng (14) described treatment of tremor artuum in 35 individuals using a combination of body points and scalp acupuncture. Regarding the latter, he stated: “The dancing tremor controlling region was chosen; needling was done once per day, 10 days for a course of treatment, with an interval of four days between courses, lasting 4 courses. Using a 26 or 28 gauge, 5 cm long needle, the squeeze-holding method was used for insertion; the angle of insertion was 30 degrees, and the needle was rapidly twirled with a small scope of movement, about 200 times per minute for 2 minutes, and then retained without twirling for 5 minutes; this procedure was repeated three times and then the needle was removed.”

Zhang Mingju reported (15) on treatment of 296 cases of hallucinations using scalp acupuncture. The method used was point-through-point needling, with the needles inserted at an angle of about 15 degrees with the scalp and running from GV-19 to GV-20 (the *Dingzhen* 1, which affects the head); auxiliary treatment locations were needled by similar method, starting at the selected point and then needling through to the next point (examples: GB-17 to GB-16; TB-19 to TB-17). Needles were twirled and agitated for 1–3 minutes. When the needling sensation is felt is the best time to channel qi to the locality of the disease. Needles were retained for 1–3 hours. Acupuncture was performed daily, and 10 sessions constituted on therapeutic course. After the first course, acupuncture was performed every other day, with 10 sessions constituting the second therapeutic course. If still necessary, acupuncture was performed twice weekly, with 10 sessions constituting the third therapeutic course. By this method, 71% were cured and 19% markedly improved.

Zhang Hong reported (16) on treatment of 76 cases of senile urinary incontinence. Body and scalp acupuncture was used, with scalp points picked in the leg motor and sensory area (1 cm lateral to GV-20, corresponds to *Eding* 4) and reproduction area (*Epang* 2). Electrical stimulation was adopted, with a frequency of about 200 pulses per minute, with the intensity limited to the patient's tolerance. Needles were retained for 30 minutes. Treatment was given 5 times per week, with 10 treatments constituting one course, with an interval of one week between courses. After 1–2 courses, half the cases were cured, and 20 others markedly improved.

2. About needling pain and needle sensation

Lu Shoukang observes (1): “In scalp acupuncture, the needle is usually inserted by the penetration needling along the skin. Since the scalp is rich in nerves and blood vessels and is more painful than the limb when punctured, the needle insertion should be rapid and kept away from the hair follicles and the tip of the needle should be sharp. After insertion, the needle body should be rapidly pushed to the lower layer of the galea aponeurotica that is the loose connective tissue to allow the needle to be manipulated freely to cause less pains. In order to strengthen the stimulative sensations, the point-through-point method is used, that is, the needle penetrates several points at the same time. Sometimes the method of two needles punctured to each other is used. For instance, one needle is punctured from *qianding* [GV-21] to *baihui* [GV-20] while the other needle from *baihui* to *qianding*, both along the midline of the vertex.”

Chen Zaiwen and Chen Ling (4) described treatment of enuresis in children with scalp acupuncture. It was mentioned that: “For scalp acupuncture, the selection of acupoints needs to be accurate and the manipulation mild to avoid unnecessary pain which might dispose the child

unfavorably to acceptance of the treatment. The author's choice was a 30–32 gauge filiform needle, 1.5 cun in length. It was desirable to insert the needle rapidly through the skin in a vertical direction and then the needle was bent to an angle of 30 degrees to the skin to be pushed forward, preferably under the epicranial aponeurosis. A stronger stimulation often brought about better curative effects.” Although the authors reported good clinic effect of scalp acupuncture for enuresis, it was said that: “Owing to the needling pain, only 59 cases [out of more than 100] were willing to accept the treatment for a complete course [10 to 15 sessions, undertaken either every day or every other day] or longer.”

3. About the effectiveness of scalp acupuncture in clinical practice

In a general review of acupuncture therapy (5), it was said that: “Clinical reports of 2,917 cases of hemiplegia treated in 34 units [clinics] reveal an effective rate of 94.5%, with 58.9% markedly improved....Observation of the graphic [EEG] changes of amplitude, decrease of frequency, decrease of the angle of the main peak, deepening of the valley of the wave indicate that scalp needling dilates blood vessels, improves vascular elasticity, reinforces cardiac contraction, and increases cerebral blood flow.”

A problem with claimed effectiveness rates for scalp acupuncture is that there is rarely a control group (or one that is well-matched) to help sort out improvements that might occur spontaneously or due to other therapeutic measures (such as ordinary physical therapy) that might be undertaken. However, there may be some benefit to examining the disorders that have been treated by this method and the extent of improvements, whatever the cause, that were noted during the treatment period.

In the article by Chen and Chen regarding enuresis treatment (4), effectiveness was moderate (only 9 out of 59 were cured), but it was said that: “It seemed to be a general rule that older children were apt to have better curative results; treatment in the afternoon seemed to be better than in the morning, and a longer time of needle retention was better than short time needle retention....A stronger stimulation often brought about better curative effects.”

In an article on scalp acupuncture for hemiplegia (6), Wang and his colleagues reported that of 110 cases, 29 were essentially cured, with mobility of limbs recovered. They state that: “Analysis of the 110 cases showed that the location, number and extent of the cerebral lesions correlated closely with the therapeutic effects, and early institution of the acupuncture treatment led to better results....Among 29 cases that were essentially cured, most involved lesions in the external capsule or cerebral lobes, with some single lesions in the internal capsule or brain stem. However, the 5 ineffective cases had mostly multiple lesions in the basal ganglia, the brain stem, and cerebral ventricles.”

In an article by Cui Yunmeng (7), scalp acupuncture for facial paralysis was described. It was reported that 71 out of 100 cases were cured, using 5–40 treatment sessions, given once daily.

In a report on pseudobulbar paralysis (8), Qu Hong, Ren Liping, and Guo Yi describe their results of combining scalp acupuncture and body acupuncture: “The treatment was effective in all 28 cases. 19 cases (68%) were cured and 9 cases (32%) were markedly effective. The shortest course of treatment was 4 sessions and the longest 4 courses [40 sessions]....The patients in this series were all difficult cases of pseudobulbar paralysis refractory to western and Chinese drugs. The good therapeutic effects indicated the superiority of this modality.”

A study by Wan Zhijie and colleagues on the mechanism of action of scalp acupuncture (17) indicates that cholinesterase is inhibited and, at the same time, muscle force of the extremities is

increased. Further, microcirculation is notably enhanced. In treating hemiplegia, a single treatment (about 25 minutes, including insertion, three sessions of 3-minute twirling with two 5-minute breaks, and withdrawal of the needles) muscle strength in upper and lower extremities improved by about 20%, whole blood cholinesterase was reduced by about 15%, and speed of blood flow through nail bed capillaries increased by over 30%. These changes slowly reverted after treatment to reach pretreatment values after 24 hours, confirming the need for daily scalp acupuncture therapy.

Two reports on aphasia (inability to speak) were presented in the Shanghai Journal of Acupuncture and Moxibustion. In one report, from the Guangdong Provincial Hospital, 72 cases of stroke-caused aphasia were treated and evaluated (19). The zones selected were from the “speaking zones” (from a different set of zones than used in Zhu’s scalp acupuncture). After applying the needles and getting the qi reaction, the needles were hooked up to an electroacupuncture device and stimulated for 20 minutes (once per day). In addition, body acupuncture was applied (mainly GB-20 on one day and GV-16 on the alternate day, with some non-standard, “extra points”). Those needles were stimulated for about 20 seconds and then retained for 30 minutes (once per day). After 30 days of treatment, 46% of the patients showed marked improvement, and another 50% showed some improvement. In the other report (20), from the Central Hospital of Shantou City (also in Guangdong), aphasia in nine children ages 16 months to 14 years was treated. The causes were numerous, including viral encephalitis and meningitis. The speaking zone was treated as the main therapy, and as an adjunct a treatment comprised of needling GV-20, GV-24 and the four points of *Sishencong* (Extra-6) were treated. Three needles were used in the speaking zone, they were twirled rapidly for two minutes, then connected to an electroacupuncture device and stimulated for 30 minutes (at 14 Hz). Treatment lasted from 4–21 days. Of the 9 patients treated, 4 were reported recovered and 2 improved.

According to the content of these reports, compared to Zhu’s techniques there is shorter duration of individual treatments, reliance on electroacupuncture as stimulation, and no mentioned focus on patient breathing or movements during treatment (e.g., for aphasia, Dr. Zhu needles *Eding* zone #1 and has the person try to count from 1 to 10, say their address, sing, etc., to use both voice and memory).

4. About the mechanism of action for stroke

In a study of scalp acupuncture applied immediately following a stroke (21), it was reported that both thromboxane B₂ (TXB₂) and 6-ketone prostaglandin F₁₀ (6KP) levels in the blood plasma were affected. These biochemicals are the stable metabolites of substances involved in platelet clumping: thromboxane A₂, which induces clumping of platelets and contraction of arteries, and prostaglandin I₂, which inhibits platelet clumping and inhibits formation of arterial atheromas (by reducing cell proliferation).

The physicians treated 20 patients who had suffered a stroke within the prior 10 days. For scalp acupuncture, the major areas selected were the “motion” zone and the “diastole-systole” zone. Body points were also needed; alternating from one day to the next between treatment of yang meridians (points would be selected from LI-15, LI-11, LI-4, TB-5, GB-30, GB-34, GB-39, or UB-60) and treatment of the yin meridians (points would be selected from HT-1, LU-5 PC-6, SI-13, SP-6, or LV-3). The scalp needles were strongly stimulated with twirling at 200 times per minute for 2–3 minutes, and followed by the lifting maneuver to get the full qi reaction. Body points were stimulated less, but it was important to get a qi reaction. Needle retention was for 30 minutes, with electrostimulation used after getting the qi reaction. Treatment was carried out for 6 consecutive days, followed by a 1 day rest, as one course of treatment, for a total of 4 courses (one month). Drugs that might affect thromboxane or prostaglandin levels were discontinued prior to the study.

It was shown that stroke patients had higher plasma TXB2 levels and lower plasma 6KP levels than healthy persons. After performing acupuncture on the stroke patients, the TXB2 levels declined and the 6KP levels rose. The changes were statistically significant, though the parameters did not reach the levels of healthy patients. The improvements in TXB-6KP levels were interpreted as a biochemical manifestation of harmonizing yin and yang. The authors thought that the effect of acupuncture was mediated by the cerebral cortex and the nervous humoral system.

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