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# Safety In Acupuncture #1

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## Pathogens & Transmission

Health care providers are exposed to a host of pathogens on a daily basis. Both resident and transient microorganisms occupy the surface of our skin and hair. Many of the microorganisms living on the surface of our body are capable of causing disease or infection if they penetrate deeper into underlying tissue and our immune system fails to fight them off.

Protecting ourselves and our patients is crucial to a safe and healthy clinical environment. Healthcare providers must be concerned with preventing transmission and cross-contamination. The Occupational Safety and Health Administration has established universal precautions for this purpose. All healthcare providers need to understand the mechanisms of transmission and prevention of infectious diseases. Some primary routes of transmission are given below.

### Airborne Pathogens

Transmission: via aerosol and air droplets.

Examples:

- Tuberculosis
- Influenza
- Common cold
- Streptococcus
- Mononucleosis

### Direct Contact With Pathogens

Transmission: via transfer by hands, hair, countertops, surfaces, etc...

Examples:

- Staphylococcus
- Methicillin Resistant Staphylococcus Aureus (MRSA)

## Bloodborne

Transmission: via blood, seminal fluids.

Examples:

- Hepatitis A
- Hepatitis B
- Hepatitis C
- Human Immunodeficiency Virus (HIV)

## Food or Water Borne

Transmission: via contaminated food or water.

Examples:

- Hepatitis E
- Escherichia coli
- Clostridium difficile

## Nosocomial Infections

All healthcare providers should also be aware of nosocomial infections. Nosocomial infections are those that are acquired in the hospital or clinical setting. The US Centers for Disease Control and Prevention (CDC) estimates that the number of healthcare associated infections (HAIs) in US hospitals in 2002 was approximately 1.7 million. The CDC notes:

In 2002, the estimated number of HAIs in U.S. hospitals, adjusted to include federal facilities, was approximately 1.7 million: 33,269 HAIs among newborns in high-risk nurseries, 19,059 among newborns in well-baby nurseries, 417,946 among adults and children in ICUs, and 1,266,851 among adults and children outside of ICUs. The estimated deaths associated with HAIs in

U.S. hospitals were 98,987: of these, 35,967 were for pneumonia, 30,665 for bloodstream infections, 13,088 for urinary tract infections, 8,205 for surgical site infections, and 11,062 for infections of other sites.<sup>1</sup>

The CDC also notes:

We estimate that 1.7 million HAIs occurred in U.S. hospitals in 2002 and were associated with approximately 99,000 deaths. The number of HAIs exceeded the number of cases of any currently notifiable disease, and deaths associated with HAIs in hospitals exceeded the number attributable to several of the top ten leading causes of death reported in U.S. vital statistics.<sup>2</sup>

Nosocomial infections are commonly caused by opportunistic pathogens such as:

- Enterococcus spp.
- Escherichia coli
- Pseudomonas spp.
- Staphylococcus aureus

Acupuncturists must be aware of the transmission risks of these pathogens and exercise caution to prevent cross-infection and transmission. During a new patient intake, be certain to conduct a thorough health history. The best method to prevent nosocomial infections is to practice hand hygiene and to clean work surfaces.

## **HIV & Hepatitis**

Acupuncturists must be aware of the transmission risks of pathogens and exercise caution to prevent cross-infection and transmission. During a new patient intake, be certain to conduct a thorough health history. The best method to prevent nosocomial infections is to practice hand hygiene and to clean work surfaces. The following summarizes basic information on HIV and hepatitis transmission and incubation periods.

<sup>1</sup>. Estimating Health Care-Associated Infections and Deaths in U.S. Hospitals, 2002. Klevens, et. al. 4-2004, Public Health Reports, V. 122.

<sup>2</sup>. Estimating Health Care-Associated Infections and Deaths in U.S. Hospitals, 2002. Klevens, et. al. 4-2004, Public Health Reports, V. 122.

## Hepatitis A (HAV)

- 15 – 45 days Incubation
- Bloodborne, fecal contaminated food and water
- Abrupt Onset
- Vaccine Available
- Not Chronic, common with children and young adults

## Hepatitis B (HBV)

- 50 – 180 days Incubation
- Bloodborne
- Insidious (slow) Onset
- Vaccine Available
- Chronic 5 – 10% of cases

## Hepatitis C (HCV)

- 20 -90 days Incubation
- Bloodborne
- Insidious Onset
- No Vaccine
- Chronic 50% of cases

## Hepatitis E (HEV)

- 30 – 40 days Incubation
- Waterborne
- Abrupt Onset
- No Vaccine
- Not Chronic, more prevalent in developing countries

## Human Immunodeficiency Virus (HIV)

- 2 weeks – 10 years Incubation (50% of cases develop within 10 years; some occur in as much as 20 years from initial exposure)
- Bloodborne
- Asymptomatic or symptomatic; symptoms can resemble other common diseases like mononucleosis or a common cold
- No Vaccine
- Chronic can lead to Acquired Immune Deficiency Syndrome (AIDS)

# Acupuncture Precautions

This section is a summary of major acupuncture points of concern and other cautions, warnings and contraindications in common clinical practice. This course does not teach acupuncture needle techniques but provides text to assist in identifying compliance with established standards of practice for needle depth and angle of insertion. This course is only for licensed acupuncturists that have already been trained, licensed or otherwise certified in the practice of acupuncture.

Avoid puncturing major blood vessels, internal organs and pneumothorax by not needling deeply over the local regions of major anatomical structures. The following pages list common acupuncture needling contraindications and cautions. Note that needling depth and angle of insertion instructions do vary across classical and modern acupuncture literature. There is also variance in acupuncture point locations. The following are common acupuncture points of concern.



## ST1

One of the more common points directly beneath the eyeball is ST1. Looking forward, this acupuncture point is directly below the pupil located between the eyeball and the infraorbital ridge. Strong manipulation of an acupuncture needle at this point is contraindicated. Moxibustion is contraindicated for use at this point.



ST1 and ST9

The eyeball is pushed upwards to protect the eye when needling this point. A perpendicular insertion is used to a depth of 0.5 to 1.0 inches along the infraorbital ridge. The initial insertion of the needle may have a very slight inferior angle from the perpendicular position but never superior. Manual acupuncture techniques are to be avoided to protect this region that includes the infraorbital and ophthalmic arteries and veins. Do not apply lifting, thrusting, twisting and rotating. This area is innervated by the infraorbital, oculomotor and facial nerves. Similar care must be taken with other eye region points including extra point Qiuhou.

ST1 is an intersection point with the Yang Heel (Yang Motility, Yang Qiao) and Conception (Ren) channels. ST1 is used in the treatment of eye disorders and facial paralysis including deviation of the mouth and eyes. ST1 powerfully regulates lacrimation as indicated by its name “Container of Tears.”

## ST9

This point is located near a major artery. The pulse of the common carotid artery is palpable at this point. ST9 is located in the depression between the anterior border of the sternocleidomastoideus muscle and the lateral aspect of the thyroid cartilage, level with the tip of the Adam’s apple (laryngeal prominence).

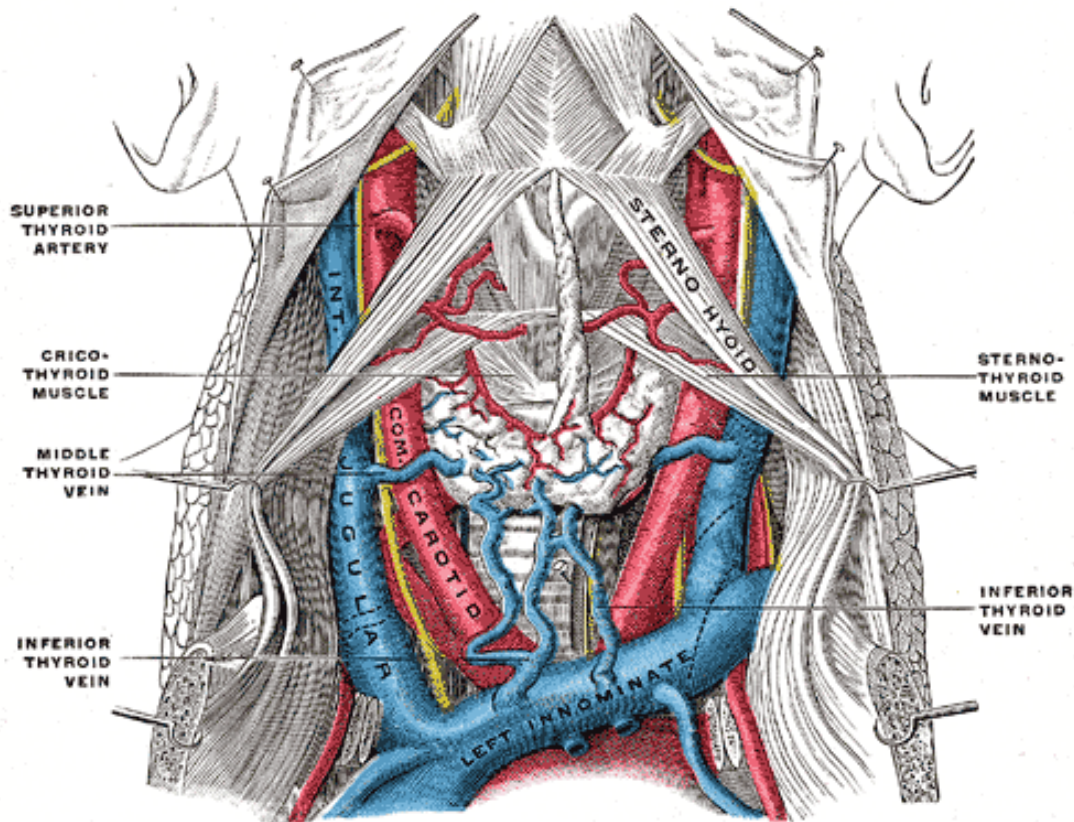
Care must be taken to avoid the carotid artery. Laterally, the pulse of the carotid artery at the anterior border of the sternocleidomastoideus muscle is palpable. Medially to ST9, the thyroid cartilage is palpable. ST9 is in the depression between the carotid artery and the thyroid cartilage. Practitioners often use the fingers to spread the thyroid cartilage from the carotid artery to help define an unobstructed fossa.

ST9 is needled perpendicularly to a depth of 0.3 to 0.5 inches although some texts allow for a very slightly deeper insertion depths. The fingers are used during needling to hold the carotid artery lateral to the insertion site. Usually, the index finger and thumb are placed superior and inferior to the acupuncture point to hold the carotid artery laterally to the insertion site.

Local to this acupuncture point is the superior thyroid artery at the bifurcating area of the internal and external carotid arteries. The cutaneous cervical nerve and facial nerves are at the superficial level at this acupuncture point. Deep to this point is the sympathetic trunk, a pair of bundled nerve fibers that extend from the base of the skull to the coccyx. The sympathetic trunk interacts with spinal nerves and is a vital part of the sympathetic division of the autonomic nervous system. Lateral to this point is the descending branch of the hypoglossal and vagus nerves.

ST9 is a window of sky, sea of energy and intersection point of the Gallbladder and Stomach channels. ST9 regulates the qi and blood and

benefits the throat. ST9 is indicated for the treatment of throat disorders including sore throat, asthma, goiter, dizziness, delirium, low blood pressure and high blood pressure.



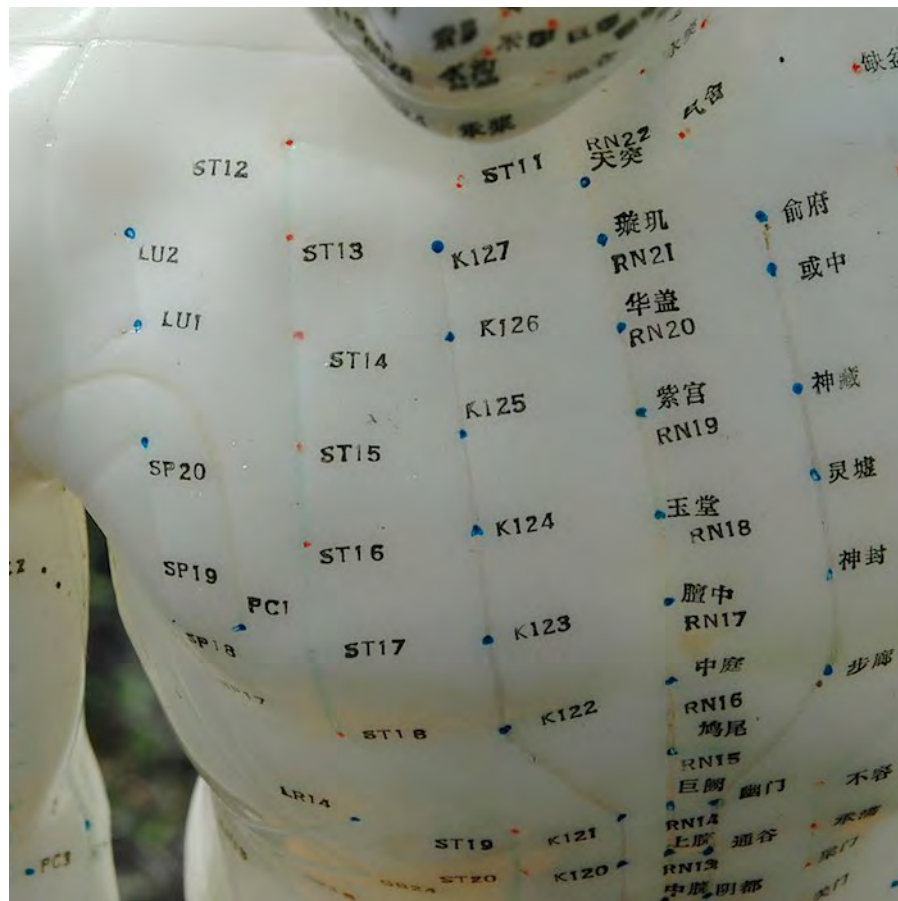
## ST12 and ST13

ST12 and ST13 are used for the treatment of asthma, intercostal neuralgia, pain of the supraclavicular fossa, hiccups and chest pain. However, be careful to avoid needling blood vessels local to these points. Use extreme caution and avoid deep insertion. ST12 is located in the midpoint of the supraclavicular fossa, 4 cun lateral to the Ren (CV, RN) channel. ST13 is located at the lower border of the middle of the clavicle, 4 cun lateral to the Ren channel. Note that the lungs are below this pair of points that are above and below the clavicle.

Some texts note that ST12 is contraindicated during pregnancy. This acupuncture point is needled perpendicularly 0.3 to 0.5 inches along the

posterior border of the clavicle. Care must be taken to avoid needling local blood vessels and the transverse cervical artery is locally superior to this point. Deep insertion is contraindicated to avoid pneumothorax, which is a puncture of the lungs. This point is superficially innervated by the intermediate supraclavicular nerve and more deeply by the brachial plexus.

ST13 is needled obliquely 0.3 to 0.5 inches. Deep needling and perpendicular insertion is dangerous and is strictly contraindicated. The lungs are deep to this point as are blood vessels. Deep or perpendicular needling may cause pneumothorax. The thoracoacromial artery and vein are local to this point. Superiorly, the subclavicular vein is local to this point.



*ST12 & ST13 and other points over the lungs*

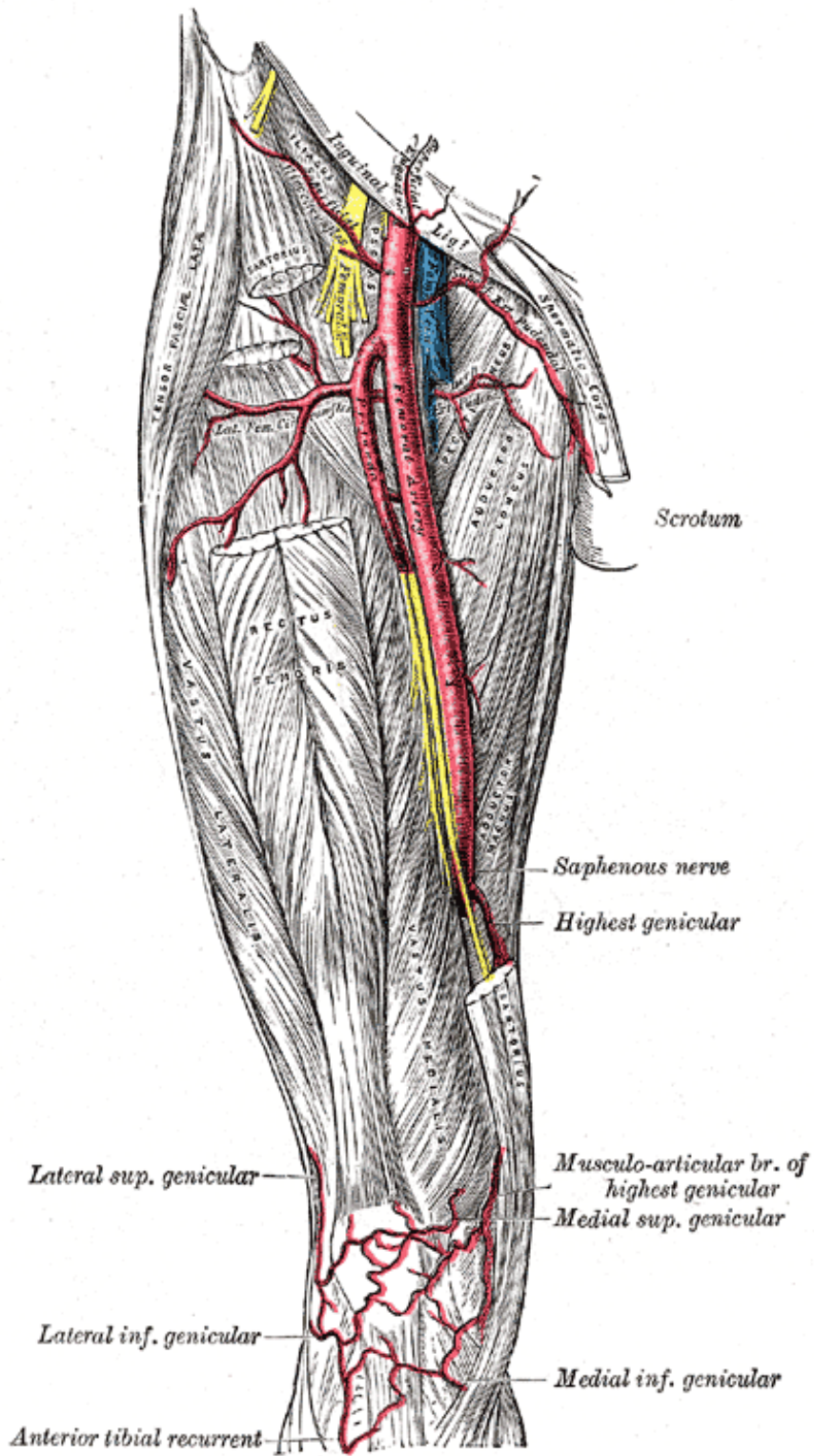
## SP11

SP11 is located 6 cun above SP10 on a line connecting SP10 to SP12. SP11 is located halfway between the tibiofemoral joint line and SP12. SP11 regulates urination, drains dampness and is indicated for the treatment of urethritis, dysuria, enuresis and inguinal lymphadenitis.



SP11

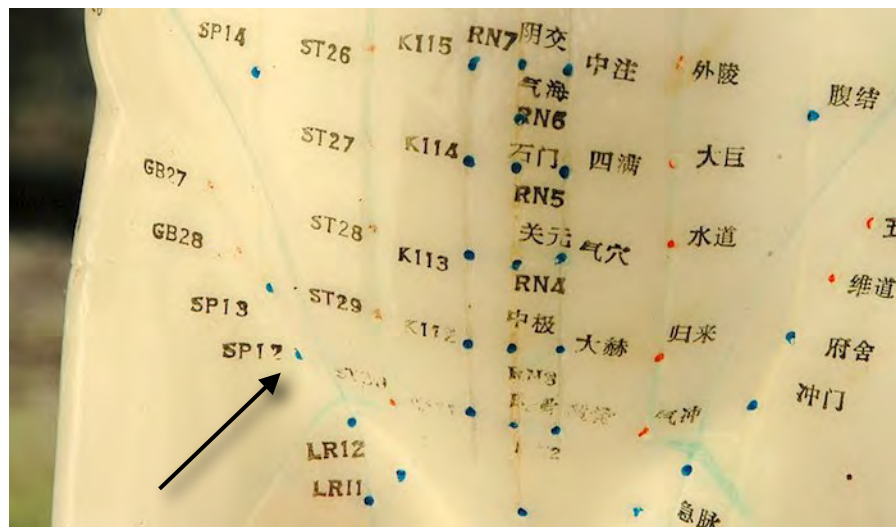
SP11 is needled perpendicularly 0.5 to 1.0 inches. Deep needling is contraindicated to avoid a puncture of the femoral artery. SP11 is located at the region of the great saphenous vein and femoral artery and vein. This point is innervated by the femoral cutaneous nerve and the saphenous nerve.



## SP12

SP12 is located superior to the lateral end of the inguinal groove on the lateral side of the femoral artery at the level of the upper border of the symphysis pubis, 3.5 cun lateral to CV2 (Ren2, RN2). Both CV2 and SP12 are at the level of the upper border of the symphysis pubis. This point is lateral to the femoral artery.

Avoid needling the femoral artery when applying acupuncture to SP12. SP12 is used for the treatment of abdominal pain, hernia, dysuria and urinary retention. SP12 is the meeting point of the Spleen and Liver channels with the Yin Linking channel.



### SP12

This acupuncture point is needled perpendicularly 0.5 to 1.0 inches. Locally, the femoral artery is medial to this point and the femoral nerve traverses this point. To avoid puncturing the femoral artery, palpate to locate the pulsation of the artery and the point is located lateral to the pulsation. Care must be taken to avoid needling either laterally towards the femoral nerve or medially towards the femoral artery.

## TB22 (SJ22, Erheliao)

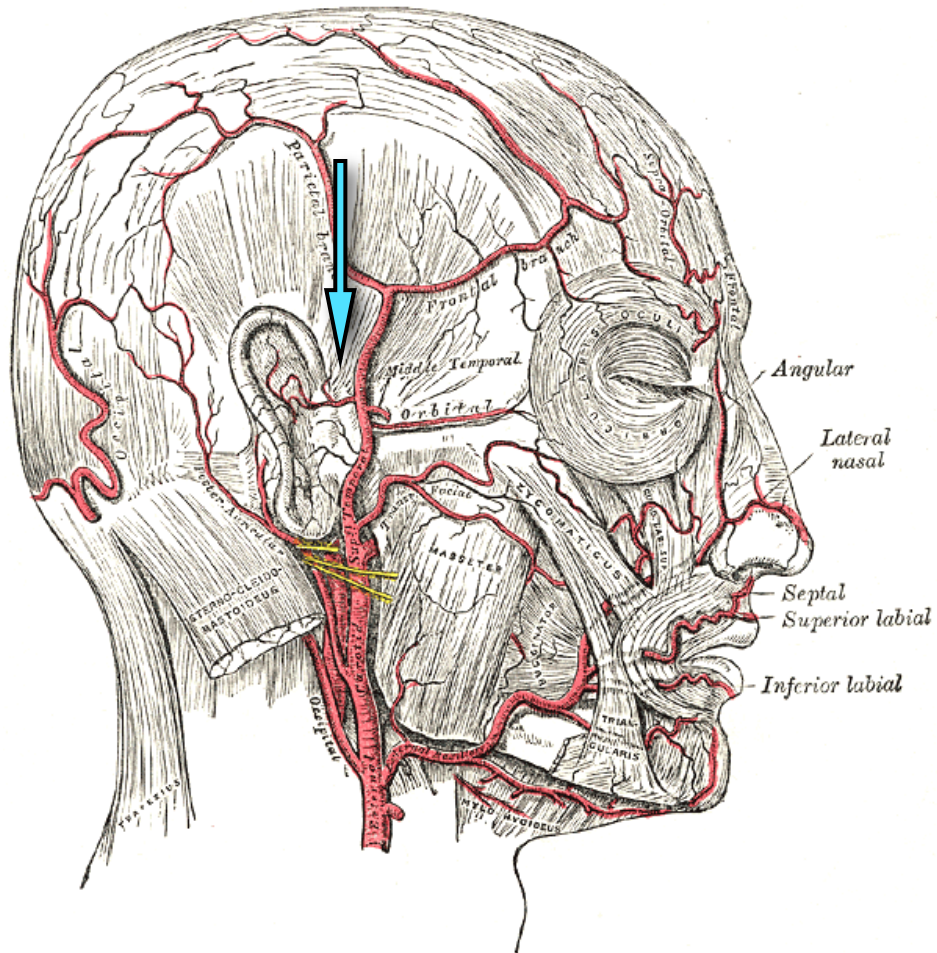


TB22 (SJ22)

TB22 is located anterior and superior to TB21 and is level with the root of the auricle on the posterior border of the hairline of the temple where the superficial temporal artery passes. This point is approximately 0.5 cun anterior to the upper border of the root of the ear. There is a slight depression on the posterior border of the hairline of the temple where this point is located. SJ22 is the meeting point of the Sanjiao (Triple Burner), Gallbladder and Small Intestine channels. TB22 is an Exit point and is commonly used for the treatment of headaches, deviation of the mouth, head wind, tinnitus and lockjaw.

TB22 (SJ22) is needled obliquely at a depth of 0.1 to 0.3 inches according to some texts and is needled 0.3 to 0.5 cun transversely according to other texts. Avoid the superficial temporal artery at this location. TB22 is posterior to the superficial temporal artery. Palpate to locate the superficial (superior) temporal artery and the point is in the small depression posteriorly.





*TB22 is located posterior to the superficial temporal artery*

## Biomedical Waste

Biomedical sharps waste is often regulated by county rules along with state and federal regulations. In California, the following rule applies for small quantity generators of medical waste:

For the two types of medical waste, biohazardous and sharps waste, the storage times do differ. A facility that generates less than 20 pounds of biohazardous waste per month may store it for 30 days. The waste may be stored for up to 90 days if kept at 32° F or below. Sharps waste can be stored for 30 days, once the container is full. To determine how frequently your facility requires pickup by a medical waste transporter, you should weigh the amount of biohazardous waste generated in one month. Do not include the amount of sharps waste generated in the weight.

California allows for medical sharps waste to be picked up by approved disposal companies. Keep a receipt and/or copy of the manifest to prove proper disposal of the waste. As with all areas, the waste must be stored in an approved container. California, along with many other states, allows mail-back systems for sharps containers, specially designed medical needle disposal containers. Mail-back sharps containers are prepaid sharps disposal containers that can be mailed back to the disposal company.

Florida statutes stipulate the following:

381.0098 Biomedical waste.—

(1) LEGISLATIVE INTENT.—Except as otherwise provided herein, the Department of Health shall regulate the packaging, transport, storage, and treatment of biomedical waste. The Department of Environmental Protection shall regulate onsite and offsite incineration and disposal of biomedical waste. Consistent with the foregoing, the Department of Health shall have the exclusive authority to establish treatment efficacy standards for biomedical waste and the Department of Environmental Protection shall have the exclusive authority to establish statewide standards relating to environmental impacts, if any, of treatment and disposal including, but not limited to, water discharges and air emissions. An interagency agreement between the Department of Environmental Protection and the Department of Health shall be developed to

ensure maximum efficiency in coordinating, administering, and regulating biomedical wastes.

(2) DEFINITIONS.—As used in this section, the term:

(a) “Biomedical waste” means any solid or liquid waste which may present a threat of infection to humans. The term includes, but is not limited to, nonliquid human tissue and body parts; laboratory and veterinary waste which contains human-disease-causing agents; discarded disposable sharps; human blood, blood products, and body fluids; and other materials which in the opinion of the department represent a significant risk of infection to persons outside the generating facility. The term does not include human remains that are disposed of by persons licensed under chapter 497.

(b) “Biomedical waste generator” means a facility or person that produces or generates biomedical waste. The term includes, but is not limited to, hospitals, skilled nursing or convalescent hospitals, intermediate care facilities, clinics, dialysis clinics, dental offices, health maintenance organizations, surgical clinics, medical buildings, physicians’ offices, laboratories, veterinary clinics, and funeral homes where embalming procedures are performed.

(c) “Department” means the Department of Health.

(d) “Sharps” mean those biomedical wastes which as a result of their physical characteristics are capable of puncturing, lacerating, or otherwise breaking the skin when handled.

(e) “Treatment” means any process, including steam treatment, chemical treatment, and microwave shredding, which changes the character or composition of biomedical waste so as to render it noninfectious. For the purposes of this section, treatment does not include the incineration of biomedical waste.

Many states stipulate differences between large and small generators of medical waste. Most acupuncturists tend to fall in the small generator category. Restrictions, permits and fees for large generators are more tightly regulated. This may be of concern in group practices wherein all acupuncturists are incorporated as a single entity. In this case, the practice may be classified as a large generator of medical sharps waste. The following Florida statute (381.0098) defines the differences between large and small generators for licensed acupuncturists in Florida:

(4) PERMITS AND FEES.—

- (a) All persons who generate, store, or treat biomedical waste shall obtain a permit from the department prior to commencing operation, except that a biomedical waste generator generating less than 25 pounds of biomedical waste in each 30-day period shall be exempt from the registration and fee requirements of this subsection. A biomedical waste generator need not obtain a separate permit if such generator works less than 6 hours in a 7-day period at a location different than the location specified on the permit. The department may issue combined permits for generation, storage, and treatment as appropriate to streamline permitting procedures. Application for such permit shall be made on an application form provided by the department and within the timeframes and in the manner prescribed by department rule.
- (b) Once the department determines that the person generating, storing, or treating biomedical waste is capable of constructing a facility or operating in compliance with this section and the rules adopted under this section, the department shall grant the permit.

Taking a look at requirements for sharps containers in Oregon, the same stipulations are nearly identical to other states:

*Sharps and other medical waste*

Medical sharps such as needles, IV tubing with needles, scalpel blades, lancets, glass tubes and syringes can harm people, pets and wildlife when discarded improperly. Placing hypodermic needles and other sharps in the trash, for example, exposes garbage haulers and other disposal workers to potential injury.

To reduce these risks, it's illegal in Oregon to dispose of medical sharps in the garbage. Instead, they must be put in approved sharps containers and disposed of safely. Source: oregonmetro.gov

Virginia has the same requirement by statute:

9VAC20-120-240. Sharps.

Sharps must be placed directly into puncture resistant containers as required by the general industry standards in 16VAC25-90-1910.1030(d)(4)(iii)(A).

The similarities persist in almost every jurisdiction. The following pertains to Colorado statutes:

Contaminated sharps (needles, syringes, lancets) must be placed in a puncture resistant container and be properly designated as untreated infectious waste or made noninfectious by an appropriate treatment method. Untreated containers of sharps cannot be compacted. [CSWR Section 13.8.4] Recognizable human anatomical remains cannot be disposed of at a solid waste landfill. These must be either incinerated or interred. [CSWR Section 13.4.4]

Concerns about a particular state's medical sharps waste restrictions can be referenced from the EPA's (epa.gov) website or on a state-by-state basis. The EPA lists each state and the statutes governing sharps waste. Canada, Australia and the UK have similar provisions and similarities.

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