

Comprehensive Atlas of Acupuncture: Technical Analysis of Meridians, Anatomical Landmarks, and Five-Phase Theory

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The evolution of acupuncture as a clinical science has necessitated the transition from traditional, often metaphorical, descriptions of point locations to a rigorous, standardized **Atlas of Acupuncture**. This technical transition aligns ancient Chinese medical philosophy with modern anatomical precision. Understanding the topography of acupuncture points requires a multifaceted approach that integrates the **Zang-Fu system**, meridian theory, and musculoskeletal landmarks. This guide provides an in-depth technical analysis of acupuncture meridians, the mathematical precision of point location, and the functional characteristics of specific acupoint groupings based on clinical data mining and historical texts.

The Theoretical Framework of Acupuncture Meridians

In traditional Chinese medicine (TCM), meridians (Jing-Luo) represent a network of pathways through which **Qi** (vital energy) and blood circulate. While these pathways do not always correspond directly to known neurological or vascular structures in Western medicine, current research suggests they often align with **fascial planes** and connective tissue interstices. The primary system consists of twelve regular meridians, which are bilaterally symmetrical and associated with specific internal organs.

The Twelve Primary Meridians and Their Nomenclature

The nomenclature of acupuncture points often utilizes a standardized alphanumeric code alongside traditional Chinese names. This dual system ensures global consistency in clinical practice and research. The primary meridians are categorized as follows:

- Lung Meridian (LU): Hand Taiyin. Associated with the Metal element.
- Large Intestine Meridian (LI/CO): Hand Yangming. Associated with the Metal element.
- Stomach Meridian (ST): Foot Yangming. Associated with the Earth element.
- Spleen Meridian (SP): Foot Taiyin. Associated with the Earth element.
- Heart Meridian (HT/HE): Hand Shaoyin. Associated with the Fire element.
- Small Intestine Meridian (SI): Hand Taiyang. Associated with the Fire element.
- Bladder Meridian (BL): Foot Taiyang. Associated with the Water element.
- Kidney Meridian (KI): Foot Shaoyin. Associated with the Water element.
- Pericardium Meridian (PC): Hand Jueyin. Associated with the Fire element.
- Triple Energizer Meridian (TE/SJ): Hand Shaoyang. Associated with the Fire element.
- Gallbladder Meridian (GB): Foot Shaoyang. Associated with the Wood element.
- Liver Meridian (LR): Foot Jueyin. Associated with the Wood element.

The Cun Measurement System: A Mathematical Approach to Point Location

A central challenge in acupuncture is the variation in human body size. To address this, the **Cun** (proportional measurement) system was developed. Rather than using fixed units like millimeters or inches, the Cun system utilizes the patient's own body proportions to define distances. This ensures that the **Atlas of Acupuncturology**

remains accurate across diverse populations.

Standard Proportional Measurements

The following table outlines the standardized measurements used for point location across various body segments:

Body Segment	Landmarks	Standard Distance (Cun)
Head	Anterior to Posterior Hairline	12 Cun
Chest/Abdomen	Sternocostal angle to Umbilicus	8 Cun
Abdomen	Umbilicus to Upper Border of Pubic Symphysis	5 Cun
Upper Limbs	Axillary fold to Cubital crease	9 Cun
Lower Limbs	Prominence of Greater Trochanter to Knee Joint	19 Cun

Technically, **1 Cun** is equivalent to the width of the patient's thumb at the distal phalanx joint. **3 Cuns** defined as the combined width of the four fingers (index to pinky) at the level of the proximal interphalangeal joints.

Technical Breakdown of Five-Phase Acupoints

The **Five-Phase (Wu Xing)** theory organizes acupoints based on their elemental associations: Wood, Fire, Earth, Metal, and Water. Each meridian contains five specific points, known as the **Five Shu Points**(Well, Spring, Stream, River, and He-Sea), located distal to the elbows and knees. These points are critical for regulating the flow of energy and treating specific types of pathologies.

Characteristics of Five Shu Points

1. Jing-Well Points: Located at the tips of fingers or toes. Used for acute conditions, loss of consciousness, and clearing heat.
2. Ying-Spring Points: Located in the depressions distal to the metatarsophalangeal or metacarpophalangeal joints. Primary use: treating febrile diseases.
3. Shu-Stream Points: Where the Qi starts to pour. Used for joint pain and heaviness.
4. Jing-River Points: Where the Qi flows like a current. Used for cough, asthma, and upper respiratory issues.
5. He-Sea Points: Where the Qi enters the interior to join the organ. Used for digestive issues and rebellious Qi.

Data mining studies from the **NCBI** have highlighted the statistical prevalence of these points in treating systemic imbalances, emphasizing their role in **homeostatic regulation**. For instance, the use of Earth points on the Stomach meridian (ST36 - Zusanli) is mathematically correlated with significant improvements in gastrointestinal motility.

Positioning Standardized Acupuncture Points: Anatomical Landmarks

Precise point location requires an integration of surface anatomy and skeletal structure. The **Illustrated Manual of Acupuncture Points** provides specific instructions for locating points relative to bony prominences, tendons, and muscular borders. For example, points on the **Large Intestine meridian (LI)** are frequently located relative to the **radial bone** and the extensor tendons of the thumb.

Facial Acupoints and Meridian Groupings

The face is a high-density area for acupoints, particularly those belonging to the Yang meridians (Stomach, Large Intestine, Bladder, Small Intestine, Gallbladder, and Triple Energizer). These points are often grouped by their proximity to sensory organs:

- ST1 (Chengqi): Located between the eyeball and the infraorbital ridge.
- LI20 (Yingxiang): Located in the nasolabial groove, at the level of the midpoint of the lateral border of the ala nasi.
- BL1 (Jingming): Located in the depression slightly superior to the inner canthus.

Comparative Analysis: Human vs. Canine Acupuncture

The application of acupuncture meridians extends beyond human medicine into veterinary practice, specifically canine acupuncture (as explored in the works of J. Stills). While the fundamental **Qi flow** principles remain consistent, the anatomical positioning must be adapted to the quadrupedal skeletal structure.

Feature	Human Acupuncture	Canine (Dog) Acupuncture
Primary Goal	Nervous system regulation, pain, internal medicine.	Musculoskeletal rehabilitation, hip dysplasia, geriatric care.
Point Identification	Manual palpation and Cun measurements.	Transpositional mapping based on skeletal homology.
Meridian Flow	Vertical (Bipedal orientation).	Horizontal/Longitudinal (Quadrupedal orientation).
Key Points	LI4, ST36, PC6.	GB29, GB30 (Hip), BL13-25 (Back Shu points).

Technical Workflow for Accurate Point Localization

For practitioners and researchers, the following step-by-step procedural execution ensures the highest level of accuracy in point identification, as detailed in the **Atlas of Acupuncturology**:

Step 1: Patient Positioning and Relaxation

The patient must be placed in a neutral anatomical position. Muscular tension can shift surface landmarks, leading to inaccurate point identification. For example, when locating points on the **Gallbladder meridian (GB)** on the leg, the knee should be slightly flexed.

Step 2: Proportional Measurement Calculation

Calculate the **proportional Cun** for the specific body segment. If locating points on the forearm (between the wrist and elbow), the distance is defined as 12 Cun. This must be measured using the patient's individual limb length.

Step 3: Palpation of Bony Landmarks

Identify the nearest **skeletal structure**. For the **Spleen meridian (SP)**, the medial border of the tibia serves as the primary longitudinal guide. Use the thumb to palpate the bone edge to find the depression where the point is located.

Step 4: Locating the 'De-Qi' Point

Acupoints are often found in small depressions or "hollows" in the tissue. These areas often exhibit higher electrical conductivity and lower resistance. Upon needle insertion, the attainment of **De-Qi** (a dull, heavy sensation) confirms accurate localization.

Case Study: Managing Chronic Gastralgia via the Stomach Meridian

A technical analysis of the **Stomach (ST)** meridian reveals its importance in descending rebellious Qi. In a case involving chronic gastralgia, the practitioner utilizes a combination of **Mu points** and **He-Sea points**.

The Role of ST36 (Zusanli)

ST36 is located 3 Cun below ST35 (the "calf's nose" depression), one finger-width lateral to the anterior crest of the tibia. This point is technically significant because it lies over the **tibialis anterior muscle** and near the **deep peroneal nerve**. Stimulating this point has been shown via data mining to modulate the autonomic nervous system, specifically the vagus nerve, which regulates gastric acid secretion.

Potential Failure Modes in Point Localization

- Anatomical Variation: Differences in muscle mass or subcutaneous fat can obscure landmarks. Solution: Use deep palpation to locate bone margins.
- Incorrect Cun Scaling: Using the practitioner's fingers instead of the patient's. Solution: Always calibrate measurements to the individual being treated.
- Posture-Induced Shifts: Locating a point while the limb is flexed and then needleing while extended. Solution: Ensure the posture used for measurement is maintained during insertion.

The Significance of Back Shu and Front Mu Points

The **Atlas of Acupuncture** emphasizes the relationship between the surface and the internal organs (Zang-Fu). The **Back Shu points** (located on the Bladder meridian) and **Front Mu points**(located on the chest and abdomen) are diagnostic and therapeutic hubs.

Organ	Front Mu Point	Back Shu Point (BL Meridian)
Lungs	LU1 (Zhongfu)	BL13 (Feishu)
Heart	CV14 (Jueque)	BL15 (Xinshu)
Liver	LR14 (Qimen)	BL18 (Ganshu)
Stomach	CV12 (Zhongwan)	BL21 (Weishu)
Kidney	GB25 (Jingmen)	BL23 (Shenshu)

From a technical standpoint, the **Back Shu points** are located 1.5 Cun lateral to the lower border of the spinous processes of the vertebrae. These points are believed to transport Qi directly to the associated internal organ, making them essential for treating chronic, deficient conditions.

Modern Innovations in Acupuncturology

Current trends in the field involve the 3D digital mapping of acupuncture points. By utilizing **MRI and CT imaging**, researchers are creating a more precise **Atlas of Acupuncture** that maps points to specific neurovascular bundles and fascial planes. This "biomedical mapping" provides a bridge between traditional meridian theory and modern physiological science.

Data Mining and Five-Phase Attribute Analysis

Recent studies published in **NCBI** repositories have used data mining to analyze the characteristics of **five-phase acupoints**. These studies suggest that points associated with the "Water" element often have a more profound effect on systemic fluid regulation and endocrine function, whereas "Wood" points are more effective in treating spasmodic conditions and neuromuscular tension. This statistical evidence reinforces the clinical validity of the **Five Element attributes** described in classical texts.

The integration of the **Illustrated Manual of Acupuncture Points** with modern anatomical data represents the pinnacle of current TCM practice. By adhering to standardized localization techniques—such as the proportional Cun system and the identification of precise skeletal landmarks—practitioners can ensure high therapeutic efficacy and reproducibility in clinical settings. The shift toward a technical, evidence-based atlas ensures that acupuncture continues to evolve as a vital component of integrative medicine, providing a detailed framework for understanding the complex relationship between the body's surface and its internal physiological states.

The depth of information provided in a modern **Atlas of Acupuncturology** serves not only as a guide for needle insertion but as a comprehensive map of human (and veterinary) physiology. Whether analyzing the **Lung meridian (LU)** for respiratory health or the **Stomach meridian (ST)** for metabolic balance, the technical accuracy of point location remains the cornerstone of successful clinical outcomes. As digital mapping and statistical data mining continue to refine these ancient pathways, the bridge between tradition and science becomes increasingly robust, paving the way for more sophisticated diagnostic and therapeutic applications.

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