

# Type IV Acupuncture Points

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**Abstract:** Subsequent to our previous report of acupuncture points corresponding to at least three known neural structures, acupuncture foci corresponding to yet another anatomical entity—the muscle tendon junction—are described and labeled as Type IV acupuncture points. It is suggested that the present anachronistic system of acupuncture point location, description and nomenclature be replaced or supplemented. The designation of acupuncture points by their relationship to known neural structures appears preferable to the current method of description by surface location.

IN OUR RECENT PROPOSAL for the classification of acupuncture points according to relationship to known neural structures,<sup>1</sup> we reported that acupuncture points may be divided into at least three types:

- Type I correspond to a known anatomical entity—the motor point of a muscle;
- Type II to the focal meeting of superficial nerves in the sagittal plane, and
- Type III lie over superficial nerves or plexuses.

Since the above study appeared, another important group of acupuncture points has been recognized. Dr. Kay Clawson,<sup>2</sup> when reviewing our report on the occurrence of tender motor points following low back injuries, called to our attention tenderness also present at muscle-tendon junctions where the Golgi tendon organ is situated (Fig. 1). Some

acupuncture points are seen to be situated at these sites where neurometer readings are moderately high and concisely located.

Examples are:

Mann's Points	Neuroanatomic Description
T-10	Junction of triceps muscle and tendon. <sup>7</sup>
XL-1 (Hao-ting)	Junction of rectus femoris muscle with quadriceps tendon. Although this point is described <sup>6</sup> as the center point of the upper margin of the patella in the quadriceps femoris muscle, it is obviously in the tendon.
S-39 (Hsia-chu-hsu)	Junction of tibialis anterior muscle and its tendon. There is an "upper" or shang-chu-hsu point which is at the tibialis anterior motor point or Type I point.
B-57	Junction of both heads of gastrocnemius and Achilles tendon.

## Discussion

Traditional descriptions of acupuncture points should not be accepted as anatomically accurate but must be considered as general guides to surface anatomy and thus may be compared to the diagrams found in textbooks of human anatomy depicting cutaneous dermatomes or the surface anatomy of internal organs such as the heart or pleura. Whilst these descriptions of the surface anatomy of acupuncture points and internal organs may overlie anatomic entities, the exact locations of the latter may vary slightly from person to

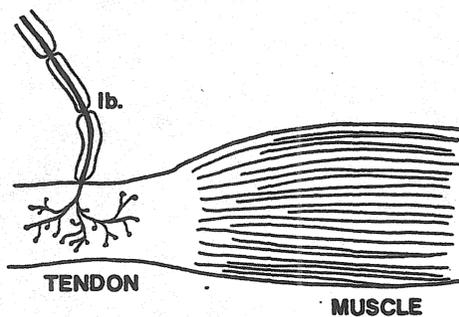


FIG. 1.

The Golgi tendon organ consists of special bare nerve endings found ramifying about bundles of collagen fibers of tendon at the end of muscles. Their afferent fibers (Ib) are amongst the largest fibers in the peripheral nerve. The receptor responds to tension when muscle contracts against resistance or is stretched.

person. It is, therefore, for example, anatomically preferable to specify the "apex beat of the heart," rather than to describe it as "that point which lies 9 centimeters from the midline and in the fifth intercostal space." Furthermore, because traditional descriptions are none too accurate, there may be more than one anatomic entity ascribable to a particular labeled focus. An example is the Ho-Ku point or Li-4 in the first dorsal interosseous space of the hand where there are two points with high DC conductance—the motor points of the first dorsal interosseus and adductor pollicis brevis muscles, both supplied by the ulnar nerve though sometimes mistakenly attributed to the radial.<sup>6</sup> (The overlying skin is supplied by the radial nerve).

Again, Li-10 is shown on acupuncture charts as overlying the lateral aspect of the elbow "at the origin of the extensor carpi radialis longus," yet analysis of this area yields at least four points of low DC resistance—the motor points of the wrist extensors—the extensor carpi radialis, longus and brevis, extensor carpi ulnaris, extensor digitorum and supinator.<sup>4</sup> Li-11 probably corresponds to the motor point of the brachioradialis. It is thus possible for a traditionally labeled acupuncture point to represent more than one "acupuncture-active" anatomic entity.

If the Gate Control Theory of Melzack and Wall for the perception of pain is to be invoked for a partial explanation of acupunc-

ture analgesia, then it is of interest to note that the afferent fibers with the largest diameter originate from the annulospiral endings (Ia fibers) at the motor point or Type I acupuncture points, and Golgi tendon organs (Ib fibers) at the muscle-tendon junction or Type IV acupuncture points.<sup>5</sup>

### Conclusions

Our previous suggestion that the present anachronistic and empirical systems of acupuncture point location, description and nomenclature be replaced or supplemented by one more acceptable to the medical profession is again put forward. The designation of acupuncture points by their relationship to known neural structures appears preferable to the current method of description by surface location. So-called "atlases of acupuncture" or plastic models of the human body showing mere surface anatomy serve, in general, no useful function.

### References

1. C. C. Gunn, F. G. Ditchburn, M. H. King, G. J. Renwick: Acupuncture Loci—A Proposal for Their Classification According to Their Relationship to Known Neural Structures. *Am. J. Chin. Med.*, Vol. 4, No. 2, pp. 183-195. 1976. (Reprints available).
2. Kay Clawson: Personal communication, Oct. 17, 1975.
3. C. C. Gunn, W. E. Milbrandt: Tenderness at Motor Points—A Diagnostic and Prognostic Aid for Low Back Injury. *J. Bone & Joint Surg.*, Vol. 58A, No. 6, pp. 815-825. Sept. 1976.
4. C. C. Gunn, W. E. Milbrandt: Tennis Elbow and the Cervical Spine. *Journal of the Canadian Medical Association*, Vol. 114, pp. 803-809, May 8, 1976.
5. C. C. Gunn, W. E. Milbrandt: Transcutaneous Neural Stimulation, Needle Acupuncture and The "Teh Ch'i" Phenomenon. *Am. J. Acupuncture*, Vol. 4, No. 4, pp. 317-322. 1976.
6. Acupuncture Anesthesia. 1975. Compiled by the First Hospital, the Second Hospital, the Teachers University, the Institute of Physiology, the Institute of Traditional Medicine, and the First Tuberculosis Hospital, Shanghai. (Ministry of Health publication).
7. H. Kinoshita: The Illustration of Acupuncture Points. Ido-No Nippon Sha, Oppama-Honcho Yokosuka, Japan. 1973.