

As a library, NLM provides access to scientific literature. Inclusion in an NLM database does not imply endorsement of, or agreement with, the contents by NLM or the National Institutes of Health.

Learn more: [PMC Disclaimer](#) | [PMC Copyright Notice](#)



[Animals \(Basel\)](#). 2012 Sep; 2(3): 455–471.

PMCID: PMC4494290

Published online 2012 Sep 17. doi: [10.3390/ani2030455](#)

PMID: [26487033](#)

Acupuncture Points of the Horse's Distal Thoracic Limb: A Neuroanatomic Approach to the Transposition of Traditional Points

[Lisa S. Lancaster](#)^{1,*} and [Robert M. Bowker](#)²

Abstract

Simple Summary: Anatomy of the equine foot is not precisely analogous to anatomy of the human hand and foot. Thus acupuncture points transposed from human acupuncture maps may not be functionally similar in the equine digit. Veterinarians strive to select points based on what is currently known about the anatomy and physiology of the equine foot, despite the lack of research evidence to use as guidance. This paper discusses the anatomy and physiology of the horse's foot and presents a neuroanatomically based modification of some traditional point locations including several newly proposed points. The paper also presents neuroanatomically based clinical suggestions for laminitis treatment.

Abstract: Veterinary acupuncture charts were developed based on the concept of transpositional points whereby human acupuncture maps were adapted to animal anatomy. Transpositional acupuncture points have traditionally been placed in specific locations around the horse's coronet and distal limb believed to be the closest approximation to the human distal limb points. Because the horse has a single digit and lacks several structures analogous to the human hand and foot, precisely transposing all of the human digital points is not anatomically possible. To date there is no published research on the effect of acupuncture treatment of the equine distal limb points. This paper presents a modified approach to equine distal limb point selection based on what is known from research on other species about the neuroanatomic method of acupuncture. A rationale is presented for modification of traditional equine ting points as well as additional points around the hoof and distal limb that do not appear in the standard textbooks of equine acupuncture. The anatomy and physiology of the equine foot likely to be affected by acupuncture are briefly reviewed. Modified neuroanatomic points are proposed that may be more accurate as transpositional points. As an example of clinical application, a neuroanatomic approach to

acupuncture treatment of equine laminitis is presented.

Keywords: equine acupuncture, equine laminitis, equine neuroanatomy, veterinary medical acupuncture

1. Introduction

Acupuncture has been used on animals for thousands of years but only since the 1970s in the United States have there been professional organizations dedicated to training veterinarians in acupuncture theory and practice [1]. Acupuncture charts were developed based on the concept of transpositional points whereby human acupuncture maps were adapted to animal anatomy. Transpositional acupuncture points have traditionally been placed in specific locations around the horse's foot and distal limb believed to be the closest approximation to the human hand and foot points. Because the horse has a single digit and lacks structures analogous to the human hand and foot, points traditionally placed distal to the equine carpal and tarsal joints may not have the same physiologic effects as points on the human wrist, hand, ankle and foot.

This paper begins with a description of the main anatomic structures within the foot that are likely to be affected by acupuncture needles placed proximal to the hoof capsule. Then a rationale is presented for using traditional points as well as modified placement and newly proposed points. Because there is limited research on equine acupuncture, discussion of acupuncture mechanisms of action for the equine foot is based on known physiological effects in other species. The final section of this paper presents clinical suggestions for point selection in treating equine laminitis.

2. Equine Foot Anatomy and Physiology

The equine digit refers to the structures distal to metacarpophalangeal or metatarsophalangeal joint (fetlock) (Figure 1(a,b)). The equine digit includes four bones: the first, second and third phalanges, and the navicular bone (distal sesamoid). The term foot refers to all structures enclosed within the hoof capsule. The hoof capsule and its internal contents include the distal phalanx and distal sesamoid bone, and dermal and epidermal components of the coronary region, hoof wall, frog, bars, sole, white line, digital cushion, ungual cartilage, and laminae. The region where the proximal hoof wall meets the haired skin is called the coronet or coronary band. The digit has ligaments between bones as well as between bone and ungual (commonly termed lateral) cartilage. There are no muscles distal to the carpus or tarsus. The tendons within the foot have their muscle bellies on the proximal limb.

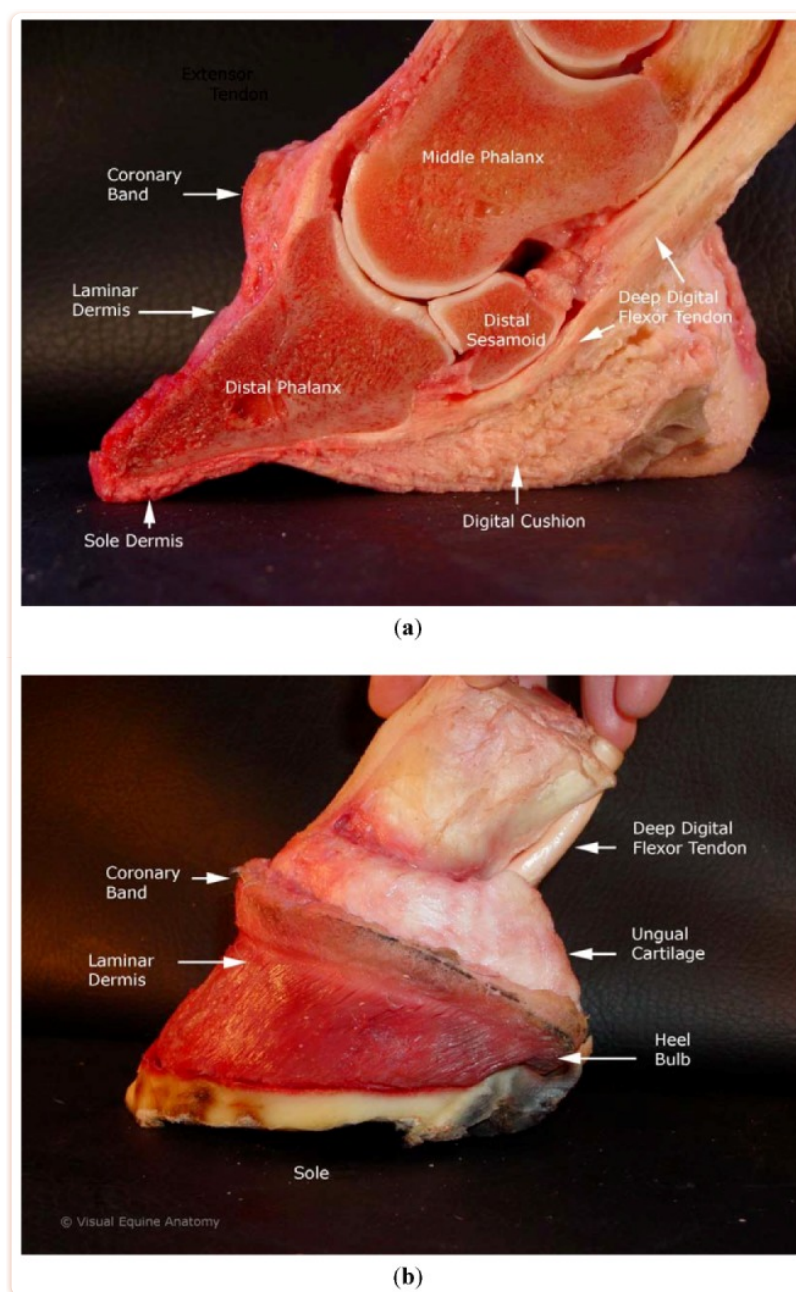


Figure 1

(a) Equine foot specimen sagittal section with hoof capsule removed. Labels identify structures likely to be influenced by acupuncture needles in coronet and nerve block point locations. (b) Equine foot specimen with hoof capsule and skin removed, laminar and coronary dermis left intact.

2.1. Vasculature

Blood supply to the thoracic limb comes from the axillary artery, which becomes the median artery that passes through the carpal canal. Proximal to the fetlock the median artery branches into medial and lateral palmar digital arteries. The digital arteries circle around the distal phalanx in a coronary and distal