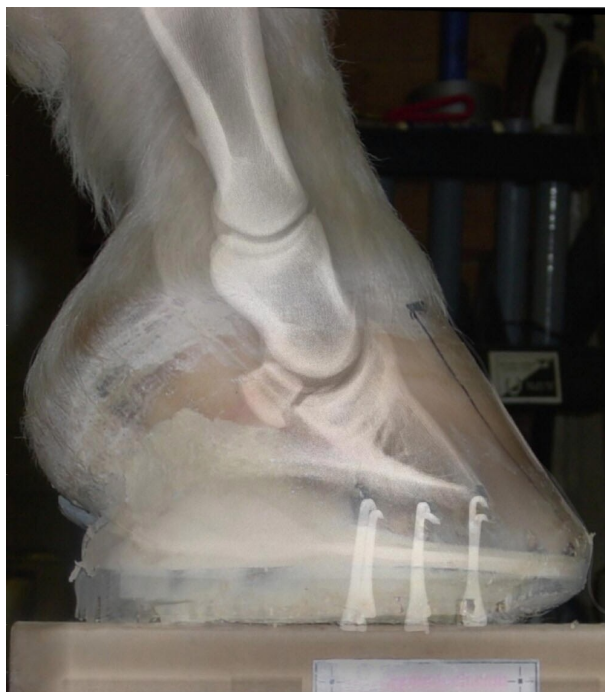


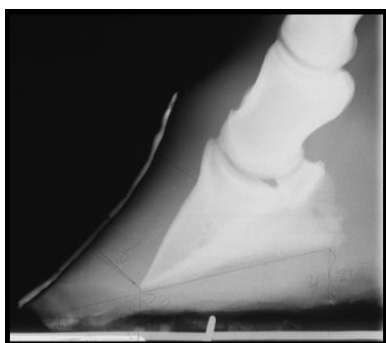


Any deviation from the regular arrangement of the bones in the equine distal limb is damaging to the horse

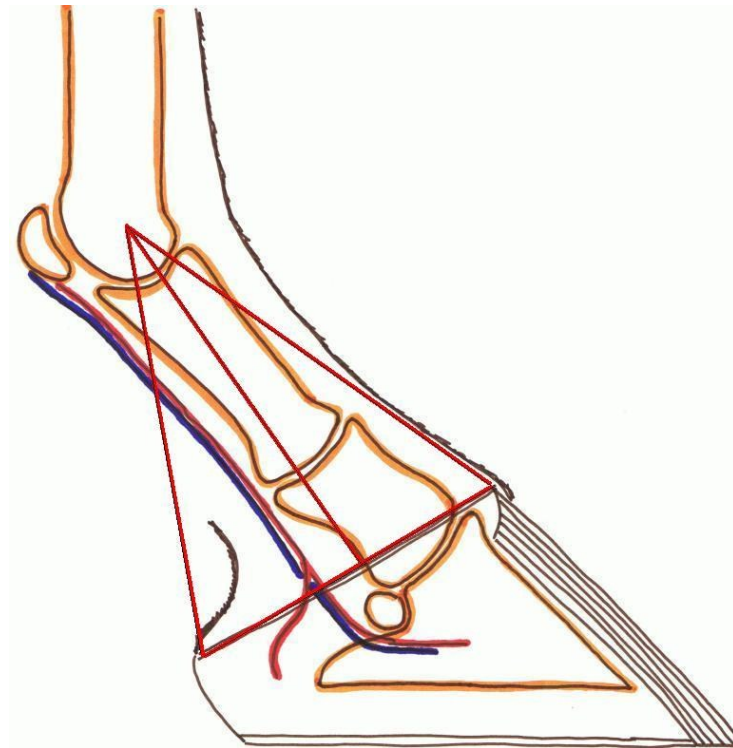
Often we find too steep an alignment of the distal bones. This steep alignment is combined with a steep orientation of the coffin bone, which means that the coffin bone rests on its sharp frontal edge. This may happen while the coffin bone is still parallel to the hoof wall.



Note: When there is a separation of the coffin bone from the hoof wall (the coffin bone is no longer in alignment with the hoof wall) we speak of founder. We will visit that subject in a later lecture



In a healthy hoof the force onto the coronet band is transmitted at a 90°. This is important for the meridian end points (ting points) which lay on the coronet band. If the hoof capsule is distorted and therefore the weight on the coronet band is distributed unevenly, the acupuncture points on the coronet band are out of balance. These acupuncture points are important stimulation points for the major organs





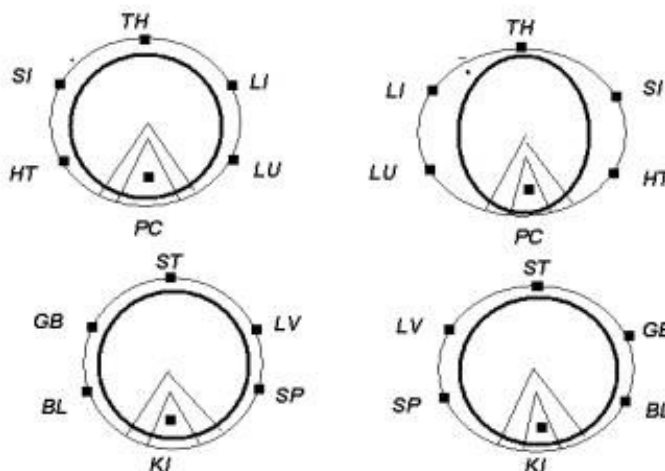
Ting (Jing-Well) Points are the most distal acupoints of the 12 Meridians (Channels). In horses, 10 of them are situated in the coronary band and 2 in the bulb of the heels on each hoof.

Front hooves - meridian end points for the digestive and circulatory organs  
Hind Hooves - meridian end points for elimination and reproductive organs

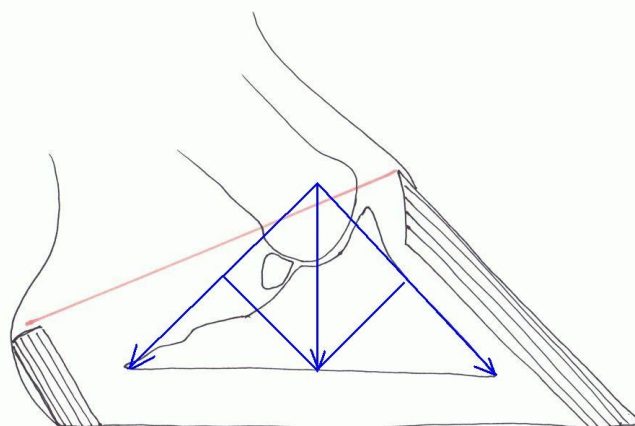
When we see horses with organ dysfunction, they have also unphysiological hoof form

More about meridians, acupuncture and acupressure in "Introduction to complimentary and supportive care" in module #2.

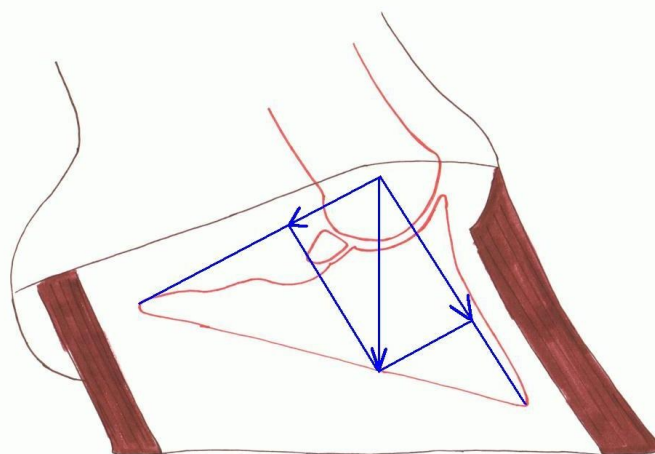
*Diagram showing the placement of the TING-points*

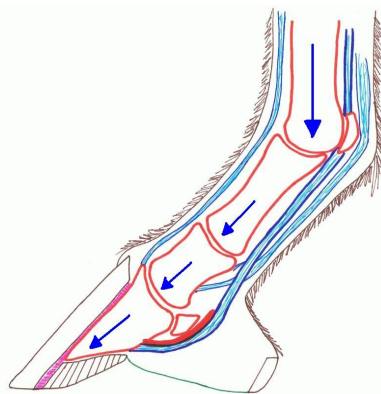


Evenly distributed forces in a healthy situation

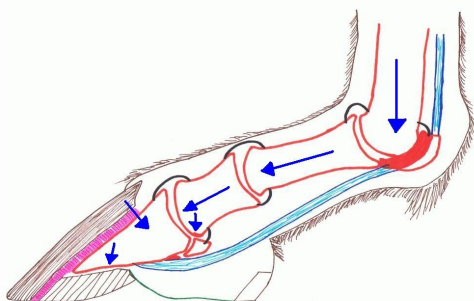


In a steep hoof the horse's weight is no longer distributed evenly. More weight is brought to the frontal part of the hoof wall. The coffin bone is still parallel to the toe line

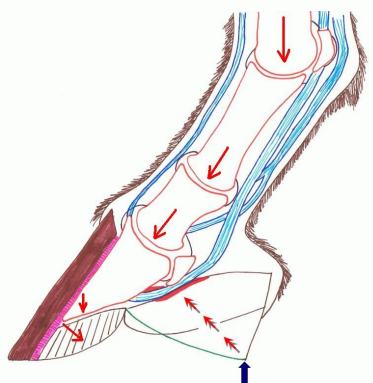




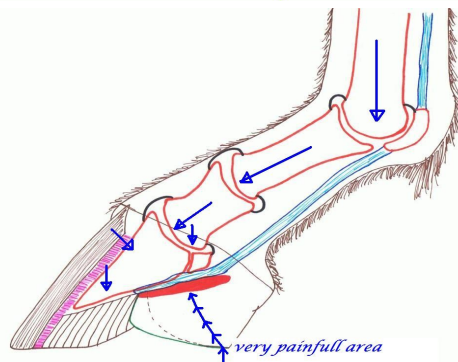
Distribution of forces in a healthy hoof non-weight-bearing



Distribution of forces in a healthy hoof weight-bearing

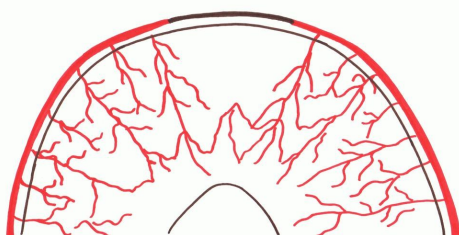


Distribution of forces in a steep hoof non-weight-bearing



Distribution of forces in a steep hoof weight-bearing

Below:



The coffin bone is not ground parallel any longer. When the hoof becomes weight bearing, the forces are transferred to the frontal part of the coffin bone and the circumflex artery is pinched shut. Depending how steep the hoof is, circulation in the area of the pinched circumflex artery is greatly diminished. Sole horn cannot be produced in this area or production of sole horn is greatly diminished.





The contour of the coffin bone shows later as bruising. The reason for this bruising being further forward than where the coffin bone sits: The sole grows forward-down and the bruising only shows up months later.

Beside the circumflex artery being pinched in a steep hoof, the pressure on the tip of the coffin bone also affects the bone. Below left a healthy coffin bone tip, right a damaged coffin bone tip



Causes for club, coon and extensor bearing feet are:

### **Congenital**

Some times a foal is born with a limb deformation.

Changes for this to happen are higher when the mare is given time off during her pregnancy, so she is not moving enough for the foal to develop correctly. Most often these foals are born with a coonfoot, the fetlock often touching the ground.

An extensor bearing situation also may happen. Both situations are remedied within days if the foal and mare are turned out and the foal has sufficient reason to move on appropriate terrain (10 - 15 miles a day with his dam).

Foals have in general steep hooves when they are born. That does not matter



in the first few days, as the foal in the beginning very light, the full development of the rump is missing. But when the foal starts to eat and it starts to grow, the joints start to develop under the weight and the harmonic curve begins to form. This leads to a slanted hoof form as well.

In soft ground or in soft bedding and without sufficient reason to move, not only will the foal hooves develop wrong, but the organs will not grow sufficiently either



## Acquired

**Improper Trimming** - Imbalanced trimming, shortening of the toes, very infrequent trimming, steep hoofs becoming ever steeper. If there is only one deformed hoof, it can be assumed that the cause is improper trimming or an injury (see below).

**Injury** - In injured hooves the horse usually touches only carefully with the toe, so the non-weight bearing heel grows much faster. If left un-corrected, this hoof grows very fast into a pathological shape

**As a Foal** - Today a lot of foals are raised in stalls, on too small an acreage and with too little movement. The terrain is not always appropriate for the breed either, usually too soft to offer proper resistance for the development of tendons, ligaments and a correct hoof form.



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