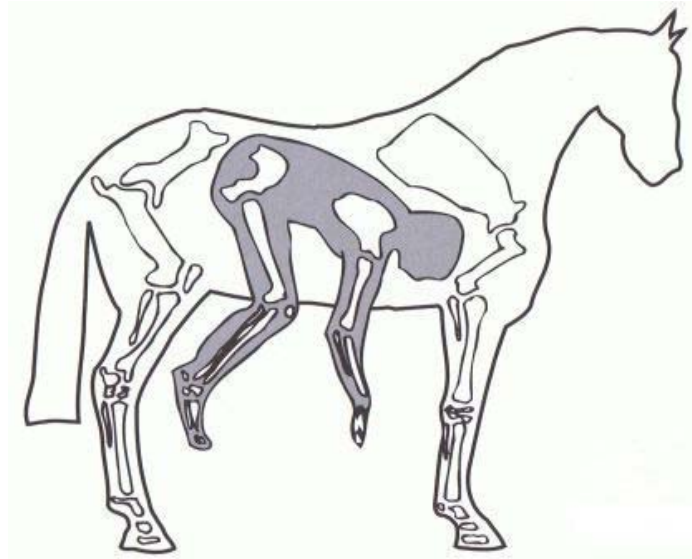


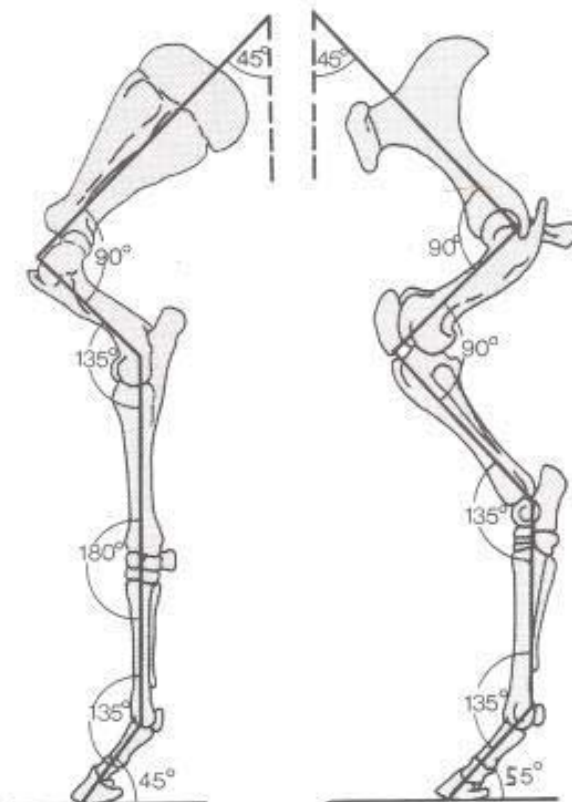


Conformation



Conformation in Hoofcare

Horse conformation is a chapter that can fill many pages. In this context, we are looking at conformation as it applies to hoof care. While there are many conformational challenges listed in conventional horse books, we have learned in natural hoof care that a multitude of these conformational problems can be changed by correctly balancing the hoof. As the hoof is the base of the horse, it often determines all the angles in the skeletal structure above.



Angles in the front and hind limb of a correct conformed horse

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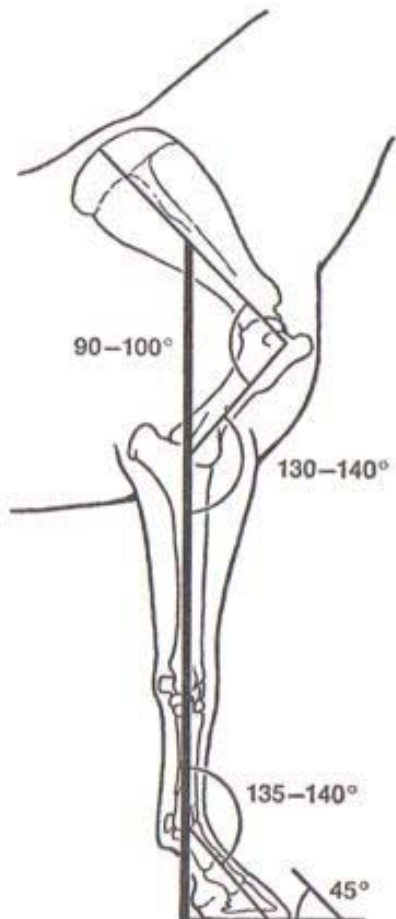
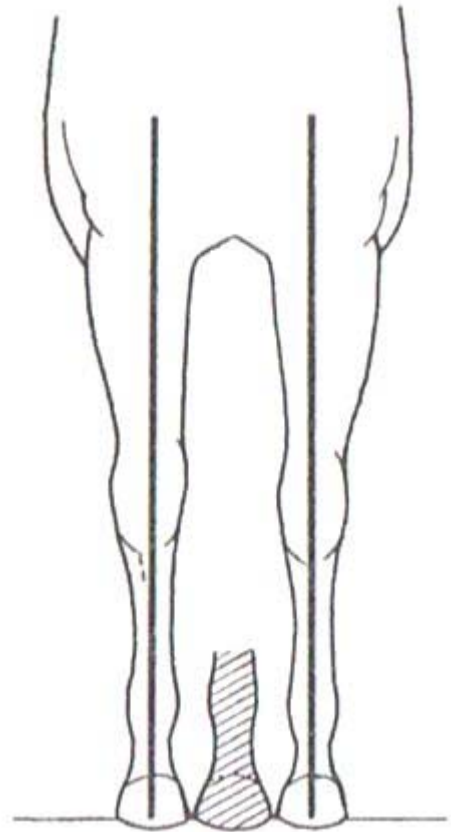
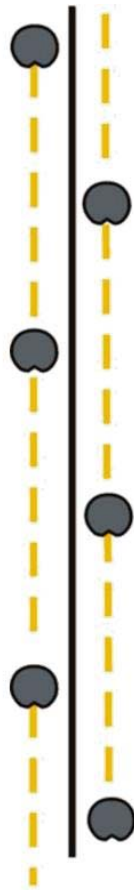
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Correct front limb conformation

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A line dropped from the point of the shoulder (middle of the shoulder joint) bisects a normal forelimb. Such a horse moves straight



A line dropped from the tuber of the scapular spine bisects the limb as far as the fetlock and continues distal just caudal of the heel.



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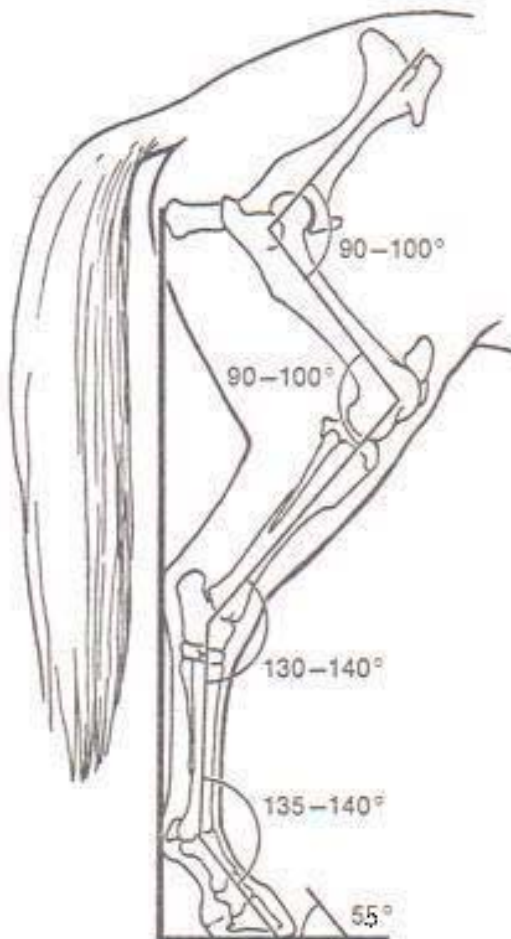
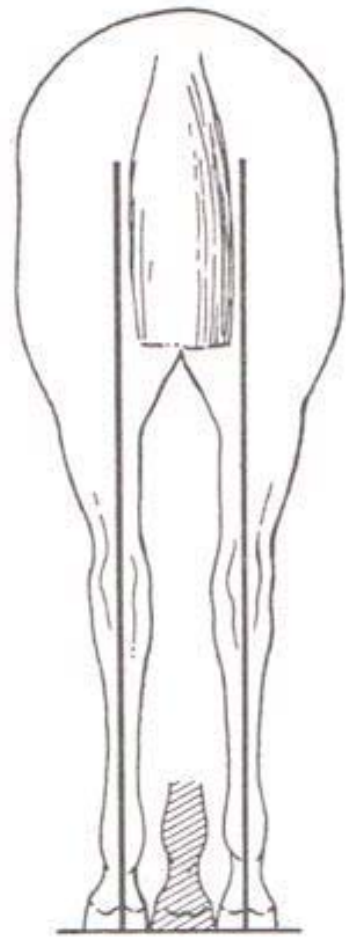
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Correct hind limb conformation

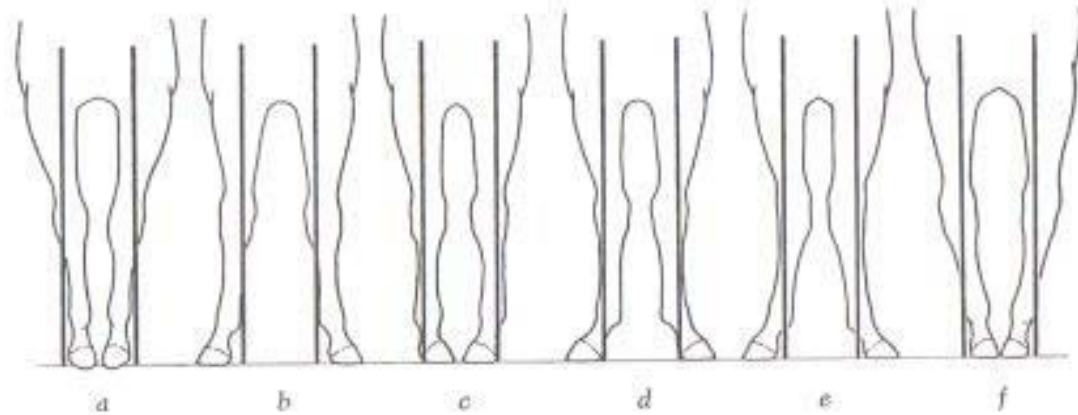
Caudally, a line dropped from the point of the ischiadic tuber ("pin bone") bisects a normal hindlimb.



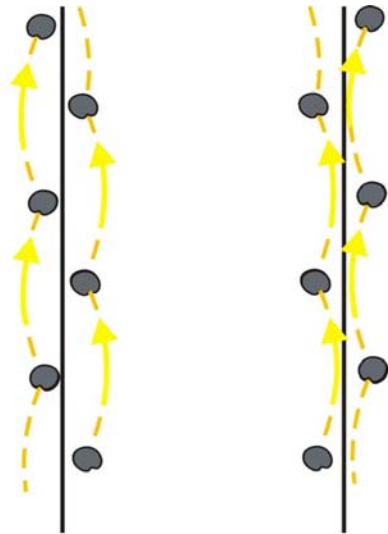
In a lateral view of a normal hindlimb, a line dropped from the ischiadic tuber extends along the caudal surface of the metatarsus.



Incorrect front limb conformation

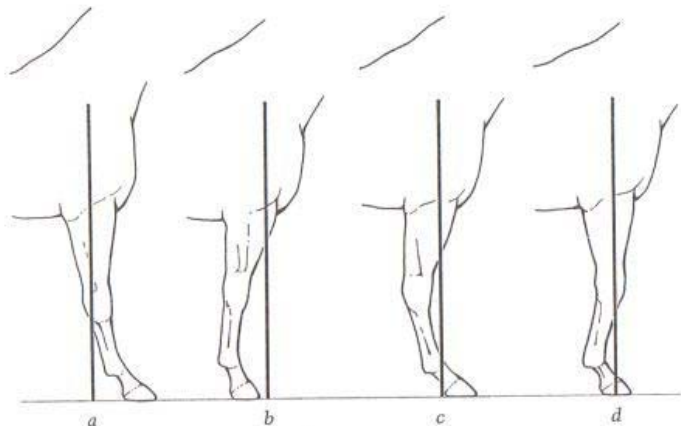


- a) base narrow - loading towards the outside hoof wall
- b) base wide- loading towards the inner hoof wall
- c) toed in - loading towards the outside hoof wall
- d) toed out - loading towards the inner hoof wall
- e) knock-kneed - loading towards the inner hoof wall
- f) bow-legged - loading towards the outside hoof wall



Left: Toe-out conformation usually causes the forefoot to break over the medial side of the toe and arc to the inside - the result is a gait named "winging".
Far left: Toe-in conformation usually results in the forefoot swinging to the outside as it leaves the ground - the result is "paddling".

- a) standing forward
- b) standing back
- c) calf knee
- d) buck knee



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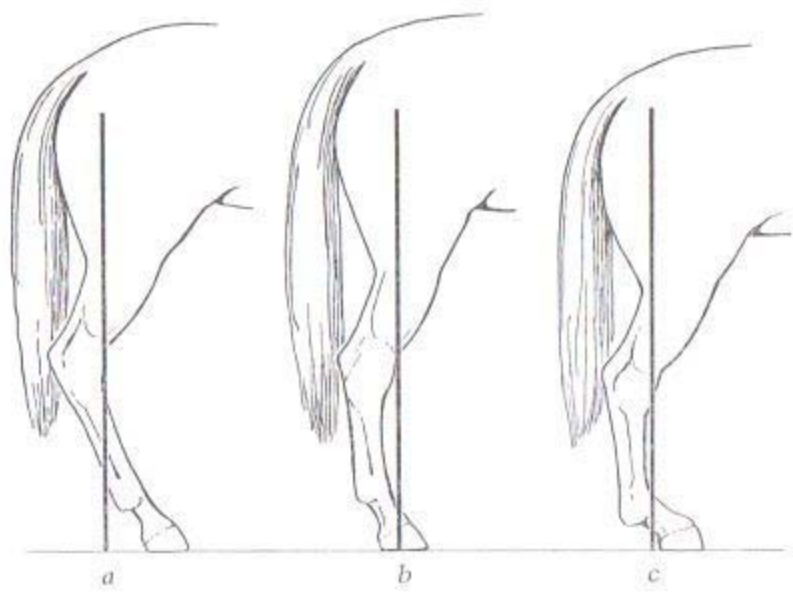
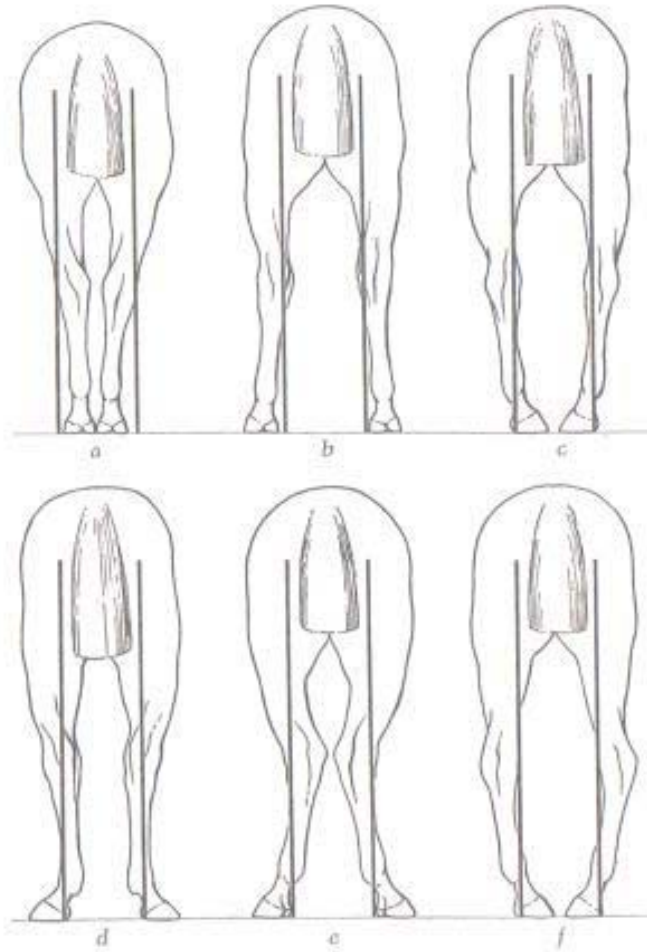
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Incorrect hind limb conformation

- a) Base and hock narrow
- b) Base wide and hock wide
- c) Toed in
- d) Toed out
- e) Cow hocked – loading towards the inside of the hoof
- f) Bow legged – loading towards the outside of the hoof



- a) Sickle hocked
- b) Post legged
- c) Coon footed

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Conventionally it is thought that an upright shoulder like in the picture above = short pastern = decreased levering effect in the support phase = high heel = short toe



Whereas a sloping shoulder = long pastern = increased levering effect in the support phase = low heel = long toe

In natural trimming we have learned that a correct hoof form will influence the placement of the shoulder in a positive (more sloping) way **The previous pictures were all about conventional conformation analysis. You can find these principles in most any book about conformation.**

In **natural hoof care** we are looking at the same problems from a slightly different angle. Unphysiological tension in the muscles usually determines an abnormal movement pattern. But what is the cause for such muscle tension? After studying anatomy we know which muscles in the leg move joints. One can see from the muscle tension in a leg where the horse tries to avoid pressure on the painful hoof. This pain must be larger than the pain resulting from muscle tension.

Usually the hooves are responsible for pain and as a result of this for problems with stance and movement of the leg. The horse has too much horn on one side of the hoof and tries to avoid the pressure. As the hoof is at the same time not loaded evenly, the side that is unloaded grows faster, adding to the problem. One-sided pain results in crooked hooves. Pain in the heel area results in a steeper stance towards the toe, heels will grow faster now.

Balance is really important when evaluating the hoof capsule. Also how long or short the hoof is often determines the movement pattern of a horse.

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Standing forward with the leg indicates pain in the front of the hoof



Standing with the cannon slanted back indicates pain in the heel region of the hoof



Cramped muscles throughout the horse point to hoof pain



Checking from the front how do the bones and joints stack onto each other from the ground up? Is this a healthy situation?





Below left: Sometimes it is not so obvious at first
Below right: X-ray of the same hoof makes the misalign-
ment more obvious



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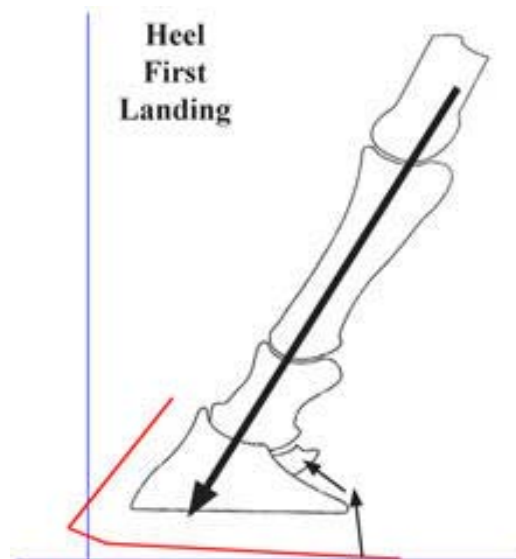
Quality of Movement



A few words about the quality of movement. We have learned that horses have different abilities: some horses move better than others. While this is true to a degree, you also need to observe how horses move with pain and in absence of pain.

A horse that moves correctly with the total absence of pain will not only land heel first as shown in the pictures on the left, he also will have a longer stride and more elevation in his stride than a horse in pain.

Picture courtesy of Gene Ovniczek

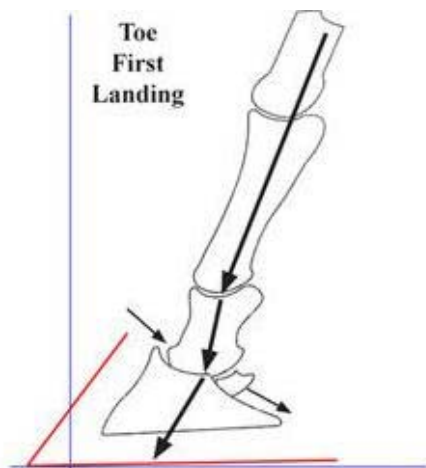




Here is such a horse, the movement is light and appears to have a lot of lift in the stride. The back is swinging and unconstrained.



Some horses may not be lame in



the conventional sense, (i.e., they are not limping.) But they are not loading their hoof back to front. Rather, to avoid landing on sore heels, they first land either in the middle of the hoof or, on the toe.

As you can see in the schematic on the left, this not only results in a short stride, but also does not allow for shock absorption through the natural leaf spring effect.

Picture courtesy of Gene Ovnicek



Here you see a horse with a short stride due to high heels, high bars, long toes. He is short in his stride, resistant in the back and a far cry from being a joy to ride.

Here is the same horse one day after his first corrective trim.



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