This is a first draft of the translation to give you an idea of the content.

Reduced Performance Ability

Reduced performance ability is a very broad subject looking at why the horse isn't performing as well as the rider expects. It is important to consider the horse and rider as a unit and remember that everything on and around the horse influences his performance.

Reduced performance ability has many different causes. When a horse doesn't want to perform, it can manifest in many ways. A lot of riders handle their horses without considering how they behave and without giving any thought as to why they are behaving as they are.

Typical examples are a horse who doesn't want to go forward, runs off, bucks, rears, won't stand still during saddling or mounting, shakes his head, opens his mouth, has tongue problems, is stiff to one side, has a hard mouth, is pacey in the tolt, refuses to trot, is cross-cantering, is stiff in the back, isn't using the hind end, is tight or afraid, swishes his tail etc. Many of us interprets this behaviour as the horse being independent, dominant or stupid and keep on pressing the horse to do what is difficult for him, using different kinds of punishments.

Far too often you hear riders saying their horse is stubborn when it won't do what is asked of him. Comments like "when he doesn't want to be ridden, he goes lame" or "he is just bridle lame", "It's because he is lazy" are often heard. It is important to understand, that the horse isn't able to think in that way, he is not stand in his pen thinking: "If I am lame today, I'll have the day off" or "today I will pretend I can't do the exercises on the right side". If the horse is lame it is because he has a physical problem. The same applies if your horse prefers to work in one direction and not on the other.

Pain

Pain threshold

One thing that makes Icelandics special is their very high pain threshold, which means they won't show any signs of pain until it is really bad. That's why the rider has to be very observant and be quick to respond to the symptoms, so the horse can be helped early on.

Just as there are breed differences in pain threshold, there are also substantial individual differences. Some horses react to very little pain, these are usually the ones who are more uptight and alert, while more easy-going horses will react less. A pain that developed slowly over a period of time is usually more tolerated by the horse as the body gets used to the constant discomfort. It is very clear that horses that have had treatment and have felt what it is like to be pain-free will respond very quickly and show you clearly if they are in pain again

There can be many reasons why horses have pain. It takes a thorough examination to go through all the diagnoses, and it is important that the rider tells the vet as much about the horse as possible. This is only possible if the rider is observant to the signals the horse is sending at all times.

The list of symptoms is long and a lot of horses can show a number of these reactions, without it meaning that there is something wrong. It is most important to pay attention to the number of

symptoms, in which situations they occur as well as the frequency and the degree to be able to conclude whether the horse has a physical problem, hasn't learned and understood the message from the rider, or if the problem really is the rider. It takes both insight and acknowledgment from the rider to correct them.
(See more in the chapter "the rider")

The horse can show his discomfort in many ways during the ride:

- He won't stand still during saddling
- He tightens while mounted
- He drops his back or hind end during mounting
- He won't go forward
- He is too forward
- He bucks or rears
- He pins his ears
- He swishes the tail
- He shakes his head
- He is heavy on the bit and drops his back
- He will only do the exercises to one side
- He won't turn his head/neck
- He is walking crooked with his head/neck
- He is difficult to turn in the neck or body
- He wont bend his neck
- He is stiff
- He walks on two or three tracks
- He won't trot
- He won't tolt
- He will only pace, and is pacey in the tolt
- His trot has four beats
- He "jumps" in the trot
- His has a four beat canter
- He wants to canter in the beginning of the lesson
- He prefers cross-canter or changes the lead all the time
- He will only canter on one lead
- He trips
- His balance is bad in the corners
- He loses his hind end, or loses a step behind
- He has lost his action in the front legs
- He shuffles his feet (walking with very small & fast steps)
- He takes small steps
- He walks as if on glass
- He doesn't use his hind legs
- The length of the steps on his hind legs isn't even
- He doesn't use his back
- He groans during saddling
- He overreacts to the rider's legs
- He overreacts to the rider moving in the saddle

- He sucks his tongue back
- He puts the tongue over the bit
- He sticks his tongue out
- He grinds his teeth
- He sweats a lot, or sweats a lot after riding
- His respiration is high and shallow
- He holds his breath
- He doesn't want to be caught

He can also show his discomfort in the stall

- He doesn't want to be groomed or touched in certain places
- He gets anxious or tight when he sees the bridle or saddle
- He doesn't want to lift one or several legs
- He gets anxious when the saddle is tightened and may threaten to bite or kick
- He bites the leadline
- His respiration is high

Posture

The horse's posture, the way he carries himself, tells a lot about possible tensions in his body. The posture is controlled by the position of sensory receptors, which sit in ligaments, tendons, muscles and joints and send information to the brain through the nerves.

If the body is damaged the position sensory receptors will tell the brain to protect the painful areas and the horse's posture and movements will change. By observing the horse, when he is resting or being saddled, you can get an impression whether he has pain somewhere and is trying to relieve certain areas.

Foto: Friðbjófur Þorkelsson

- Is he always resting on the same hind leg??
- Does he shift his weight from one hind leg to the other all the time?
- Does he often shift his weight from one front leg to the other?
- Are his front and hind legs standing spread out from each other?
- Is one of the front legs always standing in front of the other?
- Is he standing with his front or hind legs underneath the body?
- Is he standing with a dropped back –that means, has he got a sway back, and does the stomach look big or like a hay belly
- Is he standing with his head tipped?
- Do his ears have the same height when they are in the same position?
- Does his neck bend to one side?
- Does the spine bend to one side?

When the horse is injured, his posture will change from what is normal to what is more comfortable. This posture will quickly become "normal" for the horse, even after the pain is gone. Therefore after recovery it is important that the horse once again learns the correct posture and to use his body as correctly as possible to avoid secondary damages. (See chapter "training methods")

Muscle development and the symmetry of the body
By looking at the muscle development of the horse, you will be able to see which groups of muscles are used correctly and which are used incorrectly. Muscles that work properly are round and full, while muscles there are used poorly either atrophy or become too big.

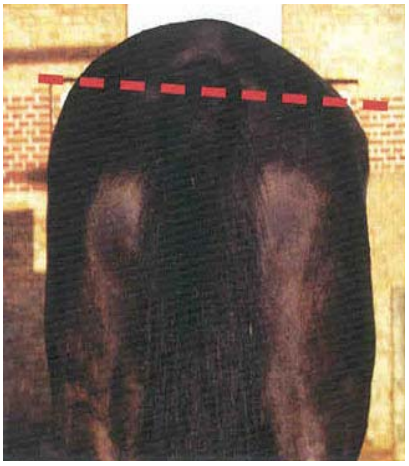
When a horse is working correctly, it will have a homogenous convex curve on the top of the neck, the bottom of the neck will be relaxed, and not pushed out. The chest should be broad and have good muscle tone. The trapeziums muscle behind the shoulder blades will be thick and full and the long muscles in the back will be round and full. The croup shall be round and full. The muscles of the belly should be firm.

A horse that uses himself incorrectly can have a concave curve on the top of the neck, either all the way or part of it (and therefore the mane can tip), he can have a ewe neck (overdeveloped muscles on the lower side of the neck), and the chest-bone will be pointing out clearly. If the vertebra in the neck can be clearly felt, there are not enough muscles on the side of the neck.

The trapeziums muscle can be atrophied and create a hollowness behind the shoulder blades, the spine can be pointing up clearly all the way to the croup, or the loin muscles can bulge up as two pillows (some people wrongly believe that it is fat deposits or sign of a strong loin). The croup can be atrophied and the horse can have a hay belly appearance, because the muscles in the belly are not strong enough.

Asymmetry of the muscles
The muscles can be asymmetric on the two sides of the horse. Asymmetry can be seen when standing in front of the horse looking at the muscling above the front legs, chest and shoulders.

The points of the hips can have different heights, and the tail can be crooked. Look at the horse from all sides as he stands squarely on all four legs to compare the fullness and symmetry. Icelandic horses in winter coat can be quite difficult to evaluate because of their heavy coat.



Movements

A horse that is in good shape should move with an even beat, be supple and swing evenly to both sides. Like humans, horses will have a strong and a weak side, but it has to be possible to engage the weaker side easily through training.

It takes an experienced eye to notice movement-distractions, but here are some simple exercises you can try.

- Can the horse eat a carrot by the girth area on each side (the carrot test)?
- Does he turn his head/neck evenly to both sides?
- Does he rotate his head?
- Can the horse trot evenly on both sides on the longeline?
- Does he often change the gait?
- Is it hard for him to get his hind end under himself?
- Is it hard for him to raise his neck?
- Does he walk with his neck straight ahead, as if he can't come up through his shoulders?
- Does he walk with an ewe-neck?
- Is he much better on one side than the other?
- Does that include all the gaits or just one of them?
- Is one gait very difficult for him?

While longing the horse should be able to trot evenly on both sides, same in canter. Some horses will need a larger circle if they have a very four-beat canter.

The gaits and the spine biomechanics

Even tough it is the legs that do the movements in the gaits, the back is essential in bringing suppleness to the movement. A lot of people incorrectly see big leg action as a sign of correct movement through the whole body, but that is not necessarily the case.
The vertebrae of the spine move and create the connection through the back. This movement is very different from gait to gait. The spine can move at different levels.

It can curve upwards, sway downwards and rotate from side to side. The facet joints limits the movement.

The influence from the gaits on the spine movement follows the succession of the legs.

Santa frá Mósitja / Eiríngur Eiríngsson

Nagli frá Búfu / Þórður Þorgeirsson

Ormur frá Dallandi / Atli Guðmundsson

Drottning frá Efri-Rauðalæk / Baldvin Ari

Walk and tolt

Walk and tolt are four beat gaits without a suspension phase.
The succession is RH → RF → LH → LF → RH etc. The spine will then move right → forward on the right side → rotate diagonally back to the left → forward on the left side →rotate diagonally back to the right → etc.
This means that the spinous process, especially in the withers (because they are so long) moves several cm. from side to side.
The movements end up in the undulating movement of the tail which is visibly in the tolt, but the neck also projects an undulating movement that is clearly seen in the walk with lose reins. It can easily be observed when you look at a horse from above, which walks up a slight hill.

Trot

Trot is a two beat diagonal gait with a suspension phase. The succession is RH and LF → suspension phase → LH and RF → suspension phase → RH and LF → etc. At the trot the spine will rotate diagonally RH – LF – in the suspension phase straiten up, then rotate diagonally LH – RF, herby arise spine movement in the floating phase. The longer the suspension phase is, created in correct posture, the bigger the diagonal rotation and spine movement. If the horse moves with a dropped and therefore locked back, the spine movement will decrease, and the movement becomes hard and uncomfortable for the rider.

Pace

Pace is a two beat movement with a floating phase. The succession is RH and RF → suspension phase → LH and LF → suspension phase → RH and RF → etc. The spine will move right – in the suspension phase, straighten up, and then move left. The slower, and thereby shorter the suspension phase, the clearer the rider feels the rotation from side to side. At a high speed the suspension phase is longer, when the spine is straight, so the rider feels less movement from side to side.

Canter

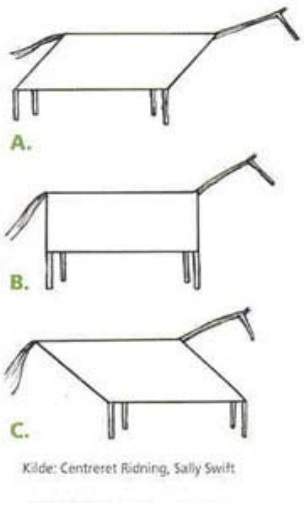
Canter is a three beat movement with a suspension phase. The succession on the left lead is RH→ LH and RF → LF → suspension phase→ RH →etc. It is LH → RH and LF → RF → suspension phase → LH → etc. on the right lead.
On the left lead there is a rotation towards the right after a diagonal rotation from left towards right and then a rotation towards the left. At the same time an extension happens, and in the suspension phase a strong flexion especially in the loin by the transition between the chest- and loin vertebras, and the transition between the loin and the sacrum. The extension – flexion is the most visible part of the movement, and gives the rocking feeling, but the rider will also clearly be able to feel that his pelvis is rotated forward to the left.

The power is in the lift of the hind legs as it is transmitted up through the pelvis, forward towards the loin and sternum to the front end. The more a horse collects himself with the hind-end underneath him, the more the lifting power is transmitted. It crates a bigger movement of the spine and therefore higher front leg action. When there is speed in the gait, a good push will provide longer strides and more floating in the gaits. For this to work the spine needs freedom to move. If the spine's movements are restricted by a saddle that is not placed correctly or is too narrow and lies to close to the spinous process, it will have a large influence on the gaits. The movement of the spine can also be restricted if the rider clamps to the horse or if the rider is locked in the loin and doesn't follow the movement with his/hers seat bones. (See chapter "the rider")

To avoid the discomfort the horse will keep his back as still as possible and thereby lose his spin movement in the trot and canter He will become pacey in the walk and tolt. Different problems in the spine can also cause reduced movement.

The balance of the horse

In nature when the horse is eating much of the time he carries most of his weight on the front end. His point of balance is in the front section of the horse's body. Being able to carry a rider on his back and do the exercises asked of him, he has to move his own point of balance back in the body, so he can remain balanced. The more the horse carries the weight on his back end, the more collected he is. The change of balance point demanded by the rider depends on the gait and the required degree of collection. The slower the horse is in his gait the more collected he can be. As he speeds up he has to straighten out and move his point of balance more forward. You can look at the degree of collection as an elastic in the horse. It is not automatic for the horse to move his point of balance back and forth; it is something he has to learn. It is the rider's most difficult job to teach him that.



Kilde: Centreret Ridning, Sally Swift

The rider's placement on the horse influences a lot for his ability to balance and to his ability to carry the weight. If the rider is leaning forward, the horse has to move his point of balance forward under the rider, so that he doesn't loose his balance and feels he is falling onto his nose. If the rider leans back, the horse has to move his balance point the same way underneath the rider and balance himself by stepping further underneath himself. These exact mechanisms can be used as the most important tool in riding, that is the weight. If the rider leans forward the degree of collecting is reduced and the speed increases, while leaning back increases collection and decreases the speed – this is also used to change the gaits.

There has been a large tendency to overdo this, especially by building long saddles with the rider's point of balance placed onto the back 1/3 of the saddle and at the same time placing the saddle too far back. That creates too much strain on the loin of the horse, which is the weakest point of the back and it places too much weight on the hind end. Thereby stress and damage can occur to the loin, croup and hind legs.

Pulling – a vicious cycle
Due to the horse's strong flight instinct it is very important for him to feel well balanced, so he is always prepared for flight. If he is unbalanced and thereby not able to escape quickly, he will, according to his instincts, end up as food for a predator, and this feeling can create anxiety. If the horse feels trapped or unbalanced and at the same time feels unsafe or is hurting he will try to get away. Therefore he will fight to get away the more he feels stuck or tied up.

Examples:

1) When the horse is tied up and gets scared, he will pull until he gets loose-no matter if he falls backwards, and that can cause serious damage to his neck and hind end. The same happens if he is stuck, whether it is in a stall, a fence or in the trailer. After accidents like these the horse often won't be lame or bleed, but the bruises, muscle damages and joint damages, which often occur are not noticeable and you think the horse is all right. Later on it can be seen as low performance ability.
2) If you lift a leg and the horse is concerned it will fight more the harder you hold on. If you relax and loosen your grip, he is more likely to relax.

The horse is unable to balance properly is he has an impaired range of movement in the neck. There are several mechanisms in the body, whose function it is for an individual to stand upright and balanced. There are balance-centres in the brain, the balance organ in the ear, the position sensory receptors in joints, ligaments, tendons, and muscles in legs and back, plus the so-called "neck-nerves" that appear between the three first neck vertebras and the position of sensory receptors in the neck muscles. The influence from the neck-nerves on the balance is huge. This is shown by vet Charlotte Frigast, Dk. through some experiments, where used local anaesthetic around the various nerves and observed how unbalanced the horses became. This means that the more locked the horse's neck, the harder it is for him to use the neck as a balancing pole, and the horse becomes more unbalanced and scared.

The neck is very important for horse's ability to balance.
The rider's rein-contact is very crucial for the horse's ability to stay balanced. If there is a constant pull through the reins, the horse's ability to use the neck as a balance-bar reduces, and he is forced to put a great amount of weight on the bit and thereby lay his weight on the front end to keep balanced. The horse becomes hard in the mouth and heavy on the front end. Self-carriage and collection disappear and consequently so does the tolt. The horse gets pacey, hard to stop and control. Often the horse will be accused of being "hard in the mouth", but in reality it is the rider who is "bad on the rein". (Read more in the chapter "the rider".)

The horse pattern of movement
To understand why the problems mentioned in the introduction have an influence on the horse's pattern of movement and performance ability, I will go through an explanation of how the horse moves correctly.

For the horse to move with flexibility and big movements it is important that he is well balanced. This appears when he flexes his pelvis, so the hind end gets underneath himself allowing the back to become flexible and springy. At the same time he will naturally rise in front, get better leg action and the correct flexion in the neck. It is important that the entire body works in harmony. To get the right carriage of the neck, the pelvis also need the right slope, and the back needs freedom to flexible movement.

In the wrong posture the horse locks his back, that means he loses his flexibility, because the long back muscles withdraw, causing the neck and pelvis to pull up. The muscles in the belly loosen and the horse gets a hay-belly appearance. To maintain balanced, the underneath part of the neck is tightened, and in an attempt to breath easier the horse has to pull his neck up and forward. The horse is not carrying himself with his hind end, his balance decreases, the front leg action is reduced and head-carriage is poor. At the same time he loses his beat and posture. That is what most horses do when they feel pain, no matter if it's from the mouth (problems with the teeth, pull from the reins, wrong bit) or from the back (wrong saddle, poor riding) or from the hocks (spavin) or any another place. This puts the horse in a situation where it is physical impossible for him to move correctly, and therefore he will not be able to perform as well as he could.

An Icelandic horse will have most of his weight on the hind end in the tolt and more weight on the front end in the trot. This fact can be used in looking at a horse with reduced performance ability. Generally speaking you can say that a horse that won't trot has a problem in the front end, and a horse that doesn't want to tolt has a problem in the hind end. Horses that only show piggy-pace can have problems all over, but the common denominator is that they are stiff and inflexible in the back. Problems in the canter often appear due to pain in the sacrum, the last two vertebrae in the loin or in the neck. A pacey walk is a sign of lack of flexibility in the back or of poor balance. Different length of strides in the walk is a sign of a problem in the loin or lameness in the hind legs.

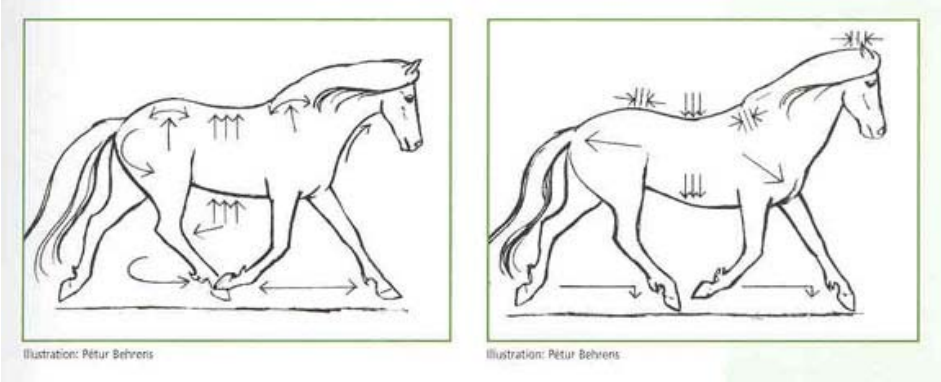


Illustration: Pétur Behrens

Illustration: Pétur Behrens