

Pinto Patterns

In past installments of this column, we have mostly dealt with dilution genes, which can be classified as effecting red or black hairs (pigment specific), or the body or points (location specific). At this point we will be moving on to the pattern genes, which mask specific areas with white rather than alter the base color. For this reason the pattern genes are best understood in terms of where these "masks" first appear (the points of origin) on the most minimally marked animals, and the directions they spread (the pattern progression) on more extremely marked animals. Variations in these two aspects - "points of origin" and "pattern progression" - are especially important with pinto patterns since they make it possible to tell one pattern from another. *(Note: In the years since I wrote this article and started using these two phrases to help explain pinto patterns, I have found it also helpful to talk about where the white does not go in each pattern, the "areas of exclusion". Since this article is older, that aspect of pattern progression is not included.)*

It should be noted, however, that pattern progression in pintos applies to groups of horses showing varying amounts of white, and not the individual horse itself, since these patterns are fixed from birth and do not change with age.

Of the patterns of white found in horses, those that make up the pinto patterns are probably the most popular at the moment, both in the real horse world and in our industry. There are currently four patterns in this group. The first one, tobiano, is probably the best known, while the remaining three are frequently lumped as a group and collectively called overos. While this is not inaccurate - they are indeed all overos - it is also not particularly helpful since frames, splashes and sabinos vary a great deal from one another. They are also the result of separate genes, and not all breeds said to come in overo actually have the three different genes in their breeding group. Arabians, for instance, can be found with sabino patterns, but not frame or splash. Someone learning that Arabians could be "overo", but not aware that there were three different types of overo, might choose to paint an Arabian model with a frame pattern, which would be unrealistic. For that reason I am a big advocate of understanding the differences between the overo patterns, and using specific terms for them whenever possible.

The following are overviews of the pinto patterns in horses. In subsequent issues, we will look at each one more closely.

Tobiano

Tobianos look like white horses with dark spots, as opposed to the other three patterns that tend to look like dark horses with white spots. Their face markings tend to be conservative and the eyes are usually dark. Tobianos almost always have four white legs and the white on their body will usually cross over their back or neck. The borders of the spots are usually rounded and well-defined, but sometimes the placement of many smaller spots in one area will make the white areas seem jagged. However, even in the wildest tobiano pattern it is usually possible to see how roundish spots grew together to form the pattern.

Although tobianos do look like they have dark markings on a white background, it is much easier to understand how the patterns work if the subject is approached in terms of white markings covering the base color. Although the pattern progresses as dark spots grow in size and frequency until they run together and make more of the horse dark, pinto breeders tend to define a horse by how much white is present. Therefore, a horse with a lot of spots that have run together (making him predominantly dark) would be termed by pinto breeders as "minimally marked". Remember that the points of origin and pattern progression are being described as the start of the *white* areas, so this approach will seem to be looking at tobianos backwards, in a way!



This Saddlebred gelding has a very typical tobiano pattern.

Points of origin: On all four legs (solid legs are exceedingly rare, and found on only the most minimally marked tobianos), along the topline between the neck and withers, and at the base of the tail.

Pattern progression: On a minimally marked tobiano, usually what is seen are high stockings that appear to come to a point along the side of the leg, and a small patch that crosses the neck or withers. There may also be white at the base of the tail which turns the top half of the tail white (a dark tip to the tail will often remain, even in the more extremely white tobianos). As the pattern progresses, the patch along the neck will spread down the back, eventually joining with the patch at the tail. At the same time, the white will spread down the sides roughly perpendicular to the ground. As more white appears, the individual (dark) spots become more obvious.

Frame Overo

In many ways, frame overo is opposite in appearance to tobiano. Frame overos appear to be dark horses with white spots that resemble torn paper. Bald and apron faces are quite common, but the leg markings are conservative. The markings tend to concentrate on the neck, shoulder and flanks, and the pattern does not generally



This frame overo displays white in the typical areas - the face, the broad sides of the neck and barrel, while the hindquarters and legs remain mostly dark.

cross the topline or extend to the hindquarters. The tail is almost always dark. Blue eyes are occasionally seen, but they are not a hallmark of the pattern in the way that they are for splash overos. Many geneticists believe that this is the pattern involved in Lethal White Syndrome. (Update: Scientific testing has since proven this.)

Points of origin: On the face but not necessarily including the eyes, on the sides of the neck, and on the barrel.

Pattern progression: In the most minimally marked frame overos, there will be a bald or irregular face marking and a small patch on the side of the body without coming too close to the edges of the horse, when viewed in profile (hence the name - the dark areas "frame" the pattern). As the pattern progresses, more white will appear on the sides of the neck and body. Because the white concentrates on the body and neck, and grows towards the shoulder area, the hindquarters often remain dark even in more extremely marked horses. Irregular patches do occasionally appear on the forearm and stifle, but are extensions of the body pattern rather than extensions of the leg markings.

Sabino Overo

The sabino pattern is probably the most common form of spotting in equines, and is known by a variety of names depending on the breed or geographical area; "wild white", "flash markings", "calico", "particolor", and "lit-up roan" are just a few. The sabino pattern is an exaggeration of the face and leg markings found on solid horses, but beyond that generalization the pattern has a great deal of variation. Some sabinos will look blotchy, with roundish spots of dark hairs in the middle of their white areas, giving them an almost appaloosa-like appearance. Some will have ragged white markings with little roaning at all, while others will be heavily roaned and ticked with no distinct areas of dark and white. The current belief is that the sabino pattern is actually the result of a set of genes, which would account for the variation and for the fact that certain variations are found in some breeds but not others.

Points of origin: On the face and under the jaw, up the legs along the stifle, and under the belly, possibly the girth area.

Pattern progression: Many people mistake these overos, at least in the pattern's more minimal expressions, as being solid horses with

flamboyant markings, and indeed the pattern does seem to work by extending the white normally found on the face and legs of solid-colored horses. Usually there will be high stockings, especially on the hind legs where the markings often extend up the stifle. Patches will appear along the belly or girth, and sometimes on the legs as well, more often on the knees. There is a lot of facial white, although not as extreme as it is seen in frames or splashes, and it tends to spread under the jawline rather than across the face. It is along the belly and up the sides of the body that the pattern usually grows, as well as up the stifle and along the hindquarters. Sometimes this progression up the hindquarters will form a peculiar jagged line straight up the hindquarters to the croup. On the forelegs the markings will eventually move up the chest and from there run up the neck, where in the more extremely marked animals it will eventually join the white along the jawline. The tail and mane will often remain dark, though roany sabinos often have mixed manes and tails. The most extreme sabinos are born white, often with faint ticking on the skin. The eyes of sabinos are typically dark, even when the foal is born white.

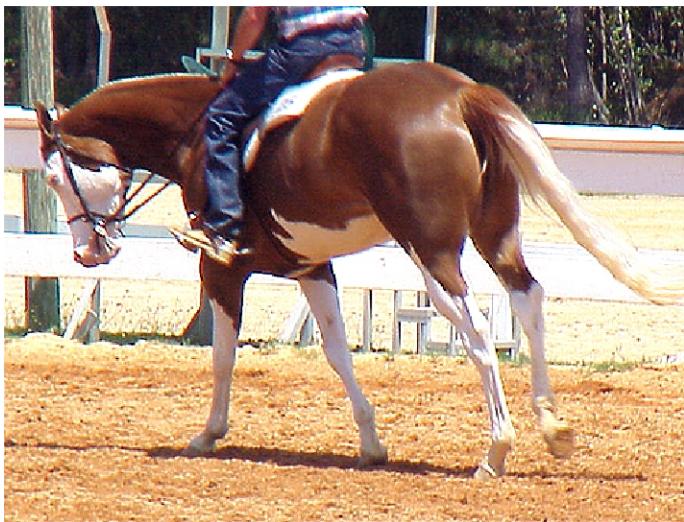
Splash Overo

This is probably the least known of the overo patterns, although it is actually more widespread across a variety of breeds than the better-known frame overo pattern. Horses with this pattern look as if they have been dipped feet-first into a vat of white paint. Splash overos have more face white than any other pattern, with bald faces standard and paper faces (where the entire head is white, except the ears) not at all uncommon. The legs are also typically marked with a great deal of white. The edges of the markings are even, without roaning or flecking. The tail may be dark or light, and occasionally a light tip will be seen on an otherwise dark tail. Both eyes are typically blue, though some minimally marked horses will only have one blue eye or a partial blue eye.

Points of origin: On the face including the eyes, on the legs, and on the belly.



This Paint gelding shows how the sabino pattern can appear to be just a slightly more flashy form of ordinary stockings and blazes. Minimally marked sabinos - horses with only a little less white than this horse - will often slip through registries that do not register "pintos" because their patterns are seen as attractive markings, rather than as less extensive versions of a pattern.



Although it might look flaxen, the tail on this splash overo is red chestnut. The lighter bottom is white, and is part of his pinto pattern. This trait, along with his completely white face and blue eyes, is typical of splash overos.

Pattern progression: In its most minimal form, this pattern can be hard to distinguish from a minimally-patterned sabino, since the points of origin are much the same. What will differentiate the two are the edges, which are even like those seen on the tobiano, and the eyes, which are almost always blue. As the pattern progresses, the white on the legs will extend as if the horse was dipped further and further into a bucket of white paint. From the belly it will travel up the sides of the body, often crossing the middle of the back, leaving a dark area on the hindquarters and on the lower neck and shoulders. Eventually the only remaining dark area will be the ears. While minimal splash overos are occasionally seen with only one blue eye (or even a partial blue eye), the vast majority will have blue eyes.

“Toveros” or Combination Overos

Although the American Paint Horse Association only registers horses as being tobiano, overo or tovero (a combination of the first two), it is quite possible - even likely when horses are being bred specifically for color - that a horse will have more than one of the four basic patterns. While many of these horses will end up classified as toveros, some with a combination of two or more overo patterns will simply be called “overos”. The important thing to remember is that all four patterns are the result of separate genes, and that when several are inherited by the same horse, identifying just which patterns are involved can be difficult.

When a horse inherits more than one pattern, for the most part the end result looks very similar to what would happen if the two patterns overlapped. For example, if you took a sketch and shaded in all the area of white from a given tobiano pattern, and then took the same drawing and shaded in a frame pattern, in the end the shaded areas would look a lot like a pattern that might be seen on a tobiano-frame combination. Most of the time, this is how combination patterns work. The exception to this ‘overlapping rule’ is sabino. In many cases sabino does not just cause overlapping, but also causes the edges of the other pattern(s) to appear irregular, lacy or roaned.

No matter which patterns are involved, two things are true of combination pintos; the horses more reliably produce colorful offspring, and they themselves tend to be more extremely marked. If you look at the points of origin for the various patterns, you will quickly see that most of the patterns start from a different area, and move in a different direction from the others. Therefore, it comes as no surprise that when horses carry multiple patterns - all with diverse areas inclined to be white - the end result is a horse with more than an average amount of white.

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Like many combination pintos, this tovero - a combination of tobiano and sabino overo - is predominantly white.