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#### On the Cover

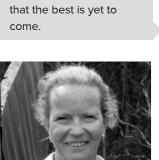
Molly Lines and OTT Thoroughbred Tadpole won their first 4\* at the 2023 Marcus Oldham Ballarat International Horse Trials (Image by Racing Photos).

### **OUR CONTRIBUTORS**



#### **Molly Lines**

July's Life After Racing features Molly and her off the track Thoroughbred Tadpole. Riding since she was a child, Molly has long been a fan of OTTs, and her partnership with Tadpole has resulted in a speedy rise up the levels. In 2023 the pair won their first 4\* at the 2023 Marcus Oldham Ballarat International Horse Trials, and there's little doubt



Magazine's editor, Amanda's two longstanding passions, one for horses the other for writing, come together perfectly. In this issue she speaks to Molly Lines about her journey with outstanding OTT Thoroughbred Tadpole, who is proving to be an eventing superstar. She also had the opportunity to talk with John Price, Director of the renowned Catalina Stud.



Dr Jennifer Stewart B.V.Sc., B.Sc., Ph.D.

but fortunately, Jennifer has some great advice.

With over 40 years' experience as a veterinarian in mixed

nutrition. She was Senior Veterinary Officer with the Australian

Department of Agriculture. Water and the Environment for 10

years, and for two years was Biosecurity Veterinarian with the

ACT Government. To rug or not to rug, it's a puzzling question

and equine practice. Jennifer's special interest is equine

#### Amanda Mac

As Equestrian Hub



Leisa is an equine nutritionist and founder of Hof Equine. She has a Bachelor of Equine Science, specialising in nutrition, and lives west of Brisbane, in Queensland's beautiful Lockyer Valley. Could your horse be described as hot, fresh or fizzy? We know that this can sometimes be in response to certain feeds, but why? Leisa takes a deep dive into which feeds are likely to result in a hot horse.



#### Leisa Hofstetter



**Nicole Tough** 

An EA Level 2 Dressage

National A Level Judge,

Nicole has over 30 years

experience in training,

competing, judging and

coaching. She enjoys

and masterclasses, has

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very successful FEI

and has produced nine

trained in Germany, Spain

presenting seminars

Specialist Coach and

#### **Michelle Terlato**

Michelle grew up with horses and has always loved them. When she's not travelling the globe photographing the world's top equestrian athletes, she's home riding her own horses. It's the behind the scenes and the unexpected shots that she likes the best, and in our Behind the Shot feature, she shares her favourites and explains what makes them so special.



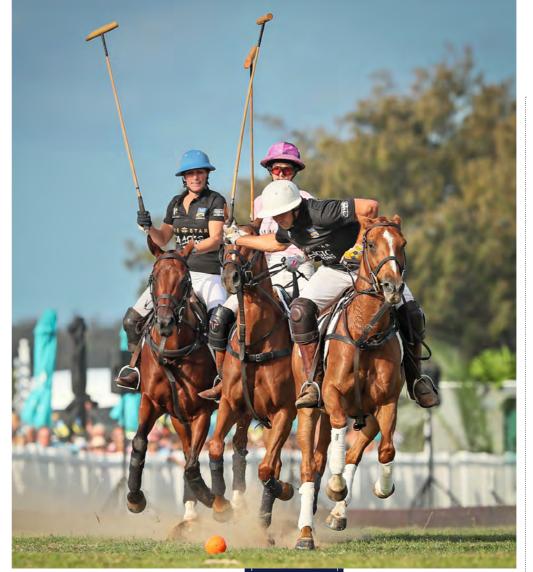
### **Christine Armishaw**

Christine is a qualified EA Level 1 Coach and horse trainer who specialises in building confidence in women returning to riding and young riders getting started on their equestrian journey. Based at Otford Valley Equestrian, she runs clinics in NSW and NZ, and is a keen eventer and show jumper. In the market for a horse? In this issue, she offers seven tips to help you choose the horse that's right for you.



The publisher of Equestrian Hub Magazine, Fiona's fascination with horses has been life-long. Driven by a desire to inspire and inform all equestrians, she launched the magazine and its <u>sister website</u> to support everyone from competition riders to those who ride for pleasure, as well as for people, who, like Fiona, simply love horses and everything about them.







## Billy Slater, Zara Tindall & Delfina Blaquier

One of Australia's top equestrian photographers, MICHELLE TERLATO travels the world capturing equestrian athletes in action. Each month she shares one of her favourite shots.

Rider: Billy Slater, Zara Tindall MBE (nee Phillips), & Delfina Blaquier

Event: 2023 Magic Millions Celebrity Polo Match

Location: Gold Coast, Queensland

Camera & Settings: Canon EOS 1DX Mark II 300mm Lens ISO 250 f4 1/1250 sec

Challenges: Polo is always a little challenging to shoot because unlike dressage or show jumping, you never know where the action is going to be. It's a little bit of guess work mixed with good luck.

I always like to shoot polo from ground level so this means getting down and dirty, and often being in the line of fire! While this looks like the riders are coming straight for me, it was shot on my 300mm lens so there was some zoom involved.

The aperture for a shot like this has to be wider too, as there is more than one point of focus to get right. However, it can be rare to get all the riders, horses, polo mallets and the ball in one composition - and this was one of those special moments.

Why this shot is special: The polo celebrity match at Magic Millions is always fun and has a great atmosphere, but make no mistake, it is highly competitive.

Billy Slater is a very good polo player and always gives one hundred percent to his performance. Here he is in full flight about to whack the ball, but hot on his heels in the blue hat is Olympian Zara Tindall MBE (daughter of Anne, Princess Royal, and Captain Mark Phillips, granddaughter of the late Queen Elizabeth II, and niece of King Charles III) a great rider and competitor who has represented her country on many occasions.

Also determined not to let Billy get away Is Argentina's Delfina Blaquier (in the pink hat). Delfina is married to Argentinian polo megastar Nacho Figueras, ranked world Number 6, and is a great player in her own right. I really like that this image highlights the horses' athleticism as well as the riders' absolute commitment to the game.

I think the shot gives such a strong feeling of being there in the moment, watching the action with the thundering of hooves, the dust, the speed, the sun shining, and the players' win at all costs attitude.  $\triangle$ 

Michelle is available for event, commercial and private shoots. Visit Michelle Terlato Photography to view her impressive portfolio.

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HANGING TOUGH

# The importance of transitions

It's all too easy to become complacent about transitions.

But they are a training opportunity that should never be ignored. **NICOLE TOUGH** explains why.

ransitions refer to both changes of pace and variations within the pace. Transitions from one pace to another should be precise, clear and be performed as the rider's leg passes the prescribed marker. When they occur within the pace - increasing

and decreasing the size of the steps – transitions play an essential part in the horse's overall training.

All transitions have an important function. Whereas humans use gym machines to build specific muscles, the dressage trainer uses transitions to build the pushing and carrying muscles needed to develop an FEI horse. The repeated practise of pushing and carrying, through good transitions, develops the impulsion that can transform a nice horse into an extraordinary one.

For every transition from one gait to another, there is a beginning, a middle and an end. Through all three phases, the rhythm and balance should be maintained up to the moment when the pace is changed, and the horse should remain light in the hand, calm, straight, and in the same position.

We should never begin a transition if the horse is unclear in the rhythm, has contact issues, is unbalanced, crooked, strung out and so on, because the transition cannot recover. A crooked horse will make a crooked transition; a horse that is against the hand will come more against the hand in the transition. The rider should correct their beginning point before attempting the transition. If we start well, and a mistake is made in the middle or at the end of the transition, we should do it again and again until it's as good as we can get it.

This is training - and when training corrections, think repetition, not punishment. Horses learn through repetition and every transition we accept teaches the horse what is acceptable. Always remember, to accept is to approve. So don't accept in training what you wouldn't like in competition. Horses get good at what is practised, so ride 200 transitions every training session, think about them from the judges' perspective, and give yourself a mark for every single one of them, redoing any that go awry.

Transitions within the pace are an excellent way to channel energy and improve collection. When we decrease the size of the steps, we are asking the horse to take more weight to the haunches (carry), and when we increase the size of the steps, we are training



ABOVE: Through all three phases of every transition, the rhythm and balance should be maintained up to the moment when the pace is changed (Image by Christy Baker Photography; Left by Amy-Sue Alston Photography).

the thrust (push). If we can't shorten the steps, it is hard to train them, and if we can't lengthen the steps, it is hard to reward them. We should play a game with our horses: how small can they step and after a few steps, ride bigger steps and reward their effort. Repeat this game until they are anticipating the 'go'. Every good downward transition trains the horse's carrying muscles, so that one day they have the strength to do canter pirouettes and piaffe; and every good upward transition trains the horse's pushing muscles, so one day they have the strength to do extensions and passage.

Downward transitions should be performed with a subtle combination of all the aids: seat aid to execute, leg aids to maintain an active hindleg, and rein aids to manage (not support) the frame through the transition. Likewise, upward transitions

are also correctly performed with a subtle blend of the three natural aids: lower leg to execute, seat aids to maintain balance on the hindleg, and the rein aids to manage (not support) the frame.

Left to themselves, all horses will use transitions to become long; simultaneously becoming inactive behind, losing balance to the forehand, and looking for support from the rider by leaning on the hand. It is up to the rider to use transitions to their advantage. Every ride, use the transitions to find out how little we need the rein. FEI Judge General Stephen Clarke once said that the more we use our seat and leg, the less we need the rein. Performed correctly the horse will stay soft and supple in the back through all transitions. Training in the right direction means using transitions as tools for developing the pushing and carrying

capacities of the horse. As previously mentioned, this pushing and carrying ability is called impulsion. Every horse can walk, trot and canter; but it is impulsion, with its improved elasticity and spring in the joints, that is the added ingredient which makes the gaits more spectacular.

It is easy to become complacent about the transitions, thinking that near enough is good enough. But practising poor transitions ingrains incorrect mechanics and confirms habits which only hinder our horse's development. When we train, we should think about the future and what we are trying to produce. A horse in self-carriage and consolidated in their strength to remain on the hindleg, will always be a happy athlete.





FEATURE

## Hi-tech foals

We spoke to **JOHN PRICE**, Director of Catalina Stud, about cloning and intra-cytoplasmic sperm injection (ICSI), to learn more about what they are and what they are not.

pecialising in cutting edge techniques, Catalina Stud is recognised as one of Australia's most advanced equine reproduction facilities. With a global reputation for excellence and innovation, the Catalina team focus not only on reproduction, but also on the holistic management,

health and welfare of every horse in

We started our conversation with John Price, Catalina's Director, by asking him about the benefits of cloning in comparison to breeding by natural

JP: I think it's very important to state at the outset that in my opinion, cloning is a tool for breeding but is not in any way intended to replace breeding. It cannot be used to improve your breed, in fact cloning is a flat line when it comes to the genetic evolution of your herd.

However, where cloning comes into its own is, for example, when you have a mare you've successfully competed with for most of her life. You haven't taken the opportunity to put her in foal and by the time she gets to 12 or 13 years old, she's likely to have fertility issues. But cloning gives you the opportunity to breed from her.

Or, you've got a stallion who's been a popular sire and he has a paddock accident and dies suddenly, cloning allows you to continue that line. Or, perhaps you're a breeder in the sporthorse scene with a very successful horse. You accept a big offer to sell them overseas, which makes it very

ABOVE: Catalina's mares enjoy improved pastures in post and rail paddocks scattered across 200 spacious acres. LEFT: The Catalina team focus on the holistic management, health and welfare of every horse in their care.

difficult to keep any breeding rights.
But if you take a biopsy before they
leave Australia, you can continue their
bloodline here as well as benefiting from
a lucrative sale.

Broadly speaking, cloning is a tool for breeding, but it doesn't replicate breeding. It just allows you access to genetics that you might not otherwise have had due to circumstances similar to the examples I've just given.

EH: What does cloning involve?

JP: There are a number of different ways to clone, but we're one of a handful of facilities around the world, the others are in Argentina and Italy, that use the very latest technology. The best and most appropriate cells in the body for cloning are from the sternum. In a one time procedure, we take bone marrow from the sternum to access the cells we need. The other benefit to this method is that, unlike taking a skin sample, it's a relatively non-invasive and safe

procedure in which we use sedation rather than a general anaesthetic.

Once we have the bone marrow, which gives us the genetic material to make unlimited clones, we culture it in our lab, a process that involves removing all the bone, fatty tissue and other materials that aren't required, until you are left with the raw cells.

The next stage is through a process called Oocyte Pick-Up (OPU), in which an ultrasound guided probe that comprises a dual lumen needle is inserted into the mare's vagina. One needle flushes fluid into the ovaries to remove eggs from the ovary wall, while the other needle sucks the fluid out, bringing the eggs with it. The procedure is usually very well tolerated by the mare.

Using OPU, we take eggs from one of the mares in our herd, remove the nucleus from a single egg and replace it with a nucleus from the cell of the horse being

cloned. So, all the genetic information from the cloned horse is being implanted into the mare's egg. Think of it as the way switching a SIM card from one phone to another imports the information on that card into the new phone.

The egg is then kept in an incubator where the nucleus binds to the host egg. A week later you have an embryo which is then implanted into one of our recipient mares.

EH: Why do you favour Standardbreds?

JP: We have a herd of mainly
Standardbred mares who have a very
good life out in the paddock. What
they do for us is give us eggs and carry
embryos to term. I really like the breed
because they're much better doers
and have better feet. They're also
much better mums and have a great
temperament. They're sensible horses
who don't do silly things in paddocks.

injuries caused by overextension of the fetlock

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LEFT: The cloning procedure. RIGHT: The clone of the famous polo horse Ellerston Eris (All images courtesy Catalina Stud).

- EH: Are the cloned foals exact replicas?
- JP: They are 99.98% genetic replicas of the horse you have cloned. So you always have the same base colour. If they had socks or a blaze, the foal will have those markings too, but the sock might be on the other leg, the blaze may be narrower or wider. A star may be larger or smaller. But fundamentally they'll all have the same attributes and many of them are identical.
- EH: What causes those variations?
- JP: Although we haven't researched this, I believe it's due to differences in temperature, nutrition and so on during gestation. I've cloned horses that were born all over the world and I've noticed that horses in climates colder to the horse being cloned tend to have subtle differences, while horses from similar environments are almost identical.
- EH: What's the difference between conventional embryo transfer and intracytoplasmic sperm injection (ICSI)?
- JP: A mare's cycle usually starts with smaller eggs, and then there will usually be one or two of an appropriate size as their cycle evolves. In conventional embryo transfer you wait until you have the right size egg, inseminate the egg,

and then flush the embryo out and transfer it to a recipient mare. In this process, you're relying on access to four to eight straws of semen from the stallion, on the mare being of an appropriate age to produce an embryo, and you're waiting for the right time of year. With ICSI it's very different. We want to have lots of those smaller eggs, so we're looking for the opposite of what we would usually be looking for, and other than avoiding very hot or very cold weather, we can carry out the procedure all year round.

The process involves putting the client's sedated mare in the crush, where once again, we use OPU to harvest her eggs. But instead of removing the nucleus as we would with cloning, we take a single sperm, inseminate the egg, and create an embryo. The embryo then goes into an incubator for about a week before it's implanted into one of our recipient mares.

- EH: What are the advantages with ICSI?
- JP: There are a couple of big advantages. Firstly, with a valuable competition mare, you can do ICSI yearround, you don't have to try work your competition schedule around it. The mare is on our property for about 48 hours and the procedure itself takes around

45 minutes. So, if you've got a show in Queensland and a show in Victoria, you can call into our property in North Richmond NSW along the way. The mare can be given light work the day after the procedure, but then she's basically back in full work. The procedure is very low-

Additionally, there are no issues around hormonal differences in the mare, and it's kinder on older mares because they don't have to create their own embryos. By the time they're 12 to 13 years plus, their fertility starts to decrease, but they produce eggs their entire lives, so we can use ICSI with them at any age.

Another huge benefit with ICSI is we only need to use a single sperm. So, with conventional embryo transfer you would probably get one service, one foal, out of four straws of semen. Using ICSI, with a fifth of one straw we can breed about five mares. So that's 25 mares for one straw, and 100 pregnancies for the four straws that would previously have produced a single foal.  $\Box$ 

If you're interested in learning more about Catalina Stud's extensive range of expert equine reproductive services, visit their website or call (02) 4570 6000.



## Seven top tips for buying a horse

Before you buy, CHRISTINE ARMISHAW has some tips to help you choose wisely.

first-time owner or not, it's all too easy to let your heart rule your head. You might be fixated on a particular breed, or a particular colour, or be absolutely sure that you want a gelding and definitely wouldn't consider a mare.

Unfortunately, having too narrow a focus, or being blinded by love for the first horse you see, can end up with you buying one that's not a good match for your riding abilities, or won't take you where you want to go on your riding journey. The end result? Huge disappointment all round and probably wasted time and money too.

So, to help you avoid some of the more common pitfalls, here are my top seven horse hunting tips:

1) Talent/Suitability: This might sound blindingly obvious, but has the horse you're interested in done, or do they have the potential to do, what it is you want to achieve with them? No matter whether you're looking for a pleasure horse, or you want one to compete with, don't be swayed by their looks, breed, or charm. They must tick your boxes and be fit for purpose.

2) Look for the right signs: Watch for how often they lick and chew. Why? Because that's a sign of how quickly and well a horse is processing information and learning. An anxious horse takes longer to learn and will not lick and chew as frequently. For example, you're on the ground and you ask the horse to take a few steps back. Do they lick and chew after they've moved, or are they holding onto tension with a hard look in their eye? Essentially, you want a horse that



processes information quickly because they're the easiest ones to train.

3) Is the horse interested in people? How curious is the horse in the fact that you are even there? With no treats in your hands, does the horse still want to interact with you and show as much interest in you as you do in them? It doesn't matter how much you might love a horse, if they're not interested in people you are unlikely to have the kind of relationship with them that you are probably dearly hoping to have.

4) What's the worst case scenario? Explain to the owners that you are fully aware that their horse, like all horses, is going to have horse moments, and all you need to know is how they're likely to react in those moments. If the horse is getting frustrated, or doesn't understand what's being asked of them, or has a bit of a bee in their bonnet about something, what's their go-to response? Are they likely to buck? Pig root? Rear? The point is that no horse is perfect. They all have a default mode when they're under stress,

and you have to be sure you're perfectly willing and capable of dealing with whatever that horse's default might be.

5) What bit is the horse ridden in? Once you know the type of bit, it will give you a handle on how hot the horse is likely to be. For example, if the answer is a Waterford, one of the strongest bits available, it's an indication that the horse is either very strong, or hot, or a bit of both! Either way, if you're an inexperienced rider, no matter how much you might love the horse, it's probably not the right one for you.

6) Who's currently riding the horse? If the horse is being produced and sold by a professional rider on the owner's behalf, and goes beautifully for you on the day you go and try it out, that's a very different proposition to one that's being ridden by a 12-year-old with their stirrups on upside down and their bridle a bit twisted and yet the horse still goes well! There's absolutely nothing wrong with buying a horse that's been professionally produced, but if you don't have the experience or know-how to continue riding them correctly, in the same way they've been trained, they may begin to fall into some bad habits. It's always a good idea to have lessons with your new horse to make sure you're up to speed.

7) What's the horse's current feed/ paddock set up? This one is super important. If you buy a horse who is an absolute angel, but has been living in a dry climate where there's little grass, and you transport them to a location where the grazing is lush, don't be surprised if your angel suddenly turns into a demon! It's not that the horse had been sedated when you tried it out, it's simply that all that rich grass has gone straight to their head. Adjust their feed and your angel will reappear as if by magic.

Christine Armishaw Equestrian offers a wide variety of coaching and other equestrian services at her Otford Valley **Equestrian Agistment & Training Centre** just south of Sydney, NSW.





**VET VIBES** 

## Shivers: what you need to know

Have you heard of shivers but been unsure as to exactly what it is and how bad its effects are?

DR ELIZABETH BARTER has some answers.

diagnosis of shivers is not something any horse owner wants to hear. While its symptoms have been documented for many years, there is still much yet to be discovered about the condition and research is ongoing.

#### What is Shivers?

Shivers is a neuromuscular disease in which horses exhibit tremors or shivers of the tail and thigh muscles, have difficulty holding up the hind limbs, and display an unusual gait when asked to

move backwards. Unfortunately, half of the horses diagnosed with shivers slowly progress in their symptoms over time.

For hundreds of years there have been descriptions of horses suffering from the symptoms of shivers, but until recently the cause of the disease has remained a mystery. And there is still no specific test or treatment for shivers, with a diagnosis arrived at based on clinical signs which can be intermittent or variable early in the disease process.

### What are the signs?

Horses with advanced cases of shivers have a characteristic gait abnormality when backing of holding their leg to the side and elevating their tail (see classification system at the end of this article). The clinical signs appear to be involuntary, without the horse knowing, and may extend to shivering or tremoring of the thigh muscles.



ABOVE: Horses with advanced cases of shivers have a characteristic gait abnormality when backing of holding their leg to the side. LEFT: Shivers is over-represented in Shires, Clydesdales and Warmbloods 16.2hh and taller.

Some horses progress to an inability to lift their hind leg for their hooves to be cleaned, or to be shod by the farrier. Whilst the hind legs are more typically affected, front leg and face abnormalities have been reported. Signs in forelimbs include the limb being held outward with the muscles above the elbow shaking, whilst facial signs can include rapid blinking, quivering of the ears, and twitching of the lips. However, the horse's gait is normal when moving forward at the trot and canter.

#### **Symptoms**

Symptoms can occur at any age and affect any breed of horse although experts suspect that genetics might be involved. Typically, clinical signs are observed before horses are four years of age. Fifty percent of horses progress with their symptoms and by the time they are seven years old, they are

unable to walk backwards.

A higher proportion of tall geldings are reported with Shires, Clydesdales and Warmbloods 16.2hh and taller overrepresented. However, shivers has also been observed in mares, Quarter Horses, and Thoroughbreds. Signs of the disorder may become worse after confinement, stress, excitement, or illness, with episodes of leg twitching observed while at rest and when eating or drinking with the head down.

#### Cause

Horses have two main 'chains' of muscles (the flexors and the extensors) that are involved in propulsion. The flexors, run at the back of leg and flex the stifle and hock bringing the leg up. The extensors are involved in straightening the leg. In normal horses, when the flexor muscles are activated the extensors are relaxed.

However, horses with shivers have a miscommunication that causes both flexors and extensors to be activated at once, resulting in spasms and abnormal coordination. Recent studies have shown the miscommunication to be due to degeneration of the Purkinje cells axons (the long slender nerve fibres involved with voluntary motor control) as they enter the cerebellum, the back of the brain responsible for normal motor movements. Clinical signs are seen when fine motor control is required such as when the horse is backed up.

Studies have shown subclinical evidence of disrupted muscle control when horses are walking forward, but these are often not able to be seen with the naked eye. As the disease progresses muscle wastage of the thighs can occur, and horses may become reluctant to lie down.



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#### **Diagnosis**

There is no specific test or genetic markers for shivers. Some horses present with classical clinical signs trembling in the hindlimbs, difficulty backing and picking up hind feet making a diagnosis straightforward.

Milder cases however, have intermittent and variable signs and numerous tests and lameness examinations may be required to rule out other conditions. Horses may additionally suffer from combined diseases such as shivers and polysaccharide storage myopathy (PSSM), which is also prevalent in the same breeds of horses listed above.

### Treatment and prognosis

There are no current treatments for shivers and the condition is progressive in 50 percent of horses. Due to the potential genetic link, it is not recommended to breed affected horses. Keeping horses in work, supported with massage, body work and acupuncture, may aid in maintaining muscle mass and competition fitness.

The degree to which the horse's performance is impacted depends on the discipline the horse is involved in. Dressage requires fine motor control and backing at advanced levels, so the



ABOVE: Some horses progress to an inability to lift their hind leg for their hooves to be cleaned, or to be shod by the farrier.

effects of shivers are likely to hinder competition. Similarly, horses involved with driving may be impacted due to an inability to back into the hitch.

There are no tests to predict which horses will continue to deteriorate and which horses will maintain their current performance level. Warm climates and maintaining low stress environments have previously been advocated to reduce signs although study results are variable.

Diets high in fat, and low in carbohydrate have also been thought to limit spasm episodes early in the disease.

However, such diets may be treating a combination of PSSM conditions as well as shivers and their effectiveness is hard to determine. Vitamin E supplementation has also been advised, but like all other treatments, the results are poorly documented.

If you think your horse may have shivers, contact your equine veterinarian to rule out other possibilities, and to advise on appropriate management.  $\Box$ 

Dr Elizabeth Barter is a senior veterinarian at Apiam Hunter Equine Centre, in Scone NSW.

#### SHIVERS CLASSIFICATION SYSTEM

#### Shivers Hyperflexion (HF)

Most common form affecting one or both limbs. Walk and trot are normal with hyperflexion noted when backing. During backing one hindlimb is raised up and held away from the body and the limb shakes (shivers) with the tail head raised. The hoof is then brought rapidly to the ground when the spasm resolves.

#### Shivers - Forward hyperflexion (FHF)

More severe form with signs when the horse is initially walked forward. The tail head is elevated, and the limb held to the outside. Signs normally improved after a few walk strides or when the horse is trotted but may be exacerbated with a change in surface, speed or direction. Often it is not possible to lift either hindlimb manually.

#### Shivers - Hyperextension (HE)

Most severe form commonly affecting both hind limbs. Horses are reluctant to back. Hind feet are placed further back than normal when moving backwards, locking the stifle and hocks and leading to a sawhorse stance. The tail may be raised, and muscle tremors can be seen in the back legs. The heels may be raised off the ground and the horse might fall if it cannot regain control. Horses still appear normal at trot.





**FEATURE** 

# Rugging: Yes, no, or maybe?

There's a lot of uncertainty around whether or not we should rug our horses. **DR JENNIFER STEWART** has some insightful thoughts on the issue.

hinking we're doing the right thing for our horses, the temptation to rug them up during cold weather can be overwhelming.

Indeed, the results of a year-long survey published in 2023 and involving over 2,500 horses in all the states of Australia, found almost 85 per cent of us rug our horses.

However, the survey also found that most owners were unsure whether horses needed to be rugged at all, and that nearly 90 per cent felt 'overrugging' was a concern. In another study in Norway in 2019, horses were trained to communicate their preferences for wearing a rug and these often differed to the rugging routines of the owners.

Horses are very adaptable to temperature variation, and are able to thrive in tropical to subarctic climates. Factors affecting their ability to keep a constant body temperature (37°C to 38.5°C) are air temperature, sunlight, humidity, precipitation (rain) and wind velocity – with air temperature having the major effect. Characteristics individual to each horse, such as body condition, coat thickness, age and breed, also influence cold tolerance.

#### **Behavioural adaptations**

When conditions are cold, wet and/or windy, horses have several behavioural adaptations that conserve body heat: standing with their heads away from the wind, tails set low and into the wind; shelter-seeking; huddling; reducing the time they spend grazing and moving; and changing their standing position according to the movement of the sun.

In yearlings who have become acclimatized to the cold, increased play activity during cold weather boosts their muscle temperature. In winter, density of the hair coat increases by up to 45 per cent, hair depth by over 30 percent,

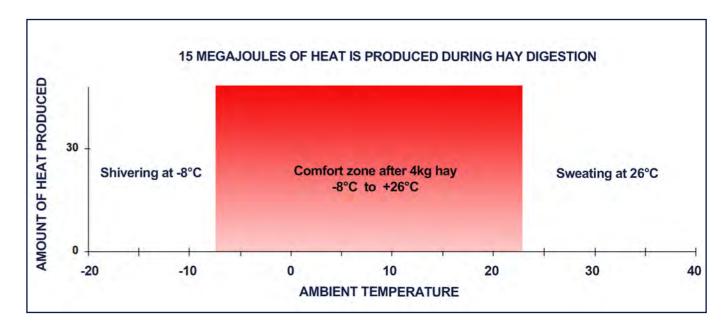


Diagram 1: The thermoneutral zone (TNZ) for humans is between 26°C and 33°C; for horses it is between 5°C and 25°C. This means horses don't begin to feel cold until the air temperature is less than 5°C. Feeding roughage increases heat production and metabolism by up to 10 to 20 per cent, and can reduce the need for rugging in Australia.

LEFT: In Scandanavia, horses were taught to touch visual symbols to communicate their preference between having their rugs on or off.

and blood vessels in the skin contract to reduce leg skin temperature and heat loss.

Ponies evolved in colder conditions and to conserve energy they have a unique ability to reduce their metabolic rate and core body temperature at nighttime. Periodic shunting of blood to and from the hooves is another adaptation and helps combat tissue damage in horses standing in snow and ice.

#### The thermoneutral zone

The temperature range in which animals need neither to lose heat by sweating nor to generate heat by shivering, is called the thermoneutral zone (TNZ). For us, the TNZ is between 26°C and 33°C; for horses it is between 5°C and 25°C. This means horses don't begin to feel cold until the air temperature is less than 5°C, which is way below our comfort zone. So, you their owner, will feel cold well before your horse does, but your horse may feel hot before you do.

Comparing the TNZ to the forecasted weather is a good guide to rugging.

The wide range of climate zones in Australia means the need for rugging varies geographically. Weather conditions are often difficult to predict and may change substantially and quickly within the same day. Hence, it can be difficult for horse owners to know how to best protect their horse when turned out under such conditions.

Research carried out at the University of Sydney describes the zones and associated temperature ranges and provides insights into how to decide on the number, types and practices for optimum rug use. For those of you who want to delve deeper into this topic, the research findings are <u>freely available</u> online.

#### **Heat production**

Feeding roughage increases heat production and metabolism by up to 10 to 20 per cent, and can reduce the need for rugging in Australia. Most body heat is generated by the digestion of food. Heat liberated during digestion makes the horse warm on the inside and hence they can tolerate colder outside temperatures. By increasing

heat produced during digestion we can reduce the amount of shivering, help horses maintain condition over winter, and minimise feed costs. Different feeds release different amounts of heat and we can make use of this to adjust the diet so it is more appropriate for cold conditions.

Of the energy in meadow hay, 66 per cent is converted to heat during digestion, in lucerne hay 42 per cent, and in oats and corn 32 per cent and 20 per cent respectively. The heat generated by hay digestion allows horses to be comfortable from minus 8°C to 26°C (see Diagram 1).

#### For and against

Rugs protect against the wind and help to keep the hair coat dry, reducing the cooling effects of wind and rain. Older horses can have problems fine-tuning body temperature as hair coat quality and thickness of fat layers change with age, making a horse's age an important individual factor to be considered. On the negative side, rugs can reduce vitamin D levels, interfere with free exercise even if they fit well, can cause





ABOVE: Ponies evolved in colder conditions and to conserve energy they have a unique ability to reduce their metabolic rate and core body temperature at nighttime.

skin soreness, and can cover preferred sites for social grooming. And because in cold weather the coat stands on end to trap in heat, rugs can flatten the hair, reduce its mobility, and thus its ability to keep the horse warm.

Coat length is another reason why owners rug their horses - but shedding and hair regrowth is mainly regulated by the length of daylight hours. Although nearly 85 per cent of owners rug their horses, nearly 70 per cent feel uncertainty about whether rugs should or should not be used in Australia.

### The problem with perception

The perceptions and common practices of many Australian owners are not in line with the horse's natural thermoregulation, and horses may have preferences that differ from what the owner thinks is best! Ongoing studies in Norway have shown this is often the case and have developed a method that allows us to 'ask' our horse whether they wish to be rugged or not. Again, if you want to delve deeper into the topic, this link will take you to the research paper in its entirety.

The principles of learning are increasingly being implemented in equitation. Horses have a remarkable, in fact amazing ability to learn and obey signals given by humans. They can discriminate between visual cues and learn the relevance of one choice over

Examples include using mazes and more complex labyrinths to test acceptance or avoidance of the roll-kür riding style (which refers to a controversial training method in which the horse's neck is flexed into an extreme position), preference for shorter or longer riding bouts, and in the recent Scandinavian research, a tool was developed to 'ask' horses whether or not they preferred to wear a rug under different weather conditions.

#### Ask your horse

When horses were taught to touch visual symbols to communicate their preference between the 'rug on' or the 'rug off', all the horses signalled that they preferred to be without a rug on summer days with no rain,

and that they wanted the blanket on when it was continuously rainy, windy and chilly. The horses used their new insight to communicate their preference regarding rugging to obtain or maintain thermal comfort, based on their individual perception of weather. If you'd like to work with your horse to find out whether they want to have a rug on or not, the method is described

There are several great resources that offer advice and information applicable to your local conditions. The RSPCA has detailed information on rugging, as does Pony Club Australia, and from the UK, The Grooms List has some excellent guidelines on rugging for colder conditions.

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LIFE AFTER RACING

## Rising to the top

Molly Lines has long been a lover of OTT Thoroughbreds, and Tadpole, her current star, is proof that her devotion is well founded, writes **AMANDA MAC.** 

hen I caught up with Molly Lines, she had just returned from the Melbourne International 3DE, where she'd competed in Restart, a class sponsored by the Hong Kong Jockey Club Racehorse Aftercare Program, and had

picked up a tidy fifth place from a field of 31 competitors with her relatively new off the track (OTT) Thoroughbred Paris Pike.

With parents who were partial to horses and riders themselves, it's hardly a surprise that Molly has been riding for pretty much her whole life. Brought up in Mansfield, Victoria, she had a pony of her own and was a regular at Pony Club. However, up until she was around 12 years old, she was involved mainly with show riding, because, she says, "whenever I did jumping I'd always fall off and break something!"

But the show ring quickly faded into the distant past when Molly discovered eventing. "I started eventing at Pony Club, but it wasn't until I got my first off the track Thoroughbred when I was 13 that I started competing in Grade 3." Sadly, that partnership came to an end when the horse passed away quite unexpectedly. It was, Molly says, "very traumatic."

But not wanting to give up on the sport she'd discovered she loved, the hunt was on for another horse. "We asked

ABOVE: Molly and Tadpole secured 2nd place at the Albury CCI4\*-S in 2023 (Image by Grain & Mane Photography). LEFT: Dressage at the 2023 Adelaide International 3DE (Image by Jenny Barnes).

around and a friend put us in touch with Hayley Coman Equestrian." Hayley, daughter of Olympian Jamie Coman, had several horses for sale, one of whom was a recently retired six-year-old Thoroughbred who had raced as Liquid Courage (Teofilo x Remy) and collected a far from impressive \$1,200 during his five-start career.

Hayley had renamed the horse Tadpole. Why? "Because he apparently looked like one," laughs Molly, "a big head and shoulders and a skinny little bum!"

Tadpole was the first of 10 horses Molly tried out over one very busy weekend. "He reminded me so much of the horse I'd just lost. He looked very similar and had the exact same quirks – he bucks when he knocks a rail and he's very cheeky on the ground. He was super to ride and he had a great jump too.

Although he was green, Hayley had done such a good job with him." And just like that, Molly had found her new heart horse.

However, Taddy hadn't done any dressage and had never set foot on a cross country course, but he had done a little bit of show jumping. "So I started doing Pony Club at Grade 3, and we got eliminated at the first three events we went to. He didn't like the water," Molly explains. "I didn't know that paddling or schooling the water was a thing until I started doing EA, and by the time I'd worked it out, we could finish going around cross country anyway."

After just one EVA80, Molly and Tadpole quickly progressed to EVA95 where they stayed while they were competing in Interschools events. Proving just how quick a learner he is, Tadpole competed

in only a handful of 1\* events before going 2\* - and then along came COVID. Thanks to that hiatus, he'd been ready for the Melbourne 2\* for two years before competing there, by which time he'd already stepped up to 3\*. "So, we had to do a 2\*-L before we could do a CCI-3\*, but because we'd already done a CCN-3\*, the step up to the CCI-3\* wasn't hard"

And 16.2hh Taddy took the 3\* in his stride! "I can't even remember where he placed," Molly tells me. "I don't think he did very good dressage, but we survived, and that was the main goal."

After a win in Melbourne's CCI-2\*J, they went on to win the CCN-3\* at Werribee, followed by a CCI-3\* two weeks later. In 2023 they qualified for the Oceana team, but the event was cancelled due to cyclonic weather conditions in New

#### LIFE AFTER RACING



ABOVE: Competing on the Oceana team in New Zealand in 2023 (Image courtesy of Molly Lines). BELOW: Hard to beat around a cross country course, Molly and Tadpole on their way to winning their first CCI-S 4\* at Ballarat in 2023 (Image by Jay Town for Racing Photos).

Zealand at the time. So they went to Adelaide instead, where Molly confesses that a mistake she made in the jumping phase bumped them down to 7th place, although they did pick up a 2nd in the Young Rider.

Probably 2023's crowning achievement was Molly and Tadpoles first 4\* in Ballarat, where they won the CCI4\*S



at the International Horse Trials. After ticking that notable box, Tadpole enjoyed a well-deserved break before getting back into the groove with a CCN3\* win at Werribee, followed by an 8th place at the Canberra 4\* and a 2nd in the 4\* at Aubrey.

Molly and Tadpole were again selected for the Oceana team. Held in March this year, this was not one of Tadpole's finer moments. "He was very naughty in his dressage but redeemed himself in the next two phases enough to be placed 3rd overall. Then two weeks later we were at Wandin where we won the 4\*. He really is a bit of a legend," Molly says.

If Tadpole has a discipline that would particularly benefit from improvement, it's dressage. "He actually can do a very nice dressage test. We're still working out things like changes and I'm not very experienced so he's just as good as me. We're just learning along the way and hoping for the best really," Molly chuckles. "We're trying to get our dressage scores down a bit more. Wandin was a PB for us. I think we were on a 35 or 36. But we're getting there!"

If dressage isn't their strong suit, cross country and show jumping certainly are. "We're not very conventional," Molly explains, "but he's got a pretty good jump. His front legs are a little bit loose, but he's got a very good back end and he's really fast. Not many can beat him time-wise on cross country - he's very nimble and quick."

Overall, Tadpole seems to be a bit of a treasure, and is, according to Molly, a joy to ride. "He's amazing! He's not really strong - he's in a rubber snaffle for dressage and show jumping, and a rubber two-and-a-half ring for cross country. He's not hard or difficult to ride. Mum calls him a Rolls Royce. She loves riding him."

Molly, who is studying Equine Business Management at Marcus Oldham College, is delighted to see the profile of Thoroughbreds on the rise: "It's great that they're becoming popular again - and off the tracks too. I think Racing Victoria is doing such a good job of promoting them." And with more of our top equestrians competing successfully on OTT Thoroughbreds, the future is looking very bright indeed.  $\Box$ 





**NUTRITION** 

# Feeding your fizzy horse

Is your horse hot, fresh or fizzy? Rather than tightening your seatbelt, some tweaks to their feed might be the answer, as **LEISA HOFSTETTER** explains.

t's not exactly breaking news that horses can be hot, fresh or fizzy in response to certain feeds, but why is this, and how do we know which feeds are likely to result in unwanted behaviour?

To arrive at an answer, we need to understand the types of energy

available in our horses' feed, how they digest and use this energy, and what different energy sources can mean for their behaviour. For example, not all carbohydrates are created equal and their impact on a horse's demeanour can vary quite dramatically. However, with some knowledge and understanding, it is possible to make informed decisions about how you feed your horse, and to reduce the likelihood of hot behaviour in the process.

There are three energy sources used by both horses and humans: these are carbohydrates, fats and protein. Protein, while it can provide energy, is very inefficient in this regard and therefore not used much by the horse for this purpose. Instead, most of the protein digested is involved in muscle growth and repair, and other important body functions.

Fats are a high energy fuel, but because they release energy slowly, they are considered be a source of cool energy. Horses can digest and use up to 15 per cent fat in their total daily diet. This doesn't seem like much, until you take into account that a horse must consume around 1.5 to 2 per cent of their body weight in feed per day. For a horse that has access to grass or hay 24 hours a day, seven days a week, and so has a diet that consists mostly of forage,



TOP: Muscle glycogen stores can be important for performance horses who may need sudden bursts of energy.

LEFT: Not all carbohydrates are created equal and their impact on a horse's demeanour can vary quite dramatically.

it's likely that a fat content of above 15 per cent of their total diet will be hard to reach, even if hard feed is included once, or even twice a day. Fat tolerance and digestibility can also increase over time if fat is fed consistently and on a daily basis.

A horse's main energy source is carbohydrates, but there are different types of carbohydrates that are either more or less beneficial depending on the horse's needs and level of work. Similar to the human diet, there are fast release non-structural carbohydrates, and slow release structural carbohydrates.

Non-structural carbohydrates consist of starch and sugars. Examples of feeds high in starch and/or sugars include grains, fruit, some legumes and some rich green pastures, especially if the pasture is new growth. Structural carbohydrates, which, as the name suggests are the components of the plant involved in maintaining its structure, consist of fibre. Common

sources of structural carbohydrate fibre for horses include grasses, hays, beet pulp, bran and soybean hulls.

Structural carbohydrates are digested in the hindgut by the beneficial bacteria present in a healthy horse. They are slow release because they are digested slowly, which means their glucose content is released into the blood over time. Glucose is one of the end-products of carbohydrate digestion and is a particularly useful energy source. Due to its slow release, a small amount of glucose is almost always available for transport through the blood - and the staggered release means that until all available supplies in the body have been depleted, glucose is available for fuel at about the same rate as it is used.

Imagine for a minute that the digestion and release of glucose from structural carbohydrates is like a conveyor belt steadily pushing fuel into a furnace and maintaining a consistent, manageable flame. What would happen if the speed of that conveyor belt was suddenly and dramatically increased? This is similar to what happens when non-structural carbohydrates are digested and their glucose enters the bloodstream – the flame burns much hotter and brighter, but the fuel source runs out much quicker.

Non-structural carbohydrates are usually digested in the stomach and small intestine. It is also possible for them to be digested in the hindgut, but this is not ideal as it can cause digestive upsets. Because they lack the fibre content of structural carbohydrates, non-structural carbohydrates are digested relatively quickly by the horse, and therefore the release of glucose into the bloodstream is much more rapid. In larger amounts, this can result in a higher than optimum level of glucose in the blood, a glucose 'spike'. Although the horse's body can regulate excess glucose through the increased production of insulin, if this becomes a regular occurrence over an extended period of time, it can lead to a number

## Inglis Est 1867





ABOVE: Training with an appropriate diet can help reduce the fizz and improve interactions between you and your horse.

of detrimental health issues, including disruption to healthy metabolic functioning.

One method the body uses to reduce blood glucose levels to normal is to store the glucose in muscle tissue in the form of glycogen, or to store it as fat. Muscle glycogen stores can be important for performance horses - eventers, campdrafters, cutting horses or show jumpers, for example - that may need sudden bursts of energy.

While it's the oversupply of glucose in the blood that produces excess energy (think small children on a sugar high) and thus the likelihood of a hot or fizzy horse, such behaviour can also be related to the anxiety and stress your horse may feel in situations such as going to an event, being in a new setting, or trail riding with a group of horses they are not familiar with — in other words, being exposed to stimuli that are outside the norm for that horse.

Ensuring they are properly trained and exposed to a variety of settings and experiences will help to reduce their anxiety and hence the potential for

any unwanted behaviour. Of course, the optimal approach is to combine training with an appropriate diet to help reduce the fizz and improve interactions between you and your horse. Riding is, after all, supposed to be an enjoyable experience, not an ongoing battle!

However, if you are participating in a discipline such as show jumping, eventing, cutting, or campdrafting, all of which require your horse to have access to a lot of energy in short bursts, feeds high in starch and/or sugars may be beneficial to performance and help to keep your horse in good condition when offered in the correct quantity.

In summary, the hot behaviour your horse is exhibiting may be caused by feeds such as grains, legumes and/or new growth green pasture, which are generally high in starch and/or sugars. Limiting these feeds can help to reduce fizzy behaviour, especially if combined with training that aims to reduce the stress and anxiety your horse might be experiencing on outings or in new settings.

A diet higher in fibre, and such a diet might include more mature grasses, hay, bran, beet pulp or soybean hulls, plus the addition of fats for horses who need that little bit of extra energy to help maintain their condition without the fizz, may assist in reducing unwanted behaviour, equating to a more positive experience for both horse and rider.

Now that you are armed with this knowledge, it is possible to make informed decisions about your horse's feed and to reduce the likelihood or incidence of hot or fizzy behaviour. If you are still not sure which feeds are right for your horse, simply contact your nearest equine nutritionist so that they can suggest a diet that suits your horse, and provides the energy they need for their level of work without turning them into a sugar fuelled toddler!

Leisa Hofstetter is an equine nutritionist offering ration analysis, designer diets and customised mineral supplements.

She can be found at <a href="Hof Equine">Hof Equine</a>, or email hofequine@gmail.com.



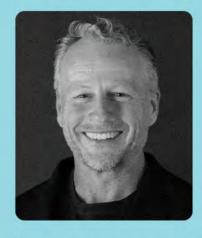


Listen - Learn - Enjoy



### We speak to **DARREN MILLS**

A co-founder and Director of leading architecture, interiors and construction company Cadence & Co, which specialises in designing and building equestrian properties, Darren is a keen horseman with many years experience.



- Important considerations when designing an equine property
  - · Scottish borders ride
  - · Coffee and cake trail rides
  - Father daughter bonds

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## Winter warmers

There's no doubt about it, winter has arrived. Beat the cold with these top wardrobe picks.



B Vertigo Emma Women's PU Raincoat from Ashbree Saddlery

B Vertigo's Emma Raincoat comes with a detachable hooded sweatshirt. Made from waterproof PU material with taped seams, the jacket has a practical two-way zipper, and two button up pockets to keep keys and phone safe. Buttons in the back make it easy to wear in the saddle, and adjustable strings in the hood and around the waist ensure a perfect fit.



Cavallo Everly Knitted Headband from The Equestrian

Cold ears not your thing? You won't have that problem with Cavallo's Everly Knitted Headband. Featuring cable knit and scattered tonal crystals, the headband is lined with a soft fleece. A handy one size fits all, it comes four fashionable colours.

Ariana Women's Hybrid Jacket is made from breathable knitted fleece and features a functional front panel that's



Ariana Women's Hybrid Jacket from Ashbree Saddlery

both water repellent and windproof. Stay warm and dry while riding and yet still have unrestricted movement, all without overheating. The stylish design includes a two-way front zipper and zipper pockets perfect for phone, keys and horse treats.

WeatherBeeta's Fleece Lined Beanie is guaranteed to bring a dash of colour to the coldest day. Stylishly finished with the WeatherBeeta badge



Fleece Lined Beanie from Horseland

Designed for equestrians who are looking for warmth and comfort, Montar's Sophie Light Down Jacket ticks all the boxes. Cosy enough to help keep biting winter winds at bay, this jacket has the style smarts to take you to the yard and then out for a coffee on the way home.



Montar Sophie Light Down Jacket from The Equestrian



**PROPERTY** 

# Somewhere special to call home

In a premium position at 117e Range Road North, Upper Hermitage in South Australia, this property truly is something very special.

panning approximately 20 acres and meticulously designed for horse enthusiasts, this is an exceptional lifestyle property. Built in 2022, the luxurious four bedroom home offers panoramic views from Adelaide's CBD to the Port and Semaphore, and the property's elevated position adds to a wonderful sense of tranquillity and

The home features high quality hybrid floors and is designed with both comfort and elegance in mind. The executive master suite is a generously sized private retreat with a spacious walkin robe, large windows opening onto stunning views, and direct balcony access. A double shower, separate toilet, and stone benchtops add a touch of luxe to the ensuite. The three

additional bedrooms all have ceiling fans, built-in robes, and spectacular .

The formal dining or games room includes a stone-topped wet bar, ideal for entertaining, while the heart of the home is an open plan living space, featuring a gourmet kitchen with a large Calcutta Gold Stone Island Bar and

top-of-the-line Westinghouse appliances.
Step outside and you'll discover four paddocks and four day yards with
Borderline PVC horse safe fencing and
Duncan Equine horse safe gates. The
large powered shed and stables has dual electric roller doors, electric hot water and horse wash, and three 4x4m Jarrah stables designed by Equine Stables.

The 60x20m horse arena, constructed by Oakwood Recreation & Landscaping is equipped with power, flood light, cameras, a Soiltex and sand surface, and Polvin PVC fencing with a 20-year warranty.

Only a few kilometres from two shopping centres, and less than 17km to the Adelaide CBD, the property is also in close proximity to nature trails, Gorge Wildlife Park, Anstey Hill Recreation Park and Black Hill Conservation Park, as well as those beautiful Adelaide Hills towns and all that they have to offer.

See the listing on <u>Horse Property</u>, or contact Ray White's Johnny Zehle on 0468 829 582, or Jacob Branch on 0478 094 421.



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