



## The P2 Variant Of PSSM2 Survey Results

The official findings from the PSSM & MFM awareness survey on the P2 variant of PSSM2.

The survey was set up to establish whether there is any pattern in ages affected, manageability, and symptoms associated with the P2 variant of PSSM2.

The survey was completed by 477 horse owners of single variant P2 horses only meaning all horses were either N/P2 or P2/P2.

Horses were tested via either the Equiseq or Generatio hair strand test for PSSM2. Some horses were also tested via additional muscle biopsy for double confirmation.

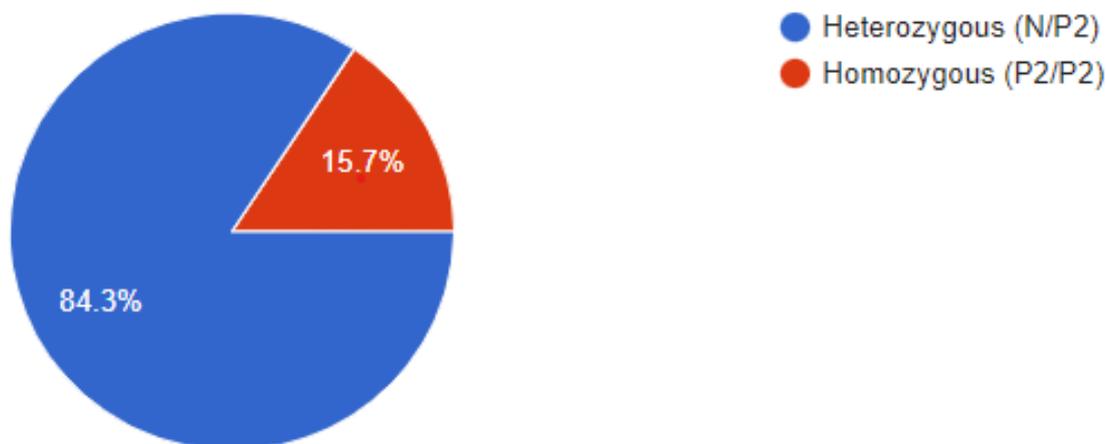
### Findings

#### Question 1

Is Your Horse Heterozygous or Homozygous For PSSM2?

-84.3% (402) of horses who participated in the survey were Heterozygous for P2 (N/P2)

-15.7% (75) of horses who participated in the survey were Homozygous for P2 (P2/P2)



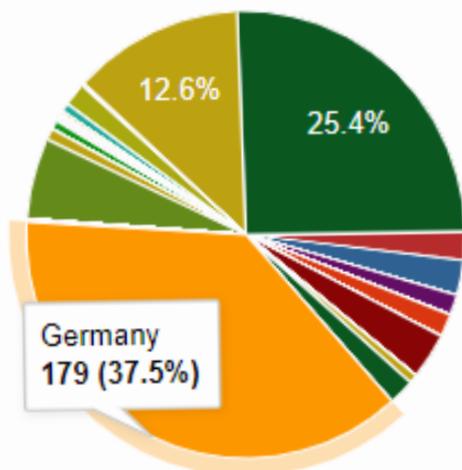


## Question 2

What Country Is Your Horse Based In?

Horses from across the world participated in our survey from all corners of the globe.

- 37.5% (105) were based in Germany
- 25.4% (121) were based in the USA
- 12.6% (60) were based in the UK
- 5.9% (28) were based in the Netherlands
- 3.4% (16) were based in Denmark
- 2.5% (12) were based in Austria
- 2.1% (10) were based in Australia
- 1.9% (9) were based in France
- 1.7% (8) were based in Switzerland
- 1.7% (8) were based in Canada
- 1.5% (7) were based in Belgium
- 0.8% (4) were based in New Zealand
- 0.6% (3) were based in Finland
- 0.6% (3) were based in Norway
- 0.6% (3) were based in Sweden
- 0.2% (1) was based in Portugal
- 0.2% (1) was based in Poland
- 0.2% (1) was based in Slovenia





### Question 3

What Breed Is Your Horse?.

- 25.2% (120)- American Quarter Horses
- 21% (100)- Warmbloods (All types)
- 9.2% (44)- American Paint Horses
- 5.2% (25)- Andalusians
- 5.2% (25)- Thoroughbreds
- 3.8% (18)- Crossbreds
- 3.6% (17)- Arabians (All types)
- 3.1% (15)- Connemaras
- 3.1% (15)- Appaloosas
- 2.5% (12)- Quarter Ponies
- 1.9% (9)- Cobs (All types)
- 1.9% (9)- Standardbreds
- 1.7% (8) German Riding Ponies
- 1.7% (8)- Draft Horses (All types)
- 1.3% (6)- Appendix Quarter Horses
- 1.3% (6)- Irish Sport Horses
- 1.3% (6)- Haflingers
- 1% (5)- Lusitanos
- 0.6%- (3) Friesians
- 0.6% (3)- Freidbergers
- 0.4% (2)- Tennessee Walking Horses
- 0.4% (2)- Spanish Mustangs
- 0.4% (2)- Morgans
- 0.4% (2)- Knabstrupper
- 0.4% (2)- Irish Draught
- 0.4% (2)- Hucul Pony
- 0.4% (2)- Canadians Horses
- 0.2% (1)- Spanish Barb
- 0.2% (1)- Quarab
- 0.2% (1)- Pony Of The Americas
- 0.2% (1)- Mangalarga Marchador
- 0.2% (1)- New Forest Pony
- 0.2% (1)- Iceland Horse
- 0.2% (1)- Bardigiano
- 0.2% (1)- Azteca

From our findings we can establish that the P2 variant of PSSM2 is found in a large variety of horse breeds.



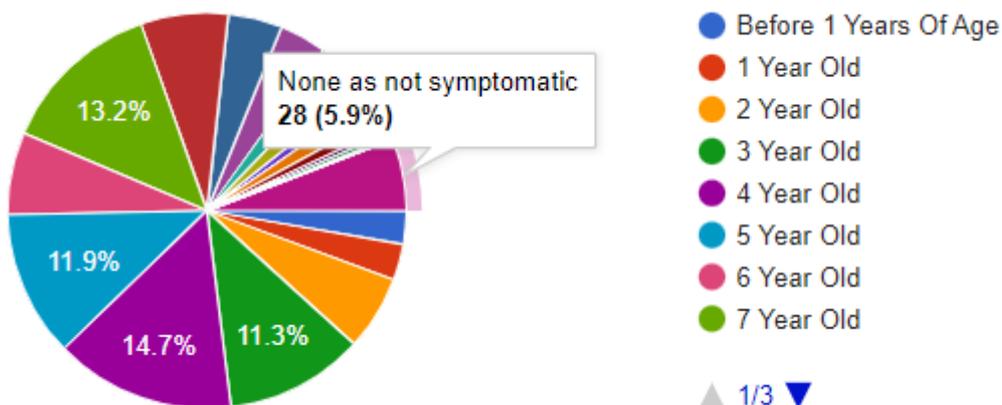
## Question 4

At What Age Did Your Horse Start Displaying Symptoms?

- 2.7% (13) before the age of 1
- 2.9% (14) at 1 years old
- 6.1% (29) at 2 years old
- 11.3% (54) at 3 years old
- 14.7% (70) at 4 years old
- 11.9% (57) at 5 years old
- 6.7% (32) at 6 years old
- 13.2% (63) at 7 years old
- 7.1% (34) at 8 years old
- 4.4% (21) at 9 years old
- 3.8% (18) at 10 years old
- 2.3% (11) at 11 years old
- 2.1% (10) at 12 years old
- 1% (5) at 13 years old
- 1.7% (8) at 14 years old
- 1% (5) at 15 years old
- 0.4% (2) at 16 years old
- 0.4% (2) at 17 years old
- 0.1% (1) at 18 years old

In our survey only 28 horses (5.9%) who took part were unsymptomatic.

From our findings we can establish that most horses with the P2 variant of PSSM2 will become symptomatic, we can also establish that the most common ages for symptoms to develop in P2 horses is between the ages of 3-8 years old. 64.99% of horses in our survey displayed symptoms between these ages.





## Question 5

What Symptoms Did Your Horse Display?

- 52% (248)- Canter issues
- 49.3% (235)- Stiffness
- 47.8% (228)- Tightness
- 43% (225)- Lethargy
- 42.1% (201)- Feeling the cold
- 41.9% (200)- Sensitivity
- 40.7% (194)- Exercise Intolerance
- 35.2% (68)- Lameness
- 35.2% (68)- Contact issues
- 34.6% (165)- Reluctance to be saddled
- 34.4% (164)- Muscle Loss
- 31.4% (150)- Struggling for the farrier
- 31.4% (150)- Muscle divots/dents
- 26% (124)- Muscle spasms
- 25.8% (123)- Aggression
- 23.1% (110)- Depression
- 22.9% (109)- Respiratory issues
- 22.6% (108)- Colic/Laminitis like symptoms
- 20.8% (99)- Shifting Weight
- 18.2% (87)- Tripping
- 17.8% (85)- Standing underneath themselves
- 16.4% (78)- Weakness
- 13.8% (66)- Camping Out
- 13.4% (64)- Tying up
- 12.6% (60)- Sweating profusely
- 10.9% (52)- Co-ordination issues (Ataxia)
- 7.8% (37)- Dark or bloody urine

Other symptoms reported by 0.8-0.2% of owners included explosive behaviour, twitching, wood chewing, feet stomping, & diarrhoea.

From our findings we can establish that the symptoms of PSSM2 in the P2 variant of PSSM2 is diverse, there appears at present no distinct symptoms unique to the P2 variant of PSSM2 except canter issues which we know are present in horses of all variants.

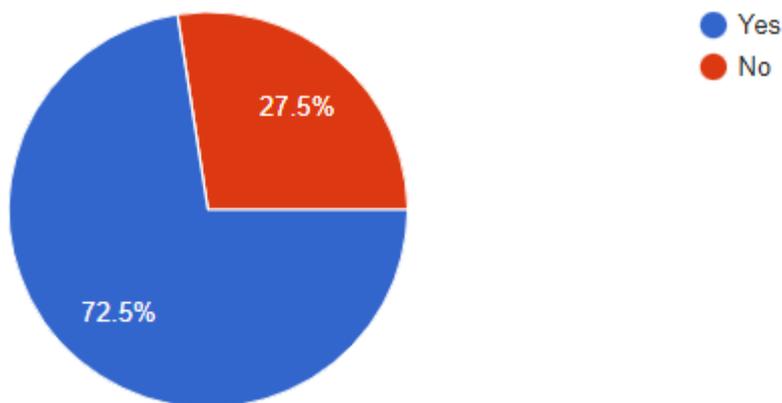
We will know further details once all variant surveys are submitted and results collated.



## Question 6

Is Your Horse Managed For PSSM?

- 72.5% (346)- Managed
- 27.5% (131) Not managed



## Question 7

If Your Answer Is Yes- Then Please Explain How You Manage Your Horse?

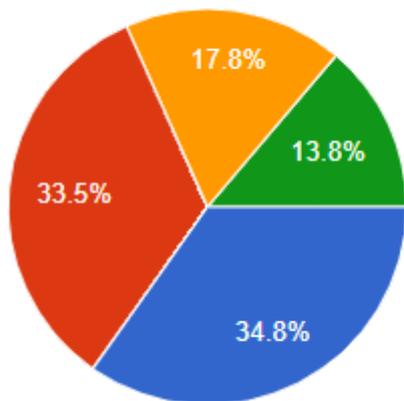
From 346 answers the most common forms of management were as follows:

- Diet change of high protein and/or amino acid supplementation
- Vitamin E supplementation
- Rugging
- Exercise and/or daily movement

## Question 8

If Your Answer Was Yes Your Horse Is Managed- Then How Would You Describe Your Horses Exercise In Regards To Management?

- 34.8% (113)- High workload (Ridden every day and able to compete)
- 33.5% (109)- Medium workload (Workload decreased, not able to do as much as they used to)
- 17.8% (58)- Light workload (Hacking/trail riding only)
- 13.8% (35)- Managed but retired (Unable to be ridden but managed to be retired)



- My horse is managed and is capable of a high workload (Ridden every day, and able to compete)
- My horse is managed but is capable of a medium workload (horses workload has decreased but they are still capable of...)
- My horse is managed but is only capable of light work (like trail riding or...)
- My horse is managed but is unable to be ridden and only comfortable as a field/...

From our findings we can establish that workload for the managed P2 horse is diverse but 68.3% of horses were capable of either a high workload or a medium workload with appropriate management.

### Question 7

If Your Answer Was No As To Whether Your Horse Was Managed- Please Explain Why Your Horse Is Unmanageable?

From 131 answers the most common answers for were as follows:

- The horse did not respond to any of the PSSM2 diet dietary changes
- Progressive fast paced symptoms that just get worse
- Lack of information/support on how to manage my horse
- Aggression and dangerous behaviour
- Irreversible damage after being undiagnosed for so long

Horses who did not respond to diet or had progressive fast paced symptoms were all euthanised.