

## Temperament of stallions: relation with age, breed and level of riders

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Temperament is an important factor when working with horses. Behavioral tests have been developed to measure certain dimensions in horses. Relations between temperament and ability to riding activity have been highlighted (Lansade 2008a). The aims of this study were 1) to evaluate the effect of age on temperament, 2) to verify that temperament are related to breeds 3) to check if the ease to be ridden is in relation with temperament, on a first set of data.

Five dimensions of temperament have been measured in 98 field stallions (Table 1). They were tested as described by Lansade (2008 a,b): fearfulness/curiosity (tests: crossing a novel aera, suddenly opening an umbrella, novel object), gregariousness (test: isolation), locomotor activity (during the other tests), reactivity/curiosity to a non familiar human (tests: passive and active human), tactile (Von Frey filament) and auditory sensitivities.

| Breeds or groups of breeds        | Young (<13 years) | Old (≥13 <20 years) |
|-----------------------------------|-------------------|---------------------|
| Merens <sup>1</sup>               | 15                | 10                  |
| Leisure horse breeds <sup>2</sup> | 13                | 10                  |
| Jumping pony breeds <sup>3</sup>  | 7                 | 20                  |
| Jumping horse breeds <sup>4</sup> | 9                 | 10                  |
| Arabians                          | 7                 | 11                  |
| Total                             | 37                | 61                  |

(1) Merens : french mountain horse breed (2) Appaloosa, Barbe, Lusitanian, Polish, Paint (3) French Saddle Pony, Connemara, New Forest, Welsh (4) French Saddle Horse, Anglo-Arab, KWPN, Foreign breeds

Effect of age. Due to imbalanced data, only stallions from 3 breed groups were compared (29 young ones selected at random and 30 old ones). Young stallions presented a higher emotivity (more elevated distance/intensity of the flight after umbrella opening (P=0.001)) and curiosity (more sniffings/nibblings the passive human (P=0.04) and the novel object (P<0.0001)) compared to old ones.

Relation with breed groups. In young stallions, differences were noted: in the number of trots during social isolation (P=0.001) and in the tactile sensitivity

(P=0.005). Merens had smaller values than Jumping horses for these 2 variables.

In older stallions, differences were also noted: in the number of sniffings/nibblings the novel object (P=0.04), in the manner to cross the novel aera (P=0.03), in the distance and intensity of the flight after umbrella opening (P=0.04), in the number of trots during isolation (P=0.02) and in the tactile sensitivity (P=0.03). Merens had lower reactivity compared: 1) to Arabians (for novel aera) and 2) compared to Jumping ponies and Jumping horses (for isolation and tactile sensitivity).

Minimal level of rider. Stallions of all ages and breeds were divided into 3 groups according to the level of riders able to ride them safely, according to a questionnaire: low level, intermediate level and pre-national competition level. Stallions adapted to low level riders showed lower values in the number of trots during isolation (P=0.02) and in the tactile sensitivity (P=0.03) than stallions rode by pre-competition level riders.

Conclusion: The intensity of fear reactions to suddenness decreased with age. Differences between breeds and eases of use have been related to temperament measurements.

Fundings: COST Haras Nationaux, Association Sherpa Merens

Key words: temperament, age, breed, fear, gregarity

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