**Supplementary material**

Supplementary Table a and b: Results from transcranial magnetic stimulation, height measurements, and clinical grading of knuckling in 20 horses from a premises with acquired equine polyneuropathy, examined in May and October 2016. LT, latency time for magnetic motor evoked potentials in respectively cranial tibial (CT, Supplementary table 2a) and extensor carpi radialis (ECR, Supplementary table 2b) muscles, mean of triplicates from left and right side. Delta-LT, difference between predicted and recorded LT. K=knuckling, NK= non knuckling. LH=left hind, RH=right hind.

Predicted LT was based on withers height, according to Nollet et al.: ECR 8.55 + 0.078 x height (cm), CT 6.72 + 0.17 x height (cm).18. ↑ denotes delta-LT above reference cutoff value of 0.2 ms for thoracic limbs, and 0.8 ms for pelvic limbs.

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| **a. Pelvic limbs, Tibial cranial muscle (CT)** | | | | | | | | | | |
|  |  |  | **May 2016** | | | | **October 2016** | | | |
| **Horse no.** | **Withers height in cm** | **Predicted LT (ms)** | **Measured LT (ms)** | **Delta-LT (ms) (Reference ≤0.8)** | **Knuckling**  **grade in May** | | **Measured LT (ms)** | **Delta-LT (ms) (Reference ≤0.8)** | **Knuckling grade in October** | |
| **Affected horses (arranged from worst to least affected in pelvic limbs)** | | | | | | | | | | |
| **14** | 150 | 32.2 | 61.8 | 29.6 ↑ | K | 3 | 42.3 | 10.1 ↑ | K | 2 |
| **10** | 158 | 33.6 | 54.3 | 20.7 ↑ | K | 2 | 38.9 | 5.3 ↑ | K | 1 |
| **16** | 161 | 34.1 | 53.7 | 19.6 ↑ | K | 2 | 41.8 | 7.7 ↑ | K | 1 |
| **13** | 162 | 34.3 | 50.5 | 16.2 ↑ | K | 2 | 41.4 | 7.1 ↑ | K | 1 |
| **17** | 155 | 33.1 | 48.7 | 15.6 ↑ | K | 1 | 52.0 | 18.9 ↑ | NK | 0 |
| **12** | 165 | 34.8 | 48.9 | 14.1 ↑ | K | 2 | 44.3 | 9.5 ↑ | NK | 0 |
| **2** | 168 | 35.3 | 47.5 | 12.2 ↑ | K | 2 | 45.3 | 1.0 ↑ | K | 1 |
| **3** | 163 | 34.4 | 46.1 | 11.7 ↑ | K | 2 | 48.0 | 13.6 ↑ | K | 1 |
| **4** | 169 | 35.5 | 47.3 | 11.8 ↑ | K | 2 | 39.3 | 3.8 ↑ | K | 1 |
| **7** | 153 | 32.7 | 40.6 | 7.9 ↑ | K | 1 | 49.1 | 16.4 ↑ | K | 1 |
| **15** | 177 | 36.8 | 44.3 | 7.5 ↑ | K | 1 | 50.5 | 13.7 ↑ | NK | 0 |
| **1** | 172 | 37.1 | 44.1 | 7.0 ↑ | K | 2 | 39.0 | 1.9 ↑ | K | 1 |
| **11** | 165 | 34.8 | 40.3 | 5.5 ↑ | K | 1 | 37.7 | 2.9 ↑ | NK | 0 |
| **18** | 155 | 33.1 | 35.0 | 1.9 ↑ | K | 2 | 34.6 | 1.5 ↑ | K | 1 |
| **Pelvic limb lame horses** | | | | | | | | | | |
| **5** | 158 | 33.6 | LH: 33.7, RH: 55.4 | LH: 0.1,  RH: 21.8 ↑ | NK, lame RH | 0 | LH: 33.2, RH: 40.1 | LH: -0.4, RH: 6.5 ↑ | NK | 0 |
| **6** | 156 | 33.2 | LH: 33.4, RH: 60.4 | LH: 0.2,  RH: 27.2 ↑ | NK, lame RH | 0 | LH: 30.3, RH: 39.3 | LH: -2.9, RH: 6.1 ↑ | NK | 0 |
| **Unaffected horses** | | | | | | | | | | |
| **9** | 156 | 33.2 | 33.4 | 0.2 | NK | 0 | 33.1 | -0.1 | NK | 0 |
| **20** | 155 | 33.1 | 32.8 | -0.3 | NK | 0 | 32.9 | -0.2 | NK | 0 |
| **8** | 165 | 34.8 | 34.7 | -0.1 | NK | 0 | 34.4 | -0.4 | NK | 0 |
| **19** | 164 | 34.6 | 32.8 | -1.8 | NK | 0 | 33.3 | -1.3 | NK | 0 |

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| **b. Thoracic limbs, Extensor carpi radialis muscle (ECR)** | | | | | | | | | | |
|  |  |  | **May 2016** | | | | **October 2016** | | | |
| **Horse no.** | **Withers height in cm** | **Predicted LT (ms)** | **Measured LT (ms)** | **Delta-LT (ms)**  **(Reference ≤0.2)** | **Knuckling**  **grade (pelvic limbs) in May** | | **Measured LT (ms)** | **Delta-LT (ms) (Reference ≤0.2)** | **Knuckling grade (pelvic limbs) in October** | |
| **Affected horses (arranged from worst to least affected in pelvic limbs)** | | | | | | | | | | |
| **14** | 150 | 20.3 | 23.1 | 2.8 ↑ | K | 3 | 21.7 | 1.4 ↑ | K | 2 |
| **10** | 158 | 20.9 | 20.0 | -0.9 | K | 2 | 20.7 | -0.2 | K | 1 |
| **16** | 161 | 21.1 | 24.4 | 2.7 ↑ | K | 2 | 24.5 | 2.8 ↑ | K | 1 |
| **13** | 162 | 21.2 | 23.3 | 2.1 ↑ | K | 2 | 22.9 | 1.7 ↑ | K | 1 |
| **17** | 155 | 20.6 | 21.8 | 1.2 ↑ | K | 1 | 21.4 | 0.8 ↑ | NK | 0 |
| **12** | 165 | 21.4 | 22.4 | 1.0 ↑ | K | 2 | 22.3 | 0.9 ↑ | NK | 0 |
| **2** | 168 | 21.7 | 22.5 | 0.8 ↑ | K | 2 | 23.0 | 1.3 ↑ | K | 1 |
| **3** | 163 | 21.3 | 21.5 | 0.2 | K | 2 | 24.6 | 3.3 ↑ | K | 1 |
| **4** | 169 | 21.7 | 22.4 | 0.7 ↑ | K | 2 | 21.9 | 0.2 | K | 1 |
| **7** | 153 | 20.5 | 23.4 | 2.9 ↑ | K | 1 | 23.8 | 3.3 ↑ | K | 1 |
| **15** | 177 | 22.4 | 24.8 | 2.4 ↑ | K | 1 | 24.7 | 2.3 ↑ | NK | 0 |
| **1** | 172 | 22.0 | 23.8 | 1.8 ↑ | K | 2 | 22.4 | 0.4 ↑ | K | 1 |
| **11** | 165 | 21.4 | 21.9 | 0.5 ↑ | K | 1 | 22.5 | 1.1 ↑ | NK | 0 |
| **18** | 155 | 20.6 | 19.7 | -0.9 | K | 2 | 19.8 | -0.8 | K | 1 |
| **Pelvic limb lame horses** | | | | | | | | | | |
| **5** | 158 | 20.9 | 20.2 | -0.7 | NK | 0 | 20.3 | -0.6 | NK | 0 |
| **6** | 156 | 20.7 | 20.8 | 0.1 | NK | 0 | 20.1 | -0.6 | NK | 0 |
| **Unaffected horses** | | | | | | | | | | |
| **8** | 165 | 21.4 | 21.4 | 0 | NK | 0 | 21.2 | -0.2 | NK | 0 |
| **9** | 156 | 20.7 | 20.0 | -0.7 | NK | 0 | 20.1 | -0.6 | NK | 0 |
| **19** | 164 | 21.3 | 21.1 | -0.2 | NK | 0 | 21.3 | 0 | NK | 0 |
| **20** | 155 | 20.6 | 20.1 | -0.5 | NK | 0 | 20.0 | -0.6 | NK | 0 |