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Laminitis: Risk factors and outcome in a group of Danish horses

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## 1 Laminitis: Risk factors and outcome in a group of Danish horses

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### 12 Abstract

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14 **Reasons for performing study:** Recent systematic reviews have highlighted the lack of  
15 quality information with respect to the epidemiology of equine laminitis.

16 **Objectives :** To identify in Denmark the risk factors for new (i.e. not believed to have  
17 suffered from laminitis previously) cases of laminitis (NL) and to look at the outcome and  
18 incidence of repeated episodes of laminitis in these animals as well as those which had  
19 previously suffered an episode of laminitis (i.e. chronic cases) over the following 12 months.

20 **Methods:** Information was obtained from 110 veterinary diagnosed cases of laminitis (69 new  
21 and 41 chronic) and 80 control animals (the next non-laminitic horse/pony seen by that  
22 participating practice). All animals were followed for up to one year. Univariable and  
23 multivariable conditional logistic regression was conducted for the NL case control pairs.  
24 Variables were retained within the final multivariable models if the likelihood ratio p-value  
25 was < 0.05.

26 **Results:** There was no association between sex or gender and laminitis. A recent change of  
27 grass, being on what was considered high quality grass and being a cold-blooded type,  
28 <149cm (i.e. Shetland, Fell, Welsh, or Dartmoor pony, Icelandic horse, Norwegian fjords,  
29 or a mix of these breeds) were all significant risk factors for laminitis. Although cresty neck  
30 score (CNS), and body condition Score (BCS), were significantly associated with NL at the  
31 univariable screening stage, they were found to be confounders of breed and each other  
32 during the multivariable model building process. Other factors such as weight, and estimated  
33 starch intake were not found to be significant. Thirty three percent of all the laminitis cases  
34 had been humanely destroyed within 12 months of diagnosis, mainly for laminitis associated  
35 reasons, compared with only 7.5% of the controls (none for laminitis associated reasons).

36 **Conclusions and potential Relevance:** This study confirms the importance of grass turn out  
37 and breed on laminitis risk. Horses in work at the time of diagnosis as well as those  
38 diagnosed in the winter and spring were more likely to be humanely destroyed within the  
39 next 12 months than those not in work or diagnosed in the autumn and summer.

40

### 41 Conflicts of interest

42 The authors do not have any conflict of interest.

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