



Animal Health Trust



Integrating systematic reviews with epidemiological studies of equine laminitis to deliver evidence-based benefits in clinical veterinary practice



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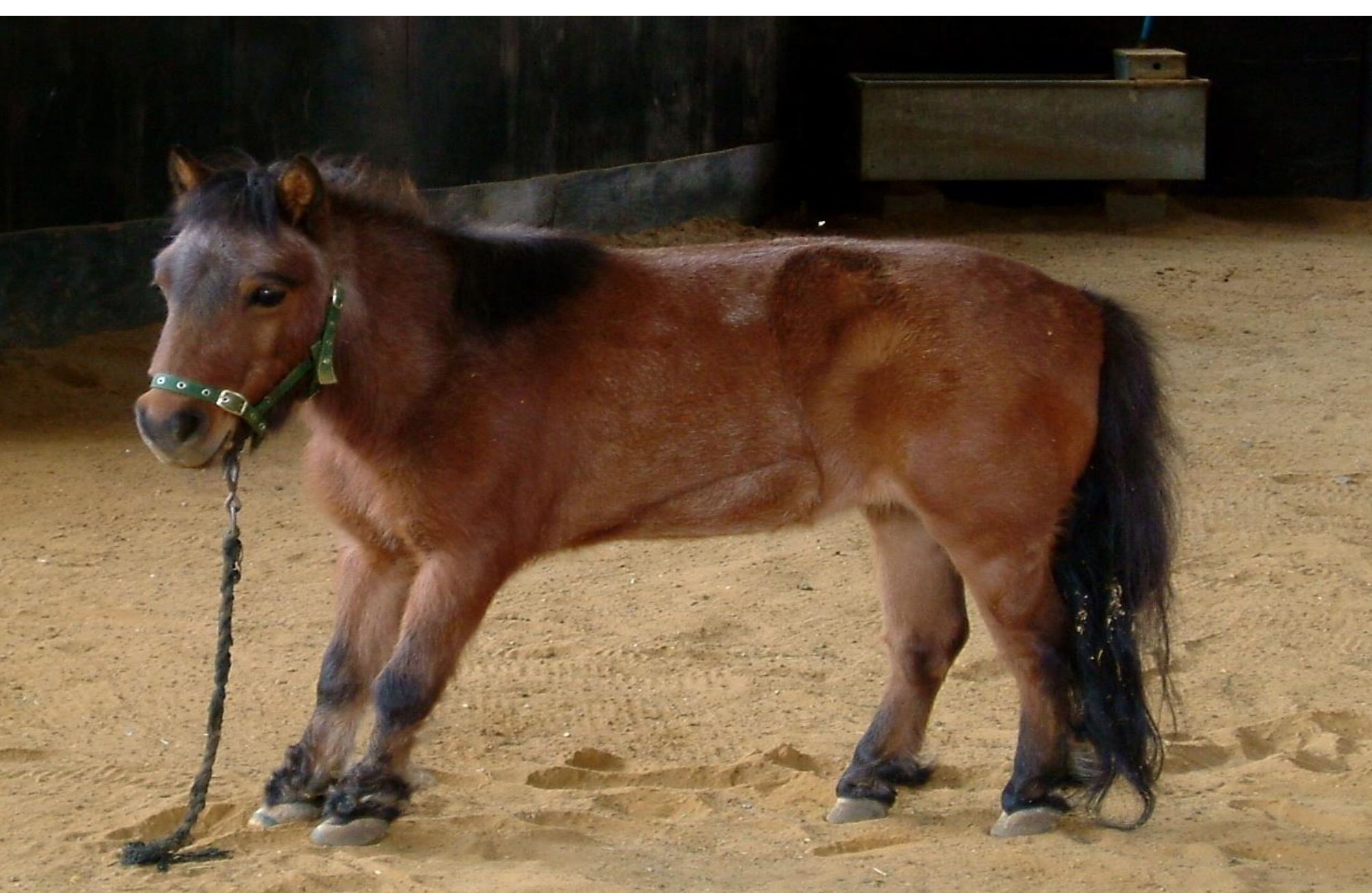


Summary

- Laminitis is a painful and debilitating disease of the horses' foot which can lead to euthanasia on welfare grounds in severe cases
- Two systematic reviews assessed the best evidence regarding the frequency of, and risk factors, for naturally-occurring laminitis
- Design of new epidemiological tools assisted the conduct of cohort and nested case-control studies in Great Britain (GB)
- This work should lead to evidence-based recommendations for interventions to prevent and control laminitis, improving equine welfare

Introduction

- Laminitis is a painful and debilitating disease of the equine foot resulting from insult to the junction between the dermal and epidermal lamellae
- "Better understanding of epidemiology key requirement in conquering the disease"(2nd International Workshop of Equine Laminitis, 2010)



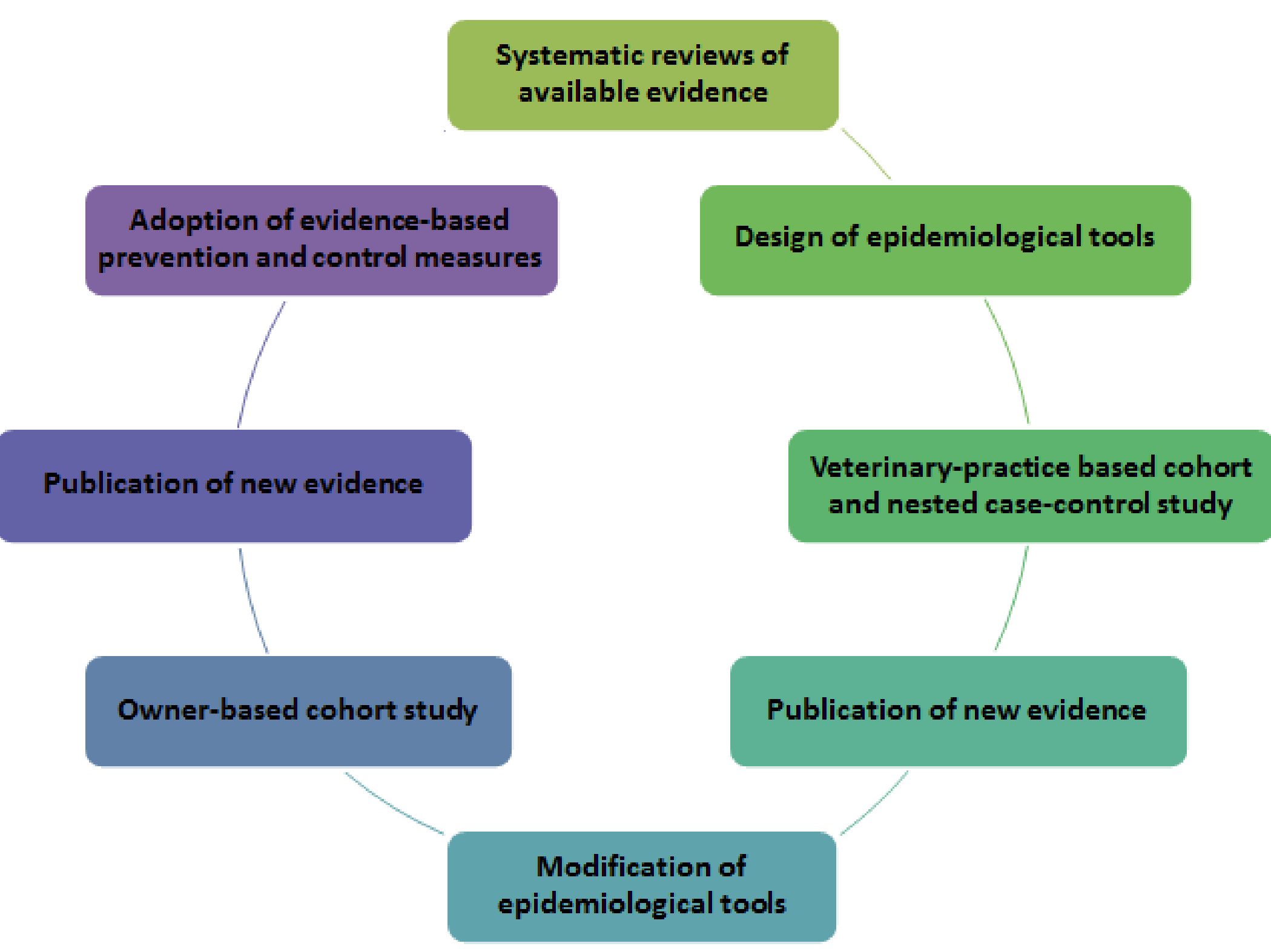
Laminitis occurs when there is pain within the sensitive structures which bind the distal phalanx to the internal hoof capsule, supporting the weight of the animal

Completed epidemiological studies

- Active laminitis in horses/ponies in GB
- Two year (2009-2011) prospective vet practice-level cohort and nested case-control study
- 30 practices: 48,082 registered horses reported 235 laminitis episodes in 46,814 HYAR
- Owner-level questionnaires were received for 191 laminitis cases and 819 controls



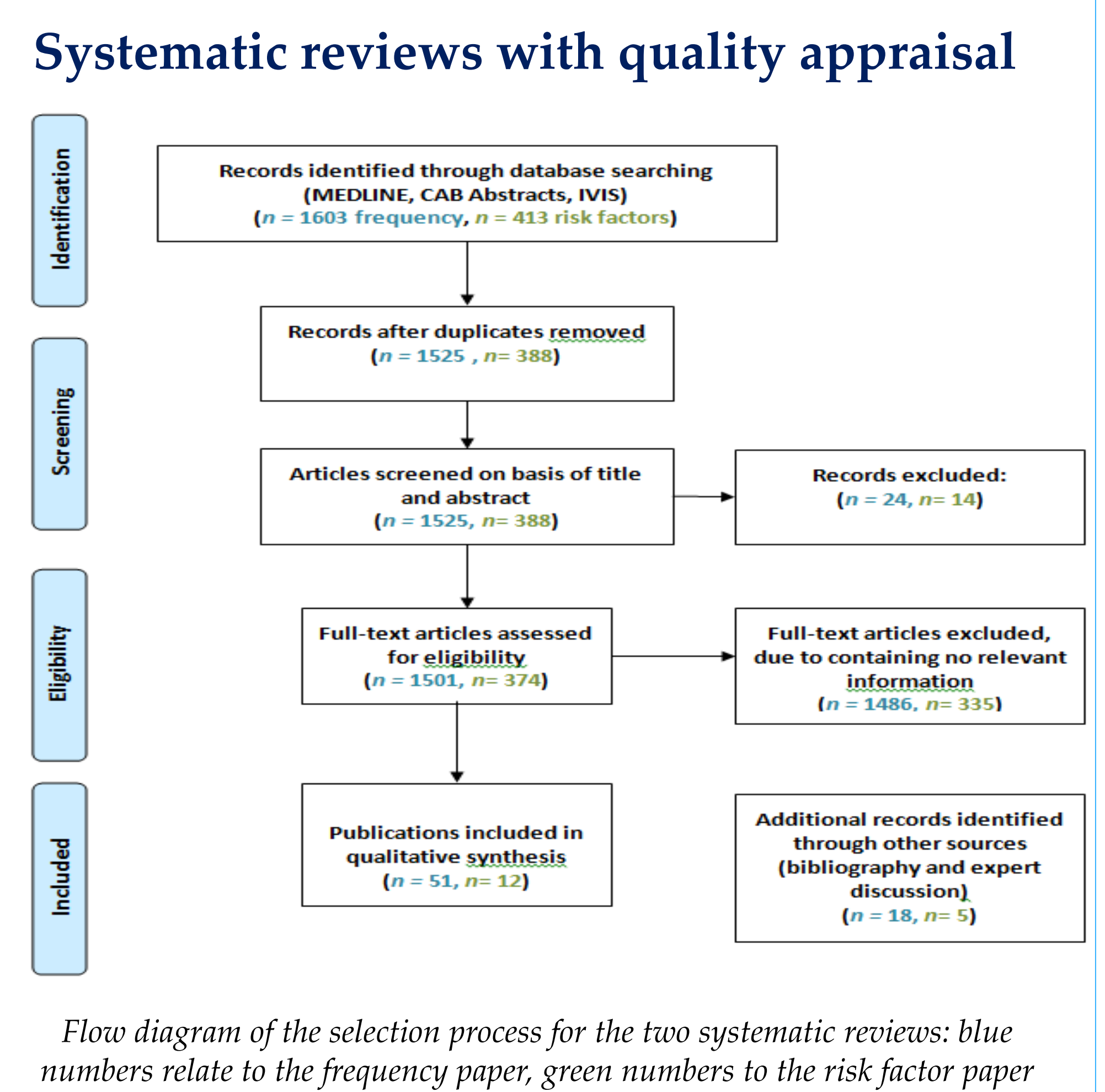
A cohort study of owner-reported laminitis frequency and risk factors, CARE about laminitis, is creating awareness and reporting evidence for the disease



Steps outlining the integration of systematic reviews of available evidence with epidemiological studies of laminitis

Current epidemiological studies

- Further investigation of active laminitis in horses/ponies in GB
- Prospective owner-level cohort study
- Modification of epidemiological tools for use by lay people
- Validation of owner-reported clinical data with veterinary diagnosis
- Sample size estimations indicate data required from 5000 HYAR (~3,333 animals over 18 months)
- Web-based system of data collection:
 - www.careaboutlaminitis.org.uk



Flow diagram of the selection process for the two systematic reviews: blue numbers relate to the frequency paper, green numbers to the risk factor paper

Frequency

- Ten papers considered most reliable: prevalence estimates 1.5% to 34.0%
- Generally poor quality

Risk Factors

- Six papers considered most reliable: association with increasing age and chronic laminitis
- Limited in number and scope
- Reasonable quality

Conclusions

- Need for high-quality evidence-based studies and standardised epidemiological research tools

Frequency

- Prevalence 0.49% (CI 0.43–0.55%)
- Incidence 0.50 cases/100 HYAR (CI 0.44–0.57)

Risk Factors

- Novel, modifiable risk factors included:
 - ↑ risk with: weight gain in previous 3 months; new access to grass in previous 4 weeks; box rest in previous week; increasing time since anthelmintic treatment
 - ↓ risk with supplement feeding and transportation in previous week

Conclusions

- Owner-reported estimates may be more representative of general population
- Prospective cohort study stronger evidence

Standardised data collection tools were developed to collect information on active laminitis ("Laminitis Reporting Form", left) and owner-reported risk factors ("Equine Laminitis/Management Questionnaire", right)

Discussion

- Standardised epidemiological studies of laminitis will assist future systematic reviews with meta-analysis to provide the highest level of evidence
- Programme of work should enable evidence-based recommendations for interventions to prevent and control laminitis, improving equine welfare

Literature

- Wylie et al, (2011) Vet J, 189 (3), 248-256
- Wylie et al, (2012) Vet J, 193 (1), 58-66
- Wylie et al, (2013) EVJ, 45 (6), 681-687
- Wylie et al, (2013) Vet J, 198 (1), 57-69

Acknowledgments

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