

# **A RETROSPECTIVE STUDY INTO THE INFLUENCE OF BODY WEIGHT AND CONDITION ON PLASMA LACTATE CONCENTRATION IN HORSES PRESENTING WITH GASTROINTESTINAL DISEASE.**

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The aim of this study was to compare plasma lactate levels in horses and ponies of varying body conditions presenting with gastrointestinal disease. Higher lactate concentrations have previously been identified in ponies compared to horses, but it remains unknown if a higher body condition in ponies contributes to this finding or if there are other factors at play. Given that lactate is used to quantify the severity of gastrointestinal disease it is important that the mechanism and role of other influencing factors is understood. Retrospective data from the Royal Veterinary College Equine Hospital (RVCEH) were obtained from the period of 2021 and 2023 and analysed using Excel and Prism to look for statistical significance within the data subsets. 132 equids were included in the study, of which 64.4% (n=85) were >14.2 hands high (hh) and classified as a horse, the rest were classed as ponies. Countering previous studies, ponies did not appear to have a statistically significant higher BCS than horses where  $p = 0.42$ . However, ponies in this study had a statistically higher median lactate concentration [LAC] of 1.7mmol/L (range 0.4-9.9mmol/L) than horses who had a median [LAC] of 1.0mmol/L (range 0.4 to 9.9mmol/L;  $p = 0.0055$ ). Although body condition has not been found to influence [LAC], breed of the equid (horse or pony) does. The exact physiology of this mechanism has not yet been decided but would be a basis for future studies which might warrant further amendments in our diagnostic workup of our smaller equine companions.