

Associations between exercise and joint injury in Thoroughbred racehorses in training

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This study aimed to identify exercise-related risk factors for carpal and metacarpo-/tarsophalangeal (MCP/MTP) joint injury occurrence and progression in young Thoroughbreds in flat race training. In a 2-year prospective cohort study, daily exercise and joint injury data were collected from horses in 13 training yards in England. Four injury categories were defined: (1) localised to a carpal or MCP/MTP joint based on clinical examination and/or use of diagnostic analgesia, no diagnostic imaging performed (n=21); (2) localised to a carpal or MCP/MTP joint, no abnormalities detected on diagnostic images (n=21); (3) evidence of an abnormality of subchondral bone and/or articular margin(s) identified using diagnostic imaging (n=72); (4) evidence of discontinuity of the articular surface identified by diagnostic imaging (n=70). Survival analysis using Cox regression was used to identify risk factors for injury type, category and progression. 647 horses spent 7,785 months at risk of joint injury and 184 injuries were recorded (82 carpal, 102 MCP/MTP injuries). Increasing distances cantered in short periods were associated with a decreased risk of sustaining any joint injury, Category 1, 2 and 3, and MCP/MTP injuries. Greater canter distances in 30 days increased the risk of Category 4 injury. Risk of Category 1 injury increased with increasing distances of weekly high-speed exercise. MCP/MTP injury risk increased with accumulation of canter or high-speed exercise since entering training. Progression of joint injury was associated with increasing exercise distances in short time periods and medical treatment. In conclusion, modifications to exercise regimens could reduce joint injury occurrence and progression. The use of medication in horses with joint injury clearly requires further research.