The Hong Kong Jockey Club
Equine Welfare
Research Foundation

Priority Research Topics for December 2021
(Applicable for all grant programmes and Research Training Scholarship)

1   High incidence of degenerative orthopaedic disease in racehorses

1a   Response of critical musculoskeletal tissues to repetitive, cyclical high intensity loads associated with current modes of training and racing.

- Longitudinal studies to characterise structural changes in tissues at high risk of injury due to repetitive, cyclical loading.
- The functional significance of fine structural features that can be identified in musculoskeletal tissues with MRI and CT
- The fine balance between functional adaptation that confers benefit and pathology

1b   Relationship between track and injuries

- Application of "Big Data" analytics to identify risk factors for injuries in training and racing
- Pros and cons of synthetic surfaces in different climates.
- Relative risk of turf, dirt and synthetic tracks (differentiating between sand mesh and natural turf tracks) in different climatic conditions
- Impact (positive or negative) of training and trialing on turf relative to dirt on subsequent risk of fracture when racing on turf

1c   Suitability of individual horses for racing

- Are there particular biomechanical characteristics of horses (either temporary or permanent) that predispose individuals to injury? If so, can we screen for these?
- Is "Handedness" a real feature of horses and, if so, does it impair some horses running in a particular direction around an oval track?

2   Reducing the incidence of severe fractures in horses while training and racing

2a   Develop clear advice to trainers based on systematic review of the literature and promulgate to the global racing community.

2b   Develop holistic protocols to screen for horses that may be at high risk of sustaining a fracture when training or racing.

3 Husbandry and management

3a Develop tools, based on objective, quantifiable measures, including expressions of behaviour, to judge the state of welfare of an individual racehorse.

3b Use this tool to identify common factors that improve or degrade the welfare of racehorses.

4 Objective measures to assess the physical potential for racehorses to adapt to different future career paths on retirement from racing

4a Develop an evidence-based assessment protocol that relates clinical history, clinical findings and performance in early retraining to long-term outcomes.

5 The biological integrity of horses

5a Techniques to detect manipulation of the genome of individual horse.

6 Disease associated with intensive training

6a Risk factors for Exercise Induced Pulmonary Haemorrhage and lower airway disorders and practical measures to reduce their impact

6b Application of modern technology to identify causes of sudden-onset poor performance and to determine their impact of horse welfare.

6c Risk factors for horses developing significant respiratory signs associated with recurrent laryngeal neuropathy.

6d The consequences of Equine Gastric Ulcer Syndrome on horse welfare.