

Meydan Hotel - Dubai 2017

Thursday, 2<sup>nd</sup> November & Friday, 3<sup>rd</sup> November 2017

## AGENDA

### DAY 1 – Thursday, 2<sup>nd</sup> November

| <u>TIME</u>           | <u>TOPIC</u>  | <u>SPEAKER(S)</u> |
|-----------------------|---|-------------------|
| 9.00am                | <p>Welcome and Introduction</p> <p>Denis Egan - Chairman of the Conference welcomed everyone to the 7<sup>th</sup> International Conference for the Health, Safety and Welfare of Jockeys. He said the conference was being attended by 63 attendees from 13 countries which was the highest number of attendees ever to attend. He noted that there would be 35 individual speakers. He thanked the Al Basti Equiworld for their sponsorship of the event and for providing a top-class venue and facilities. He concluded by saying that he was looking forward to the presentations over the next 2 days.</p>  | Denis Egan (IRE)  |
| <b>9.10am-11.05am</b> | <b>SESSION 1: MAKING WEIGHT AND RIDING PERFORMANCE</b>  |                   |
| 9.10am-9.40am         | <p>(a) The horseracing Industry's perception of jockeys' nutrition and weight-making.</p> <p>Despite recent research and applied examples showing jockeys can lose significant weight through fat loss, whilst preserving fat-free tissue and improving performance markers through adhering to a calorie controlled, high protein diet, dehydration and starvation are still the most common techniques used for weight management amongst UK jockeys. Interviewing jockeys, trainers, agents, racecourse clerks, and jockey coaches, this research sought to understand why, despite the available support, do jockeys maintain archaic weight-making and detrimental practices, and what, if any, are the influencing factors in jockeys' relationship with food and weight-making processes.</p>  | Dan Martin (UK)   |
|                       | <p>(b) Race-day catering in professional horseracing: does current provision facilitate weight management and riding performance?</p> <p>Dan Martin updated on research carried out on race-day catering and whether or not it facilitated weight management and riding performance. The research reached the following conclusions:</p> <ul style="list-style-type: none"> <li>i) Provision is better than previous times however development is required to provide foods that facilitate the demands of modern day jockeys, specifically their requirement to make weight and optimise their riding performance.</li> <li>ii) Interactions and engagement with catering staff can influence the weighing room dietary practices and jockeys' relationship with food</li> <li>iii) A necessity for regulatory guidance is recognised amongst all parties, by where minimum standards are agreed and governed</li> </ul> | Dan Martin (UK)   |

The research also found that 75% of jockeys and staff believe that current food provision does not help jockeys with weight management and riding performance.

It was proposed that the following steps should be taken to address the deficiencies:

- i) There should be Preliminary training for catering staff at racecourses to include:
  - a) basic knowledge of jockey lifestyle
  - b) knowledge of weight-making pressures
  - c) being granted more autonomy based on the needs of jockeys on the day
- ii) There should be development of coherent minimum catering guidelines:
  - a) based on existing nutrition evidence
  - b) aligned with jockey school education
  - c) which are financially and logistically viable for racecourses to deliver
  - d) which are conducive to health, performance, and weight management

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| 9.40am-10am  | <p>Energy expenditure in professional flat jockeys using doubly-labelled water during racing session: implications for body weight management.</p> <p>To formulate individualized dietary strategies for jockeys, it is vital that energy requirements are quantified. We measured total energy expenditure (TEE) over two separate weeks in spring and summer using doubly-labelled water in a group of male flat jockeys (n = 8, 36.9, ± 5.7 years, 164, ± 8 cm, 54.6, ± 2.5 kg). Total energy intake (TEI) was self-recorded, as were riding and exercise activity. Mean daily TEE was 10.83 (± 2.3) and 10.66 (± 1.76) MJ, (P =0.61) respectively. Self-reported TEI were 6.03 (± 1.7) and 5.37 (± 1.1) MJ (P =0.40), respectively, and were significantly lower than TEE (P =0.01). Mean race rides were 17.25 (± 6.16) and 13.0 (± 3.42; P =0.37) and horses ridden at morning exercise were 8.12 (± 6.35) and 7.37 (± 4.4; P =0.77) respectively. Additional structured exercise was 76.25 (± 95.1) and 52.5 (± 80.9) min per week (P =0.35) respectively. At the individual level, TEE was related to body mass and the level of non-racing physical activity, but not riding. Physical activity levels for TEE were 1.76 (± 0.37) and 1.69 (± 0.27; P= 0.59), and appear modest when compared with other athletes, and similar to age-matched non-athletes, suggesting that conventional sport-specific nutritional recommendations do not appear applicable. The large discrepancy between TEE and TEI suggests significant under reporting of dietary intake. These data now provide an appropriate framework from which to formulate jockey nutritional guidelines to promote the ability to achieve the daily weight target and improve athlete welfare.</p> | Dr George Wilson (UK)                                  |
| 10am-10.30am | <p>Improving weight management, health and performance in jockeys</p> <p>In line with the Jockey Pathway discussed in previous years, support services for jockeys have now been implemented in Ireland by Horse Racing Ireland’s Careers and Racing Education (CARE) department. However, it is important the information and support strategies provided are evidence based and specific to the industry.</p> <p>From 2005-2015, The Turf Club in conjunction with Dublin City University investigated the health and performance characteristics of jockeys, with a particular focus on the implications of making weight on jockey health and performance. More recently, The Turf Club has collaborated closely with Waterford Institute of Technology and the University of Limerick as well as Irish Injured Jockeys to further progress the research programme.</p>   | Dr Giles Warrington (IRE)<br>Dr SarahJane Cullen (IRE) |

|                        |   |                          |
|------------------------|---|--------------------------|
|                        | <p>The Turf Club research group have now expanded their research focus to ensure their research findings are directly feeding into the support services provided. From January 2018, three PhD researchers will be completing projects in three very different areas:</p> <ol style="list-style-type: none"> <li>1) Investigation into the physiological demands of racing and development of a “Fit to Ride” assessment protocol;</li> <li>2) Longitudinal tracking of bone health in jockeys with a vitamin D supplementation intervention;</li> <li>3) Identification of essential support strategies and interventions to optimise mental health in jockeys.</li> </ol> <p>An overview of the applied nature of these projects in conjunction with information on additional ongoing research projects currently underway was provided.</p>   |                          |
| 10.30am-10.50am        | <p><b>The Brazilian Experience</b></p> <p>The training undertaken by Brazilian apprentice jockeys was outlined. The goal of the training is to give guidance and education to help the apprentices become the best professionals in the world,</p> <p>The training covers such areas as what is required for a healthy life and healthy eating so as to ensure longevity in the profession and safety. It addresses nutrition and exercise – when and what to eat and how often to exercise, discipline and routine, how to become a professional and the controls that are in place to ensure that a high prizemoney won is saved.</p>   | Dr Mayra Frederico (BRZ) |
| 10.50am-11.05am        | <p><b>Demands on physical tests and training for young riders</b></p> <p>The Swedish Horseracing organizes training and coaching for young riders led by former champion jockey Fredrik Johansson with a focus on physical training and training on the racehorse simulator. A physical test is mandatory before getting a license and every year before renewing the license for Amateur Riders and Apprentice Jockeys.</p> <p>The presentation featured a video which showed how riders are trained together with interviews from Fredrik Johansson.</p>  | Helena Gartner (SWE)     |
| 11.05am-11.20am        | <i>COFFEE BREAK</i>   |                          |
| <b>11.20am-12.50pm</b> | <b>SESSION 2: IMPLICATIONS OF MAKING WEIGHT</b>   |                          |
| 11.20am-11.50am        | <p><b>Examining markers of immune function and management of long-term health of the jockeys</b></p> <p>Weight-making practices have been shown to impair musculoskeletal and physiological function in jockeys, but to our knowledge, the effect of weight making practices on immune function has not yet been investigated. This study will examine immune function of professional jockeys based in Hong Kong through the assessment of a number of key blood markers relating to immune function and inflammation respectively including white blood cells (WBC), vitamin D, immunoglobulin A (IgA), neutrophil and pro-inflammatory markers IL1b, IL-6, IL-10 and IFNg. Additionally, full body DXA scans will be conducted to assess body composition and bone mineral density (BMD). An assessment of dietary intake and lifestyle choices will also be measured. A cross-sectional approach will be used, with 3 time points (October 2017, February and July 2018) over the entire racing season 2017-2018. Similar analysis will also be conducted on elite athletes from the Hong Kong Sports Institute in the sports of rugby sevens, triathlon and rowing, in order to draw comparisons on the effect of training load and weight-making cycles (where applicable) on immune function throughout their respective seasons. This study also aims to introduce the concept of immuno-nutrition into jockeys’ lifestyle, which relates to the potential to</p> | Dr John O’Reilly (HK)    |

modulate the activity of the immune system by interventions involving specific nutrients. It is envisaged that the results of this study may assist in the design and implementation of a more impactful meal planning strategy and will significantly contribute to the existing body of scientific literature in relation to the potential utility of various supplements and probiotics for professional jockeys.

11.50am-12.20pm

Relative Energy Deficiency in Sport (RED-S; A focus on the Male Athlete

Dr James Morton (UK)

The relative energy deficiency in sport syndrome (RED-S) was recently developed in recognition that male athletes display evidence of impaired physiological function that may be related to chronic low energy availability. As such, it is often hypothesised that athletes involved in weight sensitive sports may suffer from symptoms of RED-S including low bone density, resting metabolic rate (RMR), low testosterone, muscle protein synthesis and cardiovascular function. Given that jockeys are unique amongst weight making athletes in that they have to make weight daily, it could be suggested that jockeys are an athletic population especially sensitive to exhibit components of RED-S. This presentation will review evidence from a range of male athletes including cyclists, boxers, mixed martial artists and jockeys to identify the true prevalence of RED-S symptoms. In relation to jockeys, we highlight that purported symptoms of RED-S (e.g. low hip / lumbar bone density and suppressed RMR) display no differences between apprentice and senior male flat jockeys and that such parameters do not progressively worsen with years of race-riding. When considered with previously published data examining under-reporting of energy intake and direct assessments of energy expenditure, we therefore suggest that poor bone health in jockeys is not due to low energy availability but rather, the lack of an osteogenic stimulus associated with riding.

12.20pm-12.50pm

UK study on Bone Health of Apprentice Jockeys

Dr Jerry Hill (UK)

This presentation featured an update on a study on cross-sectional analysis of bone mineral density and body composition in newly registered jockeys,

The key findings of the study were:

- Large, representative cohort of male and female entry-level jockeys
- Very low spine BMD prevalence 29% male, flat jockeys and 13% male, jump jockeys – compared to ‘normals’
- Lower spine BMD in male flat jockeys than female jockeys
- Low proportional LBM instead of lower body fat % in male flat jockeys

Future studies will address:

- 12 month prospective study of newly-licensed jockeys. Baseline - DEXA/fitness tests/Vitamin D.
- Outcomes
  - falls with and without injury
  - fractures
  - number of rides and wins

12.50pm-1.45pm

LUNCH BREAK

1.45pm-2.45pm

On-track evaluation and updates on management of concussions/  
Returning to Ride; Utilizing physical therapy for improved recovery

Dr Kelly Ryan (USA)  
Laura Long (USA)

Diagnosis of a sports-related concussion can be very difficult and signs and symptoms may present differently for each athlete. It is important to educate riders and safety officials along with the medical professionals at the racetrack, as not every track has a physician or a professional that is trained specifically in sports-related concussions. Diagnosis and management of SRC is challenging as the findings on a physical and cognitive exam can initially be normal.

The goals of best practices for the diagnosis and management of sport-related concussion at the racetrack are to aid in safe riding with a process for diagnosis and management of a sports related concussion. It is also to develop prevention strategies for sport related concussion and promote injury resolution.

On race days, any rider that falls off of a horse should be quickly evaluated by EMS. If there is significant impact and any question of injury by medical staff on-site, they need to be evaluated immediately. After a fall, an assessment should be performed for head and cervical spine injury and implementation of the emergency action plan as warranted. Evaluation must include injury assessment, at physician discretion, usually SCAT 3 or 5 as well as Vestibular/Ocular – Motor Screening. If there was suspected head injury, or if the rider is experiencing signs, symptoms, or behaviors consistent with a sports-related concussion, they must be removed immediately from racing for the day.

Serial assessments of concussions will be performed by medical care providers specialty trained in managing concussions. Although initial treatment for concussions typically involves prescribed physical and cognitive rest, there is emerging evidence that active, targeted approaches for treating concussion may be more effective for certain patients. However, activities that put a patient at risk of another head injury or overexerting themselves should be avoided.

Specifically targeting treatments for athlete’s concussion clinical profiles (ie symptoms, impairment) such as vestibular, oculo-motor, cognitive fatigue, migraine, cervicogenic and anxiety/mood may be helpful. It is important to note that the effects of targeted post-concussion treatments on the underlying physiology of concussion are unknown.

Once an athlete has returned to his/her baseline, the return to play decision must be made by physician specialty trained in concussions. They must follow the return to ride protocol which is a stepwise process including incremental increase in physical activity and includes rider specific activities. While there is a recommended return to ride progression, it should be done on an individualized plan due to concussion symptoms and other factors like history and co morbid conditions.

### Return to Ride Communication Tool

| STAGE 1:   | STAGE 2:  | STAGE 3:  | STAGE 4:   | STAGE 5:   | STAGE 6:   |
|--|---|---|--|--|--|
| <p><b>No sporting activity</b></p> <p>Symptom-limited physical and cognitive rest</p>                              | <p><b>Light aerobic exercise</b></p> <p>Walking, swimming, stationary cycling, 15-30 minutes</p> <p>No resistance training. Heart rate &lt; 70%</p> | <p><b>Sport-specific exercise</b></p> <p>Jump Rope/Squat Jump<br/>Jumping Jacks<br/>Box Jumps/Step Ups<br/>Burpees/Lunge Jump<br/>Mountain Climbers<br/>Bicycle Circles<br/>Pushups</p> <p>Heart Rate 80-100% at 2-3 minute intervals, with 2-3 minute rest. No head-impact activities.</p> | <p><b>Noncontact drills</b></p> <p>Equicizer:<br/>30 sec on/off<br/>1 min on/off<br/>1.5 min on/off<br/>2 min on/off</p> <p>Max Heart Rate</p> <p>May start resistance training.</p> | <p><b>Full-contact practice</b></p> <p>Following medical clearance, participating in galloping and breezing</p>      | <p><b>Return to Competition:</b></p> <p>Medical clearance will be determined by team physician</p> |
| <p><b>Recovery</b></p>   | <p><b>Increase heart rate</b></p>   | <p><b>Add movement</b></p>  | <p><b>Exercise, coordination, cognitive load</b></p>   | <p><b>Restore confidence; assess functional skills</b></p>   |  |
| <p>Symptom-free for 24 hours?<br/>Yes: Begin Stage 2<br/>No: Continue resting.</p> <p>Time and date completed:</p> | <p>Symptom-free for 24 hours?<br/>Yes: Move to Stage 3<br/>No: Return to Stage 1.</p> <p>Time and date completed:</p>                               | <p>Symptom-free for 24 hours?<br/>Yes: Move to Stage 4<br/>No: Return to Stage 2.</p> <p>Time and date completed:</p>   | <p>Symptom-free for 24 hours?<br/>Yes: Move to Stage 5<br/>No: Return to Stage 3.</p> <p>Time and date completed:</p>  | <p>Symptom-free for 24 hours?<br/>Yes: Return to play<br/>No: Return to Stage 4.</p> <p>Time and date completed:</p> |  |

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|---------------|--|--|
| 2.45pm-3.00pm | Concussion – what to do on a racecourse  | Dr Peter Wind (GER)<br>Dr Benjamin Kienast (GER) |
|               | <p>This was a presentation on Concussion assessment and management on German Racetracks using VR and eye tracking devices and how it works.</p> <p>The presentation acknowledged that it is easy to diagnose moderate and severe traumatic brain injury and that diagnostic tools are not required to do this.</p> <p>It noted that 90% of all patients with a traumatic brain injury are suffering from a mTBI and in amateur sports 2 to 5 mTBI per career are detected. It also noted that there are definitely more mTBI in professional soccer and horse racing.</p> <p>MTBI can be difficult to detect because of the symptoms.</p> <p>The presentation outlined how the system based on virtual reality and eye tracking worked. Reference was made to work that was being carried out on an actual clinical trial of the Hamburg Concussion Group in soccer including 5 teams and how it was hoped to transfer the system from soccer to horseracing so as racing could join the study.</p>  |  |
| 3.00pm-3.10pm | <p>Personal Story of being concussed. What is remembered and not, then and now.</p> <p>This presentation outlined the personal story of Kevin Ring.</p> <p>He said he was first concussed at 10yo, playing soccer; kept on the field; can't remember the rest of the game</p> <p>He was then concussed at trackwork when thrown from his mount after the horse reared up and struck him on the head; rested for the rest of the day.</p> <p>He was then concussed at barrier trials at Rosehill on a Friday morning after his horse whipped around jumping out the barriers dislodging him; He said he had no memory of the next 48 hours. During that period, he drove home from the barrier trials; drove to and from trackwork the next morning, Saturday; drove to the races and back that afternoon, as well as riding in two races; slept between rides; after getting back home he slept for approx. 12 hours; rested with a headache on the Sunday and then to trackwork on the Monday, had a headache which he could remember. He also referred to a number of other concussions he had during his career.</p> <p>He firmly believes that as a result of the concussions, it caused him not to remember other parts of his life, although he can sit thinking of things and memories suddenly jump into his head for some reason.</p> <p>He said that his recall is not as good as it should be and that he has days that are good where he's up but others when down and depressed; this has happened since being in a coma</p> <p>In conclusion Kevin expressed concern that after all the head injuries and loss of memory of certain incidents that it may impact on him later in life.</p> | Kevin Ring (AUS)                                 |
| 3.10pm-3.40pm | <p>The long-term implications/effects of concussion</p> <p>The increasing concern surrounding sub-concussive impacts and CTE (chronic traumatic encephalopathy) have focused attention on the aftermath of any career involving contact sport. Multiple research projects are now examining retired, and deceased, sportsmen and women and the implications for jockeys (past and present), welfare organisations and governing bodies of racing are potentially significant.</p> <p>The problem with CTE is not the patients it is the doctors. Normal people who never played sport get neurodegenerative diseases and examples of</p>   | Dr Michael Turner (UK)                           |

this were set out. CTE is going to be no different – we just don't know the basic incidence or prevalence yet because it is new.

Incidence is the risk of contracting a particular problem over a period of time e.g. Within 25 years of retirement, NFL players have a 1:3,000 chance of developing CTE.

Prevalence is the proportion of the population with a particular problem, at a given point in time. e.g. At the age of 55, 5% of former NFL players have Stage 1 CTE.

Chronic Traumatic Encephalopathy (CTE) is a post mortem diagnosis.

Reference was made to the levels of settlements made by the NFL to players in the USA because of CTE.

In conclusion, reference was made to the unanswered questions that the research is hoping to answer.

3.40pm-3.55pm

*COFFEE BREAK*

4.30pm

Trip to Dubai National Ambulance Centre

Day one concluded with a trip to the Dubai National Ambulance Centre for the delegates.

## DAY 2 – Friday, 3<sup>rd</sup> November

TIME

TOPIC

SPEAKER(S)

9.00am-11.25am

**SESSION 4: INJURIES AND FALLS / STRATEGIES TO REDUCE**

9.00am-9.30am

Updates on the French research project - helmets and epidemiological follow up of the falls from 2005 to 2015

Dr Benoit le Masson (FR)

The first presentation featured an update on the French Helmet research project.

It noted that Head rotational acceleration is an essential factor leading to diffuse brain injury or commotion. Head impact velocity vector has a significant tangential component in addition to the linear component. No standard exists today that considers the oblique impact to assess the helmet performance under complex linear and tangential impact. The reason may be that no multidirectional brain injury criteria exist.

This presentation exposes a multidirectional coupled experimental versus numerical helmet protection assessment method and its application in the context of helmets consumer tests.

The presentation concluded by stating that a new linear and oblique helmet test method is proposed. It is an experimental vs numerical test method involving model-based brain injury criteria.

It noted that it was possible to establish a bicycle helmet rating based on brain injury risk. The next step is that the Equestrian Helmet Rating has been initiated by applying his proposed test.

The second presentation outlined the findings of a French study carried out on the Epidemiology of Jockeys falls in France (2005-2015).

The study covered the outcomes of 865,000 rides with 23,700 falls analysed over 30 variables.

The falls were examined in the context of a number of variables namely:

- Racecourse
- Number of starters
- Financial allocation

- Age and Experience
- Type of surface
- Jockey's status
- Race distance
- Type of event

In conclusion, it was noted that the study has allowed the researchers to:

- i) Identify the racetracks at risk
- ii) Do an audit of those racetracks
- iii) Think about recommendations and decisions to take in order to reduce the impact of falls

It was agreed that the next steps would be:

- a) analyse the severity of injuries after a fall
- b) create a mathematical model to predict a fall

9.30am-9.50am

Safety vests for jockeys: An investigation into why product innovation is needed

Nicole Aimers (AUS)

Similar to other countries around the globe, thoroughbred racing in Australia is a highly dangerous occupation. Regardless of the training and skills that jockeys possess, falls will inevitably occur. Subsequently, the life of a jockey can dramatically change at any instant.

As a result of these dangers, the use of safety vests became compulsory for jockeys in Australia in 1998, when the EN 13158 and the ARB 1.1998 standards were introduced. Despite this, injuries to the torso and spine, the areas of the body that are meant to be protected by the safety vests, continue to be a problem for this profession.

To date, many studies have focused on the nature and frequency of falls which highlight the need for wearing protective equipment. However, with the exception of one study conducted by Foote, Gibson, and McGauran (2014), relatively few studies have investigated the actual product (i.e., vest).

Foote and colleagues (2014) acknowledged that riders would like to see the vests improved in terms of comfort and protection. However, how does one achieve this? What changes need to be made to the vest which will result in these improvements? Importantly, by involving the end users (i.e., the jockeys and medical staff), this study aimed to answer these questions.

A total of 20 participants were involved in this study; 17 jockeys (13 males, 4 females) and 3 medical professionals from Wilson Medic One who regularly attend to injured jockeys on raceday. By using qualitative research methods, deeper insights into the user's needs were obtained. Specifically, in terms of comfort, the jockeys reported that all available vests were quite stiff and thus, lacked flexibility. According to many jockeys, this rigidity can interfere with their ability to roll in the event of a fall, leading to trample injuries. In addition, in terms of protection, the jockeys also reported many attributes of the vest which could increase, rather than decrease risk of injury. Specifically, for female jockeys, the vests fail to suit or accommodate differences in their body shape in comparison to male jockeys. This lack of ergonomics creates a feeling of uncertainty, particularly in relation to the protection of the spine and neck. To overcome this obstacle, the female jockeys would often loosen the vest at the sides and wear it backwards. Furthermore, a lack of cohesion between the vest and helmet was reported. This frequently resulted in the vest 'bumping' the helmet, impeding the jockey's vision. Finally, when a jockey is lying on the track injured, the medical staff reported challenges with trying to remove the vest safely and therefore, were concerned of the potential risk of increasing the severity of injury, particularly to the spine, neck, and ribs.

Based on these findings, a new vest prototype will be designed, using advanced materials which will provide greater freedom of movement whilst maintaining superior energy absorption (impact) properties. The new vest will also address the protection issues which primarily relate to the template/layout. Importantly, revisions to the safety vest standards will be required for product innovation to occur. By including the end users throughout this process, it is hoped that the usability and protective qualities of safety vests will finally improve.

9.50am-10.20am

Race Day Jockey Injuries & Falls in Ireland

Dr Giles Warrington (IRE)  
SarahJane Cullen (IRE)

In recent years, the Irish horse racing industry have implemented many targeted health and safety interventions in an attempt to improve the health, wellbeing and safety standards in professional and amateur horse racing. Despite many advances in health and safety strategies, the incidence of falls and injuries in racing in Ireland has not been reported since 2006. There is also a dearth of recent literature in Europe on the fall and injury incidence and type of injuries that occur in racing. Our research group recently had one paper accepted for publication with a focus on professional racing and another manuscript on amateur racing is currently under review.

O'Connor, S., Warrington, G., McGoldrick, A., Cullen, SJ. 2017. Epidemiology of injury due to race-day jockey falls in professional flat and jump horse racing in Ireland, 2011-2015. Journal of Athletic Training. In Press.

O'Connor, S., Warrington, G., McGoldrick, A., Cullen, SJ. 2017. A nine-year epidemiological study (2007-2015) on race-day jockey fall and injury incidence in amateur horse racing in Ireland. Journal of Athletic Training. In Review.

In line with these manuscripts, this presentation aims to provide an updated analysis of the fall and injury rates in professional and amateur horse racing in Ireland and to also detail the specific type and location of injuries sustained. Strategies to further reduce fall and injury risk in racing need to be established.

10.20am-11.05am

Fall Safety Training : Reducing Injury Risk

Lindsay Nylund (AUS)

Lindsay Nylund provided an overview of the training program that he has developed and implemented in Australia to reduce the risk of injury for jockeys and riders in equestrian sports. More than 1,000 riders (mostly equestrian sports and polo players) have undertaken basic fall safety training.

The benefits of proper skills-based training in fall safety can be significant and include:

- Improved balance, co-ordination and kinaesthetic awareness
- Reduced risk of catastrophic and serious injury to the head, neck and vertebrae
- Reduced risk of trample and crush injury

The main barrier to industry bodies implementing proper skills-based training in fall safety appear to be based upon the belief that there is not enough time for jockeys to respond in a fall and possibly also a lack of qualified instructors to develop and carry out the training.

Fall times vary from approximately ½ a second to 1 second. While this is a short time, jockeys and riders can be trained to respond to reduce serious injury risk in many fall scenarios. Sometimes there are warning signals that a fall may occur and this enables the jockey to respond more quickly. In unexpected falls it is more difficult for jockeys to respond quickly, however this should not be a deterrent to doing fall safety training. No safety measure can prevent all injury and if helpful in some falls, it should be embraced.

Skills-based training in fall safety includes; training to let go of the reins once a fall becomes inevitable, brace position to protect the head and neck from blunt force impact with the ground, and tuck-and-roll skills to reduce impact forces when falling at speed.

An overview of fall safety training including fall simulation activities was provided including:

- Education about the techniques
- Emergency response action
- Tuck-and-roll and dive roll skills
- Fall simulation activities including mechanical horse work
- Video review to observe the application of skills in real fall scenarios
- Environmental simulation activities to enhance skills transfer

Training can be conducted progressively and it was recommended that jockeys and riders be trained from a young age. Basic training can be conducted in 2 to 4 hours (1 to 2 sessions) intermediate training in an additional 6 to 8 hours (2 to 4 sessions), and advanced in an additional 10 to 12 hours (4 to 6 sessions). A total of 12 training sessions with an annual refresher session is recommended for jockeys and riders who participate in racing and higher risk equestrian sports.

Developing a new or enhancing an existing fall safety training program includes equipment purchase (gym equipment, safety mats and mechanical horse), instructor training and accreditation, training of juniors, apprentices and track riders, and jockey / rider fitness and skills assessment.

Finally, the importance of on-going research was highlighted with the commencement of an international study entitled: *Jockey and Rider Safety: A study of fall time, warning signals and rider response capability to reduce catastrophic and serious injury risk in racing and equestrian falls*. Associations or industry bodies who wish to collaborate on this study by providing videos of falls were invited to do so.

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| 11.05am-11.25am                                | Data to inform decision making on the return to ride phase (pre / post injury)  | Daloni Lucas (UK)<br>Edward Stroud (UK) |
|  | This presentation provided an update on the rehabilitation facilities available in Great Britain for injured jockeys at Oaksey House and Jack Berry House as well as updating on the development of Peter O’Sullivan House.   |   |
|  | It also referred to injury prevention and whether or not it was possible to train for it.   |   |
| 11.25am-11.40am                                | <i>COFFEE BREAK</i>   |   |
| <b>11.40am-1.20pm SESSION 5: MENTAL HEALTH</b> |   |   |
| 11.40am-12.25pm                                | Building resilience and promoting wellbeing with jockeys – lessons learned from an Irish context  | Dr Ciara Losty (IRE)                    |
|  | The topic of mental health in jockeys has been the subject of much public interest and attention in recent years. Professional jockeys are a unique cohort of athletes who work exhaustive schedules and have extremely competitive, dangerous and high-risk occupations (Landolt et al., 2017; O’Connor et al., 2017; Wilson et al., 2014). Jockeys are often expected to peak mentally and physically many times a day, daily over a protracted racing season lasting 10-12 months. The challenging lifestyle of a jockey is very demanding on health, both physically and mentally. Despite the well documented physical health and performance implications of being a jockey (Wilson et al., 2014; Dolan et al., 2012; Warrington et al., 2009), research pertaining to the psychological health of jockeys is limited. Resilience is the ability to cope with life’s challenges and to adapt to adversity. A jockey’s level of resilience can change over the course of their career for a myriad of reasons. This presentation will recap on Irish findings in relation to mental health and Irish jockeys and discuss the unique psychological stressors and risk factors for psychological distress within a jockey’s life. This presentation will highlight the need to provide |   |

specific and targeted support for the mental health needs of jockeys. The stigma attached to mental health issues in athletes (Bauman, 2016) can be seen to be highlighted in jockeys due to many factors including the drive to be successful, expectations of others, financial gain/loss and a multitude of media outlets that glorify those who succeed and are critical of those who fail. It is therefore important to raise jockeys' awareness and those who work in the horse racing industry of mental health issues that may occur during their career. Finally, this presentation will provide personal reflections and insights into providing sport psychology support within the horse racing community.

12.25pm-12.55pm

The UK Experience

Paul Struthers (UK)

This presentation was broken down into four parts as follows:

- The issues, including key stressors (A. Conlon, 2017)
- #JockeyMatters & removing the stigma
- Support network
- What next – addressing the issues

It identified the main issues which need to be addressed as being:

- 1 in 4 will suffer some form of mental health issue in a year
- 2 in 3 Irish jockeys aged 18 to 24 display symptoms of depression
- Restricted diet
- Financial uncertainty
- Losing
- Injury
- Hours
- Breaks
- The regulators/governing bodies

The key stressors were identified as being:

- Occupational stress
- Lifestyle
- Trainer relationship
- Job insecurity
- Lack of autonomy
- Mental wellbeing
- Self-worth

Reference was made as to how the stigma of depression is being addressed through jockeys going public with their problems and through the Jockey Matters short film series.

The support structure in place for jockeys was outlined.

The presentation concluded by highlighting the issues which need to be addressed in the future including mandatory breaks for riders, the treatment of apprentice jockeys, racing on Sunday evenings and the important role that both the valets and physios play.

12.55pm-1.05pm

Through a Jockeys Eyes

Richard Mullen

Richard is a GB jockey who has been based in the UAE on a permanent basis for the past number of years.

In an interview with Paul Struthers, Richard outlined his lifestyle and how it is so much easier than it was when he was based full-time in GB. He noted in particular that the racing season in the UAE is much shorter and that there is far less travelling involved which positively impacts on his family life.

1.20pm-2.15pm

*LUNCH BREAK*

2.15pm-2.35pm

**Japan**

- Falls and Injuries in Professional Horseracing in JRA

Dr Akihiro Ito (JAP)  
Hideya Hashizume (JAP)

This presentation featured an update on falls and injuries in horseracing in Japan for the period 2014-16.

JRA hold about 3,400 races per year in Japan, and there were 149,876 rides (Flat 145,131, Jump 4,745) between 2014-2016.

From the JRA's database and insurance system, they analysed the fall and injuries ratio and the types of injuries. "Injury" is defined as falls which lead to an absence from work. Also, presented was the results and the factors that related to severe injuries were outlined.

The fall rate in flat racing was 0.12% while the fall rate in jump racing was 3.52%. The injury rate in flat racing was 18.4% while the injury rate in jump racing was 19.2%.

Details were given of the recovery rates and the injury types.

There was a far higher injury rate in incidents where the horse wasn't injured.

The presentation also highlighted the location of falls during the race. It was noted that injury rates are highest on the first turn and on the final turn/ home straight.

In conclusion, it was noted that there was only one severe injury in the period and that the injury rates compared favourably to previous studies.

The importance of making continuous efforts for improvement of the fall/injury rate was noted.

- JRA's efforts for Jockeys' safety – Concussion

This presentation highlighted the efforts that the JRA are making to workshops to enhance Jockeys' consciousness of a brain concussion.

Two seminars were held in 2016 and 2017 to identify jockeys concerns and to outline what the JRA was doing to alleviate their worries. The seminars were presented by the JRA's Medical Advisor.

The jockeys' main concerns were the procedures in place for dealing with concussions.

2.35pm-2.55pm

**South Africa**

- The South African Jockey and Equestrian Research Institute, SAJERI, an update 2016 to 2017 and the future

Kathleen Krog (SAF)

Since the official opening of SAJERI, May 2016, a number of significant factors relating to the health of our Apprentice jockeys has taken place.

A Master's project began under the Dietetic Dept UKZN. 'Methods of accurately determining the percent body fat in male jockey apprentices at the SAJA and the impact of hydration status.' This study made use of double -labelled water as the gold standard to measure body composition particularly fat%. The provisional findings: When euhydrated, mean %BF according to deuterium was  $9.51 \pm 2.85$  %. Therefore. Skinfolds and BMI were more accurate as a significant proportion of BIA equations were inaccurate when hydrated (90%) and when dehydrated (80%). The Durnin & Womersley (1974) skinfold equation is recommended for measuring %BF of SAJA apprentices and is not affected by hydration status.

'Weight-loss, heart rate variability, cognitive function, reaction time and mood responses in apprentice jockeys', is an on-going study, from 2013

and will now be completed as a Master's thesis through to 2018 the amount of data collected over this period of time will be very relevant. SAJERI has also become a teaching school for the honours students of the Sport Science Dept., UKZN and the second group has just completed their internship. The next large research project will begin in 2018 and will include a cross-sectional examination of resting metabolic rate (RMR), body composition, bone mineral density, lifestyle, energy intake and daily expenditure in apprentice and professional jockeys.

2.55pm – 3.10pm

### **Ireland**

Dr Adrian McGoldrick summarised the main changes that had taken place in Ireland since the last conference.

- TURF CLUB DOCTORS WORK AT ALL POINT TO POINT MEETINGS SINCE JANUARY 2017
- LEVEL 2 SAFETY VESTS ARE MANDATORY SINCE JANUARY 2017
- ALL NATIONAL HUNT RIDERS –PROFESSIONAL AND AMATEUR, TO BE FITTED WITH GUMSHIELDS –ADVISED TO WEAR
- TABLET SYSTEM INTRODUCED ON TRACK TO VIEW RACES HEAD ON FOR RACECOURSE DOCTORS TRAVELLING BEHIND IN AMBULANCES
- WITHDRAWAL OF JOCKEYS PAPER LICENCE –NEVER CURRENT / ACCURATE ALERT SHEET
- COMPUTERISATION OF MEDICAL RECORDS
- EPILEPSY GUIDELINES
- CONCUSSION GUIDELINES –UPDATE IN VIEW OF 2017 CONSENSUS STATEMENT – MORE ROBUST ASSESSMENT OF CONCUSSED RIDERS PRIOR TO RETURNING TO RACE RIDING
  - Any jockey/rider who is diagnosed as having suffered concussion will be required to undergo a detailed evaluation before being allowed to return to race riding:
  - **Within 72 hours** referral to Santry Sports Centre or an equivalent centre for:  
Full clinical evaluation including SCAT 5  
GAD7 and PHQ9 Questionnaires  
Exercise Test (Buffalo protocol)  
Balance test on force plates  
Individualised presentation-specific rehabilitation e.g. vestibulo-ocular etc.
  - **Day 6**  
Cogstate  
Full clinical evaluation including SCAT 5  
GAD7 and PHQ9 Questionnaires  
Exercise Test (Buffalo protocol)  
Balance test on force plates
- ROLLOUT OF JOCKEY PATHWAY SEPTEMBER 2017 –R.A.C.E.  
SERVICES AVAILABLE
  - Physiotherapy
  - Dietician
  - Sports Psychologist
  - Strength & Conditioning Coach
- DEXA SCANNER INSTALLED AT R.A.C.E. OCTOBER 2017

Dr Adrian McGoldrick(IRE)

3.10pm-3.25pm

### **Hong Kong**

This presentation featured an update on the main changes in Hong Kong since the last conference.

- Appointment of Racing Medical Officer
- Integration of Conghua Training Centre – medical implications
- Falls statistics & Review

Steve Railton (HK) & John Fargher (AUS)

- Safety implementations being developed by Steriline with HKJC involvement

3.25pm-3.40pm

**USA**

This presentation provided an update under the three main headings of health, safety and welfare.

Under health, the areas covered were the scale of weights, nutrition, jockeys' health information system and concussion.

Reference was made to concussion pilot study at the University of Kentucky. There was also reference to a study being carried out by the UK SMRI which has collaborated with the North American Racing Academy to study beginning jockeys' and create a profile for the jockey athlete to include strength, endurance, psychological and biomechanical profiles. These profiles will be compared pre- and post- riding and strength training program. The first study of the collaboration will kick-off late fall of 2017.

Four areas were covered under safety namely:

- Safety Equipment
- Jockey Injury Database
- Whip Usage
- Lightning Protocol

The welfare part of the presentation outlined details of a new retirement plan which is being introduced for jockeys.

Jeff Johnston (USA)  
Terry Meyocks (ISA)

3.40pm-3.50pm

**Germany**

In his short presentation, Dr. Peter Wind referred to the European standards for dealing with concussion. He also highlighted the difficulty there is in Germany of getting young doctors involved in the sport. He suggested that most racecourse doctors do not get the support needed and that it is very hard to enforce rules on this basis. He also referred to the medical department being short staffed.

Dr Peter Wind (GER)

3.50pm-4.00pm

*COFFEE BREAK*

4.00pm-4.20pm

**Ireland**

- Sports Tax Exemption

This presentation featured an update on a Tax Relief on Retirement for Certain Income of Certain Sportspersons. Jockeys are one of the categories covered.

Details of how the relief works were provided and what is classified as income for the purposes of the relief. There is no relief on indirect income such as sponsorship and image rights.

To qualify for the relief, the qualifying sports person must satisfy the Revenue Commissioners that he/she has ceased permanently to be engaged in that occupation. Also, the sports person must be resident in the State, an EEA state or EFTA state for the year of assessment in which he/she ceases permanently. The relief will be withdrawn if the person recommences to engage in the sport on a professional level. Relief is given by means of repayment of income tax. The cost to the Exchequer is relatively low at €500k approx. per annum. Only 38 sports persons availed of the relief in 2015.

Andrew Coonan (IRE)

4.20pm-4.35pm

**UK**

Dr Jerry Hill gave details of three new jockey groups which had been set up namely:

Dr Jerry Hill (UK)

- Jockey Health Group
- Jockey Strength and Conditioning Group
- Jockey Performance Group

He outlined the top three priorities of each group.

Reference was made to the Jockey Training and Development Programme and the curriculum which covered four key stages of a jockey's training and riding career.

Details were given of the various programme and research sponsors and a summary of the research carried out was outlined.

Updates were provided on regulatory issues in the context of the matters dealt with by the Medical Dept and an update was provided on the Concussion programme.

4.50pm-5.05pm

**France**

Dr Benoit le Masson (FR)

Updates were provided on the main developments in French racing since the last conference including:

- Implementation of a minimum riding weight for each jockeys  
It is not possible for a jockey to be declared below his minimum riding weight
- Allowance of 2 kg for women  
The reason why the allowance was introduced for specified races was outlined which primarily related to the low number of rides that female jockeys had relative to male jockeys.  
There was a positive response from female jockeys. The initial results of the trial have been positive with female jockeys having 60% more rides and 90% more wins since 2016.
- Rule Modification art 143: infringement to sampling  
in case of fraud or attempt of fraud by a jockey during a biological sampling operation, the racing stewards may ban the jockey from riding for 30 days with immediate effect  
This punishment is independent from any medical or any others disciplinary measure taken later.
- Heart rate frequency during races  
The results of a research pilot study conducted at Auteuil Racetrack, on 27/09/2017 during hurdle races and steeplechases were outlined. The study involved 9 jump jockeys and their heart rate was recorded by Polar System  
The purposes of this study were to :
  - I) to test new technologies used in others sports with immediate debriefing,
  - II) to develop skills and expertise,
  - III) to communicate that a jockey is a high level athlete

5.05pm-5.20pm

**India**

Kiran Lakhani (Ind)

This was a short presentation by Kiran Lakhani from the Indian Jockeys Association. It was the first time they had attended the conference and he updated on the main issues in Indian racing.

5.20pm-5.30pm

**Australia**

Paul Innes & Kevin Ring (AUS)

The final presentation was a country update from Australia with a focus on the work and achievements of the Australian Jockeys Association.

The areas covered included:

1. History  
AJA is a public company limited by guarantee.
2. AJA Major Achievements since it was formed in 2002 which include significant benefits achieved for its members

3. AJA Current Initiatives include:
  - Safety
  - Jockey Challenge - \$ return on use of Jockeys' names
  - Apprentices
  - Paid Parental Leave
  - Other IP/Media
4. National Jockeys Trust (NJT) History  
Set up in 2004 to assist jockeys and their families, who were in necessitous circumstances from racing injuries or other problems.
5. NJT Major Achievements
  - Jockey Memorials
  - Sponsorship commenced 2006
  - Flow of grants to applicants
  - Website and Annual Reports

From 2006 to current, \$3.7m has been paid to some 330 beneficiaries
6. NJT Current Initiatives
7. Summary
  - The AJA & NJT have been in existence for only a short time ~13 years
  - Some major improvements have been achieved with a small but enthusiastic staff
  - Strong focus on future and delivering more

**5.30pm-5.45pm**

**SESSION 7: WRAP UP**

**7.30pm**

**Conference Dinner**