



FIM Medical Summit Insights

Lyon,
18.02.2024

Welcome to the 2024 FIM Medical Summit!

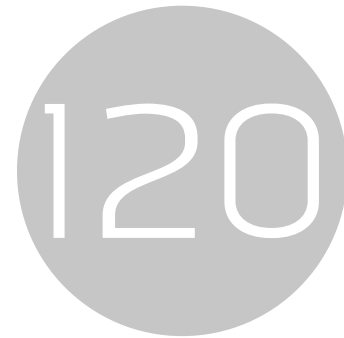
France is in the spotlight this year, not just for the upcoming Olympics, but also for hosting the 2024 FIM Commissions Conference in Lyon last February, which featured the first-ever FIM Medical Summit. For fans of numerology, the summit was a delightful convergence: 120 medical doctors registered for the event, organized by an International Federation representing 120 National Motorcycling Federations, which is celebrating its 120th anniversary this year!

Gavin Emmet kicked off the event, and FIM President **Jorge Viegas** officially opened the Summit with a warm welcome and a short video. The video highlighted the incredible progress in motorcycling over the years and the vital role FIM Medical Doctors have played in these advancements.

120 Medical Doctors

120 National Motorcycling
Federations

120th birthday this year!



Speakers

Jorge Viegas, FIM President

Dr David McManus, FIM Medical Director

Dr Angel Charte, MotoGP™ Medical Director

Dr Giancarlo Di Filippo, MotoGP™ FIM Medical Director

Dr Gonçalo Moraes-Sarmento, Junior GP FIM Medical Director

Dr Martin Syrůček, MXGP FIM Medical Director

Dr Srećko Margetić, FIM SGP and SON Medical Director

Dr Martin Schweiger, Supercross WC FIM Medical Director

Nelly Dagtas, FIM Insurance Coordinator

Yann Caillet, Development Director - MUTUAIDE

Laurent Hachfi, FIM Technical Coordinator FRHP/ Homologations

Emanuele D'Artibale, PhD, Sports Scientist

Dr Dominic O'Dowd, Consultant Sports Trauma and Orthopaedic Surgeon

Dr Sean Petherbridge, President of the FIA Medical Commission and CMO

Dr Michael Turner, Medical Director and CEO of The International Concussion and Head Injury Research Foundation (ICHIRF)

Dr Brent May, CMI Commission Member and Chief Medical Officer for Motorcycling Australia



The FIM President Mr. Jorge Viegas

Dr Stephan Filipowski, CMI Commission Member

Mikael Swarén, PhD Director of the Swedish Unit of Metrology in Sports

Dr Maxime Moreillon, Associated Doctor at Swiss Olympic Medical Center - Hôpital de La Tour

Updates from the FIM Medical Commission

David McManus, Director of the FIM Medical Commission presented the main updates of the FIM Medical Commission

Anti-doping

- Update & Wada Prohibited List
- Addiditon of Tramadol from 2024
- Anti-doping facilities
- Chaperones
- New partnership between the FIM and ITA - International Testing Agency

Faced with the constant evolution of anti-doping standards and regulations, the FIM recognises the importance of remaining at the forefront in maintaining trust and credibility towards anti-doping issues. By working together with the ITA, who is renowned for its expertise in implementing independent clean sport programs, the FIM continues its commitment to maintaining anti-doping standards, in line with the highest requirements for clean and true sport. From now on, ITA will manage the following activities on behalf of the FIM:

- In and Out of Competition Testing
- Whereabouts Information Management
- Therapeutic Use Exemptions (TUEs)

Dr David Mc Manus added:

“ This collaboration will enable the FIM to benefit from additional resources, specialised advice and technical assistance from the ITA in the field of anti-doping issues. The ITA will organise, manage, conduct and handle In and Out-of-Competition Testing and Therapeutic Use Exemptions. Our respective teams are already working together to implement the transition. This collaboration with the International Testing Agency represents a significant step forward in our collective efforts to ensure that our sport remains clean, fair, true to its values and promotes the health and safety of our riders. ”

About ITA

The International Testing Agency (ITA) is an international organisation constituted as a not-for-profit foundation, based in Lausanne, Switzerland. Its mission is to manage anti-doping programs, independent from sporting or political powers, for International Federations (IFs), Major Event Organisers (MEOs) and all other anti-doping organisations requesting support.

For more information, [click here](#)

New Licencing System for Chief Medical Officers (CMO)

Dr McManus introduced the new licensing system for Chief Medical Officers (CMOs), including the mandatory CMO Superlicence for major events (currently covering eight world championships). This year, experienced CMOs in these championships will automatically receive a free upgrade to a Superlicence.

MotoGP and WorldSBK CMOs, however, must attend the FIM Medical Summit every three years to renew their licenses. Newly appointed CMOs seeking a Superlicence will undergo a two-phase training program, featuring hands-on experience with a veteran CMO and mentorship during their first FIM race.



Summary - new licence Systems

	How to obtain it ?	How to renew it ?	
	For New CMO	For Experienced CMO	For SBK and MotoGP CMOs
Licence	CMO Seminar	CMO Seminar or Medical Summit	Not necessary
Superlicence	CMO Seminar and Shadowing programme	CMO Seminar or Medical Summit	Medical Summit

CMO licence mandatory for :

- FIM Dragbike World Cup
- FIM Speedway of Nations
- FIM Speedway World Cup
- FIM Sidecar World Championship
- FIM Sidecar Motocross World Championship
- FIM SuperMoto SIGP World Championship
- FIM SuperMoto of Nations
- FIM Enduro World Championship
- FIM International Six Days' Enduro
- FIM World Rally-Raid Championship

CMO Superlicence mandatory for:

- Grand Prix World Championship
- Superbike World Championship
- Endurance World Championship
- JuniorGP World Championship
- MXoN and Motocross World Championship
- Junior Motocross World Championship
- Supercross World Championship
- Speedway Grand Prix World Championship

Update of the FIM Medical Code

Dr McManus presented the latest updated of the FIM Medical Code including:

- **Minimum/maximum participation age:**

Art. 09.2.: Minimum and maximum ages for newly created World Championships/Cups are now as follows:

- Women Circuit Racing World Championship: min. 18 years old
- Women Circuit Racing World Cup: min. 18 years old
- FIM SidecarCross of Nations: min. 16 years, max. 50 years
- FIM QuadCross of Nations: min. 16 years, max. 50 year
- FIM Hard Enduro Junior World Championship: min. 16 years, max. 22 years
- FIM Women's Speedway Gold Trophy: min. 16 years

- **Art 09.7 Minimum Medical Requirements for Events**

- for E-bikes, EBK, E-Explorer, Enduro, Hard Enduro, Sand Races & Supercross WC
- Clarification of minimum number and standards for ambulances at events.

- Medical Intervention Team Personnel Training

- Appendix G – List of Medically Unfit Riders

- Appendix N – AlcoholTesting Procedure: FIM Jury President, members of the Race Direction, appointed FIM Officials and any person appointed by the FIM for this purpose may carry alcohol test and process results.

- **Art 09.1.2 Fits or Unexplained Episodes of Loss of Consciousness**

- No license if episode within 5 years
- Can race if no episode and no medication within 5 years
- Report from specialist neurologist indicating level of risk of further episode

- **1.4 Issues for International Medical Commission in 2024**

- FIM Concussion Protocol
- Races Involving Children
- Safeguarding
- Anti-doping Education & Partnerships
- Scientific & Technical Expertise
- Research Capability & Opportunities
- Airbag & Helmet Technologies Development and Standards
- Trackstats Database
- Medical Forms & Appendices



Dr David McManus

David McManus is the **FIM Medical Director since 2016** and the **Director of the FIM International Medical Commission (CMI) since 2010**. He graduated in Medicine from Queens University in Belfast, and immediately became involved in Motorcycle Sport, providing medical interventions at Irish Road Races. He is co-founder of the Medical Team of the Motorcycle Union of Ireland (MCUI) and continues to act as Chief Medical Officer at races such as the North West 200 Road Race. He has also been Chief Medical Officer for the World Rally Championship (WRC) in Ireland and is a member of the Motorsport UK Medical Committee. He was appointed as the first full-time Medical Director of the Northern Ireland Ambulance Service and also as the Vice-Chair of Air Ambulance Northern Ireland.



Medical Review

of the season

MotoGP and SBK

Giancarlo Di Filippo, FIM MotoGP Medical Director, outlined key aspects for effective medical operations during racing events. He shared personal experiences and scenarios to illustrate current standards for managing medical duties, including the requirements for Medical Centers and essential radio communication protocols. Di Filippo also emphasized the importance of safety procedures, quality training for staff and marshals, and the value of hands-on experience.

Dr Di Filippo stated,

"The 2024 Medical Summit is invaluable for our work. It brings all disciplines together, allowing us to share expertise, address challenges, and enhance protocols and procedures. In MotoGP, we emphasize the seamless connection between on-track intervention, the circuit medical center, and local hospitals. Strong links between these elements optimize the quality and efficiency of medical interventions, making local hospitals an extension of the circuit's medical coverage."



Dr Giancarlo Di Filippo

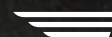
Giancarlo Di Filippo is a **FIM MotoGP Medical Officer**. He holds a Degree in Medicine and Surgery and a Doctorate in rehabilitation. He is also a medical specialist in rehabilitation at Military Hospital Celio in Rome. He is the Medical Director at the Rehabilitation Ambulatories of the Italian Neurotraumatology Institute (INI), a Physical Therapy Degree Course Professor at the La Sapienza University, and a Technical Consultant for the Court of Justice in Rome. He is a bureau member of the FIM International Medical Commission (CMI).

Medical Review

of the season

EWC

David McManus EWC Medical Director outlined unique issues within this championship including potential risks during the starting procedure, pitlane precautions including a new fuelling system, use of safety cars, resilience and welfare of the medical personnel and marshals during long races and the additional resources required as well as the requirements for deputy CMOs. He also presented key injury findings during the 2023 season using data from the Trackstats Database.



Medical Review

of the season

JuniorGP

Gonçalo Moraes Sarmento, Junior GP World Championship FIM Medical Director, shared his recent experiences from the Junior GP FIM world championship. He emphasized the importance of pre-event briefings to educate young riders about their specific medical needs. Sarmento highlighted bone-fracture treatments, recovery monitoring, and adaptations like resizing airbags for smaller riders.

Interview with Dr Moraes Sarmento

During your presentation today you showed us some examples of soft-tissues injuries that could be perhaps prevented by technical adjustment or modification to the motorcycle (example: fingers trapped between brake or clutch lever and handlebar). Could you please expand a bit more in regards to what kind of

cooperation we could have between doctors and engineers?

Dr G.M.S.: *"In Junior GP effectively we have a very close collaboration with the Technical Direction, indeed we have worked together for several years and we often share knowledge and cooperation. As for example in the identification*



Dr Gonçalo Moraes Sarmento

Gonçalo Moraes Sarmento is an Orthopaedic and Trauma Surgeon. He has been a **Member of the FIM Medical Commission for 30 years**. He is the **President of the Medical Commission and Vice President of the Board of the Federação de Motociclismo de Portugal**. He operated as Chief Medical Officer during several world championships (MotoGP, SBK, Enduro, MX, Trial, etc.).

of concussions, the Medical and the Technical directions always work together, we check together the helmet, we review the impact, checking the raw materials to understand if the information we have is enough or if we want further checks... or as in the cases of soft tissues injuries, when we realize that some mechanism can cause potential harm, we discuss the topic with the technical stewards, we show the photos, we review the measurements and we formulate solutions to be proposed and discussed with manufacturers. Another example, when airbags were still in the experimental phase: the Junior GP championship wanted to pioneer the mandatory use of airbags but several adaptations, modifications and improvements were needed, so we had multiple meetings, the Technical and Medical directions jointly, along with manufacturer developers, and we were discussing airbags even during the time outside of the paddock, while meeting socially after the race. And those talks shaped the direction of investigation and development towards better results."

"Dr Moraes Sarmento, today you showed us the importance of having a conservative approach with young riders, and we perceived a great manifestation of empathy towards those young athletes. How do you think that this approach could conflict with the financial pressures or economical requests coming from the sport?"

Dr G.M.S.: *"Interesting question... I currently work in the Junior GP, but I've done also MotoGP in due times and now, when the guys from MotoGP see me around the paddock, they stop*

their scooters to cheer me and show respect and affection, because they remember the treatments received at a younger age or at the former FIM CEV Repsol championship. I say this to transfer the message that it's easier to find the solution with young riders when you establish a good relationship with them, and they understand and accept the length of an "unfit period" a little bit easier. However, they have the example of the big GP guys, and sometimes they ask "why I can't be operated now and race in two days?", but we take good care of them, explaining at any opportunity: during pre-race briefings, or in the paddock, we spend hours talking to riders and their families to explain what's the best to do to avoid potential consequences or complications during their career and life. When we explain what we do, and when we have created a human connection, they accept and respect the timing of recovery easily."



Medical Review

of the season

MXGP

Martin Syrůček, FIM MX GP Medical Director, emphasized the importance of clear visual communication between marshals and medical staff and the benefits from joint practical on track training exercises. Using real-case scenarios, he also underscored the necessity for the Chief Medical Officer (CMO) to be familiar with the off-road Motocross event circuit and venue.



Dr Martin Syrůček

Martin Syrůček is a Medical Doctor **member of the Medical Commission of Czech (Czecho-Slovak) Motorcycle Federation** since 1986 and President of the Medical Commission of the Accreditation Commission of Colleges of Medicine (ACCR) since 2002. He joined the FIM International Medical Commission (CMI) in 1993 and has served as a bureau member since 2011. In the same year, he was also appointed as **MXGP Medical Director**. He also worked as Chief Medical Officer for many World and European Motocross and Enduro events.



Medical Review

of the season

SGP

Srećko Margetić, FIM Speedway GP Medical Director discussed the unique challenges faced by Speedway riders, such as tracking the health status of injured riders who compete in multiple championships. He pointed out the difficulty in sharing medical records across events and highlighted the different working methods in Speedway, like restricting access to the track during medical interventions.

He explained the shape of a racing season for a Speedway rider and the challenges connected to it; for example, the difficulty of following closely the health status of an injured rider since they simultaneously take part in different

championships and it may happen that the medical record does not permeate across series. Moreover, Dr Margetić told the audience how the working methods in this discipline can be substantially different from other motorcycling competitions, offering examples as in the case of limiting people entering the track during a medical intervention in favor of a "crashed rider": *"In Speedway, there could be situations where non-medical personnel could reach a potentially-injured rider before or among the assigned professionals, and this can create too many people surrounding the athlete, with the consequent obstruction or interference with support or medical operations."*



Dr Srećko Margetić

Srećko Margetić is a **medical doctor at the Zabok Health Center in Croatia**. He graduated in Medicine at the University of Zagreb. He has worked as Chief Medical Doctor for a variety of races including Speedway GP, MX3 World Championships, sidecar MX world championships, multiple qualifying races for the SGP, the World Junior Championships, Motocross and Speedway European Championships, and numerous championship races at a national level. He has served as a member of the FIM Europe Medical Panel since 2009 and a member of the FIM International Medical Commission (CMI) since 2017, while he has been the chairman of the Medical Panel of FIM Europe since 2022.



Medical Review

of the season

Supercross

Martin Schweiger, FIM Supercross World Championship Medical Director, provided an overview of the medical staff's challenges in Supercross competitions. He described the efforts involved in transforming arenas into WSX tracks and the medical issues that arise during these events.

Dr Schweiger shared insights from the three Supercross events held in 2023, illustrating the complexities and problem-solving skills required in this sport.



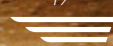
Dr Martin Schweiger

Martin Schweiger is a specialist in Trauma Surgery and Emergency Medicine, DMSB Federation Doctor, Member of DMSB Safety and Medical Commission and FIM International Medical Commission. He is **Supercross World Championship FIM Medical Director**, and operated as Chief Medical Officer in several World Championships (WSBK, EWC and MxGP).



HONDA HONDA HONDA HONDA

WSX



FIM

Technical Commission

FIM Racing Homologation Programme Helmets and Airbags

Laurent Hachfi, the FIM Technical Coordinator for the FIM Racing Homologation Programme in his informative presentation delved into the sophisticated process of motorcycle helmet homologation. Showcasing a series of videos and detailed data on the rigorous protocols and laboratory tests required to achieve the standard for FIM helmet homologation, he also described, as part of the FIM Helmet Homologation Programme, other elements including the helmet database and explained how each helmet is given a single electronic

identifier QRcode and hologram. FIM homologated helmet under the FRHPhe-02 Standard will be mandatory as of 2026 for all FIM Championships (except for Trial, Pedelecs, SSV and Land Speed World Records (Streamliners only) riders).

He reminded the audience of the recently introduced requirement in the Medical Code for the helmet of any rider taken to the medical centre to be retained for technical inspection. He reported this process had



Laurent Hachfi

Laurent Hachfi is the **Coordinator of the FIM Racing Homologation Programme** since May 2022. Before this position, he was the Head of the Safety & Homologation Department within the French Federation of Sport Automobile in Paris

<h2>Off-Road</h2>		<p>FIM RACING HOMOLOGATED HELMET</p>	<p>LS2 HELMETS</p> <hr/> <p>X-FORCE PRO XS-S-M-L-XL-XXL-XXXL FRHPhe-02 - 2023</p>
<h2>Circuit Racing</h2>		<p>FIM RACING HOMOLOGATED HELMET</p>	<p>Arai HELMET®</p> <hr/> <p>RX-7V FIM Racing#2 XS - S - M - L XL - XXL - XXXL FRHPhe-02 - 2023</p>

been very successful and illustrated this with examples, explaining that if a helmet is found to be significantly damaged, this is recorded in the helmet database and the hologram removed to prevent it being used again in the future. The technical director of the championship must retain the Helmets of riders with an associated head injury to be sent to the FIM laboratory for further detailed analysis.

Laurent Hachfi also provided a brief historical overview tracing the evolution and technological advancements of airbags and airbag vests incorporated into the protective racing suits. The airbag vests are now scheduled to undergo a series of tests to achieve the standard for FIM homologation in the coming years.

In response to questions from the audience Laurent Hachfi emphasized critical aspects of airbag development, such as activation time,

inflation pressure and importantly deflation time, minimising erroneous activations and to enable multiple activations when riders re-join races. Additionally, he addressed the importance of considering rider anthropometry in airbag design and the body areas protected. To illustrate this, he highlighted a potential issue with young riders. He explained that their on-bike racing posture causes the hips to be tightly flexed therefore potentially preventing the inflation of the pelvic elements of the airbag device. This in turn can increase the pressure applied to the chest from the airbag inflation potentially resulting in breathing difficulty.

Laurent Hachfi's presentation also underscored the importance of meticulous design and testing involved in all aspects of enhancing rider safety, stressing the continuous need for innovation and adaptation in protective equipment.



External speakers presentations

Enhancing the Human Performance of Motorcycle Races

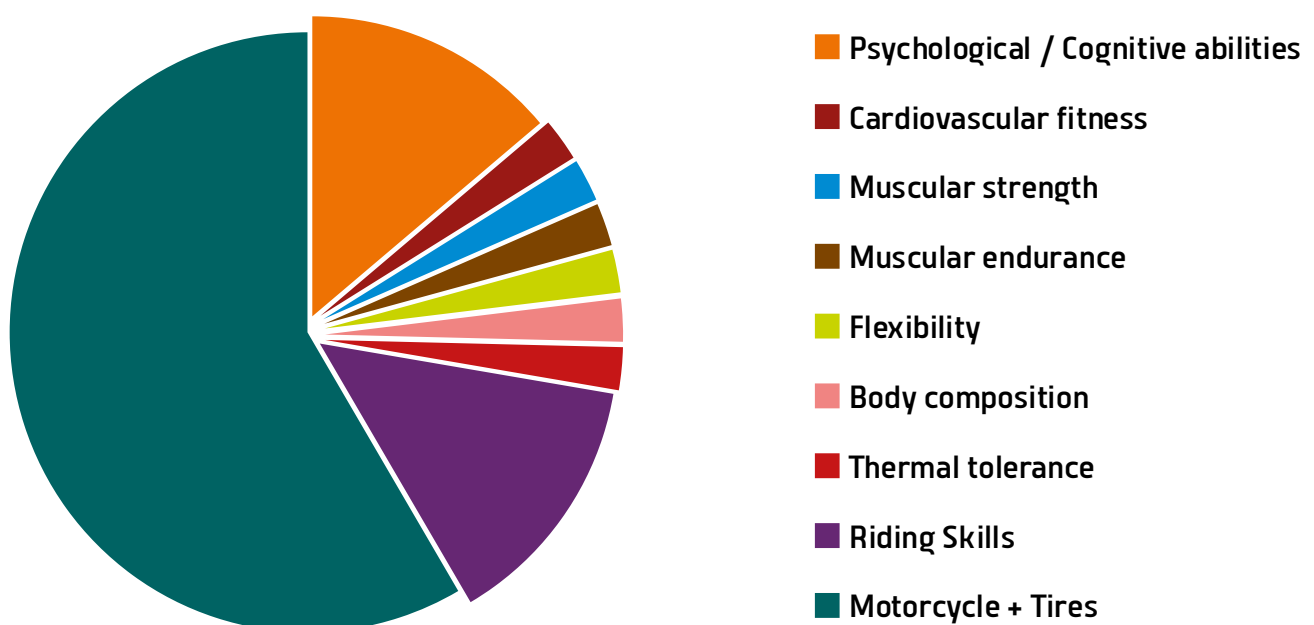
Emanuele D'Artibale, a double PhD, presented a summary of his extensive research on enhancing the human performance of motorcycle riders. He began by acknowledging the various factors that contribute to racing performance, such as the motorcycle, tires, and environment, but focused on the human element. D'Artibale highlighted that high-performance riders face a combination of physiological, mechanical, and psychological stresses, alongside potential injuries from crashes or muscle overuse, like chronic exertional compartment syndrome of the forearm.

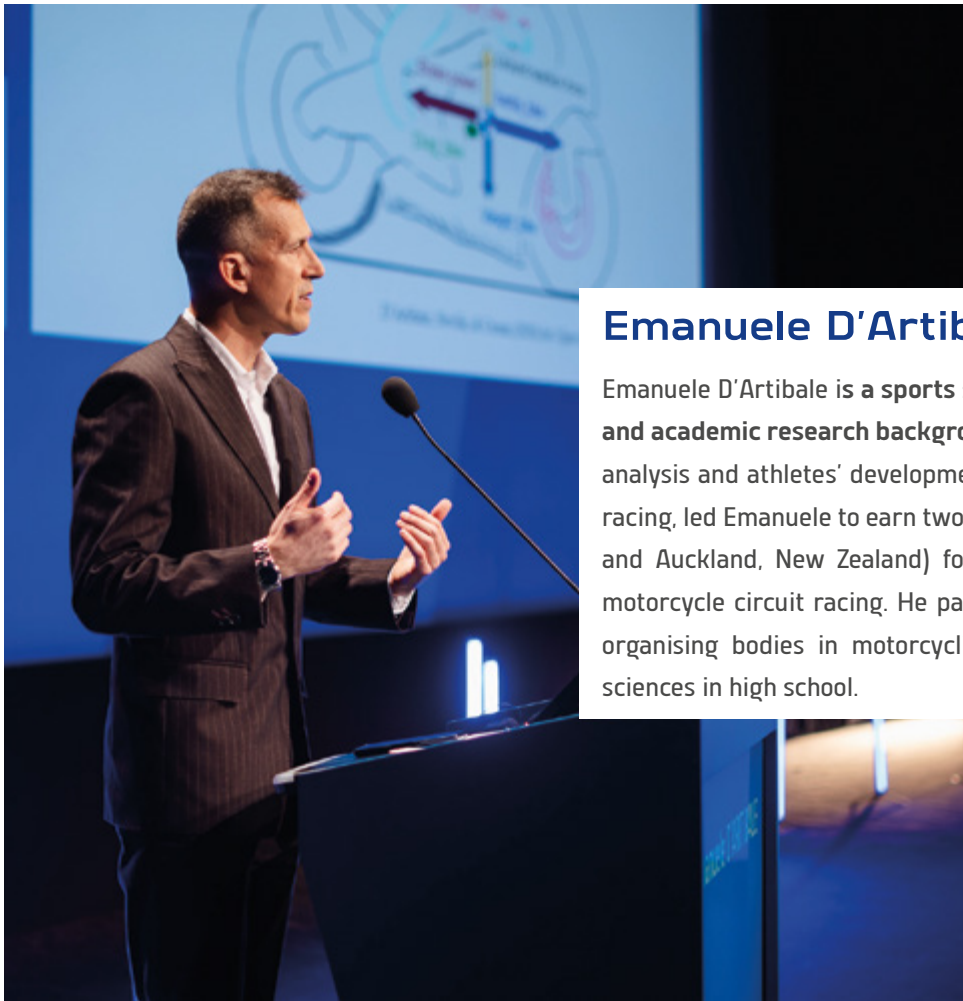
He emphasized that modern racers need a well-rounded physical and mental fitness

level, including proper body composition, cardiovascular health, muscular strength, flexibility, and heat tolerance. Additionally, resistance to inertial stresses, visual acuity, resilience, psychological strategies, and technical riding skills are crucial for success.

D'Artibale concluded his first presentation by recommending that riders undergo specific multidisciplinary training aimed at reducing fatigue, preventing injuries, and enhancing technical and mental skills. Given the risks and costs associated with motorcycle racing, he advised both young and experienced riders to work with specialized professionals who adopt a holistic approach to improving performance".

Competition result = multidisciplinary performances





Emanuele D'Artibale, PhD

Emanuele D'Artibale is a sports scientist with coaching, teaching and academic research backgrounds. His interest in performance analysis and athletes' development, combined with his passion for racing, led Emanuele to earn two Doctorate degrees (in Rome, Italy, and Auckland, New Zealand) focused on human performance in motorcycle circuit racing. He partnered with athletes, teams, and organising bodies in motorcycling. He currently teaches sports sciences in high school.

Forearm Chronic Exertional Compartment Syndrome

D'Artibale delivered a second presentation on forearm chronic exertional compartment syndrome (CECS) in motorcycle racing aiming to foster discussion on this physical limitation as a possible occupational hazard for riders. He offered insights into the incidence of CECS among riders, questioning its prevalence and

exploring whether fasciotomy is the sole remedy. Considering the absence of consensus in scientific literature and international treatment guidelines, the presentation sought to provoke dialogue among Summit attendees. The goal was to deepen understanding and propose hypotheses for advancing athlete care and sport evolution.

To go further :

Journal of Vascular Surgery

A systematic review of fasciotomy in chronic exertional compartment syndrome

Ding et al

[Link to article](#)

Injury and Illness Surveillance

Dominic O'Dowd, Orthopaedic Surgeon with extensive experience in sports injuries. Dr O'Dowd discussed Trackstats, the FIM's tool for monitoring rider injuries and health data during competitions. Developed in 2022, Trackstats provides real-time updates on injuries, "fit-to-ride" status, and ongoing treatments, aiding clinical governance and risk management in motorcycle racing.

Interview with Dr O'Dowd

From your presentation at the Summit, we had the opportunity to reflect on the concept of "Continuity of Care", could you please contextualize this aspect a little?

Dr D.O'D.: "We have a somewhat unique situation within motorsport where we travel around various countries, to different circuits, and we need to be able to know the condition of the rider following their intervention at the previous circuit. If they've had a fall or an injury, we need

to be able to provide continuity in terms of the medical care and treatment the rider is receiving. Therefore it's about the utilisation of the system that we have implemented to be able to help that aspect for both the riders and the clinicians at different venues."

"Reading the data from your presentation, you mentioned that in lower classes we observe higher injury incidence per riding hours,



Dr Dominic P O'Dowd

Dominic P O'Dowd is a **Consultant Orthopaedic Surgeon at Sheffield Children's Hospital and Rotherham Hospital**, specialising in paediatric and adult trauma, knee surgery, sports injuries and injury prevention. He graduated from Sheffield University and holds a Master of Science in Sports and Exercise Medicine. He gained extensive experience working with professional athletes domestically as a doctor at the British Superbikes, for West Ham United and Blackpool Football Clubs, and internationally at the England FA with the U16-19 Men's squads and the Senior Women's 2013 World Cup Qualifying Campaign.

therefore, is the data suggesting that there is also a learning curve for riders about how to deal with a crash?"

Dr D.O'D.: "That could be one conclusion, but at the moment we have limited data, so have to be careful with the interpretation at this early stage, but it starts to give us a picture about how we can use the data, to then go on and eventually answer: is it that younger riders do crash more? If they crash more, do they sustain more injuries? If so, were they crashing at similar points at the track, or with similar mechanisms, or there are other variables involved that we potentially need to look at?"

Interestingly, you referred to the "consensus extension" in your presentation, could you please give us your view on that?

Dr D.O'D.: "In 2020 the International Olympic Committee produced a consensus paper with a

panel of experts advising on key definitions for sports injury and illness surveillance. Part of that paper was that they recommend other sports to produce sports specific extensions tailored to how their sports work. I think it's important that we think about this in motorcycling being that it's very different from a lot of the Olympic and field sports, like football and rugby, where the majority of research is undertaken. This would allow us to ensure that we're collecting the right data and we're analysing it correctly within the context of the sport and the IOC consensus guidelines."

Dr O'Dowd's insights underscored the critical role of data in enhancing safety and medical care in motorsport. The continuous monitoring and analysis facilitated by Trackstats are essential steps toward reducing injuries and improving outcomes for riders.



Safety Protocols for Electric Vehicles

Sean Petherbridge, President of the FIA Medical Commission, and expert member of the FIM International Medical Commission, delivered a presentation on safety protocols for electric vehicles.

Interview with Dr Petherbridge

Dr Petherbridge, what do you think about the time taken to add all the e-safety protection if the driver is critically injured?

Dr S.P.: *"The safety procedures following a crash of hybrid or electric cars involve the electric safety gloves, the boots, and using rubber mats to isolate the car to prevent transfer of electricity; the risk is small but the risk is there, and obviously we want to protect our rescuers. One thing that does happen is that rescuers ask me: at what point should we consider the seriousness of the accident and the injuries to the driver against the time taken to put the rescue equipment on? It's not an easy answer because though the*

risk is there, it is small. In summary though, it seems that it compromises to use the personal protective equipment and perhaps use at least one rubber mat over the sill of the car, so you can get in quickly and assess the driver. So it's a common question, it does require some thought, and every accident is different."

"Talking about electric vehicles and in particular electric racing, what do you think about the emotions playing a key role in the perception of the people towards embracing e-racing and accepting the change from internal combustion engines?"



Dr Sean Petherbridge

Sean Petherbridge is a senior aviation medical examiner and the current **President of the Federation Internationale de l'Automobile (FIA) Medical Commission**. Over the course of over 17 years, he gained cross-disciplinary experience as a Chief Medical Officer for the W2RC cross-country rally and Formula 1, 2 and other events such as GTI, MERC and V8 Supercars in the UAE. He also sits on the FIM International Medical Commission (CMI).

Safety light logic



GREEN LIGHT
= vehicle is **SAFE**



RED LIGHT FLASHING
= HV system fault >> vehicle is **NOT SAFE**



NO LIGHT
= consider as **RED**



MEDICAL LIGHT
= report to **MEDICAL TEAM**

Dr S.P.: "This change is here, it's coming more and more. Most of us here are... let's call ourselves petrol heads, right? we like motorsport, we like the sound of the engine, the infrasound, the passion that comes from that powertrain, but at the same time, there is still exhilaration and excitement to come from electric powertrains: the acceleration is great! I am driving an electric car myself and despite me having a passion for engines, having grown up fixing my own cars, like a lot of us have, and I have ridden motorcycles,

I had a nice CBR 600 RR at one time, so I really get the passion of the internal combustion engine. But the change is coming and the change will continue, and it's what's normal for you, for example, if I look at my children I once bought them watches, but they never wore them, because they don't look at the watch for the time, they look at their phone! Each generation has a new norm and over time I think we will find that it's very normal to have an electric powertrain in our vehicles."

Concussion

The big theme of the afternoon was Concussion. The FIM invited several experts from various sports to discuss this subject in the optic of helping the FIM Medical Commission to develop a specific Concussion protocol for motorcycle sport.

Micheal Turner

The expert

Michael Turner, Medical Director of the International Concussion and Head Injury Research Foundation (ICHIRF) and a renowned expert in brain injuries, shared insights from various sports and discussed the complex history and recognition of Chronic Traumatic Encephalopathy (CTE). He emphasized the importance of comprehensive concussion management and ongoing research in retired athletes with multiple concussions.

In his presentation, Dr Turner delved into the intricate history of recognizing and classifying Chronic Traumatic Encephalopathy (CTE). He highlighted the pioneering work of Dr Bennet Omalu, who faced significant challenges in his career while bringing attention to this serious condition. To contextualize the arduous journey of CTE recognition, Turner drew parallels with other well-known diseases like Alzheimer's, which existed long before they were formally identified and understood. By doing so, he underscored the complexities involved in acknowledging and accepting new medical conditions, particularly when they are relatively recent in their labelling and they stop athletes from performing. Turner also discussed the National Football League's (NFL) experience in the United States as a poignant example of political resistance to recognizing CTE. He illustrated how the NFL's initial reluctance to address the issue eventually led to far-reaching consequences, including numerous legal battles a decade later. Through these examples, Turner emphasized the critical need for ongoing research and understanding of sport-related traumatic brain injuries, highlighting that while significant progress has been made, the journey towards full recognition and effective management of such injuries continues.

Interview with Dr Turner

When asked about how his experience across different sports can help the FIM to understand concussion better, Dr Turner answered:

Dr M.T.: *"I was very lucky to start with an individual and high-speed sport: skiing. Skiing is a high-risk sport with varying weather conditions such as snow, rain, and sleet. Particularly in downhill racing, athletes wear helmets and travel at high speeds. If you hit something, the damage can be significant. From skiing, I moved on to the Olympics, where I looked after Olympic sports. I attended three Olympic Games and cared for British Olympic athletes for a short period. After that, I joined horse racing, which is surprisingly similar to motorcycle racing. In both sports, if you fall off, you cannot get back on and continue. The race is over. The participants are tightly bunched together, moving very fast, and the sport carries high danger and risk. Although horse racing isn't as high-speed as motorcycling, you're still traveling at about 60 kilometers per hour, and the horse weighs 500 kilograms. If a horse falls*

on you, it can cause serious injuries, including fatalities, broken legs, and paralysis. Then, I moved on to tennis where injuries are mostly musculoskeletal. So, I've had a diverse range of experiences with individual sports like skiing and tennis, as well as team-oriented sports like horse racing. This diverse background has been extremely valuable in my work with the Fédération Internationale de Motocyclisme (FIM). The parallels between these different sports are fascinating and have provided valuable insights."

"What is your position regarding sensors installed inside helmets?"

Dr M.T.: *"There are some new technologies that are very popular in the USA. The difficulty is that the effectiveness of these sensors depends on how well the helmet fits. The information you get is related to the impact on the helmet, not the impact on the head. Particularly in America, there are many gadgets where parents can monitor their child playing American football or*



Dr Michael Turner

Michael Turner is the **Medical Director of the International Concussion and Head Injury Research Foundation (ICHIRF)** and Honorary Clinical Associate Professor at the University College London (UCL). Prior to this, he was Chief Medical Adviser to the Lawn Tennis Association, British Horseracing, the British Ski and Snowboard Federation, Director of Medical Services at the British Olympic Association, and GB Team doctor at the Calgary, Albertville and Lillehammer Winter Olympic Games. Furthermore, He has been member of the International Medical Committees of the International Skiing Federation (FIS), tennis (ITF) and horse racing. He is co-author of the last three Concussion in Sport Consensus Statements delivered at the Zurich 2012, Berlin 2016, and Amsterdam 2022 Concussion in Sport conferences.

other sports and see every impact on the helmet. However, if the helmet is loose, the impact data is meaningless because it does not accurately reflect the impact on the brain. This is why we have moved away from sensors in helmets to sensors in other locations. For instance, ear plugs that measure impacts and instrumented mouthguards are becoming popular. In rugby, at the highest levels, you will find that the entire England team wears instrumented mouthguards. These devices measure every impact, and if the impact is too high, the player is pulled off for a concussion assessment before returning to the game. They use this method to improve safety. Although it hasn't been validated across all sports, it is currently used in rugby. So, while some kind of sensor makes sense, instrumented helmets have not proven to be as successful as we had hoped when they were first introduced."

In conclusion, Dr Turner emphasized how a crucial role is played by education: athletes, managers, and all stakeholders must be thoroughly educated about the risks and symptoms of head concussions. This

knowledge forms the foundation for identifying and addressing concussions promptly and accurately. Secondly, removing the external pressures that athletes face from contracts or career; by alleviating these stresses, athletes can be more honest about their symptoms, in fact, once the external pressures are minimized, athletes are more likely to report their symptoms truthfully. This honesty is critical for timely and appropriate intervention, ensuring that concussions are not overlooked or underestimated. Dr Turner acknowledges that these changes won't happen overnight. It will take time, potentially years, to fully integrate this educational approach and shift the culture around concussions in sports. However, he firmly believes that education and awareness are the cornerstones of successfully managing head concussions. "With education and honesty in place, recognizing concussions becomes a more straightforward and effective process. The collective understanding and awareness allow for quicker identification and treatment, reducing the long-term impacts on athletes' health".



Brent May

Education is key

Dr Brent May, CMI Commission Member and Chief Medical Officer for Motorcycling Australia presented Motorcycling Australia’s concussion protocol, it’s creation process and application. One very interesting point was the education programme created by Motorcycling Australia for their riders and their entourage.

The education campaign of MA focuses on educating riders of all levels about, the symptoms of a concussion, the risks involved and the importance of a good recovery.

MA published leaflets, complete guidelines but also short framework documents for the riders, and also for their families, team managers, coaches and medical staff

More information and documents are available on: <https://www.ma.org.au/medical-concussion/>



RIDER CONCUSSION

**“It’s ok to say you’re not ok
...if in doubt, sit them out”**

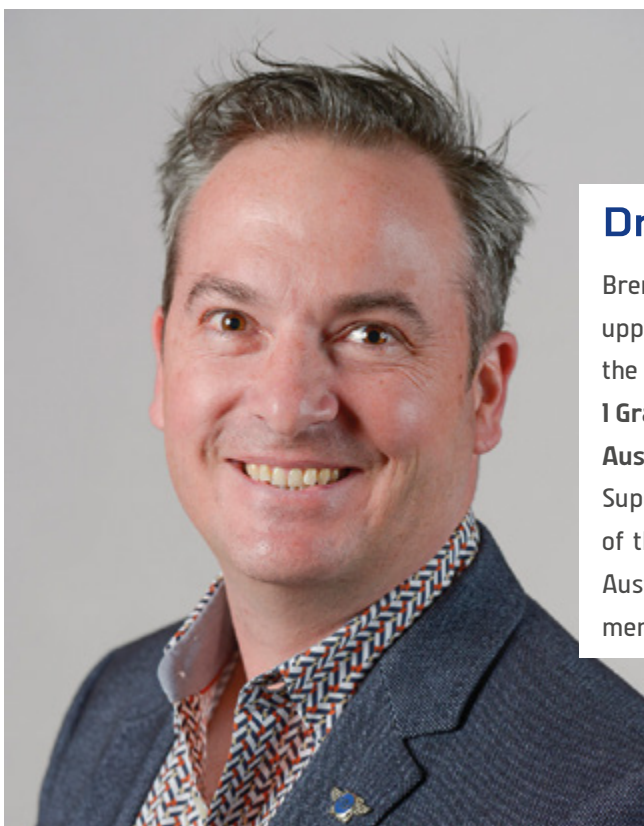
If you or a fellow rider experiences the following concussion symptoms, you should sit it out if in doubt, and get checked out by a doctor if you have the following symptoms:

- > loss of consciousness
- > seizure or convulsion
- > balance problems
- > nausea or vomiting

For more information visit www.ma.org.au/medical-concussion

For additional information on sports concussion
www.concussioninsport.gov.au

MOTORCYCLING AUSTRALIA www.ma.org.au



Dr Brent May

Brent May is a Specialist Anaesthetist with an interest in trauma, upper gastrointestinal surgery and medical education. Dr May is the **Chief Medical Officer for the Australian and Vietnam Formula 1 Grand Prix**. He is also the **Chief Medical Officer for Motorcycling Australia**, including the Australian Motorcycle Grand Prix and World Superbike Championship, and for Karting Australia. He is a member of the National Medical Advisory Council for the Confederation of Australian Motor Sport and their Chief Medical Educator. He is also member of the FIM Medical Commission.



Mikael Swarén and Stephan Filipowski

The need for a Cultural Shift

Echoing Dr Turner, Doctor **Mikael Swarén**, Director of the Swedish Unit of Metrology in Sports, and Doctor **Stephan Filipowski**, FIM Medical Commission Member, shared their presentations and visions inside the closing panel, dedicated to concussion.

In his presentation Dr Filipowski wanted to start reminding everyone that clearly the primary duty of doctors is: *“protecting all riders, especially when assessing concussions”*, then underscoring the critical goal of *“keeping the rider out of competition as short as possible but as long as necessary”*.

Dr Filipowski highlighted the unique challenges of detecting brain injuries in off-road racing,

noticing how it isn't just doctors who can spot a concussed rider, but marshals, team and family members, and paddock workers also play crucial roles. Dr Swarén cited different scientific studies identifying blood biomarkers as effective indicators of concussion, offering a promising alternative for diagnosis in the future. With this, Dr Filipowski pointed out the complexities doctors face in this context: unlike team sports, motorcycling is an individual sport, so deciding to stop a racer means halting their entire participation. Additionally, motorcyclists are highly passionate and resilient, often enduring stress and pain, which complicates a doctor's assessment. To address these challenges, Dr Filipowski stressed the necessity of a “return to race form” to ensure a rider's



Mikael Swarén, PhD

Mikael Swarén is a researcher specialising in sports biomechanics and sports mechanics, with over 15 years of experience with Swedish and international Olympic athletes and teams. Bringing extensive expertise in analysing head impacts in various sports, he currently serves as the Director of the Swedish Unit of Metrology in Sports at Dalarna University and as a Swedish Sports Concussion Society board member. Furthermore, he actively participates in the Player Safety Group within the Swedish Ice Hockey Association, primarily focusing on preventing concussions among ice hockey players.



Dr Stephan Filipowski

Stephan Filipowski is an anaesthetist and emergency physician from Germany. In 2008, he moved with his family to Sweden, where he worked at the University Hospital of Uppsala and the regional helicopter rescue ever since. He has been active in motorcycle sports since his late adolescence but got more involved starting in 2015 when his cooperation with the Swedish Motorsport Federation Svemo began. Initially, he was the only responsible doctor for the Federation and became the Swedish Federation medical panel chief. He joined the FIM International Medical Commission (CMI) in 2018 combining his professionalism with his interests through privileged access to motorcycle sports at the highest level.

safe and appropriate return to competition. This form would standardize the criteria and timeline for a rider's recovery, balancing their eagerness to return with the need for thorough medical evaluation.

Continuing the Concussion Panel, Dr Mikael Swarén delivered an insightful presentation summarizing recent scientific literature on the topic. He emphasized the critical goal of immediately removing athletes from the field following a suspected concussion to prevent further injury. Highlighting innovative approaches, Dr Swarén pointed to Rugby's adoption of instrumented mouth guards, which provide reliable data on head impacts, as a model for other sports to follow. He also discussed the limitations of helmet-based impact sensors, noting that these devices measure helmet movement rather than direct

head impact, leading to unreliable data. Dr Swarén cited different scientific studies identifying blood biomarkers as effective indicators of concussion, offering a promising alternative for diagnosis in the future. A significant part of Dr Swarén's presentation focused on the cultural shift needed in sports to prioritize athlete health. He argued that to avoid situations where athletes might hide symptoms to continue playing, there must be a fundamental change in mentality. Athletes should be encouraged to prioritize their health, free from external pressures.

Dr Swarén concluded with a powerful message: changing attitudes and culture, supported by knowledge and education, is crucial. He highlighted the Swedish Hockey League as an exemplary model of this progressive approach.

To go further :

Phys Sportsmed

Examining how time from sport-related concussion to initial assessment predicts return-to-play clearance

Taylor Pratile, Cameron Marshall, Carol DeMatteo

[Link to article](#)

Am J Sports Med

Immediate Removal From Activity After Sport-Related Concussion Is Associated With Shorter Clinical Recovery and Less Severe Symptoms in Collegiate Student-Athletes

Asken et al

[Link to article](#)

J Athl Train

“Playing Through It”: Delayed Reporting and Removal From Athletic Activity After Concussion Predicts Prolonged Recovery

Breton M Asken, Michael A McCrea, James R Clugston, Aliyah R Snyder, Zachary M Houck, Russell M Bauer

[Link to article](#)

Ann Biomed Eng

Laboratory Evaluation of the gForce Tracker™, a Head Impact Kinematic Measuring Device for Use in Football Helmets

Kody R Campbell , Meagan J Warnica, Iris C Levine, Jeffrey S Brooks, Andrew C Laing, Timothy A Burkhardt, James P Dickey

[Link to article](#)

J Athl Train

Measurement of Impact Acceleration: Mouthpiece Accelerometer Versus Helmet Accelerometer

Michael Higgins, P. David Halstead, Lynn Snyder-Mackler and David Barlow

[Link to article](#)

Maxime Moreillon

The importance of continuity of care and athletes recovery

Dr Maxime Moreillon, a sports medicine physician, presented on concussion protocols in alpine skiing and closed the Summit sharing valuable insights on athlete recovery and the importance of continuous monitoring.

Interview with Dr Moreillon

“During your presentation you showed us videos of practical methods for athletes, and you explained some exercises used for recovery from a mild traumatic brain injury. Could you tell us a little bit more about them, and advise if there is a specific protocol that can be used on a specific area of motor competencies, like more exercises for balance, or aerobic training...”

Dr M.M.: *“We do not have a strict specific protocol, instead we try to start with simple exercises, especially with simple aerobic exercises, because we know that with aerobic*

training we can gain a few days on symptoms. We start with simple tasks for the brain like aerobic training, and then try to complexify this adding multi-modal exercises, for example cognitive exercises, coordination tasks, balance, or exercises that involve decision-making and reaction time. Also, we try to be symptom specific, so if they’re suffering from headache or cervical pain, we rehab this in the same time. Or if it’s more balance issues or neuro-vestibular, we focus on specific rehab for those symptoms. So, simple tasks first, then we complexify with multitasking, and always



Dr Maxime Moreillon

Maxime Moreillon is a **medical Doctor specialized in internal and sports medicine**. A doctorate followed his graduation from the Lausanne University Medical School in 2010 in muscle metabolism in 2019. He is keen on sports and practised American football as a player and coach on the Lausanne University team. He currently works at the Hôpital de la Tour Swiss Olympic Medical Center in Geneva, where he follows athletes of various sports at different levels. He is the team physician for the Swiss 5x5 men’s basketball team and a referring physician for several rugby clubs. He is currently involved in the SwissSki alpine team medical staff and the follow-up and medical care of the junior and emerging elite of alpine skiers.

take care of specific symptoms in parallel. In this whole process we try as best we can to control risk factors for consecutive injuries and accidents, like lack of reaction time, balance, coordination..."

"Dr Moreillon, during the concussion panel, we had the opportunity to realize how important could be to follow an athlete (that is recovering from a mild traumatic brain injury) with high frequency. Monitoring an athlete regularly, day by day when possible, seems to be the key to have a measure of the improvements during the recovery period. How do you relate to that?"

Dr M.M.: "We doctors need to have good communication with the team, and in our case, athletes are actually lucky to have a physiotherapist working full-time for them which makes monitoring easier. Usually, the doctor is with the team for the race, and when the race is over the doctor leaves and the team goes on their schedules, and it may be other doctor of the medical team that takes over

for the next race, so it's important to stay in contact with the physical therapists and the strength and conditioning trainers, so we can follow up on the recovery and return to sport phases. And communicate with the team doctor for the next racing event.

"And are you going to have a daily communication?"

Dr M.M.: "Yes, concussed athletes have daily evaluations of symptoms in reaction to physical or cognitive load, with progressive implementation of more complex exercises or higher intensity exercises. Once we see the athlete feels comfortable with these tasks, he/she will be cleared to start simple free skiing and we make sure there is no increase in symptoms in this next step. In alpine skiing, conditions such as altitude, cold or the light from the sun can be enough to trigger symptoms and lead to go back to easier tasks, before ski racing. These daily assessments are all discussed as a team with the athlete, trainers, and medical staff."

Concussion discussion's conclusion

At the end of the weekend, the FIM Medical Commission agreed on the following points

- 1. The FIM needs to adopt its own concussion protocol specific to motorcycle sport**
- 2. Education and awareness towards riders and their entourage is paramount**
- 3. Clear procedure for doctors to follow for the assessment of concussion should be developed and agreed**
- 4. Clear process for return to sport for riders and doctors should be developed**

Despite controversies around details of the procedures (for example case by case basis or set period for return to sport) the FIM Medical Commission plans to publish its concussion protocol in 2024 for introduction in 2025.

Conclusion

Dr David McManus provided his inputs on this first edition of the FIM Medical Summit.

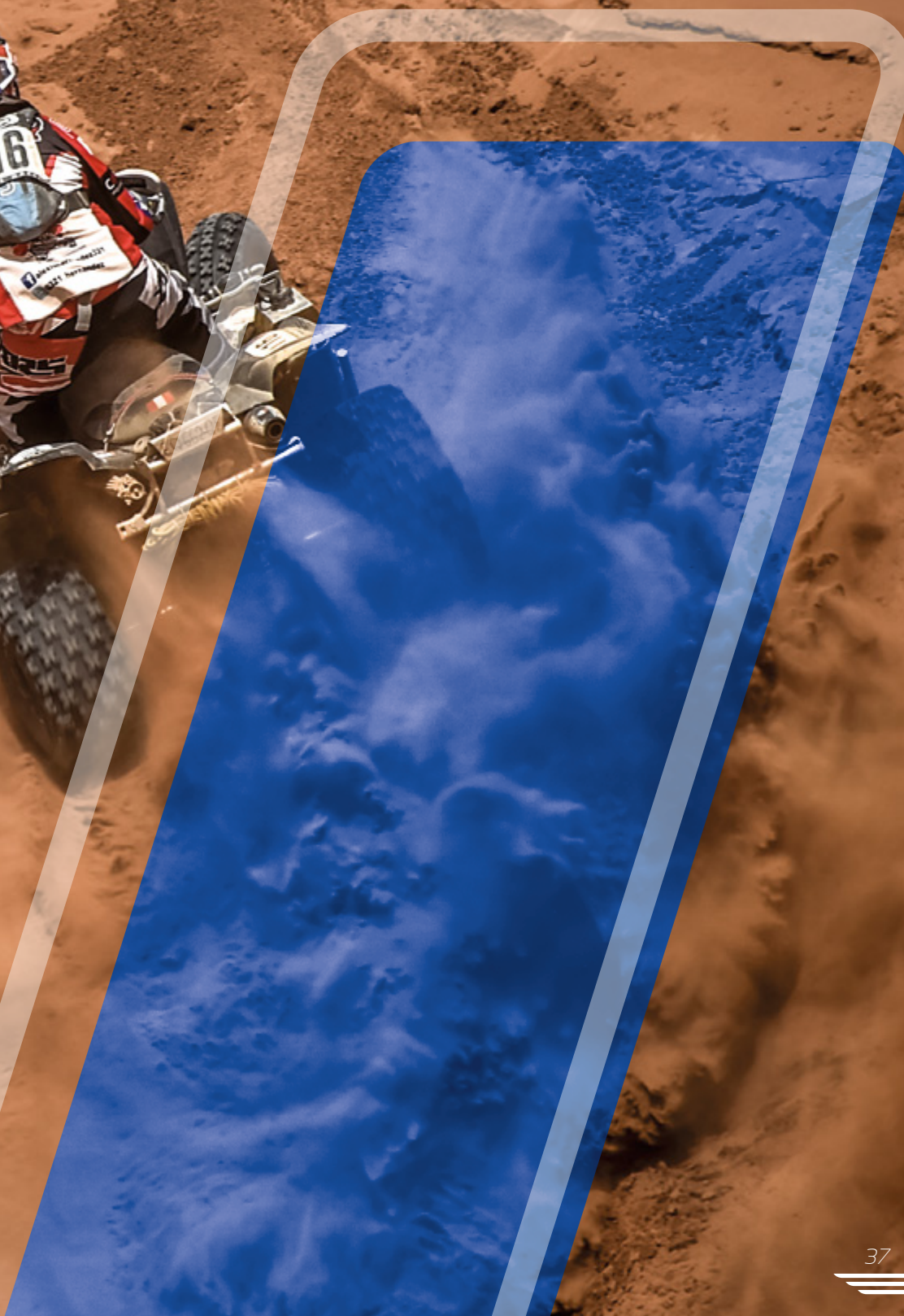
Dr McManus:

“ *The Summit was a great success from my perspective and the feedback we have received has been universally positive regarding the format, the topics and the speakers. We have also received some suggestions for important topics for the next summit and suggestions to increase the duration to facilitate more interaction between the participants.*

A number of important topics were covered including the sharing of experience and learning from our major championships last year as well as important medical topics and new technologies relevant to our work.

A significant part of the Summit was devoted to considering concussion. This was very beneficial with presentations from renowned subject matter experts and the experience in other sports. This will inform the development and introduction of specific concussion assessment and management tools by the FIM for use in our sport.

However, one of the greatest benefits was doctors from all over the world who act as Chief Medical Officers in our championships coming together to share their experience and learning and also importantly to interact with each other informally to form personal and professional relationships through the networking opportunities provided by the Summit. ”



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