



# LESSONS OTHER SPORTS CAN LEARN FROM FORMULA 1

WEBINAR TRANSCRIPTION / DR. DANIELA MIFSUD

**Lessons other sports can learn from Formula 1 was the topic for the first FA Medical Society evening lecture of this 2022/23 season.**

**Current developments and future innovations in Motorsports Medicine**  
 Dr James McBride - Chief Medical Officer, Abu Dhabi Desert Challenge

The Abu Dhabi Desert Challenge is an event that occurs over 5 days and runs over 2000km in distance. There are two classes of vehicles within the events which are cars and motorbikes with approximately 40 teams per class. Given the nature of such a huge event, a support team consisting of doctors, nurses, physiotherapists, and chiropractors are required to be on standby. There are also 3 search and rescue aircrafts with four medical personnel on board.

The rally control can access the GPS device of each vehicle. This shows up as green if they are moving and yellow when stationary. However, if they hit their SOS button it will show as red, and an alarm will also sound.

The usual response time is ten minutes from the initiation of alarm to 'wheels down' for the helicopter. Furthermore, self-extraction is preferable due to the time demands and dangers of being on a live rally course. Pentrox is the drug routinely used to offer quick analgesia and is usually deemed to be effective after around 6-8 breaths.

One of the main concerns in this event is that the risk of injury increases as the event goes on due to dehydration and fatigue. To mitigate risks, a compulsory 15-minute rehydration stop for the motorcycle riders were put in place. Another concern is the sudden vertical drops from dunes which predispose the drivers to lower thoracic or lumbar spine fractures. For this reason, it is essential to have knowledgeable and experienced medical personnel on standby in such events.

**Smooth running and pitfalls in the Pits**  
 Andrea Skyring - Pit Lane Chief, Abu Dhabi Formula 1

Motorsport is dangerous which is why trained officials and marshals are present in the

pitlane and on the start grid to ensure safety and discipline of the pits, paddock, and grid (PPG). The best way to ensure a smooth-running race weekend is to work with an expert PPG marshal team who can be relied on to professionally deal with any pitlane/startline incidents. Pitlane marshals not only deal with the competitors but also deal with team personnel, media, and guests.

Some pitfalls commonly dealt with include unsafe releases (collisions between cars entering and leaving their pit boxes or car parts flying off), speeding, fire and burns, conflict and paddock club mishaps related to smoking and drinking. The pitlane/garages have many flammable/combustible materials which means the pitlane/grid is designated a no smoking areas (and this includes e-cigarettes).

Startline marshals play a significant part before the start of the race, making sure that cars are all correctly lined up on the grid. They then wave a yellow flag if any driver stalls or struggles to get off the line when the race begins and recovers any disabled cars

from the grid. It is very important for PPG marshals and officials to stay alert and know what is going on around them to help avoid incidents.

For Formula One, pitlane speeds were trialed in 1993 and introduced in 1994 and most circuits have a pitlane speed of 80km/h, whilst others that are smaller have a 60km/h (such as Zandvoort and Singapore). The speed limit helps protect the marshals, teams, and the media. For every km/h a driver exceeds there is a €100 penalty (up to €1000). Other race series (F2, 24H etc.) have their own prescribed pit lane speeds. At some circuits pit marshals are equipped with a speed gun to make sure drivers are not exceeding the permitted speed when travelling down the pitlane.

### Performance and optimising recovery in drivers

Paul Cheung – President, National Chiropractic Sports Council UAE at Emirates Chiropractic Association, Former Red Bull F1 Chiropractor

Drivers must be able to withstand high gravitational force (up to 6G) which can result in stress and strain. The role of a chiropractor within a F1 team is to analyze the symmetry of the drivers to ensure there

is nothing that predisposes them to stress. High loads are required to break the car which results in high force loading on the core and the pelvis. Before getting into the car the drivers usually get an assessment. Myofascial techniques and mobilization techniques are useful at this stage.

Post-race recovery is essential as around 2kg of fluid is lost after a race. Therefore hydration, electrolyte supplementation and taking a snack is essential.

### Managing emergencies during the race

Mr Mansoor Khan – Trauma Surgeon

It is important to keep in mind that anybody and everybody can get injured and not just the athletes themselves. The team at the Grand Prix is composed of orthopaedic and trauma surgeons, GPs, EMTs, and paramedics amongst others. There are 2 sets of teams. One takes care of the perimeter and general population whilst another team takes care of the athletes and staff. The ambulances and extrication team are strategically placed to get quickly to the incident place. There are also aircrafts which have full prehospital capability manned by experienced paramedics.

All of the medical teams will have completed a large number of scenarios which means that whenever the situations occur they will already know exactly what needs to be done as they have done it all before. In cases where interventions were done in pit, the prehospital center is the point where doctors ensure they didn't miss anything prior transfer to a hospital. The medical facility in motor sport is a high turnover facility and thus, in cases where there is doubt the patient should be immediately transferred to a nearby hospital.

There are three types of extrications. Self-extrication is when the driver comes out of the race car on his/her own. Controlled extrication is when the casualty must be pulled out of the car. The final type of extrication is rapid extrication which is used in cases of an unconscious racer and requires a lot of training to be done beforehand by the medical team.

If there is a conscious athlete then there is no need for a collar to protect the c-spine while if the driver is unconscious, a rapid extrication should be carried out and a collar should be applied.

