

**A DRIVER'S GUIDE TO SAFE
MOTOR SPORT**

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A Driver's Guide to Safe Motor Sport

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Introduction

Because motor sport has become so much safer over recent years, you might think that accidents only happen to other people. Wrong – an accident can happen to anyone. This Guide aims to minimise the risks and help you enjoy your motor sport as safely as possible. It is intended primarily for newcomers to the sport although it is hoped that it will also act as a memory-jogger for the more experienced.

Professor Sid Watkins,
President of the FIA Institute for
Motor Sport Safety

Although references to FIA Regulations are mentioned at various points, the Guide is published for information only and has no regulatory value; many of the basic safety measures suggested do not in fact feature in any regulations but they are very easy to adopt and are strongly recommended.

1 Personal Preparation

Before you compete on an event, give some thought to your general fitness. A medical examination will be compulsory anyway. If you are passed fit but become ill at a later date, you **must** declare this.

In a sport where quick reactions are vital, the medical includes eye and colour blindness tests. If you need vision correction, wear shatterproof lenses in all-enveloping non-metallic frames – and use a full face helmet. Contact lenses are acceptable but stop if you have any problem with them during an event.

Use a tinted visor and/or windscreen sunstrip rather than sun glasses.

Disability may not be a bar to competing in motor sport – your national governing body will be able to advise you.

If you need any medication, including over the counter remedies, be sure to consult the FIA regulations and check the World Anti Doping Agency (WADA) list of prohibited substances as if it's on the list you cannot take it and participate in any motor sport. This goes for "recreational" drugs too of course. However, if you need to follow a treatment which requires, with no reasonable alternative, the use of a prohibited substance, you must apply for a Therapeutic Use Exemption, but this takes time so apply immediately.

If in any doubt – **ask** a sports doctor rather than risk being excluded from an event.

Appendix 1 to this Guide explains why the use of “banned substances” in motor sport is both prohibited and pointless. It's worth remembering that traces of a substance can stay in the body and give positive dope test results days or weeks after absorption. On the other hand, you need to know what to do if you are obliged to take medicine, which is also explained in the appendix.

If necessary, wear an easily identifiable tag with details of your special medical needs. This could be vital at the scene of an accident and assist medical personnel with diagnoses. On rallies make sure your driver/navigator is aware of your medical condition – and you know theirs.

The presence of chains, amulets and other jewellery, including those attached through body piercing, may hinder intervention in case you are injured in an accident. Decorative studs through lips and tongues for instance could interfere with some medical procedures, while studs in eyebrows could snag on helmets. So think to remove them before starting an event.

Equally importantly, under no circumstances compete while chewing gum – a potential killer if it gets stuck in the windpipe in an accident. It makes sense to remove false teeth too.

It is a good idea to empty the bladder and bowels before driving ... nerves may act as natural reminders of this.

If for any reason you are feeling seriously below par, you should consider whether to withdraw from an event because you could be a danger to yourself and other people.

Think about your diet and particularly your fluid intake. As a general rule, eat and drink little and often rather than filling up on calories and liquids just before competing. On long, hot events you will need to guard against dehydration. Appendix 2 contains further suggestions regarding hydration and diet before an event.

Refer to FIA Regulations: see Appendix 4 Note 1 at the end of this guide.

2 Personal Equipment

(a) Clothing

As a general rule, buy equipment from recognised and reputable suppliers and make sure everything meets the appropriate national or FIA standards. Criteria change so you need to keep up to date on the latest information.

Underwear: don't skimp on this just because it's out of sight – it has a key role to play. It is next to your skin so in a fire it is your last line of defence – and it increases your protection against serious burns by up to 50%. Any fabrics other than those developed to provide fire protection (e.g. Nomex) should be avoided because they will transmit the heat to your skin or melt and stick to it.

Socks and gloves must be flame resistant too. Gloves in a bright colour, contrasting with the car, will be better noticed by the starter and marshals in case you have to signal problems on the grid.

Get the best **overalls** for competition you can afford; it's your life they are protecting. Keep overalls clean and take care to ensure that washing instructions are followed so that any protective treatments are not washed out.

Overalls should not fit you tightly anywhere – a looser fit gives better fire protection and comfort – and always wear your own overalls. Do not rely on borrowed equipment.

Make sure your **footwear** is fire resistant, the right size and that laces are tied so that they won't get tangled around the pedals.

Keep your footwear clean and dry – **overshoes** are useful in wet service areas and paddocks.

For some events – rallies for instance – it is wise to have a **rally jacket** and a **hat** to keep you warm in service areas and in case you stop in a special stage - 30% of all heat lost from the body is lost through your head. Hypothermia won't help your championship chances. It may be a good idea to have a thermal blanket in the car to protect you against the cold.

If you have **waterproofs** to protect against rain, keep in mind that some are less inflammable than others.

On other events you may need to guard against sunburn, or heat build-up in the car: adequate ventilation (including through your helmet) and hydration are the principal ways to combat this. If the body's heat rises above 38°C, performance will start to diminish rapidly.

See Appendix 3 for more information on FIA standards for clothing.

(b) Helmets

Take time to try on new helmets, get professional advice and buy the best you can afford.

Full face helmets give better protection against fire and facial injury than open ones. For closed cars, open face helmets are tolerated if helmet removal in the car, to enable access to an injured driver's airway, is difficult.

Size is important: a helmet that does not fit snugly can easily rotate over the front of the head in an accident and come off, reducing the protection it provides to zero. Never wear a helmet that is not your size or that needs any extra padding to make it fit.

To check the size, wearing an FIA approved balaclava, position the helmet so that it sits low on your forehead; you should be able to see the edge of the brim at the extreme upper range of your vision. Adjust the retention system so that it will hold the helmet firmly in place then try to remove the helmet without undoing it. If the helmet can shift over your eyes, it is too big; it should be very difficult to move it about in any direction and not possible without movement of your skin. Basically, choose the smallest helmet you can bear, but without any particular pressure points (or voids between head and helmet). Do not borrow someone else's helmet!

Wear the chinstrap as tight as you can without discomfort. With a double D-ring attachment, it's a good idea to have a tab on the second ring so that it will undo quickly by just pulling.

Choose a helmet with a good ventilation system.

The visor is an integral part of the protection against impacts and fire: it should have a positive locking mechanism to prevent opening during an accident. Don't forget to peel the protective plastic wrap off a new visor (it happens, even in Formula 1!)

The visor – and helmet – should be kept in place during slow-down laps, until you are back in the paddock.

Don't modify or drill holes in your helmet and, if having it decorated, remember that special paints must be used to avoid damaging the structure.

Avoid stick-on accessories: if really necessary only use those of the helmet's manufacturer, fixed so that they can be knocked off easily. If you wish to fit a drinking tube, seek instruction from the helmet maker and keep to one, small diameter hole. Don't mount any communications equipment in or on the helmet or disturb the lining in any way. If a drinks tube or earplug radio cable needs routing out of the bottom of the helmet, they may be lightly attached with Velcro to the bottom surface of the comfort padding, but any such lines must come apart immediately when exiting the car or removing the helmet.

Always protect your helmet when not in use. Pad your roll cage in areas of likely contact so the helmet does not suffer any impact damage, no matter how slight. On rallies, keep it in a lined bag and make sure it is well supported and protected in the rally car between stages.

The helmet is probably the piece of equipment most likely to save your life – take care of it and it will take care of you. Don't drop or knock your helmet and if it suffers any impact, or gets scratched, consider replacing it. At the very least have it inspected by an expert after any impact, even if only against the garage floor. It is a good idea to renew your helmet from time to time, even though it is undamaged.

Refer to FIA Regulations: see Appendix 4 Note 2.

(c) Head and neck support

One of the most significant advances in driver safety in recent years has been the introduction of the FIA-approved HANS® (Head And Neck Support). This is a device worn on the shoulders over the outside of the overalls and tethered to the helmet. It is held in place underneath the shoulder belts. The device very effectively prevents the neck being stretched and twisted excessively in an impact, dramatically reducing neck loads and the likelihood of spinal injury.

The HANS® greatly reduces the risk of injury to face or neck in a frontal accident and has no disadvantages as long as it is properly installed – some cars may need adjustment to the seat or shoulder belt anchorages. You are strongly advised to use it, for all events - it is mandatory in Formula 1 and various other championships.

It is however essential have a helmet approved for HANS® use (**see FIA Technical list no. 29**) and to have the HANS® anchorages on the helmet installed by your helmet makers or an expert approved by them.

Note that the use of any protective device attached to a helmet is prohibited unless FIA approved. There is little evidence that wearing one of the proprietary types of neck brace or cervical collar will help in an accident; some may exacerbate injuries.

Refer to FIA Regulations: see Appendix 4 Note 3.

(d) Ear protection

Noise is an unseen and sometimes overlooked danger in motor sport. Prolonged exposure to high decibel levels can lead to loss of hearing, or tinnitus (ringing in the ears) which in acute form can have disastrous effects on your health. Unlike a broken limb, damaged hearing does not recover so always wear good ear defenders. Use moulded ear plugs if open exhausts are being used.

Apart from engine noise or the sound of a shouting co-driver, wind noise can also be damaging – another good reason for wearing a properly fitting helmet.

3 The Working Environment

N.B: Although modifications for comfort with no effect on performance are generally allowed, before making any alteration to a car, it is best to check that the relevant technical regulations permit it.

As a competition driver you will perform better if your car is made as driver-friendly as possible by paying attention to the following areas.

(a) Seats

The seat should be FIA homologated or, for non-production based cars, a sturdy, one-piece, properly fitted shell.

When selecting a seat, look for:

- Strong tight fitting side support particularly around the hips;
- Strong side shoulder support close to the driver;
- Strong side and rear headrests with FIA standard energy absorbing padding and low friction surfaces.

When the seat is installed in the car:

- The seat back should preferably not be inclined more than 30° from the vertical.
- The rear headrest surface should be vertical
- The lateral headrests should be as high and as close to the head as is practical for movement and vision.
- A seat should only be used with the seat padding supplied by its manufacturer; excessive padding will diminish the protection provided by the seat and seat belts in an accident.
- In an accident, the combination of seat and belts will only work if the seat remains attached solidly to the floor – follow the manufacturer's instructions or enlist the aid of a scrutineer for the installation, and then check regularly.

Refer to FIA Regulations: see Appendix 4 Note 4.

(b) Padding

- Look for any corners and edges in the cockpit where your head, hands and legs might make contact; round them off and/or pad them with appropriate energy absorbing materials – to FIA specification for the head and Confor, Sunmate or similar foam for limbs.
- To identify these areas, sit in the car and kick forward and then outward. If there is anything that makes contact with the ankle, shin, or the leg, especially at the knee, it should be padded. If not it will cause pain in a shunt!
- Gear change: paddles behind the steering wheel are ideal, but in the case of an exposed shift lever, avoid radii smaller than 25 mm on the top knob and pad the shaft with stiff foam or rubber as described above.
- If exposed, the gear shift lever mechanism should be protected by a smooth casing that will prevent the pivot point on the lever from injuring your thigh in a side impact.

Use a thick rubber cover over the mechanism which will leave the actual shift lever exposed but will protect the driver from the mechanism.

- Pad every tube of the roll cage closer than 50 cm forwards and sideways of the head with stiff foam to FIA specification, which cannot be compressed with the fingers. Note that although FIA-specification rollbar padding may feel as hard as wood, it is only intended to be hit by the helmeted head, in an accident. It has been scientifically developed to combine with the impact reducing properties of your helmet, to allow you to survive the kind of blow which has severely injured or killed drivers in accidents in the past. Common foam rubber will do nothing to help in that situation, even if more comfortable for a light tap on the head.
- Pad the steering column and its bracket.
- It is advisable to wear knee pads. These pads need to cover the outside of both knees and the inside of one knee. This protects the knees in a side impact and particularly the vulnerable upper part of the knee on the outer side of the leg (which can even suffer in the constricted environment of a single-seater cockpit regardless of accidents), as well as the outer, lower part of the knees. An important nerve passes close to this bone and is vulnerable to being damaged as well. Wearing proper knee pads also helps prevent the insides of the knees from striking and damaging each other.

In single-seaters this can also be achieved by putting padding on the inside of the tub and first bulkhead, and by using a seat with padded divider between the knees.

- Ankles can be protected using the same principle with padding inside the socks or padded boots.
- Elbow pads are also recommended, particularly in single-seaters where the elbows can be subject to chronic irritation. Another source of irritation is wearing flame resistant overalls without the mandatory long sleeved FIA approved underwear. Not wearing the long sleeve underwear lets the overall rub on the unprotected skin of the elbow.

Refer to FIA Regulations: see Appendix 4 Note 5.

(c) Ventilation

Scientific studies have shown that physical and mental capacities diminish after the body's core temperature exceeds 38°C in human beings. If temperatures in your cockpit are likely to be high, arrange for sufficient ventilation to cope with ambient temperature and humidity, giving equal attention to ensuring air can exit as well as enter the cockpit. Sun screens on windows and fitting isolation against the heat from engine and exhaust will help. Above all, ensure your proper hydration during the event as explained in Appendix 2.

It should be noted that the same studies indicated that not wearing FIA homologated fire resistant clothing had little effect in reducing core temperature – although it may be expected to have a considerable effect in raising it in case of fire.

(d) Supplementary comfort

If you are installing drinking bottles, radio equipment, mobile phones, video cameras or any other objects in the car, bear in mind that they can be lethal if not properly fixed, whether they come loose and lodge under the brake pedal for example, strike you or you strike them in a crash. Fix them to withstand a 40g deceleration and, if hard or sharp, mount them well away from you.

Light can blind the driver in some situations and can lead to accidents (sun low in the sky or the headlights of following cars). A stripe in the upper part of the windscreen or tape in the rear window can prevent this.

(e) Emergency switches

Ensure that the electrical cut-off and onboard extinguisher switches are within your easy reach (and your co-driver's for rallies) when you are strapped into your seat

Refer to FIA Regulations: see Appendix 4 Note 6.

4 Safety Harnesses

- Use a 6 point harness whenever possible.
- Keep each strap as short as possible.
- Ensure that the belt anchorage points are installed on the car by a professional according to the latest guidelines from the manufacturer and the FIA.
- The lap belt should cross the pelvis not the abdomen: the outer edges should make contact with the bony prominences of the pelvis. The belts should also cross the bony prominence of the hips.
- When the shoulder belts are tightened they should not pull the lap belt off the pelvis onto the abdomen. This can usually be avoided by tightening the lap belt first and by making sure that the crotch straps are of the proper length.
- It is important to keep the shoulder belt adjusters as low as possible, away from the neck – severe injury is possible if they are badly located.
- The harness belts are designed to stretch to absorb the shock. Wear them as tight as possible (whilst still breathing) to avoid excessive forward movement in an impact. Leaving the crotch straps loose for example just increases the jolt when the slack has been taken up instead of absorbing it. It's a good idea to give them a final tightening on the grid if you can, after they have settled in the formation lap.
- Belts only fail when previously damaged – check regularly for cuts or abrasions and replace if in any doubt. Problems are caused by bent hardware, incorrect anchoring or poor routing through seats or across seat edges.
- Only use harnesses that are FIA homologated and **never** buy second-hand. Don't let seat belts become scruffy, not least because you could be thrown out of an event by the scrutineers.
- Know how to release your belts, remembering that you might well be upside down.
- Always renew the harness after an impact.

Refer to FIA Regulations: see Appendix 4 Note 7.

Window Nets

Quickly detachable nets for the side windows of closed cars are obligatory in many disciplines and their value in saving hands and arms in a roll cannot be over-emphasised. An indication on the outside of the car of where to detach them is advisable.

Refer to FIA Regulations: see Appendix 4 Note 8.

5 On an Event

Know thoroughly the general and particular rules for your type of event. Obvious? Of course, but not everyone does and anyone who, for example, doesn't understand flag signals or rally stage signs is a danger to him/herself and to other drivers, so learn the meanings of all signals you will encounter and the rules of the road for race or rally driving.

Equally important is to study carefully the supplementary regulations and any official bulletins of each event you drive in, as they may have special instructions about pre-grid and starting procedures, safety car operation, how to go to parc fermé at the finish, etc., all of which contribute to both your safety and your chances of success – “to finish first, first you have to finish”.

If in doubt about any regulations **ask**.

Refer to FIA Regulations: see Appendix 4 Note 9.

It also makes sense to know the law of the land such as the speed limits for towing trailers and so on. A high visibility offence can bring the sport into disrepute and, on a personal level, make it more difficult for you to find sponsors if you get bad publicity.

On the event itself, drive as competitively as possible bearing in mind general safety and, if on a circuit, "do-to-others-as-you-would-be-done-by". If you wish to travel slowly in practice to get a clear lap, or have to at any time, this must be done without hindering or being a danger to other drivers in any way; make sure the mirrors are adjusted so you can see them. Motor sport accidents happen for many reasons but driver errors are the **most usual** cause, so your life could literally be in your own hands.

Above all, always obey officials. Their instructions will often be given for safety reasons and although it's not a safety issue, be polite to officials. It is not easy to get marshals for some events and the problem won't be helped if they are shouted at by drivers.

N.B. Why not consider marshalling yourself? Not only will you be putting something back into the sport but seeing something of how events are run may actually help you perform better.

If you have to stop or leave the car out on the circuit

- As far as possible, park near a vehicle access point, marked with a large – 1m square – fluorescent orange panel painted on the barrier (some circuits may still have the old green and white diagonal striped panels), or if on fire, near a marshal post or extinguisher point marked with a smaller fluorescent orange panel or local variations above the barrier. During practice take note of where such points are.
- Never leave your car where a car out of control is likely to end up or in a run-off area (if you have a choice).
- Leave the car in neutral (if there is no risk of it rolling) with the steering wheel, and ignition key, if relevant, in place.

- Unless local custom dictates otherwise owing to the type of circuit or racing, do not stay in or around the car – get behind a barrier as soon as you safely can.
- Do not remove your helmet until you are behind a barrier.
- Do not call your team unless you are in a safe place.
- Do not cross the track unless instructed to by a marshal.
- If you know your car is losing oil, get off the racing line, then the track, as soon as safely possible – don't try to get back to the pits.

If you have to stop on a rally

- Follow the FIA Rally General Prescriptions Article 19.19.

NB: It is advisable to stay with your car until the recovery service arrives and to then accompany the car to the paddock to assist and avoid further damage.

Refer to FIA Regulations: see Appendix 4 Note 10.

6 Accidents

You've prepared properly, you've got the right equipment, you've studied the regulations – but you can still have an accident.

If you see an accident coming.....

- The less distance there is in which you can accelerate before making contact with parts of the car, the less hard the blow will be when you do.
- In a lateral or oblique angle crash, if possible move your head and legs to the impact side (into the headrest or side padding), not away from it.
- In a front or rear end crash, position your head on the rear headrest and, if you are wearing one, let your head restraint device do its work.
- Leave your hands on the steering wheel but with the thumbs out of it.
- Do not try to resist the impact with muscle tension.

On a circuit after an accident the marshals will immediately signal following drivers to slow down, in order to avoid you and allow them to come to your aid in safety. They will report the gravity of the situation to race control. Normally, within seconds, there will be marshals arriving to help.

If the car is in a dangerous position, a practice session will be stopped and a race stopped, suspended or neutralised with a safety car (which can take some time), to reduce the hazard.

Expert medical and rescue crews will be sent if you are injured or trapped; the marshals themselves will start fighting a fire. If the marshals take your arm or give you instructions this is because they know you may be concussed or in shock and in potential danger – allow them to get you to safety as directly as possible and don't cross the track without their guidance.

On a rally special stage follow the FIA Rally General Prescriptions Appendix III, Article 3.4.

If you do have an accident, is there anything you can do to help the rescue team help you? Well, if you are knocked out, then not a lot but if you are conscious:

- Try to stay calm.
- Use the cut-off switch to isolate the electricity supply and stop fuel being pumped into a hot engine.
- If there is a fire operate the switch to fire your onboard extinguisher. If exiting from a closed car is difficult you may be able to push out the windscreen or rear window with your feet.
- If the car is on the track or road, don't undo your belts or remove your helmet until you are sure it's safe to leave or a marshal is there to guide you.
- If the car is on its roof, support yourself before undoing or releasing the seat belts, in order to avoid landing on your head and injuring your neck.
- Remember to replace the steering wheel if removed.

- It may be worth counting to five before leaping out of the car rather than jumping in front of oncoming traffic while you are still angry or disorientated.
- If you are injured and experience difficulty moving, it is best to stay in the car until the rescue crew arrives. Make them understand the problem and wait until a doctor arrives in order to supervise your transport without aggravating an injury.

If you are unlucky enough to have an accident, do what the doctor tells you.

Even after only a minor accident a doctor may ask you to go back for a check up. Do so. It is for **your** benefit.

Refer to FIA Regulations: see Appendix 4 Note 11

Specific points concerning accidents on rallies

- Read the event regulations, understand the organisers' safety precautions and particularly the FIA Rally General Prescriptions. Be aware that on international rallies when a red "SOS" is displayed on a car it is **MANDATORY** to stop and assist the crew requiring help - you are responsible for helping the injured and make sure that safety services are mobilised as quickly as possible.
- Carry a mobile telephone, with the rally control help number.
- Check your first aid kit and make sure that its contents are suitable for rally needs.
- Know where the radio points are on a stage. If you retire or crash, you should stay near the car; however if leaving it is unavoidable, be sure that you know exactly where you are, and what you are letting yourself in for if you choose to do this – it is easier to find two people near a car than to look for one wandering through a forest.

Refer to FIA Regulations: see Appendix 4 Note 12

7 First aid

It is worth having some basic first aid training. On some rallies you may be the first on the scene at an accident; if you were the first person to arrive and you didn't know what to do, think how you'd feel. At other times it may help you understand what rescue personnel are doing for you.

A variety of national and international organisations offer first aid and resuscitation training at minimal expense. It could save a life.

8 Further Information

Read the bulletins from your licensing body (ASN) and the ASN and FIA website to keep up with safety developments and find out about videos and publications on competitor safety, marshalling, rescue and First Aid.

APPENDIX 1

Doping and Motor Sport

This is an issue that concerns all licensed drivers from the top level to the amateur. Put simply, **doping in motor sport doesn't make sense!** In most cases it is of no use and you put yourself and others at risk.

The common risks associated with drugs in sport are well known. The media frequently highlight the cases of athletes who suffer physically or, in the worst case, die during sports events.

Drugs that are usually prescribed to treat patients are abused and become doping substances when they are administered in excessive doses or as a long-term or periodic treatment, or when several drugs are combined in an incoherent manner. In these instances, athletes risk going beyond their physiological limits, suffering from sudden or delayed pathological effects, and becoming addicted and dependent.

In motor sport, any product that modifies the behaviour may cause serious anomalies in a competitor's way of driving. Considering the inherent dangers of our sport, it is stupid - and can be a crime - to take risks by taking such substances.

- Whilst “hormones” (cortisone and cortisone derivatives, male hormones, growth hormones, etc.) may be taken to boost muscle performance beyond the usual limits in aerobic and anaerobic sports such as swimming and weight-lifting, in motor sport there is nothing to be gained from these products.
- EPO, once notorious on the *Tour de France*, increases the level of red corpuscles in the blood, allowing especially high-level competitors in aerobic sports (cycling, long-distance running, etc.) to push their limit even further. Motor sport is not an aerobic sport and the “physiological engine” works at a very different power level, so using such products in motor sport is pointless. Vascular problems caused by taking EPO are substantially aggravated when someone is seated for an extended period of time.
- “Beta blockers” (used for treating heart problems and high blood pressure) slow down the heart rate. Since it is well known that in our sport the heart rate goes up considerably, tests were conducted to compare racing times with and without using beta blockers; performances remained unchanged. In case of an accident resulting in bodily injuries, beta blockers can cause a serious and sometimes deadly trauma.
- Certain asthma medicine (such as Ventolin) supposedly serves to increase the breathing capacity, especially in long-distance sports. In motor sport, do not expect it to make any difference.
- “Anti-sleep” medicine (amphetamines and similar products) undoubtedly used to be used in marathon rallies that ran day and night. That type of competition no longer exists. Using these products has become unnecessary; if you are tired, take allowed “invigorating” products – they are legion!
- Alcohol and soft or hard drugs are used mostly “for the fun of it,” during times of depression, or out of peer pressure. They are obviously forbidden, especially in our sport where they are considered as doping substances because their effect of removing inhibitions causes people to take unusual and sometimes foolish risks. Taking such substances puts in jeopardy the lives of those who take them, other drivers, and anyone who is around them for example officials or spectators.

N.B. The dangers of cannabis are often underestimated; it seriously modifies a driver's behaviour as he is no longer aware of his limits and can turn overly aggressive or exaggeratedly confident.

What should you do if you need medical care?

Never take any medication that has not been prescribed by a doctor. Do not listen to the advice of well-meaning friends and sport "gurus." If you have sport-related health problems, go to see an informed and competent medical doctor; you will find out that a lot of permitted medicine can be useful and beneficial.

Tell your doctor as well as the pharmacist that you are an athlete; they both have a comprehensive list of the substances that you are not allowed to take because they would make you fail doping tests, a fact that would result in heavy disciplinary sanctions by the anti-doping authorities examining your case. If you buy medicine over the counter, make sure that you carefully read the enclosed leaflet, which will inform you if the medicine contains a banned substance.

What do you do if your state of health requires you to take a banned substance?

If there is no alternative treatment, in some exceptional cases it may be justified to take certain banned substances. In that case, you will have to fill in with your doctor a Therapeutic Use Exemption (TUE) application form and send it to the national sporting body which issued your license (ASN), which will forward it to the FIA if necessary. Please note that the TUE form and regulations can be downloaded from the FIA website. If your request is approved, you should keep it to show to officials if you have a doping test.

TUE's cannot be granted retroactively, save in very exceptional circumstances such as emergency treatment, so make sure you apply in good time (at least 1 month before a national event, 2 months before an international).

If you fail to abide by these rules, even if you acted with the best intentions, you will be summoned before the disciplinary authorities of your ASN if you test positive.

Doping Tests

A doping test may be undertaken at any event or during any practice session (or even out of competition), at the initiative of the ASN or the FIA.

If you are selected for a control, you will be notified by an official who will accompany you until your arrival at the doping control station.

Anyone who refuses to undergo a doping test will face disciplinary action. Tests are run by qualified officials who draft a report, a copy of which will be given to you.

The Disciplinary Procedure

Test samples are sent to an approved national test house. The results are communicated to the authority which organised the control (the ASN or the FIA).

If banned substances are found in a sample, the disciplinary procedure set out in the FIA regulations will apply and a hearing will be organised before the ASN or the FIA as required. The competitor may appeal against any sanction and, in addition, may ask for a counter-analysis as soon as the procedure starts.

Now that you know about this, please be reasonable and act responsibly in your own interest and in the interests of your fellow drivers and motor sport as a whole.

Athletes who dope themselves are cheating no matter what sport they practice; in motor sport, moreover, doping not only makes no sense but puts the drug taker and others at risk.

In motor sport, pills definitely do not make champions.

It is appropriate regularly evaluated training, a healthy life style, balanced nutrition, regular medical check-ups and plenty of rest if you are injured, that will help you find the edge to be a winner.

See the FIA Anti-Doping Regulations on www.fia.com

APPENDIX 2

Hydration and Diet

Hydration and diet during an event – a communiqué issued by the FIA Medical Commission

N.B: these recommendations, originally intended for F1 drivers taking part in Grands Prix (2 hours of intense physical and mental stress in high temperatures), should be adapted to the type of activity concerned.

The loss of liquid through sweating can reach between 0,5 and 1 litre per hour of driving, depending on the subject and the outside temperature. This loss may lead to a notable reduction in the performances of drivers and greatly jeopardize their safety.

What to Drink

For races of two hours or less, the loss of mineral salts is negligible; the best drink, as far as studies have shown, is non-aerated water, no serious study has proved the benefit of other liquids. With water, fruit juice may also possibly be drunk, for example fruit juice or tomato juice; it is necessary to drink:

- before the race
- during the race
- after the race

Up to 5 litres of liquid may be consumed, in small doses, the day of a race, depending on the climatic conditions, for example:

- 1 litre in the morning, before the race
- 2 litres during the race
- 2 litres after the race

Don't wait until the symptom of thirst appears, it may be too late to avoid dehydration.

General Advice for the Day of the Race

To be ruled out:

- Alcohol
- Food which is difficult to digest: melon, cucumber, cabbage, onion, spices, rich or fried foods

To be Avoided:

- Aerated drinks
- Coffee, tea, depending on the sensitiveness of the individual
- Large quantities of fruits
- Large amounts of confectionery

Bear in Mind that:

- Frozen foods multiply the risk of bacterial infection unless they have been kept under perfect conditions, which you cannot always be sure of at a circuit or on a rally
- It's important to like the taste – otherwise you may not eat as much as you need for your performance and safety

Recommended:

- Non-aerated water, fruit juice, energy drinks
- Sugars absorbed slowly (pasta, rice, bread)
- Food absorbed quickly and with a high calorific value (dried fruit)

Suggested Menu for the Day of a Race

Breakfast – large. Drink as much as desired, in small quantities.

Before the race – a small meal if necessary, e.g. bread, cheese, ham, mixed salad or even pasta, 1 piece of fruit, include a few biscuits.

Drinks - about 1 litre, in split quantities (2/3 water, max. 1/3 fruit juice), spread over the two hours before the race.

Do not forget to urinate before the race

During the race – it is desirable, depending on the duration of the race, to fit a liquid dispensing device, the quantity of liquid consumed during the race being 1 litre of water, possibly mixed with low-sugar fruit juice (less than 25 gr. per litre), or an energy drink.

After the race – drink plenty of liquid. The addition of a little salt to food will compensate for any loss. A quarter litre of fruit juice replaces the quantity of mineral salts lost in 2 to 3 litres of perspiration, that is to say, the maximum lost during a race. Tomato juice has the same properties.

APPENDIX 3

Clothing

Flame and Heat Resistant Clothing

The FIA Standard 8856-2000 contains the guidelines reprinted below. The FIA's insistence on wearing complete (full length) underwear and balaclava is a result of long experience, and testing, of the effects of fuel fires. Remember, though, that the protection afforded by a race suit is still very limited. It is possible to suffer burns under an apparently undamaged suit – in this case it is advisable to cool the area with water, but do not remove any clothing adhering to your skin.

Extract from FIA Standard 8856-2000

Protective clothing is not able to protect against all the possible hazards which might be encountered in automobile racing. The clothing specified in this standard has to provide protection against heat and flame whilst having the minimum effect on driver comfort. Users shall ensure that garments are not tight fitting, as this reduces the level of protection, and that they are comfortable to wear under the actual conditions of use.

All the clothing recommended in Appendix L (Chapter III, article 2) to the FIA International Sporting Code should be used in order to obtain maximum protection. Wearers are warned of the particular vulnerability of neck, wrists and ankles. The neck, wrists and ankles shall always be covered by at least two articles of protective clothing.

Embroidery sewn directly onto the overalls shall be stitched onto the outermost layer only, for better heat insulation.

Backing material of badges shall be flameproof and in conformity with the standard ISO 15025 in order to avoid combustion of the badge which would affect the efficiency of the overalls.

Thread used for affixing the badge to the overalls shall be flameproof and in conformity with the standard ISO 15025.

It is also recommended that embroidery thread on badges or on the outermost layer of the garment be flameproof and in conformity with the standard ISO 15025.

When affixing badges and signs to the overalls, heat-bonding shall not be used and the garment shall not be cut.

NB: Any embroidery not complying with these conditions will result in the cancellation of the homologation of the overall concerned, and its user may be excluded by the scrutineer of the event during which the infringement was noted.

APPENDIX 4

Index of FIA Regulations and Guides

Published on www.fia.com and in the FIA Yearbook of Automobile Sport

1. **Appendix L Chap. II Art. 4 – Dope testing**
2. **Appendix L Chap. III Art. 1**
3. **Appendix L Chap. III Art. 1; FIA Institute Guide for the Use of HANS® in International Motor sport**
4. **Appendix J Articles 253.16- General; 258.14.4 – GT; 258a.14.4 – Sports; 259.13.5 – Prod.Sports; 259.14.4 – Prod.Sports; 261.6.2 - Super Prod; 263.6.2 – Super 2000; 275.14.6 – F3, F/Libre-Nat.; 279.2.3 – Autocross, Rallycross; 290.2.18.4 – Trucks**
5. **Appendix J Articles 253.8.2.2.6 - General; 254.6.6.3 – Gr.N; 255.5.7.4 – Gr.A; 258.13 - GT; 258a.13 – Sports; 275.13 – F3; 279.5.5 – Autocross; 290.3.22 – Trucks.**
6. **Appendix J Articles 254.2 – Gr.N; 255.5.7.4 – Gr.A; 258.3.6.8-9 – GT; 258a.3.6.8-9 – Sport ; 259.13.6 – Prod.Sports; 261.13.2 – Super Prod ; 279.2.4 – Autocross, Rallycross**
7. **Appendix J Articles 253.6 – General; 258.14.2 – GT; 258a.14.2 – Sports; 259.14.2 – Prod.Sports, F/Libre-Nat.; 261.6.3 – Super-Prod; 263.6.3 – Super 2000; 275.14.4 – F3; 290.2.6 – Trucks**
8. **Appendix J Articles 253.11, 261.6.6, 263.6.6, 279.5.5, or 283.11**
9. **For Signals, the Start, Safety car procedure, Appendix H Articles 4 and 5 and International Sporting Code Chapter VI. For Driving conduct, Appendix L Chapter IV Article 3 and General Prescriptions Article 13 A, B, J, N, Q). For all vehicle safety regulations, Appendix J**
10. **Appendix L Chap. IV Art. 3; General Prescriptions Art. 13 C, D, F, K; Rally General Prescriptions Article 19.19.10**
11. **Appendix H Articles 3.5, 6, 7, 8; Appendix L Chap. II Arts 2, 3, Chap. IV Article 3**
12. **Rally General Prescriptions Article 19.19, Appendix I, Appendix III Articles 3.2.4, 3.3, 3.4 - Accident and Safety Procedure**