

SPEEDWAY AUSTRALIA MEDICAL STANDARDS

These notes are designed to assist medical examiners in making a decision about a driver's fitness to compete in speedway events.

The medical examiner must bear in mind the following points:

- Motor racing places a much greater physical and mental strain upon its participants than does ordinary driving on the public roads. Dramatic increases in cardiac rate and blood pressure are an inevitable feature of motorsport participation.
- Even minor defects of vision (particularly reduced visual field) may cause a significant deficit during competition.
- Restrictions on mobility and co-ordination not only diminish the ability of a driver to respond to an emergency but may dangerously impair their extrication from a crashed vehicle.
- Racing on dirt or mud tracks places severe strain on all joints, particularly those in the upper spine and neck.

All drivers must undergo a medical assessment every two years until aged 40, and then annually. Please note that any medication being taken by applicants may be on our list of banned substances or may require our medical assessor to request further information. This is done so with our Appendix B form and could be requested annually.

The aim of this examination is to identify drivers who are suffering from any medical condition that might cause them to drive erratically and/or **pose a hazard to other drivers, race officials or spectators**. Speedway Australia will do everything it can to assist individual drivers to overcome personal medical or physical handicaps – provided that their medical condition is unlikely to constitute a realistic threat to others.

The medical assessment form is designed to ensure that the major relevant areas of physical and mental fitness are examined thoroughly. These notes are offered to assist in this process.

The examining doctor should indicate whether they consider the applicant is fit to compete in the designated categories of competition. However, **the doctor is advised to refer the matter to the Speedway Australia for a decision if in any doubt about the applicant's fitness to compete. Speedway Australia will then refer the matter our medical assessor who will assess and give a recommendation if a Speedway Australia licence should be issued, or if further information is required to be provided.**

The notes below in *italics* indicate situations in which a driver would usually be considered unfit but where Speedway Australia **may** grant a licence if medical evidence supports the applicant's claim.

MEDICATION

The main concern is with any medication that might impair concentration, delay reaction time or result in impairment of thinking – or that might infringe the Speedway Australia policy on the use of drugs in Speedway.

A driver is probably unfit to compete if taking any of the following groups of drugs:

- **Analgesics**, particularly **Codeine** and other **opioids**, see the **Speedway Australia policy on drugs**.
- **Antiarrhythmics**, see **CVS** section below.
- **Anticonvulsants**, see **Epilepsy** below.
- **Antidepressants**, particularly the older antidepressants such as **Tricyclics** and **MAOIs**.
- **Antiemetics**, (**Metoclopramide** may cause drowsiness).

- **Antihistamines**, if causing drowsiness, are incompatible with safe competition.
- **Antihypertensives**, see **Hypertension** below.
- **Antiparkinsonian** drugs, see **CNS** section below.
- **Antipsychotics**, see **Psychiatric Disorders** below.
- **Bronchodilators**, see **Respiratory System** below.
- **Eye Medication**, see **Glaucoma** below. Note the possibility of disturbance of visual acuity.
- **Methadone**, see **Illicit Drugs** below.
- **Sedatives and Tranquillisers**, regular use is incompatible with racing and they should not be taken for at least 24 hours before an event. Beware of the effects of sudden withdrawal.
- **Stimulants**, including **amphetamines** or medication used for **AD-HD** (see Speedway Australia Drug Policy).

ILLICIT DRUGS (see the Speedway Australia Policy on Drugs in Speedway for specific information).

In general terms, the following drugs are banned from use in Speedway. Drivers may be tested for evidence of their use and severe action will be taken if drug use is detected:

- Morphine, Heroin, Codeine and other opioids
- Amphetamines and all related substances
- THC and other Marijuana components
- Alcohol
- Cocaine

Please note, many drugs, particularly Alcohol and Marijuana, cause persistent cognitive deficits if used on a regular, long term basis. Sudden withdrawal of many drugs may also result in adverse effects. Speedway Australia will deal severely with any competitor who endangers others by their use or abuse of both prescribed and illicit drugs.

Speedway Australia may consider participation by a driver using Methadone as part of a supervised programme or taking prescribed analgesics for a recognised medical disorder.

BODY WEIGHT

The medical examiner should be aware of the extra stresses posed on an obese driver within the cramped quarters of the average race car and the difficulty of extricating an overweight driver who is unconscious.

Body-Mass Index (B-MI) is given by the formula, Weight in Kg/Square of Height in cm. The “normal” range is between 19 and 25. Scores above 30 are classified as “obese” and below 15 as “underweight”.

*An applicant may be accepted to drive with a BMI outside the ‘normal’ range up to a score of 40, but any applicant with a score 40 or above may have their application refused as such a finding would cast doubt upon overall fitness and increase the risk of associated diseases See also the section on **Myocardial Ischaemia** below.*

CARDIOVASCULAR SYSTEM

The stress of motor racing will cause an unavoidable increase in pulse rate with a corresponding increase in heart activity and blood pressure. (Heart rates in excess of 150 bpm are common during racing).

The cardiovascular examination should include the palpation of all peripheral pulses, palpation and auscultation of the heart and examination for evidence of heart failure and peripheral circulation defects. ECG investigation is necessary only if clinically indicated.

Hypertension:

- * A driver is unfit for racing if;
 - Blood pressure cannot be reduced below 200/110 mmHg.
 - End organ damage has occurred (eg retina, heart or cerebrovascular system).
 - Anti-hypertensive medication causes side-effects or results in an unstable BP, postural hypotension, altered alertness or embarrassment of the myocardial circulation.

*Well-controlled hypertension without any untoward ill-effects would usually be **acceptable**. (Warn patient of the risks of changing dosage or stopping medication.)*

Cardiac Arrhythmias:

- * A driver is unfit to compete if:
 - Arrhythmias occur without warning, despite medication or other treatment.
 - Symptoms such as syncope are associated with the arrhythmia

Speedway Australia may allow drivers to compete if their arrhythmia is reliably controlled with medication (without significant side-effects), if surgery has been effective or if a pacemaker has been proven to give reliable control.

Ischaemic Heart Disease (IHD)

The “risk factors” for heart disease (such as obesity, smoking, hyperlipidaemia, age and hypertension) are well-known. Applicants with such cardiac risk factors are likely to need further investigations (such as cardiac lipid levels and an Exercise ECG) to satisfy a medical examiner there was no obvious risk – but need not necessarily be excluded from competition unless associated with symptoms suggestive of active cardiovascular disease. A full history is essential to exclude symptoms such as chest pain, dyspnoea, claudication, TIA etc.

The medical examiner must exclude cardiac symptoms by taking an appropriate history.

- * A driver is unfit for racing if:
 - There is a current history of angina pectoris (even if “stable” and responsive to symptomatic medication)
 - There is a past history of myocardial infarction, coronary artery bypass graft (CABG) or any form of coronary angioplasty.
 - There is a history of cardiomyopathy, valvular deformity, heart or heart/lung transplantation or congenital heart defect.

Speedway Australia may allow drivers to compete with a past history of heart disease if there is expert opinion to indicate that their condition is now stable.

RESPIRATORY SYSTEM

Many races take place in a dusty, pollen-laden environment that may induce acute bronchospasm in the susceptible.

The respiratory examination should include auscultation of all lung areas. A chest x-ray is not usually necessary.

In general, respiratory disorders do not render a driver unfit to compete unless the degree of airway disease, or the effect of medication, results in restricted physical responses or disturbance of alertness. **Sleep apnoea** may result in daytime drowsiness that might restrict the ability to compete.

Bronchodilator drugs are permitted only if the patient has an established need for them. This must be noted on the medical form.

ABDOMEN AND GASTRO-INTESTINAL TRACT (GIT)

GIT problems may impair a driver's ability to race in individual events but it is unlikely that these would constitute a reason to withhold a competition licence. The Medical Examiner should consider the location of harness restraints and related safety equipment in applicants with conditions such as hernia.

PSYCHIATRIC DISORDERS

Each case must be decided upon its merits. Factors to consider include the risk of impaired insight, distorted judgment or inappropriate mood interfering with rational decision-making under stress. Individuals suffering from an active psychotic disorder (eg Schizophrenia) or marked mood swing (eg Bipolar Disorder, Depression or Hypomania/Mania) are unfit to compete. The effects of antipsychotic medication, sedatives or antidepressants must also be considered since many cause drowsiness and reduce reaction times.

Speedway Australia may allow a driver to compete if the psychiatric disorder is stable and the effects of medication do not interfere with safe participation or infringe the Speedway Australia policy on drugs.

Attention Deficit-Hyperactivity Disorder (AD-HD)

AD-HD is a condition associated with reduced concentration and increased distractibility. The usual medications used in its treatment may be banned under the Speedway Australia policy on drugs which would not allow the applicant to compete. As a result, drivers with AD-HD may require further medical assessment with their application.

CENTRAL NERVOUS SYSTEM

Anything that impairs a driver's concentration, alertness or perception is liable to have a severe effect upon their safety on the race track.

Testing of the CNS must include: Power, tone and sensation of touch in all regions; Biceps, triceps, supinator, knee, ankle and plantar reflexes; Cranial Nerves II-XII and Co-ordination (Nose-Finger Test, Heel on shin Test).

Head Injury

It is impossible to make general statements about head injury since there is considerable variation in the severity and residual deficit resulting from such incidents.

- * It is unlikely that a driver would be considered as fit to compete following a head injury that resulted in loss of consciousness of more than 24 hours and/or that had resulted in any residual consequences such as persisting seizures, headaches, visual disturbance, motor deficit or disturbance of cognitive processes.

Speedway Australia may consider a driver as fit to compete once a full recovery from the incident has occurred and subject to expert opinion, where necessary.

Epilepsy

- * A driver with a history of epilepsy should be considered as unfit to compete.

Speedway Australia may allow a driver to compete if the epilepsy was confined to febrile convulsion, was clearly related to specific or avoidable events (such as a head injury or drug effect) or the applicant has been free of seizures for more than 5 years without medication.

Other neurological disorders

- * A driver is unfit to compete in motor racing if suffering from **transient ischaemic episodes (TIAs)**, **stroke with residual deficits**, **multiple sclerosis** with neurological deficiencies, **syncope** from whatever cause or disorders such as **peripheral neuropathy**, **narcolepsy**, **cataplexy**, **dementia** or **parkinsonism**. Any significant residual deficits from CNS or spinal trauma, disease or degeneration are likely to exclude a driver from competition.

Speedway Australia may consider individual cases when it can be shown that the condition is stable, predictable and unlikely to interfere with the sensory, motor or coordination skills necessary for safe operation of a race vehicle.

Musculo-Skeletal and Joint D

Motor racing requires considerable agility to enter and leave the vehicle (particularly in emergencies) and the body must withstand severe forces and impacts during competition. Conditions such as **Ankylosing spondylitis**, all forms of **joint disease**, peripheral **amputations** and a wide range of **bone disorders** may all restrict movement or increase the risk of serious bone or joint injury.

- * A driver is unfit to compete if there is any significant loss of function or restriction of movement in all or any limbs.

Speedway Australia may clear a driver to compete if it can be shown that there is good compensation for any deformity or functional deficit or that suitable vehicle modification has overcome any deficit.

URINE TESTING

A fresh specimen of urine should be tested for **protein, blood and sugar**. Any abnormality must be further investigated before a driver could be considered fit for competition.

ENDOCRINE DISORDERS

Although **Thyroid disorders** may affect concentration and attention, these are usually easily controlled on replacement therapies and are unlikely to bar a symptom-free driver from competition.

Diabetes mellitus poses a greater concern since it carries a real risk of blood sugar fluctuation – particularly on race days when meals can be missed and energy expenditure is high.

* All drivers with diabetes mellitus (Type 1 or Type 2) should be considered as unfit for motor racing.

Speedway Australia may allow a diabetic driver to compete provided that there is evidence of a stable pattern of control with a good understanding of blood sugar management. Drivers may be required to report to the track medical service prior to each day of competition.

AUDITORY FUNCTION

Loss of hearing is rarely a bar to competition provided that there is no significant restriction in the ability to communicate with other competitors or race officials.

VESTIBULAR FUNCTION

An adequate sense of spatial orientation is absolutely essential for safe driving.

All applicants for a competition licence should be able to pass Romberg's test (standing with feet together, eyes closed and arms extended forwards at right angles for at least 30 seconds).

* Conditions such as Meniere's Disease and vertigo will exclude any applicant from competition.

SURGICAL OPERATIONS

Surgical wounds remain at increased risk of dehiscence or herniation for a considerable time following surgery. Given the extreme forces that drivers experience during races, the medical examiner should consider carefully the delay after surgery before a driver is considered fit to compete.

VISUAL SYSTEM

Competitors require bilateral vision with full visual fields and normal colour perception.

- **Colour Perception:** A driver should be able to correctly identify all plates in the Ishihara test
- **Visual Fields:** A driver should have at least 180° of binocular vision in the horizontal and plane. A deficit of peripheral vision is likely to exclude a driver from competition. Vertical visual field is less critical but any deficit should be noted.
- **Eye movements:** There should be a full range of all eye movements without nystagmus
- **Squint:** There should be no squint or diplopia on eye movements or on the cover test

- **Cover test:** Ask candidate to keep both eyes open. Cover one eye and ask candidate to stare at a point (such as the examiner's finger) directly ahead. There should be no deviation of the shaded eye when its cover is removed after 20 seconds. Repeat on opposite eye.)
- **Glaucoma and cataract:** This is acceptable provided the visual acuity exceeds the standard noted below and any medication does not produce impairment of vision or focussing.
- **Visual Acuity** (with correction if necessary): A minimum standard of visual acuity is 6/9 in the better eye and 6/18 in the worse eye (measured with the standard Snellen chart). Spectacles and contact lenses may be worn but the medical examiner should note the visual acuity both with and without correction. Refractive surgery is no restriction provided the driver meets these criteria.

A medical examiner should refer an applicant to the Speedway Australia Medical Assessor if:

- Vision is effectively restricted to one eye (worse eye scoring less than 6/18)
- Visual field is restricted in either a vertical or horizontal plane
- There is marked nystagmus in any direction
- There is any evidence of diplopia
- There is colour blindness revealed by the Ishihara test.

Speedway Australia may issue a licence to a driver with one eye (or effective monocular vision) provided specialist evidence confirmed that there was good compensation to the loss of vision with adequate depth perception.

Speedway Australia may approve a licence for a driver who is colour blind provided the applicant can recognise the flags and any other colour signals in use at a race track.

MALIGNANT DISEASE

The medical examiner should consider very carefully the risks of motor racing in drivers with known malignant disease. A decision will depend on many factors including the nature of the primary lesion, the possibility of metastatic disease and the effects of treatment.

PREGNANCY

Speedway Australia advise against drivers competing while they are pregnant due to the increased risk to both mother and child.

IF IN ANY DOUBT ABOUT A DRIVER'S FITNESS TO COMPETE, PLEASE DISCUSS THE DECISION WITH SPEEDWAY AUSTRALIA. SPEEDWAY AUSTRALIA MAY REFER TO OUR MEDICAL ASSESSOR FOR FURTHER CLARIFICATION IF REQUIRED