

MEDICAL AND OTHER RISK FACTORS

These events are physically taxing and participation in them presents numerous medical risks - many of which can be extremely serious or even fatal.

Participation in these events is at the competitor's own risk. Although run management may have medical personnel at various points along the course, the inaccessibility of much of the trail may make it difficult or impossible for medical assistance to reach the competitor in a timely fashion.

Medical examinations are required of some ultra entrants at the pre-race registration. This examination will primarily involve the evaluation of vital signs (weight, blood pressure and pulse). It will not be a complete physical and participants are encouraged to see their own physician for such an examination (including a stress ECG) shortly before the run. Runners must show evidence of training for ultra marathon distances and should be knowledgeable about the stress effects attendant to participating in such events.

Vital signs will be checked at various points along the trail, subject to the discretion of medical advisor to the run. Weight loss will be one of the most important of the physiological criteria the medical personnel will be evaluating. A loss of 3% of one's body weight indicates the serious dehydration may be imminent. The runner will be weighed and allowed to proceed, with fluids encouraged. A loss of 3 - 5 % of body weight will require a blood pressure and pulse check and closely scrutinize the runner, probably allowing him to proceed at a slower rate, drinking more fluids. A loss of 5 - 7% of body weight will require a blood pressure and pulse check. The runner will be required to stop and rehydrate back to the 3 - 5% weight loss range. The runner may then be allowed to continue at a slower rate and encouraged to increase fluids. A 7% loss of weight may be grounds for withdrawal from the run due to the increasing risk to impairment of body functions. It is the runner's responsibility to make any decisions about their weight loss.

It is important for each entrant to recognize the potential physical and mental stresses which may evolve from participation in these events. Runners may be subject to extremes of heat and cold, hypothermia, dehydration, hypoglycaemia, disorientation and total mental and physical exhaustion. Run management and the medical staff strive to work with runners. They will do all they reasonably can to insure 'safe passage', but ultimately runners must understand their own limitation. Participants must continuously monitor themselves, and must know when to draw the line. This is one event where it is better to follow the dictates of your body - not your ambitions! Adequate physical and mental conditioning prior to the run is mandatory. If you have not been able to prepare properly, **do not attempt to compete**. Competitors should also appreciate the risks associated with participation in these events. Actions may have to be taken on your behalf under extreme time constraints and adverse circumstances. We will make reasonable efforts to give responsible assistance where possible. Ultimately and primarily you are in charge, and you are likely to be solely responsible for creating your own crisis that we must respond to. Be careful, be responsible, and do not come even close to exceeding your own abilities and limitations.

In the event that a competitor requires emergency evacuation by ground ambulance or helicopter-ambulance, the runner assumes all financial obligations connected with the service. Race management is not responsible for any costs incurred.

Some of the main risks of the run, but certainly not all of them, are listed below. These should be understood and remembered by all competitors, both before and during the event. Please note that death can result from several of the risk conditions discussed below, or from other aspects of participation in the run.

1. RENAL SHUTDOWN

Causes of renal shutdown (kidney failure) have been reported in other ultra marathons. In questioning the individuals who have experienced this problem, most of the cases have occurred in participants who have relied on their own high carbohydrate-type drinks for their electrolyte replacement drink. Without going into the complex physiology of what occurs, apparently the high sugar and/or carbohydrate content of these drinks, when consumed in large quantities, has a blocking effect on the normal filtering functions of the kidneys, thus resulting in renal shutdown (kidney failure). Several of the participants in such events in the USA in recent years had to undergo kidney dialysis following the race, due to using these products, and failing to consume adequate additional fluid intake to help “flush the kidneys”. Using these products only and no solid foods is not recommended in the 100 miles event of the Glasshouse Trail Run. If not remedied, renal shutdown can cause permanent impairment of kidney function and even death.

2. HEAT STROKE

Heat illness and heat stroke are serious risks. These conditions can cause death, kidney failure and brain damage. It is important that runners be aware of the symptoms of impending heat illness. These include: nausea, vomiting, headache, dizziness, faintness, irritability, lassitude, weakness and rapid heart rate.

Impending heat stroke may be preceded by a decrease in sweating and the appearance of goose bumps on the skin, especially over the chest. Heat stroke may progress from minimal symptoms to complete collapse in a very short period of time. Accordingly, maintaining a proper pace is crucial. Remember that your muscles produce tremendous amounts of heat when running up and down hill. The faster the pace, the more heat produced. A light coloured shirt and cap, particularly if kept wet during the race, can also help. Full acclimatization to heat may require up to two months. Some degree of acclimatization may occur with workouts in warm temperatures over 10 to 20 days. We recommend training 90 minutes in 25C heat or greater, for 14 days shortly before the run if at all possible.

Runners will drink approximately one third or more of their body weight in fluids during this event. This means that an average 65kg runner will probably drink 25 litres or more of fluid, depending on the heat factor. In addition to drinking at checkpoints, runners will need to carry fluids to drink along the trail. (Carrying adequate food and fluids is equally important on training runs when larger supplies will be necessary due to the absence of aid stations). The way to accurately measure fluid intake and output balance is by weighing before and after training runs to familiarize yourself with techniques used during the run. All competitors must carry at least one water bottle at 500ml capacity or greater.

3. INJURIES FROM FALLING

Falling is an ever present danger on the trail, with potential consequences ranging from bruises and scrapes to broken bones or death. Much of the trail is narrow and often uneven,

rutted, rocky, muddy, wet, dusty, slippery or all of the above. Even your best concentration and careful running may not prevent a fall. Runners should be constantly alert and should use extreme care to navigate the course.

4. EFFECTS OF COLD/HYPOTHERMIA

Hypothermia can strike very quickly, particularly when pace slows from exhaustion or injury. The major risk of this condition is when a hypothermic individual's core body temperature falls to 33.3C or below, the runner may become so confused that they will be unaware that the runner is in hypothermic state. At that point the runner is unable to take appropriate steps to remedy the situation.

Staying well nourished, adequately hydrated and appropriately clothed will help runners avoid the onset of hypothermia. It is imperative that runners have access to extra warm clothing (sweatshirts, hats, gloves, etc.) through their support crews, drop bags, or both. The effects of hypothermia can be fatal.

5. WILDLIFE HAZARDS

Not serious but there may be a few snakes, spiders, etc. so keep alert as to where you place your feet and hands, especially at night.

6. VEHICLE HAZARDS

More than 95% of the Glasshouse Trail is run on mountain trails and fire roads which are closed to vehicles. Nevertheless, there are often areas on the course where runners and pacers have to be watchful for automobiles. Trail bikes and 4WD vehicles could be present in some areas. Roads may have to be crossed in a few places.

7. USE OF DRUGS

No drugs of any kind should be taken before, during or immediately after the run! Many drugs can increase the risk of heatstroke. A partial list of problem drugs include amphetamines, LSD, many tranquilizers and diuretics. There is little known about drug reactions with stress of this severity. Many common medications could also have adverse effects on the body's physiology.

8. RISKS ASSOCIATED WITH LOW SODIUM AND CHLORIDE COUNTS

Low sodium levels (hyponatremia) in ultra marathon runners have been associated with several illnesses requiring hospitalisation. Is important for long distance athletes to use fluids containing physiologic amounts of sodium and chloride to replace water and salts lost during exercise. **Water intake alone is not sufficient**, as water intoxication (dilutional hyponatremia) may result. This problem may in fact worsen after the race, as the non-electrolyte containing fluid which has been accumulating in the stomach is absorbed. Potassium replacement is also important, although levels of this ion change less with fluid loss and replenishment.

The best way to achieve proper electrolytes and fluid balance is to rehydrate with fluids containing proper amounts of electrolytes, as well as plain water. Potassium, while present in many electrolyte-replacement solutions, may also be replaced with the ingestion of fruit, such

as bananas or oranges. Beer has very little sodium or chloride and should not be thought of as an electrolyte replacement fluid.

Electrolyte-containing fluids should be continued after the race until the gastrointestinal tract is fully functional, which may take several hours. Once the gut is working and rehydration has occurred adequately, the normal balance of thirst, hunger, digestion and kidney filtration will maintain the proper homeostasis of fluids and electrolytes.

9. DIFFICULTY IN GAINING ACCESS TO OR LOCATING INJURED PARTICIPANTS

As has been emphasised, much of the trail is remote and inaccessible by motor vehicle. Accordingly, in spite of the safety precautions instituted by run management which include radio communications, search and rescue personnel at some checkpoints, **there is absolutely no assurance that aid or rescue will arrive in time to give you effective assistance should you become sick, incapacitated or injured.** In some events in USA ambulances and other emergency vehicles have experienced difficulties in getting access over remote roads jammed with crew's vehicles, and other delays have resulted from erroneous information regarding the condition or exact location of injured or ill participants.

10. GETTING LOST

Although run management endeavours to mark the course well, it is definitely possible to lose the trail. If you believe at any time that you may not be on the correct trail, **do not attempt to find your way across country.** If you are sure of your route, backtrack to where you last saw a trail marker and try to find other markers showing the direction of the trail. If you are unable to find your way, wait where you are. **This is doubly important** if you cannot find your way back to a course marker. Wandering randomly may take you farther from the trail and reduce your chances of being found. Runners, on occasion, have been temporarily lost, but by observing these rules, have always been found fairly soon. If you do become injured, exhausted or ill, **stay on the trail.** You will be found there either by another runner, or by members of the sweepers who monitor the progress of runners during the event. Staying on the trail is vital. If you feel dizzy, disorientated or confused, do not risk falling. Sit or lie down in the trail until you recover or are found. An unconscious runner even a few feet off the trail could be impossible to find until it is too late. If you are assisted by individuals who are not associated with run management and you elect to leave the trail, you **must** notify the official at the nearest checkpoint of your decision to withdraw. Although medical and other personnel will assist you when possible, remember that you are **ultimately responsible for your own well-being on the trail.** Only you will know how your body and mind feel at any given time. Monitor yourself during the entire race, and prepare yourself to drop out at the nearest checkpoints. It is important to remember the number of kilometres between them, and the fact that getting vehicles into these areas can be difficult, if not impossible.

Runners in ultra events in particular would be advised to carry a whistle. A number of short blasts would indicate injury/medical problem and long blasts at intervals would indicate the runner is lost. Many also carry mobile phones so they can store important phone numbers e.g. Race Director, Medical Supervisor, Course Coordinator.