

SOUTH



AUSTRALIA

## FINDING OF INQUEST

*An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 25<sup>th</sup> and 31<sup>st</sup> days of May, 2000, before Wayne Cromwell Chivell, a Coroner for the said State, concerning the death of Ervin Les Zurmuhl.*

*I, the said Coroner, do find that Ervin Les Zurmuhl, aged 29 years, late of 7 Keithlewis Court, Wynn Vale, died at the Royal Adelaide Hospital on the 12<sup>th</sup> day of April, 1999 as a result of left cerebrovascular accident. I find that the circumstances of death were as follows:-*

### 1. **Introduction**

- 1.1 Ervin Les Zurmuhl was born on 28 January 1970 in Hungary. His father states that he had been involved in sports since he was a child. As an adult, he engaged in gymnastics, karate, body building and boxing. In body building, he won the title of Mr. South Australia in 1996-97 (Exhibit C.1a, p2).
- 1.2 It is apparent that Mr. Zurmuhl had used anabolic steroids in the past. He underwent an operation in 1993 to deal with a condition he had developed from using steroids prior to that time (see the Royal Adelaide Hospital ['RAH'] casenotes, Exhibit C.6).
- 1.3 On 6 April 1999 Mr Zurmuhl was involved in a very minor motor vehicle accident. The circumstances are not particularly clear, but it seems that he had a slight collision with a pole. It was feared that he had suffered a stroke, either before or during the accident. He was conveyed to the RAH, where a CT scan was performed. This showed swelling and cell damage to the left hemisphere of the brain. An angiogram was performed, and this demonstrated the presence of a partially obstructing thrombus (blood clot) in the middle cerebral artery, causing delayed filling of the distal part of that artery (that part beyond the obstruction), and no real collateral circulation. Dr. Annabelle Mahar, who performed the post mortem examination, commented:-

“The appearances were suggestive of an embolus”. (Exhibit C.3a, p1).

An embolus is a blockage or plugging of a vessel by material, which could have been a blood clot, organising bacteria, or even air bubbles. In this case it seems to have been a blood clot.

1.4 Unfortunately, Mr. Zurmuhl’s condition failed to improve, and he suffered a respiratory arrest and died on 12 April 1999.

## 2. **Cause of death**

2.1 Dr. Mahar performed a post mortem examination on 16 April 1999, under the supervision of Associate Professor R. Rowland. The cause of death was diagnosed as “left cerebro vascular accident”, in other words, a stroke. A source for the embolus was not found (Exhibit C.3a, p5). A neuropathological investigation by Dr. Grace Scott at the Institute of Medical and Veterinary Science confirmed that Mr. Zurmuhl had suffered an infarction (death of tissue) in the region of the left anterior and middle cerebral arteries. Dr. Scott commented:-

“Microscopy of the brain confirms the presence of extensive, haemorrhagic infarction involving the left anterior and middle cerebral artery territories and consistent with ischaemic injury occurring six days previously. There is histologically confirmed evidence of raised intracranial pressure with tentorial herniation and secondary brain stem haemorrhage. Microscopic examination shows no evidence of significant vascular disease in the sections of basal arteries examined, and in particular no evidence of thrombus in the left middle or anterior cerebral arteries. The haemorrhagic nature of the infarction described above would be consistent with an episode of embolisation followed by dissolution of the embolus and restoration of perfusion to the affected tissue”. (Exhibit C.4b, p2).

2.2 A toxicological investigation of blood taken upon Mr. Zurmuhl’s admission to the Royal Adelaide Hospital disclosed the presence of tetrahydrocannabinol (THC) and 11-nor-9-carboxy-thc, indicating that Mr. Zurmuhl had recently consumed cannabis, but no other significant drugs were detected (see the certificate of Ms. Heather Felgate, Exhibit C.5a).

2.3 An opinion was sought from Dr. Gary Wittert, Senior Consultant Endocrinologist in the Department of Medicine at the Royal Adelaide Hospital, concerning whether Mr. Zurmuhl’s death could be related to anabolic steroid use.

2.4 Dr. Wittert states that Mr. Zurmuhl’s levels of testosterone and sex hormone-binding globulin were extremely low, which is consistent with the ongoing use of anabolic

steroids (Exhibit C.7, p1). He expressed the opinion that these findings, and the particular circumstances of Mr. Zurmuhl's death, are "consistent with a role for anabolic steroids in this particular cerebro-vascular accident". He cited the following factors which supported his conclusion:-

- (i) The nature of this cerebrovascular accident;
  - (ii) The evidence of ongoing (or at least relatively) recent use of anabolic steroids;
  - (iii) The established association between a stroke of this nature as well as abnormalities of coagulation in weightlifters using anabolic steroids;
  - (iv) The effect of anabolic steroids to increase platelet aggregation, coagulation proteins and the vascular system in ways that facilitate thrombosis;
  - (v) Absence of other identifiable cause for thromboembolic disease in this man.
- (Exhibit C.7, p1).

2.5 Dr. Wittert declined to accept that the force of this circumstantial evidence was sufficient to constitute "scientific proof" that anabolic steroid use was implicated in Mr. Zurmuhl's death. He cautioned that episodes of unexplained thrombo-embolic stroke among young people are occasionally seen.

2.6 I accept the need for Dr. Wittert, as a scientist, to be cautious in this respect. He conceded that the role of steroids in such deaths will probably never be much clearer than in this case, because it cannot be established in properly controlled trials (T.16). It seems to me that the circumstantial evidence implicating the use of anabolic steroids in this case is sufficient for me to make a finding, on the balance of probabilities, that it was implicated in Mr. Zurmuhl's death. The absence of other credible explanations for his illness is sufficient, in my view, to make a finding, on the balance of probabilities, that his cerebro-vascular accident was occasioned by ongoing anabolic steroid use. I so find.

### 3. **Recommendations**

3.1 In view of that finding, I now turn to consider whether I should make a recommendation pursuant to Section 25(2) of the Coroners Act which may “prevent, or reduce the likelihood of, a recurrence of an event” similar to Mr. Zurmuhl’s death.

3.2 Dr. Wittert pointed out that the following adverse side-effects from anabolic steroid use, or perhaps more correctly abuse, have been noted:-

- liver toxicity, particularly in the case of oral steroids. He said that the use of such drugs can lead to jaundice, hepatic cholestasis, liver tumours, or fatal liver failure;
- changes in the mechanism of blood clotting, glucose metabolism, and lipid balances, including the ratio of “good” (HDL) and “bad” (LDL) cholesterol. Increased incidence of myocardial infarction and stroke in such patients has been noted;
- by dramatically increasing the level of cortisol, the body’s primary stress hormone, anabolic steroids can cause high blood pressure, stress, as well as serious neurological and psychiatric problems. Dr. Wittert explained that, although in moderate doses mood changes are rare, in high doses of the type normally taken by body builders, such symptoms as both mania and depression, particularly on removal of the drug, can occur (T.9);
- anabolic steroids can also affect the reproductive and endocrine systems. When large amounts of anabolic steroid are taken, the body decreases testosterone production, which can alter libido and sex drive, and cause shrinkage of the testes (in one study the frequency of this was 56 percent). Other effects include acne, increased facial and body hair, and impotence, priapism, prostate enlargement and production of the female hormone oestrogen, causing such conditions as gynaecomastia (development of breast-like tissue) in males;
- anabolic steroid use can cause interference with the sleep cycle, interference with the immune system, causing more frequent colds and influenza, interference with kidney function and liver function, fluid retention, and increased incidence of tendon injuries;
- continuing use may produce dependence, probably of a psychological nature, so that the user requires these substances to achieve a sense of well-being. (T.9).

3.3 Having regard to all of this evidence, it is clear that the abuse of anabolic steroids carries a high risk of adverse health outcomes, and is therefore undesirable. Dr. Wittert’s evidence is that, on the basis of anecdotal observation, the use of such substances, particularly among young people, is quite prevalent. The drugs are quite efficacious in terms of achieving increased muscle bulk with exercise, and many young people continue to use them, even though they are aware of the risks. Studies have demonstrated that “scare tactics” are unlikely to succeed, and that the best approach is well-constructed education of the patient about the likely adverse effects of abusing such drugs. He pointed to one study which demonstrated that 81 percent of steroid users experienced side-effects, but 74 percent of such people intended to continue using them, clearly because they considered that the benefits outweighed the

disadvantages. Obviously, “scare tactics” are not going to work on such people. Dr. Wittert said:-

“A. I see a number of people in the practice who come to me either because they have in the past used and are contemplating using again, or they have been offered and are contemplating using, and want information, and frequently when given appropriate information will choose not to use. So I still believe that appropriate education provided in a very open manner to young people is the most effective way to reduce the use of these drugs and where they are used, and let’s be honest they are going to be used, they will then at least be used in the safest possible way by people who know what could occur and will seek help in a sort of non-threatening non-confrontational and non-judgmental way, to deal with any potential problems.

Q. So that might be a more effective warning, that if anyone is considering using them the best help is to seek reputable medical advice rather than simply a blanket ‘don’t do it’.

A. I think that’s right. I think that if you are offered this or if you are exposed to it or you are considering it you should seek advice from someone who knows something about it and he’ll provide confidential and objective information”.

(T.18-19).

3.4 Accordingly, I recommend that a public warning be issued to any person who may be using anabolic steroids, or considering their use. Any such person should seek appropriate and reputable medical advice about the serious adverse health consequences, including death, which may be caused by steroid use.

*Key Words: anabolic steroid abuse; public warnings*

*In witness whereof the said Coroner has hereunto set and subscribed his hand and*

*Seal the 31st day of May, 2000.*

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*Coroner*