

The mystery of the "TDI": proving chemical poisoning

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A series of 13 compensation claims by members of the A.C.T. Fire Brigade were successfully concluded recently in the Supreme Court of the Australian Capital Territory. The marathon litigation was commenced during the 1980s by different law firms representing Fire Brigade members who suffered various injuries after attending a truck fire on the 27th May 1982.

A semi trailer travelling from Melbourne had overturned causing drums of Toluene Di-isocyanate ("TDI") to explode and catch fire. Television coverage dramatically depicted billowing clouds of orange and brown smoke engulfing fire officers. Most were equipped with breathing apparatus. However, many officers attending the scene were directly exposed to the burning chemicals which at the end of the day left a gooey toothpaste consistency on their clothes and breathing equipment. Other officers at the fire stations cleaned the apparatus with scrubbing brushes and hoses. In one case the evidence indicated that an officer had eaten his lunch immediately after handling some of the contaminated equipment.

TDI is a well-known industrial chemical. It is used mainly in the manufacture of polyurethane plastics and in the fibreglass industry where large quantities of TDI are used with many workers are being exposed to it on a daily basis. As early as the 1950s it was well recorded that people exposed to substantial quantities of TDI suffered irritation of the nose and throat, shortness of breath, choking, coughing, nausea, vomiting and abdominal pain. Chronic respiratory symptoms fell easily within the foreseeable consequences of the poisoning in the worst cases. Most of the plaintiffs complained of husky voice, acute irritation of the mucous membranes and skin, pussy blisters etc. The defendants' doctors did not seriously challenge the existence of

those injuries or their connection with the incident.

The interesting twist to these cases was whether the plaintiffs could recover damages for a combination of neurological and psychiatric injuries which were new to all of the examining doctors. Typical particulars of symptoms included:

- Severe personality change
- Depression
- Sleep related problems
- Introverted and hermit-like personality.

The principal debate however was whether other symptoms which developed sometime later (in some cases one to two years) and which were largely psychological and psychiatric (phobias and anxiety) could also be attributed to chemical exposure

Medico-legal doctors engaged on behalf of the defendants were dismissive of these claims, asserting consistently that such symptoms were not a foreseeable consequence of TDI poisoning. They looked for other explanations for the development of such symptoms. The defendants carried out the usual broad based investigations into plaintiffs' family, career and medical histories.

The missing links which enabled all plaintiffs to eventually succeed were firstly, a logical analysis of the various psychological symptoms carried out by Professor Peter Dissler from the Royal Melbourne Hospital. He recommended that a detailed neuropsychological assessment be carried out to determine the existence of any cognitive deficits consistent with chemical poisoning. He concluded that if there was no such evidence of structural brain damage then it was possible that the symptoms could be attributable to psychological distress rather than organic brain pathology. Secondly: a series of neuropsychological

assessments were carried out by a well known Canberra Clinical Psychologist. The test results indicated primarily left frontal lobe dysfunction, evidenced by significant loss in memory tasks, particularly verbal memory, attention and concentration as well as belated recall. The performance of complex designs and tasks requiring planning, knowledge of concepts, and formulation was poor in all cases.

This was sufficient to prove the connection. It was an interesting exercise to find that approximately 15 other doctors of various specialties had looked into the problems without providing any definitive explanation for the plaintiffs' conditions. Whilst an explanation of the science of clinical psychology is beyond the scope of this note, this case was a worthwhile exercise in analytical science to find a plausible explanation for a new problem. ■

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