

Research reveals complete recovery of brain function for chronic petrol sniffers

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The final results of a groundbreaking, long-term study prove that brain damage can be completely reversed when people stop sniffing petrol but the recovery can take years.

Petrol abuse remains a major source of illness, death and social dysfunction in many remote communities

Associate Professor Sheree Cairney and her team from the Menzies School of Health Research (Menzies) have been working with two remote Arnhem Land communities to stamp out the petrol sniffing that was devastating their communities.

The researchers assessed brain function and blood lead levels of the sniffers at the time they quit sniffing when they were significantly impaired. These assessments were again tested after two years abstinence, when some impairment remained, and finally after fifteen year of abstinence when no impairment remained.

“Our preliminary results, based on two years’ abstinence, provided the first clinical proof in the world that the brain damage of ex-sniffers can repair if the abuse stops early enough,” says A/Prof Cairney.

Prior to Dr Cairney’s pioneering research, the medical profession had assumed that brain damage from sniffing petrol and other inhalants was permanent.

“At the 15 year mark we had an extraordinary response from the original participants and were able to assess neurological function for 93 per cent of the original 112 participants,” she said.

“Our final results show that with further abstinence, repair can be even more complete.”

While these findings will bring much hope to other petrol-blighted communities and health professionals, the outcomes were not so positive for the small number who had experienced heavy exposure to leaded petrol.

“Unfortunately damage inflicted by lead to the cerebellum part of the brain can be irreversible, a condition known as lead encephalopathy,” Dr Cairney explained.

“Even though the levels of lead in these individuals’ blood returned to normal with 15 years’ abstinence, they continued to suffer permanent cognitive impairment, tremors, an uncoordinated gait, involuntary eye movements and convulsive seizures.”

“It is important to note that even a single heavy sniffing session can lead to permanent brain damage.”

Dr Cairney said that research had showed that young people were sniffing because they were bored.

“Petrol sniffing was eradicated in these communities by switching fuel supply and by introducing employment and skills training programs. The roll out of Opal fuel in remote regions must continue,” she said.

“Interestingly, we noticed substantial deterioration in the health of the control group of people who had never sniffed. Heavy drinking and other drug use remain serious health concerns in these communities.

“Recovery for ex-sniffers may be quicker if they are supported by complementary programs encouraging better nutrition and healthier lifestyles.”

This research is published in the journal *Addiction* and the full article can be accessed [here](#). Dr Cairney’s research was funded by the National Health and Medical Research Council.

Media Contact:

Richmond Hodgson, National Communications and Media Manager, 0408 128 099 / communications@menzies.edu.au

Menzies Background

Menzies School of Health Research is Australia’s only Medical Research Institute dedicated to improving Indigenous health and wellbeing. We have a 28-year history of scientific discovery and public health achievement. Menzies works at the frontline, partnering with over 60 Indigenous communities across Northern and Central Australia. We collaborate to create resources, grow local skills and find enduring solutions to problems that matter.