

## Case Reports

# The first reported case of thinner sniffing in a Sri Lankan adolescent

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### Introduction

Inhalant abuse is an unspoken social problem in Sri Lanka that is not given the same gravity as smoking and alcohol abuse. There are no published case reports regarding thinner sniffing in the Sri Lankan literature. Here we report a case of thinner sniffing in an adolescent which caused loss of consciousness and subsequent drowsiness.

### Case report

A 13-year-old boy was admitted to the paediatric casualty ward with the complaint of loss of consciousness with an opened thinner bottle nearby. He was a child with a history of petrol sniffing, who had undergone treatment and was now off the habit for 3 years. He was found in his grandmother's garden, unconscious with frothing and the exact duration of unconsciousness was not known, but roughly would have been about 20 minutes. He was initially brought to a General Practitioner over the next 15 minutes. Although he had regained consciousness, he remained persistently drowsy. He was subsequently transferred to the hospital by ambulance. The drowsiness persisted for about two hours and then gradually subsided.

He was haemodynamically stable and no focal neurological signs were found. He admitted that he had been attracted to the smell of thinner and that he had spent about 30 minutes sniffing it continuously. He had then felt lightheaded and when trying to enter the house, had fallen unconscious in the garden. He claimed that he had spent about 15 to 20 minutes each in the past few days sniffing thinner. He had been treated for petrol sniffing at the age of 9 years,

where he had been strongly addicted to the smell, but there was no history of loss of consciousness or seizures. He had been managed with behavioural therapy and had been off the habit for the past three years. He also claimed that he liked sniffing sanitizer fluids.

Basic blood investigations, including random blood sugar, full blood count, renal function tests, aspartate transaminase and alanine transaminase were normal. The electrocardiogram was normal with no arrhythmias and normal QT<sub>c</sub>. Electroencephalography was done to exclude abnormal electrical activity in the brain and it was normal. Psychiatry referral was done and he was started on cognitive behavioural therapy.

### Discussion

Inhalant abuse is known as the deliberate inhalation of volatile substances to achieve an altered mental state<sup>1</sup>. Inhalants can be classified into 4 subgroups viz. volatile solvents, aerosol solvents, gases and nitrates<sup>2</sup>. Inhalant abuse is an emerging health problem throughout the world<sup>3</sup>. The majority of inhalant abusers are children and adolescents and most of them have started with thinner sniffing<sup>4</sup>.

Thinner is a volatile solvent, which contains various components such as toluene, hexane, acetone, methanol, xylene, benzene, butyl acetate, aromatics and propyl acetate<sup>5</sup>. Toluene and acetone are considered to be the major constituents<sup>5</sup>. Toluene is a well-known neurotoxic agent<sup>6</sup>. It also has effects on the respiratory, cardiovascular renal, haematologic and metabolic systems and also on the skin, liver and eyes. It is readily absorbed by the lungs and in children the absorption is more as they have a greater lung surface area: body weight ratio and an increased minute volume: weight ratio<sup>6</sup>. Adverse effects caused by toluene include central nervous system (CNS) effects (headache, dizziness, ataxia, drowsiness, euphoria, hallucinations, tremors, seizures and coma), cardiovascular system (CVS) effects (ventricular arrhythmias), respiratory effects (aspiration, chemical pneumonitis), renal effects (haematuria and proteinuria after massive inhalation, renal tubular acidosis, glomerulonephritis, myoglobinuria and renal failure), haematologic effects (bone marrow

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depression) and ocular effects (blepharospasm, conjunctivitis, keratitis)<sup>6</sup>.

During recovery, patients might continue to have ataxia, drowsiness, dilated and sluggish pupils, decreased or absent deep tendon reflexes<sup>6</sup>. Deaths have been reported following thinner inhalation<sup>7,8,9</sup>. There are no exact data regarding inhalant abuse in Sri Lanka. However, evidence worldwide<sup>3</sup> and also in other Asian countries<sup>3</sup>, shows it as a significant health problem. Research needs to be carried out in Sri Lanka to further explore the width and breadth of this important problem in our country.

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