The facts about ‘solvent abuse’ or ‘volatile substance abuse’ (‘VSA’)

What is ‘solvent abuse’ or ‘volatile substance abuse’?

The official term for ‘solvent abuse’ is ‘volatile substance abuse’ (or ‘VSA’ for short). Around the UK, it’s also known as ‘sniffing’, ‘tooting’, ‘buzzing’ and ‘huffing’. In many parts of the world the term ‘inhalant abuse’ is used. In all cases, solvent abuse involves the deliberate inhalation of volatile chemicals: solvents and gases found in everyday products – such as aerosols – and cigarette lighter refills for the purpose of getting ‘high’ (intoxicated).

Many people are unaware that solvent abuse exists or think that the problem has gone away. Others mistakenly assume that because the products misused are ‘legal’ domestic products they are ‘safe’. In fact, volatile substances, when deliberately inhaled, can kill suddenly and unpredictably, and there is no way to avoid this risk.

In the past decade, solvent abuse has killed more young people under the age of 15 than all illegal drugs combined. Annual reports show that it continues to kill approximately 50 people each year in the UK – although nowadays most of those who die are adults.

What are ‘volatile substances’?

Volatile substances are chemicals (many are contained in everyday household products) described as ‘volatile’ either because they are gases, or because they readily evaporate at room temperature to form a vapour which can be inhaled. Products that contain such chemicals include:

- fuel gases (which contain LPG: butane and propane, e.g. cigarette lighter refills)
- aerosols (containing butane as the propellant)
- petrol
- some industrial adhesives, but not consumer glues in the UK (as these no longer contain the volatile substance, toluene)
- and products containing solvents, such as tetrachloroethylene (used, for example, in dry-cleaning)

‘Poppers’ are also misused. ‘Poppers’ is the ‘street term’ for various alkyl nitrites sold in ‘adult shops’, ‘head shops’, tobacconists or from market stalls, often as ‘room odourisers’.

Why do people inhale volatile substances?

Volatile substances are legal, accessible and inexpensive. They offer the possibility of a fast-acting ‘high’ which, in many cases, passes off quickly without a ‘hangover’.

Many young people who experiment with volatile substances do so out of curiosity or a desire to experiment. They may try misusing them in order to copy older peers or to be part of a group, or even in order to shock parents or carers. Solvent abuse is also difficult to
detect: unlike alcohol, it doesn’t always make the breath smell; and (again unlike alcohol) misusers ‘sober up’ quickly.

Long-term or ‘chronic’ solvent abuse can be a sign of problems in other areas of a person’s life, such as bereavement, divorce or stress. Although there is little research about why adults misuse volatile substances, reasons may include: repeating a youthful experience at a time of stress, loss or other difficulty; using volatile substances as substitute for other drugs when these are difficult to obtain; or using volatile substances instead of illegal drugs to avoid producing a positive drug test.

In the UK, the British Crime Survey estimates that approximately 57,000 adults (aged 16 and over) have misused volatile substances in the past year. The NHS Information Centre reports that 3.5% of young people (aged 11-15) say they have misused volatile substances in the past year.

How do volatile substances work?

Volatile substances are nervous system depressants which slow down the activity of the brain and central nervous system, affecting physical, mental and emotional responses. When the fumes from these products are deliberately inhaled they are absorbed through the lungs into the bloodstream. The volatile substances are soluble in body fat and so pass rapidly to the brain and other organs, meaning that the effects begin quickly – perhaps within half a minute. Although the ‘high’ usually lasts only a few minutes (and can include hallucinations), the intoxicating effects can continue for up to 30-40 minutes. Users may maintain the intoxication by continuing to inhale the fumes – sometimes for many hours.

Are volatile substances dangerous?

When used for their intended purpose (i.e. following the manufacturer’s instructions), consumer products that contain volatile substances are safe. However, when deliberately inhaled, volatile substances have the capacity to suddenly and unpredictably kill, and there is no way to avoid this risk.

At least 2,493 people have died from VSA in the UK since annual records began in 1971. There are now approximately 50 deaths per year, approximately 6 of which are likely to be young people under the age of 18.

Why do people die from inhaling volatile substances?

Anyone experimenting with volatile substances is at risk from sudden death. Death may occur at the first attempt or following many attempts – it can happen at any time.

The causes of death include:

- a heart condition called ‘cardiac arrhythmia’ – also known as ‘Sudden Sniffing Death Syndrome’. Most deaths from VSA are caused by SSDS. This is a direct toxic effect of VSA, where the heart starts to beat irregularly. If the person experiences a sudden rush of adrenaline – if, for example, they are excited, frightened or if they engage in physical activity – the heart can fail to effectively pump blood, particularly if oxygen
levels are depleted, for example by breathing from a plastic bag. Unless a defibrillator is available, death can result within minutes.

- choking on vomit.
- suffocation or asphyxiation – when someone is unable to breathe in sufficient oxygen, perhaps because they are choking or because they have a bag or mask over their nose and mouth.
- fatal accidents – such as being knocked down by a car or train, or drowning. Some volatile substances are highly flammable, so if the user is smoking, burns and explosions are also a significant danger.

Poppers can be fatal if the liquid is ingested.

**Does solvent abuse have long-term health risks?**

Repeated misuse of petrol and some organic solvents such as toluene can cause long-term brain, lung, liver and kidney damage. This is why toluene has been banned from UK consumer products (although it may still be found in industrial glues).

New research suggests that, in some cases, the inhalation of poppers has been responsible for causing permanent eye damage.

There is no published evidence that butane causes long-term damage. In anecdotal statements, some regular and chronic misusers report suffering from slurred speech and slower reactions while they are misusing, but find that these symptoms do not continue once they stop VSA; others feel that their VSA has contributed to longer-term physical or mental health issues.

**Does solvent abuse lead to dependency or addiction?**

Anecdotally, some regular or chronic volatile substance misusers report that they develop tolerance to the substances – that is, they need more of the chemical to achieve the same effects. This is worrying, because it may lead to dependence (a feeling that one cannot do without the substance), and even psychological addiction. But the teenager who is experimenting with these substances is not likely, in the short term, to develop such problems.

**How do you recognise products that can be misused?**

The most commonly misused products are butane gas cigarette lighter refills, aerosols (commonly deodorants), petrol and some glues. (Glues and petrol are less commonly misused in the UK, but are misused in some poorer countries by, for example, children living on the street). Many UK consumer products (aerosols) carry the ‘Solvent Abuse Can Kill’ (‘SACKI’) warning pictured here.
Why doesn’t the government ban these products?

It isn’t possible to ban all the products that could possibly be misused. They have legitimate everyday uses. And even if some products were banned, others could still be misused – there are so many possible ‘sniffable’ products. But some products have been made safer, and less easy to misuse, and some chemicals have been controlled, reduced or removed from products.

What controls are there on the sales of these products in the UK?

- It is illegal to supply cigarette lighter refills containing butane to anyone under the age of 18 (Cigarette Lighter Refill (Safety) Regulations 1999).
- It is illegal to sell spray paint to anyone under the age of 16 (Antisocial Behaviour Act 2003).
- Under national licensing conditions, petrol cannot be sold to anyone under the age of 16.
- It is an offence under the Medicines Act 1968 to sell nitrous oxide for inhalation (i.e. recreational drug use).
- The Intoxicating Substances (Supply) Act 1985 (in England, Wales and Northern Ireland) makes it illegal for a person to sell or supply a substance to anyone believed to be under the age of 18 or anyone acting on behalf of someone under that age, if he or she has reasonable cause to believe that the substance may be inhaled for the purpose of intoxication. In Scotland similar prosecutions have been brought under Scottish Common Law.

How can young people be stopped from misusing these products?

Although there are laws to restrict the sales of some products to young people, we can’t completely control young people’s access to misusable products. But we can educate young people and their parents about the risks. And we can provide help and support for those who need it.

Are there ways of reducing the harm that solvent abuse can cause?

Solvent abuse can kill and there is no ‘safe’ way to do it.

Anyone misusing volatile substances will always be at risk of Sudden Sniffing Death Syndrome (SSDS). However, it is possible to reduce the risk of other fatal accidents associated with solvent abuse, e.g.:

- Don’t misuse volatile substances alone or in dangerous or out-of-the-way places.
- Don’t put plastic bags over the head or impede breathing in any way.
- Don’t misuse volatile substances near a naked flame or lit cigarette as they are highly flammable.
- Don’t drink alcohol or take other drugs.
How can you tell if someone is misusing volatile substances?

There may be a chemical smell, runny nose, watery eyes and rashes or spots around the nose and mouth. Solvent abuse can cause throat irritation, nausea and ‘drunken’, withdrawn, irritable or inattentive behaviour.

Circumstantial evidence of misuse might include empty gas or aerosol containers (perhaps with teeth marks on the nozzle), or aerosols disappearing from around the home or workplace.

However, none of these signs are definitive – they may be caused by other behaviours or illnesses. The best way to find out if someone is misusing is to build a relationship with them and observe their behaviour – and ask them!

What should you do if someone you know is misusing volatile substances?

Just as with any other form of substance misuse, there are often complex reasons for solvent abuse, and these may change over time. Someone may start experimenting out of curiosity, continue because their friends are doing it, and become dependent on solvent abuse because they find that it provides a temporary relief from deep-seated social or emotional problems.

Often the best type of help to begin with is simple advice and reassurance:

- Don’t panic – staying calm will make it easier for someone to ‘open up’ to you.
- Listen – gently ask questions to find out what is happening and why. Try to see things from the other person’s perspective.
- Show your concern – make it clear that you want them to be safe.
- Don’t be judgemental, but offer understanding and support.
- Seek professional help – speak to your GP, contact one of our Counsellors, visit Talk to Frank, the national drugs awareness service or use their guide to find support near you.

What should you do in an emergency if someone is ‘high’ on VSA?

- Keep calm – assess the situation, in particular the risks to yourself (e.g. aggressive or threatening behaviour, risk of fire or explosion from butane, aerosols or petrol).
- Stay with them – as long as it’s safe.
- Ensure adequate ventilation – open windows and loosen tight clothing, etc.
- Keep the person calm and still. There is a risk of sudden death if exertion follows ‘sniffing’. Don’t chase or excite someone who is ‘high’.
- Remove the solvents from them if you can do so calmly and without using force.
- Stay with them until the effects have worn off.

What should you do in an emergency if someone is unconscious?

- Keep calm – assess the situation, in particular, the risks to yourself.
- See if the person responds by gentle shaking or loud talking.
- Check their Airway, Breathing and Circulation and apply first aid if you know how.
- Place them on their side in the recovery position.
- Call an ambulance or, if possible, send someone to do it.
Stay with the person if you can and keep them warm and still.