

Re-Solv

INTERIM ONLINE TRAINING

Welcome to Re-Solv’s interim online training programme. We hope you find this helpful in building awareness around gas and solvent use while face-to-face training is suspended due to the Covid-19 pandemic.

If you have questions that arise from the training, or about supporting a client using volatile substances, please don’t hesitate to call our Helpline on **01785 810762**, mobile **07496 959930**, email info@re-solv.org, or **live chat** with us here online.

Please note: Volatile substance use has historically been known as ‘solvent abuse’ but in this resource we tend to use the term ‘gas and/or solvent use’ or just shorten ‘volatile substance use’ to ‘VSU’.

Completing the Training

You’re welcome to work through the training online and just make your own notes at home, or to print off the pdf and use it as a workbook. If you want to complete the pdf and either photocopy and post it, or scan and email it back to us, we will email you a certificate. Please just complete the following before you return your completed workbook:

Name:

Email address:

Region:

N East N West Yorks W Mids E Mids East S East S West London

I would like to receive Re-Solv’s quarterly e-newsletter: Yes No

Please return to: Re-Solv, 30a High Street, Stone, ST15 8AW or email info@re-solv.org. If you are emailing, please can you provide the above information in your email. Thank you!

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Section 1. What do you know already?

Objective: Before beginning the training, please think about the questions below and make a note of your answers. There will be another questionnaire at the end and we hope this will enable you to track how beneficial you've found the training and whether there are ways it will help you adapt your practice in future.

1. How would you rate your knowledge of VSU prior to doing this training?
(1 = limited and 10 = extensive)
1 2 3 4 5 6 7 8 9 10
2. How confident do you feel in discussing the issue of VSU or responding to/treating a client who uses volatile substances? (1 = not confident and 10 = very confident)
1 2 3 4 5 6 7 8 9 10
3. Do you feel as knowledgeable about VSU as you do about other drugs?
Yes No Unsure
4. Do you currently assess for past and/or current VSU as standard practice?
Yes No Unsure
5. Does your organisation currently provide treatment and support for VSU?
Yes No Unsure
6. Have you had any cases in the last 2 years?
Yes No Unsure

When you have made a note of your answers, please continue to Section 2.

Section 2. What is volatile substance use?

Objective: To understand what volatile substance use is, and the products associated with it.

Often known simply as “solvent abuse” or “VSU”, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) defines volatile substance use as: **“the deliberate inhalation of volatile compounds to produce psychoactive effects.”**

The most common substance associated with gas/solvent use in the UK is **butane gas**, usually inhaled from cigarette lighter refills and/or from **aerosols** such as deodorants, hairsprays, etc. There is still some use of **petrol** and of **trade glues**. (Household consumer glues no longer contain the volatile substance, toluene.) From anecdotal evidence provided to Re-Solv, the use of **acetone** (e.g. nail varnish) is also occurring.

Volatile substances are **depressants**.

‘Party Drugs’

Other volatile substances include:

- **Nitrous oxide** (N₂O, ‘laughing gas’), usually purchased in small metal canisters known as ‘whippits’ and inhaled from balloons. Nitrous oxide is a dissociative, rather than a depressant.
- **Poppers** (alkyl nitrites), liquid chemicals which give off a gas that can be inhaled at room temperature are also classed as volatile substances, and often used to enable or enhance sexual experiences.

There are always risks associated with any form of drug use. However, please note that nitrous oxide and poppers have a very different risk profile to, e.g. butane. There is **no evidence to suggest that inhaling nitrous oxide or poppers can cause instant death**, as is the case for butane and other solvents.

Research Activity: To make sure you understand what volatile substance use is, and the products associated with it, we would recommend the following reading:-

- The EMCDDA’s [Drug Profile](#) page for VSU provides a really useful summary of what VSU is and the products associated with it.
- To fully understand the different risk profile of nitrous oxide and poppers, please read the pages on [nitrous oxide](#) and [poppers](#) at DrugScience.org.uk.

Section 3. Why is gas and solvent use a concern?

Objective: To recognise that gas/solvent use is not simply a historic problem of the 1980s and '90s and understand why it is an issue of concern today.

Many people associate gas/solvent use with the glue-sniffing epidemic of the 1980s and '90s without realising that, although the landscape has changed, gas/solvent use is still very much with us today. It remains one of the most hidden, and least talked-about, forms of substance use. As a result, vulnerable users, whether they be children or adults, remain unidentified, unsupported and at risk.

1. Gas/solvent use **can kill instantly**. Deaths occur suddenly and unpredictably – from the first time of use or after many years of use.
2. There is **no 'safe' way to do it** that removes the risk of death. This means that absolute harm reduction is not an option.
3. Gas/solvent use has historically been associated with young people. It is still the **most common form of substance use among under-14s** in England and second only to cannabis by the age of 15.
4. Gas/solvent use is not just a young people's issue. The most common age of death today is among **adults aged 20-39**.
5. Control of these **legal products** – which have legitimate every day uses – is extremely difficult, if not impossible.
6. Professionals often feel that they **lack the knowledge and confidence** to support service users effectively.

Practice-based Activity: Consider how aware you think your organisation is about gas/solvent use. Think of three ways in which awareness could be improved in your organisation. This might include ideas such as commissioning training during an inset day; obtaining and circulating resource materials; integrating question(s) about gas/solvent use into standard assessment procedures ... etc. Note your answers down below.

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Can you answer the question: Why should we be concerned about gas/solvent use today? If so, please continue on to Section 4.

Section 4. Prevalence

Objective: To understand whose lives are affected by gas/solvent use today, and why.

Gas/solvent use affects **young people and adults of all ages**, and impacts on their families and communities. There is no stereotypical 'solvent user' and there can be **any number of reasons that trigger someone's use**. These can range from experimentation, to loneliness, isolation, bereavement, stress, trauma, struggles with mental health, and so on. If someone has used solvents as a child, they may also return to it during periods of stress in adult life. Many people Re-Solv has worked with say that **gas/solvent use helps them "escape"**. A significant proportion use solvents in conjunction with other substances.

Adults

There is no current data on prevalence among adults. The most recent government statistics are those from [Drug Misuse Declared, 2009/10](#) which looked at the percentage of 16-59 year-olds in England and Wales who reported using substances:-

	Ever taken		Use in the last year		Use in the last month	
'Glues'	2.3%	739,000	0.2%	57,000	0.1%	17,000
Amyl Nitrite	9.5%	3,091,000	1.1%	351,000	0.4%	115,000

2019/20 data on nitrous oxide use among adults (16-59 year-olds) is available from the [Crime Survey of England and Wales](#). This and, for comparison, data on a number of other substances is as follows:

	Ever taken		Use in the last year		Use in the last month	
Nitrous oxide		n/a	2.4%	796,000		n/a
Cannabis	31.1%	10,482,000	7.8%	2,617,000	3.8%	1,296,000
Cocaine	10.6%	3,583,000	2.6%	887,000	0.8%	270,000
Ecstasy	9.6%	3,226,000	1.4%	471,000	0.3%	97,000
Opiates	0.6%	201,000	0.1%	22,000	0.0%	10,000

According to [2019/20](#) data, 8.7% of 16-24 year-olds have used nitrous oxide in the past year.

In the absence of more detailed prevalence data, it is difficult to know how many people use gas or solvents together with other drugs. 2019/20 treatment data from the [National Drug Treatment Monitoring System](#) (NDTMS) suggests that 89 out of the 309 people in treatment services (i.e. 29%) report volatile substances as their primary substance of use. However, 2001-2016 [Mortality data](#) from the Office for National Statistics (ONS) tells us that only 27% of all VSU deaths involve more than one substance (volatile or otherwise) and/or alcohol. If 73% of those dying from VSU *only* have solvents in their system, then this may suggest that there is a significant group of primary or solvent-only users, but that – for whatever reason (*see Section 8*) – they are not making their way into treatment services.

Young People

Until 2016, there had been a steady decline in the number of young people using glue, gas, aerosols or solvents. However, the annual [Smoking, drinking and drug use among young people in England](#) report shows **a recent increase in use** from 2.9% in 2014 (3% girls, 2.8% boys) to 4.4% in 2016 (4.1% boys, 4.8% girls), dipping slightly to 4.2% in 2018 (4% boys, 4.4% girls).

Proportion of pupils (11-15) who have taken individual drugs in the last year (%)					
	2012	2013	2014	2016	2018
Gas/Solvents	3.6	3.6	2.9	4.4	4.2
Nitrous Oxide	-	-	-	4.0	4.1
Poppers	0.8	0.8	0.7	0.6	0.6

Many people don't realise that VSU continues to be **the most common form of substance misuse among 11-13 year-olds** and second only to cannabis by the age of 15.

Proportion of pupils who have taken individual drugs in the last year, by age (%)					
Age	11	12	13	14	15
Cannabis	0.5	1.3	4.1	10.9	19.3
Gas/Solvents	1.8	3.1	4.7	5.9	5.1
Nitrous Oxide	1.3	1.0	2.4	5.7	8.7
Poppers	0.1	0.1	0.4	1.0	1.2

Pupils' early experience of drug use is most likely to involve cannabis (42%) or volatile substances (40%). The report tells us that: "Pupils who tried drugs at an earlier age were more likely to report using volatile substances at that age, whilst pupils who first took drugs at an older age were more likely to report taking cannabis."

Practice-based Activity: Familiarise yourself with the prevalence data above so that you are aware of how prevalent gas/solvent use is and how its use compares to that of other drugs. Then open the report, [The Social Impact of Gas/solvent use](#). This is a report Re-Solv commissioned in 2018 and you may find it interesting to read Section 1 (pages 13-32) which describes individual experiences of gas/solvent use and why people turned to it. Alternatively, consider clients that you have worked with. Do you know why they chose to use gas or solvents? Was there a particular trigger that precipitated use? Did they feel isolated *because* of their gas/solvent use? Thinking about these questions can help organisations and recovery communities better understand and empathise with gas and solvent users, and so inform future practice.

Think of three questions that you might ask someone about their gas or solvent use that would help you understand their situation better and enable you to help them better.

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If you are happy that you understand the extent of gas/solvent use in England and Wales today, and why people might choose to use these substances, please continue on to Section 5.

Section 5. Mortality

Objective: To understand why VSU can be fatal, the risks involved and mortality data.

Anyone experimenting with butane and/or propane gas, petrol, trade glues containing toluene and solvents is at risk of sudden death. This can occur unpredictably – on the first time of use, or after many years of inhaling these substances.

Most deaths are caused by **cardiac arrhythmia – a form of fatal heart attack also known as Sudden Sniffing Death Syndrome (SSDS)**. This happens because inhaling volatile substances causes the heart to beat irregularly. The heart can then fail if the person experiences a sudden rush of adrenaline – e.g. if they are excited, frightened or if they engage in physical activity. Unless a defibrillator is available, death can result within minutes. **Anyone coming into contact with someone high on gas or solvents should keep the situation as calm as possible in order not to increase the risk of death.**

Please note: Although they are volatile substances, SSDS is not associated with nitrous oxide or alkyl nitrite (poppers) and the risks associated with using these substances are significantly less.

Other causes of death include:

- Choking on vomit.
- Suffocation or asphyxiation – when someone is unable to breathe in sufficient oxygen. This can occur if someone chokes, or if they have a bag or mask over their nose and mouth.
- Burns injuries, as volatile substances are highly flammable
- Fatal accidents due to impaired judgement and/or mobility

According to the most recent analysis by the Office for National Statistics, it is also the case that 27% of all VSU deaths involve more than one substance (volatile or otherwise) and/or alcohol.

There is no 'safe' way to inhale volatile substances such as butane that will take away the risk of death from heart failure. But if someone chooses to do it, the following advice might reduce the risk of other accidents:

- Don't do it alone—someone with you can call an ambulance.
- Avoid spraying directly into the mouth.
- Avoid using plastic bags—this will lower the risk of suffocation.
- Don't smoke or light cigarettes—solvent are highly flammable.
- Don't mix with alcohol, any other drugs or prescribed medicines.

6. Effects and Risks to Health

Objective: To understand the short- and long-term effects of VSU and the risks – for both health and safety – that these pose.

Short-term Effects

Due to the **rapid entry of the fumes/chemicals into the bloodstream through the lungs**, the effect will kick in within 20-30 seconds and last for the next 30-40 minutes. However, the ‘high’ usually lasts only a few minutes.

Volatile substances are central nervous system (CNS) depressants. The symptoms and effects from inhaling them are **very similar to alcohol intoxication** and can include the following short-term effects:

Excitatory	Early CNS Depression	Medium CNS Depression	Late CNS Depression
euphoria, excitation, exhilaration, dizziness, drowsiness, hallucinations, sneezing, coughing, excess salivation, intolerance to light, nausea/vomiting, flushed skin, bizarre behaviour	confusion, disorientation, dullness, loss of self-control, loss of inhibitions, ringing or buzzing in the head/ ears, blurred/double vision, cramps, chronic headache, pain insensitivity, pallor/ paleness	severe drowsiness, uncoordinated, slurred speech, depressed reflexes, nystagmus (where the eyes make repetitive, uncontrolled movements), violence/ aggression, paranoia and anxiety	loss of consciousness, bizarre dreams, epileptiform seizures, EEG changes, cardiorespiratory arrest

Longer-term Effects

Longer-term effects and risks to health **depend on the substance(s) being inhaled**.

- Butane: There is **no published evidence that butane causes long-term damage**. However, anecdotal evidence from regular and chronic users suggests some suffer from slurred speech and slower reactions while they are using, but find that these symptoms do not continue once they stop. Others feel that butane has been a contributory factor in the development of longer-term physical or mental health issues.
- Nitrous Oxide: Nitrous oxide can cause vitamin **B12 deficiency leading to anaemia** (lack of red blood cells). Heavy, prolonged use can lead to peripheral neuropathy – nerve damage. ([More information](#))
- Poppers: Poppers can cause a sudden decrease in blood pressure and should not be used with stimulants or Viagra. New research suggests that, in some cases, the

inhalation of poppers (isopropyl nitrite) is causing a form of permanent **eye damage** known as 'Poppers Maculopathy.' ([More information](#))

- Solvents, petrol and trade glues: Chronic use of these substances can cause long-term medical problems, including damage to the brain, liver, kidneys, immune system and/or respiratory illness.

Accidents

As well as the **risk of sudden death**, other dangers associated with gas/solvent use include:

- Explosions, fires and burns
- Accidents via hallucinogenic effects
- Choking on vomit while unconscious.

This printable [incident management sheet](#) advises on what to do in an emergency.

Practice-based Activity: You enter a room and witness that the individual is actively inhaling the butane gas from a deodorant aerosol. They are under the influence and incoherent. Knowing what you know about the risks and dangers of inhaling, write down what you are going to do immediately and post incident?

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If you are happy that you understand the health and safety risks that VSU can involve, please continue to Section 7.

7. Recognising Signs and Symptoms

Objective: To be able to recognise the signs and symptoms of VSU.

Physical Symptoms

The immediate symptoms of gas/solvent use can appear a lot like alcohol use. They might include:

- Slurred speech
- Dilated pupils
- Euphoria and excitement
- Difficulty with coordination
- Feeling drowsy, dizzy or light-headed
- Feeling nauseated and not interested in eating
- 'Drunken', withdrawn, irritable or inattentive behaviour
- Hallucinations and/or delusions
- Other physical signs suggestive of use might include a chemical smell, runny nose, watery eyes, irritation of the throat and rashes or spots around the nose and mouth.

However, although the effects will be felt almost instantly, they wear off within 30 minutes and the person will then present as sober.

Circumstantial Evidence

There may also be circumstantial evidence of use, e.g.:

- Empty gas or aerosol containers – perhaps with teeth marks on the nozzle
- Aerosols disappearing from around the home or workplace
- Aerosols being used up unusually fast
- Materials – e.g. sleeves, socks, towels – having white markings on them. This is where they have been used to filter out the unwanted chemicals from an aerosol.
- Nitrous oxide use is often associated with the littering of small metal canisters ('whippits') and balloons.

Behavioural Change

Gas/solvent use can be the result of, or cause, changed social circumstances. It is usually the case that young people are introduced to this activity by a family member, peer or someone else that they know. They may shift friendship groups. However, over time, those who choose to continue will often do so on their own. As a result, they can become less outgoing and more isolated. They may have less interest in activities and friends, spend more time on their

own and indoors, and no longer want to socialise or be involved in any activity which takes up large quantities of their time.

However, none of the above signs are definitive – they may be caused by other behaviours or illnesses. **The best way to find out if someone is using solvents is to talk with them and listen to what they have to say.**

Reflection Activity: Consider what cues in the following areas may suggest that someone is deliberately inhaling products.

- The individual's environment
- The individual's presentation (physical/psychological)
- The individual's social circumstances

1. Environment.....

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2. Presentation

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3. Social Circumstances

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If you are happy that you have a good grasp of the signs and symptoms associated with gas/solvent use, please continue on to Section 8.

8. Treatment

Objective: To understand how treatment services can respond effectively to VSU.

Since VSU is **not physically addictive**, there is no clinical solution that can be prescribed, although anti-anxiety medication may be appropriate in some cases.

However, many people have a **psychological dependency** and the idea of giving up using volatile substances can be extremely distressing. Inhaling these substances has not only become habitual but may be a coping strategy for everyday life. As a result, **psychosocial interventions** can be very helpful; e.g.:

- Identifying triggers and strategies to prevent relapse
- Motivational interviewing to identify reasons for use
- Brief solution focused therapy

People using gas or solvents should have **the same access into local recovery communities and activities as any other person using substances, and feel as welcomed.**

This is critical. In terms of treatment, the National Drug Treatment Monitoring System (NDTMS) [reports](#) suggest that VS-users account for only 3% of adults in treatment services in England and 2% of young people:

Substance breakdown of adults in treatment 2019-20					
	Opiate	Non-opiate only	Non-opiate & alcohol	Total	Additional adults receiving treatment in secure settings
Solvents	98	89	122	309	102

Substance breakdown of young people (YP) in treatment 2018-19					
	Primary	Adjunctive	Total	Primary Median Age	Additional YP receiving treatment in secure settings
Solvents	105	364	469	14	44

For whatever reason, it appears that people who use volatile substances are either not finding their way into treatment services or not disclosing VS-use. This may be due to any number of reasons: a reluctance to stop using, the stigma that surrounds gas/solvent use or, alternatively, the fact that there are perceived benefits to use. There may also be a lack of service provision locally, or people using gas/solvents may think that services are only for those using illicit drugs and/or to provide clinical interventions. Furthermore, feedback from professionals suggests that not all services routinely assess for VSU, so it is likely that many have existing clients who have not disclosed that they are also using solvents.

In conclusion, an increased awareness of gas/solvent use in support services and recovery communities – even just having informational posters – could do a lot to overcome some of these barriers.

Practice-based Activity: Make a list of all the barriers you can think of that might prevent someone accessing help or support for gas/solvent use in your organisation. Then think of an action you, or your organisation, could take to address each one of these barriers in turn.

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If you are happy that you understand how services can respond to gas/solvent use, please continue to the final section, Reflection.

9. Reflection

Objective: To reflect on what you have learned and how you can now apply this in your practice.

Thank you for taking the time to complete this training programme. We hope you have found it useful and that completing this final task will help you review your learning.

1. How would you rate your knowledge of VSU now? (1 = limited and 10 = extensive)

1 2 3 4 5 6 7 8 9 10

2. How confident do you now feel in discussing the issue of VSU or responding to/treating a client who uses volatile substances? (1 = not confident and 10 = very confident)

1 2 3 4 5 6 7 8 9 10

3. Will you now routinely assess for past and/or current VSU as part of your assessment practice?

Yes No Unsure

4. Are there other ways in which you think this training will positively influence your work practice?

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Final Activity: Bearing in mind the health, and practical risks, associated with gas/solvent use, does your organisation have appropriate policies and procedures in place? For example, if you are a school, do you have policies around aerosol use? If you are a housing service, do you have risk assessments in place about accommodating people using gas or solvents? Or, in more general terms, would staff in your organisation know how to react to an incident of gas/solvent use? As a final reflective task, consider what you could put in place to improve your organisation's policies and procedures around VSU.

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Additional Resources

If you would like to receive regular updates from Re-Solv, [please subscribe to our quarterly e-newsletter](#). We also have additional resources that you can access online, or contact us to order free printed copies:

- [Solvent use leaflet](#)
- [Nitrous oxide leaflet](#)
- [Poppers leaflet](#)
- [Parent Guide](#)

Finally, if you have questions that arise from the training, or about supporting a client using solvent and volatile substances, please don't hesitate to call our Helpline on **01785 810762**, mobile **07496 959930**, email info@re-solv.org, or **live chat** with us here online at re-solv.org.

Thank you!