

# Solvent abuse: the East Sussex Study findings

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Solvent abuse, or "glue-sniffing", is becoming of increasing concern to teachers and community workers. The East Sussex Solvent Abuse Study, which commenced in 1980, surveyed 9,000 school pupils to examine the extent of solvent abuse. This article summarises the main points of its report.

The study began in July 1980 as a direct response to a series of individual requests for help and advice. The three Health Education Units of the Brighton, Eastbourne and Hastings Health Authorities were designated as central collation and information points, co-ordinated by a central Study Co-ordinator. The study would not have begun or completed its task without the continued support, enthusiasm and co-operation of all the local services, national bodies, and professional specialists.

A literature search and statistical review in 1980 revealed that the most substantial work had been carried out by Dr Joyce Watson in the Glasgow and Lanarkshire region. In England the quantity of recorded work was small, although several studies into specific areas were under way. This led us to believe that the right course of action was to conduct a local study.

Although the main study was concluded in July 1984, it is intended to initiate and develop a forward strategy in the light of the knowledge and experience gained.

## Study location profile

The total population of East Sussex in 1981 was 665,300. There are four main

coastal towns — Brighton, Eastbourne, Bexhill and Hastings, a number of market towns and many rural communities. The overall percentage of ethnic minority groups is very low. There is a lower rate of socio-economic problems than in many deprived inner-city areas and other parts of the country. In addition to the state schools, East Sussex has a high percentage of independent education establishments.

It may not, therefore, be possible to view the collective findings of this study as representative of the national scene, although it may be fair to assume that many of the specific statistical findings could be considered indicative of general solvent abuse trends.

## An outline of the study

At the outset of the study the major tasks were:

1. Seeking data which would indicate the extent of solvent abuse and associated behaviours.
2. To provide a focal point for professionals to acquire and exchange knowledge and establish a suitable climate for informed debate.
3. To stimulate a local co-ordinated approach.

4. To support professionals in the field by a central co-ordinating advisory and information point.

*Phase 1* The Phase 1 data, collated in a 12-month period from July 1981, was on officially-known solvent abusers, as identified by the professionals to whose attention they came. The anonymous survey forms were completed by the professional interviewer.

*Phases 2 and 3* The second phase (March 1983) and third phase (March 1984) surveyed whole secondary-school year groups with a general health education survey which contained questions on smoking, alcohol, solvent abuse and recreational pursuits. The survey was carried out with the Education Authority's consent and the headteachers' co-operation, in a controlled classroom setting. At all times the individual information remained confidential to the survey team.

*Phase 4* In the fourth phase (July 1984) a representative sample of professionals from many disciplines likely to come into contact with solvent abusers were surveyed. The information sought from them would assist us in reaching conclusions, and prompting future action and direction.

Each of the phases was preceded by a pilot study, the data from which has been included in the main study results.

## Solvents and their effects

Suitable solvents are cheap and readily available in a vast range of products, many of them everyday household articles, such as paint stripper, nail polish remover, dry-cleaning fluids, anti-freeze, petrol, lighter fuel, and butane gas. In all phase studies, the respondents were asked to identify the most popular solvents (Table 1).

Various methods are used to induce a state of intoxication from solvents. Most frequently, the substance will be placed in a container, usually a crisp or polythene bag. The bag is then placed over nose and mouth, and deep breaths are taken to produce intoxication. Hy-

Solvent	%
Unspecified glue	47.1
Tipp-Ex fluid	25.6
Evo-stik	13.2
Butane gas	7.0
Nail polish remover	5.5
White spirit	5.4
Airfix cement	4.7
Zoff fluid	3.7
Petrol	3.4
Felt-tip pens	3.2
Thixo-Fix	2.5
Not specified	3.5

Table 1. The most popular solvents, identified by 597 respondents during the second phase of the project in March 1983.

poxia and hypercarbia may occur as a direct result of rebreathing, a fact which has been proved in controlled tests by Dr Joyce Watson.

The volatile substances are quickly absorbed into the blood-stream from the lungs, causing intoxication within seconds. This effect may last for minutes or hours. The experience ranges from a general feeling of well-being — euphoria and loss of inhibitions — to mental and physical disorders. The effects are said to be similar to those induced by excessive intake of alcohol.

The hallucination stage, according to Dr Joyce Watson, was reached by 42% of the cases investigated. The hallucinations can be horrific and frightening, or mystical and beautiful, and some imaginary experiences lead them to believe they can fly. In already dangerous locations, such as a high building or embankment, this can lead to injury or death. Continued inhalation, deepening the level of intoxication, causes cerebral depression and may induce drowsiness, unconsciousness, and coma. Sudden death may occur through asphyxia or cardiac arrhythmia and heart failure.

Although there have been some reported cases of youngsters experiencing physical withdrawal symptoms, we have seen no clinical evidence suggesting that solvent abuse is physically addictive.

Psychological dependency, however, is not in doubt. A study by Ross Anderson in 1982 reported a yearly average of 30 to 40 deaths in the UK associated with volatile substance abuse, constituting a total of 1% of all deaths among males aged 10 to 19 years. Statistics are now also available from the Office of Population Censuses and Surveys (OPCS).

**Solvent abuse – in groups or alone?**

Solvent inhaling is most frequently a group activity, often occurring as a direct result of peer-group pressure. The East Sussex findings (Phase 1) demonstrated that the large majority of the identified abusers fell into this category. In Phase 2, respondents identified the reasons for experimenting as follows: 19% to be like a friend, in with the group, or offered by a friend; and an average of 34% curiosity. This would seem to support the theory that solvent abuse is viewed by a large majority of youngsters as a social activity.

Various places are used as "dens". The favourite ones are secluded areas such as recreation grounds, multi-storey car parks, and bus shelters. Well-meaning attempts to close down den sites, or, as in the case of one Sussex newspaper, to publish details and photographs of a local den arousing concern, do little more than divert the group to a more secluded site. The worry is that some locations used by lone or group abusers, such as river banks, railway cuttings, and car parks, add to the dangers. Youngsters have died

attempting to fly from multi-storey car parks, and other fatalities have occurred as much as a direct result of the environmental hazards as of the influence of solvents.

Individuals often use a quiet part of the house, or their bedroom, under the cover of a suitable hobby such as model-making. Lone inhaling is potentially more hazardous, as, in addition to the risks already mentioned, it is commonly accepted that a higher percentage of this group become long-term abusers.

**Solvent abuse: short-term and long-term**

Even the most naive researcher soon becomes aware that there are in fact two very different types of abusers – the short-term experimenter and the long-term chronic abuser.

The short-term abuser or experimenter may inhale solvent once or twice, or continue for several weeks or months. Phase 2 of the study asked abusers to state in their own words why they experimented in the first place. This was an open question, leaving the respondent free to choose their own words. Without exception, all those who stated the reason as depressed or worried were females the highest recorded percentage coming from a single-sex school for girls. The main causative reasons identified were curiosity and to be like a friend or in with the group (Table 2).

When looking at the short-term experimenter group, and ways of controlling the practice effectively, the following points should be considered:

1. Part of the natural learning process is experimentation, and to many youngsters the practice of experimenting with solvents may be paralleled with any new fad or fashion trend. In most instances, the short-term experimental phase lasts only a few months.
2. Some do not survive this experimental period. Both the experimenting and chronic categories of abusers are equally at risk of dying. The tailing-off of inhaling at 18 is noticeable, and possibly happens because alcohol

becomes legally available, which gives access to a new social and recreational pursuit.

The long-term chronic abuser was defined in Phase 2 as one who admitted inhaling solvent one to four times daily over a period of months – in Phase 3 this period was extended to at least six months. No specific patterns appeared in this study that could definitely have identified the potential long-term abuser at an earlier stage. It is, however, a commonly-held belief that long-term abusers are under-achievers and inadequate individuals. The locality showing the highest recorded percentage of long-term abusers has a low socio-economic status, with an almost total absence of social or recreational facilities. Whether the course is set for the long-term abuser from the outset, or is triggered at a later stage, requires further investigation.

**Seeking patterns**

One of the main aims of the East Sussex study was to give some indication of the extent of practice in the locality as a whole, and to see if there were significant changes in patterns over a specific time scale or between specific areas.

In Phase 1 (1982), 112 solvent inhalers were identified. Phase 2 (1983) identified 597 inhalers, and Phase 3 (1984) 117. However, it should be recognised that the numbers identified may be an underestimate, since some individuals may have preferred not to admit to past or present practice.

In Phase 2, recorded in March 1983, there is a local variation in different communities studied ranging from 5.6% to 11.7%, giving an overall 8.1% of those surveyed aged between 11 and 18 years admitting to solvent abuse in the preceding year.

In Phase 3, recorded in March 1984, a representative sample (23%) of the original number surveyed in March 1983 was resurveyed. The number still found to be addicted was only very slightly reduced to an overall 7.0%, but of this group a significant increase had occurred in the percentage admitting inhaling solvents for more than one year, and

therefore coming into the long-term category.

The study suggests that the most vulnerable time is between the ages of 14 and 17. However, some fluctuation was observed during the three survey phases, the most striking being that solvent abuse was increasing in the younger age groups. It should be noted that the second and third phase of the study did not attempt to identify abusers aged over 19, although we know from the first phase of the survey that they exist.

During Phase 1 (1982) information was sought regarding the identified abusers' social class background. The results show that the practice was not confined to any particular social band, but was fairly evenly spread across all the classes as represented in the sample.

**Summary**

Over a two-year period, of the total 9,027 school pupils surveyed, an average of 7.5% of young people aged between 11 and 18 admitted inhaling solvents during that period. The study has illustrated that solvent abuse is not an illusion or a passing fashion. We should strive to control and reduce the level of abuse, with particular attention to the long-term abuser.

Excellent teaching packs from the

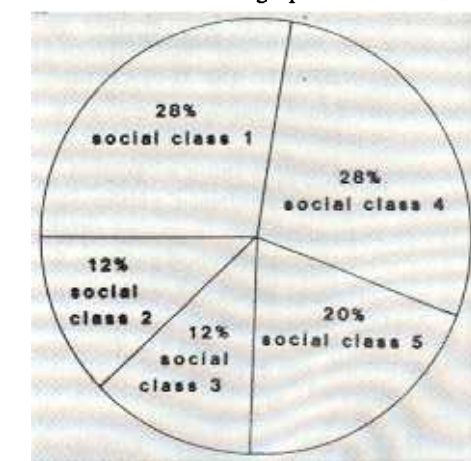


Chart showing the incidence of solvent abuse in young people from the different social classes as represented in the survey.

Reason	%
Curiosity	34.5
Like friend/group	15.2
Liked smell	12.1
Boredom	6.7
Don't know	4.9
To look big	3.5
Felt depressed	3.4
Offered it	2.0
Not specified	21.9

Table 2. Reasons for beginning to experiment with solvents, as given by 597 respondents during the second phase of the project in March 1983.

Teachers' Advisory Centre on Alcohol and Drug Education (TACADE), and from the Health Education Council, provide a ready source of background materials to facilitate the inclusion of this topic in the normal "drug use and abuse" component of any school health education programme. It is therefore recommended that Education Authorities should take steps to advise head teachers of the existence of these materials, and the desirability of a consistent and low-profile health education approach to the topic.

The Health Education Council response has been to consider the training needs of the professionals and produce jointly with Leeds Health Authority a training manual for professionals, reviewed on page 68 of this issue. They also launched, in late 1984, an excellent leaflet, *What to do about glue-sniffing - advice for parents on the misuse of glue*

*and other solvents.*

The following people have been closely involved in research into solvent abuse, and could be approached for further information:

- Ross Anderson, Department of Clinical Epidemiology and Social Medicine, St. George's Hospital Medical School, Cranmer Terrace, London.
- Joyce Watson, University Department of General Practice, Woodside Health Centre, Barr Street, Glasgow.
- Virginia Murray, National Poisons Unit, New Cross Hospital, Avonley Road, London.

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*Copies of this report, price £2.50, may be obtained from the Press and Public Relations Department, S.E. Thames Regional Health Authority, Thrift House, Collington Avenue, Bexhill-on-Sea, East Sussex TN39 3NQ.*