

Organic Solvent Syndrome (chronic toxic encephalopathy)

Symptoms

Organic solvent syndrome refers to a pattern of psychological symptoms, which have been linked to exposure to solvents over a long period or as a result of a single heavy dose. The most common symptoms include problems with memory, concentration, mood swings and irritability. Motivation and energy may be affected. Early warning signs include headaches and lethargy while working in a solvent laden atmosphere. Solvents cause a number of other health problems including dermatitis, respiratory irritation, and peripheral neural problems. Some published case reports have linked the onset of psychiatric disorders to solvent exposure.

Exposures

The most common exposures leading to reporting of solvent-related symptoms are painting (e.g. white spirits), industrial degreasing (e.g. trichloroethylene - Trike, or 1,1,1 Trichloroethane - Genklene), floor tiling and carpet-laying, dry-cleaning (perchloroethylene - perc-), and furniture production (sprayed varnishes and paints). Industrial degreasing occurs throughout Sheffield's metal industries, in cutlery-manufacture, engineering and the steel industry. Less common exposures occur amongst printers, cleaners, garage mechanics, chemical tanker drivers, chemical (including paint and petroleum products) production workers, coke oven workers and others.

Diagnosis and rehabilitation

Where organic solvent syndrome is recognised a detailed history of occupational exposure to chemicals with detailed neuropsychological testing is recommended. Neurological examinations are usually normal. Blood tests for solvent metabolites are appropriate in some cases where there is

continuing exposure. Rehabilitation of sufferers, similar to that available for stroke victims, has been found to be effective in Scandinavia. Early recognition of solvent symptoms is vital as a step towards prevention and recovery.

Prevention

There are substitutes for or safe methods of handling all solvents. Practical help with identifying solutions is available from SOHP. Solvent exposure at work is covered by the Control of Substance Hazardous to Health Regulations (COSHH) which make substitution the preferred method of controlling exposure, with personal protection, masks and airlines, the least desirable method. Benzene is a recognised carcinogen in UK and trichloroethylene is recognised as a carcinogen in several countries in Europe and N America. Other solvents are suspected carcinogens. Carcinogens are covered by tough requirements under COSHH legislation.

Benefits and Compensation

State Disablement Benefit may be available where exposure occurs in an incident, or from exposure to tetrachlorethane, carbon tetrachloride, trichloromethane, methyl chloride, benzene or a chemical closely related to benzene. This would cover exposures to white spirits (which contains toluene and xylene), but not to common degreasers like trichloroethylene, or Genklene. Form BI100D (BI100A for an incident) from the Department of Social Security should be used to make a claim. Other illness-related benefits: Incapacity Benefit and Disability Living Allowance, have been obtained in more severe cases. Civil damages claims are being won increasingly often.

This bulletin is produced by Sheffield Occupational Health Project. We aim to provide advice tailored to the needs of clinical workers primary care in the Sheffield area. In addition we will feature in each issue the work of a local specialist or group with a particular area of interest in occupational health.

For more information on any item contact sohp at the address below

An occasional publication, free to workers in primary care in the Sheffield area

Occupational Health update

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The Swedish Neuropsychological symptoms questionnaire.

This questionnaire is a useful tool for assessing the likelihood that current or recent solvent exposure is responsible for neuropsychological symptoms. Results correlate with the extent of recent exposure, as well as presence or absence of recent exposure. However for individuals with past chronic or heavy acute exposures the questionnaire is not reliable. Tests of psychological functioning are essential for the latter group.

1. Do you feel that your memory has become poorer than it used to be ?
2. Do you use more notes than you used to, in order not to forget appointments, when shopping or the like ?
3. Do you feel that it has become more difficult for you to remember what you have seen on TV or read in newspapers or books ?
4. Do you feel that your ability to concentrate is poorer than it used to be ?
5. Do you feel that it has become more difficult for you to participate in conversations or discussions when several people talk at the same time ?
6. Do you get upset more easily than you used to (e.g. when you see something sad or sentimental on film or TV)?
7. Do have you workmates or relatives complained that you are more testy or irritable than you used to be ?
8. Do you feel that your way of thinking has become slower and less clear than it used to be ?
9. Do you feel that your ability to adapt yourself to new conditions has changed making it more difficult or stressful to adapt?
10. Do you engage in leisure-time activities and hobbies as you used to do ?
11. If you start doing something do you get tired and lose concentration more quickly than you used to ?
12. Do you tolerate alcohol less than you used to ?
13. Do you tolerate the smell of solvents and other air pollution less well than you used to ?