

SCIENCE NEWS FLASH: New ECETOC report offers guidance on the efficacy and safety of antidotes for acute poisoning by cyanides

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When it happens, cyanide poisoning can have very serious neurological consequences that may result in severe disability and death. Cyanide poisoning may occur after swallowing of, inhalation of, or skin contact with hydrocyanic acid, cyanide salts, or cyanide forming compounds (cyanogens, e.g. nitriles or amygdalin), or from smoke inhalation. So far, there has been no recognised consensus on when to apply the various antidotes being used across the world.

This report, therefore, reviews the efficacy, efficiency, safety, and practicality of the various antidote regimes used under different poisoning circumstances. The review was based on an extensive literature survey and analysis and statistical evaluation of more than 400 published and unpublished cases of poisoning by cyanides. The report concludes that certain antidotes (sodium thiosulphate, amyl nitrite and hydroxocobalamin), when administered alone, counteract moderate to severe poisoning. The combination of sodium nitrite and sodium thiosulphate, with or without amyl nitrite, also was effective in severe poisonings. Dimethylaminophenol and sodium thiosulphate are at least peffective in moderate poisonings, probably (few actual cases) also in severe cases. Because of significant side effects di-cobalt-EDTA is not recommended. Oxygen is not regarded as an antidote, but is an important supportive treatment. The final choice of antidote additionally depends on the practicality, e.g. cold storage requirement in a tropical country, or high price in developing countries. Recommendations are also given for the treatment of poisoned children, or mass poisonings and for use by first aiders, e.g. in industry.

Published as ECETOC Technical Report no. 121: *Efficacy and safety of antidotes for acute poisoning by cyanides*, the report is freely available and can be downloaded via <http://bit.ly/ecetoc-tr121>



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