

# Nitrous oxide induced neurotoxicity: a case report and literature review

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## Abstract

Nitrous oxide is an increasingly popular recreational drug. However recurrent or prolonged use can be associated with nitrous oxide toxicity, with numerous reports of harm documented in the literature. Nitrous oxide irreversibly binds and inactivates vitamin B12, which is an important co-factor in metabolic pathways involved in DNA and myelin synthesis. Toxicity is therefore associated with vitamin B12 deficiency-related syndromes, primarily involving haematological and neurological systems. As a 'legal high', nitrous oxide use has attracted repeated health warnings from experts. An awareness and understanding of the pathophysiology and management of nitrous oxide toxicity is therefore important for clinicians. We discuss the case of a 29-year old man presenting with nitrous oxide-induced sensorimotor neuropathy and review the existing literature surrounding toxicity.

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