

Novel psychoactive substances:

the rising wave of 'legal highs'

In a somewhat prophetic statement, Henderson wrote in 1988:

*'It is likely that the future drugs of abuse will be synthetics rather than plant products. They will be synthesised from readily available chemicals, may be derivatives of pharmaceuticals, will be very potent, and often very selective in their action. In addition, they will be marketed very cleverly.'*¹

Indeed, despite an overall decline in drug misuse in recent years, the use of so-called 'legal highs' or novel psychoactive substances (NPS) has seen exponential growth, with new brands, chemicals, and products proliferating rapidly in a new and evolving market. The United Nations Office on Drugs and Crime recently reported more than twice the number of new substances now available as compared with 2 years ago.² In addition, the European Monitoring Centre for Drugs and Drug Addiction report that in Europe two new NPS are available on the market almost every week.³ In the face of such a rapidly growing market, it is difficult to keep pace with what these products contain, what psychoactive effects they have, and how best to manage patients who are taking them.

Although we may feel fairly confident in managing a patient who has injected heroin, with Toxbase guidelines at the ready, managing a patient who has smoked 'Blast Off', snorted 'CharlySheen', or injected 'Magic Dragon' may not be quite as straightforward. Toxbase guidelines for synthetic stimulants, hallucinogens, and empathogens are sparse, if present at all,⁴ and the fact that there is no way of knowing what chemicals these products contain compounds the issue because treating clinicians cannot know which chemicals to reference on Toxbase. Further, data show that products labelled with the same name may contain different compounds, sometimes with several compounds in one product.⁵ Lack of manufacturing regulations and an absence of quality assurance⁵ mean that there is also a high likelihood of contamination. Some studies show the presence of illicit drugs within these so-called legal substances, something that the users are most often unaware of, leading to untold biological and psychological effects.⁵ As a result, it is highly unlikely that NPS users can be sure what they have ingested.⁶

THE SALE OF 'LEGAL HIGHS'

A look back at the history of substance misuse reveals that synthetic recreational drugs have been available in varying forms since the 1920s. However, the development of the internet seems to have been the catalyst for the explosion in NPS use,⁶ with virtual communication allowing the ready spread of information among manufacturers, retailers, and users. Not only is it possible to purchase a multi-buy deal of the latest 'legal high' online, but consumers can also access numerous fora to discuss the effects of such products, and receive recommendations for products providing a similar 'high'. For those not keen to buy online, 'head shops' have sprung up on the high street, where it is possible to purchase the 'legal high' of one's choosing.⁶

They are invariably labelled 'not for human consumption' to avoid regulation under the Medicines Act (1968) and are sold in varying guises such as bath salts, incense, and plant food.⁶ Although efforts are made to outlaw NPS under the Misuse of Drugs Act (1971), new products are made available just as quickly as existing ones are banned, with alternatives to mephedrone being made available just weeks after it was made a Class C drug.⁵ Similarly, although many synthetic cannabinoids have been banned, many more are still available, with manufacturers altering specific chemical formulas in subtle ways in order to stay ahead of legislation.⁵

WHO USES 'LEGAL HIGHS'?

Worryingly, the brightly-coloured packaging of NPS appears to target the younger population.⁶ In the UK, DrugScope suggests the typical NPS user is a vulnerable young person, living in socioeconomic deprivation, too young to engage in club drug use, with limited disposable income, and who is now able to easily access as yet legal intoxicating substances.⁶ The Royal College of Psychiatrists disagrees, pointing to

evidence that NPS users are more likely to be employed and to have established social networks.⁷

The Angelus Foundation, set up specifically to help parents of NPS users, reports that 13.6% of 14–18-year-old school students and 19% of university freshers had tried a 'legal high'.⁸ Although NPS appear to be popular among teens and students, specific groups such as lesbian, gay, bisexual, and transgender (LGBT) communities, clubbers, and 'psychonauts' also show higher levels of use.⁷ Prisoners are also increasingly using NPS.⁷

The draw of NPS seems to be that these drugs are designed to provide a similar effect to traditional recreational drugs, but are affordable, widely available, and, importantly for many, legal.⁶ Existing drug users may be encouraged by the fact that most NPS are undetectable in urine drug screens.⁷ The majority of NPS are synthetic cannabinoids, with a significant proportion of stimulant drugs also available.² However, the reality is that NPS are difficult to categorise, as NPS products may be chemically similar but have very diverse psychotropic effects.⁵ In addition, compounds are often mixed. Synthetic cannabinoids are generally sold in products in combination with benzodiazepines, hallucinogens, or stimulants.⁵ They are known to be many times more potent than cannabis, leading to concerns about their long-term effects on health. In addition, dependency can occur after relatively short-term use.⁵

Given the variety of products available and the diversity of the contents and effects of these products, acute assessment and management require a symptom-directed approach,⁴ with information from the National Poisons Information Service and Toxbase if available.⁵ Although many users are likely to be ingesting NPS with little to no adverse effects, there is a significant risk of physical and psychological harm.⁵ Short-term effects can range from a self-

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limiting gastrointestinal upset, to potentially fatal effects such as cardiac arrhythmias and serotonin syndrome. There can be temporary paranoia and aggression, with the risk of an 'intense comedown' as drug effects wear off, which can lead to suicidal ideation. Longer-term mental health problems such as psychosis, depression, and anxiety have also been reported.⁷

THE ROLE OF THE GP IN MANAGING NOVEL PSYCHOACTIVE SUBSTANCE USE

Evidence-based guidelines for the management of NPS use are lacking. A multidisciplinary task force, the Novel Psychoactive Treatment UK Network (NEPTUNE), has recently published recommendations on the role of front-line staff.⁵ Many NPS users do not consider themselves drug users, and are likely to engage in casual and sporadic use, with little or no contact with health services. They often do not see their drug use as a health problem and are therefore unlikely to seek help for it. As a result, opportunistic detection in a primary care consultation for a seemingly unrelated issue is potentially crucial in detecting and minimising use, and allowing the opportunity for brief advice and information to be given to patients. A Brief Intervention can also then be provided, if possible within the time frame of a GP consultation.⁵ High-risk groups, such as those presenting with mental health difficulties, may need to be specifically questioned about NPS use, in order to identify users and offer help as appropriate.⁹

An initial assessment should include more detailed information regarding the patient's drug use, any high-risk behaviours, and the physical and psychological sequelae of drug use that they may be suffering from.^{9,10} This then allows an assessment of needs to be made, while an intervention in general practice can be with the goal of abstinence or harm reduction. It is important to make clear to patients that, just because 'legal highs' are legal, this does not mean that they are safe, and significant harm can result from use. Patients can be signposted to sources of further help, including UK Drug Watch briefing papers for drug-specific

information,¹¹ and the Angelus Foundation website (www.angelusfoundation.org.uk) for information and support specific to 'legal highs'. Those patients requesting further help, displaying high-risk behaviours, or presenting with recurrent harm from NPS use can be referred to specialist drug services for ongoing management.⁵

THE FUTURE OF NOVEL PSYCHOACTIVE SUBSTANCES

With the recent introduction of the Psychoactive Substances Bill,¹² steps are being taken to prohibit the production, distribution, and sale of NPS. However, in the absence of legislation, the consumption of 'legal highs' continues to soar. Further research is required into the short- and long-term consequences of use, and the most appropriate management approach when dealing with patients who take NPS.

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REFERENCES

1. Henderson GL. Designer drugs: past history and future prospects. *J Forensic Sci* 1988; **33**(2): 569–575.
2. United Nations Office on Drugs and Crime. *World drug report 2015*. New York: United Nations, 2015. http://www.unodc.org/documents/wdr2015/World_Drug_Report_2015.pdf [accessed 25 Nov 2015].
3. European Monitoring Centre for Drugs and Drug Addiction. *European drug report: trends and developments 2015*. Luxembourg: Publications Office of the European Union, 2015. http://www.emcdda.europa.eu/attachements.cfm/att_239505_EN_TDAT15001ENN.pdf [accessed 25 Nov 2015].
4. Toxbase. <http://www.toxbase.org/Poisons-Index-A-Z/L-Products/Legal-Highs/> [accessed 1 Dec 2015].
5. Abdulrahim D, Bowden-Jones O, on behalf of the NEPTUNE Expert Group. *Guidance on the management of acute and chronic harms of club drugs and novel psychoactive substances*. London: NEPTUNE, 2015. <http://neptune-clinical-guidance.co.uk/wp-content/uploads/2015/03/NEPTUNE-Guidance-March-2015.pdf> [accessed 1 Dec 2015].
6. DrugScope. *Business as usual? A status report on new psychoactive substances (NPS) and 'club drugs' in the UK*. DrugScope, 2014. <https://drugscopelegacysite.files.wordpress.com/2015/07/businessasusual.pdf> [accessed 25 Nov 2015].
7. Faculty of Addictions Psychiatry, Royal College of Psychiatrists. *One new drug a week: why novel psychoactive substances and club drugs need a different response from UK treatment providers*. London: RCPsych, 2014. http://www.rcpsych.ac.uk/pdf/FR%20AP%2002_Sept2014.pdf [accessed 25 Nov 2015].
8. Angelus Foundation. *Angelus welcomes Queen's Speech bill to outlaw the sale of 'legal highs' – 27 May*. <http://www.angelusfoundation.org.uk/tag/survey/> [accessed 25 Nov 2015].
9. National Institute for Health and Care Excellence. *Drug misuse in over 16s: psychosocial interventions. NICE guidelines [CG51]*. London: NICE, 2007. <http://www.nice.org.uk/guidance/cg51> [accessed 25 Nov 2015].
10. Winstock AR, Mitcheson L. New recreational drugs and the primary care approach to patients who use them. *BMJ* 2012; **344**: DOI: 10.1136/bmj.e288.
11. Scottish Drugs Forum in partnership with UK Drug Watch. *Drug briefing papers*. <http://www.sdf.org.uk/drug-information/> [accessed 25 Nov 2015].
12. Bates M, May T. *Psychoactive substances bill [HL] 2015–2016*. <http://services.parliament.uk/bills/2015-16/psychoactivesubstances.html> [accessed 25 Nov 2015].