

ALCOHOL, NICOTINE AND ILLICIT DRUG TESTING IN WASTEWATER IN VICTORIA

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Introduction and Aims: Substance misuse results in a range of social harms. Estimating alcohol, nicotine and illicit drug use in the community is important, with current estimates reliant upon self-report data and subject to biases. Chemists can now quantify substances in wastewater using an internationally validated method.

This research estimated consumption levels based upon contaminants discharged in municipal wastewater treatment plants in metropolitan and regional Victoria sites during a week in March and June/July 2015.

Design and Methods: Twenty-four hour composite raw wastewater samples were collected at inlets of seven sewage treatment plants during each sampling week in March and June/July 2015. Using a validated analytical method, concentrations of alcohol, nicotine, and illicit drug excreted residues were measured.

Key Findings: In metropolitan Victoria during March 2015, average cocaine consumption was 245mg/day/1000ppl and MDMA was 273mg/day/1000ppl. Methamphetamine consumption was triple at 978mg/day/1000ppl. Alcohol consumption was 13.5L/day/1000ppl and nicotine consumption was 1850/day/1000ppl. Comparison of metropolitan Victoria results between March and June/July 2015 showed cocaine consumption decreased slightly, yet MDMA and methamphetamine consumption remained stable. Alcohol consumption decreased slightly and tobacco consumption decreased about 20%. In regional Victoria during June/July 2015, average cocaine consumption was 77mg/day/1000ppl and MDMA was 298mg/day/1000ppl. Methamphetamine consumption was 1819mg/day/1000ppl, double metropolitan results. Alcohol consumption was 20L/day/1000ppl, 47% higher than and tobacco consumption was over double metropolitan consumption at 3307/day/1000ppl.

Discussions and Conclusions: Wastewater analysis provides reliable objective data on population-wide substance use of major concern to the community – offering consumption level data, previously only obtained through survey data.

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