

Wastewater study flushes out drug habits

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Associate Professor Chris Wilkins, lead drug researcher at Massey University's SHORE and Whāriki Research Centre. Credit: Massey University

In the first wastewater study of drug use in New Zealand, methamphetamine was the most commonly detected illegal drug in Auckland.

In a pilot study, funded by Massey University, Auckland wastewater treatment plants were sampled daily from May to July 2014. These plants service a catchment area of approximately 1.3 million people. The study did not include cannabis, as it tends to bind to solids and requires extra testing which was not covered under the [pilot study](#).

Associate Professor Chris Wilkins from the SHORE and Whāriki Research Centre co-authored An exploratory wastewater analysis study of drug use in Auckland, New Zealand, with environmental toxicologists from Queensland University's National Research Centre for Environmental Toxicology. The paper has today been published in the *Drug and Alcohol Review*.

He says the results show consistent levels of [methamphetamine](#), codeine, morphine and methadone in our largest city. "These drugs were found in high frequency, followed by amphetamine, MDMA [ecstasy] and methylone [a common ecstasy substitute]. Methamphetamine consumption was found at similar levels in both catchments however, interestingly, [cocaine](#) was only detected in one catchment and only on eight occasions during the testing period. Two of the detections identified cocaine but not its metabolite, suggesting the disposal of raw cocaine into the sewer rather than cocaine consumption.

"And while the other drugs were detected at consistent levels throughout weekdays, MDMA and methylone were only detected on weekends, suggesting they are used primarily as 'party drugs'. The consistent use of amphetamine and methamphetamine suggests their use is not limited to late-night weekend partying. The stimulant properties have long been known to be used across a range of work, domestic and recreational activities that require long periods of stamina and concentration," Dr Wilkins says.

"It's not surprising methamphetamine presented more regularly, as it's

also associated with high levels of dependency, which may also dictate more regular use patterns. The low level of cocaine consumption is consistent with the very low use and availability of cocaine as reported in our annual monitoring surveys."

Wastewater analysis has been conducted in cities in Europe, North America, Asia and Australia, but this is the first time a study of this kind has been carried out in New Zealand.

More information: Lai, F. Y., Wilkins, C., Thai, P., and Mueller, J. F. (2017) An exploratory wastewater analysis study of drug use in Auckland, New Zealand. *Drug and Alcohol Review*, [DOI: 10.1111/dar.12509](https://doi.org/10.1111/dar.12509)

Provided by Massey University

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