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wastewater analysis — a new source of monitoring illicit drug use in europe

Largest multi-city study on drug wastewater analysis released today

(27.5.2014, LISBON **EMBARGO 10.00 WET**) The findings of the largest European project to date in the emerging science of wastewater analysis (WWA) are released today in an article published in ***Addiction***(1). The project in question — steered by the Europe-wide **SCORE** network (2) — analysed wastewater in over 40 European cities to explore the drug-taking habits of those who live in them. Its conclusions are taken up in the ***European Drug Report 2014***, launched by the **EU drugs agency (EMCDDA)** today, as well as in an online interactive analysis by the agency dedicated to the issue (**Perspectives on drugs**) (3).

The purpose of the **SCORE** study was to assess geographical differences and temporal changes in illicit drug use in metropolitan settings across the region. It is the first, and most extensive, WWA application to date, covering multiple countries, over consecutive years (2011–13) and according to a fixed protocol.

Wastewater analysis is a rapidly developing and novel scientific discipline with the potential for monitoring near-real-time, population-level trends in illicit drug use. By sampling a known source of wastewater, such as a sewage influent to a wastewater treatment plant (WWTP), scientists can now estimate the quantity of drugs used in a community by measuring the levels of illicit drugs and their metabolites excreted in urine.

From London to Nicosia and Stockholm to Lisbon, the study analysed daily wastewater samples in the catchment areas of WWTPs over a one-week period in April 2012 and in March 2013. In 2012, the study involved 23 cities in 11 countries, while in 2013 it was broadened to 42 cities in 21 countries. Data from a 2011 study (19 cities, 11 countries) were used for comparison. Wastewater from approximately 8 million people was analysed for traces of five illicit drugs: amphetamine, cannabis, cocaine, ecstasy and methamphetamine.

The WWA results provide a valuable snapshot of the drug flow through the cities involved, revealing marked regional variations in drug use patterns. Traces of cocaine, for example, were higher in western and some southern cities but lower in northern and eastern cities. Use of amphetamine, while relatively evenly distributed, showed the highest levels in the north and northwest of Europe. Methamphetamine use, generally low and traditionally concentrated in the Czech Republic and Slovakia, now appears to be present in the east of Germany and northern Europe. And when weekly patterns of drug use were examined, cocaine and ecstasy levels rose sharply at weekends in most cities, while methamphetamine and cannabis use appeared to be more evenly distributed throughout the week.

‘Wastewater analysis provides the possibility to collect and report measurements more quickly and regularly than is the current norm for national surveys’, concludes the report. If used more routinely as a complement to other European drug surveillance methods, it has the clear potential to shed extra light on drug use trends in Europe, including the use of new psychoactive substances.

(1) Ort C, van Nuijs ALN, Berset J-D, *et al*. ‘Spatial differences and temporal changes in illicit drug use in Europe quantified by wastewater analysis’, *Addiction* 109: doi: 10.1111/add.12570 [www.addictionjournal.org](http://www.addictionjournal.org)

(2) The Sewage analysis CORE group (SCORE) [www.niva.no/SCORE](http://www.niva.no/SCORE)

(3) See Figure 2.4 in the European Drug Report and Perspectives on drugs at [www.emcdda.europa.eu/edr2014](http://www.emcdda.europa.eu/edr2014)