



Drug use in Adelaide Monitored by Wastewater Analysis

Project commissioned by Drug and Alcohol Services
South Australia (DASSA)

Analyses performed by:
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September 2024

Please note that drug consumption levels may vary slightly from report to report due to adjustments made to sewerage flow rates in some of the treatment plants. The South Australian population has also been updated according to the 2021 Census release (Australian Bureau of Statistics).

Purpose of the project

- > To determine the prevalence of drug use in South Australia, initially in metropolitan Adelaide, through wastewater analysis.

Wastewater analysis CAN tell us:

- > The pattern of drug consumption over the week.
- > Drug consumption levels tested bi-monthly from December 2011 (monthly sampling occurring between April and December 2020).

Wastewater analysis CANNOT tell us:

- > The characteristics of people who use drugs.
- > In what regions of metropolitan Adelaide drug consumption is occurring.
- > The form and way drugs were taken.

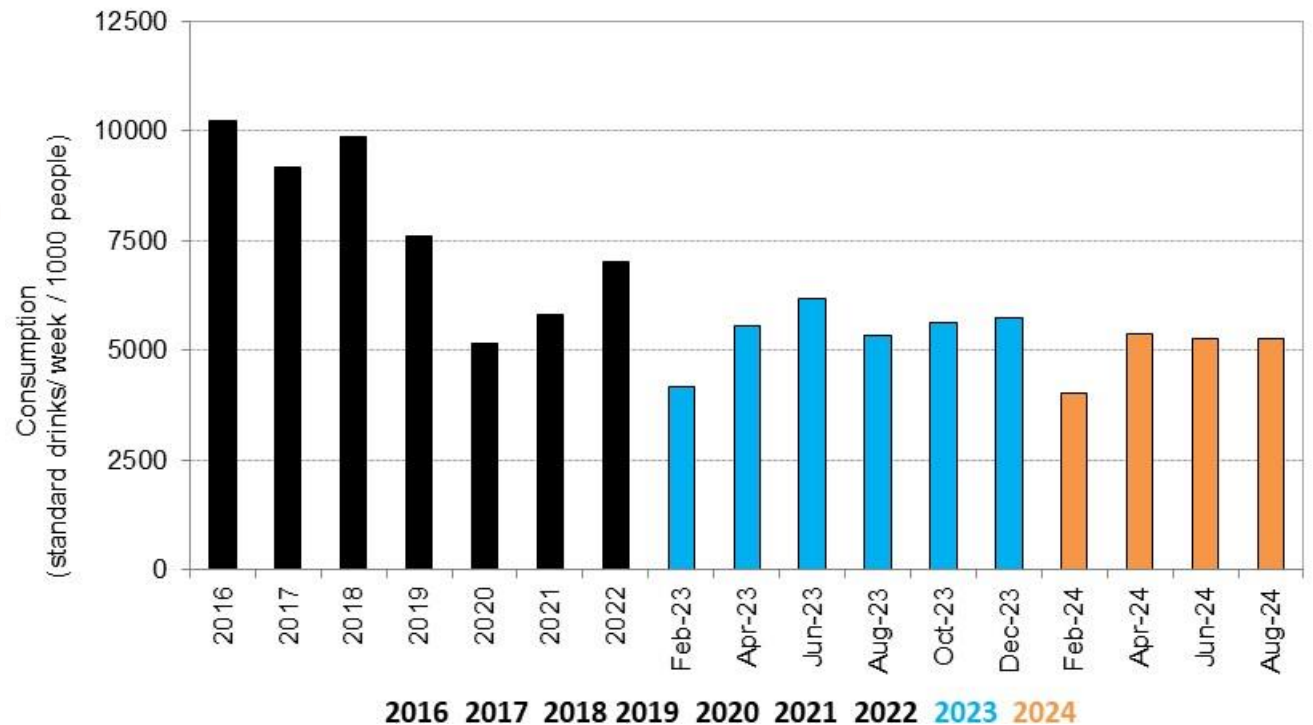
Wastewater sampling

- > Sampling over one week every two months from Adelaide Metropolitan treatment plants, commencing December 2011.
- > In response to COVID-19, sampling was monthly from April to December 2020, returning to bi-monthly thereafter*.
- > Drugs tested:
 - Stimulants: cocaine, MDMA, and methamphetamine.
 - Opioids: morphine, codeine, methadone, oxycodone, fentanyl and heroin.
 - Cannabis (THC).
 - Nicotine and anabasine (tobacco-specific alkaloid).
 - Alcohol.

*Consumption levels in May 2020 are based on weighted averages as sampling only occurred on two days. June 2020 samples were taken before restrictions on alcohol consumption were lifted in restaurants and hotels. Sampling in July 2020 in three of the four plants excludes Wednesday.

Alcohol

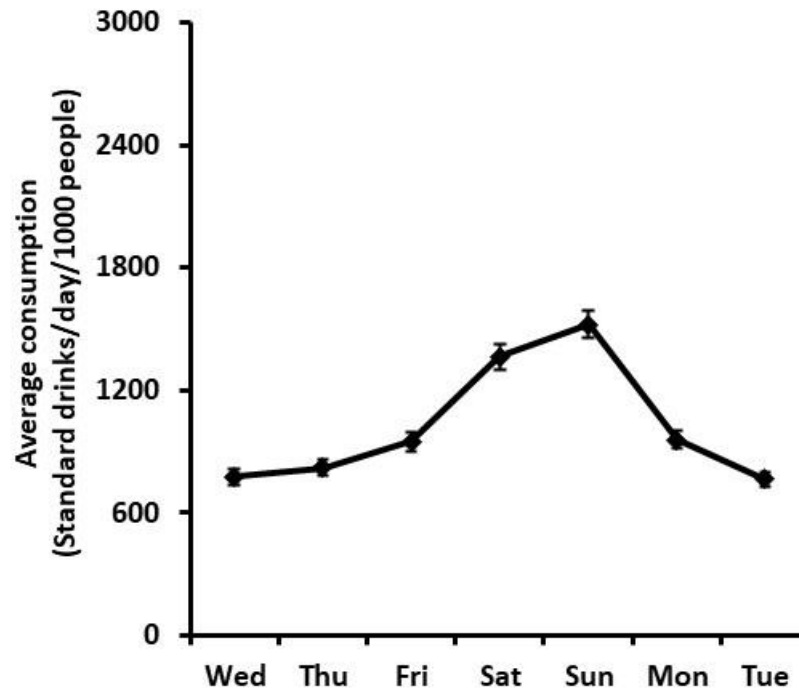
Average levels in 2024 to date were the lowest since reporting began.



Average consumption (standard drinks/week/1000 people) from 2016-2022 (excludes February). Weekly consumption (standard drinks/week/1000 people) bi-monthly from February 2023 onwards. Ethanol excretion=0.012 % of ethanol consumption, 10g ethanol per standard drink.

Alcohol

Alcohol levels are higher on weekends.

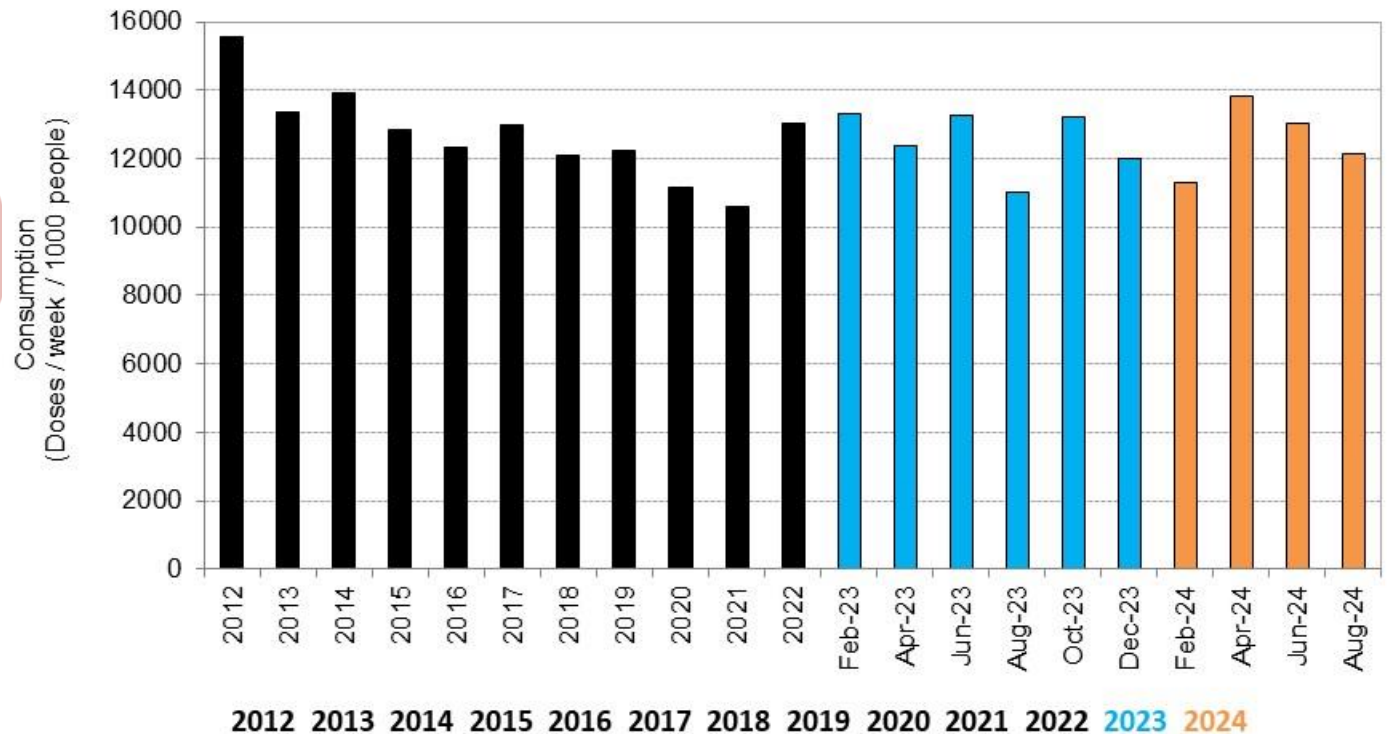


April 2016 – Aug 2024

Average daily consumption (standard drinks/day/1000 people) of ethanol over the week. Dose=10g ethanol per standard drink.

Nicotine*

Average levels from 2022-2024 to date were the highest since 2017.

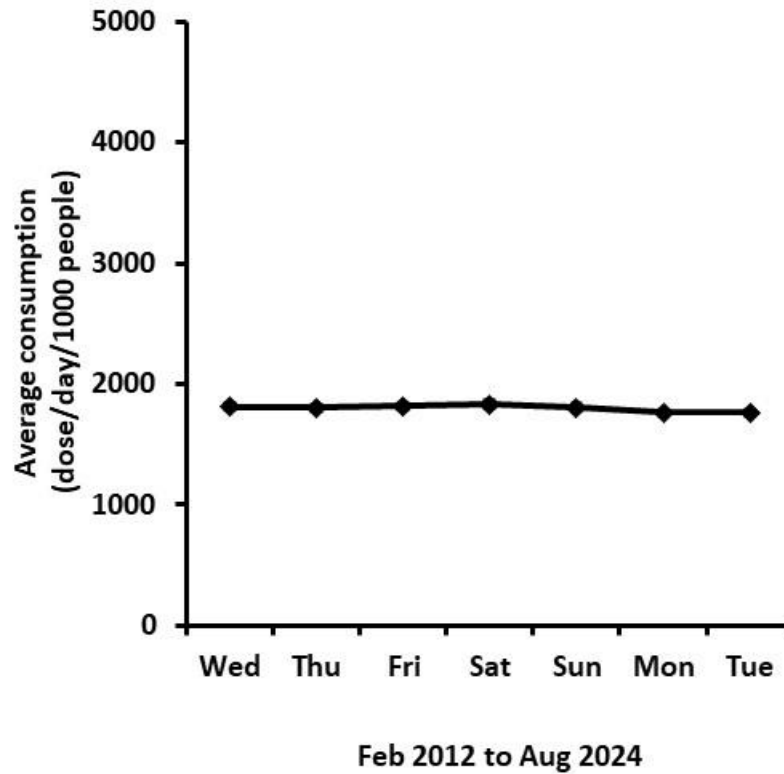


Average consumption (dose/week/1000 people) of nicotine for 2012-2022. Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Dose=1mg.

*Does not differentiate between tobacco and nicotine replacement therapy (NRT) use
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Nicotine

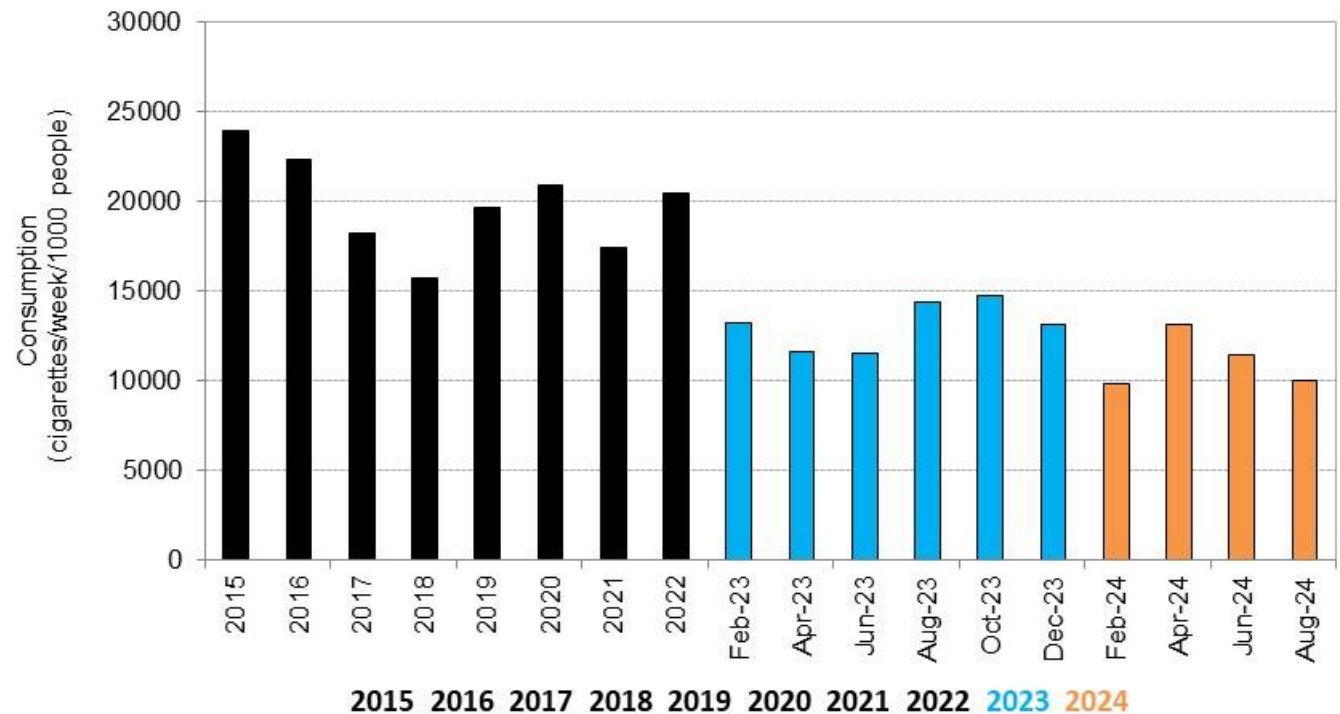
Nicotine levels are constant over the week.



Average daily consumption (dose/day/1000 people) of nicotine over the week. Dose=1mg.

Anabasine*

Average levels are decreasing, with 2024 to date the lowest since reporting began.

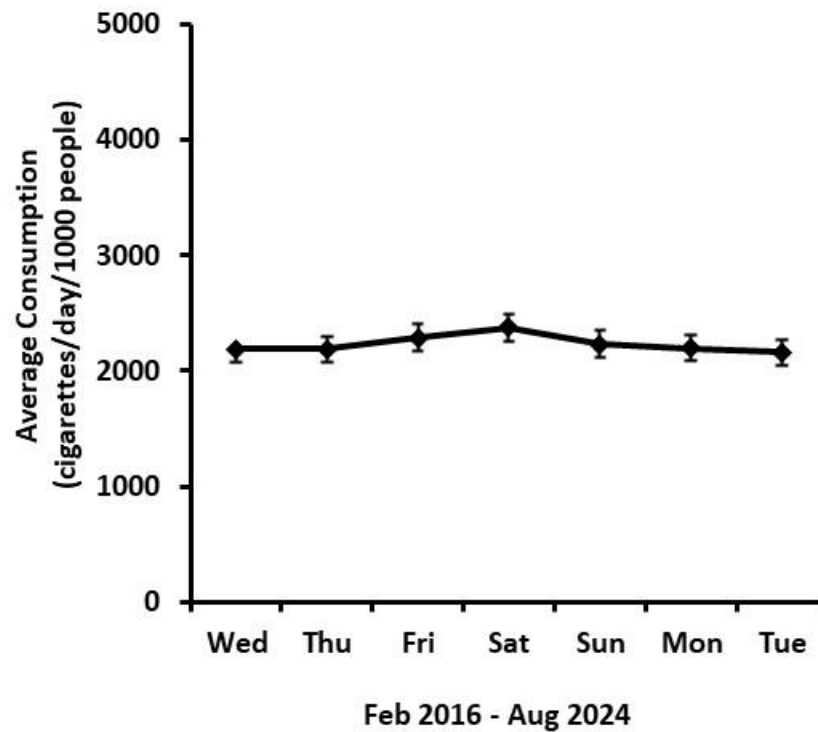


Average weekly consumption (cigarettes/week/1000 people) from 2015-2020 (2015 includes December only). Weekly consumption (cigarettes/week/1000 people) bi-monthly from February 2021 onwards.

*Tobacco-specific alkaloid.

Anabesine

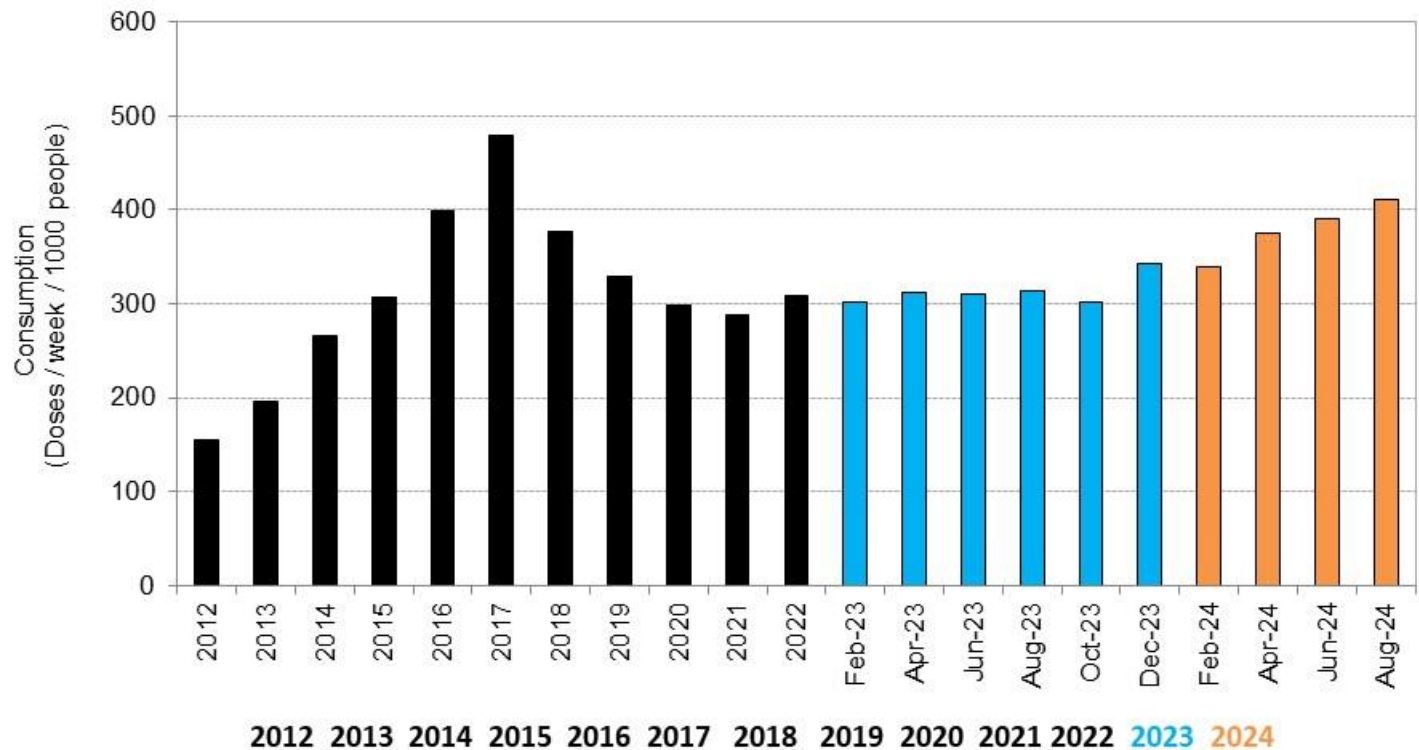
Anabesine levels are constant over the week.



Average weekly consumption (cigarettes/day/1000 people) of anabesine.

Methamphetamine

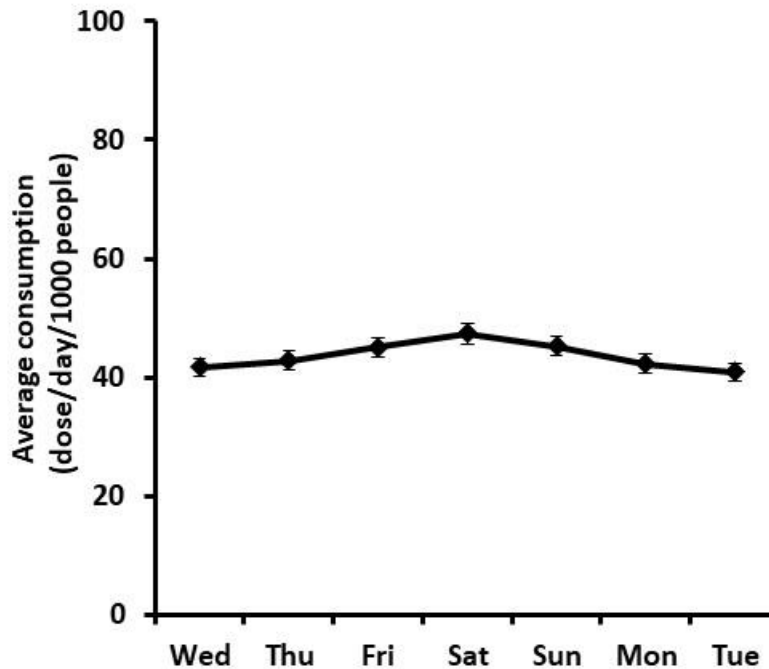
Average levels in 2024 to date were the highest since 2017.



Average consumption (dose/week/1000 people) of methamphetamine for 2012-2022. Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Dose=30mg.

Methamphetamine

Methamphetamine levels increase slightly on weekends.

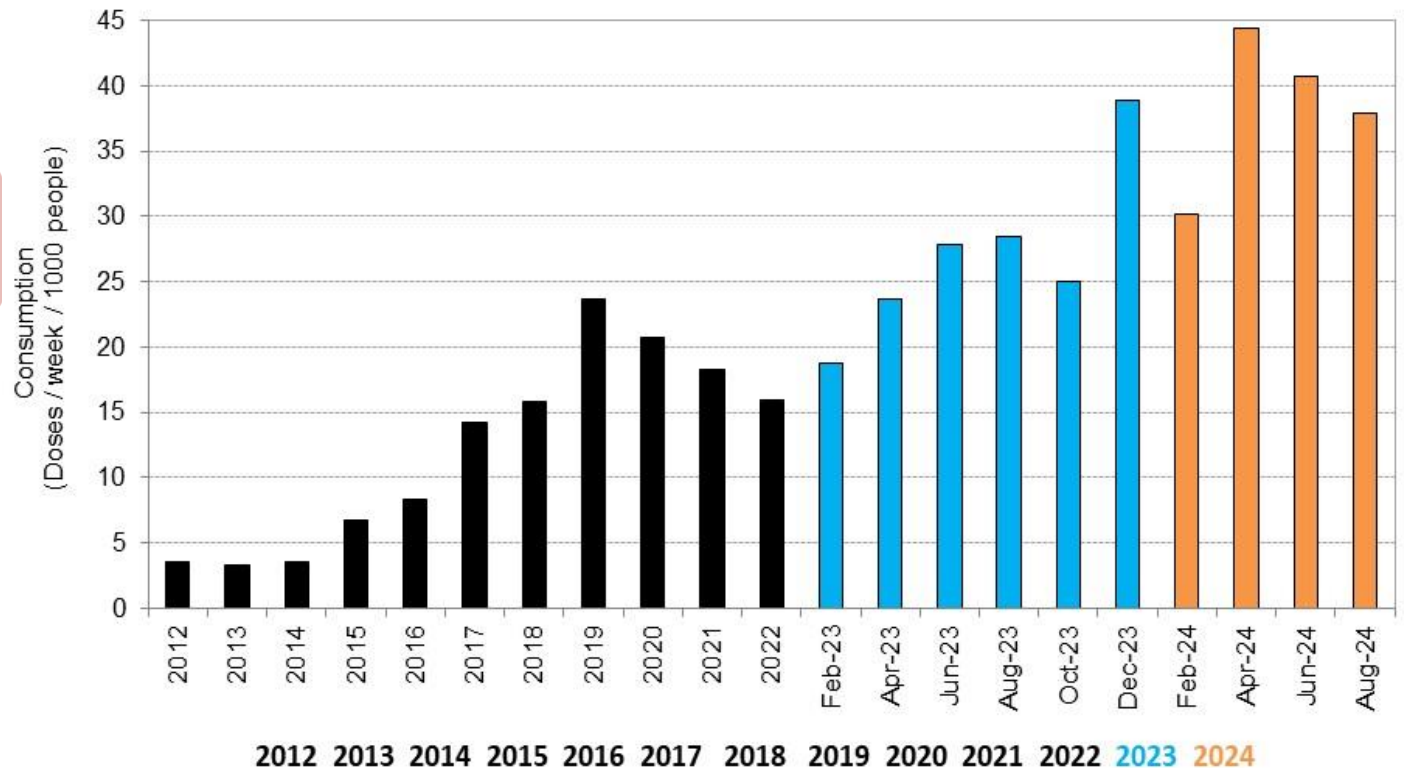


Feb 2012 to Aug 2024

Average daily consumption (dose/day/1000 people) of methamphetamine over the week. Dose=30mg.

Cocaine

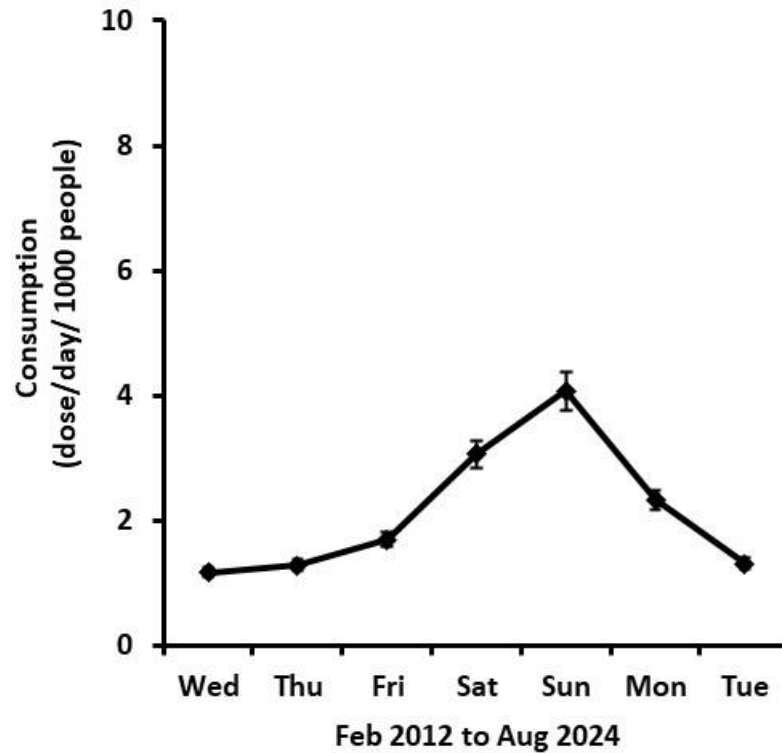
Average levels in 2023 and 2024 to date were the highest since reporting began, but low compared with methamphetamine.



Average consumption (dose/week/1000 people) of cocaine for 2012-2022. Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Dose=100mg.

Cocaine

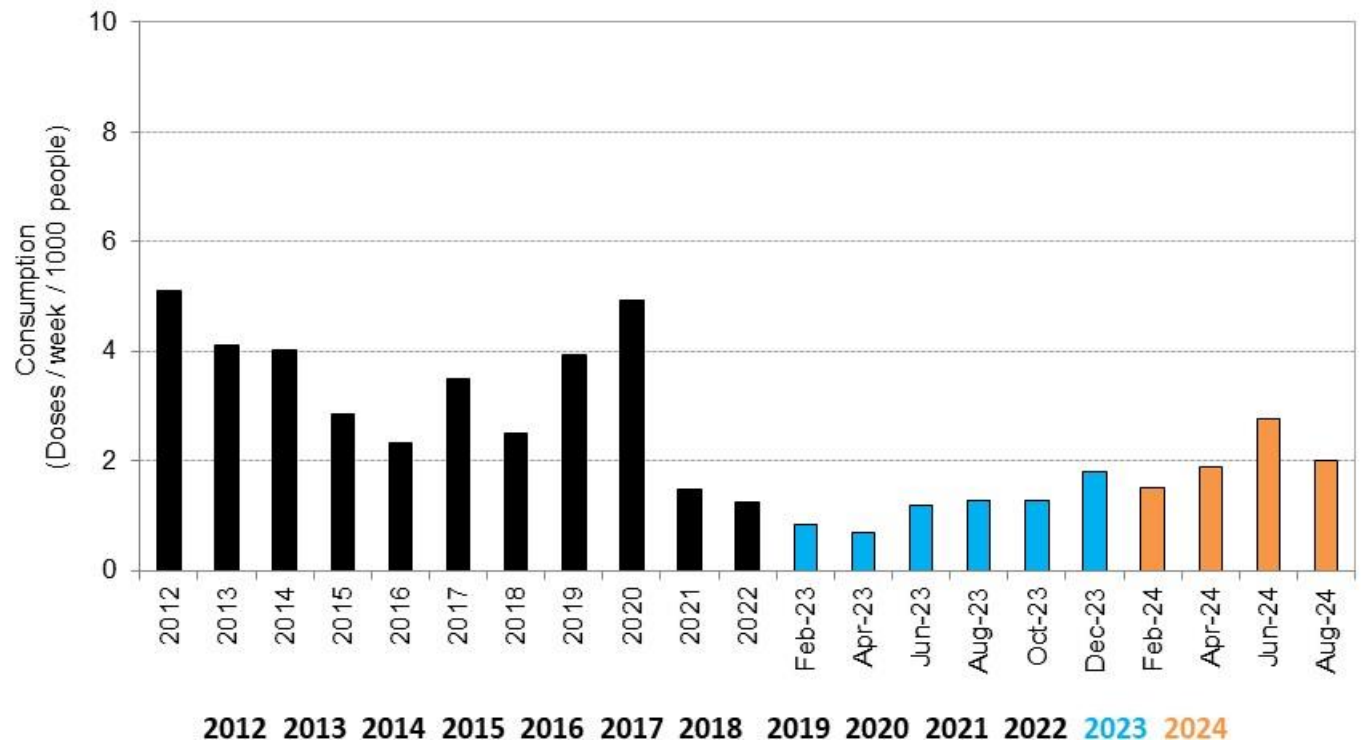
Cocaine levels are higher on weekends.



Average daily consumption (dose/day/1000 people) of cocaine over the week. Dose=100mg.

MDMA (Ecstasy)

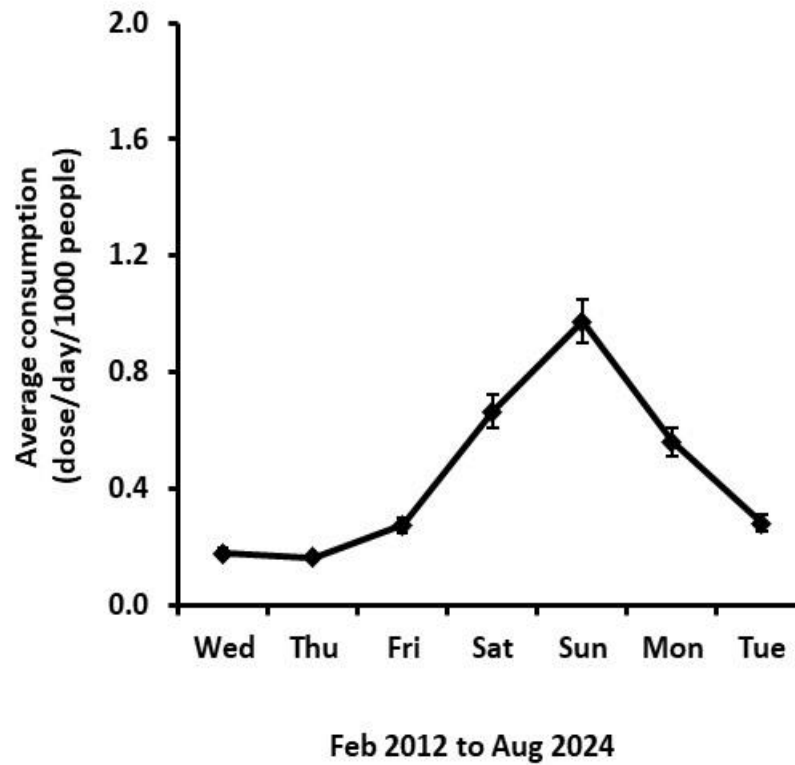
Average levels in 2024 to date were the highest since 2020 low compared with methamphetamine.



Average consumption (dose/week/1000 people) of MDMA for 2012-2022. Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Dose=100mg.

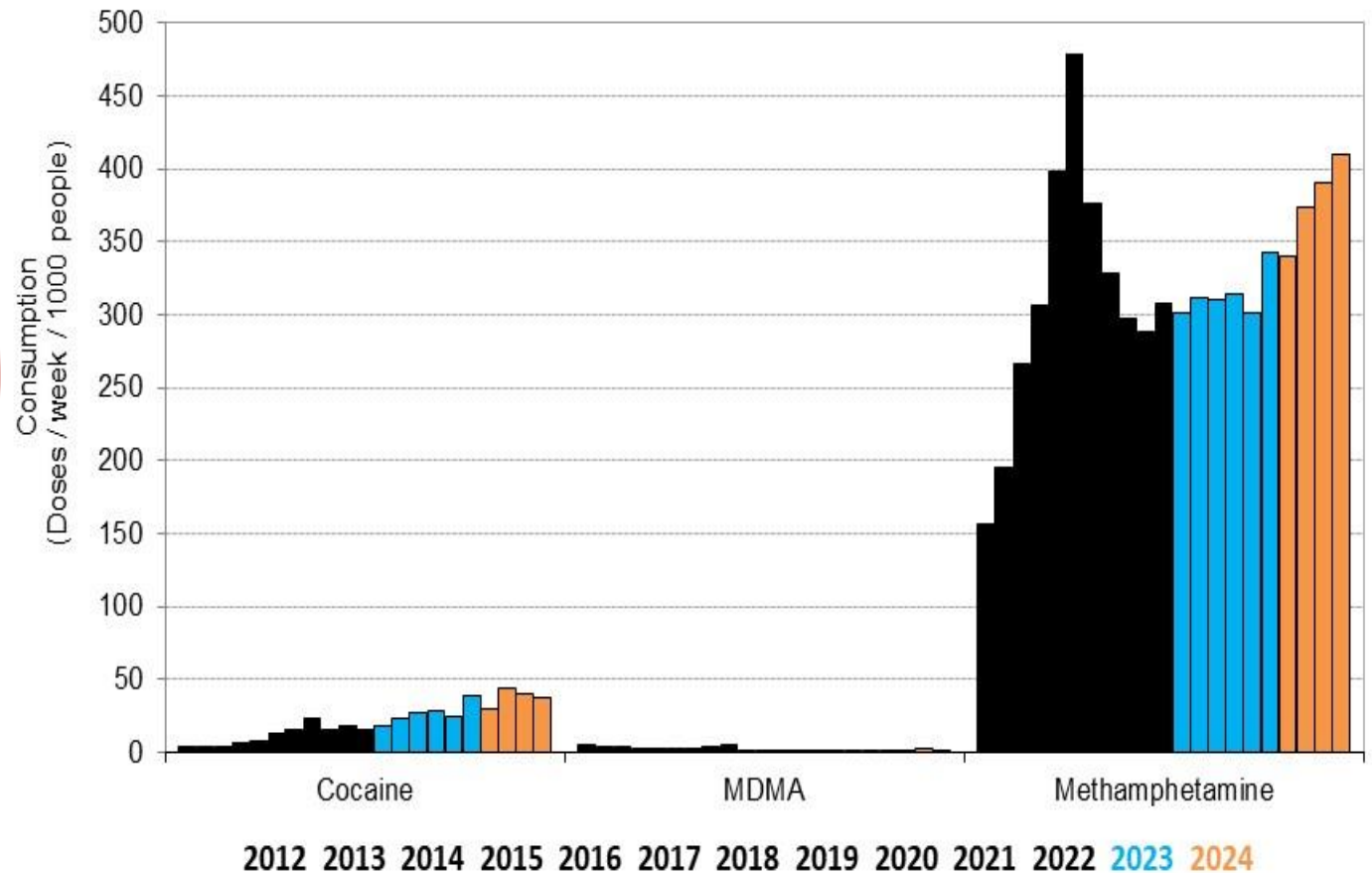
MDMA

MDMA levels are higher on weekends.



Average daily consumption (dose/day/1000 people) of MDMA over the week. Dose = 100mg.

Stimulants



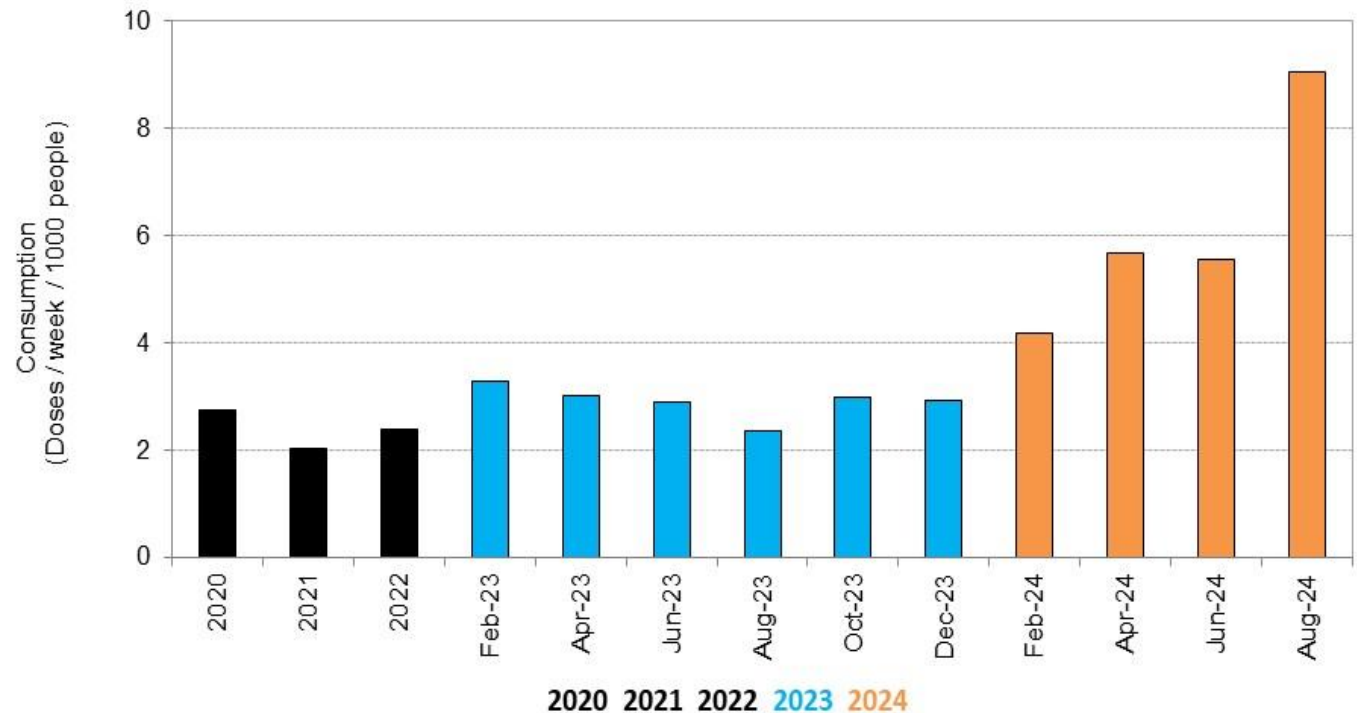
Average consumption (dose/week/1000 people) 2012-2022. Weekly consumption (dose/week/1000 people) of cocaine (100mg dose), MDMA (100mg dose) and methamphetamine (30 mg dose) bi-monthly from February 2023 onwards.

Stimulants - summary

- > Methamphetamine:
 - > Highest levels of the illicit stimulants tested.
 - > Average levels in 2020 and 2021 were the lowest since 2014.
 - > Evidence of a return to 2017 levels in the first eight months of 2024.
- > Cocaine:
 - > Average levels are low compared with methamphetamine.
 - > Levels in 2023 and 2024 to date were the highest since reporting began.
- > MDMA:
 - > Average levels in 2024 to date were the highest since 2020 but levels are low compared with methamphetamine.

Ketamine

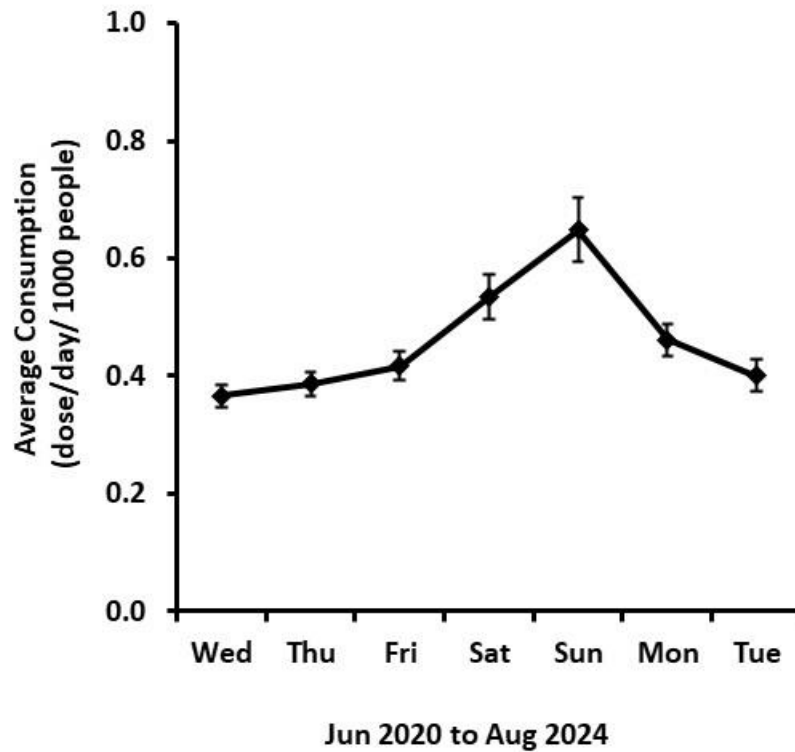
Levels increased from 2021 to 2023, with a sharp rise in 2024 to date.



Average consumption (dose/week/1000 people) of ketamine for 2020-2022 (2020 excludes February and April). Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Dose=100mg.

Ketamine

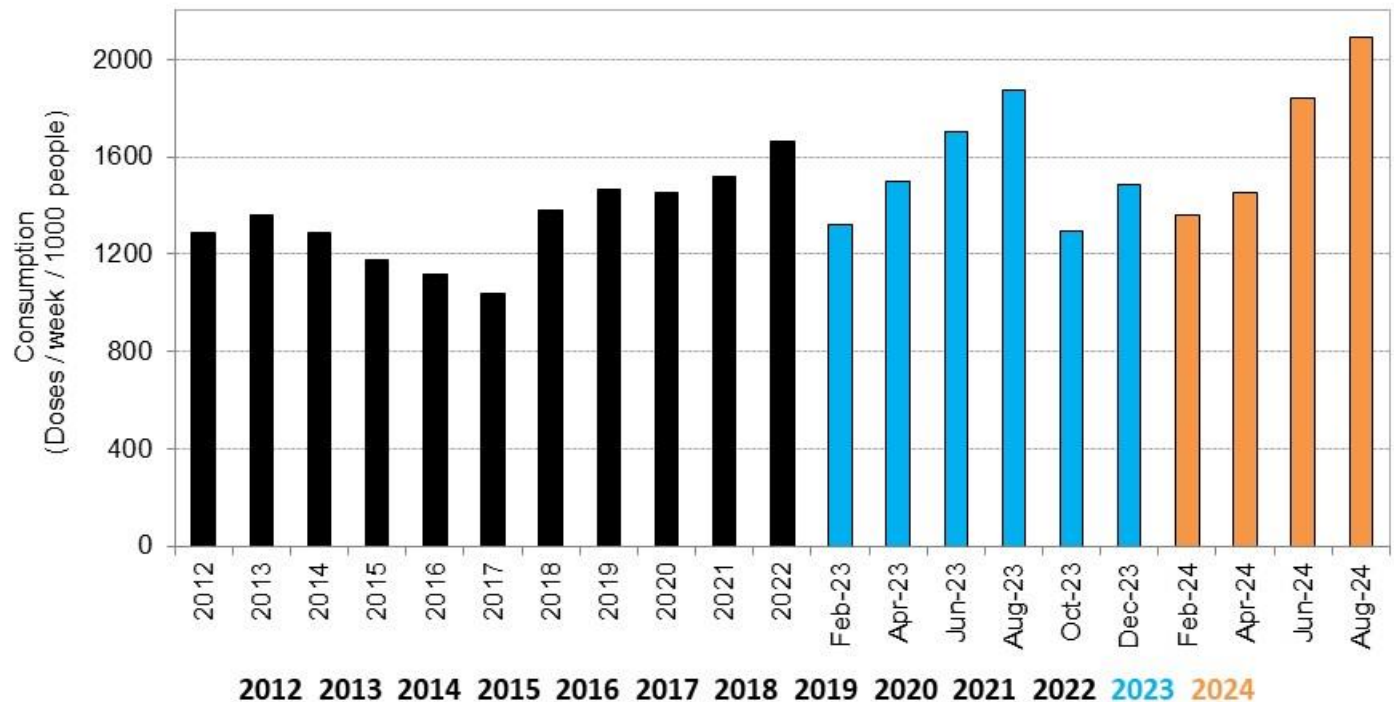
Ketamine levels increase on weekends.



Average daily consumption (dose/day/1000 people) of ketamine over the week. Dose=100 mg.

Cannabis

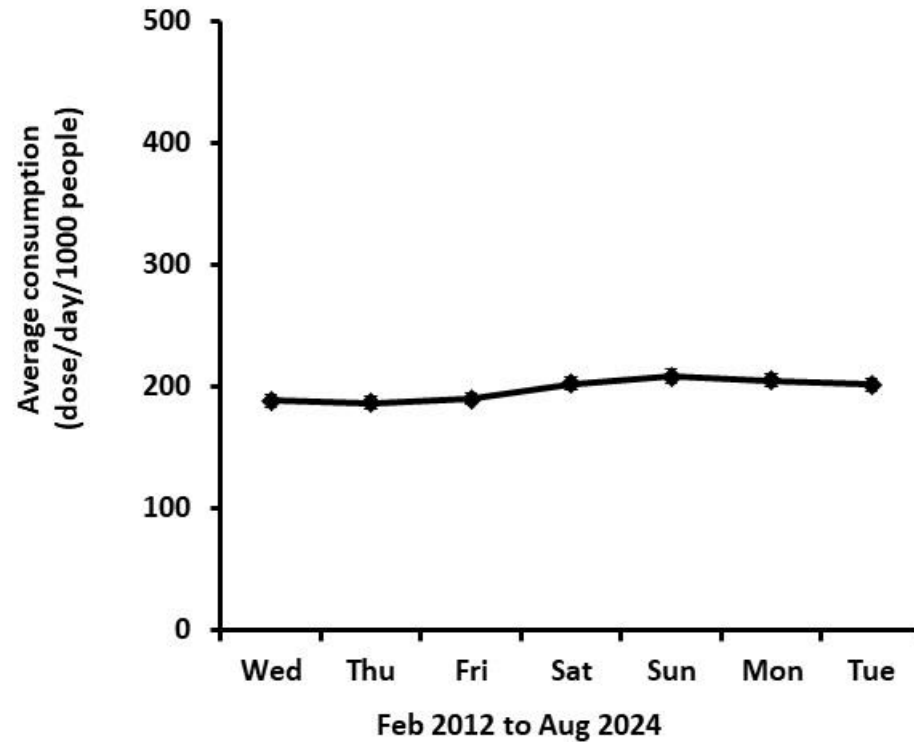
Levels in 2024 to date were the highest since reporting began.



Average consumption (dose/week/1000 people) of THC for 2012-2022. Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Dose=125mg.

Cannabis

Cannabis levels are constant over the week.

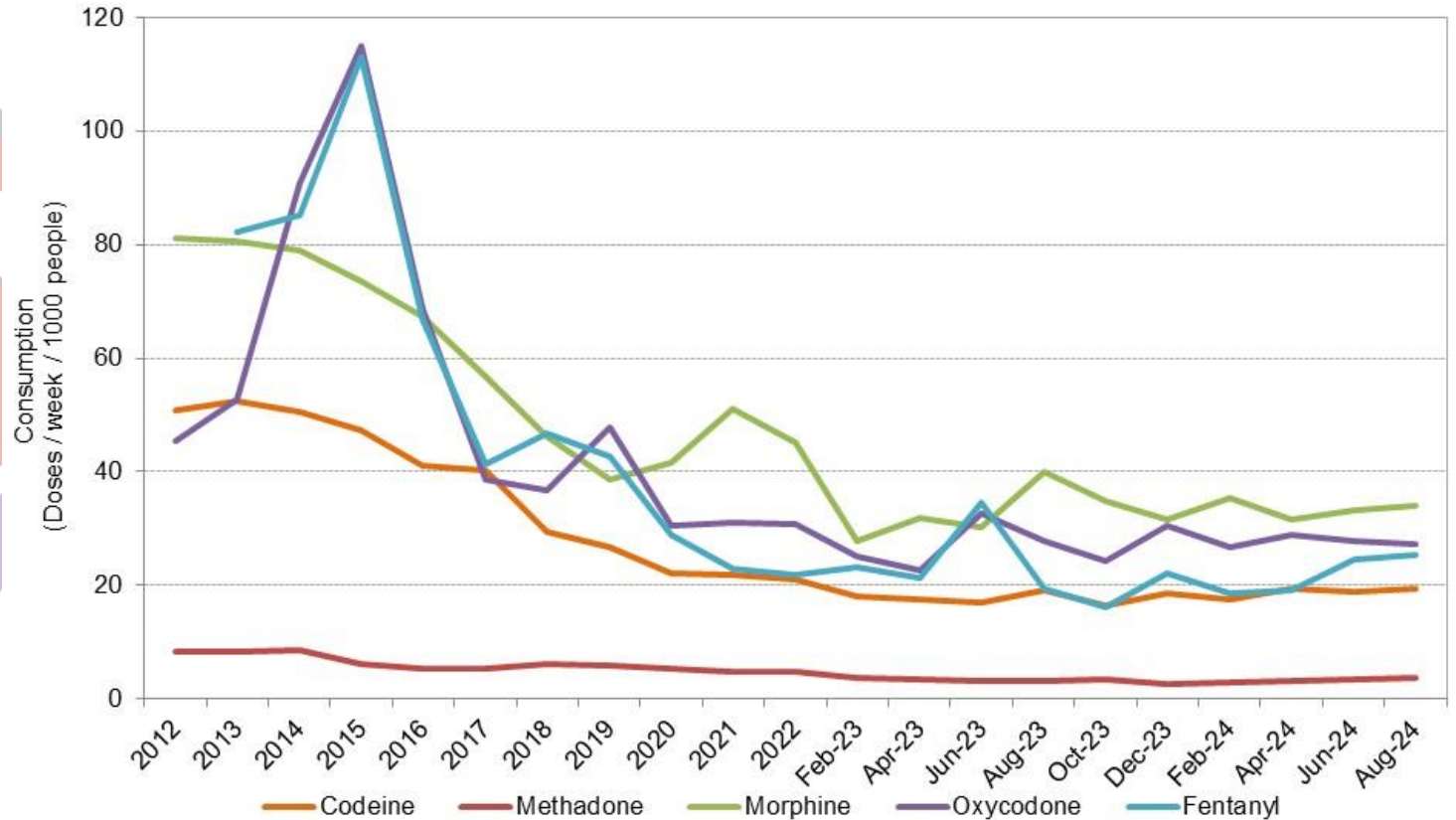


Average daily consumption (dose/day/1000 people) of THC over the week. Dose=125 mg.

Opioids

- > Opioids are a class of drugs that are used for pain relief (e.g. codeine, morphine) or for the treatment of opioid dependence (e.g. methadone).
- > Codeine in the samples can originate from prescription or over the counter medications. In February 2018 codeine was rescheduled and is no longer available over the counter.
- > Morphine, methadone, oxycodone and fentanyl can be used legally on prescription or may be sourced illegally.
- > The analysis of opioids, except for heroin, cannot differentiate illicit from licit use.

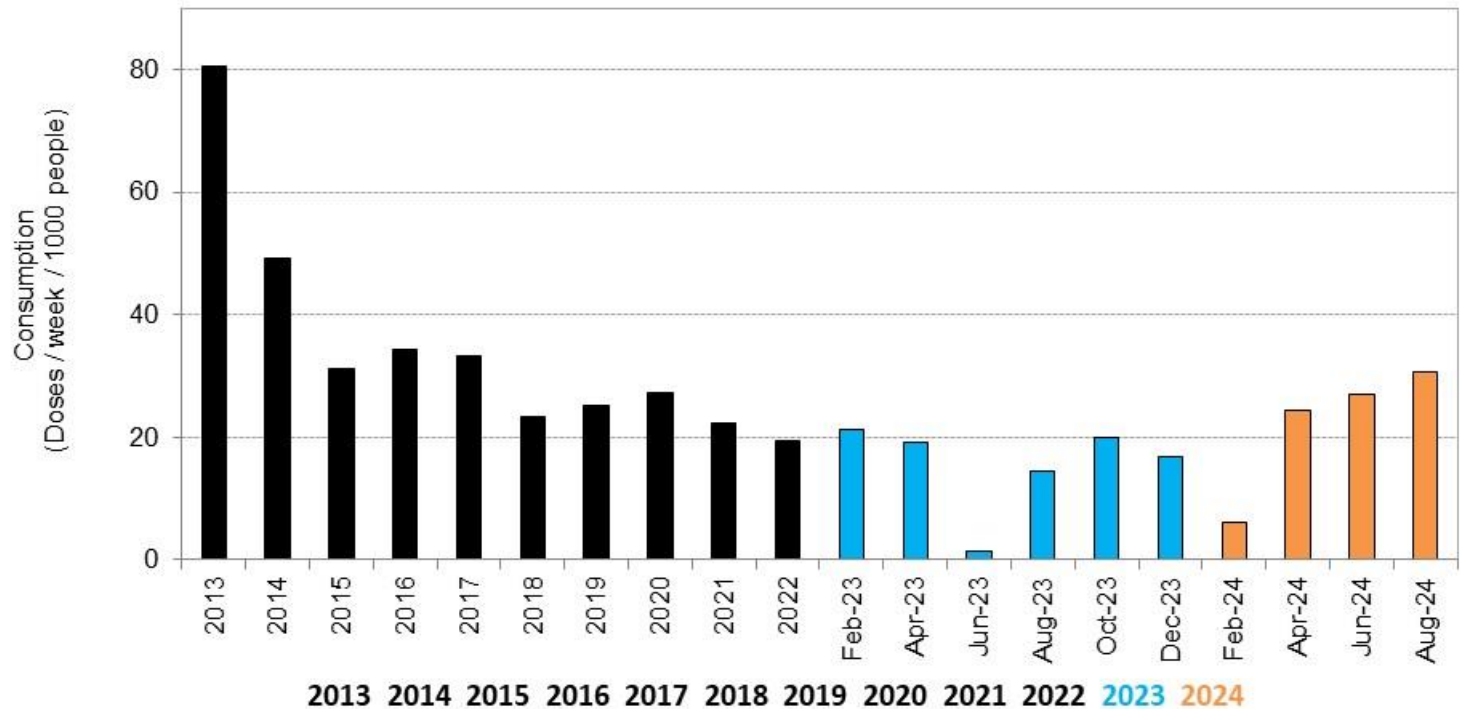
Pharmaceutical Opioids



Average consumption (dose/week/1000 people) for 2012-2022. Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Codeine (200mg dose), morphine (30mg dose), methadone (100mg dose), oxycodone (10mg dose) and fentanyl (0.2mg dose).

Heroin

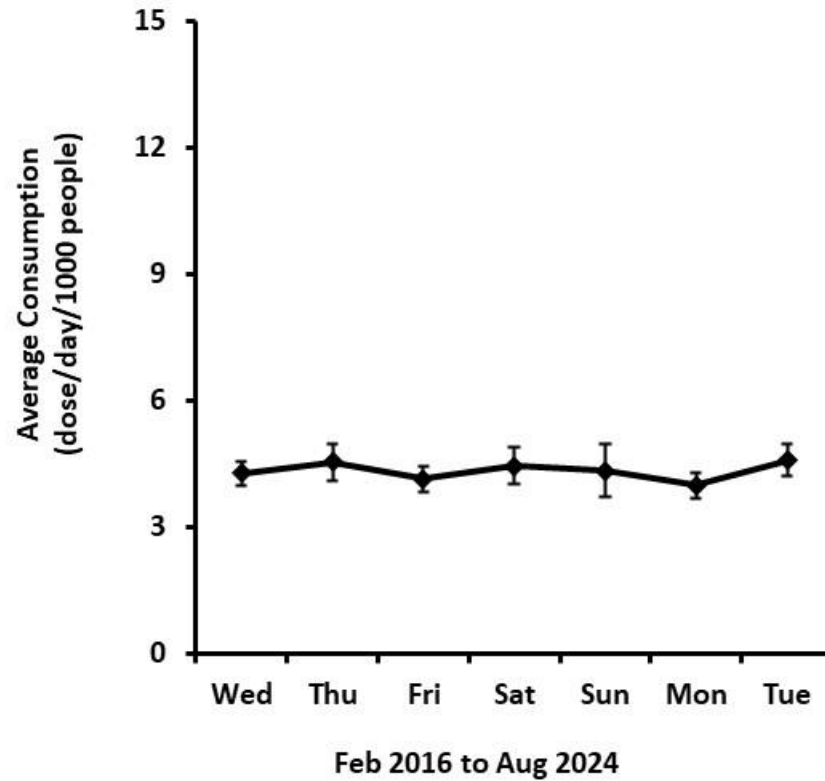
Average levels from 2021 were the lowest since sampling began.



Average consumption (dose/week/1000 people) of heroin for 2013-2022. Weekly consumption (dose/week/1000 people) bi-monthly from February 2023 onwards. Dose for calculation=20mg.

Heroin

Heroin levels are constant over the week.



Average daily consumption (dose/day/1000 people) of heroin over the week. Dose = 20mg.
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Opioids - summary

- > Oxycodone and fentanyl levels increased from 2012-2015 but have decreased since then. Levels of both remained stable in August 2024.
- > Codeine and morphine levels decreased over the sampling period, remaining stable in August 2024.
- > Methadone levels also decreased over the reporting period, but there was a small increase in August 2024.
- > Average levels of pharmaceutical opioids in 2023 and 2024 to date were the lowest since reporting began for all substances.
- > Levels of pharmaceutical opioids are constant over the week.
- > Heroin levels have decreased since 2013 and remain low.