

Results from 195 samples checked

October 19 – November 1, 2024

Key findings

- 11% of the expected¹ fentanyl samples⁵ were known to be **associated with an overdose** – all samples contained at least one high-potency opioid (an opioid as strong as or stronger than fentanyl), many in combination with a benzodiazepine-related drug and/or a veterinary tranquilizer
- 59% of the expected¹ fentanyl samples⁵ **contained multiple high-potency opioids**, including fentanyl, fluorofentanyl and/or a methylyfentanyl-related drug
- 55% of the expected¹ fentanyl samples⁵ **contained fluorofentanyl** (up to 2 times stronger than fentanyl)
- 49% of the expected¹ fentanyl samples⁵ **contained a veterinary tranquilizer** – 37% contained **medetomidine** and 16% contained xylazine
- 47% of the expected¹ fentanyl samples⁵ **contained a benzodiazepine-related drug** – 18% contained multiple benzodiazepine-related drugs
- 44% of the expected¹ fentanyl samples⁵ **contained a methylyfentanyl-related drug** (up to 10 times stronger than fentanyl)
- 24% of the expected¹ fentanyl samples⁵ **did not contain fentanyl** – most of these samples instead contained a methylyfentanyl-related drug and/or fluorofentanyl, some in combination with a veterinary tranquilizer and/or benzodiazepine-related drug
- Amount of drugs found in expected¹ fentanyl drug samples². **To stay on top of the composition of the rapidly changing unregulated fentanyl supply, we have updated our method to determine the precise amount (aka quantity or concentration) of some noteworthy substances found in the drug samples we check. In addition to fentanyl, fluorofentanyl, bromazolam, xylazine, and caffeine, we now also quantify methylyfentanyl-related drugs, medetomidine, alprazolam (Xanax), and primidone.** Previously quantified drugs, including carfentanil, cocaine, etizolam, flubromazepam, heroin, and phenacetin, remain available on [our website](#).

In 45 expected¹ fentanyl drug samples²:

1.8% was the **average³ amount of fentanyl found**

0.3 – 3.6% was the **range⁴ of fentanyl found** in half of the drug samples²

In 30 expected¹ fentanyl drug samples²:

0.3% was the **average³ amount of fluorofentanyl found**

0.2 – 2.7% was the **range⁴ of fluorofentanyl found** in half of the drug samples²

In 27 expected¹ fentanyl drug samples²:

2.0% was the **average³ amount of bromazolam found**

1.2 – 2.9% was the **range⁴ of bromazolam found** in half of the drug samples²

In 13 expected¹ fentanyl drug samples²:

0.3% was the **average³ amount of xylazine found**

0.1 – 0.4% was the **range⁴ of xylazine found** in half of the drug samples²

In 25 expected¹ fentanyl drug samples²:

0.8% was the **average³ amount of medetomidine found**

0.4 – 1.1% was the **range⁴ of medetomidine found** in half of the drug samples²

In 25 expected¹ fentanyl drug samples²:

2.7% was the **average³ amount of methylfentanyl-related drugs found**

0.6 – 13.3% was the **range⁴ of methylfentanyl-related drugs found** in half of the drug samples²

Expected fentanyl drug samples

- 74% (49) of the expected¹ fentanyl drug samples⁶ **contained fentanyl and other drugs**, including:
 - 96% (47) contained caffeine
 - 61% (30) contained at least one additional high-potency opioid (!):
 - 51% (25) contained fluorofentanyl (!)
 - 29% (14) contained a methylfentanyl-related drug (!)
 - 49% (24) contained a veterinary tranquilizer (!):
 - 47% (23) contained medetomidine (!)
 - 8% (4) contained xylazine (!)
 - 43% (21) contained at least one benzodiazepine-related drug (!):
 - 41% (20) contained bromazolam (!)
 - 16% (8) contained desalkylgidazepam (!)
 - 2% (1) contained nordiazepam (!)

Unexpected noteworthy drugs found in other expected drug samples

- 4% (4) of the remaining drug samples,⁶ meaning drug samples² that weren't expected¹ to be fentanyl, **contained an unexpected noteworthy drug**, including:
 - 100% (1) of **expected¹ crack cocaine drug samples²** contained phenacetin (!)
 - 5% (1) of **expected¹ cocaine drug samples²** contained phenacetin (!)
 - Two **expected¹ bromazolam drug samples²** that **did not contain⁸ bromazolam** contained a methylfentanyl-related drug (!)

Not sure what some of these substances are?

View our drug dictionary: www.drugchecking.community/drug-dictionary/

Notes

1 | Expected (drug): When a sample is submitted to be checked, the drug that sample was bought or got as is recorded. We call it the "expected drug". Knowing the expected drug helps us tailor our harm reduction advice. It also helps us understand contamination to drugs rather than combinations of drugs (e.g., fentanyl was found in a heroin sample rather than fentanyl and heroin were found together).

2 | Drug samples: Could be a small amount of powder, crystals, rocks, blotter, or liquid, or a crushed bit of a pill.

3 | Average amount: We arrange the amounts of a substance found as a proportion of the total fentanyl drug sample from smallest to largest, determine the median (i.e., the middle number), and use that number as the "average". For more information, view our [amount of drugs found graph](#).

4 | Range: Known as the interquartile range, represents the middle 50% of the amounts of a substance found as a proportion of the total fentanyl drug sample. For more information, view our [amount of drugs found graph](#).

5 | Samples: Includes both drugs and used drug equipment. Drugs could be a small amount of powder, crystals, rocks, blotter, or liquid, or a crushed bit of a pill. Used equipment could be a used cooker or filter, or leftover liquid from a syringe. For more information, view our [terms of service](#).

6 | Reason for reporting only drug samples: While Toronto's Drug Checking Service checks both drugs and used equipment, drug equipment – like cookers – are often re-used. The mass spectrometry technologies used for this drug checking service are so sensitive that very trace amounts of substances may be found. This means that when equipment is re-used, substances from past use may present in the results for the sample that is being checked. This can interfere with up-to-date drug market monitoring, so we've noted when we exclude used equipment from this report. For more information, view our [service and technology limitations](#).

7 | Reporting similar substances together: These substances have a very similar chemical structure, and it is not currently possible for Toronto's Drug Checking Service to differentiate between them. For this reason, we report these substances together. For more information, view our [drug dictionary](#).

8 | Drug samples that unexpectedly contain noteworthy drugs and not the expected drug: Our reports highlight unexpected noteworthy drugs found in all checked drug samples. When noteworthy drugs are found unexpectedly in a drug sample and the expected drug is not present, we flag it but are hesitant to consider it contamination of the expected drug. Instead, we assume there is an issue with the expected drug: the person who sold or provided the drugs accidentally mixed up their drugs, the service user accidentally mixed up their drugs, or the expected drug was recorded incorrectly during sample collection. These samples require special consideration.

9 | High-potency opioid contamination: Based on the information we have about this sample, we are reporting it as contaminated with a high-potency opioid. However, it is very unusual that our program finds high-potency opioids unexpectedly in samples expected to be stimulants, psychedelics, and depressants, and these samples always require special consideration. There is increasing consensus in the drug checking community that the unexpected presence of high-potency opioids in other drug types is the product of accidental cross contamination rather than intentional adulteration. Cross contamination may result from poorly cleaned scales, storing drugs together (e.g., storing LSD in a baggie that was originally used for storing cocaine), or using drug equipment with different batches of drugs.

(!) | Unexpected noteworthy drug: “Noteworthy drugs” are drugs that (i) are linked to overdose or other adverse effects, (ii) are highly potent or related to highly potent drugs, or (iii) may not be desired by some service users. Noteworthy drugs are flagged when they are unexpectedly found in checked samples.

About Toronto’s Drug Checking Service: [Toronto's Drug Checking Service](#) is a free and anonymous community-based public health service that aims to reduce the harms associated with substance use and, specifically, to prevent overdose by offering people who use drugs timely and detailed information on the contents of their drugs. Beyond educating individual service users, results for all samples are combined and analyzed to perform unregulated drug market monitoring, then translated and [publicly disseminated every other week](#) to communicate unregulated drug market trends and drug education to those who cannot directly access the service, as well as to inform care for people who use drugs, advocacy, policy, and research.

Participating collection sites: Casey House | Parkdale Queen West Community Health Centre (Parkdale and Queen West sites) | Regent Park Community Health Centre | South Riverdale Community Health Centre (KeepSix and Moss Park sites) | Street Health | The Neighbourhood Group (Kensington Market Overdose Prevention Site) | The Works at Toronto Public Health | Toronto Shelter and Support Services (Seaton House Overdose Prevention Site)

Participating analysis sites: Centre for Addiction and Mental Health (Clinical Laboratory and Diagnostic Services) | St. Michael’s Hospital (Department of Laboratory Medicine and Drug Checking Unit)

Toronto’s Drug Checking Service is coordinated by a small central team that operates from within the Drug Checking Unit at St. Michael’s Hospital. The central team is also responsible for conducting unregulated drug market monitoring and developing and disseminating relevant drug information.

Our work would not be possible if people who use drugs did not access our service and, as a result, advocate for themselves and help develop solutions that impact them. We thank the community of people who use drugs in Toronto, and elsewhere, who provide ongoing feedback on the design and implementation of our program, as well as our members, partners and collaborators, and funders for their ongoing commitment.