

# STREET CHECK COMMUNITY DRUG CHECKING

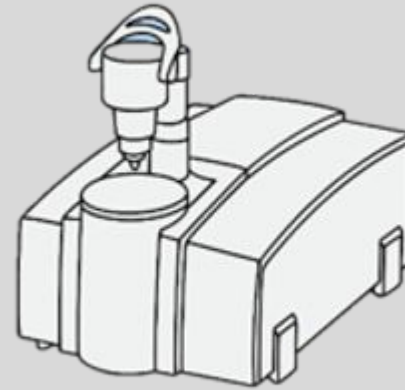
## Medetomidine and Nitazene Test Strip Training

Network 1



# Overview

1. Nuts and bolts
  - a. Sensitivity and Specificity
  - b. When to use mts and nts / types of samples
2. Test Strip Best Practice for Drug Checking
  - a. Recommended dilutions
  - b. Cross reacting substances
3. Common Test Strip Issues
4. How to Train Others



# Background on MTS & NTS - Why have a training?

- Medetomidine and nitazenes are emerging substances often difficult to detect on in-field drug checking tools (FTIR ~5% LOD)
- The N1 BTNX MTS/NTS Validation Study ending on 6/30/25 showed the strips perform well, indicating high levels of confidence in the use of MTS and NTS to detect and rule out the presence of these substances in the supply.
- Standardized, patient training ensures proper sample preparation, accurate interpretation, and responsible decision-making.
- Read full report at <https://www.info.streetcheck.org/network1>

Updated results as of 10/06/25

	MTS/ GC-MS+ LC-QToF	NTS/ GC-MS+ LC-QToF
Prevalence	17.0%	2.13%
Sensitivity	88.0%	80.0%
Specificity	80.3%	96.1%
Total tests with lab results	294	470

$$\text{Sensitivity} = \text{TP}/(\text{TP}+\text{FN})$$
$$\text{Specificity} = \text{TN}/(\text{TN}+\text{FP})$$

# Types of test strips and when to test

BTNX Brand pictured here [www.btnx.com](http://www.btnx.com)



**Medetomidine**

Primarily dope samples

Reports of sedation, hallucinations, dry mouth, slow breathing/heart rate, sweating



**Nitazene**

Primarily dope samples, some pressed pills / M30

Reports of stronger or long opioid effects, "naloxone didn't work"; FTS -



**Xylazine**

Primarily dope, pressed pills / M30s

Reports of pimple like irritation (early wounds), wounds, heavy sedation



**Benzodiazepine**

Pressed pills, suspected benzos.

Reports of memory loss or blackouts



**Fentanyl**

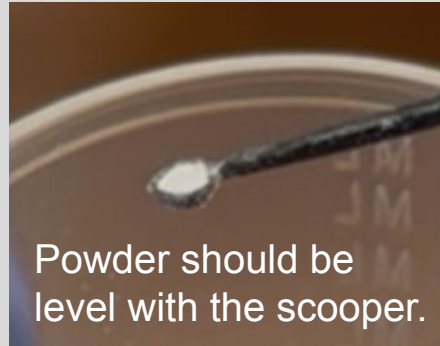
Nearly all samples

# Recommended Dilutions

- MTS, NTS, XTS require more concentrated solutions. If testing a sample with more than one type of test strip, start with those and dilute (more water) before testing with FTS.
- If you don't have two scoops of substance, start with 1 scoop and  $\frac{1}{2}$  of a 1ml syringe.

Remember:

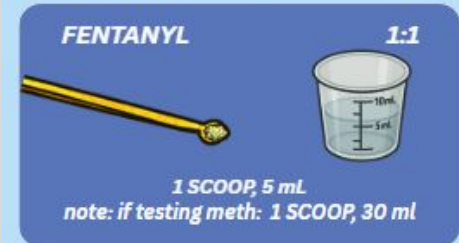
- MTS, NTS, XTS: more drug is better
- FTS: more water is better



How to eye-ball dilutions:

- 1ml is about  $\frac{1}{2}$  the surface of a bottom of a cooker
- 5ml is about a full plastic water bottle cap

1 scoop = 5 mg



# Cross-reacting substances

**Medetomidine**

Levamisole

**Nitazene**

Caffeine

**Xylazine**

Lidocaine

**Benzo**

None known. \*Make sure sample dissolves in solution. OK to shake/stir well!

**Fentanyl**

Methamphetamine, MDMA, Diphenhydramine / Benadryl

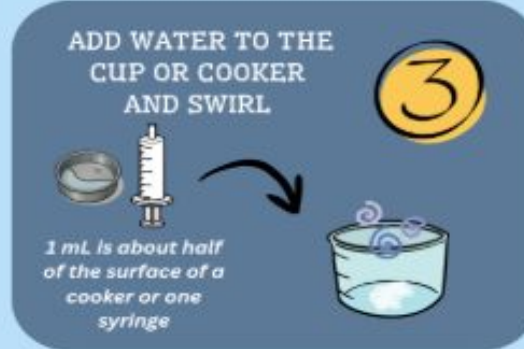
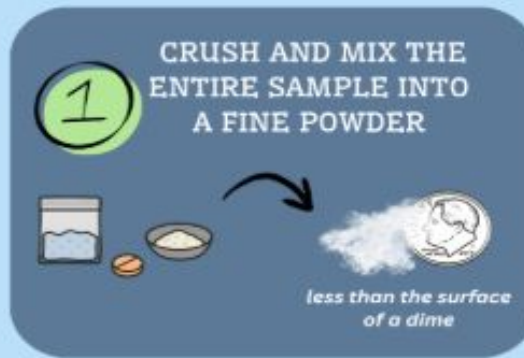
These substances can cause a false positive result on the test strip.

If possible, couple test strips with FTIR spectrometry when suspecting a cross-reacting substance/false positive.

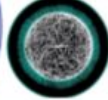
Use experience reports to inform analysis.

# Best Practices

1. Make sure sample is mixed well before taking a scoop so that what we test is representative of the entire sample. Use a mortar & pestle if the sample is chunky.
2. Could also use a cooker, bottle cap, whatever is available! 1 scoop = 5mg when powder is level to scooper. Don't over scoop!
3. Check proper dilution for the strip!  
Eye-ball 1 mL =  $\frac{1}{2}$  of bottom of the cooker.
4. Don't submerge past solid line. Hold in solution until water begins to wick up through the strip.
5. Opposite reading compared to some common at home tests! Read in direct bright light.



# GETTIN' STRIPPY WITH IT!



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need more info?



## BEST PRACTICES FOR TEST STRIPS

1

CRUSH AND MIX THE ENTIRE SAMPLE INTO A FINE POWDER



2

ADD SAMPLE TO A PLASTIC MEDICINE CUP OR TEST IN COOKER



3

ADD WATER TO THE CUP OR COOKER AND SWIRL



4

TEST!



5



POSITIVE



NEGATIVE



INVALID, RETEST

## RESULTS

## RECOMMENDED DILUTIONS MG:ML

MEDETOMIDINE 10:1



NITAZENE 10:1



XYLAZINE 10:1



BENZODIAZEPENE 5:2



FENTANYL 1:1



DATE:

SAMPLE ID:

MEDETOMIDINE

place test strip here

1 mL

⚠ levamisole

NITAZENE

place test strip here

1 mL

⚠ caffeine

XYLAZINE

place test strip here

1 mL

⚠ lidocaine

BENZODIAZEPENE

place test strip here

2 mL

note: shake/stir vigorously to ensure sample has fully dissolved in water

FENTANYL

place test strip here

5 mL

place test strip here

30 mL

⚠ MDMA, diphenhydramine

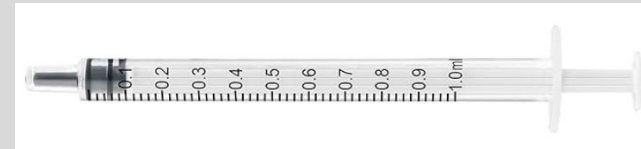


cross reacting substances may cause false positives

# How to Train Others in MTS and NTS



- Patient, accurate training builds trust in drug checking and harm reduction services.
- Give a demonstration, and then practice hands on together.
- Explain steps as you go, layer in details as confidence grows.
- Drug to water ratio is important with MTS and NTS!
  - Reference the dilution chart on the placemat.
  - Reference the placemat or packaging to interpret results ( pos / neg )
  - Use the microscoop to measure sample.
- Highlight common issues / errors (faint lines, not in solution long enough, etc.)
- Practice communicating results



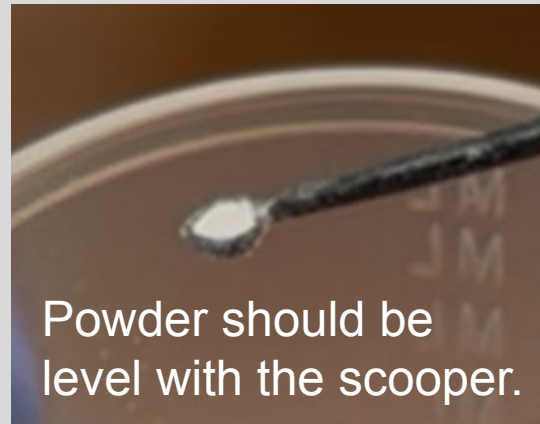
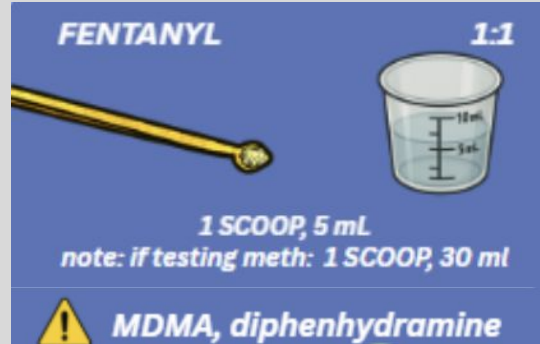
## Urgent Need for Pairing Training and Education With Fentanyl Test Strip Distribution (2025), Reed, et al

- 40 interviews with people who reported non-fentanyl/heroin/dope substance use
- 31 had previous experience, 9 did not
- Set up FTS simulation to test simulated drugs in a simulated space
  - Environment, durg, could use own materials (bottles of water, cookers, microscoops)
- No participants completed all sets of using FTS according to best practice recommendations.
- Common issues
  - Under-dilution (3-5 drops of water)
  - Did not put FTS in solution correctly
  - Not in solution long enough
  - Interpreted lines incorrectly



# FTS Best Practice

- FTS are highly sensitive (cut off: 20-200 ng/ml, MTS = 1000, NTS = 2000) meaning it can detect very small concentrations of fentanyl in diluted samples.
- Leave the white end / wavy lines in solution for 15-30 seconds or until water wicks up the strip. Then lay flat to finish developing.
- Use clean water and supplies for each test to avoid contamination.
- In small dilutions strip(s) can rest in the cup. If testing in <10mL, must hold the strip in solution to not pass solid line.

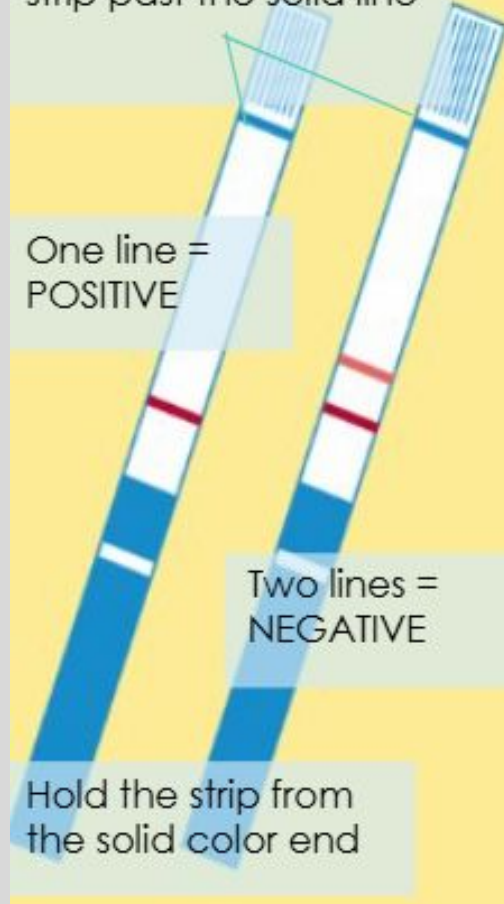


Don't submerge the strip past the solid line

One line = POSITIVE

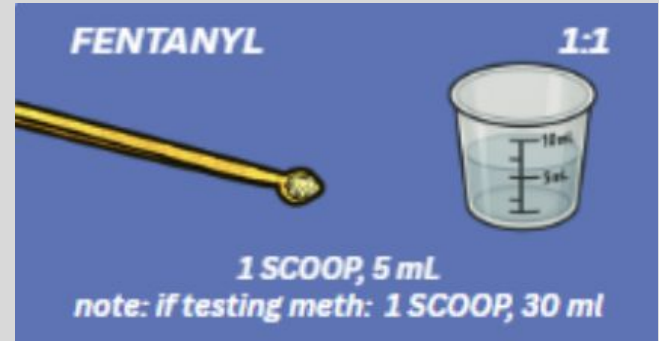
Two lines = NEGATIVE

Hold the strip from the solid color end



# How to Train Others in FTS

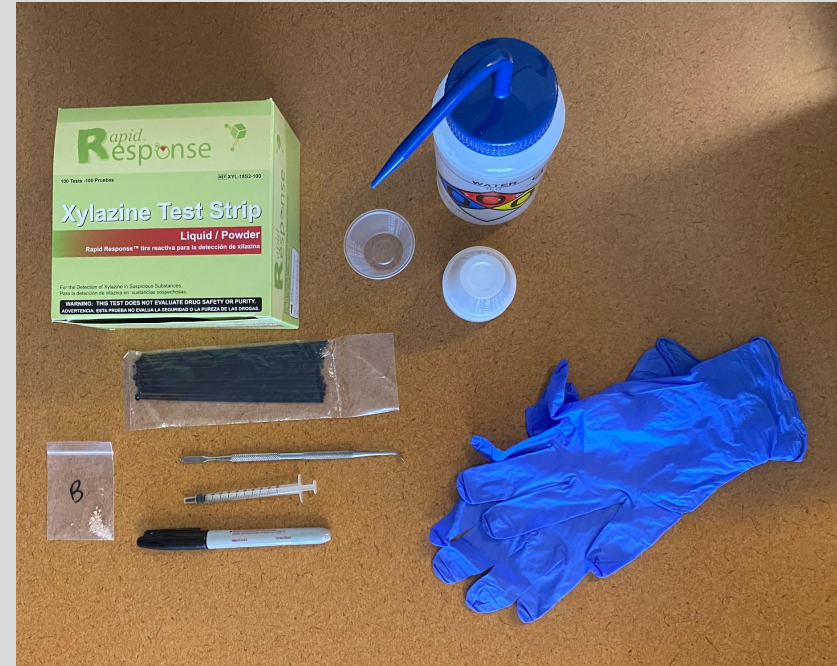
- If testing with FTS after MTS/NTS, make sure to dilute solution first. If you've done 2 scoops in 1mL for MTS/NTS, add 9 more mL so its a 1:1 ratio.
- Again, give a demonstration, practice hands on together and sharing results, and allow for questions.
- Highlight common errors (misinterpretation, incorrect dilution, not in solution long enough, etc).

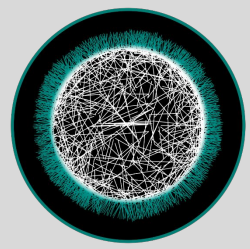


- Discuss what to do if results don't make sense or differ from expectations.
- Explain how to recognize and report potential adverse test strip events (e.g., suspected bad batches).

# Key Reflections

- Standardized, patient training protects accuracy and prevents harm. Use the scoop and when in doubt, slow down and check guidance.
- Proper dilution, measurement, timing, and interpretation matter every time.
- These are screening tools, not guarantees. Results must be communicated with care.
- How we train reflects our respect for the tools and the people who rely on them.
- Lean into training, not just written instructions. For FTS, it's ok to repeat and revisit instructions with people, or do a teach back/have them walk you through it





# STREET CHECK COMMUNITY DRUG CHECKING

# Thank you!

## Network 1

