STARTING HOUND LABS WAS DEEPLY PERSONAL

★ EMERGENCY PHYSICIAN ● 25 YEARS ● CURRENT

★ 9/11 ● PHYSICIAN ON STAFF ● U.S. SECRETARY OF STATE

★ RESERVE DEPUTY SHERIFF ● 12 YEARS ● CURRENT

★ 4 YOUNG KIDS
SCIENTIFIC RIGOR

• 8,000 tests with human subjects
• 2 clinical studies with UCSF + others pending

INVESTMENT IN R&D

• Over $50M spent on R&D
• 12 issued patents | 30 pending

COMMITMENT TO FIELD TESTING

• Law enforcement
• Employers
• Live track simulations at high speeds
ULTRA-SENSITIVE TECHNOLOGY

HOUND BREATHALYZER
• Immunoassay
• Point-of-care
• Instrument-read
• Single-use cartridge
• Built-in calibration

VS

MASS SPECTROMETER
• Lab-based
• $1+ million
• Trained technicians
• Only alternative with similar sensitivity

HOUND BREATHALYZER
1 BILLION times more sensitive than an alcohol breathalyzer.

It’s equivalent to finding 1 person living among the populations of 130 Earths.

OR 1 in ~1,000,000,000,000.

THC + BREATH

The Challenges
“Our findings validate existing research and provide additional evidence for using exhaled breath testing as an effective means of THC impairment and field sobriety detection.”


THC DEGRADES QUICKLY IN BREATH

DETECTION WINDOW FOR THC IN BREATH

- McCarthy 1971: 10 ng detection limit
- Hauck 1974: 1 ng detection limit
- Manolis 1983: 0.25 ng detection limit
- Heustis 2013: 0.05 ng detection limit
- Hound Labs 2019: 0.001 ng detection limit

Hours After Smoking

PROBLEMS TO OVERCOME

- Detection limit
- Consistent sample
- Environmental contamination
- Saliva contamination

THC IN BREATH — BUT NOT METABOLITES

UNIQUELY SPECIFIC TECHNOLOGY

THC  [✓] Breath

11-OH-THC  [✗] Breath

THC-COOH  [✗] Breath

THC is easily distinguished from other cannabinoids in breath (CBD, CBN).


RESEARCH

What Have We Learned?
University of California – San Francisco (UCSF) Clinical Trial:
Duration and Concentration of THC in Breath and Blood Over Time
THC can be measured consistently

Frequent smokers do not have residual THC in breath

2nd hand THC smoke disappears after a person is no longer exposed

THC has a brief detection window
NEW CANNABIS SOLUTION NEEDED

ERA OF LEGALIZATION

Breathalyzer positive only within the impairment window

Positive results only after recent use
Positive THC in breath with impairment window
Drivers can legally use, but cannot be impaired

PRE-LEGALIZATION

Non-breath drug tests support zero-tolerance

Positive THC results days or months after use
Results do not correlate with impairment
Unfair consequences for legal choices

SIMPLE STEPS TO FAIR RESULTS

1-2-3

ATTACH
Easy to use

BREATHE
Simple to conduct

PROCESS
Roadside results
DISCLAIMER

The HOUND® MARIJUANA BREATHALYZER is intended to detect recent cannabis use. It does not measure whether, or how much, a person is impaired. It is intended solely for use in law enforcement, employment, and insurance settings. It should not be used for any medical or therapeutic purposes, or for any Federal drug testing programs, such as programs run by the Substance Abuse and Mental Health Services Administration (SAMHSA), the Department of Transportation (DOT), and the U.S. military.