

# COGNITIVE IMPAIRMENT DETECTION

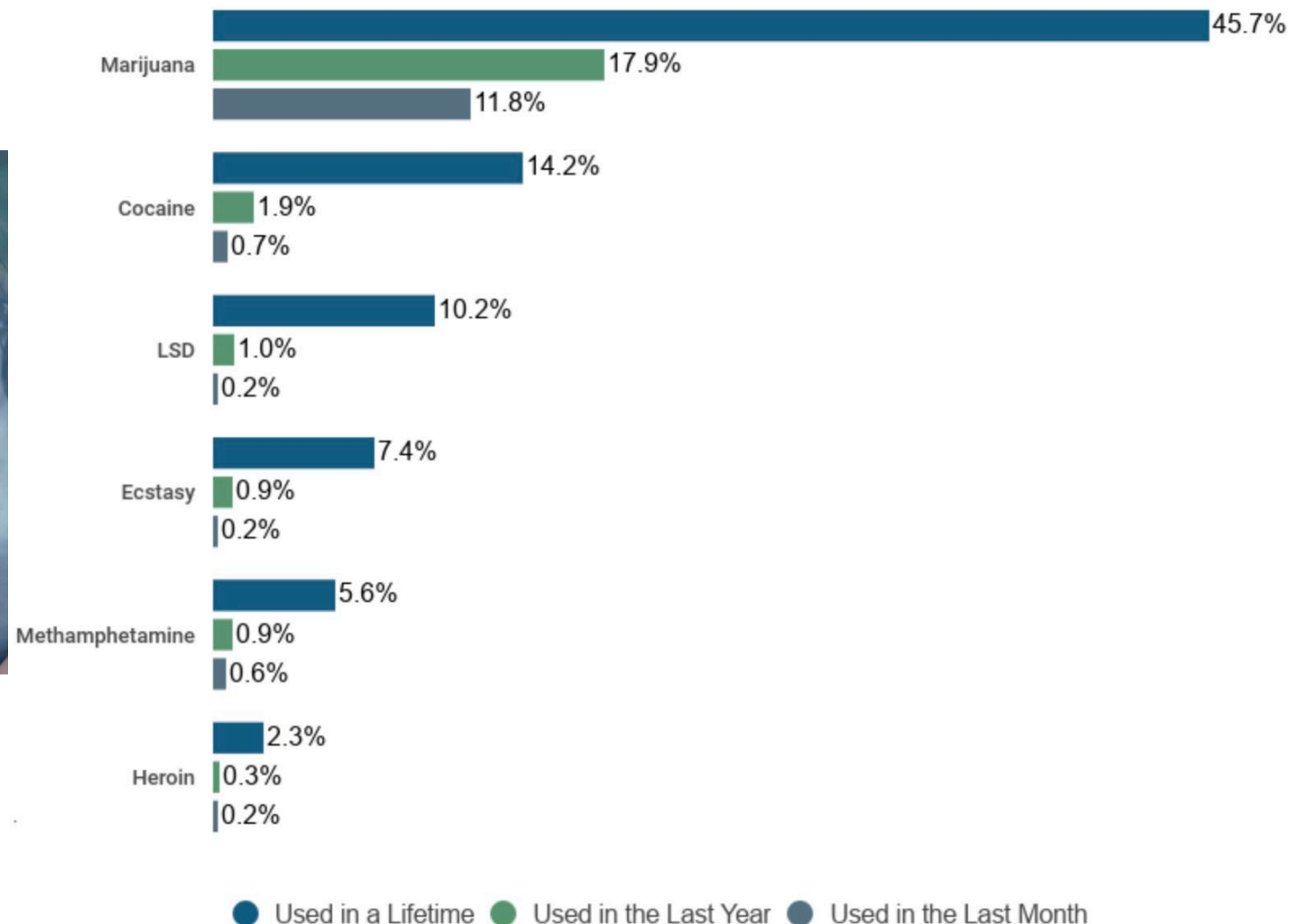
Gianfranco Scherini  
Vice President



# AGENDA

- Cannabis use and legalization
  - Zero-tolerance may become no longer enforceable or practical
- What's important to us: Catching drug users or Preventing accidents
- Breathalyzers: Detecting recent use
- Impairment Detection Technologies

## Drug Usership Among Americans Aged 12 & Older



National Center for Drug Abuse Statistics, data from the Substance Abuse and Mental Health Services Administration 2020 National Survey of Drug Use and Health



# CANNABIS MARKETING

Marijuana is marketed to help with various general wellness conditions, like improving focus and/or managing fatigue and pain, increasing the chance of its use in the workplace.



CANNABIS / CANNABIS BEST PICKS

## 5 Best Cannabis Strains to Combat Fatigue

Written by [Georgia Smith, B.Sc](#)

Updated on: 29 Apr, 2020 9 min 22

Read Later

*These will prevent you from falling asleep...*

Contrary to what you might believe, marijuana doesn't necessarily cause you to become zonked out on the couch. If you still believe this to be the case, you've either never tried weed before or else you've watched one too many stoner stereotype movies. Yes, some strains [help with insomnia](#) or cause couch-lock, but there are also [types of weed that invigorate and energize the user.](#)

Home > Blog > Sleep

## 5 Best Strains to Help You Focus

November 7, 2022 | John Malanca

### Article Topics

- Cinex
- Lucid Blue
- Sour Diesel
- Harlequin
- Green Crack



# Cannabis use and legalization



## **Work and Safety: Cannabis use on the job is very dangerous**

Studies of cannabis have demonstrated effects that include sedation, disorientation, impaired judgment, lack of concentration, and slowed motor skills, all of which can contribute to delayed decision-making, impaired learning, and memory and attention deficits

## TRUE or FALSE?



A positive drug test means that the person was under the influence at the time of the test.

FALSE

### Marijuana detection window

	HAIR	90 DAYS-3 YEARS
	BODY FAT	MONTHS
	URINE	30 DAYS
	BLOOD	7 DAYS
	SALIVA	3 DAYS



# ZERO-TOLERANCE POLICIES: What's happening?

Laws in twenty-two states\* prohibit employers from discriminating against workers based on their use of [medical](#) marijuana.

Seven states\*\* have passed laws protecting the employment rights of [recreational](#) marijuana users.

## THE TIPPING POINT

While using cannabis or being under the influence on the job remains illegal, zero-tolerance may become no longer enforceable or practical.

\* Arizona, Arkansas, Connecticut, Delaware, Illinois, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Vermont, Virginia, and West Virginia

\*\* Nevada, New York, New Jersey, Connecticut, Montana, Rhode Island, and **California**

# WHAT'S MORE IMPORTANT?

Catching drug users and firing them or Preventing accidents due to impairment?

Reduced  
Alertness

Inability to  
Focus



Impacted  
Judgment

## Cognitive Impairment Detection



# WORKPLACE IMPAIRMENT

Drugs and alcohol are most often associated with the risk of impairment in the workplace. However, impairment can be caused by other, often interrelated factors.



The National Safety Council (NSC) defines workplace impairment as the inability to function normally or safely because of any number of critical factors – from chemical factors such as legal and illicit drugs, physical factors such as fatigue or certain medical conditions, as well as social factors like stress or other mental distress.

# ALCOHOL BREATHALYZERS

- Handheld testing units are inexpensive and provide accurate real-time BAC\* readings
- A legal limit exists, permitting lawful disciplinary actions



Handheld unit  
measures BAC level

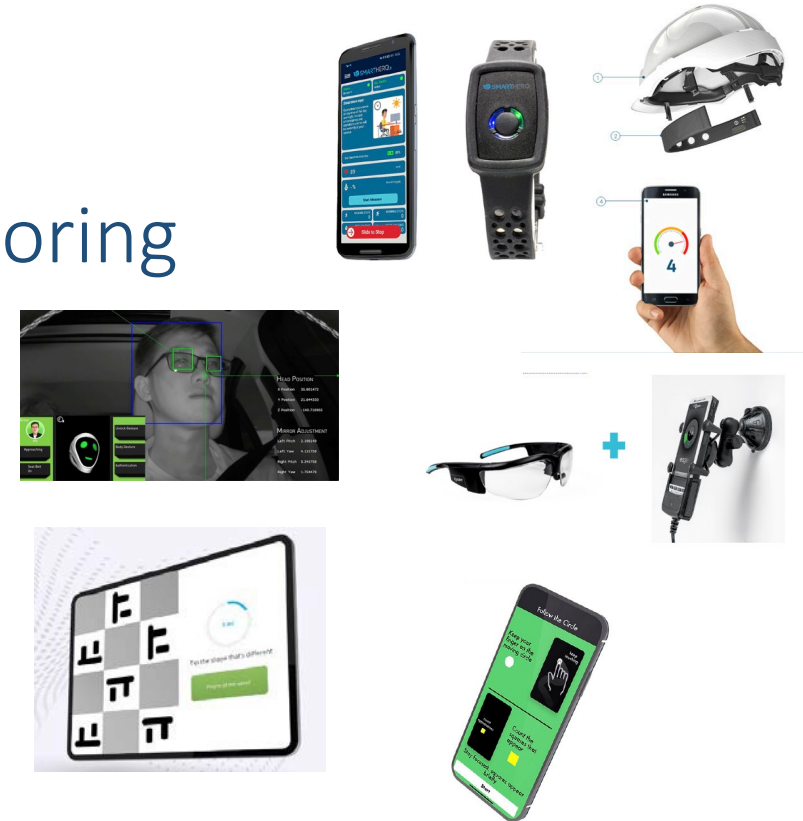
Since alcohol is  
metabolized quickly by  
the body, any reading  
indicates recent drinking



\*Blood Alcohol Concentration or blood alcohol level, is a measurement of alcohol intoxication used for legal or medical purposes; it is expressed as mass of alcohol per volume or mass of blood.

# IMPAIRMET DETECTION TECHNOLOGIES (IDT)

- Wearables, physiological parameters monitoring
- Driver Monitoring
- PVT (Psychomotor Vigilance Testing)
- Oculomotor based testing
- Pupillometry
  - A scientific approach to Impairment!



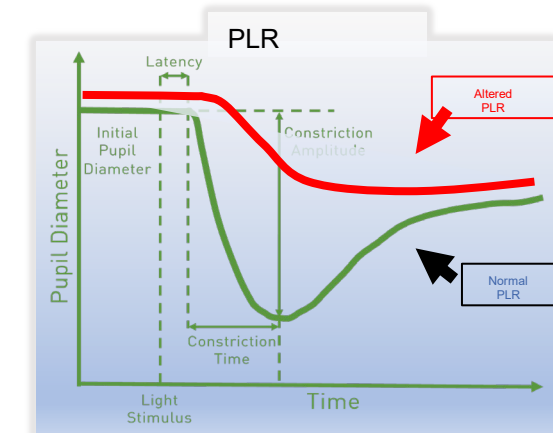
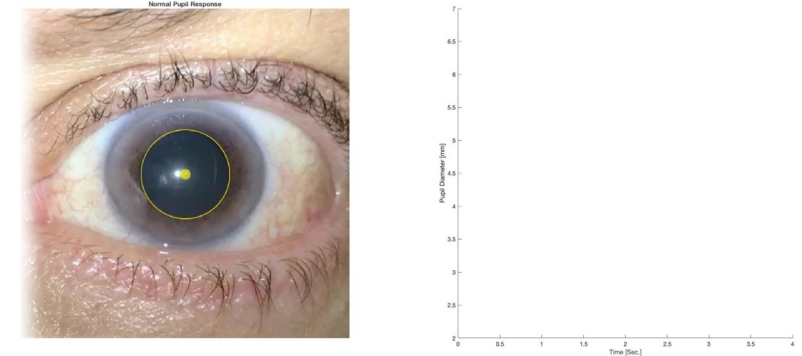
# PUPILLOMETRY (PUPILLARY ANALYSIS)

Pupillary analysis measures the **pupillary light reflex (PLR)**, the pupil's response to changing light conditions or light stimuli

The PLR is an **involuntary reflex** controlled by the Autonomic Nervous System

The PLR response is always the same (Baseline), when a non impaired person is subjected to the same light stimulus but PLR changes if there is an anomaly in the Nervous System

**SOBEREYE measures PLR response alterations**



Pupillary analysis is a proven non-invasive technique to analyze brain functionality

# PUPILLOMETRY BASED SOLUTIONS



Pupillometry based workplace cognitive impairment testing has been around since the late 90s (FIT2000), In 2018 SOBEREYE introduced a low-cost, cloud-connected, and portable solution.



## How it works!

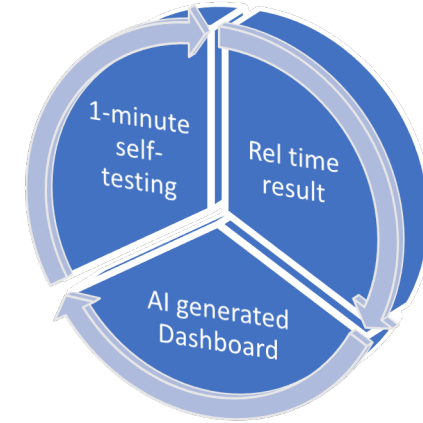


In studies conducted in collaboration with law enforcement agencies and Drug Recognition Experts (DREs), SOBEREYE has demonstrated the effectiveness of the PLR (Pupil Light Reflex) test in detecting the impact of marijuana consumption.



The legalization of marijuana brings about a shift, and SOBEREYE makes it an opportunity to minimize workplace accidents

- "Human Error" is listed as a contributing cause in 90% of workplace accidents\*
  - Impairment due to fatigue, medications, and/or drugs is what causes people to make mistakes
- Detecting impairment in the workplace reduces mistakes, saves lives, and saves money
  - The cost of work injuries is estimated at \$164 billion\* in the US and over \$3 trillion\* worldwide
- Workers become aware of the daily testing routine
- Employers have access to AI generated Dashboard



## REAL-TIME IMPAIRMENT DETECTION



PREVENT ACCIDENTS, SAVE LIVES, SAVE MONEY