“Turn on, Tune in, Drop out “

Substance Abuse in the Workplaces of our bodies and mind..

Warren Silverman MD

Brief History of Drug abuse – Mary Jane

- 1629 – Marijuana introduced to the Puritan colonies of New England
- 1765 – George Washington was cultivating Marijuana for a sore tooth
- 1800's Tincture of Cannabis is available from pharmacies,
  - unpopular due to variations in potency and dosage, but
  - recreational use continues with Hashish clubs in most cities by 1885
- By the 20th century, marijuana use was associated with racial groups and drug abusers and lost popularity

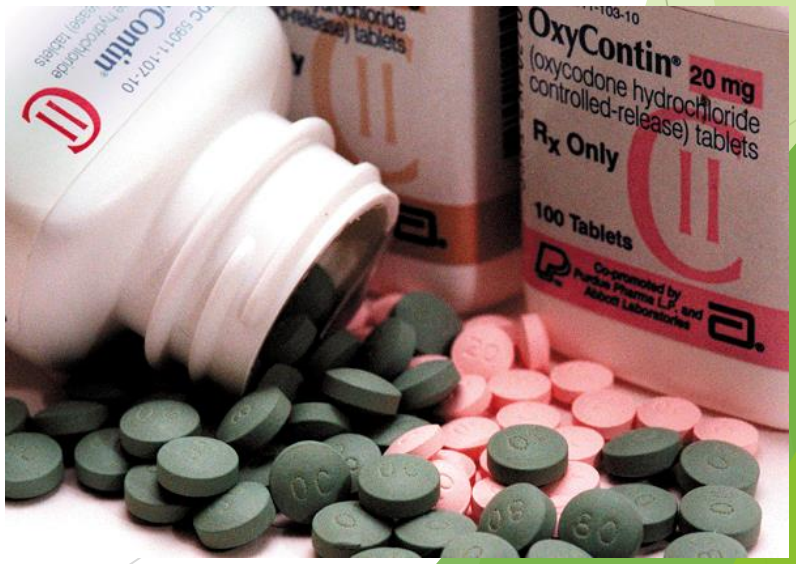
- The foreign origin of marijuana lead to propaganda against its use (as we have just seen), by 1930's marijuana was considered wicked
- In the 1960's, drug use was considered a demonstration of anti-establishment leanings and became popular
- Marijuana has remained a constant presence in our society with gradual legislation to decriminalize and legitimize its use

Brief History of Drug Abuse - Opiates

- In colonial America, Opiate medications were common in London a imported to the colonies – used to treat pain from diarrhea, colds, fever, tooth aches, cholera, rheumatism, pelvic disorders, athlete's foot and baldness
- 1784 Dr. William Buchan's book tells people how to make their own tincture of Opium (paregoric) to keep around the house
- 1804 catalogue listed 90 brands of elixir, by 1905 it was more than 28,000
- 1803 Morphine developed (Morpheus – god of dreams) Hypodermic needle invented and by the civil war Morphine was widely used as injectable

- 1898 Heroin developed by Friedrich Bayer : initially used for cough and lung conditions (tuberculosis, pneumonia), later used to treat Morphine addiction
- 1900 State of Vermont sold 3.3 million doses of opium a month
- Considered a Ghetto drug, Heroin use increased dramatically in the 60's

- After the 60's, the medical community was scared to use opiates for fear of creating addicts
- In the early 80's literature came out scolding doctors for failing to adequately treat the pain of TERMINALLY ILL patients, as a result there was a marking increase in opiates in this population
- In the beginning of this century, drug manufacturers had found a lucrative market in long acting preparations of opiates and aggressively marketed the use of these agents in patients with non terminal illnesses



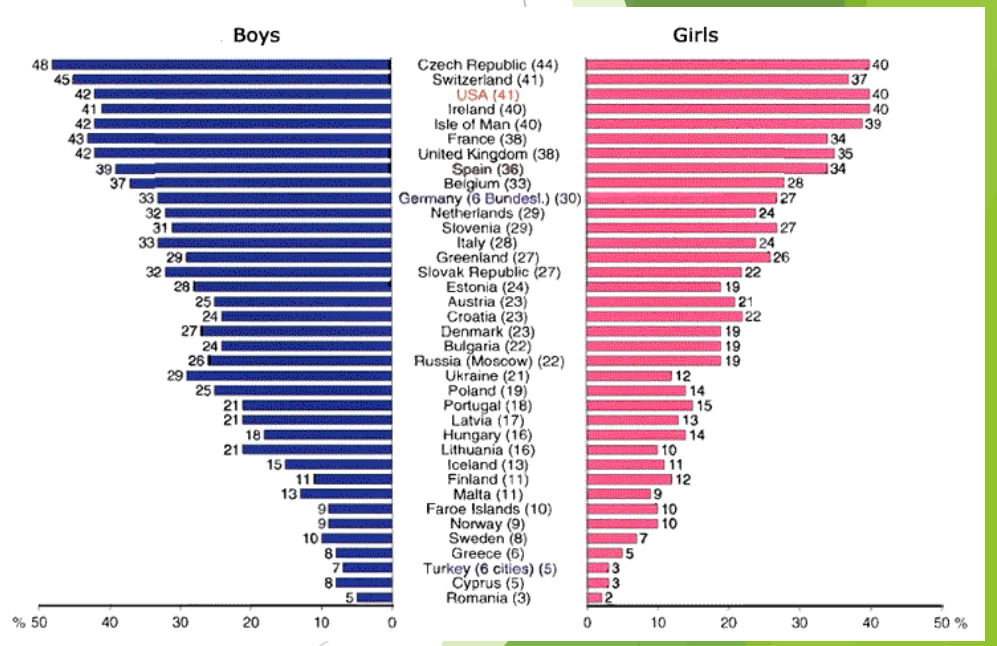
- Anesthesiologists and Primary care physicians recognized a lucrative opportunity in pain management, initially to supplement their income, later to specialize in it
- Opiate use sky rocketed with patients being treated with high dose opiates for conditions as benign as osteoarthritis
- A rapid rise in community diversion, abuse and opiate overdose has created a spotlight on this practice and legislation to combat this type of use. The pendulum is swinging away from opiate use in non-acute situations

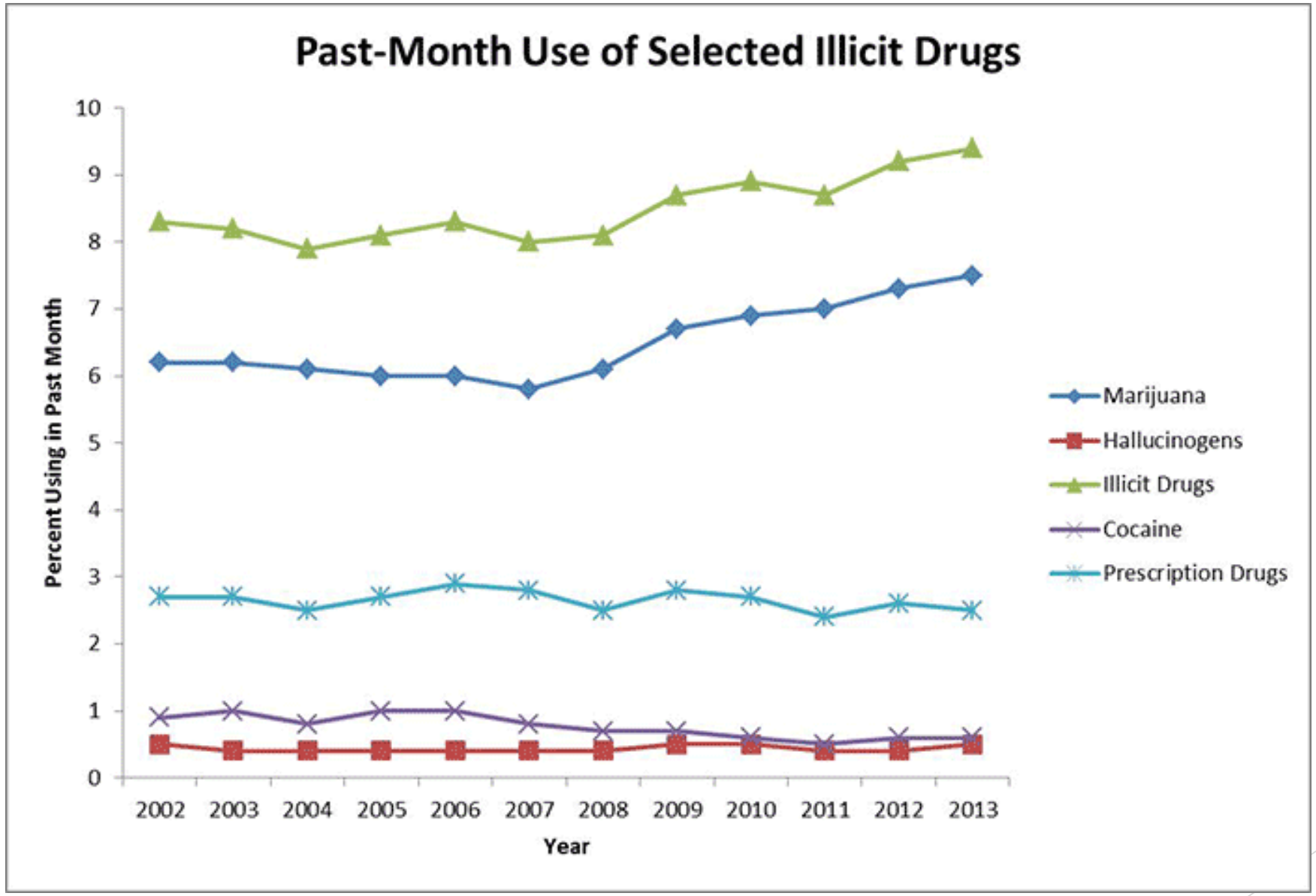
U.S. Leads the World in Illegal Drug Use

Despite the fact that American people make up only four percent of the global population, they still manage to use two-thirds of illegal drugs worldwide

How many drug addicts are there in the United States?

According to the National Survey on Drug Use and Health (NSDUH), an estimated **20 million** Americans aged **12** or older used an illegal drug in the past 30 days. This estimate represents 8% percent of the population aged **12** years old or older.

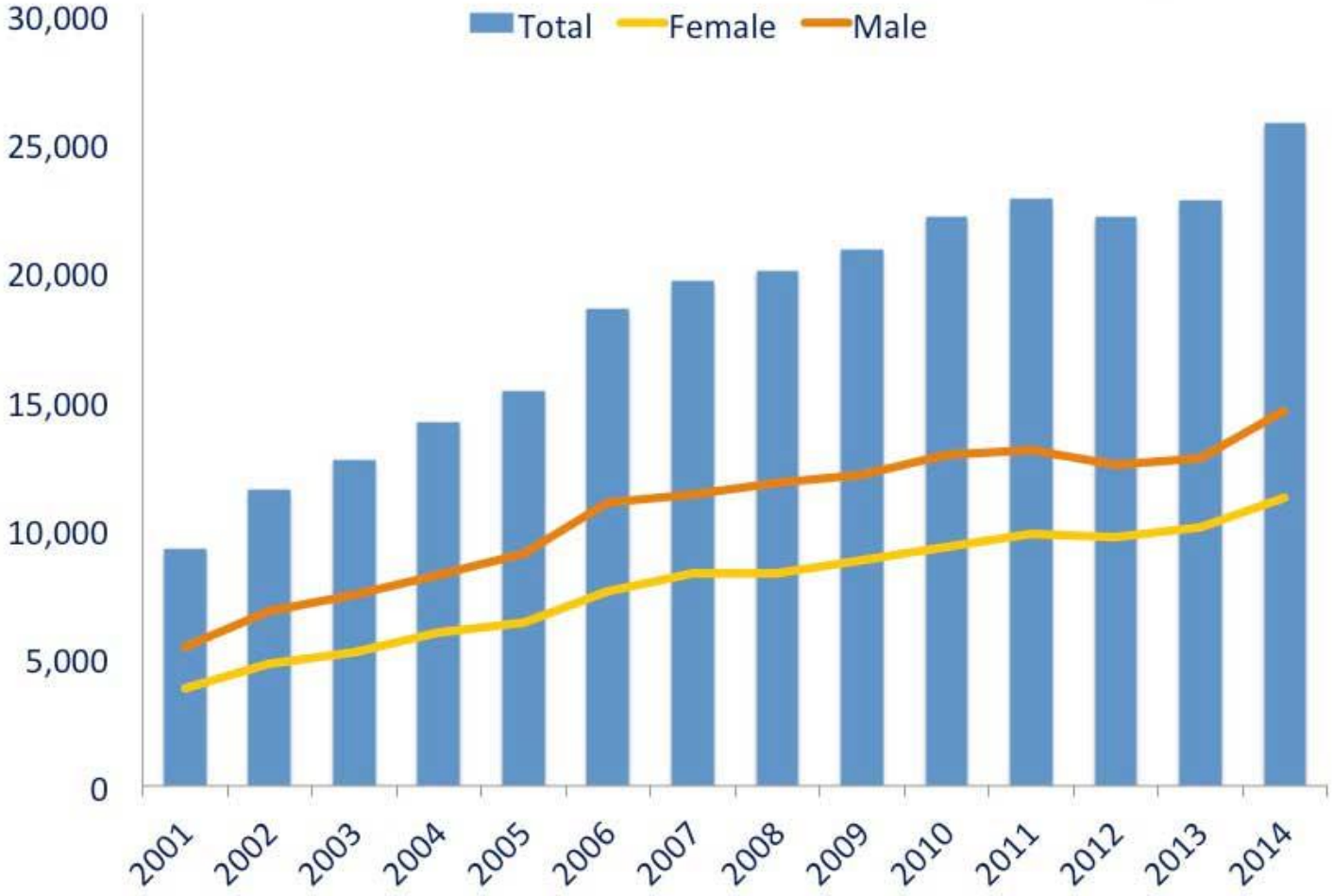



Past-Month Use of Selected Illicit Drugs
Percent Using in Past Month
10
9
8
7
6
5
4
3
2
1
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Year
Marijuana
Hallucinogens
Illicit Drugs
Cocaine
Prescription Drugs

National Institute on Drug Abuse

National Overdose Deaths

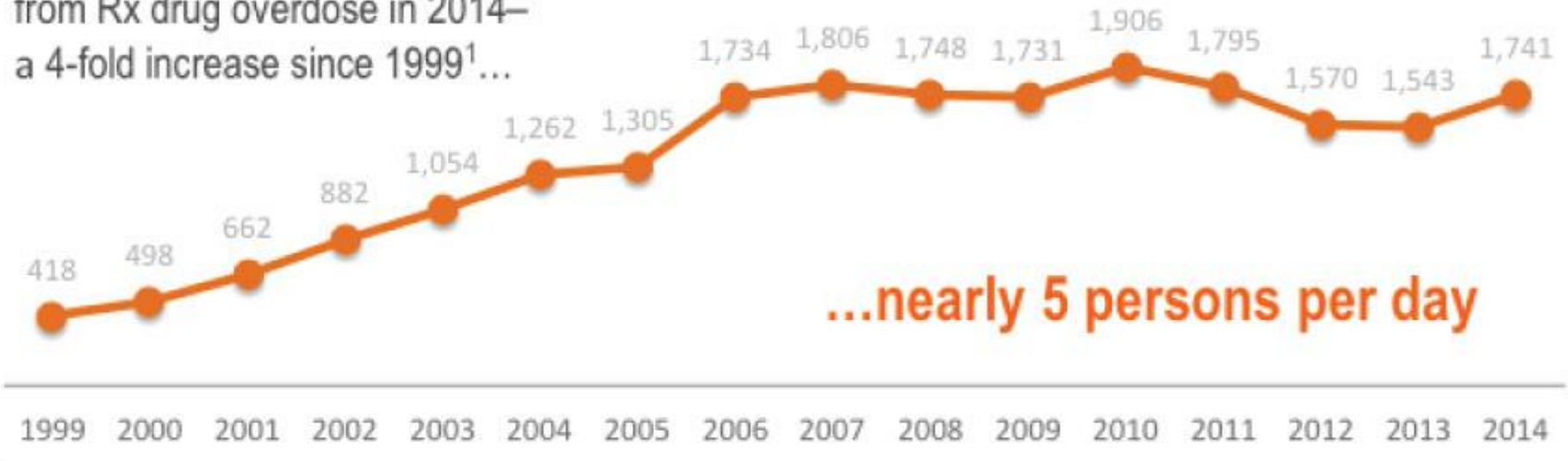
Number of Deaths from Prescription Drugs



Source: National Center for Health Statistics, CDC Wonder

CONSEQUENCES

More than 1,700 young adults, ages 18-24, died from Rx drug overdose in 2014– a 4-fold increase since 1999[1]…



…nearly 5 persons per day

Among young adults, for every death due to Rx drug overdose, there were:

119 Emergency Room Visits[6]

&

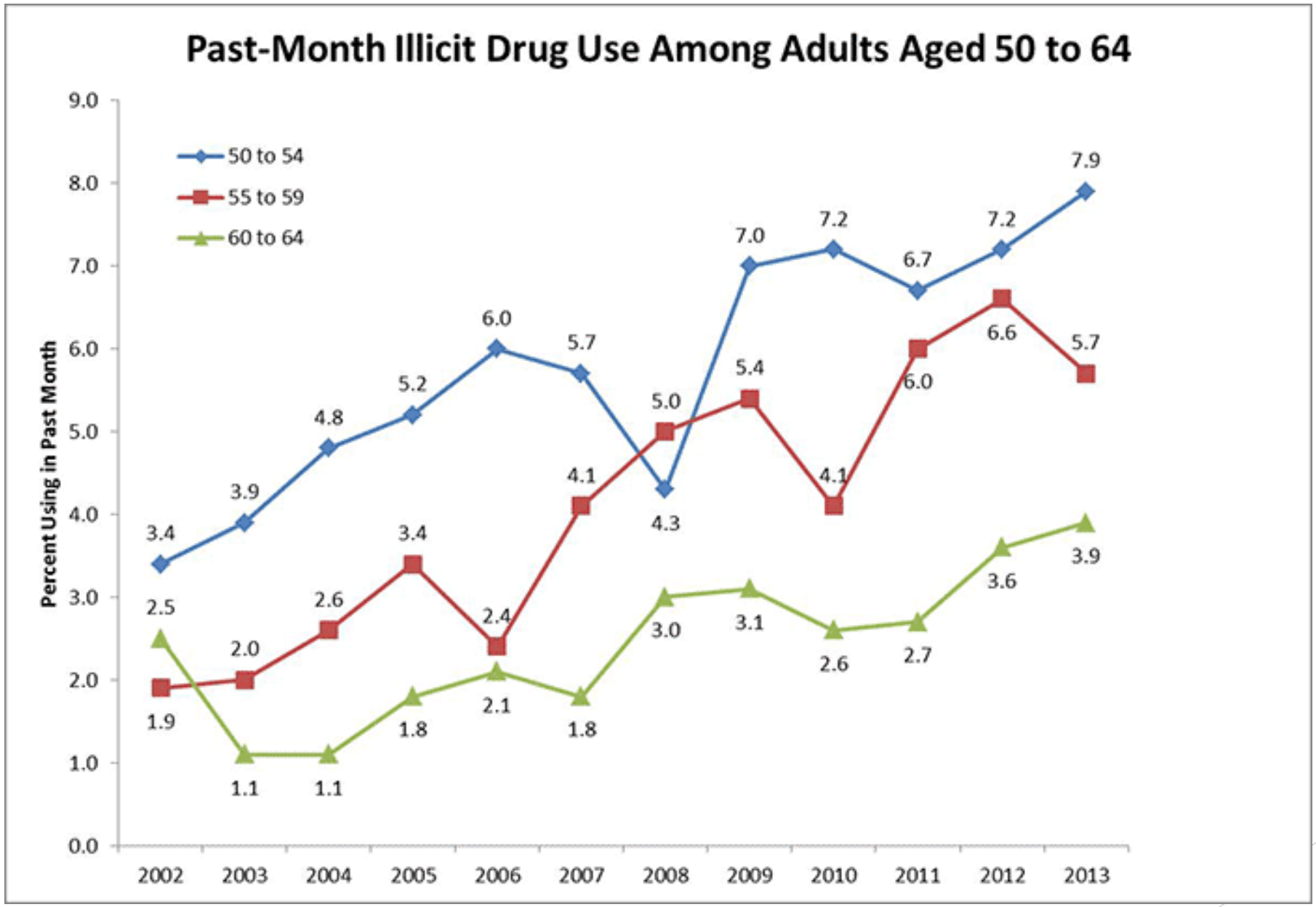
22 Treatment Admissions[7]

Young People Use

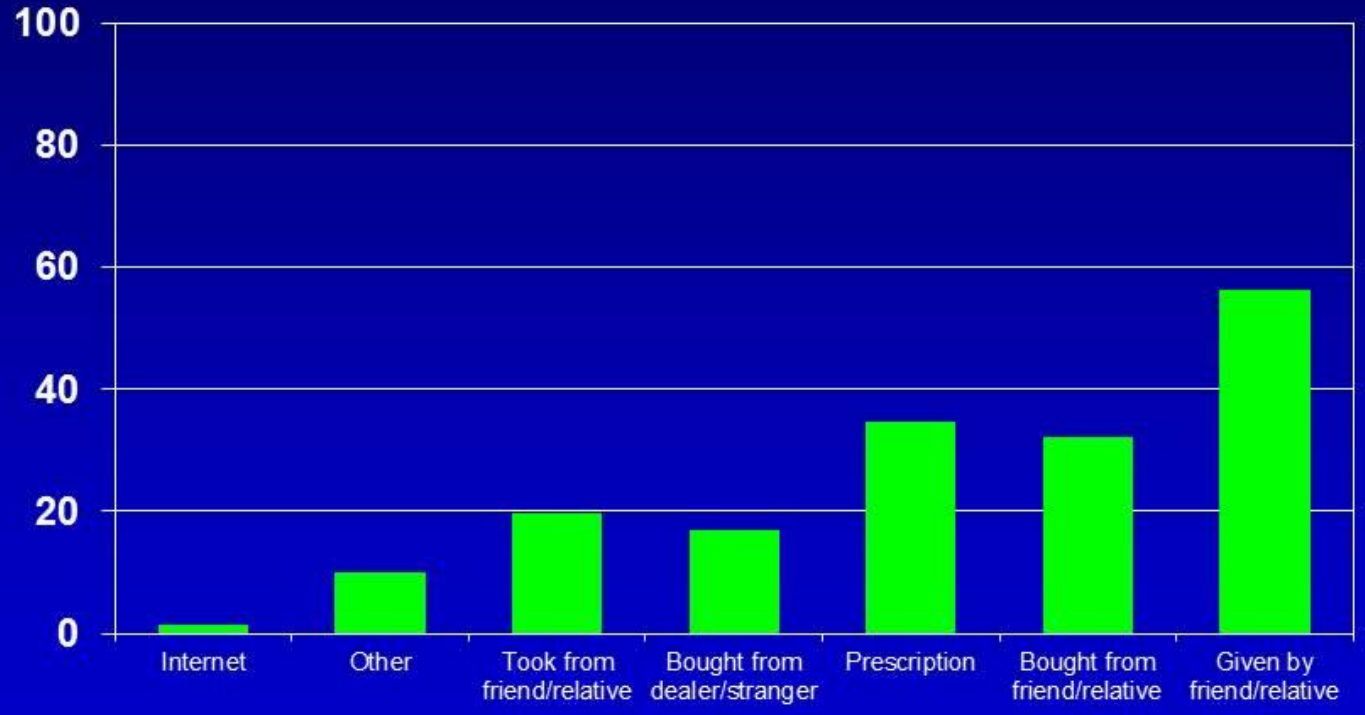
- In 2014, 467,000 adolescents were current nonmedical users of pain reliever, with 168,000 having an addiction to prescription pain relievers.
- In 2014, an estimated 28,000 adolescents had used heroin in the past year, and an estimated 16,000 were current heroin users. Additionally, an estimated 18,000 adolescents had heroin a heroin use disorder in 2014.
- People often share their unused pain relievers, unaware of the dangers of nonmedical opioid use. Most adolescents who misuse prescription pain relievers are given them for free by a friend or relative.
- The prescribing rates for prescription opioids among adolescents and young adults nearly doubled from 1994 to 2007.

- Drug overdose is the leading cause of accidental death in the US, with 47,055 lethal drug overdoses in 2014.
  - Opioid addiction is driving this epidemic, with 18,893 overdose deaths related to prescription pain relievers, and 10,574 overdose deaths related to heroin in 2014.
- From 1999 to 2008, overdose death rates, sales and substance use disorder treatment admissions related to prescription pain relievers increased in parallel.
  - The overdose death rate in 2008 was nearly four times the 1999 rate; sales of prescription pain relievers in 2010 were four times those in 1999; and the substance use disorder treatment admission rate in 2009 was six times the 1999 rate.
- In 2012, 259 million prescriptions were written for opioids, which is *more than enough to give every American adult their own bottle of pills.*

- Four in five new heroin users started out misusing prescription painkillers.
  - As a consequence, the rate of heroin overdose deaths nearly quadrupled from 2000 to 2013.
  - During this 14-year period, the rate of heroin overdose showed an average increase of 6% per year from 2000 to 2010, followed by a larger average increase of 37% per year from 2010 to 2013.
- 94% of respondents in a 2014 survey of people in treatment for opioid addiction said they chose to use heroin because prescription opioids were “far more expensive and harder to obtain.


Past-Month Illicit Drug Use Among Adults Aged 50 to 64
Percent Using in Past Month
50 to 54
55 to 59
60 to 64
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
3.4
3.9
4.8
5.2
6.0
5.7
4.3
7.0
7.2
6.7
7.2
7.9
1.9
2.0
2.6
3.4
2.4
4.1
5.0
5.4
4.1
6.0
6.6
5.7
2.5
1.1
1.1
1.8
2.1
1.8
3.0
3.1
2.6
2.7
3.6
3.9

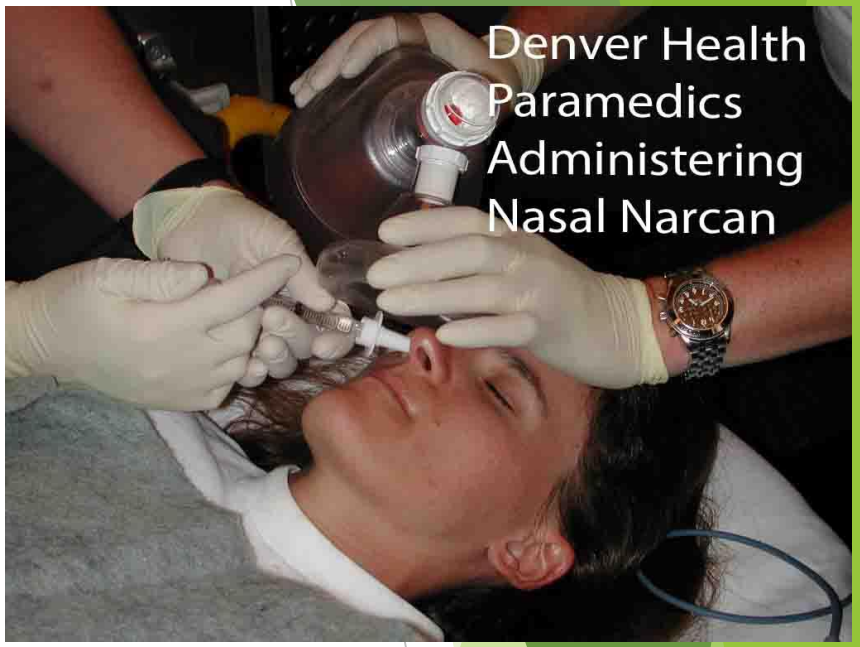
Source of Prescription Narcotics Among Those Who Used in the Past Year, 12th Grade*



*Categories not mutually exclusive

SOURCE: University of Michigan, 2015 Monitoring the Future Study


NDC 69547-353-02
0.1 mL intranasal spray per unit
For use in the nose only
Rx Only
NARCAN® (naloxone HCl)
NASAL SPRAY 4 mg
DO NOT TEST DEVICES OR OPEN BOX BEFORE USE.
Use for known or suspected opioid overdose in adults and children.
This box contains two (2) 4-mg doses of nalox
in 0.1 mL of nasal spray.
Two Pack
CHECK PRODUCT EXPIRATION DATE BEFOR
4 mg
NARCAN® NASAL SPRAY
(naloxone HCl)
FOR USE IN THE NOSE ONLY
NDC 69547-353-02


Denver Health
Paramedics
Administering
Nasal Narcan


Suboxone
Buprenorphine and naloxone
mg/2 mg
8 mg/2 mg

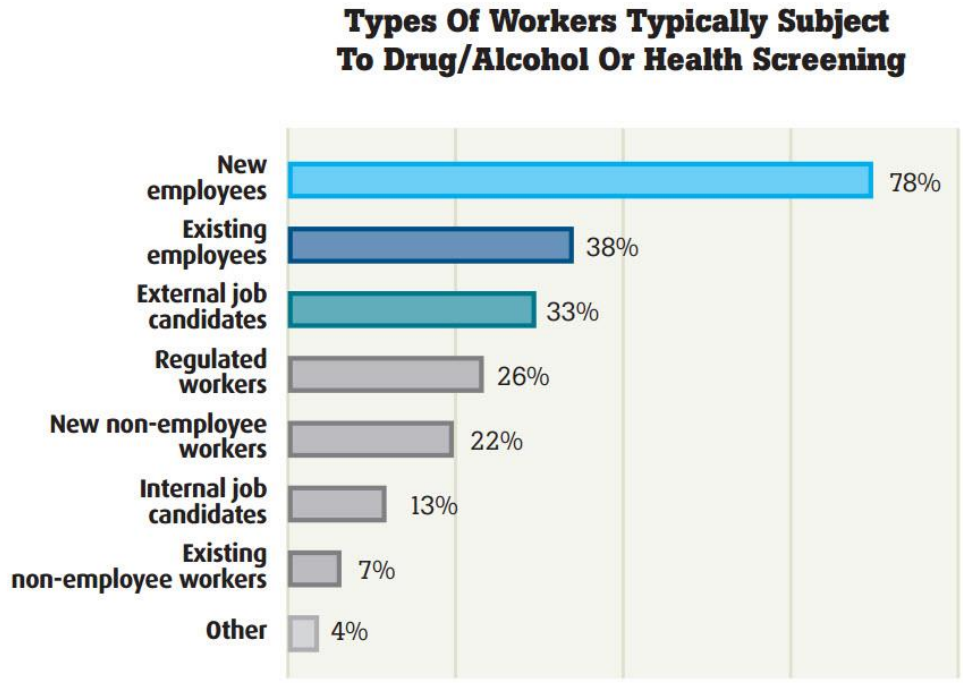

Suboxone: The Best of Both Worlds?
Buprenorphine
-Partial opioid AGONIST
-Can mimic some of heroin's effects
-Can satisfy heroin cravings
-No euphoric "high"
-Less habit-forming than full opioid agonists such as heroin or methadone
-Less respiratory depression compared to methadone
Suboxone
-Can satisfy heroin cravings
-No euphoric "high"
-Less habit-forming than full opioid agonists such as heroin or methadone
-Less respiratory depression compared to methadone
-Low risk of overdose
Naloxone
-Opioid ANTAGONIST
-Blocks heroin's actions
-Eliminates risk of opioid overdose


Methadone Hydrochloride DTF 1mg/1ml Oral solution


WPXI

Types of Drug Testing – 6 Basic Types Occupational

- Pre-employment
- Random
- For Cause – Suspicion
- Post Accident
- Return to Duty
- Follow – up



Federally Mandated programs

- Federal motor Carrier Safety Administration (CDL)
- Federal Aviation Administration
- Federal Railroad Administration
- Unites States Coast Guard
- Pipeline and hazardous Material Safety Administration
- Federal Transit Administration
- Department of Energy
- Nuclear Regulatory Commission
- Department of Defense
- Drug-free Workplace Act of 1988
  - Any organization that receives a federal contract of $100,000 or more
  - Any organizations receiving a federal grant of any size

Pre-employment

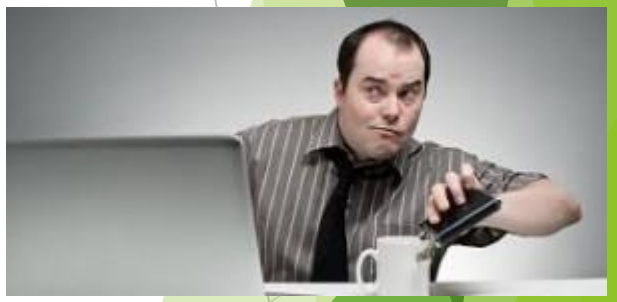
- Pre-employment drug testing is the most common "type" of workplace drug testing employed in the general workforce.
- Legally, pre-employment testing can be required of a job candidate only after a formal "Conditional Offer of Employment" has been made.
- Companies with USDOT-regulated employees (transportation, oil-gas, etc.) are required under 49 CFR Part 40 et al to do pre-employment testing.
- Non-regulated companies are not required to do pre-employment tests. But each year, a growing percentage of non-regulated companies do so.
- Pre-employment testing is a good policy, since it is a first-step in establishing and maintaining a Drug-Free Workplace.

Random Drug Testing

- This testing is not for the purpose of catching substance abusers, although it frequently does
- The purpose is to act as a deterrent
- All employees being monitored work with the understanding that they may be asked on short notice to undergo a drug test at any time
- Employees are chosen randomly and only a percent of the employee pool is tested each year.
- After testing, names are thrown back in the pool and may be chosen multiple times in a year while others are not tested
- Employees must show up within prescribed period of time after being notified – “Proceed Immediately”
- Limit knowledge of the selection list
- Failure to test is equal to a positive

For Cause – Reasonable Suspicion

- Testing is performed when there is a reasonable suspicion that the employee is performing their duties while under the influence of a prohibited substance
- Initiation of a Reasonable Suspicion program requires:
  - Individuals at the employer who have received training on recognizing the signs of substance use
  - Documentation specifically of aberrant behaviours
  - Immediate supervised transportation to and from the testing site
- The USDOT *requires* "Reasonable Suspicion" training for supervisors of companies with DOT-regulated employees.
- Non DOT does not require training, but it is important to do so to avoid litigation and improper selection for testing
- For Cause testing runs the highest positive rates
- Rapid testing is frequently used, follow up laboratory testing is important to offer accuracy and legal back-up



Post Accident - DOT

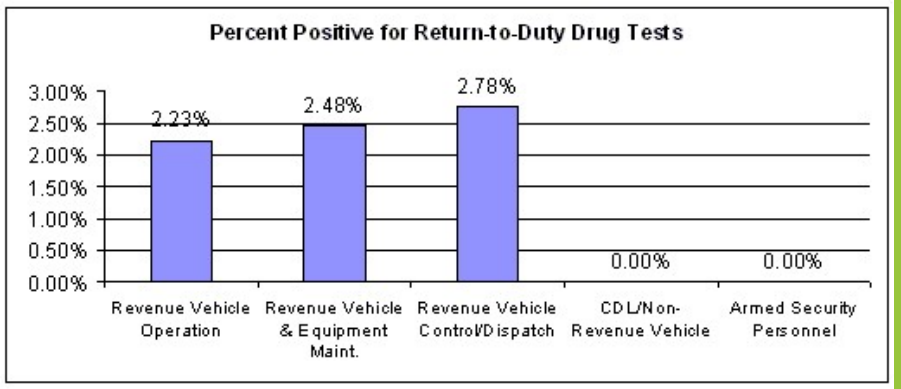
- Who was performing safety-sensitive functions with respect to the vehicle, if the accident involved the loss of human life; or
- Who receives a citation within 8 hours of the occurrence under State or local law for a moving traffic violation arising from the accident, if the accident involved:
- Bodily injury to any person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident;
- One or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicle to be transported away from the scene by a tow truck or other motor vehicle.
- Up to 32 hours following the accident for drugs
- Alcohol within 2 hours or if longer, documentation of the reason why with testing attempts to stop after 8 hours

Post Accident – Non DOT

- For situations including but not limited to
  - Injury to an employee or others requiring medical assessment
  - Damage to company property
- Occurs while at work or on company property
- Testing of the injured employee AND the employee who caused the accident or injury
- Testing to occur as soon as possible, but up to 32 hours post accident
- Alcohol within 2 hours or documented reason up to 8 hours
- Jurisdictions that limit post accident testing

City or State	Prohibited	Restricted
Arkansas*		X
Boulder, Colorado		X
Connecticut	X	
Iowa		X
Maine	X	
Massachusetts		X
Minnesota	X	
Mississippi*		X
Montana		X
Rhode Island	X	
San Francisco, California	X	
Tennessee*		X
Vermont	X	
West Virginia	X	

Return to Duty-
for previously suspended employees



- Passing a drug test as a condition of a "Return to Duty" is *required* of DOT-regulated employees.
- "IF" their company's written Drug-Free Workplace Policy allows for re-hire after a policy rule violation.
- Return to Duty testing also requires a prior completion of a successful counseling by a Substance Abuse Professional (SAP) before re-hire.
  - (DOT-regulated company policies are NOT *required* to allow for re-hire after a drug policy rule violation. But they must stipulate that in their written policy if that is the case.)
- Non federal programs often mirror federal policy, but some have a zero – tolerance policy while others are much more liberal
- The Use of an SAP or an EAP

Follow-up examinations

- Observed Sample
- In DOT a minimum of 5 random tests over the next 12 months with more allowed
- Done in addition to other testing (IE: Random, for cause, post accident)
- Usually managed by the SAP in federal testing
- Requires a negative drug screen before this program can start

Urine collection

PRO

- Highest assurance of reliable results
- Least expensive
- Most flexibility in testing different drugs, including alcohol and nicotine
- Most likely of all drug testing methods to withstand legal challenge

con

- Specimen can be adulterated, substituted, or diluted
- Limited window of detection
- Test sometimes viewed as invasive or embarrassing
- Biological hazard for specimen handling and shipping to lab

- Window of Detection : Typically 1 to 5 days
- Longer for marijuana
- Traditional testing used since 1983. GC/MS confirmation is considered gold standard of drug testing. Acceptable for all testing categories. Both lab and instant testing available.

HAIR COLLECTION

PRO

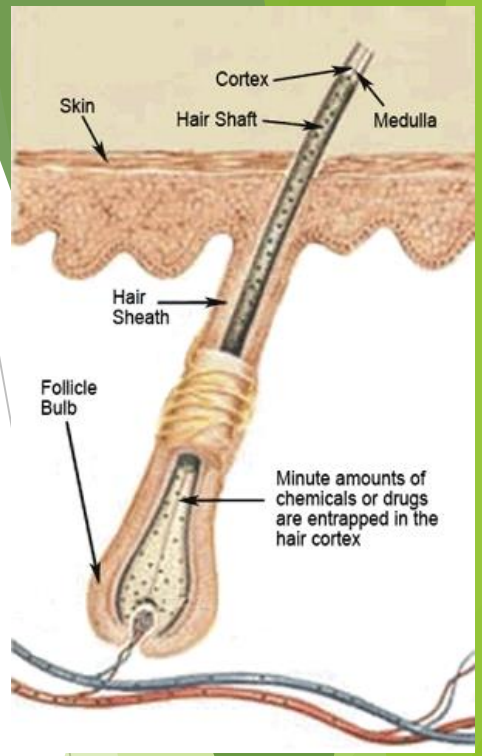
- Longer window of detection
- Greater stability (does not deteriorate)
- Can measure chronic drug use
- Convenient shipping and storage (no need to refrigerate)
- Collection procedure not considered invasive or embarrassing
- More difficult to adulterate than urine • Detects alcohol/cocaine combination use

CON

- More expensive
- Test usually limited to basic 5- drug panel
- Cannot detect alcohol use •
- Will not detect very recent drug use (1 to 7 days prior to test)

- Window of Detection: Depends on the length of hair in the sample
- Hair grows about a half-inch per month, so a 1-1/2 inch specimen would show a 3-month history.

- New federal guidelines propose that head hair should be the only type of hair to be used for pre-employment, random, return-to-duty, and follow-up testing.
- Because of detection times not to be used for post-accident and reasonable suspicion testing.



ORAL FLUIDS - SALIVA

PRO

- • Sample obtained under direct observation
- Minimal risk of tampering
- Non-invasive
- Samples can be collected easily in virtually any environment
- Can detect alcohol use
- Reflects recent drug use

CON

- Drugs and drug metabolites do not remain in oral fluids as long as they do in urine
- Less efficient than other testing methods in detecting marijuana use

Yes, I Want To Pass My Saliva Drug Test!

Window of Detection

- Approximately 10 to 24 hours

Typical uses

- Used primarily for post-accident and reasonable suspicion testing.
- Some companies are using for pre-employment.
- Not to be used for return-to-duty and follow-up testing.
- Both lab and instant testing available.

SWEAT PATCH

PRO

- Non-invasive
- Variable removal date (generally 1 to 7 days)
- Quick application and removal
- Longer window of detection than urine
- No sample substitution possible

CON

- Limited number of labs able to process results
- People with skin eruptions, excessive hair, or cuts and abrasions cannot wear the patch
- Passive exposure to drugs may contaminate patch and affect results

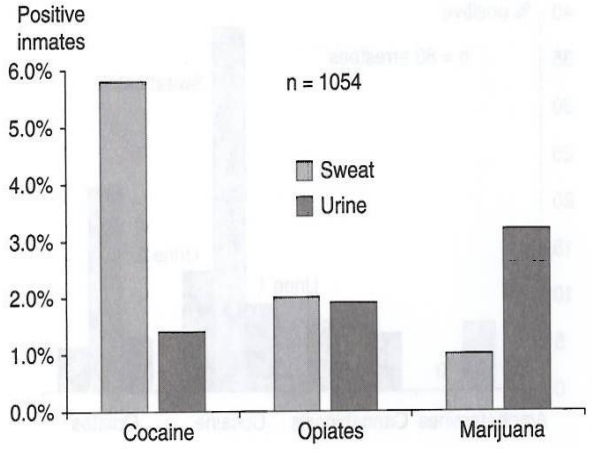


Figure 8-5 Drug detection rates for cocaine, opiates, and marijuana in the sweat patches and urine. Data from *(2)*.

WINDOW OF DETECTION

- Patch retains evidence of drug use for at least 7 days, and can detect even low levels of drugs 2 to 5 hours after last use

PRIMARY USES

- Used primarily for follow-up testing and return-to-duty testing. Patch is applied to upper arm and back.
- SAMHSA…. “on the basis of available information, the department considers the statement that under normal circumstances, the external absorption of any drugs via the external shell into the patch is impossible”.

NIDA 5 Panel – Federal testing

- Marijuana (THC)
- Cocaine
- Amphetamines
  - Amphetamine
  - Methamphetamine
  - MDMA
  - MDA
  - MDEA
- Opiates
  - Codeine
  - Morphine
  - 6-AM (heroin)
- Phencyclidine (PCP

Labcorp 12 panel

- Adulteration (dilution) testing–creatinine;
- amphetamines;
- barbiturates;
- benzodiazepines;
- cannabinoids (THC);
- cocaine (as benzoylecgonine);
- ethanol (alcohol);
- meperidine (Demerol®);
- methadone (Dolophine®);
- opiates (codeine, morphine, hydrocodone, hydromorphone);
- oxycodone (oxycodone, oxymorphone);
- phencyclidine (PCP);
- propoxyphene (Darvon®);
- tramadol

Drugs of Abuse – synthetics and others

Medtox test 2950 : Psychoactive Drugs of Abuse,urine,qualitative/quantitative

- 2C-B;
- 2C-E;
- 2C-H;
- 2C-I;
- 4-methylethcathinone;
- 5-MeO-DALT;
- 6-APB;
- alpha-methyltryptamine;
- alpha-PVP;
- A-PVP;
- a-PVP;
- Bromo-dragonfly;
- BZP;
- Cathinone;
- DMT;
- Ethlone/Butylone;
- Ethylethcathinone;
- Fluoro-methamphetamine;
- JWH-018 N-pentanoic acid;
- JWH-073 N-butanoic acid;
- Kratom;
- LSD;
- m-CPP;
- MDAI;
- MDPBP;
- MDPPP;
- MDPV;
- MeO DIPT;
- Mephedrone;
- Methcathinone;
- Methedrone;
- Methoxetamine;
- Methylone;
- Mitragine;
- Naphyrone;
- Pentedrone
- Pentylone;
- TFMPP;
- UR-144 N-4-hydroxy-pentyl;
- XLR-11 N-4-hydroxy-pentyl

Designer Drugs ???

Lysergamides[edit]
Lysergamides are amide derivatives of the alkaloid lysergic acid.
1P-ETH-LAD, 1-Propionyl-ETH-LAD
1P-LSD, 1-Propionyl-LSD
ALD-52, 1-Acetyl-LSD
AL-LAD, 6-Allyl-6-Nor-LSD
ETH-LAD, 6-Ethyl-6-Nor-LSD
LSM-775, N-Morpholinyllysergamide
LSZ, LA-SS-Az
4-AcO-DALT, Dalcetin
4-AcO-DET, Ethacetin
4-AcO-DiPT, Ipracetin
4-AcO-DMT, Psilacetin
4-AcO-DPT, Depracetin[6]
4-AcO-EiPT, Ethipracetin
4-AcO-MET, Metacetin
4-AcO-MiPT, Mipracetin
4-HO-DALT, Dalocin[7]
4-HO-DET, Ethocin
4-HO-DiPT, Iprocin
4-HO-DPT, Deprocin
4-HO-MET, Metocin
4-HO-MiPT, Miprocin
4-HO-MPMI, Lucigenol
4-HO-MPT, Meprocin
5-Bromo-DMT
5-MeO-DALT
5-MeO-DET
5-MeO-DiPT, Foxy
5-MeO-DMT
5-MeO-DPT
5-MeO-EiPT
5-MeO-EPT[8]
5-MeO-MALT
5-MeO-MET[9]
5-MeO-MiPT, Moxy
5-MeO-MPMI
5-MeO-NiPT[10]
5-MeO-TMT, Indapex
DALT, Diallyltryptamine
DET, Diethyltryptamine
DiPT, Diisopropyltryptamine
DPT, Dipropyltryptamine
4-PO-DET, Ethocybin, CEY-19
EiPT, Ethylisopropyltryptamine
EPT, Ethylpropyltryptamine
MiPT, Methylisopropyltryptamine
McPT, Methylcyclopropyltryptamine[11]
EcPT
PcPT
MET, Methylethyltryptamine
Benzofurans[edit]
5-MeO-DiBF
Dimemebfe, 5-MeO-Benzofuranethanamine, 5-MeO-BFE

3C-E
3C-P
Allylescaline, "AL"
Escaline, "E"
Isoproscaline, "IP"
Methallylescaline, "MAL"
Proscaline, "P"
2C-x[edit]
2C-x
2C-B-AN, Brolphetaminil[12]
2C-B-FLY
2C-C
2C-D, 2C-M
2C-E, "Europa"
2C-G
2C-iP, "Jelena"
2C-I
2C-P
2C-T-2
2C-T-4
2C-T-7
2C-T-21
Bk-2C-B
BOB, B-Methoxy-2C-B
BOD, B-Methoxy-2C-D
BOHB, B-Hydroxy-2C-B, "BH-2CB"
HOT-7
NBxx[edit]
2CBCB-NBOMe
25B-NBF[13]
25B-NBOH
25B-NBOMe, "Nova", Cimbi-36
25C-NBF[14]
25C-NBOH
25C-NBOMe, "Pandora", Cimbi-82
25D-NBOMe, "Divination"
25E-NBOMe
25I-NBF, Cimbi-21
25I-NBMD, Cimbi-29
25I-NBOH, Cimbi-27
25I-NBOMe, "Solaris", Cimbi-5
25iP-NBOMe[15]
25H-NBOMe[16]
25N-NBOMe
25P-NBOMe
C30-NBOMe[17]
Mescaline-NBOMe[18]
DOx[edit]

Aleph
Bromo-DragonFLY, DOB-DragonFLY
DOB
DOC
DOE, DOET, "Hecate"
DOI
DOiPR, DOiP
DOM, "STP"
DON
DOPR
TMA-2
TMA-6
ZDCM-042-Fluorodeschloroketamine, 2-FDCK, Fluoroketamine, 2-Fluoroketamine
2'-Oxo-PCE, Eticyclidinone, O-PCE, Deschloroethylnorketamine, 2-DCNEK[19]
2-Trifluoromethyldeschloroketamine , 2-TFMDCK
3-HO-PCE, Hydroxyeticyclidine[20]
3-HO-PCP, Hydroxyphencyclidine
3-MeO-PCE, Methoxyeticyclidine
3-MeO-PCMo
3-MeO-PCP
4-MeO-PCP, Methoxydine
Deschloroketamine, 2'-Oxo-PCM, 2-DCK, DCK, O-PCM
Eticyclidine, PCE, CI-400
Methoxetamine, MXE, 3-MeO-2'-Oxo-PCE
Methoxmetamine, MXM, MMXE, 3-MeO-2'-Oxo-PCM, E-MXE
Methoxyketamine, 2-MeO-2-Deschloroketamine, 2-MeO-Ketamine
N-Ethylnorketamine, NENK, N-Ethylketamine
2-Chloro-Ephenidine
2-MeO-Ephenidine
Diphenidine
Ephenidine, NEDPA, EPE
Fluorolintane
Methoxphenidine, 2-MeO-Diphenidine, MXP
N-Methylephenidine, "Ephenidine-2"
2C-B-BZP
3-Chlorophenylpiperazine, meta-Chlorophenylpiperazine, mCPP
4-Fluorophenylpiperazine, para-Fluorophenylpiperazine, pFPP, 4-FPP, Fluoperazine, Fluperazine
4-Methoxyphenylpiperazine, para-Methoxyphenylpiperazine, MeOPP, pMPP, 4-MPP, Paraperazine
Benzylpiperazine, BZP
Dibenzylpiperazine, DBZP
Difluoromethylenedioxybenzylpiperazine, DF-MDBP, DB-MDBP[21]
Methoxypiperamide, MEOP, MEXP
Methylbenzylpiperazine, MBZP
Methylenedioxybenzylpiperazine, MDBZP, Piperonylpiperazine
Trifluoromethylphenylpiperazine, TFMPP
5-Methoxymethylone, 8k-MMDMA, "2-A1MP"
5-Methylethylone, 5-Me-Bk-MDEA, 5-ME
5-Methyl-MDA
Butylone, Bk-MBDB
Dibutylone, Bk-DMBDB
Difluoromethylenedioxyamphetamine, DiFMDA
Dimethylone, Bk-MDDMA, "M11"[22]
Dipentylone, Bk-DMBDP[23]
EBDB, Ethylbenzodioxolylbutanamine
EDMA, Ethylenedioxymethylamphetamine
EFLEA, N-Hydroxy-EDMA[24][25]
Ethylone, Bk-MDEA
Eutylone, Bk-EBDB, N-Ethyl-Butylone
FLEA, Methylenedioxyhydroxymethamphetamine, MDHMA
MBDP, Methylbenzodioxylpentanamine
MBDB, Methylbenzodioxylbutanamine, "Eden"
MDEA, Methylenedioxyethylamphetamine, MDE, "Eve"
Methylenedioxyhydroxyamphetamine, MDOH
Methylenedioxydeschlorobupropion, N-Tert-Butyl-Methylone
Methylenedioxyphenylacetamide, MDPA
Methylone, Bk-MDMA
MMDA, 5-MeO-MDA
MMDA-2, 6-MeO-MDA
Pentylone, Bk-MBDP
Putylone, Bk-PDBD, N-Propylbutylone

5-APB
5-EAPB
5-MAPB
5-APDB
5-MAPDB
5-MBPB[26]
6-APB, "Benzo Fury"
6-EAPB
6-MAPB
6-APDB
6-MAPDB4-BA, 4-Bromoamphetamine, PBA
4-CA, 4-Chloroamphetamine, PCA
4-CMA, 4-Chloromethamphetamine, PCMA
4-FA, 4-Fluoroamphetamine, PFA
4-FMA, 4-Fluoromethamphetamine, PFMA
4-MA, 4-Methylamphetamine, PAL-313
4-MeOA, 4-Methoxyamphetamine, PMA, 4-MeO-A, "Death"
4-MeOMA, 4-Methoxymethamphetamine, PMMA, 4-MeO-MA
4-MTA, 4-Methylthioamphetamine
4-NMA, 4-Nitromethamphetamine
Methamnetamine, N-Methyl-PAL-287, Methylnaphetamine, MNT, MNA
MMA, 3-Methoxy-4-Methylamphetamine
Piperidines[edit]
Cyclo-Methiodrone, TCAT
Stimulants[edit]
mphetamines[edit]
2-FA, 2-Fluoroamphetamine
2-FMA, 2-Fluoromethamphetamine
2-MA, 2-Methylamphetamine, Ortetamine
3-FA, 3-Fluoroamphetamine
3-FMA, 3-Fluoromethamphetamine
B-Phenylmethamphetamine
N,alpha-Diethylphenylethylamine, EAPB
.
2-Chloromethcathinone, 2-CMC
2-Fluoromethcathinone, 2-FMC[27]
Ethylenedioxymethcathinone, 2-MEC[28]
Methylenedioxymethcathinone, 2-MMC[29]
2,4-Dimethylethcathinone, 2,4-DMEC[30]
2,4-Dimethylmethcathinone, 2-Methylmephedrone, 2,4-DMMC[31]
3,4-Dimethylmethcathinone, 3,4-DMMC
3,4-Dimethyl-N-ethylbuphedrone, 3,4-DMNEB[16]
3,4-Dimethyl-N-ethylpentedrone, 3,4-DMNPD[16]
3-Chloromethcathinone, 3-CMC, Metaclephedrone, Clophedrone[32]
3-Ethylethcathinone, 3-EEC[33]
3-Fluoromethcathinone, 3-FMC
3-Methoxymethcathinone, 3-MeOMC[34]
3-Methylethcathinone, 3-MEC[35]
3-Methylmethcathinone, 3-MMC
4-Bromomethcathinone, 4-Bromomethcathinone, 4-BMC, Brephedrone
4-Bromoethcathinone, 4-BEC[36]
4-Chlorobutylcathinone, 4-CBC
4-Chlorodimethylcathinone, 4-CDMC
4-Chloroethcathinone, 4-CEC[222]
4-Chloroisopropylcathinone, 4-CiPC
4-Chloromethcathinone, 4-CMC, Clephedrone[38]
4-Ethylethcathinone, 4-EEC
4-Ethylmethcathinone, 4-EMC
4-Fluoroethylmethcathinone, 4-EFMC
4-Fluoromethcathinone, Flephedrone, 4-FMC
]
4-Fluoro-Piperidinopentiophenone, 4F-PPP
4-Fluoropentedrone, 4-FPD [40]
4-Methyl-a-Ethylaminopentiophenone, 4-MEAPP, N-Ethyl-4-Methylpentedrone[41]
4-Methylbuphedrone, 4-MeMABP, BZ-6378
4-Methylcathinone, 4-MC, Normephedrone
4-Methyldimethcathinone, 4-MDMC [42]
4-Methylethcathinone, 4-MEC
4-Methylpentedrone, 4-MPD
4-Methylpropylcathinone, 4-MPC
4-Sulfonyldimethcathinone, 4-SMC, 4-SDMC

Pramipexole
Propentofylline
PRL-8-53
Prucalopride
Pyritinol
Rapastinel, GLYX-13
Rasagiline
Roflumilast
Selank
Selegiline
Semax
Sufranal
Sulbutiamine
Sunifiram
Taltirelin
Tianeptine
Unifiram
Vinpocetine
WAY-100,635
Racetams[edit]
Racetams are a class of drugs that share a pyrrolidone nucleus. Many, such as piracetam, but not all, are considered nootropics.
Aloracetam
Aniracetam
Cebaracetam
Coluracetam
Dimiracetam
Doliracetam
Etiracetam
Fasoracetam
Imuracetam
Nebracetam
Nefiracetam
Oxiracetam
Phenylpiracetam hydrazide
Phenylpiracetam
Pramiracetam
Rolziracetam

- Benzedrone, 4-MBC
- Buphedrone, α-Methylamino-Butyrophenone, MABP
- DL-4662, Dimethoxyethylpentedrone, VEVP[45]
- Ephylone, N-Ethylpentylone, βk-Ethyl-K, βk-EBDP
- Ethcathinone, EC
- Hexedrone, α-Methylamino-Caprophenone
- 4-Methylmethcathinone, Mephedrone, 4-MMC, 4-Methylephedrone, "MCAT"
- 4-Methoxymethcathinone, Methedrone, βk-PMMA, 4-Methoxyephedrone, 4-MeoMC
- Mexedrone
- N,N-Diethyl-4-Methcathinone, N,N-DEMC
- N-Ethylbuphedrone, NEB
- N-Ethylhexedrone, NEH, "Hexen"
- N-Ethylpentedrone, NEPD
- 4-Fluoro-N-Ethylbuphedrone, 4-Fluoro-NEB, 4-FNEB
- NiPP, α-Isopropylamino-Valerophenone, iPAVP, N-Isopropylpentedrone, NPP[44]
- Pentedrone, α-Methylamino-Valerophenone, MAVP, PD
- α-Ethylaminopentiophenone, EAPP, N-Ethylpentedrone[41]
- βk-IBP, Indanyl-N-ethylbuphedrone[16]
- βk-IVP, Indanyl-N-ethylpentedrone[16][45]

- Diphenylprolinol, D2PM
- 2-Diphenylmethylpyrrolidine, Desoxy-D2PM
- α-Pyrrolidinopropiophenone, α-PPP
- 2',4'-Dimethyl-α-pyrrolidinopropiophenone, DMPPP, 2,4-DM-α-PPP
- 3',4'-Methylenedioxy-α-pyrrolidinopropiophenone, MDPPP, 3,4-MD-α-PPP
- 4'-Chloro-α-pyrrolidinopropiophenone, 4-Chloro-α-PPP
- 4'-Methoxy-α-pyrrolidinopropiophenone, MOPPP, 4-MeO-α-PPP
- 4'-Methyl-α-pyrrolidinopropiophenone, 4-MePPP, MPPP, MαPPP
- α-Pyrrolidinobutiophenone, α-PBP
- 3',4'-Methylenedioxy-α-pyrrolidinobutiophenone, MDPBP, 3,4-MD-α-PBP
- 4'-Fluoro-α-pyrrolidinobutyrophenone, 4-Fluoro-α-PBP[46]
- 4-Methoxy-α-pyrrolidinobutyrophenone, 4-MeO-α-PBP[47]
- 4'-Methyl-α-pyrrolidinobutiophenone, MPBP, 4-Me-α-PBP
- 5-PPDI, Indanyl-α-PBP[48]
- TH-PBP, Cyclohexane-α-PBP
- α-Pyrrolidinobutiothiophenone, α-PBT[49]
- α-Pyrrolidinopentiophenone, α-PVP, βk-Prolintane, O-2387
- 3',4'-Dimethoxy-α-pyrrolidinopentiophenone, 3,4-DMPV
- 3',4'-Dimethyl-α-pyrrolidinopentiophenone, 3,4-DMPV[16]
- 4'-Bromo-α-pyrrolidinopentiophenone, 4-Bromo-α-PVP
- 4'-Chloro-α-pyrrolidinopentiophenone, 4-Chloro-α-PVP
- 4'-Fluoro-α-pyrrolidinopentiophenone, 4-Fluoro-PVP, 4-Fluoro-α-PVP
- 4'-Methoxy-α-pyrrolidinopentiophenone, 4-MeO-α-PVP, 4-MeO-PVP, MOPVP
- 5-DBFPV, 5-Dihydrobenzofuranpyrovalerone, 3-Desoxy-MDPV
- Pyrovalerone, 4-Me-α-PVP, Centroton, Thymergix, O-2371
- Methylenedioxypyrovalerone, MDPV
- Naphyrone, Naphthylpyrovalerone, O-2482
- Pyrophenidone, α-Phenyl-Pyrovalerone
- Indapyrophenidone, Indanyl-α-Phenyl-α-PVP
- TH-PVP, Cyclohexane-α-PVP[50]
- α-Pyrrolidinopentiothiophenone, α-PVT
- α-Pyrrolidinoisohexaphenone, α-PiHP
- α-Pyrrolidinohexiophenone, α-PHP, PV-7
- 3',4'-Dimethoxy-α-PHP, 3,4-DMPH[25]
- 4'-Fluoro-α-pyrrolidinohexiophenone, 4-Fluoro-α-PHP
- 4'-Methyl-α-pyrrolidinohexiophenone, MPHP, 4-Me-α-PHP, PV-4
- 4'-Methoxy-α-pyrrolidinohexiophenone, 4-MeO-α-PHP
- TH-PHP, Cyclohexane-α-PHP
- 5-BPDI, Indanyl-α-PHP[51]
- Methylenedioxypyrrolidinohexiophenone, MDPHP [16][52]
- α-Pyrrolidinoheptiophenone, PV-8, α-PHPP[53]
- 4'-Fluoro-α-pyrrolidinoheptiophenone, 4-Fluoro-PV-8, 4-Fluoro-α-PHPP[41]
- 4'-Methoxy-α-pyrrolidinoheptiophenone, 4-MeO-PV-8, 4-MeO-α-PHPP
- α-Pyrrolidinooctanophenone, PV-9, α-POP[41]
- 4'-Fluoro-α-pyrrolidinooctanophenone, 4-Fluoro-PV-9, 4-Fluoro-α-POP
- 4'-Methoxy-α-pyrrolidinooctanophenone, 4-MeO-PV-9, 4-MeO-α-POP[54]
- α-Pyrrolidinononanophenone, PV-10, α-PNP [55]

2-Diphenylmethylpyrrolidine, Desoxy-D2PM, 2-Benzhydrylpyrrolidine
3,4-Dichloromethylphenidate, 3,4-CTMP
4'-Fluorococaine, 4'-FC
4-Benzylpiperidine, 4-PMPD
4-Fluoroethylphenidate, 4F-EPH, 4-FEPH
4-Fluoromethylphenidate, 4-FMPH, 4-FMPH
4-Methylmethylphenidate, 4-Me-TMP, 4-MMPH
Benocyclidine
Desoxypipradrol, 2-DPMP, 2-Diphenylmethylpiperidine
Dichloropane, RTI-111, O-401
Ethylphenidate, EPH
HDEP-28, Ethylnaphthidate
HDMP-28, Methylnaphthidate
Isopropylphenidate, IPH, IPPD
Meprylcaine
Nitracaine, 4-Nitro-Dimethocaine
Pipradrol, Meratran
Propylphenidate, PPH
Troparil, WIN 35,065-2, β-CPT

Isophenmetrazine, PAL-730[56]
2-Hydroxy-4'-Ethylphenmetrazine, 2-HO-4'-EPM, 2-Hydroxyphenmetetrazine, N-Ethylphenmetrazol
3,4-Methylenedioxyphendimetrazine, MDMPM
3-Fluorophenetrazine, 3-FPE[57]
3-Fluorophenmetrazine, 3-FPM, PAL-593
3-Methylphenmetrazine, 3-MPM, PAL-773
N-Ethylphenmetrazine, Phenmetetrazine[58]
4-Methylphenmetrazine, 4-MPM
6-Methylphenmetrazine, 6-MPM
G-130
Methylmorphenate
PDM-35, 5-Methylphenmetrazine, 5-MPM
Phenetrazine, PE[59]
Viloxazine

Phenylacetamides[edit]

2-PA, 2-Phenylacetamide
2-PTA, 2-(4-methylphenyl)acetamide

Misc[edit]

1,3-Dimethylbutylamine, 1,3-DMBA, "AMP-Citrate"
2-AI
2-MPPP, 2-methyl-1-phenyl-3-(piperidin-1-yl)propan-1-one
4-Fluorodimethocaine
Amfonelic acid, AFA, WIN 25,978
Bromantane
Camfetamine
CRL-40,940, Bisfluoromodafinil
CRL-40,941, Fladrafinil, Fluorafinil
Diclofensine, Ro 8-4650
Dimethocaine, Larocaine
Homomazindol
Mephtetramine, MTTA[60]
Methylhexanamine, DMAA
Modafiendz, Methyldifluoromodafinil[61]

Sedatives[edit]

.

Opioids[edit]

Opioids have pharmacologic actions resembling morphine and other components of opium.
3-Methylbutyrfentanyl, 3-MBF
3-Methylfentanyl, 3-MF
4-Chloroisobutyrfentanyl, 4-ClBF, p-ClBF
4-Fluorobutyrfentanyl, 4-FBF, p-FBF
4-Fluoroisobutyrfentanyl, 4-FIBF, p-FiBF
4-Methoxybutyrfentanyl, 4-MeO-BF, p-MeO-BF
4-Fluorofentanyl, 4-FF, p-FF
Acetylfentanyl, AF
Acrylfentanyl
AD-1211AH-7921
α-Methylfentanyl, "China White"
Butyrfentanyl, BF
Desmethylprodine, MPPP
Furanylfentanyl, Fu-F
4'-Nitromethopholine
MT-45
Nortilidine
O-Desmethyltramadol
U-51754[62]
U-47700
U-77891
Valerylfentanyl, VF
W-15[63]
W-18

Benzodiazepines[edit]

3-Hydroxyphenazepam
Adinazolam
Clonazolam, 8-Nitrodeschlorotriazolam, Clonitrazolam
Cloniprazepam, 1-Cyclopropylmethylclonazepam[64]
Desmethylflunitrazepam, Fonazepam
Diclazepam, 2'-Chlorodiazepam
Flubromazepam
Flubromazolam
Flunitrazolam, 2'-Fluorodeschloroclonazolam
Meclonazepam, 3-Methylclonazepam
N-Desalkylflurazepam, Norflurazepam
Nitemazepam, 3-Hydroxynimetazepam
Nifoxipam, 3-Hydroxydesmethylflunitrazepam
Nitrazolam
Phenazepam
Pyrazolam
Ro5-4864 4'-Chlorodiazepam

Thienodiazepines[edit]

Deschloroetizolam, "Etizolam-2"[65]
Etizolam
Desmethyletizolam, Metizolam

1,4-Butanediol, 1,4-BD
GBL, γ-Butyrolactone
GHV, γ-Hydroxyvaleric acid (4-Methyl-GHB)
GVL, γ-Valerolactone
Afloqualone
Etaqualone, 2-Ethylnormethaqualone, "ECQ"
Mebroqualone, 2-Bromonormethaqalone, "MBQ"
Mecloqualone, 2-Chloronormethaqualone, "MCQ"
Methylmethaqualone, 4-Methylmethaqualone, "MMQ"
Nitromethaqualone, 2-Methoxy-4-nitronormethaqualone
2-Methyl-2-butanol, 2M2B, tert-Amyl alcohol
2-Methyl-2-pentanol
3,4,5-Trimethoxyphenibut
4-Fluorophenibut
Benzylbutylbarbiturate
Pagoclone
Phenibut
CP 47,497 and its (C8) homologue cannabicyclohexanol
CP 55,940
HU-308
HU-210
5F-AB-FUPPYCA, AZ-037
5F-PCN, 5F-MN-21
A-836,339
AB-CHFUPYCA
BAY 38-7271
BIM-018
CB-13
EG-018[66]
EG-2201[67]
FUBIMINA, BIM-2201, BZ-2201, FTHJ
JTE-907
JTE 7-31
LY-2183240
MDA-19
MDMB-CHMCZCA, EGMB-CHMINACA[68]
NESS-0327
NESS-040C5
NNL-1[69]
QMPSB
WIN 55,212-2
JWH-098
JWH-116
JWH-122
JWH-149
JWH-182
JWH-193
JWH-198
JWH-200
JWH-210
JWH-398
JWH-424
MAM-2201
NM-2201, CBL-2201
JWH-167
JWH-203
JWH-249
JWH-250
JWH-251
JWH-320[84]
RCS-8
Acetildenafil
Aildenafil
Aminotadalafil[92]
Gendenafil
Homosildenafil
Hydroxyacetildenafil
Hydroxyhomosildenafil
Hydroxythiohomosildenafil
Nitrosoprodenafil
Piperidinoacetildenafil
Piperidinovardenafil
Sulfoaildenafil
Thiosildenafil

Nootropics[edit]

Nootropics are drugs that improve one or more aspects of mental function, such as working memory, motivation, and attention.
Alagebrium
(-)-BPAP
Dihexa
Dimethylethanolamine, DMAE
Edaravone
Emoxypine
Epitalon
9-Fluorenol, Hydrafinil
9-Fluorenone, Oxafinil
Idebenone
IDRA-21
Isoxazole-9, ISX-9[93]
J147
JDTic
Meclofenoxate, Centrophenoxine
Memantine
N-Acetyl-Epitalon
N-Acetyl-Selank
N-Acetyl-Semax
N-Acetyl-Semax-Amidate
Nilotinib
Noopept
NRX-1074
NSI-189
Picamilon
Pitolisant
(-)-PPAP

5C-APINACA, 5C-AKB48[70]
5F-AB-PINACA
5F-ADB-PINACA
5F-ADB, 5F-MDMB-PINACA
5F-AMB
5F-APINACA, 5F-AKB48
5F-CUMYL-PINACA, SGT-25, C-Liquid
5F-EMB-PINACA, 5F-AEB
5F-MN-18[71]
5F-NPB-22[72]
5F-SDB-005[73]
AB-CHMINACA
AB-FUBINACA
AB-PINACA
ADAMANTYL-THPINACA
ADB-BINACA[74]
ADB-CHMINACA, MAB-CHMINACA, "MA-CHMINACA"
ADB-FUBINACA, MAB-FUBINACA
ADB-PINACA, MAB-PINACA
ADSB-FUB-187
AMB[75]
AMB-CHMINACA, "MA-CHMINACA"
AMB-FUBINACA, FUB-AMB, MMB-FUBINACA
APINACA, AKB48
APP-FUBINACA
BiPICANA[76]
CUMYL-PINACA, SGT-24
CUMYL-THPINACA, SGT-42
EMB-FUBINACA, FU-AEB[77]
FAB-144
FUB-APINACA, FUB-AKB48
FUB-NPB-22[78]
IPO-33
MDMB-CHMINACA, MDMB(N)-CHM
MDMB-FUBINACA, MDMB(N)-Bz-F, MDMB-Bz-F, FUB-MDMB
MN-18
NPB-22[79]
PX-2, 5F-APP-PINACA, FU-PX, PPA(N)-2201
PX-3, APP-CHMINACA
SDB-005
THJ-018
THJ-2201
4-HTMPIPO
5C-MN-24, 5C-NNEI[41]
5F-AB-PICA[80]
5F-ADBICA
5F-AMB-PICA, I-AMB, MMB-2201
5F-AMP
5F-NNE1, 5F-NNEI, 5F-MN-24
5F-PY-PICA[81]
5F-SDB-006
AB-005
AB-BICA[74]
AB-FUBICA
AB-PICA
ADB-BICA[69]
ADB-FUBICA
ADBICA, ADB-PICA
APICA, SDB-001, 2NE1
AMB-CHMICA, MMB-CHMICA, "MA-CHMINACA"[82]
BzODZ-EPyr
CUMYL-PICA
FDU-NNE1, FDU-NNEI, FDU-MN-24
FUB-144, FUB-UR-144
LTI-701
MDMB-CHMICA, incorrectly known as MMB-CHMINACA
MDMB-FUBICA
MEPIRAPIM
MN-25
NNE1, NNEI, MN-24
NNL-2[69]
Ora 28611, SCH-900,111
PTI-1
PTI-2
PX-1, 5F-APP-PICA, SRF-30
STS-135, 5F-APICA
UR-144
XLR-11, 5F-UR-144
5F-PB-22
BB-22, QUCHIC
FDU-PB-22
FUB-PB-22
PB-22, QUPICAM-630
AM-679
AM-694
AM-1241
AM-2233
RCS-4
AB-001
AB-002
AM-1248
AM-1220
AM-1221
AM-1235
AM-2201
AM-2232
CBL-018, NM-018[83]
EAM-2201
FUB-JWH-018
JWH-007
JWH-015
JWH-018
JWH-019
JWH-073
JWH-081

Acetildenafil
Aildenafil
Aminotadalafil[92]
Gendenafil
Homosildenafil
Hydroxyacetildenafil
Hydroxyhomosildenafil
Hydroxythiohomosildenafil
Nitrosoprodenafil
Piperidinoacetildenafil
Piperidinovardenafil
Sulfoaildenafil
Thiosildenafil
Alagebrium
(-)-BPAP
Dihexa
Dimethylethanolamine, DMAE
Edaravone
Emoxypine
Epitalon
9-Fluorenol, Hydrafinil
9-Fluorenone, Oxafinil
Idebenone
IDRA-21
Isoxazole-9, ISX-9[93]
J147
JDTic
Meclofenoxate, Centrophenoxine
Memantine
N-Acetyl-Epitalon
N-Acetyl-Selank
N-Acetyl-Semax
N-Acetyl-Semax-Amidate
Nilotinib
Noopept
NRX-1074
NSI-189
Picamilon
Pitolisant
(-)-PPAP
Pramipexole
Propentofylline
PRL-8-53
Prucalopride
Pyritinol
Rapastinel, GLYX-13
Rasagiline
Roflumilast
Selank
Selegiline
Semax
Sufranal
Sulbutiamine
Sunifiram
Taltirelin
Tianeptine
Unifiram
Vinpocetine
WAY-100,635
Aloracetam
Aniracetam
Cebaracetam
Coluracetam
Dimiracetam
Doliracetam
Etiracetam
Fasoracetam
Imuracetam
Nebracetam
Nefiracetam
Oxiracetam
Phenylpiracetam hydrazide
Phenylpiracetam
Pramiracetam
Rolziracetam

C.E.P., Local 30 v. Irving Pulp & Paper, Ltd., 2013 SCC 34

- In 2006, Irving unilaterally adopted a drug-testing policy in which 10% of employees in “safety sensitive” positions would be tested for drug and alcohol use each year.
- Day, a teetotaler since 1979, was tested for alcohol, and his breathalyzer test indicated a blood alcohol level of zero.
- Subsequent to this test, the union filed a grievance on Day’s behalf.

Judicial Review – When is drug testing reasonable

Inherently allowed

- Where there are reasonable grounds to believe an employee was impaired while on duty.
- Where an employee was directly involved in a workplace accident or significant incident.
- Where the employee returns to work after treatment for substance abuse.

Variable

- Random testing is allowed if the employer can demonstrate that the worksite has a problem with substance abuse, it is not inherently assumed
- If the testing has been part of a negotiation labor management agreement