Adolescents and Drug Abuse: Trends, Recognition and Treatment

Diane P. Calello, MD
Executive and Medical Director
New Jersey Poison Information and Education System (NJPIES)
Rutgers New Jersey Medical School

RUTGERS
New Jersey Medical School

Objectives

- Discuss trends in adolescent drug use
- Describe important categories of emerging drugs
- Recognition of acute and chronic drug use in students
- Treatment and prevention

National Institute on Drug Abuse, NIH

Nothing to disclose

Adolescent Drug Use

- Opioids – illicit and prescription
- Other prescription drugs
- Cannabis
- Nicotine
- Alcohol
- Novel psychoactives

ChatGPT, OpenAI.com

https://youtu.be/1ZMFLKWIoyE

RUTGERS
New Jersey Medical School

FAKE PRESCRIPTION PILLS • WIDELY AVAILABLE • INCREASINGLY LETHAL

DEA LAB TESTING REVEALS THAT

6 OUT OF EVERY 10 PILLS

WITH FENTANYL CONTAIN A POTENTIALLY

LETHAL DOSE

Fake pills often contain fentanyl and are more lethal than ever before.

DEA officials report a dramatic rise in the number of fake pills containing at least 2 mg of fentanyl, which is considered a potentially lethal dose.

Drug traffickers are using fake pills to exploit the opioid crisis and prescription drug misuse. In 2021, 107,622 people died by drug poisoning in the United States.

Fentanyl, the synthetic opioid most commonly found in fake pills, is the primary driver in this alarming increase in poisoning deaths.

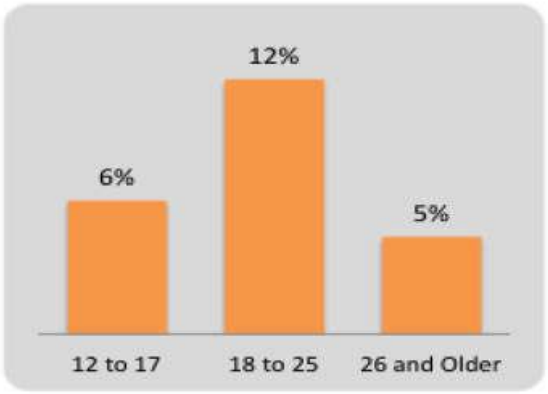
RUTGERS
New Jersey Medical School

Abuse of Prescription (Rx) Drugs

Affects Young Adults Most

Young adults (age 18 to 25) are the biggest abusers of prescription (Rx) opioid pain relievers, ADHD stimulants, and anti-anxiety drugs. They do it for all kinds of reasons, including to get high or because they think Rx stimulants will help them study better. But Rx abuse is dangerous. In 2014, more than 1,700 young adults died from prescription drug (mainly opioid) overdoses—more than died from overdoses of any other drug, including heroin and cocaine combined—and many more needed emergency treatment.[1]

PAST-YEAR USE

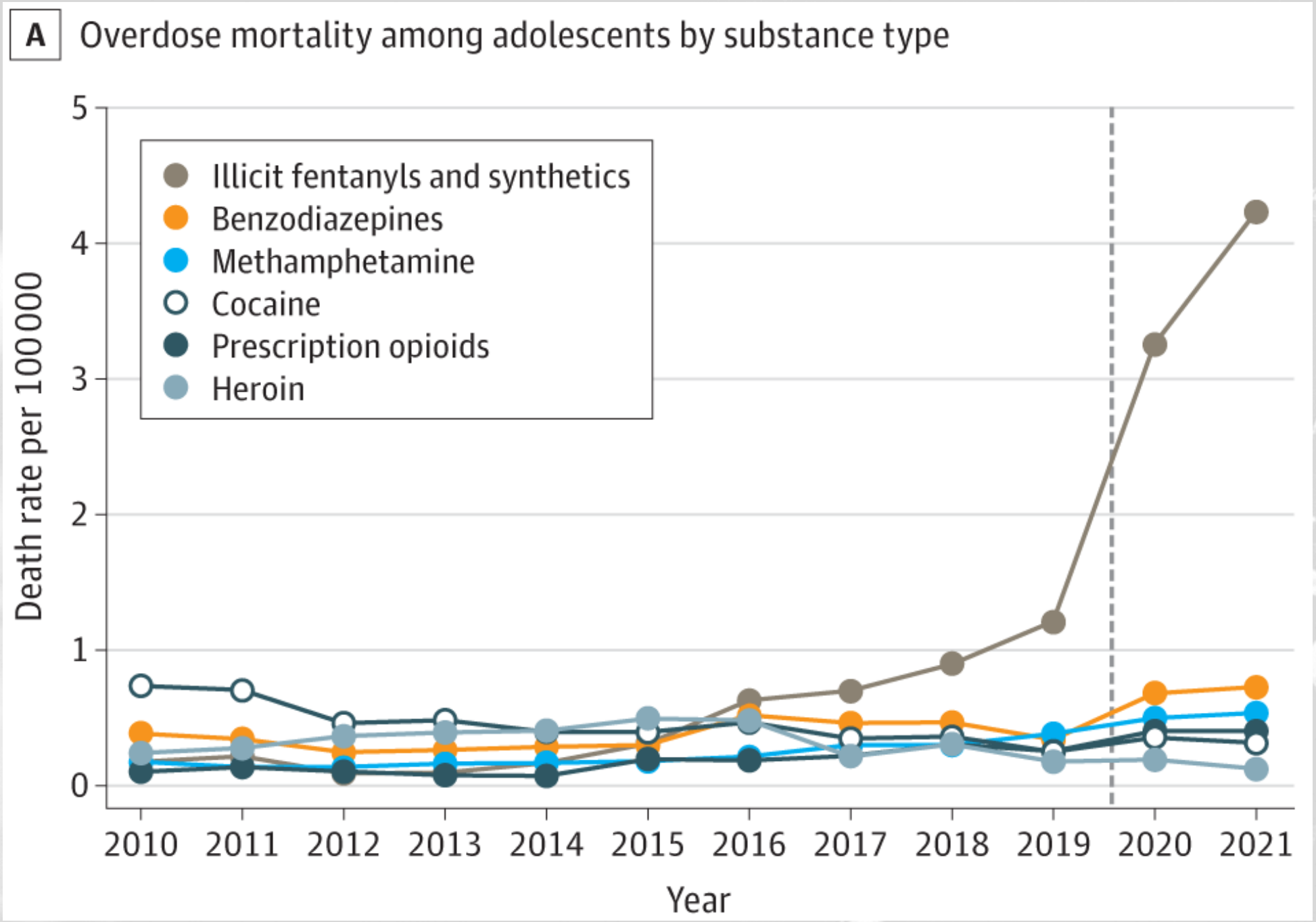


In 2014, the nonmedical use of prescription drugs was highest among young adults.[2]

MOTIVATIONS FOR USE

Most young adults say they use Rx drugs to[3,4,5]

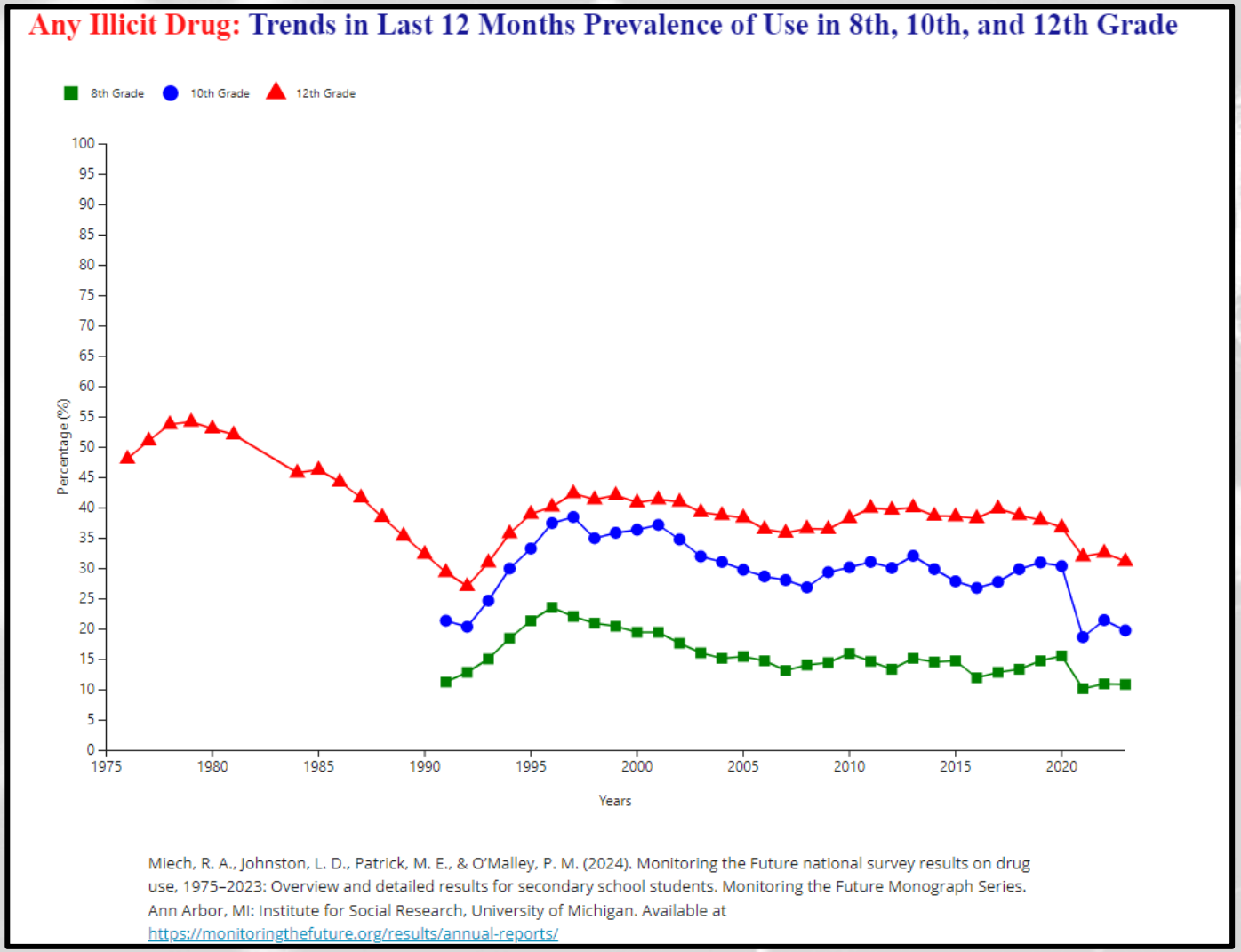
Prescription Drugs



From: **Trends in Drug Overdose Deaths Among US Adolescents, January 2010 to June 2021**

JAMA. 2022;327(14):1398-1400.
doi:10.1001/jama.2022.2847

Adolescent Substance Use: Trends



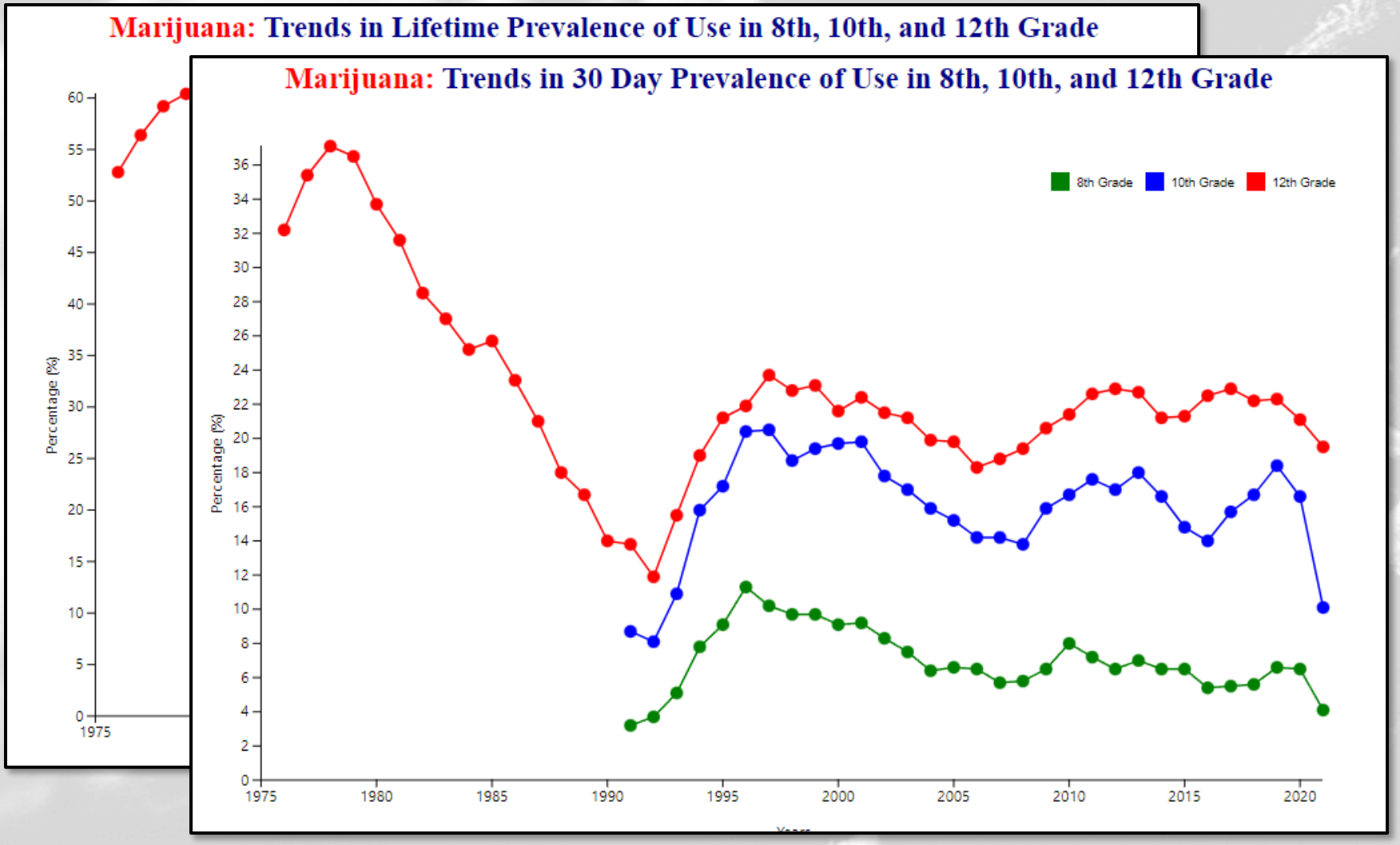
Monitoring The Future, 1975-2021

University of Michigan, www.monitoringthefuture.org

RUTGERS
New Jersey Medical School

RUTGERS
New Jersey Medical School

Adolescent Marijuana Use



Monitoring The Future, 1975-2021

University of Michigan, www.monitoringthefuture.org

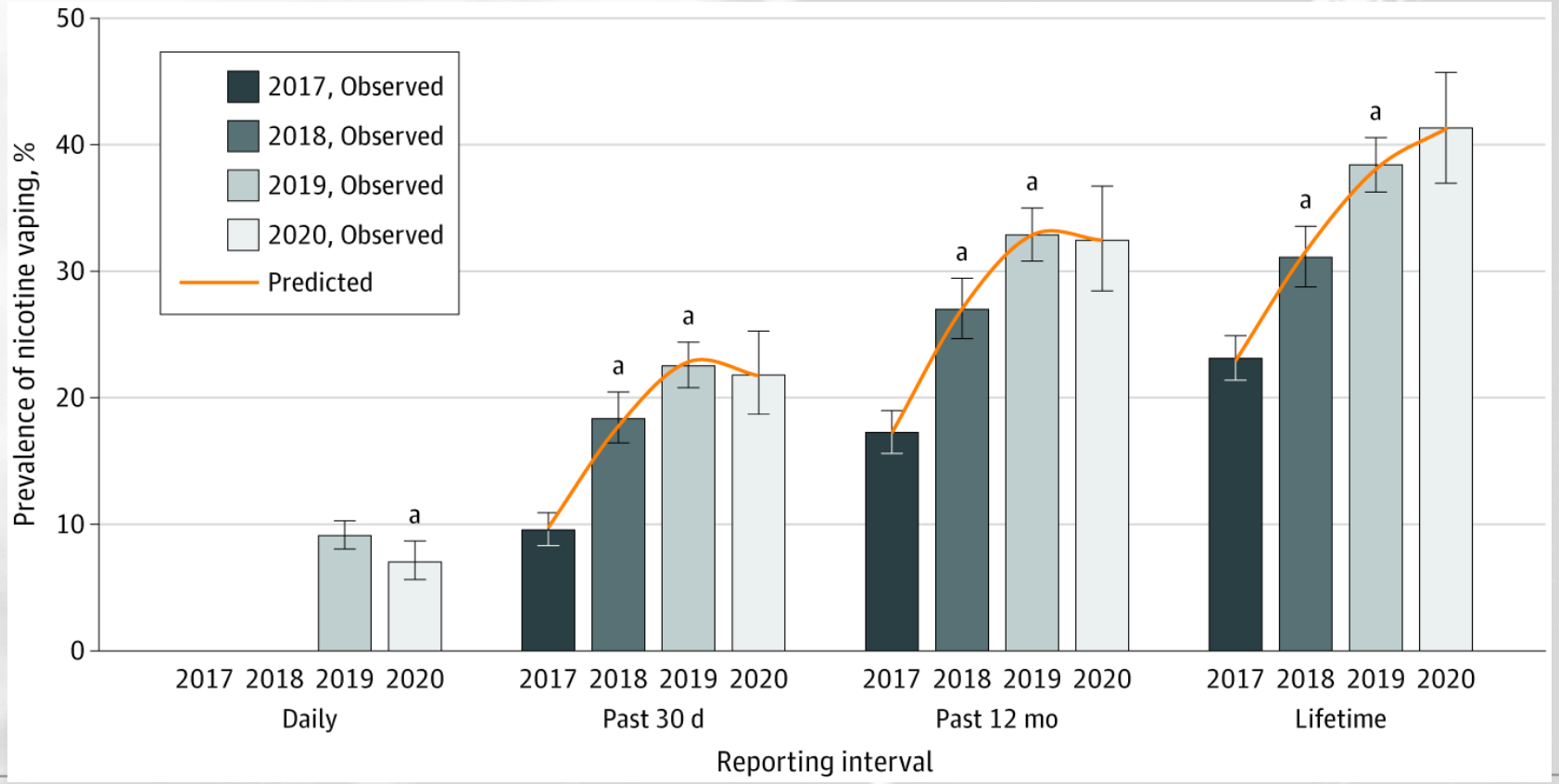
RUTGERS
New Jersey Medical School

Vaping and E-Cigarettes

JAMA Network™

From: **Trends in Use and Perceptions of Nicotine Vaping Among US Youth From 2017 to 2020**

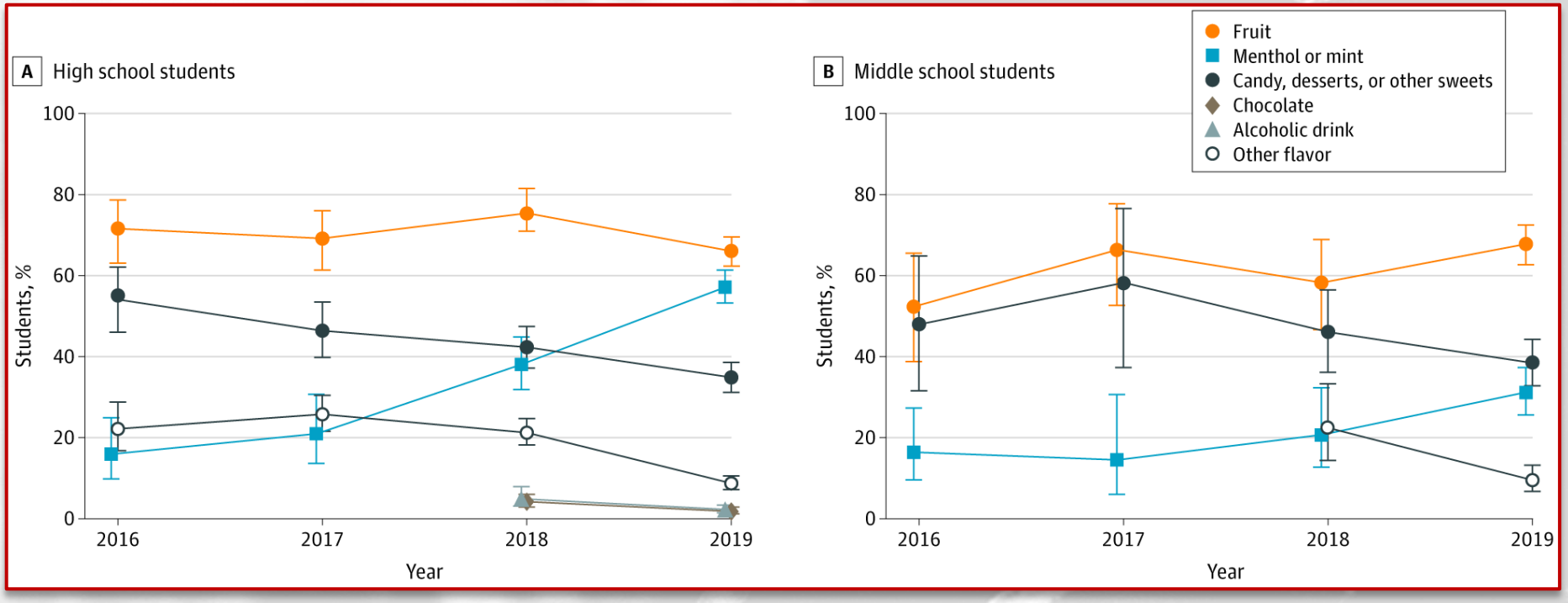
JAMA Pediatr. 2021;175(2):185-190. doi:10.1001/jamapediatrics.2020.5667



Copyright 2020 American Medical Association.
All Rights Reserved.

From: **e-Cigarette Use Among Youth in the United States, 2019**

JAMA. 2019;322(21):2095-2103. doi:10.1001/jama.2019.18387



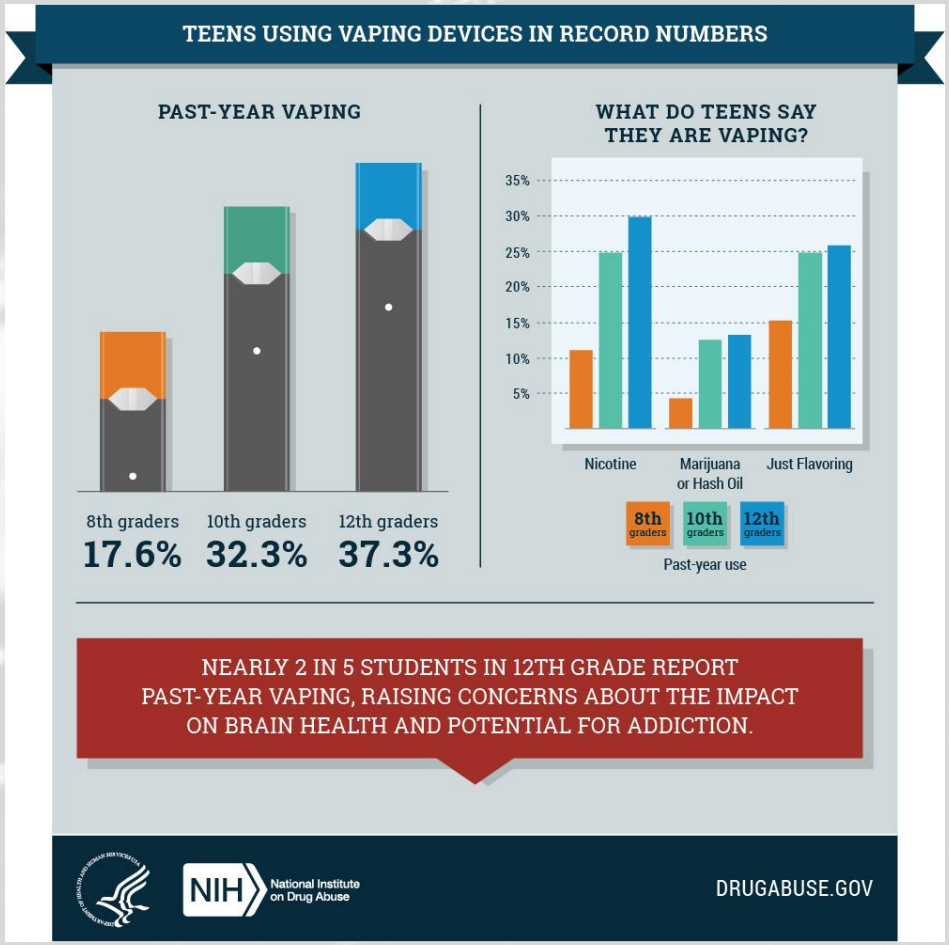
Flavor Types Reported Among Current Exclusive e-Cigarette Users Who Reported Flavored e-Cigarette Use, 2016-2019

Date of download: 12/9/2019

Copyright 2019 American Medical Association.
All Rights Reserved.

Vaping: Drugs Other Than Nicotine

- Ethanol
  - Intoxication without calories
- THC/CBD
  - Hash oil (dabs)
  - Plant material in newer vapes
- Synthetic Cannabinoids
  - Liquid form
- Opioids
- Novel Psychoactive Substances
  - Stimulants
  - Hallucinogens



Novel Psychoactive Substances (NPS)

- Synthetic cannabinoids (K2, Spice)
- Synthetic cathinones
- Designer benzodiazepines (etizolam)
- Fentanyl analogues, designer opioids
- Phenethylamines (NBOME, MDMA, 2C-B)
- Nootropics: phenibut, kratom, tianeptine

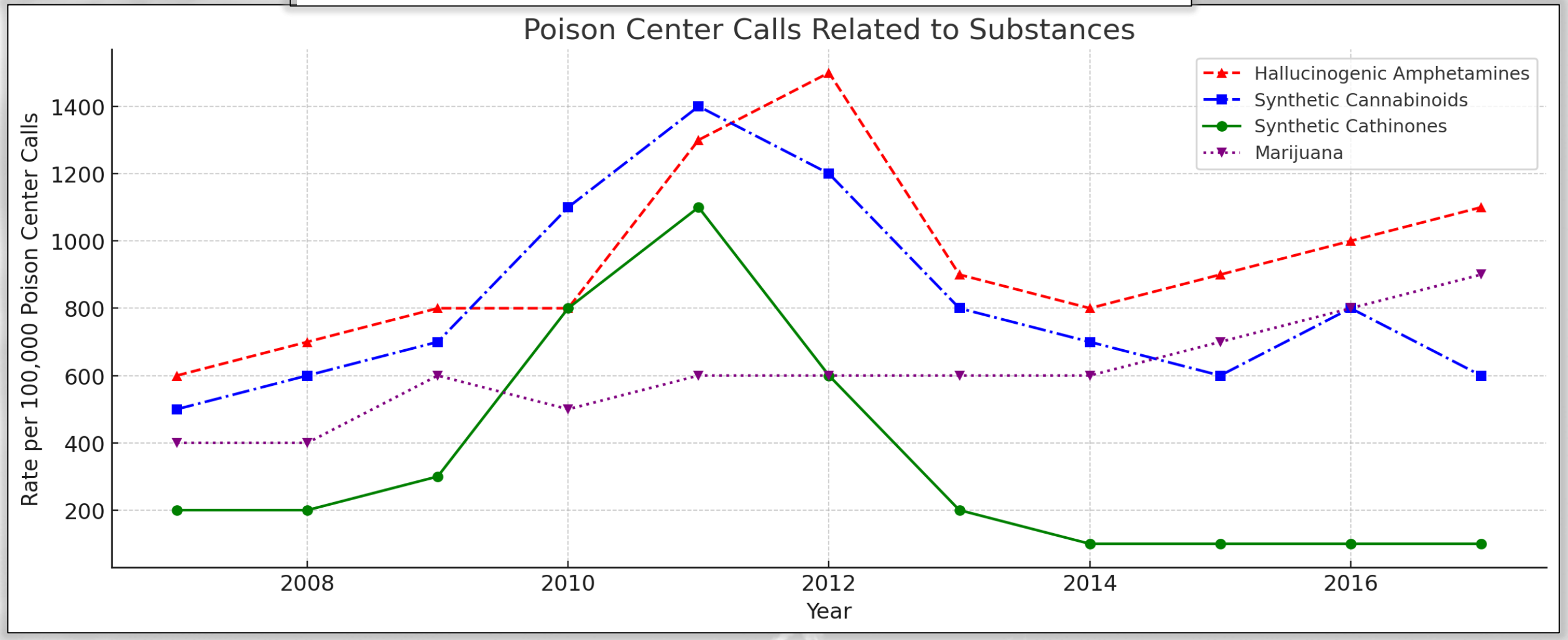
ChatGPT, OpenAI.com

RUTGERS
New Jersey Medical School

Adolescent exposures to traditional and novel psychoactive drugs, reported to National Poison Data System (NPDS), 2007–2017

Patrick C. Ng[a,*], Shireen Banerji[a], Jessica Graham[b], Jan Leonard[b], George Sam Wang[a,b]

[a] Rocky Mountain Poison and Drug Center, Denver Health Hospital, Denver, CO, 80204, USA
[b] Section of Emergency Medicine, Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO, 80045, USA

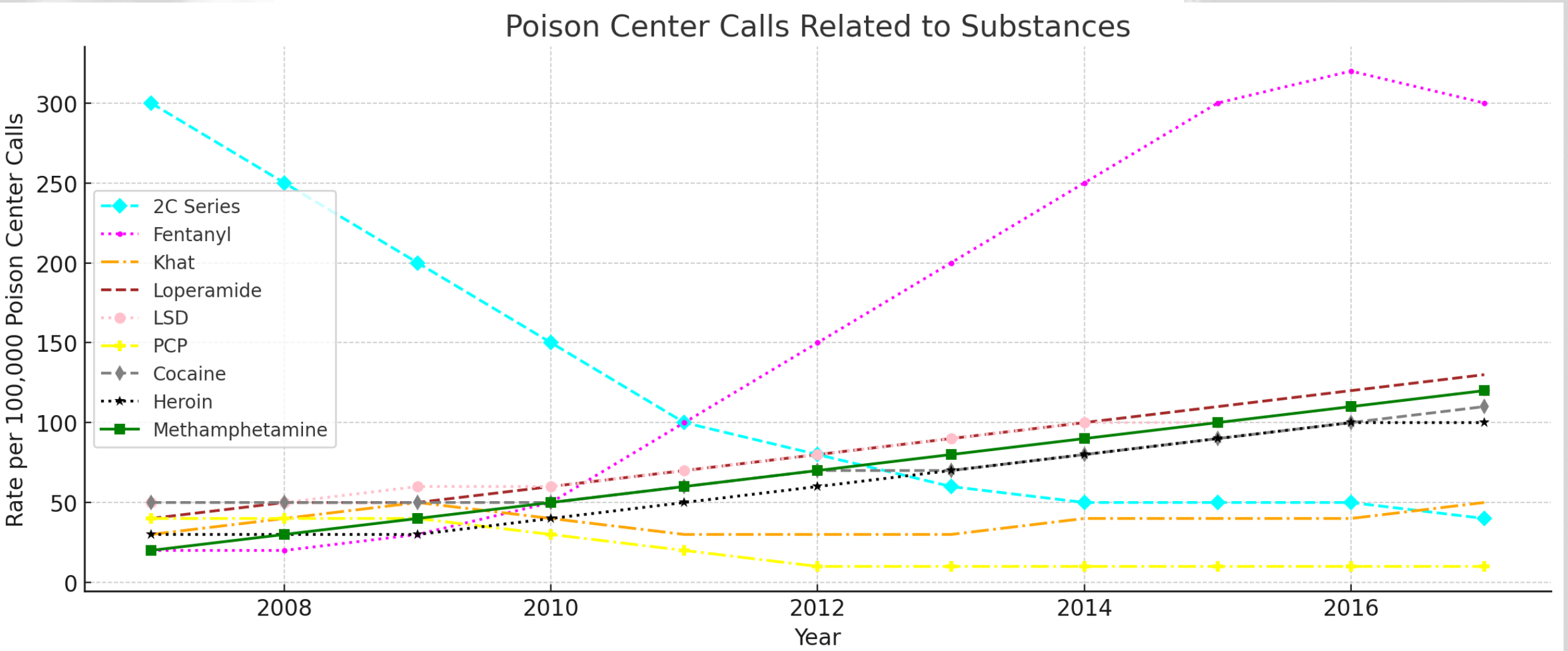


RUTGERS
New Jersey Medical School

Adolescent exposures to traditional and novel psychoactive drugs, reported to National Poison Data System (NPDS), 2007–2017

Patrick C. Ng[a,*], Shireen Banerji[a], Jessica Graham[b], Jan Leonard[b], George Sam Wang[a,b]

[a] Rocky Mountain Poison and Drug Center, Denver Health Hospital, Denver, CO, 80204, USA
[b] Section of Emergency Medicine, Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO, 80045, USA



Green Gia o, Geeked Up, Smacked, A
Bizarro, G ant, Smacked, AK-47, Geeked U
Geeked U acked, Bizarro, Green Giant, AK-4
Smacked arro, Gree Gia eeked Up
AK-47, Bi rro, Smac een Giant
Green Giant, Bizarro ked, AK-4
Bizarro, Green Giant, , Geeked
Geeked Up, Smacked, en Giant, A
Smacked, Bizarro, Gree ., AK-47, Gee
AK-47, Biza Smacked, eeked Up, G
Green Gia arro, Geeked Up, Sm
Bizarro, G nt, Smacked, AK-47, Geeked Up
Geeked U ed, Bizarro, Green Giant, AK-47
Smacked een Giant, AK-47, Geeked Up
0% MARIJUANA
100% DANGEROUS
K2 is not marijuana. It is a dangerous mix of chemicals that can cause severe anxiety, heart attack, passing out and even death.
For more information call 311 or visit nyc.gov/K2
NYC | Health | Consumer Affairs

Hypnotic
Herbal Mysteries
Spicy Green
2012
Aromatherapy
1.5 Grams
Contains:
Passion Flower, Hops, Clover Leaf,
Dandelion Leaf, Marshmallow Leaf
Contains No Cannabinoids
Not For HumanConsumption
NOT FOR HUMAN CONSUMPTION!
CONTAINS NO CANNABINOIDS.

Synthetic Cannabinoids

- Sold either as
  - Herbal Marijuana Alternatives (HMA) – plant with leaves sprayed with SC
  - Compound in pure powdered form
- Widely varied products:
  - Spice, K2, Mamba, Mr. Smiley, Red X Dawn
- May list herbal ingredients:
  - Bay bean, blue lotus, dwarf scullcap, lousewart
- Marketed as Incense, Potpourri

medscape.com

RUTGERS
New Jersey Medical School

FASHION & STYLE

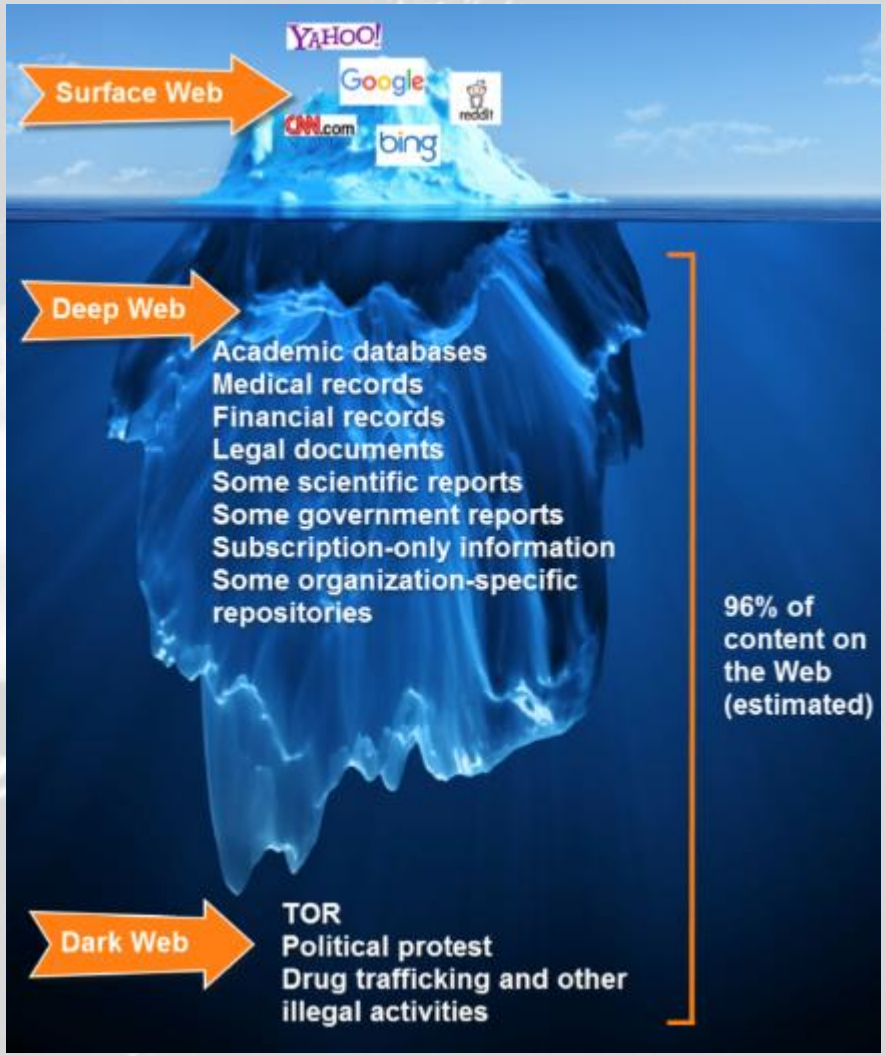
Molly: Pure, but Not So Simple

By IRINA ALEKSANDER JUNE 21, 2013

Fruit-punch-flavored “Galaxy Gas” brand nitrous oxide tanks for sale on the Lower East Side of Manhattan early this month. (Shane O'Neill/The Washington Post)

Availability and Distribution

- Dark web, online sales
  - International pipeline
- Gas stations, convenience stores
- Social media-facilitated sale



RollingStone

SPECIAL REPORT

Inside Snapchat's Teen Opioid Crisis

Law-enforcement sources and grieving families allege that the social media giant Snapchat has helped fuel a teen-overdose epidemic across the country. Now, their parents are fighting back

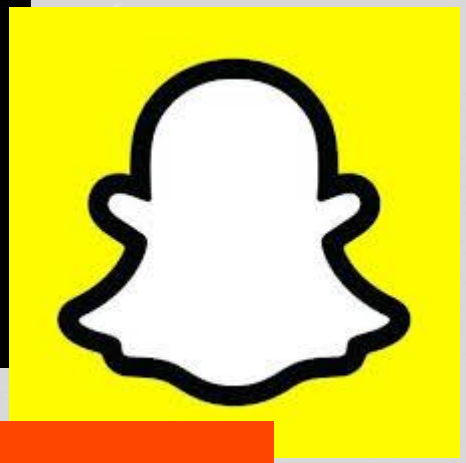
BY PAUL SOLOTAROFF

Illustration by Justin Metz

JUN 16, 2024 8:02 PM

Influence of Social Media

- Normalization of substance use
- Influencer and celebrity impact
- Peer influence and FOMO
- Targeted marketing and ads
- Desensitization to risk, lowered perception of risk
- Erosion of mental health



RUTGERS
New Jersey Medical School

Recognition Of Drug Use
Clinical features

When to Suspect Drug Use? Acute signs

- Physical signs
  - Slurred speech, unsteady gait, bloodshot eyes
  - Dilated or constricted pupils
  - Unusual body odors (alcohol, cannabis, inhalants, cathinones)
  - Elevated heart rate, dry mouth
- Behavioral changes
  - Drowsiness or hyperactivity
  - Sudden mood swings: irritability, euphoria, aggression
  - Confusion/disorientation
  - Lethargy or extreme tiredness
  - Increased appetite

RUTGERS
New Jersey Medical School

Recognizing Specific Drug Intoxication

Opioids

- Pinpoint pupils
- Shallow breathing
- Drowsiness, nodding off
- Slurred speech

Stimulants

- Dilated pupils
- Rapid heart rate
- Sweating
- Agitation/talkative
- Paranoia

Cannabis

- Pupils midsized
- Conjunctival injection
- Anxiety*
- Rapid heart rate*

- Other substances:
  - Hallucinogens
  - Alcohol
  - NPS

When to Suspect Drug Use? Long-term indicators

- Sudden changes in academic performance
- Frequent absences
- New friend group, secrecy
- Presence of paraphernalia
- Physical signs like weight loss, weight gain, conjunctival injection, nosebleeds, vomiting
- Noticeable energy fluctuations
- Persistent cough/respiratory issues
- Cannabinoid Hyperemesis

RUTGERS
New Jersey Medical School

Treatment of Drug Intoxication

Treatment of Drug Intoxication

- Stay calm!
- Airway/Breathing/Circulation – basic life support
- Do not induce vomiting
- Naloxone for opioid overdose
- Stay close
- Call for help

RUTGERS
New Jersey Medical School

What is naloxone?

Naloxone is designed to rapidly reverse an opioid overdose. It needs to be administered (given) right away, which is why the U.S. Food and Drug Administration approved an easy-to-use nasal spray version. Naloxone also comes in an injectable syringe, which can be used by emergency medical workers.

How does it work?

A person who overdoses on an opioid (like a prescription pain medication, heroin, or fentanyl) experiences slower breathing — or stops breathing completely. In many cases, giving the person naloxone can immediately restore normal breathing.

RUTGERS
New Jersey Medical School

Conclusion

- Adolescent drug use can involve a variety of exposures
- Many factors influence choices
- Know the drug trends and signs of intoxication

Thank you!

- Questions?
  - Diane.calello@rutgers.edu
  - @DrDianeC
  - @NJPoisonCenter