

STIMULANTS

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Fundamentals of Addiction Medicine Summer Series
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Outline

1. The Basic Elements
2. 1980s: Cocaine
3. 1990s: Ecstasy
4. 2000s: Crystal Methamphetamine
5. 2010s: Bath Salts
6. Conclusions

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1980s: Cocaine

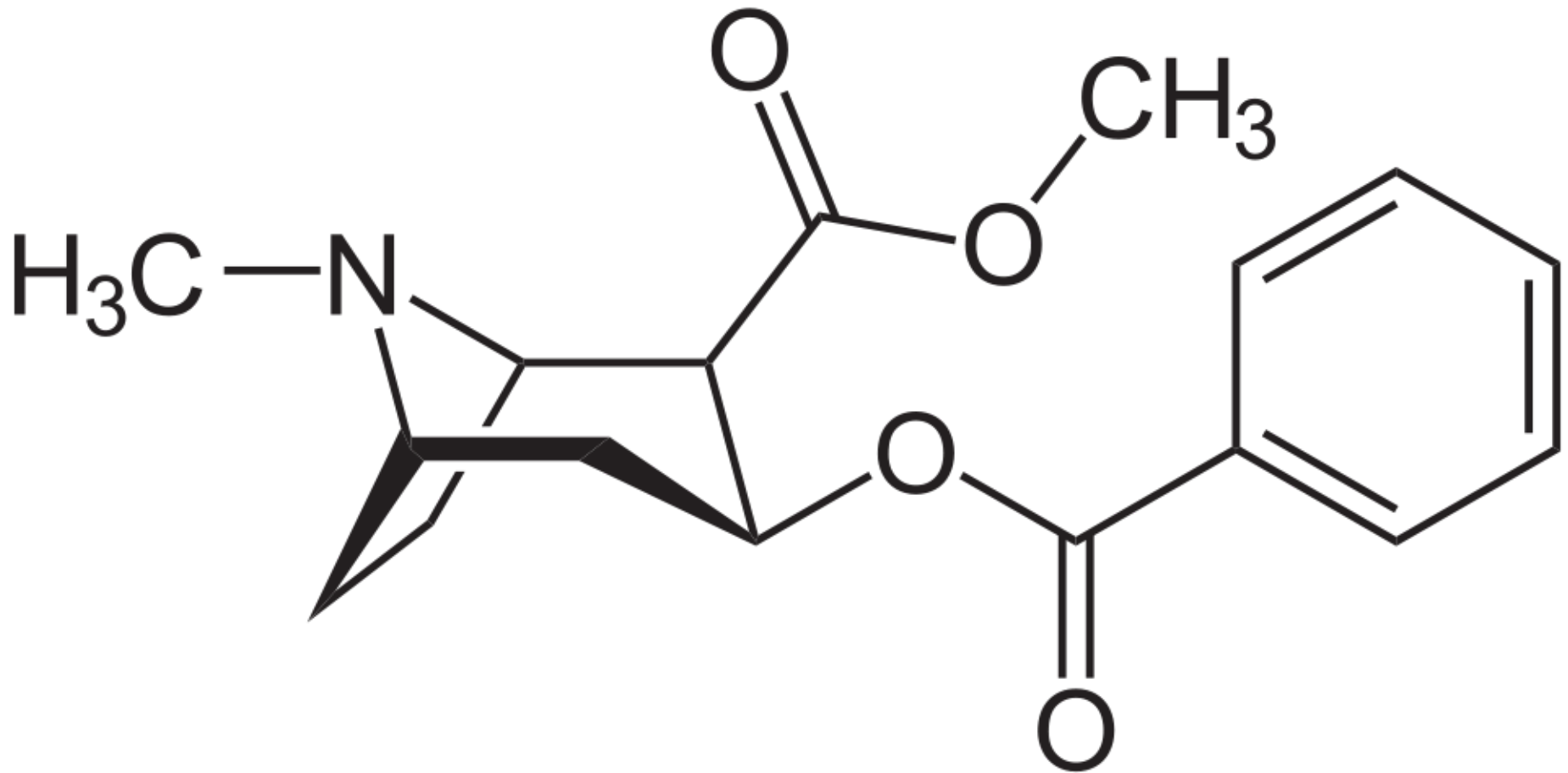


“Cocaine is like really evil coffee.”
Courtney Love

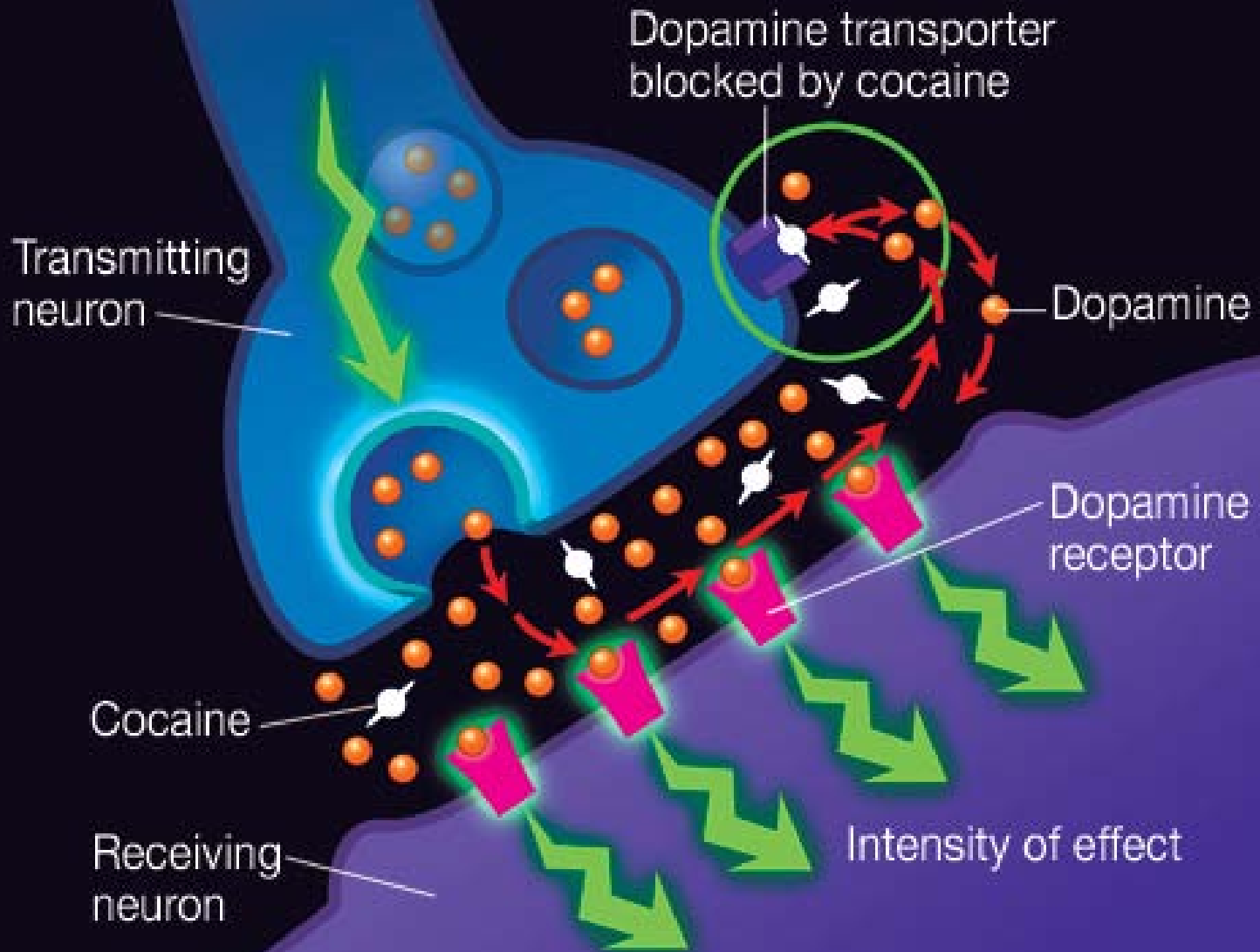
Effects

- Euphoria
- Sense of Mastery
- Sexual Arousal
- Appetite Suppression

Free Base Cocaine



Neurobiology



Intoxication

1. Euphoria
2. Decreased appetite
3. Hypervigilance to frank paranoia
4. Autonomic hyperactivity
5. Stereotyped behavior
6. Seizures

Withdrawal

1. Dysphoria
2. Increased appetite
3. Fatigue
4. Psychomotor retardation
5. Vivid, unpleasant dreams
6. Insomnia or hypersomnia

Sensitization

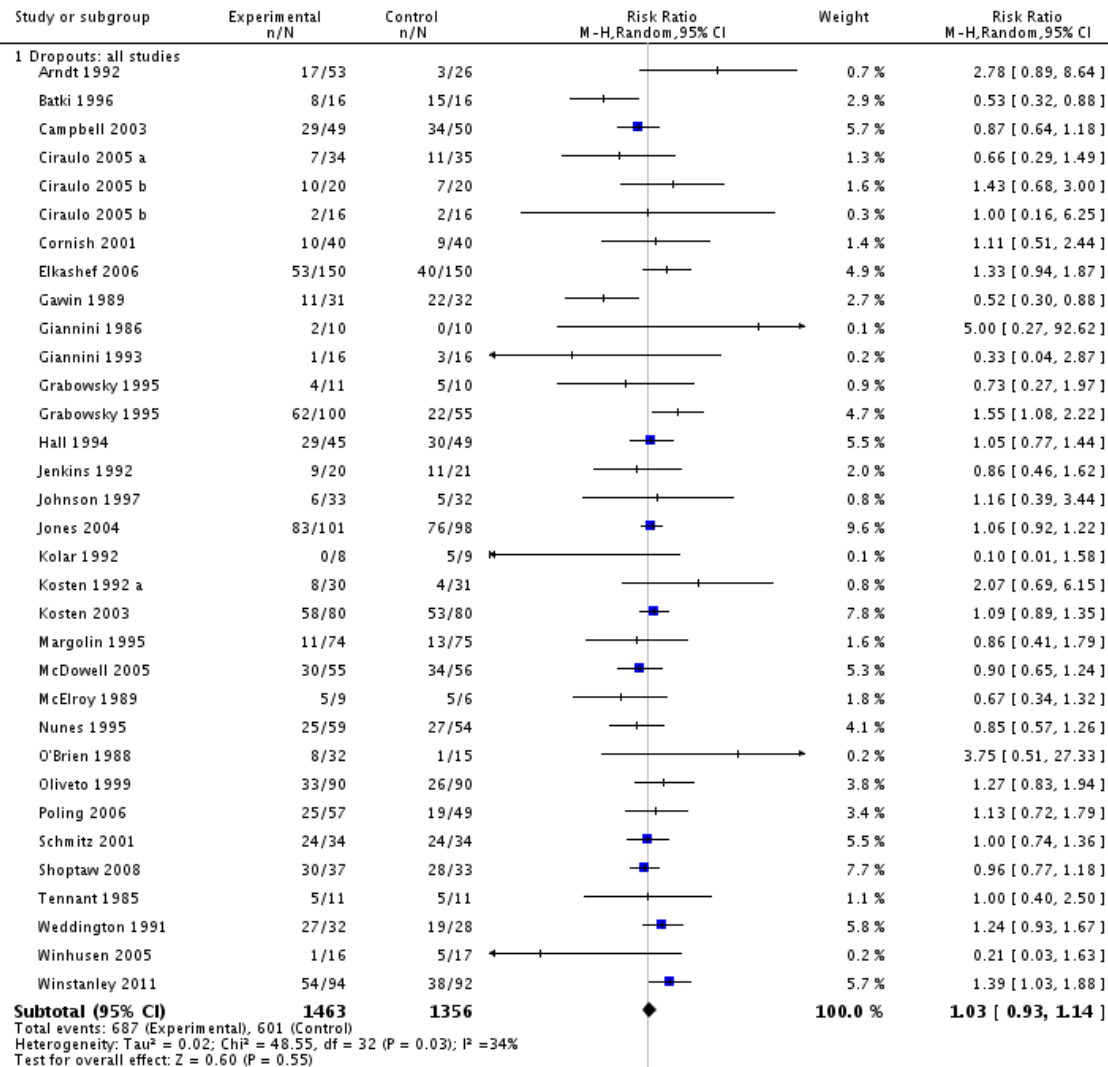
- Seizures
- Psychosis
 - Paranoia
 - Visual, auditory and tactile hallucinations
 - Virtually indistinguishable from schizophrenia
- Stereotypical behaviors

Tolerance

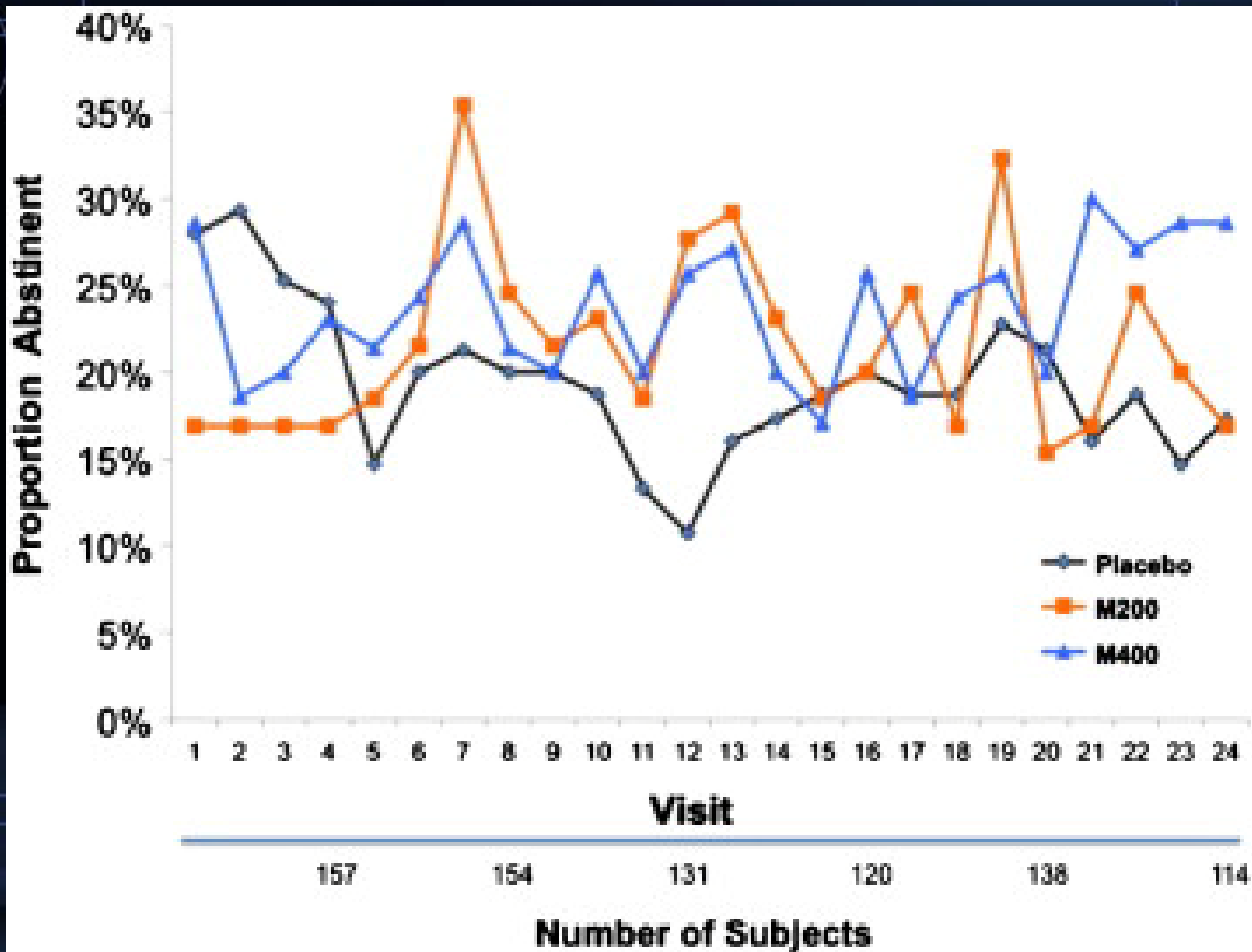
- “First Dose” effect
 - Cardiovascular Effects
 - Euphoria, mastery, sexual arousal
 - But no longer-term tolerance
- Anorexia

Antidepressants

Review: Antidepressants for cocaine dependence and problematic cocaine use
 Comparison: 1 Antidepressants vs placebo according to any definition
 Outcome: 1 Dropout



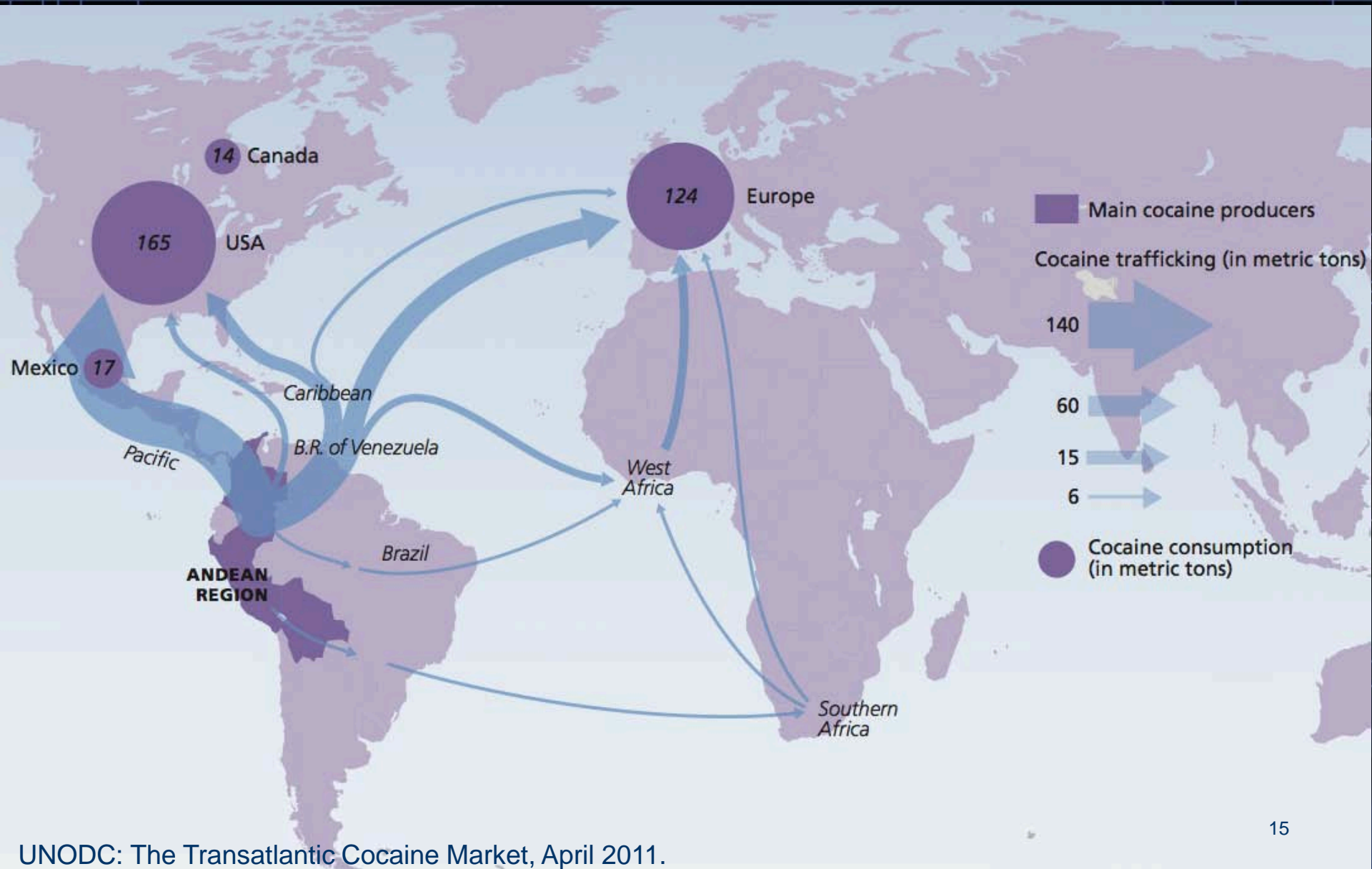
The Modafinil Disappointment



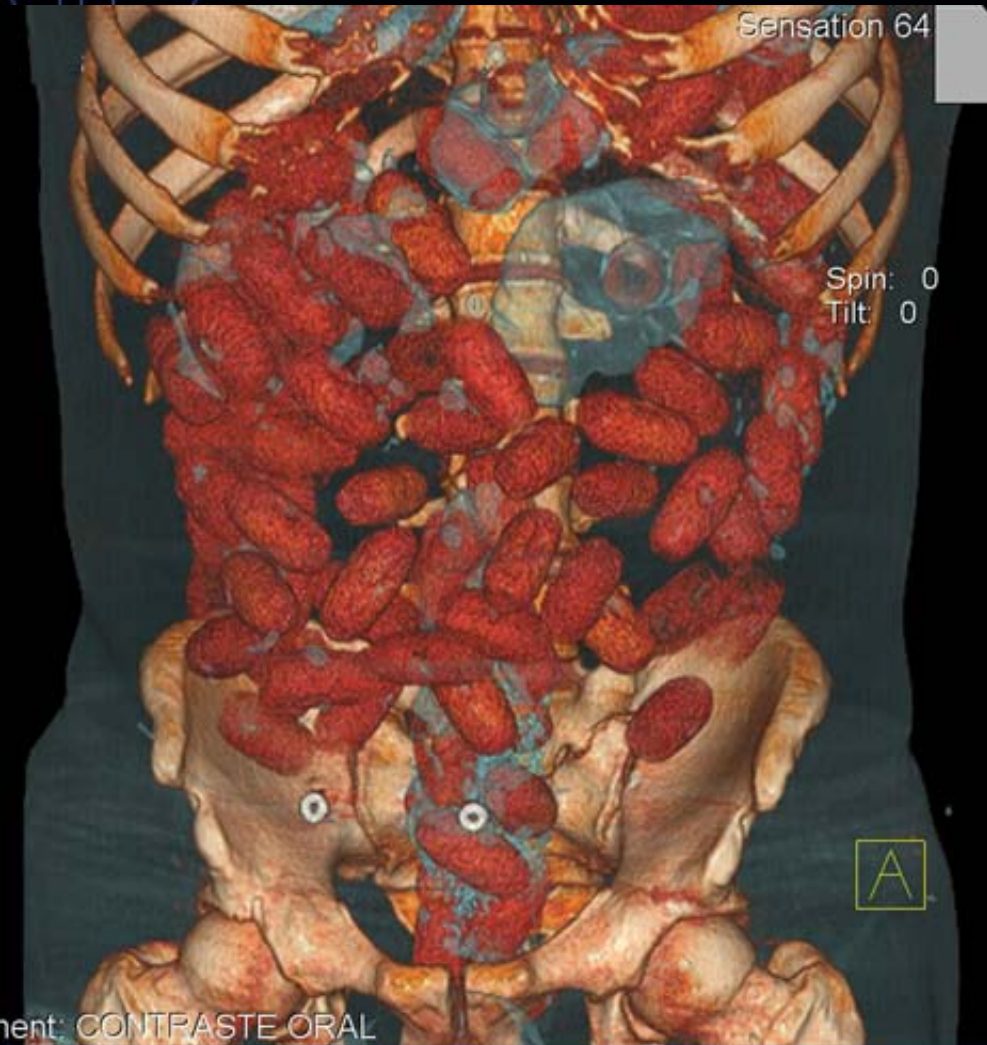
Dackis, *J Subst Abuse Treat*, 2012.

Please note: This agent is not approved by the FDA for use in cocaine dependence.

Cocaine Trafficking



Mules



3

1990s: Ecstasy

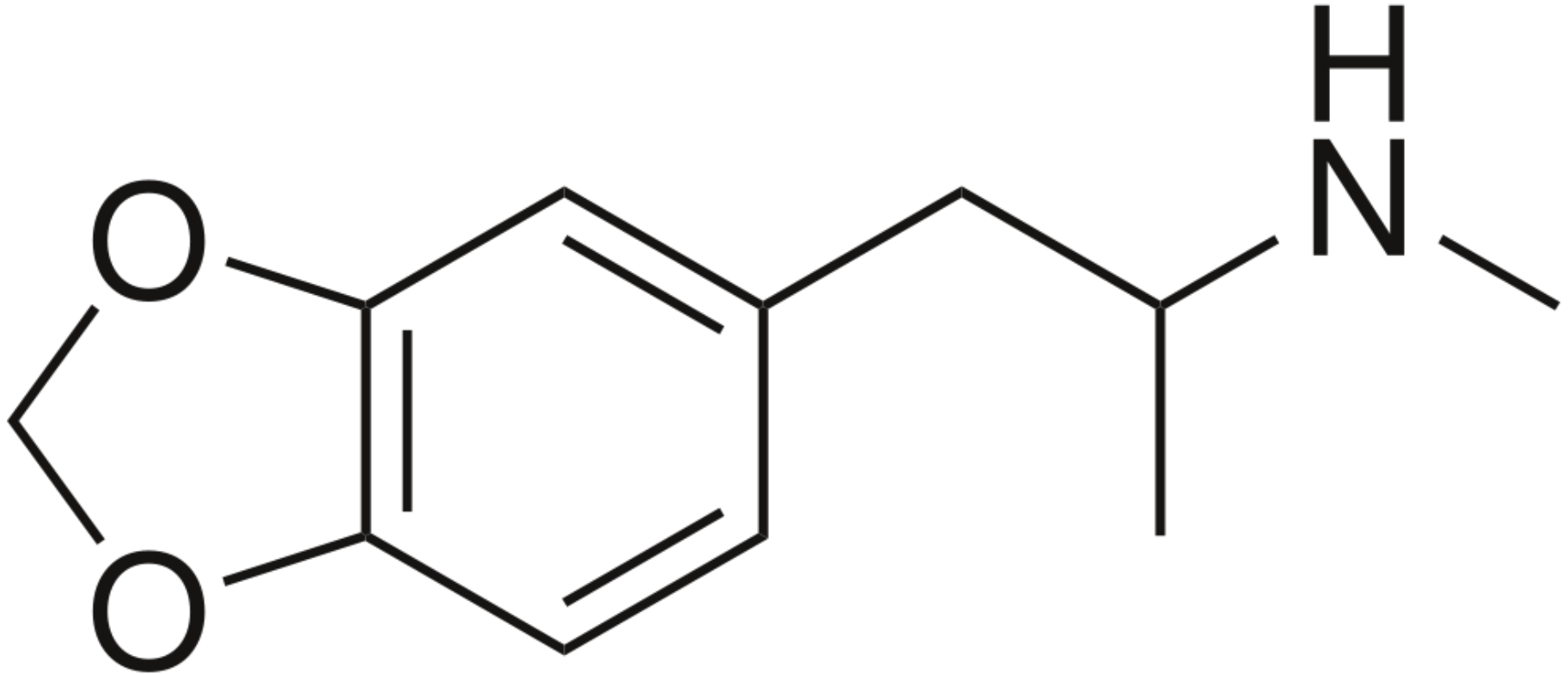


“Freshmen love it,
Sophomores like it,
Juniors are ambivalent, and
Seniors are afraid.”

Effects

- Essentially partly a stimulant and partly a hallucinogen:
 - An attenuated form of cocaine, plus
 - An attenuated form of LSD.
- Empathy (more than ecstasy).
- Profound feelings or relatedness to the rest of the world.
- In the 1970s, it was used in psychotherapy (unsuccessfully).

Methylene-Dioxy-Methamphetamine



Neurobiology

- Acutely increases serotonin levels by:
 - Blocking reuptake, and
 - Directly releasing the neurotransmitter.
- Chronically decreases serotonin levels by:
 - Depleting serotonin stores
 - Inhibiting the synthesis of new serotonin.
- Neurotoxicity

Intoxication

- “Disco dump” and bruxism.
- Stimulant effects:
 - Wakefulness, endurance, energy.
 - Trismus, anorexia, diaphoresis, hot flashes.
- Serotonin Syndrome:
 - Treat with hydration, cooling, and sedation.
 - Do not use beta-blockers, which may worsen vasospasm and hypertension.

Withdrawal

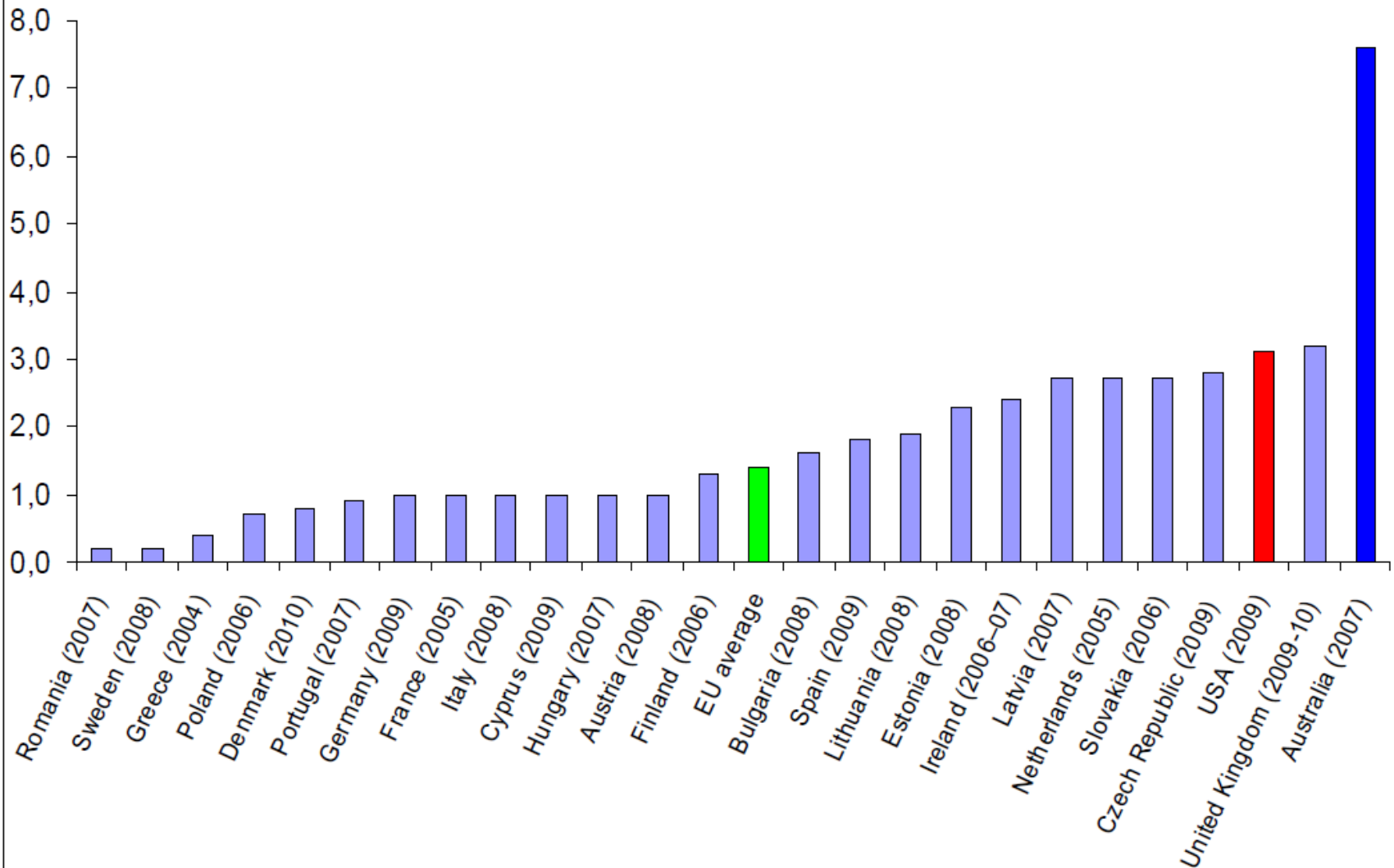
- Anhedonia and depressed mood.
- Lethargy and fatigue for several days.
- Frank suicidality in the absence of co-occurring depressive disorder is rare.
- No indication for treatment.

Long-term Effects

- Associated with:
 - Depression
 - Anxiety
 - Panic Disorder
 - Increased impulsivity
 - Sleep disturbances
 - Cognitive dysfunction
- No FDA approved medications.
- MI and CBT are the major treatment modalities.

Ecstasy Across the World

Last 12 months prevalence of ecstasy use (%) among 15 to 34



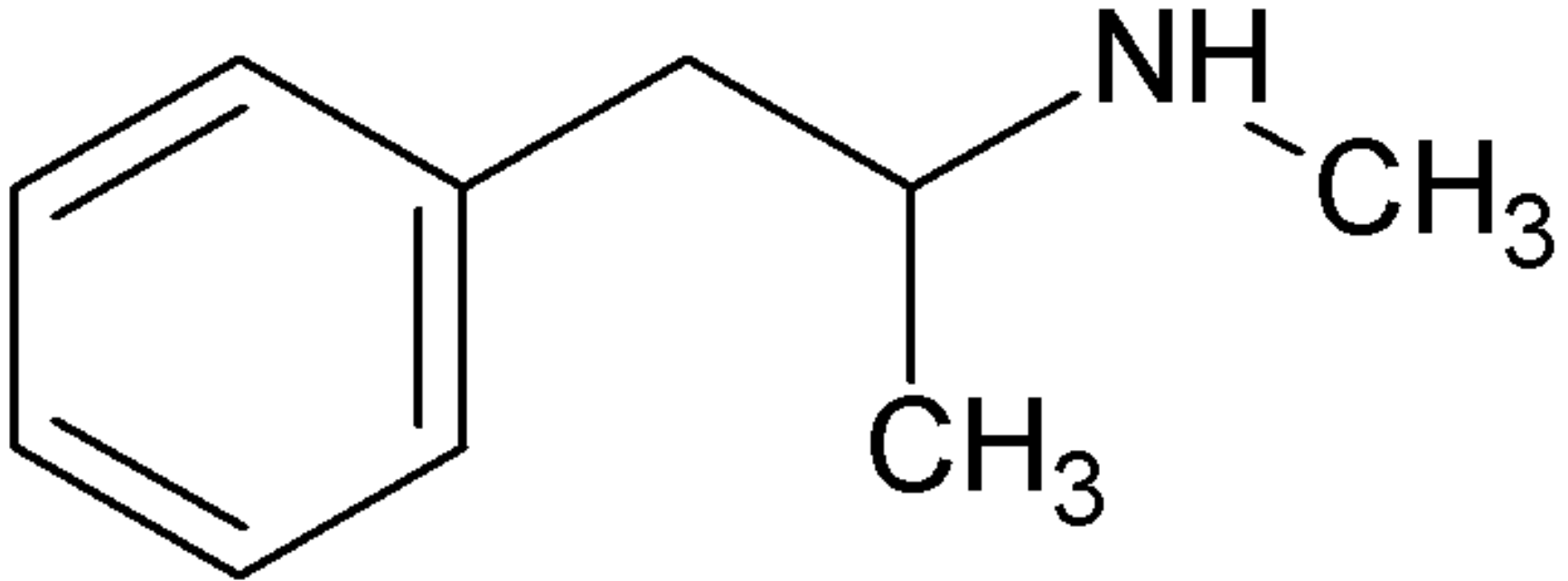
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2000s: Crystal
Methamphetamine

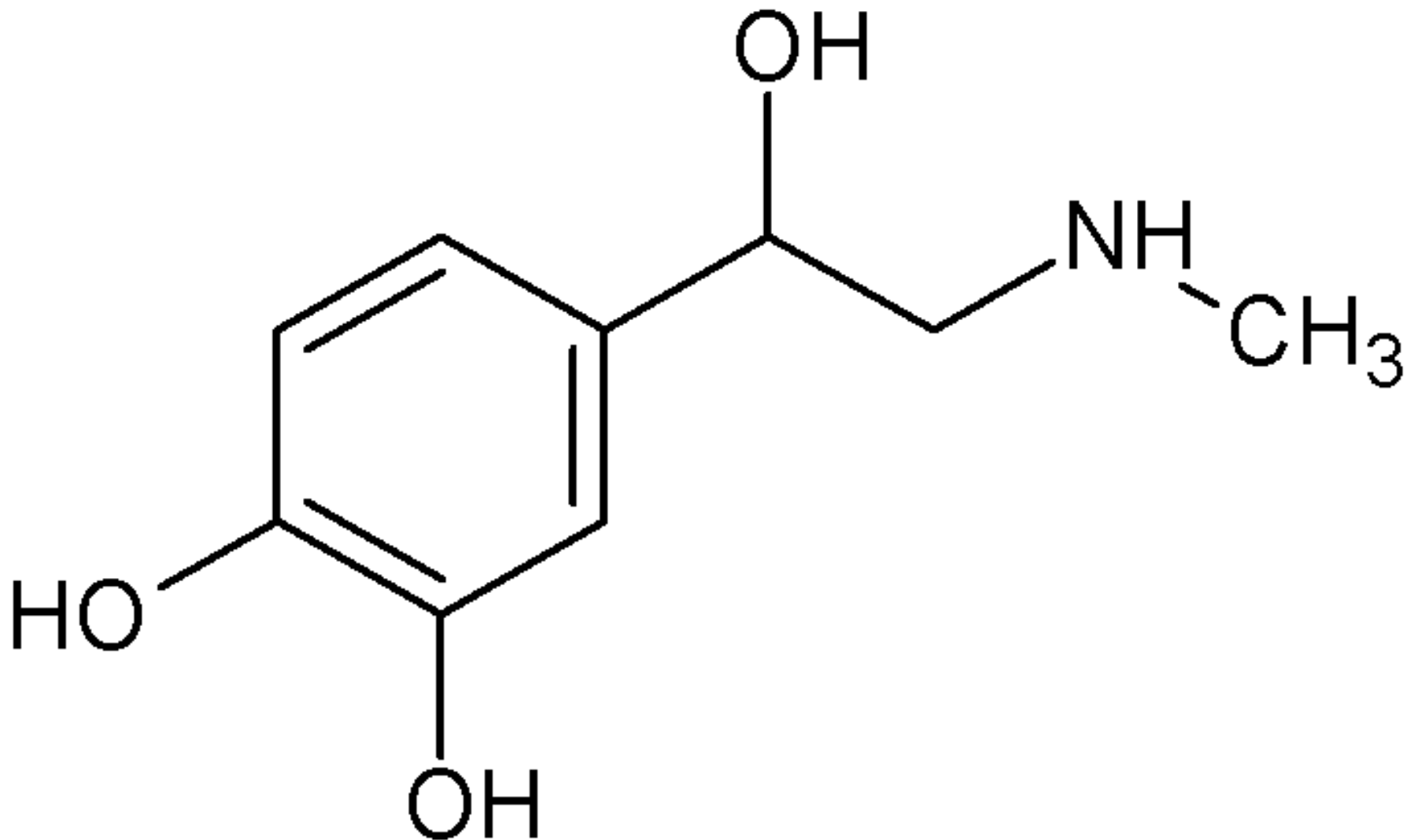


“It was the hardest boyfriend
I ever had to break up with.”
Fergie

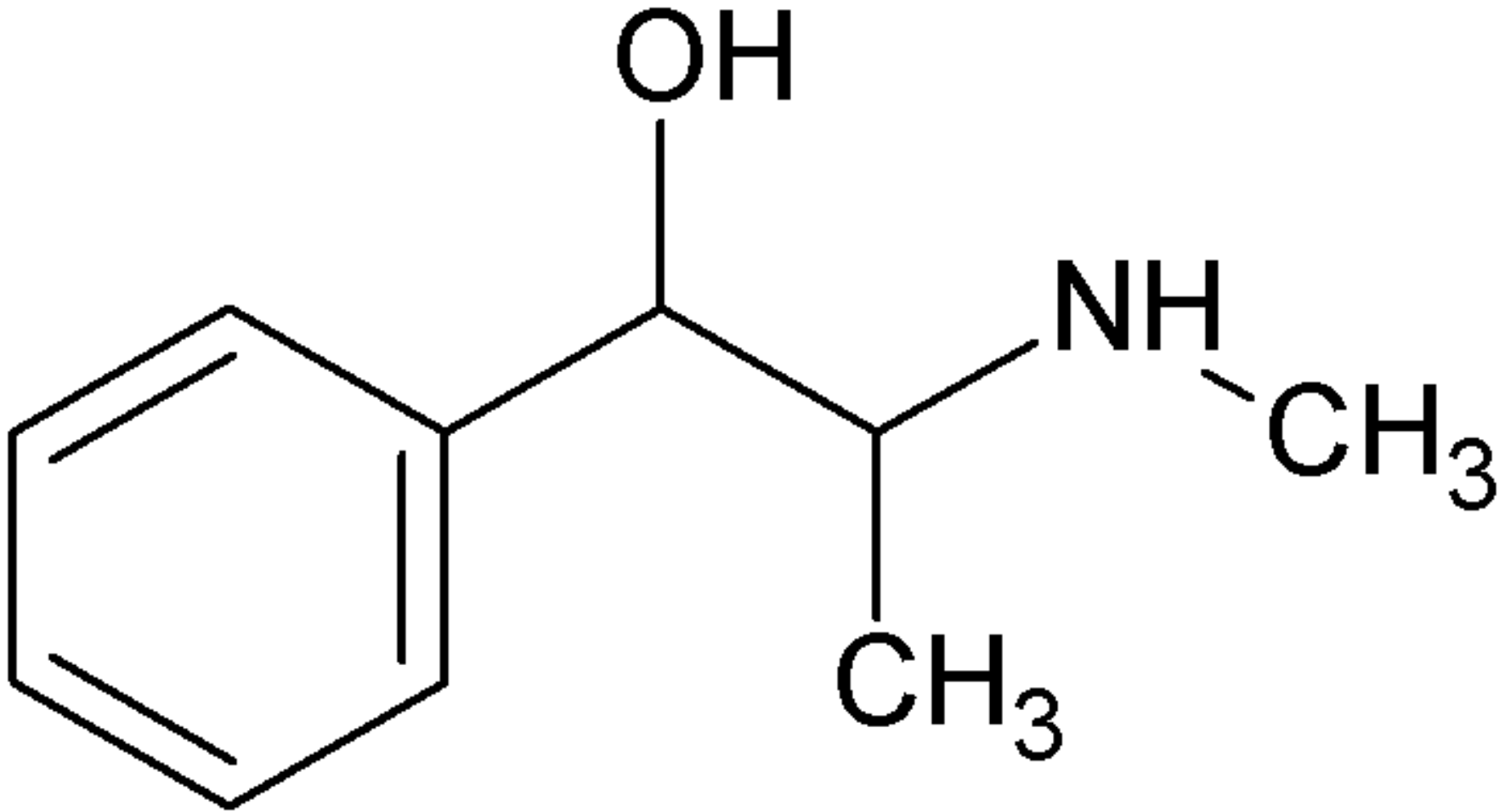
Methamphetamine



Epinephrine



Pseudoephedrine





Cocaine v. Methamphetamine (1)

COCAINE

Inhibits Reuptake of synaptic dopamine

METH

Inhibits Reuptake of synaptic dopamine

Promotes Direct dopamine release

Cocaine v. Methamphetamine (2)

COCAINE

- Metabolizes rapidly
- Effects typically last 1-2 hours
- Withdrawal can last 1-2 days

METH

- Metabolizes slowly
- Effects typically last 10-20 hours
- Withdrawal can last several days

The Crystal Mouth





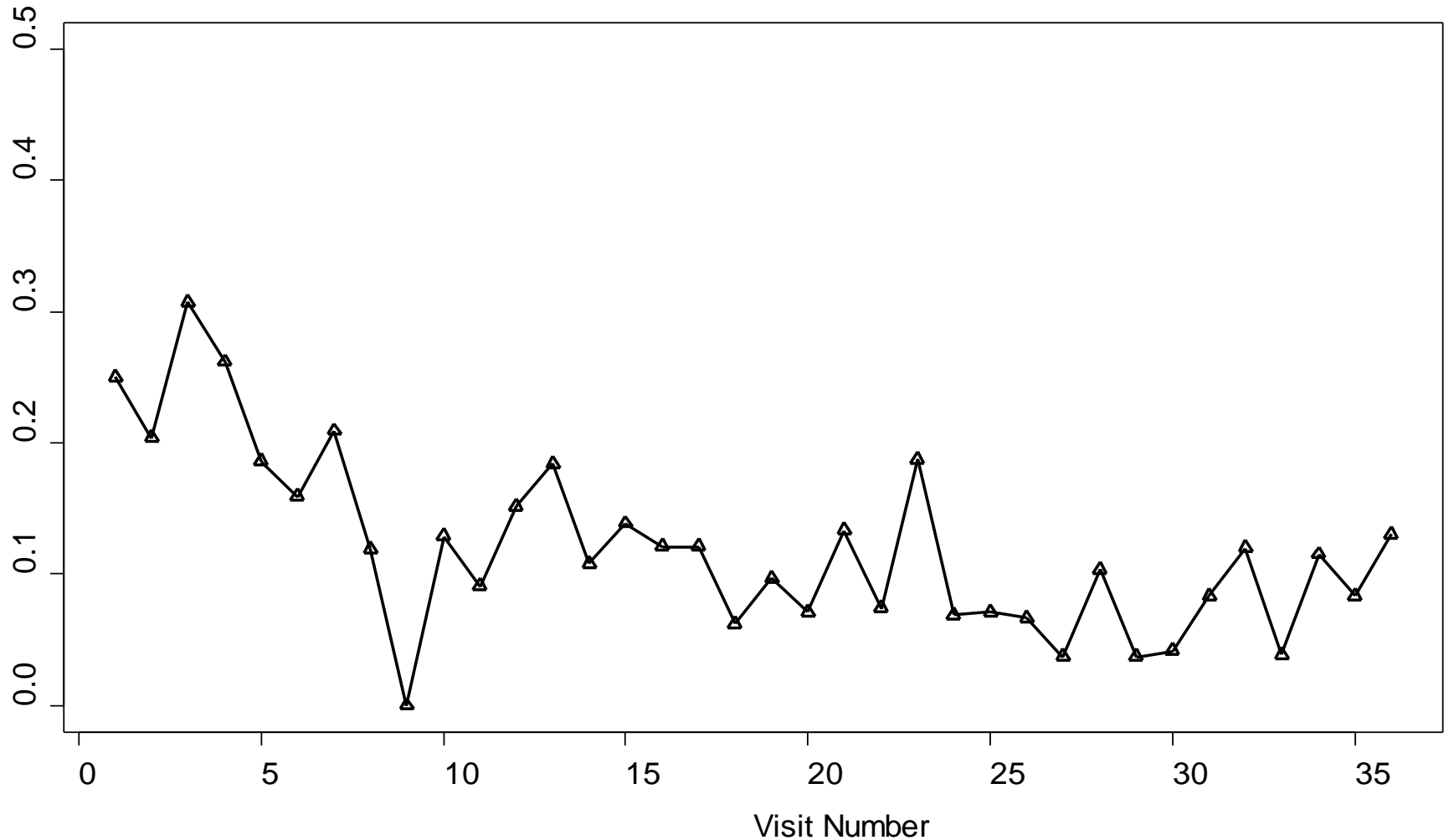
The Matrix Model

- Group Psychotherapy
- Individual Counseling
- Family Therapy
- Contingency Management (CM)
- Crystal Methamphetamine Anonymous
- Treatment of Co-occurring Disorders

Stages of Recovery

- Withdrawal Day 1 to 15
- Honeymoon Day 15 to 45
- The Wall Day 45 to 90
- Adjustment Month 4 to 6
- Resolution Month 7 on

The Case of Sertraline



Crystal Meth in a Gay Subculture

The Basic Pathway

1. Crystal meth intoxication
2. Decreased inhibitions and judgment
3. Increased sensation seeking and extreme sexual arousal
4. Unsafe sex
5. HIV transmission

Sildenafil and HIV

- Erectile dysfunction, i.e., the “crystal dick” problem.
- In 1998, sildenafil became commercially available.
- From 1999 to 2005, new diagnoses of HIV in men having sex with men increased by almost 18%.

Crystal, Sex, and the Internet

- The Perfect Storm
- Sex, both virtual and real, both safe and unsafe, is only a click away.
- Variable Intermittent Reinforcement

The Lingo

- PNP = Party (drugs) and Play (sex)
 - Chem Friendly = Drugs
 - Barebacking = BB = Unprotected anal sex
 - In the Raw = Unprotected anal sex
 - To the Point = Intravenous use
- and much more ...

Videos



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Video player controls: play button, progress bar (0:08 / 0:26), volume icon, full screen icon, and next button.

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YouTube Live

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YouTube Program



From: [LastChanceLife](#)

Added: March 15, 2008

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I'm doing a hit of meth

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01:04 From: pallechibby

Primary Prevention

HOW TO MAKE CRYSTAL METH

PAINT STRIPPER
REMOVES PAINT, VARNISH AND STAIN

SINUS MEDICATION

DRAIN CLEANER

ANTIFREEZE

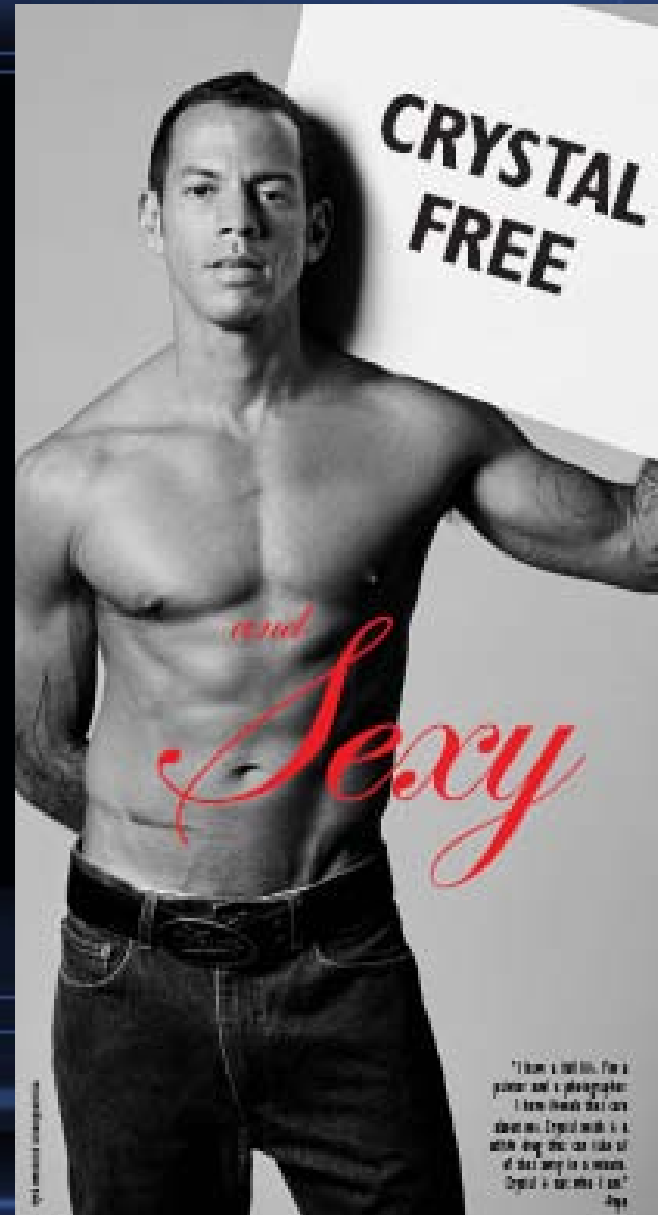
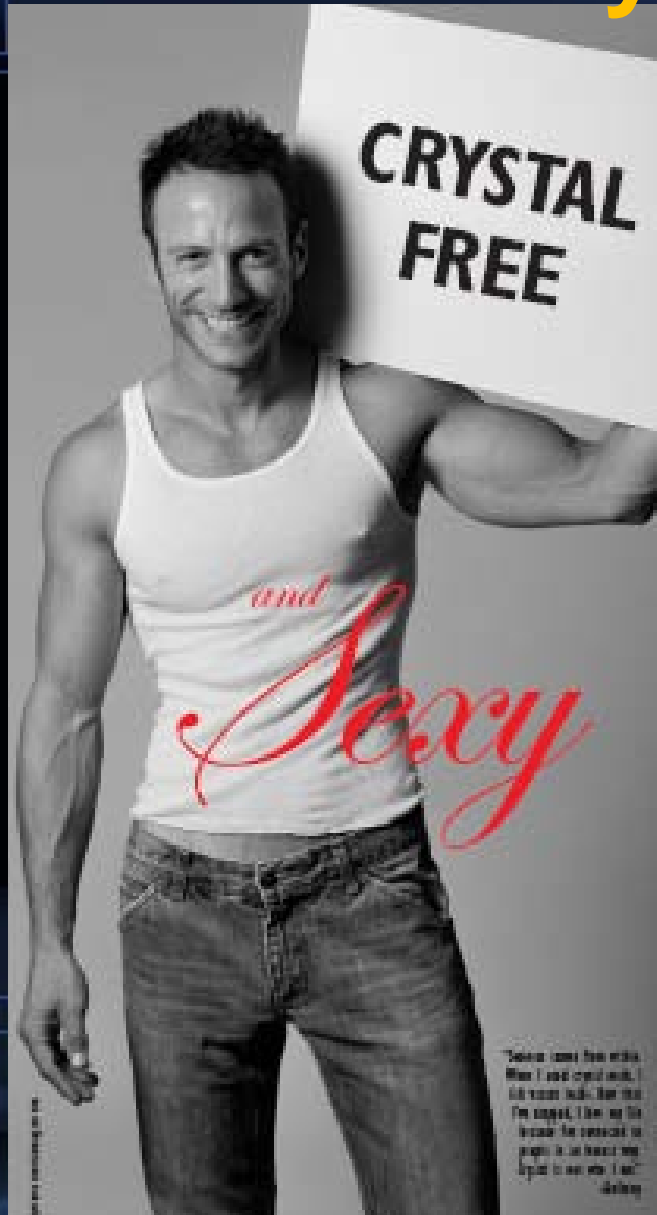
PAINT THINNER

Crystal Meth Working Group

MORE TOXIC THAN HEROIN. These are actual ingredients that go into making crystal meth, including toluene (brake cleaner), ether (engine starter), methanol (gasoline additive), lithium (from batteries), anhydrous ammonia (farm fertilizer), sodium hydroxide (lye), muriatic acid, and iodine. Why does it matter? Chronic meth users suffer brain damage. MRI scans show an 8-11% loss of tissue in the areas controlling mood, memory and emotion. **So what'll it be?**

FOR HELP CALL 1-800-LIFENET OR 311

Secondary Prevention



GAY MEN & CRYSTAL METH a manifesto

Let's face it. There's a problem, and we all need to deal with it.

Crystal meth poses a threat to many communities, both in this country and around the world. The UN says 39 million people use meth, making it the second most frequently used illicit drug behind marijuana. But while most meth use in the U.S. is among heterosexuals, here in New York City it's largely a problem among gay men.

While most gay men have never used meth, approximately 15% have. By chemically blocking inhibitions, it leads many to take sexual risks, resulting in more infections of HIV, syphilis and other diseases.

Why reached us meth seeped in very into our lives as an "innocent" party drug and then established itself as a serious threat to our health and prosperity. We've seen it cripple our friends and loved ones, destroy the lives of our youth and members, and corrode the spiritual fabric of our community.

Bottom line, meth is hurting gay men. How can we stand by and do nothing?

We know that the failed approaches of our nation's "war on drugs" won't help. Addiction cannot be legislated away, and law enforcement is not the answer.

We know that treatment can work. Meth is highly addictive, and recovery is often difficult. While many will struggle, there is a growing army of gay men who have gotten off meth.

And most importantly, we know that love works. Yeah, that might sound corny to some, but love is what motivated gay men to care for

one another when the AIDS epidemic hit 25 years ago. Love is what brought us together to fight America's silence and stigma. Love made us insist on safe sex, dramatically reducing new HIV infections.

Love supports without judgment. It challenges self-destruction. It strengthens commitment. And today love is why one gay man will help another gay man quit using crystal meth.

So, here's what we're going to do.

We will take responsibility for our lives and for the health of our community. We will make informed choices about sex and partying, and urge our friends and lovers to do the same.

We will not be silent. We will talk to other gay men about the dangers of crystal meth. We will create honest prevention campaigns so that every gay man knows the real risks of meth use.

We will show compassion for those who are addicted. Meth is the problem, not those in its grasp. Addiction needs treatment, not stigma. And if they who love them.

We will fight for better treatment programs.

And finally, we are a generation of gay men who refuse to do nothing. We will continue to challenge our sports, our sports, our sports. **We will lead by example.**

Special to Crystal Meth Working Group

Daniel L. Carlson

Brian Curran

Bruce Kellerman, MD

Robert O'Neil

Matthew Cook
CEO, HIV Media, LLC

Lady Bunny
DJ/Performer

Richard D. Burns
Executive Director
HIV Community Center

Daniel Wilson
President, Justice Commission on AIDS

Tom Thomas K. O'Connell
New York State Senator, 20th District

Dary English
Executive Director
People's Project on AIDS

Honey Flannel

Man Parrish
Executive Director
National City and Lesbian Bar Association

Howard A. Greenman, MD
Executive Director
American Academy of HIV Medicine

Ronald E. Johnson
Executive Executive Director
Gay Men's Health Crisis

The Reverend Charles King
President, Ministry Work

Larry Kramer

Mark Krueger

Jay Landau
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Seamus Lagan
Journalist/Author

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Michael Lutz
President, Crisis Intervention

Marie Madewick, MD
Deputy Assistant Secretary

Craig B. Miller
President, NYC Health Div. II

David Miner

Mark Miller
Executive Director

John O'Connell
Executive Director
Gay Men's Outreach Center

Paul Schindler
Editor-in-Chief, Gay City News

John Shea
Organizational, Senior Counsel

Michelle Marie Spivack

Stan Smith
President, HIV Magazine

Andrew Sullivan

Phil Wilson
Executive Director, World AIDS Journal

Jed Whaley

Organizational assistance was provided for identification purposes only, and does not imply any endorsement by the organization listed.

Amanda Lepore

Transexual Performer

Petros Levounis, MD, MA

The Addiction Institute of New York

Michael Lucas

President, Lucas Entertainment

CRYSTALCLEARMN.ORG

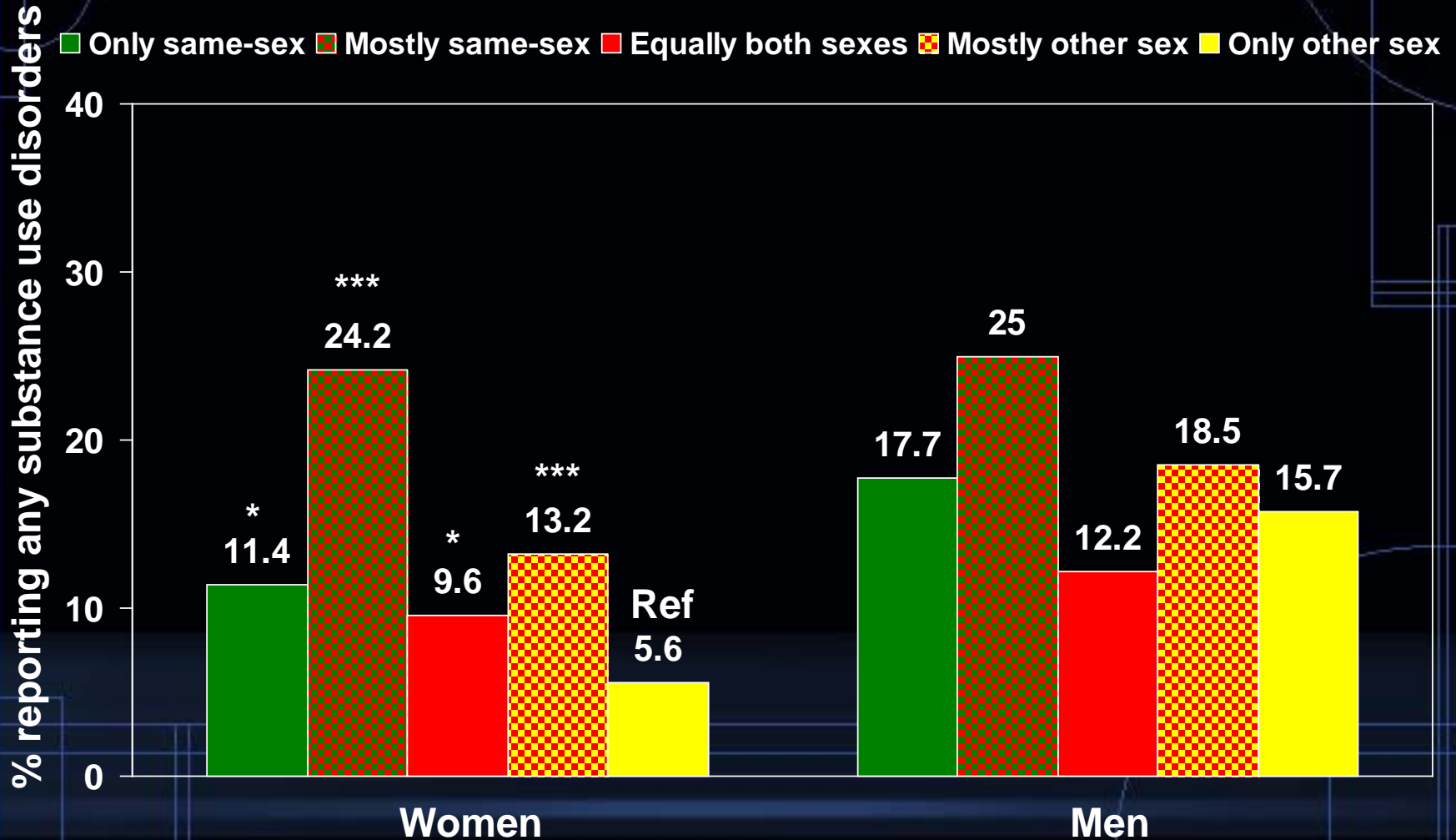
Crystal meth info, resources and support for gay and bi guys



Crystal Clear Minnesota is a 501(c)(3) non-profit organization. Photography: Justin Anselmi/Interimmedia.com. Design: Art Director: Justin D'Amico/Interimmedia.com



Sexual Attraction



*p<0.05, ***p<.001 based on logistic regression analysis adjusted for race, age, educational level, personal income, employment status, relationship status, health insurance status, geographic location, MSA, age at alcohol onset, and family history of AOD problems. Reference group was "heterosexual" group.

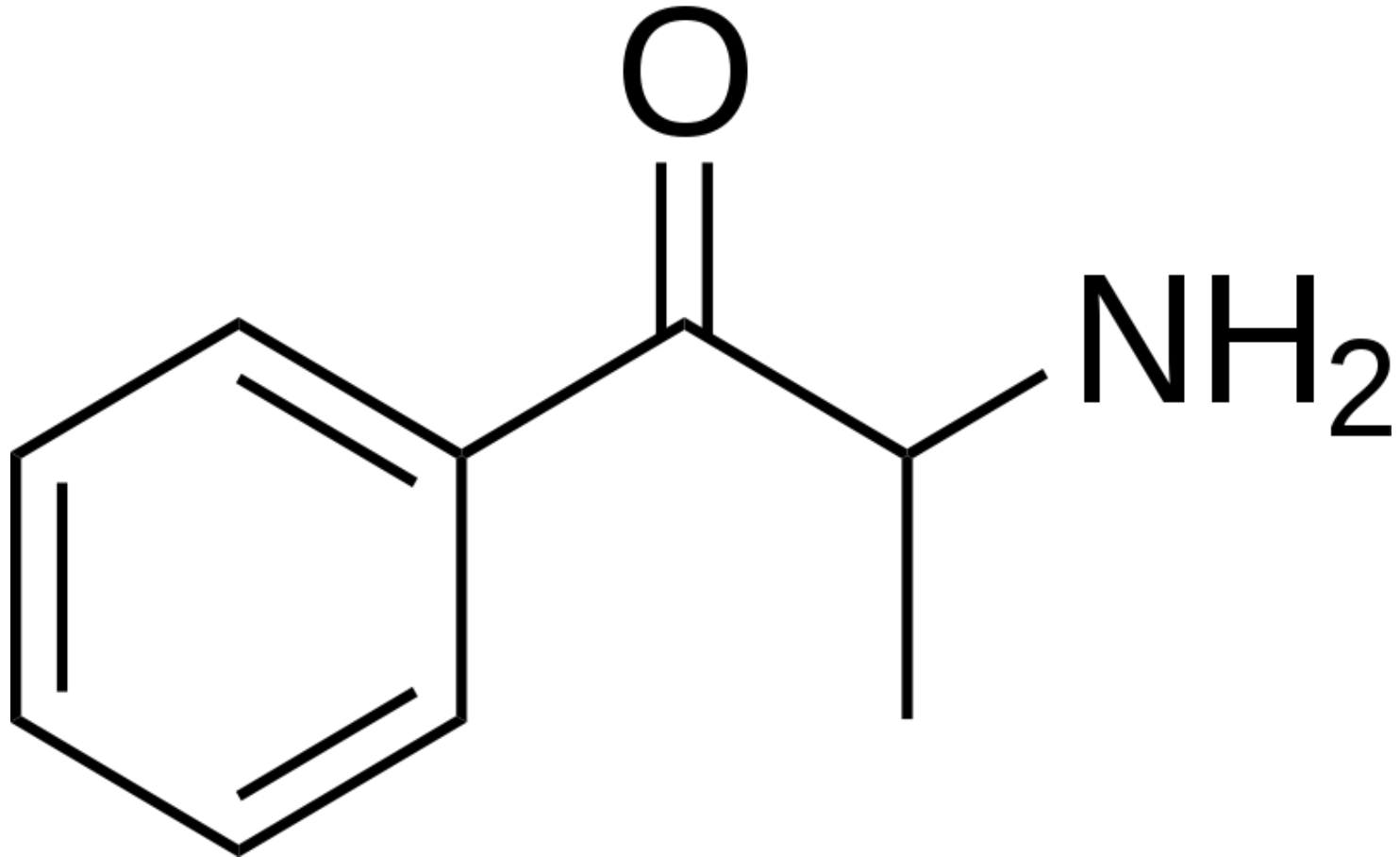
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2010s: Bath Salts



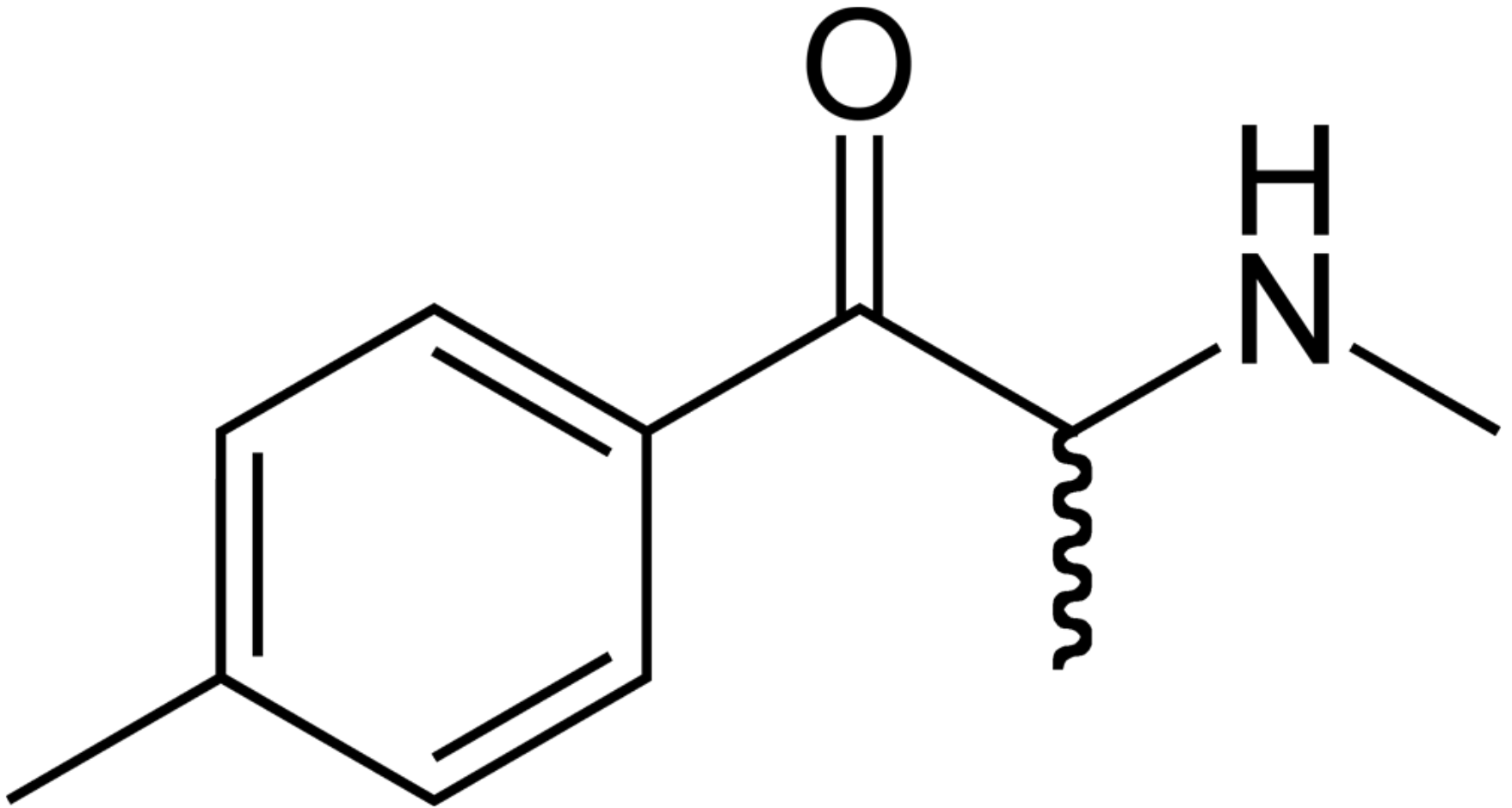
“Hey, I just met you,
and this is crazy,
but I’m on bath salts,
and your face looks tasty.”

Cathinone (Khat)

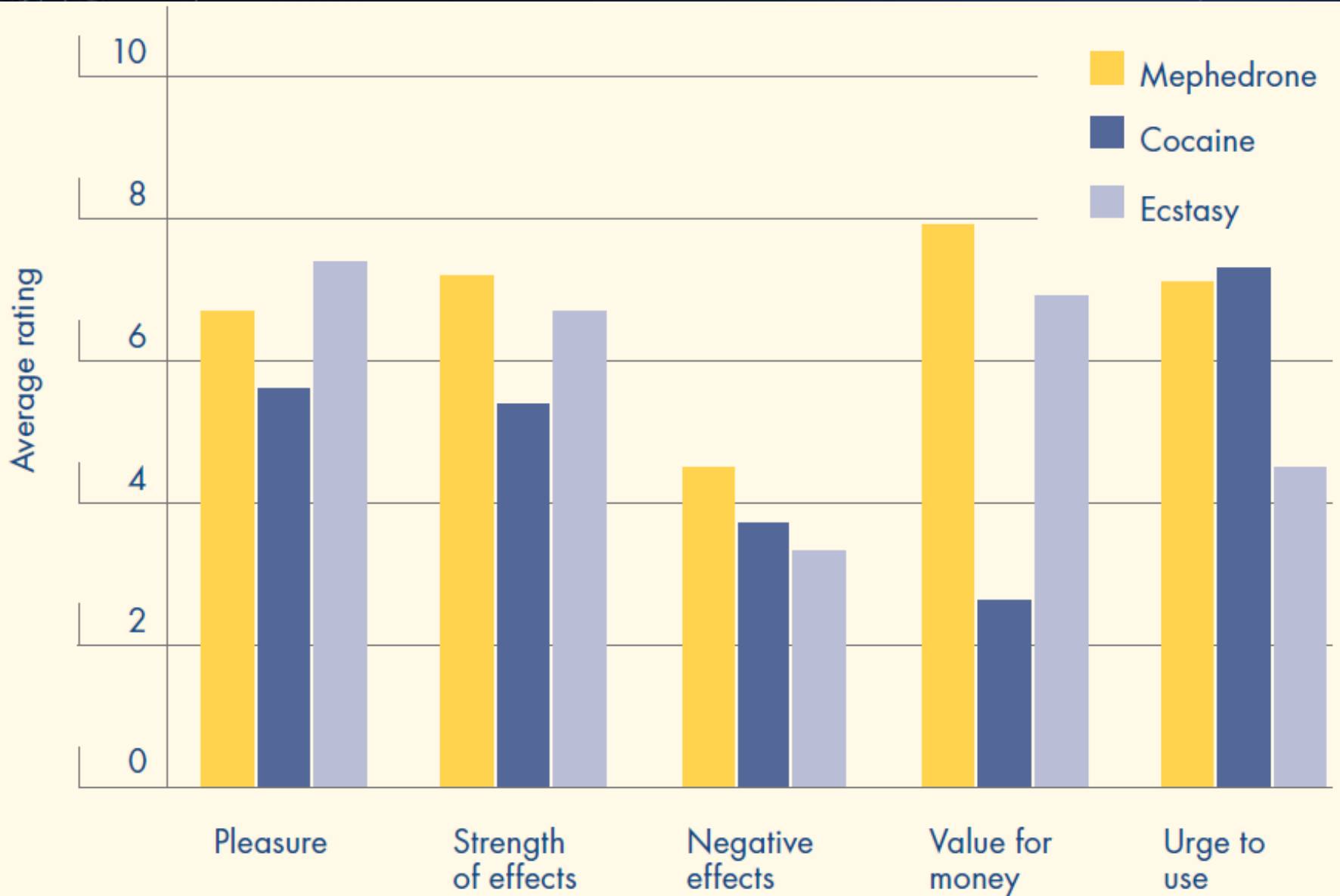




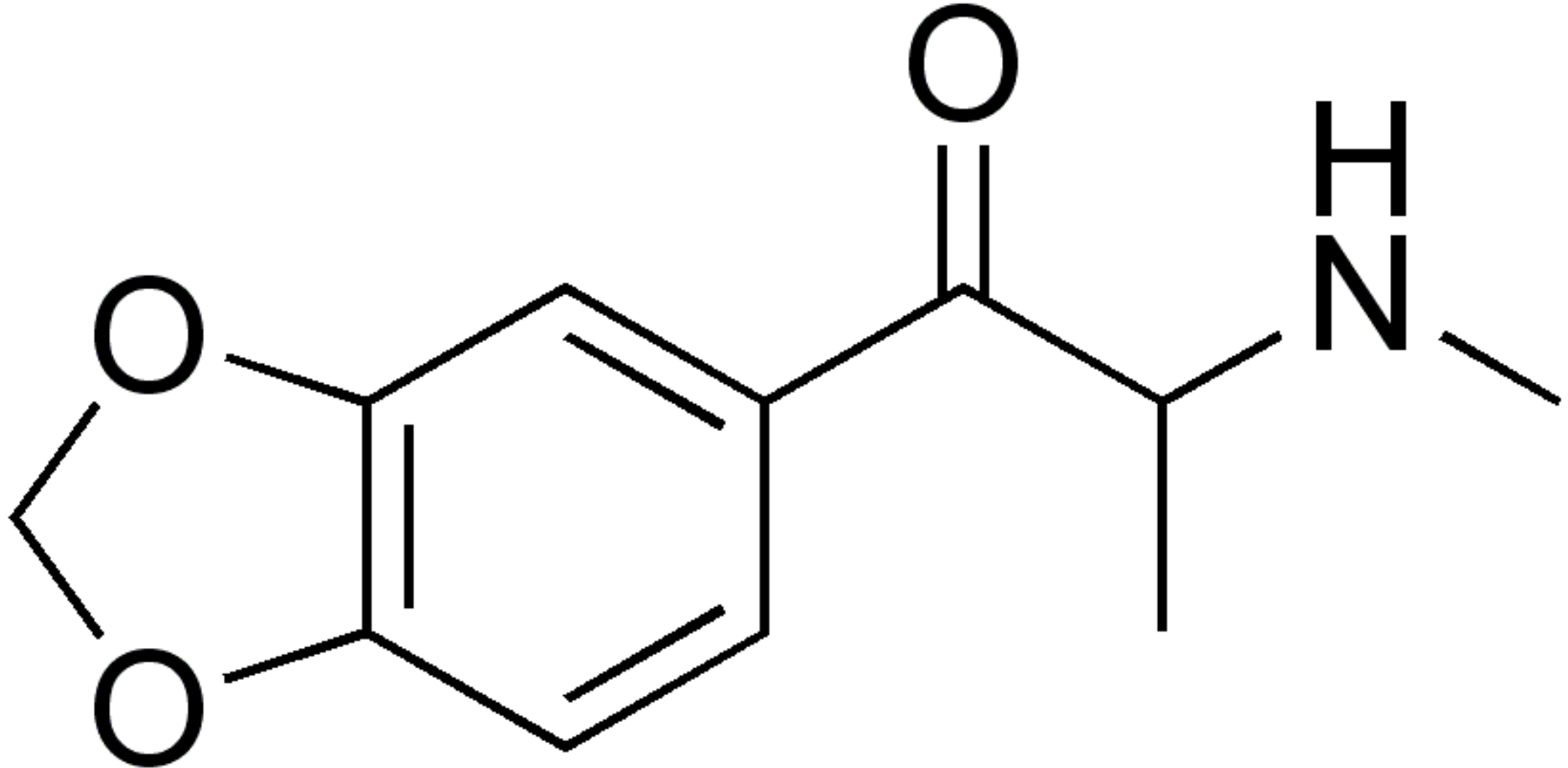
Mephedrone



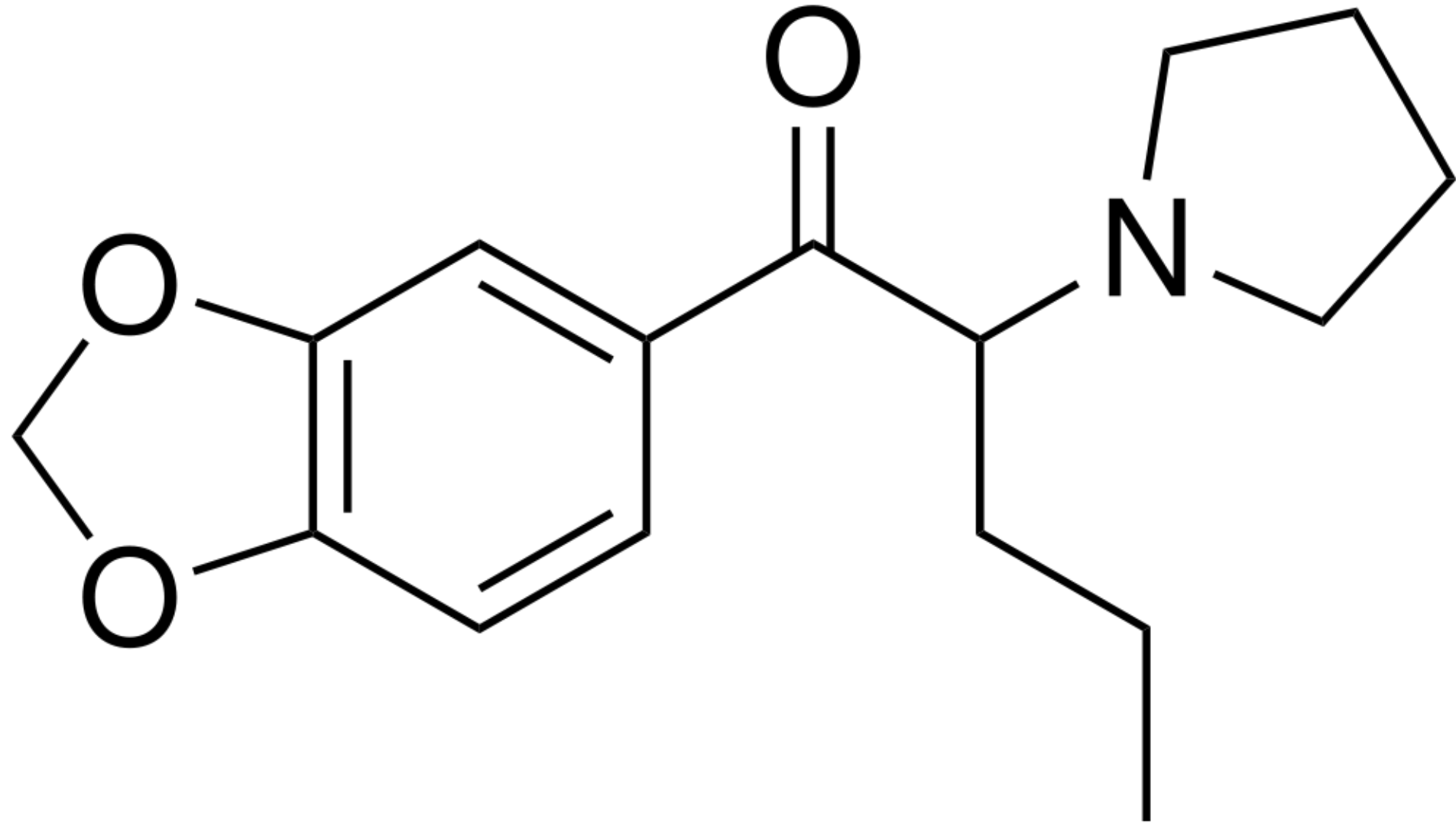
Effects



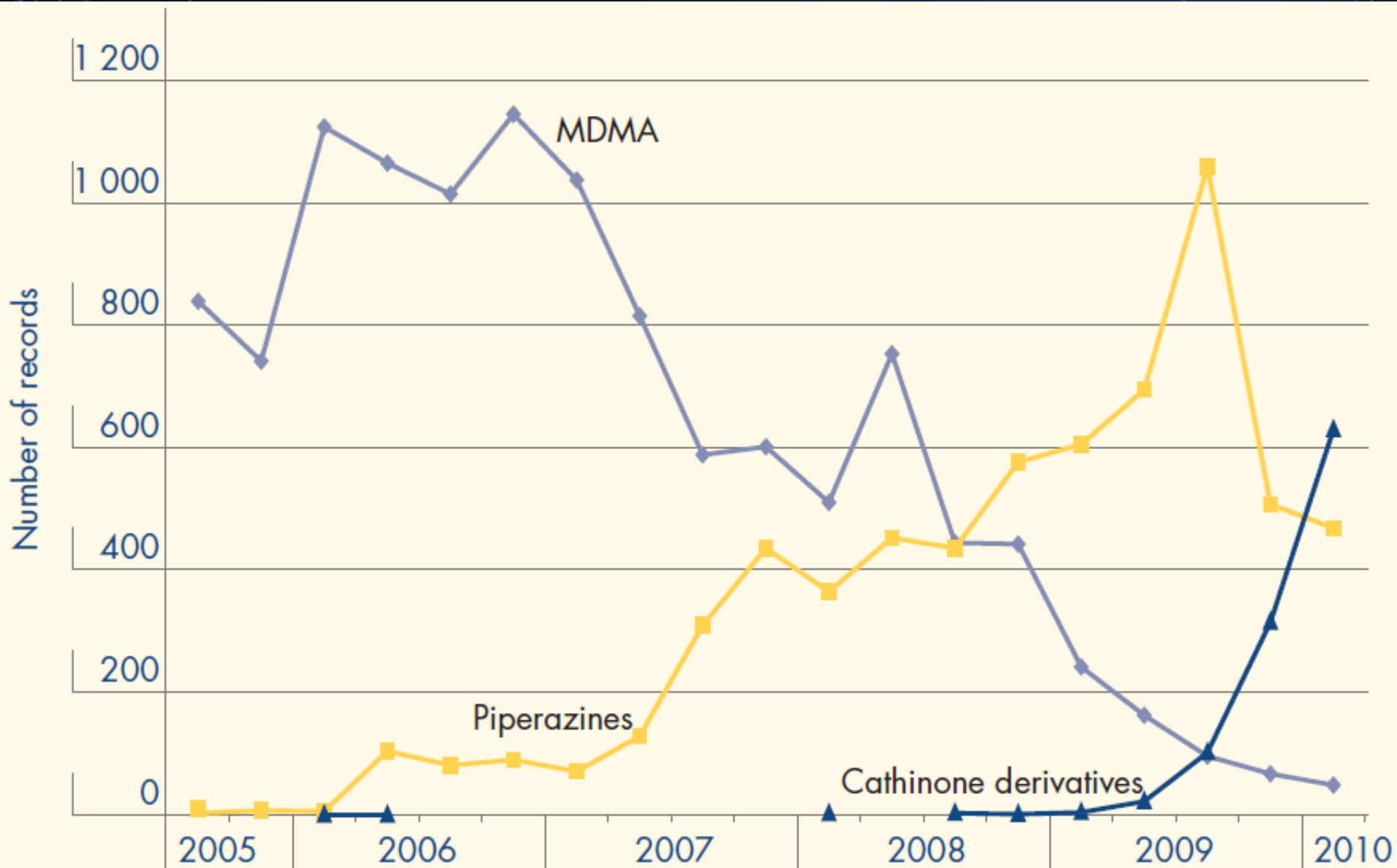
Methylone



Methylenedioxypropylone (MDPV)



The British Data

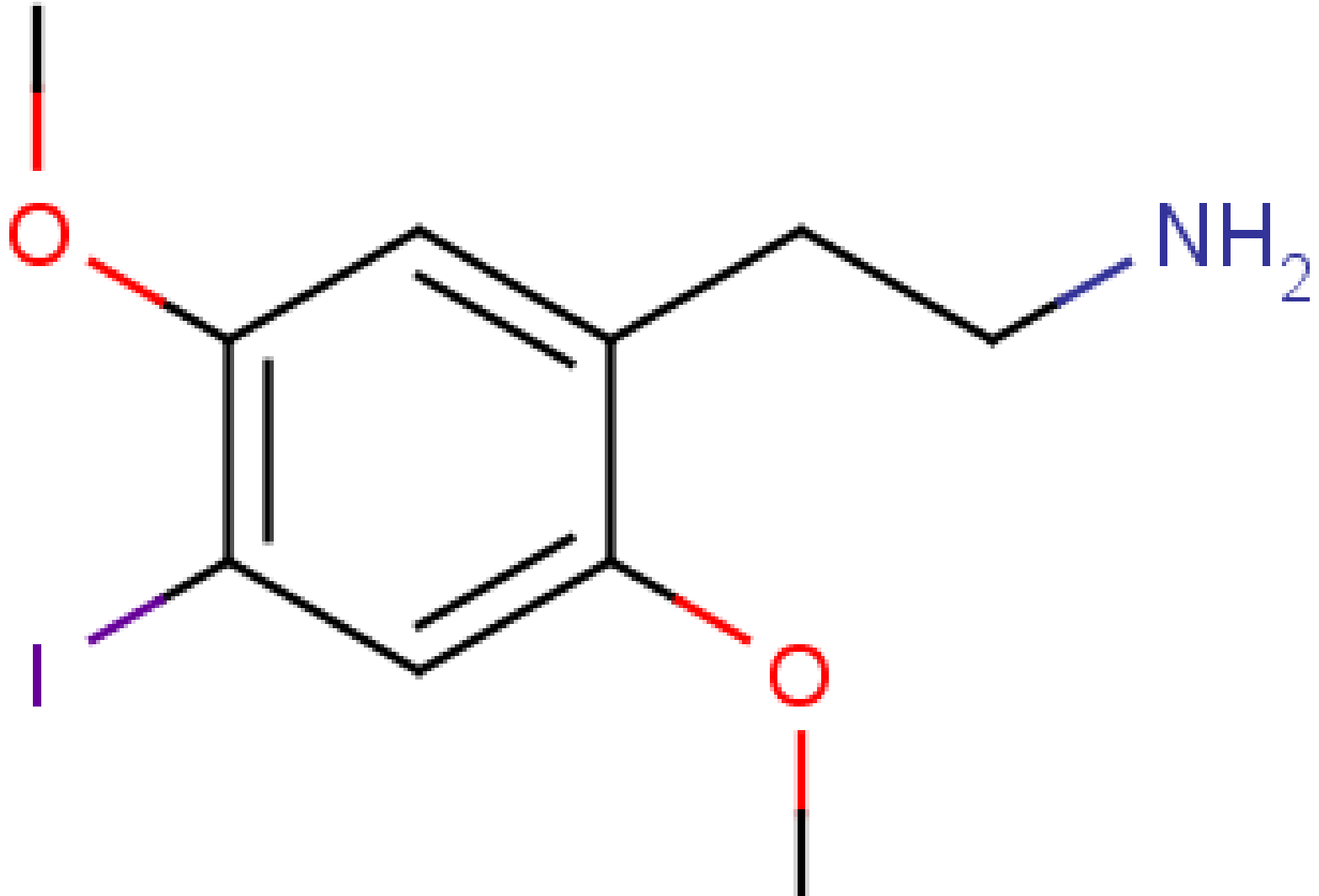


Smiles

2,5-dimethoxy-4-iodophenethylamine



2C-I and the 2C Family



Alexander Shulgin



PIHKAL

A
CHEMICAL
LOVE STORY

ALEXANDER
SHULGIN



ANN
SHULGIN

The Documentary



"A FILM WORTH GETTING ECSTATIC ABOUT."

-Sheela Clark, BOSTON PHOENIX



THERE ARE
NO CASUAL
EXPERIMENTS

DR. ALEXANDER SHILIN

DR. ALEXANDER SHILIN

dirty pictures



6

Conclusions

1. Cocaine is the prototypical dopaminergic drug.
2. Ecstasy acts as half a mild stimulant and half a mild hallucinogen.
3. Crystal methamphetamine is the turbo cocaine.
4. Culturally-specific community involvement is the key to prevention.
5. Bath Salts are as pleasurable as ecstasy and as addictive as cocaine.

And the Latest Problem...

Cocaine and levamisole:

- **Levamisole is cancer medication also used in de-worming animals.**
- **Found in almost 100% of all cocaine now—added in South America.**
- **Can result in agranulocytosis (discoloration of skin, beginning in ears—sign of skin cell death).**
- **Results in neutropenia (bone marrow does not make enough white blood cells).**



Thank you