

The Rest of the Date

Rape Drugs

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Purpose

To understand the circumstances commonly reported in drug-facilitated sexual assaults, the drugs reported to be involved in such cases, and how to help establish whether drugs were used in the commission of the assault.



Michigan State Police Toxicology Laboratory

Lansing, Michigan

Mission:

Analysis of blood and urine for alcohol and drugs of abuse.

Dr. Felix Adatsi, Supervisor, Alcohol Analysis

Dr. Michele Glinn, Supervisor, Drug Analysis

> 15,000 cases/year



Overview of Laboratory Operations

1. Samples collected in cases of OUIL/OUID, CSC, ME requests, other felonies or suspicious circumstances.
2. All samples analyzed for alcohol content. Alcohol report issued (3 weeks).
3. If requested, drug analysis performed. Drug toxicology report issued (2-4 months).
4. Samples preserved for at least 1 year after report issued.



Drugs Analyzed by MSP Toxicology Lab

Alcohols

Amphetamines

Antidepressants

Benzodiazepines

Barbiturates

Cannabinoids

Carbon Monoxide

Cocaine and Metabolites

GHB

Hallucinogens

Inhalants

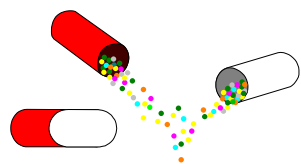
Muscle Relaxants

Narcotic Analgesics

Non-Prescription Drugs

Opiates

Other Prescription
and Street Drugs



Sexual Assault: Definitions

Criminal Sexual Assault

Assault with intent to commit criminal sexual conduct (MCL 600.2157a).

Drug-Facilitated Sexual Assault

Use of a drug to incapacitate a victim to facilitate rape:

- ▶ reduce inhibitions
- ▶ impair judgement
- ▶ render unconscious
- ▶ induce muscle weakness
- ▶ produce amnesia



Date-Rape Drug Scenarios

- κ Victim is at a party or other social setting, often drinking alcohol.
- κ Feels dizzy, nauseous, disoriented, may pass out.
- κ Wakes up some time later, possibly in other surroundings.
- κ Does not remember parts of the evening.
- κ May not remember assault.
- κ Feels impairment is excessive with regard to alcohol drunk.



What Drugs Are We Talking About?

- *Consumed Voluntarily by Victim*

Alcohol

Cannabinoids

MDMA (Ecstasy)

Cocaine

GHB

antidepressants

over-the-counter drugs

- *Given Surreptitiously?*

GHB

MDMA

Rohypnol

Ketamine

Others: barbiturates, opiates, benzodiazepines



Gamma-hydroxybutyrate (GHB)

Actions: CNS depressant with effects similar to alcohol

Symptoms:

- Alcohol-like intoxication, but no odor of alcohol.
- **Low Doses:** euphoria, relaxation of inhibitions
- **High Doses:** sedation, slurred speech, incoordination, amnesia

Onset of Effects: 10 - 20 minutes

Duration of Effects: 3 - 6 hours

Detectable in Urine: 6 – 12 hours



Rohypnol

Flunitrazepam

- κ Short-acting, low-dose benzodiazepine.
- κ Must be investigated in urine.
- κ Causes severe ataxia, anterograde amnesia.
- κ Approved outside the U.S. for sedative/hypnotic use.
- κ Never approved in U.S.
- κ 17 reported cases (mostly SW US) from 1994-1998
- κ No cases ever reported in Michigan.



Ketamine

Actions: Veterinary anesthetic

- Related to PCP but not as potent
- Abused for hallucinogenic qualities

Symptoms:

- Visual hallucinations
- Irrational behavior
- Confusion, disorientation, memory loss
- Nausea
- Blurred vision
- Respiratory stimulation or depression
- Cardiac stimulation or depression, arrhythmia



Prescription Drugs

- ↖ May be taken chronically (i.e. antidepressants).
- ↖ May have minimal side effects when taken alone.
- ↖ In combination with alcohol, clearance of one or both drugs may be delayed; higher levels can accumulate in blood.
- ↖ *Commonly* enhance deleterious effects of alcohol.
- ↖ *User may not be aware this can occur.*



Antidepressants

Common Antidepressants:

Fluoxetine (Prozac)

Sertraline (Zoloft)

Imipramine (Tofranil)

Risperdone (Risperdal)

Bupropion (Wellbutrin)

Trazodone (Desyrel)

Citalopram (Celexa)

Nefazadone (Serzone)

Paroxetine (Paxil)

Quetiapine (Seroquel)

Doxepin (Sinequan)

Amitriptyline (Elavil)

Nortriptyline (Aventyl)

Venlafaxine (Effexor)

Possible Side Effects *(especially in combination with alcohol)*:

dizziness, drowsiness, confusion, disorientation, ataxia



Other Prescription Drugs

| Drug | Possible Side Effects | Medical Uses |
|----------------------------|------------------------------|---------------------|
| Olanzapine (Zyprexa) | dizziness, drowsiness | schizophrenia |
| Phentermine (Adipex) | agitation, confusion | obesity |
| Carbamazepine (Tegretol) | seizures, depressed reflexes | anticonvulsant |
| Cyclobenzaprine (Flexeril) | drowsiness, dizziness | muscle relaxant |
| Carisoprodol (Soma) | drowsiness, confusion | muscle relaxant |
| Bupropion (Wellbutrin) | drowsiness, dizziness | anxiety disorders |
| Zolpidem (Ambien) | sedation, amnesia | hypnotic |
| Doxylamine (Unisom) | sedation | hypnotic |

Sedative effects often additive with alcohol!



Non-Prescription Drugs

Drug

Possible Effects

Diphenhydramine

sedation

Pseudoephedrine

dizziness, agitation, tremor

Phenylpropanolamine

dizziness, agitation, tremor

Guaifenesin

CNS depression

Dextromethorphan

sedation

In liquid form, many have significant amounts of alcohol.

Significant sedation in combination with ethanol.



How Common is Drug-Facilitated Sexual Assault?

How to Evaluate?

National and regional data exist concerning:

- drug seizures & trafficking
- emergency room incidents and overdoses
- OUIL/OUID
- drugs found in CSC cases



How Common is Drug-Facilitated Sexual Assault?

But:

- **Little hard data** on how many CSC cases involve intentional drugging of the victim.
- Many difficulties in establishing what occurred: underreporting may be common.



Sexual Assault: Incidence

Estimate of the Incidence of Drug-Facilitated Sexual Assault in the U.S. (Negrusz et al, 2005)

1. Took urine and samples from CSC victims from four regional US Medical Centers (144 victims total; TX, CA, MN, WA).
2. Issued questionnaires about current and past drug use to victims.
3. Hypothesized that victims of CSC would be more honest than intoxicated drivers or other defendants about their history of drug use; emphasized no legal repercussions to them.
4. Analyzed samples for drugs.



Negrusz et al: Drugs Found in CSC Cases

144 CSC cases

62% positive for alcohol or drugs.

| <u>Drug</u> | <u>Admitted to Use</u> | <u>Percent Positive</u> |
|------------------|------------------------|-------------------------|
| Alcohol | 55.5 | 9.7 |
| THC | 10.9 | 26.4 |
| Cocaine | 6.7 | 18.1 |
| Barbiturates | 0 | 0.69 |
| Narcotics | 0 | 8.3 |
| Amphetamine | 4.2 | 6.2 |
| Methamphetamine | 4.2 | 6.9 |
| Any Illicit Drug | 18.5 | 45.8 |

The Midwest had the highest % positive cocaine and THC cases.

Negrusz et al: Drugs Found in CSC Cases

144 CSC cases

62% positive for alcohol or drugs.

| <u>Drug</u> | <u>Percent Positive</u> |
|--------------------|-------------------------|
| All Drugs Found | 61.81 |
| Drugs of Abuse | 45.83 |
| “Date-Rape” Drugs* | 4.86 |
| OTC and Rx Drugs | 27.78 |

• *Represents flunitrazepam and clonazepam.*

Only seen in subjects with prescriptions, and seen on multiple visits.

GHB, ketamine, scopolamine not found.

Sexual Assault: Definitions

Negrusz et al:

DFSA -1

Drugs given surreptitiously to victim.

DFSA-2

Victim becomes incapacitated due to voluntary drug ingestion.



Sexual Assault: Definitions

Negrusz et al Conclusions:

- DFSA-1: Incidence: very low ($\leq 4\%$)
 - “Date-rape” drugs found were those subject had Rx for; probably not given surreptitiously.
 - No conclusive examples of victim being drugged unknowingly with GHB, ketamine, etc. Real incidence: 0% (?)
- DFSA-2: Incidence ~ 35%
- CSC victims likely to underreport illicit drug use; the younger the victim, the greater the tendency to underreport.
- DFSA is more of a problem due to the subject’s own drug use, rather than surreptitious drugging by the perpetrator.



Australia: Drugs Found in CSC Cases

*Beyond Drink Spiking:
Drug and Alcohol Facilitated Sexual Assault
(Alexandra Neame, 2003)*

- Report for Australian Institute of Family Studies
- Review of literature and epidemiological data.

Chemistry Center Study

Chemistry Center (Western Australia):

- June 2002-Feb 2003
- 44 cases
- 75% positive for alcohol (31% BAC > 0.15)
Alcohol results higher than would be expected given victims' reported use
- No CNS depressants detected
(may be some analytical limitations)

Chemistry Center Study

Conclusions:

- Drink spiking with alcohol prevalent and much more common than realized (buying triple shots for unsuspecting friends-common practice?)
- Drink spiking with drugs “urban myth”

Australian Inst. Family Studies Review

Media Reaction to Chemistry Center Study:

“Police have dismissed as urban myth epidemic of drink spiking...”

“ ..just an excuse to hide abhorrent behaviour or inexperienced drinking,...what people are doing when they shouldn't be.”

Australian Inst. Family Studies Review

- Review takes issue with this stance that drink spiking with alcohol is not “real spiking” and sexual assault that occurs subsequently is not “real” rape.
- Conclusions similar to Negrusz et al that drugs voluntarily consumed by victim are the larger problem.
- Reaffirms that “sexual assault” is any unwanted sexual contact that occurs when a victim cannot consent, regardless of whether drugs/alcohol were consumed voluntarily.

MSP: Drugs Found in CSC Cases

Year 2006: 159 CSC cases

62% positive for alcohol and drugs.

33% positive for more than one substance.

| <u>Drug</u> | <u>Percent Positive</u> |
|---------------------|-----------------------------|
| Alcohol | 45 |
| THC | 34 |
| Cocaine | 13 |
| Benzodiazepines | 12 |
| Barbiturates | 2 |
| Opiates, Analgesics | 18 |
| Muscle Relaxants | 7 |
| Amphetamines | 4 |
| GHB | 0.6 (1 case) |
| Other Rx Drug | 11 (mostly antidepressants) |
| Non-Rx Drug | 9 (cough/cold/allergy) |



MSP: Drugs Found in CSC Cases

Year 2003: 192 CSC cases

65% positive for alcohol and drugs.

18% positive for more than one substance.

| <u>Drug</u> | <u>Percent Positive</u> |
|---------------------|-------------------------|
| Alcohol | 45 |
| THC | 32 |
| Cocaine | 6 |
| Benzodiazepines | 5 |
| Opiates, Analgesics | 5 |
| Amphetamines | 3 |
| Other Rx Drug | 14 |
| Non-Rx Drug | 10 |



MSP: Drugs Found in CSC Cases

Year 2000: 114 CSC cases

65% positive for alcohol or drugs.

15% positive for more than one substance.

| <u>Drug</u> | <u>Percent Positive</u> |
|---------------------|-------------------------|
| Alcohol | 45 |
| THC | 35 |
| Cocaine | 7 |
| Benzodiazepines | 4 |
| Opiates, Analgesics | 4 |
| Amphetamines | 1 |
| Other Rx Drug | 5 |
| Non-Rx Drug | 4 |

MSP Typical Sexual Assault Cases

MSP Typical CSC Case:

- Female, under 21
- Urine collected 12 – 48 hours after incident
- Urine + for THC (moderate to low)
- Urine + for alcohol (moderate to low)
- Urine negative for GHB
- Urine may be negative for alcohol and drugs
- Blood, if collected, negative or very low for alcohol

MSP Unusual Sexual Assault Cases

GHB (2001)

- 15-y.o. female victim.
- 35-y.o. male assailant, GHB dealer.
- Told others he had spiked her drink.
- Left victim at home on the porch, still unconscious.
- Blood sample positive for very low GHB (no urine).
- Judge did not allow GHB evidence at trial: acquitted.

MSP Unusual Sexual Assault Cases

GHB (2002)

- Teenage female victim.
- Five male assailants, 18 – mid-30's.
- Oldest assailant a GHB dealer.
- All agreed victim's drink spiked with GHB.
- Victim's urine negative for GHB.
- At trial, defense stipulated victim was drugged, even with a negative lab report. Defense was "the other guys did it."
- First defendant convicted; others pled.

MSP Unusual Sexual Assault Cases

GHB Overall

2001 - 2005

- 3 other GHB-positive CSC cases.
- In all, victim voluntarily consumed GHB.

Sept. 2006

- 16-y.o. female victim.
- Urine and blood both positive for alcohol.
- 12 ng/ml GHB in urine (just over cutoff).
- No contact with court: to be prosecuted?

2007

- No cases.

MSP Unusual Sexual Assault Cases

Diazepam (2002)

- 2 female victims at a party at a private home.
- Became unconscious; assaulted after the party by the host.
- Diazepam found in the urine of one victim, not the other.
- Diazepam found in the glass the victim drank from, taken from the suspect's home.
- Convicted.

MSP Unusual Sexual Assault Cases

Diazepam (2004)

- Middle-aged female patient at a hospital.
- Male nurse allegedly put diazepam in her IV, assaulted her.
- Diazepam found in her blood (no urine collected).
- Independent lab also found diazepam.
- Irregularities in hospital records of drugs checked out by nurses; allegations he had done this previously to other victims.
- Defense centered around time of diazepam administration and whether the suspect could be concluded to have given it to her.
- First trial, hung jury; second trial, convicted.

MSP Unusual Sexual Assault Cases

Phenobarbital (2001)

- Mid-twenties female victim at a New Year's Eve party at a home.
- Witnesses spoke to her condition; said she became incoherent and incapacitated after drinking.
- Low level of phenobarbital found in urine collected 3 days later.
- Defense centered around time of ingestion: it could not be conclusively stated if the drug was consumed before or after the assault, or who gave it to her.
- Jury did not find victim credible. Defendant acquitted.

MSP Unusual Sexual Assault Cases

Meprobamate (2006 Case 1)

- 15-y.o. victim
- Urine collected 12 hours after incident
- Urine positive for alcohol, sertraline, meprobamate
- Negative for carisoprodol
- Given Miltown by assailant, along with alcohol?
- Given by medical personnel?
- No contact with courts. To be prosecuted?

MSP Unusual Sexual Assault Cases

Meprobamate (2006 Case 2)

- 22-y.o. victim
- Requested analysis for “muscle relaxers”
- Urine negative for alcohol, positive for THC
- Urine positive for carisoprodol, meprobamate, codeine
- Given Soma by assailant?
- No contact with courts. To be prosecuted?

Was It Drug-Facilitated?

Difficulties in Establishing:

Time Delay in Sample Collection

- Drugs may be cleared from the body before samples collected.

Wrong Sample Collected

- Blood has shorter window of drug detection than urine.

Alcohol or Other Drug Consumption

- Voluntary or involuntary consumption?
- Possible synergistic effect of alcohol/legitimate drug combination?
- Young victims or novice drinkers may underestimate alcohol's impairing effects.



Interpretation of Results

Positive for Alcohol or Drugs:

Blood:

Victim had drugs in system *at the time of sample collection.*

Urine:

Victim had ingested drugs within the window of detection.



Interpretation of Results

Negative for Alcohol or Drugs:

Blood:

Victim had no drugs in system at the time of sample collection.

Urine:

Victim had not ingested drugs within the window of detection

Possible Reasons:

- No drugs were ingested
- Drugs had been ingested, but were cleared from the system before sample collection.



Legal Issues: Interpretation of Results

Negative for Alcohol or Drugs:

- Could a drug have been present?
How to tell with no positive results?

Positive for Alcohol or Drugs:

- Voluntarily consumed?
If yes, if street drugs, possible victim credibility issues for jury.
- If not voluntarily consumed:
 - how to prove defendant gave to victim?
 - how to prove victim did not take after the fact?
 - how to prove someone else did not give her?



Sample Submission

Collection Kits obtained from MSP

Fill out **FSD-93** form completely:

- Indicate CSC
- Urine preferred sample
- SPECIFY DRUGS SUSPECTED
- Record victim's symptoms
- Establish time frame of events

Submit through police agency!



Conclusions and Recommendations

- ▶ The most common drugs involved in CSC cases are alcohol and THC.
- ▶ Combinations of alcohol and other drugs, including Rx drugs, may cause significant impairment in victim.
- ▶ Difficulties in establishing DFSA include time delay in sample collection and drug use by victim.
- ▶ Urine samples should always be collected, blood if the incident is < 6 hours prior.
- ▶ A negative result does not mean no drug ingestion occurred.



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