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SP.236 / ESG.SP236 Exploring Pharmacology
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Today: Recreational Drugs

- First: Finishing pharmacokinetics
- Then: A very broad overview of recreational drugs
- Finally: A long, structured discussion of drug laws – how should we change them, and why?

Pharmacokinetics

Pharmacodynamics: What drugs do to the body

Pharmacokinetics: What the body does to drugs

- Absorption
- Distribution
- Metabolism
- Excretion

ADME

Excretion

- In feces (how did it get there? Discuss)
- In urine (Kidneys)

Drugs with funky excretion

Amphetamine:

A large amount of amphetamine is excreted renally without being metabolized.

Amphetamine is a weak base with a pKa near urine's pH.

Acidic urine causes fast excretion

Alkaline urine causes slow excretion

Playing with ADME:

- Alcohol enemas
- Taking a huge amount of baking soda with amphetamine
- Taking Tagamet (cimetidine) with MDMA (ecstasy), opioids, many other drugs. Tagamet inhibits liver enzymes, thus inhibiting which of these: A, D, M, or E?
- Taking grapefruit juice

Playing with ADME:

- Snorting everything
- Smoking everything
- Injecting everything
- Depot injections (inject a month's worth of drugs into the muscle, design for slow absorption)
- Chewing time-release pills
- Dissecting time-release pills (Concerta)

Playing with ADME:

- Snorting Viagra before snorting something else (especially before snorting something vasoconstrictive, like what?)
- Inhaling albuterol before smoking crack (yes, people do this)
- Taking MAOIs with your DMT to enable absorption – this is called ayahuasca and was discovered hundreds of years ago

Recreational Drugs

- Let's go through the chart
- Please share stories about yourself, your friends, your “friends”, your family, movies you have seen, and books you have read. Don't be shy, just anonymize the story.
- Please ask questions

Recreational Drugs Chart

- Read chart
- Share
- Ask questions

Good, authentic movies with drugs

- Blow
- Go
- Trainspotting
- Goodfellas
- Basketball Diaries
- Drugstore Cowboy
- Ray
- Leaving Las Vegas
- Less Than Zero
- Spun

Spoiler alert!

Good, authentic movies with drugs

- Blow
- Go
- Trainspotting
- Goodfellas
- Basketball Diaries
- Drugstore Cowboy
- Ray
- Leaving Las Vegas
- Less Than Zero
- Spun
- Cocaine
- Ecstasy
- Heroin
- Cocaine
- Heroin
- Prescription opioids
- Heroin
- Alcohol
- Crack cocaine
- Methamphetamine

Good movies, inauthentic drug use

- Pulp Fiction
- Fear and Loathing in Las Vegas
- The Big Lebowski
- Boogie Nights
- Harold and Kumar Go to White Castle
- Dude, Where's My Car

Terrible movie, horribly inauthentic
drug use:

- Requiem for a Dream

Homework

- Comment on the blog, pharmacology.mit.edu
- Think about your presentation
- Review the recreational drugs chart, make sure you have some familiarity with the drug classes “Sedatives” through “Inhalants”. Memorize one example of each, and roughly what it does. Don’t worry about “Other”.

Discussion: Drug Laws

What do you know about drug laws?

Discussion: Drug Laws

Should marijuana be legal?

Discussion: Drug Laws

Should marijuana possession just warrant a ticket,
like it does now in Massachusetts?

Discussion: Drug Laws

Should medical marijuana be legal?

Discussion: Drug Laws

Agonist substitution?

Methadone clinics?

Heroin clinics?

Discussion: Drug Laws

Should salvia be illegal?

Discussion: Drug Laws

Should alcohol be illegal?

Discussion: Drug Laws

Should we lower the drinking age to 18?

Discussion: Drug Laws

Is it good that we keep pseudoephedrine cold medicines behind the counter?

Discussion: Drug Laws

Should there be any legal access at all to mind-expanding or recreational drugs, like psychedelics?
What about heroin?