**Methamphetamine Use: The formal compliment to your extensive case-based knowledge**

* Official diagnosis: amphetamine use disorder (DSM V)
* Pharmacokinetics: causes release of and blocks reuptake of **Dopamine**, NE, 5-HT.
  + Neuroimaging= changes in orbitofrontal, striatal, hippocampal regions
  + Smoked 68%, Snorted 31%, Injected 7%, Ingested 3%
    - 10X more concentrated in brain than plasma!
    - Rapid onset, t1/2 9-13 hours
* Effects
  + Short term: activation (decreased sleep, increased energy/alertness/euphoria/weight loss, dry mouth -> tooth decay, grinding teeth, N/V/D
  + Chronic: adverse mood/cognitive changes (irritability, anxiety, aggression, panic, paranoia, memory and executive dysfunction)
    - Yet this remains in dispute, often fall within normal range
* Epidemiology: fastest growing drug of abuse worldwide, M:F
  + US prevalence: decreasing since mid 2000s
  + Rapid increase in CA
    - 17%/year 1985 to 2008
    - Spreading most rapidly through low-income White and Hispanic populations living outside dense urban areas. SF Bay as prime example!
    - Smaller households, Proximity to highway systems
    - Domestic labs -> Mexican cartel importation
  + 2 % of US tries at some point

*Socially contagious epidemic of use, as if an opportunistic infection (an active drug market) was spreading through populations at risk for abuse (e.g., low-income suburban and exurban groups) and increasing risks for related sequelae (e.g., comorbid health and psychiatric disorders)*

* Comorbidity: high rates psych conditions.
  + Primary Psychotic + Mood + Anxiety Disorders.
    - 70% of patients in one study with comorbid Depression
* Mortality: 5 year rate all cause mortality 5%, Observed death rate: W 26X, M 6X
  + Cardiovascular: risk never returns to normal after cessation, chronic >>> acute
  + Increased risky sexual behavior: Meth increases sex drive!
* Pathophysiology: neurotoxic, through unclear process.
  + Increases Blood-brain permeability, unclear effect
  + ?oxidative stress, exotoxic, inflammation, mitochondrial dysfunction
* Course of Addiction: More likely to become addicted than to other types of stimulants
  + Highest risk of not completing treatment: <HS education, Younger at start, concurrent disability, higher dose use, **injection**
    - Social pressure: leading antecedent to relapse
* Assessment:
  + Characteristics: pattern, amount, recent progression, route
  + Depression, anxiety, psychosis
  + Other substances- BMJ study
  + CV (valve dz, angina, arrhythmias) and CNS disease (stroke, seizure)
  + Psychosocial factors affecting relapse

References:

[Mapping the Spread of Methamphetamine Abuse in California From 1995 to 2008](http://dx.doi.org/10.2105/AJPH.2012.300779). Paul J.Gruenewald - William R.Ponicki - Lillian G.Remer - Lance A.Waller - Li Zhu - Dennis M.Gorman - American Journal of Public Health - 2013

The methamphetamine problem in the United States. Gonzales R, Mooney L, Rawson RA. Annu Rev Public Health. 2010;31:385-98.

UpToDate**: Methamphetamine use disorder: Epidemiology, clinical manifestations, course, assessment, and diagnosis**