Inhalants

UCLA 2014 Presentation
- Part of religious ceremonies dating back to ancient times in Egypt, Babylonia, India, China
- Practiced by priestesses at the Oracle of Delphi in ancient Greece
- Cheap substitute for alcohol during The Prohibition
**Differences Types of Inhalants**

**Liquids:** paint thinners, gasoline, glue

**Sprays:** spray paint, deodorant, hair spray, vegetable oil

**Gases:** medical anesthetics (chloroform, nitrous oxide), whipped cream

**Nitrites:** found in food preservatives, room deodorizers
He used 3-M electronics cleaner
Routes of Administration

- **“Sniffing”**: Inhaling vapors from an open container.
- **“Bagging”**: Inhaling more concentrated vapors from a closed container.
- **“Huffing”**: Breathing through a solvent-soaked cloth.

- ***Quick onset: seconds.
- ***Last: Short, usually 1-5 minutes, leading to repeated use.
Petrol (Gasoline)
What is Petrol?

- **Gasoline!!**
- Mixture of toxic substances (hydrocarbons, lead) found in crude oil
- Depressant (like alcohol, other sedatives)
Chemicals In Petrol

- **Hydrocarbons:**
  - Very toxic, quickly absorbed through the lungs
  - Can contribute to brain damage

- **Lead:**
  - Metal that is taken into the body and deposited in different organs (including the brain)
  - Causes *irreversible* brain damage
Petrol sniffing History

- Documented by researchers for more than a century!
- Serious problem in remote Australian communities: Northern, Western Australia and Native Americans

Native American mother holding a photo of her 14 year old son who died after huffing glue
How It Works

- Enhances GABA (neurotransmitter) receptor function
- Decreases Glutamate (neurotransmitter) receptor function
  - Slows brain communication
Drug Effects

Short Term:
- Euphoria
- Dizziness
- Numbness
- Nausea

Long Term:
- Muscle tremor
- Seizures
- Pneumonia
- **Permanent brain damage**
- **Death**
Withdrawal

- Symptoms:
  - Irritability
  - Mood swings
  - Anxiety
  - Depression
Treatment

- In hospital:
  - Hydration
  - Seizure management
  - Chelation therapy: lowers blood lead levels (clinical trials)

- Rehab

- Counseling/therapy
Chelation Therapy

-Chelating agents can be given by mouth or injection

-Bind to the metal (i.e. lead) so it can't bind to anything else and is excreted
Why may this NOT be the best treatment?

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Opal

- Policy:
  - Introduce non-sniffable fuel
  - Opal introduced in 2005
- Contains 1/5 the toxic chemicals as ordinary petrol

***70% decline in petrol sniffing in some remote Australian communities
Legality

- Gasoline is not regulated!
- Under the Australian *Misuse of Drugs Act 1993*, it is illegal to sell/supply gasoline to anyone when it is known the person will use/sell it as a drug.
What is in a “Whippet”

- Whippets are canisters full of Nitrous Oxide ("laughing gas")
  - Ex: Whipped Cream
History of Nitrous Oxide

• Discovered in 1772, experimented in 1799 to discover effects

• Used in dentistry since 1863
Legality

• California: possessing Nitrous Oxide for intoxication purposes and being under the influence of N₂O (except when used medically) are MISDEMEANORS
How Whippets Work

• Inhale balloons full of N₂O or snort from canisters (takes seconds)
• Slow your body (depressive)
  – Increasing effect of GABA
  – Decreasing effect of NMDA
How the N₂O Takes Effect

- Nose/mouth → Lungs → Blood → Blood Brain Barrier → Brain
Short Term Effects

- Laughter
- Relaxation
- Excitement $\rightarrow$ Drowsiness $\rightarrow$ Light Headed $\rightarrow$ Upset
- Weakness
- Slow Reflexes
Long Term Effects

• Damaged airways
• Lose muscle tone
• Paralysis (damage nerves)
• Lose parts of your brain
• Can get cancer
• Can DIE from Sudden Sniffing Death Syndrome (heart fails)
Withdrawal

- N₂O is addictive and there is withdrawal
- Nausea
- Headache
- Anxiety
- Depression
- Dizziness
- Craving
Treatment

• Withdrawal effects last for weeks, DETOX
• Individual or Family or Group Therapy
• Cognitive Behavioral Therapy