

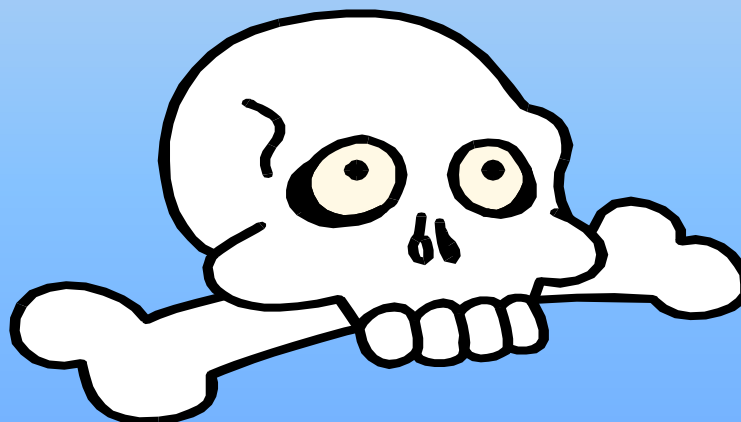
Effect of the substances to the Body

นายแพทย์ธรรุรัตน์ พุทธชาติ

ศูนย์บำบัดรักษายาเสพติดสงขลา

หัวข้อบรรยาย

- The brain and substance
- Alcohol and the body
- Amphetamine
- Caffeine
- Cannabis



- Hallucinogen
- Inhalant
- Nicotine
- Opioid
- Sedative, hypnotics, anxiolytics





Alcohol and the Body

- Group of large organic molecules with a hydroxyl group (- OH)
- Ethanol or beverage alcohol
- $\text{CH}_3\text{-CH}_2\text{-OH}$
- 10% absorb at stomach , the reminder from small intestine
- peak blood concentration 30-90 mins depending on an empty stomach

- 90% metabolized through oxidation in the liver
- 10% excreted unchanged by the kidneys and lungs
- 15 mg/dL per hour with a range of 10 to 34 mg/dL per hour
- Alc + alcohol dehydrogenase → acetaldehyde + aldehyde dehydrogenase → acetic acid



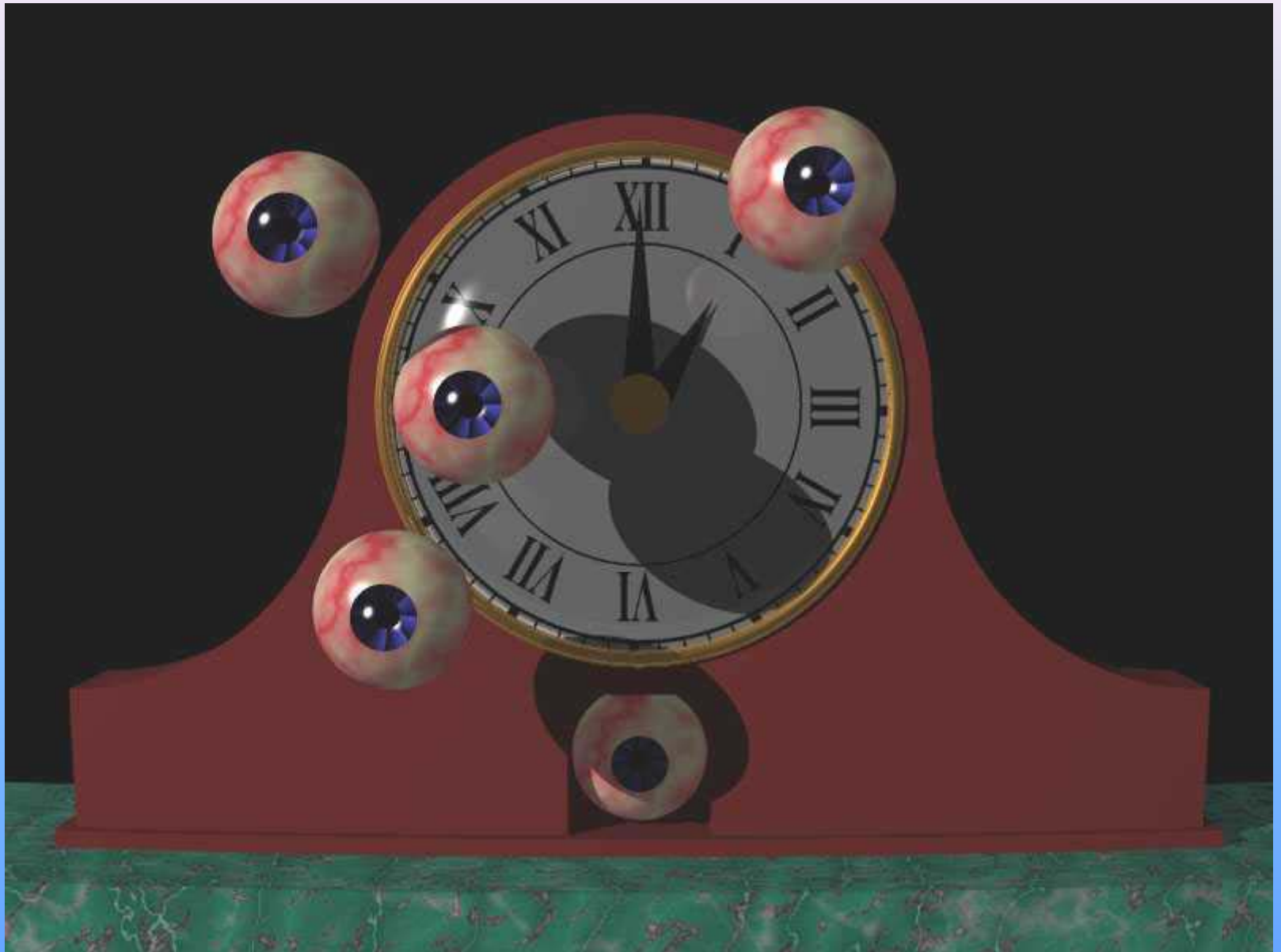


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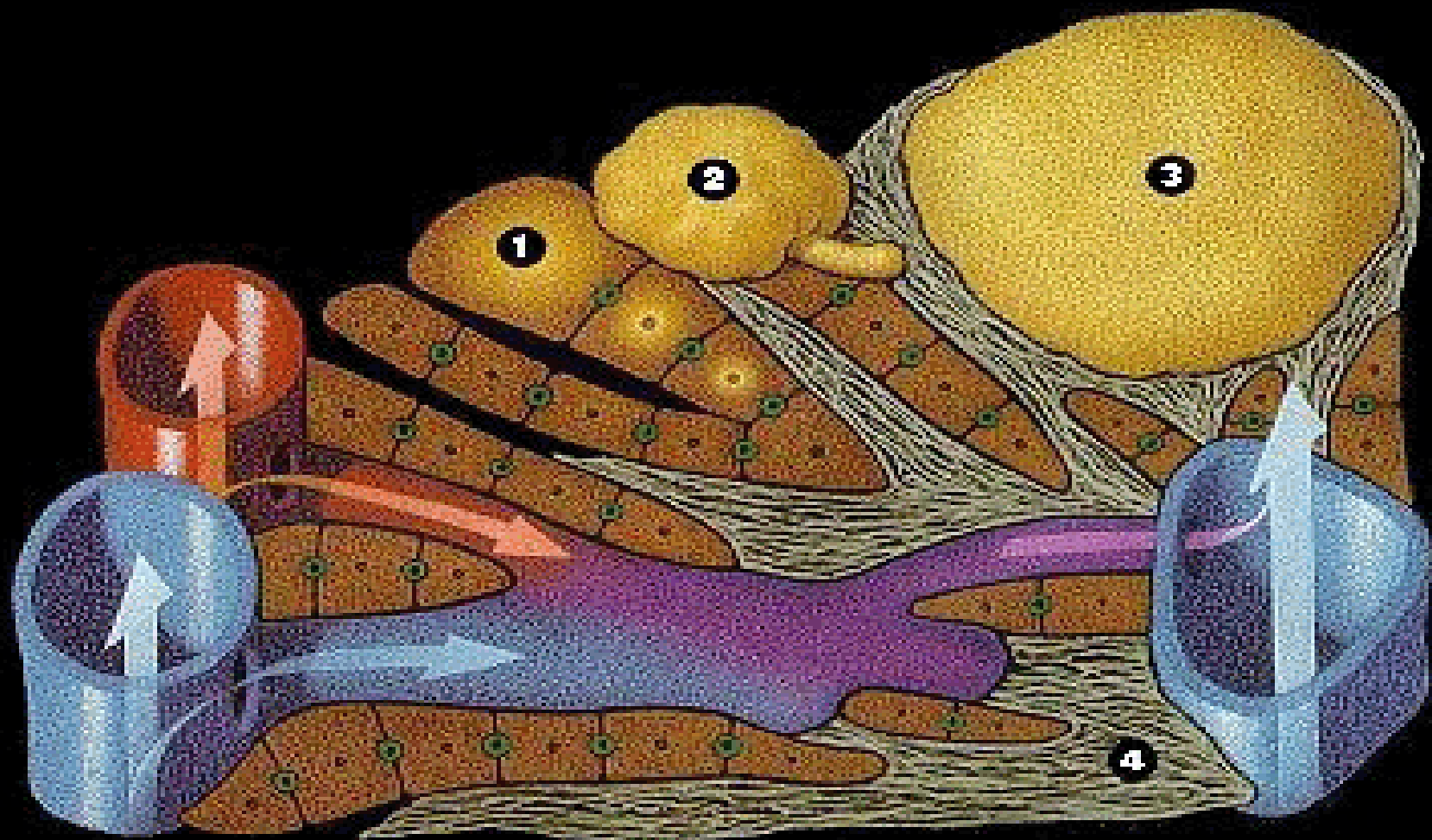
Sleep effects

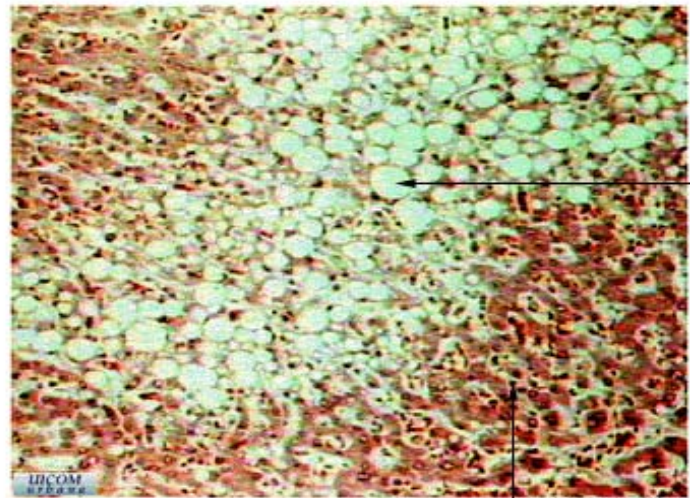
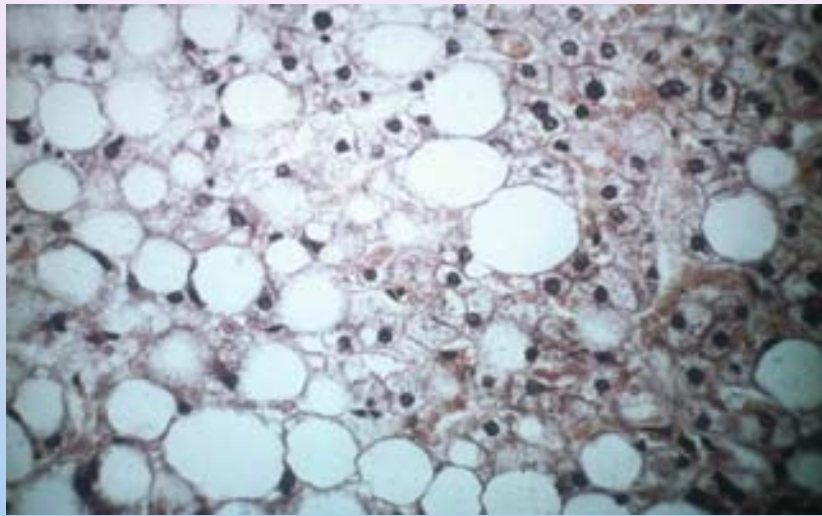
- Increase the ease of falling asleep
- Alcohol also has adverse effects on sleep architecture
- decrease the rapid eye movement sleep
- and deep sleep
- more sleep fragmentation
- the idea that drinking alcohol helps persons fall asleep is myth

Liver effects

- The major effect is liver damage
- accumulation of fats and proteins
- produce the appearance of fatty liver
- associated with alcoholic hepatitis and alcoholic cirrhosis

1. Normal pre-hepatic the breakdown of fats (1).
2. Fatty cells enlarge (2). Rupture or become cysts (3).
3. Leading to cirrhosis (4).

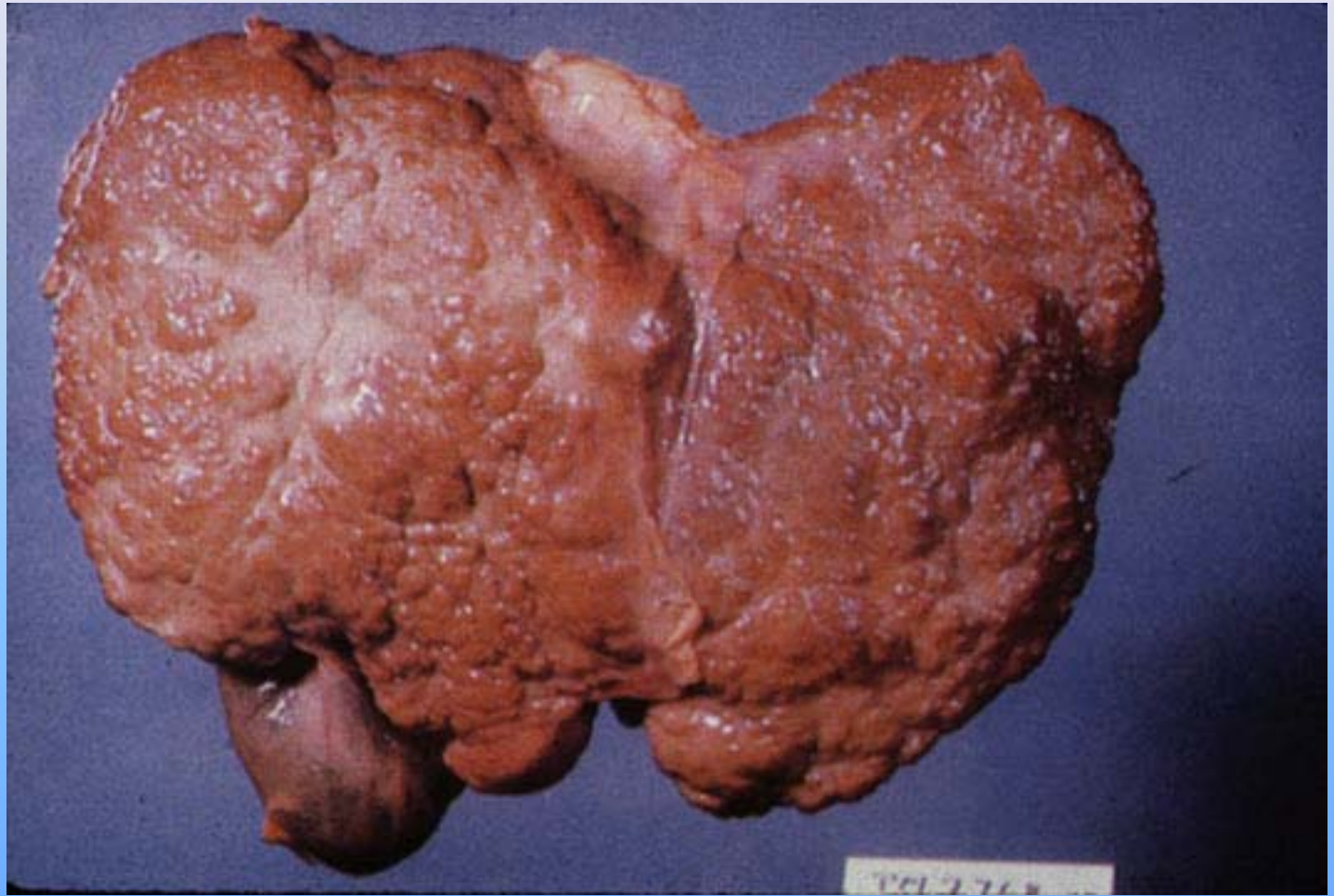




Lipid-filled hepatocytes

Normal sinusoids & hepatocytes

UICOM
M.D. 2004



Gastrointestinal System

- Esophagitis
- gastritis
- achlorhydria
- gastric ulcer
- pancreatitis
- pancreatic cancer
- vitamins B deficiencies



Other bodily systems

- Increase BP
- dysregulation of lipoprotein and triglyceride metabolism
- increase risk of myocardial infarction and cerebrovascular diseases
- increase incidence of cancer
- hypoglycemia associated with intoxication





Friends Don't Let Friends Drive Drunk







AMPHETAMINE

amphetamines : amphetamine : amphetamine : amphetamine : amphetamine

For 200 million of people in the world, amphetamine is what keeps them going and why people take them.

Amphetamine

- Life threatening
- myocardial infarction
- severe hypertension
- cerebrovascular disease
- ischemic colitis
- twitching to tetany to seizure to coma and death are associated with high dose of amphetamine





- Intravenous use associated with HIV, hepatitis, lung abscesses, endocarditis, and necrotizing angitis
- little or did not care about safe sex



- Non life threatening
- flushing
- pallor
- cyanosis
- fever
- headache
- tachycardia



- Palpitation
- nausea, vomiting
- bruxism
- shortness of breath
- tremor and ataxia
- In pregnant women induce baby with low birth weight, small head circumference, early gestational age, and growth retardation



Caffeine

- Half life is 3 - 10 hours
- peak concentration 30 - 60 mins
- genetics and caffeine use
- caffeine act as positive reinforce at low dose (100 mg)
- decrease cerebral blood flow with vasoconstriction



Sign and symptoms

- Increase alertness
- diuresis
- cardiac muscle stimulation
- increase intestine peristalsis
- increase gastric acid secretion
- increase BP



Adverse effect



- Cardiac arrhythmia
- fibrocystic disease
- birth defects
- no solid data link caffeine intake with cancer



Cannabis



- With smoking euphoric effect appear with minutes
- peak about 30 mins to 2 - 3 hours
- some motor and cognitive effects last 5 to 12 hours



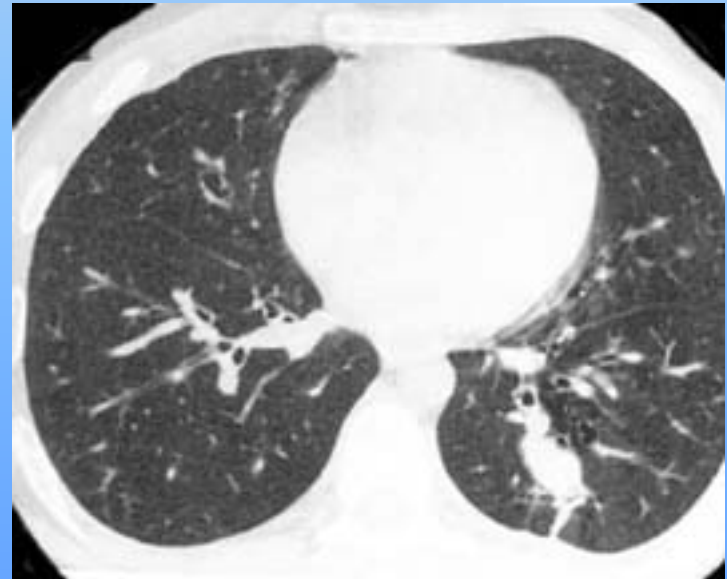
Common physical effect

- Dilatation of conjunctival blood vessels
- mild tachycardia
- increase appetite
- dry mouth
- lack of effect to respiratory rate



Serious potential adverse effects

- Increase inhaling the carcinogen hydrocarbon cause chronic respiratory disease and lung cancer
- cerebral atrophy
- seizure
- chromosomal damage, birth defects



- impaired immune reactivity
- alternation of testosterone concentrations
- Dysregulation of menstrual cycles

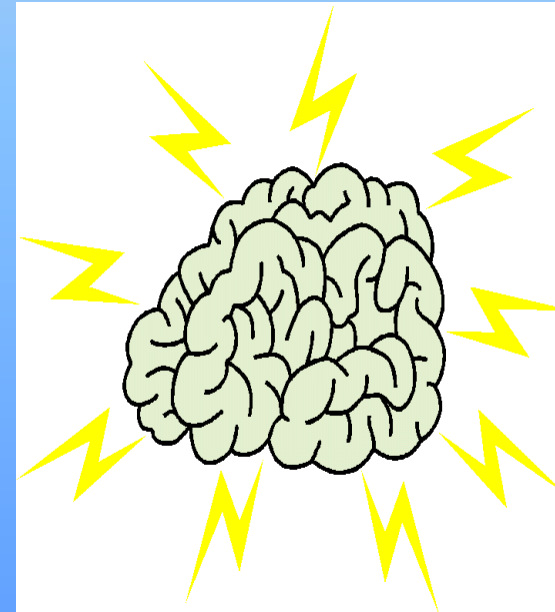




DELIRIUM

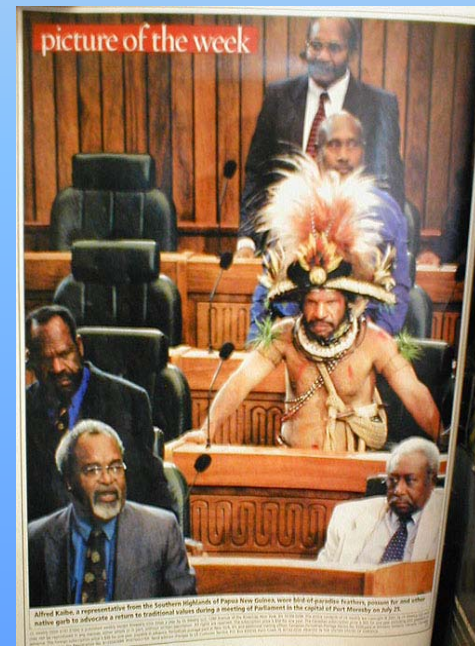
Hallucinogen

- Psilocybin, mescaline, dimethyltryptamine(DMT), lysergic acid diethylamine
- well absorbed after oral ingestion
- rapid tolerance after 3-4 days of continuous use
- rapid tolerance reverse in 4-7 days
- Onset with hours
- peaks in 2 - 4 hours and last to 8 - 12 hours



Clinical feature

- Sympathomimetic effects
- death caused by cardiac or cerebrovascular pathology related to hypertension or hyperthermia
- neuroleptic malignant syndrome
- physical injury
- perceptions become unusually brilliant and intense
- synesthesia





Inhalant

- Rapid absorbed through the lungs and rapidly delivered to the brain
- effect appear within 5 mins and may last for 30 mins to several hour
- concentration may increase if combined with alcohol used
- excreted unchanged by the lungs remainder metabolized by the liver

Clinical features

- Initial dose
- feeling of euphoria, excitement and pleasure floating sensation
- High dose
- slurred speech
- decrease speed to talking
- long term use
- irritability, impaired memory

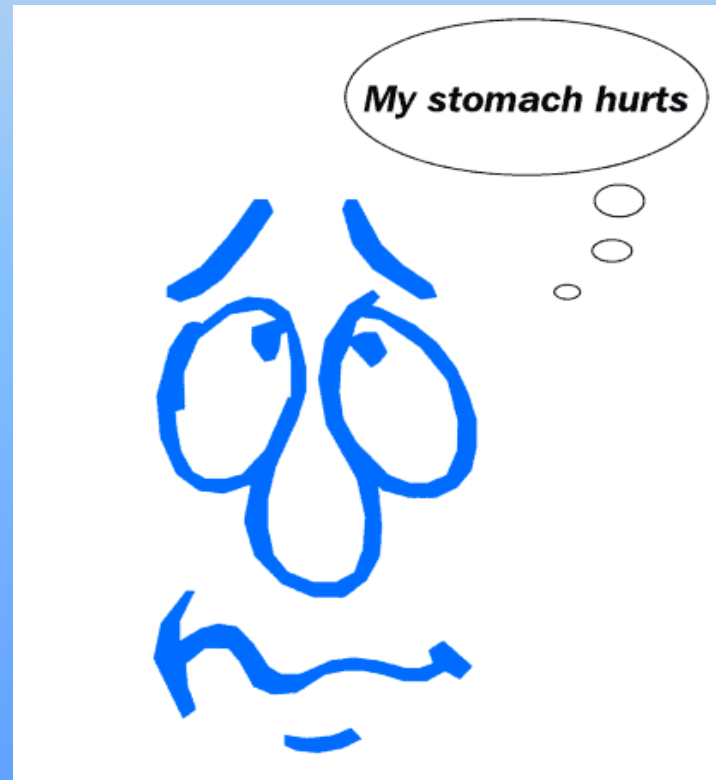


Adverse effects

- Death : respiratory depression, cardiac arrhythmias, asphyxiation, aspiration of vomitus, or accident or injury
- irreversible hepatic or renal damage
- permanent muscle damage from rhabdomyolysis
- brain atrophy
- temporal lobe epilepsy
- decrease IQ



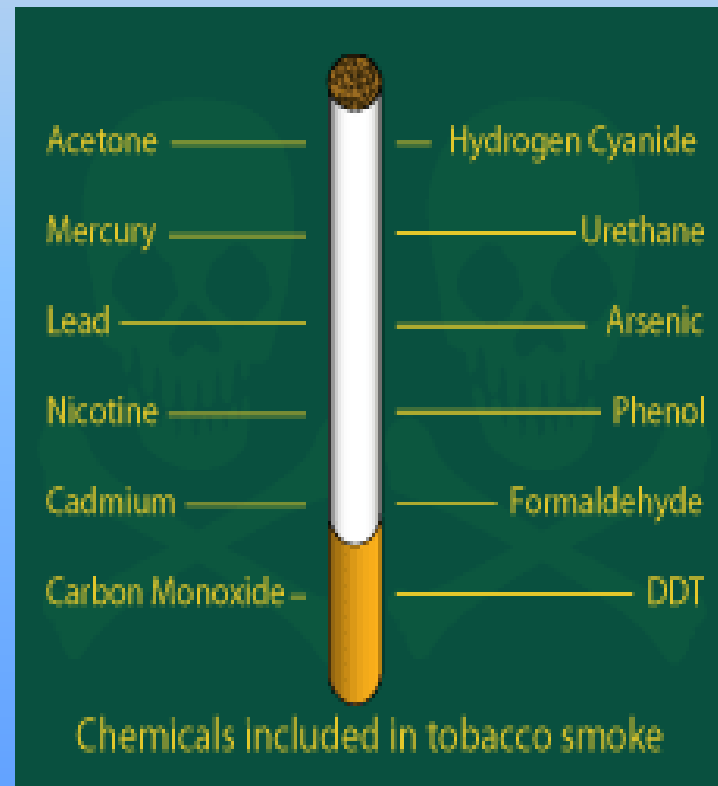
- Cardiovascular and pulmonary symptoms (chest pain and bronchospasm)
- gastrointestinal symptoms
- fetal development

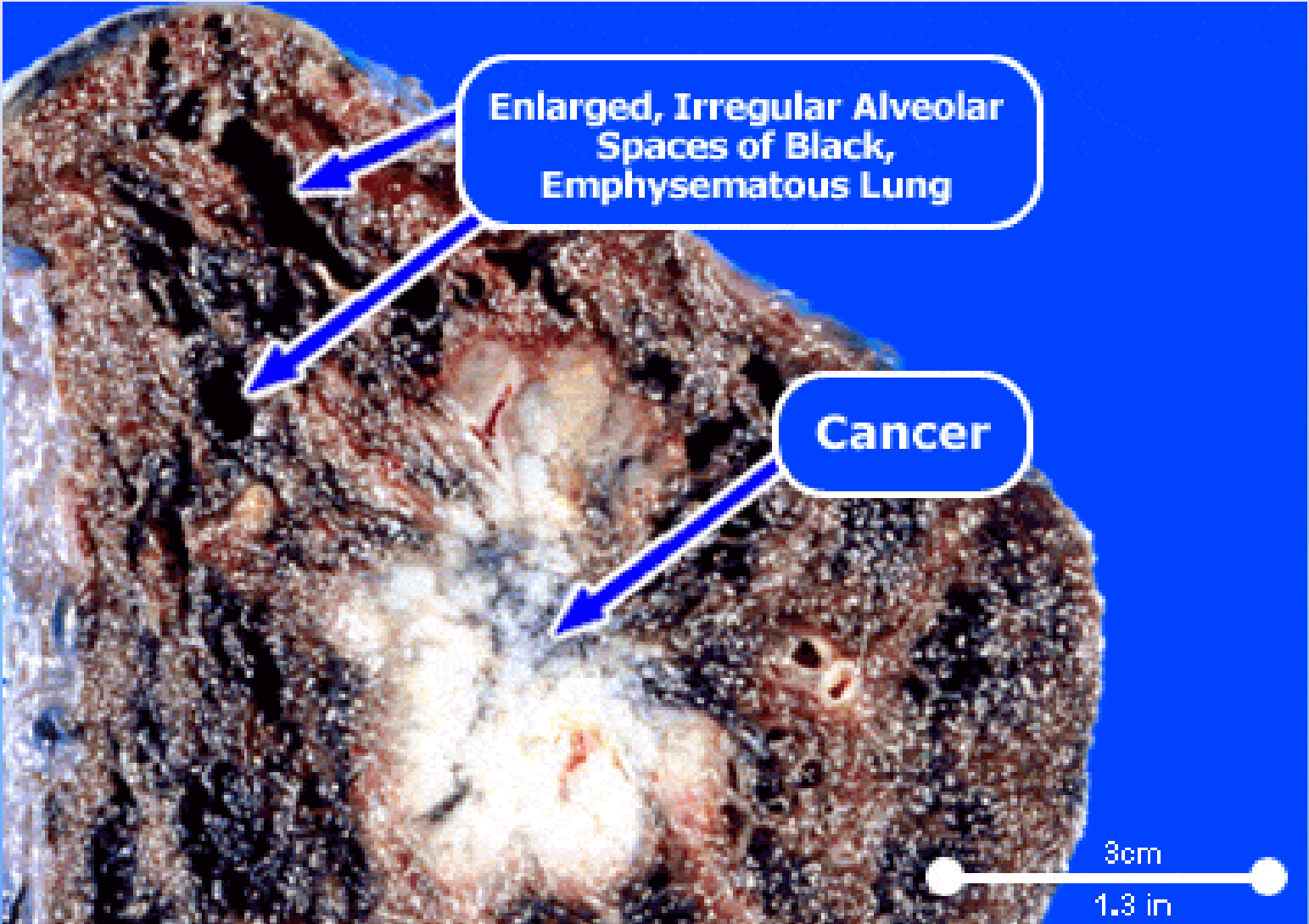




Nicotine

- 25 % of inhaled nicotine reached in blood stream
- reaches in the brain in 15 sec
- half life is 2 hours
-





Enlarged, Irregular Alveolar Spaces of Black, Emphysematous Lung

Cancer

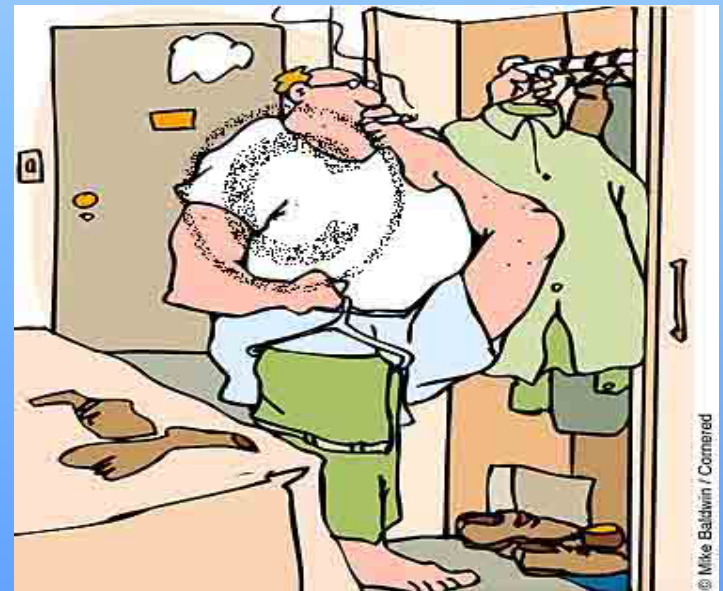
3cm

1.3 in



Clinical features

- Produced improve in attention, learning, reaction time and problem solving ability
- decrease tension and lessens depressive feeling
- increase cerebral blood flow
- skeletal muscles relaxant



His feet were killing him.

Adverse effects

- 60 mg in adult cause death from respiration paralysis
- nausea , vomiting
- salivation
- pallor (peripheral vasoconstriction)
- weakness abdominal pain (increase peristalsis)
- diarrhea
- dizziness



- Headache
- increase BP
- tachycardia
- tremor
- cold sweats



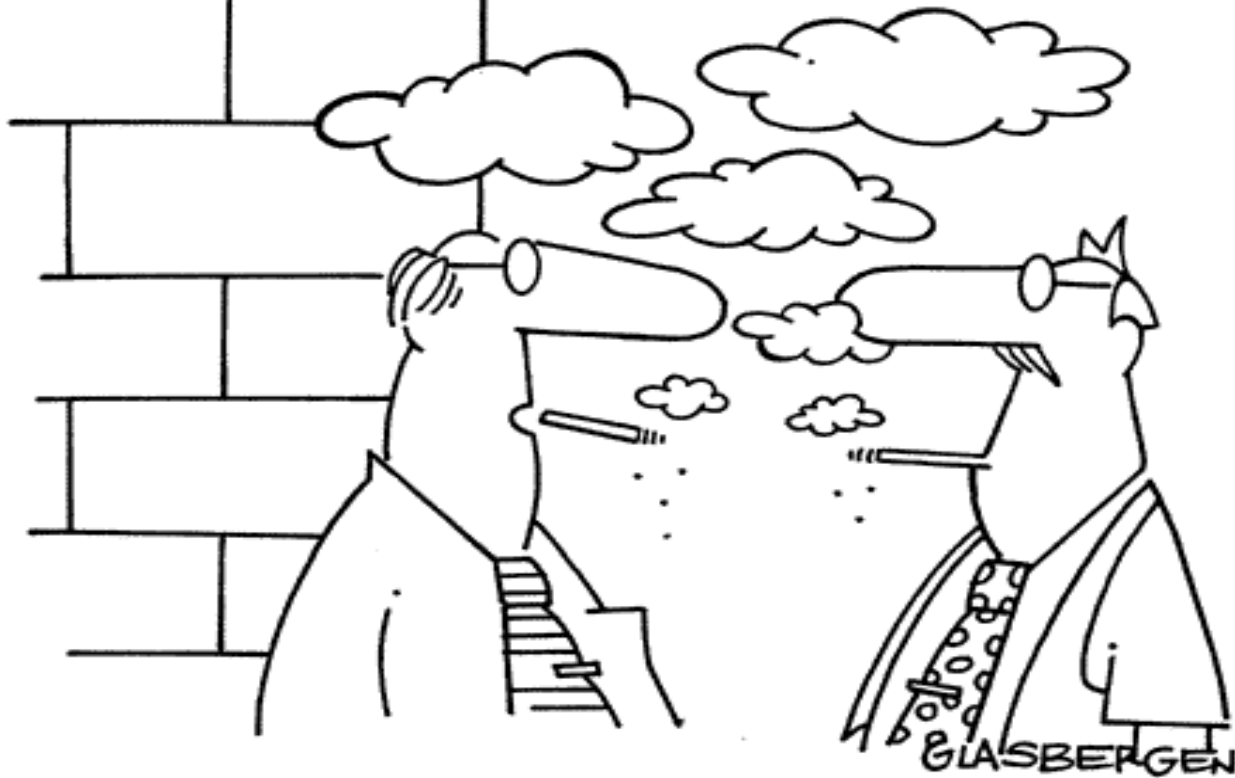
Toxicity

- Inability to concentrate
- confusion
- sensory disturbance
- decrease in rapid eye movement sleep
- low birth weight and persistent pulmonary hypertension





Patrick McGee, 14, holds his nose and sucks air through a straw to see what breathing is like for someone with smoking-damaged lungs during yesterday's "Smoking: Don't Go There" program at Randolph Community Middle School. (LISA BUL photos/The Patriot Ledger)

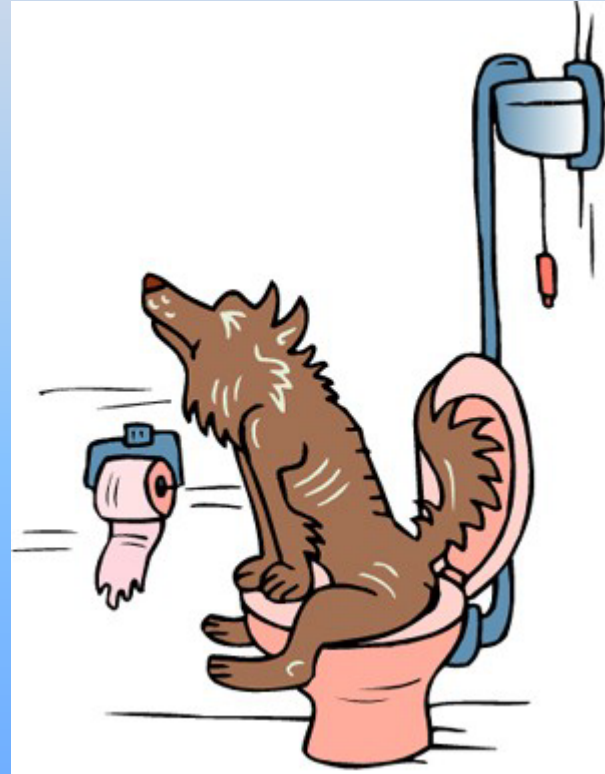


“We make clouds, clouds make rain, and rain spoils ball games. *That’s* why people don’t like smokers!”



Opioid

- Physical effect
- respiratory depression
- pupillary constriction
- smooth muscle contraction
- constipation



Adverse effects

- Blood transmission of hepatitis and HIV infection
- idiosyncratic allergic reaction , anaphylactic shock, pulmonary edema
- opioid overdose
- Induced Parkinsonism
(N-methyl-4-phenyl-1,2,3,6-tetrahydropyridine, MPTP)

C-IV

PHARMACIA & UPJOHN

P. 2294



29* 0.25 mg



55* 0.5 mg



90* 1 mg



94* 2 mg

Xanax (Alprazolam)

Photo from the Physicians Desk Reference





Denise ©97

Sedative-, Hypnotic-, or Anxiolytic

- Benzodiazepine
- barbiturates
- barbiturates like substance

Thank you

