

CANNABINOIDS

- Parts of *Cannabis sativa* plant
- Tetrahydrocannabinol (**THC**) is major active ingredient
- Marijuana joints contain about 75mg THC, which is rapidly absorbed into blood.



- THC is metabolized to **11-OH-THC**, which is metabolized to **9-carboxy-THC** (*what is tested for in urine*)
- Blood test is best for testing **current** impairment
- Urine test for past 7-30 days use
- Blood test for past 14 days use
- Hair test for past 90 days use

PSA: if you smoke marijuana, please tell your anesthesia team.

They're not going to rat you out. They're going to adjust your anesthesia dosage so you don't WAKE UP IN THE MIDDLE OF SURGERY.



hopefullyshecannotseethis

Some anesthesiologists will refuse to put you under if you've smoked cannabis within the past 24 hours – and let's be clear, this is NOT because they're morally against it – it's because THC and anesthetic react in unpredictable ways and waking up in the middle of surgery is slightly less of a concern than SLIPPING INTO A COMA OR DYING.

So there's that.



cliffnotesofanerd

Yes, this too. Should have included this. It just wasn't on my mind when I made the original post because my mind was full of NOPE NOPE NOPE after, you guessed it, one of my patients woke up in the middle of her surgery because she didn't tell her anesthesia team she used marijuana.

WHAT MARIJUANA DOES TO YOUR BODY AND BRAIN

It can mess with your memory by changing the way your brain **processes information**.

Since weed makes blood vessels expand, it can **turn your eyes red**.

Extended, **heavy use can be addictive** or cause dependence.

It may give you the munchies. A recent study in mice suggests that pot effectively **flips a circuit** in the brain that's normally responsible for quelling the appetite.

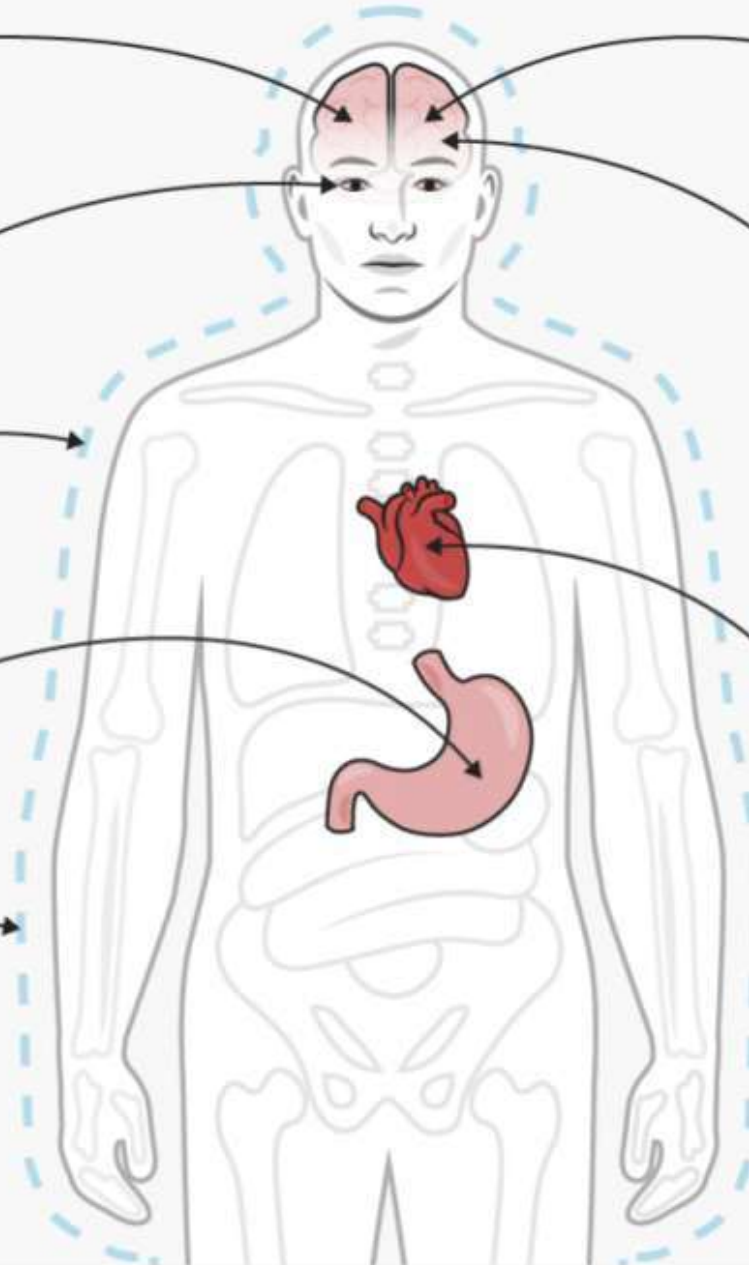
It may **throw off your balance**, since it influences activity in two brain areas which **help regulate** balance, coordination, reaction time, and posture.

It can make you feel **euphoric**, since THC causes brain cells to release the feel-good chemical dopamine.

Since it affects brain areas that process what we see and hear, pot can make you **hallucinate**.

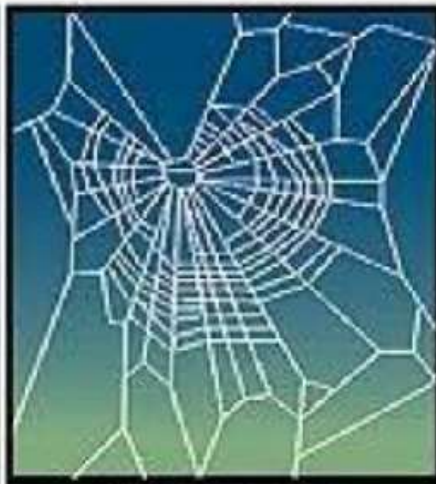
Within minutes of inhaling marijuana, your heart rate can **increase** by 20-50 beats per minute. This can last from 20 minutes to 3 hours.

It can make you feel **anxious or panicky**, a side-effect that's more common when someone takes too much.





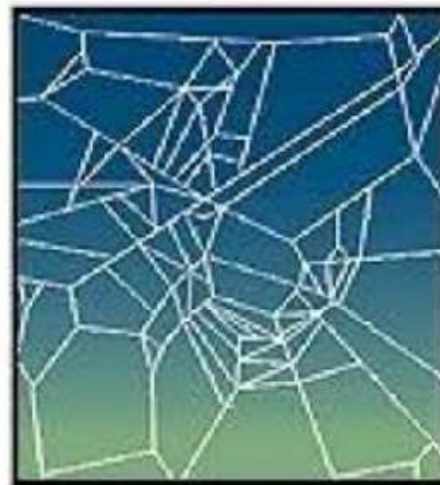
Normal (no chemical)



Marijuana



Banzedrine



Caffeine



Chloral Hydrate

Webs of spiders after exposure to psychotropic drugs.

Rx MATERIALS

Many ppl die from ODing of medicinal agents *(suicide or accident)*

Accident? Wrong drug, wrong dose, or buildup due to organ damage

- Toxicology labs are capable of recognizing a large variety of Rx drugs



NON- Rx AGENTS

Many deaths due to non-medicinal
and are encountered in
environment:

**Alcohol, sleeping pills, cyanide, CO,
and hydrocarbons**



ALCOHOLS

Ethanol is beverage alcohol

- Enter membrane of nerve cells, alters normal nerve-to-nerve conduction
(causes behavioral changes)
- Within liver, 90% of alcohol is converted to **acetaldehyde and acetic acid**, the rest is eliminated by sweat or urine



WHAT ALCOHOL DOES TO YOUR BODY AND BRAIN

As a depressant, it puts the brakes on our brain's "excitatory" messengers and **amplifies our "inhibitory" ones, making us feel sluggish.**

Within minutes, it starts to **slow our thinking, breathing, and heart rate.** Overdoing it can kill.

In general, the liver can only process 1 oz of liquor per hour. Drinking more than that can **dangerously and swiftly raise your blood alcohol content.**

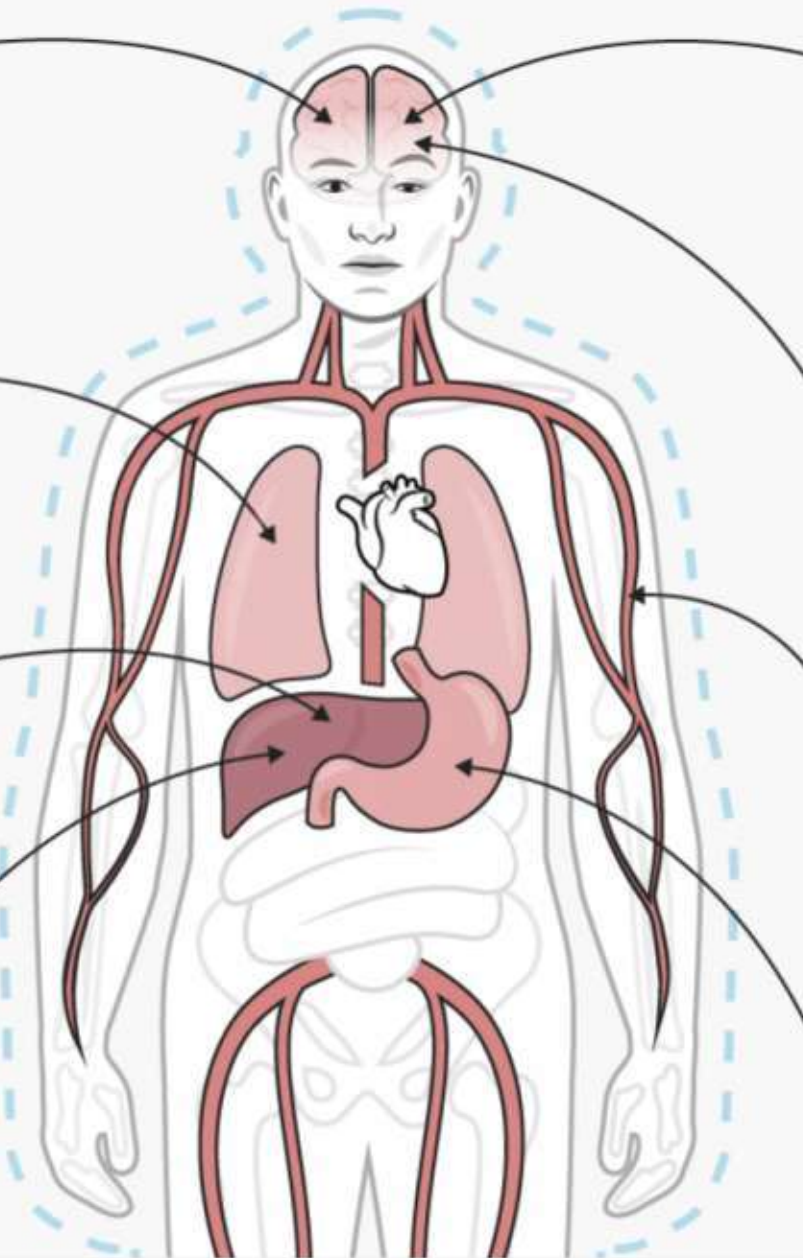
More than **90% of people who drink heavily develop fatty liver disease,** which can cause fatigue, weight loss, and pain.

It raises the level of **feel-good chemical dopamine** in the brain's reward center, tricking you into thinking you feel better.

Too much, too often can **damage the links between neurons** and interfere with how your brain processes information.

You may feel its effects in minutes, but the **level of alcohol in your blood won't peak for another 40-90 minutes.**

In most people, the body will **absorb alcohol faster** if it's bubbly or if your stomach is empty.



A Crazy Number Of Kids Are Getting Sick From Drinking Hand Sanitizers

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A [new report](#) by the Centers for Disease Control and Prevention (CDCP) found that over a three-year period, 70,669 kids in the US aged 12 or under fell ill as a direct result of hand sanitizer. The data comes from reports given to Poison Control centers across the US between 2011 and 2014. The vast majority of cases were due to kids drinking it, with over 62,000 cases, which the CDCP says is probably because the added fruity scent appeal to children. Over 92 percent of the cases were also in relation to alcohol-based sanitizers. These types of hand sanitizers, as opposed to the other non-alcohol based ones, also came with the nastiest side effects.

As you can imagine, the results of drinking something designed to scourge bacteria isn't too healthy for your insides. Many of the kids who had a run-in with the hand sanitizers experienced vomiting, irritation, pain, and red eyes. Five kids even fell into comas, three had seizures, two had respiratory depression, and two experienced hypoglycemia.

Out of all the cases, 944 said they had ingested it intentionally. The huge bulk of these (906 cases) came from the older kids in the age 6-12 years bracket, which the report says is an indicator "that older children might be deliberately misusing or abusing alcohol hand sanitizers."

Kids today, eh? A few years ago there were reports of a "growing trend" of teenagers getting drunk on hand sanitizer. [Buzzfeed News](#) reported as far back as in 2012 that there have been numerous accounts of teenagers across the US ending up in A&E after drinking hand sanitizer, attempting to get a buzz from the alcohol. At the time, Albuquerque Police Department Deputy Chief Paul Feist also released a statement saying adolescents were mixing the hand sanitizers with alcohol-based mouthwash to make a "strong cocktail."



By Tom Hale

06/03/2017, 14:33

Mens B.A.L. Estimation Chart

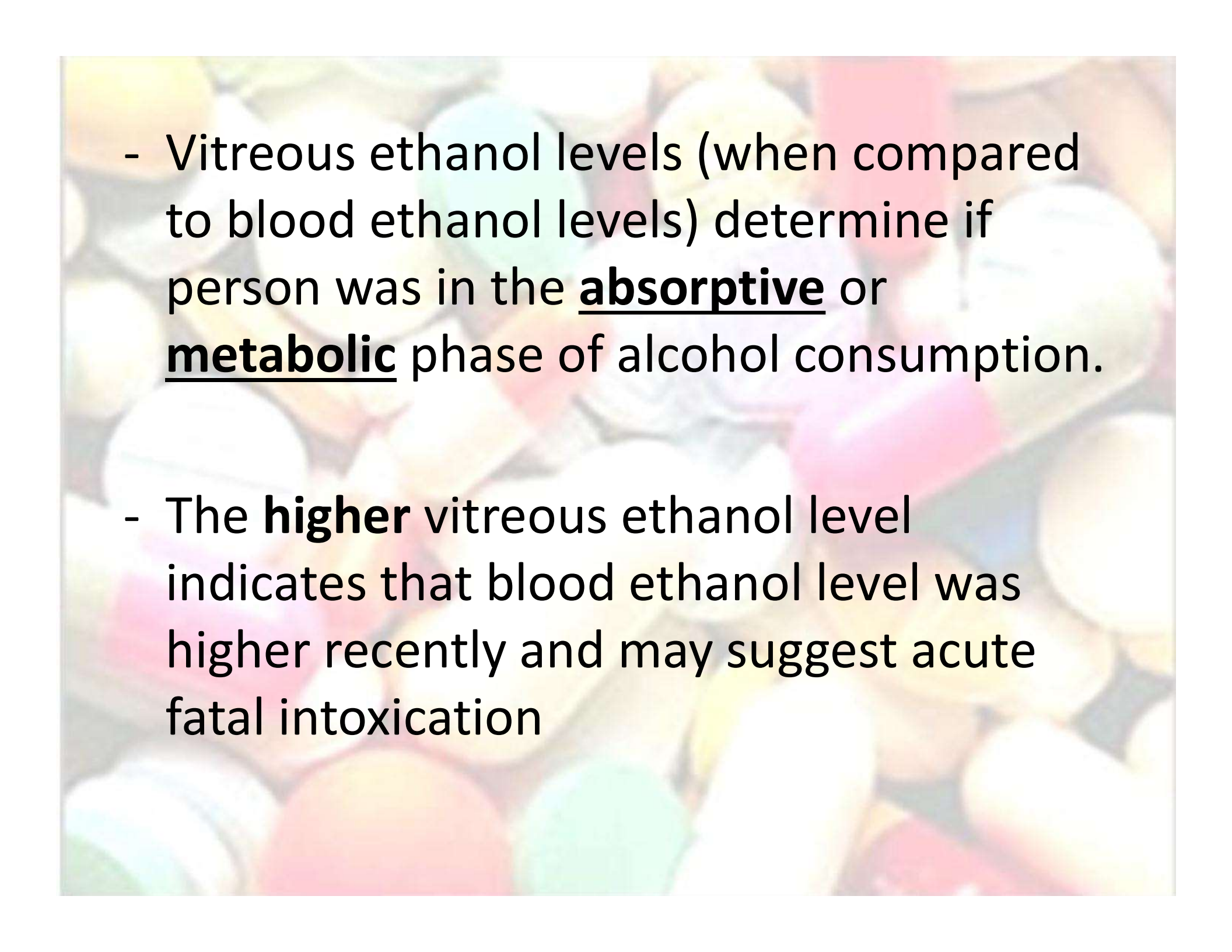
Drinks	100	120	140	160	180	200	220	240	
0	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
1	.04	.03	.03	.02	.02	.02	.02	.02	Driving Skills Impaired
2	.08	.06	.05	.05	.04	.04	.03	.03	
3	.11	.09	.08	.07	.06	.06	.05	.05	
4	.15	.12	.11	.09	.08	.08	.07	.06	
5	.19	.16	.13	.12	.11	.09	.09	.08	
6	.23	.19	.16	.14	.13	.11	.10	.09	Legally Intoxicated
7	.26	.22	.19	.16	.15	.13	.12	.11	
8	.30	.25	.21	.19	.17	.15	.14	.13	
9	.34	.28	.24	.21	.19	.17	.15	.14	Possible Death
10	.38	.31	.27	.23	.21	.19	.17	.16	

1 drink equals roughly 1 shot, 1 12oz. beer, or 1 5oz. glass wine.

Womens B.A.L. Estimation Chart

Drinks	100	120	140	160	180	200	220	240	
0	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
1	.05	.04	.03	.03	.03	.02	.02	.02	Driving Skills Impaired
2	.09	.08	.07	.06	.05	.05	.04	.04	
3	.14	.11	.10	.09	.08	.07	.06	.06	
4	.18	.15	.13	.11	.10	.09	.08	.08	
5	.23	.19	.16	.14	.13	.11	.10	.09	
6	.27	.23	.19	.17	.15	.14	.12	.11	Legally Intoxicated
7	.32	.27	.23	.20	.18	.16	.14	.13	
8	.36	.30	.26	.23	.20	.18	.17	.15	
9	.41	.34	.29	.26	.23	.20	.19	.17	Possible Death
10	.45	.38	.32	.28	.25	.23	.21	.19	

1 drink equals roughly 1 shot, 1 12oz. beer, or 1 5oz. glass wine.

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- Vitreous ethanol levels (when compared to blood ethanol levels) determine if person was in the absorptive or metabolic phase of alcohol consumption.
 - The **higher** vitreous ethanol level indicates that blood ethanol level was higher recently and may suggest acute fatal intoxication

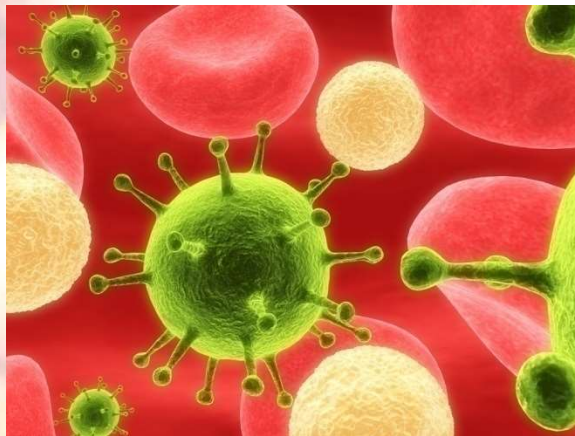


Low-risk drinking limits		MEN	WOMEN
	On any single DAY	No more than 4  drinks on any day	No more than 3  drinks on any day
	** AND **		
Per WEEK	No more than 14  drinks per week	No more than 7  drinks per week	

To stay low risk, keep within BOTH the single-day AND weekly limits.



- If ethanol is detected in blood **but NOT** in urine or vitreous fluid, it indicates that postmortem ethanol synthesis has occurred.



CARBON MONOXIDE

- Causes more fire deaths than thermal injury
- Faulty heaters, indoor fires, and whenever carbon is not fully oxidized to CO_2 , is where CO is most produced



REASONS CO IS TOXIC

- Binds hemoglobin better than oxygen
- Binds to myoglobin and to cytochrome oxidase
(aerobic respiration)

CO bound hemoglobin = **carboxyhemoglobin**

Persons whose blood carboxyhemoglobin levels exceed 60% are at great risk of death

Signs of Carbon Monoxide Poisoning



Headaches



Nausea



Dizziness



Breathlessness



Collapse



Loss of
Consciousness

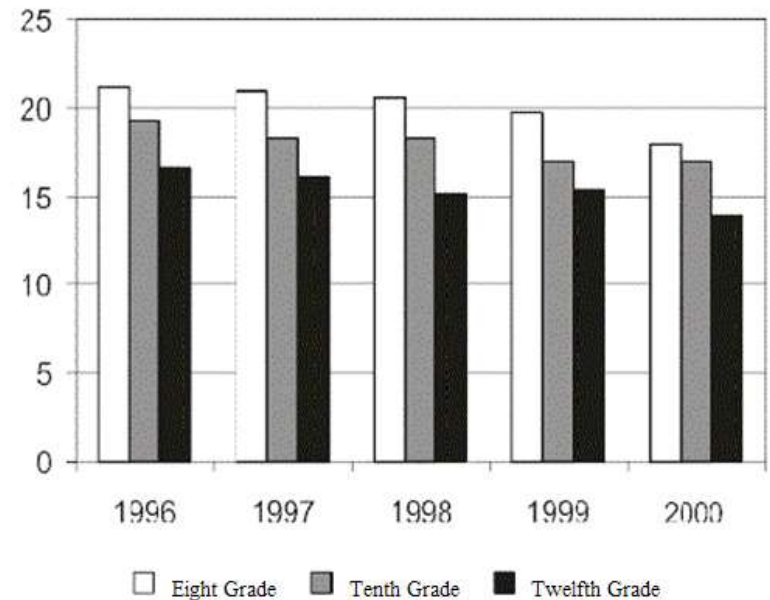
HYDROCARBONS

Death is likely due to oxygen deprivation, or accident after effect of hydrocarbons on brain

~22% die 1st time they try it



Percentage of Lifetime Abuse of Inhalants



HUFFING (hydrocarbons)

- When huffing doesn't kill quickly – it damages over time (especially the brain)
 - Memory loss
 - Impaired concentration
 - Hearing loss
 - Loss of coordination
 - Permanent brain damage
- Signs of abuse: nausea, lack of appetite, weight loss, nervousness, restlessness, and outbursts of anger

