

Alcohol in the Body

Impaired Driving and Ignition Interlock Laws Summit

Cody Stewart

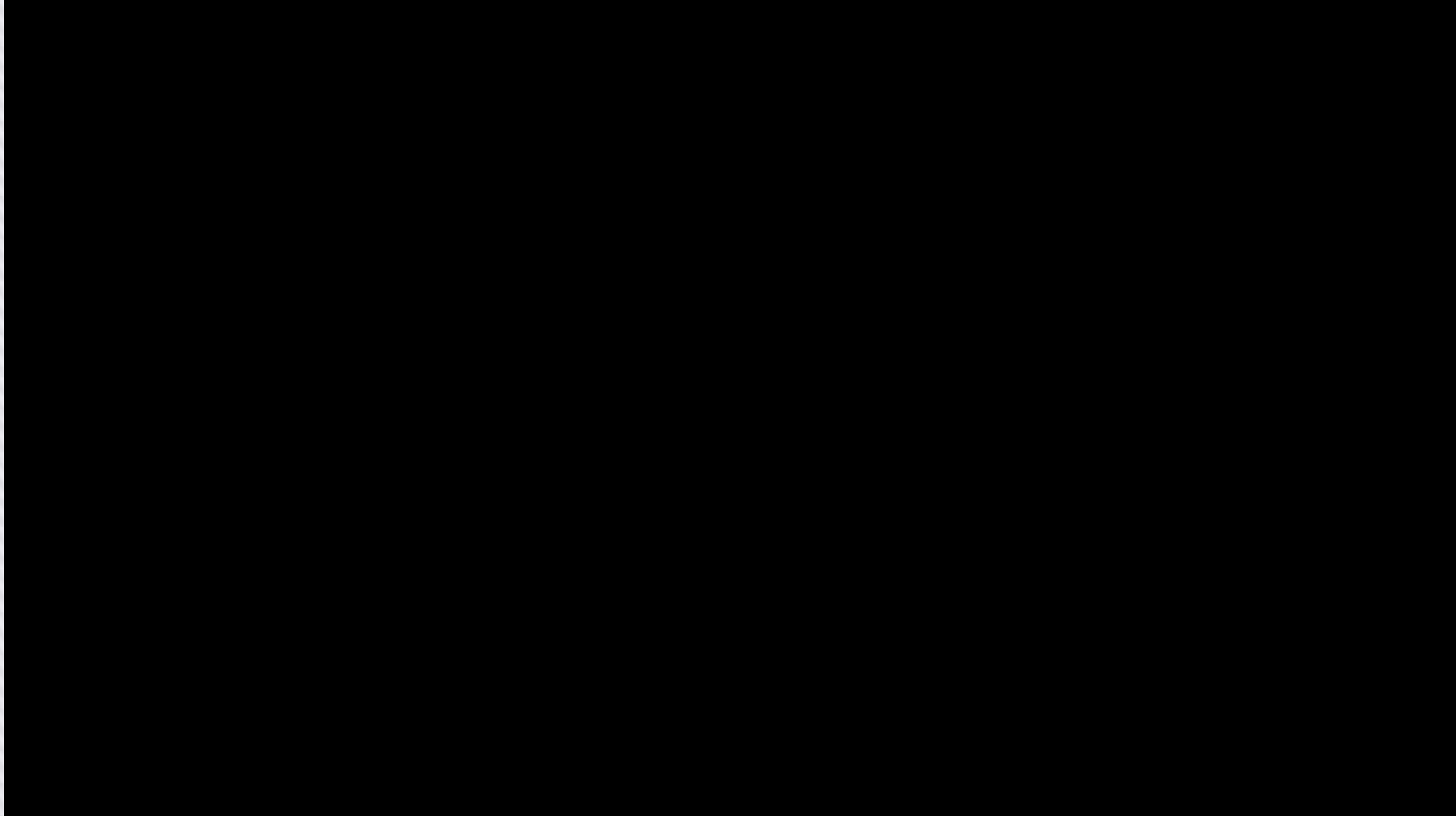
Texas A&M Transportation Institute

Alcohol and the IID

- Known as ethyl alcohol or ethanol
- Found in beer, wine, or liquor
- Is a CNS depressant



Consumption



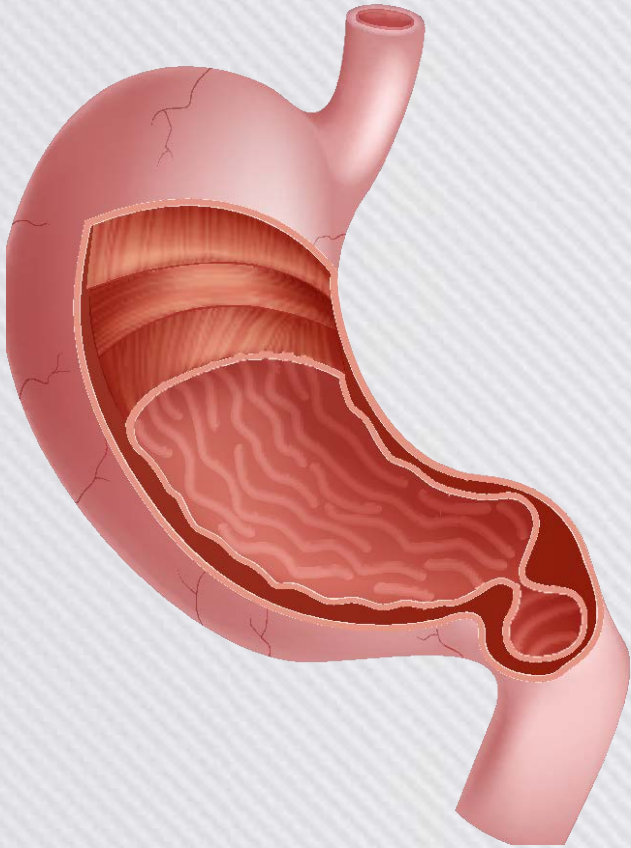
Consumption



A woman has been indicted on negligent homicide charges for allegedly giving her husband a sherry enema that killed him. Michael Warner, 58, died last May after the enema caused his blood-alcohol level to rise to .47 percent.

"That's extremely high," Detective Lt. Robert Turner said. "You're either going to be in the hospital or the funeral home with that much alcohol."

Absorption



- Once alcohol gets into the stomach, it moves into the blood by absorption via the walls of the stomach
- Drinking on an empty stomach creates an ideal circumstance for rapid absorption
- When alcohol gets into an empty stomach, about 20% will pass directly through the walls of the stomach to the blood
- The remaining 80% will move to the small intestine, where it will be absorbed into the blood
- However, when the brain senses food in the stomach, it cuts off passage to the small intestine, slowing absorption into the blood

Distribution

- Alcohol has an affinity for water, and will move to areas with the highest water concentration
- This is why the brain receives a substantial share of alcohol



Alcohol Effects – Men Vs. Women

**Typical male body is
about 68% water**



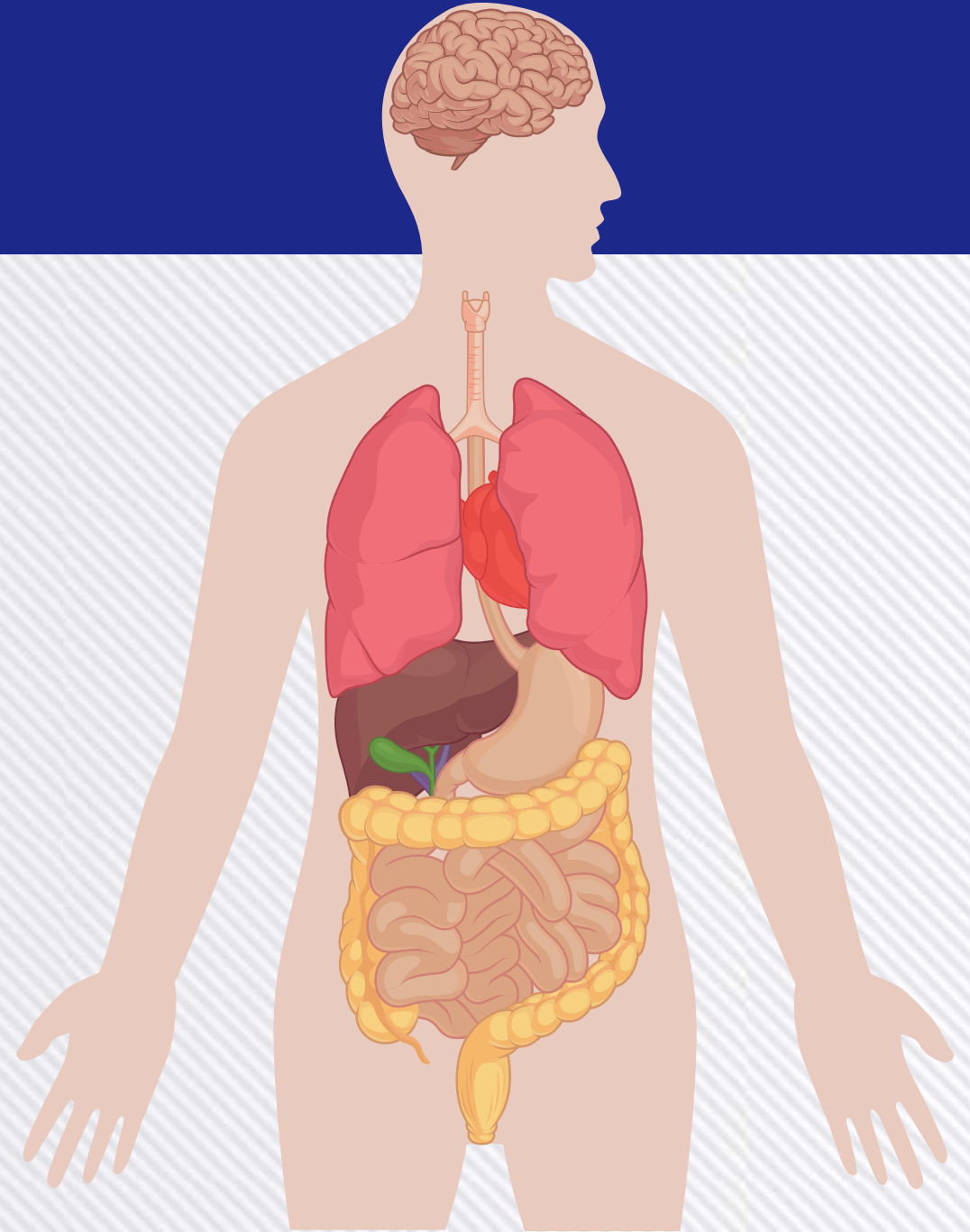
**Typical female body is
about 55% water**

**Women are generally
physically smaller than
men**

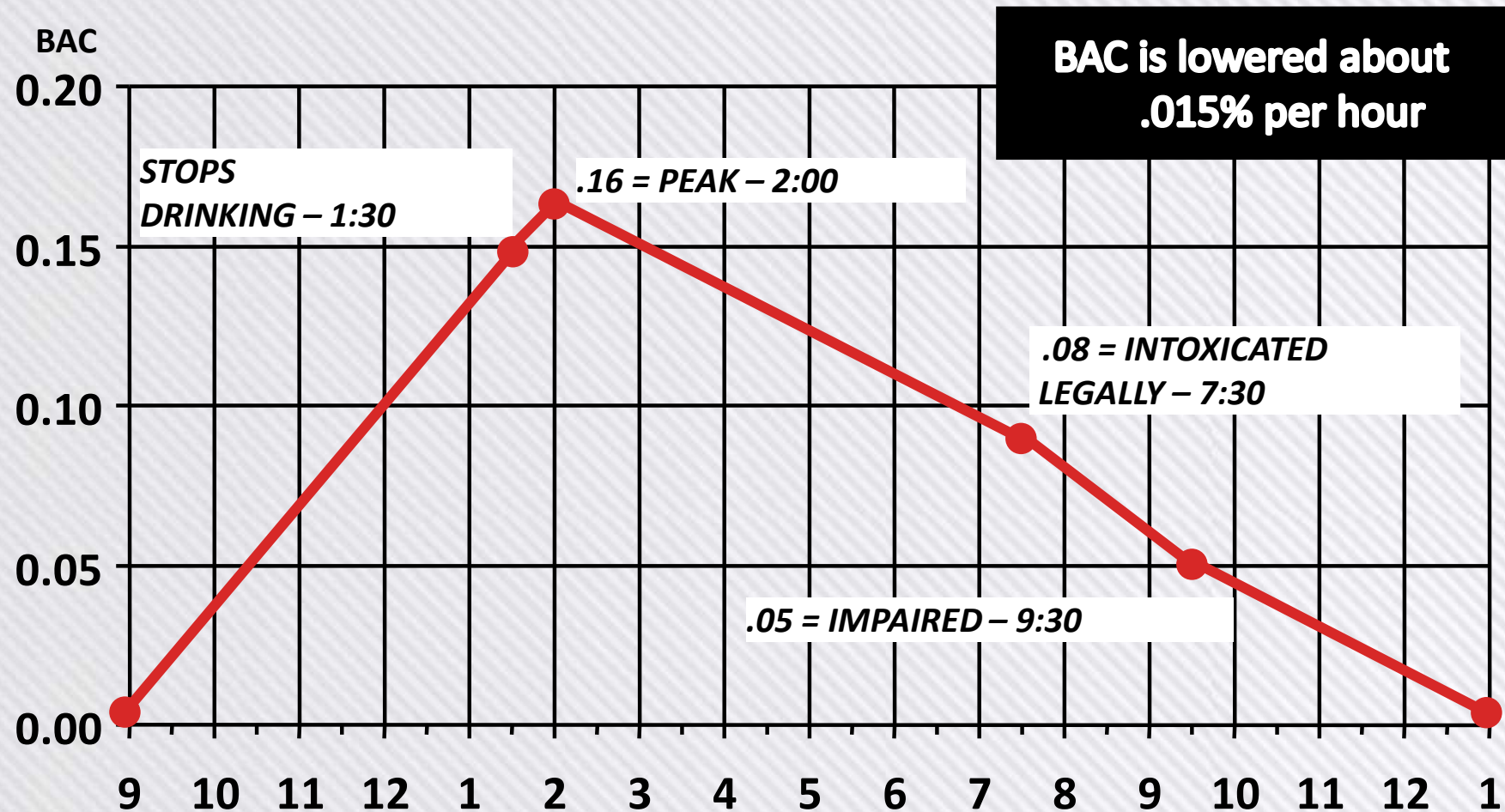
**Effects of alcohol are
generally compounded in
women**

Elimination

- As soon as alcohol enters the blood, the body starts to eliminate it.
- About 2 – 10% will be eliminated through breath, urine, sweat, & tears
- The rest will be metabolized by the body in the liver



Elimination Rate



Alcohol Consumption by Country

Rank		Country	L/Person/Year	BAC Law
1		Belarus	17.6	0.03
2		Moldova	16.8	0.03
3		Lithuania	15.5	0.04*
4		Russia	15.1	0.036
5		Romania	14.4	0
6		Ukraine	13.9	0.02
7		Andorra	13.8	0.05
8		Hungary	13.3	0
9		Czech Republic	13	0
10		Slovakia	13	0
25		United Kingdom	11.6	0.08

Alcohol Consumption in the US

Time for a stiff drink

Average number of drinks per capita consumed in the past week, by decile, among adults aged 18 and over.

30 percent of American adults don't drink at all. Another 30 percent consume, on average, less than one drink per week.

On the other hand, the top 10 percent of American adults - 24 million of them - consume an average of 74 drinks per week, or a little more than 10 drinks per day.



IID Costs vs. Alcohol Costs



IID Costs

- Installation: \$70 - \$150
- Monitoring and calibration cost: \$60 - \$80 per month
- Total IID costs: <\$3 a day

Alcohol Costs

- 6-pack of Bud Light: \$7
- Bottle of wine: \$9
- Night out: ??

Contact Information

Cody Stewart

C-Stewart@tti.tamu.edu

979-317-2506