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Postmortem Ethanol Testing


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Disclosures

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Learning Objectives

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POSTMORTEM DISTRIBUTION OF ETHANOL

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POSTMORTEM TESTING TECHNIQUES AND INSTRUMENTATION


3

MATRIX MATTERS: HOW TO INTERPRET POSTMORTEM ETHANOL CONCENTRATIONS





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POSTMORTEM DISTRIBUTION OF ETHANOL



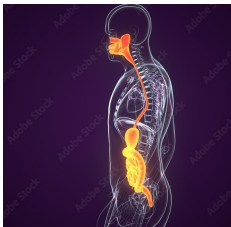
Ethanol is found where after death?

- Peripheral blood (femoral or subclavian)
- Heart blood (central cavity)
- Stomach contents
- Urine
- Vitreous Humor
- Brain Tissue
- Liver Tissue
- Bile



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POSTMORTEM DISTRIBUTION OF ETHANOL





Can ethanol be redistributed after death?

Yes! _____


Can ethanol be created after death?

Yes! _____



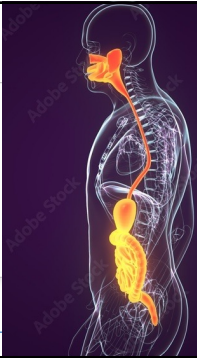
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POSTMORTEM DISTRIBUTION OF ETHANOL



QUESTIONS?


1. NAME BEST TWO SPECIMENS FOR POSTMORTEM ETHANOL TESTING?
2. WHAT CONDITIONS WILL ELEVATE POSTMORTEM ETHANOL CONCENTRATIONS?





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POSTMORTEM TESTING TECHNIQUES & INSTRUMENTATION




Instrumentation

Headspace Gas Chromatography

Detector Options:
Flame Ionization Detector
Mass Spectrometry

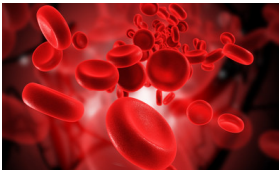
Reporting Results

Dependent upon:
Clinical versus forensic
Medical examiner, coroner, crime lab
Regulation/statute
Embalmed or not



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MATRIX MATTERS: INTERPRETING RESULTS



CASE # 1

Decedent is a 22-year-old male with blunt force trauma to the head and thoracic cavity from a single vehicle accident, car vs. tree.

Heart blood concentration = 420 mg/dl
Vitreous humor concentration = 110 mg/dl



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MATRIX MATTERS: INTERPRETING RESULTS



CASE # 2

Decedent is a 19-year-old female pending toxicology findings. Last known to be binge drinking at party and passed out. No known alcohol use prior to death.

Peripheral blood concentration = 370 mg/dL
Vitreous humor concentration = 300 mg/dL

DRUG



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MATRIX MATTERS: INTERPRETING RESULTS



CASE # 3

Decedent is a 15-year-old male pending toxicology findings. Last known to be surfing in the ocean prior to death. Has been missing for 7 days. Found with a head wound but not significant enough to cause death.

Heart blood concentration = 60 mg/dL
Vitreous humor concentration = 0 mg/dL
Urine concentration = 0 mg/dL

DRUG



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MATRIX MATTERS: INTERPRETING RESULTS



CASE # 4

Decomposed body, may or may not have been embalmed.

Liver concentration = 20 mg/dL
Blood ??? = > 10 mg/dL
Blood ??? = Methanol positive

DRUG



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