

OFFICE OF THE MEDICAL EXAMINER
Center for Forensic Medicine
Nashville, Tennessee

REPORT OF INVESTIGATION BY COUNTY MEDICAL EXAMINER

Davidson County Medical Examiner: Feng Li M.D., J.D., Ph.D.

Judicial District Number: 20

District Attorney: Honorable Glenn Funk

State Number: 24-19-2053

Case Number: MEC24-1075

Name of Decedent Riley Ray Strain		Age 22 Years	Race White	Date of Birth 01/02/2002	Sex Male
Address 3876 W. Village Terrace, Springfield, MO 65810					
Date of Death 03/22/2024 7:36 AM		Type of Death Accident		Investigating Agency/Complaint #: Metro Nashville Police Dept, Complaint #: 24-196768	
Place of Death 1740 61st Ave. N., Nashville, TN					
Narrative Summary <p>Reportedly the decedent was a 22 year old male who was discovered floating in the Cumberland River by an employee at a concrete plant at approximately 07:28 hours on 03/22/2024. 911 was contacted. Nashville Fire responded to the scene via boat to retrieve the decedent's body. Death was confirmed on scene. The decedent's past medical history was unknown at the time of this report. Countywide Communications contacted the Medical Examiner's Office via pager to request a response. Due to the decedent's death being accident related, Medical Examiner jurisdiction was accepted. I, Investigator Melanie Byrd, responded to the initial scene where the decedent was discovered and later responded to the scene where the decedent's body was retrieved. Middle Tennessee Removal Service transported the decedent's body to the Center for Forensic Medicine for further examination and positive identification. The decedent's body will later be released to Greenlawn Funeral Home at the family's request.</p> <p>Investigator Melanie Byrd 03/22/2024 13:31 hours</p>					
Jurisdiction Accepted Yes		Autopsy Ordered Yes		Toxicology Ordered Yes	
Physician Responsible for Death Certificate Gulpreet S Bowman, D.O.					
Cremation Approved No		Funeral Home Greenlawn Funeral Home			
Cause of Death Drowning and ethanol intoxication					
Contributory Cause of Death					
Manner of Death Accident					

OFFICE OF THE MEDICAL EXAMINER
Center for Forensic Medicine
850 R.S. Gass Blvd.
Nashville, Tennessee 37216-2640

CASE: MEC24-1075
County: DAVIDSON

AUTOPSY REPORT

NAME OF DECEDENT: STRAIN, RILEY SEX: Male AGE: 22

DATE AND TIME OF AUTOPSY: March 23, 2024 at 9:30 a.m.

FORENSIC PATHOLOGIST: Gulpreet Singh Bowman, D.O.

PATHOLOGIC DIAGNOSES

- I. Drowning:
 - A. Decedent last witnessed alive on March 8, 2024 alone at the underpass of the James Robertson Parkway Bridge after departing a local downtown establishment.
 - B. Missing person report filed March 9, 2024.
 - C. Decedent discovered floating face down in the Cumberland River within debris on March 22, 2024.
 - D. Water depth of at least 20 feet.
 - E. Pulmonary edema.
 - F. Pleural effusions.
 - G. No evidence of significant trauma.

- II. Femoral blood ethanol concentration = 0.228 g/100 mL.

- III. Decomposition.

CAUSE OF DEATH: Drowning and ethanol intoxication

MANNER OF DEATH: Accident

CIRCUMSTANCES OF DEATH: Drowned within Cumberland River while intoxicated

The autopsy was performed at the Center for Forensic Medicine. The purpose of this report is to provide a certified opinion to the County Medical Examiner and District Attorney General. The facts and findings to support these conclusions are filed with the Tennessee Department of Health. The autopsy was performed in the presence of David Zimmerman, M.D.

GENERAL EXAMINATION

The body is that of a normally developed, well nourished, adult male, measuring approximately 76 inches in length, weighing approximately 182 pounds and appearing consistent with the subsequently confirmed age of 22 years. The deceased is clad in a tan and black short-sleeve shirt, blue plaid undershorts and black socks. A blue watch surrounds the left wrist. A white metal necklace and yellow metal necklace with a pendant surrounds the neck. All clothing is wet and covered in a dense film of dark mud.

EXTERNAL EXAMINATION

The body is not embalmed and displays changes of decomposition, including marbling, bloating, green and red discoloration and patchy skin slippage. Rigor mortis is partially developed in the joints. Livor mortis cannot be assessed.

The scalp hair is medium in length and brown. The eyes are closed; the conjunctivae are congested and without petechiae; the sclerae are white; the corneae are cloudy; and the irides are dark. The nares are patent. The ears are normal in location and formation. The facial bones are intact to palpation. The mouth is slightly open revealing natural teeth in good condition.

The neck, chest and abdomen appear normally formed.

The upper and lower extremities, including the hands and feet, appear symmetrical and atraumatic. The hands and feet are waterlogged. The fingernails are short and intact.

The external genitalia are those of an adult male and are atraumatic; the testes are palpated within the scrotal sac and have postmortem gas formation.

The back is straight and free of trauma. The anus is patent and unremarkable.

INTERNAL EXAMINATION

All internal organs demonstrate changes of decomposition.

HEAD: An intermastoid incision is made around the cranium and the scalp is retracted; no hemorrhage is identified. Opening of the cranial cavity exposes smooth, tough dura without evidence of epidural, subdural or subarachnoid hemorrhage. The 1500 g brain appears normally formed and edematous with translucent leptomeninges. The cerebral vessels follow the usual distribution and are free of significant atherosclerotic changes. On cut sections, the parenchyma is soft and has no evidence of infection, tumor or trauma. Removal of the dura uncovers an intact cranial and basilar skull.

BODY: The body is opened with a Y-shaped incision. The organs occupy their usual positions and relationships. The right and left pleural cavities contain approximately 500 mL and 280 mL, respectively, of thin, red-brown fluid. The peritoneal cavity contains a scant amount of similar-appearing fluid. Inspection of the thoracic and abdominal cavities after evisceration fails to reveal significant musculoskeletal abnormalities.

NECK: There is no evidence of infection, tumor or trauma. The hyoid bone and laryngeal

cartilages are intact. The airway is patent and unobstructed without significant inflammation or neoplasia. No cervical dislocations or fractures are present.

CARDIOVASCULAR SYSTEM: The 300 g heart has an unremarkable smooth epicardial surface. The coronary arteries arise normally and are free of significant arteriosclerosis. On cut sections, the endocardium is smooth and glistening and the myocardium is uniformly dark red and soft without discrete lesions or fibrosis. The cardiac valves are thin, pliable and normally formed. The aorta is opened and displays a smooth tan intimal surface.

LUNGS: The right and left lungs weigh 570 g and 390 g, respectively, and display smooth purple-red pleural surfaces with mild congestion and edema. There is no evidence of infection, tumor or trauma. The pulmonary vessels and airways are unobstructed.

ALIMENTARY SYSTEM: The tongue is atraumatic. The esophagus, stomach and small and large intestines reveal no evidence of significant natural disease or trauma. The stomach contains less than 100 mL of tan, partially digested food particles. The pancreas is unremarkable.

HEPATOBIILIARY SYSTEM: The 1550 g liver has an intact capsule and tan-brown, soft parenchyma with postmortem gas formation and without significant fibrosis or neoplasia. The gallbladder is unremarkable.

ENDOCRINE SYSTEM: The pituitary, thyroid and adrenal glands are normal in size, shape and location and are without abnormality on sectioning.

LYMPHORETICULAR SYSTEM: The 150 g spleen is very soft. Significant lymphadenopathy is not identified.

GENITOURINARY SYSTEM: The right and left kidneys weigh 150 g each and display smooth and shiny cortical surfaces. On cut sections, the parenchyma is tan-red and soft with distinct cortico-medullary demarcations. The collecting systems, ureters and bladder show no evidence of significant natural disease or trauma. The bladder contains a small amount of urine. The prostate gland is unremarkable.

TOXICOLOGY

Specimens are collected (see separate report).

RADIOGRAPHS

Full body radiographs are performed prior to examination.

IDENTIFICATION

Positive identification as Riley Strain is established by comparison of antemortem and postmortem dental radiograph comparison performed by Dr. John Kenney, Forensic Odontologist.

CONCLUSION

The decedent is a 22-year-old male who was reportedly witnessed to leave a local downtown establishment and was last seen alive alone at the underpass of James Robertson

Parkway Bridge on March 8, 2024. A missing persons report was filed on March 9, 2024. Search efforts were initiated, and the decedent was subsequently discovered face down in the Cumberland River within debris on March 22, 2024.

Autopsy findings are significant for a decomposed male with pulmonary edema and pleural effusions (fluid within the chest cavity) and without significant trauma.

Postmortem toxicology detected ethanol (0.228 g/100 mL), isopropanol (12 mg/dL), caffeine, cotinine, nicotine and THC.

After review of available investigative information including video surveillance, autopsy examination and toxicologic analysis, it is my opinion that Riley Strain, a 22-year-old male, died as a result of drowning and ethanol intoxication.

MANNER OF DEATH: Accident

*****Electronically signed by Gulpreet S. Bowman, D.O. on Monday, June 17, 2024*****

Gulpreet Singh Bowman, D.O.
Assistant Medical Examiner

GSB/shl



NMS Labs

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200 Welsh Road, Horsham, PA 19044-2208
Phone: (215) 657-4900 Fax: (215) 657-2972
e-mail: nms@nmslabs.com

Robert A. Middleberg, PhD, F-ABFT, DABCC-TC, Laboratory Director

Toxicology Report

Report Issued 04/23/2024 12:00

Patient Name STRAIN, RILEY
Patient ID 24-1075
Chain NMSCP342363
DOB Not Given
Sex Male
Workorder 24124438

To: 10341
Forensic Medical Management Services - Nashville
850 R.S. Gass Blvd.

Nashville, TN 37216

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Positive Findings:

Table with 4 columns: Analyte, Result, Units, Matrix Source. Rows include Ethanol, Blood Alcohol Concentration (BAC), Isopropanol, Caffeine, Cotinine, Nicotine, Delta-9 Carboxy THC, and Delta-9 THC.

See Detailed Findings section for additional information

Testing Requested:

Table with 2 columns: Test, Test Name. Rows include 1919FL (Electrolytes and Glucose Panel) and 8042B (Postmortem, Expanded w/Vitreous Alcohol Confirmation).

Tests Not Performed:

Part or all of the requested testing was unable to be performed. Refer to the Analysis Summary and Reporting Limits section for details.

Specimens Received:

Table with 6 columns: ID, Tube/Container, Volume/Mass, Collection Date/Time, Matrix Source, Labeled As. Rows include Gray Stopper Glass Tube, Red Stopper Plastic Tube, and White Cap Plastic Container.

All sample volumes/weights are approximations.
Specimens received on 03/26/2024.



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Chain NMSCP342363
Patient ID 24-1075

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Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Ethanol	228	mg/dL	10	001 - Femoral Blood	Headspace GC
Blood Alcohol Concentration (BAC)	0.228	g/100 mL	0.010	001 - Femoral Blood	Headspace GC
Isopropanol	12	mg/dL	5.0	001 - Femoral Blood	Headspace GC
Caffeine	Presump Pos	mcg/mL	0.20	001 - Femoral Blood	LC/TOF-MS
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Cotinine	Presump Pos	ng/mL	200	001 - Femoral Blood	LC/TOF-MS
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Nicotine	Presump Pos	ng/mL	100	001 - Femoral Blood	LC/TOF-MS
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Delta-9 Carboxy THC	17	ng/mL	5.0	001 - Femoral Blood	LC-MS/MS
Delta-9 THC	>50	ng/mL	0.50	001 - Femoral Blood	LC-MS/MS
Ethanol	Confirmed	mg/dL	10	001 - Femoral Blood	Headspace GC
Isopropanol	Confirmed	mg/dL	5.0	001 - Femoral Blood	Headspace GC
Creatinine (Vitreous Fluid)	TNP	mg/dL		002 - Vitreous Fluid	Chemistry Analyzer
Sodium (Vitreous Fluid)	TNP	mmol/L		002 - Vitreous Fluid	Chemistry Analyzer
Potassium (Vitreous Fluid)	TNP	mmol/L		002 - Vitreous Fluid	Chemistry Analyzer
Chloride (Vitreous Fluid)	TNP	mmol/L		002 - Vitreous Fluid	Chemistry Analyzer
Glucose (Vitreous Fluid)	TNP	mg/dL		002 - Vitreous Fluid	Chemistry Analyzer
Urea Nitrogen (Vitreous Fluid)	TNP	mg/dL		002 - Vitreous Fluid	Chemistry Analyzer

Other than the above findings, examination of the specimen(s) submitted did not reveal any positive findings of toxicological significance by procedures outlined in the accompanying Analysis Summary.

Reference Comments:

1. Delta-9 Carboxy THC (Inactive Metabolite) - Femoral Blood:

Delta-9 THC is the principle psychoactive ingredient of marijuana/hashish. Delta-9 carboxy THC (THCC) is the inactive metabolite of THC. The usual peak concentrations in serum for 1.75% or 3.55% THC marijuana cigarettes are 10-101 ng/mL attained 32 to 240 minutes after beginning smoking, with a slow decline thereafter. The ratio of whole blood concentration to plasma concentration is unknown for this analyte. THCC may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users. THCC is usually not detectable after passive inhalation.

**Reference Comments:**

2. Delta-9 THC (Active Ingredient of Marijuana) - Femoral Blood:

Delta-9 THC is the principle psychoactive ingredient of marijuana (cannabis, hashish). It is also the active component of the prescription medication Marinol®. Marijuana use causes relaxation, distorted perception, euphoria and feelings of well being, along with confusion, dizziness, somnolence, ataxia, speech difficulties, lethargy and muscular weakness.

After smoking a user-preferred 300 mcg/kg dose average plasma THC concentrations at 35 minutes were reported at 16.1 (range 4.7-30.9) ng/mL, and had declined to 1.5 (range 0.4-3.2) ng/mL after 190 minutes. Usual peak levels in serum for 1.75% or 3.55% THC marijuana cigarettes: 50-270 ng/mL at 6 to 9 minutes after beginning smoking, decreasing to less than 5 ng/mL by 2 hrs. Whole blood THC concentrations are typically half those in a corresponding plasma sample.

3. Ethanol (Ethyl Alcohol) - Femoral Blood:

Ethyl alcohol (ethanol, drinking alcohol) is a central nervous system depressant and can cause effects such as impaired judgment, reduced alertness and impaired muscular coordination. Ethanol can also be a product of decomposition or degradation of biological samples.

4. Isopropanol (Isopropyl Alcohol) - Femoral Blood:

Isopropanol is a common industrial and laboratory chemical that is available as a 70% aqueous solution in 'Rubbing Alcohol'. Isopropanol may be consumed for its intoxicating effects. Isopropanol produces effects in man similar to those produced by ethanol, including impairment of cognitive, perceptual and psychomotor capabilities presenting as decrements in alertness, judgment, perception, coordination, response time and sense of care and caution. As a central nervous system depressant, isopropanol has about two times the potency of ethanol; therefore, while the effects produced are similar, impairment caused by isopropyl alcohol will occur at blood concentrations substantially lower than those of ethanol. Isopropyl alcohol is metabolized to acetone, however acetone produced in the body as a result of uncontrolled diabetes can also be converted to isopropanol.

Three workers exposed to 191-200 ppm isopropanol in air had blood isopropanol concentrations <1 mg/dL; acetone levels were 4-16 mg/dL during the exposure. After a sponge bath with isopropanol, one adult had a blood isopropanol concentration of 10 mg/dL.

In a study of 31 isopropanol deaths, postmortem blood concentrations ranged from 10-250 mg/dL (mean 140 mg/dL) and acetone blood concentrations ranged from 40-300 mg/dL (mean, 170 mg/dL).

Isopropanol and acetone are sometimes used as components in preparations used for embalming. Isopropanol and acetone may sometimes be detected in postmortem blood specimens as the result of contamination by embalming materials.

Sample Comments:

001 Physician/Pathologist Name: Dr. G. Bowman

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded one (1) year from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.

Workorder 24124438 was electronically signed on 04/23/2024 11:10 by:

Kristopher W. Graf, M.S., D-ABFT-FT
Forensic Toxicologist



Analysis Summary and Reporting Limits:

All of the following tests were performed for this case. For each test, the compounds listed were included in the scope. The Reporting Limit listed for each compound represents the lowest concentration of the compound that will be reported as being positive. If the compound is listed as None Detected, it is not present above the Reporting Limit. Please refer to the Positive Findings section of the report for those compounds that were identified as being present.

Test 1919FL - Electrolytes and Glucose Panel (Vitreous), Fluid (Forensic) - Vitreous Fluid

-Analysis by Chemistry Analyzer for:

<u>Analyte</u>	<u>Rpt. Limit</u>	<u>Analyte</u>	<u>Rpt. Limit</u>
Chloride (Vitreous Fluid)	N/A	Potassium (Vitreous Fluid)	N/A
Creatinine (Vitreous Fluid)	N/A	Sodium (Vitreous Fluid)	N/A
Glucose (Vitreous Fluid)	N/A	Urea Nitrogen (Vitreous Fluid)	N/A

Testing Not Performed: Test was canceled due to [Inappropriate Sample Condition].

Test 52198B - Cannabinoids Confirmation, Blood - Femoral Blood

-Analysis by High Performance Liquid Chromatography/ Tandem Mass Spectrometry (LC-MS/MS) for:

<u>Analyte</u>	<u>Rpt. Limit</u>	<u>Analyte</u>	<u>Rpt. Limit</u>
11-Hydroxy Delta-9 THC	2.0 ng/mL	Delta-9 THC	0.50 ng/mL
Delta-9 Carboxy THC	5.0 ng/mL		

Test 52248B - Alcohols and Acetone Confirmation, Blood - Femoral Blood

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Analyte</u>	<u>Rpt. Limit</u>	<u>Analyte</u>	<u>Rpt. Limit</u>
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	10 mg/dL

Test 53249FL - Alcohols and Acetone Confirmation, Vitreous Fluid (Forensic) - Vitreous Fluid

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Analyte</u>	<u>Rpt. Limit</u>	<u>Analyte</u>	<u>Rpt. Limit</u>
Acetone	N/A	Isopropanol	N/A
Ethanol	N/A	Methanol	N/A

Testing Not Performed: Test was canceled due to [Inappropriate Sample Condition].

Test 8042B - Postmortem, Expanded w/Vitreous Alcohol Confirmation, Blood (Forensic) - Femoral Blood

-Analysis by Enzyme-Linked Immunosorbent Assay (ELISA) for:

<u>Analyte</u>	<u>Rpt. Limit</u>	<u>Analyte</u>	<u>Rpt. Limit</u>
Barbiturates	0.040 mcg/mL	Gabapentin	5.0 mcg/mL
Cannabinoids	10 ng/mL	Salicylates	120 mcg/mL

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Analyte</u>	<u>Rpt. Limit</u>	<u>Analyte</u>	<u>Rpt. Limit</u>
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	10 mg/dL



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Patient ID 24-1075

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Analysis Summary and Reporting Limits:

-Analysis by High Performance Liquid Chromatography/Time of Flight-Mass Spectrometry (LC/TOF-MS) for: The following is a general list of analyte classes included in this screen. The detection of any specific analyte is concentration-dependent. Note, not all known analytes in each specified analyte class are included. Some specific analytes outside of these classes are also included. For a detailed list of all analytes and reporting limits, please contact NMS Labs. Amphetamines, Anticonvulsants, Antidepressants, Antihistamines, Antipsychotics, Benzodiazepines, CNS Stimulants, Cocaine and Metabolites, Hallucinogens, Hypnotics, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, Opiates and Opioids.