

**FOR IMMEDIATE RELEASE**  
11/30/11

**CONTACT:** Greg Wyatt, Coroner  
(916) 874-1696  
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## ***NEWS RELEASE***

### **CORONER'S CAUSE-OF-DEATH FINDINGS FOR IN-CUSTODY DEATH**

#### **Tyrone Walter Smith**

Sacramento County Coroner Case # 11-04798

Mr. Smith was arrested by the Sacramento Police Department on 10/22/11 and was pronounced deceased at the University of California Davis Medical Center during the early morning hours of 10/23/11. The Sacramento County Coroner's Office has completed the investigation into Mr. Smith's death with the following findings:

#### **CAUSE OF DEATH:**

Sudden death in police custody while lying in prone restraint on back seat of patrol car following foot pursuit.

#### **OTHER SIGNIFICANT CONDITIONS CONTRIBUTING TO DEATH:**

Asthmatic bronchitis; truncal obesity; hypertensive and atherosclerotic cardiovascular disease; unspecified psychiatric illness; cannabinoid intoxication

The cause of death listed above is descriptive of the death scene and factors present at or near the time of death. It is not to be inferred that Mr. Smith died simply as a result of being restrained and placed in the rear seat of a patrol car. (A further explanation of the cause of death findings is attached)

The manner of death has been classified as: **UNDETERMINED**

Undetermined (or could not be determined) is a classification used when the information pointing to one manner of death (Accident, Homicide, Suicide, Natural) is no more compelling than one or more other competing manners of death in thorough consideration of all available information. After a thorough forensic autopsy and investigation, it is the opinion of the Sacramento County Coroner's Office that Mr. Smith's death is a direct result of a combination of factors including Mr. Smith's physical exertion at the time of arrest and his pre-existing medical condition. The autopsy report, toxicology report, and the medical opinion of Chief Forensic Pathologist Stephany Fiore, M.D., are attached.

The Coroner's Office is releasing this information as a public service due the high volume of telephone calls from the media. Coroner personnel may not be able to immediately respond to media calls after business hours and weekends. Thank you for your patience.

*It is the duty of the Sacramento County Coroner's Office to identify and determine the cause and manner of sudden and unexpected deaths, and to investigate deaths that occur under violent or suspicious circumstances. Visit the Coroner's Office online at [www.coroner.saccounty.net](http://www.coroner.saccounty.net) or call (916) 874-9320.*



# County Of Sacramento

Department of Coroner  
4800 Broadway, Suite 100  
Sacramento, CA 95820-1530

Gregory P. Wyatt  
Coroner



Autopsy

External Examination

**NAME:** SMITH, TYRONE WALTER

**CASE NO.** 11-04798

**POSTMORTEM DATE:** 10/23/11

**TIME:** 14:00

**INVESTIGATOR:** Beth Sherman

**DATE OF DEATH:** 10/23/11

**TIME OF DEATH:** 00:14

**AGE:** 32 yr **SEX:** Male **Ht:** 69" **Wt:** 240 lbs.

**RACE/ ETHNICITY:** Black

## AUTOPSY FINDINGS:

1. Sudden death in police custody while lying in prone restraint on back seat of a patrol car following foot pursuit.
  - A. Small abrasions on the face, arms, and legs
  - B. Linear contusions around the wrists, consistent with handcuffs
  - C. Deep muscle contusions on the back
  - D. Marked facial and visceral congestion
  - E. Mild pulmonary edema
  - F. Rectal temperature at 0010 hrs on 10/23/11 of 98.6 °F (37°C)
2. Clinical history of psychiatric illness, possible schizophrenia.
  - A. ER visit at UCDMC 10-30-10 for psychotic behavior
    - i. Brought in by police in 4-point restraint with spit-mask
    - ii. Left prior to being fully evaluated
  - B. ER visit at UCDMC on 11-1-10 for psychotic behavior
    - i. Evaluated by Psychiatry staff, possible schizophrenic break vs. PTSD
      1. Family history of schizophrenia
      2. Family noticed a change in his behavior ~2 month prior to admission
    - ii. Transferred to Sacramento County Mental Health Treatment Clinic (SCMHTC) for 5150 hold; disposition unknown
    - iii. No record of follow up with Sac County Primary Care Clinic.
3. Asthmatic bronchitis
  - A. History of "asthma requiring inhalers" per family
  - B. No documentation of asthma or other chronic respiratory problems found in UCDMC medical records.
4. Caffeine, cannabinoids, and nicotine products detected in postmortem blood; vitreous electrolytes within normal postmortem limits (see separate Toxicology report)
5. Truncal obesity (BMI 35.4).
6. Hepatic steatosis, mild to moderate
7. Clinical history of hypertension (see UCDMC medical records)
  - A. Mild cardiac hypertrophy (400 gm)
8. Mild coronary artery atherosclerosis
9. Focal nodular hyperplasia of the liver



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SMITH, TYRONE WALTER

11-04798

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10. Mild cortical hyperplasia of the adrenal glands
11. Cholelithiasis
12. Remote gunshot wound to abdomen, s/p exploratory laparotomy (June 2010)

**CAUSE OF DEATH: Sudden death in police custody while lying in prone restraint on back seat of patrol car following foot pursuit.**

**OTHER SIGNIFICANT CONDITIONS: Asthmatic bronchitis; truncal obesity; hypertensive and atherosclerotic cardiovascular disease; unspecified psychiatric illness; cannabinoid intoxication**

**OPINION:** The patrol car involved in the incident was brought to the Coroner's Office for examination after processing by SPD. Statements from the arresting officers as relayed through Sgt. Stigerts with SPD were received. Video footage from KCRA, Fox New 40, and SPD helicopter and dash video cameras regarding the events leading up to the death of Mr. Smith as well as medical records from UCDMC concerning pre-existing health issues have been reviewed. We found no record of Mr. Smith ever being evaluated in either the Sutter or Mercy systems for pre-existing health issues and the only medical history at the Sacramento County Primary Care Clinic was remote and the records have been destroyed. No records have been received from SCMHTC. We have no knowledge of Mr. Smith being followed on a regular basis for either his psychiatric illness or any other chronic medical conditions following his release from SCMHTC.

The video footage from the helicopter camera was not of very good quality but the audio was clear. I could not clearly see the suspect during the foot pursuit, but according to the audio he encountered several fences during the five minute period prior to his arrest. The video clearly shows him lying prone on the ground with arms outstretched over his head prior to being approached by two officers. According to statements from the arresting officers and a witness statement from KCRA news footage, he was cooperative, communicating, and did not appear to be in any distress other than sweating and breathing somewhat hard, consistent with the recent physical exertion. The news footage from KCRA clearly shows him walking in a somewhat staggered gait and leaning forward prior to going to the ground, pulling the officers down with him. I could not see any indication that he was tripped by the officers from the footage received. Mr. Smith was then shackled, picked up by four officers, and placed on his belly in the back seat of a patrol car. The first patrol car reportedly did not have a functioning video camera, so he was "immediately" transferred to a second vehicle prior to transport. The footage from the dash camera clearly shows an officer reaching across the back seat of the patrol car and pulling Mr. Smith into the vehicle across the seat. You can see his handcuffed left hand on his back, which doesn't appear to voluntarily move during this process. The video then shows the officer in the front passenger seat checking on Mr. Smith every minute or so. Approximately four minutes into the video you can hear one of the officers ask "is he still breathing" and the other answer "yes". Another thirteen minutes elapse with the officer periodically checking on him before there is any indication something was wrong. The vehicle pulls over and an officer checks on him, stating "no pulse; call fire". He is removed from the vehicle and the video clearly shows CPR being performed for close to seven minutes prior to the arrival of paramedics. According to statements from the arresting officers, the reason they pulled over was that Mr. Smith had slid off the back seat and was lying on the floor of the vehicle. He was reportedly lying on his left side facing the back of the vehicle with his head on the footboard near the right passenger door. Dried secretions were visible on the plastic in this area during my examination. The seat was noted to be made of hard molded plastic. Mr. Smith was reportedly pulled from



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Sacramento, CA 95820-1530



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Coroner

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11-04798

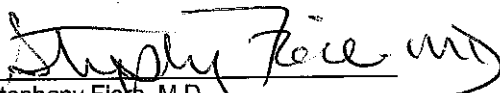
Page 3

the vehicle, originally landing face down on the pavement and rolled to his back for CPR. Video footage of CPR shows his handcuffed right hand by his side indicating he was lying on top of his left arm during resuscitation.

We have objective evidence that Mr. Smith was alive and well following the foot pursuit and the first few minutes following arrest. His medical status, however, is unclear between the time he falls to the ground and is found unresponsive on the floor of the patrol car. The reason for the fall itself is unclear. Officers indicate he was resisting arrest while witnesses state he was tripped. A third option is that his health status could have started taking a turn for the worst causing him to fall to the ground. Following the fall, he is reported to have stated "I can't breathe" followed by something that sounded like "I've made it". From that point forward his ability to communicate was reported as incoherent mumbling. He was felt to be "resistive" and "fighting" as he was placed into the first patrol car, but was passive while being placed into the second one, possibly indicating a loss of consciousness at this point. There was no sign of voluntary movement as he was being dragged across the hard molded back seat of the car, which could be interpreted as no response to a painful stimulus again supporting the notion he was already unconscious by the time he was placed into the second vehicle. There is no indication he was medically evaluated between the time he fell and placed into the second vehicle only the observations of mumbling, breathing, and resisting. He was then left lying prone on this hard seat with his arms restrained behind his back.

The autopsy did not reveal any trauma that would have contributed to his death. He did have a few scrapes on his face and extremities, consistent with his contact with the ground. A couple of deep bruises were found across his lower back, which could be explained by the fact he was lying across his left arm during CPR. There was no evidence of neck or chest compression or positional asphyxia. The only drugs found in his system were marijuana (both delta-9 and delta-9 carboxy THC, indicating recent use), caffeine, and nicotine. Mr. Smith was an obese man who carried most of his weight in his belly and had mild heart disease, both from high blood pressure and atherosclerosis. Despite the family's statements that Mr. Smith suffered from severe asthma, there is no objective evidence in the medical records to support this. Histological examination of his lungs, however, did confirm that he had reactive airway disease with some mucus present. The findings, however, did not meet the criteria for status asthmaticus. One thing the medical records did reveal was that Mr. Smith did have some form of psychiatric illness which resulted in a stay at SCMHTC one year ago. The outcome of this stay is unknown but it does not appear he was receiving any on-going medical care for this illness.

So why did Mr. Smith die while in police custody? The death appears to be multi-factorial. First we have a man who was not physically fit engaged in a five minute foot chase that involved hopping several fences. This physical exertion could have triggered his reactive airway disease further compromising his ability to breathe and recover from the chase and lead to narcosis from the build up of carbon dioxide in his system. There is some indication that this may have been the case based on the reports of incoherent mumbling following the fall to the ground and his passive state while being placed into the second patrol car. The increased carbon dioxide levels will cause confusion, which may have been interpreted by the officers as resisting arrest, and ultimately lead to coma unless oxygen is provided. Placing this man with his large abdominal girth prone in the back seat of the patrol car only further compromised his recovery. Other factors that may have contributed to his death are his underlying heart disease as well as his psychiatric illness and the cannabinoid intoxication, both of which can destabilize the heart and increase the chance of developing a fatal arrhythmia. It is my opinion that the wedged position on the floor of the vehicle is more reflective of his advanced decompensated state than a principle factor in his death.

  
Stephany Fiore, M.D.  
Chief Forensic Pathologist  
November 25, 2011

SEF/clk  
D: 10/23/11  
T: 10/25/11

**AUTOPSY ASSISTANTS:**

Adrienne Montoya, Simon LeBleu, Ailee Kinoshita.

**WITNESS:**

Detective Brian Jensen (Badge #0424), Sacramento Police Department.

**IDENTIFICATION:**

The body is identified by a Sacramento County Coroner's ID tag attached to the left great toe, labeled with the decedent's listed name and case number. Tattooed on the lateral aspect of the right shoulder are the initials "TMG". Tattooed beneath these letters are the words "Thuggee Mischievous God". A 25 x 1 longitudinally oriented laparotomy scar extends down the mid-abdomen.

**EVIDENCE OF MEDICAL INTERVENTION:**

Both an endotracheal tube and an endogastric tube are inserted into the oral cavity and held in place with a cloth strap. Five EKG pads are attached to the torso and one to each shoulder. A vascular catheter is inserted into the left antecubital fossa. A triple lumen vascular catheter is inserted into the right groin. An intraosseous trocar is inserted into the proximal left tibia. A UC Davis Medical Center identification bracelet encircles the left ankle, bearing the name "Doe, Bart" with record number 210-54-23. A pulse oximeter is attached to the right index finger and another to the right middle finger.

**CLOTHING:**

The decedent is received unclothed. The hands are encased in white paper bags secured at the wrists with yellow bands. No jewelry is found on the body.

A brown paper bag accompanies the body. The bag is unmarked, but contains the following clothing:

1. A black T-shirt, size 4XL Tall, is also found in the bag. This shirt has been cut from the body up the front and down each sleeve. A few pieces of dried plant-like material are adhered to the back surface of the shirt. No other markings are present.
2. A black sleeveless undershirt. The undershirt has been previously cut from the body down the left side and across each shoulder strap. No other defects are found in this article of clothing.
3. A pair of blue denim pants with a black belt. The pockets of the pants are empty. There is a small amount of dirt and apparent grass stains soiling the left knee of the pants. No other distinctive markings are found on the pants. There are no tears in the pants.
4. A pair of green plaid boxer shorts previously cut down the left anterior leg from waistband to hem. No other defects are found in this article of clothing.
5. A single gray athletic-style shoe, Nike brand, is present. This is the left shoe. The right shoe was not received. No distinctive markings or bodily fluids are found on the shoe.
6. A pair of black low-top socks is present. These are moist, but have no markings.

**EXTERNAL EXAMINATION**

The unclad, unembalmed body is that of a well-developed, obese, 69 inch, 240 pound, light brown pigmented, Black male whose appearance is consistent with the reported age of 32 years. The decedent is in full rigor mortis. Non-blanching lividity is posterior on the cold body. In addition, there is congestion of the face and anterior neck. Striae across the anterior shoulders are bright pink. No other postmortem changes are present. Trauma to the head and extremities is described under "Injuries".

The scalp is covered by tightly curled, black hair that measures approximately 4 inches in length. The hair is braided at the back of the head into a ponytail measuring 6 inches in length. The eyes have clear corneae and brown irides. The conjunctivae are markedly congested, but without petechiae, icterus, or edema. The nose is normally formed. The external nares are patent and contain no hemorrhage or discharge. Facial hair consists of a moustache and goatee of black hairs measuring up to ¼ inch in length. In addition, there is 1/8 inch stubble on the cheeks and under-surface of the chin. The lips and oral mucosa are cyanotic and moist. Intra-oral trauma is described below. The natural dentition is in good repair. A large amount of bloody fluid drains from the oral cavity with manipulation. No foreign material is seen other than medical devices. Each earlobe is remotely pierced one time. There is no hemorrhage or discharge in the external auditory canals.

A 4.5 cm horizontally oriented linear scar runs across the mid-anterior neck. The neck is otherwise symmetrical and without palpable crepitus or masses.

The torso has a symmetric, stable chest and protuberant, soft abdomen with prominent striae that radiate upwards from the pelvis. There are also prominent striae across the anterior surface of each shoulder. A 1.0 x 0.5 cm oval scar is found in the right lower quadrant of the abdomen. A 2 x 1 cm irregular scar is found in the left lower quadrant of the abdomen. The two scars are spaced 22 cm apart and are consistent with the history of remote gunshot wound. A very mild amount of hair is found on the anterior surfaces of the torso and predominantly confined to the abdomen. The breasts are without gynecomastia or masses. The external genitalia are of a normally developed circumcised adult with a normal distribution of pubic hair. There is no anal or genital trauma. The back is unremarkable.

The upper and lower extremities are symmetrical and without deformity. No remote needle track marks or ventral wrist scars are present. The finger and toenails are clean and trimmed flush with the tips. The soles of the feet are unremarkable. There is no evidence of pedal edema.

#### EXTERNAL AND INTERNAL EVIDENCE OF INJURY

**Head:** A 3 x 3 cm somewhat triangular-shaped dark reddish brown friction abrasion is on the right cheek with the apex pointing anterior and slightly down. There are linear striations that extend upward in a posterior direction creating a feathered posterior edge. A faint 1.5 cm contusion is present on the right side of the forehead located above the medial aspect of the eyebrow. Two small abrasions are present along the medial aspect of the right infraorbital ridge near the nose. A 0.7 abrasion extends down from the right nasal ala onto the lip. A 0.7 cm fine linear abrasion is present on the right side of the jaw line near the corner of the mouth. There are no palpable facial fractures. A very small mucosal contusion is found on the upper lip underlying the abrasion that was noted above. There is a fine linear contusion on the left side of the upper lip mucosal running in a sagittal direction. No other oral trauma is present.

Reflection of the scalp reveals a small focus of hemorrhage underlying the right forehead contusion described above. In addition, there is a 4 cm area of hemorrhage overlying the right temporalis muscle. No intracranial trauma is present

**Torso:** A small dry yellowish brown abrasion overlies the precordium, consistent with cardiopulmonary resuscitation. There is no other cutaneous trauma on the torso.

Deep dissection of the soft tissues on the back is performed. Two foci of hemorrhage are found on the left side. One measures 4 cm in greatest dimension and overlies the lower end of the ribcage. The hemorrhage extends all the way through the soft tissues to the surface of the ribs. There are no fractures associated with this finding. The second focus is more along the posterior flank and measures 2 cm. This just extends into the subcutaneous fat. The third focus measures

2 cm and overlies the thoracolumbar region of the spine. No fractures are found. No other deep hemorrhages are found.

There is a small focus of hemorrhage on the left side of the neck overlying the mid-portion of the clavicle. No other hemorrhages are found in the paratracheal or prevertebral soft tissues of the neck.

**Extremities:** There is a 3.0 x 1.5 cm abrasion on the lateral aspect of the left elbow. A couple of small abrasions are found on the dorsal aspect of the left elbow. A 6 x 2 cm cluster of light purple contusions is found on the dorsomedial aspect of the distal left forearm. The dorsal aspect of the left wrist has a 3 cm fine linear abrasion. The lateral aspect of the left wrist has an 8 x 1 cm area of light purple contusion. There is a 5.0 x 0.7 cm contusion with superficial abrasion on the medial aspect of the left wrist. The lateral aspect of the right wrist has an 8.0 x 0.7 cm pink contusion that curves around the wrist. A 4.0 x 0.7 cm similar-appearing contusion curves around the medial aspect of the right wrist. The wrist injuries are consistent with the history of handcuffs. There is no trauma on the hands.

A couple of very small abrasions are present on the knees and shins. No other trauma to the lower extremities.

### INTERNAL EXAMINATION

**HEAD:** The scalp and galea are congested. The calvarium and base of skull are of normal thickness and free of fractures. The dura is smooth and shiny. There is neither recent epidural or subdural hemorrhage nor evidence of a subdural neomembrane. The blood in the dural sinuses is not clotted. The brain weighs 1400 gm. The leptomeninges are congested, but thin and transparent. There is no subarachnoid hemorrhage or exudate. The atraumatic brain is symmetrical, with a normal gyral pattern. There is no brain swelling, midline shift, or herniation. The brainstem and cerebellum are unremarkable. The arteries at the base of the brain are normally formed and free of atherosclerosis or aneurysm.

Coronal sections of the cerebrum reveal no focal lesions of the cortex, white matter, or deep gray structures. There is no evidence of midline shift or herniation. Sections of the brainstem and cerebellum are unremarkable. The ventricles are of normal size and configuration and free of hemorrhage.

**NECK:** The cervical vertebrae, hyoid bone, and tracheal and laryngeal cartilages are without fracture. The endotracheal tube is positioned within the upper airway, with the tip located at the carina. The endogastric tube passes down the esophagus, with the tip located in the cardiac region. No other foreign material is present within the posterior oropharynx, larynx, or trachea. There is mild edema of the supraglottic tissues, but no obstruction. The tracheal mucosa is cyanotic. The tongue is without hemorrhage or masses.

**BODY CAVITIES:** The subcutaneous fat is 1 ½ inches thick at mid-abdominal level. No blood or excess fluid is found within any of the body cavities. The loops of bowel are fused together, but the adhesions are easily reduced. There is no evidence of obstruction. No abdominal viscera are absent. The remaining serosal surfaces are smooth and shiny. The organs are normally arranged. No organs are absent.

**CARDIOVASCULAR SYSTEM:** The 400 gm heart has a prominent left ventricle and a right-dominant circulation. The epicardial surface is smooth and shiny, with the usual distribution of epicardial fat. The myocardium is firm and red-brown without focal softening, discoloration, or fibrosis. The left ventricular free wall measures 1.5 cm in thickness; the septal wall measures 1.5 cm; and the right ventricular wall measures 0.4 cm. The chambers are not dilated. The



endocardial surfaces are without fibrosis or mural thrombus. The four cardiac valves are normally formed, thin, and pliable. The coronary ostia are patent, with normal takeoff angles. Each of the coronary arteries is widely patent, with thick fatty deposits along the intimal surfaces resulting in no more than 10 percent stenosis of the lumen. No acute thrombi are present. The heart is filled with a large amount of liquid blood. The aorta is normally formed, with fatty streaks throughout its length. There are no aneurysms.

**RESPIRATORY SYSTEM:** The right lung weighs 640 gm and the left lung weighs 550 gm. Each lung is normally formed and fully inflated, with a smooth and shiny pleural surface containing moderate anthracotic pigmentation. The parenchyma is mildly crepitant and dark purple, oozing a mild amount of serosanguineous fluid. There are no masses, infarcts, or consolidations. The bronchi are normally formed and unobstructed. The pulmonary arteries are free of thromboemboli.

**LIVER, GALLBLADDER, AND PANCREAS:** The liver weighs 2620 gm and is normally formed, with a smooth and shiny capsule. The parenchyma is congested, firm, and yellowish brown. The lateral edge of the left lobe has a 2 cm subcapsular yellowish tan mass. Sectioning reveals a lobulated lesion with a central scar. A second similar appearing lesion is found within the right lobe of the liver, also near the lateral edge. The gallbladder contains approximately 20 ml of bile. In addition, there are two mulberry-shaped yellowish green stones measuring 1 and 2 cm in greatest dimension. The gallbladder mucosa is unremarkable. The bile ducts are patent and of normal caliber. The pancreas is normal in size and cyanotic. The tail of the pancreas has more of a dark purple, somewhat hemorrhagic appearance, but this appears to be postmortem change. No cysts, masses, or fibrosis are present.

**GASTROINTESTINAL SYSTEM:** The esophagus is normally formed and patent with a smooth, dusky purple mucosa. The gastroesophageal junction is unremarkable. The stomach contains approximately 150 ml of bloody fluid and scant remnants of food. No medication residue is present. The gastric mucosa is diffusely hemorrhagic, with no ulcerations or mass lesions. The small bowel is cyanotic and contains light tan to dark green chyme. No drug packets or mucosal lesions are found. The colon contains soft green stool. The appendix is present and is unremarkable.

**THYMUS, SPLEEN AND LYMPH NODES:** The thymus is atrophic. The spleen weighs 130 gm and is normally formed with an intact, smooth, gray-purple capsule. The parenchyma is firm and dark purple, with an indistinct white pulp and no evidence of fibrosis or mass lesions. The mediastinal, paratracheal, parabronchial, para-aortic, and mesenteric lymph nodes are not enlarged.

**ENDOCRINE SYSTEM:** The thyroid is symmetrical with uniform, red-brown parenchyma and no masses. The adrenal glands are normally formed, with fine cortical nodularity. There are no dominant nodules or medullary hemorrhages. The pituitary is of normal size and without masses.

**UROGENITAL SYSTEM:** The right kidney weighs 160 gm and the left kidney weighs 170 gm. Each kidney is normally formed with a smooth, dark purple subcapsular surface. The cortex is of normal thickness. The corticomedullary junctions are distinctly demarcated. There are no cysts or masses. The pelves and ureters are patent and of normal caliber. The ureters follow their usual course and empty into the bladder, which contains approximately 10 ml of clear yellow urine. The bladder mucosa is smooth, light pink-tan. The prostate is not enlarged and free of nodules. The testes are unremarkable.

**MUSCULOSKELETAL SYSTEM:** The skeletal muscle is dark red and firm, with a mass appropriate for the decedent's age and sex. The clavicles, sternum, ribs, vertebrae, and pelvis are without fracture, degenerative changes, or lesions.

**TOXICOLOGY:**

Femoral blood is submitted for toxicology. Heart blood is submitted for thyroid studies. Vitreous fluid is submitted for electrolytes and glucose. Heart blood, femoral blood, vitreous, gastric contents, urine, and liver are retained.

**HISTOLOGY:**

Representative sections of the major organs are submitted.

**PHOTOGRAPHS:**

Digital photographs are taken.

**X-RAYS:**

X-rays of the head and chest are obtained and are noncontributory.

**EVIDENCE:**

Blood for DNA typing is retained. Gunshot residue kit was collected in the Emergency Room.

**MICROSCOPIC DESCRIPTION:**

**Heart (x3)** – mild myocyte hypertrophy; mild thickening of intramural arteries, particularly in section from septum; no inflammation or other significant histopathology

**Lungs (x5)** – marked vascular congestion with patchy intra-alveolar hemorrhage; cartilaginous bronchi with hyperplasia of submucosal glands, moderate submucosal inflammation including many eosinophils, hypertrophy of smooth muscle in the walls, thickened basement membranes, and desquamated columnar epithelium and thin mucus in the lumen; small bronchioles with mucous in lumen; no goblet cell metaplasia present; no other significant histopathology

**Liver** – acute sinusoidal congestion; micro and macrovesicular steatosis in a centrilobular distribution; architecture intact; no inflammation or other histopathology

**Kidney** – vascular congestion; no other histopathology

**Pancreas (x2)** – autolysis; no apparent histopathology

**Adrenal** – mild cortical hyperplasia; no other histopathology

**Spleen** – marked congestion of red pulp; no other apparent histopathology

**Thyroid** – no histopathology

**Brain** – section from frontal border-zone with small cluster of mononuclear cells in the perivascular space around one blood vessel in the subcortical white matter; no other histopathology

SEF/clk

D: 10/23/11

T: 10/25/11

**Toxicology Report**

Report Issued 11/07/2011 15:00

Patient Name SMITH, TYRONE W.  
 Patient ID 11-04798  
 Chain 11230514  
 Age 32 Y  
 Gender Male  
 Workorder 11297220

Page 1 of 5

To: 117C

Sacramento County Coroner  
 Attn: Gregory Wyatt/Pathology  
 4800 Broadway, Suite 100  
 Sacramento, CA 95820

**Positive Findings:**

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>Matrix Source</u>
Atropine	Positive	ng/mL	Femoral Blood
Caffeine	Positive	mcg/mL	Femoral Blood
Cotinine	Positive	ng/mL	Femoral Blood
Nicotine	Positive	ng/mL	Femoral Blood
Delta-9 THC	13	ng/mL	Femoral Blood
Delta-9 Carboxy THC	29	ng/mL	Femoral Blood
Sodium (Vitreous Fluid)	140	mmol/L	Vitreous Fluid
Potassium (Vitreous Fluid)	10	mmol/L	Vitreous Fluid
Chloride (Vitreous Fluid)	120	mmol/L	Vitreous Fluid
Glucose (Vitreous Fluid)	66	mg/dL	Vitreous Fluid
Urea Nitrogen (Vitreous Fluid)	11	mg/dL	Vitreous Fluid
Creatinine (Vitreous Fluid)	0.80	mg/dL	Vitreous Fluid

See Detailed Findings section for additional information

**Testing Requested:**

<u>Analysis Code</u>	<u>Description</u>
1919FL	Electrolytes and Glucose Panel (Vitreous), Fluid (Forensic)
8092B	Postmortem Toxicology - Expert, Blood (Forensic)

**Specimens Received:**

<u>ID</u>	<u>Tube/Container</u>	<u>Volume/ Mass</u>	<u>Collection Date/Time</u>	<u>Matrix Source</u>	<u>Miscellaneous Information</u>
001	Gray Top Tube	10 mL	10/23/2011 14:00	Femoral Blood	
002	Gray Top Tube	10 mL	10/23/2011 14:00	Femoral Blood	
003	Red Top Tube	1.75 mL	10/23/2011 14:00	Vitreous Fluid	

All sample volumes/weights are approximations.  
 Specimens received on 10/27/2011.

✓  
 SF  
 11-7-11

**Detailed Findings:**

<b>Analysis and Comments</b>	<b>Result</b>	<b>Units</b>	<b>Rpt. Limit</b>	<b>Specimen Source</b>	<b>Analysis By</b>
Atropine	Positive	ng/mL	12	001 - Femoral Blood	GC/MS
Caffeine	Positive	mcg/mL	0.10	001 - Femoral Blood	GC/MS
Cotinine	Positive	ng/mL	12	001 - Femoral Blood	GC/MS
Nicotine	Positive	ng/mL	12	001 - Femoral Blood	GC/MS
Delta-9 THC	13	ng/mL	1.0	001 - Femoral Blood	GC-GC-GC/MS
Delta-9 Carboxy THC	29	ng/mL	5.0	001 - Femoral Blood	GC-GC-GC/MS
Sodium (Vitreous Fluid)	140	mmol/L	80	003 - Vitreous Fluid	Chemistry Analyzer
Potassium (Vitreous Fluid)	10	mmol/L	1.0	003 - Vitreous Fluid	Chemistry Analyzer
Chloride (Vitreous Fluid)	120	mmol/L	70	003 - Vitreous Fluid	Chemistry Analyzer
Glucose (Vitreous Fluid)	66	mg/dL	35	003 - Vitreous Fluid	Chemistry Analyzer
Urea Nitrogen (Vitreous Fluid)	11	mg/dL	3.0	003 - Vitreous Fluid	Chemistry Analyzer
Creatinine (Vitreous Fluid)	0.80	mg/dL	0.50	003 - 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. Atropine (d,l-Hyoscyamine) - Femoral Blood:**

Atropine is an anticholinergic alkaloid used in pre-anesthetic therapy to control airway secretions and as an antispasmodic to control gastrointestinal spasms. It is frequently used as an antidote in the treatment of anticholinesterase-type pesticides. It can be obtained naturally from deadly nightshade or jimson weed. Atropine is also used in resuscitative attempts.

Following a single IM 1.0 mg dose of atropine, peak plasma concentrations of approximately 3 ng/mL were attained in 30 min.

Toxic effects of atropine have considerable individual variation; however, at high doses, signs and symptoms include mydriasis, hot dry reddened skin, delirium and hallucinations. Death has been reported with a concentration of 200 ng/mL in blood and 1500 ng/mL in urine.

In resuscitative failure, most of the administered drug remains confined to the intravascular injection pathway. Often the drug is still present in the postmortem blood collected from the heart sampled at autopsy.

The reported qualitative result for this substance is indicative of a finding commonly seen following a resuscitative attempt and is usually not toxicologically significant.

**Reference Comments:****2. Caffeine (No-Doz) - Femoral Blood:**

Caffeine is a xanthine-derived central nervous system stimulant. It also produces diuresis and cardiac and respiratory stimulation. It can be readily found in such items as coffee, tea, soft drinks and chocolate. As a reference, a typical cup of coffee or tea contains between 40 to 100 mg caffeine.

Following the oral ingestion of 120 and 300 mg of caffeine, reported peak plasma concentrations of the drug averaged 3.0 mcg/mL (range, 2.0 - 4.0 mcg/mL) and 7.9 mcg/mL (range, 6.0 - 9.0 mcg/mL), respectively. A single oral dose of 500 mg produced a reported peak plasma concentration of 14 mcg/mL after 30 min.

Reported concentrations of caffeine in caffeine-related fatalities averaged 183 mcg/mL (range, 79 - 344 mcg/mL).

The reported qualitative result for this substance is indicative of a finding commonly seen following typical use and is usually not toxicologically significant.

**3. Chloride (Vitreous Fluid) - Vitreous Fluid:**

Normal: 105 - 135 mmol/L

**4. Cotinine (Nicotine Metabolite) - Femoral Blood:**

Cotinine is a metabolite of nicotine and may be encountered in the fluids and tissues of an individual as a result of, e.g., tobacco exposure. Concentrations may be variable in blood and urine depending on the route of exposure and length of exposure. Cotinine plasma/serum concentrations in non-smokers are reported to be typically less than 15 ng/mL. Tobacco users and transdermal patch wearers have typical cotinine plasma/serum concentrations of less than 1000 ng/mL.

Anabasine is a natural product occurring in tobacco, but not in pharmaceutical nicotine and a separate test for anabasine in urine can be used to distinguish tobacco from pharmaceutical nicotine use.

**5. Creatinine (Vitreous Fluid) - Vitreous Fluid:**

Normal: 0.6 - 1.3 mg/dL

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

Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC with peak concentrations attained 32 to 240 minutes after smoking and 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.

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

Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. It rapidly leaves the blood, even during smoking, falling to below detectable levels within several hours. THC concentrations in blood are usually about one-half that of serum/plasma concentrations. The active metabolite, 11-hydroxy-THC, may also fall below detectable levels shortly after inhalation. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC with peak concentrations attained 32 to 240 minutes after smoking and 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.

Reported usual peak THC concentrations in serum after smoking 1.75% or 3.55% THC marijuana cigarettes are 50 - 270 ng/mL after beginning of smoking, decreasing to less than 5 ng/mL by 2 hrs. Corresponding delta-9-carboxy-THC concentrations range from 10 - 101 ng/mL about 32 to 240 minutes after the beginning of smoking and decline slowly. Passive inhalation of marijuana smoke has been reported to produce blood THC concentrations up to 2 ng/mL. Delta-9-carboxy THC concentrations in blood may not be present following passive inhalation of marijuana smoke.

**Reference Comments:**

## 8. Glucose (Vitreous Fluid) - Vitreous Fluid:

Normal: &lt;200 mg/dL

Postmortem vitreous glucose concentrations &gt;200 mg/dL are associated with hyperglycemia.

Since postmortem vitreous glucose concentrations decline rapidly after death both in vivo and in vitro, care should be taken in the interpretation of results. Stability of vitreous glucose for up to 30 days has been noted by NMS Labs when specimens are maintained frozen (-20°C).

## 9. Nicotine - Femoral Blood:

Nicotine is a potent alkaloid found in tobacco leaves at about 2 - 8% by weight. It is also reportedly found in various fruits, vegetables and tubers, e.g., tomatoes and potatoes, but at a smaller per weight fraction. As a natural constituent of tobacco, nicotine is found in all commonly used smoking or chewing tobacco products. It is also in smoking cessation products, e.g., patches. Nicotine has been used as a pesticide, although not as widely since the advent of more effective agents.

Nicotine is extensively metabolized; the primary reported metabolite is the oxidative product cotinine. The plasma half-life of nicotine is short (approximately 1 - 2 hr); while that of cotinine is about 20 hr. Non-smokers typically have plasma/serum nicotine concentrations of less than 10 ng/mL; however, levels may be higher depending on exposure parameters, e.g., length of time in a tobacco smoke environment; amount of airborne nicotine, etc. Tobacco users and transdermal patch wearers have typical nicotine plasma/serum concentrations less than 100 ng/mL. However, many factors influence the levels found in an individual, including: frequency of use; amount of nicotine exposed to; route of administration; etc.

Toxic effects of nicotine overdose include nausea, vomiting, dizziness, sweating, miosis, EEG and ECG changes, tachycardia, hypertension, respiratory failure, seizures and death. Death from nicotine exposure usually results from either a block of neuromuscular transmission in respiratory muscles or from seizures. Reported blood levels of nicotine in deaths attributed to the compound range from 1000 - 5800000 ng/mL.

Anabasine is a natural product occurring in tobacco, but not in pharmaceutical nicotine. A separate test for anabasine in urine can be used to distinguish tobacco from pharmaceutical nicotine use.

The reported qualitative result for nicotine is indicative of a finding commonly seen following typical use and is usually not toxicologically significant.

## 10. Potassium (Vitreous Fluid) - Vitreous Fluid:

Normal: &lt;15 mmol/L

## 11. Sodium (Vitreous Fluid) - Vitreous Fluid:

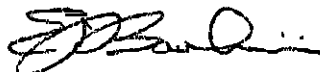
Normal: 135 - 150 mmol/L

## 12. Urea Nitrogen (Vitreous Fluid) (VUN) - Vitreous Fluid:

Normal: 8 - 20 mg/dL

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 11297220 was electronically signed on 11/07/2011 14:39 by:



Edward J. Barbieri, Ph.D.  
Forensic Toxicologist

**Analysis Summary and Reporting Limits:**

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

**Analysis Summary and Reporting Limits:**

-Analysis by Chemistry Analyzer for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Chloride (Vitreous Fluid)	70 mmol/L	Potassium (Vitreous Fluid)	1.0 mmol/L
Creatinine (Vitreous Fluid)	0.50 mg/dL	Sodium (Vitreous Fluid)	80 mmol/L
Glucose (Vitreous Fluid)	35 mg/dL	Urea Nitrogen (Vitreous Fluid)	3.0 mg/dL

Acode 50013B - Cannabinoids Confirmation, Blood (Forensic) - Femoral Blood

-Analysis by Multi-dimensional Gas Chromatography/Mass Spectrometry (GC-GC-MS) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
11-Hydroxy Delta-9 THC	5.0 ng/mL	Delta-9 THC	1.0 ng/mL
Delta-9 Carboxy THC	5.0 ng/mL		

Acode 8092B - Postmortem Toxicology - Expert, Blood (Forensic) - Femoral Blood

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

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Salicylates	120 mcg/mL		

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

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Benzodiazepines	100 ng/mL	Cocaine / Metabolites	20 ng/mL
Cannabinoids	10 ng/mL	Opiates	20 ng/mL

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

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Buprenorphine / Metabolite	0.50 ng/mL		

-Analysis by Gas Chromatography/Mass Spectrometry (GC/MS) for: The following is a general list of compound classes included in the Gas Chromatographic screen. The detection of any particular compound is concentration-dependent. Please note that not all known compounds included in each specified class or heading are included. Some specific compounds outside these classes are also included. For a detailed list of all compounds and reporting limits included in this screen, please contact NMS Labs.

Amphetamines, Analgesics (opioid and non-opioid), Anorectics, Anesthetics, Antiarrhythmics, Anticholinergic Agents, Anticoagulant Agents, Anticonvulsant Agents, Antidepressants, Antiemetic Agents, Antifungal Agents, Antihistamines, Antihypertensive Agents, Antiparkinsonian Agents, Antipsychotic Agents, Antitussive Agents, Antiviral Agents, Anxiolytics (Benzodiazepine and others), Calcium Channel Blocking Agents, Cardiovascular Agents (non-digitalis), Hallucinogens, Hypnotics (Barbiturates, Non-Benzodiazepine Hypnotics, and others), Local Anesthetics Agents, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents (excluding Salicylate) and Stimulants (Amphetamine-like and others).

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Acetone	1.0 mg/dL	Isopropanol	1.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL