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Forensic Pathologist and Consultant

Dr. Steven White in Support of the Lung Float Test Ban Act (House Bill 1143)

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Dear Chair Bagnall, Vice Chair Cullison, and Members of the Health Committee,

As a practicing forensic pathologist with experience in perinatal pathology, I respectfully submit this written testimony in support of the *Lung Float Test Ban Act* (House Bill 1143).

I am a physician and board-certified by the American Board of Pathology in anatomical (general) and forensic pathology with experience in perinatal pathology. In brief, I graduated from medical school in Louisiana in 2007 after completing MD and PhD (Biochemistry and Molecular Biology) degrees, as well as a master's degree in public health (MPH).

I completed residency training in Anatomic Pathology at the National Institutes of Health (NIH) in Bethesda, MD in 2010, followed by a Forensic Pathology fellowship at the Cook County Medical Examiner's Office in 2011. I obtained additional training in perinatal pathology and worked as a staff pathologist in perinatal and autopsy pathology at Northwestern Memorial Hospital in Chicago (in addition to my regular forensic pathology work). I also joined the faculty of the Northwestern University Pathology Department.

I have extensive experience in forensic and perinatal pathology, having performed more than 5,500 autopsies, including more than 300 perinatal autopsies. I have taught and supervised the work of numerous trainees, including medical students, pathology residents, forensic pathology fellows, and other trainees. I am a member of several professional organizations related to pathology and forensic pathology and have served on national and international committees establishing standards of practice in death investigation and forensic pathology. Additionally, I have testified in more than 60 criminal trials, as well as numerous depositions, and maintain an active private forensic consultation practice.

BACKGROUND

The hydrostatic lung test, more commonly known as the lung float test, was developed several hundred years ago to help distinguish between liveborn infants from stillborn fetuses at autopsy (1). The main idea behind the lung float test is that if an infant was born alive and took breaths, the lungs would be filled with air and lighter than lungs of stillborn fetuses that died prior to birth. During autopsy, the lungs would be removed from the body and placed in water. If they floated, this would indicate that they were filled with air from the baby actively breathing. If they sank, this would indicate that the baby was dead when born and never breathed (1). The "test" has remained unchanged in the centuries since it was developed.

During the past 20 to 30 years, numerous problems with the lung float test have been brought to light. During this time, the validity of the lung float test was being called into question. During my pathology residency (2007-2010) and forensic pathology fellowship (2011), I was taught that the

lung float test had many flaws and was unreliable. At that time, many academic training centers started realizing that the lung float test was not valid. In the past few decades, teaching has centered on explaining why the lung float test is not valid. It was taught so that forensic pathologists would recognize what the test was, not that it was a valid test.

Part of the drive to create the NAME position paper and spread the word about problems with the lung float test has been the recognition by forensic pathologists that the test has been used in courts for the purposes of prosecution, leading to miscarriages of justice.

MEDICAL AND SCIENTIFIC EVIDENCE

The practice of forensic pathology, like other medical specialties, is practiced according to evidence-based medicine. This means that as scientific and medical knowledge advances with peer-reviewed studies, medical practice changes, based on new evidence.

The National Association of Medical Examiners (NAME) is the professional organization of forensic pathologists that accredits medical examiner and coroner offices in the United States, defining standards of practice in forensic pathology, and ensuring competent death investigation systems. They issue position papers to address and correct issues in death investigation practices.

The NAME published a position paper regarding investigation and certification of fetal demise, stillborn, and early neonatal deaths in 2026 to address changes in knowledge and inconsistencies in practice (1). The paper highlights that there are known false positive and false negative results for the lung float test. The position paper states that it should not actually be regarded as a test because there is no standardized methodology for performing the “test,” no error rates, and there is insufficient data to analyze results obtained (1). Basically, the results are not reproducible (a requirement for scientific and medical tests) and cannot be used alone to determine if a baby died in the uterus or was born alive (1).

The final recommendations in the NAME position paper state that “while it may be possible to distinguish a stillborn fetus by the process of postmortem investigation, this distinction can be very difficult” and that “those who use the lung float should be wary of accepting the results” (1). These recommendations are based on evolving knowledge in forensic pathology.

Additionally, in a survey of practicing forensic pathologists, 67% did not use the lung float test to help determine stillborn versus liveborn (2). This is most likely due to the unreliability of the “test” and changing knowledge in forensic pathology. In fact, textbooks in both forensic pathology and pediatric pathology warn of the dangers of using the “lung float test” to differentiate stillborn from liveborn infants (3 - 6).

As a practicing forensic and perinatal pathologist and teacher of medical students and pathology trainees, I know that the lung float test is flawed and I teach trainees that they should not rely on this test.

Problems with the lung float test:

False positive results: Even when the lung float test was used in the past, forensic pathologists knew that the results were meaningless in the setting of decomposition changes or resuscitation efforts. After death, bacteria normally present in the mouth, airways, and intestines

proliferate and start releasing gas (as they normally do in healthy intestines). This gas can cause lungs to float even when the baby never took a breath, leading to a false positive result. Bacteria start replicating and releasing gas in the minutes to hours after death, so that there can be gas in tissues in the absence of outward signs of decomposition.

False negative results: In addition to producing false positive results, there have been reported cases of negative lung float tests (lungs sink in water) in babies known to have been born alive and breathing. This can be caused by prematurity, where the lungs are not fully developed and certain types of lung diseases, which do not allow the air spaces (alveoli) in the lungs to fully expand. There are too many opportunities for misinterpretation of lung float test results.

Lack of standardization and data: There are no standardized methods for performing the lung float test. In medicine and science, standardization of methods is essential to ensure reproducibility. If a test is not reproducible, then the results are meaningless. When diagnosing and treating patients in a patient care setting, we must rely on standardized methods and reproducible data to ensure patient safety. If the wrong tests are used, then patients can be misdiagnosed and treated inappropriately. We would never allow such tests to be used in patient care settings.

Serious implications for the criminal justice system: Forensic pathology is the practice of medicine and interpretations of autopsy test results have serious implications in the criminal justice system. Faulty tests and bad data can lead to wrongful arrests and miscarriages of justice. When a forensic pathologist performing an autopsy on a baby uses the lung float test to indicate that a baby was born alive, this often prompts a criminal investigation, which can lead to the arrest, conviction, and imprisonment of parents.

CONCLUSION

The lung float test used by some forensic pathologists has been shown to be unreliable and should not be used in distinguishing live birth from stillbirth. The National Association of Medical Examiners (NAME) has issued a position paper describing the many problems associated with the lung float test. Most forensic pathologists no longer use this test, as medical knowledge has advanced.

Again, I am writing in support of the *Lung Float Test Ban Act* (House Bill 1143). The stakes are too high to continue using this “test.”

Sincerely,



Steven White, MD, PhD, MPH
Forensic Pathologist

References:

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5. Husain AN, Stocker JT, and Dehner LP. *Stocker and Dehner's Pediatric Pathology*, 5th edition. Wolters Kluwer, 2021.
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