



Prone Restraint Cardiac Arrest: New Sudden Death Theory

The theory of Prone Restraint Cardiac Arrest introduces a controversial viewpoint regarding the underlying reasons for sudden fatalities in individuals who have been involved in altercations with law enforcement, particularly those involving prone restraint.

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Dr. Alon Steinberg, a cardiologist, has formulated and released a theory concerning instances of sudden death following struggles involving prone restraint. His concept, termed “prone restraint cardiac arrest,” challenges what some refer to as the misconception of “restraint asphyxia.” Initially introduced in the medical literature in 2021, this theory gained traction. Late last year, Dr. Steinberg presented his findings at the annual conferences of the International Association of Chiefs of Police (IACP) and the Institute for the Prevention of In-Custody Deaths, Inc. (IPICD).

Most public safety officers, including EMTs and paramedics, attorneys, news reporters, and the public have heard about “restraint or positional asphyxia.” In short, a struggling individual is often redirected into a prone position by officers who then apply temporary pressure on the person’s back and shoulder areas until restraints are applied. The amount of applied down-

ward pressure on the back area is often a function of how violently the person is struggling, bucking or twisting their body.

Asphyxia and Asphyxiation

Asphyxia refers to the body not getting enough oxygen and can be life-threatening. *Asphyxiation* is a derivative of the Greek *asphyxia* which means without pulse, indicating the person has died due to a lack of sufficient oxygen. Among the many categories of asphyxia are *positional*, *postural*, *traumatic* (compressional), *mechanical*, and *restraint*. There are several other categories as well; however, these are the ones most commonly used in officer-associated deaths.

Air Hunger

During capture, control and restraint, an individual who is in a prone position and struggling is often perceived by officers as attempting to physically escape and/or avoid being restrained. Another possible explanation focuses on “air hunger” when

the individual is struggling to inhale more oxygen or is having difficulty exhaling carbon dioxide. Regardless of the reason, on rare occasions, struggles have stopped suddenly because individuals became nonresponsive and then died. Medical examiners often rule the manner of death as “homicide” (death at the hands of another) and, because the officers involved had put their weight on the person’s back area, a finding of restraint asphyxia is often made, even though other indications of asphyxia are missing.

Fleeing, Fighting and Struggling

Few people will disagree that placing too much weight onto a person’s back or chest area can impede inhalation, exhalation and/or ventilation. *Compressional asphyxia* is real and medical examiners have often misapplied it to sudden deaths involving officers who had placed their knee(s) on a violently struggling person’s body. Dr. Steinberg’s “Prone Restraint Cardiac Arrest” theory is a revitalizing,



The theory posits that intense physical activity may induce metabolic acidosis and related health complications which, along with prone restraint and insufficient ventilation, could precipitate cardiac arrest.

though controversial, approach for explaining a person's sudden death following a struggle with officers and/or possible prone restraint.

Officers sprinting after a fleeing subject or wrestling with a subject for more than a minute require additional oxygen. So, too, does the resisting subject. Fleeing and fighting with officers are forms of exercise, as is struggling to restrain a resisting individual. During and after a struggle, the involved individuals often inhale and

exhale with more frequency because they are experiencing *dysfunctional breathing* and are attempting to correct it. While Dr. Steinberg does not dismiss breathing, his focus is on sudden cardiac arrest following a struggle.

Fleeing, fighting with officers and/or then violently struggling during the restraint process, and/or against the restraints are physical activities which require more oxygen. Stress, anxiety, stimulant drugs, alcohol, and so forth, when added to these physical activities, creates a demand for more oxygen and may create metabolic acidosis which Steinberg (2021) and Weedn, Steinberg and Speth (2022) claim make an individual hyperventilate. Hyperventilation may cause people to say, "I can't breathe" or use their accessory and intercostal muscles to help breathe.

B = V+R

The formula for adequate breathing is *ventilation + respiration*, with adults breathing between 12 and 20 breaths per minute. Ventilation is the mechanical process of moving air into and from the lungs (inhalation and exhalation). Respiration is how oxygen diffuses from the air into the lungs and how carbon dioxide is transferred from the blood into the lungs and then discharged into the air. This invisible to the eye process is called *gas exchange*.

System Issue

The functions of the human body are interconnected creating a complex network of body systems. When one part of the system is experiencing difficulty, it will affect one or more parts of the system. A fleeing or struggling person may experience "air hunger" and a decrease in *ventilation*. Add "exercise" (fleeing and/or violent struggle) to the equation and suddenly the person is experiencing metabolic acidosis (drop in pH levels). The outcome can be fatal.

Prone Restraint Cardiac Death

Dr. Steinberg theorizes that increased physical activity which may create metabolic acidosis and associated medical issues, coupled with a person being placed into the prone position, can facilitate cardiac arrest resulting from metabolic acidosis which is negatively impacted by inadequate ventilation and a decrease in carbon dioxide. Similar to a Venn diagram, these variables overlap and, according to his theory, can produce a cardiac arrest. Unlike a heart attack which is a "plumbing" issue, cardiac arrest is an "electrical" issue. The heart suddenly stops.

Summary

Many public safety defense lawyers and expert witnesses believe officer-associated prone restraint deaths will be one of the two top litigation areas for the next decade (mind-body disconnect is number two). If Dr. Steinberg's theory is proven to be scientifically correct, restraint asphyxia will no longer be a primary focus or finding by medical examiners except in those cases where it is appropriate. Recently, in a midwestern civil lawsuit, the plaintiff argued "positional/restraint asphyxia," because the officers held down the person using their hands and knees. Dr. Steinberg argued it was a prone restraint cardiac arrest and not "restraint asphyxia" which caused the death, not "asphyxia" as opined by the other plaintiff's medical experts.

Share this article with others including defense counsel and medical examiners so they will learn about the theory of prone restraint cardiac arrest. Give a copy to law enforcement restraint and defensive tactics trainers so they can incorporate it into their lesson plans and educate their learners about it. When you think about it, prone restraint cardiac arrest appears to shift the emphasis onto the decedent's lifestyle, physical condition, etc. and away from the public safety officers.

Remember: Sudden compliance by a struggling subject may not be cooperation, but a medical emergency. A person can transition from being a suspect to a patient in a short amount of time. Be prepared to give CardioPulmonary Resuscitation (CPR), know how to use and apply an Automatic External Defibrillator (AED), and ask for medical assistance. Adopt and use the P.E.P. capture, control and restraint system developed and taught by retired Huntington Beach (CA) Police Department Lieutenant John Domingo to avoid placing knees on a subject's back which can lead to claims of "positional/restraint asphyxia." **P&SN**

John G. Peters, Jr., Ph.D., serves as president of the Institute for the Prevention of In-Custody Deaths, Inc. and Executive Director for the Americans With Effective Law Enforcement, Inc. An experienced instructional designer, he developed the Institute's tuition-free User-Level "Recognizing and Managing Abnormal Breathing" online program (ipicd.com). A judicially qualified expert witness, he has testified in federal, state and international courts.