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## Restraint Asphyxia

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*To the Editor:*

Recently, O'Halloran and Frank reported 21 cases of deaths caused by "restraint asphyxia" (1). We believe the concept of restraint asphyxia, as presented in this article and others, does not have a scientific basis. We believe the concept should disappear like the dinosaur.

Chan et al. (2) demonstrated that hog-tying after exercise may produce a clinically insignificant restrictive pattern on lung spirometry but causes no significant impairment of arterial oxygenation. Their study discredited the methods and findings of Reay et al. (3) in their 1988 article, which is cited often as a basis for restraint asphyxia. Other studies, such as the ones by Schmidt and Snowden (4) and Eisele et al. (5), further discredit the restraint asphyxia concept by demonstrating no significant impairment of arterial oxygenation in situations simulating restraint.

The cases reported by O'Halloran and Frank are most likely accounted for by catecholamine-mediated cardiac dysrhythmias, not asphyxia. We have investigated several cases of excited delirium, psychosis, and strenuous physical exertion leading to sudden death, and many of these cases do not have any element resembling asphyxia.

O'Halloran and Frank implicate petechiae in 10 of their cases as evidence of asphyxia, but petechiae are nonspecific and can be seen in many settings, including sudden cardiac death. Two of the subjects in their study stated they could not breathe before losing consciousness. This also is not evidence of asphyxia. Dyspnea frequently results from cardiac dysfunction. Also, doesn't the ability to say "I can't breathe" show the absence of asphyxia?

Too many of us assume de facto blame on people involved in the restraint of a psychotic and combative individual. We often believe that the restraining individuals are negligent because they caused "restraint asphyxia." In the interest of science and the truth, it is time to put this unsubstantiated concept to an end.

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## REFERENCES

1. O'Halloran RL, Frank JG. Asphyxial death during prone restraint revisited: a report of 21 cases. *Am J Forensic Med Pathol* 2000;21:39-52.  
[\[Context Link\]](#)
2. Chan TC, Vilke GM, Neuman T, Claussen JL. Restraint position and positional asphyxia. *Ann Emerg Med* 1997;30:578-86.  
[\[Context Link\]](#)
3. Reay DT, Howard JD, Fligner CL, Ward RJ. Effects of positional restraint on oxygen saturation and heart rate following exercise. *Am J Forensic Med Pathol* 1988;9:16.  
[\[Medline Link\]](#) [\[Context Link\]](#)
4. Schmidt P, Snowden T. The effects of positional restraint on heart rate and oxygen saturation. *J Emerg Med* 1999;17:777-82.  
[\[Medline Link\]](#) [\[CrossRef\]](#) [\[Context Link\]](#)
5. Eisle J, et al. Comparison of respiratory function in the prone maximal restraints position with and without additional weight force on the back: as reported in "Drugs, not police restraint, cause of death." *Forensic Drug Abuse Advisor* 2000;12:17-8.  
[\[Context Link\]](#)

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