

# Police Officer Stress and Sleep Deprivation

## Subject Matter Expert Interview with Dr. John Violanti

By

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As one of the leading researchers in the field of Law Enforcement Health, Dr. John Violanti's name can be found in the author section of some of the most important studies conducted in this field. Topics ranging from endothelial function and sleep deprivation to post traumatic stress and mortality rates, Dr. Violanti is a true pioneer in study of officer health and wellness. Currently serving as a research professor in the Department of Social and Preventive Medicine at the State University of New York Buffalo, he draws upon his 23 years of experience as a New York State Police trooper to provide a practical approach to his prospective research projects. A national lecturer, he has been asked to speak at esteemed venues including the FBI Academy at Quantico, Virginia and various symposiums on Law Enforcement health.

Along with his significant research, Dr. Violanti has also written and edited several books on stress and trauma in the police profession, including Police Trauma: Psychological Aftermath of Civilian Combat, Posttraumatic Stress Intervention: Challenge, Issues, and Perspectives, and Copicide: Concepts, Cases and Controversies of Suicide by Cop. Dr. Violanti's body of work speaks for itself. The MPTC is proud to have the opportunity to share his expert insight with the Law Enforcement community around globe.

**Dr. Violanti, your research on mortality rates in police officers back in 1996 found that the average lifespan of a police officer is 66 years. Have you seen any changes in this as of 2012?**

Previous research has suggested that police officers are dying sooner than their same age civilian counterparts. For example, police officers at the age of 50 are dying sooner than their 50 year old civilian counterparts.

**What do you feel are the top 5 factors associated with the declining health of law enforcement professionals?**

- Stress
- Lack of physical fitness

- Diet
- Shift work
- Difficulty transitioning from work to personal life

**You have done quite a bit of research on how stress affects the overall health of police officers. Can you provide us with some of your findings?**

Stress can lead to a disruption in the HPA axis. The HPA axis is the hypothalamic-pituitary-adrenal axis, is one of the major bodily systems generally responsible for responding to stress. We are also presently looking into whether or not PTSD (post-traumatic stress disorder) alters heart rate variability, with a decrease in the ability to vary heart rate. Here, the parasympathetic nervous system is not allowed to counteract the effects of the sympathetic nervous system. With stress, we have also seen a dysregulation in daily cortisol patterns. This may leave the police officer more vulnerable to disease. Excessive cortisol secretion which does not return to a normal level can also lead to a state of hypervigilance.

**In your research, have you seen other health problems associated or caused by chronically elevated or altered cortisol patterns?**

We have found a decrease in the flexibility of the brachial artery in police officers with elevated stress levels. In fact there is a 2X greater risk of impaired brachial artery flow in police officers with higher PTSD symptoms. We have also found a thickening of the Carotid artery. These are both major risk factors of plaque build-up, cardiovascular disease and stroke.

**Have you found any other physiological symptoms associated with PTSD?**

Stress that originated from police organizational pressure and lack of support at work are two of the major risk factors associated with the symptoms of PTSD.

PTSD is both a physiological and psychological disorder. PTSD can cause destruction of the cells in the hippocampus area of the brain. There is a decreased blood flow to parts of the brain leading to the inability to extinguish bad memories of the traumatic event.

**There have been numerous studies on shift work, sleep deprivation, and related health decline. Can you share what you have found in your research?**

Shift work and sleep deprivation individuals have been associated with 4X greater risk of metabolic syndrome. This combined with elevated stress levels associated with police work can lead to inflammation in arteries, which in turn can lead to cardiovascular disease.

There is a negative hormonal cascade associated with shift work and sleep deprivation. Individuals who work night shifts have a diminished cortisol response. The disruption in eating patterns associated with shift work can also be a lifestyle risk factor which increases the risk of metabolic syndrome. We also found a 4-fold increase in injury rate for night shift workers. Not only is the risk for cardiovascular disease greater in night shift workers, but the risk of getting seriously injured is also magnified.

**Do you have any recommendations on how a police officer working the night shift may curb the potential for these serious health risks?**

- National Institute of Justice recommends 10 hour fixed shifts are best
- Limit second jobs and allow time for physical and mental recovery
- Controlled napping during shifts
- Eat a high protein meal just prior to shift. This energizes hormonal systems.
- Exercise prior to shift. This also energizes hormonal systems.
- Get quality sleep prior to shift.
- Departments need to change the culture and educate on proper sleeping habits.

**What do you feel are some of causes of the declining health over a police officer's career?**

When a police cadet graduates an academy they are typically idealistic young officers who are also fit. They are then exposed to police culture and the associated stresses. As one's career progresses there is a general drop in physical and mental fitness. At older age categories there may be complete or near complete cessation of physical fitness, leading to the prevalence of obesity and metabolic risk factors among officers.

**If you were a Wellness coordinator, what would you do to increase the overall health of the Law Enforcement community?**

Many departments have adopted wellness programs. Some have succeeded, while others have not. Education of both the individual and department as a whole is critical. Creating a healthy culture can have profoundly positive effects across a department. Educating officers on the importance of sleep, diet, stress management, physical fitness, and social network/relationships should be a priority in any wellness program. Let officers know that it is OK to be human.

**You mentioned physical fitness. Do you have any recommendations regarding training?**

The best training advice I can give is to make sure the training is age appropriate and tailored toward the individual. This will help to ensure that officers will stay with a program. Physical fitness is a lifetime habit.

**Do you have any clinical pearls from your research that you could share with us?**

We are currently researching if vitamin D deficiency can lead to increased risk of cardiovascular risk factors. Other research has suggested that natural vitamin D from sunlight is superior to synthetic form. We are also going to conduct imaging of the eye to assess plaque build-up in the very thin vessels in the human eye. This can be a sign of future cardiovascular disease.

**Dr. Violanti, thank you for both your time and insight. It has been an honor.**

It has been my pleasure.