

HEALTH & SCIENCE

Chronic stress linked to more heart disease among police

Research showing increased risk and prevalence of cardiovascular disease in police officers also could apply to firefighters, nurses and teachers.

By [Susan J. Landers](#), AMNews staff. Oct. 20, 2008.

Washington -- It's no secret that police officers face a lot of stress on the job. After all, bringing in the bad guys is hazardous duty.

But surprisingly, it's also the low-level, chronic stress of finishing up paperwork and juggling work and family -- stressors faced by workers across occupations -- that can take a toll on the health of police officers, according to recent research.

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The risk for cardiovascular disease is higher among law enforcement officers than it is for the rest of the population, where it is already exceedingly high. Heart disease and strokes cause more deaths in Americans of both genders and all racial and ethnic groups than any other disease, according to the Centers for Disease Control and

Prevention.

It appears that chronic stress in police officers may be a factor in heart disease's elevated levels among these men and women. And, researchers say, there is likely a similar effect in other occupations.

Firefighters, nurses, teachers and even newspaper reporters are all vulnerable to the effects of chronic stress, said Warren Franke, PhD, a kinesiology professor and director of the exercise clinic at Iowa State University.

Heart disease risk is higher for law enforcement personnel than for the rest of the U.S. population.

These findings signal the need for additional precautions by physicians, especially those whose patients are either still in law enforcement or are retirees, said Sandra Ramey, PhD, RN, assistant professor of nursing at the University of Iowa College of Nursing. "A red flag should go up, and more screening should be considered beyond the routine."

Ramey has examined stress's impact on police officers in large and small law enforcement agencies. She found that a common scenario plays out. Officers who have heart disease most often retire with a disability and "self-select out of the population."

She continued to follow these retirees in her research and discovered they had twice the prevalence of cardiovascular disease as the general population. Some of their risk factors, such as high blood pressure, cholesterol levels and the presence of diabetes, were three times greater than in the general population.

Plus, the retirees were still young. Their average age was 55, she said.

Another, perhaps unsolvable stressor is in the nature of police organizations, Franke noted. Most police departments have paramilitary structures in which orders come from the top. "There's not a huge amount of give and take," he said. This stress is bureaucratic, which is not unique to police departments, he added.

Franke stumbled onto the connection between heart disease and law enforcement when surveying Iowa Dept. of Public Safety retirees and their widows. He found the incidence of workers' cardiovascular disease almost twice as high as that of Iowa's general population.

Heart attack and stroke are the leading causes of U.S. deaths.

Franke now is examining the biological mechanism that might trigger this high disease rate. He has a CDC grant to explore the hypothesis that the body's inflammatory response is higher among people under chronic stress.

John Violanti, PhD, research associate professor in New York's University of Buffalo School of Medicine and Biomedical Sciences, also is examining the stress of police work and its link to physical and mental ills.

More than 400 police officers are participating in his study, the Buffalo Cardio-Metabolic Occupational Police Stress study, funded by the National Institute of Occupational Safety and Health. Data are being collected via ultrasound exams of brachial and carotid arteries, salivary cortisol and blood samples. In addition, the officers wear a small electronic device to measure the quantity and quality of their sleep throughout a typical police shift cycle.

"There is a real need to examine what the job does to people, usually good people," said Violanti, a member of the New York State Police for 23 years.

Violanti is measuring cortisol patterns among police officers as a signal for stress. A pilot study of officers with symptoms of posttraumatic stress disorder revealed that the hormone was elevated in those with moderate and severe PTSD.

An imbalance in cortisol can signal an opportunity for disease, he said. "Cortisol is a regulatory hormone that keeps things going. Stress messes things up."

Violanti managed to sidestep health problems while on the force by exercising, running and watching his diet. "I've been pretty lucky."

Education is key for the young officers entering the force, Violanti added. They need to be told about the importance of a healthy lifestyle, including eating right and getting enough sleep. "We found that telling officers something as simple as getting a room-darkening shade helped."

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The Buffalo, N.Y., Cardio-Metabolic Occupational Police Stress study focuses on the effects of stress on more than 400 members of that city's police force. It is expected to be completed by the end of 2009. Meanwhile, two pilot studies involving smaller numbers of police officers have been released. Among the findings:

- Female officers had higher mean impact-of-events (a measure of posttraumatic stress symptoms) and CES-D (a measure of depressive symptoms) scores than did male officers.
- Officers with higher PTSD symptoms had a nearly twofold reduction in brachial artery flow-mediated dilation, indicating greater impairment of endothelial function, than officers with fewer PTSD symptoms.
- Officers with moderate or severe PTSD symptoms had higher mean cortisol values upon awakening than did those with less severe PTSD symptoms.
- Officers with severe PTSD had a threefold higher prevalence of metabolic syndrome than those reporting the fewest PTSD symptoms.

Source: "Police and Stress," the Science Blog of the National Institute for Occupational Safety and Health (www.cdc.gov/niosh/blog/nsb063008_policestress.html)

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