

Earthquake aftermath: Life-threatening blood clots in legs and lungs from sitting in cars for extended periods

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A photograph of a junior high school sports ground in Kumamoto city, which served as an emergency parking lot for individuals taking refuge in their vehicles, taken on April 16, 2016. Many evacuees spent the full night in a vehicle. Credit: Kumamoto Nichinichi Shimbun

Japanese physicians highlight the risks and clinical significance for individuals who remain seated and immobile in vehicles for prolonged periods. They call for preventive awareness activities and education about the risk of venous thromboembolisms (VTE) in a Letter to the Editor in the *Canadian Journal of Cardiology*.

Earlier reports have identified a sharp increase in [sudden cardiac death](#) following natural disasters like earthquakes, but less is known about the risk of other secondary health damage such as acute cerebral and cardiovascular diseases, and in particular, the risk of VTE as a result of being confined in a car for a long time.

Following the Kumamoto [earthquake](#) in April 2016, there was a high number of night aftershocks. Because many people were afraid to return to their homes, they chose to evacuate. Although some individuals reached a public evacuation shelter, many others were forced to stay in their vehicles overnight.

In order to assess the impact of remaining seated in cars for extended periods of time, the Kumamoto Earthquake Thrombosis and Embolism Protection (KEEP) project investigators gathered data from the aftermath of the Kumamoto earthquakes. They found an "epidemic" of blood clots developing in the legs, and in numerous cases going to the lungs, in many of the people forced to evacuate. Analysis of questionnaires from 21 local medical institutions established that 51 patients were hospitalized following the earthquakes due to VTE. Of these, 42 patients (82.4 percent) had spent the night in a vehicle. VTE was complicated by pulmonary thromboembolism (PTE) in 35 cases.

"Preventive awareness activities by professional medical teams, supported by education in the media about the risk of VTEs after spending the night in a vehicle, and raising awareness of evacuation centers, could lead to a reduced number of victims of VTE," noted lead

investigator Seiji Hokimoto, MD, PhD, from the Department of Cardiovascular Medicine, Graduate School of Medical Sciences, Kumamoto University, Kumamoto, Japan.

"This is a dramatic example of the risks inherent in spending prolonged periods immobilized in a cramped position," commented Stanley Nattel, MD, Editor-in-Chief of the *Canadian Journal of Cardiology*. "It is an important reminder of a public health point and reinforces the need to get up and walk around regularly when on an airplane or when forced to stay in a car for a long time."

More information: "Venous Thromboembolism Caused by Spending a Night in a Vehicle after an Earthquake (Night in a Vehicle after the 2016 Kumamoto Earthquake)," *Canadian Journal of Cardiology*, [DOI: 10.1016/j.cjca.2018.01.014](https://doi.org/10.1016/j.cjca.2018.01.014)

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