



NEWS RELEASE

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

Investigators writing in the Canadian Journal of Cardiology warn about the increased risk of venous thromboembolism as the result of being confined to a vehicle and call for action to raise public awareness of the dangers

Philadelphia, May 3, 2018 – 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.



Caption: 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

“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.”

Notes for editors

The Letter to the Editor is “Venous Thromboembolism Caused by Spending a Night in a Vehicle after an Earthquake (Night in a Vehicle after the 2016 Kumamoto Earthquake),” by Daisuke Sueta, MD, PhD; Seiji Hokimoto, MD, PhD, Yoichiro Hashimoto; Kenji Sakamoto; Hiroshi Hosokawa; Kazuhiro Nishigami; Koji Sato; Koichiro Fujisue; Sunao Kojima; Takeshi Takahashi; Kazuhiko Hanzawa; Hisao Ogawa; and Kenichi Tsujita on behalf of the Kumamoto Earthquake Thrombosis and Embolism Protection (KEEP) Project (<https://doi.org/10.1016/j.cjca.2018.01.014>). It appears in the *Canadian Journal of Cardiology* in advance of volume 34, issue 6 (June 2018) published by Elsevier.

Full text of this content is available to credentialed journalists upon request. Contact Eileen Leahy at +1 732 238 3628 or cjcmmedia@elsevier.com to obtain copies. Journalists wishing to schedule interviews with the authors should contact Dr. Hokimoto at shokimot@kumamoto-u.ac.jp.

About the *Canadian Journal of Cardiology*

The [Canadian Journal of Cardiology](#) is the official journal of the [Canadian Cardiovascular Society](#). It is a vehicle for the international dissemination of new knowledge in cardiology and cardiovascular science, particularly serving as a major venue for the results of Canadian cardiovascular research and Society guidelines. The journal publishes original reports of clinical and basic research relevant to cardiovascular medicine as well as editorials, review articles, case reports, and papers on health outcomes, policy research, ethics, medical history, and political issues affecting practice. www.onlinecjc.ca

About the Editor-in-Chief

Editor-in-Chief Stanley Nattel, MD, is Paul-David Chair in Cardiovascular Electrophysiology and Professor of Medicine at the University of Montreal and Director of the Electrophysiology Research Program at the Montreal Heart Institute Research Center.

About the Canadian Cardiovascular Society

The Canadian Cardiovascular Society is the professional association for Canadian cardiovascular clinicians and scientists working to promote cardiovascular health and care through knowledge translation, professional development, and leadership in health policy. The CCS provides programs and services to its 2000+ members and others in the cardiovascular community, including guidelines for cardiovascular care, the annual Canadian Cardiovascular Congress, and, with the Canadian Cardiovascular Society Academy, programs for trainees. More information about the CCS and its activities can be found at www.ccs.ca.

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