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UNDER EMBARGO UNTIL MARCH 29, 2018, 12:01 AM ET

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Hockey victories may increase heart attack risk in Canadian men: The thrill of victory may turn into the agony of heartbreak

Men under the age of 55 are more likely to suffer a heart attack the day after a Montreal Canadiens victory, according to a new study in the Canadian Journal of Cardiology

Philadelphia, March 29, 2018 – The thrill of a hockey victory may put younger men at an increased risk for heart attack. A new [study](#) published in the [Canadian Journal of Cardiology](#) found an increase in hospital admissions for men under 55 presenting with symptoms of ST-elevation myocardial infarction (STEMI) or heart attack the day after a Montreal Canadiens win. There was little evidence within the general population of a relationship between watching hockey games and the incidence of STEMI.

Each year, cardiovascular disease claims the lives of an estimated 17.3 million people. The emotional and environmental stress of sporting events has been linked to acute cardiac problems, however, the relationship has yet to be well defined.

Because hockey is an integral part of Canadian life, researchers wanted to examine whether or not there is a link between watching hockey and heart attacks. They analyzed hospitalization data for patients at the Montreal Heart Institute for STEMI. The results of their analysis showed an association between Montreal Canadiens victories and increased STEMI risk in men, but not women. The greatest incidence was seen in men under 55 years of age, and the highest admission rates occurred after home victories, with a 40 percent increase in this age group after a triumphant game for the home team.

“Our study is the first to evaluate the association between local hockey games and admission rates for acute STEMI. Since the inauguration of the NHL in 1917, the Montreal Canadiens remains the team with the most Stanley Cup wins and is known for its extremely loyal and enthusiastic fan base. This historical role of the city of Montreal might explain in part the association between higher admission rates for STEMI,” explained lead investigator Hung Q. Ly, MD, SM, interventional cardiologist at the Montreal Heart Institute, Montreal, Canada.

In the study, women were less likely to suffer a STEMI after a hockey game than men, despite the fact that prior research has shown women are more susceptible to mental stress-induced myocardial

ischemia. “Previous studies have suggested that unhealthy behavioral changes including increased alcohol consumption, heavy and fatty meals, smoking, drug use, or sleep deprivation may have additive effects on the link between sporting events and increased cardiovascular risk in spectators,” noted Dr. Ly. “Notably, among all demographic groups in our study, the highest proportion of obesity, dyslipidemia, and smoking was found in young males, pointing towards an increased risk behavior and unhealthy lifestyle in this subgroup.”

Another interesting finding is that winning games produced more heart attacks than losses. “Indeed, strong emotional response to events has been reported to increase the risk of cardiovascular events. In our study, the fact that game outcomes are likely unknown to the spectator until the end implies that emotional triggers at the end and/or after the match might impose a greater risk for vulnerable populations,” observed the team of investigators. “This hypothesis is further supported by the notion that significant increases in STEMI hospital admissions occurred one day after a game in our study, while no difference in admission rates were observed on match days.”

While hockey and other sports will continue to be a source of fun and excitement for people in Canada and around the world, it is important to consider how these events can influence spectator health. The emotional responses and associated physiological changes combined with a high-risk cardiovascular profile might contribute to the higher risk in this study population. According to the researchers, preventive measures targeting behavioral and lifestyle changes could positively impact this risk.

Notes for editors

The article is “Hockey Games and the Incidence of ST-Elevation Myocardial Infarction,” by Caroline E. Gebhard, MD; Catherine Gebhard, MD, PhD; Foued Maafi, MSc; Marie-Jeanne Bertrand, MD, MSc; Barbara E. Stähli, MD; Karin Wildi, MD; Zurine Galvan, MD; Aurel Toma, MD; Zheng W. Zhang; David Smith, MSc; and Hung Q. Ly, MD, SM (<https://doi.org/10.1016/j.cjca.2017.12.028>). It is published in advance of a forthcoming issue of the *Canadian Journal of Cardiology* published by Elsevier.

Full text of this article is available to credentialed journalists upon request. Contact Eileen Leahy at +1 732 238 3628 or cjcmedia@elsevier.com to obtain copies. Journalists wishing to schedule interviews with the authors should contact Hung Q. Ly at qh.ly@umontreal.ca.

About the *Canadian Journal of Cardiology*

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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.

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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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