



CARDIOPULMONARY RESUSCITATION (CPR)

FACTS

- Cardiac refers to the heart. Arrest means stop. Sudden cardiac arrest is the sudden and unexpected loss of heart function in a person (i.e. the heart stops beating).
- Cardiac arrest is not the same as heart attack. A heart attack occurs when the blood supply to the heart is slowed or stopped because of a blockage. In the case of a heart attack, the heart continues to beat.
- Both cardiac arrest and heart attack are medical emergencies that require early access to emergency medical care – minutes matter.
- Cardiac arrest may have a variety of causes including heart disease, drowning, stroke, electrocution, suffocation, drug overdose, motor vehicle or other injury.
- Signs of cardiac arrest include: no breathing, no movement or response to initial rescue breaths, and no pulse.
- Cardiopulmonary resuscitation (CPR) is an emergency procedure to restore blood flow to someone suffering cardiac arrest, keeping the victim alive until advanced medical care arrives.
- In Canada, 35,000 to 45,000 people die of sudden cardiac arrest each year.¹
- Sudden cardiac arrest occurs with a frequency of roughly 1 per 1000 people 35 years of age or older per year.²
- The survival rate of victims of sudden cardiac arrest (outside of a hospital) is approximately 5 percent.^{3,4}
- Almost 80 percent of all cardiac arrests occur in homes and public places, and 35 to 55% are witnessed by a family member, co-worker or friend.⁵
- Unfortunately, the majority of people witnessing cardiac arrest do not perform CPR.^{3,4}
- Knowing how to respond to a cardiac arrest can increase the odds of survival and recovery by 30 percent or more.³
- Conventional CPR involves chest compressions (pushing down hard and fast on the centre of the chest) and artificial respiration (rescue breathing or mouth-to-mouth breaths) in order to provide oxygen to essential organs such as the heart and brain.
- The optimal ratio of chest compressions to mouth-to-mouth breaths is 30 compressions to 2 breaths (30:2) with minimal interruption of chest compression.
- Hands-Only CPR is CPR without mouth-to-mouth breaths. It involves providing high quality chest compressions by pushing hard and fast on the centre of the chest, at a rate of about 100 times per minute.
- Compared to not responding at all, it is critical to at least provide chest compressions (such as Hands-Only CPR).



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RECOMMENDATIONS

The Heart and Stroke Foundation of Canada recommends that:

Canadians

1. Activate their community emergency medical system by calling 9-1-1 or the local emergency number in the event of a cardiac arrest emergency.
2. Be trained in conventional CPR and apply CPR skills when needed.
3. Who witness an adult suddenly collapse and are either not trained in conventional CPR or unsure of their ability to perform it effectively should activate the emergency medical system (call 9-1-1 or the local emergency number or have someone else do it) and use Hands-Only CPR. This means pushing down hard and fast on the centre of the chest at a rate of 100 compressions per minute.
4. Learn about the Heart and Stroke Foundation's *CPR Anytime™ Family & Friends™*, an easy way for Canadians to learn CPR in only twenty-two minutes. For additional information or to order a kit, contact your local Heart and Stroke Foundation office or visit cpranytime.ca.

Governments

Ensure provincial regulations and/or legislation provides protection from liability to responders who administer CPR, including the use of automated external defibrillators (AEDs).

Healthcare Professionals

Perform conventional CPR in the course of professional duties.

BACKGROUND INFORMATION

Once the heart stops pumping, seconds count. For every minute that passes without help, the chance of surviving a cardiac arrest drops by about 10 percent. But if you know how to respond to a cardiac arrest, the odds of survival and recovery can increase by 30 percent or more.³ Clinical studies have shown that CPR can help to improve survival rates. CPR is the best treatment that a cardiac arrest patient can receive until a defibrillator and advanced medical care arrives.⁶ CPR training teaches Canadians how to recognize the signals of a heart attack and cardiac arrest, how to react, and how to provide CPR, greatly improving a person's chance of survival.

Conventional Cardiopulmonary Resuscitation

Conventional CPR involves chest compressions (pushing hard and fast on the centre of the chest) and artificial respiration (rescue breathing or mouth-to-mouth breaths). The ratio of chest compressions to mouth-to-mouth breaths is 30 compressions to 2 breaths (30:2), at a rate of 100 compressions per minute.

Learning CPR is easy and inexpensive. The short time it takes to learn CPR could make a real difference to someone's life. Since most cardiac arrests happen at home, you could be saving the life of a friend or family member.



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Hands-Only Cardiopulmonary Resuscitation

Hands-Only CPR involves providing high quality chest compressions by pushing hard and fast on the centre of the chest, at a rate of at least 100 times per minute. It is a potentially lifesaving option that can be used by people not trained in conventional CPR, or those who are unsure of their ability to give the combination of chest compressions and mouth-to-mouth breathing required for conventional CPR.

What is the Heart and Stroke Foundation's role in CPR Science?

The Heart and Stroke Foundation of Canada (HSFC) is a founding member of the International Liaison Committee on Resuscitation (ILCOR). ILCOR is the international body that reviews emerging resuscitation research and summarizes the latest findings to give direction when there is strong scientific evidence to lead to a Guidelines change. HSFC, in collaboration with the American Heart Association, uses ILCOR information to regularly update Guidelines for North America.

HSFC sets the Canadian Guidelines for CPR, defibrillation and other aspects of emergency cardiovascular care in Canada. *The 2005 Guidelines for CPR and Emergency Cardiovascular Care* are the current HSFC Guidelines. All CPR training agencies in Canada should refer to these Guidelines when developing their own training programs.

HSFC offers a comprehensive range of CPR training programs to train members of the public, professionals and program instructors. CPR courses to train the public include both instructor-led and self-directed learning programs.

CPR Anytime™ Family & Friends™

The Heart and Stroke Foundation's *CPR Anytime™ Family & Friends™* is a portable CPR course in a small box. This innovative training program teaches the skills to perform CPR on an adult, child or infant in just twenty-two minutes. It can be used by an individual in their home or offered in a community or workplace group setting. The training kit uses a unique 'practice-while-watching' instruction method that has been proven to be as effective as standard instructor-led courses.⁷ For more information or to order a *CPR Anytime™ Family & Friends™* kit, contact your local Heart and Stroke Foundation office or visit cpranytime.ca.

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The Heart and Stroke Foundation of Canada recognizes that the life-long heart health of Canadians is affected by both individual and social factors. Individual factors include genetic make-up, personal health choices and actions, and social support. Social factors include the social, economic and environmental conditions in which Canadians live, work, learn and play. The Foundation encourages Canadians to make heart-healthy choices and encourages governments and the private sector to develop policies and programs that support healthy communities and reduce inequalities that negatively affect health and well-being.

The evidence contained in this scientific statement is current
as of: OCTOBER 2010

REFERENCES

1. Gardiner, Martin J., Leather, Richard and Teo, Koon, The Prevention of Sudden Death from Ventricular Arrhythmia, Chapter 1, Epidemiology, Canadian Cardiovascular Society, 1999.
2. Hazinski MF, Markenson D, Neish S et al. American Heart Association Scientific Statement: Response to Cardiac Arrest and Selected Life-Threatening Medical Emergencies. *Circulation* 2004;109:278-291.
3. Robertson, RM (Editorial). Sudden death from cardiac arrest - improving the odds. *New England Journal of Medicine* 2000;343(17): 1259-60.
4. Culley LL, Rea TD, Murray JA, Welles B, Fahrenbruch CE, Olsufka M, Eisenberg MS, et al. Public access defibrillation in out-of-hospital cardiac arrest – A community based study. *Circulation* 2004;109:1859-1863.
5. Vaillancourt C, Steill IG, Canadian Cardiovascular Outcomes Research Team. Cardiac arrest care and emergency medical services in Canada. *Canadian Journal of Cardiology* 2004;20(11):1081-90.
6. International Liaison Committee on Resuscitation (ILCOR). Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 4: Automated External Defibrillator: Key link in the chain of survival. *Circulation* 2000;108(Suppl 2):160-176.
7. Einspruch EL, Lynch B, Aufderheide TP, Nichol G, Becker L. Retention of CPR skills learned in a traditional AHA Heartsaver course versus 30-min video self-training: a controlled randomized study. *Resuscitation* 2007;74(3):476-86.



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