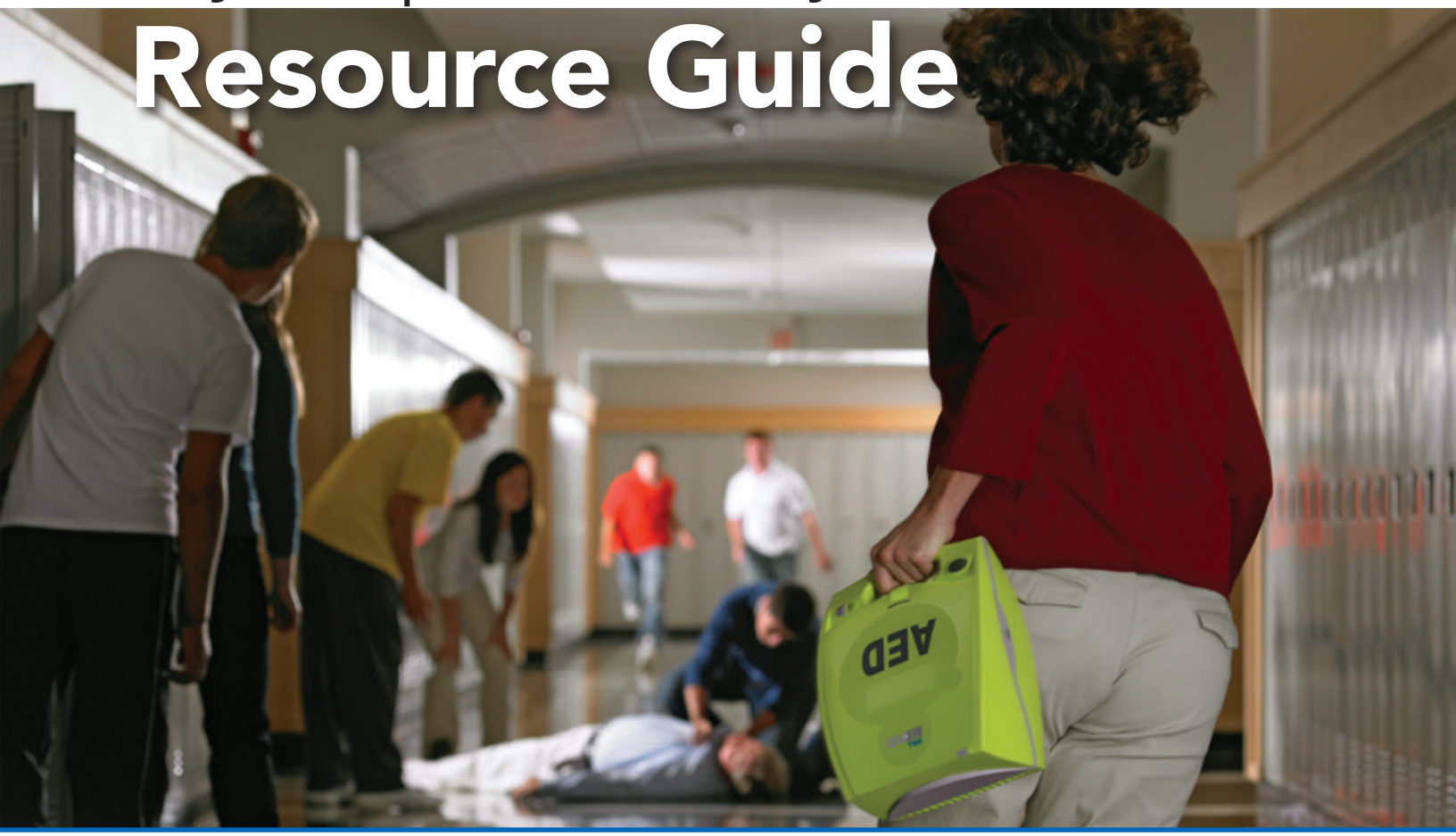
Lay-Responder & Bystander
Resource Guide



Peel Regional PARAMEDIC Services

Information for those who have **Acted to Save a Life**

Providing information on normal reactions to abnormal events, understanding commonly asked questions along with tools and resources to aid in self-recovery.

Region of Peel
working with you

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Introduction

Acting to save someone's life can have a lasting impact on both the rescuer and the person being rescued. It may be the first and only time someone experiences an event like it, and it can feel like a whirlwind while it's happening. Regardless of the outcome it's normal and quite common to be affected mentally and emotionally, whether the rescuer has first aid training or not.

We start acting in the best way we know how with the information we were able to process.

The degree to which a critical event affects someone is individual and personal. Most people attempting to save a life describe an adrenaline rush at first, which can last minutes, hours, and less commonly, days. In the first few moments our brain is working on instinct, processing the seriousness, calculating what to do and how to recall information from prior training, movies, or whatever knowledge has been implanted in our minds. We start acting in the best way we know how with the information we were able to process and remember.

When the rush calms down, the rescuer might feel shocked, scared, guilty, ashamed, angry, or vulnerable. It is common for people to experience doubt, questioning their performance or even the incident itself. By understanding the reactions that normally occur in these situations and some coping strategies, most people can overcome difficult thoughts and emotions without needing professional help.

Our goal with this document is to help lay rescuers process their emotions and to answer questions that can help them effectively recover after acting to save a life.

If you have any questions, comments or feedback, please email Peel Regional Paramedic Services PAD Program at *PADProgram@peelregion.ca*. If at any point you feel in crisis going through this resource guide, please refer to section 7 for resources available within the community or call 911.

The Window of Tolerance

When acting to save a life, or even watching someone else do it, there are a range of possible reactions. The window of tolerance, (see image below), originally named by Dr. Dan Siegel, provides a visual depiction of normal brain and body reactions after being involved or witnessing a critical incident.

Everyone has a zone or "window" where they can remain in the present and in control of their thoughts, feelings, and emotions. This is referred to as the optimal state.

Each day, and even hour by hour, we have fluctuations of stress.

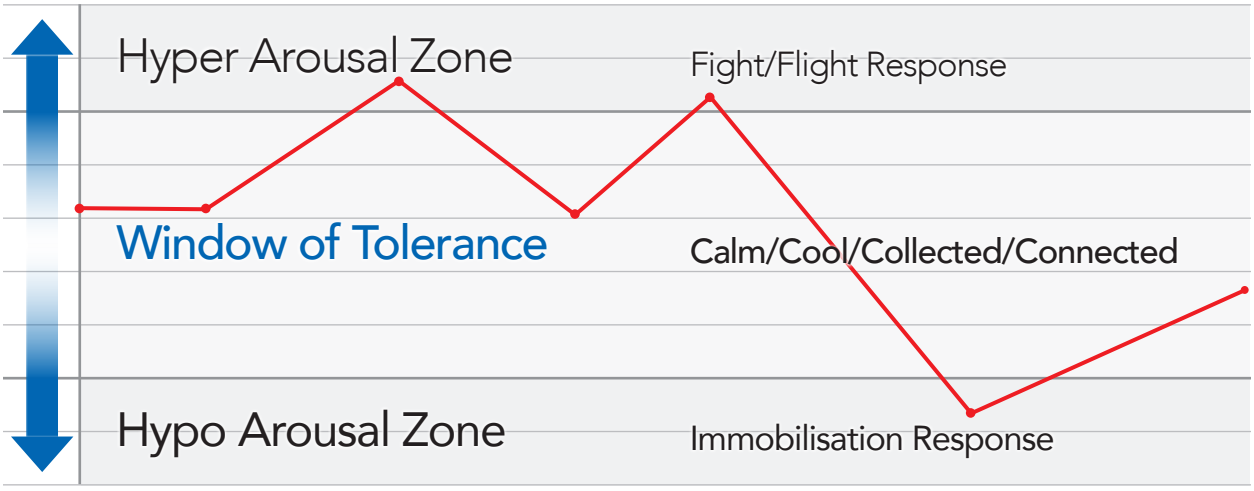
However, most of us don't stay within our window of tolerance all the time. Each day, and even hour by hour, we have fluctuations of stress. Each person has a unique window that represents their individual ability to absorb and respond to information and stresses well.

Here's an example. Imagine someone is late for work. On their way there they hit every red light possible. They may become frustrated and angry. But when they get to their destination, they eventually calm down.

Resilience and experience allow us to stay within the window of tolerance, or quickly return to a state of balance. In our example, the person might peak within the window or cross the upper portion of the window into hyperarousal. However, it is likely not the first time in their life they've been late, and they know traffic lights can slow them down. This prior exposure/experience allows the mind to process the event. So when the person gets to where they're going, they can quickly gain control of their emotional responses and return to a normal state.

Seeing someone in extreme crisis is not something most of us experience. This can put our response to the event outside of our window of tolerance, and we may quickly swing between hyper- and hypoarousal.

In the next section, we talk about the **"The four 4s,"** and take a more in-depth look at how someone might respond after acting to save a life.

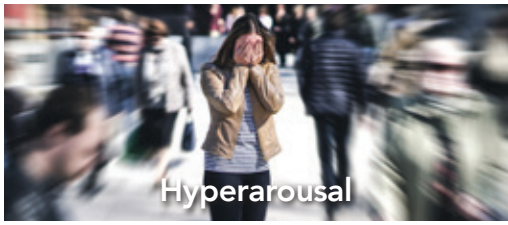


What is Hyperarousal?

Above the window, we experience hyperarousal, often associated with the body's "fight or flight" response. We might react by feeling the need to "do something" in the moment. Or the event might trigger a memory of trauma that causes us to react. Hyperarousal is also characterized by excessive activation/energy. This keeps our system stuck "on" and impacts our ability to relax.

Symptoms of hyperarousal:

- Emotionally overwhelmed
- Feeling unsafe
- Acting impulsively
- Feeling anger/rage
- Racing thoughts
- Emotionally reactive
- Hypervigilant
- Intrusive images
- Obsessive compulsive
- Tension, rigidity or shaking
- Showing poor judgment



What is Optimal State?

The optimal state or "window" is the space where someone is continuously fluctuating within various levels of arousal throughout the day, neither overstimulated or understimulated. This is their tolerance. Our window of tolerance changes throughout life, sometimes increasing is size or becoming more tolerant when we learn to handle certain stresses effectively.

Symptoms of an optimal state:

- Able to feel and think simultaneously
- Able to feel empathy
- Able to be in the present
- Feeling safe, open and curious
- Able to regulate emotions
- Able to access intuition and insight
- Relaxed, calm and alert

What is Hypoarousal?:

Below the window is hypoarousal. We may freeze, "play dead," feel submissive or disassociate with what's happening. This emotional response may occur if we feel we can't escape the situation. Or it can be triggered by memories of a prior experience. Hypoarousal may occur when we have too much arousal, so that it becomes overwhelming, and our brain/body is not able to tolerate it. Hypoarousal is when we are stuck in "off" by shutting down or dissociating.

Symptoms of hypoarousal:

- Feeling flat; no energy
- Unable to think clearly
- Feeling numb
- Collapsing
- Feeling disconnected/no feelings
- Unable to defend oneself or say no
- Feeling disassociated
- Shutting down
- Being passive
- Feeling ashamed
- Withdrawing/isolating oneself
- Feeling hopeless

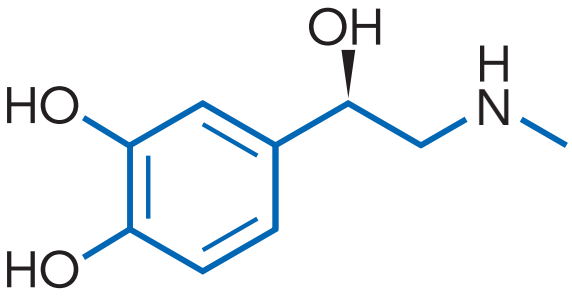
Normal Reactions to Abnormal Events

A tool provided to understand normal reactions to abnormal events is the **"Four 4s"**. It offers a general guide on how someone might move through the window of tolerance after an incident.

A person might react in either direction on the window of tolerance, or stay level.

Everyone's window of tolerance is unique to that individual. A person might react in either direction on the window of tolerance, or stay level. We do know that critical incidents can shrink the window of tolerance, and the emotions and feelings someone experiences happen regardless of whether the person being helped lived or died. These critical incidents can weaken areas in the brain that help us regulate down from a hyperactivation or up from a hypoactivation. The **"Four 4s"** can help determine whether the journey of self-care is working, and may provide guidance on whether professional help should be sought.

In the moment an incident happens and critical decisions need to be made, a person will typically spike instantly to either hypo- or hyperactivation. That's largely because of a chemical response that occurs in the brain called adrenaline. The person may freeze, or the opposite can occur.



When presented with any fearful situation, the body produces adrenaline. It's a natural response that is important to our survival, and has a direct impact on our mental and emotional responses. When we witness or are involved in a critical incident, our bodies may produce and release excessive amounts of adrenaline, even though we are not personally facing danger.

The first 4 hours after

Excessive high levels of hormones are released and sugar also enters the bloodstream, providing the energy needed to react immediately due to a perceived stressful event or threat of harm. When hormones such as adrenaline and sugar is released without needing it because no real personal danger was present, this can cause an "adrenaline dump". This is the first phase someone goes through after a critical incident. Our recovery from that release of hormones can take several hours.

This phase affects each person differently. Someone who has acted to save a life before, who has trained in high-stress situations, or has had similar experiences in life may be able to handle the dump easier or seem to get over it much easier, and return to an optimal place in the window of tolerance. The more often someone deals with these "dumps" the easier it may be for them to recover.

Make notes, before providing a written report, and avoiding the use of automobiles and heavy machinery is recomended.

It is important to note that when a person experiences a critical event, adrenaline and other chemicals cause the mind to create a picture of the incident versus a narrative. This can make it challenging for them to provide police or others with a detailed report of the incident right away. It is not uncommon for the person to forget something or leave out important details. A better approach is perhaps to make some notes after an incident, and then add more detail several hours later. It is also important those who participated in acting to save a life to avoid operating heavy machinery or doing tasks that require quick thinking. Reports of people who have driven through stop signs or had near-misses operating heavy machines or automobiles are common. Physical activity, such as going for a walk, a run or a workout, is a good way to burn off excessive adrenaline and sugar. It can also help improve sleep after the incident.

Normal symptoms during the first 4 hours:

- Headache, stomachache
- Vision changes, light-headed
- Jittery, restless or unable to sleep the day of incident
- Nervous without anything to be nervous about
- Sweaty palms, tight muscles, increased heart rate
- A sense of physical displacement, feeling dazed, surreal
- An altered sense of reality (e.g., feeling as if time has slowed)
- Difficulty remembering specific details of the event

The first 4 days to 4 weeks

After the adrenaline dump is over and the body has expelled the excess neurochemicals and sugars, the mind starts to process the event. This typically happens in the first four days after the incident. During this phase, our mind is trying to put all the pieces together and return to the optimal state in the window of tolerance. Each person will recover at different speeds and in different ways.

We might start thinking of other people involved and their thoughts, and question how they're doing.

A number of factors influence our window of tolerance and how the event is processed in the brain. It's common for the brain to try and make sense of what happened, and why it happened. We might start thinking of other people involved and their thoughts, and question how they're doing. During the incident, when the adrenaline is racing through our bodies, our mind alters how it processes memories. While memories are usually stored like a storyboard, the mind records memories of the incident according to how the five senses experienced it.This explains why it is common to have memories of a particular smell, a physical feeling, taste, visual or audible noise.

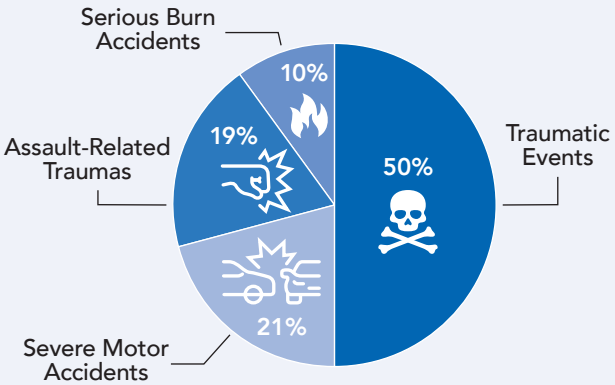
Our mind captures the memories of the event based on our senses, and not a timeline. Our mind after the event tries to formalize or build the"story," using the memories recorded from our senses. We can start questioning our own actions and involvement as we process the fragments of the event. We may re-live, have vivid images, or remember a particular fragment or aspects of the incident that was imprinted by one or more of our senses have taken in. A person may also find that they're going from one end of the window of tolerance to the other rapidly. This is the phase where the mind tries to make sense of it all, and establish a feeling of safety and security so that it can return to the optimal state it was in before the event.

This is a good time to discuss the events with someone. After an incident, our mind is disorganized and overwhelmed, which can cause the disconnection between cognitive processing and reasoning and our emotions. If we get stuck in hyper- or hypoactivation during this phase, it can be difficult to move on. It is very easy in this phase for someone to develop a negative bias or a cognitive distortion while working through the what-ifs, could-haves and should-haves. These distortions can cause a person to become hypersensitive and vulnerable to self-doubt. They might overthink, overreact, or even become triggered by insignificant things. The great news is that during this processing phase, the majority of us are able to mentally write the story and formulate a memory of the event vs. living in the event, and recover back to an optimal state. The mind is a powerful tool in self-recovery, and there are many techniques that can help.

People do generally exhibit or experience symptoms or emotional responses after an incident, not all of which are troublesome. Symptoms are generally in relation to where they are on the window of tolerance. Not all of these symptoms last, and are different based on whether someone is in a hypo- or hyperactivated state. Someone who is exhibiting several different symptoms or emotional responses for a minimum of three days and not lasting more than one month may be experiencing what is called "acute stress." Which is completely normal after a critical incident.

Many people recover from acute stress once removed from the situation and given appropriate support. This can take the form of understanding, empathy for their distress, and an opportunity to describe what happened and their reaction to it. Some people benefit from describing their experience several times or participating in a technical debriefing of the event. Emergency service personnel, friends and loved ones can often provide this support. Otherwise, physicians or other health care professionals are helpful. In section 4 we answer commonly asked questions by those who acted to save a life. Sometimes clarity and understanding is the best tool to recovery.

Causes of Acute Stress Disorder



Source: https://www.stress.org/acute-stress-disorder

It is also important to remember that a critical event is an event. It should not define a person.

One of the ways to increase our window of tolerance following an event is to increase the window itself, meaning we expand the boundary of our optimal state when facing the memories and emotions, which are an important part of recovery. It is also important to remember that a critical event is an event. It should not define a person. Being involved in acting to save a life can also lead to a propensity of pro-social activities and awareness, and inspiring advocacy. When thinking or talking about the event, the responder should try to externalize it. Instead of saying "I broke their ribs doing compressions", they might say "Their ribs broke while doing compressions," reframing the event as an experience.

Normal symptoms during this phase:

- Numb or emotionally detached from the incident
- Recurring, uncontrollable, and intrusive images of the incident
- Feelings that the incident is playing out or recurring (flashbacks)
- Inability to feel positive (happy, satisfied, or loved)
- Loss of memory/unable to recall certain aspects of the event
- Making a conscious effort to avoid thoughts or feelings associated with the incident
- Avoiding people, places, conversations, activities, objects, and situations that might remind them of the incident
- Recurring dreams of the incident
- Inability to sleep properly
- Easily irritated or having outbursts
- Substantial changes in diet
- Loss of sex drive
- Being excessively attentive
- Difficulty concentrating

The first 4 weeks to 4 months

The third phase following a critical incident occurs in the 4 weeks after the event. Acute stress symptoms will have gradually lifted over the previous weeks as the brain reprogrammed how it processed the incident. What was once a vivid image in the first few days, may now just be a memory of the incident, and the thoughts are no longer intrusive or bothersome as the window of tolerance has expanded. For the majority of people, the first two phases are short lived as they make sense of what happened and process their thoughts and emotions.

It's completely normal at this time to experience some of the symptoms from the first two phases, which can include feeling detached emotionally from the incident altogether. Some people may also find that during the first few weeks it is difficult to stop thinking about what happened. It is important to note that some people after four weeks may feel worse, or continue to manifest some symptoms from the processing phase, or find that they are still getting stuck in a hypo- or hyperactivated state.

There are different forms of therapy that can help in recovery. In some cases, speaking to a family physician is a good starting point.

Again, this is normal because there could be other factors that are preventing someone from moving on or causing them to be stuck in that moment. The brain is complex, and past experiences also play a factor. If after four weeks a person is still struggling with the incident or specific symptoms from phase 2, it's important that they talk with a professional. If seeking professional help, the individual should look for someone who has experience with "trauma". There are different forms of therapy that can help in recovery. In some cases, speaking to a family physician is a good starting point. Learn more about seeking professional help in Section 6.

If you continue to feel these symptoms, seek professional support:

- Still re-experiencing the incident through intrusive memories, flashbacks, nightmares, or intense mental or physical reactions
- Avoidance, such as avoiding anything that reminds them of the trauma, a loss of interest in activities and life in general
- Hyperarousal, including sleep problems, irritability, hypervigilance (on constant "red alert")
- Negative thoughts and mood changes like feeling alienated and alone, difficulty concentrating or remembering, depression, hopelessness, and feeling guilt, shame, or self-blame.

Symptoms that exhibit self-recovery, and returning to the optimal state:

- Ability to laugh, smile, and joke around
- Ability to think about the incident without becoming upset (or have stomachache or headache)
- Sleeping normally
- Eating normally
- Resuming or unchanged social activities
- Ability to be productive, concentrate at work, school or home
- Ability to control thoughts, and not become emotional about the incident

The first 4 months and beyond

After four months, most, if not all of the acute stress symptoms should have resolved. If the person sought assistance from a professional, they should be well on their way to recovery. However, if they are still struggling with the events that occurred, they could have post-traumatic stress disorder (PTSD). It is important to remember that while the experience can't be unexperienced or unwitnessed, it should simply become a memory as the person continues through life, much like positive or negative memories from youth and childhood.

The hardest part for most people is the ability to say "I am not okay."

If a person is still struggling to cope, they should seek additional support, indicating what happened and the timeframe. It's okay to feel vulnerable, or nervous when accessing help. The hardest part for most people is the ability to say "I am not okay."

Beyond the 4 months the lay responder may encounter triggers that cause a reminder of an event. These flashbacks/reminders are common. In some cases the individual may feel the event is happening again, or they are going through the motions in their mind to the point they might even be disconnected from the present, as if in a deep day dream. These moments are often temporary and trigged by one of the 5 senses that takes them back to that moment. When these reminders become disruptive, the individual should seek professional support.

For others, the memory of the event may stay with them for life and not be intrusive or disruptive. However, it is important to note that future incidents or life events might trigger unresolved emotions, or feelings, just as the recent event might trigger past unresolved feelings or emotions.

Section 5 provides strategies to deal with these moments when they arise, and how to be brought back into the present.

Grieving

Grieving is a very individual and personal experience. The healing happens gradually.

During the first 4 months, maybe longer, it is also possible to be experiencing grief. Grieving is an emotional suffering that is felt when something or someone has been removed or taken away. The loss can come from witnessing, knowing or being directly involved in a cardiac arrest or other critical event. There is no right or wrong way to grieve, but there are healthy ways to deal with the grieving process. Grieving is a very individual and personal experience. Influencing factors, that contribute to grieving include personality, coping style, life experience, faith, and how significant the loss was. The healing happens gradually. It can't be forced or hurried. There is no "normal" timetable for grieving.

The "five stages of grief" reflects the various stages a person may go through while grieving. An individual won't necessarily go through all stages, and they may not experience them in sequence. In fact, grief can be resolved without going through any of these stages. The 5 stages of grief are:

- **Denial:** "This can't be happening to me."
- **Anger:** "Why is this happening? Who is to blame?"
- **Bargaining:** "Make this not happen, and in return I will ____."
- **Depression:** "I'm too sad to do anything."
- **Acceptance:** "I'm at peace with what happened."

While grieving a loss is an inevitable part of life, there are ways to help cope with the pain, come to terms with grief, and eventually, find a way to pick up the pieces and move on with life.

- Acknowledging the pain
- Accepting that grief can trigger many different and unexpected emotions
- Understanding that the grieving process is individual
- Seeking out face-to-face support from people who care
- Supporting oneself emotionally by taking care of oneself physically
- Recognizing the difference between grief and depression

Having a support system in place is key. This guide provides insight into having a support system, and also resources that can be accessed to support someone if they are grieving.

Questions Explained

Technical Clarity

If you experience any acute stress symptoms following an event, understand that for the most part they are temporary. They will gradually dissipate as your mind processes the event and your nervous system returns to an optimal state. Dealing with acute stress can require an active effort on your part. While some of the strategies may seem like common sense or even amateur, they can have a positive impact on your journey of recovery, allowing your mind, body and nervous system to return to a balanced state.

You'll notice a lot of the questions are experiential. They involve what you felt, saw, and heard. One way to support healing is to get clarity or closure around those recorded experiences—coming to terms with what occurred or why it occurred. After debriefing over 300 individuals that acted to save a life in various capacities, we compiled a list of the most frequently asked questions and our responses to them to help provide understanding and technical clarity.

Why was there blood in the mouth/bleeding from the mouth?

When a person goes into cardiac arrest, blood flow to vital organs is reduced or absent. The liver is responsible for producing most of the coagulation factors that help control bleeding. Since their body no longer has the ability to control clotting, a person can start to bleed with very little injury. Doing compressions on someone does cause bruising to occur, but when someone has suffered a cardiac arrest, there may be additional bleeding visible. When they collapsed, they may have had a seizure that simply caused an injury to their head, face, tongue or lips. Rarely is bleeding caused by a punctured lung due to broken ribs. Simply put, blood doesn't clot properly when we are in cardiac arrest, so you may see more than normal amounts of blood or bruising.

Why was there froth, foam or vomit?

This may occur for a couple of reasons. When someone is unconscious, a buildup of saliva occurs in the back of the throat, which gets moved around when CPR is performed and air passes in and out of the airway. This causes the froth or tiny bubbles around or inside the mouth.

Light-pink or blood-tinted mucus can be caused by a buildup of fluids in the lungs. This normally occurs after the heart goes into failure and is not able to move blood effectively through the lungs. In some cases it can spill out uncontrollably. Vomiting is also common while performing CPR, especially if doing any type of ventilation. A person's stomach is partially covered by the ribs (starting about the seventh rib down on the left side). When doing compressions on the chest, pressure can build up inside the body, which can force out stomach contents. The amount depends on how much and how recently the person has eaten.

Note: In aquatic settings it is common to see copious amounts of foam or froth coming from the mouth.

Why did the belly move so much when I did compressions?

During a cardiac arrest or unconsciousness there is a loss of muscle tone throughout the body, making a person less rigid or tense. During compressions you are applying force to the chest, and this causes movement. This movement including the stomach might be more exaggerated if a person is overweight. It's also possible that with compressions and ventilations air can end up in the stomach, making it distended or bloated looking.

Why did they snore, gasp, or make strange sounds?

This is called agonal breathing, an abnormal pattern of breathing that is caused by a brainstem reflex telling the body to continue to breath while not actually breathing. It can give the illusion that someone is breathing and can be short lived or last for hours. Agonal respirations occur in over half of witnessed cardiac arrests and are more common in individuals that receive CPR from a lay responder. For the most part, agonal breathing indicates that there is still brain function, and it's possible to witness agonal breathing when doing good compressions. It is not an indication of compression quality, just a potential side effect.

Why were they twitching or having seizure-like movements?

This is called myoclonus (my-oh-clo-nus), quick, involuntary muscle twitching caused by a lack of oxygen to the brain. Nerve cells of the brain are particularly sensitive to a lack of oxygen, such as the cerebellum, located at the back and bottom of the brain, behind the brainstem. The cerebellum helps to control movement and coordination. So you may see a slight twitch in the arms or legs; the arms may bend in towards the body or straighten outward; or the hands may form into a claw or a fist. In some people that movement looks as if they are having a seizure, or they legitimately could be having a seizure that doesn't last long before CPR is needed. You may have heard someone on a TV show say "seizure, coma, death." That is essentially what is happening. Lack of oxygen causes the seizure activity, then a coma, and eventually death.

Why did their colour change so much/so fast?

A bluish tinge to the skin indicates that a person has a low concentration of oxygen in the blood, often most apparent around the lips, mouth and fingertips. This is called cyanosis (si-an-oh-sis). It occurs because the blood is no longer circulating properly throughout the body. The bluish appearance can seem more dramatic for those with lighter skin complexions, while darker skin complexions may appear even darker. When someone goes into cardiac arrest, the skin colour begins to change almost immediately. The person may appear very pale initially when circulation becomes compromised, but discolouration will occur rapidly when the heart stops pumping altogether. It's common to notice the colour change on the upper chest, neck, and throughout the person's face, and it can be frightening when seen for the first time.

Why did they urinate/defecate?

Our nervous system regulates the bladder and rectum, and keeps them from draining or leaking. When cardiac arrest occurs, muscles relax and the nervous system that controls bodily functions stops functioning properly. The person will likely urinate if they have fluid in their bladder and may also defecate.

Why did their eyes stay open?

This occurs in about half of all cardiac arrests, and has been documented all the way back to Hippocrates in 460–370 BC. The look is often described as "eyes wide open with alarm, starring into nothingness," and is very common when there is no brain activity. The central nervous system shuts down, and pupils dilate and don't respond to light. The eyelids also loose tension.

Many who have acted to save a life remember the look in the eyes. Psychologists and neuroscientists, who have been studying eye contact for decades, have found that gazing eyes can grab and hold our attention.

Why did their ribs break or crack?

When doing chest compressions, it takes about 27 kg (60 lbs) of downward force to compress an adult's chest to the appropriate depth of 5-6 cm (2 in). It is more likely that a person doing CPR who felt a pop or crack was feeling the connective tissue (cartilage) that binds the ribs and the bone in the middle of the chest (sternum) together. Ribs do have some flexibility to bend with chest compressions. However, if the cartilage separates completely from the bones it will likely create a loud pop and can be felt when doing compressions. This is commonly what people associated with fracturing a rib. Rib fractures do happen and are common.

A 2015 study of 2,148 patients who had undergone chest compressions found that 86% of males and 91% of females had some form of skeletal injury (crack or fracture). It can be a disturbing experience for rescuers—a sensation that is hard to describe to those who haven't felt it.

Why didn't I notice/hear anything around me?

When the body produces high levels of adrenalin due to extreme panic and critical stress, the brain struggles to process all the information coming in. Someone may only be able to see the task in front of them. This is what is referred to as "tunnel vision". Studies have shown that tunnel vision also involves selective hearing, or hearing everything but nothing at all. The tunnel effect can affect all of the senses simultaneously. The release of adrenaline and other hormones can effect the eyes, causing someone to experience blurry vision, sensitivity to light and even temporary colourblindness. This is normal. Many first responders experience tunnel vision when faced with new situations throughout their entire career. The more exposure you have to similar situations the greater and wider the tunnel becomes expanding your window of tolerance..

Why did I freeze, while others acted?
Or, Why did others freeze, while I acted?

When someone witnesses a cardiac arrest, adrenalin starts to flow through, heart rate increases, sugar is being added to the blood, and our attention moves toward a direct response: Immediately starting CPR or calling for other to come and assist to provide CPR or Call 911 (fight and flight responses). Many people describe this as "acting on instinct." However, there is also a third response to these critical situations. A person may freeze and not immediately intervene during an unexpected incident. When a person freezes in the moment, their eyes widen, increasing peripheral vision; their mouth opens, and they often gasp in preparation for what they do next. It is not a conscious decision to freeze. Their brain starts immediately processing the scene.

An individual's window of tolerance and their personality can influence how they respond. The more extroverted a person is, the more likely they are to immediately "jump in," start compressions and make physical contact. People who are more introverted are more likely to assess the risk/safety of the incident and get someone to help, maybe by calling 911. Those who initially froze, once they are instructed or directed to help, they typically do. Their brain becomes "unfrozen" when another person is involved, as it creates a sense of safety in numbers.

Many people who "freeze" report little memory of the trauma, inadvertently protecting themselves from the psychological impact. However, they may later express feelings of guilt or shame because of their inaction. They may also face criticism from others for not responding right away. It's important to remember that we all react differently to a critical incidentand that it not may be a conscious decision.

What do compressions and AED actually do?

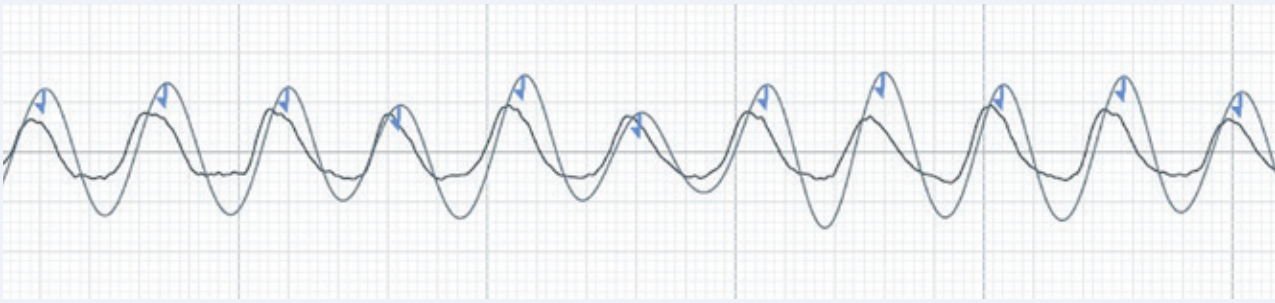
Chest compressions are done to manually pump the heart in the absence of a normal heartbeat. Manual compressions are only 20–30% as efficient as the heart's normal pumping ability. Pushing down on the chest forces blood out of the heart to the body and brain, allowing it to get oxygen to stay alive. During the lifting off the chest, fresh blood refills the heart chambers, helping to ensure it continues circulating. This buys time until an AED (automated external defibrillator) arrives to analyze the heart rhythm and determine if a shock is required. Without CPR the heart dies at a rate of 7–10% per minute. When doing compressions, the heart rate slows to 2–3% per minute. Compressions preserve the brain, body and organs.

An AED is the only tool that can correct a heart that is not beating effectively. When someone suffers a cardiac arrest the heart is often functioning erratically, not pumping blood effectively. The AED delivers a shock to the heart that disrupts the erratic behaviour in order to re-set it. It's essentially the "Ctrl+Alt+Del" for a heart. If the heart is not beating at all, or there is a different rhythm it can't correct, an AED may not deliver a shock. It will only shock what it's programmed to correct and will instruct the user to continue compressions (see image on page 16).

Why didn't they survive, was it my fault?

People who act to save a life often take ownership of the outcome—whether someone lives or dies. But they are not responsible for a patient's outcome, only their actions in the moment. In almost all cases of a cardiac arrest or other critical incident, the issue started before a lay responder started their interventions. An undiagnosed heart-problem, diet, lifestyle or family history may have contributed to the problem. As hard as it may be to accept, sometimes everything can be done right, and the person will not survive. As morbid as it may sound everyone has a "best before date", and when it's someone's time, it's their time, regardless of CPR, AED, paramedics, nurses, or physicians. We act to save a life because we believe that an underlying cause can be fixed or treated, and that the person could have a second chance at life. This is where a lay responder makes the difference. Instead of someone asking themselves "Was it my fault," the question should be "Did they get a second chance?" by my calling 911, or doing CPR/AED?

When someone responds to a critical situation, they aren't expected to be flawless, or even to act according to how they might have been trained. In fact, seldom do things go according to training. Every situation is different, everyone's window of tolerance is different, and everyone involved has different life experiences. Forgetting to do things or check things, how to use certain equipment or how to execute steps in the right order is more common than people realize, even for professional responders. Success should be measured by whether an attempt was made at a second chance.



The blue line represents compressions being performed by a lay responder. The black line is the ECG (ecocardiogram) which shows the heart function. you can see each time the compression occurred, the heart manually was being pumped and allow for manual circulation. When performing CPR you can't see what is happening under the skin, but this image from an AED shows exactly how each compression has an impact on the resuscitation process.

Were they actually dead?

Humans are not like power switches "on" one moment "off" the next. As the body begins to shut down, many things happen. The human body is made up of millions of cells, and not all cells and organs stop immediately when the heart stops beating normally. In fact, when the heart stops, the brain can survive another 4–6 minutes before permanent brain damage begins to occur. This phase is called clinical death, where much of the body is still alive (not functioning) but paused as it waits for oxygen. This is why people may question if someone is actually dead when they see them collapse.

Most people do not anticipate going about their daily lives and coming across someone who is deceased or witnessing someone collapse. When it does happen, our minds look for clues to prove why they don't need CPR. This is where people interpret agonal breathing as normal breathing, the twitching as a seizure, etc. The mind does not assume a person is deceased at first. It sometimes takes a minute or two before a lay person accepts that a person is deceased and needs CPR/AED. When a person is in clinical death the patient doesn't necessarily represent what we see on TV or in movies. Movie's normally show what someone would look like after biological death. No movement, perfectly still, with their eyes closed.

One of the only certain ways to determine if someone needs CPR is to check if they are breathing. This is complicated by the opioid crisis, as many people who received Naloxone kits were given instructions to administer Naloxone and provide ventilations, with less focus on compressions. A person in cardiac arrest has similar visible signs to a person suffering an overdose. So regardless of what actions you took — calling 911, administering naloxone or CPR/AED — you should ask yourself whether the person needing care got care? If the answer is yes, then you did everything that was needed.

Self-care Strategies

Practicing self-care isn't selfish. It's essential to protecting your physical and mental health under stress, and should be non-negotiable. In the initial days and weeks after an event, self-care is vital to building resilience and helping in recovery. Be patient with yourself and try not to judge yourself too harshly if it takes time. Most people will recover on their own by following the self-care strategies described in this chapter.

1. **Find information and understanding**

   Read through this document or search the Internet to learn and understand normal physical and mental responses to these abnormal events.

2. **Develop a toolkit and use different strategies**

   Identify and try self-coping strategies that work for you. No matter what strategy you use, you need to give it an opportunity to work. Sometimes you may need a combination of strategies such as sensory grounding and journalling.

3. **Seek additional support**

   Be aware of the different types of clinical support available to you and the value of seeking additional supports beyond self-care strategies

Sensory Grounding

When you are feeling vulnerable with your emotions in the moment, the following exercises can help you identify the sensory experiences that work to quickly relieve stressors for you.

As you experiment, note how quickly your stress level drops. And be as precise as possible. What is the specific kind of sound or type of movement that affects you the most? For example, if you're a music lover, listen to many different artists and types of music until you find the song that instantly lifts and relaxes you.

Explore a variety of sensations so that no matter where you are, you'll always have something you can do to relax yourself.

One technique is the **5-4-3-2-1 technique**. This is where you take a moment and notice the following:

- 5 things you see
- 4 things you can touch
- 3 things you can hear
- 2 things you can smell
- 1 thing you can taste

The examples listed on the next page are intended as a starting point to begin using sensory grounding. These tips can be used when practicing the 5-4-3-2-1 technique, or simply in the moment when you are feeling uneasy.

Sensory grounding examples:

Sight

- Look at a cherished photo or a favourite memento.
- Use a plant or flowers to enliven your space.
- Enjoy the beauty of nature—a garden, the beach, a park, or your own backyard.
- Surround yourself with colours that lift your spirits.
- Close your eyes and picture a place that feels peaceful and rejuvenating.

Smell

- Light a scented candle or burn some incense.
- Lie down in sheets scented with lavender.
- Smell the roses—or another type of flower.
- Enjoy clean, fresh air in the great outdoors.
- Spritz on your favourite perfume or cologne.

Touch

- Wrap yourself in a warm blanket.
- Pet a dog or cat.
- Hold a comforting object (e.g., stuffed animal, memento).
- Soak in a hot bath.
- Give yourself a hand or neck massage.
- Wear clothing that feels soft against your skin.

Taste

Slowly savouring a favourite treat can be very relaxing, but mindless eating will only add to your stress and your waistline. The key is to indulge your sense of taste mindfully and in moderation.

- Chew a piece of sugarless gum.
- Indulge in a small piece of dark chocolate.
- Sip a steaming cup of coffee or tea or a refreshing cold drink.
- Eat a perfectly ripe piece of fruit.
- Enjoy a healthy, crunchy snack (e.g., celery, carrots, or trail mix).
- Eat something with a sour or strong taste to immediately ground yourself, like sour gummies or sour gum.

Movement

If you tend to shut down when you're under stress or have experienced trauma, stress-relieving activities that get you moving may be particularly helpful.

- Run in place or jump up and down.
- Dance around.
- Stretch or roll your head in circles.
- Go for a short walk.
- Squeeze a rubbery stress ball.

Sound

- Sing or hum a favourite tune. Listen to uplifting music.
- Tune in to the soundtrack of nature—crashing waves, the wind rustling the trees, birds singing.
- Buy a small fountain, so you can enjoy the soothing sound of running water in your home or office.
- Hang wind chimes near an open window.

Mindfulness Meditation and Yoga

Traumatic events can interfere with learning, memory, and emotional regulation. Meditation or mindfulness when dealing with trauma is about making you aware of the present moment. The purpose is to bring you to the centre of the window of tolerance by calming and grounding the nervous system.

Meditation can help to overcome uncomfortable thoughts and memories and allow them to pass without judgment. By meditating you can become more aware of bodily sensations, thoughts and feelings.

Mindfulness practices like yoga have been shown to be a beneficial complement to conventional trauma treatments such as cognitive behaviour therapies and psychotherapy, as they can assist in reducing physiological arousal or providing a break when we are in an aroused state.

Physical Activity

Exercise of all forms is beneficial. Cardio training and going for a simple walk can be beneficial with releasing endorphins, and acts as a natural stress reliever. Focusing on your body and how it feels as you move can help your nervous system recover. You don't need to be an athlete to exercise. Doing something active is better than doing nothing at all. If you're an athlete, alter your regular routine by trying something less competitive like yoga.

It has been proven over and over that physical activity/exercise is good for de-stressing by removing us from the daily routine and environment. Physical activity can also improve your sleep, which is another crucial factor in coping with acute stress.

Try to be physically active for 30 minutes or more each day, or alternatively, for three 10-minute periods. Choose rhythmic routines that engage both your arms and legs, such as walking, running, swimming, hiking, or dancing.

Don't think of exercise as another task on your to-do list. Find something that sparks your interest and do it regularly. Any form of physical activity can help in the healing process.

Sleep

Adequate sleep is important, even if you don't believe you have any symptoms of stress. Depriving yourself of sleep after being involved in a critical event can trigger other symptoms of stress. You ideally want to get 7–9 hours of sleep each night.

For some people, this may not be an issue; others may have a challenging time sleeping.

If you find it hard to sleep, try some of these tips:

- Keep your room cool, 16–20°C (62–68°F).
- Avoid stimulants after dinner, such as caffeinated drinks.
- Leave a 3–4 hour gap between exercising and bedtime.
- Remove distractions like cell phones, blinking lights, TVs.
- Make your room as dark as possible.
- Try to have a consistent bedtime. If you are a shift worker, keep a consistent bedtime with your work cycle so your mind and body can get used to a set habit.



Diet

Maintaining a balanced diet is important. Food fuels our mind and body. Your diet can influence mood swings, thoughts and energy levels. Take a multi-vitamin each day to make sure your body is getting the nutrients and minerals it requires to function optimally.

Tips for maintaining a balanced diet:

- Start with breakfast each day.
- Avoid fried food, refined starches and sugars.
- Limit processed foods.
- Drink lots of water.
- Snack on healthier alternatives such as fruits and vegetables.

If you have a busy schedule and can't prepare meals as easily, consider trying healthier options that are available in the ready-to-eat section at most grocery stores. If you plan to eat out, try a new place or different type of meal than you'd normally purchase.

Avoid Alcohol and Drugs

When you're struggling with difficult emotions or questioning yourself and your actions, you may be tempted to self-medicate with alcohol or drugs. Self-medicating isn't always a conscious or rational choice. After a few drinks you may be able to justify having more. But alcohol and drugs only mask unresolved emotions or thoughts.

Substance use worsens many symptoms of acute stress, including emotional numbing, social isolation, anger, and depression. Always use in moderation and consider if the substance use is making your coping better or worse.

Creative Outlet

Creative outlets such as art and music can have a positive effect on symptoms by engaging a different part of the brain and allowing you to process trauma in a different way. They provide alternative, equally effective outlets for expression. For example, music evokes emotions and influences mood, causing you to feel happy or sad, relaxed or pumped. Other hobbies such as creative writing, quilting, or crafting can provide relief from anxiety and irritability. These creative therapies may help foster resilience and are an alternative if you struggle with stigma associated with seeking professional help.

Other creative hobbies include:

- Woodworking
- Learning to play an instrument
- Painting
- Model railroading
- Singing in a choir
- Cooking
- Sewing
- Building dioramas

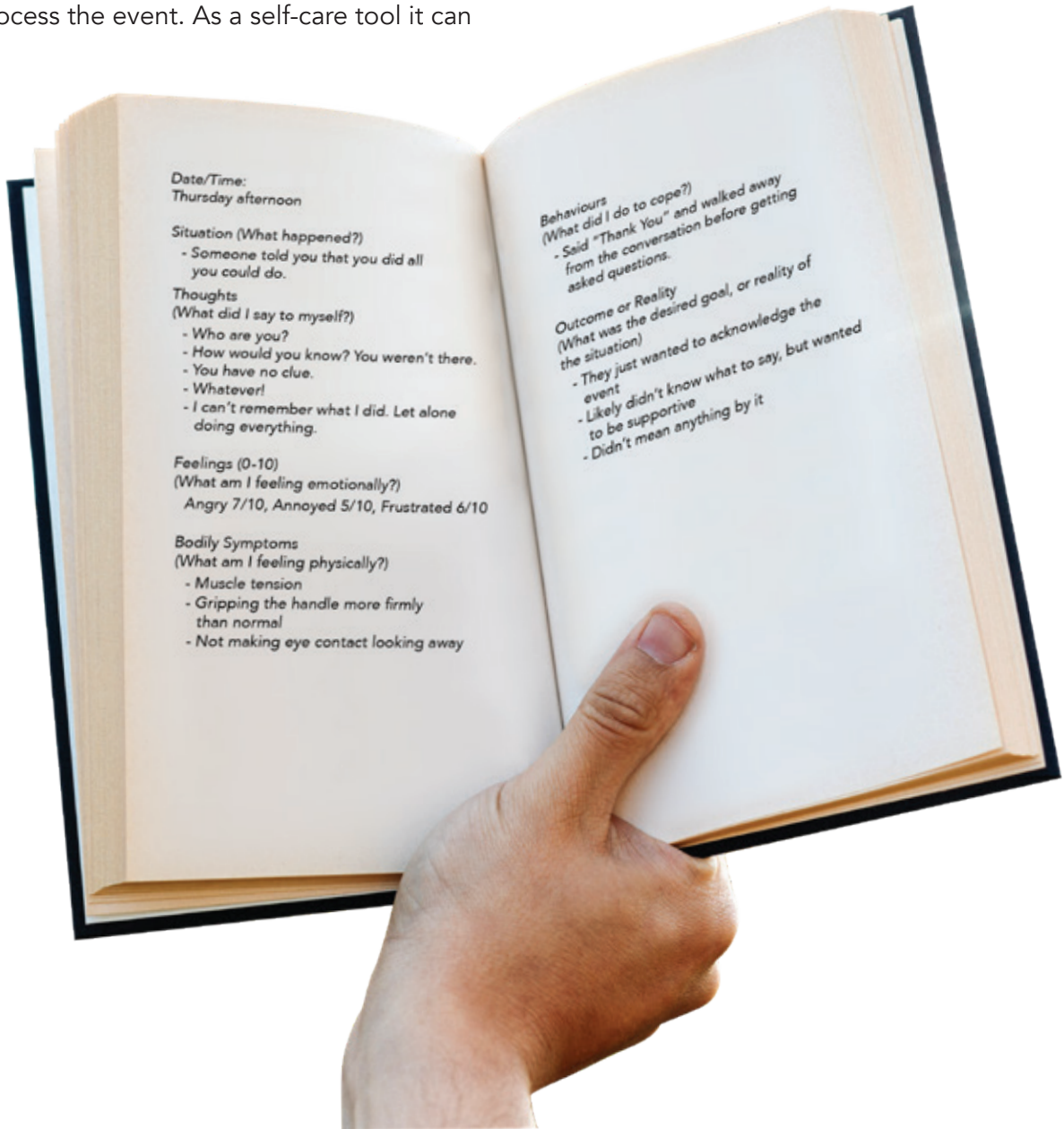
Journalling

For some, the word "journalling" causes them to roll their eyes. But writing things down can be very helpful for those dealing with symptoms of stress. It provides a safe outlet for anxiety, anger, and other emotions. Admittedly journalling is not for everyone, but deserves a fair chance to see if it can help.

Putting words down on paper may help you to process thoughts and emotions more objectively.

Journalling can help in two ways. One is to externalize the event and the other is to process the event. As a self-care tool it can help lesson how real or powerful negative thoughts and emotions are. Putting them down on paper may help you to process those thoughts more objectively. You may have heard the expression "transferring knowledge." In a similar way, we are transferring our experiences onto paper. When negativity, fears, or sadness are impeding the moment, try to transfer those emotions and thoughts onto paper. Create a thought journal. You can type it out, or write it out.

Below we provided an example of what it can look like to journal:



Support/Social Groups

Support and social groups are key to recovery. If sharing your experience and feelings with strangers in a formalized support group makes you feel vulnerable, you can create a group of your own with friends of others involved in the incident. Discussing what happened and how you're feeling can be difficult, but it is important to remember that you are not a burden. Having people to connect with, to listen, and to support you keeps you from feeling alone.

Formalized support groups provide a place to share your own experiences, learn from others, and connect with people who understand how you feel, the environment, the intensity and dynamic because they have a similar lived experience. Social support and support groups can help alleviate some of the symptoms that people experience. Even though you may not want to, try to stay connected to the social and leisure activities you had pre-incident. It will be instrumental in helping you recover or feel better.

Seeking Support

During and certainly after 4 weeks and 4 months post incident, check in with yourself to see how you are doing. The tools listed in the previous section can be very effective in helping you to manage symptoms that you may be feeling. But sometimes those self-coping strategies are not enough. Having the support of a mental health professional throughout the process can ensure that you are able to address your triggers in a safe space.

Many people require support to return to a balanced state in the window of tolerance. Lingering thoughts of guilt, negative feelings, sadness, depression, and shame and still being bothered by images or aspects of the situation may continue beyond the initial 4 days or 4 weeks. Self-coping strategies might help in the moment when you are bothered, but deep inside you feel something is off. This is understandable, since dealing with these events can feel like an overwhelming struggle.

If this is the case for you, it might be a good idea to consult with your family doctor, a psychiatrist or a psychologist/mental health worker to get some help in dealing with your feelings and processing the experience. Asking for help does not make you helpless or powerless. It is in fact a strong recognition of your own power to be able to seek help and be open to receiving it. Be open with them about what's going on inside your head!

Professional Care Strategies

People often try self-help strategies at first. For some it has limited success. Sometimes self-help can take you only so far, and may be more detrimental than helpful to the healing process. When you try to find relief on your own there is a risk of using avoidance strategies, distractions and the use of numbing agents that prevent healing.

Counselling should be looked at as an educational experience. The purpose of having a certified counsellor is to help you learn more about yourself. Not only to help you gain an understanding of yourself but you can also learn new skills and strategies that are customized to you as an individual, taking into account your situation, personality, learning style, personal needs, and goals.

When you are looking for treatment, look for a therapist who specializes in trauma. Just like any profession, therapists specialize in different areas and trauma therapy is a unique specialty in the mental health field. A physician should be able to provide a referral. You can also contact a counselling centre, or the Mental Health Helpline. It is important to find a therapist that you feel comfortable with.

It is common and acceptable to meet with a couple of therapists before selecting the one you feel is the best fit for your personality and your goals for therapy. Proven therapy approaches:

Cognitive Therapies

Cognitive-behavioural therapy (CBT) is a practical, short-term form of psychotherapy. It can help you develop skills and strategies for becoming and staying healthy.

CBT focuses on the here-and-now—on the problems that come up in day-to-day life. CBT helps you examine how you make sense of what is happening around you and how these perceptions affect the way you feel.

CBT:

- is structured
- is time-limited (usually 6-20 sessions)
- is problem-focused and goal-oriented
- teaches strategies and skills
- is based on a proactive, shared therapeutic relationship between you and your therapist

In CBT, you learn to identify, question and change the thoughts, attitudes and beliefs related to the emotional and behavioural reactions that cause you difficulty. By monitoring and recording thoughts during upsetting situations, you learn that how you think can contribute to emotional problems such as depression and anxiety.

CBT helps to reduce these emotional problems by teaching you to:

- identify distortions in your thinking
- see thoughts as ideas about what is going on, rather than as facts
- stand back from your thinking to consider situations from different viewpoints.

Eye Movement Desensitization and Reprocessing (EMDR)

EMDR therapy is an interactive psychotherapy technique used to relieve psychological stress. It is an effective treatment for trauma and post-traumatic stress disorder (PTSD).

During EMDR therapy sessions, you re-live traumatic or triggering experiences in brief doses while the therapist directs your eye movements.

EMDR is thought to be effective because recalling distressing events is often less emotionally upsetting when your attention is diverted. This allows you to be exposed to the memories or thoughts without having a strong psychological response.

It is believed that over time, this technique will lessen the impact that the memories or thoughts have on you.

Exposure Therapy

Exposure therapy is a type of cognitive-behavioural therapy. It reduces the physical or emotional distress you feel when confronted with a particular object, situation, or distressing thought or memory. During this type of counselling, you may re-live a traumatic experience, confront a feared object or situation, or deal with a distressing thought. But you do it while in a controlled environment.

During this type of therapy, a counsellor helps you while you remember or use your mind to see the feared object or distressing thought. The counsellor also helps you work through the physical and emotional distress that you may feel during this experience. You confront and learn to cope with the distressing feelings gradually. And this reduces your symptoms.

Both CBT and EMDR use exposure-based techniques to address the impact of a traumatic event. CBT focuses on teaching you skills to control how your thoughts, feelings, and behaviours are impacting your current stress. EMDR works with the brain's nervous system and memory system to process memories that are naturally stuck by trauma. Both treatments are highly effective, with CBT teaching you skills to practice independently and EMDR focusing on changing the impact of the memory itself.

Faith Leader, Clergy

Most places of worship have leaders who can provide support that integrates psychological and theological concepts into its framework, similar to other modes of therapy. What sets it apart is the way faith, spirituality, and theology are incorporated into the model. Faith-based counsellors believe this incorporation of spiritual exploration and support can foster wholeness, healing, and growth in those who are seeking help.

Beyond providing psychotherapy, faith-based counsellors use resources such as prayer, scripture study, and participation in the congregation community to help guide people on their journey toward transcendence, transformation, and greater connection to others.

Employee Assistance Programs EAP

An EAP is an employee benefit program that assists employees with personal problems and/or work-related problems that may impact their job performance, health or mental and emotional well-being. EAPs generally offer free and confidential assessments, short-term counselling, referrals, and follow-up services for employees and their household members.

Many corporations, academic institutions and government agencies are active in helping organizations prevent and cope with workplace trauma, and other emergency response situations. Even though EAPs primarily address work-related problems, there are a variety of programs that can assist with problems outside of the workplace. EAPs have grown over the years and are more desirable and socially accepted.

Please contact your Human Resources or Benefits department to see if your organization participates in an employee assistance program that you can access. These programs do not share your concerns or issues with your employer. You are encouraged to call the toll-free number on your own at your convenience.

Medication

With your doctor you can work to figure out if medication is needed to help with anxiety and related problems like depression and difficulty sleeping. Always consult with your physician prior to taking medications or other chemical therapies.

Antidepressants can help symptoms of depression and anxiety. They can also help improve sleep problems and concentration. Anti-anxiety medications can help relieve severe anxiety and related problems. However, some anti-anxiety medications have the potential for abuse, so they are generally used only for a short time.

Resources & Local Care Options

Professional Support

Walk-in counselling clinics provide free, private and confidential counselling often with no appointment required, though some clinics may require you to call ahead to book appointments for the same day. These services allow you to meet with a professional and qualified multicultural staff for support, advocacy and referrals to other available services. All families and individuals can receive at least one walk-in session for free. After that, a fee may be charged based on your needs and financial circumstances. Please call before you come in. These services can be very helpful for many issues, including trauma.

Family Services of Peel

https://fspeel.org/

Mississauga

151 City Centre Dr., #501,
Mississauga, ON L5B 1M7

Wednesday: Noon – 8:00 pm
Saturday: 9:00 am – Noon
Intake: 905.453.5775
Office: 905.270.2255

Canadian Mental Health Association

https://cmhapeeldufferin.ca/

Brampton

314-7700 Hurontario Street,
Brampton ON L6Y 4M3

Translation of information available in:
Chinese, French, Polish, Portuguese, Punjabi, Urdu.

Monday – Friday: 9 am – 5 pm

Catholic Family Services

https://cfspd.com/

Brampton

William G. Davis Centre for Families
60 West Drive, Suite 201
Brampton, ON, L6T 3T6

Mississauga

2227 South Millway, Suite 202
Misssissauga, ON, L5L 3R6

Thursday: 12:30 pm – 7:30 pm
Intake: 905.450.1608

Tuesday: 12:30 pm – 7:30 pm
Intake: 905.897.1644

Online & Referral Support

Online and referral support programs provide free and confidential health services and information for people experiencing problems with a number of concerns that include alcohol, drugs, gambling and mental illness. In addition to providing phone support, professionals are usually also available 24/7 to individuals who need help. These services generally maintain a centralized, up-to-date, local and accurate database of drug, alcohol, gambling, and mental health treatment and counselling services and supports in your area.

Mental Health Helpline - ConnexOntario

https://www.connexontario.ca/

Province-wide

Phone: 1.866.531.2600
Services offered via phone, webchat and email

24/7

Center for Addictions and Mental Health

http://www.camh.ca/

Province-wide

416.535.8501, option 2

Access CAMH:

http://www.camh.ca/en/your-care/access-camh

Community Resources:

http://www.camh.ca/en/health-info/guides-and-publications/community-resource-sheets

Social Resources

Social websites bring people with similar interests together. For example, people who are looking to try hiking can join a hiking group. Online social resources are helpful whether you like dancing, yoga, rock collecting, or you're a true foodie and want to try new places, and meet new friends along the way. It's a great way to tie all the coping mechanisms together. In most groups there are always new members attending the various activities, and you are bound to find a social resource that you'll enjoy.

Meetup.com

https://www.meetup.com/

You can search through 100s of events and meetups based on your location, interests and demographics.

Mississauga Sport & Social Club

https://mississauga.sportsocial.club/

Offering single-sex and co-ed, recreational and advanced programs and sport.

Average Joe Sports & Social Club

https://www.averagejoesports.ca/sports-leagues-brampton-

Average Joe Sports Club organizes co-ed recreational sports leagues and corporate events for the Brampton, Burlington/Oakville, Hamilton, Milton (USC), and Mississauga regions. Average Joe Sports Club creates great opportunities for everyday adults.

Self-help Resources

Self-help resources are a great place to start learning about coping strategies and dealing with distress. By increasing your awareness, self-help resources can help you learn to recognize potential problems before they occur, when something is a problem. Self-help resources allow you to be an adviser for yourself. Always treat self-help as an educational experience to learn, grow and practice. Self-help does not replace professional therapy; even professional counsellors seek therapy despite having the knowledge and education.

Help Guide – Mental Health and Wellness

https://www.helpguide.org

A site to help support your well-being in various capacities of mental health and wellness.

https://www.helpguide.org/articles/grief/coping-with-grief-and-loss.htm

Mind your Mind

https://mindyourmind.ca/

Mind your mind exists in the space where mental health, wellness, engagement and technology meet.

Get Self Help

https://www.getselfhelp.co.uk/index.html

This website provides CBT self-help and therapy resources, including worksheets and information sheets.

Mindful.org

https://www.mindful.org/how-to-meditate/

A website dedicated to understanding and learning mindfulness practices to do on your own.

The Bystander Network

http://www.bystandernetwork.org/

Until recently there has not been a support resource for people who witness a public cardiac arrest—to debrief after the event, access trusted information, or network with others who have had a similar experience. As a paramedic service we know how important it is to talk, and have access to the appropriate resources after witnessing a cardiac arrest or acting to save a life. Peel Regional Paramedic Services has partnered with the Bystander Support Network to address this gap, which includes researchers from St. Michael's Hospital in Toronto, bystanders and survivors.

After acting to save a life, your actions, feelings, concerns, and thoughts may be similar to others who have had a similar experience. The Bystander Support Network is a first-of-its-kind online community engagement network that is designed to provide an opportunity for bystanders and lay rescuers to engage directly with each other, share first-hand experiences, and have their questions answered by clinicians and researchers.

Your experience in acting to save a life, regardless of the patient's outcome, is critical in helping the research community develop first aid training, first aid content and a more in-depth understanding of what it means to be a bystander and the support you need after an event.

We encourage anyone who has acted to save a life to visit the Bystander Support Network. Share your story, and use your experience to help others.

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