FIRST AID & CPR PRE-COURSE READING

The **FACT** is you can save a life

www.factco.nz
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WELCOME

Welcome to FACT CO – First Aid and CPR Training Company and your Pre-Course Reading.

Our First Aid is fun, interactive, and easy to learn. Our goal is to create confident and capable first responders. We look forward to training with you!

This Pre-Course Reading is to help you make the most of your first aid experience with FACT CO. The following topics are the basics of First Aid that will be covered in detail in your course. Some prior knowledge will help you get the most from the course, so we require you to please take the time to read over this document and complete the activity before coming to your course.

You will be asked to indicate if you have completed this reading when you sign-in on the day of your course.

We are required to provide you with a minimum learning time, and by completing this reading prior to your course, you will not be required to have 'working breaks' on the day of your course.

STOP – THINK – ACT

The stress hormone: adrenaline, is secreted by the adrenal glands in our body when we experience a stressful situation. The effects of adrenaline stimulate a wide array of bodily functions including heart rate, respiratory rate, and body temperature, which all aid in combatting the high-stress situation.

Also known as an adrenaline rush, the adrenaline response enables us to process information at a rapid rate and act accordingly. Symptoms of an adrenaline rush may include:

- rapid heart rate.
- sweating.
- heightened senses.
- rapid breathing.
- decreased ability to feel pain.
- increased strength and performance.
- dilated pupils.
- feeling jittery or nervous

After the stress or danger is gone, the effect of adrenaline may last up to one hour, depending on the intensity of what has activated the adrenal glands.

Typically, the body will release adrenaline only when you need it, however, in some cases it is secreted in times that we may not need it, for example: a first aid situation. In this instance, it is important to control the surge of adrenaline so that we don't dive head-first into a potentially dangerous situation.

It is important when feeling an adrenaline rush to monitor and control your breathing rate, this will in turn slow down the heart rate and lower the blood pressure. Once the rush of adrenaline subsides, then you can step in and assist knowing you have taken the time to calm yourself and assess the scene.

D R S A B C D

The Primary Assessment is the foundation of first aid, and DRs ABCD is a great way to remember the order of priority needing addressed in any first aid situation.

DANGER

Check for danger - ensure everyone is safe

RESPONSE

Check for response - ask name, squeeze shoulders

SEND for help

Send for help - **call 111** for an ambulance, or get a bystander to make the call

AIRWAY

Open mouth - look for foreign material and maintain the airway

BREATHING

Check for breathing - look, listen, feel

CPR

Start CPR
30 compressions : 2 breaths

DEFIBRILLATION

Apply Defibrillator (AED) as soon as available
Follow the voice prompts

WHAT IS CPR

Cardiopulmonary Resuscitation (CPR) is an emergency procedure in which cardiac massage and artificial respiration are used to keep oxygenated blood circulating to the brain and around the body to keep vital organs alive.

If your victim is an **adult** or child older than 8 years, and not breathing, commence CPR:

- Ensure the victim is flat on their back on a firm surface.
- Start compressions by placing the heel of one hand in the centre of the chest, with your other hand on top of the first.

GIVE 30 COMPRESSIONS AT A RATE OF 100-120 TIMES PER MINUTE.

- Open the victim's airway by gently tilting their head back and lifting the chin. Take a normal breath and ensure a good seal around the victim's mouth with yours

GIVE 2 BREATHS WITH JUST ENOUGH FORCE TO MAKE THE CHEST RISE.

- Repeat 30 COMPRESSIONS + 2 BREATHS until help arrives. Don't give up, even if you feel that it is hopeless.
- Check to see whether there may be a defibrillator available.

If your victim is an **infant or child** under the age of 8 years old, and not breathing, commence CPR:

- Ensure the infant/child is flat on their back on a firm surface.
- For infants/children the compression area is the same as with adults, but with less pressure. Infants (under 1 year) use 2 fingers only. Children (1–8 years) use the heel of one hand OR two if needed.

GIVE 30 COMPRESSIONS AT A RATE OF 100-120 TIMES PER MINUTE.

- For a child, open the airway by gently tilting their head back and lifting the chin. For an infant, have head in neutral position (i.e. a very small tilt. “eyes to the sky”). Take a normal breath and ensure a good seal around the mouth for a child (or nose and mouth for an infant) with yours

GIVE 2 BREATHS WITH JUST ENOUGH FORCE TO MAKE THE CHEST RISE.

- Repeat 30 COMPRESSIONS + 2 BREATHS for 1 minute. If there is no response, go for help and continue CPR until help arrives. Don’t give up, even if you feel that it is hopeless.
- Check to see whether there may be a defibrillator available.

AED

AED stands for automated external defibrillator. The brand of defibrillator that we will show you at your course is a HeartSine Defibrillator. Here is some information about defibrillation:

1. Sudden Cardiac Arrest

Sudden Cardiac Arrest (SCA) often happens without warning, and when it happens, it is often devastating. It can happen to anyone, anywhere and at any time. SCA can strike regardless of age, race or gender. According to the NZ Resuscitation Council (2021), over 2000 people will suffer from a SCA every year.

Outcomes of SCA are dramatically improved with early CPR and defibrillation. For

every minute without CPR or defibrillation, a patient's chance of survival falls by 10–15 percent.

2. What Is Sudden Cardiac Arrest?

SCA is a malfunction of the heart's electrical system, which causes it suddenly and unexpectedly to begin to beat rapidly, then erratically, and finally to stop all together.
Two of the most common onsets are a rapid heartbeat called ventricular tachycardia (VT) and a chaotic heartbeat called ventricular fibrillation (VF). When this happens, the heart cannot pump blood effectively. As such, blood flow to the brain is compromised and the victim quickly loses consciousness.

During SCA, CPR alone will not restart the heart. Cardiac defibrillation within minutes is the only effective means to restart the heart. Survival from cardiac arrest decreases 10% with each minute from the time of collapse to defibrillation.

Is SCA the Same as a Heart Attack?

No. A heart attack is when a blockage in an artery result in a lack of oxygen to the heart muscle, ultimately causing damage. Heart attack victims may experience chest pain and usually remain conscious. Heart attacks are serious and can lead to SCA.

However, SCA may occur independently from a heart attack and without warning. SCA results in death if not treated immediately.

3. What Does a Cardiac Defibrillator Do?

A processor inside the AED analyses the victim's heart rhythm through adhesive electrodes placed on a patient's chest. The processor analyses the heart rhythm and advises if a shock is required. An electric current is delivered to the heart through the victim's chest wall through the adhesive electrode pads.
Cardiac defibrillators are specifically designed not to shock unless a lifesaving

shock is required. The shock delivered by a cardiac defibrillator interrupts the chaotic rhythm and allows it to return to normal.

4. Why Do You Need an Automated External Defibrillator?

The HeartSine device can be used by anyone, anytime, or anywhere to administer a lifesaving shock to victims of Sudden Cardiac Arrest. With CPR alone, the chance of survival after Sudden Cardiac Arrest is less than 5%; when CPR is combined with the use of a cardiac defibrillator within the first few minutes, the chance of survival can increase dramatically to more than 75%. Having an AED on the premises gives the victim the best chance of survival until paramedics arrive and take over care.

If you have access to the Internet, please click on this link to watch a demonstration on how to use a Defibrillator: bit.ly/demodefib

www.aedlocations.co.nz

The website and associated app for www.aedlocations.co.nz could be the difference between life and death, so we highly recommend you familiarise yourself with it. Individuals and businesses that have AED's on their site are able to register their location on this website. Once registered, anyone can look for publicly accessible defibrillators near to their home, work, bus stop, or even use the app to find an AED when you are out and about in the city. If you know of an AED that is not registered on the website, email the details to info@aedlocations.co.nz to have it added — it might just save a life.

BLEEDING & SHOCK

The amount of blood in the human body is generally equivalent to 7-8 percent of body weight or 70-80 ml of blood per kg of body weight.

Losing around 20% of the blood in the body is a dangerous medical event that can be life-threatening. Losing around 40% of the blood is usually fatal.

Lacerations (cuts) on fingers, toes, or hand are common, and many will heal on their own. However, some lacerations on hands or feet may involve deeper structure under the skin, like tendon and nerves. In the case of deep lacerations, bleeding can be rapid and extensive.

Bleeding should be managed as severe, life-threatening bleeding in the following situations:

- blood spurts or gushes steadily from a wound.
- amputated or partially amputated limb above wrist or ankle.
- shark attack, propeller cuts or similar major trauma to any part of the body.
- bleeding not controlled by local pressure.
- bleeding with signs of shock, i.e. pale and sweaty and/or decreased level of consciousness.

Management of all bleeding begins with application of pressure on or around the wound.

- Applying firm, direct pressure. Pressure can be applied using hands or a pad over the bleeding points.
- If bleeding continues, apply a second pad and a tighter bandage over the wound.
- If bleeding continues, check that the pad and bandage are correctly applied, directly over the bleeding.
- Advise the casualty to lie down and remain still.
- Restrict movement by immobilising a bleeding limb.

SEE BLOOD – THINK RED

Rest	**R**eassure
Expose	**E**valuate
Direct Pressure	**D**ressing

SHOCK

Shock is a very serious and life-threatening condition and must be identified and managed immediately. Shock occurs when the body is not getting enough blood flow and can damage multiple organs. Losing an excessive amount of blood is known as hemorrhagic shock.

SOME OF THE SIGNS AND SYMPTOMS MAY BE:

- Cold, pale, and clammy skin
- Feeling dizzy, faint, and unwell
- Anxiety, shallow breathing
- Confusion
- Rapid but weak pulse
- Urgent need to go to the toilet.
- Feeling sick/nauseous/vomiting

HOW TO MANAGE SHOCK

- Call 111 for Assistance
- Check DRSABCD
- Do NOT elevate the legs.
- Give first aid for any wounds or injuries and control any bleeding without using elevation techniques.
- Keep the victim warm and comfortable.
- Keep reassuring them as much as possible

MUSCULOSKELETAL INJURIES

The musculoskeletal system is the combination of the muscular and skeletal systems working together and includes the bones, muscles, tendons and ligaments of the body. The musculoskeletal system provides our bodies with shape, protection of our internal organs and the ability to move.

Bones - There are usually 206 bones in the adult human body.

Muscles - There are two kinds of muscle that are part of the musculoskeletal system: skeletal and smooth.

Joints - The joints are where the ends of two or more bones come together.

Cartilage - The ends of the bone that form a joint are covered with cartilage.

Ligaments - Ligaments are tough, fibrous cords or bands of tissue that connect bone

to bone.

Tendons - Tendons are tough, fibrous bands of tissue that connect muscle to bone.

A musculoskeletal injury is an injury to any of the above tissues. The common musculoskeletal injuries include:

- Fractures
- Dislocations
- Strains and Sprains

Musculoskeletal injuries represent 50% of all injury-related claims in Australia and around 1.2 million ACC claims annually in New Zealand.

For an obvious fracture, leave in an ‘as found’ position and call 111.

The First Aid management for Strains and Sprains include:

DO:	**DO NO:**
Rest	**H**eat
Ice	**A**lcohol
Compression	**R**unning
Elevate	**M**assage

Do not force movements of your injured limb and stop if it gets too painful.

If, despite the RICE treatment, the injury does not improve in a few days, see your health professional to assess it.

SUPPORT RESOURCES

Call one of these support options for information or advice if you are concerned about your patient and it is not an emergency.

IN AN EMERGENCY CALL 111

Healthline	0800 611 116
Poison Centre	0800 POISON (0800 764 766)
Diabetes NZ	0800 DIABETES (0800 342 238)
Immunisation Advisory Centre	0800 IMMUNE (0800 466 863)
Health Info	HEALTHINFO.ORG.NZ
AED locations	www.aedlocations.co.nz

Thank you for completing your pre-course reading. We hope you have found it interesting, and we look forward to teaching you even more about first aid soon