**What Is CPR?**

Cardiopulmonary resuscitation (CPR) is an emergency treatment that try to restart the heart and breathing during cardiac arrest by performing chest compressions and artificial respiration.

Cardiac arrest victims become unconscious within 15 seconds after the heart stops and if no CPR is performed, it only takes 3 to 4 minutes for the person to become brain dead due to a lack of oxygen.

By performing CPR as soon as the heart stops, you circulate the blood so it can provide oxygen to the body in order to stay the brain and the other organs alive. The person’s chances of survival drop as the time passes by, however, it will slow down if CPR is performed. Moreover, combining CPR and AED (automatic external defibrillator) will be more effective for survival and to prevent after effects.

※ To save people’s life, YOU are the person to take an action.

**How and When to Call an Ambulance**

In recent years, the ambulance wait time has increased due to the rising numbers of ambulance usage.

How long does it take for an ambulance to arrive in Japan?
It generally takes about 8 minutes on average to arrive in Japan and about 6 minutes in Sapporo.

When to call an ambulance?
Patients with less serious and non-urgent health concerns should be diverted from calling an ambulance. For example...

- “It’s not bleeding anymore but I got a papercut on my finger.”
- “I called an ambulance because my home helper didn’t come.”
- “I called an ambulance so that the doctor will see me faster.”

Patients who require emergency treatments should not hesitate and immediately call an ambulance. This corresponds to these cases for example...

- A patient cannot speak clearly.
- A sudden weakness in the patient’s hands and feet.
- Sudden difficulty breathing.
- Feeling tightness in chest.
Continue the following process until emergency personnel arrive or signs of life return such as normal breathing, coughing, or movement.

Even after the AED has decided whether to give a shock to the victim, continue chest compression and artificial respiration until you see the signs of life return.

1. Assess the victim’s
   - No signs

2. Send for Help (Call 119 and prepare AED)
   - Breathing normally
   - Open the airway Wait for emergency personnel to arrive Place in the recovery position
   - Not breathing
     - A sudden irregular gasps for breath is an “agonal respiration” which should not be mistaken for normal breathing.

3. Check for
   - Chest Compressions
     - Strong (At least 5ch for adults, 1/3 the depth of the chest for infants)
     - Fast (At least 100 times per minute)
     - Continuously (Minimize the frequency and duration of interruptions in compressions)
     - Allow the chest to recoil completely after each compression
   - Artificial respiration (Use resuscitation mask if possible)

4. AED
   - Turn on the AED
   - Attach the sticky pads

5. Analyze the heart rhythm to see whether a shock is necessary
   - Necessary
   - Unnecessary

6. Give an electric shock
7. Resume CPR from chest compression

8. Repeat

9. Resume CPR from chest compression immediately

10. Repeat

A sudden irregular gasps for breath is an “agonal respiration” which should not be mistaken for normal breathing.
Administering CPR

① Assess the Victim’s Consciousness.
   ◎ Gently tap his or her shoulder and ask “Are you OK?” in a loud, clear voice. If he or she responds, CPR is not required but if doesn’t, continue with the following steps.

② Send for Help
   ◎ If he or she doesn’t respond, send for help around you.
   ◎ If more people are available around you, give directions to each person. When giving directions, be specifically as much as possible. For example, “Please bring AED!” or “Please call 119.”

③ Check for Breathing
   ◎ Check whether he or she is breathing normally.
   ◎ Sit by the victim and check whether his or her chest and stomach is moving or not.

④ Perform Chest Compressions
   ◎ If he or she is not breathing normally, perform chest compressions immediately.
Performing Chest Compressions
◎ Place the heel of one hand on the victim’s breastbone.
◎ Place your other hand on top of the first hand and interlace the fingers.
◎ Lock your elbows and using your body’s weight, compress the victim’s chest. The depth of compressions should be approximately 5 cm.
◎ Perform 30 chest compressions at roughly 100 times per minute.
◎ After each compression, allow the chest to recoil completely.
◎ To an infant, use only one hand to perform heart compressions. Compress about 1/3 the depth of the chest.
◎ To procedure for giving CPR to a child is essentially the same as that for an adult. The difference is use only one hand to perform heart compressions and gently compress about 1/3 the depth of the chest.

Perform Artificial Respiration
After compressing the victim’s chest for 30 times, give rescue breaths.

Airway Management (Head-tilt chin-lift)
◎ Ensure an open pathway between a victim’s lungs and the outside world. (Open the airway)
◎ Place one hand on the forehead of the victim while grasping the bony portion of the chin with the other. Tilt the head and lift the chin at the same time. This lifts the tongue and creates a pocket for oxygen to travel.
☆ **Artificial Respiration (Mouth to Mouth)**

◎ Open the victim’s airway and pinch the victim’s nose with your thumb and index finger.

◎ Cover the victim’s mouth completely with your mouth and give a regular breath for about 1 second into the victim. Check whether the victim’s chest rises or not.

◎ Let the victim exhale and give the second breath just as you did with the first breath.

6 **Continue CPR**

◎ Repeat the cycle of 30 chest compressions and 2 rescue breaths.

◎ Continue CPR until emergency personnel arrive or signs of life return.

❤ **Using an AED**

◎ If an AED is available in the immediate area, use it as soon as possible to jump-start the victim’s heart.

◎ Resume CPR while preparing AED.

7 **How to Use an AED**

◎ Place the AED by the victim and open the lid of the AED.

◎ Turn on the AED. (Some AED will turn on automatically right after the lid is opened.)

◎ Follow the visual & voice prompts of the AED.

◎ Fully expose the victim’s chest.

◎ Attach the sticky pads with electrodes to the victim’s chest.
⑧ Analyze the Heart Rhythm
◎ The AED will advise not to touch the victim while it is analyzing the victim’s heart. Verbally and physically look head to toe to make sure no person is touching the victim.
◎ If you get “no shock advised”, resume CPR immediately.
◎ Once an AED is placed, never remove the pads from the victim's chest or turn the AED off.

⑨ Deliver a Shock
◎ If a shock is needed, the AED will let you know when to deliver it. Stand clear of the victim and make sure others are clear before you push the AED’s “shock” button.

⑩ Resume CPR
◎ After delivering a shock, the AED will instruct you to resume CPR.

⑪ Continue the Cycle of AED and CPR
◎ After 2 minutes of CPR, the AED will analyze the victim’s heart automatically. Follow the voice prompts and keep away from the victim.
◎ Repeat the process of operation and perform the tasks indicated by the AED.
◎ If the victim’s chest is wet, dry it before attaching the sticky pads.
◎ If the victim is attaching a medicinal patch, peel it off and wipe off the medicine before attaching the sticky pads.
◎ Check the victim for implanted medical devices. Avoid the sticky pads away from implanted devices so the electric current can flow freely between the pads.
**Choking**

Ask the person, “Are you choking?”. If the person is nodding and unable to speak, determine that he or she is choking and administer first aid immediately.

◎ If others are around, have someone else call 119. Let the victim cough. If the victim cannot cough effectively, try the following two methods until either the object is completely gone or the victim becomes unconscious.

◎ If the victim is able to cough, you are better off letting him or cough to remove the obstruction.

1. **Abdominal Thrusts (Heimlich Maneuver)**
   ○ Get behind the victim and wrap your arms around his waist.
   ○ Take the underside of one fist and place it near the middle of the person’s abdomen, with the thumb-side against the abdomen, just above the navel and below the breastbone.
   ○ Grasp that fist in your other hand and give quick inward and upward thrusts.
   ※ Do not perform abdominal thrusts to infants and pregnant women.

2. **Back Blows**
   ○ Sit on your knee by the victim.
   ○ Take the heel of your hand and deliver forceful strikes between the victim’s shoulder blades.
   ※ You may perform back blows to infants and pregnant women.
   ※ If you are able to perform both methods to the victim, try either one first and if it is not effective, try the other one.

3. **If the Victim is Unconscious**
   If the victim is unconscious or become unconscious during administrating first aid, perform CPR immediately.
Emergency Bleeding Control (Direct Pressure)

※ Losing 20% or more of the normal amount of blood in your body causes hypovolemic shock. Losing 30% may even cause a person to death. Therefore, immediate treatment is required during severe blood loss.

① Determine the Wounded Area.
② Apply Firm Pressure Directly to the Wound.
   ※ Use a pad of clean gauze, dressing, or clothing. Place your hand over the pad and apply firm pressure with fingers or a hand to the wound.
   ※ If bleeding doesn’t stop, pressure with both hands.
   ※ Protect yourself from infection by wearing disposable gloves and covering any wounds on your hands.
   ※ Do not tie the victim’s wrist and ankles with thin strings or wire. It may cause damage to muscles and nerves.

Emergency Treatment for Other Injuries

★ Fracture
   ※ Symptoms
     • Severe pain and difficulty in movement
     • Deformity
     • Pieces of the broken bone are sticking out through the skin.

① Determine the Broken Area
   ※ Ask the victim where the injured area is.
   ※ If possible, check whether the injured area is deformed or bleeding.
② Immobilize the Injured Area
   ◎ Don’t try to realign the bone or push a bone that’s sticking out back in.
   ◎ To keep the broken parts still, make a temporary splint by taping a ruler or other support to the limb or area of the body that has been injured.
   ※ Notice the victim when immobilizing.
★ Cuts and Scrapes
☆ Treatment
※ If dirt remains in the wound, rinse out the wound with clear water.
※ Cover the wound with clean gauze to protect the wound and discourage infection.

★ Burn
☆ Treatment
◎ Immediately cooling the burn will comfort the damage and prevent from becoming worse.
※ If clothing sticks to the skin, leave it there and cut away
※ Don’t use ice. Putting ice directly on a burn can cause a person’s body to become too cold and cause further damage to the wound.
※ Don’t immerse large severe burns in cold water for more than 10 minutes. Doing so could cause a drop in body temperature.

★ Hyperthermia
◎ Hyperthermia is elevated body temperature due to failed thermoregulation that occurs when a body produces or absorbs more heat than it dissipates.
◎ When the elevated body temperatures are sufficiently high, hyperthermia is a medical emergency and requires immediate treatment to prevent disability or death.

☆ Symptoms
◎ Muscle pain in hands and feet, and sudden muscle stiffness are one of the first signs for hyperthermia.
◎ Accompanying dehydration can produce nausea, vomiting, headaches, and low blood pressure.
※ Hyperthermia not only occurs during a physical activity but also occurs by staying in a hot, confined area for children and elderly.

☆ Treatment
◎ Place the victim in a cool environment.
◎ Remove clothes and cool the body by fan.
◎ Apply wrapped ice packs to neck, groin and armpits.
※ Drink sports drinks. Sports drinks will minimize the risk of dehydration.