CPR 3A: Anyone Anytime Anywhere

A Project of the Singapore Heart Foundation’s HeartSave Committee
Chairman: Prof Anantharaman
Challenges to Promoting CPR

- Developing interest
- Need for CPR Manikin
- Duration of training
- Need for expert trainers
- Time and location of training centers
Includes:

- Mini Anne Manikin
- CPR Skills DVD
- AHA CPR Booklet
- Directions for use
“Mini Anne”: Inflatable CPR Learning Manikin
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Cardiopulmonary resuscitation performance of subjects over forty is better following half-hour video self-instruction compared to traditional four-hour classroom training

- Participants in traditional CPR classes (TRAD) average 31 years of age, while family members of cardiac patients average 55 years.
- Video self-instruction (VSI): A 34-min videotape and an inflatable manikin intended for use in the home,
- 202 subjects > 40 years old randomised to either TRAD or VSI, and tested immediately following training using validated methods including measurement by means of a Laerdal–Skillmeter® manikin.
- VSI subjects performed an average of 20.8% of all compressions and 25.1% of all ventilations correctly, vs 3.4% of compressions and 1.7% of ventilations by TRAD subjects (P<0.0001).
- VSI subjects performed an average of 10.1 of the total 14 CPR assessment and sequence skills correctly, compared with an average of 4.7 for TRAD (P<0.0001).
- 62.7% of the VSI subjects were rated ‘competent’ or better vs 6.1% of TRAD subjects (P<0.0001). VSI provides an effective, convenient, and inexpensive means of training persons over 40 years of age that achieves skill performance superior to traditional CPR classes.
• Evaluation of a video-based self-instruction (VSI) program that comprised a 22-min video, an inflatable training manikin, and an audio prompting device with individuals 40–70 years old.

• 285 adults 40 - 70 years old who had no CPR training in the past 5 years were assigned to an untrained control group, Heartsaver training, or one of three versions of VSI.

• Basic CPR skills were measured by instructor assessment and by a sensored manikin.

• Percentage of subjects who assessed unresponsiveness, called the emergency telephone number 911, provided adequate ventilation, proper hand placement, and adequate compression depth was significantly better ($P < 0.05$) for the VSI groups than for untrained controls.

• VSI subjects tended to have better overall performance and better ventilation performance than did Heartsaver subjects.
Retained CPR skills learned in a traditional AHA Heartsaver course versus 30-min video self-training: A controlled randomized study

Eric L., Bonnie L at al. Resuscitation 2007

285 adults ages 40 - 70 who had no CPR training within the past 5 years were assigned at random to a no-training control group, Heartsaver (HS) training, or one of 3 versions of brief VSI (i.e., self-trained—ST subjects).

Retention of CPR skills was compared 2 months post-training for adults between 40 and 70 years old who had taken either a traditional Heartsaver CPR course or a 22-min video self-directed training course.

Although performance declines occurred in the 2-month interval, self-trained subjects generally demonstrated CPR skill retention equivalent to that of Heartsaver-trained subjects, although for both groups skill decline on some measures reached the level of untrained controls.
Advantages of the 3A CPR Kit

- “Proven” effectiveness
- Portability
- Practicality
- Price
- Practice

*This is not a certification programme.*
CPR 3A Kit

• The CPR 3A Kit contains everything that is necessary for a cost-effective, self-directed educational experience that can be completed within 30 minutes, in the comfort of one’s home with family members, in school with classmates, in the workplace with colleagues, at a party amongst friends or with neighbours in a community club.

• The kit takes into consideration Singapore’s National Resuscitation Council guidelines.
CPR 3A Kit

- Each CPR 3A Kit contains:
  - A personal, inflatable CPR manikin
  - CPR Practice DVD
  - CPR reference materials
  - Accessories (spare lungs and disinfectant wipes for the manikin)
Concept

• One of the best ways to achieve a CPR-enabled population is to instill this life-saving skill in our young.
• Through the CPR 3A Kit, the aim is to train Secondary students in Singapore and replicate the multiplier effect seen in Denmark and other parts of the world, where students bring the kit home to train their parents, siblings and grandparents.
• This is all the more important because 70% of heart attacks occur at home.

* This is not a certification programme.
Concept

- Adapted to local needs
- English and Mandarin DVD
- Local actors & personalities

A pilot project using the CPR Anytime kit was carried out with South West CDC on 24 February 2008.

SHF worked with Laerdal to modify the American CPR kit to suit Singapore’s local ethnic groups’ distinct cultural and linguistic backgrounds.

SHF’s kit will also take into consideration Singapore’s National Resuscitation guidelines.

* This is not a certification programme.
Heart Safe Committee

• Heart Safe Chairman: Dr V Anantharaman
• Hon Advisor: Dr Fatimah Lateef
• Members:
  – Dr Abdul Razakjr Bin Omar
  – Dr Chee Tek Siong
  – Mr David Wong
  – Mr Jarnail Singh
  – Dr John Wong
  – Dr Tan Eng Hoe
  – Dr Terrance Chua
  – Ms Dawn Low
SHF will be conducting CPR 3A training sessions in the following schools:

Date: 19 Mar 2009 Time: 9.15am - 11.30pm
School: Victoria Junior College: Training for: 800 students

Date: 3 & 17 Apr 2009 Time: 1.30pm - 4.30pm
School: Bedok West Primary School: Training for: 85 students

Date: 06 May 2009 Time: 8am - 11.30am
School: Montfort Secondary School: Training for: 680 students

Date: 25 May 2009 Time: 11am – 1.30pm
School: River Valley Primary School: Training for: 300 students

Date: 26 May 2009 Time: 10am – 12.30pm
School: Hougang Primary School: Training for: 350 students
A short video clip from 3A CPR
Thank You!
By the end of the 3A CPR course, the participant should be able to:

- give CPR to an adult
- give CPR to a child
- give CPR to an infant

- list the signs of choking
- help a choking adult /child
- help a choking infant
Some examples / samples of what are expected in the 3A CPR booklet
Danger

Make Sure the Scene Is Safe
Before you give CPR, make sure the scene is safe for you and the victim. For example, make sure there is no traffic in the area that could injure you (Figure 4). You do not want to become a victim yourself.

Call 995

Figure 6. Get help. Phone your emergency response number (or 911).

Check for Response

Check to see if the victim responds before giving CPR. Kneel at the victim’s side. Tap the victim and shout, “Are you OK?” (Figure 5).

Response

Figure 5. Check for response.

Open Airway

Figure 2. Open the airway by tilting the head and lifting the chin.
Assess Breathing

Figure 7. Look, listen, and feel for normal breathing.

Figure 3. Give 2 breaths.

Circulation & Chest Compression

Figure 1. Pushing on the chest. A. Put the heel of one hand on the center of the chest between the nipples. B. Put the other hand on top of the first.
Correct method of performing chest compressions

**How Deep to Push**
When you push on a child's chest, press straight down $\frac{1}{3}$ to $\frac{1}{2}$ the depth of the chest (Figure 9).

**How Many Hands for Pushes**
You may need to use only one hand to push on the chest of very small children (Figure 10). Whether you use one hand or 2 hands, it is important to be sure to push straight down $\frac{1}{3}$ to $\frac{1}{2}$ the depth of the chest.

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Adult / young

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Child

Figure 10. One-handed compressions.
Choking for conscious and unconscious victim

**Figure 11.** The choking sign. The victim holds his neck with one or both hands.

**Figure 12.** Helping a choking victim.

**Figure 13.** Open the victim’s mouth wide and look for the object.
Figure 14. Chest thrusts on a choking large person or pregnant woman.
Check to see if the infant responds before giving CPR. Tap the infant's foot and shout, “Are you OK?” (Figure 18).

Figure 16. Open the airway by tilting the head and lifting the chin.

Figure 17. Cover the infant's mouth and nose with your mouth.

Figure 18. Check for response.

Figure 19. Look, listen, and feel for breaths.
Figure 15. Put 2 fingers just below the nipple line.
Infant choking unconscious

**Figure 20.** Give up to 5 back slaps with the heel of your hand.

**Figure 21.** Give up to 5 chest thrusts.
Important points in CPR are highlighted and boxed

e.g.

**The most important parts of CPR is pushing on the chest**

**Important**

These things are important to remember when doing CPR:

- Push hard and push fast.
- Push at a rate of 100 times a minute.
- After each push, release pressure on the chest to let it come back to its normal position.
Important points in CPR are highlighted and boxed (continue)

e.g.

**Do Not**
DO NOT give thrusts on an infant’s belly because this could injure an infant.

**Important**
When tilting an infant’s head, do not push it back too far because this may block the infant’s airway.
Standard method for locating hand position in chest compression

Alternative method used in 3A CPR because the 3A CPR manikin has “no” rib
Defibrillation is the most effective way to convert VF to normal rhythm
Introduction to Automated External Defibrillators (AEDs)

What You Will Learn

By the end of this section you should be able to tell what an AED does.

Overview

The automated external defibrillator (AED) is a machine with a computer inside (Figure 22). An AED can

- Recognize some heart problems that require a shock
- Tell the rescuer when a shock is needed
- Give a shock if needed

AEDs are accurate and easy to use. After very little training, most people can use an AED. If you start CPR right away and use an AED within a few minutes, you will have the best chance of saving the life of someone whose heart has stopped.

Figure 22. An automated external defibrillator (AED).
**Danger:** Eg. hostile environment, lightning, lethal gas, fire, explosion, building collapse, electrocution, fast traffic

**Response:** ‘Hello, hello are you OK?’

No response → Call 995 and get an AED

**Airway:** ‘head tilt-chin lift’
remove FB only if visible

**Breathing:** Look, listen and feel
No breathing → two ventilations
May need to re-position head tilt-chin lift

**Circulation/ chest compression:**
(No motion, unconscious and no breathing) → starts CPR (30:2)

Get AED as soon as possible
Exclude AED contraindications, prepare chest
Power on, Attach electrodes, (Analyse), Shock
CPR x 1 min
Recent Advances in Cardiopulmonary Resuscitation

Cardiocerebral Resuscitation

Gordon A. Ewy, MD, FACC; Karl B. Kern, MD, FACC

Tucson, Arizona

Arrival of paramedics

CC= chest compressions

Whenever available
Singapore sees an average of one to two cases of sudden death a day, according to ambulance statistics.

It is believed a third of the cases happen during sleep.
Young and apparently healthy people can also collapse unexpectedly

March 14, 2009
SAF regular collapses, dies

RI boy, 12, dies after game

BY YEO SAM JO

It was just another Sunday, then it happened so suddenly. We were in shock," said the 47-year-old civil servant.

Yan Chyuan and his sister, Zhi Yu, 17, a JC1 student at RI, were having their weekly badminton lesson on Sunday afternoon. After the two-hour session, they...
A teenage triathlete, aged 17, a student at Raffles Junior College, collapsed after crossing the finish line in a South-east Asia Games selection race and died soon after.

A full-time national serviceman collapsed doing chin-ups earlier this week.