BLS Healthcare Provider

Basic Life Support
2015 Guidelines

Part 1
General Concepts

Part 1

Adults: adolescents (after onset of puberty) and older

Children: 1 year of age to puberty

Infants: Less than 1 year (excludes newly born infants in delivery room)

Part 1

Name the 6 critical concepts of **high-quality CPR** needed to improve a victim's chances of survival:

1. Start compressions within 10 sec of recognition of arrest
2. Push hard, push fast: compress at a rate of 100-120/min with a depth of:
   a) At least 2" for adults
   b) At least 1/3 depth of chest, about 2"for children
   c) At least 1/3 depth of chest, about 1 ½" for infants
3. Allow complete chest recoil
4. Minimize interruptions in compressions to <10 sec
5. Give effective breaths that make chest rise
6. Avoid excessive ventilation

Part 1

- What is cardiac arrest in adults often caused by?

A sudden cardiac event

- What is cardiac arrest in pediatrics often caused by?

A result of respiratory failure and shock

Part 1

- What are the steps in the adult chain of survival out-of-hospital?

Part1

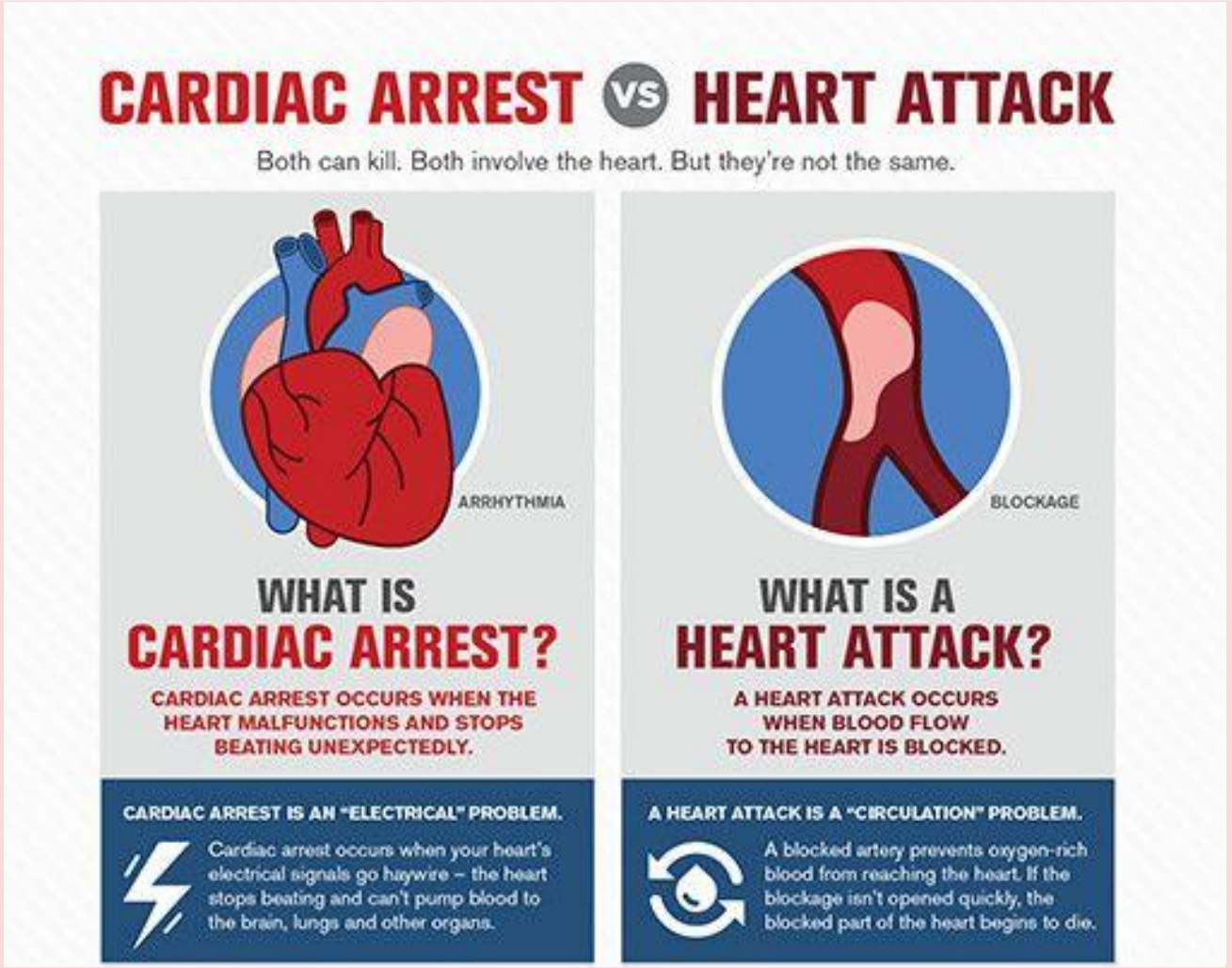
- What are the steps in the adult chain of survival in-hospital?

Part 1

What are the steps in the pediatric chain of survival?

1. Prevention of arrest
2. Early high-quality CPR
3. Rapid activation of EMS
4. Effective advanced life support
5. Integrated post-cardiac arrest care

Part 1


CARDIAC ARREST VS HEART ATTACK
Both can kill. Both involve the heart. But they're not the same.
ARRHYTHMIA
BLOCKAGE
WHAT IS CARDIAC ARREST?
CARDIAC ARREST OCCURS WHEN THE HEART MALFUNCTIONS AND STOPS BEATING UNEXPECTEDLY.
WHAT IS A HEART ATTACK?
A HEART ATTACK OCCURS WHEN BLOOD FLOW TO THE HEART IS BLOCKED.
CARDIAC ARREST IS AN "ELECTRICAL" PROBLEM.
Cardiac arrest occurs when your heart's electrical signals go haywire – the heart stops beating and can't pump blood to the brain, lungs and other organs.
A HEART ATTACK IS A "CIRCULATION" PROBLEM.
A blocked artery prevents oxygen-rich blood from reaching the heart. If the blockage isn't opened quickly, the blocked part of the heart begins to die.

Part 1

Match the term to the correct definition:

Heart attack

occurs when the heart develops an abnormal rhythm & can't pump blood

Sudden cardiac arrest

occurs when blood flow to part of the heart muscle is blocked

Part 1

Match the term to the correct definition:

Heart attack

Sudden cardiac arrest

occurs when the heart develops an abnormal rhythm & can't pump blood

occurs when blood flow to part of the heart muscle is blocked

Part 1

Which is the most common cause of cardiac arrest in children?

a) Cardiac problem

b) Respiratory failure or shock

c) Congenital or acquired heart defect

d) Infection and sepsis

The answer is ….. B

Part 1

Which statement best describes sudden cardiac arrest?

a) When an abnormal rhythm develops and the heart stops beating unexpectedly

b) When respiratory distress in adults occurs and the heart rate does not change

c) When the heart rate is 40-60 bpm and respirations increase

d) When blood flow to the heart is blocked and the heart rate increases

The answer is ….. A

Paramedic cat knows...
High quaility CPR is critical to patient survival.

Part 2
BLS for Adults

Part 2

Which of the following is the correct BLS sequence:

a) Airway, breathing, chest compressions
b) Circulation, breathing, airway
c) Chest compressions, airway, breathing
d) Breathing, chest compressions, airway

C

Part 2

Put these 5 initial steps in order:

1. If the victim is not responsive, shout for nearby help
2. If you are alone, get the AED. If someone else is available, send that person to get it
3. Tap the victim's shoulder & shout, "Are you all right?"
4. Make sure scene is safe
5. Activate the emergency response system

4, 3, 1, 5, 2

Part 2

Fill in the blanks:

To check for breathing, scan the victim's chest for rise & fall for no more than _____ seconds.

10

In an adult, palpate a _____ pulse

carotid

If you don't definitely feel a pulse within ____-____ seconds, start CPR, beginning with _____ _____

5-10; chest compressions

Part 2

Important facts about agonal gasps:

- ✓It is not normal breathing
- ✓May be present in first few mins after sudden cardiac arrest
- ✓Usually happen at a slow rate
- ✓May sound like a snort, snore, or groan

Part 2

Match the correct action to the situation:

- Victim **is** breathing normally & pulse **is** present
- Victim is **not** breathing normally but a pulse **is** present
- Victim is **not** breathing normally and has **no** pulse

- Begin CPR starting with chest compressions
- Monitor the victim
- Provide rescue breathing, check pulse q2min

Part 2

Match the correct action to the situation:

- Victim **is** breathing normally & pulse **is** present
- Victim is **not** breathing normally but a pulse **is** present
- Victim is **not** breathing normally and has **no** pulse

- Begin CPR starting with chest compressions
- Monitor the victim
- Provide rescue breathing, check pulse q2min

Part 2

- What is the compression:ventilation ratio for adults?

30:2

- How many compressions per minute should be delivered in an adult?

100-120

- What does it mean to allow complete chest recoil?

To allow the chest to re-expand completely so blood flows into the heart

Part 2

True or False??

- For adult compressions press straight down at least 2" on the upper half of the sternum

False-lower half

- Victims should be on a firm surface for effective compressions

True-provides better blood flow

Part 2

Why is it recommended that you don't move the victim while CPR is in progress unless the victim is in a dangerous environment?

Minimizing interruptions provides better CPR

Part 2

- Name 2 ways to open the airway:

Head tilt-chin lift & Jaw thrust

- If you suspect a head or neck injury, which technique should you use?

(A) Jaw thrust

Part 2

You are walking down the street and witness a man fall off the second story of his house. After going through all of the initial steps, you begin chest compressions and use the jaw thrust technique to open his airway. However, you are unable to get his airway open. What should you do?

a) Continue to use jaw thrust due to risk of neck injury

b) Use head-tilt chin lift

c) Reposition his mouth

d) None of the above

B

Part 2

In order to comply with OSHA regulations about standard precautions, which of the following should the HCW use during CPR?

a) Gloves

b) Bag-mask devices

c) Mask barrier device

d) All of the above

D

Part 2

- Why do you think bag-mask ventilation is not recommended for lone rescuer CPR?

It takes too long to position correctly

- When using a bag-mask what is the technique used to hold the mask in place called?

E-C Clamp

Part 2

- You should squeeze the bag over ____ second(s) while watching for chest rise.

a) 1 second

b) 2 seconds

c) 3 seconds

d) 4 seconds

A

Part 2

- Answer the following questions about 2-rescuer CPR:

What should the 2nd rescuer do while the 1st rescuer starts CPR?

Activate EMS & get AED

After how many cycles should rescuers switch roles? How many minutes is that?

5 cycles – about 2 mins

Part 2

- It is important to count compressions out loud because:

a) Effective teams communicate continuously

b) The rescuer providing breaths can anticipate when breaths are due

c) It helps to minimize interruptions

d) It helps both rescuers know when the time for a switch is approaching

All are correct!

Part 2

- There are 3 rescuers present, what would be the best arrangement of rescuers to provide the most effective CPR?

1 rescuer opens airway and holds mask

1 rescuer squeezes the bag

1 rescuer does chest compressions

T-Rex hates CPR
Another theory on why they went extinct

Part 3

AED for Adults/Children >8 yrs

Part 3

- What does AED stand for?

Automated External Defibrillator

- What is an AED?

Computerized device that can identify cardiac rhythms that need a shock & deliver the shock

Part 3

- Put the following steps in the correct order:

1. If shock is advised, clear the victim & press shock
2. Open the carrying case and power on the AED
3. "Clear" the victim and allow AED to analyze the rhythm
4. Resume CPR after shock or if no shock was advised, start with chest compressions
5. After 5 cycles or about 2 min, the AED will prompt you again to analyze the rhythm
6. Attach AED pads-use adult pads for victims 8 yrs & older

2, 6, 3, 1, 4, 5

Part 3

- Draw AED pads on the victim's chest in the anteriolateral position:

Part 3

True or False??

- It is ok to use the AED if the victim is lying on snow or in a small puddle?

True

- It is ok to use child AED pads on an adult.

False

Part 3

Which of the following statements about special situations while using the AED is correct?

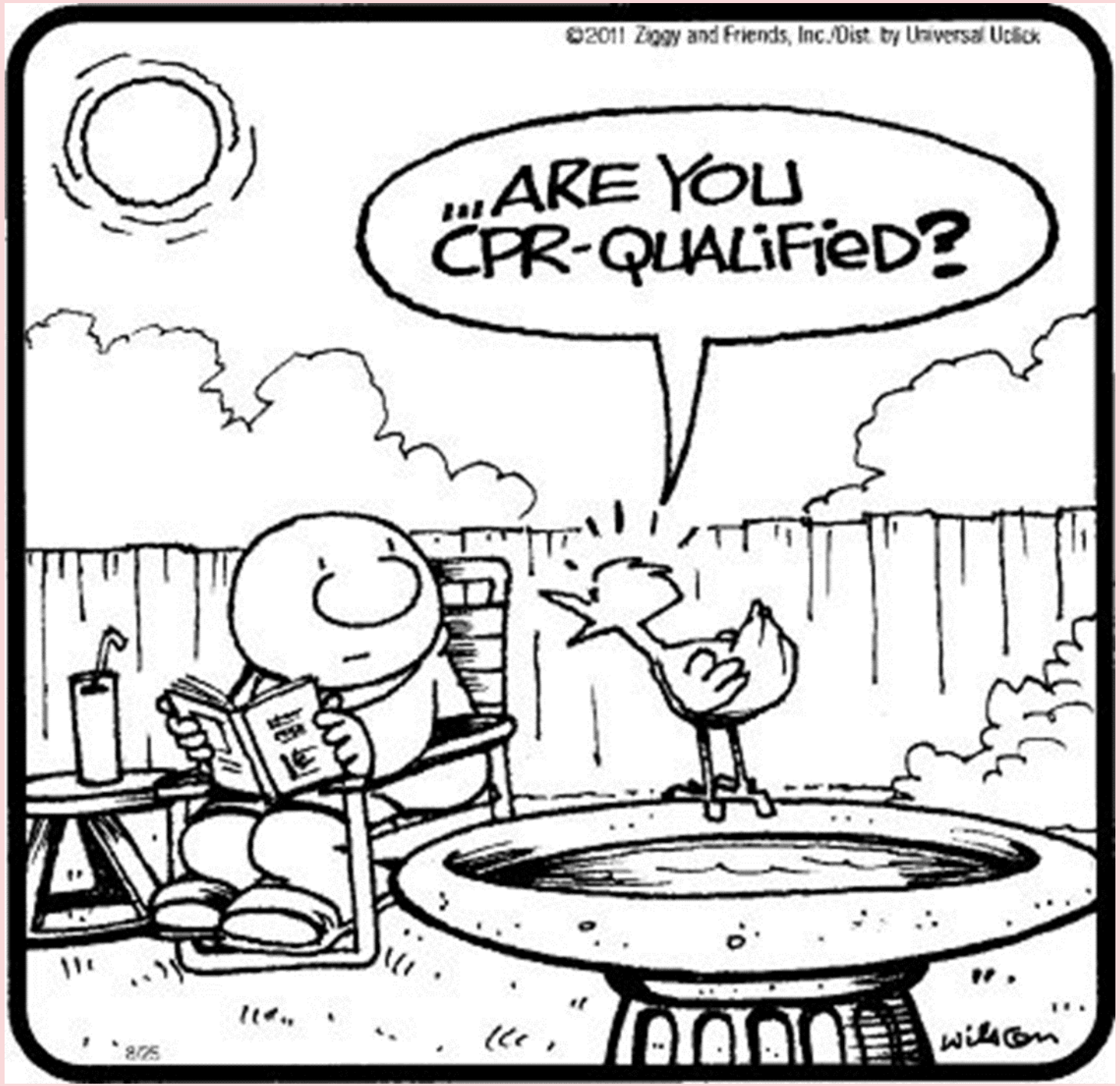
a) It is ok to place the AED pads over transdermal medication patches.

b) Water will not interfere with the AED shock.

c) Place AED pads over implanted defibrillators or pacemakers in order to help deliver the shock

d) It is ok to use a razor to shave a victim's chest if the pads will not stick.

D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...ARE YOU CPR-QUALIFIED?
8/25
WILSON

Part 4
Team Dynamics

Part 4

After performing high-quality CPR for 5 minutes, the team leader frequently interrupts chest compressions to check for a pulse even though the victim has no organized rhythm when the AED analyzes the rhythm. Which action demonstrates constructive intervention?

a) Wait until the debriefing session afterward to discuss it

b) Suggest to resume chest compressions without delay

c) Say nothing that contradicts the team leader

d) Ask another rescuer what he thinks should be done

The answer is ….. B

Part 4

What is the appropriate action to demonstrate closed-loop communication when the team leader assigns you a task?

a) Wait for team leader to address you by name before acknowledging the task

b) Start performing the assigned tasks, but don't speak, to minimize noise

c) Repeat back to the team leader the task you were assigned

The answer is ….. C

One, two three, BREATHE
He's dead, Jim

Part 5

BLS for Infants & Children

Part 5

- How do you decide if a child should be considered an adolescent and use the adult CPR protocol?

After the onset of puberty as evidenced by chest or underarm hair in males & any breast development in females

Part 5

Nancy is performing CPR on Susie, a 4 year old who is not breathing and does not have a pulse. What should the compression:ventilation ratio be?

a) 15:2

b) 30:1

c) 30:2

d) 100-120 per minute

C

Part 5

How deep should Nancy be compressing into Susie's chest? Select all of the correct answers.

a) About 2 inches

b) At least 1/2 the depth of the chest

c) At least 2 inches

d) At least 1/3 the depth of the chest

A and D

Part 5

Which of the following statements is **NOT** correct based on the scenario with Nancy and Susie?

a) Nancy can use 1- or 2- handed chest compressions

b) Since Nancy did not witness the arrest and is alone, she should call activate EMS & get the AED first

c) When Sam arrives and states he knows CPR, they can do 15 compressions:2 breaths

d) The compression rate should be 100-120 per minute

B (see 4 and 4a page 46)

Part 5

Which of the following statements is correct about CPR in a **child**?

a) For pulse check, auscultate the carotid or femoral pulse

b) If the P<60 with signs of poor perfusion, begin CPR

c) Check for pulse by palpating the brachial pulse

d) The bag mask barrier device should cover the eyes and overlap the chin

B

Part 5

Match the statement with the correct response for lone rescuer situations:

1. Infant/Child found unresponsive
2. Adult arrest
3. Witnessed infant/child arrest

A. Provide 2 minutes of CPR before leaving the victim to activate EMS & get AED

B. Activate EMS & get AED

1-A 2-B 3-B

Part 5

True or False??

- When sudden cardiac arrest occurs in adults, the O2 content in the blood is usually normal, so compressions alone may maintain O2 delivery to the heart & brain for the first few minutes after arrest.

True

but is this true for children too?

Part 5

Which of the following statements is correct for BLS in infants?

a) Infant mean babies up to 12 months of age

b) The carotid artery should be used for pulse checks

c) The compression rate is 30 compressions per minute

d) Compression depth is approximately least ½”

A

Part 5

Match the correct picture to the following statements:

1. 2 finger compression technique for singe rescuer
2. 2 thumb-encircling hands technique
3. Technique used for 2 rescuers
4. Technique used for single rescuer

A.

B.

1-B 2-A 3-A 4-B

Part 5

Fill in the blanks about **infant** CPR:

1. Compressions should be at least _____ the anterior-posterior chest depth.
2. Compressions should be about_____ inches deep.
3. Compression:ventilation rate is _____ for one rescuer.
4. Compression:ventilation rate is _____ for two rescuers.
5. Use the _____ artery for pulse checks.

1/3, 1 ½, 30:2, 15:2, brachial

Part 5

Which of the following statements about infant CPR is correct?

a) Place the infant on a soft surface

b) Place 2 fingers in the center of the infant's chest just below the nipple line

c) Press on the bottom of the breastbone

d) Push hard and fast, make sure you don't allow the chest to recoil completely

B

Part 5

- How would you open the airway of an infant/child who has no suspected neck injury?

Head tilt-chin lift

- What does it mean to keep the infant's head in a neutral position? Why is this important?

Keep external ear canal level with the top of their shoulders-Don't extend the head beyond the sniffing position.

This position is best to maximize airway patency

Part 5

The 2 thumb-encircling hand technique is the preferred 2-rescuer chest compression technique in infants because:

a) It produces better blood flow

b) It more consistently results in appropriate depth or force of compression

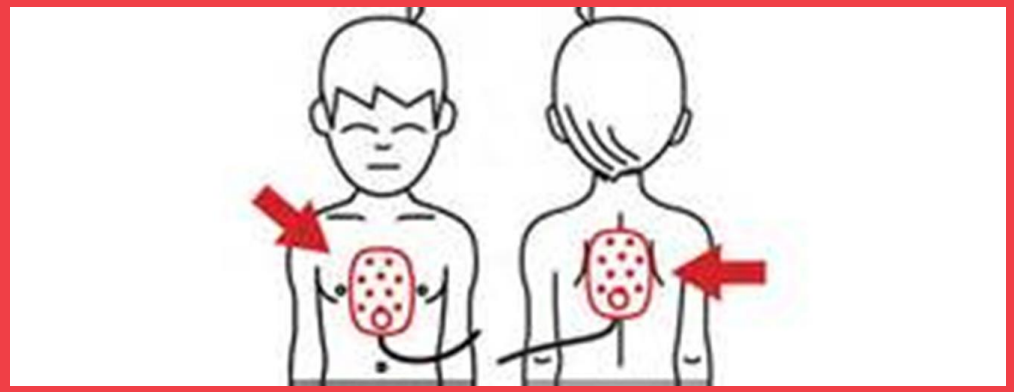
c) It may generate higher blood pressures

All answers are correct

I WILL NOT PUT HOT SAUCE
IN THE CPR DUMMY
UCE
I WILL NOT PUT HOT SAUCE
IN THE CPR DUMMY
UCE
I WILL NOT PUT HOT SAUCE
IN THE CPR DUMMY
UCE
I WILL NOT PUT HOT

Part 6

AED for Infants & Children



Part 6

Key points for using AED on infant or child <8 yrs:

- Use pediatric cables or attenuator if available
- Use child pads if available
- If there are no child pads use adult pads
- Make sure pads don't touch each other or overlap
- Use manual defibrillator for infants if available
- If manual debfib or child pads not available, use adults pads for infant

Part 6

Draw a line to match the following situations to all of the correct responses:

- Victims 8 years of age and older
- Victims Younger than 8 years of age

Use the AED as soon as possible

Use child pads if available

Use only adult pads

Use a child key or child switch

Do not use child pads

Do not use child key or child switch

Ok to use adult pads

Part 6

Draw a line to match the following situations to all of the correct responses:

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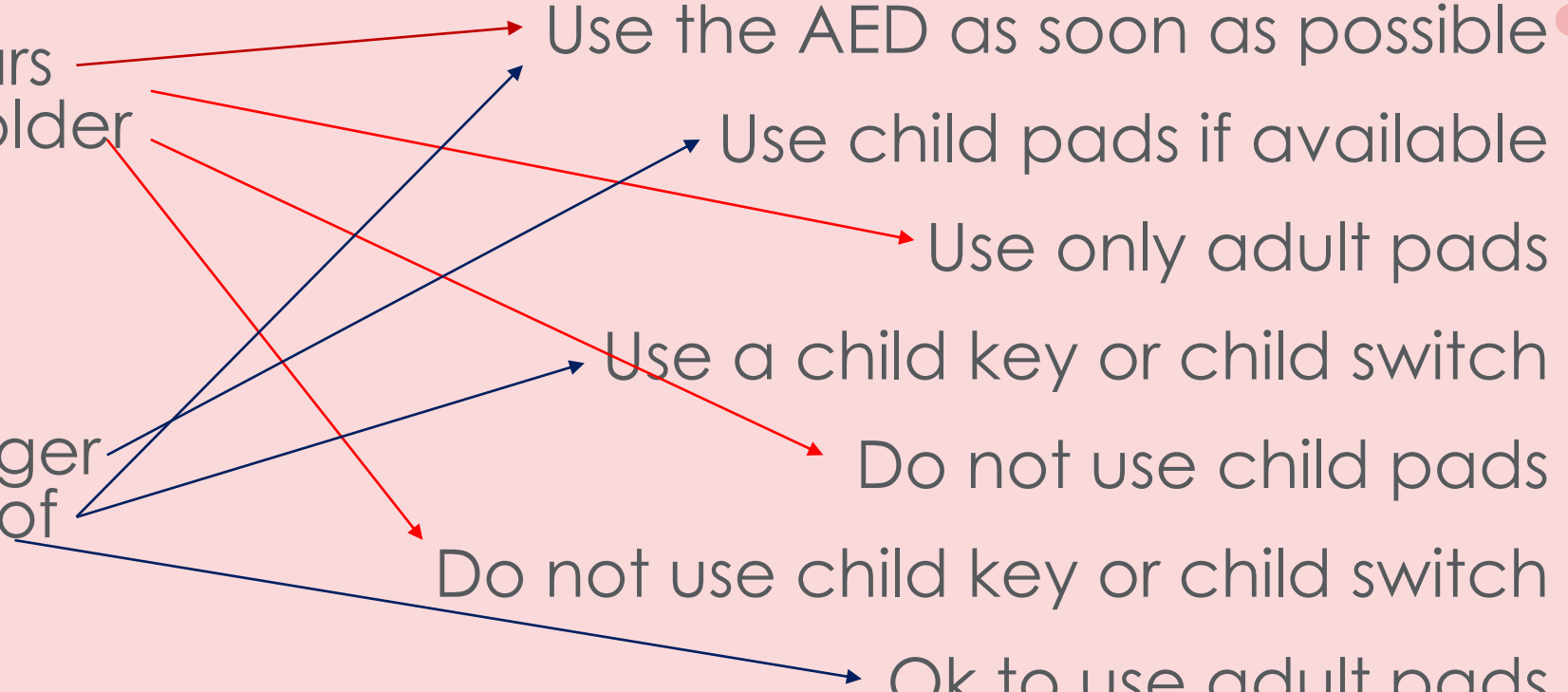
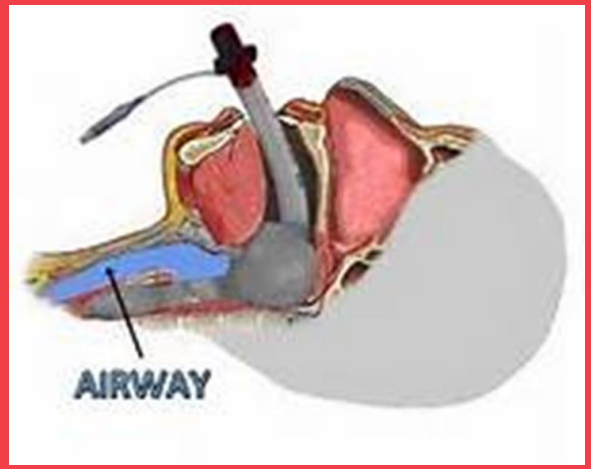


Part 7
Ventilation Techniques



Part 7

Advanced airways:

- laryngeal mask airway (LMA)
- endotracheal tube (ETT)
- Prevent airway obstruction
- Provide route for more effective oxygenation & ventilation
- Once in place don't pause compressions for breaths
- Give 1 breath every 6 seconds (10 breaths per min)

Part 7

Rescue breathing:

- Breaths to unresponsive victim who has a pulse but **isn't** breathing
- Use barrier device (pocket mask), bag-mask device, mouth-to-mouth, or mouth-to-nose
- *Adults*: 1 breath every 5-6 seconds (10-12 breaths per min)
- *Infants & Children*: 1 breath every 3-5 seconds (12-20 breaths per min)
- Give each breath in 1 second
- Each breath should make chest vise
- Check pulse every 2 minutes

Part 7

Fill in the blanks:

- For signs of poor perfusion in an infant or child and a HR < _____, start CPR

60

- In respiratory arrest, the victim is unresponsive, not breathing or only gasping, but still has a _____.

Pulse

- If you are unable to ventilate a victim after 2 attempts, promptly return to _____ _____

Chest compression

Part 7

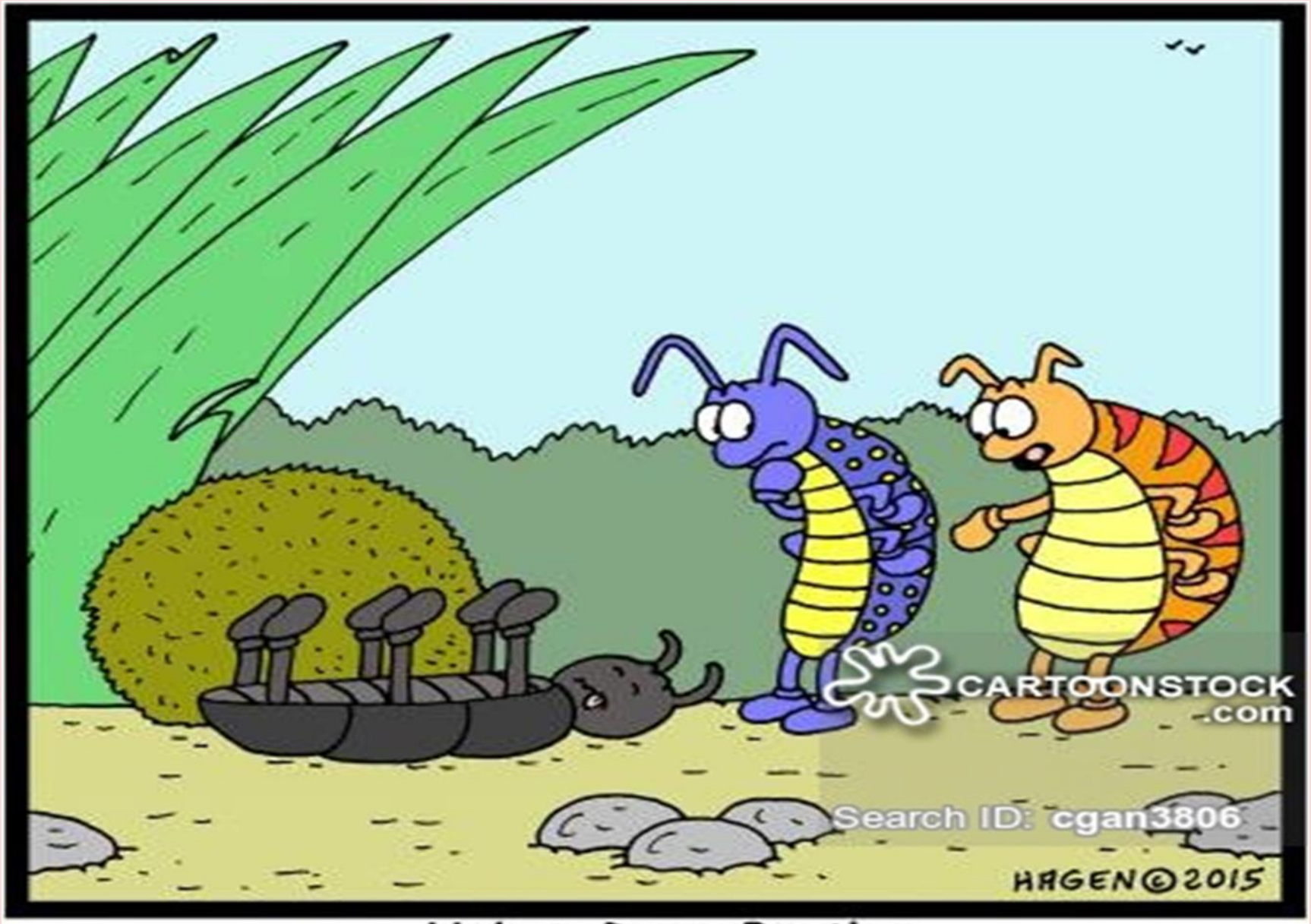
Fill in the blanks:

- _____ technique is preferred for rescue breathing infants: mouth-to-mouth or mouth-to-nose?

Mouth-to-nose

- Giving breaths too quickly or with too much force can cause_____ _____

Gastric inflation



He's a Dung-Beetle:
No way I'm giving him mouth-to-mouth!

Part 8

Opioid-Associated Emergencies

Part 8

Facts about opioids:

- Medications used primarily for pain relief
- Hydrocodone, morphine, heroin
- Can cause CNS and respiratory depression that can cause respiratory & cardiac arrest
- Naloxone can reverse the respiratory depression
- Naloxone can be given IM, Intranasal, & IV

Part 8

Your 27 year-old roommate uses opioids. You find him unresponsive with no breathing, but a strong pulse. You suspect an opioid-associated life-threatening emergency. A friend is phoning 9-1-1 and is looking for the naloxone autoinjector. What action should you take?

a) Remain with your roommate until the naloxone arrives and administer it immediately

b) Begin CPR, starting with chest compressions

c) Provide rescue breathing: 1 breath every 5 to 6 seconds

d) Provide rapid defibrillation with an AED

The answer is …. C

C'MON BOB!
pump
pump
pump
BREATHEZ!!!!
ICANHASCHEEZBURGER.COM

Part 9
Choking Relief

Part 10

Which of the following statements is correct about relieving choking?

a) Signs of severe airway obstruction include coughing forcefully

b) Signs of mild airway obstruction include clutching the neck with the thumb and fingers

c) If the victim cannot talk you should attempt to relieve the airway obstruction

d) If the victim is wheezing between coughs that is a sign that you should attempt to relieve the airway obstruction

C

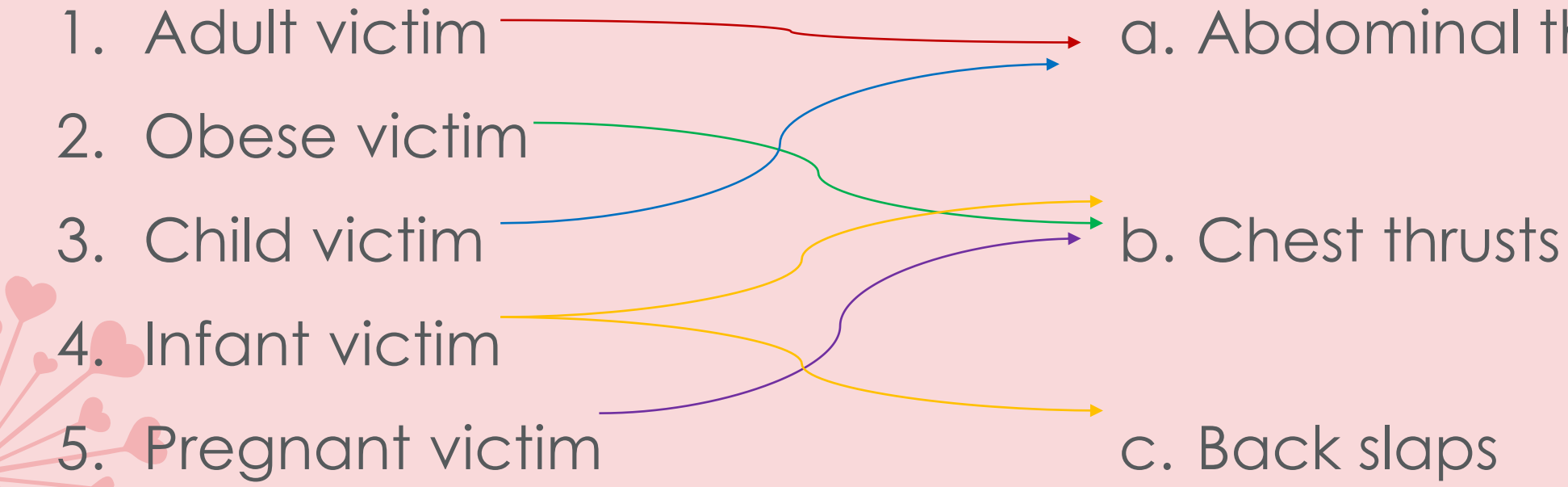
Part 10

- Draw lines to match the victims to the correct technique to relieve choking & check your answers on the next slide:

1. Adult victim	a. Abdominal thrusts
2. Obese victim	
3. Child victim	b. Chest thrusts
4. Infant victim	
5. Pregnant victim	c. Back slaps

Part 10

- Draw lines to match the victims to the correct technique to relieve choking & then check your answers on the next slide:



Part 10

If a choking victim becomes unresponsive:

(choose all of the correct responses)

a) Start CPR beginning with respirations

b) Every time you open the airway to give breaths, check for the object

c) After 5 cycles or 2 minutes of activate EMS if someone hasn't already

d) If you see an object, remove it with your fingers

B, C, D are correct

Part 10

- List 2 ways you can tell if you have successfully removed an airway obstruction in an unresponsive victim.

1. **Feel air movement & see chest rise when you give breaths**
2. **See & remove a foreign body from the victim's mouth**

Part 10

Place the steps to relieve choking in a responsive infant in the correct sequence:

1. Place your free hand on the infant's back and while cradling the infant between your 2 forearms, turn the infant as a unit
2. Deliver 5 back slaps
3. Deliver 5 quick downward chest thrusts
4. Repeat the sequence until object is removed or infant becomes unresponsive
5. Hold the infant facedown with head slightly lower than the chest, resting on your forearm

5, 2, 1, 3, 4

Part 10

True or False??

- Always perform blind finger sweeps in infants & children so you can clear their airway.

False-blind finger sweeps can push the foreign body back into the airway causing further obstruction

- If the infant becomes unresponsive, continue doing back slaps and chest thrusts

False-stop giving back slaps & start CPR

Part 10

Place the steps to relieve choking in an unresponsive infant in the correct sequence:

1. Open airway
2. Leave the victim and call 911
3. Give breaths
4. Give compressions
5. Look for obstruction object
6. Give 2 cycles of CPR
7. Remove object only if you can see it and it can easily be removed

4, 1, 5, 7, 3, 6, 2

Geez, Bob, can't you tell a decoy from the real thing?!
CARTOONSTOCK .com
Search ID: rmcn483
McIlwaine

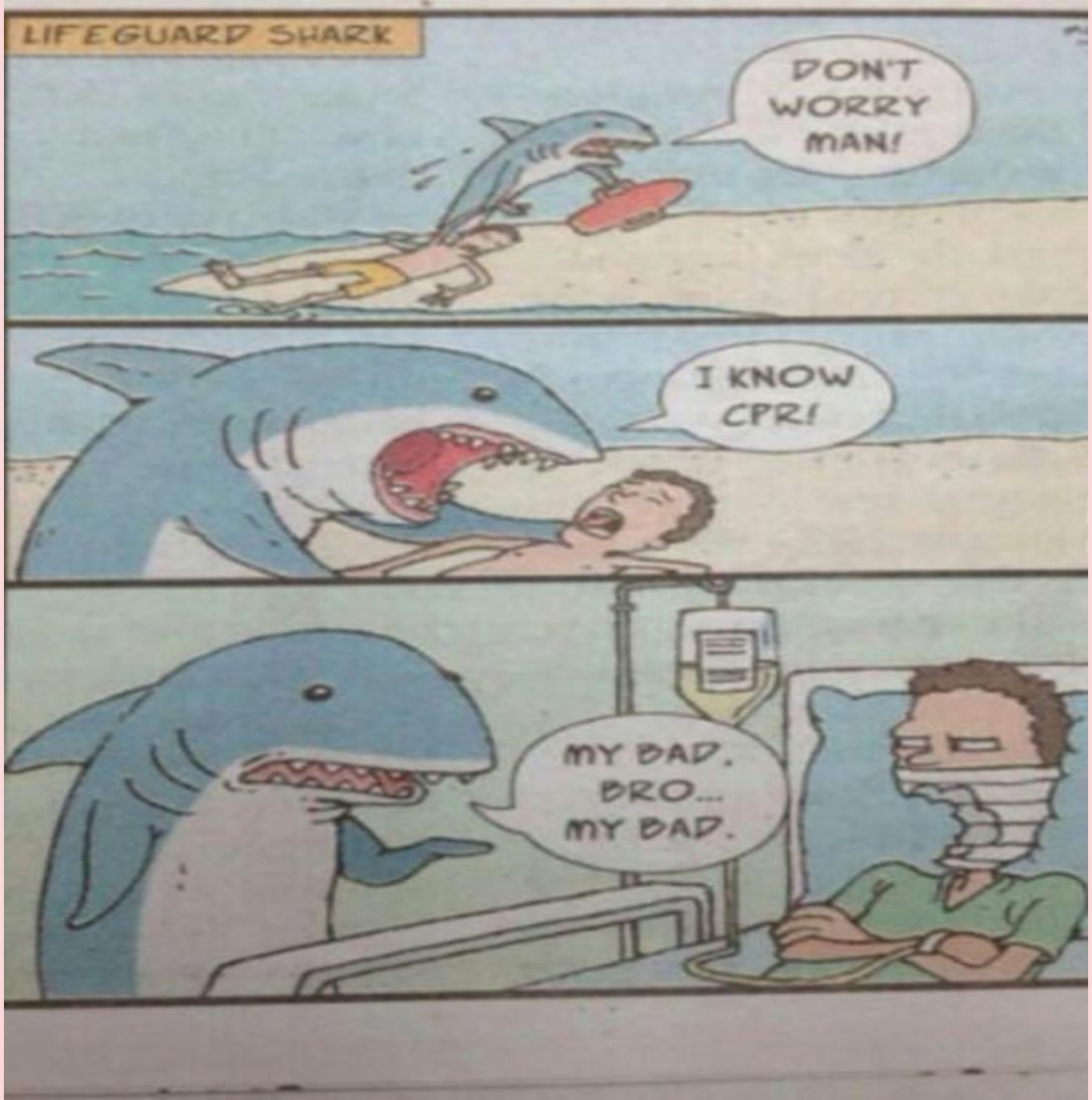
Appendix

Component	Adults and Adolescents	Children (Age 1 Year to Puberty)	Infants (Age Less Than 1 Year, Excluding Newborns)
Scene safety	Make sure the environment is safe for rescuers and victim		
Recognition of cardiac arrest	Check for No breathing or only gasping (ie, no normal breathing) No definite pulse felt within seconds (Breathing and pulse check can be performed simultaneously in less than 10 seconds)		
Activation of emergency response system	If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available	***Witnessed collapse*** ***Unwitnessed collapse*** Give minutes of CPR Leave the victim to activate the emergency response system and get the AED Return to the child or infant and resume CPR; use the AED as soon as it is available	

Component	Adults and Adolescents	Children (Age 1 Year to Puberty)	Infants (Age Less Than 1 Year, Excluding Newborns)
Scene safety	Make sure the environment is safe for rescuers and victim		
Recognition of cardiac arrest	Check for responsiveness No breathing or only gasping (ie, no normal breathing) No definite pulse felt within 10 seconds (Breathing and pulse check can be performed simultaneously in less than 10 seconds)		
Activation of emergency response system	If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available	***Witnessed collapse*** Follow steps for adults and adolescents on the left ***Unwitnessed collapse*** Give 2 minutes of CPR Leave the victim to activate the emergency response system and get the AED Return to the child or infant and resume CPR; use the AED as soon as it is available	

Component	Adults and Adolescents	Children (Age 1 Year to Puberty)	Infants (Age Less Than 1 Year, Excluding Newborns)
Compression-ventilation ratio *without advanced airway*	***1 or 2 rescuers***	***1 rescuer*** ***2 or more rescuers***	
Compression-ventilation ratio *with advanced airway*	Continuous compressions at a rate of Give 1 breath every seconds (10 breaths/min)		
Compression rate			
Compression depth	At least	At least AP diameter of chest About	At least one third AP diameter of chest About
Hand placement	2 hands on the lower half of the breastbone (sternum)	2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)	2 fingers in the center of the chest, just below the nipple line 2 thumb–encircling hands in the center of the chest, just below the nipple line
Chest recoil	Allow full recoil of chest after each compression; do not lean on the chest after each compression		
Minimizing interruptions	Limit interruptions in chest compressions to less than seconds		

Component	Adults and Adolescents	Children (Age 1 Year to Puberty)	Infants (Age Less Than 1 Year, Excluding Newborns)
Compression-ventilation ratio *without advanced airway*	***1 or 2 rescuers*** 30:2	***1 rescuer*** 30:2 ***2 or more rescuers*** 15:2	
Compression-ventilation ratio *with advanced airway*	Continuous compressions at a rate of 100-120/min Give 1 breath every 6 seconds (10 breaths/min)		
Compression rate	100-120/min		
Compression depth	At least 2 inches (5 cm)*	At least one third AP diameter of chest About 2 inches (5 cm)	At least one third AP diameter of chest About 1½ inches (4 cm)
Hand placement	2 hands on the lower half of the breastbone (sternum)	2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)	***1 rescuer*** 2 fingers in the center of the chest, just below the nipple line ***2 or more rescuers*** 2 thumb–encircling hands in the center of the chest, just below the nipple line
Chest recoil	Allow full recoil of chest after each compression; do not lean on the chest after each compression		
Minimizing interruptions	Limit interruptions in chest compressions to less than 10 seconds		


LIFEGUARD SHARK
DON'T WORRY MAN!
I KNOW CPR!
MY DAD. BRO... MY DAD.

I don't think CPR is your biggest concern,
If you are missing your arms, legs, and face.
memecenter.com
MemeCenter

Dyslexic CPR