AUTOMATIC EXTERNAL DEFIBRILLATION

AED
CARDIAC EMERGENCIES

• Heart Attack (Myocardial Infarction) – sudden illness in which blood flow to the heart is compromised.
• Cardiac Arrest – heart stops beating
• Clinical Death – no breathing and no pulse
Automatic External Defibrillator “AED”

• An electrical shock from this device will correct a faulty heart rhythm – “Defibrillation”

• Each minute AED is delayed reduces survival rate by 10%!
Heart Attack – most people die within 1-2 hours of initial signs & symptoms

- CPR only generates 1/3 of normal blood flow to the brain
- CPR – squeezes the heart between the sternum (breast bone) and the spine
- Most deny having a heart attack or blame indigestion
- When breathing stops – the heart will soon stop beating
- 4-6 minutes – possible brain damage
- 6-10 minutes – brain damage likely
- Over 10 minutes – brain damage irreversible
HEART ATTACK SIGNS/SYMPTOMS

- **PAIN** – chest, neck, jaws and arms (usually *left* shoulder and arm but can be on right side too) “*Angina – term for chest pain*”
  *[pain lasting longer than 3-5 minutes]*
- **BREATHING** – SOB, fast or slower than normal
- **PULSE** – faster or slower or irregular
- **SKIN** – pale/ashen or blue, sweaty
- **GASTRIC** – may have nausea or vomit
Other Signs & Symptoms

- Women more than men will experience SOB, nausea, vomiting, back/jaw pain or malaise
- Men normally say it feels like an elephant standing on the chest or a constant pressure
- Women have short lived pain outside of the sternum
CARE FOR HEART ATTACK

Conscious Victim

CHECK – CALL – CARE

1. CHECK THE VICTIM (breathing & pulse)
2. CALL 911
3. HAVE VICTIM REST COMFORTABLY
4. LOOSEN TIGHT CLOTHING
5. MONITOR VITALS (HR & Resp)
6. BE READY FOR CPR & AED
7. HELP WITH ANY MEDICATION
8. BE CALM AND REASSURING
CHAIN of SURVIVAL

SURVIVAL DEPENDS ON THE FOLLOWING

“Cardiac Chain of Survival”

1. **Early** recognition & Early Access – 911
2. **Early CPR** – circulate blood and O2
3. Early defibrillation – **AED**
   (10% decrease of survival for every minute delayed)
4. **Early** Advanced Medical Care - **EMS**
AUTOMATIC EXTERNAL DEFIBRILLATORS (AED)

- **Defibrillation** – electrical shock that helps correct an abnormal rhythm
- The heart beat is controlled by an electrical system that controls the “pumping” muscular contractions that moves blood into and out of the chambers of the heart
- The electrical system can be disrupted by disease or injury
- **V-fib [Ventricular Fibrillation]** - the ventricles quiver and do not pump the blood
- **V-tach [Ventricular Tachycardia]** – rapid contraction of the ventricles but the “heart pump” is insufficient
DEFIBRILLATION
( VICTIM is UNCONSCIOUS)

AED USE:
1. Confirm cardiac arrest
2. Turn on AED
3. Wipe chest dry
4. Apply pads and connect to AED
5. During Analyze phase – do not touch patient
6. During Shock phase – stand clear and do not touch patient
7. Begin CPR as prompted
ON BUTTON “GREEN”

CPR BUTTON “BLUE”

SHOCK BUTTON “ORANGE”

PLASTIC SHIELD “Pull to Open”

AED Pads behind the Plastic Shield and normally already plugged into the AED
AED USE

- **TURN ON AED AT** the **GREEN BUTTON**
- **REMOVE** the **PLASTIC FACE PLATE**
- **APPY PADS** as **PICTURED**
- **PLUG IN CONNECTOR** **UNLESS** **ALREADY ATTACHED** per the AED Model
- **“ANALYZING”** -- **STAY CLEAR** --- tell everyone
- **IF** **“SHOCK ADVISED”** – **PUSH ORANGE BUTTON**
- **“STAY CLEAR”** – tell everyone prior to shocking
- AED will then either
  1. **RE-ANALYZE**
  2. **RECOMMEND a “SHOCK”**
  3. **SAY CHECK VICTIM & DO CPR**
- **DO NOT EVER REMOVE PADS**
AED PAD PLACEMENT

- Pad placement for Adult

- Pad placement for Child (ideally same as an adult but if the pads touch – then go front and back of chest)
AED NOTES

- Around water or if victim is wet – get them dry as possible.

- Avoid metal if at all possible (ex. bleachers)

- Do not place AED pads over pace-makers or implantable cardioverter defibrillator (ICD)

- Medication patches – remove and dry the area (nitroglycerin or nicotine)

- Can use with hypothermia – do not shake the victim as can cause ventricular fibrillation
AED PRECAUTIONS

- Do not touch in “analyze phase”
- Do not touch in “shock phase”/defibrillating
- Do not use alcohol to wipe chest dry
- Do not use AED around combustible or flammable materials/liquids etc.
- Do not use in a moving vehicle
- Do not use around water
- Do not use with a cell phone within 6 feet
- Do not use on metal bleachers etc.
- Do not use on victim with Nitro patch – remove it
- Do not use adult pads on children or infants
- Do not place AED pads over implanted devices
AED Notes cont.

- *If on metal bleachers* – pads should not touch metal and no one touch patient or the metal bleachers in the ‘shock phase’

- Chest hair – if get a “*check pads*” message and the pads do not touch the chest fully – use a razor to shave the hair

- Body Piercings – make sure pads don’t touch the metal
YOUTUBE SITES

• www.youtube.com/watch?v=rfNxfw-qIwA
  --- HeartStart Instructions Of How To Use The HeartStart Defibrillator

• www.youtube.com/watch?v=ZRVFvtoLkRM
  --- University of Arizona – AED USE
"LET'S USE THE AED TRAINERS and I WILL SING TWO HEARTS ARE BETTER THAN ONE!"