

2.5 Circulatory Emergencies

In Canada, thousands of people die every year from heart disease and stroke; half of these deaths occur before the patient reaches the hospital.

The three major factors contributing to the risk of heart disease are

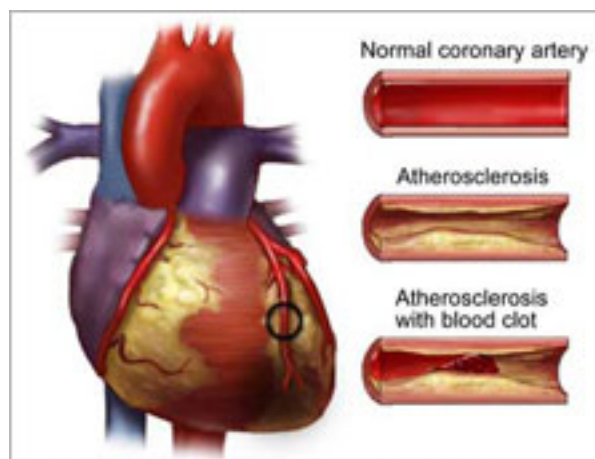
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Congestive Heart Failure

If the _____ fails to pump enough blood consistently, the blood can back up into the _____. This can lead to complications such as _____ and difficulty breathing. This condition is usually a gradual onset and is treated in hospital. It can lead to heart arrhythmia or heart attack.

Cardiovascular Disease (CVD)

Cardiovascular diseases are conditions that affect blood vessels and/or the heart. As fatty tissue builds up inside the arteries, they begin to harden. This is called _____. The picture below is an example of a progression from CVD to the full blockage of a blood vessel. This could cause either a heart attack (coronary arteries) or a stroke (brain).



Angina

Angina pectoris is a condition where the _____ arteries (that deliver food and oxygen to the heart muscle) are _____. Under physical or emotional _____, these arteries do not have the ability to dilate enough to maintain the necessary flow of blood to the heart causing a _____ of the coronary arteries. This lack of oxygen creates an “angina attack”.

Heart Attack

A **Heart Attack**, or _____, is caused by a _____ blockage of the coronary arteries that supply blood (food and oxygen) to the heart muscle. Without oxygen, the heart muscle begins to die resulting in damage to the heart muscle or a cardiac arrest (heart stops beating).

SIGN & SYMPTOMS

Angina Attack	Heart Attack
LOC -	
Breathing -	
Circulation -	
Skin -	
Pain -	
Pain radiation -	
Nausea and/or vomiting -	
Weakness, dizziness and fatigue	

TREATMENT

Angina Medication

NITROGLYCERINE

A conscious patient should be _____ in taking their own medication in the treatment of non-traumatic chest pain.

Nitroglycerine is a drug that causes the vessels to _____ (open up) allowing a blockage to pass.

Nitroglycerine can come in a tablet, _____, or medication patch. A tablet or spray should be placed under the tongue.

A maximum of _____ nitroglycerine doses can be administered in _____

Do not give nitroglycerine to a patient who is unresponsive (can not take it themselves)

Do not give nitroglycerine to anyone who has taken performance enhancing drugs such as _____ (24 hrs), _____ (24 hrs) or _____ (96 hrs).

A patient with angina can still have a heart attack. If the patient's nitro does not work (after the second dose), if they do not have their nitro on them or they are wearing the patch (and still experiencing chest pain), call EMS immediately.



ASA (Aspirin)

In addition to a patient's prescribed medication, use of ASA (acetylsalicylic acid/*Aspirin*) is recommended for a patient suffering from non-traumatic chest pain.

ASA is an _____ and can be beneficial in the treatment of chest pain.

Assist a patient in taking _____ ASA provided that:

- A -
- A -
- A -
- A -

Have the patient chew (1) adult ASA tablet (325mg) or (4) "daily dose" ASA tablets. **DO NOT** substitute acetaminophen (_____) or ibuprofen (_____) as they block the blood-thinning affect of ASA

A patient who has been prescribed nitroglycerine can also take ASA:

1. If approved by their doctor and it is part of their regular treatment
2. If they do not have their nitroglycerine with them
3. If directed by EMS personnel.

If the patient takes aspirin, **do not** repeat the aspirin dosage!



Although the SFA program trains candidates on an ASA protocol, *rescuers must consult, and comply with, their employer's policies and procedures with respect to medication administration.*

Sudden Cardiac Arrest

Cardiac arrest means that the heart has _____ beating properly (ie. you will not feel a _____). This can occur suddenly, or can develop from a heart attack. Because blood is not circulating through the body, tissue damage begins and CPR must be started immediately to restore some (approximately 25%) circulation through the body.

Transient Ischemic Attack

A transient ischemic attack is a _____ that may show signs and symptoms of a full stroke, although the symptoms may suddenly stop. A person suffering from a TIA has a 10x greater chance of experiencing a true stroke within 12 months. This is a warning sign. EMS should be contacted for all TIA's and the patient treated for shock in position of comfort.

Bell's Palsy

Bell's Palsy is a permanent dysfunction in one of the _____. It causes partial paralysis in the face in a similar fashion to a TIA or stroke.

If you notice ANY signs of paralysis, no matter how minor, you should call 9-1-1 immediately. Act **FAST**

F –

A –

S –

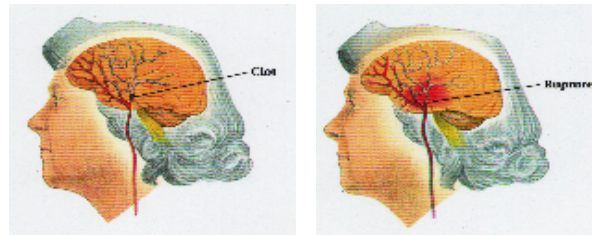
T –

Act **FAST** <http://www.youtube.com/watch?v=YHzz2cXBIGk>

Stroke

Also called a cerebrovascular accident (CVA), a stroke occurs when blood vessels in the brain become _____ (~80%) or _____ (~20%), causing the brain cells to be deprived of oxygen. Strokes can occur spontaneously while a person is at rest.

Because each side of the brain controls a different side of the body, a patient who has had a stroke may show _____. I.e. Paralysis of one half the body, drooling from corner of mouth, unequal pupils, incoherent speech, etc.



Signs and Symptoms:

Treatment:

Unit 2: First Aid

2.4 Circulatory Emergencies

Intro - The Heart Attack Grill: http://www.youtube.com/watch?v=hqf_SIQ3Jk

In Canada, thousands of people die every year from heart disease and stroke; half of these deaths occur before the patient reaches the hospital.

The three major factors contributing to the risk of heart disease are

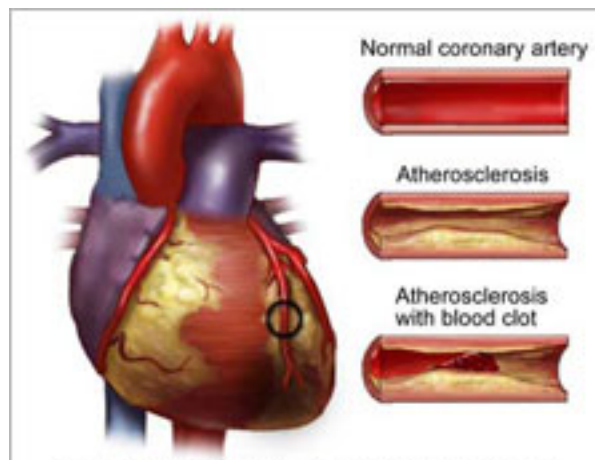
- smoking
- high blood pressure
- high cholesterol

Congestive Heart Failure

If the left ventricle fails to pump enough blood consistently, the blood can back up into the lungs. This can lead to complications such as pulmonary edema and difficulty breathing. This condition is usually a gradual onset and is treated in hospital. It can lead to heart arrhythmia or heart attack.

Cardiovascular Disease (CVD)

Cardiovascular diseases are conditions that affect blood vessels and/or the heart. As fatty tissue builds up inside the arteries, they begin to harden. This is called *atherosclerosis*. The picture below is an example of a progression from CVD to the full blockage of a blood vessel. This could cause either a heart attack (coronary arteries) or a stroke (brain).



Angina

Angina pectoris is a condition where the coronary arteries (that deliver food and oxygen to the heart muscle) are unhealthy. Under physical or emotional stress, these arteries do not have the ability to dilate enough to maintain the necessary flow of blood to the heart causing a *temporary* or *partial blockage* of the coronary arteries. This lack of oxygen creates an “angina attack”.

Heart Attack

A **Heart Attack**, or myocardial infarction, is caused by a *complete* blockage of the coronary arteries that supply blood (food and oxygen) to the heart muscle. Without oxygen, the heart muscle begins to die resulting in damage to the heart muscle or a cardiac arrest (heart stops beating).

SIGN & SYMPTOMS

Angina Attack	Heart Attack
LOC – Ranges from Denial or “Indigestion” to anxiety, fear, confusion	
Breathing – range from normal to shortness of breath	
Circulation – weak and rapid pulse (difficultly finding a radial pulse)	
Skin – pale, cool and clammy/sweaty (can also be grey or cyanotic)	
Pain – varies, but often described as pressure, tightness or squeezing in the chest	
Pain radiation - shoulders, arms, jaw, neck and through the back	
Nausea and/or vomiting – can feel like an upset stomach or indigestion	
Weakness, dizziness and fatigue	
Pain lasts 20-30 minutes	Pain lasts 30+ minutes
Rest, oxygen and medication can relieve the pain	Rest, oxygen and medication do little to relieve the pain

TREATMENT

- Treatment of non-traumatic chest pain should include:
- Scene assessment
- Determine patient history/mechanism of injury
 - What brought on the pain/what were you doing?*
 - Have you had this pain before? If so, how does this compare to last time? What did you do to make it feel better?*
 - Do you have any medication?*
- Assist patient into position of comfort (or semi-sitting) and loosen tight clothing
- Call EMS and complete the Primary Survey (to include ABCs, bleeding and/or injury)
- Assist patient with their medication
- Administer oxygen if available
- Reassure patient and monitor vital signs

Angina Medication

NITROGLYCERINE

Intro - Nitro

Duke Nukem http://www.youtube.com/watch?v=FP_aS4opiEo&feature=related

WW2 <http://www.youtube.com/watch?v=AmvvEbedHr4>

A conscious patient should be assisted in taking their own medication in the treatment of non-traumatic chest pain.

Nitroglycerine is a drug that causes the vessels to dilate (open up) allowing a blockage to pass.

Nitroglycerine can come in a tablet, spray or medication patch. A tablet or spray should be placed under the tongue.

A maximum of 3 nitroglycerine doses can be administered in a 10 minute period. Do not give nitroglycerine to a patient who is unresponsive (can not take it themselves)

Do not give nitroglycerine to anyone who has taken performance enhancing drugs such as Viagra (24 hrs), Levitra (24 hrs) or Cialis (96 hrs).

A patient with angina can still have a heart attack. If the patient's nitro does not work (after the second dose), if they do not have their nitro on them or they are wearing the patch (and still experiencing chest pain), call EMS immediately.



ASA (Aspirin/acetylsalicylic acid)

In addition to a patient's prescribed medication, use of ASA (acetylsalicylic acid/*Aspirin*) is recommended for a patient suffering from non-traumatic chest pain.

ASA is an anticoagulant and can be beneficial in the treatment of chest pain.

Assist a patient in taking their own ASA provided that:

- A - they are not **Allergic** to ASA or ibuprofen
- A - they do not have a history of **Asthma** (ASA can be a bronchial constrictor)
- A - it has been **Approved** by their physician (not contraindicated)
- A - they do not have an **Active** gastrointestinal (stomach/ulcer) bleed or a recent traumatic head injury

Have the patient chew (1) adult ASA tablet (325mg) or (2) children's ASA tablets. **DO NOT** substitute acetaminophen (*Tylenol*) or ibuprofen (*Advil/Motrin*) as they block the blood-thinning effect of ASA

A patient who has been prescribed nitroglycerine can also take ASA:

1. If approved by their doctor and it is part of their regular treatment
2. If they do not have their nitroglycerine with them
3. If directed by EMS personnel.

If the patient takes aspirin, **do not** repeat the aspirin dosage!



Although the SFA program trains candidates on an ASA protocol, *rescuers must consult, and comply with, their employer's policies and procedures with respect to medication administration.*

Sudden Cardiac Arrest

Cardiac arrest means that the heart has stopped beating properly (ie. you will not feel a pulse). This can occur suddenly, or can develop from a heart attack. Because blood is not circulating through the body, tissue damage begins and CPR must be started immediately to restore some (approximately 25%) circulation through the body.

Transient Ischemic Attack

Intro: Jean Chretien <http://www.youtube.com/watch?v=PikszBkfTHM>

TIA

A transient ischemic attack is a “mini-stroke” that may show signs and symptoms of a full stroke, although the symptoms may suddenly stop. A person suffering from a TIA has a 10x greater chance of experiencing a true stroke within 12 months. This is a warning sign. EMS should be contacted for all TIA's and the patient treated for shock in position of comfort.

Bell's Palsy

Bell's Palsy is a permanent dysfunction in one of the facial nerves. It causes partial paralysis in the face in a similar fashion to a TIA or stroke.

If you notice ANY signs of paralysis, no matter how minor, you should call 9-1-1 immediately. Act FAST

F – Face

A – Arm

S – Speech

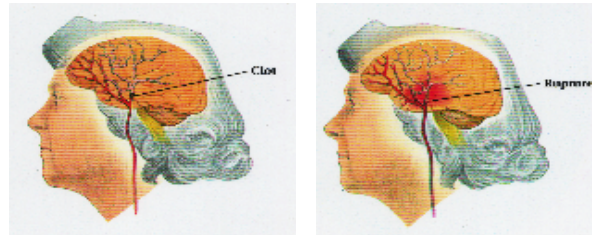
T – Telephone 9-1-1

Act FAST <http://www.youtube.com/watch?v=YHzz2cXBIGk>

Stroke

Also called a cerebrovascular accident (CVA), a stroke occurs when blood vessels in the brain become blocked (~80%) or rupture (~20%), causing the brain cells to be deprived of oxygen. Strokes can occur spontaneously while a person is at rest.

Because each side of the brain controls a different side of the body, a patient who has had a stroke may show *bilateral asymmetry*. I.e. Paralysis of one half the body, drooling from corner of mouth, unequal pupils, incoherent speech, etc.



Signs and Symptoms:

- *Paralysis*
- Dizziness/Loss of Balance
- Trouble *Speaking* & Understanding
- Vision Problems
- Lack of muscle control on one side of the body
- Unequal *pupils*
- Anxiety, agitation
- Decreased LOC
- Loss of bowel/bladder control
- Shock
- Seizures

Treatment:

- Monitor & maintain ABC's
- Call EMS
- Position of comfort (semi-sitting) for conscious patient
- Loosen tight clothing around neck and chest
- Treat for shock