



EVENT
FIRST AID & FIRE
SERVICES

CLINICAL PRACTICE GUIDELINES



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INTRODUCTION

Welcome to the Event First Aid And Fire Services (EFAAFS) third edition of the Clinical Practice Guidelines (CPGs) dated 15 March 2022.

EFAAFS is an Intermediate Licence Holder under the Department of Health's [Non-Emergency Patient Transport and First Aid Services Regulations 2021](#) and employs staff ranging from Level 1 to Level 4. This manual and the included guidelines have been developed to cater for all levels, with procedures colour coded to assist with staff determining what skills they can perform. The CPGs have taken information and guidance from *Emergency First Aid* (edition 21), *Advanced First Aid* (2nd edition), Ambulance Victoria CPGs (2019 edition), and the [2022 ARC \(Australian Resuscitation Council\) Guidelines](#), so as to comply with the Act. Only staff on duty with EFAAFS are authorised to use this manual. EFAAFS takes no responsibility for individuals or organisations using this manual outside of EFAAFS duties without direct permission from the Director of Operations: EFAAFS.

This manual is a living document in that it is constantly under review for change by the Clinical Oversight Committee who review these Clinical Practice Guidelines periodically. A new edition will be released in January of each year. Upon written requests to the Clinical Oversight Committee Chairperson, the Committee may undertake urgent review and changes if in the benefit of patient care or EFAAFS operations.

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BLUE are links to external medical videos

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CHAIN OF COMMAND

CHAIN OF COMMAND

CHAIN OF COMMAND

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THIS DOCUMENT IS TO BE USED FOR ACCESSING CLINICAL ADVICE FOR ALL LEVELS

- Level 2 Responders report to Level 3 Team leaders
- Level 3 & 4 Responders report to the Clinician



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EFAAFS Chain of Command / Flowchart
(Clinical Oversight Committee)
V1.0 01 January 2022

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PATIENT CARE RECORDS

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Patient Care Record

EFAAFS has developed a Patient Care Record (PCR) which complies with the *Non-Emergency Patient Transport and First Aid Services (First Aid Services) Regulations 2021*.

A PCR needs to be completed for all patients treated by EFAAFS staff. Completed forms are to be placed in the locked box labelled COMPLETED PCRs in the Staff Rest Area of the Mobile Medical Centre as soon as practical following the patients treatment. This is to ensure privacy of all patients treated.

The completed PCR must contain the following information:

1. Patient's: - name
 - address
 - date of birth
 - gender
2. Details of the case including:
 - Name of the event
 - Date of the event
 - Name of primary First-Aider treating the patient including signature
 - Times relevant to the case in the CASE TIMES box
3. All relevant clinical details of the patient, including:
 - *Main presenting problem*
 - *Examination (Secondary and/or DOLOR)*
 - Initial and ongoing patient clinical vital signs
 - *AMPLE*:
 - i. Allergies
 - ii. Medications
 - iii. Past medical history
 - iv. Last meal and drink
 - Event: this is to be completed on page 2 of the PCR
 - What was found *On Arrival* including position of patient, bystanders present, any first-aid being given
 - *EVENT*
 - i. History including events prior to the incident & actual incident
 - ii. Your actual examination of the patient in detail
 - iii. All treatment given and its effect (change in VS/SOB/pain/etc)
 - *REFERRED TO* includes outcome of the patient, and if the patient was referred to a Local Dr, Physio, Hospital, Ambulance or other;
 - If the patient refused further care which was essential for the patients health or welfare, it should be noted in the '*REFERRED TO*' section with advise given and then signed by the patient.

4. If an Ambulance is called, the PCR will be reviewed by the Clinical Oversight Committee. Therefore ensure that a copy of the PCR is kept for review.

It is essential that the following details are recorded:

1. REFERRED TO section:

- Reason for calling ambulance
- Intended destination of the patient
- If an ambulance was requested but refused by Ambulance Victoria, ensure the following is recorded:
 - a) Stated reason for refusal
 - b) Time of refusal
 - c) Name of Clinician refusing to send Ambulance
 - D) Alternative transport arranged for the patient

2. CASE TIMES section:

- Time ambulance was called;
- Arrival time of ambulance;
- Vehicle number and/or treating Paramedic's Service number;
- Time ambulance left the scene (cleared time).

Ensure when handing over the patient that the following details are given:

- Name and age of the patient
- Primary problem of the patient
- History of the event
- Secondary and or DOLOR
- Vital signs of the patient
- Treatments given and the effect of each
- Allergies / Medications / Past Medical history / Last meal
- A copy of the completed PCR is given to the crew

Patient Care Record

PATIENT CARE RECORD



Main Presenting Problem

Position High Sitting (SOB) Side (Unconscious)
 Half Sitting (Chest pain / injury) Lying (Shock or Trauma)
 Legs Raised (Shock) As Found (Trauma)
 Leg Bent (Abdo pain / injury) Other

SPO2 **TEMP** **BSL** **ECG**

Oxygen Nasal (86-91%) High Flow (<86% or Critical Condition)
 Simple Mask (86-91%) BVM (Assisted or Non Breathing)

PATIENT DETAILS

Name:

Age:

DOB: / /

Phone:

Address:

SIGNATURE: DATE: / / FIRST AIDER: EVENT: EFAAFS-05022022PAS

TIME					
AVPU					
Pulse					
BP	/	/	/	/	/
MAP					
Skin					
Resp					
SPO2					
Worst Pain	/ 10	/ 10	/ 10	/ 10	/ 10

Secondary (Mark injury spots on Figure with F/H/L/B/P)

	Fract	Heam	Lac	Bruise	Pain
Head					
Spine					
Chest					
Abdo					
Pelvis					
L Leg					
R Leg					
L Arm					
R Arm					

State the pain level out of 10 in each box

Description Out of 10 Aching Stabbing
 Heavy Tight Burning
 Cramping Tearing Other

Onset Time It Began Sudden At Rest
 Gradual On Activity

Location Where Is The Pain
 Radiates to

Other Dizzy Weak Nausea Other

SOB Tired Vomiting

Relief Tablets taken
 When taken How Many

Position Of Comfort

OBS NORMAL RANGE

Pulse .. 60 - 100
 BSL .. 4 - 11 mmol
 Ear Temp .. 35.4°C - 37.2°C
 SPO2 .. 92% - 96%

Systolic .. 110 - 140 mmhg
 Diastolic .. 60 - 90 mmhg
 MAP .. >65 mmhg

Resp .. Rate
 .. Sounds
 .. Speech

AVPU .. Alert
 .. Verbal
 .. Pain
 .. Unconscious

SKIN .. Colour (P/N/R)
 (Pale/Norm/Red)
 .. Warmth
 (Cold/Norm/Hot)
 .. Moistness (D/N/S)
 (Dry/Norm/Sweat)

Allergies

Medications

Past History Angina Emphysema Epilepsy
 Heart Attack Asthma Stroke
 Other

Last Meal Time of Last Meal Time of Last Drink

CASE TIMES

Call received:

On Scene:

Amb Called:

Amb Arrived:

Amb No:

Cleared:

PATIENT CARE RECORD

PATIENT CARE RECORD

SCOPE OF PRACTICE

Scope Of Practice

The following table lists the skillset of each qualification for staff working at EFAAFS. They are to be strictly adhered to unless consultation with the appropriate Officer (as per the 'Chain Of Command' - page 6) gives permission to perform a higher skillset.

Level 1: - HLTAID 009 (CPR)

- HLTAID 010 (Basic Emergency Life Support)
- HLTAID 011 (Provide Emergency Life Support)
- 22500VIC (Anaphylaxis) or equivalent

Level 2: - HLTAID 012 (Provide Emergency First Aid in Education Setting)

- HLTAID 014 Provide Advanced First Aid)
- HLT 31120 (CERT 3 Non Emergency Care)
- HLTSS 00068 (Occupational First Aid Skill Set)
- 22500VIC (Anaphylaxis) or equivalent

Level 3: - HLT41120 (Certificate IV In Health Care)

- HLT51020 (Diploma Of Emergency Care)
- HLT54121 (Diploma Of Nursing)

Level 4: - Bachelor Of Paramedicine (with current registration)

- Bachelor Of Nursing (with current registration)

SCOPE OF PRACTICE

SCOPE OF PRACTICE

ASSESSMENT / SKILLS / EQUIPMENT

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
AED - HeartStart	X	X	X	X
AED - FR2	X	X	X	X
Asthma Spacer	X	X	X	X
AutoPulse (Adult)			X	X
AVPU - Adult	X	X	X	X
AVPU - Child	X	X	X	X
Back Blows (Airway Obstruction)	X	X	X	X
Bag-Valve-Mask (BVM)	X	X	X	X
Blood Glucose Monitor (BSL) - Adult		X	X	X
Blood Glucose Monitor (BSL) - Child			X	X
Blood Pressure		X	X	X
Breathalyser	X	X	X	X
BurnAid - Dressing	X	X	X	X
BurnAid Cream	X	X	X	X
Burns Assessment - Adult	X	X	X	X
Burns Assessment - Child		X	X	X
Cardio Pulmonary Resuscitation - Adult	X	X	X	X
Cardio Pulmonary Resuscitation - Child	X	X	X	X
Cardio Pulmonary Resuscitation - Infant	X	X	X	X
Cervical Collar - Clear Collar	X	X	X	X
Cervical Collar - Wizloc	X	X	X	X

SCOPE OF PRACTICE

	L1	L2	L3	L4
Chest Thrusts (Airway Obstruction)	X	X	X	X
Choking - Adult	X	X	X	X
Choking - Child	X	X	X	X
Clinical Approach - Adult	X	X	X	X
Clinical Approach - Child	X	X	X	X
Coban Bandage		X	X	X
CPR-Ezy	X	X	X	X
Crepe Bandage	X	X	X	X
Defibrillation - Adult	X	X	X	X
Defibrillation - Child	X	X	X	X
Distal Neurovascular Examination	X	X	X	X
Drug Testing Kit			X	X
ECG 12 Ld				X
ECG 3 Ld Monitoring			X	X
EpiPen - Adult	X	X	X	X
EpiPen - Child	X	X	X	X
F.A.S.T. Assessment	X	X	X	X
Gladwrap Burns Wrapping	X	X	X	X
Glasgow Coma Scale (Adult & Child)		X	X	X
High Flow Oxygen Mask		X	X	X
Ice Pack	X	X	X	X
I.P.P.V. (Intermittent Positive Pressure Ventilation)	X	X	X	X
Long Spine Board		X	X	X
M-Series Cardiac Monitor			X	X
Motor/Sensory x 4 Examination		X	X	X
Nasal Cannula		X	X	X
Nasopharyngeal Airways - Adult			X	X
Nasopharyngeal Airways - Child			X	X
Nebuliser Mask			X	X
NIEJ Immobilisation Jacket			X	X
Oropharyngeal Airways - Adult		X	X	X
Oropharyngeal Airways - Child		X	X	X
Pad & Bandage - Bleeding	X	X	X	X
Pain Score - Adult	X	X	X	X
Pain Score - Child	X	X	X	X
Passive Cooling (Environmental Hyperthermia)	X	X	X	X
Passive Cooling (Psychostimulant Induced Hyperthermia)		X	X	X
Passive Rewarming (Heat Exhaustion/Stroke)	X	X	X	X
Patient Monitor (Blue)		X	X	X
P.E.E.P Valve (Positive End Expiratory Pressure)			X	X
Pelvic Splint - SAM			X	X
Perfusion Assessment		X	X	X
Position - High Fowlers	X	X	X	X
Position - Lateral Side	X	X	X	X
Position - Semi Fowlers	X	X	X	X
Position - Supine	X	X	X	X
Position - Trendelenburg	X	X	X	X

SCOPE OF PRACTICE

SCOPE OF PRACTICE

	L1	L2	L3	L4
Pressure Dressing (Bleeding)	X	X	X	X
Pressure Immobilisation Bandage	X	X	X	X
Quick Clot	X	X	X	X
Rescue Litter - (Ferno)		X	X	X
Respiratory Assessment - Adult	X	X	X	X
Respiratory Assessment - Child	X	X	X	X
ResusciTimer		X	X	X
Scoop Stretcher		X	X	X
Sphygmomanometer		X	X	X
Spider Straps		X	X	X
Spinal Immobilisation		X	X	X
SPO2 Monitoring		X	X	X
Stethoscope - Blood Pressure		X	X	X
Stethoscope - Chest Auscultation			X	X
Stretcher - Ambulance (Ferno 55E Manual)		X	X	X
Stretcher - Ambulance (MyTactical Automated)		X	X	X
Stroke Assessment - FAST	X	X	X	X
Suction Unit - LCSU	X	X	X	X
Suction Unit - LSU	X	X	X	X
Suction Unit - Oxygen Powered	X	X	X	X
Suction Unit - Res-Q-Vac	X	X	X	X
Supraglottic Airway - Adult			X	X
Supraglottic Airway - Child			X	X
Temperature (Tympanic)	X	X	X	X
Therapy Oxygen Mask		X	X	X
Thermal Blanket	X	X	X	X
Three Sided Chest Pad (Sucking Chest Wound)	X	X	X	X
Time Critical Guidelines (Adult)	X	X	X	X
Time Critical Guidelines (Child)		X	X	X
Traction Splint - Donway			X	X
Traction Splint - Slishman			X	X
Trauma Tourniquet		X	X	X
Triangular Bandage - Arm Sling	X	X	X	X
Triangular Bandage - Collar & Cuff Sling	X	X	X	X
Triangular Bandage - Elevation Sling	X	X	X	X
Vacuum Mattress - NEANN VIM		X	X	X
Vacuum Splint - NEANN		X	X	X
Veinlite				X
Wheel Chair	X	X	X	X

SCOPE OF PRACTICE

MEDICATIONS

	L1	L2	L3	L4
Adrenaline Ampoule - Anaphylaxis			X	X
Adrenaline EpiPen - Anaphylaxis	X	X	X	X
Aspirin - Cardiac	X	X	X	X
Atrovent Inhaler - Bronchospasm		X	X	X
Atrovent Nebuliser - Bronchospasm			X	X
Entonox - Pain Relief		X	X	X
Glucagon - Hypoglycaemia			X	X
Glucose Paste - Hypoglycaemia		X	X	X
GTN - Cardiac			X	X
Narcan - Opioid Overdose			X	X
Normal Saline - Wound Cleaning	X	X	X	X
Ondansetron - Nausea & Vomiting			X	X
Oxygen		X	X	X
Paracetamol - Pain Relief	X	X	X	X
Penthrane - Pain Relief		X	X	X
Salbutamol Inhaler - Shortness Of Breath	X	X	X	X
Salbutamol Nebuliser - Shortness Of Breath			X	X

SCOPE OF PRACTICE

SCOPE OF PRACTICE

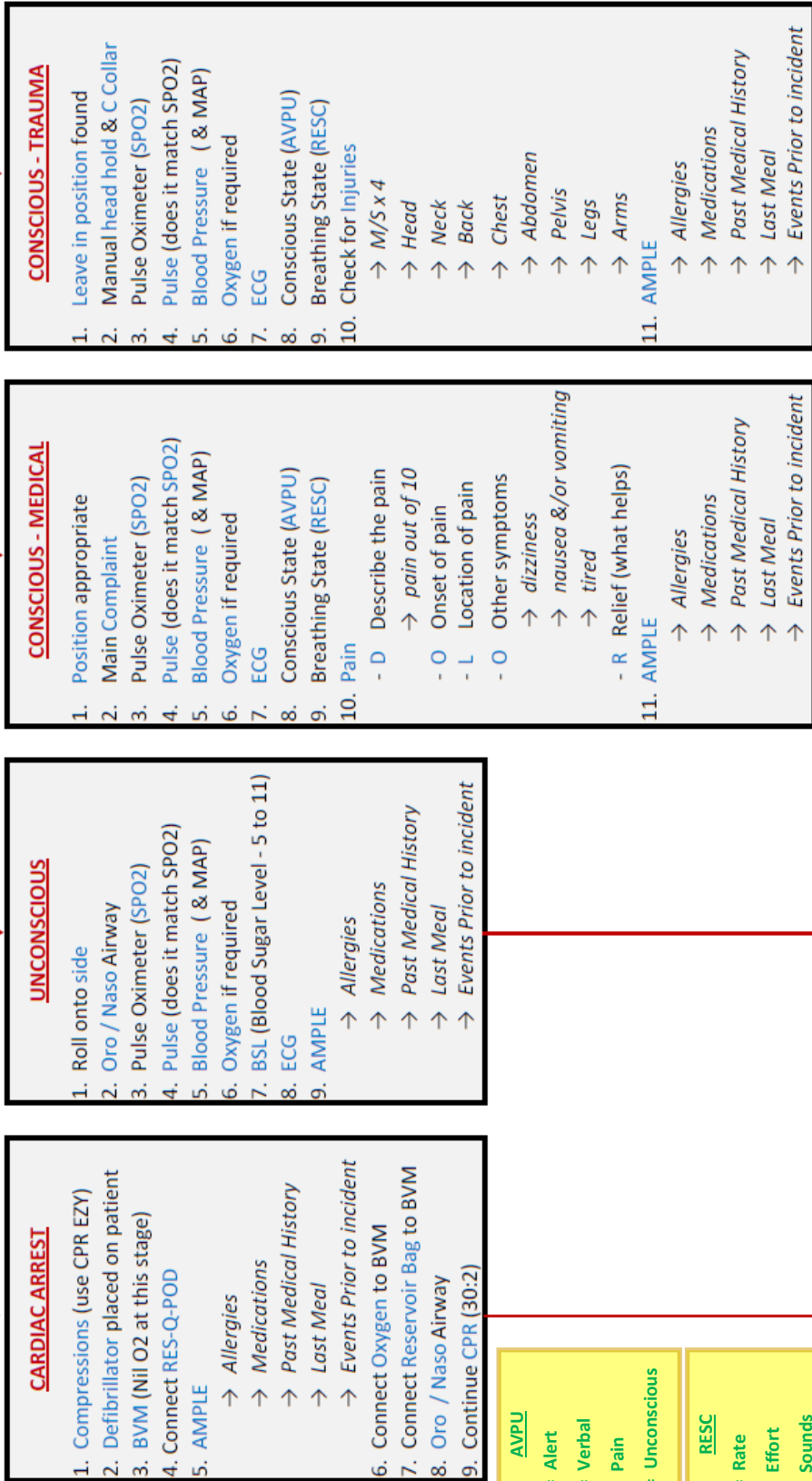
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PATIENT ASSESSMENT FLOWCHART

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PATIENT ASSESSMENT FLOW CHART

DRsABCD



IF ANY CHANGE IN ANY CONDITION AT ANY STAGE, STRAIGHT BACK AND REPEAT:

DRsABCD



PATIENT ASSESSMENT FLOW CHART

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VITAL SIGNS

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AVPU

AVPU is an easy tool for Level 1 and Level 2 staff when compared to the more detailed and complicated Glasgow Coma Scale (GCS).

AVPU is also easier and preferred for determining the conscious state of a children when compared to the more detailed and complicated GCS. It is widely used by the Royal Children's Hospital for this very reason.

AVPU is a quick and simple tool to apply for determining the conscious state especially in the early assessment of a patient whether adult or child. The GCS should be undertaken in more complex patient presentations and whenever an Ambulance is requested.

The adult or child cannot have a conscious state assessment done while asleep. They must be woken first. If the adult/child wakes and remains awake and alert, record this as an "A" for AVPU. If the adult/ child wakes but remains drowsy and appears inattentive, record this as a "V".

As a general guide:

- A) patient fully alert are a GCS of 15
- B) patients responding to voice correlate to an approximate GCS of 10 – 14,
- C) responding to pain GCS 7 – 9 and
- D) unresponsive patients will be below GCS 7.

A = Alert

V = Responds to voice

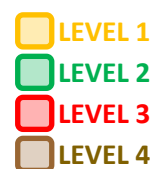
P = Responds to pain

U = Unresponsive to any stimuli



Glasgow Coma Scale

(Adult)



The [GCS](#) is an objective measure of consciousness and used extensively in ambulance and hospital. It should be used by Level 2, 3 & 4 EFAAFS staff whenever it is serious enough for an ambulance to be called. A GSC will be required to be given on handover.

EYE RESPONSE

- 4 **Eyes opening spontaneously**
- 3 **Eye opening to speech:** This should not be confused with an awakening of a sleeping person. In such cases a score of 4 is given, not 3.
- 2 **Eye opening in response to pain:** Patient responds to pressure on the patient's fingernail bed; if this does not elicit a response, supraorbital and sternal pressure or rub may be used.
- 1 **No eye opening**

VERBAL RESPONSE

- 5 **Oriented:** Patient responds coherently and appropriately to questions such as the patient's name and age, where they are and why, the year, month, etc.
- 4 **Confused:** The patient responds to questions coherently but there is some disorientation and confusion.
- 3 **Inappropriate words:** Random or exclamatory articulated speech, but no conversational exchange.
- 2 **Incomprehensible sounds:** Moaning but no words.
- 1 **No verbal response**

MOTOR RESPONSE

- 6 **Obeys commands:** The patient does simple things as asked.
- 5 **Localizes to pain:** Purposeful movements towards painful stimuli; e.g. hand crosses mid-line and gets above clavicle when supra-orbital pressure applied.
- 4 **Flexion/Withdrawal to pain:** flexion of elbow, supination of the forearm, flexion of the wrist when supra-orbital pressure applied; pulls part of the body away when nailbed pinched.
- 3 **Abnormal flexion to pain:** adduction of arm, internal rotation of the shoulder, pronation of forearm, flexion of wrist, decorticate response)
- 2 **Extension to pain:** adduction of arm, internal rotation of the shoulder, pronation of forearm, an extension of the wrist, decerebrate response)
- 1 **No motor response**

Glasgow Coma Scale

(Adult)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

These charts are available in the Resus Room of the medical centre and in all PCR folders.

GLASGOW COMA SCALE

A.	Eye Opening	Score	
	Spontaneous	4	
	To voice	3	
	To pain	2	
	None	1	A: ___
B.	Verbal Response	Score	
	Orientated	5	
	Confused	4	
	Inappropriate words	3	
	Incomprehensible sounds	2	
	None	1	B: ___
C.	Motor Response	Score	
	Obeys command	6	
	Purposeful movements (pain)	5	
	Withdraw (pain)	4	
	Flexion (pain)	3	
	Extension (pain)	2	
	None	1	C: ___
Total GCS (Maximum Score = 15)			
(A + B + C) = _____			

GLASGOW COMA SCALE - ADULT

GLASGOW COMA SCALE - ADULT

Glasgow Coma Scale

(Child)



The [Paediatric Glasgow Coma Scale](#) (PGCS) is the equivalent of the Glasgow Coma Scale and is used to assess the consciousness of infants and children. The scale has been modified from the original Glasgow Coma Scale as many of the assessments for an adult patient would not be appropriate for infants and young children. In children greater than 5 years of age, the responses are similar to the adult Glasgow Coma Scale.

EYE RESPONSE

- 4 Eyes opening spontaneously
- 3 Eye opening to being spoken to
- 2 Eye opening to pain
- 1 No eye opening

VERBAL RESPONSE

Age 0-23 Months

- 5 Infant coos or babbles or smiles appropriately
- 4 Loud cries but consolable
- 3 Persistent crying and or screaming
- 2 Infant moans to pain, grunts, agitated and restless
- 1 No verbal response

Age 2-5 Years

- 5 Appropriate words or phrases
- 4 Inappropriate words or phrases
- 3 Persistent Cries and/or screams
- 2 Grunts
- 1 No response

Age > 5 Years

- 5 Oriented and converses
- 4 Disoriented, confused
- 3 Inappropriate words or phrases
- 2 Incomprehensible or unclear sounds
- 1 No response

MOTOR RESPONSE

- 1 Infant moves spontaneously or purposefully
- 2 Infant withdraws from touch
- 3 Infant withdraws from pain
- 4 Abnormal flexion to pain for an infant (decorticate response)
- 5 Extension to pain (decerebrate response)
- 6 No motor response

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

PAEDIATRIC GLASGOW COMA SCALE

		> 1 Year	< 1 Year		
EYE OPENING	4	Spontaneously	Spontaneously		
	3	To Verbal Command	To Shout		
	2	To Pain	To Pain		
	1	No Response	No Response		

		> 1 Year	< 1 Year		
BEST MOTOR RESPONSE	6	Obeys			
	5	Localises Pain	Localises Pain		
	4	Flexion - Withdrawal	Flexion - Normal		
	3	Flexion - Abnormal (Decorticate Rigidity)	Flexion - Abnormal (Decorticate Rigidity)		
	2	Extension (Decerebrate Rigidity)	Extension (Decerebrate Rigidity)		
	1	No Response	No Response		

		> 5 Year	2-5 Year	0-23 Months		
BEST VERBAL RESPONSE	5	Orientated & Converses	Appropriate Words & Phrases	Smiles, Coos, Cries appropriately		
	4	Disorientated & Converses	Inappropriate Words	Cries		
	3	Inappropriate Words	Cries or screams	Inappropriate Crying And/or Screaming		
	2	Incomprehensible Sounds	Grunts	Grunts		
	1	No Response	No Response	No Response		

TOTAL SCORE _____

GLASGOW COMA SCALE - CHILD

GLASGOW COMA SCALE - CHILD

Pain Scales

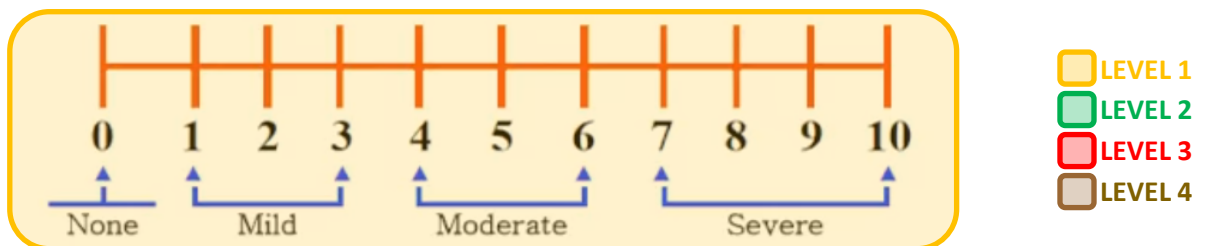
Pain scales are tools healthcare providers use to help measure and better define a persons pain. The type of analgesia given will be based on the level of pain the patient perceives. When recording the analgesia given to the patient, EFAAFS staff must record the change in pain level as well as any changes to conscious state and vital signs. All patients receiving Entonox or Penthrane must go by Ambulance to hospital, and the PCR will be reviewed by the EFAAFS Clinical Oversight Committee.

Age 10 and over

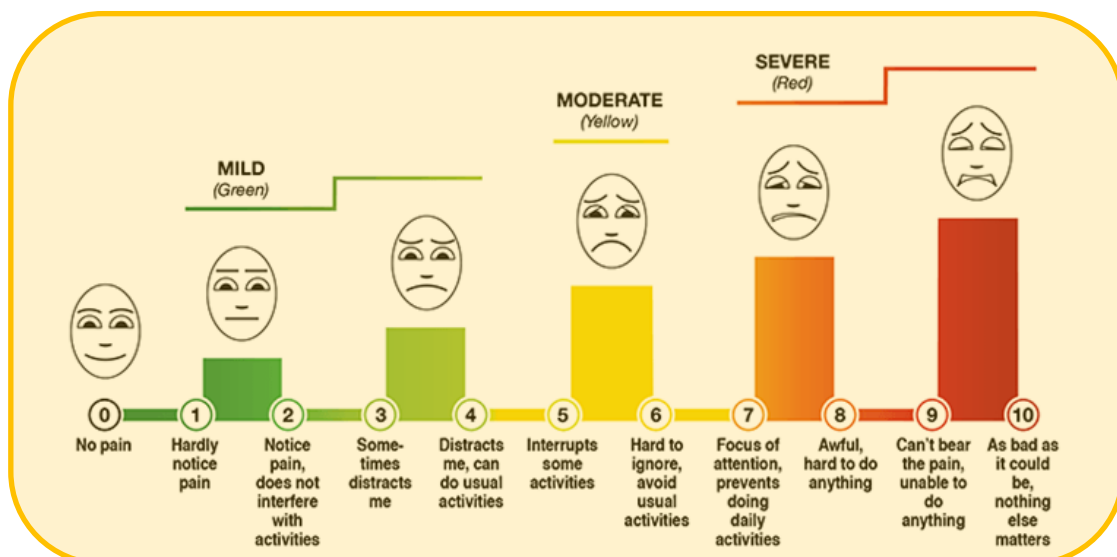
The [NUMERICAL PAIN SCALE](#) is designed to be used by those 10 years and older who are able to adequately communicate with the Health Care Provider. It is one of the most commonly used pain scales in health care. The rating is based on the patients perception of their pain and not the opinion of Health Care providers.

The patient will verbally rate their pain from 0 to 10. Generally:

- 0 = indicates the absence of pain,
- 5 = represents a level of pain that would keep the patient from sleeping
- 10 = represents the most intense pain imaginable



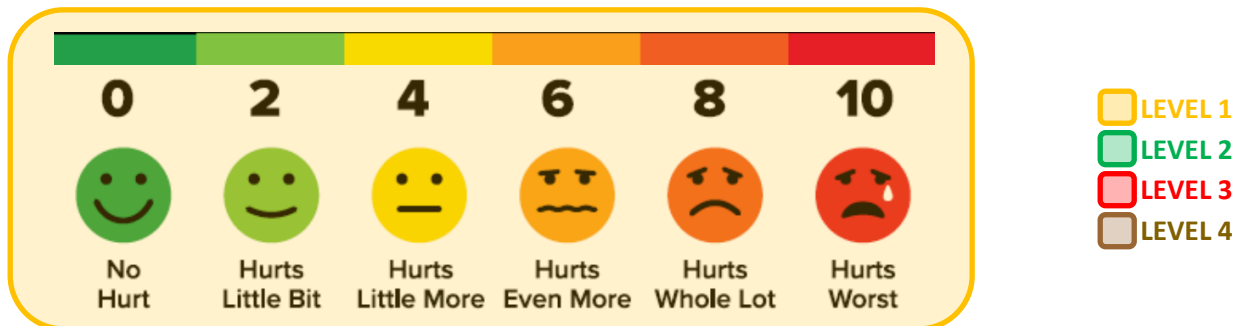
The [DVPRS \(Defence & Veterans Pain Rating Scale\)](#) is a new scale based on the Numerical Pain Scale but offers a more versatile pain scale system that can be used for those 10 years and older who have an inability to properly communicate or describe their pain intensity.



Pain Scales

Children 3-7 years

The **WONG-BAKER PAIN RATING SCALE** was originally created with children for children to help them communicate about their pain. The scale is used around the world, and whilst primarily used for children 3 - 7 years of age, it can also be used for older children and adults where communication issues exist.



Children < 5 years

The **FLACC** (face, legs, activity, crying, and consolability) pain scale was developed to help medical staff measure the level of pain in children who are too young to cooperate verbally. It can also be used in older children and adults who are unable to communicate.

	0	1	2
FACE	No particular expression or smile	Occasional grimace or frown, Withdrawn, Disinterested	Frequent to constant frown, Clenching jaw, Quivering chin
LEGS	Normal position or relaxed	Uneasy, Restless, Tense,	Kicking or legs drawn up
ACTIVITY	Lying quietly, Normal position, Moves easily	Squirming, Tense, Shifting back & Forth, Hesitant to move, Guarding	Arched, rigid or jerking, fixed position, Rubbing of body parts
CRY	No cry or moaning (awake or asleep)	Moans or whimpers, Occasional cries, sighs or complaint	Cries steadily, Screams, Sobs, Moans, Groans, Frequent Complaints
CONSOLABILITY	Calm, Content, Relaxed, Needs no consoling	Reassured by hugging, talking to, or distracting	Difficult to console or comfort

0 No pain	1 - 3 Mild	4 - 6 Moderate	7 - 10 Severe
--------------	---------------	-------------------	------------------

PAIN SCALES

PAIN SCALES

Perfusion Assessment

(Adult)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

These observations and criteria need to be taken in context with:

- The patient's presenting problem.
- The patient's prescribed medications.
- Repeated observations and the trends shown.
- Response to management.

BP alone does not determine perfusion status.

Perfusion definition

The ability of the cardiovascular system to provide tissues with an adequate oxygenated blood supply to meet their functional demands at that time and to effectively remove the associated metabolic waste products.

Perfusion assessment

Other factors may affect the interpretation of the observations made, including:

- ambient temperature
- anxiety

PERFUSION ASSESSMENT - ADULT

PERFUSION ASSESSMENT - ADULT

	SKIN	PULSE	BP	CONSCIOUS STATE
ADEQUATE PERFUSION	Warm Pink Dry	60 - 100 bpm	> 100 mmHg Systolic	Alert: Orientated to Person / Time / Place
BORDERLINE PERFUSION	Warm Pink Dry	50 - 100 bpm	80 - 100 mmHg Systolic	Alert: Orientated to Person / Time / Place
INADEQUATE PERFUSION	Warm Pink Dry	< 50 bpm or ≥ 120 bpm	60 - 80 mmHg Systolic	Either Alert or Altered in orientation to time & place
EXTREMELY POOR PERFUSION	Warm Pink Dry	< 50 bpm or ≥ 120 bpm	< 60 mmHg Systolic OR Unrecordable	Altered Conscious State or Unconscious
NO PERFUSION	Warm Pink Dry	Absence of Palpable Pulse	Unrecordable	Unrecordable

VIDEOS: [Cardiac Output](#)

Perfusion Assessment

(Child)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

Normal blood volume

- Newborn - 80 mL/kg
- Infant and child - 70 mL/kg

Adequate Perfusion

Age	HR	BP
Newborn (<24 hrs)	110 - 170 bpm	>60 mmHg
Small infant (<3 mth)	110 - 170 bpm	>60 mmHg
Large infant (3-12 mth)	105 - 165 bpm	>65 mmHg
Small child (1-4 yrs)	85 - 150 bpm	>70 mmHg
Medium child (5-11 yrs)	70 - 135 bpm	>80 mmHg

SKIN: warm, pink, dry

CONSCIOUS STATE: Alert and active

Inadequate Perfusion

Age	HR bpm	RR breath / min	SBP mmHg
Newborn (< 24 hours)	< 110 or > 170	< 25 or > 60	< 60
Small infant (< 3 months)	< 110 or > 170	< 25 or > 60	< 60
Large infant (3 – 12 months)	< 105 or > 165	< 25 or > 55	< 65
Small child (1 – 4 years)	< 85 or > 150	< 20 or > 40	< 70
Medium Child (5 – 11 years)	< 70 or > 135	< 16 or > 34	< 80

And: - GCS < 15 or not alert (as per AVPU)

- SpO2 < 96 %

- Unexplained pain

PERFUSION ASSESSMENT - CHILD

PERFUSION ASSESSMENT - CHILD

Respiratory Assessment (Adult)

RESPIRATORY ASSESSMENT - ADULT

RESPIRATORY ASSESSMENT - ADULT

	NORMAL	MILD	MODERATE	SEVERE
APPEARANCE	Calm, Quiet	Calm or Mildly anxious	Distressed or Anxious	Distressed, Anxious, Fighting to breathe, Exhausted, Catatonic
SPEECH	Calm & Steady sentences	Full sentences	Short phrases only	Words only or Unable to speak
BREATH SOUNDS	Usually quiet	Able to cough	Able to cough	Unable to cough
CHEST AUSCULTATION	No crackles or Scattered fine basal crackles	ASTHMA Expiratory wheeze +/- inspiratory wheeze LVF may be some fine crackles at the bases	ASTHMA Expiratory wheeze +/- inspiratory wheeze LVF Crackles at the bases to the midzone	ASTHMA Expiratory wheeze +/- inspiratory wheeze, may be no breath sounds LVF Fine crackles full field, with possible wheeze
RESPIRATORY RATE	12 - 16	16 - 20	> 20	> 20 or <
RESPIRATORY RHYTHM	Regular even cycles	ASTHMA May have slightly prolonged expiratory phase	ASTHMA Prolonged expiratory phase	ASTHMA Prolonged expiratory phase
WORK OF BREATHING	Normal chest movement	Slight increase in normal chest movement	Marked chest movement +/- use of accessory muscles	Marked chest movement with accessory muscle use, intercostal retraction +/- tracheal tugging
HEART RATE	60 - 100 bpm	60 - 100 bpm	100 - 120 bpm	>120 bpm Bradycardia is a late sign
SKIN	Normal	Normal	Pale & sweaty	Pale & sweaty =/- cyanosis
CONSCIOUS STATE	Alert	Alert	May be altered	Altered or Unconscious

ASTHMA ASSESSMENT CHART > 16 YRS			
SYMPTOMS	MILD	MODERATE	SEVERE/LIFE THREATENING
Appearance	NO	NO	YES Paradoxical Chest Movement
Talks in	Sentences	Phrases	Words
Heart Rate	< 100 / min	100 - 120 / min	> 120 / min
Central Cyanosis	Absent	May be present	Likely to be present
Wheeze Intensity	Variable	Moderate to loud	Often Quiet
PERF	≥ 75% predicted (or of best if known)	50-75% predicted (or of best if known)	<50% predicted (or of best if known) or less than 100L/min
SPO2			Less than 90% Cyanosis may be present





Respiratory Assessment

(Child)

Start your assessment with the 'hands off' approach, allowing the child to assume a position of comfort. With the assistance of caregivers to expose the chest, the following can be done without touching the infant or child:

- Observe the infant or child's behaviour, colour, presence of respiratory muscle recession and categorise accordingly with the table above.
- Obtain the respiratory rate.
- Observe for equal rise and fall of the chest.
- Without a stethoscope listen for any sounds such as coughing, nasal congestion, snoring, grunting, wheezing or stridor. Finish the respiratory assessment with the 'hands on' elements:
- Ensure the trachea is centred with no deviation.

PAEDIATRIC: NORMAL RESPIRATORY RANGE

Age	 < 1 year	 1-4 years	 5-11 years	 > 12 years
Respiratory rate (RR) (breaths/minute)	21-45	16-35	16-30	16-25
Heart rate (HR) (beats/minute)	100-159	90-139	80-129	60-119

PAEDIATRIC RESPIRATORY DISTRESS ASSESSMENT

	Mild ALL the following:	Moderate accessory muscle use and ANY of the following:	Severe accessory muscle use and ANY of the following:	Life-threatening ANY of the following:
Behaviour	Alert Talks in sentences	Occasional irritability Some limitation in ability to talk - talking in phrases	Agitated, restless, distressed Marked limitation to ability to talk - talking in words only	Drowsy or unconscious Unable to vocalise due to dyspnoea
Posture	Can walk or crawl	Lethargic Tripod sitting	Lethargic Tripod sitting	Collapsed or exhausted
Breathing	Mild accessory muscle use	Moderate accessory muscle use	Severe accessory muscle use	Severe accessory muscle use or poor respiratory effort
Skin Colour	Normal	Pale	Cyanosis	Cyanosis
Respiratory Rate	Normal or mild tachypnoea	Tachypnoea	Tachypnoea	Severe tachypnoea or bradypnoea or apnoea
Heart Rate	Normal or mild tachycardia	Tachycardia	Tachycardia	Cardiac arrhythmia or bradycardia (preterminal sign)

PAEDIATRIC RESPIRATORY ASSESSMENT PAGES TAKEN FROM QUEENSLAND ROYAL CHILDREN'S HOSPITAL

Time Critical Guidelines

(Trauma)

Modified for EFAAFS from the 2021 Ambulance Victoria Clinical Practice Guidelines

The concept of the Time Critical patient allows the recognition of the severity of a patient’s condition or the likelihood of the patient deteriorating. This identification directs appropriate clinical management and the appropriate destination to improve outcome. Covered within the Time Critical Guidelines are:

- Triage decisions for a patient with major trauma.
- Appropriate information given to the Ambulance Victoria Dispatch Centre so as appropriate resource are sent early.
- Requests for additional resources over an Ambulance Victoria ALS Ambulance including MICA and HEMS.
- Scene time management so that the patient is ready for transport on the arrival of Ambulance Victoria.

The Time Critical concept highlights to staff to be “time consciousness” in the management of patient care whilst preparing the patient for ambulance arrival.

Actual	At the time the vital signs survey is taken, the patient is in actual physiological distress.
Emergent	At the time the vital signs survey is taken, the patient is not physiologically distressed but does have a pattern of injury or significant medical condition which is known to have a high probability of deteriorating to actual physiological distress.
Potential	At the time the vital signs survey is taken, the patient is not physiologically distressed and there is no significant pattern of actual Injury/illness, but there is a mechanism of injury/illness known to have the potential to deteriorate to actual physiological distress.

Trauma Triage

Patients meeting the criteria for major trauma will be triaged by Ambulance Victoria to the highest level of trauma care available within 45 minutes transport time of the incident in accordance with Victorian State Trauma System requirements and AV policies and procedures. If it is greater than 45 minutes to an appropriate medical facility, Ambulance Victoria on their arrival may transport the patient to the nearest alternative highest level of trauma service.

Adult

Major Trauma Criteria - Vital Signs

In the setting of potential major trauma, an adult is considered time critical if they met any of the following:

- ⇒ Pulse <60 or >100
- ⇒ Resp Rate <10 or >30
- ⇒ Systolic BP <90 mmhg
- ⇒ SPO2 <90
- ⇒ If >16 years - GCS <13
- ⇒ If 12-16 years - GCS <13



Major Trauma Criteria - Injuries

- ⇒ All penetrating Trauma
- ⇒ Blunt Injuries:
 - Serious injury to a single body region
 - a) requiring specialised care
 - b) that could be fatal
 - c) where long term life quality may be reduced
 - Significant injuries involving more than one body region
- ⇒ Specific Injuries
 - Limb amputation
 - Limb threatening injury
 - Suspected spinal cord injury
 - Spinal fracture
 - Burns
 - a) >20% TBSA if 15 years of older
 - b) >10% TSBA if < 15 years
 - c) Suspected respiratory tract burns
 - d) high voltage (>1000 volts burn injury)
 - Serious crush injury
 - Major compound fracture or open dislocation
 - Fracture to 2 or more of Femur / tibia / humerus
 - Fractured Pelvic

Revised Trauma Score (ADULT)

	MEASURED VALUE	SCORE	
RESPIRATORY RATE	10 - 29	4	
	> 29	3	
	6 - 9	2	
	1 - 5	1	
	NONE	0	
SYSTOLIC BLOOD PRESSURE	≥ 90	4	
	76 - 89	3	
	50 - 75	2	
	1 - 49	1	
	No BP	0	
GLASCOW COMA SCORE	13 - 15	4	
	9 - 12	3	
	6 - 8	2	
	4 - 5	1	
	3	0	
		TOTAL	

< 11 = Life threatening

11 = Serious, not life threatening

12 = Not serious or life threatening

TIME CRITICAL GUIDELINES - ADULT

TIME CRITICAL GUIDELINES - ADULT

Child

Major Trauma Criteria - Vital Signs

In the setting of potential major trauma, an adult is considered time critical if they met any of the following:

AGE	0-3 Months	4-12 Months	1-4 Years	5-11 Years
Pulse	<100 or >180	<100 or >180	<80 or >160	<80 or >140
Resp Rate	>60	>50	40	>30
Systolic BP	<50 mmHg	<60 mmHg	<70 mmHg	<80mmHg
SPO2	<90%			
GCS	<15 (or less than Alert in AVPU)			

Major Trauma Criteria - Injuries

- ⇒ All penetrating Trauma
- ⇒ Blunt Injuries:
 - Serious injury to a single body region
 - a) requiring specialised care
 - b) that could be fatal
 - c) where long term life quality may be reduced
 - Significant injuries involving more than one body region
- ⇒ Specific Injuries
 - Limb amputation
 - Limb threatening injury
 - Suspected spinal cord injury
 - Spinal fracture
 - Burns
 - a) >20% TBSA if 15 years of older
 - b) >10% TSBA if < 15 years
 - c) Suspected respiratory tract burns
 - d) high voltage (>1000 volts burn injury)
 - Serious crush injury
 - Major compound fracture or open dislocation
 - Fracture to 2 or more of Femur / tibia / humerus
 - Fractured Pelvic

Major Trauma Criteria - Injuries

- ⇒ Cyclist impact > 30 kph
- ⇒ High speed motor vehicle accident > 60 kph
- ⇒ Pedestrian impact
- ⇒ Ejection from a vehicle
- ⇒ Prolonged extrication
- ⇒ Fall from a height > 3m
- ⇒ Struck on the head by an object falling > 3m
- ⇒ Explosion

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TIME CRITICAL GUIDELINES - CHILD

TIME CRITICAL GUIDELINES - CHILD

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TREATMENT GUIDELINES

TREATMENT GUIDELINES

TREATMENT GUIDELINES

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ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT

1. Position: - If conscious: Low to half sitting position
 - If signs of shock: Lay patient down
 - If unconscious: Lateral side position

2. Knees bent (by placing rolled up blanket under knees)

3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

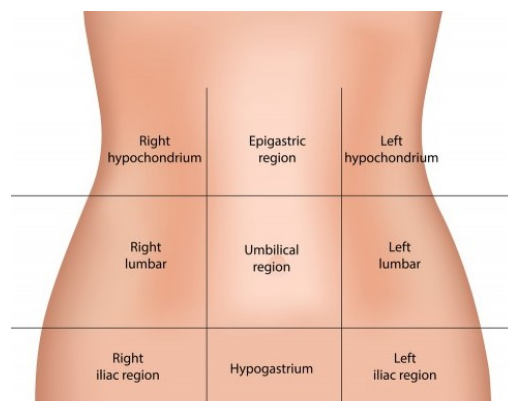
4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. Referral consideration: Call Ambulance if: - Undiagnosed abdominal pain or
 - Unstable Vital Signs
 - Entonox or Penthrane administered

CHECK FOR:

Location of pain (see chart)
 Pain level
 Tenderness
 Guarding
 Abdominal rigidity
 Localised spasms of abdominal wall
 Absence bowel sounds
 Abdominal pulsations
 Masses
 Nausea & vomiting
 Fever
 Chills
 Burning pain on urination
 Rapid heart rate
 Low blood pressure



CONSIDER:

Alcoholism
 Aneurysm
 Heart Attack
 Diabetes
 Gastrointestinal Bleed
 Poisoning

ABDOMINAL PAIN

ABDOMINAL PAIN

Abdominal Trauma

ASSESSMENT:

DRsABCD
 Vital Signs
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Low to half sitting position
 - If signs of shock: Lay patient down
 - If unconscious: Lateral side position

2. Knees bent (by placing rolled up blanket under both knees)

3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. If pain > 2/10 either: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. Do not attempt to replace any protruding bowel

6. Cover open wounds with sterile dressings

7. Cover exposed organs with saline soaked dressings & Gladwrap

8. Stabilise any impaled objects & DO NOT remove

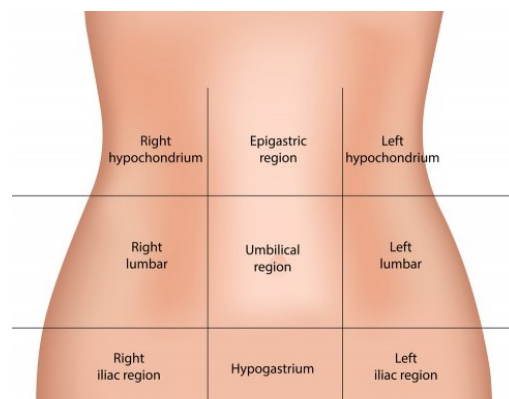
9. Referral consideration: - Call Ambulance

ABDOMINAL TRAUMA

ABDOMINAL TRAUMA

CHECK FOR:

Pain level
 Tenderness
 Guarding
 Abdominal rigidity
 Localised spasms of abdominal wall
 Masses
 Absence bowel sounds
 Protruding organs
 Bruising
 Bleeding
 Nausea & vomiting
 Rapid heart rate
 Low blood pressure



CONSIDER:

Chest Trauma
 Fractures
 Internal organ Injuries
 Shock

Acute Pulmonary Oedema

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR
AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Sit fully upright with legs dependent

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
<84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. 12 Lead ECG

4. ECG Monitoring

5. Chest Auscultation

6. **ASPIRIN 500 mg** tablet orally

7. If pain & unable to give GTN:
- **PENTHRANE 3 ml** via Green whistle (may repeat once)

8. If pain & BP>110: - **GTN SPRAY 0.4 mcg** every 5 minutes
- Cease GTN if BP < 110 / side effects / pain relieved

9. Referral consideration: - Call Ambulance

CHECK FOR:

Pain in Chest / Left Arm / Neck / Jaw / Epigastric / Back
Pain may feel: - Heavy
- Pressure
Pain generally does not change on inspiration or palpation
Extreme Short Of Breath
Chest sounds: - Crackles
- Wheezes
ECG Arrhythmias
Cardiogenic Shock: - Pale
- Rapid Heart Rate
- Low Blood Pressure

CONSIDER:

Acute Coronary Syndrome
Acute Myocardial Infarction
Cardiac Arrest
Cardiac Arrhythmias
Cardiogenic Shock
Heart Attack
Pericarditis
Pneumonia

ACUTE PULMONARY OEDEMA

ACUTE PULMONARY OEDEMA

Alcohol Intoxication

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position:
 - If conscious: Position of comfort
 - If signs of shock: Lay patient down & legs raised
 - If altered conscious state: Lateral side position
2. Protect from further injury / contact
3. Breathalyser to determine level of alcohol
4. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
5. Blood Glucose Level to exclude Hypoglycaemic event
6. ECG Monitoring if altered conscious state
7. Referral consideration:
 - If unconscious call Ambulance
 - Can be discharged once Vital Signs are stable

ALCOHOL INTOXICATION

ALCOHOL INTOXICATION

CHECK FOR:

Drowsiness
 Decreased level of consciousness
 Loss of airway control
 Lack of co-ordination
 Anxiety
 Tremors
 Slurred speech
 Confusion
 Hallucinations
 Sweating
 Rapid heart rate

CONSIDER:

Abdominal pain
 Drug Abuse
 Diabetes
 Gastrointestinal Bleed
 Head Injury
 Hypothermia
 Poisoning
 Rhabdomyolysis
 Shock
 Unconscious

AMI

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR
AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Half sitting
- If altered conscious state: Lay patient down
3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. 12 Lead ECG
4. ECG Monitoring
5. Chest Auscultation
6. **ASPIRIN 500 mg** tablet orally
7. If pain & unable to give GTN:
 - **PENTHRANE 3 ml** via Green whistle (may repeat once)
8. If pain & BP>110: - **GTN SPRAY 0.4 mcg** every 5 minutes
 - Cease GTN if BP < 110 / side effects / pain relieved
9. Referral consideration: - Call Ambulance

AMI - ACUTE MYOCARDIAL INFARCTION

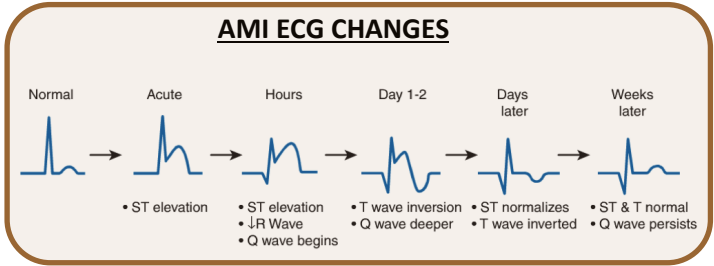
AMI - ACUTE MYOCARDIAL INFARCTION

CHECK FOR:

Pain in Chest / Left Arm / Neck / Jaw / Epigastric / Back
Pain may feel: - Heavy / Pressure
Pain generally does not change on inspiration or palpation
ECG changes
ECG Arrhythmias
Cardiogenic Shock: - Pale
 - Rapid Heart Rate
 - Low Blood Pressure

CONSIDER:

Acute Coronary Syndrome
Angina
Cancer
Cardiac Arrest
Cardiac Arrhythmias
Cardiogenic Shock
Heart Burn
Congestive Heart Failure
Pericarditis
Pleurisy
Pneumonia
Pulmonary Embolus
Pneumothorax



Amputation

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. If major bleed: Immediately apply direct pressure

2. Position: - If conscious: Position of comfort
 - If signs of shock: Lay patient down & legs raised
 - If altered conscious state: Lateral side position

3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Continue Bleed care

- a. Pad & Bandage
- b. If still bleeding apply second Pad & Bandage
- c. Elevate stump
- d. If still bleeding remove both Pads & inspect wound
- e. Reapply Pad & Bandage

f. If still bleeding apply **TRAUMA TOURNIQUET**

g. If still bleeding apply **QUICKCLOT** & direct pressure
 h. Apply bandage over **QUICKCLOT**

5. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤ 60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation

- **PENTHRANE 3 ml** via Green Whistle (may repeat once)

6. Amputated Part:

- a. Place part in sterile pad
- b. Place pad & part in water tight bag
- c. Place water tight bag in ice water

7. Referral consideration: - Call Ambulance

CHECK FOR:

Major bleed
 Rapid heart rate
 Low blood pressure
 Conscious level

CONSIDER:

Shock

VIDEOS:

[CAT Tourniquet Instructional Video](#)

AMPUTATION

AMPUTATION

Anaphylaxis (Adult)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position:
 - If short of breath: High sitting
 - If signs of shock: Lay patient down & legs raised
 - If altered conscious state: Lateral side position
2. Protect from further exposure
3. If signs of Anaphylaxis: - isolated Respiratory Distress or Hypotension AND/OR - 2 or more of R.A.S.H.
 Immediately administer either:
 - **EPIPEN ADULT 0.3 mg IM** (>5 yrs or 20kg)
 - **ADRENALINE 500 mcg IM** at 5 min intervals
4. If airway oedema with stridor:
 - **ADRENALINE 5 mg** via Nebuliser as required
5. If severe SOB with bronchospasm:
 - **SALBUTAMOL 5 mg** via Nebuliser 20 min intervals
 - **ATROVENT 500 mcg** via Nebuliser (once only)
6. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
 - Once Vital Signs stabilise, aim for SPO2 92-96% with either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
7. ECG Monitoring
8. Chest Auscultation
9. Referral consideration: - Call Ambulance

ANAPHYLAXIS - ADILUT

ANAPHYLAXIS - ADILUT

CHECK FOR:

History of allergic reactions
 Cause of allergic reaction
R Respiratory distress - SOB / Wheeze / Cough
A Abdominal - Nausea / Vomiting / Diarrhoea / Abdominal pain / Cramp
S Skin - Itching / Rash / Hives / Swollen lips, tongue or neck
H Hypotension (Low blood pressure)
 Rapid heart rate
 Conscious level

CONSIDER:

Asthma
 Drug Abuse
 Poisoning
 Unconscious

[Click here for Respiratory State Chart](#)

VIDEOS:

[Epipen Instructional Video](#)
[Anapen Instructional Video](#)

Injector Instructions

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

ANAPHYLAXIS - INJECTOR INSTRUCTIONS

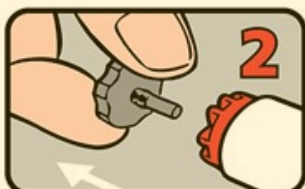
ANAPHYLAXIS - INJECTOR INSTRUCTIONS

How to give Anapen®

adrenaline (epinephrine) autoinjectors



1
PULL OFF BLACK
NEEDLE SHIELD



2
PULL OFF GREY
SAFETY CAP
from red button



3
PLACE NEEDLE END
FIRMLY against
outer mid-thigh at 90° angle
(with or without clothing)



4
PRESS RED BUTTON
so it clicks and hold
for 10 seconds.
REMOVE Anapen®

How to give EpiPen®

adrenaline (epinephrine) autoinjectors



1
Form fist around EpiPen®
and PULL OFF BLUE
SAFETY RELEASE



2
Hold leg still and PLACE
ORANGE END against
outer mid-thigh (with or
without clothing)



3
PUSH DOWN HARD until
a click is heard or felt and
hold for 3 seconds
REMOVE EpiPen®

Aneurysm (Abdominal)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious & signs of shock: Lay patient down but DO NOT raise legs
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

4. ECG Monitoring

5. Referral consideration: - Call Ambulance

CHECK FOR:

Back pain
 Rigid abdomen
 Distended abdomen
 Tender abdomen
 Bluish discoloration around navel
 Absent or unequal femoral pulses
 Pulsating abdominal mass
 Increased abdomen
 Pale
 Rapid heart rate
 Low blood pressure

CONSIDER:

Abdominal Pain
 Back Pain
 Syncope
 Gastrointestinal Bleed
 Shock

ANEURYSM - ABDOMINAL

ANEURYSM - ABDOMINAL

Angina

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Half sitting
 - If altered conscious state: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. 12 Lead ECG
4. ECG Monitoring
5. Chest Auscultation
6. **ASPIRIN 500 mg** tablet orally
7. If pain & unable to give GTN:
 - **PENTHRANE 3 ml** via Green whistle (may repeat once)
8. If pain & BP>110: - **GTN SPRAY 0.4 mcg** every 5 minutes
 - Cease GTN if BP < 110 / side effects / pain relieved
9. Referral consideration: - Call Ambulance

ANGINA

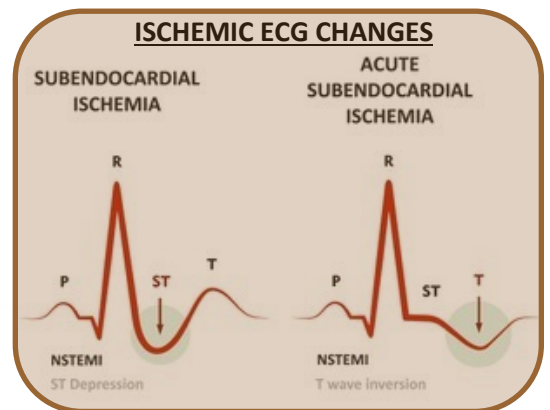
ANGINA

CHECK FOR:

Pain in Chest / Left Arm / Neck / Jaw / Epigastric / Back
 Pain may feel: Heavy / Pressure
 Pain generally does not change on inspiration or palpation
 Stable Angina: - relieves with rest
 - Usually resolves within 20 minutes
 Unstable Angina: - Comes on at rest
 - Lasts longer than 20 minutes
 ECG signs of ischemia

CONSIDER:

- Acute Coronary Syndrome
- Acute Myocardial Infarction
- Cardiac Arrest
- Cardiac Arrhythmias
- Cardiogenic Shock
- Heart Attack
- Heart Burn
- Congestive Heart Failure
- Pericarditis
- Pleurisy
- Pneumonia
- Pulmonary Embolus
- Pneumothorax
- Tuberculosis



Asthma (Adult)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Sit fully upright
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Chest Auscultation
4. If mild to moderate respiratory distress with bronchospasm
 - **SALBUTAMOL** via Spacer:
 - a. 1 Puff / 4 Breaths (4 times)
 - b. Wait 4 minutes
 - c. Repeat steps a & b as required
5. If severe SOB with bronchospasm or not responding to 20 mins Salbutamol pMDI
 - **SALBUTAMOL 10 mg** via Nebulizer initially then
 - **SALBUTAMOL 5 mg** via Nebuliser 5 minutely until symptoms resolve
 - **ATROVENT 500 mcg** via Nebuliser (once only)
6. If Critical: - NOT responding to Nebulised Salbutamol
 - Speaking single words or acute life threat
 - **ADENALINE 500 mcg** IM at 5 -10 minute intervals (MAX 1.5 mg - 3 doses)
7. ECG Monitoring
8. Referral consideration: - Call Ambulance if patient remains SOB
 - Can be discharged if mild SOB resolved after treatment

ASTHMA - ADULT

ASTHMA - ADULT

CHECK FOR:

History of asthma
 Severity of shortness of breath (see chart below)
 Dry irritating persistent cough
 Rapid breathing
 Prolonged expiration
 Reduced ability to speak
 Wheezing
 Decreased breath sounds
 Hypoxia: - Restlessness
 - Irritability
 - Cyanosis
 - Decreased conscious level

[Click here for Respiratory State Chart](#)

CONSIDER:

Anxiety
 Anaphylaxis
 Congestive Heart Failure
 COPD
 Emphysema
 Pulmonary Oedema

Asthma (Child)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Sit fully upright
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Chest Auscultation
4. If mild to moderate respiratory distress with bronchospasm:
 - **SALBUTAMOL** via Spacer:
 - a. 1 Puff / 4 Breaths (4 times)
 - b. Wait 4 minutes
 - c. Repeat steps a & b as required
5. If severe SOB with bronchospasm or not responding to 20 mins Salbutamol pMDI
 - **SALBUTAMOL** if 5-11 yrs ... **10 mg** via Nebulizer every 20 minutes
 - **SALBUTAMOL** if 2-4 yrs ... **2.5 mg** via Nebulizer every 20 minutes
 - **ATROVENT 250 mcg** via Nebuliser (once only)
6. If Critical & 2-11 yrs:
 - **SALBUTAMOL 2.5 mg** via Nebulizer 5 minutely
 - **ATROVENT 250 mcg** via Nebulizer (once only)
 - **ADENALINE 10 mcg/kg** IM at 5 -10 minute intervals (MAX 30 mcg/kg)
7. Referral consideration: - Call Ambulance if patient remains SOB
 - Can be discharged if mild SOB resolved after treatment

ASTHMA - CHILD

ASTHMA - CHILD

CHECK FOR:

History of asthma
 Dry irritating persistent cough
 Rapid breathing
 Prolonged expiration
 Reduced ability to speak
 Wheezing
 Decreased breath sounds
 Hypoxia: - Restlessness
 - Irritability
 - Cyanosis
 - Decreased conscious level
 Conscious level

CONSIDER:

Anxiety
 Anaphylaxis
 Congestive Heart Failure
 COPD
 Emphysema
 Obstructed Airway
 Pulmonary Oedema

[Click here for Respiratory State Chart](#)

[Click here for Adrenaline Dose Chart](#)

AVPU

AVPU is an easy tool for Level 1 and Level 2 staff when compared to the more detailed and complicated Glasgow Coma Scale (GCS).

AVPU is also easier and preferred for determining the conscious state of a children when compared to the more detailed and complicated GCS. It is widely used by the Royal Children's Hospital for this very reason.

AVPU is a quick and simple tool to apply for determining the conscious state especially in the early assessment of a patient whether adult or child. The GCS should be undertaken in more complex patient presentations and whenever an Ambulance is requested.

The adult or child cannot have a conscious state assessment done while asleep. They must be woken first. If the adult/child wakes and remains awake and alert, record this as an "A" for AVPU. If the adult/ child wakes but remains drowsy and appears inattentive, record this as a "V".

As a general guide:

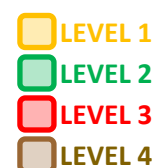
- A) patient fully alert are a GCS of 15
- B) patients responding to voice correlate to an approximate GCS of 10 – 14,
- C) responding to pain GCS 7 – 9 and
- D) unresponsive patients will be below GCS 7.

A = Alert

V = Responds to voice

P = Responds to pain

U = Unresponsive to any stimuli



Back Pain

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Lay patient down with knees slightly bent
2. Perform M/S x 4 examination
3. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
4. Secure to either:
 - Padded Long Board
 - Vacuum Mattress
5. Consider Spinal precautions if trauma related
6. Referral consideration:
 - Call Ambulance if Entonox or Penthrane administered
 - Can be discharged to see LMO if pain <3, stable Vital Signs, no neurological deficit

BACK PAIN

BACK PAIN

CHECK FOR:

History of previous back pain
 Level of pain
 Loss of motor & sensory function in arms & legs (M/S x 4)
 Localised muscle spasm
 Other injuries

CONSIDER:

Abdominal Bleed
 Aneurysm
 Carbon Monoxide Poisoning
 Spinal Injury

Bleeding - External

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. If major bleed: - immediately apply direct pressure

2. Position: - If conscious: Position of comfort
 - If signs of shock: Lay patient down & legs raised
 - If altered conscious state: Lateral side position

3. If SPO2 85-92%2%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Continue Bleed care

- a. Pad & Bandage
- b. if still bleeding apply second Pad & Bandage
- c. Elevate stump
- d. If still bleeding remove both Pads & inspect wound
- e. Reapply Pad & Bandage

f. If still bleeding apply **TRAUMA TOURNIQUET**

g. If still bleeding apply **QUICKCLOT** & direct pressure
 h. Apply bandage over **QUICKCLOT**

5. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation

- **PENTHRANE 3 ml** via Green Whistle (may repeat once)

6. Referral consideration: - Call Ambulance if: - Entonox or Penthrane administered
 - **QUICKCLOT** or Tourniquet applied
 - Unstable vital signs
 - Can be discharged if minor bleed now controlled

CHECK FOR:

Estimate blood loss
 Pain at site of injury
 Pale skin
 Rapid heart rate
 Low blood pressure
 Conscious level

CONSIDER:

Shock

VIDEOS:

[CAT Tourniquet Instructional Video](#)

Bleeding - Internal

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Position of comfort
 - If signs of shock: Lay patient down & legs raised
 - If altered conscious state: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

4. If nausea & vomiting a concern, then:
 - Adult **ONDANSERTRON 4 mg** oral (may repeat once 20 minutes later)
 - Child (1-4 years): **ONDANSERTRON 2 mg** oral
 - Child (5-11 years): **ONDANSERTRON 4 mg** oral

5. Referral consideration: - Call Ambulance

BLEEDING - INTERNAL

BLEEDING - INTERNAL

CHECK FOR:

Estimate blood loss
 Pain at site of injury
 Pale skin
 Rapid heart rate
 Low blood pressure
 Conscious level

CONSIDER:

Shock
 Underlying organ damage

Blue Ring Octopus

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay patient down
 - If unconscious: Lateral side position

2. Pressure immobilisation bandage:

- a. Do not wash bite area
- b. Apply Broad Bandage (minimum 10 cm wide) over bite
 - Apply tightly without stopping blood flow
- c. Apply Elastic Bandage from finger/toes & working up full limb
 - Apply tightly without stopping blood flow
- d. Splint the limb to prevent movement
- e. Mark area of bite
- f. Record time of bite & bandage applied

3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Referral consideration: - Call Ambulance

CHECK FOR:

Painless bite
 Visible spot of blood at bite site
 Numbness to lips & tongue
 Muscle weakness
 Breathing difficulties
 Conscious level
 Respiratory arrest
 Cardiac Arrest

CONSIDER:

Anaphylaxis
 Seizure
 Shock
 Short Of Breath
 Respiratory Arrest

VIDEOS:

[Pressure Immobilisation Bandage \(PIT\)](#)

BLUE RING OCTUPUS

BLUE RING OCTUPUS

Burns (Adult)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious & short of breath: Sit fully upright
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Then: a. Cool burn with water for maximum 20 minutes
 b. Do not allow patient to shiver
 c. Cut off any tight clothing, shoes, or jewellery
 d. Cover < 30% burns with BurnAid
 e. Cover burns (& BurnAid if applied) with Gladwrap
 f. Calculate burns area with chart on [page 71](#)

4. If chemical burn: - Follow chemical Safety Data Sheet (SDS)

5. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

6. If mild to moderate respiratory distress with bronchospasm or stridor:
 - **SALBUTAMOL** via Spacer: a. 1 Puff / 4 Breaths (4 times)
 b. Wait 4 minutes
 c. Repeat steps a & b as required

7. If severe respiratory distress with bronchospasm or stridor:
 - **SALBUTAMOL 10 mg** via Nebulizer initially, then
 - **SALBUTAMOL 5 mg** via Nebuliser 5 minutely until symptoms resolve
 - **ATROVENT 500 mcg** via Nebuliser (once only)

8. If airway oedema with stridor: - **ADRENALINE 5 mg** via Nebulizer as required

9. Referral consideration: - Call Ambulance if: - Entonox or Penthrane administered
 - Large area or airway involvement
 - Unstable Vital Signs
 - Minor burns can be discharged with advice to see LMO

CHECK FOR:

Cause of burn
 Level of pain
 Sensation at burn site
 Airway burns
 Hypoxia: - Restlessness
 - Irritability
 - Cyanosis
 - Decreased conscious level
 Other injuries

CONSIDER:

Carbon Monoxide Poisoning
 Obstructed Airway
 Pulmonary Oedema
 Smoke Inhalation

[Click here for Respiratory State Chart](#)

BURNS - ADULT

BURNS - ADULT

Burns (Child)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious & short of breath: Sit fully upright
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Then: a. Cool burn with water for maximum 20 minutes
 b. Do not allow patient to shiver
 c. Cut off any tight clothing, shoes, or jewellery
 d. Cover < 30% burns with BurnAid
 e. Cover burns (& BurnAid if applied) with Gladwrap
 f. Calculate burns area with chart on [page 71](#)

4. If chemical burn: - Follow chemical Safety Data Sheet (SDS)

5. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

6. If mild to moderate respiratory distress with bronchospasm or stridor:
 - **SALBUTAMOL** via Spacer: a. 1 Puff / 4 Breaths (4 times)
 b. Wait 4 minutes
 c. Repeat steps a & b at 20 minutes intervals

7. If severe respiratory distress with bronchospasm or stridor:
 - **SALBUTAMOL** if > 6 yrs ... **5 mg** via Nebulizer every 20 minutes
 - **SALBUTAMOL** if 2-5 yrs ... **2.5 mg** via Nebulizer every 20 minutes
 - **ATROVENT 250 mcg** via Nebuliser (once only)

8. If airway oedema with stridor:
 - 6-11 yrs **ADRENALINE 5 mg** via Nebuliser at 20 min intervals
 - 2-5 yrs **ADRENALINE 2.5 mg** via Nebuliser at 20 min intervals

9. Referral consideration: - Call Ambulance if: - Entonox or Penthrane administered
 - Large area or airway involvement
 - SOB remains
 - Unstable Vital Signs
 - Minor burns can be discharged with advice to see LMO

CHECK FOR:

Cause of burn
 Level of pain
 Respiratory distress
 Sensation at burn site
 Airway burns
 Other injuries

CONSIDER:

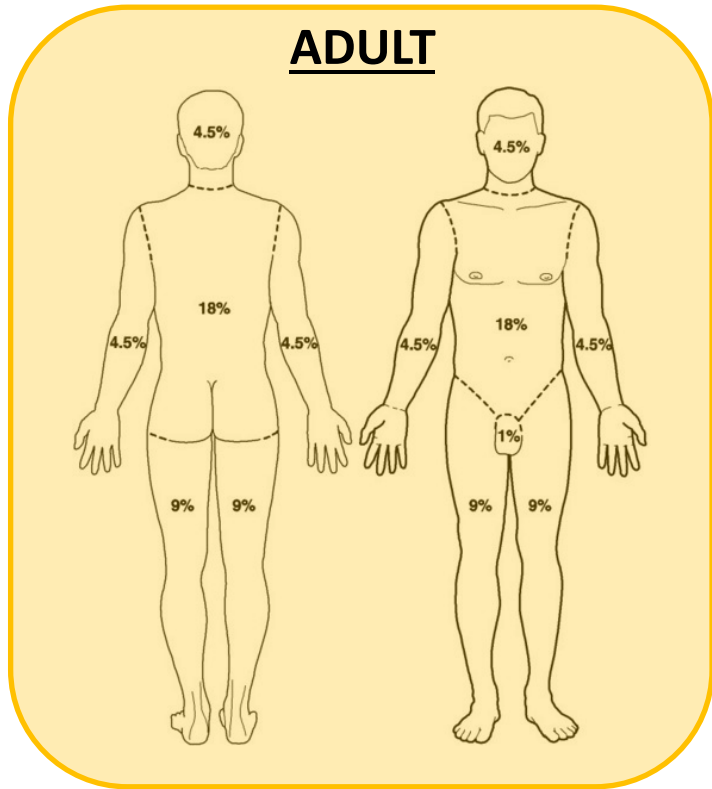
Carbon Monoxide Poisoning
 Obstructed Airway
 Pulmonary Oedema
 Smoke Inhalation

[Click here for Respiratory State Chart](#)

BURNS - CHILD

BURNS - CHILD

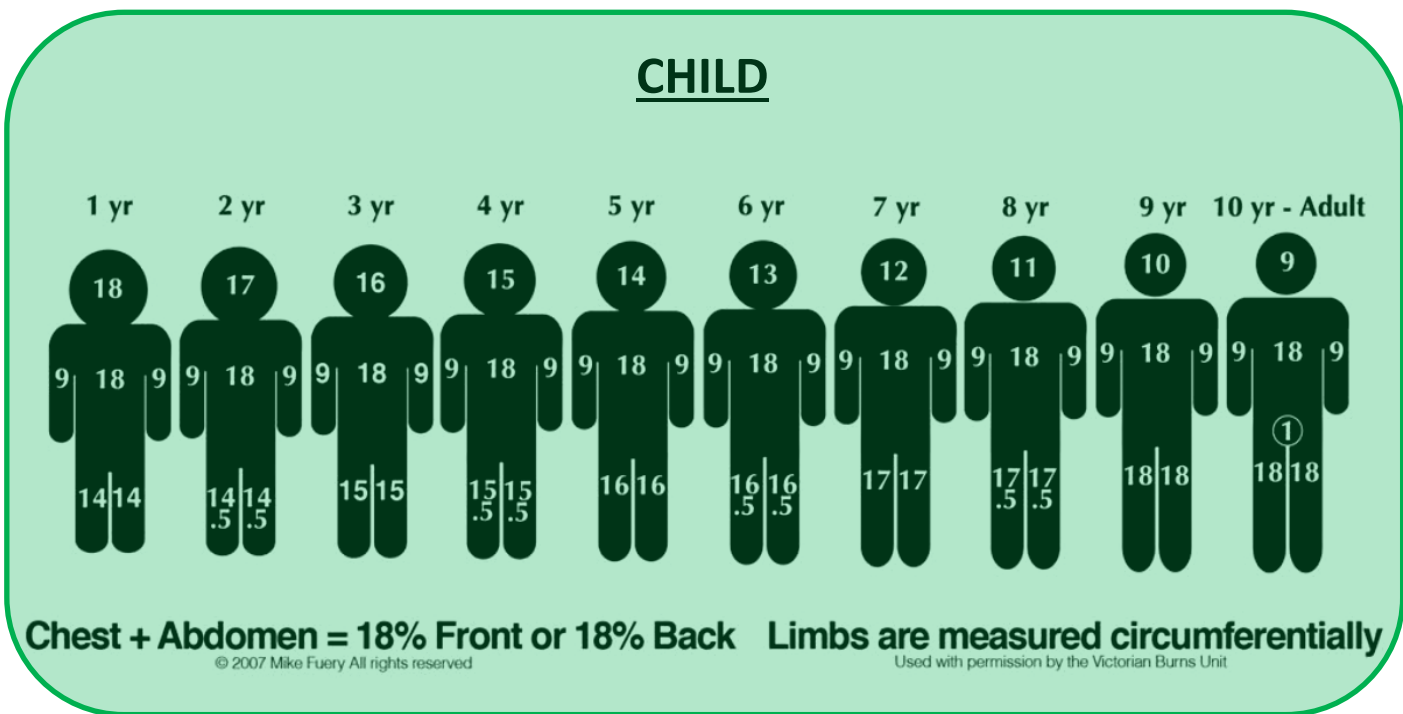
Burns Chart



- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

BURNS CHART

BURNS CHART



Carbon Monoxide Poisoning

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR AND/OR SECONDARY SURVEY
AMPLE

LEVEL 1
 LEVEL 2
 LEVEL 3
 LEVEL 4

TREATMENT:

1. Position: - If conscious: Sit fully upright if short of breath
- If unconscious: Lateral side position

2. Give Oxygen via High Flow Face Mask at 15 lpm even if no breathing problems

3. ECG Monitoring

4. Chest Auscultation

5. Ring POISONS INFORMATION on 131 126 for further advice if required

6. Referral consideration: - Call Ambulance

CHECK FOR:

Is there potential for carbon monoxide poisoning
Suspected cause of Carbon Monoxide
Headache
Back pain
Drowsiness
Nausea & vomiting
Cool Skin
Low Blood Pressure
Depressed Breathing
Conscious level
Cherry red Skin (late sign)

CONSIDER:

Obstructed Airway
Pulmonary Oedema
Smoke Inhalation

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Cardiac Arrest

(Adult)



ON INITIALLY ARRIVING ON-SCENE:

DANGER: - Access & manage risks to EFAAFS staff and others



RESPONSE: - If unresponsive



SEND FOR HELP: - Immediately radio for additional staff
- Immediately ring '000'



AIRWAY: - Open Airway
- Clear airway if vomitus



BREATHING: - Check for breathing
- If not breathing or **abnormal breathing**



CPR: - Begin CPR ...

1. Ratio 30 compression / 2 breaths
2. Rate of 100 - 120 compressions per minute
3. Minimise interruptions to chest compressions
4. Aim for 1/3 chest compression
5. Change Rescuer every two minutes (align with AED analyse)



DEFIBRILLATION: - Attach AED as soon as available & follow prompts
- AED will reanalyse every two minutes

CARDIAC ARREST - ADULT

CARDIAC ARREST - ADULT

VIDEOS: [BLS CERTIFICATION 2020 GUIDELINE UPDATES](#)
[Cardiac Arrest - ACLS](#)
[Post Cardiac Arrest Care](#)
[Science Of CPR](#)
[2020 CPR Guidelines Science & Education Updates](#)

[HeartStart Training Video](#)
[FR2 Training Video](#)
[Res-Q-Pod & Cardiopump](#)
[Air-Q-Blocker Insertion](#)
[i-Gel Insertion](#)

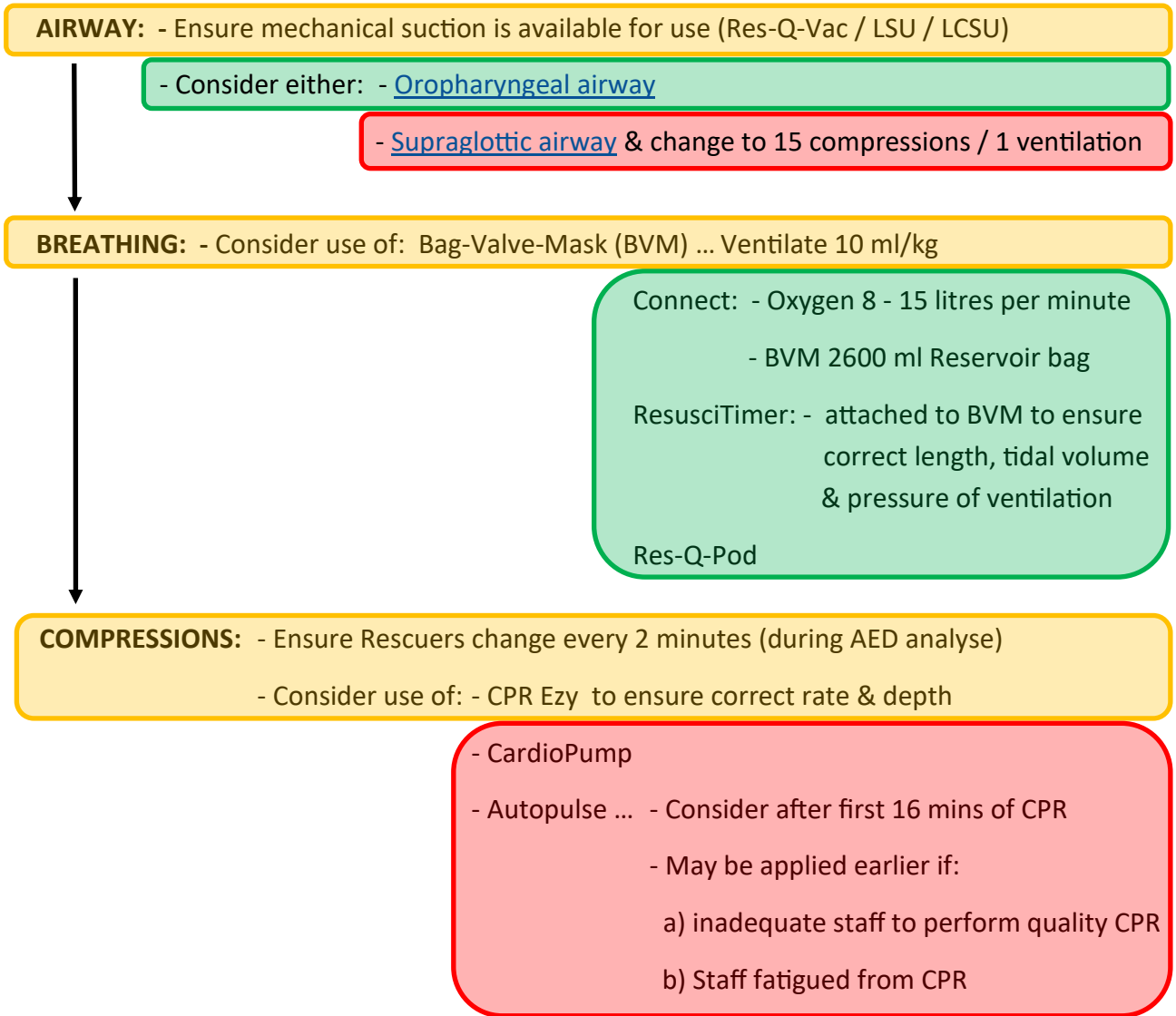
Cardiac Arrest (Adult)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

IMMEDIATELY FOLLOWING FIRST AED ANALYSIS, RE-EVALUATE:

CARDIAC ARREST - ADULT

CARDIAC ARREST - ADULT



CONSIDER POSSIBLE CAUSES:

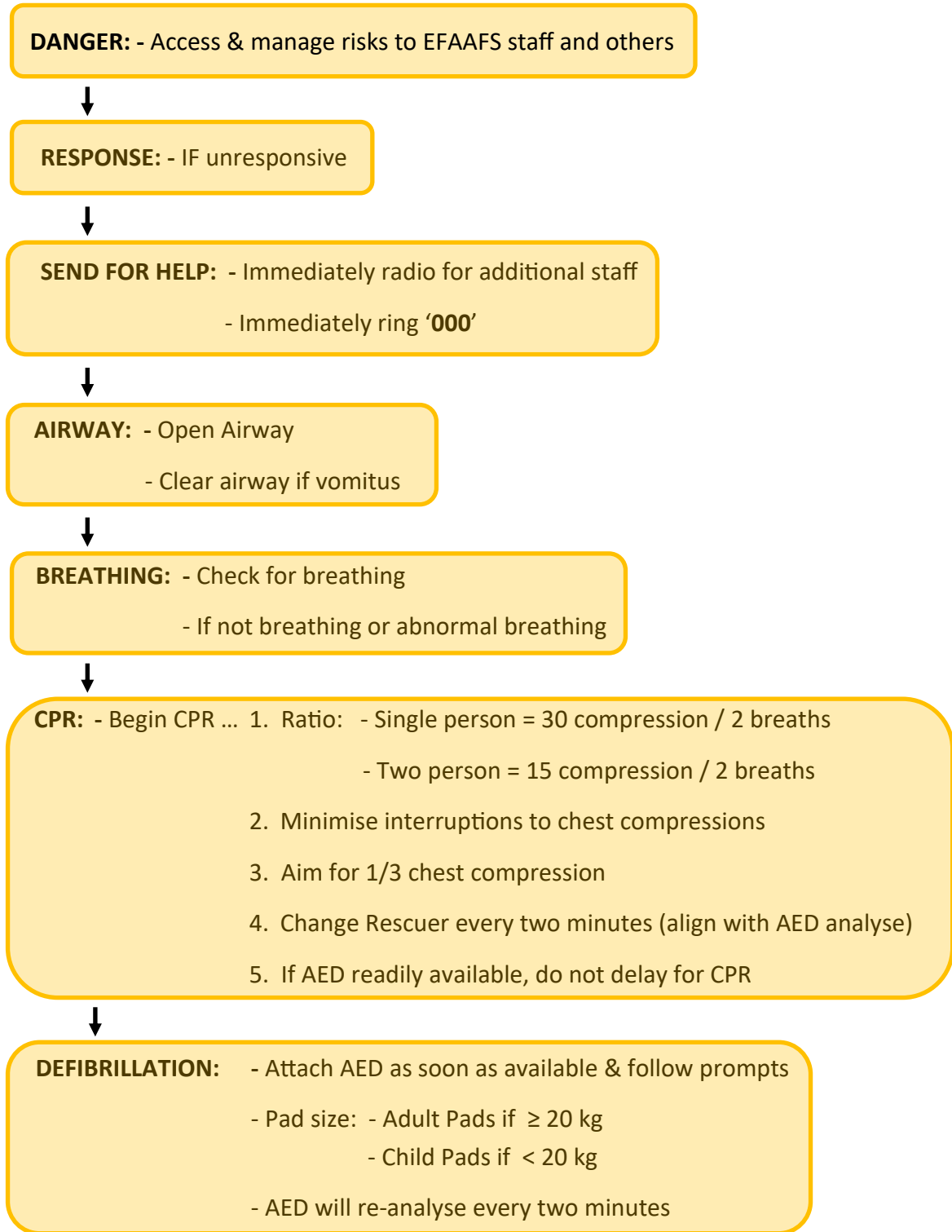
- Airway Obstruction (Foreign Body or Medical Causes)
- Anaphylaxis
- Asthma
- AMI
- Haemorrhage (Severe)
- Metabolic Causes (eg Diabetes)
- Overdose
- Pulmonary Embolus
- Tension Pneumothorax (if Asthma or Chest Trauma)

VIDEOS: [Reversible Causes of Cardiac Arrest - H's & T's](#)

Cardiac Arrest (Child)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

ON INITIALLY ARRIVING ON-SCENE:



CARDIAC ARREST - CHILD

CARDIAC ARREST - CHILD

Cardiac Arrest (Child)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

IMMEDIATELY FOLLOWING FIRST AED ANALYSIS, RE-EVALUATE:

AIRWAY: - Ensure mechanical suction is available for use (Res-Q-Vac / LSU / LCSU)

- Consider either: - [Oropharyngeal airway](#)

- [Supraglottic airway](#) & change to 10 ventilations per minute

BREATHING: - Consider use of: Bag-Valve-Mask (BVM) ... Ventilate 10 ml/kg

Connect: - Oxygen 8 - 15 litres per minute

- BVM 2600 ml Reservoir bag

ResusciTimer: - attached to BVM to ensure correct length, tidal volume & pressure of ventilation

COMPRESSIONS: - Ensure Rescuers change every 2 minutes (during AED analyse)

- Consider use of CPR Ezy if > 40 kg to ensure correct rate & depth

CARDIAC ARREST - CHILD

CARDIAC ARREST - CHILD

CONSIDER POSSIBLE CAUSES:

Airway Obstruction (Foreign Body or Medical Causes eg epiglottitis)
 Anaphylaxis
 Asthma
 AMI
 Cardiomyopathy
 Congenital heart Disease
 Dehydration
 Haemorrhage (Severe)
 Long QT Syndrome
 Metabolic Causes (eg Diabetes)
 Overdose
 Pulmonary Embolus
 Tension Pneumothorax (if Asthma or Chest Trauma)

Chest Pain - Cardiac

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

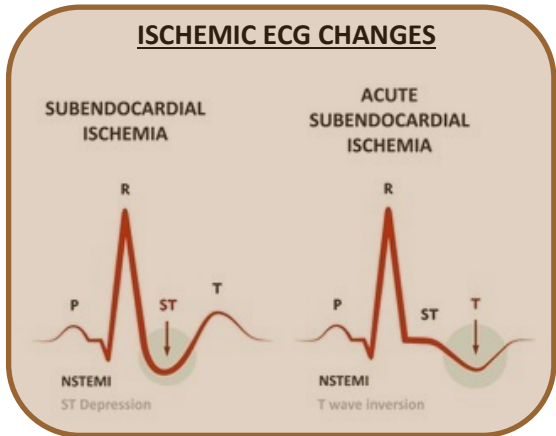
1. Position: - If conscious: Half sitting
 - If altered conscious state: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. 12 Lead ECG
4. ECG Monitoring
5. Chest Auscultation
6. **ASPIRIN 500 mg** tablet orally
7. If pain & unable to give GTN:
 - **PENTHRANE 3 ml** via Green whistle (may repeat once)
8. If pain & BP>110: - **GTN SPRAY 0.4 mcg** every 5 minutes
 - Cease GTN if BP < 110 / side effects / pain relieved
9. Referral consideration: - Call Ambulance

CHECK FOR:

Pain in Chest / Left Arm / Neck / Jaw / Epigastric / Back
 Pain may feel: Heavy / Pressure
 Pain generally does not change on inspiration or palpation
 ECG signs of ischemia

CONSIDER:

- Acute Coronary Syndrome
- Acute Myocardial Infarction
- Cancer
- Cardiac Arrest
- Cardiac Arrhythmias
- Cardiogenic Shock
- Heart Attack
- Heart Burn
- Congestive Heart Failure
- Pericarditis
- Pleurisy
- Pneumonia
- Pulmonary Embolus
- Pneumothorax
- Tuberculosis



CHEST PAIN - CARDIAC

CHEST PAIN - CARDIAC

Child Birth

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR AND/OR SECONDARY SURVEY
AMPLE

LEVEL 1
 LEVEL 2
 LEVEL 3
 LEVEL 4

TREATMENT:

1. Call Ambulance early

2. Position: - Safe position of comfort
- If laying down, left lateral tilt to help reduce aorta-caval compression and subsequent hypotension

3. If SPO₂ , 94%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
Aim to maintain SPO₂ above 94%

4. If pain > 2/10 consider Entonox via inhalation

5. Ensure warm & clean environment for mother and baby

3. Prepare equipment in case birth happens before Ambulance arrival
- Place clean Bluey sheet under patient's buttock
- Two cord Clamps ready
- Shears wiped with alcohol
- 3-4 warm towels for baby
- Sterile gloves if available

6. Determine: a. How many weeks pregnant / due date
b. Number of previous births
c. Any complications with this pregnancy
d. Have waters broken

7. Undertake frequent vital signs

BIRTH IS HAPPENING NOW:

a. Place patient in preferred position

b. If lying down, raise head of bed to half sitting

c. Remove underwear

d. Check vaginal opening during contraction for appearance of top of baby's head

e. Once top of baby's head is visible:

i. Gently place hand on top of head to stop explosive delivery:
- but do not stop head from coming out
- gently guide head slightly down to help stop tearing

ii. Ask mother to push during contraction:
- but not too hard or mother will tear
- mother can pant to slow down delivery if too fast

iii. As head comes out:
- support head with one hand over each ear
- slide one hand down to neck to ensure cord is not around the baby's neck

- iv. If cord is around the neck:
 - gently try to pull it over head or shoulders
 - under no circumstances pull hard on the cord
- v. On the next contraction:
 - allow mum to push again
 - the head will rotate to face one of mum's legs
- vi. On the next contraction:
 - holding the head with both hands,
 - gently pull down to assist delivery of the upper shoulder
 - then gently guide the head upwards to deliver second shoulder
- vii. Now support:
 - the baby's head with one hand
 - the baby's back with the other hand
 - and the rest of the baby should come out quickly
- viii Lift the baby up onto the mothers chest or abdomen
 - see assistant 2's role below which should begin immediately
- ix. Up to 300 mls of blood loss from mum may be visible which is normal
- x. Note time of birth
- xi. Cutting of the Cord:
 - There is no rush or need to cut the cord
 - If cutting:
 - i. Wait for cord to stop pulsating (2-5 mins)
 - ii. Place one cord clamp 10cm from baby
 - iii. Place second clamp 5cm further from baby
 - iv. Cut the cord with clean sterile scissors
- xii. Placenta:
 - this may take from 15 mins to 1 hour to be ready to deliver
 - there is no need to deliver this
 - do not pull on placental cord

Assistance 2 cares for the baby immediately after birth:

- i. Wipe the baby with a warm towel to dry
 - this stimulation may help baby to start crying and
 - improve in colour
- ii. Clear any mucous from mouth then nose
- lii. Wrap baby in warm towels
- iv. Undertake an APGAR at 5 minute intervals until a score of 7 or more is obtained

VIDEO: [APGAR Score](#)

SCORE	0	1	2
Appearance	Cyanotic / Pale	Peripheral Cyanosis	Pink
Pulse	0	<100	>100
Grimace	Nil to Stimuli	Grimace or weak cry to stimuli	Cries when stimulated
Activity	Floppy	Some flexion	Well flexed & resisting extension
Resp Effort	Apneic	Slow, irregular breathing	Strong Cry

Choking

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT: IF PARTIAL AIRWAY BLOCKAGE:

1. Position: - Sit fully upright
2. If foreign body obstruction:
- Encourage patient to cough
3. If obstruction due to medical condition:
- Refer to specific cause and treat
4. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
<84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
5. Chest Auscultation
6. Obtain Blood Glucose Level if altered conscious state
7. Referral consideration: - Call Ambulance if: - Unable to clear obstruction
- Damage to airway
- Underlying medical cause
- Can be discharged if uneventful partial blockage cleared

CHOKING - PARTIAL

CHOKING - PARTIAL

**IF AT ANY STAGE AIRWAY BECOMES COMPLETELY BLOCKED:
 - IMMEDIATELY MOVE TO COMPLETE AIRWAY BLOCKAGE ON THE NEXT PAGE**

CHECK FOR:

Cause: - Medical
 - Object
 Still able to talk or breath
 Short of breath
 Noisy breathing
 Anxious

CONSIDER:

Anaphylaxis
 Aspiration Of Foreign Body
 Croup
 Epiglottitis
 Oesophageal Cancer
 Facial Burns
 Inhalation of Poisonous gases
 Trauma to Airway
 Unconscious

Choking

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

IF COMPLETE AIRWAY BLOCKAGE: - ADULT

1. If object and patient responsive:
 - a. Position: - Sitting or standing with head leaning forward
 - b. Attempt 5 sharp back blows between shoulder blades
 - c. Check airway after each back blow
 - d. Attempt 5 chest thrusts
 ... similar to cardiac compressions but a) sharper
 b) slower
 - e. Check airway after each chest thrust
 - f. Repeat steps 2-5 until airway is cleared
2. If Patient becomes unresponsive: begin CPR as per Cardiac Arrest CPG
3. Referral consideration: - Call Ambulance '000'

IF COMPLETE AIRWAY BLOCKAGE: - CHILD

1. If object and patient responsive:
 - a. Call Ambulance
 - b. Position: - High sitting with head leaning forward if able
 - Place over knees if unable to follow direction
 - c. Attempt 5 sharp back blows between shoulder blades
 - d. Check airway after each back blow ... if unclear
 - e. Attempt 5 chest thrusts
 ... similar to cardiac compressions but a) sharper
 b) slower
 - f. Check airway after each... if unclear
 - g. Repeat steps 2-5 until airway is cleared
2. If Patient becomes unresponsive: begin CPR as per Cardiac Arrest CPG
3. Referral consideration: - Call Ambulance '000'

CHOKING - COMPLETE

CHOKING - COMPLETE

CHECK FOR:

Cause: Medical
 Object
 Poison / chemical

CONSIDER:

Anaphylaxis
 Aspiration Of Foreign Body
 Croup
 Epiglottitis
 Oesophageal Cancer
 Inhalation of Poisonous gases
 Trauma to Airway

Clavicular Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort usually half sitting
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Chest Auscultation to exclude underlying lung injury
4. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
5. Check distal neurovascular:
 - Colour
 - Warmth
 - Sensation
 - Pulse
6. Ice pack for 20 minutes
7. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
8. Elevation Sling
9. Recheck distal neurovascular as per step 5
10. Referral consideration:
 - Call Ambulance if:
 - Entonox or Penthrane administered
 - Unstable Vital Signs
 - Can be discharged to make own way to hospital

CLAVICULAR FRACTURE

CLAVICULAR FRACTURE

CHECK FOR:

Pain
 Unable to move lower arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm

CONSIDER:

Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Flail Segment
 Haemothorax
 Pneumothorax
 Rib Fractures

Compartment Syndrome

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position patient to ensure limb at same level of the heart

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Check distal neurovascular: - Colour
 - Warmth
 - Sensation
 - Pulse

4. If due to Bandage: Loosen

5. If due to Splint: Re-apply

6. If due to plaster cast: Cut open cast

7. Rest Limb

8. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

9. ECG Monitoring

10. Referral consideration: - Call Ambulance

COMPARTMENT SYNDROME

COMPARTMENT SYNDROME

CHECK FOR:

Significant pain out of proportion to injury
 Persistent deep pain in limb
 Pins & needles / Numbness / Tightness
 Cramping
 Swelling
 Distal pulses decreasing
 Cyanosis to limb
 Intense exercise prior to pain (eg marathon)

CONSIDER:

Burns to limbs
 Crush Injury
 Damage to: - Blood Vessels / Ligaments / Muscles / Nerves
 Lower Limb Fracture
 Penetrating Injuries
 Rhabdomyolysis
 Stroke
 Vascular injuries

VIDEO:

[Chronic Exertional Compartment Syndrome](#)

Concussion

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Raise head of bed 10°
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Obtain Blood Glucose Level if altered conscious state

4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. ECG Monitoring

6. Consider Spinal Precautions: 1. C-Collar

2. Padded Long Board
 or
 Vacuum Mattress

7. Referral consideration: - Call Ambulance if: - Any period of Unconsciousness
 - Unstable Vital Signs
 - Altered conscious state
 - Can be taken to hospital by Carer if nil of the above

CHECK FOR:

Loss of consciousness
 Altered conscious state
 Loss of memory
 Headache
 Seizure or convulsion
 Repetitious questioning
 Confusion
 Dizziness
 Drowsiness
 Irritability
 Pressure in head
 Balance problem
 Vision changes
 Feeling like "in a fog"
 Difficulty concentrating
 Unequal pupils
 Slowing pulse
 Increasing blood pressure
 Sensitive to noise

CONSIDER:

Headache
 Hypertension
 Brain bleed
 Trauma

CONCUSSION

CONCUSSION

Cone Shell Bite

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position:
 - If conscious: Lay patient down
 - If unconscious: Lateral side position
2. Pressure immobilisation bandage:
 - a. Do not wash bite area
 - b. Apply Broad Bandage (minimum 10 cm wide) over bite
 - Apply tightly without stopping blood flow
 - c. Apply Elastic Bandage from finger/toes & working up full limb
 - Apply tightly without stopping blood flow
 - d. Splint the limb to prevent movement
 - e. Mark area of bite
 - f. Record time of bite & bandage applied
3. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm

<84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
4. ECG Monitoring
5. Referral consideration: - Call Ambulance

CONE SHELL FISH

CONE SHELL FISH

CHECK FOR:

Painless bite
 Visible spot of blood at bite site
 Numbness to lips & tongue
 Muscle weakness
 Breathing difficulties
 Altered conscious state
 Respiratory arrest
 Cardiac Arrest

CONSIDER:

Anaphylaxis
 Seizure
 Shock
 Syncope
 Short Of Breath
 Unconscious
 Respiratory Arrest

VIDEOS:

[Pressure Immobilisation Bandage \(PIT\)](#)

Congestive Heart Failure

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR
AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Sit fully upright with legs dependent

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
<84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. 12 Lead ECG

4. ECG Monitoring

5. Chest Auscultation

6. **ASPIRIN 500 mg** tablet orally

7. If pain & unable to give GTN:
- **PENTHRANE 3 ml** via Green whistle (may repeat once)

8. If pain & BP>110: - **GTN SPRAY 0.4 mcg** every 5 minutes
- Cease GTN if BP < 110 / side effects / pain relieved

9. Referral consideration: - Call Ambulance

CHECK FOR:

Pain in Chest / Left Arm / Neck / Jaw / Epigastric / Back
Pain may feel: - Heavy
- Pressure
Extreme Short Of Breath
Chest sounds: - Crackles
- Wheezes
ECG Arrhythmias
Cardiogenic Shock: - Pale
- Rapid Heart Rate
- Low Blood Pressure

CONSIDER:

Acute Coronary Syndrome
Acute Myocardial Infarction
Cardiac Arrest
Cardiac Arrhythmias
Cardiogenic Shock
Heart Attack
Pericarditis
Pneumonia

CONGESTIVE HEART FAILURE

CONGESTIVE HEART FAILURE

Corneal Injury

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort
2. Flush with **NORMAL SALINE**
3. Cover both eyes
4. Consider cold compresses
5. If penetrating injury:
 - a. Do not flush with water
 - b. Avoid any pressure
 - c. Attempt to stabilise object
 - d. Cover both eyes
6. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
8. Consider **ONDANSERTRON** prophylactically
 - Child (1-4 years): **ONDANSERTRON 2 mg** oral
 - Child (5-11 years): **ONDANSERTRON 4 mg** oral
 - Adult: **ONDANSERTRON 4 mg** oral & can be repeated 20 minutes later
7. Referral consideration:
 - Call Ambulance if: - Vision impaired or vision is lost
 - Can be discharged if own transport to Hospital

CORNEAL INJURY

CORNEAL INJURY

CHECK FOR:

Redness
 Eye sensitive to light
 Tearing eye
 Leaking fluid
 Foreign body
 Blood in anterior chamber of eye
 Bulging cornea
 Nausea & vomiting

CONSIDER:

Blunt Or Penetrating Eye Trauma
 Burns
 Foreign Body
 Contact Lenses
 Enucleation (eyeball fluid leaking)
 Evisceration (eyeball protruding from socket)

Crush Injury

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position patient to ensure limb at same level of the heart
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
4. Control any bleeding before object is removed
5. Check distal neurovascular: - Colour
 - Warmth
 - Sensation
 - Pulse
6. ECG Monitoring
7. If compression force is: - greater than 1 hour ... wait for Ambulance arrival
 - less than 1 hour ... remove object if safe and able to do
8. Referral consideration: - Call Ambulance

CRUSH INJURY

CRUSH INJURY

CHECK FOR:

Time of compression injury
 Pain level - May have no pain if compression > 1 hour
 Pins & needles / Numbness / Tightness
 Cramping
 Swelling
 Distal pulses decreasing
 Cyanosis to limb
 Conscious level

CONSIDER:

Damage to: - Blood Vessels / Ligaments / Muscles / Nerves
 Internal Bleeding
 Internal Organ Damage
 Lower Limb Fracture
 Penetrating Injuries
 Rhabdomyolysis
 Spinal injury
 Vascular injuries

Dehydration

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Position of comfort
 - If signs of shock: Lay patient down with legs raised
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Blood Glucose Level if altered conscious state
4. Obtain Temperature
5. Move to a cool place if heat related
6. Remove excess clothing if heat related
7. Rehydrate by drinking cool water or oral rehydration drinks
8. If nausea & vomiting and not being tolerated
 - Child (1-4 years): **ONDANSERTRON 2 mg** oral
 - Child (5-11 years): **ONDANSERTRON 4 mg** oral
 - Adult: **ONDANSERTRON 4 mg** oral & can be repeated 20 minutes later
9. Referral consideration: - Call Ambulance if unstable Vital Signs
 - Can be discharged if mild and able to drink fluids

DEHYDRATION

DEHYDRATION

CHECK FOR:

Weakness
 Tired
 Dizziness
 Heachache
 Thirsty
 Loss of appetite
 Nausea & vomiting
 Diarrhoea
 Altered conscious state

CONSIDER:

Heat Cramp
 Heat Exhaustion
 Heat Stroke
 Shock (volume loss)

Drowning

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

(Post-Resuscitation)

1. Call Ambulance '000' IMMEDIATELY
2. Position: - If conscious: Position of comfort
- If unconscious: Lateral side position
3. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
- Once Vital Signs stabilise, aim for SPO2 92-96% with either:
- Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
4. Obtain Temperature
5. Obtain Blood Glucose Level if altered conscious state
6. ECG Monitoring
7. Chest Auscultation
8. If traumatic event: - C-Collar
- Immobilise to padded Long Spine Board or Vacuum Mattress

DROWNING

DROWNING

CHECK FOR:

History of event
 Time patient removed from water
 Determine fresh or salt water
 Determine cause of drowning
 Water temperature
 Vomiting
 Shortness of breath
 Pulmonary oedema
 Altered conscious state
 Unconscious

CONSIDER:

Alcohol
 Cardiac Arrest
 Drug Overdose
 Epilepsy
 Head Injury
 Pulmonary Oedema
 Respiratory Arrest
 Seizure
 Spinal Injury

Ear Injury

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Half sitting with head tilted to injured side down
 - If unconscious: Lateral side position with injured side down

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Cover with sterile dressing

4. If penetrating object: a. Avoid pressure
 b. Do not irrigate
 c. Do not remove object
 d. Stabilise object as best as possible
 e. Cover ear with sterile dressing
 f. Allow fluid to flow out of ear

5. If traumatic event: 1: C-Collar

2: Immobilise to padded Long Board or Vacuum Mattress

6. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

7. Referral consideration: - Call Ambulance if: - Unstable Vital Signs
 - Head injury
 - Entonox or Penthrane administered
 - Minor injury can be discharged

CHECK FOR:

History of event
 Loss or reduced hearing
 Blood leaking from ear
 Cerebral Spinal Fluid leaking from ear
 Foreign body
 Penetrating injury
 Traumatic head injury
 Battle sign
 Spinal injury

CONSIDER:

Explosion or Blast Injury
 Foreign Body
 Head injury
 Penetrating Injury
 Spinal Injury

EAR INJURY

EAR INJURY

Elbow Dislocation

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort
2. Ice pack for 20 minutes
3. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤ 60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
4. Position elbow:
 1. DO NOT attempt to straighten arm
 2. Bend elbow to comfortable position
 3. Ensure no neurovascular compromise when repositioned
5. Check distal neurovascular:
 - Colour
 - Warmth
 - Sensation
 - Pulse
6. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
- 7 Vacuum Sling to arm: Splint arm in bent position
8. Secure splinted arm to torso
9. Recheck distal neurovascular as per step 5
10. Referral consideration:
 - Call Ambulance if:
 - Entonox or Penthrane administered
 - Unstable Vital Signs
 - Can be discharged if own transport to Hospital

ELBOW DISLOCATION

ELBOW DISLOCATION

CHECK FOR:

Pain
 Unable to move lower arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm

CONSIDER:

Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Elbow fracture
 Lower arm fracture
 Upper arm fracture

Elbow Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort
2. Ice pack for 20 minutes
3. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
4. Position elbow:
 1. DO NOT attempt to straighten arm
 2. Bend elbow to comfortable position
 3. Ensure no neurovascular compromise when repositioned
5. Check distal neurovascular:
 - Colour
 - Warmth
 - Sensation
 - Pulse
6. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
7. Vacuum Sling to arm: Splint arm in bent position
8. Secure splinted arm to torso
9. Recheck distal neurovascular as per step 5
10. Referral consideration:
 - Call Ambulance if:
 - Entonox or Penthrane administered
 - Pain uncontrolled
 - Can be discharged if own transport to Hospital

ELBOW FRACTURE

ELBOW FRACTURE

CHECK FOR:

Pain
 Unable to move lower arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm

CONSIDER:

Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Elbow dislocation
 Lower arm fracture
 Upper arm fracture

Electrocution

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Position of comfort
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Obtain Blood Glucose Level if altered conscious state

4. ECG Monitoring

5. 12 Lead ECG

6. Look for Entry & exit wounds

7. If Burnt: a. Cool burn with water for maximum 20 minutes
 b. Do not allow patient to shiver
 c. Cut off any tight clothing, shoes, or jewellery
 d. Cover <30% burns with BurnAid
 e. Cover burns (& BurnAid if applied) with Gladwrap
 f. Calculate burns area with chart

8. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

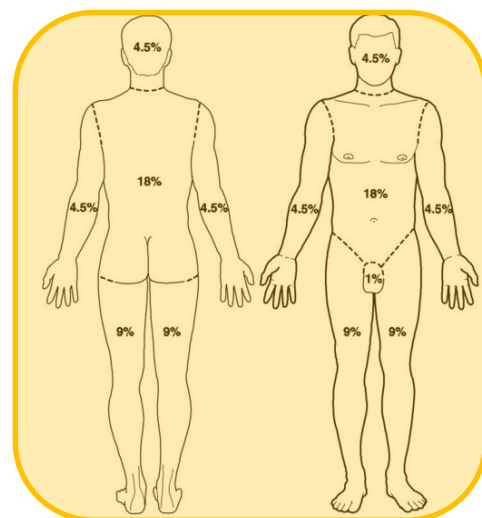
9. Referral consideration: - Call Ambulance

CHECK FOR:

Type & level of voltage
 Entry and exit wounds
 Determine track electricity took through body
 Look for fractures (due to muscle contraction)
 Consider internal organ damage
 Level of pain
 Respiratory distress
 Conscious level

CONSIDER:

Fractures
 Obstructed Airway
 Cardiac Arrest



ELECTROCUTION

ELECTROCUTION

Emphysema (COPD)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Sit fully upright and leaning forward
2. Aim for SPO2 88-92%: - If SPO2 < 88%: give **OXYGEN** by Nasal Cannula 2-6 lpm
3. Chest Auscultation
4. If mild to moderate respiratory distress with bronchospasm
 - **SALBUTAMOL** via Spacer:
 - a. 1 Puff / 4 Breaths (4 times)
 - b. Wait 4 minutes
 - c. Repeat steps 1 & 2 as required
5. If severe SOB with bronchospasm:
 - **SALBUTAMOL 10 mg** via Nebulizer (once only)
 - **ATROVENT 500 mcg** via Nebuliser (once only)
6. ECG Monitoring
7. Referral consideration: - Call Ambulance if:
 - Patient does not improve
 - Unstable Vital Signs
 - Can be discharged if SOB resolved or normal for patient

EMPHYSEMA

EMPHYSEMA

CHECK FOR:

History of Emphysema or COPD
 Recent chest infection
 Tired from effort to breath
 Rapid breathing
 Prolonged expiration
 Reduced ability to speak
 Wheezing
 Decreased breath sounds
 Rapid heart rate
 Hypoxia:

- Restlessness
- Irritability
- Cyanosis
- Decreased conscious level

[Click here for Respiratory State Chart](#)

CONSIDER:

Anxiety
 Allergic Reaction
 Anaphylaxis
 Chronic Asthma (COPD)
 Chronic Bronchitis (COPD)
 Congestive Heart Failure
 Obstructed Airway
 Pneumonia
 Pulmonary Oedema
 Short Of Breath

Epilepsy

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. If still seizing: - Remove any objects that may hurt patient
 - Do not try to hold patient down

2. Position: - If conscious: Position of comfort
 - If unconscious: Lateral side position

3. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
 ... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm

4. Obtain Temperature

5. Obtain Blood Glucose Level if altered conscious state

6. Determine: - Type of seizure activity
 - Length of seizure activity
 - Length of unconsciousness

7. Referral consideration: - Call Ambulance if:
 - Patient remains unconscious
 - Continues to fit
 - Unstable Vital Signs
 - Can be discharged to carer if typical seizure & recovered

IF SEIZURE LASTS GREAT THAN 5 MINUTES OR REPEATED SEIZURES WITHOUT GAINING CONSCIOUSNESS, TREAT AS PER STATUS EPILEPTICUS

CHECK FOR:

History of prior seizures
 Absent period
 Muscle twitching
 Tonic - Clonic movements
 Eye jerking
 Frothing at the mouth
 Incontinent of urine
 No memory of event
 Conscious level
 Status Epilepticus

CONSIDER:

Concussion
 Drug Abuse
 Febrile Convulsion
 Headache
 Head Injury
 Hypoglycaemia
 Hypotension
 Hypoxia
 Metabolic Disorder
 Pre-Arrest Seizure
 Shock
 Stroke
 Tumour
 Unconscious

Videos:

[Epilepsy Medications](#)

EPILEPSY

EPILEPSY

Eye Evisceration

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort
2. Do not attempt to replace eye into socket
3. Eyeball:
 - a. Cover carefully with saline soaked pad
 - b. Place pad carefully in plastic cup
 - c. Tape cup to eye socket
4. Cover both eyes
5. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
6. Consider **ONDANSERTRON** prophylactically:
 - Child (1-4 years): **ONDANSERTRON 2 mg** oral
 - Child (5-11 years): **ONDANSERTRON 4 mg** oral
 - Adult: **ONDANSERTRON 4 mg** oral & can be repeated 20 minutes later
7. Referral consideration: - Call Ambulance

EYE EVISERATION

EYE EVISERATION

CHECK FOR:

Eye protruding from socket
 Vision of eviscerated eye
 Traumatic head injury
 Nausea & vomiting

CONSIDER:

Blunt Or Penetrating Eye Trauma
 Burns
 Foreign Body
 Contact Lenses
 Enucleation (eyeball protruding from socket)

Faint

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay patient down with legs raised
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Obtain Temperature

4. Obtain Blood Glucose Level

5. Chest Auscultation

6. ECG Monitoring

7. Perform F.A.S.T. examination

8. Referral consideration: - Call Ambulance if unstable Vital Signs
 - Can be discharged if recovered & stable vital sign

CHECK FOR:

Exclude Stroke with FAST:
 - Facial drooping - by asking patient to smile
 - Arms raised - to see if one side is weaker
 - Slurred Speech - ask patient to say "cant teach an old dog new tricks"
 - Time - every minute delay to Hospital = 2 million less brain cells
 Pale skin
 Slow pulse
 Low blood pressure
 Incontinent of urine
 No memory of event
 Altered conscious state

CONSIDER:

Concussion
 Drug Abuse
 Epilepsy
 Migraine
 Head Injury
 Heat Stroke
 Hyperglycaemia
 Hyperventilation
 Hypoglycaemia
 Hypotension
 Hypoxia
 Metabolic Disorder
 Seizure
 Shock
 Stroke

FAINT

FAINT

Femur Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

TREATMENT:

1. Position: - Position of comfort usually laying down
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Ice pack to fracture site for 20 minutes
4. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg oral if elderly / frail / ≤60kg
 - 15 mg/kg oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
6. Check distal:
 - Colour
 - Warmth
 - Sensation
 - Pulse
7. Apply either:
 - Donway Traction Splint (preferred)
 - Slishman Traction Splint (with traction 10% of body weight)
8. If unable to apply Traction splint:
 - Place padding between legs
 - Figure of eight bandage around ankle
 - Apply triangular bandage:
 - at knees
 - above fracture
 - below fracture
9. Recheck distal neurovascular as per step 6
10. Secure patient to padded Long Spine Board or Vacuum Mattress
11. Referral consideration: - Call Ambulance

FEMUR FRACTURE

FEMUR FRACTURE

CHECK FOR:

Pain
 Unable to move leg
 Shortening of fractured leg
 Swelling
 Bruising
 Tenderness
 Muscle spasm
 Blood loss (500 - 1500 mls)

CONSIDER:

Cancer
 Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Pelvic Fracture
 Spinal Injury

Videos:

[Donway Traction Splint](#)
[Slishmann Traction Splint](#)

Febrile Convulsion

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. If still seizing: - Remove any objects that may hurt patient
 - Turn patient on their side if able
2. Position: - If conscious: Position of comfort
 - If unconscious: Lateral side position
3. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
 ... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
4. Obtain Temperature
5. Cool body to normal body temperature by removing excess clothing
6. Obtain Blood Glucose Level
7. Determine: - Type of seizure activity
 - Length of seizure activity
 - Length of unconsciousness
8. Referral consideration: - Call Ambulance

FEBRILE CONVULSION

FEBRILE CONVULSION

IF SEIZURE LASTS GREAT THAN 5 MINUTES OR REPEATED SEIZURES WITHOUT GAINING CONSCIOUSNESS, TREAT AS STATUS EPILEPTICUS

CHECK FOR:

History of prior seizures
 Absent period
 Muscle twitching
 Tonic - Clonic movements
 Eye jerking
 Frothing at the mouth
 Incontinent of urine
 High temperature
 Sudden rise in temperature
 No memory of event
 Altered conscious state

CONSIDER:

Concussion
 Drug Abuse
 Epilepsy
 Headache
 Head Injury
 Hypoglycaemia
 Hypotension
 Hypoxia
 Infection
 Meningococcal Septicemia
 Metabolic Disorder
 Pre-Arrest Seizure
 Shock
 Stroke

Funnel Web Spider Bite

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay patient down
 - If unconscious: Lateral side position

2. Pressure immobilisation bandage:
 a. Do not wash bite area
 b. Apply Broad Bandage (minimum 10 cm wide) over bite
 - Apply tightly without stopping blood flow
 c. Apply Elastic Bandage from finger/toes & working up full limb
 - Apply tightly without stopping blood flow
 d. Splint the limb to prevent movement
 e. Mark area of bite
 f. Record time of bite & bandage applied

3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. ECG Monitoring

6. Referral consideration: - Call Ambulance

FUNNEL WEB SPIDER BITE

FUNNEL WEB SPIDER BITE

CHECK FOR:

Location of bite site
 Pain at the bite site
 Abdominal pain
 Tingling around mouth
 Profuse sweating
 Copious secretions of saliva
 Muscle twitching
 Breathing difficulties
 Confusion

CONSIDER:

Anaphylaxis
 Seizure
 Shock
 Syncope
 Short Of Breath
 Unconscious
 Respiratory Arrest
 Cardiac Arrest

VIDEOS: [Pressure Immobilisation Bandage](#)

Gastrointestinal Bleed

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If vomiting: Half sitting
 - If signs of shock: Lay down & legs raised
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level if altered conscious state
5. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
6. If nausea & vomiting maybe a concern, then:
 - Child (1-4 years): **ONDANSERTRON 2 mg** oral
 - Child (5-11 years): **ONDANSERTRON 4 mg** oral
 - Adult: **ONDANSERTRON 4 mg** oral & can be repeated 20 minutes later
7. Referral consideration: - Call Ambulance

GASTROINTESTINAL BLEED

GASTROINTESTINAL BLEED

CHECK FOR:

Abdominal pain or tenderness
 Muscle spasm or rigidity
 Decreased or diminished bowel sounds
 Nausea & vomiting
 Fainting episode
 Hematemesis (coffee ground vomit)
 Patient on anti-coagulant therapy
 Shock: - Low blood pressure
 - Rapid heart rate
 - Pale skin
 Orthostatic blood pressure

CONSIDER:

Abdominal Pain
 Alcoholism
 Aneurysm
 Cancer
 Oesophageal Varices
 Gastric or Duodenal Ulcer
 Hematemesis
 Traumatic Event

Glasgow Coma Scale

(Adult)



The GCS is an objective measure of consciousness and used extensively in ambulance and hospital. It should be used by Level 2, 3 & 4 EFAAFS staff whenever it is serious enough for an ambulance to be called. A GCS will be required to be given on handover.

EYE RESPONSE

- 4 **Eyes opening spontaneously**
- 3 **Eye opening to speech:** This should not be confused with an awakening of a sleeping person. In such cases a score of 4 is given, not 3.
- 2 **Eye opening in response to pain:** Patient responds to pressure on the patient's fingernail bed; if this does not elicit a response, supraorbital and sternal pressure or rub may be used.
- 1 **No eye opening**

VERBAL RESPONSE

- 5 **Oriented:** Patient responds coherently and appropriately to questions such as the patient's name and age, where they are and why, the year, month, etc.
- 4 **Confused:** The patient responds to questions coherently but there is some disorientation and confusion.
- 3 **Inappropriate words:** Random or exclamatory articulated speech, but no conversational exchange.
- 2 **Incomprehensible sounds:** Moaning but no words.
- 1 **No verbal response**

MOTOR RESPONSE

- 6 **Obeys commands:** The patient does simple things as asked.
- 5 **Localizes to pain:** Purposeful movements towards painful stimuli; e.g. hand crosses mid-line and gets above clavicle when supra-orbital pressure applied.
- 4 **Flexion/Withdrawal to pain:** flexion of elbow, supination of the forearm, flexion of the wrist when supra-orbital pressure applied; pulls part of the body away when nailbed pinched.
- 3 **Abnormal flexion to pain:** adduction of arm, internal rotation of the shoulder, pronation of forearm, flexion of wrist, decorticate response)
- 2 **Extension to pain:** adduction of arm, internal rotation of the shoulder, pronation of forearm, an extension of the wrist, decerebrate response)
- 1 **No motor response**

Glasgow Coma Scale

(Adult)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

These charts are available in the Resus Room of the medical centre and in all PCR folders.

GLASGOW COMA SCALE			
A.	Eye Opening	Score	
	Spontaneous	4	
	To voice	3	
	To pain	2	
	None	1	A: ____
B.	Verbal Response	Score	
	Orientated	5	
	Confused	4	
	Inappropriate words	3	
	Incomprehensible sounds	2	
	None	1	B: ____
C.	Motor Response	Score	
	Obeys command	6	
	Purposeful movements (pain)	5	
	Withdraw (pain)	4	
	Flexion (pain)	3	
	Extension (pain)	2	
	None	1	C: ____
Total GCS (Maximum Score = 15)			
(A + B + C) = _____			

GLASGOW COMA SCALE - ADULT

GLASGOW COMA SCALE - ADULT

Glasgow Coma Scale

(Child)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

The Paediatric Glasgow Coma Scale (PGCS) is the equivalent of the Glasgow Coma Scale and is used to assess the consciousness of infants and children. The scale has been modified from the original Glasgow Coma Scale as many of the assessments for an adult patient would not be appropriate for infants and young children. In children greater than 5 years of age, the responses are similar to the adult Glasgow Coma Scale.

EYE RESPONSE

- 4 Eyes opening spontaneously
- 3 Eye opening to being spoken to
- 2 Eye opening to pain
- 1 No eye opening

VERBAL RESPONSE

Age 0-23 Months

- 5 Infant coos or babbles or smiles appropriately
- 4 Loud cries but consolable
- 3 Persistent crying and or screaming
- 2 Infant moans to pain, grunts, agitated and restless
- 1 No verbal response

Age 2-5 Years

- 5 Appropriate words or phrases
- 4 Inappropriate words or phrases
- 3 Persistent Cries and/or screams
- 2 Grunts
- 1 No response

Age > 5 Years

- 5 Oriented and converses
- 4 Disoriented, confused
- 3 Inappropriate words or phrases
- 2 Incomprehensible or unclear sounds
- 1 No response

GLASGOW COMA SCALE - CHILD

GLASGOW COMA SCALE - CHILD

MOTOR RESPONSE

- 1 Infant moves spontaneously or purposefully
- 2 Infant withdraws from touch
- 3 Infant withdraws from pain
- 4 Abnormal flexion to pain for an infant (decorticate response)
- 5 Extension to pain (decerebrate response)
- 6 No motor response

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

PAEDIATRIC GLASGOW COMA SCALE

		> 1 Year	< 1 Year		
EYE OPENING	4	Spontaneously	Spontaneously		
	3	To Verbal Command	To Shout		
	2	To Pain	To Pain		
	1	No Response	No Response		

		> 1 Year	< 1 Year		
BEST MOTOR RESPONSE	6	Obeys			
	5	Localises Pain	Localises Pain		
	4	Flexion - Withdrawal	Flexion - Normal		
	3	Flexion - Abnormal (Decorticate Rigidity)	Flexion - Abnormal (Decorticate Rigidity)		
	2	Extension (Decerebrate Rigidity)	Extension (Decerebrate Rigidity)		
	1	No Response	No Response		

		> 5 Year	2-5 Year	0-23 Months	
BEST VERBAL RESPONSE	5	Orientated & Converses	Appropriate Words & Phrases	Smiles, Coos, Cries appropriately	
	4	Disorientated & Converses	Inappropriate Words	Cries	
	3	Inappropriate Words	Cries or screams	Inappropriate Crying And/or Screaming	
	2	Incomprehensible Sounds	Grunts	Grunts	
	1	No Response	No Response	No Response	

TOTAL SCORE _____

GLASGOW COMA SCALE - CHILD

GLASGOW COMA SCALE - CHILD

Haemothorax

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Half sitting with injured side down
 - If unconscious: Lateral side position with injured side down
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Chest Auscultation
4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. ECG monitoring
6. Referral consideration: - Call Ambulance

CHECK FOR:

Difficulty breathing
 Shortness of breath
 Chest rising equally both sides
 Unequal breath sounds
 Fast heart rate
 Low Blood Pressure
 Bleeding
 Sucking chest wound
 Flail segment
 Tension Pneumothorax:
 - Tracheal shift
 - Unequal breath sounds
 - Distended neck veins
 Cardiac Tamponade (Beck's Triad):
 - Faint heart sounds
 - Falling blood pressure
 - Distended neck veins

CONSIDER:

Cardiac Tamponade
 Chest Injury
 Flail Segment
 Rib Fractures
 Shock
 Spinal Injury
 Sucking Chest Wound
 Trauma

HAEMOTHORAX

HAEMOTHORAX

Hallucinogenic Overdose

ASSESSMENT:

DRSABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious and breathing: Position of comfort
 - If altered conscious state: Lateral side position

2. Protect yourself and patient from injury

3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Obtain Temperature: If hyperthermic: a. Remove excess clothing
 b. Cool bath or shower
 c. Spray water on skin with fanning
 d. Icepacks to neck, underarms, groin
 e. Rehydrate by drinking:
 - Cool water
 - Rehydration drinks

5. Obtain Blood Glucose Level

6. ECG Monitoring

7. Referral consideration: - Call Ambulance

CHECK FOR:

Amount of drug taken
 Time drug taken
 Method of overdose:
 - Oral
 - Snorted
 - Injection
 Was there a mixture of drugs taken
 Rapid emotional swings
 Distortion of persons ability to:
 - recognise reality
 - think rationally
 - communicate with others
 Raised blood pressure
 Rapid heart rate
 Increase body temperature
 Dehydration
 Loss of appetite
 Enlarged pupils

HALLUCINOGEN:

- Ayahuasca
- Ketamine
- LSD
- Mescaline
- PCP
- Psilocybin
- Salvia

CONSIDER:

Hyperthermia

HALLUCINOGENIC OVERDOSE

HALLUCINOGENIC OVERDOSE

Handover

When handing the patient over to another EFAAFS staff member, Medical Practitioner, or to Ambulance Victoria, the following process of passing on patient details is to be used by all Levels 1 - 4:

- (1) Name and age of the patient
- (2) Primary problem of the patient
- (3) History of the event
- (4) Secondary and/or DOLOR
- (5) Vital signs of the patient
- (6) Treatments given and its effect
- (7) Allergies
- (8) Medications
- (9) Past medical history

-  LEVEL 1
-  LEVEL 2
-  LEVEL 3
-  LEVEL 4

A copy of the completed PCR is to be given to the person taking over care of the patient, whilst ensuring a copy also remains with EFAAFS for review by the EFAAFS Clinical Oversight Committee.

Headache

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Raise head of bed 10°
 - If unconscious: Lateral side position
2. . If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level
5. Perform F.A.S.T. to exclude Stroke
6. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
7. If pain > 7/10 consider: - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
8. Referral consideration: - Call Ambulance if: - Entonox or Penthrane administered
 - Unstable Vital Signs
 - Can be discharged if pain controlled

HEADACHE

HEADACHE

CHECK FOR:

Eyes sensitive to light
 Nausea & vomiting
 Stiff neck
 Vision changes
 Dizziness
 Nausea & vomiting
 High blood pressure
 Migraine history
 Exclude Stroke with FAST Stroke Assessment:
 - Facial drooping - by asking patient to smile
 - Arms raised - to see if one side is weaker
 - Slurred Speech - ask patient to say "cant teach an old dog new tricks"
 - Time - every minute delay to Hospital = 2 million less brain cells

CONSIDER:

Concussion
 Traumatic Head Injury
 Hypertension
 Intracerebral bleed
 Seizure
 Stroke
 Subarachnoid Bleed
 Subdural Bleed

Head Injury (Trauma)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position:
 - If conscious: Raise head of bed 10°
 - If unconscious and adequate breathing: Lateral side position
 - If unconscious and inadequate breathing: Lay down to perform IPPV
2. If Severe Head Injury, give **OXYGEN** by High Flow Face Mask 10-15 lpm
 ... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
3. If unconscious with inadequate breathing:
 - Consider IPPV required ... Ventilate 6 - 7 ml/kg with BVM
 - ... Aim for SPO2 > 95%
 - ... Aim for ETCO2 Of 30 -35 mmhg
 - If airway not patent or unable to ventilate, Insert airway adjunct:
 - Oropharyngeal airway
 - Nasopharyngeal airway
 - Supraglottic airway if no gag reflex
4. Obtain Temperature
5. Obtain Blood Glucose Level if altered conscious state
6. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg oral if elderly / frail / ≤60kg
 - 15 mg/kg oral syrup (<12 yrs)
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
7. ECG Monitoring
8. Referral consideration: - Call Ambulance

CHECK FOR:

Headache or dizzyness
 Nausea & vomiting
 Unequal pupils
 Eyes deviated to side of bleed/blockage
 Raccoon Eyes or Battle Signs
 Slowing pulse rate
 High blood pressure
 Seizure
 Loss of consciousness

CONSIDER:

Hypothermia
 Intracerebral bleed
 Subarachnoid Bleed
 Subdural Bleed
 Skull Fracture

VIDEOS: [Traumatic Brain Injury](#)

HEAD INJURY - TRAUMA

HEAD INJURY - TRAUMA

Heart Attack

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Half sitting
 - If altered conscious state: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. 12 Lead ECG
4. ECG Monitoring
5. Chest Auscultation
6. **ASPIRIN 500 mg** tablet orally
7. If pain & unable to give GTN:
 - **PENTHRANE 3 ml** via Green whistle (may repeat once)
8. If pain & BP>110: - **GTN SPRAY 0.4 mcg** every 5 minutes
 - Cease GTN if BP < 110 / side effects / pain relieved
9. Referral consideration: - Call Ambulance

HEART ATTACK

HEART ATTACK

CHECK FOR:

Pain in Chest / Left Arm / Neck / Jaw / Epigastric / Back
 Pain may feel: - Heavy / Pressure
 Pain generally does not change on inspiration or palpation
 ECG changes
 ECG Arrhythmias
 Cardiogenic Shock: - Pale
 - Rapid Heart Rate
 - Low Blood Pressure

CONSIDER:

Acute Coronary Syndrome
 Acute Myocardial Infarction
 Angina
 Cancer
 Cardiac Arrest
 Cardiac Arrhythmias
 Cardiogenic Shock
 Heart Burn
 Congestive Heart Failure
 Pericarditis
 Pleurisy
 Pneumonia
 Pulmonary Embolus
 Pneumothorax

Heat Cramp

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort
2. Stop all activity
3. Gentle slow range-of-motion stretching of the affected muscle group
4. Gentle massage of the affected muscle group
5. Rehydrate by drinking cool water or oral rehydration drinks
5. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
6. Referral consideration:
 - Call Ambulance if Entonox or Penthrane administered
 - Can be discharged once cramp resolves

HEAT CRAMP

HEAT CRAMP

CHECK FOR:

Cause
 Painful muscle spasms
 Involuntary muscle jerking
 Heavy sweating
 Flushed skin
 Rapid breathing
 Fever

CONSIDER:

Dehydration
 Embolism
 Heat Exhaustion
 Heat Stroke

Heat Exhaustion

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay patient down
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Obtain Blood Glucose Level

4. Obtain Temperature: - Heat Exhaustion generally $\leq 40^{\circ}\text{C}$ (guide only)

5. If confirmed high temperature

- a. Remove excess clothing
- b. Cool bath or shower
- c. Spray water on skin with fanning
- d. Icepacks to neck, underarms, groin
- e. Rehydrate by: - drinking cool water or
 - oral rehydration drinks

6. ECG Monitoring

7. Referral consideration: - Call Ambulance

HEAT EXHAUSTION

HEAT EXHAUSTION

CHECK FOR:

Cause
 Weakness
 Tired
 Dizziness
 Heachache
 Heavy sweating
 Pale skin
 Rapid breathing
 Muscle weakness
 Muscle cramps
 Nausea & vomiting
 Conscious state

CONSIDER:

Dehydration
 Drug Overdose
 Embolism
 Heat Cramp
 Heat Stroke
 Party Drugs

Heat Stroke

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position:
 - If conscious: Lay patient down
 - If unconscious: Lateral side position
2. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
 - ... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
3. Obtain Blood Glucose Level
4. Obtain Temperature: Heat Stroke generally $\geq 40.5^{\circ}\text{C}$ (guide only)
5. If confirmed high temperature
 - a. Remove excess clothing
 - b. Cool bath or shower
 - c. Spray water on skin with fanning
 - d. Icepacks to neck, underarms, groin
6. ECG Monitoring
7. Referral consideration: - Call Ambulance

HEAT STROKE

HEAT STROKE

CHECK FOR:

Cause
 Sudden rise in body temperature
 Red, hot and dry skin (sweating has stopped)
 Dry swollen tongue
 Rapid pulse
 Rapid shallow breathing
 Intense thirst
 Headache
 Nausea or vomiting
 Dizziness
 Confusion, poor coordination or slurred speech
 Aggressive or bizarre behaviour
 Loss of consciousness
 Seizures or coma

CONSIDER:

Drug Overdose
 Dehydration
 Heat Cramp
 Heat Exhaustion
 Party Drugs
 Psychostimulant Overdose
 Rhabdomyolysis
 Seizures

Helicopter Operations

AIR AMBULANCE HELICOPTER OPERATIONS AWARENESS

Landing Site Preparations



Minimum of 25m x 25m

Landing sites need to be free of people, obstacles, trees and overhead wires. Remove as much litter as possible. Do not cordon off with tape.

Landing on Roads




CLOSE BOTH LANES


ROAD AHEAD CLOSED

Both carriageways **MUST** be closed to traffic. Emergency vehicles should not be within 30m of ANY landing site.

Approaching



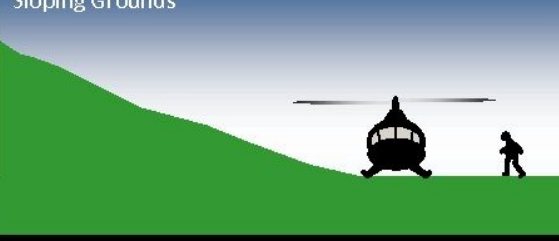
DO NOT APPROACH without receiving a visual instruction from the pilot. If in doubt do not approach the helicopter until the rotors have fully stopped.



Acceptable Prohibited

Safety zones for approaching / leaving the helicopter. Stay where the pilot can see you at all times.

Sloping Grounds



On sloping ground, **ALWAYS** approach/depart the helicopter on the downslope side for maximum rotor clearance.


Departure



LANDING SITE / REJECT AREA


IN AN EMERGENCY, THE HELICOPTER MAY NEED TO LAND BACK ON THE REJECT AREA. KEEP ALL PEOPLE AND VEHICLES CLEAR OF AREA.

Briefing from Crew:



- Do NOT help the crew without direct instructions.
- Do NOT help load/unload the patient without a request from the crew.
- Do NOT help the crew with opening or closing the doors.
- Be prepared to control access to the landing site under direction from the crew in preparation for helicopter departure.

Keep in mind:



- Downwash from the helicopter can be damaging. Remove loose objects and hats. Remove as much litter from the site as possible.
- Do not attempt to attract the crew's attention with bright lights or lasers.
- Keeping the Reject Area clear is vital to your safety.
- When landing on or departing from roads - including dual-carriageways and motorways - BOTH carriageways must be closed to ALL vehicles.

HELICOPTER OPERATIONS

HELICOPTER OPERATIONS

Humerus Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort usually half sitting

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Ice pack to fracture site for 20 minutes

4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. Check distal: - Colour
 - Warmth
 - Sensation
 - Pulse

6. If open wound: - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad

7. Collar & Cuff Sling

8. Secure upper arm to side of chest with the aim of:
 - limiting movement of the joint above and below the fracture

9. Recheck distal neurovascular as per step 5

10. Referral consideration: - Call Ambulance

HUMERUS FRACTURE

HUMERUS FRACTURE

CHECK FOR:

Pain
 Unable to move arm
 Shortening of fractured arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm
 Blood loss (200 - 500 mls)

CONSIDER:

Damage to: - Blood Vessels
 - Ligaments
 - Muscles
 - Nerves

Hyperglycaemia

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Position of comfort
 - If unconscious: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level
5. Perform F.A.S.T. examination to exclude Stroke
6. ECG Monitoring
7. Referral consideration: - Call Ambulance

CHECK FOR:

Is there a history of Diabetes
 Is patient taking Insulin as required
 Fever or illness
 Insulin pump malfunction
 Slow Onset
 Muscle weakness
 Abdominal pain
 Frequent Urination
 Thirsty
 Extreme hunger
 Flushed hot dry skin
 Confusion
 Deep rapid and laboured breathing (Kussmauls Breathing)
 Fruity scented breath
 Rapid heart rate
 Low blood pressure
 Exclude Stroke with FAST Stroke Assessment:
 - Facial drooping - by asking patient to smile
 - Arms raised - to see if one side is weaker
 - Slurred Speech - ask patient to say "cant teach an old dog new tricks"
 - Time - every minute delay to Hospital = 2 million less brain cells

CONSIDER:

Alcoholism
 Convulsion
 Cocaine Abuse
 Seizure
 Stroke
 Unconscious

HYPERGLYCAEMIA

HYPERGLYCAEMIA

Hypertensive Crisis

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Sit fully upright
 - If unconscious: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level
5. Chest Auscultation
6. ECG Monitoring
7. Perform F.A.S.T. to rule out Stroke
8. Referral consideration: - Call Ambulance Victoria if severe hypertension
 - Can be discharged to see LMO if symptom free

CHECK FOR:

Is there a history of high blood pressure
 Migraine history
 Nausea & vomiting
 Irritability
 Blurring of vision
 Short of breath
 Chest pain
 Exclude Stroke with FAST Stroke Assessment:
 - Facial drooping - by asking patient to smile
 - Arms raised - to see if one side is weaker
 - Slurred Speech - ask patient to say "cant teach an old dog new tricks"
 - Time - every minute delay to Hospital = 2 million less brain cells
 Altered conscious state

CONSIDER:

Aneurysm
 Cardiac Event
 Convulsion
 Epistaxis
 Headache
 Hypertension
 Intracerebral bleed
 Migraine
 Seizure
 Stroke
 Subarachnoid Bleed
 Subdural Bleed

HYPERTENSIVE CRISIS

HYPERTENSIVE CRISIS

Hyperthermia

PLEASE REFER TO

Heat Cramp

Heat Exhaustion

Heat Stroke

Hyperventilation

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Sit fully upright
 - If unconscious: Lateral side position

2. Remove any stress

3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Chest Auscultation

5. Obtain Temperature

6. Obtain Blood Glucose Level

7. Exclude other causes before concluding Hyperventilation is due to anxiety
 - If other cause, treat as per other illness / injury

8. Referral consideration: - Call Ambulance if: - Unstable Vital Signs
 - Sign of Stroke
 - If strong evidence hyperventilation is due to anxiety,
 patient can be discharged once SOB resolved

HYPERVENTILATION

HYPERVENTILATION

CHECK FOR:

History of recent anxiety or stressful event
 Previous history of hyperventilation episodes
 Numbness of fingertips & lips
 Trembling
 Blurring of vision
 Short of breath
 Chest pain
 Altered conscious state
 Hypoglycaemia
 Poisoning
 Pneumothorax
 Pulmonary embolus

CONSIDER:

Anaphylaxis
 Asthma
 Cardiac Event
 Faint
 Hypoglycaemia
 Poisoning
 Pulmonary Embolis
 Pulmonary Oedema
 Psychiatric History
 Stressful Event

Hypoglycaemia

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Sit fully upright
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. If suspected hypoglycaemia and able to respond to commands, give either:
 - **GLUCOSE PASTE 15g** (if able to respond to commands) OR
 - 200 ml Glass of Soft Drink (if able to respond to commands) OR
 - 200 ml Glass of Fruit Juice (if able to respond to commands) OR
 - Sandwich or other high carbohydrate foods

4. Obtain Blood Glucose Level

5. If BSL <4mmol Administer: - Adult - **GLUCAGON 1 iu IM (1 ml)**
 - Child ≥ 25 kg - **GLUCAGON 1 iu IM (1 ml)**
 - Child < 25 kg - **GLUCAGON 0.5 iu IM (0.5 ml)**

6. ECG monitoring

7. Referral consideration: - Call Ambulance

HYPOGLYCAEMIA

HYPOGLYCAEMIA

CHECK FOR:

Is there a history of Diabetes
 Has patient: - taken too much insulin
 - taken insulin but forgot to eat
 Generalised muscle weakness
 Infection or fever
 Sweating
 Trembling
 Unsteady on feet
 Nausea & vomiting
 Irritability
 Confusion
 Altered conscious state

CONSIDER:

Convulsion
 Dehydration
 Faint
 Seizure
 Unconscious

Hypothermia

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay patient down & DO NOT raise legs
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Obtain Blood Glucose Level

4. ECG monitoring

5. Obtain Temperature (Hypothermic if $\leq 35^{\circ}\text{C}$)

6. If confirmed Hypothermic ($\leq 35^{\circ}\text{C}$): - a) Gentle movement of patient
 b) Remove wet clothing & dry
 c) Thermal blanket above & below patient
 d) Heaters on

7. Referral consideration: - Call Ambulance if: - Moderate to severe hypothermia
 - Unstable vital signs
 - Can be discharged once: - Normothermic and
 - Stable Vital Sign

HYPOTHERMIA

HYPOTHERMIA

CHECK FOR:

Mild Hypothermia ($32^{\circ} - 35^{\circ}$): - Shivering
 - Pale cool skin
 - Slurred speech or mumbling
 - Lack of co-ordination
 - Drowsiness

Moderate Hypothermia ($28^{\circ} - 32^{\circ}$): - Confusion
 - Slow pulse
 - Irregular pulse
 - Low blood pressure
 - Decreased breathing
 - Cardiac arrhythmias

Severe Hypothermia ($<28^{\circ}$): - Respiratory Arrest
 - Cardiac Arrest

CONSIDER:

Alcoholism
 Burns
 Drug Abuse
 Drug Overdose
 Spinal Cord Injury
 Stroke
 Syncope

Impaled Object

ASSESSMENT:

DRsABCD
VITAL SIGNS
SECONDARY SURVEY
AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - if stable: Position of comfort
- If signs of shock: Lay down
- If unconscious: Lateral side position
2. DO NOT REMOVE impaled object: Stabilise in place
3. Undertake bleed care
 - a. Pad & Bandage: may need to squeeze sides together against impaled object
 - b. If still bleeding apply second Pad & Bandage
 - c. Elevate stump
 - d. If still bleeding remove both Pads & inspect wound
 - e. Reapply Pad & Bandage
 - f. If still bleeding apply **TRAUMA TOURNIQUET**
 - g. If still bleeding apply **QUICKCLOT** & direct pressure
 - h. Apply bandage over **QUICKCLOT**
4. Check distal: - Colour
- Warmth
- Sensation
- Pulse
5. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
<84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
6. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
7. Referral consideration: - Call Ambulance

IMPALED OBJECT

IMPALED OBJECT

CHECK FOR:

Pain level
Amount of blood loss
Possible internal bleeding
Underlying organ damage

VIDEOS:

[CAT Tourniquet Instructional Video](#)

Jaw Fracture

ASSESSMENT:

DRsABCD
VITAL SIGNS
SECONDARY SURVEY
AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: Sit fully upright
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Suction mouth as required
4. Stabilise Fracture with C- Collar:
 - Only use C-Collars with sliding jaw support eg Wizloc or ClearCollar
 - DO NOT place pressure on the jaw
 - DO NOT close mouth with Collar
5. If ?? Spinal Injury and unable to lay down: Apply NEIJ in sitting position
6. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
7. Referral consideration:
 - Call Ambulance if:
 - Airway compromise
 - Uncontrolled pain
 - Can be discharged if:
 - own transport to Hospital
 - Stable airway & pain

JAW FRACTURE

JAW FRACTURE

CHECK FOR:

Pain on moving jaw
Inability to close mouth
Swelling
Bruising
Tenderness
Muscle spasm
Inability to swallow

CONSIDER:

Airway Obstruction
Head Injury
Spinal Injury

Jelly Fish Sting

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: Position of comfort
2. Carefully pick off remaining tentacles with fingers
3. Place stung area in hot water for 20 minutes
4. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Referral consideration:
 - Call Ambulance if:
 - Entonox or Penthrane administered
 - Unstable Vital Signs
 - Can be discharged if pain controlled

JELLY FISH STING

JELLY FISH STING

CHECK FOR:

Location of sting
 Pain at site of sting
 Whip like marks,
 Raised welts
 Reddened skin
 Muscle aches ad cramps
 Nausea & vomiting

CONSIDER:

Anaphylaxis
 Seizure
 Shock
 Short Of Breath

Knee Dislocation

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: Position of comfort usually half sitting
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Ice pack for 20 minutes
4. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Position Knee:
 - a. DO NOT attempt to straighten knee
 - b. Gently bend knee to comfortable position
 - c. Support with rolled up blanket under knees
 - d. Ensure no neurovascular compromise when repositioned
6. Check distal neurovascular:
 - Colour
 - Warmth
 - Sensation
 - Pulse
7. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
8. Vacuum Splint to knee:
 - Splint knee in bent position
 - Aim to limit movement of joints above & below knee
9. Recheck distal neurovascular as per step 6
10. Referral consideration: - Call Ambulance

KNEE DISLOCATION

KNEE DISLOCATION

CHECK FOR:

Pain
 Unable to move lower arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm

CONSIDER:

Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Knee Fracture
 Lower leg Fracture
 Upper Leg Fracture

Knee Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: Position of comfort usually half sitting
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Ice pack for 20 minutes
4. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Position Knee:
 - a. DO NOT attempt to straighten knee
 - b. Bend knee to comfortable position
 - c. Support with rolled up blanket under knees
 - d. Ensure no neurovascular compromise when repositioned
6. Check distal neurovascular:
 - Colour
 - Warmth
 - Sensation
 - Pulse
7. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
8. Vacuum Splint to knee:
 - Splint knee in bent position
 - Aim to limit movement of joints above & below knee
9. Recheck distal neurovascular as per step 6
10. Referral consideration: - Call Ambulance

KNEE FRACTURE

KNEE FRACTURE

CHECK FOR:

Pain
 Unable to move lower arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm

CONSIDER:

Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Knee Dislocation
 Lower leg Fracture
 Upper Leg Fracture

Lower Arm Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: Position of comfort usually half sitting

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Ice pack for 20 minutes

4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. Check distal neurovascular: - Colour
 - Warmth
 - Sensation
 - Pulse

6. If open wound: - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad

7. Arm Sling OR Vacuum Splint immobilising joint above & below fracture

8. Recheck distal neurovascular as per step 5

9. Referral consideration: - Call Ambulance if: - Entonox or Penthrane administered
 - Unstable Vital Signs
 - Can be discharged to hospital if pain controlled

LOWER ARM FRACTURE

LOWER ARM FRACTURE

CHECK FOR:

Pain
 Unable to move lower arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm
 Compartment Syndrome

CONSIDER:

Compartment Syndrome
 Damage to: - Blood Vessels
 - Ligaments
 - Muscles
 - Nerves

Lower Leg Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: Position of comfort usually alf sitting
2. If SPO2 <92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Ice pack for 20 minutes on
4. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Check distal neurovascular:
 - Colour
 - Warmth
 - Sensation
 - Pulse
6. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
7. Vacuum Splint immobilising joint above & below fracture site
8. Recheck distal neurovascular as per step 5
9. Referral consideration: - Call Ambulance

LOWER LEG FRACTURE

LOWER LEG FRACTURE

CHECK FOR:

Pain
 Unable to move lower leg & foot
 Swelling
 Bruising
 Tenderness
 Muscle spasm
 Compartment Syndrome

CONSIDER:

Compartment Syndrome
 Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

Migraine

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: If conscious: Raise head of bed 10°
 If unconscious: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level
5. Perform F.A.S.T examination to rule out Stroke
6. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
7. If pain > 7/10 consider: - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
8. Referral consideration: - Call Ambulance if: - Entonox or Penthrane administered
 - Unstable Vital Signs
 - Can be discharged if: - Pain controlled
 - No underlying neuro suspected

MIGRAINE

MIGRAINE

CHECK FOR:

Eyes sensitive to light
 Nausea & vomiting
 Stiff neck
 Vision changes
 Dizziness
 Nausea & vomiting
 High blood pressure
 Migraine history
 Exclude Stroke with FAST Stroke Assessment:
 - Facial drooping - by asking patient to smile
 - Arms raised - to see if one side is weaker
 - Slurred Speech - ask patient to say "cant teach an old dog new tricks"
 - Time - every minute delay to Hospital = 2 million less brain cells

CONSIDER:

Concussion
 Dehydration
 Traumatic Head Injury
 Hypertension
 Seizure
 Stroke

Multi Casualty Incident

The priority when first arriving on-scene is to establish the following:

C	Command & Control
S	Safety
C	Communications
A	Assessment
T	Triage
T	Treatment
T	Transport

On Arrival of the first crew:

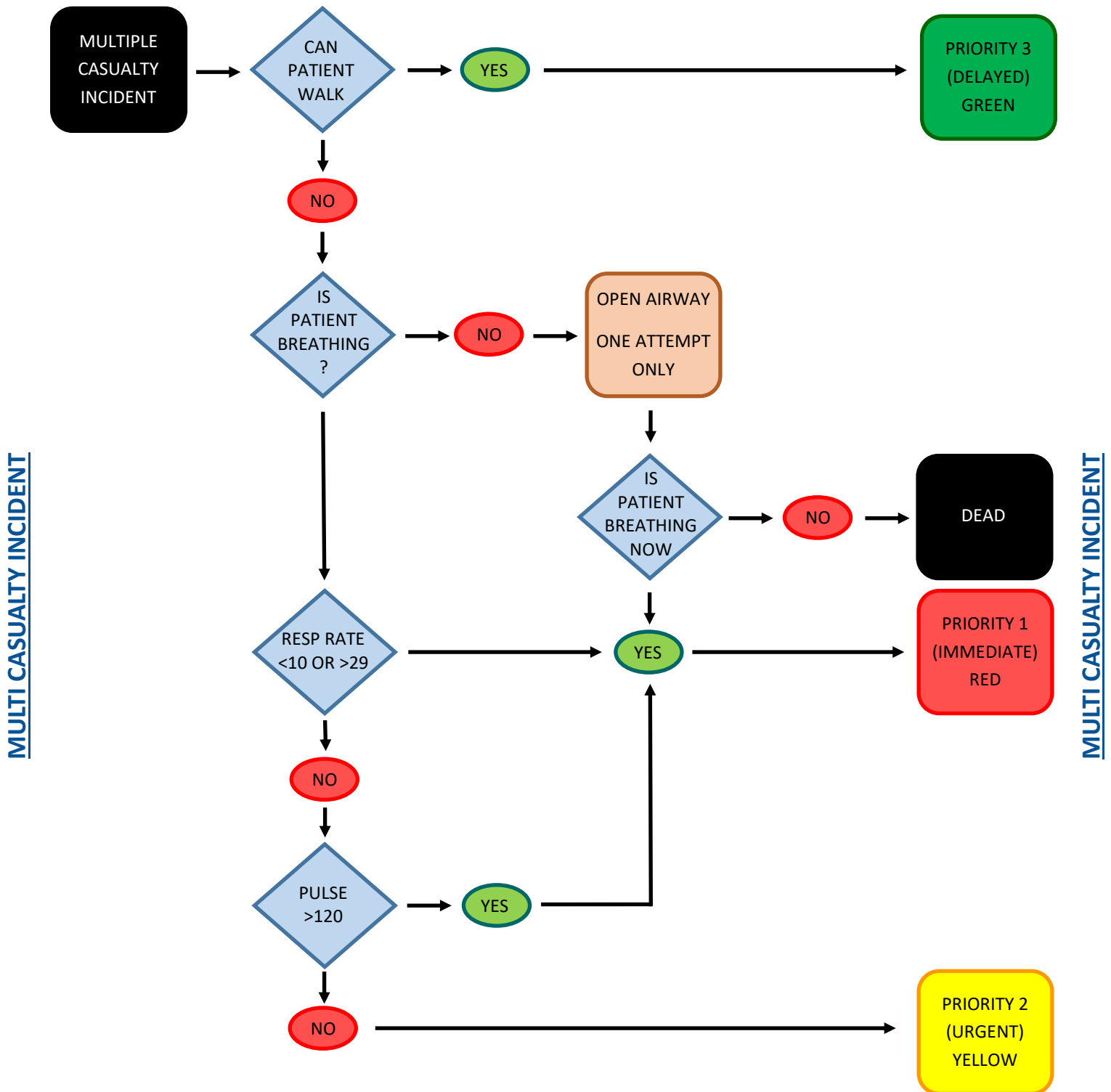
1. Immediately notify EFAAFS Controller of your arrival.
2. Advise Ambulance Victoria Dispatch Centre of the exact location of the incident, and what can be seen from initial observations on stepping out of the vehicle.
3. Assume the duties of the Triage Officer and Transport Officer, until the arrival of the first Ambulance Victoria Crew.

EFAAFS Officer 1 (takes on TRIAGE OFFICER ROLE - Pink Vest & Helmet):

1. Undertake a quick reconnaissance and provide an initial [METHANE](#) Situation Report to the Ambulance Victoria Dispatch Centre as soon as possible so Ambulance Victoria resources can be organised and dispatched:

M	Multi Casualty Incident declared
E	Exact Location
T	Type Of Incident
H	Hazards Involved
A	Access To And From Incident
N	Number of Casualties

- When ascertaining the number of casualties, only pause to undertake immediate lifesaving management (i.e. basic airway management, lateral positioning and major haemorrhage control).



- Utilise the assistance of bystanders and other emergency personnel, where available and appropriate to assist in caring for casualties.
- Apply triage tags using [SMART Triage Pack](#) found in the Multi Casualty Kit using the “Sieve” method. Liaise with the Police Coordinator and Incident Controller.
- Liaise with the Transport Officer regarding the establishment of the Ambulance Loading Point.

6. Liaise with the Field Emergency Medical Officer (if on scene). Select a suitable site for the Casualty Collecting Post (CCP).
7. Direct walking patients (green tag) to the CCP. These should be transported after transport of the higher priority patients.
8. Further classify patients using the "Sort" process. Monitor patients as they may change from one category to another.
9. Provide updated [METHANE](#) Situation Report as further details are obtained, including numbers of each triage category.
10. Hand command of the incident over to the first Paramedic crew to arrive, or to the Ambulance Commander.
11. If directed to continue Triage Officer role, direct Paramedics and medical teams to the most urgent cases until relieved.

EFAAFS Officer 2 (takes on TRANSPORT OFFICER ROLE - Blue Vest & Helmet):

1. Ensure vehicle safety and remain with vehicle.
2. Establish communication / radio with Ambulance Victoria Dispatch Centre.
3. Ensure access/ egress for incoming ambulances, use police and/or bystanders to assist with keeping the area clear.
4. Establish an ambulance loading point in consultation with the Triage Officer, and liaise with EFAAFS Triage Officer to establish the Casualty Collecting Post.
5. Establish an ambulance holding point and coordinate all ambulances arriving on scene (these must report via the Transport Officers location unless otherwise directed).
6. If directed continue Triage Officer role after Paramedic arrival. Maintain Casualty Movement Log regarding transport of all patients (the log is located inside the sleeve of the Multi Casualty TCO Folder in the Multi Casualty Kit).
7. Liaise with the Field Emergency Medical Officer (if on scene) regarding appropriate patient distribution to available hospitals.
8. Apply a smart tag bar code to the Triage Label/Disaster Tag of each victim prior to transport; ensure that the smart tag bar code corresponds to the number used on the Casualty Movement Log.

Narcotic Overdose

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious and breathing: Position of comfort
 - If altered conscious state but breathing: Lateral side position
 - If unconscious & not breathing: Lay down supine (to allow for IPPV)

2. If Unconscious with inadequate breathing:
 - Consider IPPV required ... Ventilate 6 - 7 ml/kg with BVM
 ... Aim for SPO2 > 95%

... Aim for ETCO2 Of 30 -35 mmhg

- If Heroin overdose **NALOXONE 1.6 - 2 mg IM** (single dose only)
 - If other opioid **NALOXONE 400 mcg IM** (single dose only)

- Consider either: - Oropharyngeal airway

- Nasopharyngeal airway
 - Supraglottic airway if no gag reflex

3. If SPO2 85-92% and breathing, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Obtain Temperature

5. Obtain Blood Glucose Level if altered conscious state

6. Chest Auscultation

7. ECG Monitoring

8. Referral consideration: - Call Ambulance

NARCOTIC OVERDOSE

NARCOTIC OVERDOSE

CHECK FOR:

Clear Airway
 If Snoring, roll on side (partially occluded airway)
 Slow or absent breathing
 If breathing, is it adequate:
 - Rate (> 10 per minute ... If not assist IPPV)
 - Depth (> 8 ml/kg ... if not assist IPPV)
 Fresh needle marks
 Pinpoint pupils
 Slow Pulse rate
 Low blood pressure
 Slurred speech
 Conscious level
 Time drug taken
 Route of overdose

NARCOTICS:

- Buprenorphine
- Codeine
- Fentanyl
- Heroin
- Hydrocodone
- Hydromorphone
- Meperidine
- Methadone
- Morphine
- Oxycodone
- Opium
- Tramadol

CONSIDER:

Acute Pulmonary Oedema
 Airway compromise
 Hepatitis risk

Nausea & Vomiting

(Adult)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Sit fully upright
 - If altered conscious state: Lateral side position
2. If SPO2 <92%, give **OXYGEN** by Nasal Cannula 2-6 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level
5. ECG Monitoring
6. If nausea & vomiting a concern, then:
 - **ONDANSERTRON 4 mg** oral
 - may repeat **ONDANSERTRON 4 mg** oral 20 minutes later
7. Referral consideration: - Call Ambulance if unstable Vital Signs
 - Can be discharged to Carer if nausea resolves

CHECK FOR:

Abdominal tenderness
 Fever
 Pale
 Sweating
 Low blood pressure

CONSIDER:

Abdominal Pain
 Alcoholism
 Aneurysm
 Cardiac Event
 Gastrointestinal Bleed
 Head Injury
 Heat Stroke
 Hematemesis
 Hypotension
 Motion Sickness
 Poisons
 Pregnancy
 Pulmonary Embolus
 Shock
 Vagal stimulus

NAUSEA & VOMITING - ADULT

NAUSEA & VOMITING - ADULT

Nausea & Vomiting

(Child)

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Sit fully upright
 - If altered conscious state: Lateral side position

2. If SPO2 <92%, give **OXYGEN** by Nasal Cannula 2-6 lpm

3. Obtain Temperature

4. Obtain Blood Glucose Level

5. If nausea & vomiting a concern, then:

- Child (1-4 years): **ONDANSERTRON 2 mg** oral
- Child (5-11 years): **ONDANSERTRON 4 mg** oral

6. Referral consideration: - Call Ambulance if unstable Vital Signs
 - Can be discharged to Carer if nausea resolves

CHECK FOR:

Abdominal tenderness
 Fever
 Pale
 Sweating
 Low blood pressure

CONSIDER:

Abdominal Pain
 Alcoholism
 Aneurysm (Cerebral)
 Cardiac Event
 Gastrointestinal Bleed
 Head Injury
 Heat Stroke
 Hematemesis
 Hypotension
 Motion Sickness
 Poisons
 Pregnancy
 Pulmonary Embolus
 Shock
 Vagal stimulus

NAUSEA & VOMITING - CHILD

NAUSEA & VOMITING - CHILD

Nose Bleed

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Sit fully upright with head tilted slightly forward
 If unconscious: Lateral side position
2. Nose Bleed:
 - a. Compress soft part of the nose for 10 minutes
 - b. Ask patient not to blow nose
 - c. Cold compress to back of neck and forehead
 - d. Do not allow patient to swallow blood
 - e. If still bleeding, compress for a further 10 minutes
3. Referral consideration: - Call Ambulance if:
 - Unable to cease bleeding
 - Suspected underlying neuro condition
 - Unstable Vital Signs
 - Can be discharged if bleed stops and Vital Signs stable

CHECK FOR:

History of onset
 Activity prior to nose bleed
 Estimated blood loss
 History of anti-coagulant therapy
 High blood pressure
 Exclude Stroke with FAST Stroke Assessment:

- Facial drooping - by asking patient to smile
- Arms raised - to see if one side is weaker
- Slurred Speech - ask patient to say "cant teach an old dog new tricks"
- Time - every minute delay to Hospital = 2 million less brain cells

CONSIDER:

Cancer
 Foreign Body
 Fractured Nose
 Hypertension
 Nasal Trauma (Nose Picking)
 Stroke
 Traumatic Head Injury
 Upper respiratory Tract Infection

NOSE BLEED

NOSE BLEED

Oxygen Therapy

This information and associated CPGs should only be applied to patients aged ≥ 12 years.

Mx principles

- Oxygen is a treatment for [HYPOXAEMIA](#), not breathlessness. O₂ has not been shown to have any effect on the sensation of breathlessness in non-hypoxaemic patients
- Treatment is aimed at achieving normal or near normal [SPO₂](#) in acutely ill patients. Oxygen should be administered to achieve a target SpO₂ while continuously monitoring the patient for any changes in condition.
- Oxygen should not be administered routinely to patients with normal SpO₂. This especially includes those with stroke, ACS and arrhythmias where oxygen can be detrimental to outcome.
- In patients who are acutely short of breath, the administration of Oxygen should be prioritised before obtaining an Oxygen saturation reading. Oxygen can later be titrated to reach a desired target saturation range.
- If pulse oximetry is not available or unreliable, provide an initial Oxygen dose of 2 - 6 L/min via nasal cannulae or 5 - 10 L/min via face mask until a reliable SpO₂ reading can be obtained or symptoms resolve.

Special circumstances

- Early aggressive Oxygen administration may benefit patients who develop critical illnesses and are hemodynamically unstable, such as cardiac arrest or resuscitation; major trauma / head injury; shock; severe sepsis; seizures and anaphylaxis. In the first instance, Oxygen should be administered with the aim of achieving an SpO₂ of 100%. Once the patient is hemodynamically stable, the Oxygen dose should be titrated to 92 - 96%.
- Patients with chronic hypoxaemia (e.g. COPD, neuromuscular disorders, obesity etc.) who develop critical illnesses as above should have the same initial aggressive Oxygen administration. Once the patient is hemodynamically stable, the Oxygen dose should be titrated to the same target saturations as other critically ill patients.
- [COPD](#) should be suspected in any patient over 40 years old who is: a smoker or ex-smoker, experiencing dyspnoea that is progressive, persistent and worse with exercise, has a chronic cough or chronic sputum production, has a family history of COPD.
- Special circumstances occur in the setting of paraquat and bleomycin poisoning where the use of Oxygen therapy may prove detrimental to the patient. The maintenance of prophylactic hypoxaemia in these patients (SpO₂ of 85 - 88%) is recommended.

TAKEN FROM AMBULANCE VICTORIA CLINICAL PRACTICE GUIDELINES 2021

Further Notes

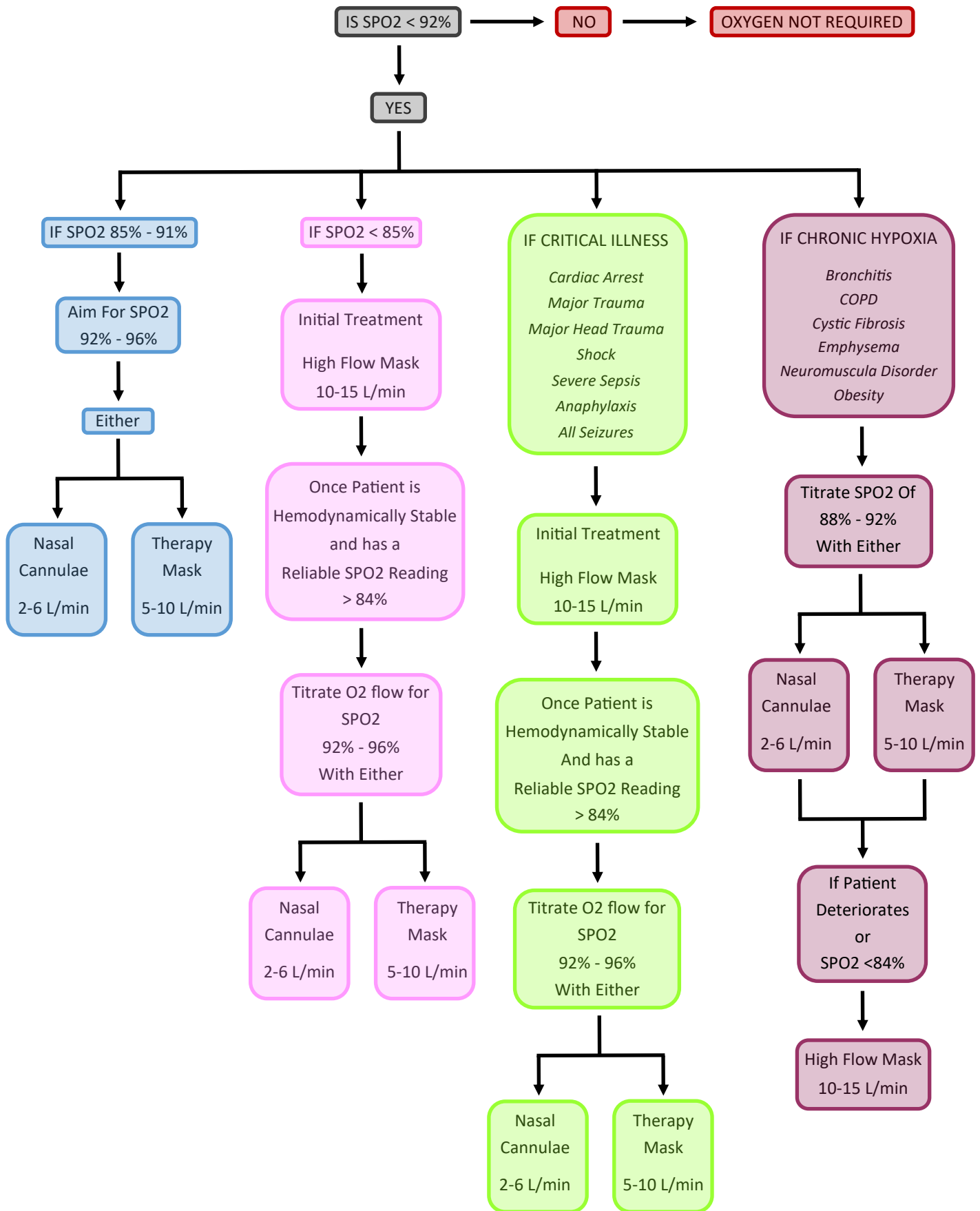
- Pulse oximetry may be particularly unreliable in patients with peripheral vascular disease, severe asthma, severe anaemia, cold extremities or peripherally 'shut down' (eg as seen in shock), severe hypotension and carbon monoxide poisoning.
- Pulse oximetry can be unreliable in the setting of severe hypoxaemia. An SpO₂ reading below 80% increases the chance of being inaccurate.
- All patients suspected of having inhaled potentially toxic gases (e.g. house fires, carbon monoxide poisoning, etc.) should be given high dose Oxygen until arrival at hospital. In these clinical situations, patients who show no signs of breathlessness may still benefit from this treatment.
- Where the patient may have been exposed to other poisons, administer Oxygen to maintain an SpO₂ of 92- 96%. Poisons information can be contacted via the clinician on 13 11 26.
- Patients with medically diagnosed pneumothorax, but without an intercostal catheter in situ, may benefit from high dose Oxygen regardless of SpO₂.
- Irrespective of SpO₂, patient tidal volume should be assessed to ensure ventilation is adequate. Oxygen exchange is at its greatest in the upright position. Unless other clinical problems determine otherwise, the upright position is the preferred position when administering Oxygen.
- Ensure the patient's fingertip are clean of soil or nail polish. Both may affect the reliability of the pulse oximeter reading. The presence of nail infection may also cause falsely low readings.
- Take due care with patients who show evidence of anxiety/panic disorders (e.g. hyperventilation syndrome). Oxygen is not required, however no attempt should be made to retain CO₂ (e.g. paper bag breathing).
- All women with evidence of hypoxaemia who are more than 20 weeks pregnant should be managed with left lateral tilt to improve cardiac output.
- Face masks should not be used for flow rates < 5 L/min due to the risk of CO₂ retention. Nasal cannulae are likely to be just as effective with mouth-breathers. However, where nasal passages are congested or blocked, face masks should be used to deliver Oxygen therapy.

Videos: [Mechanism of Breathing](#)
[Control of Breathing](#)
[Oxygen Physiology](#)

Oxygen Therapy Flow Chart

OXYGEN THERAPY FLOW CHART

OXYGEN THERAPY FLOW CHART



Bag-Valve-Mask
(Adult)

0 L/min - 21%
3 L/min - 44%
8 L/min - 81%
15 L/min - 96%

Bag-Valve-Mask
(Child)

0 L/min - 21%
3 L/min - 66%
8 L/min - 99%
15 L/min - 99%

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

Nasal Cannula

1 L/min - 20%
2 L/min - 24%
3 L/min - 28%
4 L/min - 32%
5 L/min - 36%

Used for
SPO2 85% - 91%

Therapy Mask

5 L/min - 40%
6 L/min - 44%
7 L/min - 48%
8 L/min - 52%
9 L/min - 56%
10 L/min - 60%

Used for
SPO2 85% - 91%

High Flow Mask

10 L/min - 64%
11 L/min - 68%
12 L/min - 72%
13 L/min - 76%
14 L/min - 80%
15 L/min - 84%

Used for
SPO2 <84%

OXYGEN THERAPY FLOW RATES

OXYGEN THERAPY FLOW RATES

- VIDEOS: [Hypoxia](#)
[Respiratory Alkalosis](#)
[Respiratory Acidosis](#)

PLEASE NOTE

These FIO% are based on laboratory tests in ideal conditions and should be used as a guide only.
FIO% may vary due to an incorrectly fitted mask, changes in patient respiratory rates, or brand of device.

Pain Scales

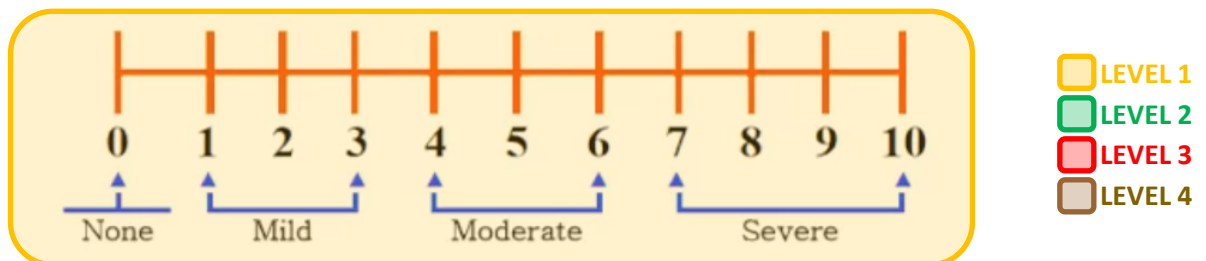
Pain scales are tools healthcare providers use to help measure and better define a person's pain. The type of analgesia given will be based on the level of pain the patient perceives. When recording the analgesia given to the patient, EFAAFS staff must record the change in pain level as well as any changes to conscious state and vital signs. All patients receiving Entonox or Penthrane must go by Ambulance to hospital and the PCR will be reviewed by the EFAAFS Clinical Oversight Committee.

Age 10 and over

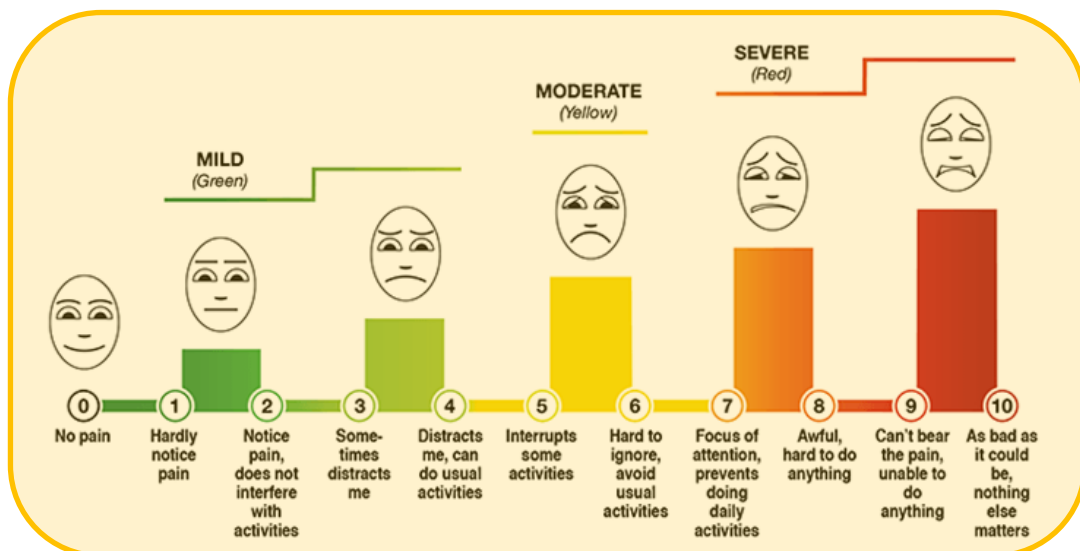
The [NUMERICAL PAIN SCALE](#) is designed to be used by those 10 years and older who are able to adequately communicate with the Health Care Provider. It is one of the most commonly used pain scales in health care. The rating is based on the patients perception of their pain and not the opinion of Health Care providers.

The patient will verbally rate their pain from 0 to 10. Generally:

- 0 = indicates the absence of pain,
- 5 = represents a level of pain that would keep the patient from sleeping
- 10 = represents the most intense pain possible



The [DVPRS \(Defence & Veterans Pain Rating Scale\)](#) is a new scale based on the Numerical Pain Scale, but offers a more versatile pain scale system that can be used for those 10 years and older who have an inability to properly communicate or describe their pain intensity.

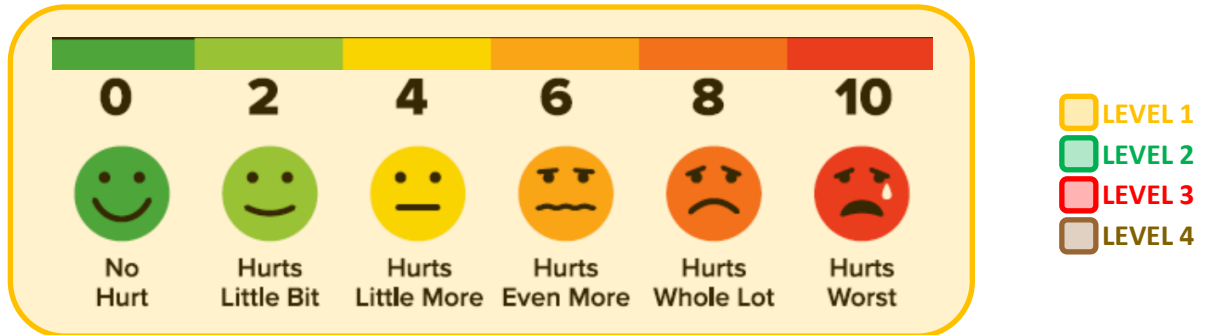


PAIN SCALES

PAIN SCALES

Children 3-7 years

The **WONG-BAKER PAIN RATING SCALE** was originally created with children for children to help them communicate about their pain. The scale is used around the world, and whilst primarily used for children 3 - 7 years of age, it can also be used for older children and adults where communication issues exist.



Children < 5 years

The **FLACC** (face, legs, activity, crying, and consolability) pain scale was developed to help medical staff measure the level of pain in children who are too young to cooperate verbally. It can also be used in adults who are unable to communicate.

PAIN SCALES

PAIN SCALES

	0	1	2
FACE	No particular expression or smile	Occasional grimace or frown, Withdrawn, Disinterested	Frequent to constant frown, Clenching jaw, Quivering chin
LEGS	Normal position or relaxed	Uneasy, Restless, Tense,	Kicking or legs drawn up
ACTIVITY	Lying quietly, Normal position, Moves easily	Squirming, Tense, Shifting back & Forth, Hesitant to move, Guarding	Arched, rigid or jerking, fixed position, Rubbing of body parts
CRY	No cry or moaning (awake or asleep)	Moans or whimpers, Occasional cries, sighs or complaint	Cries steadily, Screams, Sobs, Moans, Groans, Frequent Complaints
CONSOLABILITY	Calm, Content, Relaxed, Needs no consoling	Reassured by hugging, talking to, or distracting	Difficult to console or comfort

0 No pain	1 - 3 Mild	4 - 6 Moderate	7 - 10 Severe
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Pelvic Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Lay patient down
2. If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level if altered conscious state
5. Check distal:
 - Colour
 - Warmth
 - Sensation
 - Pulse
6. Ice pack for 20 minutes
7. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
8. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
9. Apply SAM Pelvic Splint
10. Secure patient to padded Long Board or Vacuum Mattress
11. Recheck distal neurovascular as per step 5
12. Referral consideration: - Call Ambulance

PELVIC FRACTURE

PELVIC FRACTURE

CHECK FOR:

Pain
 Unable to move legs
 Swelling
 Bruising
 Tenderness
 Muscle spasm
 Blood loss (up to 1500 mls)

VIDEOS: [SAM Pelvic Splint 1](#)
[SAM Pelvic Splint 2](#)

CONSIDER:

Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Ruptured Bladder
 Spinal Injury

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Perfusion Assessment

(Adult)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

These observations and criteria need to be taken in context with:

- The patient's presenting problem.
- The patient's prescribed medications.
- Repeated observations and the trends shown.
- Response to management.

BP alone does not determine perfusion status.

Perfusion definition

The ability of the cardiovascular system to provide tissues with an adequate oxygenated blood supply to meet their functional demands at that time and to effectively remove the associated metabolic waste products.

Perfusion assessment

Other factors may affect the interpretation of the observations made, including:

- ambient temperature
- anxiety
- any cause of altered consciousness.

	SKIN	PULSE	BP	CONSCIOUS STATE
ADEQUATE PERFUSION	Warm Pink Dry	60 - 100 bpm	> 100 mmHg Systolic	Alert: Orientated to Person / Time / Place
BORDERLINE PERFUSION	Warm Pink Dry	50 - 100 bpm	80 - 100 mmHg Systolic	Alert: Orientated to Person / Time / Place
INADEQUATE PERFUSION	Warm Pink Dry	< 50 bpm or ≥ 120 bpm	60 - 80 mmHg Systolic	Either Alert or Altered in orientation to time & place
EXTREMELY POOR PERFUSION	Warm Pink Dry	< 50 bpm or ≥ 120 bpm	< 60 mmHg Systolic OR Unrecordable	Altered Conscious State or Unconscious
NO PERFUSION	Warm Pink Dry	Absence of Palpable Pulse	Unrecordable	Unrecordable

VIDEOS: [Cardiac Output](#)

PERFUSION ASSESSMENT - ADULT

PERFUSION ASSESSMENT - ADULT

Perfusion Assessment

(Child)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

Normal blood volume

- Newborn - 80 mL/kg
- Infant and child - 70 mL/kg

Adequate Perfusion

Age	HR	BP
Newborn (<24 hrs)	110 - 170 bpm	>60 mmHg
Small infant (<3 mth)	110 - 170 bpm	>60 mmHg
Large infant (3-12 mth)	105 - 165 bpm	>65 mmHg
Small child (1-4 yrs)	85 - 150 bpm	>70 mmHg
Medium child (5-11 yrs)	70 - 135 bpm	>80 mmHg

SKIN: warm, pink, dry

CONSCIOUS STATE: Alert and active

Inadequate Perfusion

Age	HR bpm	RR breath / min	SBP mmHg
Newborn (< 24 hours)	< 110 or > 170	< 25 or > 60	< 60
Small infant (< 3 months)	< 110 or > 170	< 25 or > 60	< 60
Large infant (3 – 12 months)	< 105 or > 165	< 25 or > 55	< 65
Small child (1 – 4 years)	< 85 or > 150	< 20 or > 40	< 70
Medium Child (5 – 11 years)	< 70 or > 135	< 16 or > 34	< 80

And: - GCS < 15 or not alert (as per AVPU)

- SpO2 < 96 %

- Unexplained pain

PERFUSION ASSESSMENT - CHILD

PERFUSION ASSESSMENT - CHILD

Poisoning

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Position of comfort
 - If unconscious: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level if altered conscious state
5. Ring POISON INFORMATION on 13 11 26 and follow advice & instructions given
6. ECG Monitoring if cardiac side effects of medication / drugs / toxins
7. Referral consideration: - Follow advice & instructions of Poisons Information Line

POISONING

CHECK FOR:

Cause: - Drugs
 - Chemicals
 Short of breath
 Noisy breathing
 Cardiac arrhythmias
 Low Blood Pressure
 Conscious state

POISONING

CONSIDER:

Airway Burns
 Anaphylaxis
 Drug Overdose
 Heart Arrhythmias
 Inhalation of Poisonous gases
 Trauma to Airway

Psychostimulant Overdose

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Position of comfort
 - If altered conscious state: Lateral side position
2. Protect yourself and patient from injury
3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
4. Obtain Temperature:
5. If hyperthermic:
 - a. Remove excess clothing
 - b. Cool bath or shower
 - c. Spray water on skin with fanning
 - d. Icepacks to neck, underarms, groin
 - e. Rehydrate by drinking: - cool water
 - rehydration drinks
6. Obtain Blood Glucose Level
7. ECG Monitoring
8. Referral consideration: - Call Ambulance

CHECK FOR:

Amount of drug taken
 Time drug taken
 Method of overdose: - Oral
 - Snorted
 - Injection
 Was there a mixture of drugs taken
 Lowered inhibition
 Enhanced sensory perception
 Raised blood pressure
 Rapid heart rate
 Nausea
 Chills & sweating
 Sharp dangerous rise in body temperature
 - this may lead to kidney failure and death
 Conscious state

- PSYCHOSTIMULANT**
- MDMA
 - Amphetamine
 - Cathinones
 - Methamphetamine
 - Methylphenidate
 - Khat

CONSIDER:

Hyperthermia
 Rhabdomyolysis

PSYCHOSTIMULANT OVERDOSE

PSYCHOSTIMULANT OVERDOSE

Red Back Spider Bite

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Position of comfort
 - If unconscious: Lateral side position

2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

3. Apply cold compresses to bite site for 20 minutes

4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. Referral consideration: - Call Ambulance

CHECK FOR:

Location of bite
 Pain at site of bite
 Redness
 Swelling
 Hot to touch
 Nausea & vomiting
 Profuse sweating
 Abdominal pain

CONSIDER:

Anaphylaxis
 Seizure
 Shock
 Syncope
 Short Of Breath

RED BACK SPIDER BITE

RED BACK SPIDER BITE

Respiratory Assessment (Adult)

RESPIRATORY ASSESSMENT - ADULT

RESPIRATORY ASSESSMENT - ADULT

	NORMAL	MILD	MODERATE	SEVERE
APPEARANCE	Calm, Quiet	Calm or Mildly anxious	Distressed or Anxious	Distressed, Anxious, Fighting to breathe, Exhausted, Catatonic
SPEECH	Calm & Steady sentences	Full sentences	Short phrases only	Words only or Unable to speak
BREATH SOUNDS	Usually quiet	Able to cough	Able to cough	Unable to cough
CHEST AUSCULTATION	No crackles or Scattered fine basal crackles	ASTHMA Expiratory wheeze +/- inspiratory wheeze LVF may be some fine crackles at the bases	ASTHMA Expiratory wheeze +/- inspiratory wheeze LVF Crackles at the bases to the midzone	ASTHMA Expiratory wheeze +/- inspiratory wheeze, may be no breath sounds LVF Fine crackles full field, with possible wheeze
RESPIRATORY RATE	12 - 16	16 - 20	> 20	> 20 or < 8
RESPIRATORY RHYTHM	Regular even cycles	ASTHMA May have slightly prolonged expiratory phase	ASTHMA Prolonged expiratory phase	ASTHMA Prolonged expiratory phase
WORK OF BREATHING	Normal chest movement	Slight increase in normal chest movement	Marked chest movement +/- use of accessory muscles	Marked chest movement with accessory muscle use, intercostal retraction +/- tracheal tugging
HEART RATE	60 - 100 bpm	60 - 100 bpm	100 - 120 bpm	>120 bpm Bradycardia is a late sign
SKIN	Normal	Normal	Pale & sweaty	Pale & sweaty =/- cyanosis
CONSCIOUS STATE	Alert	Alert	May be altered	Altered or Unconscious





ASTHMA ASSESSMENT CHART > 16 YRS			
SYMPTOMS	MILD	MODERATE	SEVERE/LIFE THREATENING
Appearance	NO	NO	YES Paradoxical Chest Movement may be seen
Talks in	Sentences	Phrases	Words
Heart Rate	< 100 / min	100 - 120 / min	> 120 / min
Central Cyanosis	Absent	May be present	Likely to be present
Wheeze Intensity	Variable	Moderate to loud	Often Quiet
PERF	≥ 75% predicted (or of best if known)	50-75% predicted (or of best if known)	<50% predicted (or of best if known) or less than 100L/min
SPO2			Less than 90% Cyanosis may be present

Respiratory Assessment (Child)

Start your assessment with the ‘hands off’ approach, allowing the child to assume a position of comfort with carer. With the assistance of caregivers to expose the chest, the following can be done without approaching &/or touching the infant or child:

- Observe the infant or child’s behaviour, colour, presence of respiratory muscle recession and categorise accordingly with the table above.
- Obtain the respiratory rate.
- Observe for equal rise and fall of the chest.
- Without a stethoscope listen for any sounds such as coughing, nasal congestion, snoring, gurgling, wheezing or stridor. Finish the respiratory assessment with the ‘hands on’ elements:
 - Ensure the trachea is centred with no deviation.
 - Auscultate the chest.
- Obtain and document a full set of Vital Signs

PAEDIATRIC: NORMAL RESPIRATORY RANGE

Age	 < 1 year	 1-4 years	 5-11 years	 > 12 years
Respiratory rate (RR) (breaths/minute)	21-45	16-35	16-30	16-25
Heart rate (HR) (beats/minute)	100-159	90-139	80-129	60-119

PAEDIATRIC RESPIRATORY DISTRESS ASSESSMENT

	Mild ALL the following:	Moderate accessory muscle use and ANY of the following:	Severe accessory muscle use and ANY of the following:	Life-threatening ANY of the following:
Behaviour	Alert Talks in sentences	Occasional irritability Some limitation in ability to talk - talking in phrases	Agitated, restless, distressed Marked limitation to ability to talk - talking in words only	Drowsy or unconscious Unable to vocalise due to dyspnoea
Posture	Can walk or crawl	Lethargic Tripod sitting	Lethargic Tripod sitting	Collapsed or exhausted
Breathing	Mild accessory muscle use	Moderate accessory muscle use	Severe accessory muscle use	Severe accessory muscle use or poor respiratory effort
Skin Colour	Normal	Pale	Cyanosis	Cyanosis
Respiratory Rate	Normal or mild tachypnoea	Tachypnoea	Tachypnoea	Severe tachypnoea or bradypnoea or apnoea
Heart Rate	Normal or mild tachycardia	Tachycardia	Tachycardia	Cardiac arrhythmia or bradycardia (preterminal sign)

PAEDIATRIC RESPIRATORY ASSESSMENT PAGES TAKEN FROM QUEENSLAND ROYAL CHILDREN'S HOSPITAL

Sedative Overdose

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious and breathing: Position of comfort
 - If altered conscious state but breathing: Lateral side position
 - If unconscious & not breathing adequately: Lay patient down (to allow for effective IPPV with BVM)

2. If unconscious with inadequate breathing:
 - Consider IPPV required ... Ventilate 6 - 7 ml/kg with BVM

... Aim for SPO2 to > 95%

... Aim for ETCO2 Of 30 -35 mmhg

- Consider use of either: - Oropharyngeal airway

- Nasopharyngeal airway

- Supraglottic airway if no gag reflex

3. If SPO2 <92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Obtain Temperature

5. Obtain Blood Glucose Level

6. Chest Auscultation

7. ECG Monitoring

8. Referral consideration: - Call Ambulance

SEDATIVE OVERDOSE

SEDATIVE OVERDOSE

CHECK FOR:

Amount of drug taken
 Time drug taken
 Method of overdose:
 - Oral
 - Snorted
 - Injection
 Was there a mixture of drugs taken
 Drowsiness
 Decreased anxiety
 Muscle relaxation
 Impaired mental function & Judgement
 Confusion
 Slurred speech
 If Snoring, roll on side (partially occluded airway)
 Slow or absent breathing
 If breathing, is it adequate:
 - Rate (> 10 per minute ... If not assist IPPV)
 - Depth (> 8 ml/kg ... if not assist IPPV)

- SEDATIVES:**
- Alcohol
 - Benzodiazepines
 - Flunitrazepam
 - Kratom
 - Barbiturates
 - Cannabinoids
 - GHB

Seizure

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. If still seizing: - Remove any objects that may hurt patient
 - Do not try to hold patient down
2. Position: - If conscious: Position of comfort
 - If unconscious: Lateral side position
3. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
 ... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
4. Obtain Temperature
5. Obtain Blood Glucose Level
6. Determine: - Type of seizure activity
 - Length of seizure activity
 - Length of unconsciousness
7. Referral consideration: - Call Ambulance if:
 - Patient remains unconscious
 - Continues to fit
 - Unstable Vital Signs
 - Can be discharged if - typical seizure and carer present
 - recovered per normal presentation

SEIZURE

SEIZURE

IF SEIZURE LASTS GREAT THAN 5 MINUTES OR REPEATED SEIZURES WITHOUT GAINING CONSCIOUSNESS, TREAT AS PER STATUS EPILEPTICUS

CHECK FOR:

History of prior seizures
 Check for Medi-Alert Bracelet
 Recent traumatic event
 Absent period
 Muscle twitching
 Tonic - Clonic movements
 Eye jerking
 Incontinent of urine
 No memory of event
 Altered conscious state

CONSIDER:

Concussion
 Drug Abuse
 Febrile Convulsion
 Epilepsy
 Headache
 Head Injury
 Hypoglycaemia
 Hypotension
 Hypoxia
 Metabolic Disorder
 Pre-Arrest Seizure
 Shock
 Stroke
 Tumour

Shock

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay down & legs raised
- If unconscious: Lateral side position
2. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
- Nasal Cannula 2-6 lpm
- Therapy Mask 5-10 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level if altered conscious state
5. Chest Auscultation
6. ECG Monitoring
7. Treat specific cause as listed below
8. Referral consideration: - Call Ambulance

SHOCK

SHOCK

CHECK FOR:

Dizziness
 Confusion
 Pale skin
 Clammy skin to touch
 Cold skin to touch
 Rapid heart rate
 Low blood pressure
 Rapid breathing

CONSIDER:

Container Volume ↑:

- Anaphylaxis
- Septic (Infection)
- Neurogenic (Spinal Injury)

Volume Loss:

- External Bleeding
- Internal Bleeding
- Burns
- Vomiting / Diarrhoea (esp in children)
- Dehydration

Pump Failure:

- Heart Attack
- Cardiac Tamponade
- Tension Pneumothorax

Short of Breath

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Sit fully upright
2. If SPO2 85-91%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level if altered conscious state
5. Chest Auscultation
6. ECG Monitoring
7. Look for specific cause and treat appropriately
8. Referral consideration: - Call Ambulance if: - Unknown cause
 - Unresolved shortness of breath
 - Unstable Vital Signs
 - Can be discharged if known cause & now resolved

CHECK FOR:

History of previous breathing problems
 Rapid breathing
 Prolonged expiration
 Reduced ability to speak sentences
 Abnormal breath sounds on chest Auscultation
 Decreased breath sounds
 Hypoxia:
 - Restlessness
 - Irritability
 - Cyanosis
 - Decreased conscious level

CONSIDER:

Airway Burns	Epiglottitis
Anxiety	Failure to take medication
Anaphylaxis	Haemothorax
Asthma	Hyperventilation
Cancer	Obstructed Airway
Chest Injury	Pneumothorax
Congestive Heart Failure	Pulmonary Embolus
COPD	Pulmonary Oedema
Croup	Shock
Drug Abuse	Smoke inhalation
Emphysema	Toxic gases

SHORT OF BREATH

SHORT OF BREATH

Shoulder Dislocation

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort usually half sitting
2. If SPO2 85-91%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. If open wound: - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
4. Check distal neurovascular:
 - Colour
 - Warmth
 - Sensation
 - Pulse
5. Ice pack for 20 minutes
6. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
7. Elevation Sling & secure to torso
8. Recheck distal neurovascular as per step 4
9. Referral consideration:
 - Call Ambulance if:
 - Shoulder still dislocated
 - Entonox or Penthrane given
 - Can discharge if repositioned recommending LMO review

SHOULDER DISLOCATION

SHOULDER DISLOCATION

CHECK FOR:

Pain
 Unable to move arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm

CONSIDER:

Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Haemothorax
 Pneumothorax
 Rib Fractures
 Tension Pneumothorax

Smoke Inhalation (Adult)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR AND/OR SECONDARY SURVEY
AMPLE

TREATMENT:

1. Position: - If short of breath sit fully upright
2. Give Oxygen via High Flow Face Mask at 15 lpm even if no breathing problems
3. Chest Auscultation
4. If mild to moderate respiratory distress with bronchospasm or stridor
 - **SALBUTAMOL** via Spacer:
 - a. 1 Puff / 4 Breaths (4 times)
 - b. Wait 4 minutes
 - c. Repeat steps a & b as required
5. If severe SOB with bronchospasm or stridor:
 - **SALBUTAMOL 10 mg** via Nebulizer initially, then
 - **SALBUTAMOL 5 mg** via Nebuliser 5 minutely until symptoms resolve
 - **ATROVENT 500 mcg** via Nebuliser (once only)
6. If airway oedema / stridor: - **ADRENALINE 5 mg** via Nebuliser as required
7. Obtain Temperature
8. Obtain Blood Glucose Level if altered conscious state
9. ECG Monitoring
10. Ring POISONS INFORMATION on 131 126 for further advice if required
11. Referral consideration: - Call Ambulance

SMOKE INHALATION - ADULT

SMOKE INHALATION - ADULT

CHECK FOR:

Severity of SOB
Rate of breathing
Prolonged expiration
Reduced ability to speak
Wheezing
Decreased breath sounds
Hypoxia:

- Restlessness
- Irritability
- Cyanosis
- Decreased conscious level

 Other injuries

[Click here for
Respiratory State Chart](#)

CONSIDER:

Burns
Carbon Monoxide Poisoning
Pulmonary Oedema
Short Of Breath

Smoke Inhalation (Child)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR AND/OR SECONDARY SURVEY
AMPLE

TREATMENT:

1. Position: - Sit fully upright if short of breath
2. Give Oxygen via High Flow Face Mask at 15 lpm even if no breathing problems
3. Chest Auscultation
4. If mild to moderate respiratory distress with bronchospasm or stridor:
 - **SALBUTAMOL** via Spacer:
 - a. 1 Puff / 4 Breaths (4 times)
 - b. Wait 4 minutes
 - c. Repeat steps a & b as required
5. If airway oedema with stridor:
 - 6-11 yrs **ADRENALINE 5 mg** via Nebuliser at 20 min intervals
 - 2-5 yrs **ADRENALINE 2.5 mg** via Nebuliser at 20 min intervals
6. If severe SOB with bronchospasm or Stridor:
 - If > 6 yrs ... **SALBUTAMOL 5 mg** via Nebulizer every 20 minutes
 - If 2-5 yrs ... **SALBUTAMOL 2.5 mg** via Nebulizer every 20 minutes
 - **ATROVENT 250 mcg** via Nebuliser (once only)
7. Obtain Temperature
8. Obtain Blood Glucose Level if altered conscious state
9. ECG Monitoring
10. Ring POISONS INFORMATION on 131 126 for further advice if required
11. Referral consideration: - Call Ambulance

SMOKE INHALATION - CHILD

SMOKE INHALATION - CHILD

CHECK FOR:

Rapid breathing
Prolonged expiration
Reduced ability to speak
Wheezing
Decreased breath sounds
Hypoxia:

- Restlessness
- Irritability
- Cyanosis
- Decreased conscious level

 Other injuries

[Click here for Respiratory State Chart](#)

CONSIDER:

Burns
Carbon Monoxide Poisoning
Pulmonary Oedema
Short Of Breath

Snake Bite

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay patient down
 - If unconscious: Lateral side position

2. Pressure immobilisation bandage:
 a. Do not wash bite area
 b. Apply Broad Bandage (minimum 10 cm wide) over bite
 - Apply tightly without stopping blood flow
 c. Apply Elastic Bandage from finger/toes & working up full limb
 - Apply tightly without stopping blood flow
 d. Splint the limb to prevent movement
 e. Mark area of bite
 f. Record time of bite & bandage applied

3. If SPO2 85-91%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

4. Obtain Temperature

5. Obtain Blood Glucose Level if altered conscious state

6. ECG Monitoring

7. Referral consideration: - Call Ambulance

SNAKE BITE

SNAKE BITE

CHECK FOR:

Location of bite
 Pain at site of bite
 Visible marks of one or both fangs
 Multiple bites may occur
 Nausea & vomiting
 Diarrhoea
 Headache
 Drowsiness
 Dizziness
 Double or blurred vision
 Difficulty swallowing
 Muscle weakness
 Breathing difficulties
 Altered conscious state
 Cardiac Arrest

CONSIDER:

Anaphylaxis
 Rhabdomyolysis
 Seizure
 Shock
 Short Of Breath

VIDEOS: [Pressure Immobilisation Bandage](#)

Spinal Injury

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Lay patient down as straight as possible
 - If unconscious: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Obtain Temperature
4. Obtain Blood Glucose Level if altered conscious state
5. M/S x 4 examination
6. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
7. C-Collar
8. Immobilise to Padded Long Spine Board (LSB) or Vacuum Mattress
 - DO NOT immobilise head in isolation to torso
 - Occipital Head Padding **MUST BE USED** in adults
 - Board Pad **MUST BE USED** when immobilising to LSB
 - Lumber padding **MUST BE USED** when using Vacuum Mattress or LSB
 - If unable to lay down due to SOB, apply NIEJ in half/high sitting position
9. If nausea & vomiting maybe a concern, then:
 - Child (1-4 years): **ONDANSERTRON 2 mg** oral
 - Child (5-11 years): **ONDANSERTRON 4 mg** oral
 - Adult **ONDANSERTRON 4 mg** oral (may repeat once 20 minutes later)
10. Referral consideration: - Call Ambulance

SPINAL INJURY

SPINAL INJURY

CHECK FOR:

Mechanism of injury
 Pain
 Tenderness
 Nausea & vomiting
 Below level of injury:
 - Pins & needles
 - Heaviness
 - Loss of motor function
 - Loss of sensory function
 Spinal Shock:
 - Normal to slow pulse rate
 - Hypotension

CRITERIA TO IMMOBILISE:

- Midline pain or tenderness
- Loss of motor or sensory function
- Altered conscious state or Unconscious
- Age ≥65 years
- History of: - bone weakening disease
 - muscle weakening disease
 - previous spinal injury
- Intoxication
- Significant distracting injury
- Unable to rotate neck 45° without pain

Sprain/Strain

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort

2. Check distal: - Colour
 - Warmth
 - Sensation
 - Pulse

3. RICE: **R** Rest the Injured part
I Ice for 20 minutes on / 2 hours off for first 48-72 hours
C Compression bandage
E Elevate the limb

4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

5. Referral consideration: - Call Ambulance if Entonox or Penthrane administered
 - Can be discharged if Carer able to transport to LMO

CHECK FOR:

Pain
 Immobile
 Loss of movement
 Swelling
 Bruising
 Tenderness
 Muscle spasm

CONSIDER:

Fracture
 Muscle Damage
 Nerve Damage

VIDEOS:

[Ankle injuries](#)

[Hip Injuries](#)

[Achilles Tendon Injury](#)

[Knee Injuries](#)

[Elbow Injuries](#)

[Quadricep Tendon Rupture](#)

[Hamstring Injuries](#)

[Shoulder Injuries](#)

SPRAIN / STRAIN

SPRAIN / STRAIN

Status Epilepticus

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. If still seizing: - Remove any objects that may hurt patient
 - Do not try to hold patient down

2. Position: - If conscious: Position of comfort
 - If unconscious & breathing adequately: Lateral side position
 - If unconscious & not breathing adequately: Lay down to perform IPPV

3. If unconscious with inadequate breathing:
 - Consider IPPV required ... Ventilate 6 - 7 ml/kg with BVM

... Aim for SPO2 > 95%

... Aim for ETCO2 Of 30 -35 mmhg

- Consider use of either: - Oropharyngeal airway

- Nasopharyngeal airway
 - Supraglottic airway if no gag reflex

4. Give **OXYGEN** by High Flow Face Mask 10-15 lpm
 ... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm

5. Obtain Temperature

6. Obtain Blood Glucose Level

7. Determine: - Type of seizure activity
 - Length of seizure activity
 - Length of unconsciousness
 - Length of time between seizures

8. Referral consideration: - Call Ambulance

STATUS EPILEPTICUS

STATUS EPILEPTICUS

CHECK FOR:

History of prior seizures
 Absent period
 Muscle twitching
 Tonic - Clonic movements
 Eye jerking
 Frothing at the mouth
 Incontinent of urine
 No memory of event
 Altered conscious state
 Unconsciousness between seizures

CONSIDER:

Concussion
 Drug Abuse
 Febrile Convulsion
 Headache
 Head Injury
 Hypoglycaemia
 Hypotension
 Hypoxia
 Metabolic Disorder
 Pre-Arrest Seizure
 Shock
 Stroke
 Tumour
 Unconscious

Stingray

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort
2. If embedded bar from Stingray: - Do not remove as may be restricting bleeding
 - Treat as for impaled object
3. Place stung area in hot water for 20 minutes
4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Referral consideration: - Call Ambulance

CHECK FOR:

Location of sting
 Pain at site of sting
 Whip like marks,
 Raised welts
 Reddened skin
 Muscle aches ad cramps
 Nausea & vomiting

CONSIDER:

Anaphylaxis
 Seizure
 Shock
 Syncope
 Short Of Breath

STINGRAY

STINGRAY

Stroke

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Raise head of bed 10°
 - If unconscious: Lateral side position
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Perform F.A.S.T. examination
4. Obtain Temperature - If Hypothermia, see **HYPOTHERMIA** protocol
5. Obtain Blood Glucose Level - if hypoglycaemia, see **HYPOGLYCAEMIA** protocol
6. Chest Auscultation
7. ECG Monitoring
8. Referral consideration: - Call Ambulance

STROKE

CHECK FOR:

Time of onset
 FAST: - Facial drooping - by asking patient to smile
 - Arms raised - to see if one side is weaker
 - Slurred Speech - ask patient to say "cant teach an old dog new tricks"
 - Time - every minute delay to Hospital = 2 million less brain cells

Headache
 Epistaxis
 Vision changes
 Nausea & vomiting
 Loss of motor & sensory function down one side of body
 Unequal pupils
 Eyes deviated to side of bleed/Heart arrhythmias
 High blood pressure
 Compartment Syndrome (if patient lying on limb for extended time)
 Hypothermia (if patient lying on floor or outside for extended period)

STROKE

CONSIDER:

Faint
 Headache
 Head Injury
 Hypertension
 Hypoglycaemia
 Hypothermia
 Migraine
 Intracerebral bleed
 Subarachnoid Bleed
 Subdural Bleed

Sucking Chest Wound

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Half sitting with injured side down
 - If unconscious: Lateral side position with injured side down
2. Sucking Chest Wound: a. Plastic patch over wound
 b. Tape three sides of plastic
3. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Chest Auscultation
6. Referral consideration: - Call Ambulance

SUCKING CHEST WOUND

SUCKING CHEST WOUND

CHECK FOR:

Sucking sound in inspiration/expiration
 Difficulty breathing
 Shortness of breath
 Fast heart rate
 Low Blood Pressure
 Bleeding
 Sucking chest wound
 Flail segment
 Tension Pneumothorax: - Tracheal shift
 - Unequal breath sounds
 - Distended neck veins
 Cardiac Tamponade (Beck's Triad): - Faint heart sounds
 - Falling blood pressure
 - Distended neck veins
 Conscious level

CONSIDER:

Flail Segment
 Haemothorax
 Rib Fractures
 Pneumothorax
 Shock
 Spinal Injury
 Tension Pneumothorax

VIDEO: [Actual sucking chest wound](#)

Tension Pneumothorax

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - If conscious: Half sitting with injured side down
 - If unconscious: Lateral side position with injured side down

3. Chest Auscultation

4. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm

5. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
500 mg oral if elderly / frail / ≤60kg
15 mg/kg oral syrup (<12 yrs)

- **PENTHRANE 3 ml** via Green Whistle (may repeat once)

6. ECG monitoring

7. Referral consideration: - Call Ambulance

CHECK FOR:

Signs of Tension Pneumothorax:

- ↓ conscious state
- ↑ Respiratory distress
- ↓ SPO2 < 92 despite Oxygen
- ↓ Conscious state
- ↑ Heart rate and
- ↓ blood pressure
- ↑ Peak inspiratory pressure
- ↓ ETCO2
- ↑ JVP
- Tracheal Shift away from side of Tension Pneumothorax

CONSIDER:

Cardiac Tamponade
 Chest Injury
 Flail Segment
 Rib Fractures
 Shock
 Spinal Injury
 Sucking Chest Wound
 Trauma

TENSION PNEUMOTHORAX

TENSION PNEUMOTHORAX

Time Critical Guidelines

(Trauma)

Modified for EFAAFS from the 2021 Ambulance Victoria Clinical Practice Guidelines

The concept of the Time Critical patient allows the recognition of the severity of a patient's condition or the likelihood of the patient deteriorating. This recognition directs appropriate clinical management and the appropriate destination to improve outcome. Covered within the Time Critical Guidelines are:

- Triage decisions for a patient with major trauma.
- Appropriate information given to the Ambulance Victoria Dispatch Centre so as appropriate resource are sent early.
- Requests for additional resources in addition to an Ambulance Victoria ALS Ambulance may include MICA and HEMS.
- Scene time management so that the patient is ready for transport on the arrival of Ambulance Victoria.

The Time Critical concept highlights to staff to be “time consciousness” in the management of patient care whilst preparing the patient for ambulance arrival.

Actual	At the time the vital signs survey is taken, the patient is in actual physiological distress.
Emergent	At the time the vital signs survey is taken, the patient is not physiologically distressed but does have a pattern of injury or significant medical condition which is known to have a high probability of deteriorating to actual physiological distress.
Potential	At the time the vital signs survey is taken, the patient is not physiologically distressed and there is no significant pattern of actual Injury/illness, but there is a mechanism of injury/illness known to have the potential to deteriorate to actual physiological distress.

Trauma Triage

Patients meeting the criteria for major trauma will be triaged by Ambulance Victoria to the highest level of trauma care available within 45 minutes transport time of the incident scene in accordance with Victorian State Trauma System requirements and Ambulance Victoria policies and procedures. If it is greater than 45 minutes to an appropriate medical facility, Ambulance Victoria on their arrival may transport the patient to the nearest alternative highest level of trauma service.

Adult

Major Trauma Criteria - Vital Signs

In the setting of potential major trauma, an adult is considered time critical if they met any of the following:

- ⇒ Pulse <60 or >100
- ⇒ Resp Rate <10 or >30
- ⇒ Systolic BP <90 mmhg
- ⇒ SPO2 <90
- ⇒ If >16 years - GCS <13
- ⇒ If 12-16 years - GCS <13

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

Major Trauma Criteria - Injuries

- ⇒ All penetrating Trauma
- ⇒ Blunt Injuries:
 - Serious injury to a single body region
 - a) requiring specialised care
 - b) that could be fatal
 - c) where long term life quality may be reduced
 - Significant injuries involving more than one body region
- ⇒ Specific Injuries
 - Limb amputation
 - Limb threatening injury
 - Suspected spinal cord injury
 - Spinal fracture
 - Burns
 - a) >20% TBSA if 15 years of older
 - b) >10% TSBA if < 15 years
 - c) Suspected respiratory tract burns
 - d) high voltage (>1000 volts burn injury)
 - Serious crush injury
 - Major compound fracture or open dislocation
 - Fracture to 2 or more of Femur / tibia / humerus
 - Fractured Pelvic

Revised Trauma Score

(ADULT)

	MEASURED VALUE	SCORE	
RESPIRATORY RATE	10 - 29	4	
	> 29	3	
	6 - 9	2	
	1 - 5	1	
	NONE	0	
SYSTOLIC BLOOD PRESSURE	≥ 90	4	
	76 - 89	3	
	50 - 75	2	
	1 - 49	1	
	No BP	0	
GLASCOW COMA SCORE	13 - 15	4	
	9 - 12	3	
	6 - 8	2	
	4 - 5	1	
	3	0	
		TOTAL	

< 11 = Life threatening

11 = Serious, not life threatening

12 = Not serious or life threatening

TIME CRITICAL GUIDELINES - ADULT

TIME CRITICAL GUIDELINES - ADULT

Child

Major Trauma Criteria - Vital Signs

In the setting of potential major trauma, an adult is considered time critical if they met any of the following:

AGE	0-3 Months	4-12 Months	1-4 Years	5-11 Years
Pulse	<100 or >180	<100 or >180	<80 or >160	<80 or >140
Resp Rate	>60	>50	40	>30
Systolic BP	<50 mmHg	<60 mmHg	<70 mmHg	<80mmHg
SPO2	<90%			
GCS	<15 (or less than Alert in AVPU)			

Major Trauma Criteria - Injuries

- ⇒ All penetrating Trauma
- ⇒ Blunt Injuries:
 - Serious injury to a single body region
 - a) requiring specialised care
 - b) that could be fatal
 - c) where long term life quality may be reduced
 - Significant injuries involving more than one body region
- ⇒ Specific Injuries
 - Limb amputation
 - Limb threatening injury
 - Suspected spinal cord injury
 - Spinal fracture
 - Burns
 - a) >20% TBSA if 15 years of older
 - b) >10% TSBA if < 15 years
 - c) Suspected respiratory tract burns
 - d) high voltage (>1000 volts burn injury)
 - Serious crush injury
 - Major compound fracture or open dislocation
 - Fracture to 2 or more of Femur / tibia / humerus
 - Fractured Pelvic

Major Trauma Criteria - Injuries

- ⇒ Cyclist impact > 30 kph
- ⇒ High speed motor vehicle accident > 60 kph
- ⇒ Pedestrian impact
- ⇒ Ejection from a vehicle
- ⇒ Prolonged extrication
- ⇒ Fall from a height > 3m
- ⇒ Struck on the head by an object falling > 3m
- ⇒ Explosion

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

Transport of Patient Guidelines

Under the *Non-Emergency Patient Transport and First Aid Services (First Aid Services) Regulations 2021*, the transportation of patients beyond the event's area of operation is **NOT PERMITTED** except under exceptional circumstances as stated in Part 2 Section 12 (2), (3) & (4) of the Act which clearly states:

- (2) *A staff member of a first aid service may, at the direction of a statutory ambulance service, move a patient to meet an ambulance or facilitate referral to another health care provider.*
- (3) *Subject to sub-regulation (4), a staff member of a first aid service may move a patient of the first aid service within the vicinity of an event (including on a public road) to facilitate provision of care.*
- (4) *If a staff member uses a vehicle to move a patient in accordance with sub-regulation (3), the vehicle must-*
 - (a) *be a vehicle for which a certificate of roadworthiness has been issued (and remains in effect); and*
 - (b) *comply with the requirements of AS/NZS 4535: 1999 (Ambulance restraint systems).*

Therefore the following protocol applies to all EFAAFS staff **WITHOUT EXCEPTION**:

1. A patient can be transferred from the scene of the incident to the EFAAFS Mobile Medical Centre or First-Aid Station - Gazebo via the LAV or ATV Patient Transporter as long as it falls within the Event's **AREA OF OPERATION**, AND, the patient is secured to the stretcher with the appropriate restraint system.
2. A patient can be transferred by the LAV only to an Ambulance, medical facility or Hospital outside the event's area of operation **ONLY IF PERMISSION IS GIVEN BY THE AMBULANCE VICTORIA DISPATCH CENTRE CLINICIAN**, AND, the patient is secured to the stretcher with the appropriate restraint system. Such permissions from the Ambulance Victoria Clinician may be given when:
 - (a) Ambulance Victoria resources are unavailable, AND the patient requires treatment at a hospital, AND the patient is unable to get there by other means;
 - (b) Ambulance Victoria resources are delayed, AND the distance to hospital is within a short to reasonable distance of the incident, AND the Ambulance Victoria delay may effect patient outcome;
 - (c) Due to the location of the incident, Ambulance Victoria believes there may be a benefit to meet Ambulance Victoria part-way to Hospital.

PATIENT REQUIRES TRANSPORT

PATIENT NEEDS TRANSPORT TO EFAAFS MMC WITHIN EVENT AREA OF OPERATION

PATIENT NEEDS TRANSPORT TO HOSPITAL

YES

YES

TRANSPORT TO EFAAFS MMC VIA LAV OR ATV

CALL AMBULANCE '000'

TRANSPORTING PATIENTS

TRANSPORTING PATIENTS

AV DISPATCH CENTRE SENDS AMBULANCE IN A TIMELY MANNER

AV DISPATCH CENTRE STATES LONG DELAY FOR AMBULANCE

AV DISPATCH CENTRE STATES NO AMBULANCE AVAILABLE

YES

WILL DELAY ADVERSLY EFFECT PAITENT'S SAFETY

YES

ASK FOR AV CLINICIAN & ASK CLINICIAN FOR PERMISSION TO TRANSPORT PATIENT TO HOSPITAL

WAIT FOR AMBULANCE WITHIN EVENT AREA OF OPERATION

NO

AV CLINICIAN REFUSES PERMISSION

AV CLINICIAN GIVES PERMISSION

FIND ALTERNATIVE TRANSPORT (NOT EFAAFS)

TRANSPORT PATIENT TO HOSPITAL WITH LAV AND STRETCHER RESTRAINT

Upper Arm Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort usually half sitting
2. If SPO2 85-92%, give **OXYGEN** by either: - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Ice pack for 20 minutes
4. If pain > 2/10 consider: - **PARACETAMOL 1000 mg** oral (>12 yrs)
 500 mg oral if elderly / frail / ≤60kg
 15 mg/kg oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Check distal: - Colour
 - Warmth
 - Sensation
 - Pulse
6. If open wound: - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
7. Collar & Cuff Sling
8. Secure upper arm to side of chest to limit joint movement above & below fracture
9. Recheck distal neurovascular as per step 5
10. Referral consideration: - Call Ambulance

UPPER ARM FRACTURE

UPPER ARM FRACTURE

CHECK FOR:

Pain
 Unable to move arm
 Shortening of fractured arm
 Swelling
 Bruising
 Tenderness
 Muscle spasm
 Blood loss (200 - 500 mls)

CONSIDER:

Damage to: - Blood Vessels
 - Ligaments
 - Muscles
 - Nerves

Upper Leg Fracture

ASSESSMENT:

DRsABCD
 VITAL SIGNS
 DOLOR AND/OR SECONDARY SURVEY
 AMPLE

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

TREATMENT:

1. Position: - Position of comfort usually laying down
2. . If SPO2 85-92%, give **OXYGEN** by either:
 - Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm
 <84%, give **OXYGEN** by High Flow Face Mask 10-15 lpm
3. Ice pack to fracture site
4. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - 15 mg/kg** oral syrup (<12 yrs)
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)
5. Check distal:
 - Colour
 - Warmth
 - Sensation
 - Pulse
6. If open wound:
 - Wash with sterile water or **NORMAL SALINE**
 - Cover with sterile pad
7. Apply either:
 - Donway Traction Splint (preferred)
 - Slishman Traction Splint (with traction 10% of body weight)
8. If unable to apply Traction splint:
 - Place padding between legs
 - Figure of eight bandage around ankle
 - Apply triangular bandage:
 - at knees
 - above fracture
 - below fracture
9. Recheck distal neurovascular as per step 5
10. Secure patient to padded Long Spine Board or Vacuum Mattress
11. Referral consideration: - Call Ambulance

UPPER LEG FRACTURE

UPPER LEG FRACTURE

CHECK FOR:

Pain
 Unable to move leg
 Shortening of fractured leg
 Swelling
 Bruising
 Tenderness
 Muscle spasm
 Blood loss (500 - 1500 mls)

CONSIDER:

Cancer
 Damage to:

- Blood Vessels
- Ligaments
- Muscles
- Nerves

 Pelvic Fracture
 Spinal Injury

VIDEOS:

[Donway Traction Splint](#)
[Slishmann Traction Splint](#)

Wasp Bite

(Adult)

- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4

ASSESSMENT:

DRsABCD
VITAL SIGNS
DOLOR AND/OR SECONDARY SURVEY
AMPLE

TREATMENT:

1. Position: - Position of comfort
2. Remove the sting by scraping sideways with sharp object
3. Apply cold compresses to relieve pain
4. If pain > 2/10 consider:
 - **PARACETAMOL 1000 mg** oral (>12 yrs)
 - 500 mg** oral if elderly / frail / ≤60kg
 - **ENTONOX** via Inhalation
 - **PENTHRANE 3 ml** via Green Whistle (may repeat once)

IF SIGNS OF ANAPHYLAXIS EITHER: - Isolated Respiratory Distress or Hypotension
- 2 or more of R.A.S.H.

a) IMMEDIATELY GIVE EITHER:

- **EPIPEN ADULT 0.3mg** IM (>5 yrs or 20kg)
- **ADRENALINE 500 mcg** IM at 5 min intervals

b) Chest Auscultation

c) If airway oedema with stridor:

- **ADRENALINE 5 mg** via Nebuliser as required

d) If severe bronchospasm:

- **SALBUTAMOL 5 mg** via Nebuliser 20 min intervals
- **ATROVENT 500 mcg** via Nebuliser (once only)

e) Give **OXYGEN** by High Flow Face Mask 10-15 lpm

- ... Once Vital Signs stabilise, aim for SPO2 92-96% with either:
- Nasal Cannula 2-6 lpm
 - Therapy Mask 5-10 lpm

f) Chest Auscultation

g) ECG Monitoring

5. Referral consideration:
 - Call Ambulance if:
 - Any signs of Anaphylaxis
 - Unstable Vital Signs
 - Entonox or Penthrane administered
 - Can be discharged if no signs of anaphylaxis

CHECK FOR:

Pain at site of bite	Redness
Itchy Swelling	Muscle weakness
Difficulty to breath	Difficulty swallowing

[Click here for Respiratory State Chart](#)

VIDEOS:

[Epipen Instructional Video](#)
[Anapen Instructional Video](#)

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MEDICATIONS

MEDICATIONS

MEDICATIONS

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Adrenaline

Presentation	1 mg in 1 mL glass ampoule (1:1,000) Epipen 0.3mg (Adult) Epipen 0.15 mg (Child)
Pharmacology	A naturally occurring alpha and beta-adrenergic stimulant
Actions	<ol style="list-style-type: none"> 1. Increases HR by increasing SA node firing rate (Beta 1) 2. Increases conduction velocity through the A-V node (Beta 1) 3. Increases myocardial contractility (Beta 1) 4. Increases the irritability of the ventricles (Beta 1) 5. Causes bronchodilatation (Beta 2) 6. Causes peripheral vasoconstriction (Alpha)
Metabolism	By monoamine oxidase and other enzymes in the blood, liver and around nerve endings; excreted by the kidneys

Indications of Use	<ol style="list-style-type: none"> 1. Anaphylaxis 2. Severe asthma - imminent life threat not responding to nebulised therapy 3. Stridor (Nebuliser)
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Contraindications	1. Hypovolaemic shock without adequate fluid replacement
--------------------------	--

Precautions	<ol style="list-style-type: none"> 1. Elderly / frail patients 2. Patients with cardiovascular disease 3. Patients on monoamine oxidase inhibitors 4. Higher doses may be required for patients on beta blockers
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Route	IM Nebulised
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Side effects	<ol style="list-style-type: none"> 1. Sinus tachycardia 2. Supraventricular arrhythmias 3. Ventricular arrhythmias 4. Hypertension 5. Pupillary dilatation 6. May increase size of MI 7. Feeling of anxiety/palpitations in the conscious patient
---------------------	--

Times	IM effects: Onset: 30 – 90 seconds Peak: 4 – 10 minutes Duration: 5 – 10 minutes
--------------	--

ADRENALINE 1:1000 10mcg/kg															
AGE	0	3 mth	6 mth	1	2	3	4	5	6	7	8	9	10	11	
WEIGHT	3.5	6	8	10	12	14	16	18	20	22	24	26	33	36	
10 mcg/kg	0.1	0.1	0.1	0.1	0.12	0.14	0.16	0.18	0.2	0.22	0.24	0.26	0.33	0.36	mL
	100	100	100	100	120	140	160	180	200	220	240	260	330	360	mcg

Aspirin

Presentation	300 mg chewable tablets
Pharmacology	An analgesic, antipyretic, anti-inflammatory and antiplatelet aggregation agent
Actions:	To minimise platelet aggregation and thrombus formation in order to retard the progression of coronary artery thrombosis in ACS Inhibits synthesis of prostaglandins - anti-inflammatory actions
Metabolism	Converted to salicylate in the gut mucosa and liver; excreted mainly by the kidneys
Indications	<ol style="list-style-type: none">1. Cardiac chest pain including Angina & Acute Myocardial Infarction2. Acute pulmonary oedema
Contraindications	<ol style="list-style-type: none">1. Hypersensitivity to aspirin / salicylates2. Actively bleeding peptic ulcers3. Bleeding disorders4. Suspected dissecting aortic aneurysm5. Chest pain associated with psychostimulant OD if SBP >160 mmHg6. Do not give if patient has had Aspirin in the last 4 hours
Precautions	<ol style="list-style-type: none">1. Peptic ulcer2. Asthma3. Patients on anticoagulants
Route	Oral
Side effects	<ol style="list-style-type: none">1. Heartburn, nausea, gastrointestinal bleeding2. Increased bleeding time3. Hypersensitivity reactions
Special notes	Aspirin is contraindicated for use in acute febrile illness in children and adolescents The anti-platelet effects of Aspirin persist for the natural life of platelets.
Times	Onset: Peak: Duration: 8 - 10 days

Atrovent

Presentation	250 mcg in 1 mL nebule or polyamp pMDI
Pharmacology	Anticholinergic bronchodilator
Actions:	Allows bronchodilatation by inhibiting cholinergic bronchomotor tone (i.e. blocks vagal reflexes which mediate bronchoconstriction)
Metabolism	Excreted by the kidneys

Indications	<ol style="list-style-type: none">1. Severe respiratory distress associated with bronchospasm2. Exacerbation of COPD irrespective of severity
--------------------	--

Contraindications	<ol style="list-style-type: none">1. Known hypersensitivity to Atropine or its derivatives
--------------------------	--

Precautions	<ol style="list-style-type: none">1. Glaucoma2. Avoid contact with eyes
--------------------	--

Route	Nebulised (in combination with Salbutamol)
--------------	--

Side effects	<ol style="list-style-type: none">1. Headache2. Nausea3. Dry mouth4. Skin rash5. Tachycardia (rare)6. Palpitations (rare)7. Acute angle closure glaucoma secondary to direct eye contact (rare)
---------------------	---

Special notes	<p>There have been isolated reports of ocular complications (dilated pupils, increased intraocular pressure, acute angle glaucoma, eye pain) as a result of direct eye contact with Ipratropium Bromide formulations. The nebuliser mask must therefore be fitted properly during inhalation and care taken to avoid Ipratropium Bromide solution entering the eyes.</p>
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Ipratropium Bromide must be nebulised in conjunction with Salbutamol and is to be administered as a single dose only.

Times	<p>Onset: 3 - 5 minutes Peak: 1.5 - 2 hours Duration: 6 hours</p>
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Entonox

Presentation	400 litre cylinder 50% Oxygen & 50% Nitrous Oxide
Pharmacology	<ol style="list-style-type: none"> 1. Potent analgesic gas containing a mixture of both Nitrous Oxide and Oxygen 2. CNS depressant
Metabolism	By the lungs

Indications 1. Pain relief

Contraindications

1. Chest injury
2. SCUBA dive in the last 24 hours
3. Air embolism
4. Bends
5. Bowel obstruction

Precautions

1. Reduced level of consciousness
2. Alcohol intoxication
3. Patient unable to understand instructions
4. Aeromedical evacuation (due to gas trapping)

Route Oral inhalation via face mask

Side effects

1. reduced inhibition
2. Decreased level of consciousness
3. Light headedness

Times

Onset: 1 - 2 minutes
 Peak
 Duration: 1 - 2 minutes

Glucagon

Presentation	1 mg (IU) in 1 mL hypokit
Pharmacology	A hormone normally secreted by the pancreas
Actions:	Causes an increase in blood glucose concentration by converting stored liver glycogen to glucose
Metabolism	Mainly by the liver, also by the kidneys and in the plasma

Indications	1. Diabetic hypoglycaemia (BGL < 4 mmol/L) in patients with an altered conscious state who are unable to self-administer oral glucose
--------------------	---

Contraindications	1. Nil of significance in the above indication
--------------------------	--

Precautions	1. Nil of significance in the above indication
--------------------	--

Route	IM
--------------	----

Side effects	Nausea and vomiting (rare)
---------------------	----------------------------

Special notes	Not all patients will respond to Glucagon, e.g. those with inadequate glycogen stores in the liver (alcoholics, malnourished).
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Times	IM effects: Onset: 5 minutes Peak: n/a Duration: 25 minutes
--------------	---

VIDEOS:	Using the Gucogon Kit
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GTN

Presentation	Nitro Spray 400 mcg
Pharmacology	<p>Principally, a vascular smooth muscle relaxant</p> <p>Actions:</p> <ol style="list-style-type: none"> 1. Venous dilatation promotes venous pooling and reduces venous return to the heart (reduces preload) 2. Arterial dilatation reduces systemic vascular resistance and arterial pressure (reduces afterload) <p>The effects of the above are:</p> <ol style="list-style-type: none"> 1. Reduced myocardial O₂ demand 2. Reduced systolic, diastolic and mean arterial blood pressure, whilst usually maintaining coronary perfusion pressure 3. Mild collateral coronary arterial dilatation may improve blood supply to ischaemic areas of myocardium 4. Mild tachycardia secondary to slight fall in blood pressure 5. Preterm labour: Uterine quiescence in pregnancy
Metabolism	By the liver
Indications	<ol style="list-style-type: none"> 1. Chest pain with ACS 2. Acute pulmonary oedema
Contraindications	<ol style="list-style-type: none"> 1. Known hypersensitivity 2. Systolic blood pressure < 110 mmHg tablet 3. Systolic blood pressure < 90 mmHg patch 4. Sildenafil Citrate (Viagra) or Vardenafil (Levitra) administration in the previous 24 hr or Tadalafil (Cialis) administration in the previous 4 days (PDE5 inhibitors) 5. Heart rate > 150 bpm 6. Bradycardia HR < 50 bpm (excluding autonomic dysreflexia) 7. VT 8. Inferior STEMI with systolic BP < 160 mmHg 9. Right ventricular MI
Precautions	<ol style="list-style-type: none"> 1. No previous administration 2. Elderly patients 3. Recent MI 4. Concurrent use with other tocolytics
Route	Buccal
Side effects	<ol style="list-style-type: none"> 1. Tachycardia 2. Hypotension 3. Headache 4. Skin flushing (uncommon) 5. Bradycardia (occasionally)
Special notes	Not all patients will respond to Glucagon, e.g. those with inadequate glycogen stores in



Special notes

- Do not administer patient's own tablets, as its storage may not have been in optimum conditions or it may have expired.
- Patches should be discarded prior to use-by date.
- Since both men and women can be prescribed PDE5 inhibitors all patients should be asked if and when they last had the medication to determine if GTN is C/I.
- Tadalafil (Cialis) may also be prescribed to men for treatment of benign prostatic hypertrophy. This is a new indication for the medication and may lead to an increased number of patients under this treatment regimen.
- GTN by IV infusion may be required for an interhospital transfer as per the treating doctor's orders.

Times

S/L effects: Onset: 30 seconds – 2 minutes
 Peak: 5 - 10 minutes
 Duration: 15 - 30 minutes

Normal Saline

Presentation	10 mL polyamp 500 mL and 1000 mL infusion soft pa
Pharmacology	An isotonic crystalloid solution Composition: Electrolytes (sodium and chloride in a similar concentration to that of extracellular fluid) Action: Increases the volume of the intravascular compartment
Metabolism	Electrolytes: Excreted by the kidneys Water: Excreted by the kidneys Distributed throughout total body water, mainly in the extracellular fluid compartment

Indications	1. Eye wash 2. Wound wash
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Contraindications	1. Nil of significance in the above indications
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Precautions	1. None
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Route	IV
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Side effects	Nil of significance in the above indications
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Times	IV half life: Approximately 30 – 60 minutes
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NORMAL SALINE

NORMAL SALINE

Ondansetron

Presentation	4 mg orally dissolving tablet
Pharmacology	Anti-emetic Actions: 5HT3 antagonist which blocks receptors both centrally and peripherally
Metabolism	By the liver

Indications	<ol style="list-style-type: none">1. Undifferentiated nausea and vomiting2. Prophylaxis for spinally immobilised or eye injured patients3. Vestibular nausea in patients < 21 years of age
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Contraindications	<ol style="list-style-type: none">1. Known hypersensitivity2. Concurrent Apomorphine use3. Known Long Q-T syndrome4. Hypokalaemia or hypomagnesaemia
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Precautions	<ol style="list-style-type: none">1. Patients with liver disease should not receive more than 8 mg of Ondansetron per day2. Care should be taken with patients on diuretics who may have an underlying electrolyte imbalance3. Ondansetron contains aspartame and should not be given to patients with phenylketonuria4. Concurrent use of Tramadol5. Pregnancy
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Route	Oral
--------------	------

Side effects	<p>Rare (< 0.1%)</p> <ul style="list-style-type: none">Hypersensitivity reactions (including anaphylaxis)Q-T prolongationWidened QRS complexTachyarrhythmias (including AF and SVT)SeizuresExtrapyramidal reactionVisual disturbances (including transient loss of vision) <p>Common (> 1%)</p> <ul style="list-style-type: none">ConstipationHeadacheFeverDizzinessRise in liver enzymes
---------------------	---

Times	<p>Onset: 2 minutes</p> <p>Peak: 20 minutes</p> <p>Duration: 120 minutes</p>
--------------	--

Oxygen

Presentation 400 litre white cylinder
1600 litre white cylinder

Pharmacology Odorless colourless gas

Metabolism

Indications 1. Medical & trauma conditions with SPO2 < 92%
2. COPD aiming for an SPO2 of 88-92%

Contraindications 1. Bleomycin lung injury
2. Paraquet poisoning

Precautions 1. Avoid hypoxaemia in the COPD patient. Accept SPO2 to 88%-92%
2. High concentrations to COPD patients with hypoxic drive can lead to hypoventilation
3. Prolonged administration to newborns

Route Oral

Side effects Drying of airway mucous

Times Onset: N/A
Peak: N/A
Duration: N/A

OXYGEN

OXYGEN

Naloxone

Presentation 0.4 mg in 1 ml glass ampoule

Pharmacology An opioid antagonist

Actions:
- prevents or reverses the effects of opioids

Metabolism By the liver

Indications 1. Altered conscious state and respiratory depression secondary to administration of opioid or related drugs

Contraindications 1. Nil significance in the above

Precautions 1. If patient is known to be physically dependent on opioids, be prepared for combative patient after administration
2. Neonates

Route IM

Side effects Symptoms of withdrawal
- Sweating, goose flesh, tremor
- Nausea & vomiting
- Agitation
- Dilatation of pupils, excessive lacrimation
- Convulsions

Times Onset: 1 - 3 minutes
Peak: N/A
Duration: 30 - 45 minutes

Paracetamol

Presentation	500 mg tablets 120 mg in 5 mL oral liquid (24 mg/mL)
Pharmacology	An analgesic and antipyretic agent Actions: Exact mechanism of action unclear; thought to inhibit prostaglandin synthesis in the CNS
Metabolism	By the liver, excreted by the kidneys

Indications	1. Mild pain 2. Headache
--------------------	-----------------------------

Contraindications	1. Hypersensitivity to paracetamol 2. Children < 1 month of age 3. Paracetamol already administered within past 4 hours 4. Total paracetamol intake within past 24 hours exceeding 4 g (adults) or 60 mg/kg (children) 5. Chest pain in suspected acute coronary syndrome
--------------------------	---

Precautions	1. Impaired hepatic function or liver disease 2. Elderly / frail 3. Malnourished
--------------------	--

Route	Oral
--------------	------

Side effects	1. Hypersensitivity reactions including severe skin rashes (rare) 2. Haematological reactions (rare)
---------------------	---

Special Notes	There are several brands of Paracetamol available in Australia. Paracetamol is also found in many combination medicines, both prescription and over-the counter.
----------------------	--

Carefully determine previous Paracetamol intake before dose administration. The usual dose of Paracetamol for children is 15 mg/kg per dose. The maximum total dose of 60 mg/kg therefore equates to 4 doses within a 24 hour period.

Hepatic damage is very rare when Paracetamol is taken at recommended dosages.

Paracetamol is not indicated for the treatment of fever in the emergency setting.

Times	Onset: 30 minutes Peak: Duration: 4 hours
--------------	---

Paediatric paracetamol dose table

Paracetamol 15 mg/kg dose (based on 120 mg in 5mL liquid) CONFIRM DOSE WITH LABEL ON BOTTLE

Age (years)	Weight (kg)	Dose (mg)	Volume (nearest mL)
3 month	6	90	4
6 month	8	120	5
1 year	10	150	6
2	12	180	8
3	14	210	9
4	16	240	10
5	18	270	11
6	20	300	13
7	22	330	14
8	24	360	15
9	26	390	16
10	33	495	21
11	36	540	23

NB. Children aged 10 - 11 can have a single 500mg tablet as an alternative to the liquid preparation depending on the patient preference.

PARACETAMOL

PARACETAMOL

Penthrane

Presentation	3 mL glass bottle
Pharmacology	Inhalational analgesic agent at low concentrations
Metabolism	Excreted mainly by the lungs By the liver
Indications	1. Pain relief
Contraindications	1. Pre-existing renal disease / renal impairment 2. Concurrent use of tetracycline antibiotics 3. Exceeding total dose of 6 mL in a 24 hour period 4. Personal or family history of malignant hyperthermia 5. Muscular dystrophy
Precautions	1. The Pentrox™ inhaler must be hand-held by the patients so that if unconsciousness occurs it will fall from the patient's face. Occasionally the operator may need to assist but must continuously assess the level of consciousness 2. Pre-eclampsia 3. Concurrent use with Oxytocin may cause hypotension
Route	Self-administration under supervision using the hand held Pentrox™ Inhaler
Side effects	1. Drowsiness 2. Decrease in blood pressure and bradycardia (rare) 3. Exceeding the maxi total dose of 6 mL in a 24 hour period may lead to renal toxicity
Special notes	<p>The maximum initial priming dose for Methoxyflurane is 3 mL. This will provide approximately 25 minutes of analgesia and may be followed by one further 3 mL dose once the initial dose is exhausted if required. Analgesia commences after 8 - 10 breaths and lasts for approximately 3 - 5 minutes once discontinued.</p> <p>Do not administer in a confined space. Ensure adequate ventilation in ambulance. Malignant hyperthermia is a very rare condition that can be induced by volatile anaesthetics such as methoxyflurane. Ask patients about any past history or family history of adverse reactions to inhaled anaesthetics.</p> <p>In patients with muscular dystrophy, volatile agents may precipitate life threatening rhabdomyolysis.</p>
Video:	Using the Pentrox Inhaler Penthrane vs Entonox vs Morphine

Salbutamol

Presentation	5 mg in 2.5 mL polyamp pMDI (100 mcg per actuation)
Pharmacology	A synthetic beta adrenergic stimulant with primarily beta 2 effects Actions: Causes bronchodilatation
Metabolism	By the liver, excreted by the kidneys

Indications Respiratory distress with suspected bronchospasm or stridor in:

1. Asthma
2. Severe allergic reactions
3. COPD
4. Smoke inhalation

Contraindications 1. Nil of significance in the above indications

Precautions 1. Large doses of Salbutamol have been reported to cause intracellular metabolic acidosis

Route Nebulised, pMDI

Side effects

1. Sinus tachycardia
2. Muscle tremor (common)

Special Notes Salbutamol nebulers / polyamps have a shelf life of one month after the wrapping is opened. The date of opening of the packaging should be recorded and the drug should be stored in an environment of < 30°C

Times Nebulised Onset: 5-15 minutes
Peak:
Duration: 15-50 minutes

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ILLICIT DRUGS SLANG NAMES

ILLICIT DRUG SLANG NAMES

ILLICIT DRUG SLANG NAMES

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Illicit Drug Slang Names

There are five main classes of Illicit party drugs in use. Each class is further broken down into generic types. These each have a large number of slang names which have been listed below. Please refer to the class of drug (eg [Sedative](#)) for signs / symptoms and treatment.

 [Narcotic](#)

 [Hallucinogenic](#)

 [Anabolic Steroids](#)

 [Sedative](#)

 [Psychostimulants](#)

30s (Oxycodone)

375 (Hydrocodone)

40s (Oxycodone)

420 (Marijuana)

512s (Oxycodone)

Acid (LSD)

Adam (MDMA)

Addy's (Amphetamine)

Amidone (Methadone)

Angel Dust (PCP)

Aya (Ayahuasca)

Bananas (Hydrocodone)

Barbs (Barbiturates)

Bath Blow (Cathinones)

Beans (MDMA)

Beans (Oxycodone)

Bennies (Amphetamine)

Benzos (Benzodiazepines)

Biakbiak (Kratom)

Biscuits (Methadone)

Black (Cannabinoids)

Black Beuties (Amphetamine)

Bliss fake weed (Cannabinoids)

Blonde (Fentanyl)

Bloom (Cathinones)

Blotter (LSD)

Blow (Cocaine)

Blue Diamond (Fentanyl)

Blue Silk (Cathinones)

Blues (Oxycodone)

Blunt (Marijuana)

Boom (Marijuana)

Boomers (LSD)

Brown Sugar (Heroin)

Bubbles(Cathinones)
 Bud (Marijuana)
 Budder (Marijuana)
 Bump (Cocaine)
 Businessman's (DMT)
 Buttons (Mescaline)
 C (Cocaine)
 Cactus (Mescaline)
 Caddy (MDMA)
 Candy (Anabolic Steroid)
 Candy (Cocaine)
 Captain Cody (Codeine)
 Cat Valium (Ketamine)
 Catha (Khat)
 Chalk (Methamphetamine)
 Chat (Khat)
 Chia Seeds (Salvia)
 Chiva Dope (Heroin)
 Cid (LSD)
 Circles (Flunitrazepam)
 Cloud Nine (Cathinones)
 Coke (Cocaine)
 Cosmic Blast (Cathinones)
 Coties (Codeine)
 Crack (Cocaine)
 Crank (Methamphetamine)
 Crosses(Amphetamine)
 Crumble (Marijuana)
 Crystal (Methamphetamine)
 D (Hydromorphine)
 Date rape (Flunitrazepam)
 Demmies (Meperidine)
 Dillies (Hydromorphine)
 Dimitri (DMT)
 Diviners Sage (Salvia)
 Dolls (Barbiturates)
 Dones (Hydrocodone)
 Doobie (Marijuana)
 Dope (Marijuana)
 Downers (Benzodiazepines)
 Dreamer (Morphine)
 Droco (Hydrocodone)
 Dunk (Methamphetamine)
 Dust (Cocaine)
 E (MDMA)
 E-bomb (MDMA)
 Edibles (Marijuana)
 Embalming Fluid (PCP)
 Fire (Cannabinoids)
 First line (Morphine)
 Fizzies (Methadone)
 Flake (Cocaine)
 Flakka (Cathinones)
 G (GHB)
 Gak (Methamphetamine)
 Gamma-oh (GHB)
 Ganger (Marijuana)
 Ganja (Marijuana)

Gear (Anabolic Steroid)

GEEB (GHB)

Genie (Cannabinoids)

Gina (GHB)

Golden Dragon (LSD)

Goop (GHB)

Grass (Marijuana)

Green (Marijuana)

Grievous Bodily Harm (GHB)

Gym (Anabolic Steroid)

Hash (Marijuana)

Hashish (Marijuana)

Hearts (Amphetamine)

Hemp (Marijuana)

Herb (Marijuana)

Herbal (Kratom)

Herbal (Kratom)

Hoasca (Ayahuasca)

Hog (PCP)

Horse (Heroin)

Humid Jackpot (Fentanyl)

Ice (Methamphetamine)

Idiot Pills (Hydrocodone)

Ivory Wave (Cathinones)

Jif (Methylphenidate)

Joint (Marijuana)

Joy Juice (Morphine)

Juice (Anabolic Steroid)

Jungle Juice (Methadone)

Junk (Heroin)

K-2 (Cannabinoids)

K4 (Hydromorphone)

Kahuam (Kratom)

Kat (Khat)

Ketuam (Kratom)

Kickers (Oxycodone)

Kiddie Coke (Methylphenidate)

Killers (Oxycodone)

Lady K (Ketamine)

Lemonade (Hydrocodone)

Liquid Ecstasy (GHB)

Liquid X (GHB)

Little Smoke (Psilocybin)

Looney Toones (LSD)

Lorries (Hydrocodone)

Love Drug (MDMA)

Lucy Mae (LSD)

Lvy League (Amphetamine)

Magic Mint (Salvia)

Magic Mushrooms (Psilocybin)

Mamba (Cannabinoids)

Maria (Methadone)

Mary Jane (Marijuana)

Mescalito (Mescaline)

Meth (Methamphetamine)

Microdots (LSD)

Miss Emma (Morphine)

Mister Blue (Morphine)

Molly (MDMA)	Rolls (MDMA)
Monkey (Morphine)	Roofies (Flunitrazepam)
Moon Rocks (Cannabinoids)	Rope (Flunitrazepam)
MPH (Methylphenidate)	Rowie (Flunitrazepam)
Murder 8 (Fentanyl)	Roxy (Oxycodone)
Needle Candy (Hydromorphone)	Rphies (Flunitrazepam)
Nose (Cocaine)	R-Pop (Methylphenidate)
Oat (Khat)	Ruffies (Flunitrazepam)
Oxy (Oxycodone)	Sacred Mush (Psilocybin)
Pain Killer (Meperidine)	Sally D (Salvia)
Pep Pills (Amphetamine)	Salting (Cathinones)
Percs (Oxycodone)	Scarface (Cathinones)
Phennies (Barbiturates)	Schoolboy (Codeine)
Poles (Benzodiazepines)	Scooby Snax (Methamphetamine)
Pookie (Methamphetamine)	Scoop (GHB)
Pot (Marijuana)	Sewege Fruit (Psilocybin)
Pumpers (Anabolic Steroid)	Shatter (Marijuana)
Purple Passion (Psilocybin)	Sherms (PCP)
Quart (Methamphetamine)	Shrooms (Psilocybin)
R-Ball (Methylphenidate)	Sinsemilla (Marijuana)
Red/Bluebirds (Barbiturates)	Ska Pastora (Salvia)
Reefer (Marijuana)	Skag (Heroin)
Roapies (Flunitrazepam)	Skippy (Methylphenidate)
Roches Dos (Flunitrazepam)	Skittles (MDMA)
Rock (Cocaine)	Skunk (Cannabinoids)
Rocket (PCP)	Skunk (Heroin)
Rocket Fuel (Methamphetamine)	Skunk (Marijuana)
Rocket Fuel (PCP)	Smack (Heroin)
Roids (Anabolic Steroid)	Smacked (Cannabinoids)

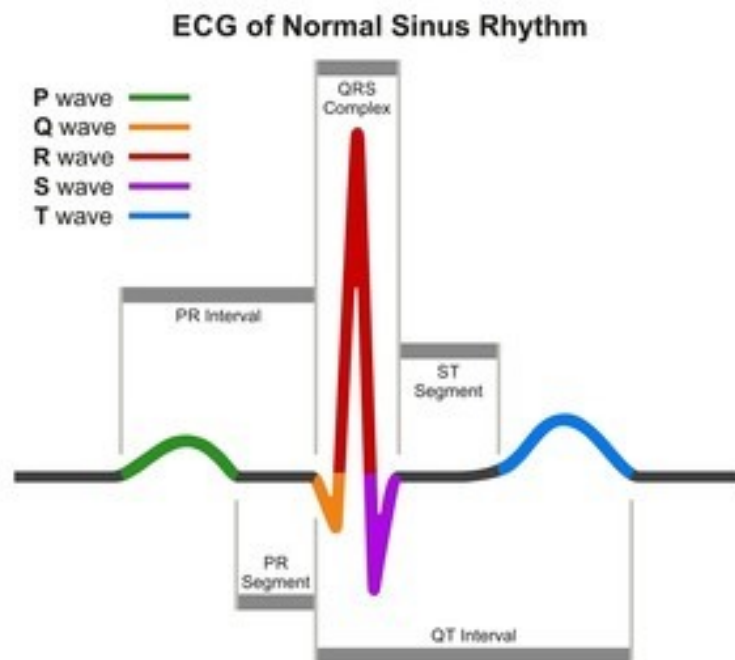
Smoke (Marijuana)	Thang (Kratom)
Snow (Cocaine)	The Smart Drug (Methylphenidate)
Snowflake (Fentanyl)	Thizz (MDMA)
Soap (GHB)	Thom (Kratom)
Solar Flare (Cannabinoids)	TNT (Fentanyl)
Special (DMT)	Toot (Cocaine)
Special K (Ketamine)	Tooties (Barbiturates)
Speed (Amphetamine)	Totem Z-Bars (Benzodiazepines)
Speed (Methamphetamine)	Tranks (Benzodiazepines)
Speedball (Kratom)	Trash (Methamphetamine)
Spice (Cannabinoids)	Trees (Marijuana)
Stacking (Anabolic Steroid)	Unkie (Morphine)
Stinkweed (Marijuana)	Uppers (Methylphenidate)
Study Buddies (Methylphenidate)	Vanilla Sky (Cathinones)
Sweets (MDMA)	Veeks (Hydrocodone)
Tabs (LSD)	Vikes (Hydrocodone)
Tango & Cash (Fentanyl)	Vine (Ayahuasca)

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12 LEAD ECG

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12 Lead ECG



P Wave - Is the electrical current going through both atria (depolarisation)

Normal P Wave - lasts less than 0.11 seconds (<3 small squares)

- height <2 small squares in limb leads
- height <1 small squares in V leads

P-R Interval - Is the time interval from the start of the atrial depolarization to the start of ventricular depolarisation

- From the beginning of the P wave until the beginning of the QRS complex

Normal Duration - lasts 0.12 to 0.2 seconds (3 to 5 squares)

P-R Segment - Is the time delay between atrial and ventricular activation

- From the end of the P wave to the beginning of the QRS complex

QRS - Is the electrical current going through the Ventricles (depolarisation)

Normal Duration - Normal Duration 0.06 to 0.11 (<3 small squares)

Q Wave - initially negative deflection of the QRS complex

- Pathological if**
- At least 0.04 sec wide OR
 - Height >25% of R wave
 - Usually appears within hrs to days
 - Caused by lack of depolarisation
 - Necrotic area
 - Indicates entire thickness (3 layer) dead
 - Lasts months to years
 - Previous AMI
 - May also be caused by obstructive septal hypertrophy

ST Segment - Represents ventricular repolarisation

- From the end of the QRS & beginning of the T wave

- Depression if** - Myocardial Ischemia
- At least 1mm in leads measured at 2 squares after the end of the QRS.
 - May be infarct if persistent depression lasting > 1 week
 - Other causes include:
 - Reciprocal ECG changes in AMI
 - Subendocardial infarction (Acute non STEMI) Angina
 - RBBB
 - LBBB
 - Digitalis
 - Hypokalaemia
 - R & L ventricular hypertrophy (strain pattern)
 - Hypothermia
 - Stress test (bike ride)
 - Hyperventilation

- Elevation if** - AMI: ST elevation of 1 mm in limb leads (I, II, III) or 2 mm in V leads indicates AMI
ST elevation during AMI less likely in women
- Other Causes:
 - Prinzmetal angina
 - Acute pericarditis (often raises T and P wave depresses)
 - Ventricular aneurysm (if ST elevation persists after T Wave inverts)
 - Hyperkalaemia
 - Hypothermia (with J & Osbourne waves)

QT Interval - Represents the time of ventricular depolarization & repolarisation

- Extends from beginning of the QRS to end of the T wave

- Normal Duration** - Usually 0.36 to 0.44 seconds OR
- Less than half distance of R-R
 - QT interval should be measured in either lead II or V5-6

Prolonged QT - Prolonged repolarisation

- >0.50 is dangerous no matter what the rate
- Lengthen refractory period
- More vulnerable
- Causes:
 - class 1 antiarrhythmics
 - hyperkalaemia
 - hypocalcaemia
 - tricyclics
 - neuroleptics
 - CCB
 - Pericarditis
 - Myocarditis
 - AMI
 - CVA
 - Subarachnoid Haemorrhage
 - Hypothermia

Shortened QT - Causes:

- Digoxin toxicity
- Hypercalcemia
- Hyperkalaemia
- Increased sympathetic Tone
- Paroxysmal atrial Fibrillation
- Ventricular fibrillation
- Increased risk sudden cardiac death.

T Wave - represents the repolarisation of the Ventricles**Normal Configuration** - < 5 mm

- Should be <2/3 size of the R wave
- Upright in all leads except aVR and V1
- Height < 5mm in limb leads, < 15mm in precordial leads
- Duration 0.1 to 0.25 (>2 to 6 small squares)
- Generally resembles the P Wave
- final 1/3 can be depolarised with a stimulus leading to arrhythmias

T Wave Inversion - Causes:

- Left ventricular hypertrophy
- Long slurred down wave
- Short up wave
- Ischemia
- Ischemic zone (down and up must be mirror images of each other to be ischemic)

U Wave - Probably represents the final stage of purkinjee repolarisation of a small section of the ventricles such as papillary muscle or ventricular septum after the left & right ventricles are repolarised:

- Upright
- < 2 mm height
- Can be larger with slower heart rates <65 bpm
- Best seen in leads V2 and V3

>2 mm U Wave - Causes: - Sinus Bradycardia (most common cause)

- Hypercalcemia
- Hypokalaemia
- Digoxin toxicity
- Hyperthyroidism
- Class 1 antiarrhythmics

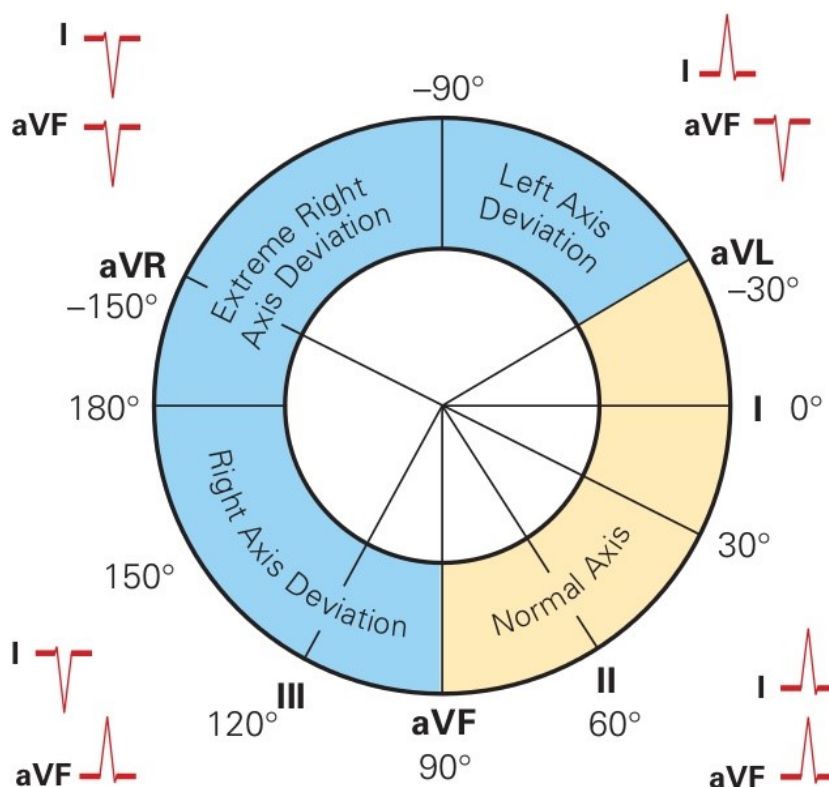
Inverted U Wave - Causes: - Ischemia in the LAD artery

- AMI
- Prinzmetal Angina
- Left or Right ventricular hypertrophy
- LQTS

Axis Deviation

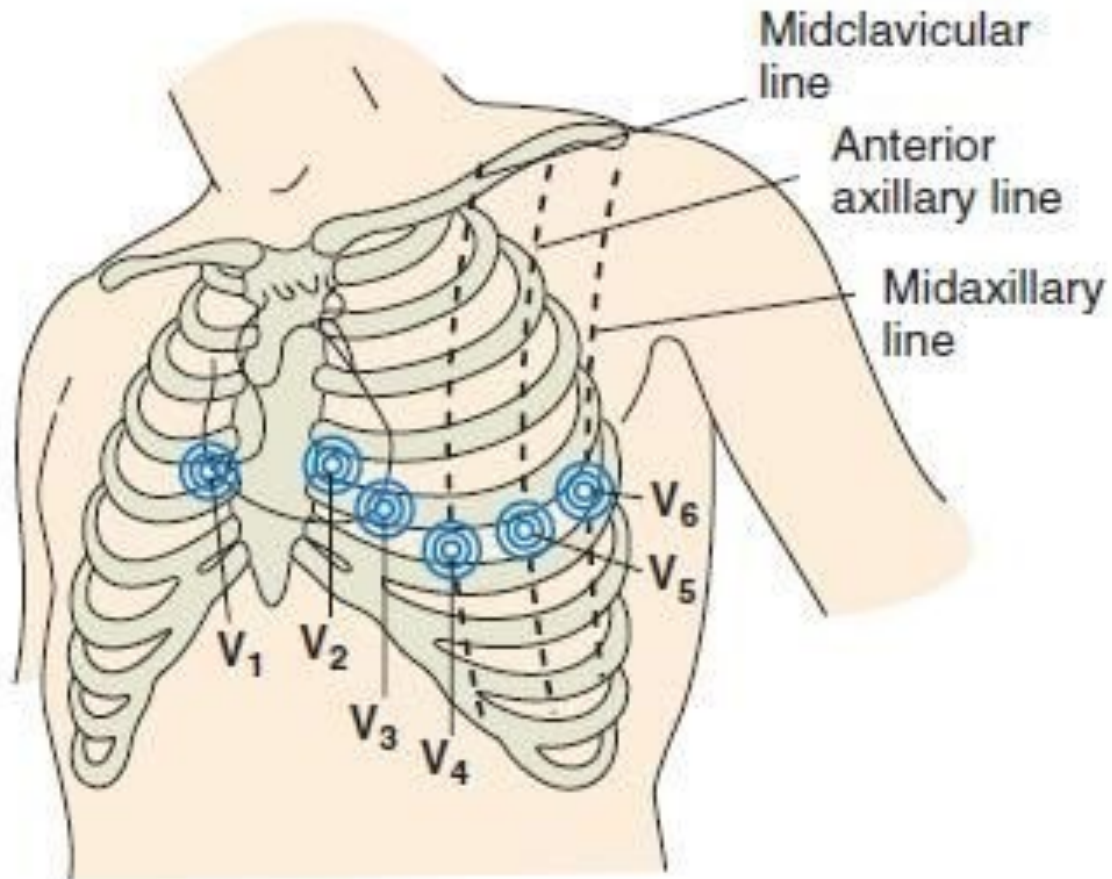
Left Axis Deviation: - Although not a dangerous finding in and of itself, **axis deviation may be an indication of a serious underlying condition**, often being caused by conduction abnormalities. A careful history to elicit acute cardiac injury is therefore of utmost importance.

Right Axis Deviation: - The most common cause of RAD is **right ventricular hypertrophy** often caused by pulmonary hypertension. Also seen in tall people.



Chest Leads

Standard Chest Lead Electrode Placement



12 LEAD ECG

12 LEAD ECG

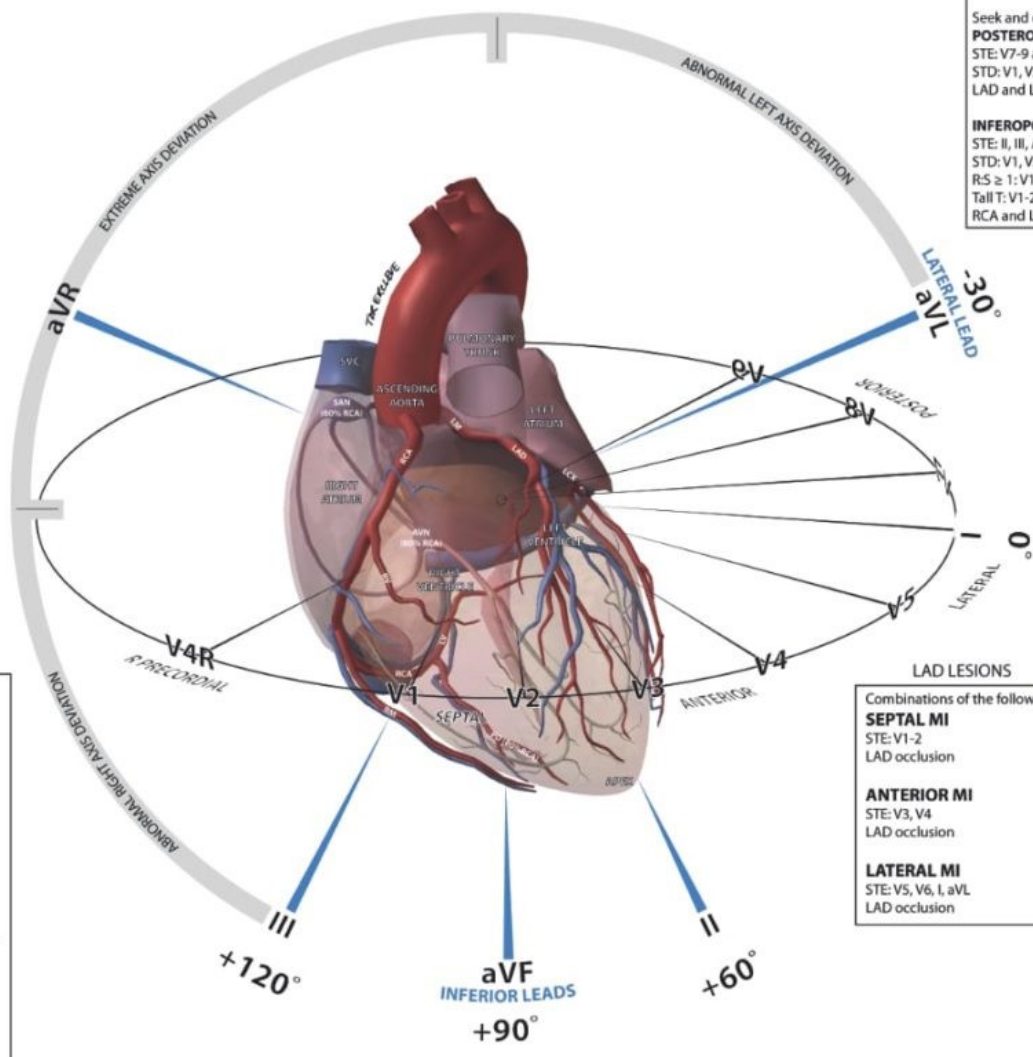
Elements of Chest Leads

Lead	Positive Electrode Placement	View of Heart
V ₁	4th Intercostal space to right of sternum	Septum
V ₂	4th Intercostal space to left of sternum	Septum
V ₃	Directly between V ₂ and V ₄	Anterior
V ₄	5th Intercostal space at left midclavicular line	Anterior
V ₅	Level with V ₄ at left anterior axillary line	Lateral
V ₆	Level with V ₅ at left midaxillary line	Lateral

Location	ST ↑	ST ↓
Anterior	I, aVL, V1-6	III and aVF
Lateral	I, aVL, V5-6	II, III, aVF
Inferior	II, III, aVF	I and aVL
Right Ventricle	V1 and V4 _R III > II	I and aVL

Lead I Lateral	aVR	V1 Septal	V4 Anterior
Lead II Inferior	aVL Lateral	V2 Septal	V5 Lateral
Lead III Inferior	aVF Inferior	V3 Anterior	V6 Lateral

AMI ECG, ANATOMY AND PATHOLOGY



LCX LESIONS ±

POSTERIOR MI
 STE: V7-9
 STD: V1-2 (reciprocal STE)
 RS ≥ 1: V1-2
 Tall T: V1-2
 RCA and LCX occlusion

Seek and exclude
POSTEROLATERAL MI
 STE: V7-9 and I, aVL, V5-6
 STD: V1, V2
 LAD and LCX occlusion

INFEROPOSTERIOR MI
 STE: II, III, AVF and V7-9
 STD: V1, V2 (reciprocal STE)
 RS ≥ 1: V1-2
 Tall T: V1-2
 RCA and LCX occlusion

RCA 'TYPE' LESIONS ±

INFERIOR MI
 STE: II, III, aVF
 STD: aVL (reciprocal STE)
 RCA occlusion distal to RV
 58% of MI

Seek and exclude
INFERIOR AND RV MI
 STE: II, III, aVF and V1, V4R
 RCA occlusion proximal to RV
 40% of Inferior MI
 Increased mortality risk

INFEROLATERAL MI
 STE: II, III, AVF and I, aVL, V5, V6 ± V4R
 LAD and LCX occlusion
 in a L dominant system

INFEROPOSTERIOR MI
 STE: II, III, AVF and V7-9
 STD: V1, V2 (reciprocal STE)
 RS ≥ 1: V1-2
 Tall T: V1-2
 RCA and LCX occlusion

LAD LESIONS

Combinations of the following

SEPTAL MI
 STE: V1-2
 LAD occlusion

ANTERIOR MI
 STE: V3, V4
 LAD occlusion

LATERAL MI
 STE: V5, V6, I, aVL
 LAD occlusion

12 LEAD ECG

12 LEAD ECG

Anterior Infarct

Diagnostic criteria

- ST segment elevation with subsequent Q wave formation in precordial leads (V1-6) +/- high lateral leads.
- These changes are often preceded by hyperacute T waves
- Reciprocal ST depression in inferior leads (mainly III and aVF)

NB: The magnitude of reciprocal change in inferior leads is determined by the magnitude of ST elevation in I and aVL (as these leads are electrically opposite III and aVF), and hence may be minimal or absent in anterior STEMIs that do not involve high lateral leads.

Clinical Significance of a Anterior Infarction

Anterior STEMI usually results from occlusion of the left anterior descending artery (LAD).

Anterior myocardial infarction carries the poorest prognosis of all infarct locations, due to the larger area of myocardium infarct size.

A study comparing outcomes from anterior and inferior infarctions (STEMI + NSTEMI) found that compared with inferior MI, patients with anterior MI had higher incidences of:

- Total mortality (27 vs 11%)
- Heart failure (41 vs 15%)
- Significant ventricular ectopic activity (70 vs 59%)
- Lower ejection fraction on admission (38 vs 55%)
- In addition to anterior STEMI, other high-risk presentations of anterior ischaemia include:
 - left main coronary artery (LMCA) stenosis,
 - Wellens syndrome
 - De Winter T waves

Patterns of Anterior Infarction

The nomenclature of anterior infarction can be confusing, with multiple different terms used for the various infarction patterns. The following is a simplified approach to naming the different types of anterior MI.

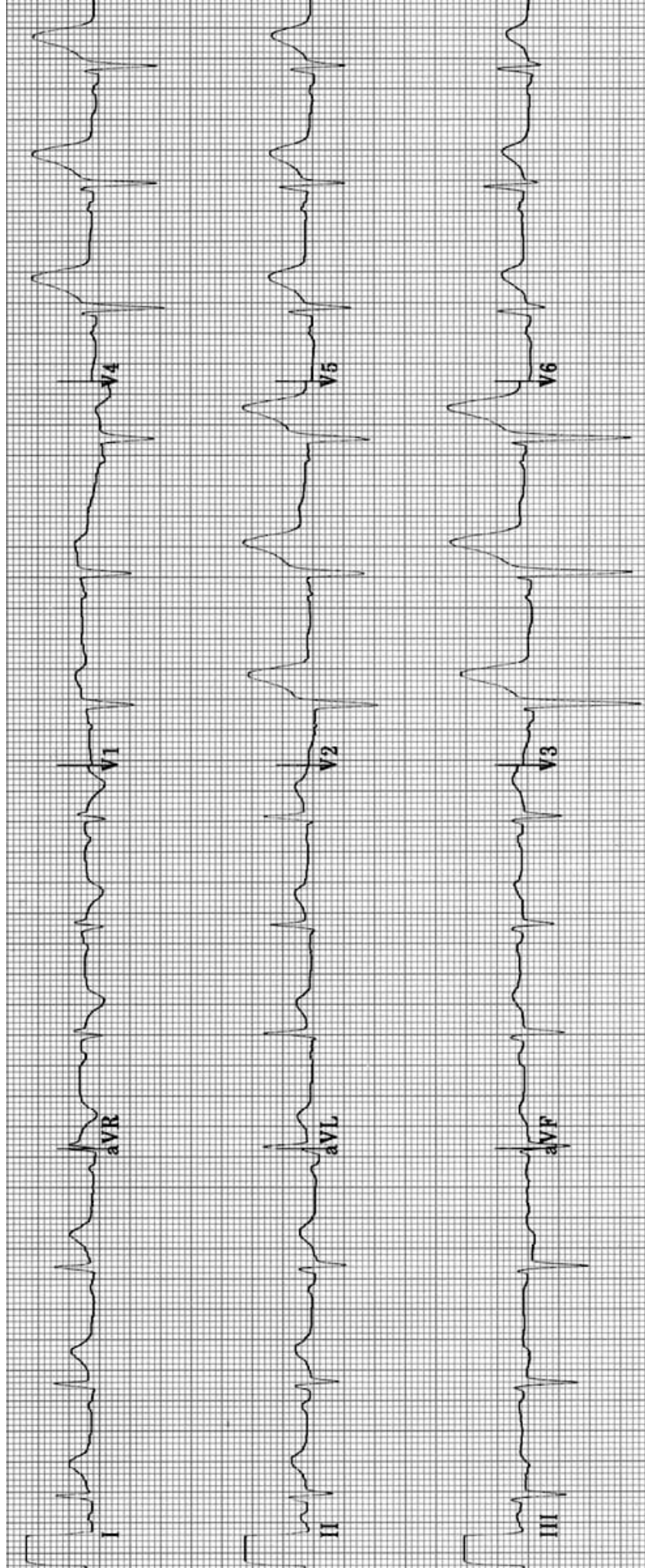
The **precordial leads** can be classified as follows:

- Septal leads = V1-2
- Anterior leads = V3-4
- Lateral leads = V5-6

The different **infarct patterns** are named according to the leads with maximal ST elevation:

- Septal = V1-2
- Anterior = V2-5
- Anteroseptal = V1-4
- Anterolateral = V3-6, I + aVL
- Extensive anterior / anterolateral = V1-6, I + aVL

ANTERIOR INFARCT



Hyperacute Anteroseptal STEMI:

- ST elevation and hyperacute T waves in V2-4
- ST elevation in I and aVL with reciprocal ST depression in lead III
- Q waves are present in the septal leads V1-2
- These features indicate a hyperacute anteroseptal STEMI

Inferior Infarct

Diagnostic criteria

- ST elevation in leads II, III, aVF
- Hyperacute T waves may precede these changes
- Reciprocal ST depression in aVL
- Progressive development of Q waves in II, III, aVF
- *Associated features*, all of which confer a worse prognosis, include:
 - Concomitant right ventricular infarction (40% of patients); these patients may develop severe hypotension in response to nitrates
 - Significant bradycardia due to second or third-degree AV block (20%)
 - Posterior infarction due to extension of infarct area

Which Artery is the Culprit?

Inferior STEMI can result from occlusion of any of the three main coronary arteries:

- Dominant right coronary artery (**RCA**) in 80% of cases
- Dominant left circumflex artery (**LCx**) in 18%

RCA occlusion

Is suggested by:

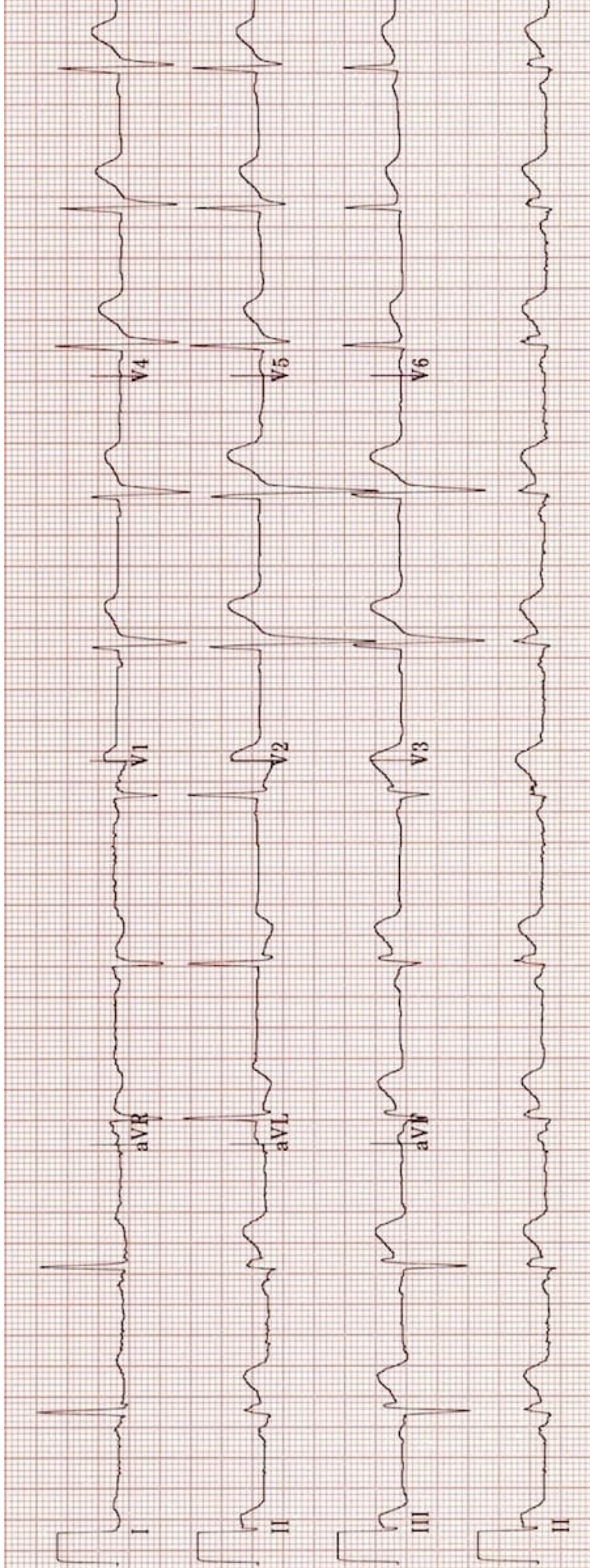
- ST elevation in lead III > lead II
- Presence of reciprocal ST depression in lead I
- Signs of right ventricular infarction: STE in V1 and V4R

Circumflex occlusion

Is suggested by:

- ST elevation in lead II = lead III
- Absence of reciprocal ST depression in lead I
- Signs of lateral infarction: ST elevation in the lateral leads I and aVL or V5-6

INFERIOR INFARCT



Inferior STEMI:

- ST elevation in II, III and aVF.
- Q-wave formation in III and aVF.
- Reciprocal ST depression and T wave inversion in aVL
- ST elevation in lead II = lead III and absent reciprocal change in lead I (isoelectric ST segment) suggests a left circumflex artery occlusion

Lateral Infarct

Diagnostic criteria

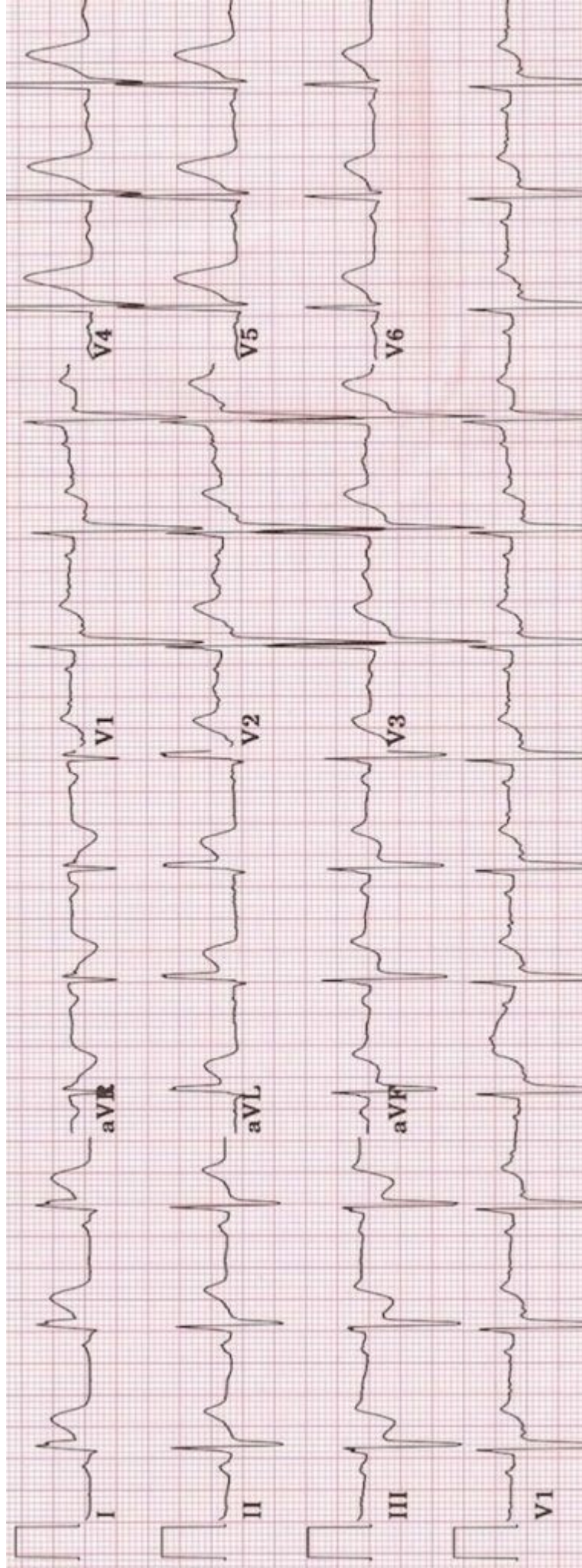
- ST elevation in the lateral leads (I, aVL, V5-6).
- Reciprocal ST depression in the inferior leads (III and aVF).
- ST elevation primarily localised to leads I and aVL is referred to as a **high lateral STEMI**.

NB. Reciprocal change in the inferior leads is only seen when there is ST elevation in leads I and aVL. This reciprocal change may be obliterated when there is concomitant inferior ST elevation (i.e an inferolateral STEMI)

Clinical Significance of lateral STEMI

- The lateral wall of the LV is supplied by branches of the left anterior descending (LAD) and left circumflex (LCx) arteries.
- Infarction of the lateral wall usually occurs as part of a larger territory infarction, e.g. anterolateral STEMI.
- Isolated lateral STEMI is less common, but may be produced by occlusion of smaller branch arteries that supply the lateral wall, e.g. the first diagonal branch (D1) of the LAD, the obtuse marginal branch (OM) of the LCx, or the [ramus intermedius](#).
- Lateral STEMI is a stand-alone indication for emergent reperfusion.
- Lateral extension of an anterior, inferior or posterior MI indicates a larger territory of myocardium at risk with consequent worse prognosis.

LATERAL INFARCT



Patterns of lateral infarction

Three broad categories of lateral infarction:

- Anterolateral STEMI due to LAD occlusion.
- Inferior-posterior-lateral STEMI due to LCx occlusion.
- Isolated lateral infarction due to occlusion of smaller branch arteries such as the D1, OM or ramus intermedius.

Posterior Infarct

Diagnostic criteria

Horizontal ST depression

- Tall, broad R waves (>30ms)
- Upright T waves
- Dominant R wave (R/S ratio > 1) in V2

In patients presenting with ischaemic symptoms, horizontal ST depression in the anteroseptal leads (V1-3) should raise the suspicion of posterior MI.

Clinical Significance of a Posterior Infarction

Posterior infarction accompanies 15-20% of STEMIs, usually occurring in the context of an inferior or lateral infarction.

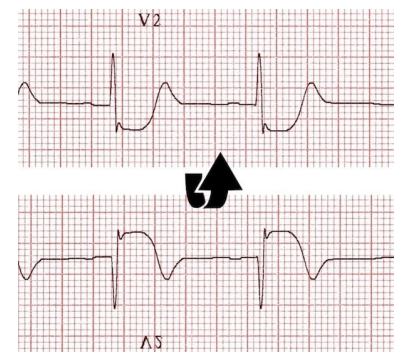
- Isolated posterior MI is less common (3-11% of infarcts).
- Posterior extension of an inferior or lateral infarct implies a much larger area of myocardial damage, with an increased risk of left ventricular dysfunction and death.
- Isolated posterior infarction is an indication for emergent coronary reperfusion. However, the lack of obvious ST elevation in this condition means that the diagnosis is often missed.

Be vigilant for evidence of posterior MI in any patient with an inferior or lateral STEMI.

Explanation of the ECG changes in V1-3

The anteroseptal leads are directed from the anterior precordium towards the **internal** surface of the posterior myocardium. Because posterior electrical activity is recorded from the anterior side of the heart, the typical injury pattern of ST elevation and Q waves becomes **inverted**:

- ST elevation becomes ST depression
- Q waves become R waves
- The progressive development of pathological R waves in posterior infarction (the "Q wave equivalent") mirrors the development of Q waves in anteroseptal STEMI.

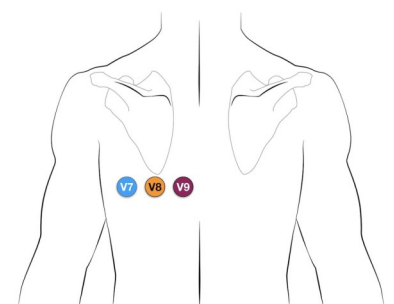


Posterior leads

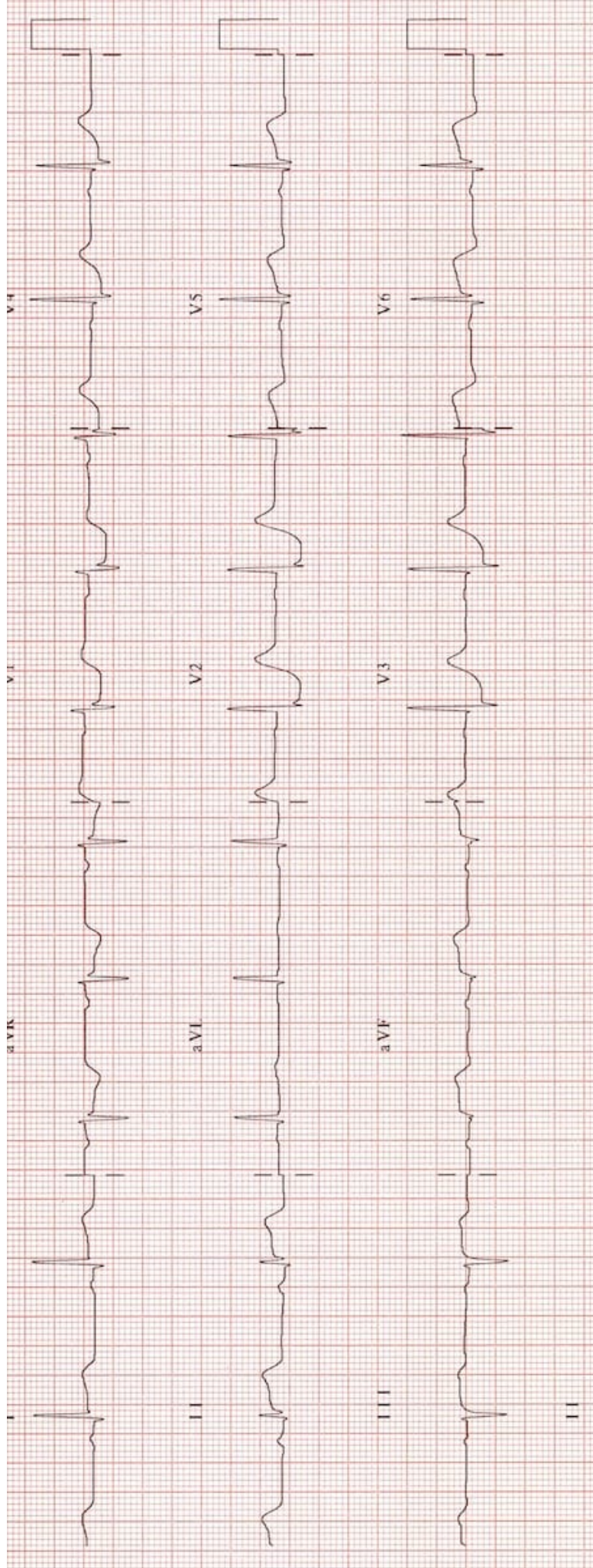
Leads V7-9 are placed on the posterior chest wall in the following positions (see diagram below):

- V7 – Left posterior axillary line, in the same horizontal plane as V6.
- V8 – Tip of the left scapula, in the same horizontal plane as V6.
- V9 – Left paraspinal region, in the same horizontal plane as V6.

Posterior infarction is confirmed by the presence of ST elevation and Q waves in the posterior leads (V7-9).



POSTERIOR INFARCT



Inferolateral STEMI. Posterior extension is suggested by:

- Horizontal ST depression in V1-3
- Tall, broad R waves ($> 30\text{ms}$) in V2-3
- Dominant R wave (R/S ratio > 1) in V2
- Upright T waves in V2-3

Right Ventricular Infarct

Diagnostic criteria

In patients with inferior STEMI, Right Ventricular Infarction is suggested by:

- ST elevation in V1
- ST elevation in V1 and ST depression in V2 (highly specific for RV infarction)
- Isoelectric ST segment in V1 with marked ST depression in V2
- ST elevation in III > II
- **Diagnosis is confirmed by the presence of ST elevation in the right-sided leads (V3R-V6R)**
- V1 is the only standard ECG lead that looks directly at the right ventricle
- Lead III is more rightward facing than lead II and hence more sensitive to the injury current produced by the right ventricle

Clinical Significance of RV Infarction

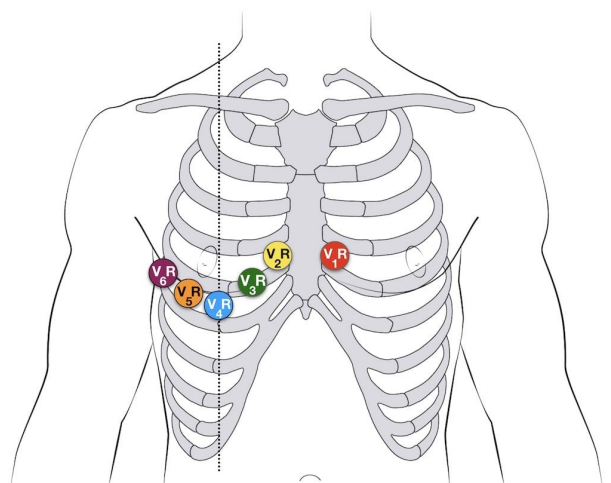
- RV infarction complicates up to 40% of inferior STEMIs (isolated RV infarction is extremely uncommon)
- These patients are very **preload sensitive** (due to poor RV contractility) and can develop **severe hypotension in response to nitrates** or other preload-reducing agents.
- Hypotension in right ventricular infarction is treated with **fluid loading**,
- **Nitrates are contraindicated.**

The ECG changes of RV infarction are subtle and easily missed!

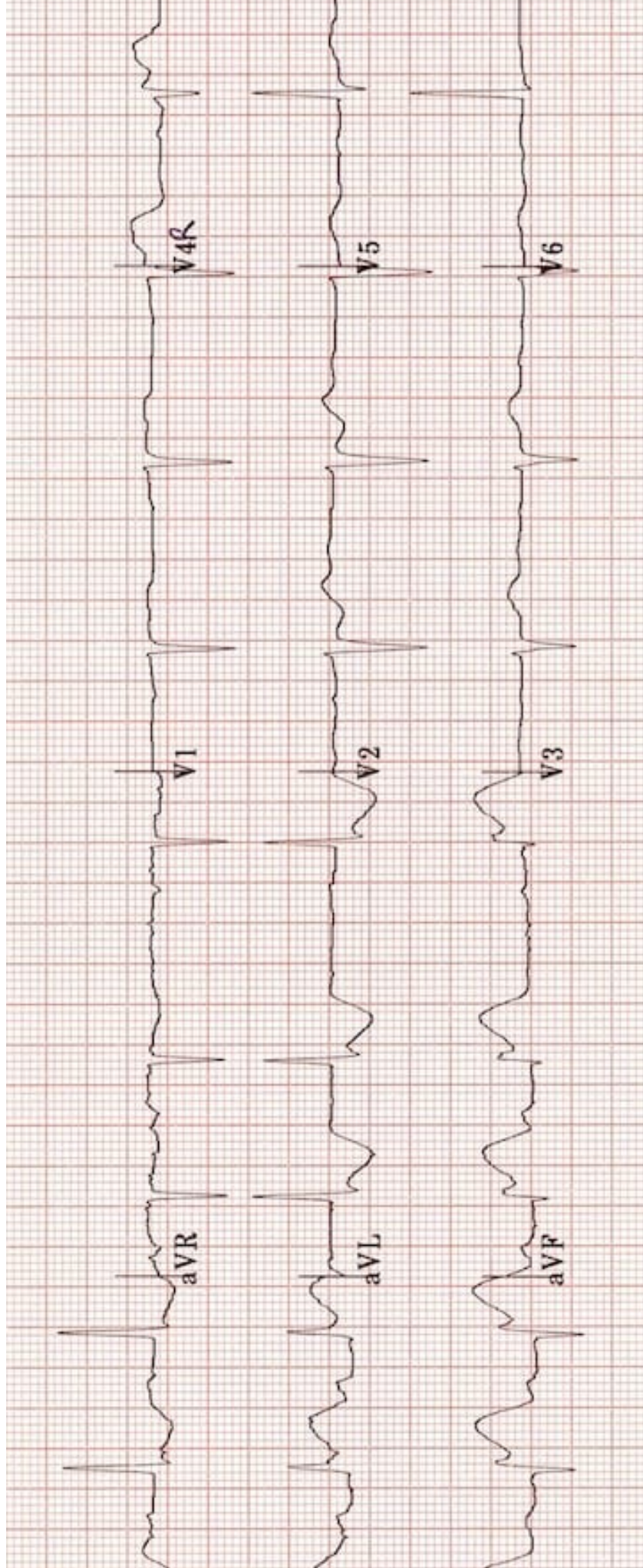
Right-sided leads

There are several approaches to recording a right-sided ECG:

- A complete set of right-sided leads is obtained by placing leads V1-6 in a mirror-image position on the right side of the chest (see diagram below)
- It may be simpler to leave V1 and V2 in their usual positions and just transfer leads V3-6 to the right side of the chest (i.e. V3R to V6R)
- **The most useful lead is V4R**, which is obtained by placing the V4 electrode in the 5th right intercostal space in the mid-clavicular line
- ST elevation in V4R has a sensitivity of 88%, specificity of 78% and diagnostic accuracy of 83% in the diagnosis of RV MI



RIGHT VENTRICULAR INFARCT



right ventricular infarction in the context of inferior STEMI:

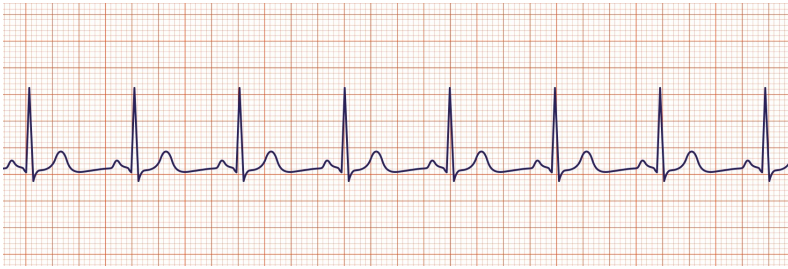
- ST elevation in lead III > lead II
- Isoelectric ST segment in V1 with marked ST depression in V2
- There is ST elevation in V4R.

ECG RHYTHMS

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ECG Rhythms

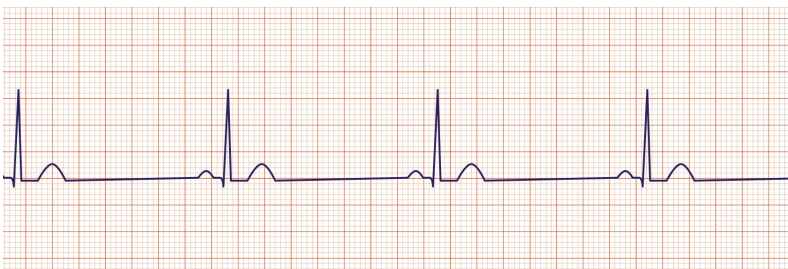
Sinus Rhythm



Sinus Arrhythmia



Sinus Bradycardia



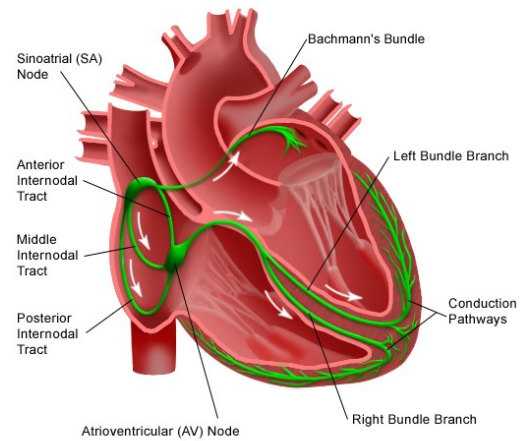
Sinus Tachycardia



Supraventricular Tachycardia



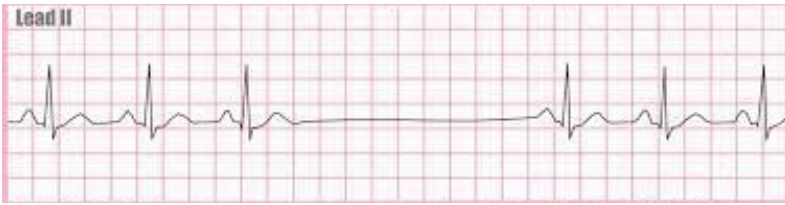
Cardiac Anatomy & Conduction System



ECG RHYTHMS

ECG RHYTHMS

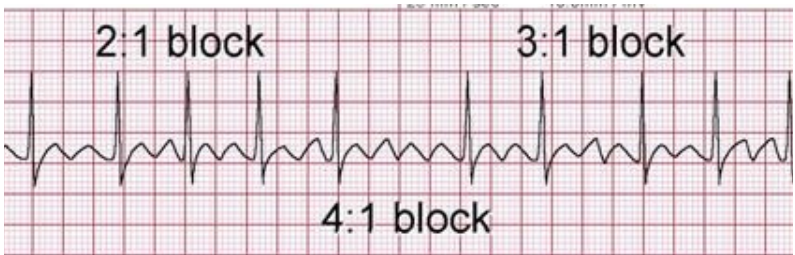
Sinus Pause/Arrest



Premature Atrial Complexes



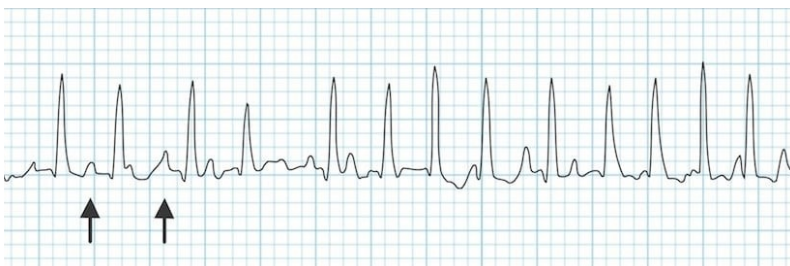
Atrial Flutter



Atrial Fibrillation



Multifocal Atrial Tachycardia



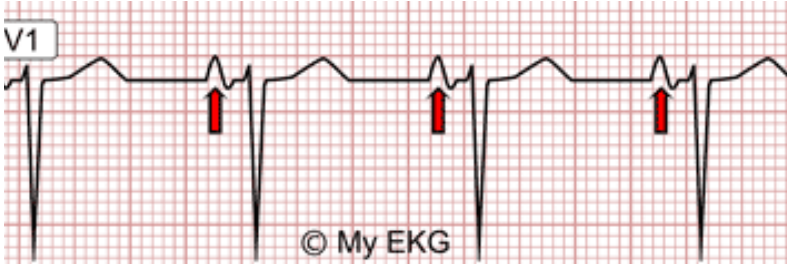
ECG RHYTHMS

ECG RHYTHMS

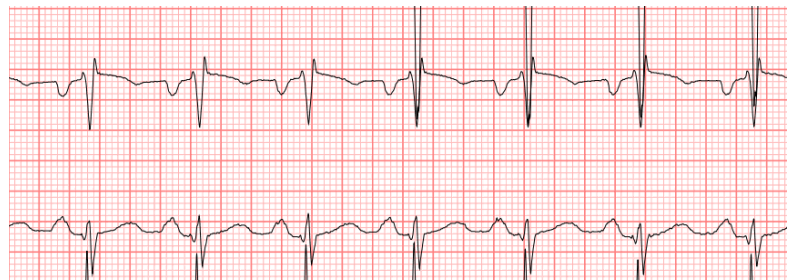
Left Atrial Enlargement



Right Atrial Enlargement



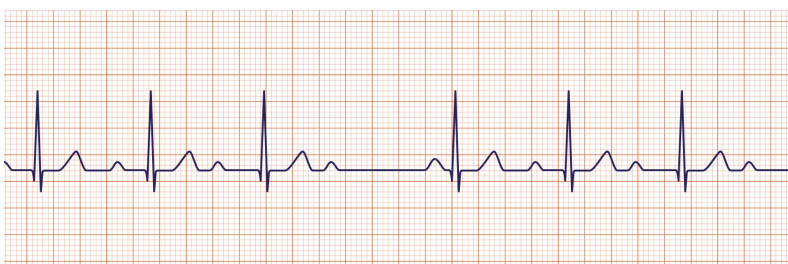
Biatrial Atrial Enlargement



First Degree AV Block



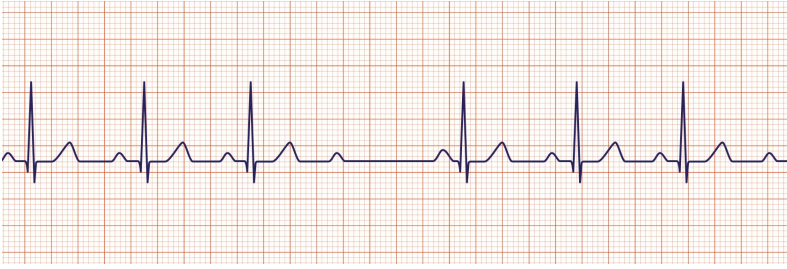
Second Degree AV Block Type 1



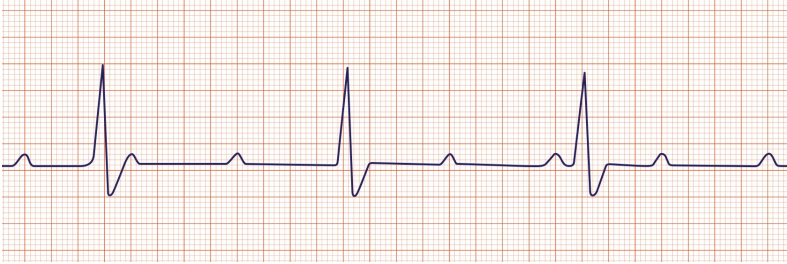
ECG RHYTHMS

ECG RHYTHMS

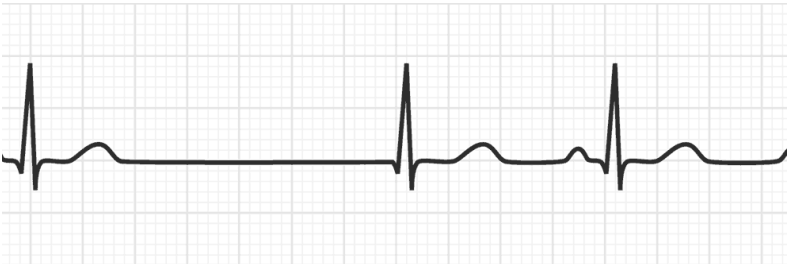
Second Degree AV Block Type 2



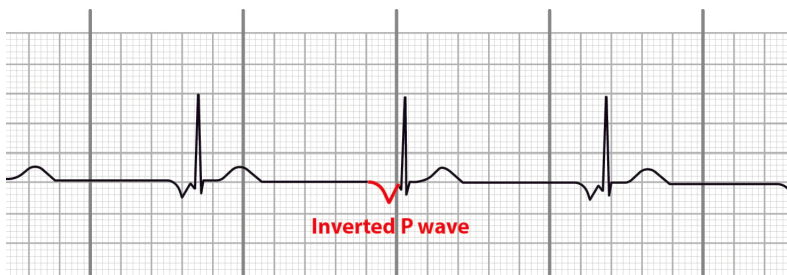
Third Degree AV Block



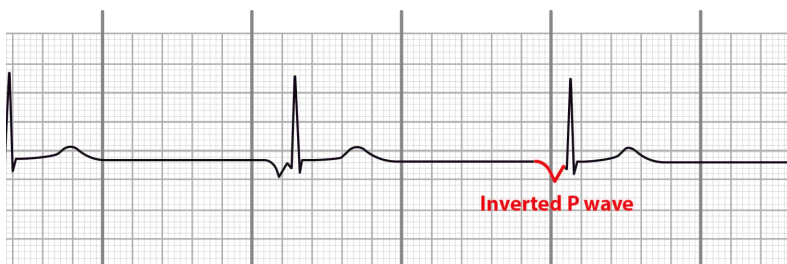
AV Junctions Escape Complexes



AV Junctional Rhythm



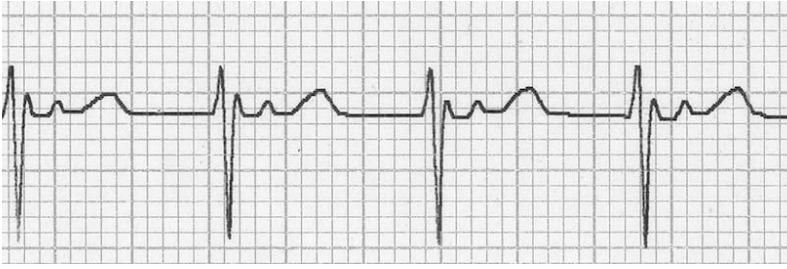
AV Junctional Bradycardia



ECG RHYTHMS

ECG RHYTHMS

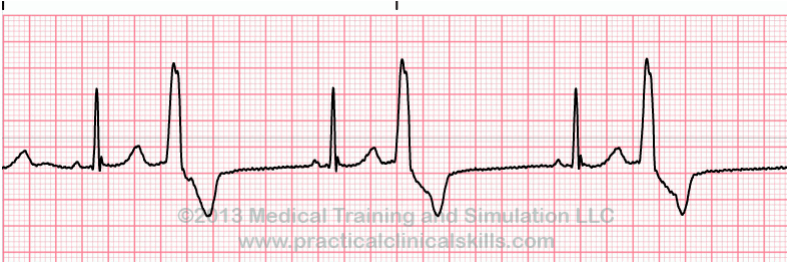
AV Junctional Accelerated Rhythm



AV Junctional Tachycardia

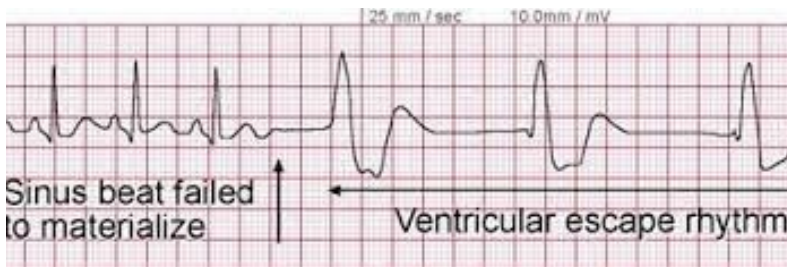


Premature Ventricular Complex



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Ventricular Escape Complex



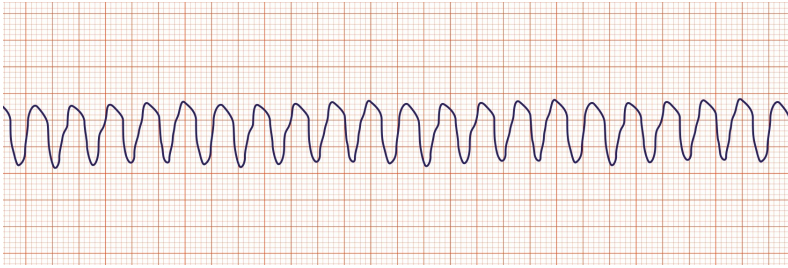
Accelerated Idioventricular Rhythm



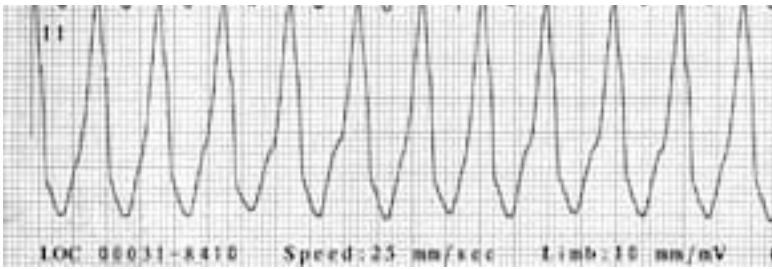
ECG RHYTHMS

ECG RHYTHMS

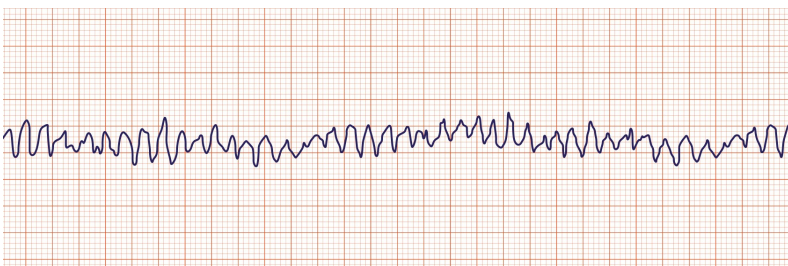
Ventricular Tachycardia



Outflow Tract Ventricular Tachycardia



Ventricular Fibrillation



Left Ventricular Hypertrophy



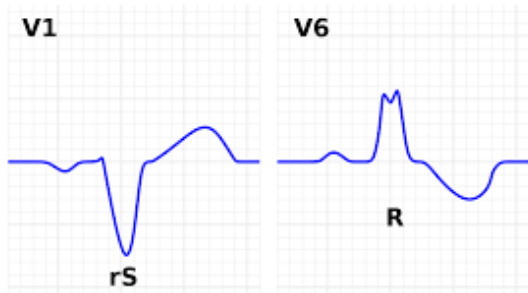
Right Ventricular Hypertrophy



ECG RHYTHMS

ECG RHYTHMS

Left Bundle Branch Block



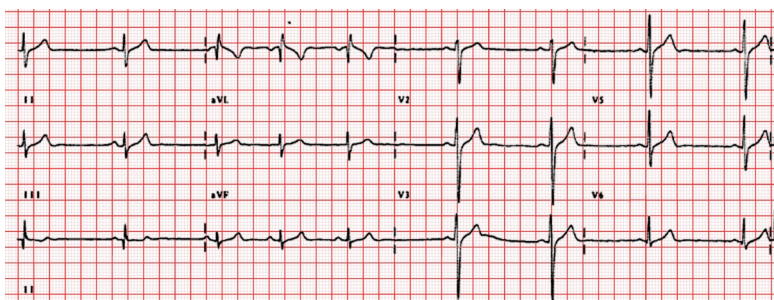
Right Bundle Branch Block



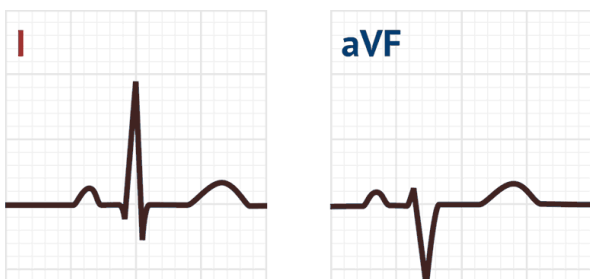
Left Anterior Fascicular Block



Left Posterior Fascicular Block



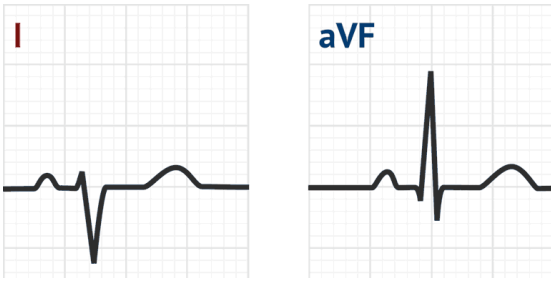
Left Axis Deviation



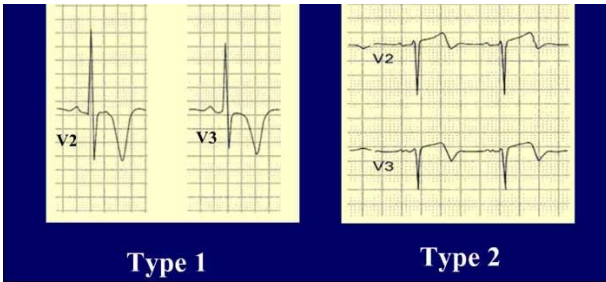
ECG RHYTHMS

ECG RHYTHMS

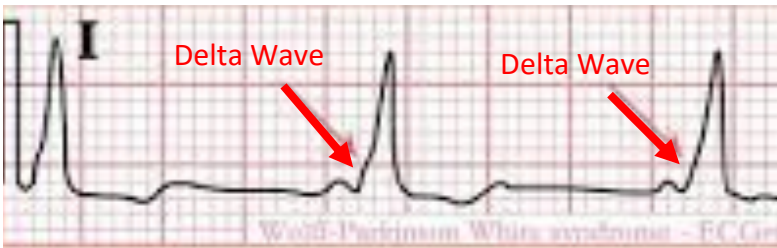
Right Axis Deviation



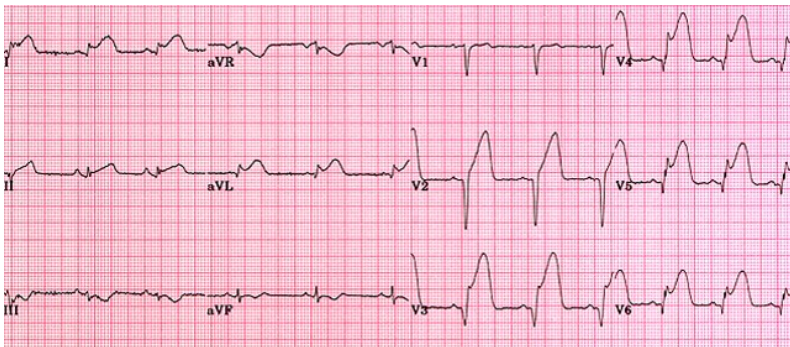
Wellens' Syndrome



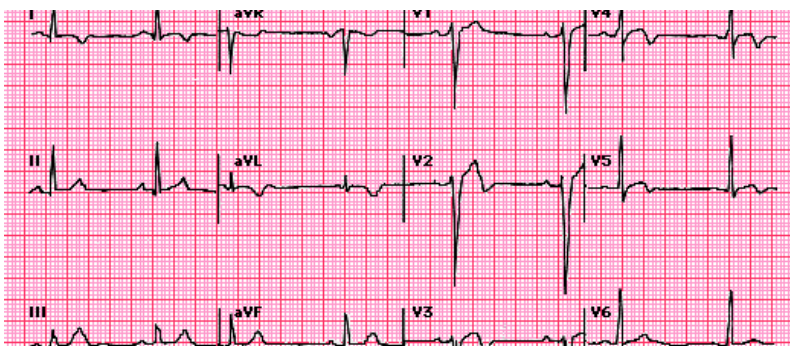
WPW Pattern



Acute Anterolateral MI



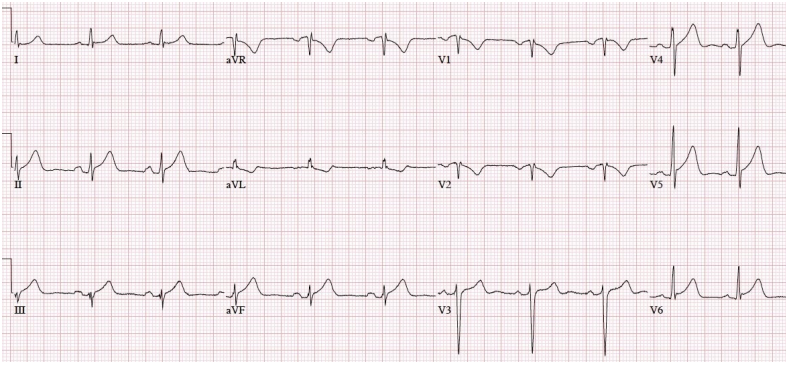
Acute Anterior or Anteroseptal MI



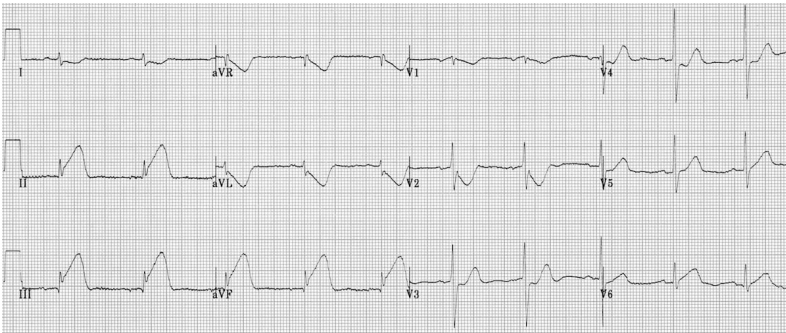
ECG RHYTHMS

ECG RHYTHMS

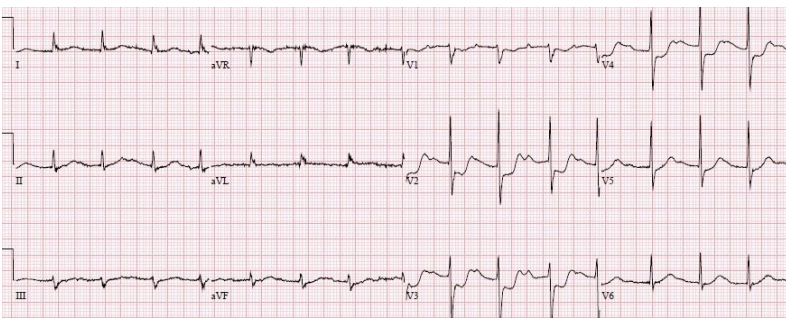
Acute Lateral MI



Acute Inferior MI



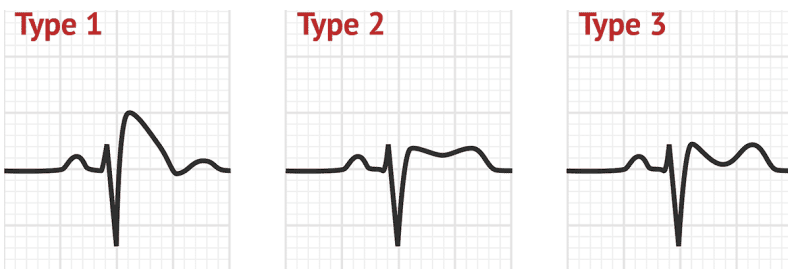
Acute Posterior MI



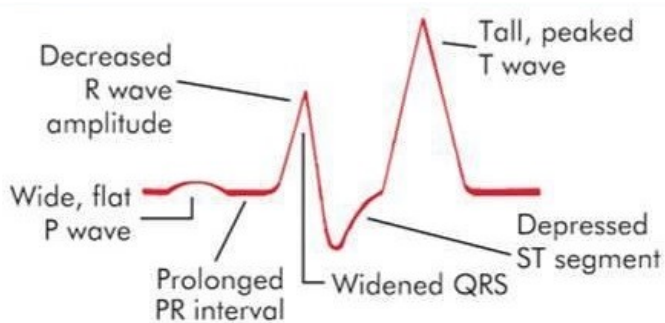
ECG RHYTHMS

ECG RHYTHMS

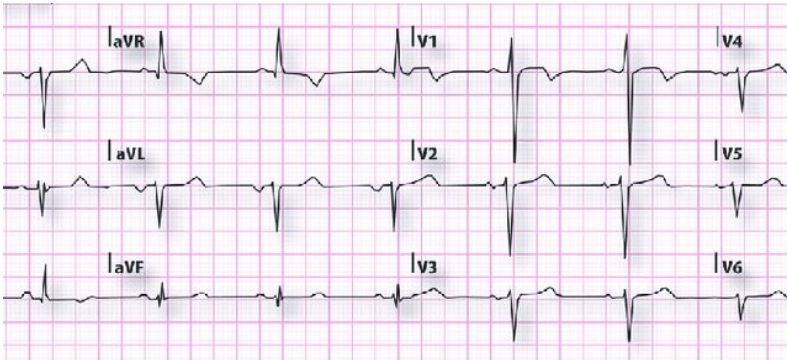
Brugada Syndrome



Hyperkalemia



Dextrocardia



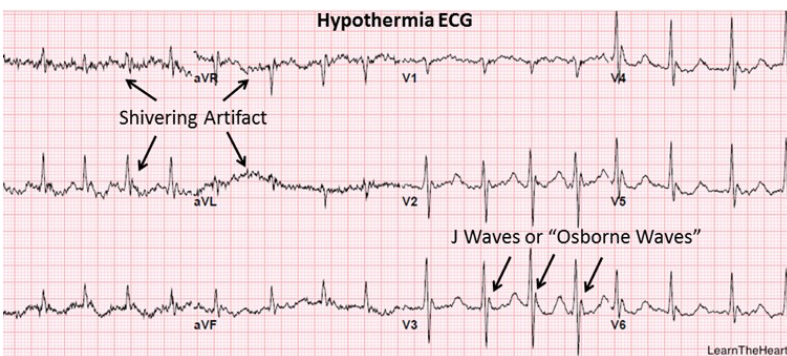
Acute Pericarditis



Unipolar vs. Bipolar Pacing



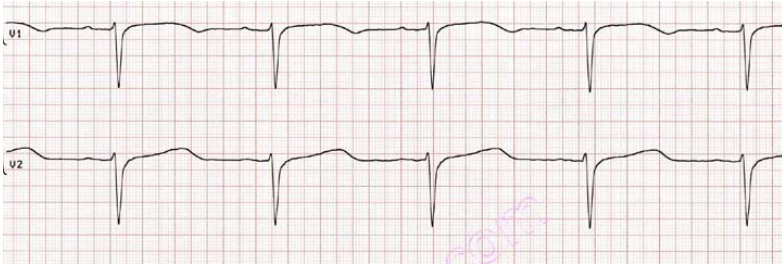
Hypothermia



ECG RHYTHMS

ECG RHYTHMS

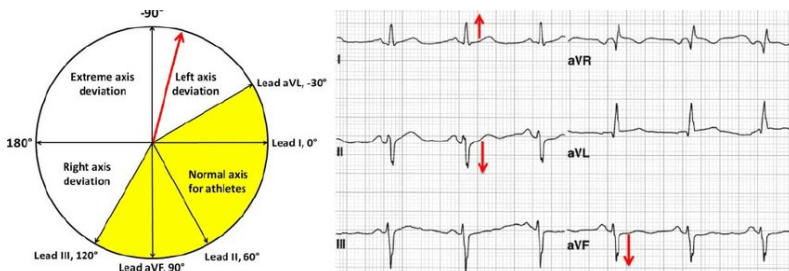
QT interval: prolonged or not



Wide complex tachycardias



Vectors & Electrical Axis



ECG RHYTHMS

ECG RHYTHMS

LICENCE TO PRACTICE

First Aid Service Licence

Non-Emergency Patient Transport and First Aid Services Act 2003

OFFICIAL

Licence holder: Event First Aid and Fire Services

Address: 109 Triggs Road
Irrewarra VIC 3249

Class of First Aid Service: Intermediate

Date of Expiry: 31 December 2024

Conditions:

Comply with Event First Aid and Fire Services' Clinical Practice Guidelines, as approved by the Department of Health's Clinical Practice Protocol Assessment Committee (CPPAC).



**Acting Director, Private Hospitals and NEPT Regulation
as Delegate to the Secretary
Department of Health**

Date: 18 /08 /2022

