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← Emergency

Medical Emergencies In Dental Practice

Medical emergencies occur in a dental practice.

The dentist

has a responsibility to recognize them and initiate primary emergency management procedures in an effort to reduce morbidity and mortality when such adverse events arise.



Emergencies Happen

Are You Ready?



The most common problems include:-

- vasovagal syncope (faints)
- hypoglycemic episodes
- Angina
- Seizures
- Choking
- asthmatic attack
- anaphylaxis

• To manage the common medical emergencies encountered in general practice, **the following drugs should be available**

1. Oxygen.
2. Oral glucose solution/tablets/gel/powder.
3. Glucagon injection 1mg IM.
4. Salbutamol aerosol inhaler (100 micrograms/actuation).
5. Adrenaline IM injection (1:1,000, 1mg/ml).
6. Glyceryl trinitrate (GTN) sublingual spray (400 micrograms/dose).
7. Aspirin dispersible (300mg).
8. Midazolam 5mg/ml or 10mg/ml (buccal or intranasal).

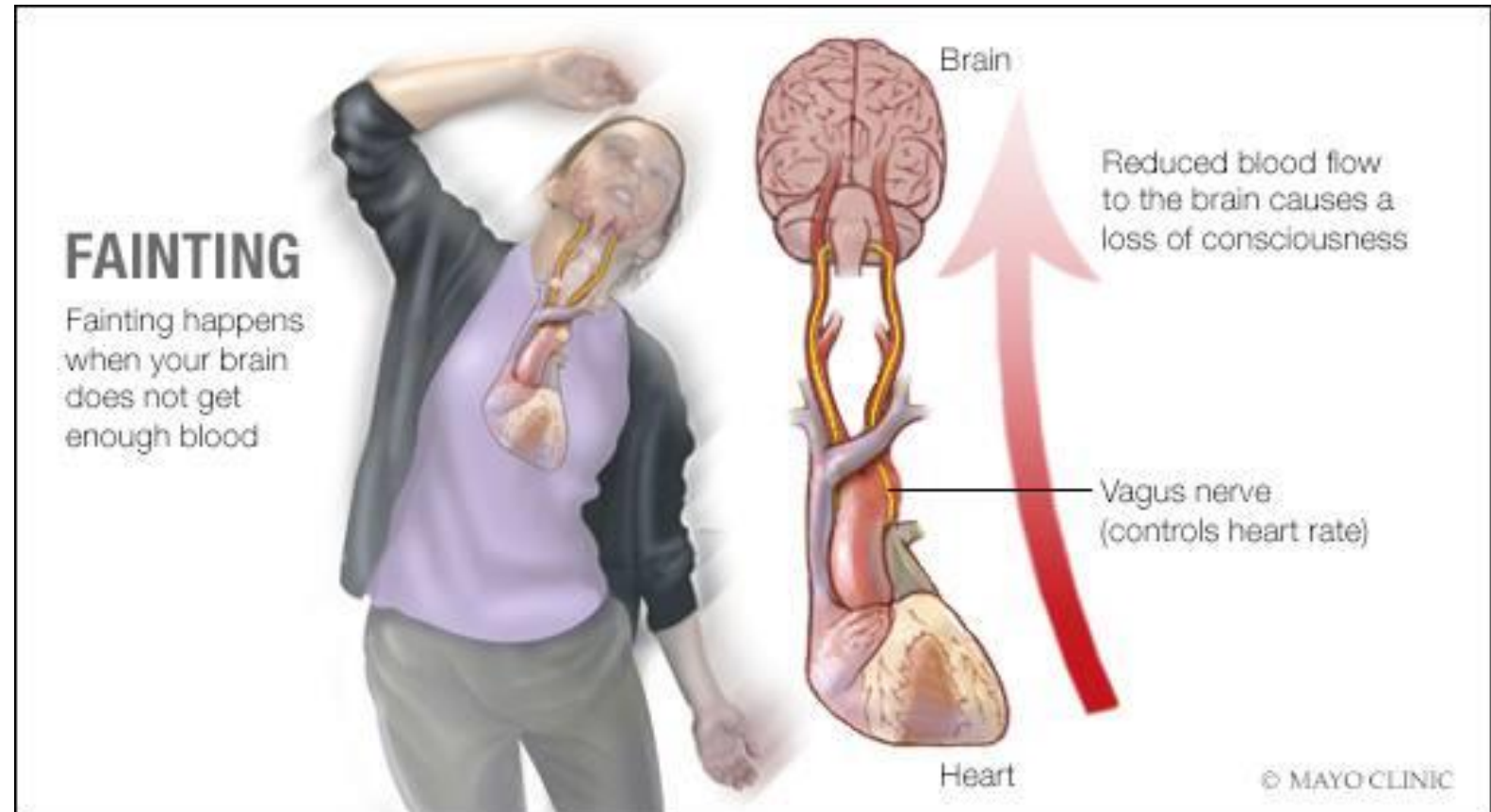


Vasovagal syncope

Is a **sudden, transient loss of consciousness**, with **spontaneous recovery**.

This is a neurally mediated response **provoked by emotion, pain, fear or standing for long periods**.

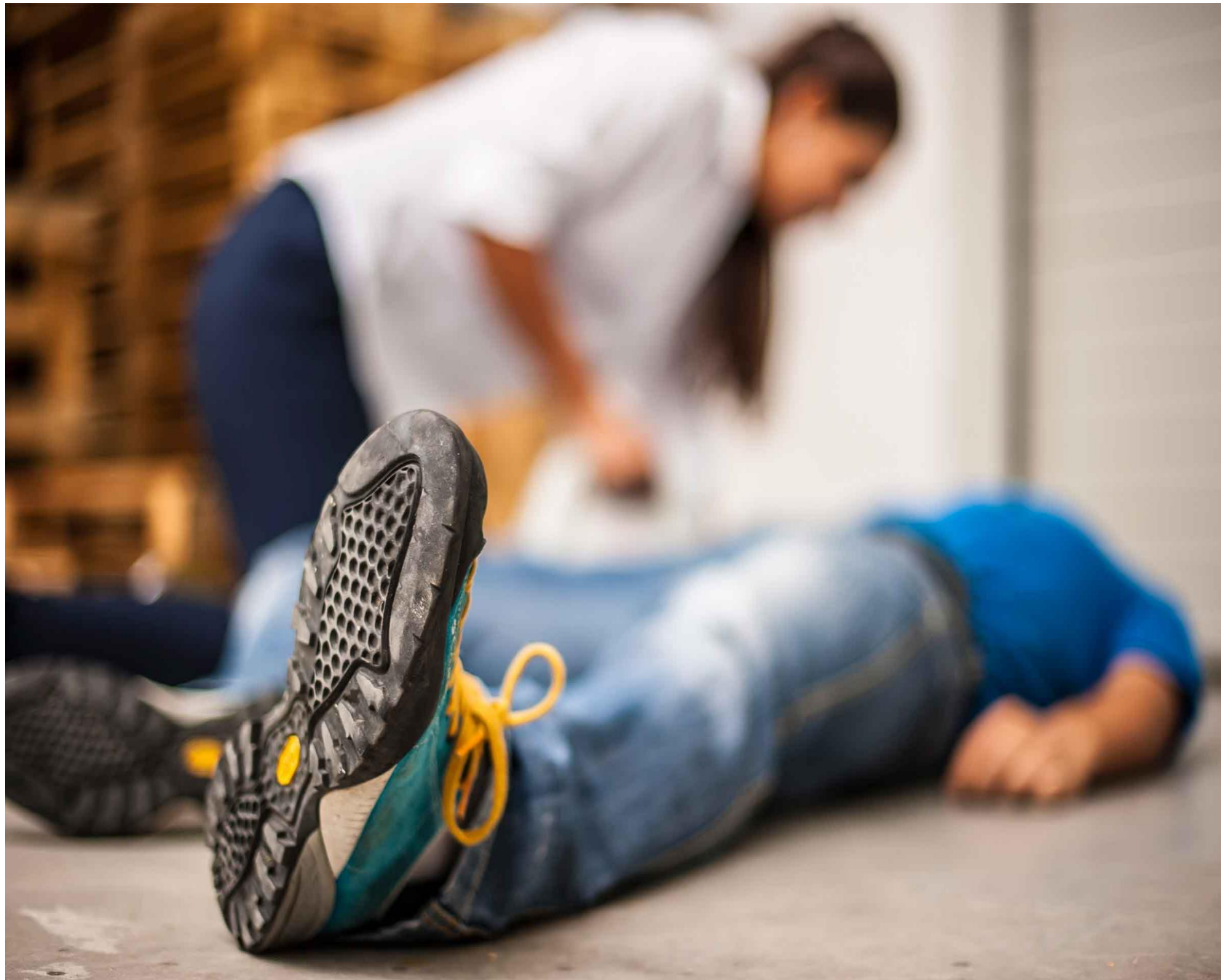
- **Patient feels:**
 - - faint / dizzy / light headed
- **Signs:**
 - slow pulse rate
 - pallor and sweating
 - nausea and vomiting
 - Patient may lose consciousness.



Syncope
(vasovagal attack, simple faint)

Management

- Lay the patient flat
- Give oxygen, loosen any tight clothing around the neck
- Maintain supine position and reassure until HR and BP recover
- Expect rapid recovery
- Unresponsive – always check for 'signs of life'



Angina

result from myocardial ischaemia caused by an imbalance between myocardial blood supply and oxygen demand.

Typically, angina is precipitated by exertion, eating, exposure to cold, or emotional stress. It lasts for approximately one to five minutes and is relieved by rest or glyceryl trinitrate.

Signs and symptoms of angina:

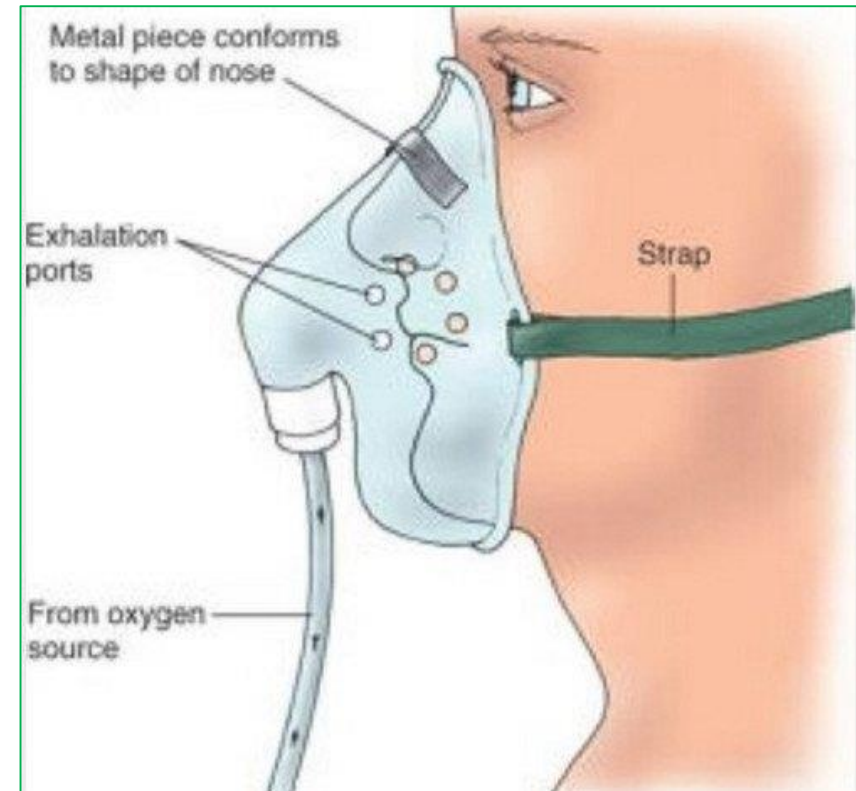
Central chest discomfort rather than frank pain +/- radiations to either the arm, neck, jaw or the epigastric region. It may be accompanied by nausea, sweating, dyspnoea, or feeling faint.



management of angina

- Stop procedure
- Sit patient up if dyspnoeic and give O₂
- GTN 400 µg spray/sublingual tabs

If symptoms continue for more than 10 minutes and are *not* relieved by the glyceryl trinitrate then suspect myocardial infarction!



MYOCARDIAL INFARCTION

NURSING CARE PLAN

is the irreversible necrosis of heart muscle secondary to prolonged ischaemia.

results from an imbalance of oxygen supply and demand.

Approximately 90% of MIs result from an acute thrombus that obstructs an atherosclerotic coronary artery, resulting in complete occlusion of the vessel.

Signs and symptoms of MI:

Severe central crushing chest pain with possible radiations to arms, neck, jaw, epigastrium.

Nausea and possibly vomiting, sweating, pallor, cold sweaty skin, dyspnoea.

Signs of pump failure:

hypotension, tachycardia.

management of acute myocardial infarction



- **Patient positioning: sitting up if SOB; flat if faint.**
- **Give high flow O2**
- **Give aspirin 300mg chewed or sucked**
- **Monitor vital signs until**
- **EMS arrive. Prepare to initiate**
- **basic life support**

Epilepsy

is a recurrent tendency to **spontaneous, intermittent, abnormal electrical activity** in a part of the brain, **manifesting as seizures.**

Signs and symptoms

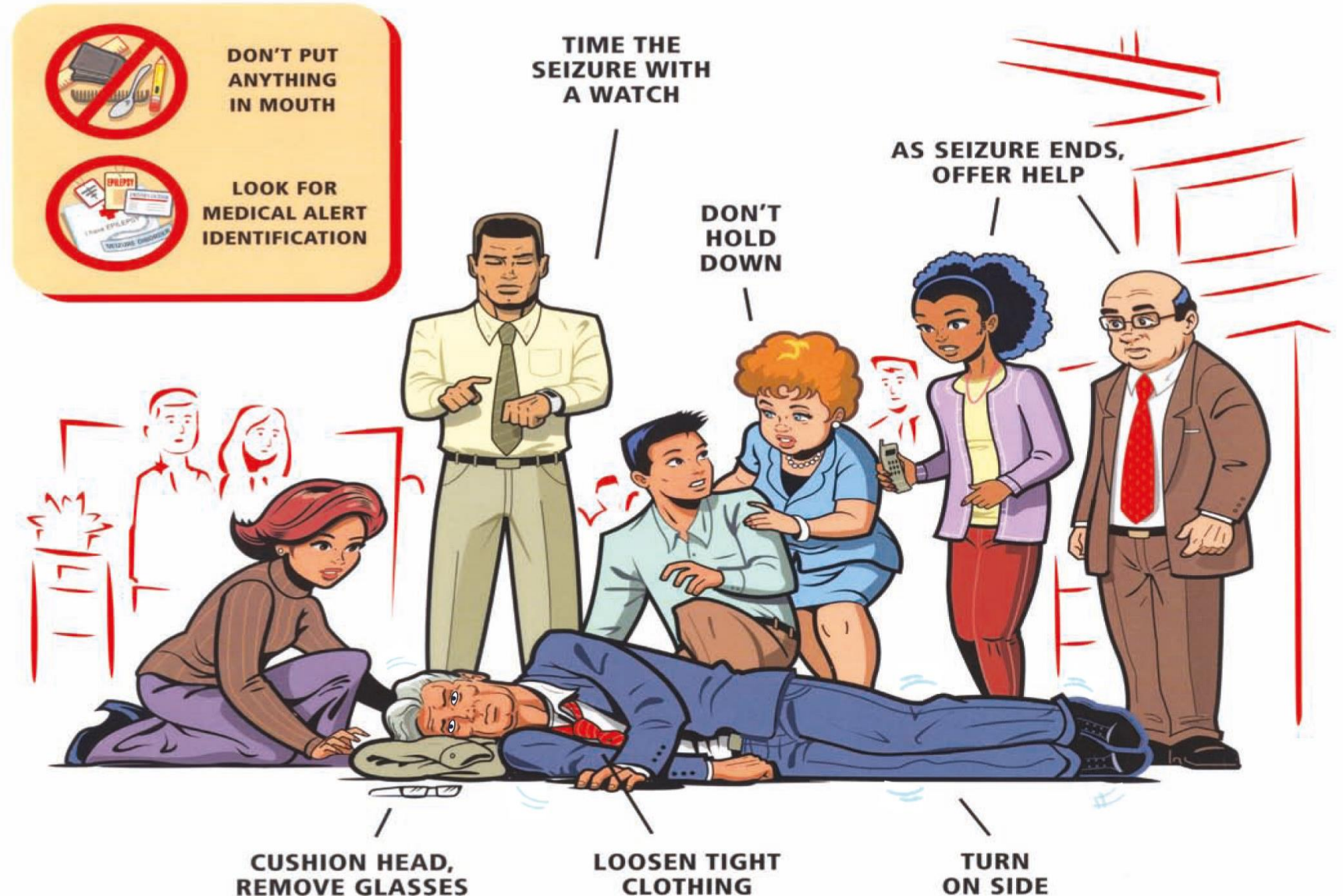
- change in mood or behaviour, which is not part of the seizure.
- An aura may immediately precede a fit described as a “**strange feeling in the gut**”,
- sensation of déjàvu, or strange smell or flashing lights, and is a feature of a seizure.

Major seizure: a sudden spasm of muscles producing rigidity (tonic phase) this may be accompanied by jerking movements of the head, arms and legs (clonic phase). becomes unconscious and may have noisy or spasmodic breathing, salivation and urinary incontinence.



management of seizures seen in patients with epilepsy

- Remove dangerous objects from the mouth and around the patient
- Lie patient flat
- Turn patient to the recovery position
- Midazolam buccally/intranasally; 10mg – adults/child >10 years
7.5mg – child 5-10 years
Or Diazepam 10mg IV over two minutes (2.5mg over 30 seconds)



Status epilepticus

- **characterized by** 30 minutes of continuous seizure activity or by multiple consecutive seizures without return to full consciousness between the seizures. It is now thought that a shorter period of seizure activity causes neuronal injury and that seizure self-termination is unlikely after five minutes. As a result, some specialists suggest times as brief as five minutes to define status epilepticus.



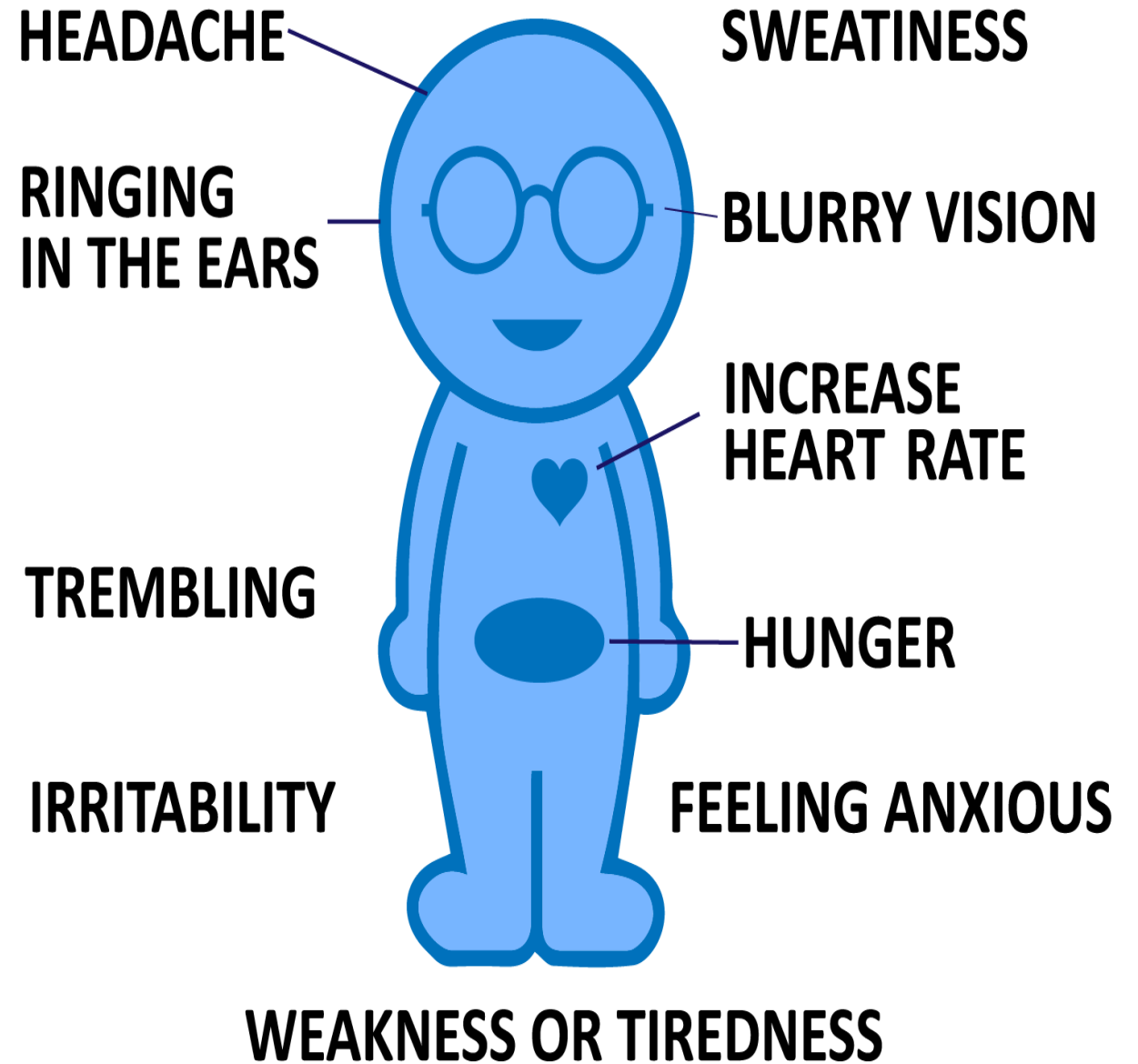
Diabetes



- condition in which the **body fails to regulate the concentration of glucose in the blood.**
- Diabetics are prone to two main problems:
 - Hypoglycemia
 - Hyperglycemia

Hypoglycemia

- Plasma glucose is **normally maintained** at levels **between 3.6 and 5.8mmol/l**.
- Cognitive function deteriorates at levels $<3\text{mmol/l}$.
- In people with diabetes, the most **common cause** is a relative imbalance of the administered versus required insulin or oral hypoglycaemic drugs.



management of hypoglycemia

Conscious/ co-operative

Give 10-20mg of glucose (two teaspoons of sugar, 200ml of milk or non-diet soft drink)
OR give "hypo-stop gel" sublingually

Conscious/ unco-operative

Glucagon 1mg: can be given SC, IM or IV

Children under 25kg (eight years):
give 0.5mg Glucagon

Treat low blood sugar: 15:15 rule



Check
blood sugar



Eat 15 grams of carbohydrate



Wait 15
minutes for
sugar to get
into blood

Signs and Symptoms

Colour: flushed

Skin: dry

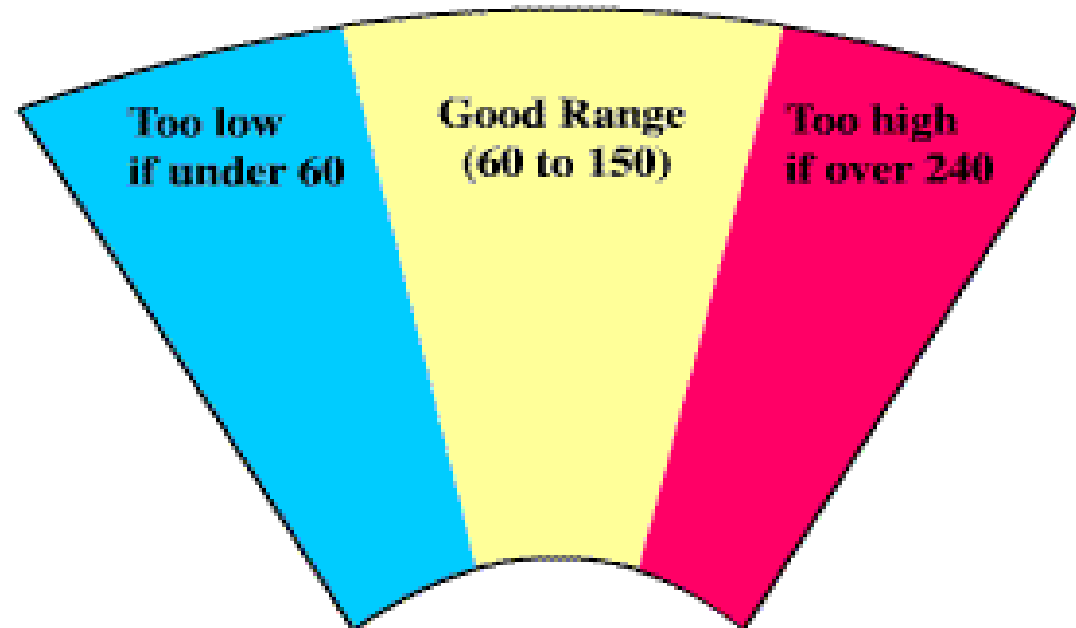
Consciousness: restless,
drowsy or lethargic
behaviour

Pulse: Rapid and full

Breathing: deep and sighing,
possible sweet smell -
acetone

Onset: gradual, hours to
days

Treatment: insulin



Asthmatic attack

- Asthma is characterised by recurrent episodes of dyspnoea, cough, and wheeze caused by reversible airway obstruction.

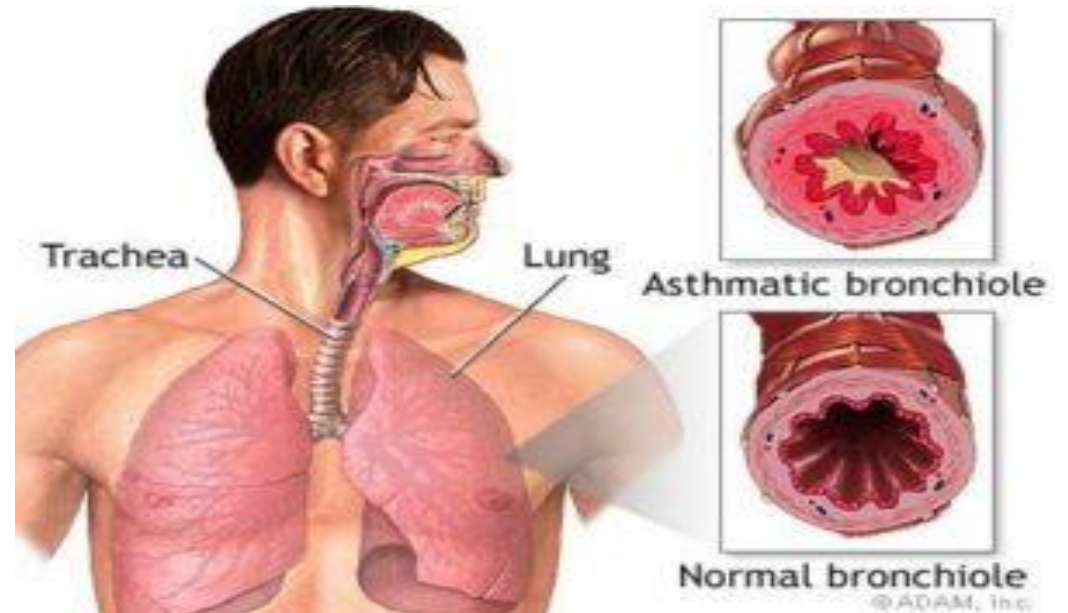
Signs and symptoms:

dyspnoea, wheeze, cough and sputum

Severe

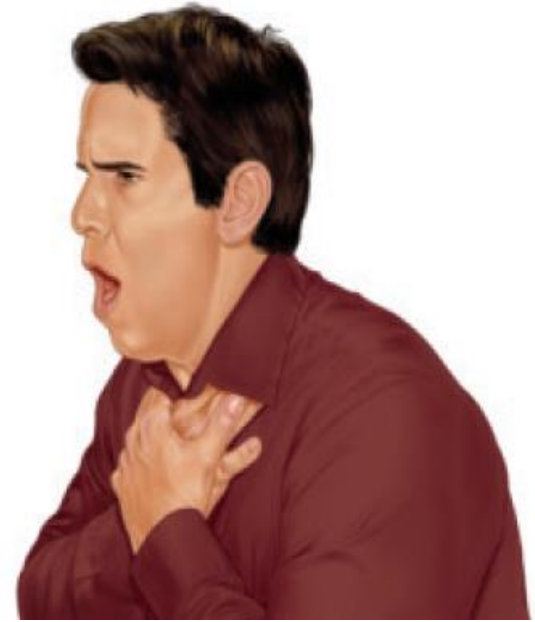
Inability to complete sentences, tachycardia >110, respiratory rate >45/min.

Life-threatening: “silent chest” on auscultation, cyanosis, sweating, flush, bradycardia/hypotension.



management of an asthmatic attack

- Remain calm.
- Sit patient up and loosen tight clothing.
- High flow O₂
- Salbutamol metered dose inhaler with volumatic spacer one puff and allow six breaths. Repeat every minute for five minutes or until symptoms improve.
- If no improvement after five minutes, and repeat spaced salbutamol. Consider giving 100mg hydrocortisone IM or IV and monitor ABC until EMS arrive.



management of foreign body obstruction

Assess severity

Mild airway obstruction (effective cough)

- Encourage cough
- Continue to check for deterioration to an ineffective cough or relief of obstruction

Severe airway obstruction(ineffective cough)

- Unconscious /Start CPR
- Conscious/
 - Five back blows,
 - five abdominal thrusts

Five-and-Five

Give 5 back blows

Give 5 abdominal thrusts

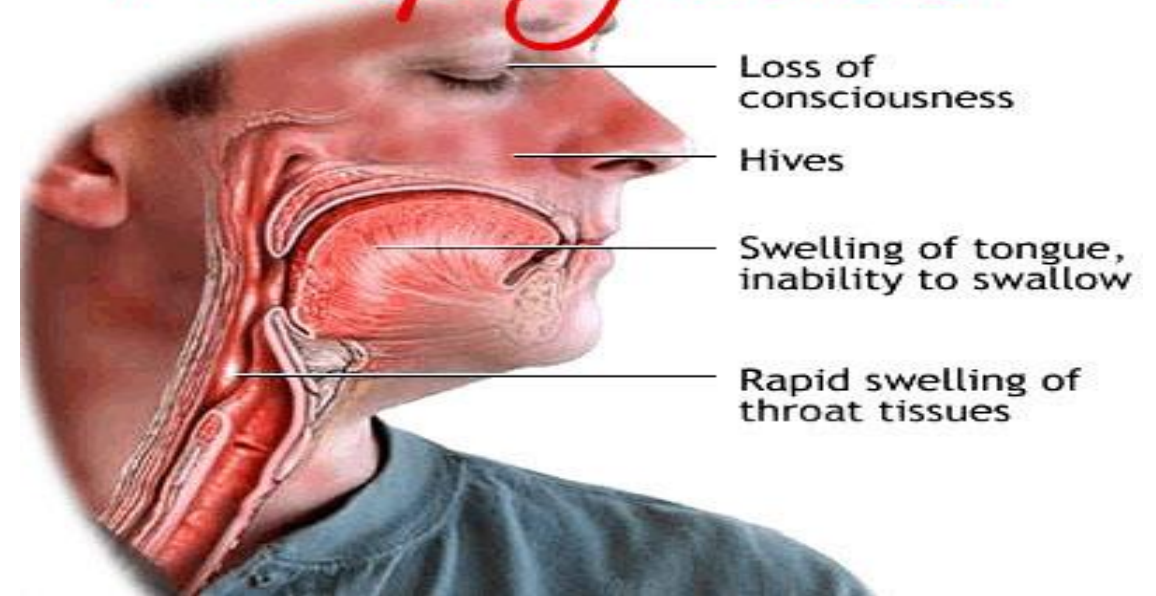


Anaphylaxis is a generalised immunological condition of sudden onset, which develops after exposure to a foreign substance.

It ultimately results in the release of inflammatory mediators (histamine, prostaglandins, thromboxanes, platelet-derived growth factors and leukotrienes) producing clinical manifestations.

Signs and symptoms: itchy rash, facial swelling, bronchospasm, tachycardia, hypotension, stridor

Anaphylaxis



Hives or nettle rash



Swelling of the mouth



Hives or nettle rash



Hives or nettle rash

management of anaphylaxis

Early treatment with intramuscular adrenaline is the treatment of choice for patients having an anaphylactic reaction.

- Remove cause(latex gloves, etc.)
- Lie supine, raise legs,give high flow O2
- Give adrenaline 0.5mg IM (0.5mls of 1:1,000)
- Monitor HR, BP and respiratory function.

Repeat adrenaline IM every five minutes until improvement.e (latex gloves, etc.)

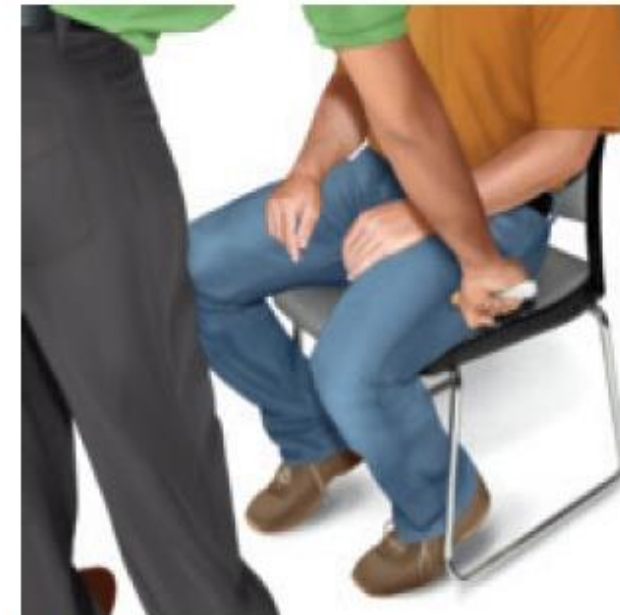
- Also consider giving:
 - a) Hydrocortisone 200mg IM
 - b) Chlorphenamine 10mg IM



Adrenaline autoinjector



A



B

Figure 15. Using an epinephrine pen. **A**, Taking off the safety cap. **B**, A rescuer uses the pen.

Causes of Unconsciousness

F Fainting

I Infantile convulsion

S Shock

H Head injury

S Stroke

H Heart Attack

A Asphyxia

P Poison

E Epileptic Fit

D Diabetes

The ABC of medical emergencies

Airway

Partial obstruction

- air entry is reduced and noisy
 - stridor
 - wheeze
 - snoring

- ‘see-saw’ respirations

Complete obstruction

- blue lips and tongue
- no breath sounds

What to do!

- airway clearance
 - head tilt/ chin lift
 - jaw thrust
- remove visible foreign bodies, debris
- simple airway adjuncts
 - oropharyngeal
 - nasopharyngeal
- give oxygen



Airway Breathing Circulation

Breathing

- Look, listen and feel
- Count the respiratory rate
- Assess the
 - depth of each breath
 - pattern of respiration
- Listen to breath sounds
 - gurgling
 - stridor
 - wheeze

Circulation

- Look at the colour of the hands and fingers
- Assess the limb temperature
- Assess capillary refill time
- What is the pulse rate
- Is the pulse strong or weak

