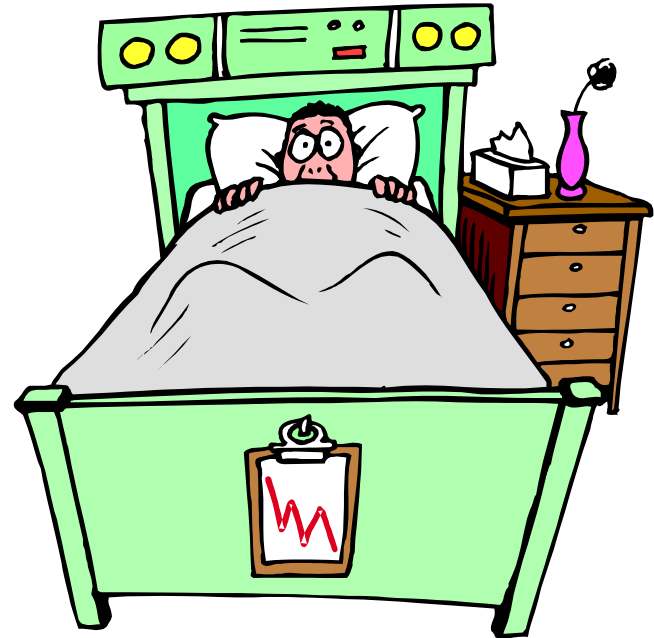




ENHANCED HEALTH
IN CARE HOMES
WORKING TOGETHER TO IMPROVE QUALITY

Resident At Risk



The National Early Warning Score (NEWS) and
Monitoring Vital Signs

Schein et al

- 64 consecutive ward patients requiring CPR
- 84% clinical deterioration 8 hours before arrest
- Pathophysiology mainly respiratory or metabolic
- 8% discharged from hospital
- Conclusions- Cardiac arrest is predictable and preventable

Franklin et al

- 150 Consecutive medical patients sustaining cardiac arrest
- 66% deterioration 6 hours before arrest
- 9% discharged from hospital
- Causes- Failure to notify clinician, failure of clinician to act appropriately, ICU failure to stabilise
- Conclusions- Cardiac arrest is predictable and strategies to prevent recommended

Franklin et al. Developing strategies to prevent in-hospital cardiac arrest: analysing responses of physicians and nurses in the hours before the event. Crit Care Med 1994;22:244-7

Goldhill et al

- PAR Team established
- Patients seen by PART had a CPR rate of 3.6% and 25% mortality overall
- Patients not seen by PART had a CPR rate of 30.4% and a mortality rate of 45%

Early Warning Scores

- Initial description of an EWS
- 5 point acute physiology score
- Retrospective and prospective analysis to set a trigger point
- Introduced into routine clinical use on wards
- ‘Led to much earlier appropriate referral’

Modified EWS

- respiratory rate
- systolic blood pressure
- pulse rate
- temperature
- a simple assessment of level of consciousness

High scores were associated with a significantly increased risk of death (odds ratio 3.8) and ICU admission (OR 5.8).

High respiratory rate was the single most sensitive measure.

National Early Warning Score (NEWS)

and Sepsis.....2 red boxes

PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
Respiratory Rate (breaths/minute)	≤ 8		9 - 11	12 - 20		21 - 24	≥ 25
Oxygen Saturations	≤ 91%	92 - 93%	94 - 95%	≥ 96%			
Any Supplemental Oxygen		Yes		No			
Temperature °C	≤ 35°C		35.1 - 36 °C	36.1 - 38°C	38.1 - 39°C	> 39.1°C	
Systolic BP (mmHg)	≤ 90	91 - 100	101 - 110	111 - 219			≥ 220
Heart Rate (beats/min)	≤ 40		41 - 50	51 - 90	91 - 110	111 - 130	≥ 131
Conscious Level				Alert			Responds to Voice, Pain or Unresponsive or new Confusion

NEWS SCORE	FREQUENCY OF MONITORING	CLINICAL RESPONSE
0	Perform observations and NEWS daily for first 3 days of admission	Continue routine NEWS monitoring with <u>every</u> set of observations
LOW Total: 1-4	Patient should have a specific management plan which describes usual parameters and has been implemented by the ANP or GP.	If NEWS is outside set parameters <ul style="list-style-type: none"> • 4 hourly observations • Contact Airedale Digital Care Hub (Telehub)
MEDIUM Total 5 or more Or 3 in one parameter	Patient should have a specific management plan which describes usual parameters and has been implemented by the ANP or GP.	If NEWS is outside set parameters <ul style="list-style-type: none"> • Hourly observations • Immediately contact Airedale Digital Care Hub (Telehub)
HIGH Total 7 or more	Patient should have a specific management plan which describes usual parameters and has been implemented by the ANP or GP.	If NEWS is outside set parameters <ul style="list-style-type: none"> • Immediately repeat observations and NEW score • Immediately contact Airedale Digital Care Hub (Telehub) Arrange urgent transfer to acute hospital <u>if appropriate</u> and patient consents

SEPSIS – COMMUNITY SCREENING AND ACTION TOOL

Sepsis is a life threatening condition that arises when the body's response to an infection injures its own tissues and organs.

Sepsis leads to shock, multiple organ failure and death especially if not recognized early and treated promptly.

Screening, early intervention and immediate treatment saves lives.

1. Could this be a severe infection?

For example:

- Chest / lung infection
- Water / bladder / kidney infection
- Does the person have new tummy/ belly pain
- A new severe headache or neck pain
- A new red rash or swollen joint

No

Sepsis unlikely to be present.
Continue usual care pathway.

Yes

2. Are any 2 of the following present?

- Feverish / hot with uncontrolled shaking
 - Fast or irregular breathing
- A fast heart beat or palpitations
- New confusion or difficult to wake up

No

Yes

3. Is any red flag present?

- Unable to feel a pulse at the wrist
- Very fast breathing (more than one breath every 2 seconds)
 - Blue lips
- Responds only to voice or pain/ unresponsive
 - Non-blanching rash or mottled skin

No

Sepsis present
Contact the Digital Care Hub or 111.

- Clearly state that the person may have sepsis.
- Ensure same day assessment by medical professional.
- May require hospital referral or assessment by GP.

Yes

Red Flag Sepsis

- This is a time critical condition, immediate action is required.
- Communication: Call Airedale Digital Care Hub (Telemedicine) or Phone 999.
- Inform Hub or ambulance call taker that the person has 'Red Flag Sepsis'.
- Tell the nurse or paramedic team about any allergies the person may have (especially antibiotic allergies)

If time allows:

- Find all the persons medication they currently take and give them to the paramedic.
- Inform next-of-kin what is happening and where the patient is going

How to monitor a respiratory (breathing) rate and why

Following slides from Kay Ford, Health Education England

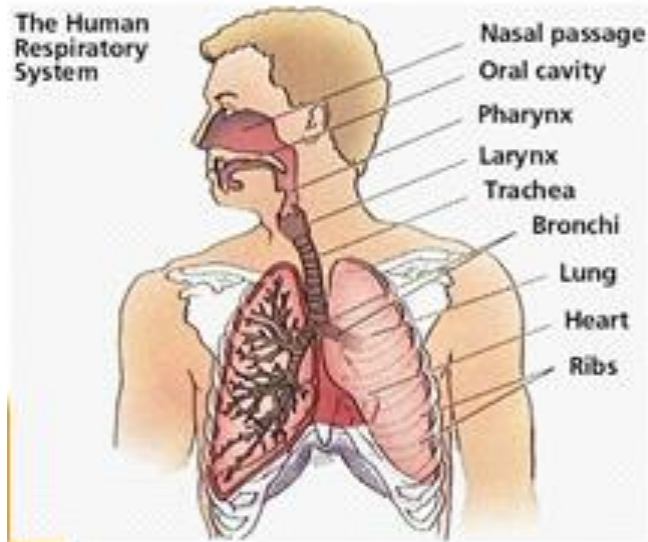
Function of the respiratory system

Respiration

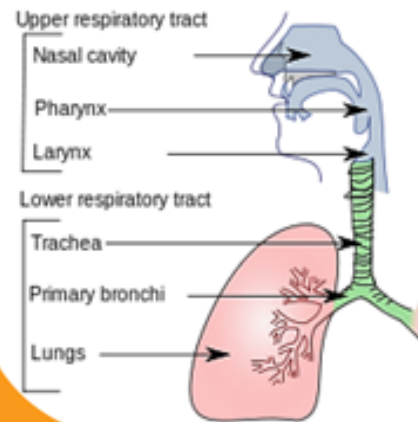
The most sensitive and earliest indicator that there is a deterioration in a person's condition
Gain base rate respiration on admission as this will give you what is 'normal' for the person

Function of the respiratory system

Allows us to breathe in oxygen which is used by cells throughout the body to create energy
By product of respirations carbon dioxide which has to be eliminated by the body quickly – this is done when we breathe out



The respiratory tract



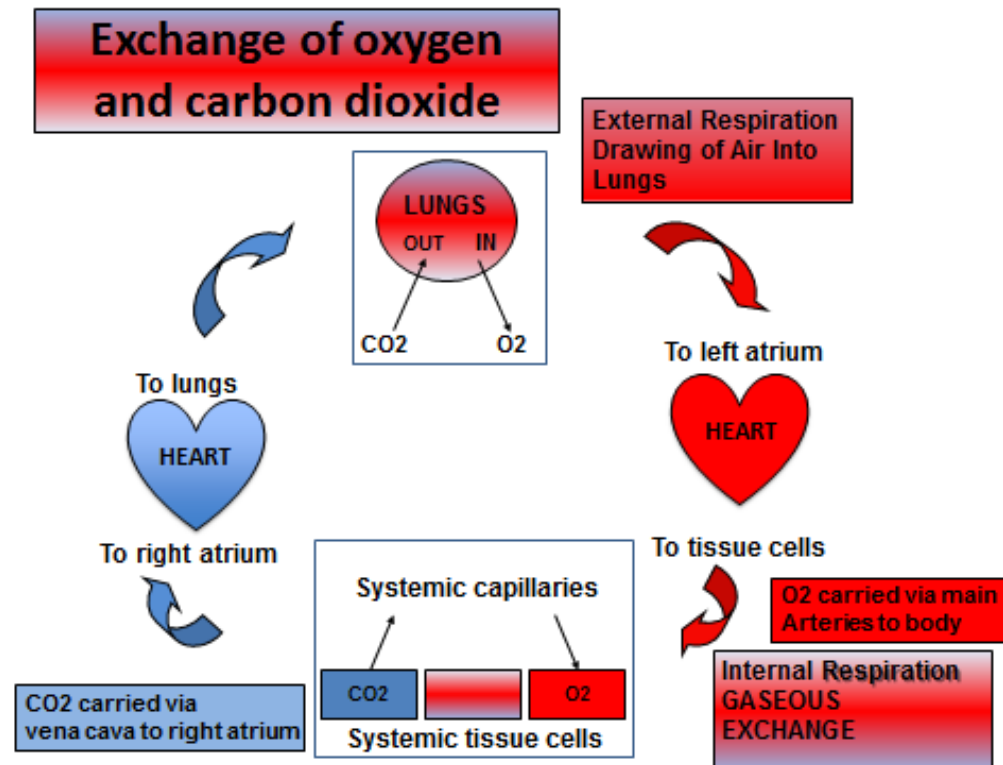
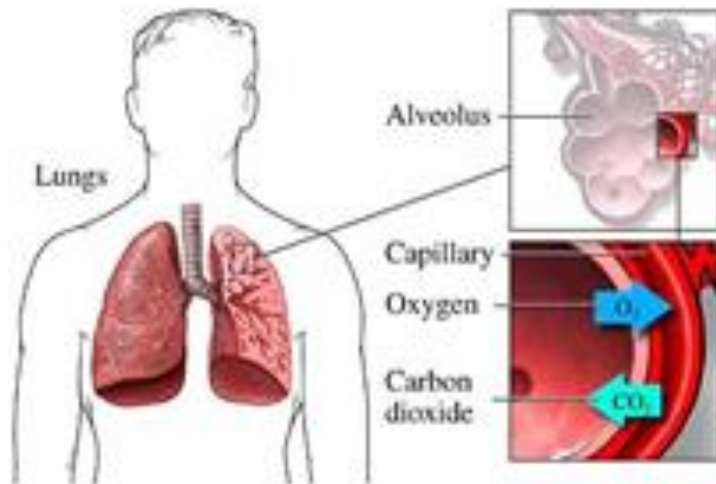
yh.hee.nhs.uk

- The nasal cavity, oral cavity and pharynx warm and filters the air as we breathe it in
- The larynx is where the vocal cords are situated
- The trachea divides into the left and right primary bronchus
- There are then approximately 25 further divisions (like the branches of a tree) until the alveoli

Gaseous exchange in the lungs

Lungs are made up of tiny air sacs called alveoli where gas exchange takes place

The exchange is oxygen and carbon dioxide across the respiratory membrane into the blood



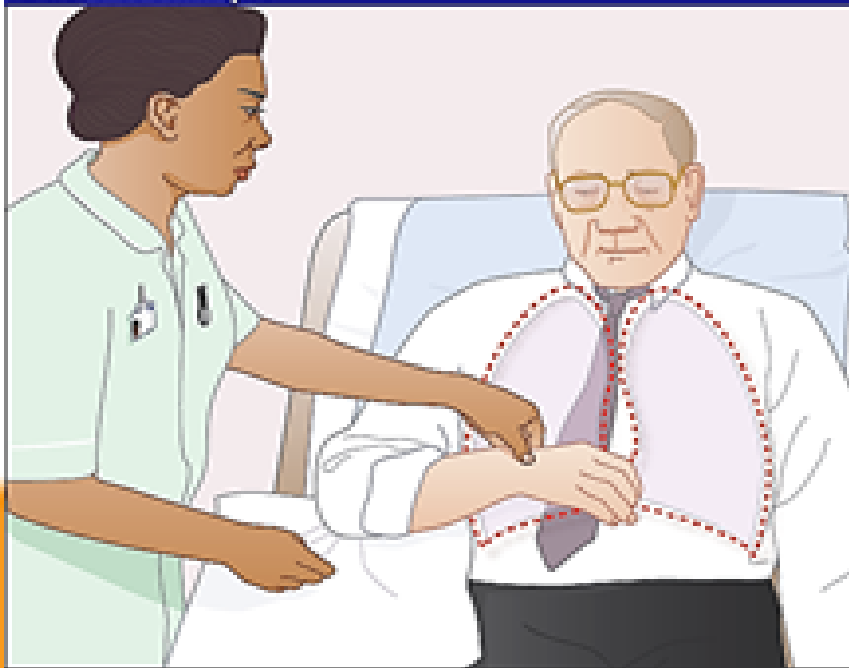
Respiratory rates

Age	Rate (breaths/min)
Newborn	30-50
2-12	20-30
Teenager	12-20
Adult	12-18

The respiratory rate varies at different ages, as shown in the chart above. Make a note of deviations from the patient's normal base-line respiratory pattern, such as the depth or rhythm of breathing.

Assessing Respiration:

Basic technique



yh.hee.nhs.uk

Can you see the chest moving CLEARLY to record the rate

Place the patient's arm on the chest whilst you are recording pulse

SO WHEN YOU COME TO ASSESS RESPIRATIONS your hand is already in place

You can move smoothly from assessing the pulse to respiration and THE PATIENT SHOULD NOT NOTICE

If patients ARE AWARE you are monitoring their breathing they may become self conscious and alter their pattern

Record for 1 MINUTE

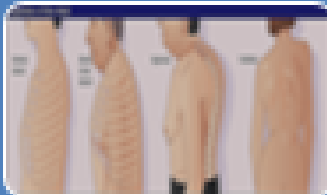


Assess colour of skin, including extremities and the colour of nail beds for signs of paleness or bluish tint. Finger clubbing sign of long term cardiac or respiratory disease



Odour of breath may be due to:

poor oral hygiene; fruity breath caused by ketoacidosis in diabetic patients and faecal odour caused by bowel obstruction

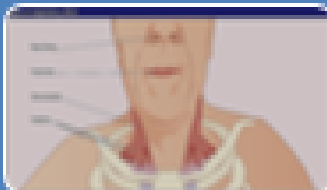


Normal chest sternum flat, ribs and shoulder blades prominent.

Normal breathing accessory muscles not used

Barrel chest = chronic respiratory conditions, e.g. emphysema

Deformed spine can interfere with breathing



At rest breathing should be quiet and effortless

Check to see if accessory muscles in neck are being used, lips pursed or nasal flaring

May be cough, wheeze, stridor or stertor (like snoring due to tracheal secretions)



Observe colour and consistency of any sputum:

Normal = clear and watery

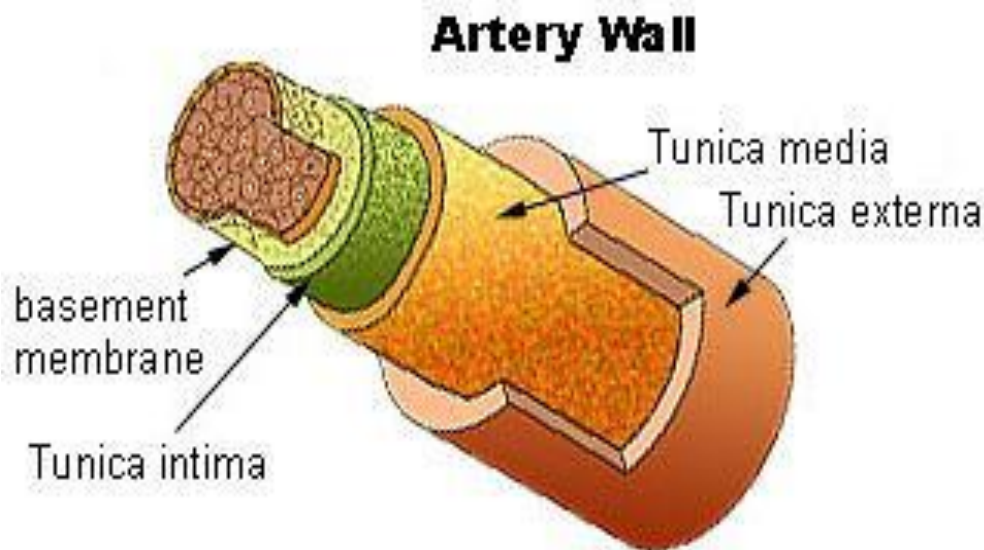
How to do a saturation and why

How to monitor a heart rate/pulse and why

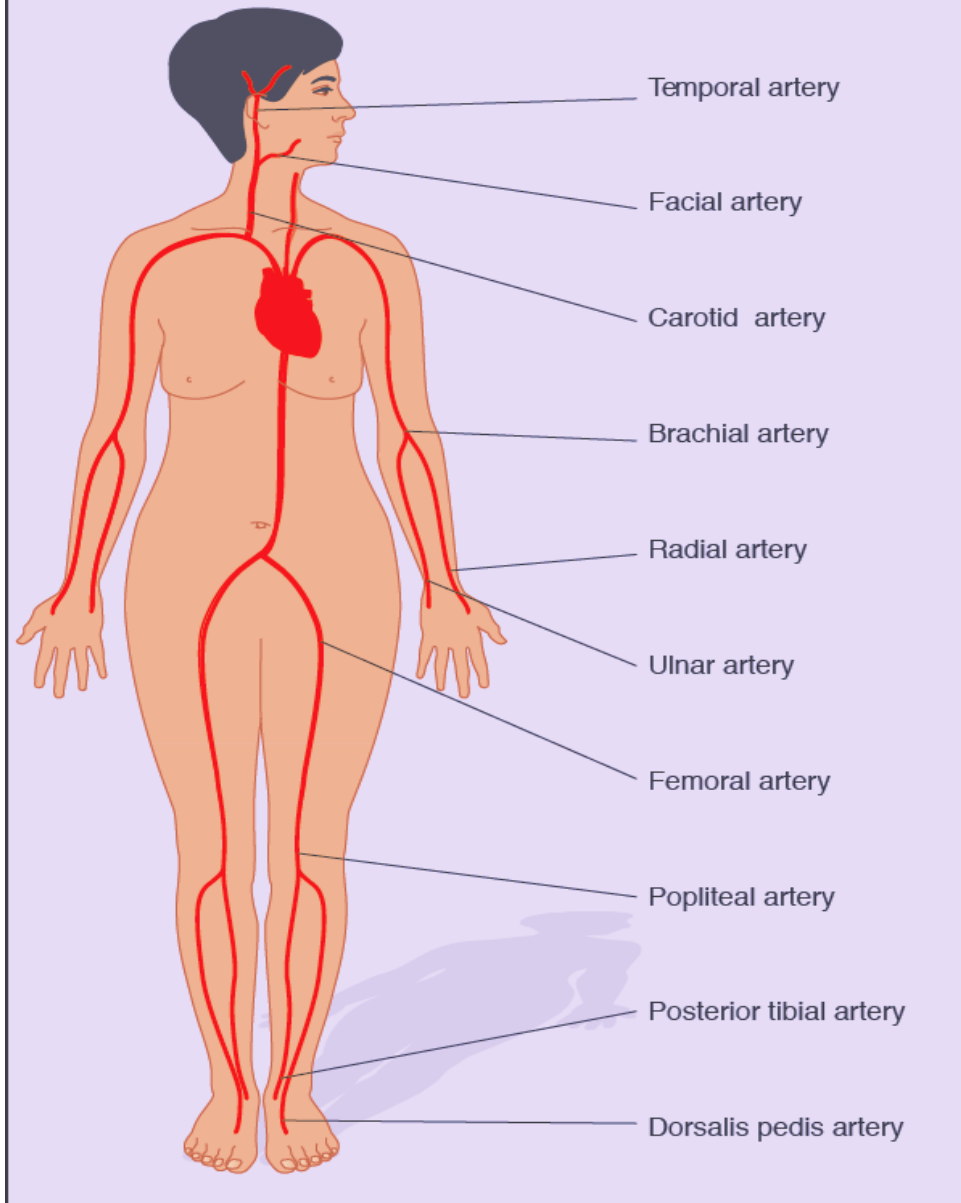
Arteries are made up of 3 elastic layers and a hollow core (lumen)

As blood is pushed out of the heart into the lumen of the arteries a pressure wave is created

This stretches the elastic walls of the artery creating a pulse

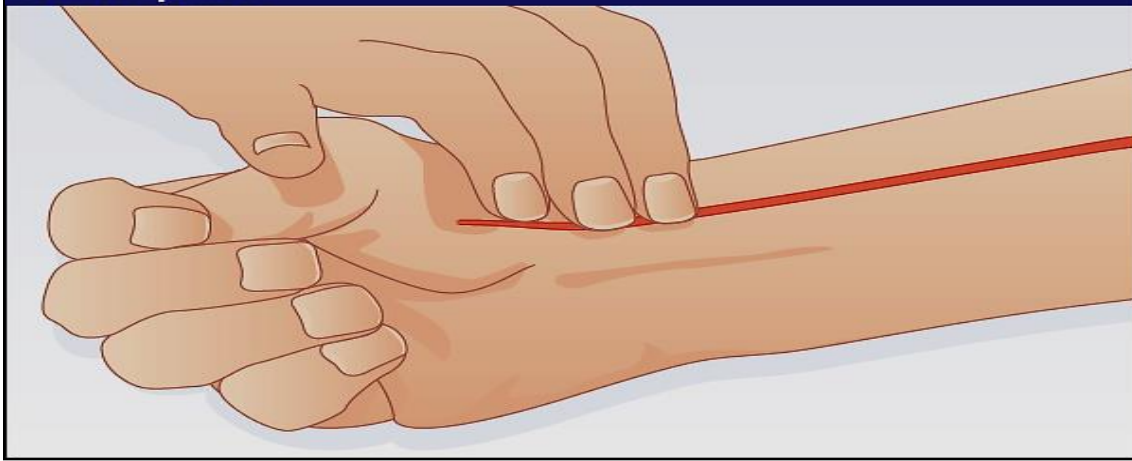


Common peripheral pulse points



- A pulse can be felt in arteries that lie near the surface
- By pressing the artery against firm tissue, such as bone, you can feel the pulse
- The pulse rate is the same as the heart rate
- A normal heart rate of an adult is between 60-90 beats per minute

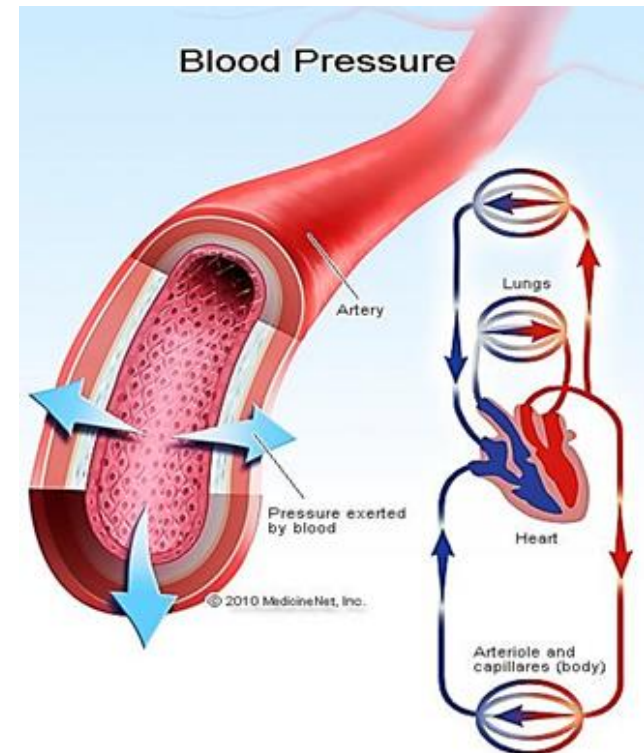
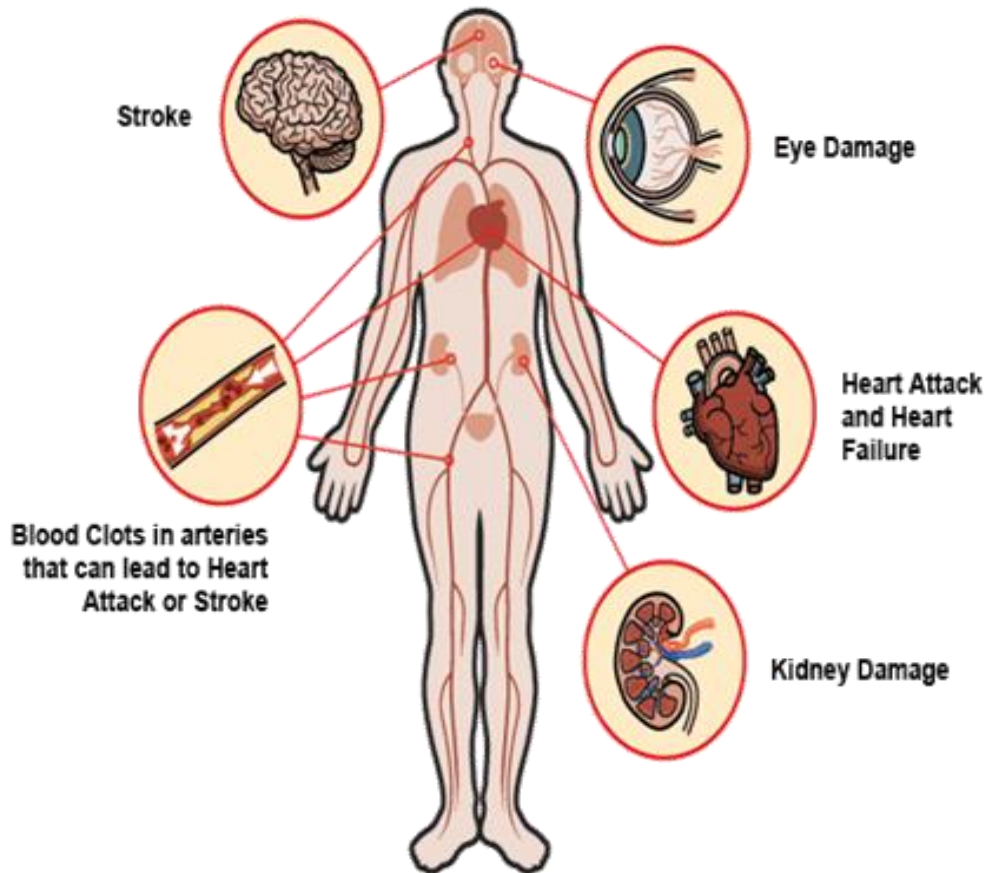
Radial pulse



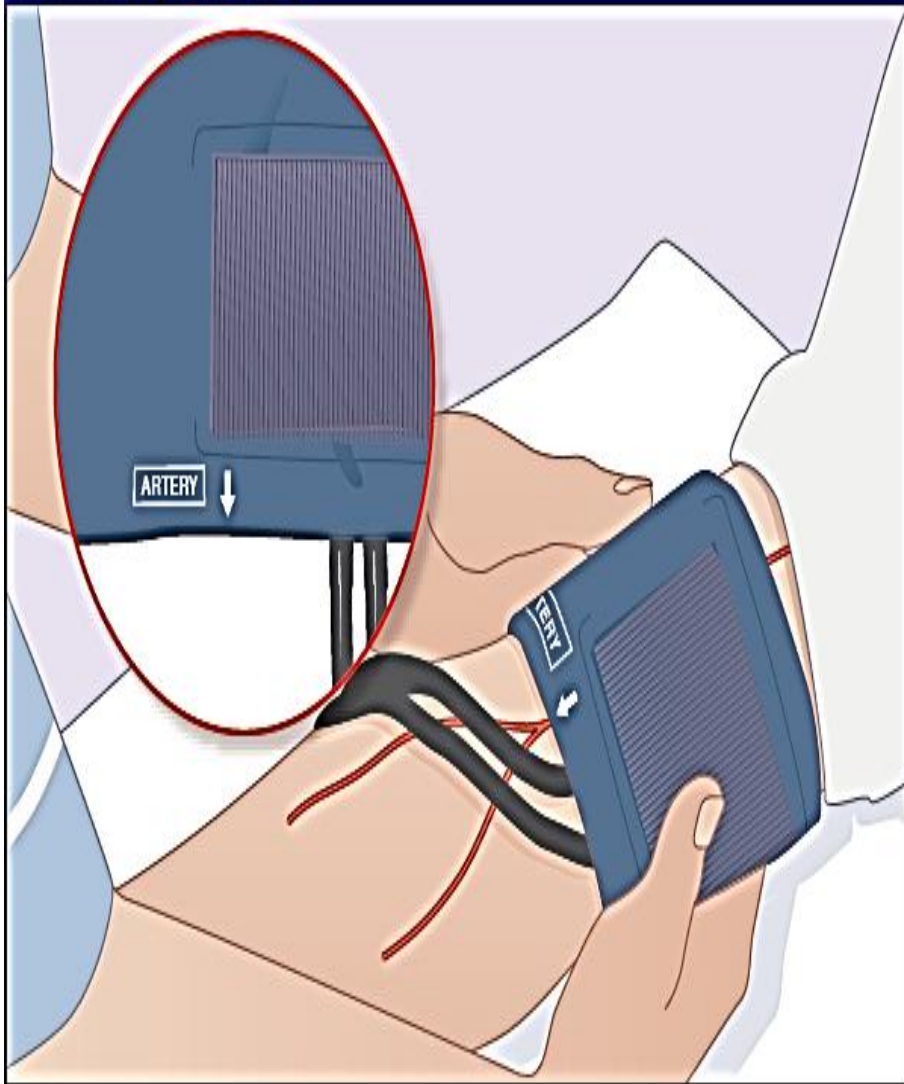
- The radial pulse can be felt at the wrist just below the thumb, so palpate it with 2 or 3 fingers as shown.
- Count the pulse for 60 seconds initially, this will allow you to also detect any abnormalities in rhythm and strength.
- Rhythm – is the pulse even or irregular? Is the volume – strong/weak/ easy to feel?
- Associated condition – skin clammy/dry/sweaty
- Inform and escalate concerns

How to monitor a blood pressure and why

High Blood Pressure

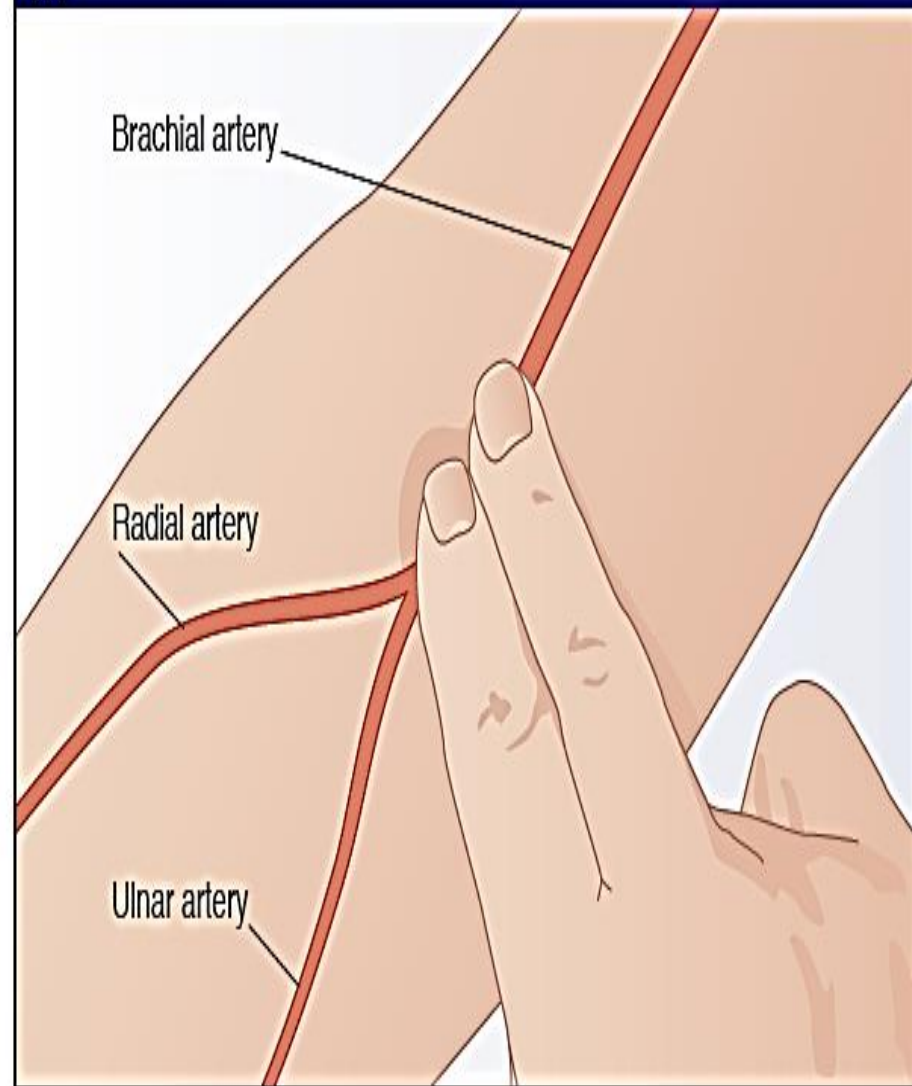


Brachial pulse: (a)



When measuring blood pressure, it is common to palpate the brachial pulse to ascertain its location before positioning the diaphragm of the stethoscope. If there is an arrow on the cuff, this must line up with the brachial artery.

(b)



This pulse site may offer more detail about the volume and character of the pulse.

Blood pressure is taken for various reasons

- To determine the blood pressure on admission for a baseline measurement
- Deterioration of existing condition or when general deterioration of health
- Routine health check e.g diabetic monitoring
- Following a fall or change in medication or
- when monitoring fluctuations in BP

What do the numbers mean?

The top figure - pressure that is exerted on the artery walls when the heart has just beaten (systolic BP)

The bottom figure - background pressure in the arteries when the heart is at rest (diastolic BP) - **140 /80 mmHg**

Blood pressure may be defined as the force exerted by the blood against the walls of the vessels in which it is contained

In healthy people there is little difference between lying, sitting and standing BP measurements

Postural Hypotension

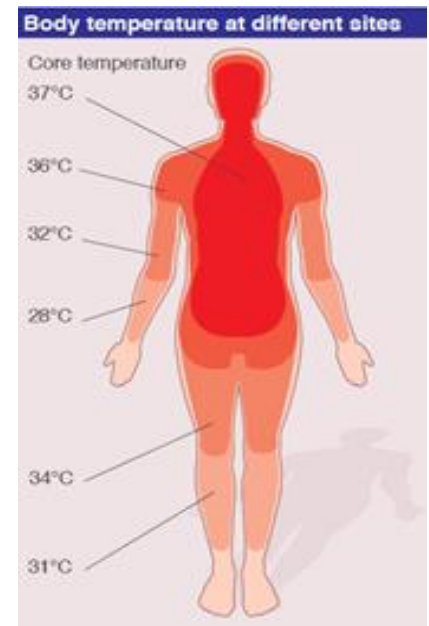
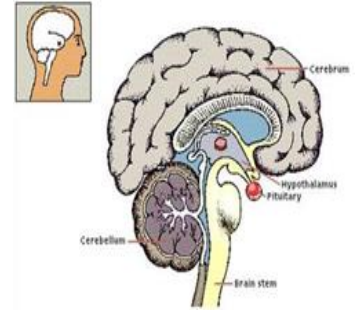
is more common in the elderly and those taking BP medication and if present, can lead to a SIGNIFICANT drop in BP when STANDING up from SITTING or LYING and can make your resident feel faint, dizzy or lead to unexplained falls

**What other vital signs are useful
and required for a NEWS**

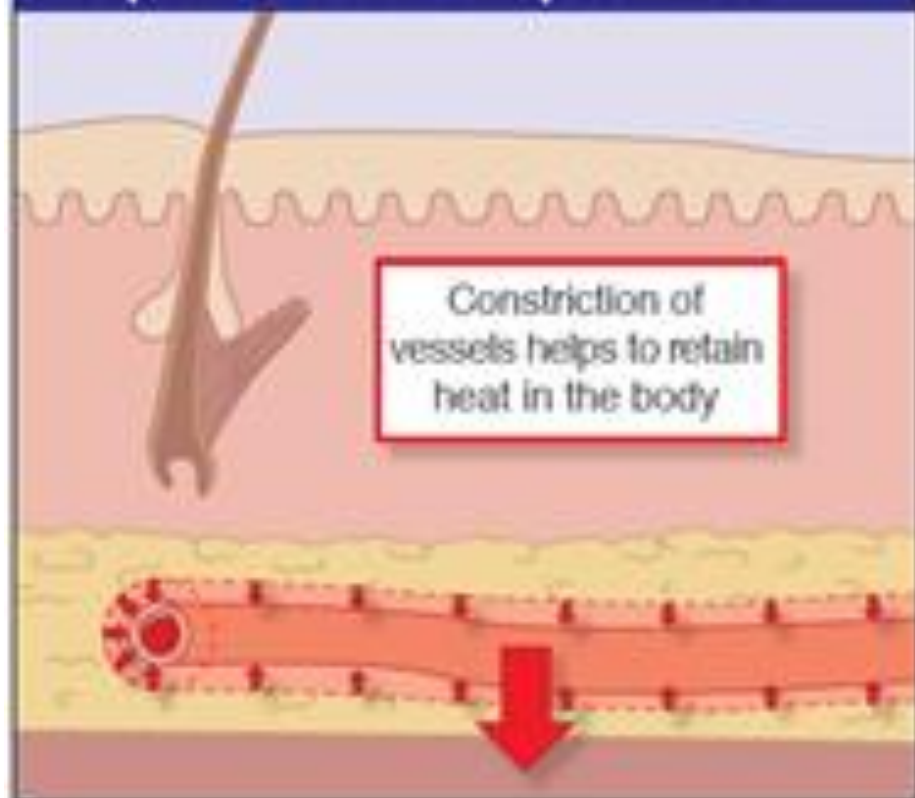
Temperature

Homeostasis and temperature control

- The core temperature is set and regulated
- by the hypothalamus
- A relative constant temperature is maintained by Homeostasis
- This is a constant process during heat loss and heat gain
- Normal body temperature is 36.8°C ($\pm 0.7^{\circ}\text{C}$)
- This is vital to maintain essential body function

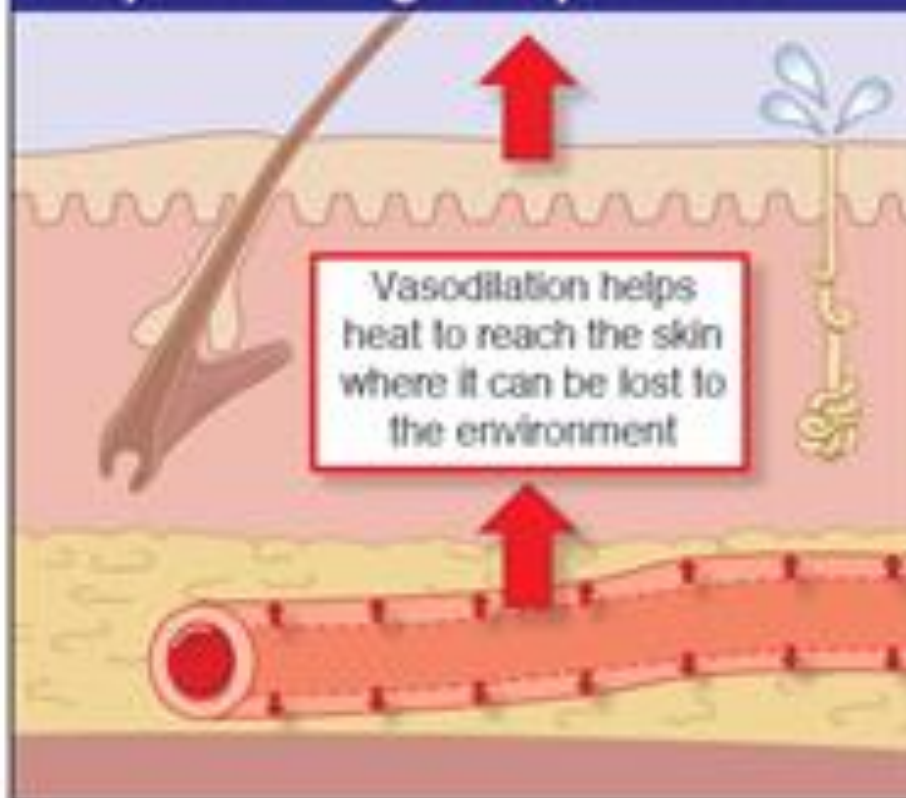


Response to low temperatures



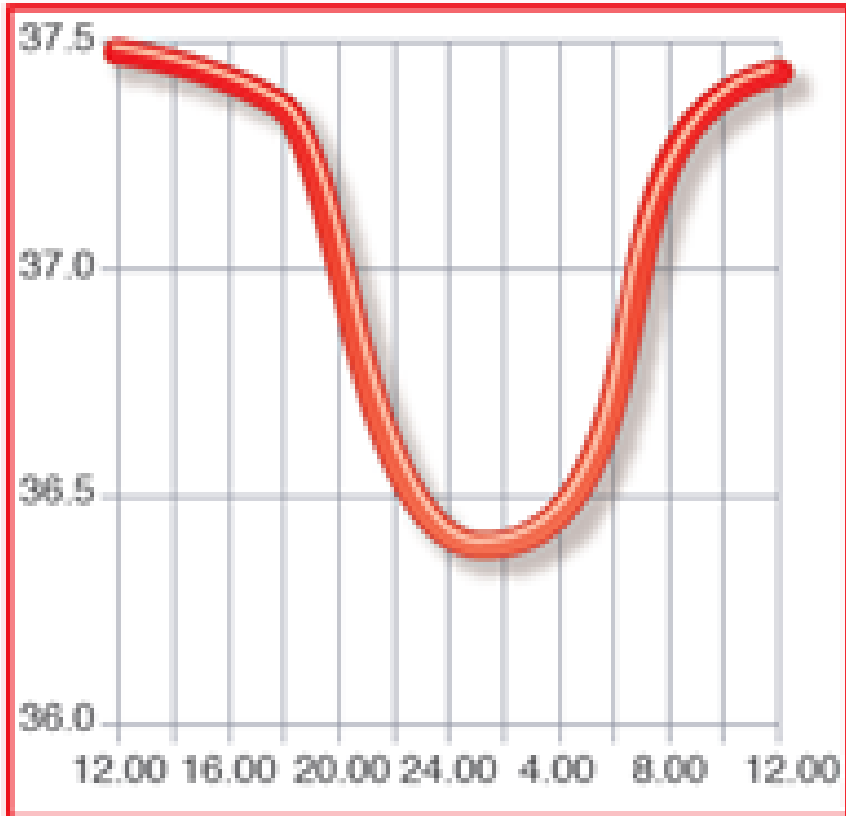
A range of mechanisms allow the body to maintain normal temperature (normothermia). Shivering raises core body temperature by producing heat in the muscles; blood vessels constrict to draw blood away from the skin, to achieve the same effect.

Response to high temperatures



To allow heat loss, vessels dilate (vasodilation) to allow warm blood to reach the skin. Heat is lost via convection, conduction and radiation. Hairs lie flat to prevent heat being trapped next to the skin. Sweating aids heat loss through evaporation.

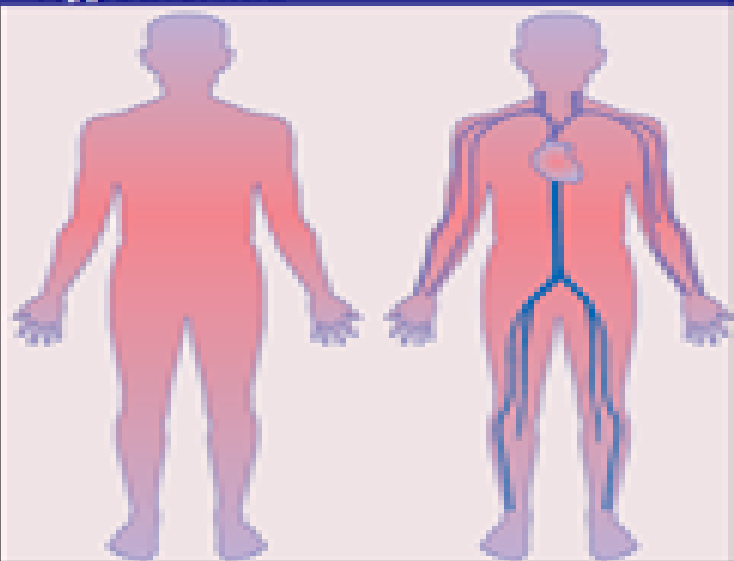
Daily change in temperature



Body temperature varies according to:

- Time of day
(lower in early hours of the morning)
- Age
- Hormonal factors
- The environment
- Exercise
- Smoking
- Chewing
- Hot drinks
- Where you take it

Hypothermia



A body temperature below 35°C due to:

Exposure to low environmental Temperatures

At Risk

Prolonged Surgery

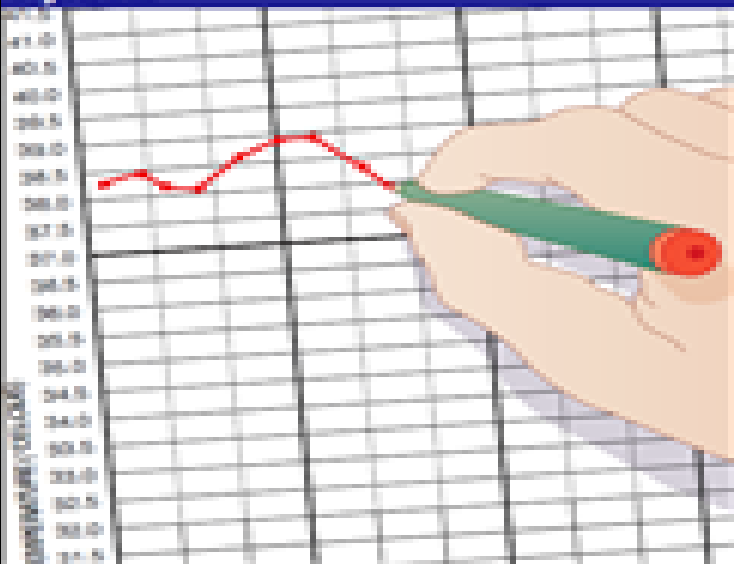
Elderly living alone, living in unheated accommodation

Trauma

Poor Mobility

Medically Induced e.g. after heart attack

Pyrexia



USUALLY indicates INFECTION

However are:

NON INFECTIONOUS causes

Drug Reactions

Transfusion Reactions

Neurological damage

Malignancy

Stroke

PYREXIA may be **ABSENT** in:

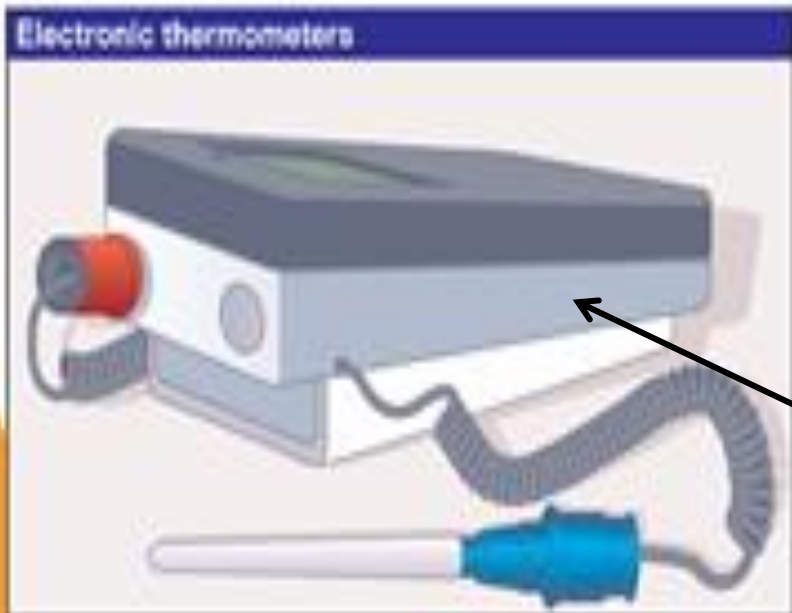
Elderly

Immunosuppressed



Normal	36.8°C (+/-0.7°C)
Low Grade Pyrexia	Up to 38°C
Moderate to High Grade Pyrexia	38°C to 40°C
High Grade or Critical Pyrexia	40°C + (* LIFE THREATENING*)
Hypothermia	Below 35°C

Uses infra-red sensor to record the temperature of the tympanic membrane via the ear canal



Now regularly seen in practice since the decline of mercury thermometers

AVPU

A = Alert

V = responds to Voice only

P = Responds to Pain only

U = Unresponsive

When communicating your findings: SBAR

SITUATION: Identify yourself and patient and give a concise statement of the problem

BACKGROUND: Give the important information relating to the situation including the results of the observations you have made and any relevant history

ASSESSMENT: Tell them what you think may be going on

RECOMMENDATION: Be clear to the what you are requesting, what action you want them to take and when you want this to take place.

Situation

- Identify yourself and the site/unit you are calling from
- Identify the resident by name and the reason for your concern
- Describe the specific situation about which you are calling, including the resident's name, date of birth or NHS number, resuscitation status, and vital signs if you are able to monitor them.

For example:

"This is Lou, a registered nurse at The Grange. The reason I'm calling is that Mrs Taylor in room 225 has become suddenly short of breath, her oxygen saturation has dropped to 88% on room air, her respiratory rate is 24 per minute, her heart rate is 110 and her blood pressure is 85/50."

Background

- Explain significant medical history
- Overview of the patient's background: date of admission, prior procedures, current medications, allergies and other relevant diagnostic results. For this, you need to have collected information from the patient's chart and care plan, although the nurse in the hub will be able to see the SystmOne record.

For example:

"Mrs. Taylor is a 69-year-old woman who has been here for three days and has a chest infection. She has been on antibiotics and appeared, until now, to be doing well. She is normally quite well and fairly independent."

Assessment

- Vital signs if you can
- Clinical impressions and your concerns

For example:

"Mrs. Taylor's vital signs have been stable since she came to us but she has deteriorated suddenly. She is also complaining of chest pain and there appears to be blood in her sputum."

- You need to think critically when informing the hub/GP of your assessment of the situation. This means that you have considered what might be the underlying reason for your resident's condition.
- If you are just concerned because the resident's condition is different to normal, you may say:

"I'm not sure what the problem is, but I am worried."

Recommendation

- Explain what you need - be specific about your request and time frame
- Make suggestions
- Clarify expectations
- Finally, what is your recommendation? That is, what would you like to happen by the end of the conversation with the hub nurse/GP?
- Any order that is given via telemedicine needs to be repeated back to ensure accuracy.
e.g.

*"I would like you to get a GP to come and review the patient?
I would like you to arrange an ambulance"*

e-learning package

<http://tfinews.ocbmedia.com/>

Any Questions?