

# VITAL SIGNS



# INTRODUCTION

**You may need to assess vital signs on clients in your care.**

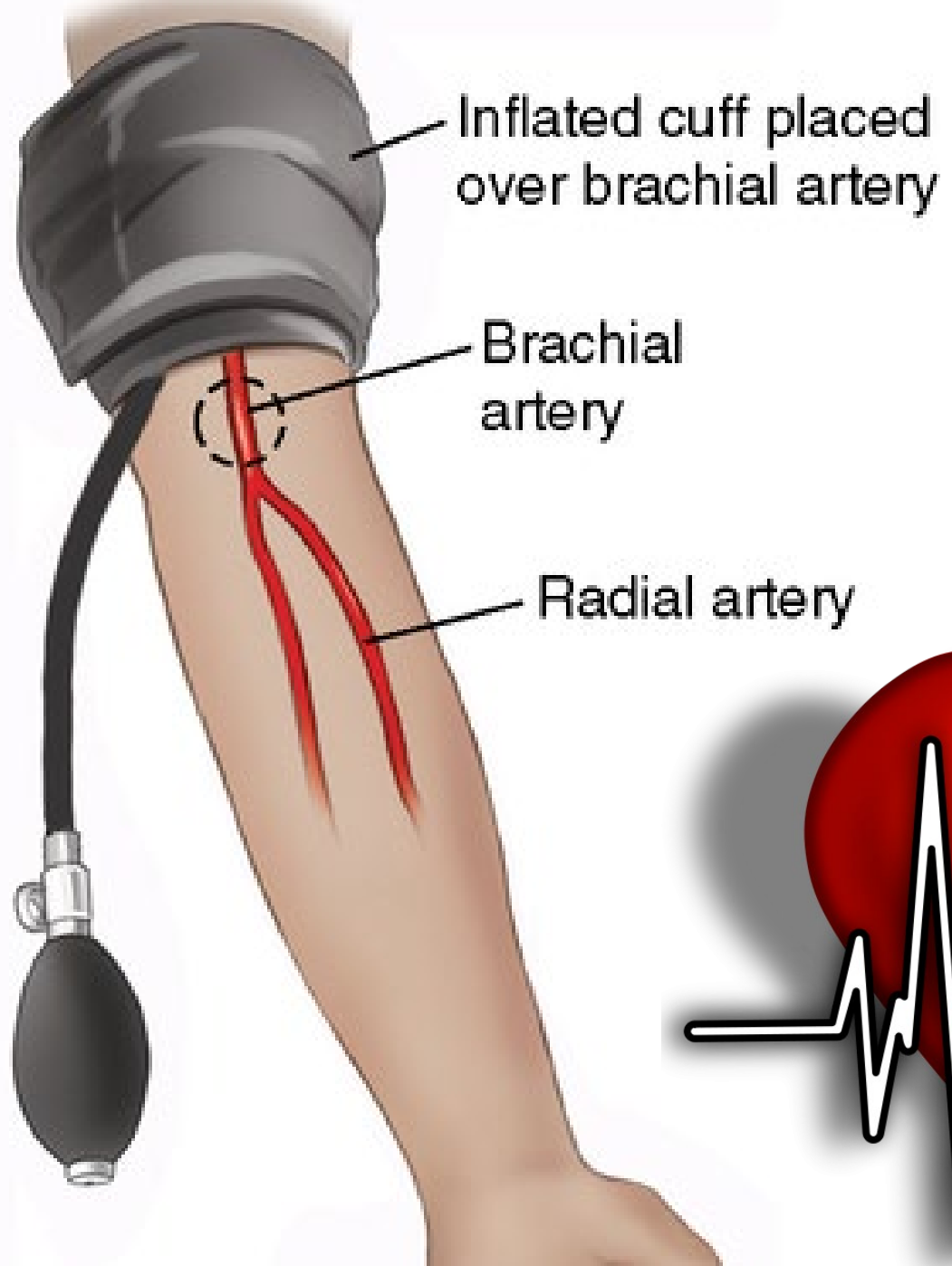
**You need to know if the results you obtain are abnormal and/or should be reported to someone.**

**It is helpful if protocols are in place for each client whose vital signs are being monitored.**

# VITAL SIGNS – what are they?

Vital signs are measurements of:

- Blood pressure
- Temperature
- Heart rate
- Respiration rate
- Oxygen saturation (pulse oximetry)



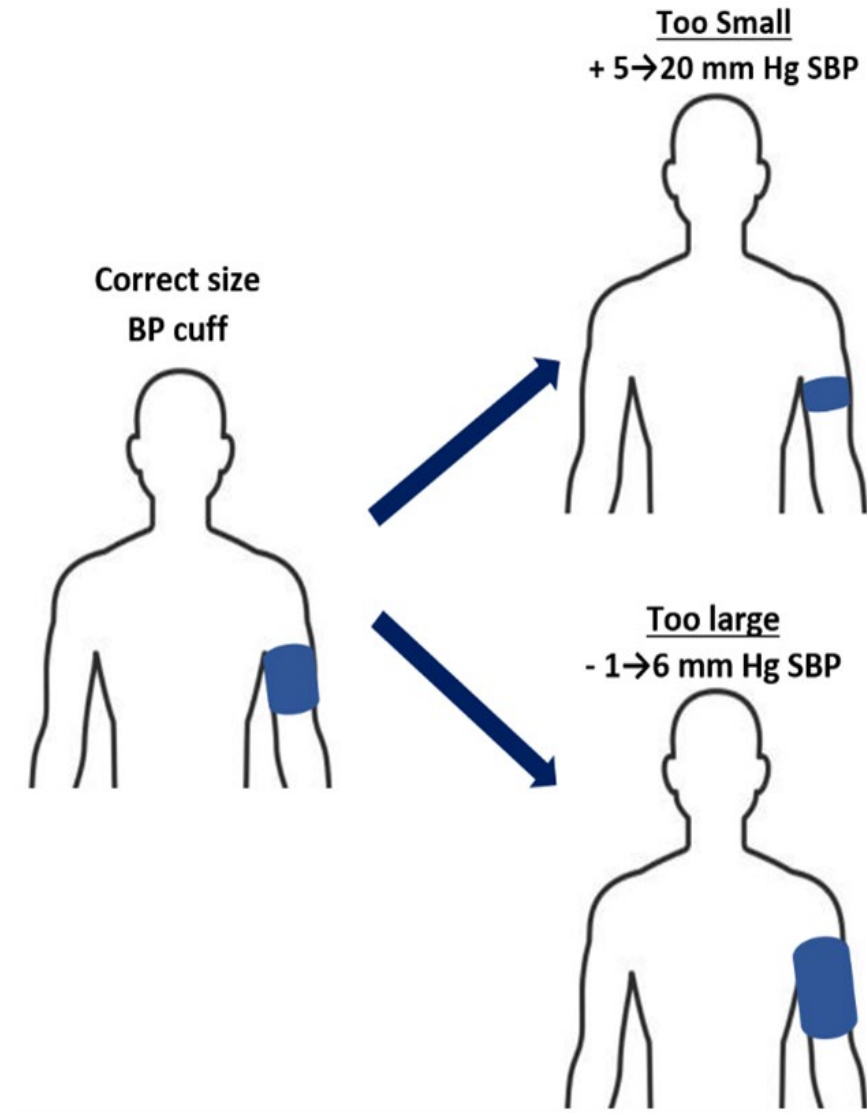
# BLOOD PRESSURE

# TAKING A BLOOD PRESSURE

You may use a manual blood pressure cuff or an automated one. Either is fine as long as the cuff is appropriate for the person. To get an accurate measurement consider:

## 1. Cuff size:

- If the cuff is too small, the blood pressure will read high
- If the cuff is too large, the blood pressure will read low



# DETERMINING CUFF SIZE

Measure the middle of the upper arm to help determine a proper cuff size.



Measure at the  
Middle of your  
upper arm

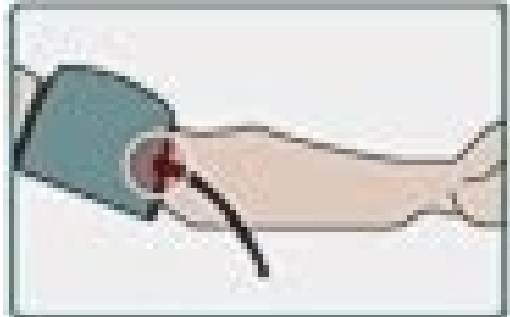
Size	Cuff Range
Small	15 - 24cm (5.91" x 9.45")
Medium	22 - 42cm (8.66" x 16.54")
Large	42 - 48cm (16.54" x 18.90")
Extra Large	48 - 61cm (18.90" x 24")

# CUFF PLACEMENT

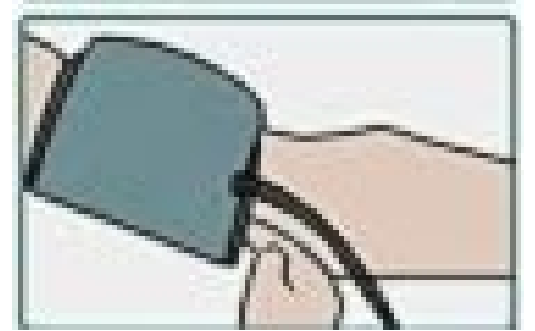


- 2. Cuff placement – ideally above the elbow over a bare arm.**
- **May take over thin clothing but thick clothing should be removed.**
  - **Do not roll up the sleeve.**

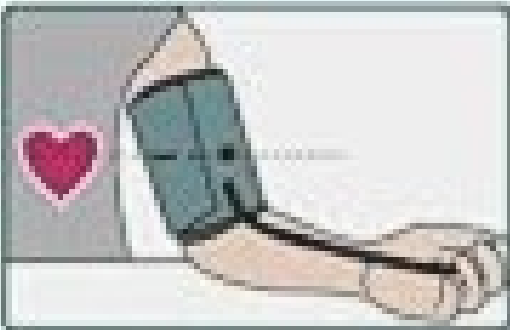
# CUFF POSITION



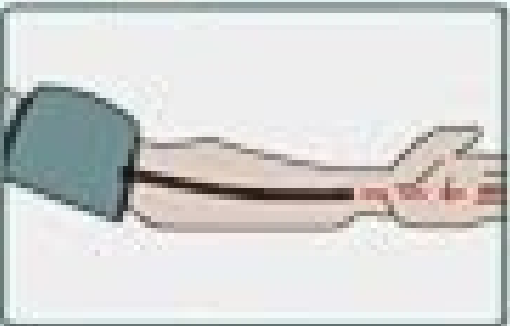
Wrap cuff around upper arm, making sure one finger can be inserted between the cuff and arm so that it isn't too tight.



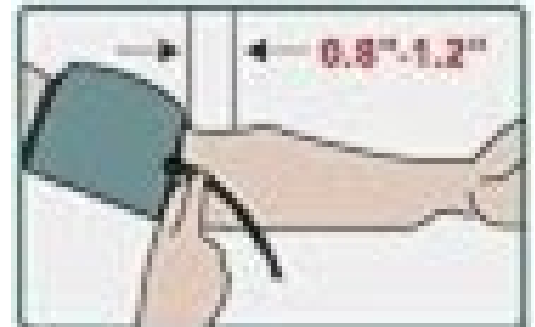
The cuff should be at the same level as the heart.



The lower edge of the cuff should be about 2 fingers above the elbow.



The air tube should be on the inside of the arm.



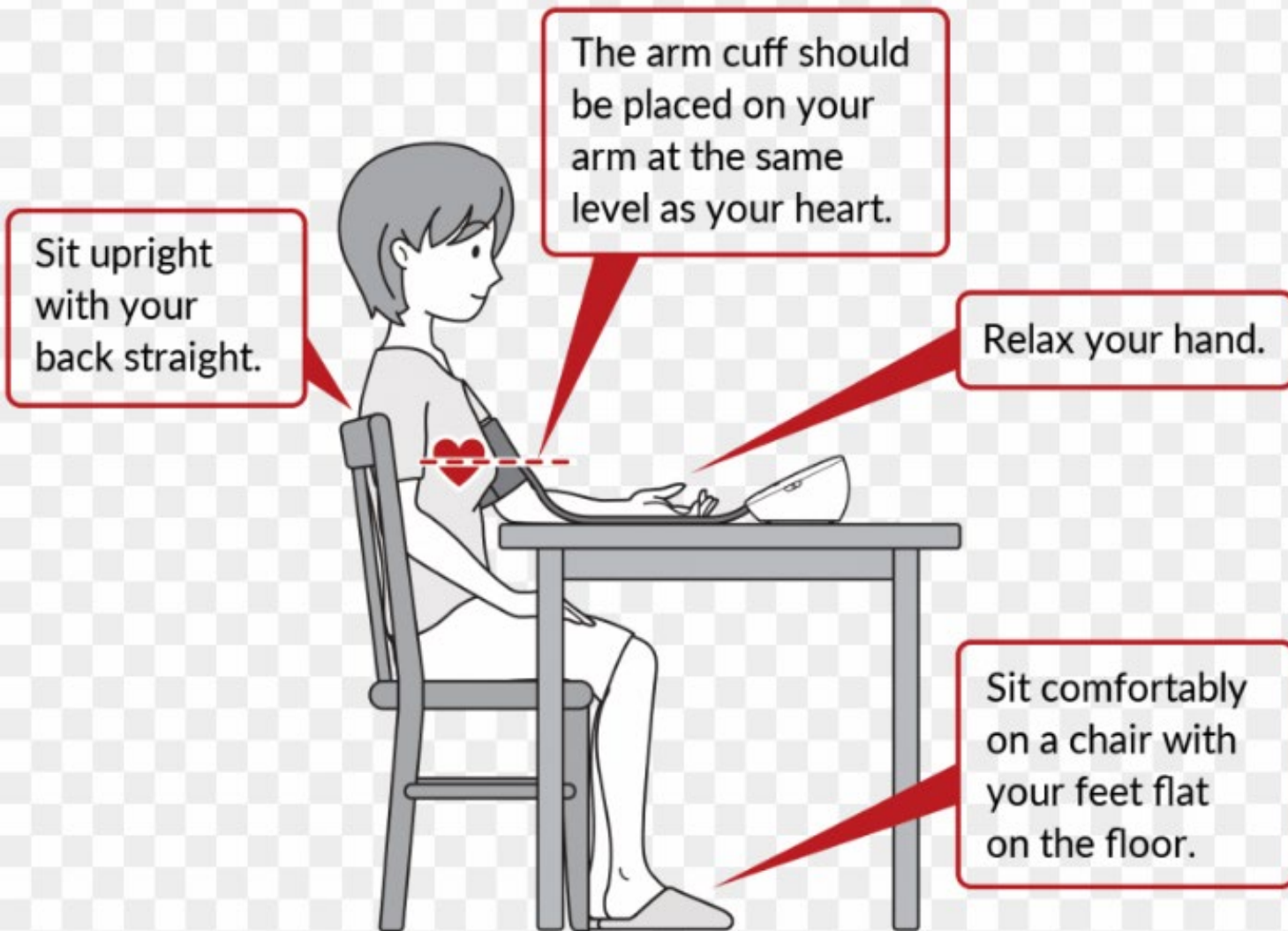


# BODY POSITION

## 3. Body position

- **Crossing legs or sitting without a back support can cause higher readings.**





# POSITIONING

# BLOOD PRESSURE DEVICES

Blood pressure cuffs that take the pressure in the upper arm (over the elbow) give the most accurate results.

Readings from wrist devices are often falsely elevated.

Blood pressure measurements on the finger including those on Smartphones have not yet been found to be accurate enough to rely on them.

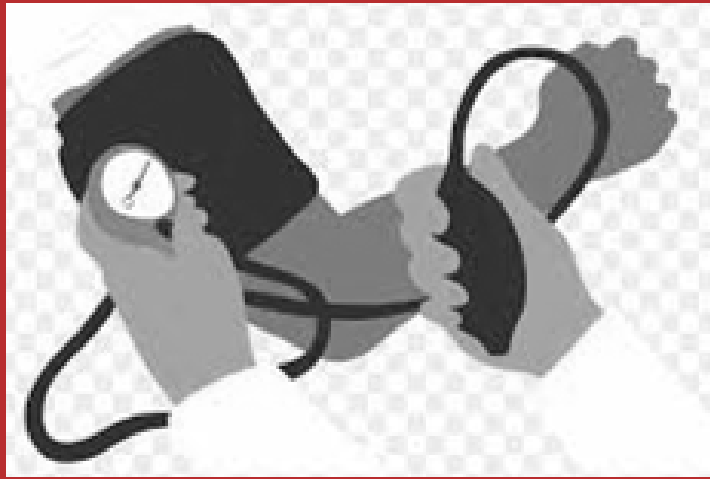


# MANUAL BLOOD PRESSURES

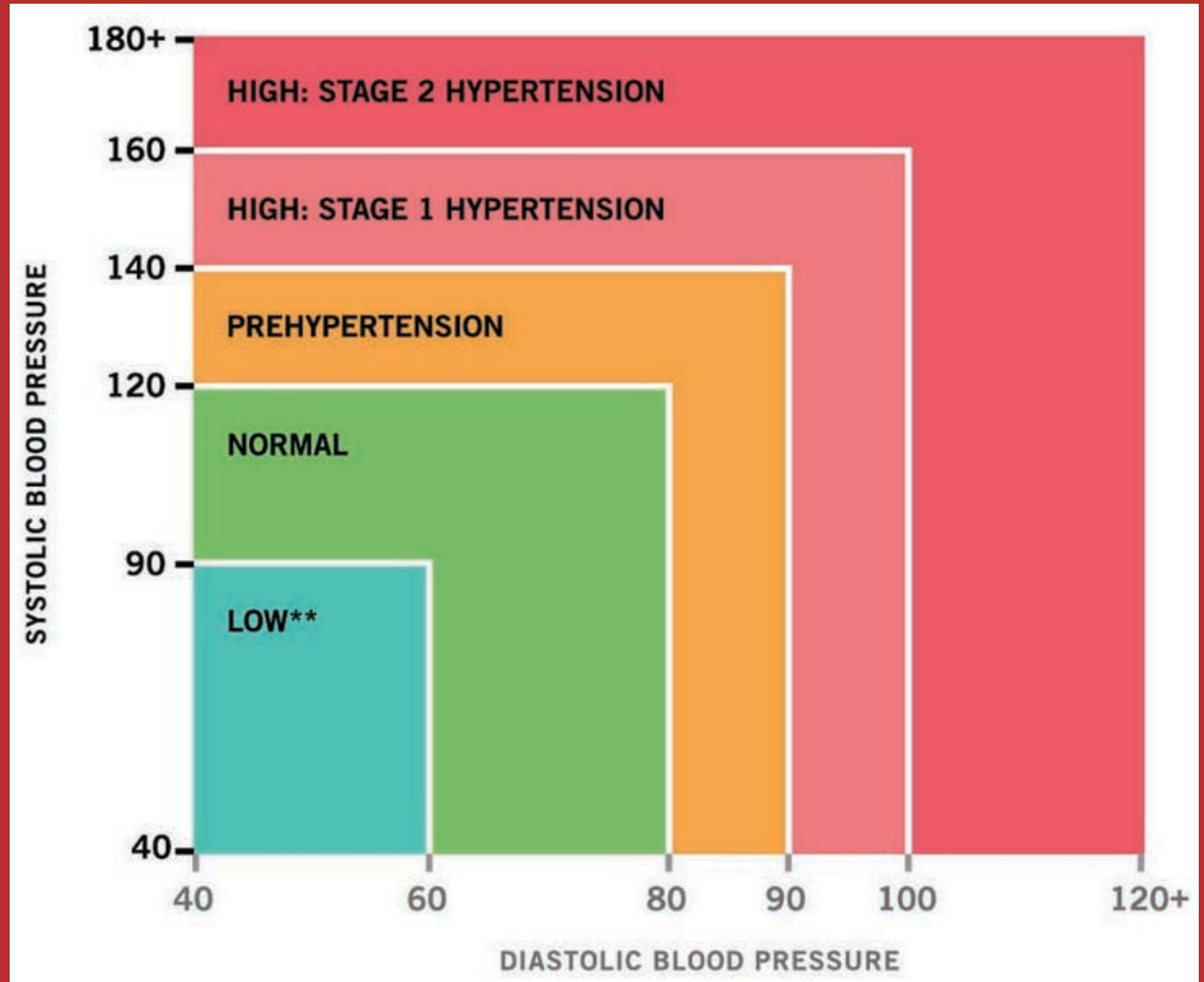


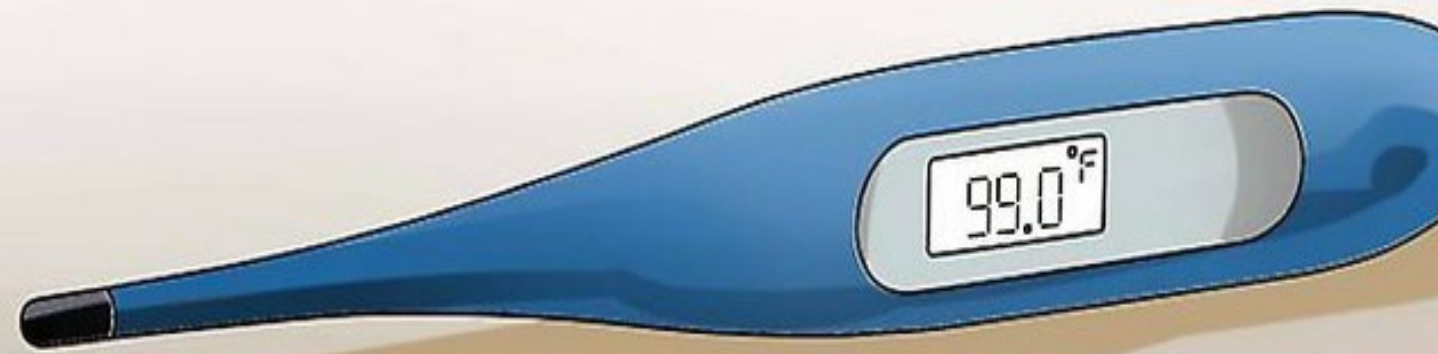
Inflate cuff to about 180 mm Hg and then allow to deflate slowly.

- Listen for the pulse over the brachial artery using a stethoscope.
- When the pulse is first heard, that is the systolic pressure reading.
- As air escapes, the sound of the pulse will disappear. The point that the sound disappears is the diastolic pressure reading.



# BLOOD PRESSURE READINGS





**TEMPERATURE**

# TAKING A TEMPERATURE

1. No smoking, eating, or drinking for at least 10 minutes before taking an oral temperature as this alters the reading.
2. Document where temperature was taken:
  - Ear and rectal temperatures =  $\frac{1}{2}$  to 1 degree F higher than oral temperatures.
  - Axillary (armpit) and forehead temperatures =  $\frac{1}{2}$  to 1 degree F lower than oral temperatures.



# TEMPERATURES

<b>Normal</b>	<b>97 to 99 degrees Fahrenheit (°F)</b>
<b>Fever</b>	<b>Anything over 100.4 °F</b> <ul style="list-style-type: none"><li>• <b>Notify medical provider if temperature is over 103°F</b></li><li>• <b>Notify medical provider if fever more than 3 consecutive days</b></li><li>• <b>Notify medical provider if fever accompanied by severe sore throat swelling, vomiting, headache, stiff neck, rash, severe cough or shortness of breath.</b><ul style="list-style-type: none"><li>○ Individual protocols may differ. Follow the protocols of your agency.</li></ul></li></ul>
<b>Hypothermia</b>	<b>Temperatures below 95°F</b>





# HEART RATE (pulse)

The pulse is the number of times the heart beats per minute

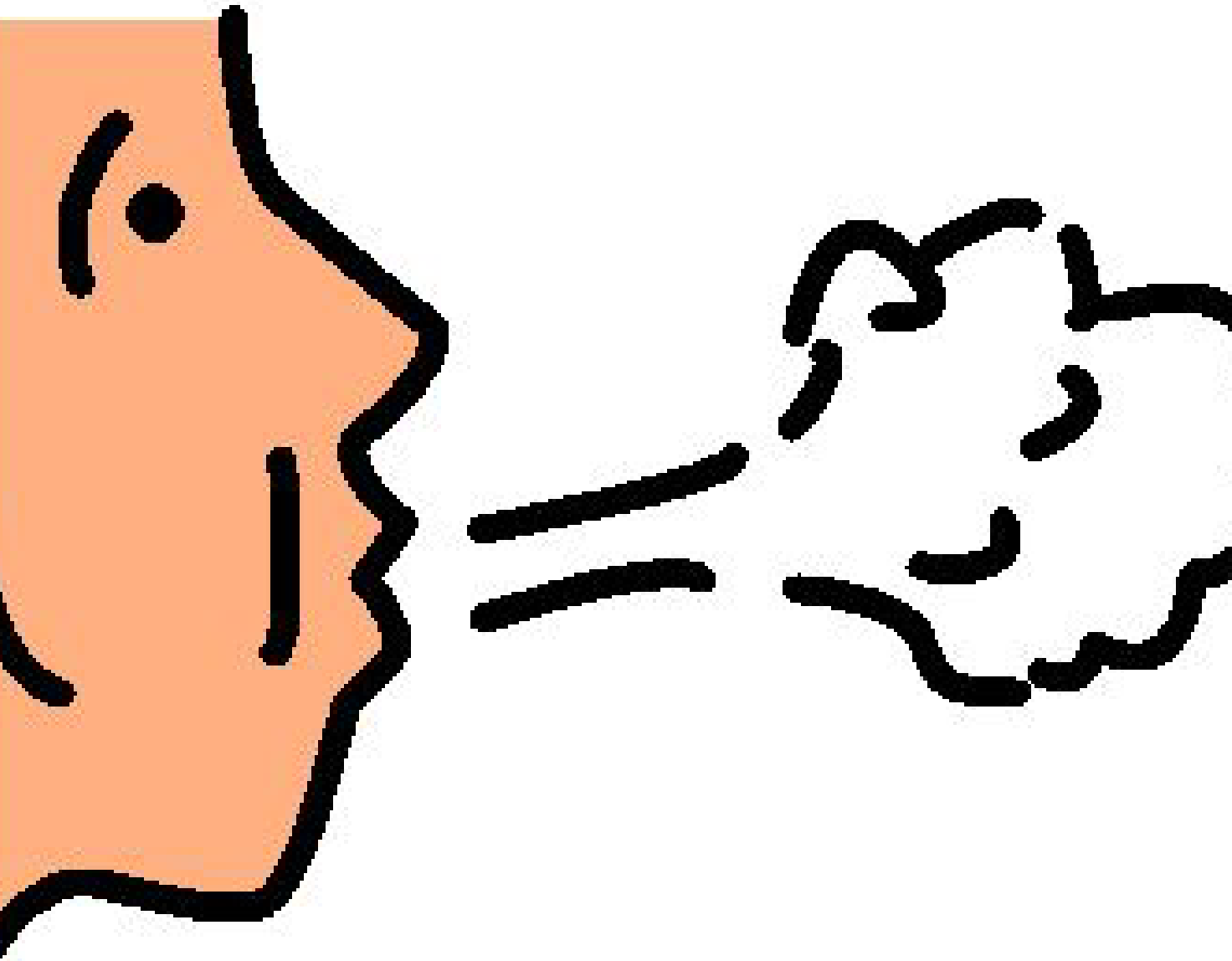
# TAKING A PULSE

- Gently press down on artery until pulse is felt. Never use your thumb as you will be feeling your own pulse.
- The radial pulse is located on the thumb side of the wrist, where the wrist bends.
- Count pulse for 30 seconds and multiply by 2. Record as beats per minute.
- Note if pulse is regular or irregular (rhythm).



# HEART RATES

<b>Normal</b>	<b>60 to 90 beats per minute (BPM)</b>
<b>Tachycardia</b>	<b>Over 100 BPM</b> <ul style="list-style-type: none"><li>• Rate normally increases with exercise, sickness, injury, emotions.</li><li>• Seek medical attention if rate is over 130 or very irregular.</li><li>• Seek medical attention if accompanied by shortness of breath, lightheadedness, or chest discomfort.</li></ul>
<b>Bradycardia</b>	<b>Abnormally low heart rate</b> <ul style="list-style-type: none"><li>• Heart rates are slower when sleeping.</li><li>• Concerning symptoms (report):<ul style="list-style-type: none"><li>○ Feeling lightheaded, dizzy, faint</li><li>○ Weakness, fatigue, confusion</li></ul></li><li>• Seek immediate attention if accompanied by chest pain, trouble breathing, low blood pressure, or fainting.</li></ul>

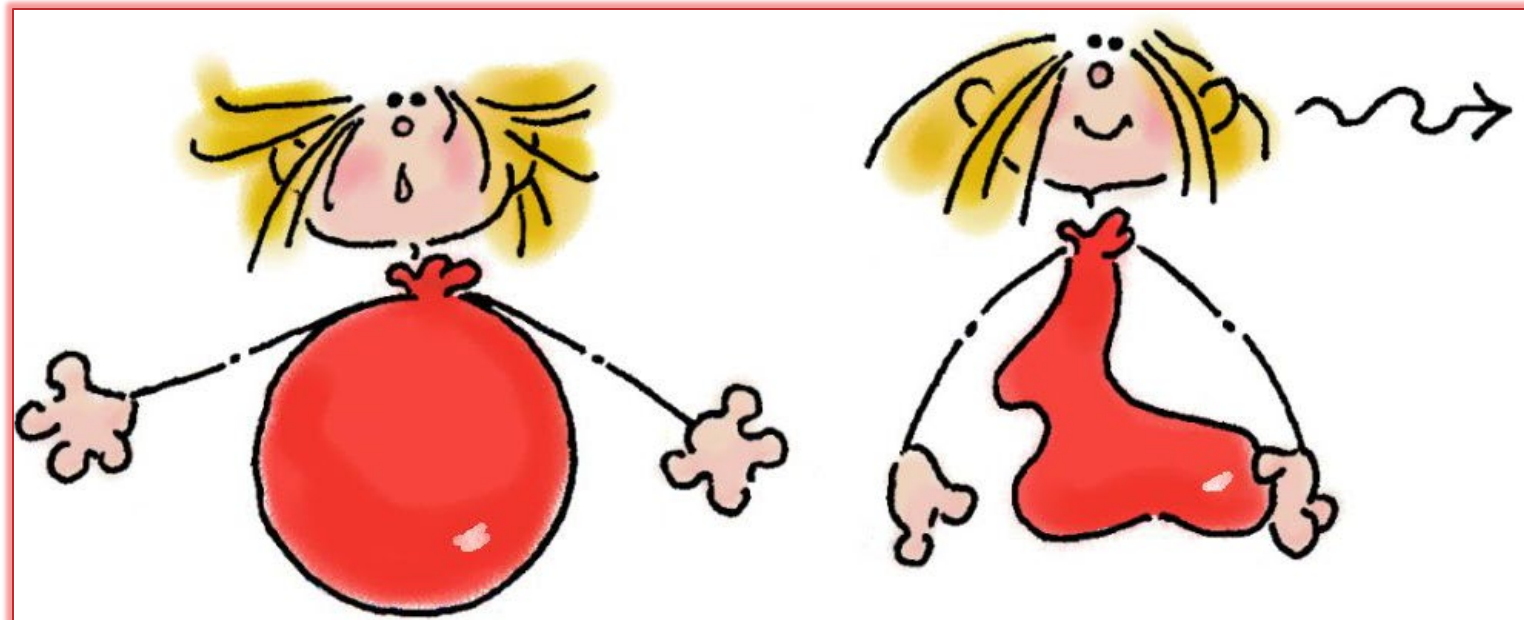


# RESPIRATION RATE

Respiration rate is the number of breaths per minute.

# PROCEDURE

1. Count how many times the chest rises over a minute.
2. To get an accurate reading, do this without the person knowing it is being done so they don't change their breathing rate.



# RESPIRATION RATES

## Normal

**12 TO 20 Breaths per minute**

- Rate increases with fever, illness, lung disease

## Respiratory distress

**Seek Immediate Medical Attention if:**

- Struggling to breath
- Pain with breathing
- Turning blue
- Irregular or very shallow breaths.



# PULSE OXIMETRY

Pulse oximetry is a non-invasive way to monitor the amount of oxygen in the blood.

# FALSE READINGS



- Low blood pressure
- Nail polish, artificial nails
- Hypothermia (vessels constrict)
- Motion (shivering, seizures, etc.)
- Dark skin color
- Dirt on hands
- Intense light (bright sunlight, fluorescent lights)





# BLOOD OXYGEN LEVELS

Pulse Oximeter Reading	
95 to 100%	Normal blood oxygen levels
91 to 95%	“Concerning” blood oxygen levels - monitor
Under 90%	Low blood oxygen levels – notify medical provider
80 to 85%	Seek Medical attention <ul style="list-style-type: none"><li data-bbox="899 1082 2328 1143">• Brain is affected at these levels and below</li></ul>
80% and lower	Cyanosis

# SYMPTOMS OF HYPOXIA (Low Oxygen Levels)

- Restlessness
- Headache
- Confusion
- Difficulty breathing
- Rapid heart rate
- Rapid breathing
- Anxiety



# SYMPTOMS OF SEVERE HYPOXIA

- Slow heartrate
- Extreme restlessness
- Blue skin (cyanosis)

