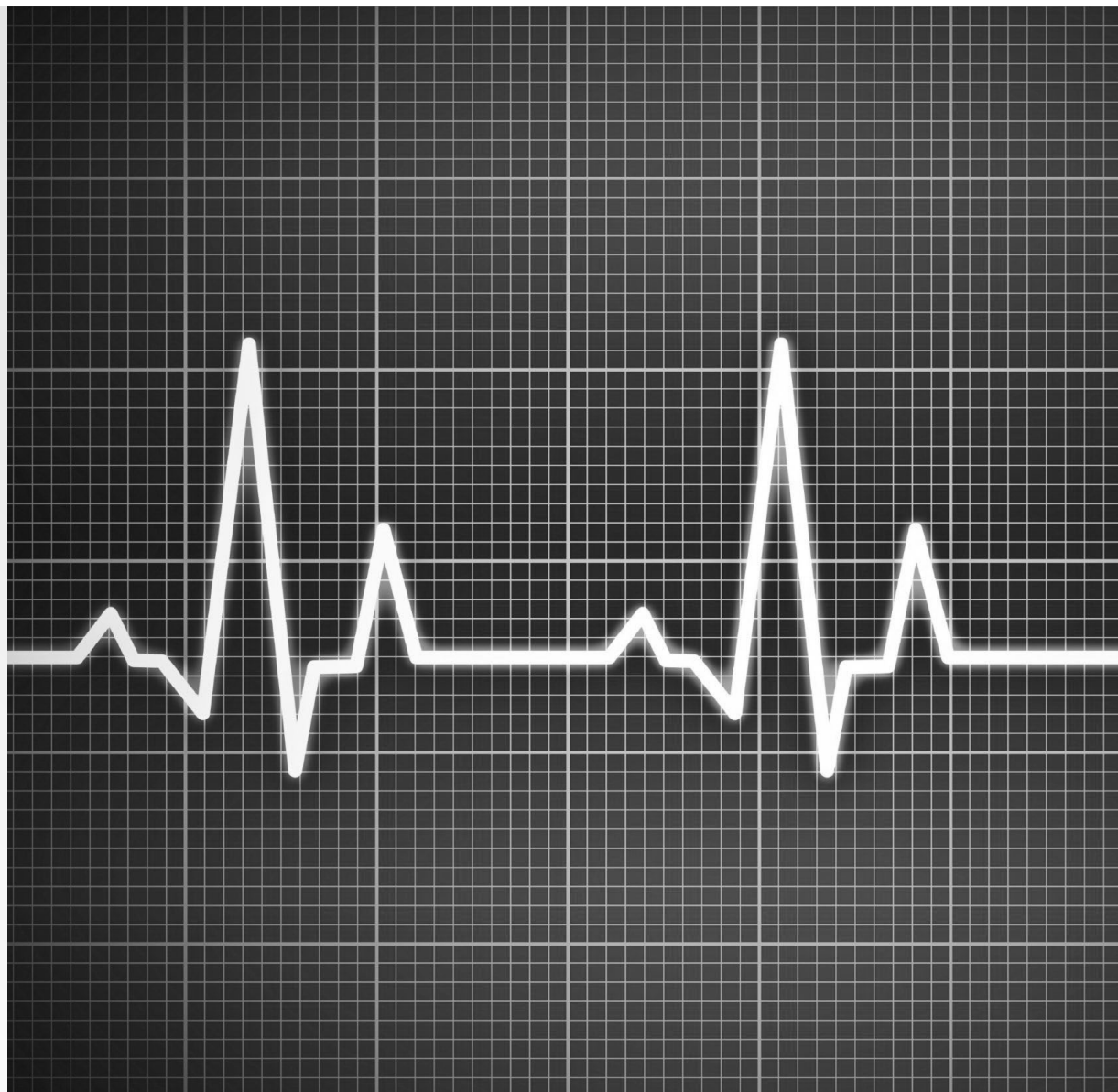


# VITAL SIGNS



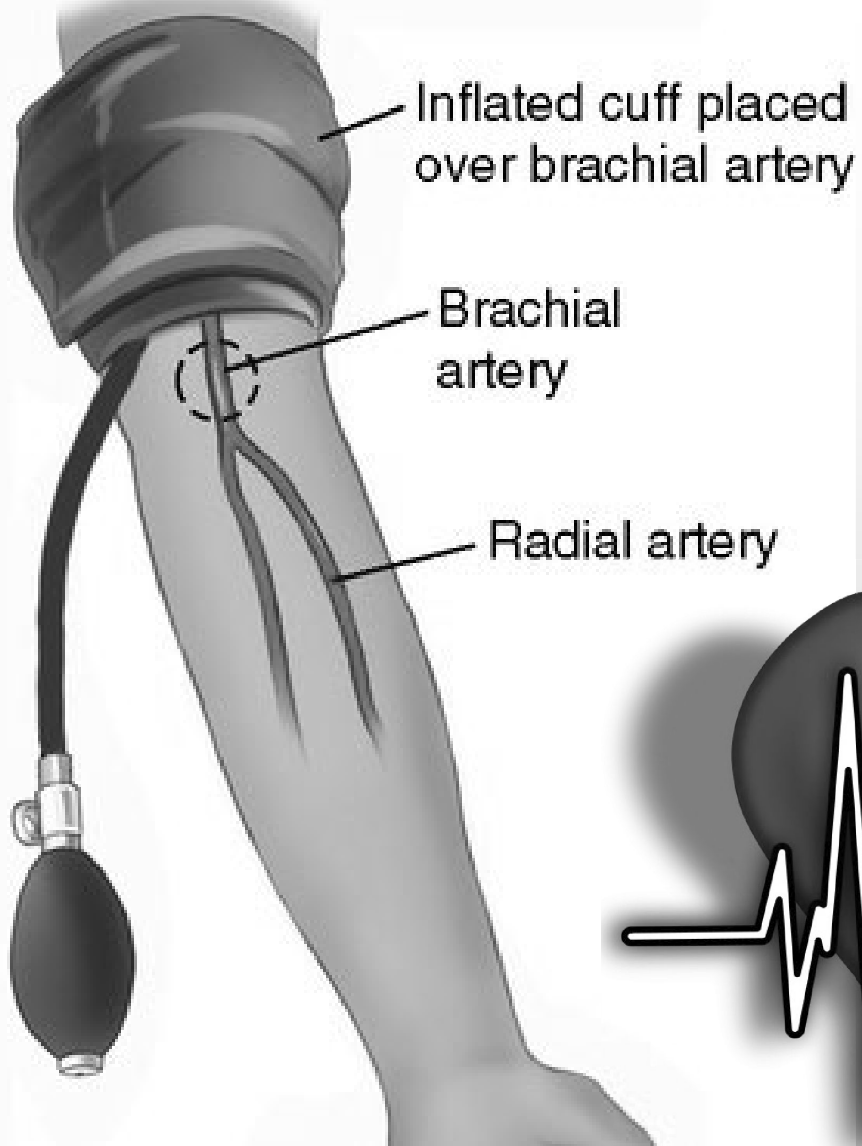
# INTRODUCTION

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

- You need to know how to do this.
- You also need to know if results are abnormal or should be reported to someone.
- Protocols regarding vital signs should be written for each client.

# VITAL SIGNS – how many are there?

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



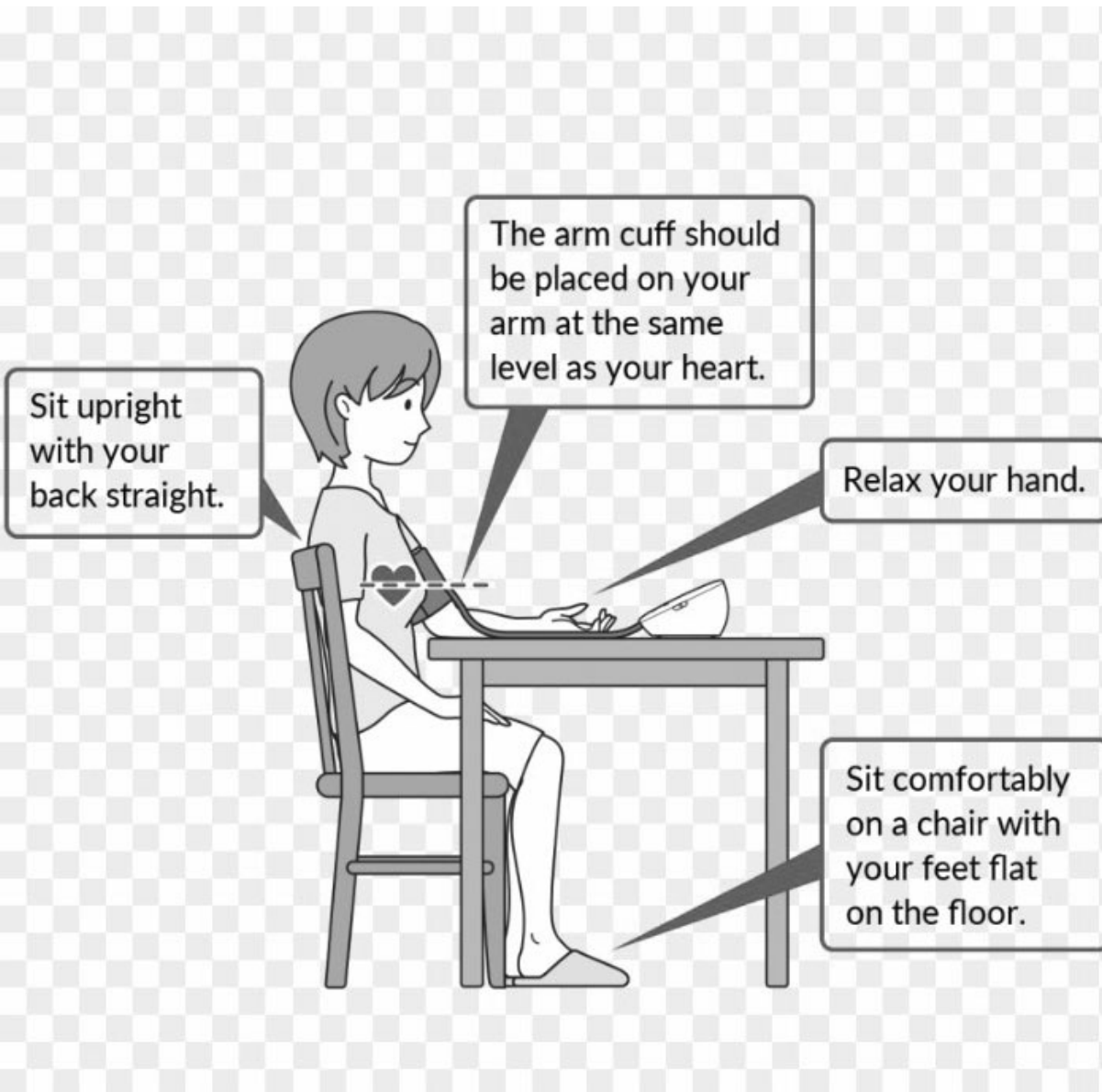
# BLOOD PRESSURE

# TAKING A BLOOD PRESSURE

**Before taking a blood pressure, pay attention to the size and placement of the cuff, the person's position, and technique.**

- **Cuff size** – if too small the systolic pressure will be high.
- **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.
- **Body position**
  - Crossing legs or sitting without a back support can cause higher readings.





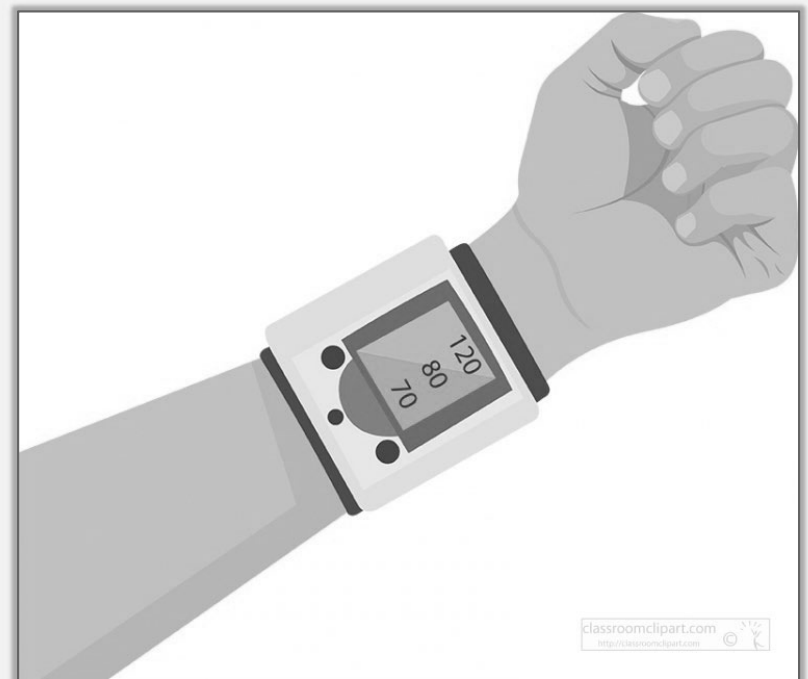
# POSITIONING

# BLOOD PRESSURE DEVICES

**Blood pressure cuffs that take the pressure in the upper arm (over the elbow) give the most accurate results whether taken on an automated system or manually.**

**Wrist devices are often used on someone who is obese. Wrist readings are often falsely elevated.**

**Blood pressure measurements on the finger are not recommended as the results are quite inaccurate.**



# OVER THE ELBOW BLOOD PRESSURE DEVICE



**With automated blood pressure cuffs, the cuff is inflated to the correct amount and automatically gives the blood pressure reading.**

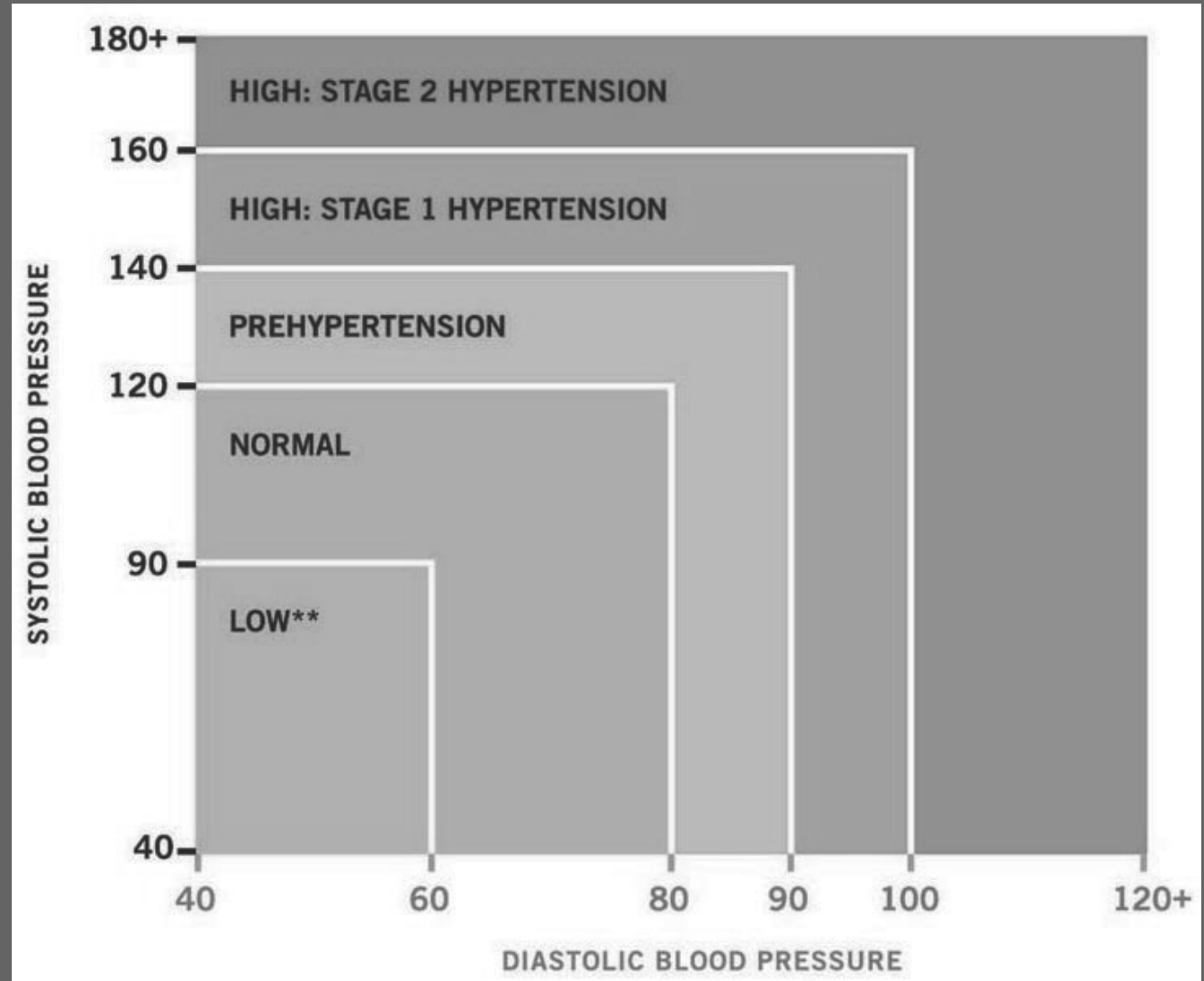
**With manual blood pressure cuffs, inflate to about 180 mm Hg and then allow to deflate slowly.**

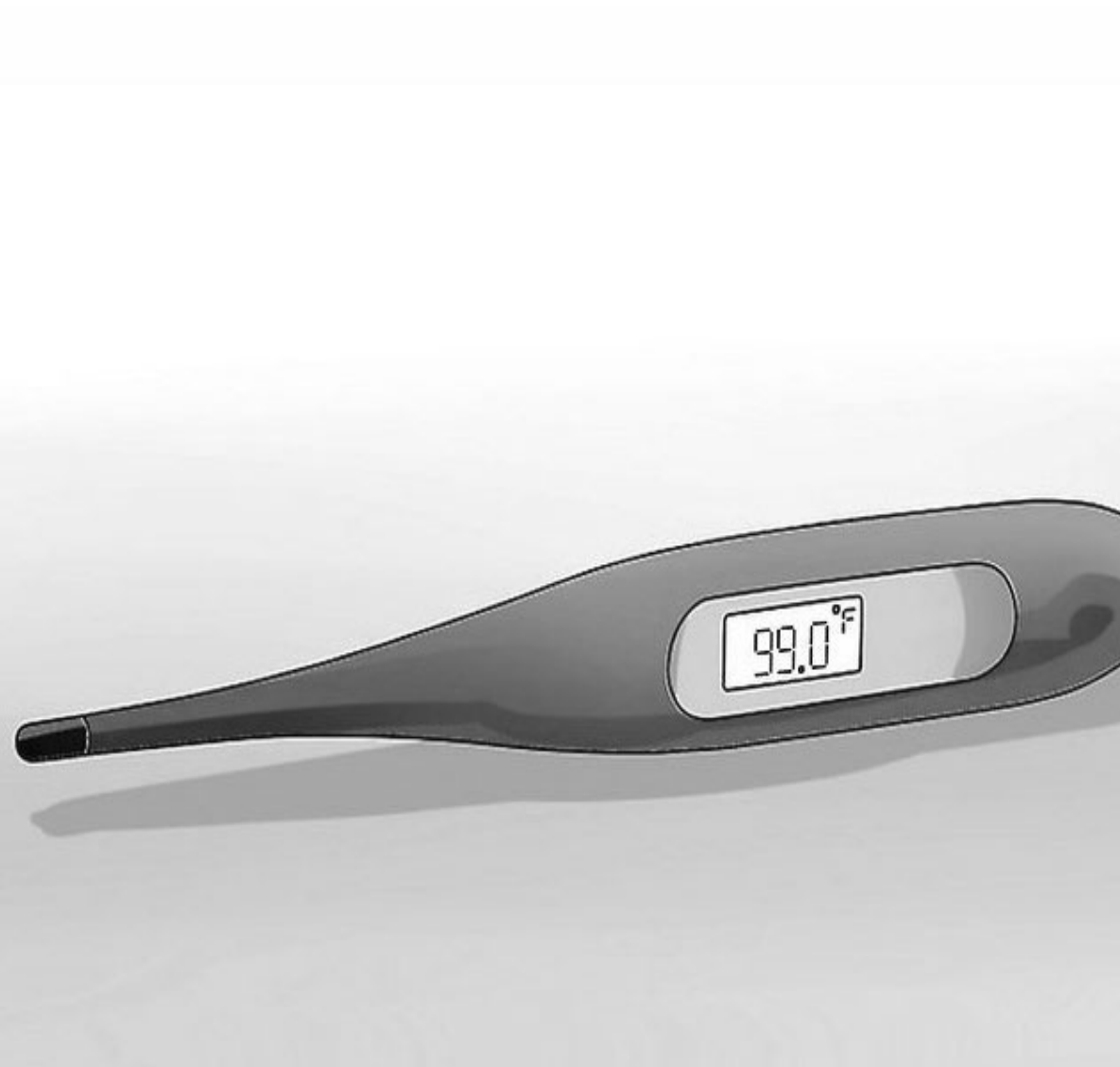
- Listen for the pulse over the brachial artery using a stethoscope.**
- When the pulse is first heard, that is the systolic pressure reading.**
- As the air escapes, the sound of the pulse will disappear. The point that the sound disappears is the diastolic pressure reading.**





# NORMAL AND ABNORMAL BLOOD PRESSURE READINGS





**TEMPERATURE**

# TAKING A TEMPERATURE

- A person should not smoke, eat, or drink for at least 10 minutes before taking an oral temperature as the body temperature will be altered.
- Document which part of the body was used when taking a temperature.
  - Ear and rectal temperatures are one half to one degree F higher than oral temperatures.
  - Axillary (armpit) and forehead temperatures are usually one half to one degree F lower than oral temperatures.



# NORMAL AND ABNORMAL TEMPERATURES

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



# HEART RATE (pulse)

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

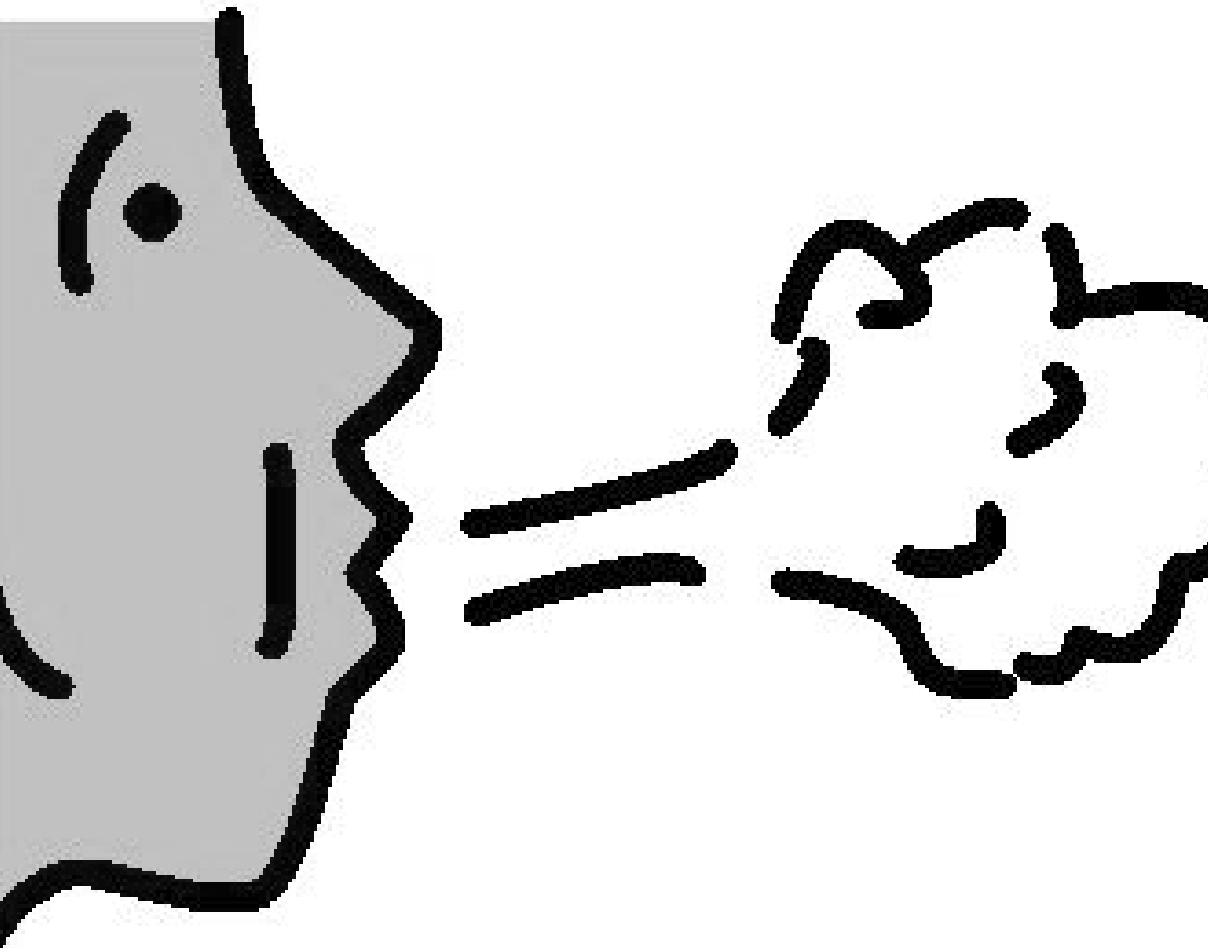
# TAKING A PULSE

- Using your first and second fingertips, gently press down on the artery until you feel the pulse. 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 the heartrate for 30 seconds and multiply by 2 to obtain the pulse which is always recorded as beats per minute.
- Note if the pulse is regular or irregular (rhythm).
- Record the rate and rhythm.



# NORMAL AND ABNORMAL HEART RATES

Normal	60 to 90 beats per minute (BPM)
Tachycardia	<p>Over 100 BPM</p> <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>
Bradycardia	<p>Abnormally low heart rate</p> <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>



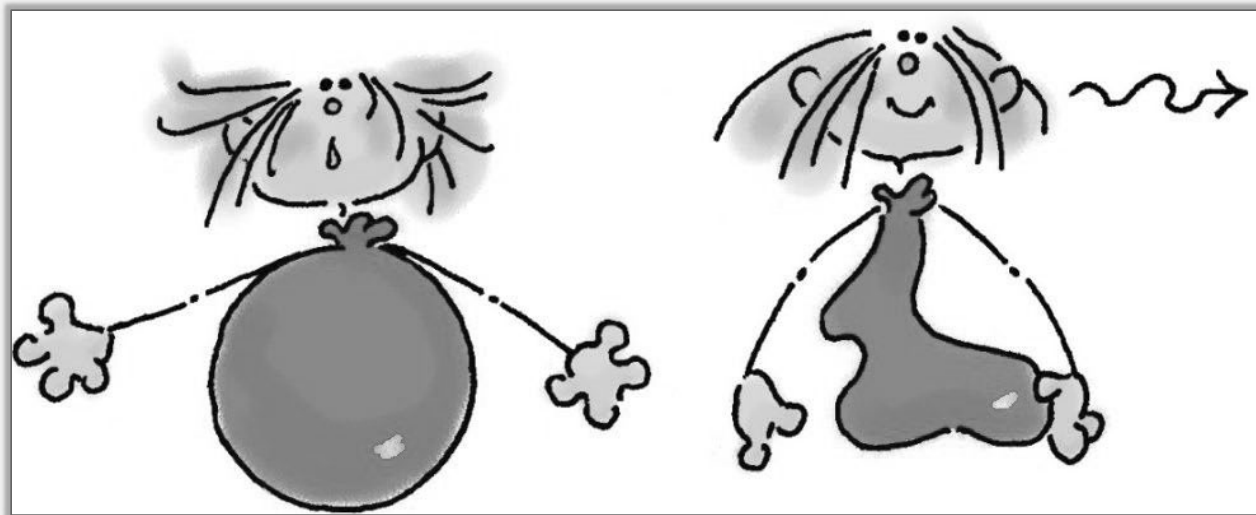
# RESPIRATION RATE

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.



# NORMAL & ABNORMAL BREATHING 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>• Brain is affected at these levels and below</li></ul>
80% and lower	Cyanosis

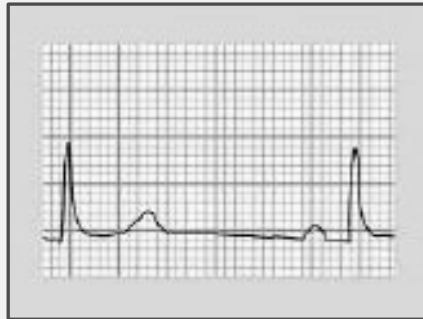
# SYMPTOMS OF HYPOXIA

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



# SYMPTOMS OF SEVERE HYPOXIA

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



# THANK YOU

JEAN JUSTAD, MD, MEDICAL DIRECTOR, DDP

CLIPART ON ALL SLIDES FROM CLIPART-LIBRARY.COM EXCEPT:  
SLIDE 5 SUNTECHMED.COM AND AINTLUKESKC.ORG/HEALTH-LIBRARY  
SLIDE 6 TOPPNG.COM/FREE-IMAGE/BLOOD-PRESSURE  
SLIDE 7 CLASSROOMCLIPART.COM  
SLIDE 16 CLIPART.EMAIL  
SLIDE 22 AND 23 MY.CLEVELANDCLINIC.ORG