



Standard Operating Procedures Clinical and *T*ranslational *R*esearch *C*enter

Title:	Vital Signs		
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Purpose: Obtaining accurate vital sign measurements is an essential part of the research procedure. The standardization of blood pressure technique is necessary to minimize variability due to known exogenous factors and to reduce imprecision and biases in measurement.

Procedure: IRB approved protocols outline the schedule for performing vital sign measurements and results are documented in the participant's chart. Identify the correct participant by asking the participant to state their name and date of birth and compare to information documented in chart prior to initiating any procedures.

Normal Vital Sign Parameters:

- Oral temperature range: 97.6°F – 99.6° F
- Adult pulse range: 60-100 beats/minute
- Systolic blood pressure range: 90-140 mmHg
- Diastolic blood pressure range: 60-90 mmHg
- O2 Saturation: 95% - 100%

A. Oral Temperature

1. For oral temperature measurement, use an oral probe.
2. Make sure the temperature probe is connected to the vital check machine if applicable, inserting the thermometer probe completely and firmly into a plastic probe cover to ensure a secure fit.
3. The probe is placed under the participant's tongue in the sublingual pocket where the richest blood supply and heat are located.
4. Record the displayed temperature
5. Normal temperature range for an adult: 97.6°F – 99.6 °F
6. Dispose of the probe/probe cover into a waste container.

B. Rectal Temperature

1. For rectal temperature measurement, use a rectal probe.
2. Have the participant lie on their side. Provide complete privacy.
3. Attach a probe cover to the probe as described in step 3 above.
4. Gently insert the probe about one-half of an inch above the sphincter muscle (the use of lubricant is optional).
5. Record the displayed temperature
6. Normal temperature range for an adult: 97.6°F – 99.6 °F
7. Dispose of the probe/probe cover into a waste container.

C. Heart Rate or Pulse

1. When using a vital check machine, the heart rate will be displayed with the B/P reading.
2. To check the heart rate manually, place the index finger and middle finger lightly on the participant's radial pulse and feel the pulsation or beat.
3. Count the beats for a full 30 seconds/or per protocol and record in the chart as beats per minute (bpm).
4. Normal range is 60 – 100 bpm

D. Respirations

1. Observe the participant's breathing pattern.
2. Count the number of times the participant inhales (inspiration and expiration is 1 full count) for a full 30 seconds.
3. Record the number of breaths per minute in the chart.

E. Pulse Oximetry

1. Make sure the pulse oximetry sensor cable is connected to the monitor.
2. Place the sensor on the participant's finger with the LEDs positioned on the nail side.
3. A plethysmographic waveform will appear when the sensor is properly positioned.
4. Record the reading, and remove the sensor from the participant's finger unless otherwise ordered.
5. Refer to manufacturer's manual as devices may differ one from to another.

F. Automated Blood Pressure

1. Select the appropriate B/P cuff according to participant's arm circumference according to reference range.
2. Secure the cuff around the participant's right upper arm (or arm designated by the protocol).
3. Check for kinks or other obstructions in the hose extending from the cuff.
4. For optimal accuracy, the participant's arm should be at the level of the heart.
5. Press the "START/STAT/STOP" button on the vital check machine to initiate a B/P reading.
6. Record the B/P and remove the cuff from the patient's arm.
7. Normal blood pressure range for an adult: 90/60 mmHg - 140/90 mmHg
8. Refer to manufacturer's manual as devices may differ one from to another.

G. Aneroid Blood Pressure

1. Selected cuff size appropriate for the participant's arm circumference is applied according to reference range.
2. The cuff is wrapped around the arm with the artery index marker located over the brachial artery and with the lower edge of the cuff 2.5 cm above the bend in the elbow.
3. Cuff is inflated rapidly to a level 30 mmHg above palpatory systolic pressure.
4. Palpatory systolic pressure is obtained by placing the index finger and middle finger lightly on the participant's radial pulse and feeling for the cessation of the pulsation while inflating the cuff.
5. Deflation is at a rate of 2 mmHg per second. As the pressure falls, the systolic pressure and diastolic pressure are recorded.

Note: Some studies will call for a more stringent assessment for measuring blood pressure and will be outlined in their approved IRB Protocol

Alerts / Referrals

Alert levels requiring immediate notification of PI/Co-I or his designee to evaluate participant and discharge from CTRC:

- Systolic BP >180mmHg
- Diastolic BP >110 mmHg

Emergency Room Referral for symptomatic participants with alert level BP includes but not limited to the following:

- Headache
- Chest Pain
- Shortness of Breath
- Visual Disturbances

Appendices:

Appendix A –CTRC Protocol Order Worksheet

Appendix B - CTRC Progress Note