Patient Care

Assess vital signs for every patient, report results outside expected range

	Heart Rate	Resp. Rate	SpO2	Systolic BP	Diastolic BP	Temp
Adult	60- 100/min	12-20/min	95-100%	90-120 mmHg	60-90 mmHg	96.4-99.1
Child (6- 12)	70- 120/min	18-30/min	95-100%	70+(2*age)	N/A	96.4-99.1
Child (1-5)	80- 150/min	24-34/min	95-100%	70+(2*age)	N/A	96.4-99.1

• Adult Heart Rate

- May be higher than 100/min with anxiety or distress
- May be lower than 60/min if patient takes certain medications
- Reassess abnormal rate manually using radial pulse for 1 min.

• Adult Blood Pressure

- May be greater than 120/80 mm Hg with essential hypertension
- Reassess abnormal blood pressure manually
- High blood pressure can increase risk of stroke, pulmonary edema
- Hypotension (less than 90 mm Hg) can result in loss of consciousness, brain injury, organ failure
- Monitor patient for symptoms of distress (pallor, diaphoresis, headache, confusion, weakness, nausea)

• Sp02

- Pulse oximeter unreliable if patient has cold hands, colored nail polish or acrylic nails, edema, or CO poisoning
- Patients with chronic respiratory ailment may function with SpO2 levels below 95%
- If SpO2 is abnormally low, assess for signs of adequate perfusion:
 - Warm skin, pink mucous membranes, strong peripheral pulses, or capillary refill less than 2 seconds
- Patients with hypoxia (low SpO2) may experience anxiety, confusion, or increased respiratory rate
- Patient may be tachypneic (respiratory rate greater than 20/min) if they are anxious or experiencing respiratory distress
- Bradypnea (respiratory rate less than 10/min) may be drug side effect
- Abnormal respiratory rates can result in acid-base imbalance, hypoxia, brain injury, or organ failure

• Temperature

- Typically measured orally
- For young children, may be obtained rectally
- Rectal temperature typically 1-2 degrees higher than expected reference range oral temp
- Older adults may have slightly lower body temperatures, more susceptible to hypothermia, hyperthermia
- Fever: temperature greater than 100.9

Patient Care for EKG Monitoring

- Interview patient to gather health history
 - Social history
 - Drinking, smoking, exercise habits, diet, etc.
 - Married, support system
 - Medical conditions
 - Valve replacement
 - Cardiac catheterization
 - Coronary artery bypass graft
 - Aneurysm repair
 - Childhood cardiac surgeries
 - Pacemaker implant
 - Heart transplant

- Surgical history
 - Document all surgeries
- Current medications
 - Allergies or adverse reactions to medications (in detail)
 - Document all medications, including name, dose, how often and time of day taken
 - Document all over the counter medications, herbal supplements and vitamins
 - Ask about birth control or erectile dysfunction drugs, they are sometimes forgotten

Patient Care for EKG Monitoring

• Educate patient about the procedure

- Describe the purpose, length, steps, and patient preparation
- Explain patient's role during test
- Explain possible side effects, and follow up care
- Answer questions, clarify misinformation, alleviate fears
- Patient must understand procedure before giving informed consent
- Be non-judgemental, demonstrate listening skills, make eye contact, face the patient

Patient Care for EKG Monitoring

- Assess the patient's knowledge base
 - Patients with cognitive disabilities and older adults may require extra time
 - Patients with sensory impairments may require more audiovisual media
 - If a patient speaks a language other than English, use an interpreter (not a family member)
- Explain details of EKG to patient
- Instruct patient to:
 - Remove electronic devices from pockets
 - Lie flat or with head slightly elevated
 - Avoid touching anything that conducts electricity
 - Remain as still as possible for approximately 10 seconds or the length of the test
 - Notify you if they experience itching, redness or swelling

Patient Care for Ambulatory (Holter) Monitor

• Explain to patient:

- The Holter monitor is used to monitor the heart's electrical activity over a period of 24-72 hours
- The monitor may detect problems that occur transiently
- There are no significant side effects to the test
- Electrodes placed on the chest need to stay in place throughout the test
- The skin may need to be cleaned/abraded to place electrodes
- Ask patient of any latex or rubber allergies

Patient Care for Ambulatory (Holter) Monitor

• Instruct patient to:

- Bathe prior to appointment
- Wear loose fitting clothing (monitor may be worn with a bra)
- Notify you if any redness, itching or swelling occurs
- Continue normal daily routine
- Keep monitor in place continuously (call the office if electrodes fall off or device malfunctions)
- Keep a journal throughout the test--note date, time and duration of any symptoms
 - Lightheadedness, chest pain, breathing problems
- Note date, time of medications, physical activity and sleep
- Call 911 if any serious signs or symptoms occur

Patient Care for Ambulatory (Holter) Monitor

Ask the patient the following questions before they leave the office:

- 1. Is it okay to remove the electrodes?
- 2. Is it okay to remove the battery?
- 3. Is it okay to disconnect the leads or move them to a different location?
- 4. What should you do if you experience itching, swelling, or redness at the site of electrode placement?
- 5. Is it okay to go to work, exercise, etc while wearing the monitor?
- 6. What do you need to do when you experience any symptoms while wearing the monitor?
- 7. What should you do if your symptoms include chest pain, shortness of breath, unexplained profuse sweating, or passing out?

Patient Care for Stress Testing

- Stress test is used to determine heart function under increased workload, is designed to provoke ischemia
- Explain the procedure:
 - Patient walks on a treadmill or uses stationary bike untile
 - Symptoms are detected
 - Patient becomes ill or excessively fatigued
 - Patient reaches target heart rate

Patient Care for Stress Testing

- Patient instructions before the test:
 - Wear comfortable walking shoes, loosefitting/lightweight clothing
 - Don't eat, drink, smoke for 3 hours before test
 - Continue normal medication routine
- Ask about patient reactions to rubber and latex
- Ask about history of exercise-related asthma, respiratory distress, inhaler use

- Patient instructions during the test:
 - Notify you if any itching, swelling or redness at electrode sites occurs
 - Can stop the test if patient experiences fatigue, lightheadedness, dizziness, shortness of breath, chest pain
 - May need to sit or stand still after exercise while machine records heart activity
- Potential complications:
 - Low blood pressure
 - Abnormal heart rhythms

Monitor Patient Condition During Stress Testing

• Monitor patient for:

- Abnormal vital signs (very high heart rate)
- Arrhythmias
- Signs of cardiopulmonary distress
- Signs of ischemia (T wave inversion, ST segment changes)
- Stop test and notify physician if patient complains of dizziness, lightheadedness, nausea, severe shortness of breath, chest pain, or fatigue

Responding to Complications During Stress Test

• For persistent hypotension:

- Have patient lie supine with legs elevated
- Notify physician
- If patient suffers cardiac arrest or ventricular arrhythmias:
 - Resuscitate
 - Call EMS
 - Notify physician
- Continuously monitor patient during and after test
- Immediately report any concerning findings to physician

Patient Care for Telemetry Monitoring

- Explain that telemetry:
 - Monitors electrical system of the heart in patients at high risk for cardiac complications
- Determine if patient has reactions to rubber or latex
- Explain the procedure:
 - Cleaning skin, trimming hair, applying electrodes
 - Either CET or RN will monitor EKG
 - Monitors will alarm if EKG detects dangerous rate or rhythm
- Tell patient to notify you of
 - Itching, swelling, or redness at electrode sites
 - Electrodes fall off
 - Dizziness, lightheadedness, weakness, chest pain, nausea/vomiting, shortness of breath, profuse sweating

Signs of Cardiopulmonary Distress

- Tachycardia, bradycardia
- Pallor
- Diaphoresis
- Low blood pressure
- Fast, labored, shallow, or slow respirations
- Anxiety or confusion
- Cyanosis
- Chest pain that radiates to the back, arms or jaw
- Chest tightness

- Shortness of breath
- Nausea or vomiting
- Lightheadedness
- Weakness
- Syncope

**Notify physician if any of these symptoms are experienced!