

Step by step process for taking an Electrocardiogram (EKG)

EKG order must be documented in the patient's EHR or verbally directed by the provider or RN before the test may be administered.

Pre-operative exams for patients over 50 years of age who have not had a EKG in the past year may be completed as a standing order.

Step 1: Prepare the Equipment

1. Check the EKG machine:
 - Make sure the EKG machine is powered on and functioning properly.
 - Confirm that the digital display is ready.
 - EKG paper in machine
 - Input the patient information into the machine:
 1. Last Name, First Name
 2. Date of Birth
 3. Age
 4. Gender
2. Prepare the electrodes:
 - Ensure you have the appropriate number of electrodes (10 are needed: 4 limb electrodes and 6 chest electrodes).
 - Verify that the electrodes are fresh and clean, and that their adhesive is intact.

Step 2: Prepare the Patient

1. Introduce yourself and explain the procedure:
 - Explain the purpose of the EKG to the patient to alleviate any anxiety.
 - An EKG is a tracing of the electrical activity of the heart.
 - Describe the process, assuring the patient that it is non-invasive and painless.
 - Electrodes are placed on certain areas on the chest, arms, and legs. The electrodes are connected to the EKG machine by lead wires. The EKG machine collects, measures, interprets, and prints out the result to be reviewed by the provider.
2. Ensure patient comfort:
 - Have the patient lie down in a comfortable, relaxed position on the exam table
 - Ask the patient to remove clothing from the waist up to allow easy access to the chest but ensure their privacy.
 - For women – have them remove their bra and give them a cape. Instruct them to keep opening in the front.
3. Ensure proper positioning:
 - The patient should be in a supine (lying down) or semi-reclining position with their arms at their sides, and legs uncrossed.

4. Check for contraindications:
 - Ensure that the patient has no conditions or medical devices (like pacemakers) that could interfere with the EKG.

Step 3: Clean the Skin

1. Prepare the skin surface:
 - Use an alcohol swab to clean the areas where the electrodes will be placed. This will remove oils, dirt, or dead skin cells that could interfere with the signal.
2. Shave if necessary:
 - If there is excess hair where the electrodes need to be placed, use a razor to shave small areas of skin (e.g., the chest) to improve electrode adhesion.

Step 4: Apply the Electrodes – refer to placement diagram

1. Place the limb electrodes:
 - Right Arm (RA): Place the electrode between the right shoulder and elbow.
 - Left Arm (LA): Place the electrode between the left shoulder and elbow.
 - Right Leg (RL): Place the electrode above the right ankle on the inside of the right calf.
 - Left Leg (LL): Place the electrode above the left ankle on the inside of the left calf.
2. Place the chest electrodes:
 - The chest electrodes should be placed in specific positions on the chest. Follow the pictorial diagram.
 1. V1: Fourth intercostal space, right sternal border.
 2. V2: Fourth intercostal space, left sternal border.
 3. V3: Between V2 and V4.
 4. V4: Fifth intercostal space, midclavicular line.
 5. V5: Same horizontal level as V4, anterior axillary line.
 6. V6: Same horizontal level as V4, midaxillary line.

Step 5: Connect the Electrodes to the EKG Machine

1. Attach the leads to the electrodes:
 - Connect the cables from the EKG machine to the corresponding electrodes chest cables (V1-V6), RA, LA, RL, and LL.
2. Check for proper connection:
 - Ensure that each lead is securely connected to both the electrode and the EKG machine.
 - Check that all connections are stable to avoid interference during the recording.

Step 6: Start the EKG Recording

1. Initiate the EKG machine:
 - Once all electrodes are placed and connected, ask the patient to remain still and breathe normally.
 - Start the EKG recording by pressing the appropriate “**Start**” button on the machine you are using.
2. Monitor the recording:
 - As the EKG machine records the heart's electrical activity, monitor the EKG trace to ensure there are no artifacts (like muscle movements or electrical interference) affecting the reading.
3. Wait for a complete cycle:
 - The machine will collect the patient's data before printing out the results. You will be able to view the EKG readings on the display screen.

Step 7: Evaluate the Results

1. Evaluate the EKG trace:
 - Evaluate the printed EKG tracing results for any obvious abnormalities in the heart's rhythm, rate, or other indicators.
 - Ensure the signal is clean and clear, without excessive noise or artifacts.
 - Read the interpretation report on the tracing for details on the results.
 - Repeat test if necessary.

Step 8: Report the Results – DO NOT DISCONNECT PATIENT UNTIL CLEARED BY PROVIDER

1. Interpretation:
 - Have the provider review the tracing before disconnecting the patient from the machine.
 - Disconnect patient **ONLY** after getting approval from provider to do so.

Step 9: Remove the Electrodes and Clean Up

1. Remove the electrodes:
 - Gently peel off the electrodes from the patient's skin, being careful not to cause discomfort.
2. Dispose of used materials:
 - Discard the electrodes and any used materials (alcohol swabs, paper towels, etc.) in appropriate waste containers.
3. Clean the skin:
 - Clean the patient's skin of any remaining gel or adhesive with a moist towel or additional alcohol swabs if necessary.
4. Assist the patient:

- Help the patient get dressed if necessary and offer any instructions for post-procedure care, if relevant.

Step 10: Cleaning and Storage of Equipment

1. Return EKG machine to storage location.
2. Wipe down cable and leads with alcohol.
3. Gently store cable and wires across machine. Avoid low hanging wires to reduce damage. Do not wrap cable or wires around machine or handles of cart.
4. Ensure that electrode box is closed and sealed. Do not leave unlocked and open to air, causes malfunction of electrodes and reduces effectiveness of adhesive.
5. Plug EKG machine in to maintain power levels of unit.

Created 1/2025