

ACTIVE LEARNING TEMPLATE: *Diagnostic Procedure*

STUDENT NAME _____

PROCEDURE NAME Electrocardiogram (ECG)

REVIEW MODULE CHAPTER _____

Description of Procedure

An assessment of the functional capacity of the heart by way of measuring the electric activity of the heart.

Indications

To detect abnormal heart rhythms
To detect heart problems including a recent or ongoing heart attack.
To detect non-heart conditions such as electrolyte imbalances and lung diseases.
To monitor recovery from and progression of a heart attack.
To monitor effectiveness of certain medication used to treat the various heart conditions.
To rule out hidden heart diseases in patients about to undergo surgery

Interpretation of Findings

In addition to a rise in biomarkers, a rise in the ST segment, changes in the shape or flipping of T waves, new Q waves, or a new left bundle branch block can be used to diagnose an AMI.
ST segment elevation can be used to diagnose an ST segment myocardial infarction (STEMI). It is associated with infarction, and may be preceded by changes indicating ischemia, such as ST depression or inversion of the T waves.
A rise must be new in V2 and V3 ≥ 2 mm (0.2 mV) for males or ≥ 1.5 mm (0.15 mV) for females or ≥ 1 mm (0.1 mV) in two other adjacent chest or limb leads.

Potential Complications

Common for cardiac stress test (exercise EKG)
Cardiac arrhythmia
Shortness of breath
Angina
Heart Attack and fainting

CONSIDERATIONS

Nursing Interventions (pre, intra, post)

Pretest:

Assess the client's medical record for information regarding the needs for an ECG.
Assess the client's heart rate, heart sounds, and blood pressure.
Assess the client's chest for areas of irritation, skin breakdown, or excessive hair growth that may interfere with the electrode placement.

Intratest:

Verify the order for the ECG in the client's chart.
Confirm the client's ID by checking two client identifiers according to your facility's policy.
Provide privacy and explain the procedure to the client. Explain that the test records the heart's electrical activity and that it may be repeated at certain intervals. Emphasize that no electrical current will enter the body. Tell the client that the test typically takes about 5 minutes. Wash hands and carry on with the test.

Posttest:

Remove and discard the electrodes
Help the patient sit in a comfortable position.
Document the date and time of the test and significant response from the client. Verify the time and date, client's name, and assigned ID number on the ECG. Note any appropriate clinical information on the ECG.

Client Education

An ECG is a non-invasive procedure, which means that nothing is injected into the body.

It is painless.

A number of electrodes – usually a total of 12 to 15 – are attached to various locations on your body including your arm, leg and chest.

The electrodes are attached by small suction cups or adhesive patches.

Sensors in the pads detect the electrical activity of your heart.

The test is usually performed while you lie still.

Results are most often recorded on graph paper and interpreted or read by your doctor or a technologist.

The test usually takes 5 to 10 minutes.

Nursing Interventions

Learning as much as possible from the medical history of the patient including allergies.

Watch the patient closely during the cardiac stress test.

Stop the test once any the patient complains of any problem.