GHADIALI

GHADIALI
General Surgery

PRESENTS

Dr. Mufa T. Ghadiali is skilled in all aspects of General Surgery.
His General Surgery Services include:

- General Surgery
- Advanced Laparoscopic Surgery
- Surgical Oncology
- Gastrointestinal Surgery
- Hernia Surgery
- Endoscopy

Electromyogram

Multimedia Health Education

Disclaimer

This film is an educational resource only and should not be used to make a decision on **Electromyogram**. All such decisions must be made in consultation with a physician or licensed healthcare provider.

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MULTIMEDIA HEALTH EDUCATION MANUAL

TABLE OF CONTENTS

INTRODUCTION

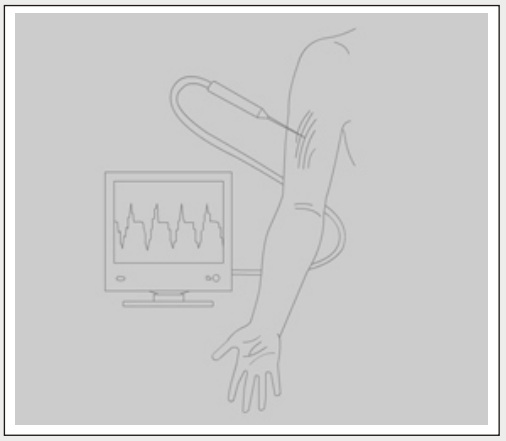
An **electromyogram (EMG)** is a medical test performed to measure the electrical activity of muscles in the body. Nerve conduction studies measure how well and how fast nerves send electrical signals to the muscles. EMG and nerve conduction studies are often done together to provide more in-depth information to the physician.

What is an Electromyogram?

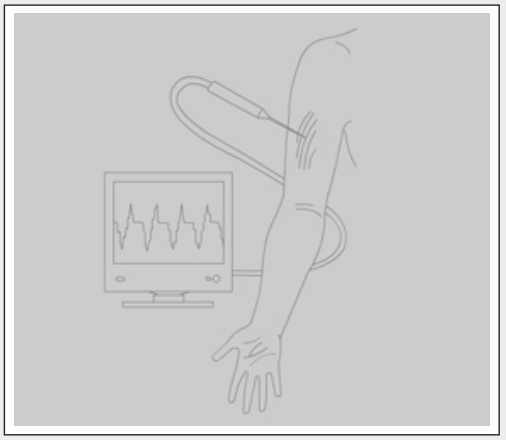
Nerves control the muscles in the body by sending electrical signals called impulses. These impulses make the muscles react in specific ways. When nerve and muscle disorders are present, the disorders cause the muscles to react in abnormal ways.

Measuring the electrical activity in muscles and nerves can help physicians diagnose diseases that damage muscle tissue or nerves.

(Refer fig. 1 & 2)



(Fig.1)



(Fig.2)

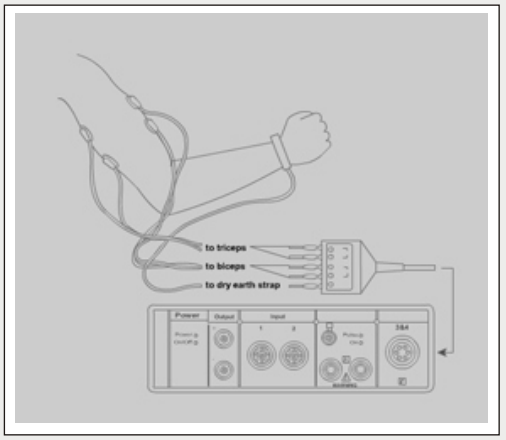
Unit 2: Purpose of Electromyogram

Why is an EMG Performed?

An electromyogram (EMG) is done to:

- Diagnose diseases that damage muscle tissue, nerves, or the junctions between nerve and muscle called neuromuscular junctions. These disorders may include a herniated disc, amyotrophic lateral sclerosis (ALS), or myasthenia gravis (MG) as well as many other conditions.

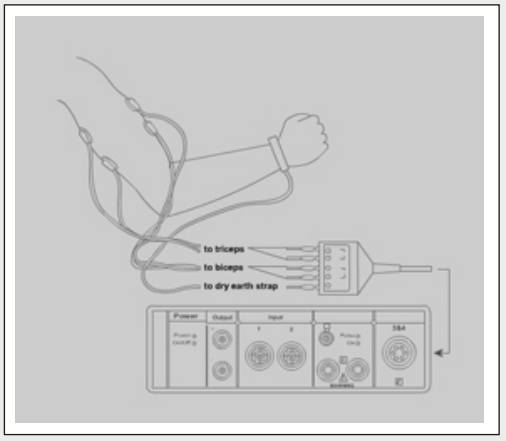
(Refer fig. 3)



(Fig.3)

- Determine the cause of symptoms such as weakness, paralysis, or muscle twitching. These symptoms can represent problems in a muscle, the nerves supplying the muscle, the spinal cord, or the area of the brain that controls that muscle. The EMG does not show brain or spinal cord diseases.

(Refer fig. 4)

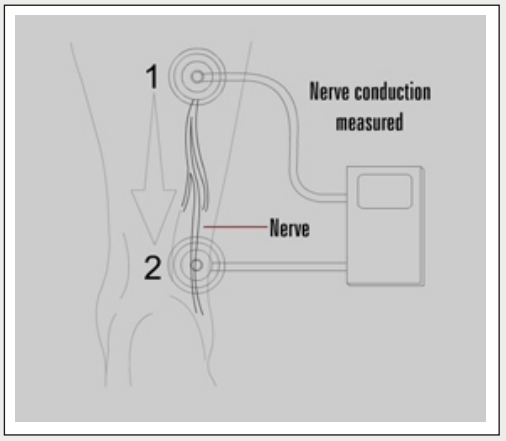


(Fig.4)

Nerve Conduction Studies

Nerve conduction studies are performed to:

- Assess disorders of the peripheral nervous system which includes the nerves that lead away from the brain and spinal cord and the smaller nerves that branch off from those nerves. Nerve conduction studies are often used to help diagnose nerve disorders such as pinched nerves, carpal tunnel syndrome or Guillain-Barre syndrome.



(Fig.5)

- Both EMG and nerve conduction studies can help diagnose a condition called post-polio syndrome that may develop months to years after a person has had polio.

(Refer fig. 5)

How to Prepare?

Inform your doctor regarding the following:

- Medications: Certain medicines that act on the nervous system can change electromyogram (EMG) results. You may need to stop taking these medicines 3 to 6 days before the test.
- Bleeding: If you have a history of bleeding problems or take blood thinners, such as coumadin, heparin, or aspirin, your doctor will tell you when to stop taking them before the test.

(Fig.6)

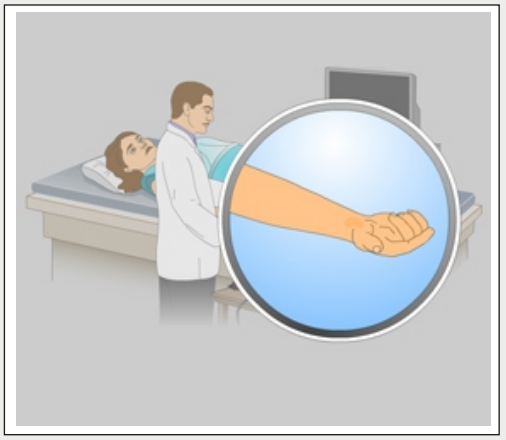
- Pacemaker: Let your doctor know if you have a pacemaker. Generally, this is not a problem, but nerve conduction stimulation will be avoided near the pacemaker.
- Smoking: Do not smoke for 3 hours before the test.
- Lotions: Do not apply lotion to the arms or legs on the day of the

(Refer fig. 6)

How is the Procedure Performed?

- Electromyogram: During the electromyography test, the physician cleans the skin with alcohol and inserts a tiny needle with an electrode into the muscle. The electrical activity of the muscle is recorded and viewed on a screen called an oscilloscope.

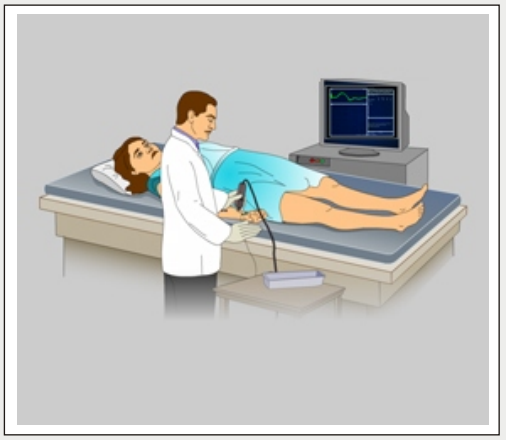
  The physician analyzes the activity on the screen and listens to the sounds of the activity through a speaker. This helps the physician determine if there are abnormalities in the muscle or the nerve going to the muscle.



(Fig.7)

(Refer fig. 7)

- An EMG may take 30 to 60 minutes. When the testing is complete, the electrodes are removed and the injection sites are cleaned with alcohol.



(Fig.8)

(Refer fig. 8)

How is the Procedure Performed?

- Nerve conduction studies: In this test, several flat metal disc electrodes are attached to your skin with tape or a special paste. A shock-emitting electrode is placed directly over the nerve and a recording electrode is placed over the muscles under control of that nerve.

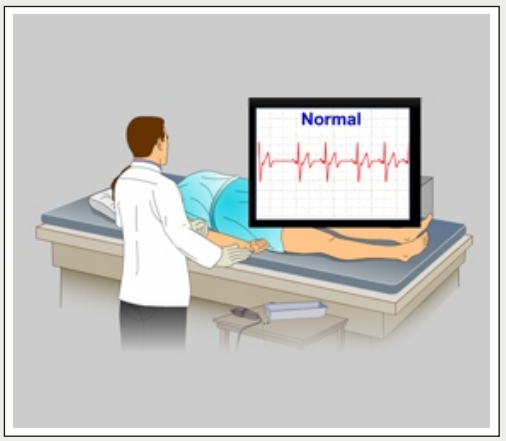
  Several quick electrical pulses are sent to the nerve. The time it takes for the muscle to contract in response to the electrical pulse is then recorded.

(Refer fig. 9)

(Fig.9)

- The speed of muscle contraction response is called the conduction velocity. Nerve conduction studies are done before an EMG if both tests are being performed. Nerve conduction tests may take from 15 minutes to 1 hour or more, depending on how many nerves and muscles are studied.

(Refer fig. 10)



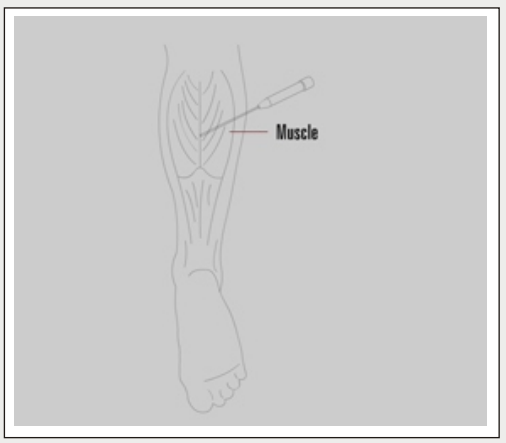
(Fig.10)

What are the Risks?

An electromyogram (EMG) is very safe. You may have some pain in the muscles after the procedure or small bruises or swelling at the needle injection sites. Sterile technique is used so there is very little chance of developing an infection at the injection sites.

There are no risks associated with nerve conduction studies. Since it is a non-invasive procedure, there is no chance of infection. The voltage associated with the electrical pulses is not high enough to cause an injury.

(Refer fig. 11)



(Fig.11)

Unit 3: Disclaimer

Although every effort is made to educate you on **ELECTROMYOGRAM** and take control, there will be specific information that will not be discussed. Talk to your doctor or health care provider about any concerns you have about **ELECTROMYOGRAM.**

☐ ☐ ☐ **YOUR SURGERY DATE**

☐ **READ YOUR BOOK AND MATERIAL**

☐ **VIEW YOUR VIDEO /CD / DVD / WEBSITE**

☐ **PRE - HABILITATION**

☐ **ARRANGE FOR BLOOD**

☐ **MEDICAL CHECK UP**

☐ **ADVANCE MEDICAL DIRECTIVE**

☐ **PRE - ADMISSION TESTING**

☐ **FAMILY SUPPORT REVIEW**

Physician's Name : _____

Physician's Signature: _____

Date : _____

Patient's Name : _____

Patient's Signature: _____

Date : _____