



Motor units' relationship with Electromyography (EMG)

Motor unit—:

A single motoneuron and its axons supply ~~not only just a muscle fiber, but also~~ several muscle fibers. The muscle fibers that ~~is-are~~ supplied by one motor neuron through ~~its-a~~ single axon, along with ~~its~~ branches, are called a ~~m~~Motor ~~u~~Unit. A variety ~~of numbers~~ of muscle fibers are present ~~in a motor unit—for instance, -it~~ is observed in cat leg muscles that approximately 120-165 fibers are present in one motor unit.

EMG

A motor unit's activity is measured ~~through by~~ placing a coaxial electrode ~~in to on~~ the muscle that is to be studied. Next, ~~they are the muscle is~~ connected to ~~to-~~ electromyography (EMG). A recording is ~~then~~ obtained during muscular activity. This recording is called an ~~electromyogram (EMG).~~

A hollow needle can be made in to a coaxial electrode ~~by introducing adding~~ an insulated inner wire ~~with in it~~. Possible changes are recorded from a small volume of the muscles in ~~the~~ immediate ~~neighborhood vicinity~~ of the tip of the needle. Thus, it has been observed that most of the electrical activity ~~comes is~~ from the active fibers near the electrodes. Sometimes, surface electrodes ~~are is~~ used in-stead of deep muscle coaxial electrodes. In this recording method, two surface electrodes are placed over the ~~muscles~~ to be studied ~~muscle's~~ at a reasonable distance.

When the muscle is at rest, no action ~~is-~~ potentials ~~are-~~ recorded; however, as soon as the muscle becomes active, potentials are recorded. The potential recorded during activity is ~~the as a~~ result of the asynchronous discharge of motoneurons in the vicinity of the electrodes. During minimal voluntary activity, only a few ~~number of~~ motor units ~~-discharges, -and~~ as ~~the~~ voluntary effort increases, ~~the~~ more ~~number of~~ units ~~are is~~ activated. This ~~phenomenon~~ is called ~~as the~~ recruitment of motor units

Commented [E1]: I might have unintentionally changed the meaning of this sentence by altering the highlighted text. Please ensure that this phrase still portrays what you intended it to mean.

Commented [E2]: The intended meaning of this phrase is difficult to determine, and so it has not been fully revised. Consider rewording the highlighted text to make the meaning of this sentence more apparent.

Commented [E3]: Note that the abbreviation "EMG" has been used for two different terms in this paper.



لینگالین
موسسه ویرایش نیتو



The gradation of muscular activity is a part of the function of the number of motor units activated. Electromyographic studies have clinical importance in diagnosing motor unit disorders, including peripheral nerve injuries and neuromuscular disorders such as myotonia and myasthenia gravis, so on and so forth.