

**Motor units and their<sup>2</sup>s relation with electromyograms (EMG)**

**Comment [A1]:** Abbreviations are not usually included in the titles or articles.

*Motor unit—:*

A single ~~motor neuron~~ ~~motoneuron~~ and ~~its~~ ~~its~~ ~~axons~~ ~~innervate~~ ~~supply not only just a~~ ~~muscle fiber, but also~~ several muscle fibers. ~~The m~~ Muscle fibers ~~that is supplied~~ ~~innervated~~ by one motor neuron through its single axon along with branches are called a ~~M~~ motor ~~U~~ unit. ~~The number~~ A variety of ~~numbers of~~ muscle fibers ~~in a motor unit varies~~ ~~are present~~. It ~~is~~ ~~has~~ ~~been~~ observed in cat leg muscles that approximately 120–165 fibers are present in one motor unit.

**Comment [A2]:** We have changed “it’s” to “its” because this is a case of a possessive pronoun. The use of “it’s” is incorrect because “it’s” a contraction of “it is” or “it has.”

Electromyography: EMG

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

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

When the muscle is at rest, no action ~~is~~ ~~potential~~ ~~is~~ recorded; however, as soon as the muscle becomes active, ~~action~~ potentials ~~results from~~ ~~are recorded~~. ~~The potential recorded during activity is as a result of~~ the asynchronous discharge of ~~motor neurons~~ ~~motoneurons~~ in the vicinity of the electrodes. During minimal voluntary activity, only a few ~~number of~~ motor

units— ~~are discharged~~ discharges, and as voluntary ~~effort~~ activity increases, ~~the more~~ number of units ~~are~~ is activated. This is called recruitment of motor units.

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

**Comment [A3]:** Redundant phrases make a sentence wordy. Being economical in writing enhances clarity (in terms of meaning) and readability of the sentence. Here, the phrase “so on and so forth” is not required as this is implied by the use of “including.”

SAMPLE