

**Motor Unit's relation with and Electromyogram (EMG)**

**Motor unit**

A single motoneuron and its axons innervates supply not only just a muscle fiber, but also several muscle fibers through its axon. The group of muscle fibers that is innervated supplied by one motor neuron through its single axon and axonal along with branches are is called a motor unit. The number of 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.

**Electromyogram (EMG)**

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

A hollow hypodermic needle can be made converted in to a coaxial electrode by introducing an insulated inner wire with in it. Possible changes Potential differences are recorded from a small number volume of the muscles fibers in the immediate neighborhood of the tip of the needle tip. Thus, it is has been observed that most of the electrical activity is from the active fibers near the electrodes.

Sometimes, surface electrodes is are used in stead of coaxial deep muscle electrodes deep muscle coaxial electrode. In this recording method, two surface electrodes are placed on the skin overlying the muscle under study over the to be studied muscle's at a reasonable distance from each other.

Action potential is recorded when the muscle becomes active but not when the muscle is at rest, no action is potential recorded; however, as soon as the muscle becomes active, potentials are recorded. The potential recorded during activity is attributed as a result of to the asynchronous discharge of motoneurons in the vicinity of the electrodes. During minimal voluntary activity, only a few the number of motor units discharged is lesss, and as the voluntary effort increases, the more the number of units is activated is more. This is called known as recruitment of motor units recruitment.

- Commented [A1]: Formatting:** According to the formatting guidelines, the title of the manuscript should be within 30 characters.
- Commented [A2]: Punctuation:** Here the unnecessary colon has been deleted.
- Commented [A3]: Remark:** Note that the terms "motoneuron" and "motor neuron" have been used interchangeably throughout the manuscript. We have revised this for consistency. Please check.
- Commented [A4]: Language:** Although "supply" is a correct word in this context, "innervate" is a better word choice.
- Commented [A5]: Language:** The sentence has been reconstructed for conciseness.
- Commented [A6]: Subject Matter:** A neuron always has one axon. Thus, the word "single" is deleted.
- Commented [A7]: Grammar:** Here the subject "fiber" is singular, and therefore the verb should also be singular.
- Commented [A8]: Style:** Here the term is a common noun and need not be capitalized.
- Commented [A9]: Language:** The sentence has been edited for readability as well as clarity.
- Commented [A10]: Grammar:** The present perfect tense is preferred in this context, and therefore, the correction made.
- Commented [A11]: Style:** Note that an en dash (–) is generally used to denote a range. We have revised the comma to an en dash at this instance as the numbers seem to denote a range.
- Commented [A12]: Remark:** Note that the highlighted sentence needs a reference to support the statement.
- Commented [A13]: Style:** According to the standard convention, terms should be followed by their abbreviations at their first mention.
- Commented [A14]: Grammar:** Article is not needed at this ...
- Commented [A15]: Language:** ...
- Commented [A16]: Attention to detail:** ...
- Commented [A17]: Language:** ...
- Commented [A18]: Punctuation:** ...
- Commented [A19]: Language:** ...
- Commented [A20]: Remark:** Note that "EMG" has been use ...
- Commented [A21]: Language:** ...
- Commented [A22]: Subject area:** ...
- Commented [A23]: Grammar:** ...
- Commented [A24]: Language:** ...
- Commented [A25]: Subject area:** ...
- Commented [A26]: Typographical error:** ...
- Commented [A27]: Language:** ...
- Commented [A28]: Subject area:** ...
- Commented [A29]: Subject area:** ...
- Commented [A30]: Language:** ...
- Commented [A31]: Language:** ...
- Commented [A32]: Remark:** Please check if the highlighted ...
- Commented [A33]: Grammar:** ...



Gradation of muscular activity is a part of the function of a number of motor units activated.

Electromyographic studies have clinically importance in diagnosis of motor unit disorders including peripheral nerve injuries, and neuromuscular disorders such as myotonia and myasthenia gravis, so on and so forth.

**Commented [A34]: Remark:** Note that the highlighted text is unclear and please check whether it should be revised to "The gradation of muscular activity is a function of the number of motor units activated" for clarity.

**Commented [A35]: Grammar:** Here the correction has been made because "clinical" is an adjective for the noun "importance."

**Commented [A36]: Typographical error:** The spelling has been rectified.