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## Electromyographic Investigation of Muscular Movements in *Kendō* (Part III)

-Men (Front strikes) Before and After Kendō Practice -

By Shuji Fukumoto\*

## I. Preface

In practicing  $Kend\bar{o}$  exercises, untrainer are using their strength which seems needless. As to how to avoid using needless strength, one can get understanding vaguely through experiences, however, there has been no study the results of which are supported definitely.

In order to study what muscular functions are made during the first half and second half period of movement, in this study, one of  $Kend\bar{o}$  movements was selected and it was repeated continuously. Especially, studies were made using the electromyography to see what striking functions were made after violent movements.

## **II.** Conclusions

The muscular discharge after violent movements were made was smaller than that before making such movements, and it was noted that the movements were made by effectively using the muscles necessary for making strikes. Such an effective use of muscles seems to be brought by exercisers becoming skilled in striking, and it was understood that they were making strikes using no needless strength.

In such exercisers, since their movements are made with a minimum of muscular function, if their striking movements are corrected or if instructions are given properly, they seem to become able to make more effective movements. At any rate, exercisers who are in such a condition are considered to have the possibility of becoming skilled Kendōmen.

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