

## Grading of hyperreflexia of finger flexors- What is pathologic hyperreflexia of finger flexors?

We propose a system of grading hyperreflexia of finger flexor reflex that can help decide its pathological significance.

The finger flexor reflex<sup>1</sup>, is a C8 spinal segmental reflex. It is elicited by flicking the distal end of digits that are supported in a relaxed posture. The sudden stretching of the finger flexors causes them to flex. Hyperreflexia of finger flexors (HFF) may be defined as flexion of the thumb when the finger flexors are briskly stretched (Figure 1). The thumb flexion is due to the phenomenon of reflex irradiation ('spread') and indicates that the muscle spindles of the thumb flexors are in a suitable state of gamma bias to respond to the propagated vibration wave induced by the sudden stretching of the finger flexors<sup>2</sup>. Although HFF may be a useful sign of upper motor neuron dysfunction it may also be physiological. When unilateral or asymmetrical HFF is likely pathological. We would like to propose a grading system for HFF as it would aid in detecting asymmetry. It is based on the observation that the further away from the thumb the effective stimulus (for thumb flexion) the greater the degree of hyperreflexia.

Grade I – The thumb flexes when all the four fingers are held together and the distal phalanges of all these fingers are simultaneously flicked; no thumb flexion occurs with flicking of individual fingers.

Grade II – The thumb flexes when the distal phalange of the digit closest to the thumb i.e digit II (index finger) is flicked

Grade III – The thumb flexes when the distal phalange of digit III (middle finger) is flicked

Grade IV – The thumb flexes when the distal phalange of digit IV (ring finger) is flicked

Grade V – The thumb flexes when the distal phalange of the digit furthest from the thumb ie digit V (little finger) is flicked

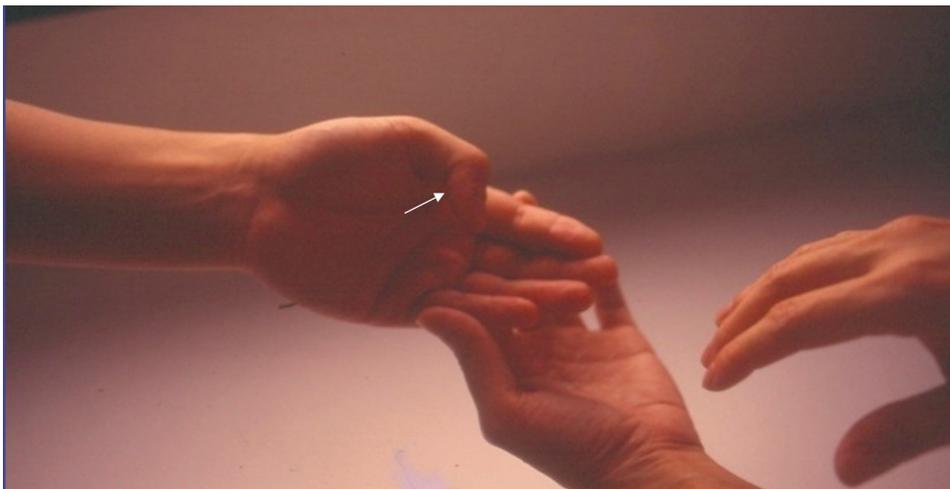


Figure 1. Hyperreflexia of finger flexors- thumb flexion when finger flexors are stretched by a flick of the distal phalanges.

To prevent inadvertent spread, attention must be given to isolate individual fingers that are flicked from the adjacent ones. Hoffmann sign<sup>3</sup>, an involuntary flexion movement of the thumb and or index finger when the fingernail of the middle finger is flicked downwards, probably represents at least Grade III hyperreflexia. Grade IV and V are probably rarely encountered in normal subjects.

Si Chin Loong, Thirugnanam Umapathi

*National Neuroscience Institute, Singapore*

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Address correspondence to: Thirugnanam Umapathi, National Neuroscience Institute, 11 Jln Tan Tock Seng, Level 1, 308433 Singapore. Tel: +6563577171, email: umapathi@nni.com.sg

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