

## Motor Nerve Conduction Velocity of Sprinters & Long Distance Runners of Selected Nerves of both Upper and Lower Limbs

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### Abstract

Background: The aim of this study was to describe motor nerve conduction velocity of selected nerves of both the upper and lower extremities in sportsmen. Thirty high-level sprinters (100mts & 200 mts) and thirty high level distance runners (3000mts) were volunteered to participate in the study. Method: Motor Nerve Conduction Velocities (MNCV) of Ulnar and Common Peroneal Nerve (CPN) were recorded with the help of computerized equipment -Neuroperfect (Medicaid Systems, India) with standard techniques of supramaximal percutaneous stimulation with constant current and surface electrodes. The anthropometric measurements taken were Body Height (cms), Age (yrs) and Body weight (kgs). The neurophysiological parameters taken were MNCV of Ulnar Nerve (upper extremity) and Common Peroneal Nerve (lower extremity) of both sides (i.e. dominant and non-dominant) of the body. The room temperature was maintained at 37 degree Celsius. Results: Significant differences in motor nerve conduction velocities were found between dominant and non-dominant limbs in each group. Ulnar nerve conduction velocity measured from above elbow to below elbow was significantly higher in the sprinters than long distance runners. The CPN nerve conduction velocity is significantly higher in distance runners as compared to sprinters. Conclusion: The motor nerve conduction velocity of ulnar nerve was found to be higher in sprinters as compared to the distance runners, and the MNCV for CPN is higher in distance runners as compared to sprinters. The MNCV of ulnar and CPN were higher in dominant limbs (i.e. arms & legs) of both sides of the body as compared to non dominant limbs.

**Key words: Motor nerve conduction velocity, ulnar nerve, Common Peroneal Nerve**

### Introduction

The players are creating and breaking new records in today's competitive sports. Traditionally the motto of Olympic festival is faster, higher and stronger is still alive in the field of physical education and sports science. The level of physical fitness and motor ability is increasing day to day because of the development of science and technology.

The anthropometric and motor nerve conduction studies in sports are the measure of the analysis of relationship between anthropometric characteristics and neurophysiological functions. With the growth of athletic participation there has been a commensurate increase of sports-related neurological disorders. Prompt evaluation and treatment of the professional and recreational athletes enable an earlier return to competition (Payne and Morrow, 1993). Their technical advancement has developed