Acta Scientific Orthopaedics (ISSN: 2581-8635)

Volume 7 Issue 3 March 2024

Short Communication

Effect of Extreme use of Mobile on Musculoskeletal System

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DOI: 10.31080/ASOR.2024.07.0909

Received: January 17, 2024;

Published: February 07, 2024

Due to digitalization, mobile phones days are not just communication device but are much more than that. It is essential part of human life and play an importer role in everything from shopping, entertainment, banking etc. [1,2]. The extreme use of mobile phone may affect the overall health of mobile user [3]. There are so many physical, mental and emotional health effects can occur such as Headaches, Asthenopia (Eye strain), lack of concentration, joint pain, sleep deprivation, and lowered physical fitness etc [4]. In this article we will see some of the hazardous effects on musculoskeletal system due to the extreme use of mobile.

The first change which occurs using mobile phone is change in posture [5]. Especially the change in cervical vertebra lordosis for looking at screen and position of hand for scrolling, typing, swiping, tapping activity [5]. Other common postural alterations are Shoulder internal rotation, Wrist extension and ulnar deviation [8]. The use of smart phone is reported in positions other than sitting which Furter alter the posture of neck, wrist, and thumb [7]. Researches have been conducted analyzing the posture of head and neck, by measuring the angel between earlobes, corner of eye and spinous process of C7 vertebra on sagittal plane in various position while using mobile phone. The flexion of neck increases and thus the prominence of spinus process of C7 increases which further leads to forward neck postures. This change in posture does not occur only in position of vertebra but is also associated with thinning of intervertebral disc, mechanical disadvantage of muscles of neck and vertebral joints [9]. All this biomechanical changes are risk factors for cervical spondylosis and other causes of neck pain [10-12].

One of the many reasons for musculoskeletal pain is repetitive strain injury (RSI), occurs due to overuse of soft tissues in an inappropriate position. Extreme use of mobile phone can cause the RSIs of wrist and thumb [13,14]. It is reported that approximately 70% mobile users experience wrist pain ranging from minimal to moderate [15]. Extreme use of mobile phone alters the biomechanics of wrist joint which leads to pain, numbness and tingling sensation [16]. Functional abilities of wrist and thumb also get affected in terms of altered range of motion, strength of wrist flexors and extensors, grip strength etc. [14,17]. the common movement of thumb occurs while using mobile phone is thumb abduction and thumb flexion [18]. The carpometacarpal joint of thumb is found most affected because of extreme use of mobile phone [14,19]. common site of pain is shown in diagram below.

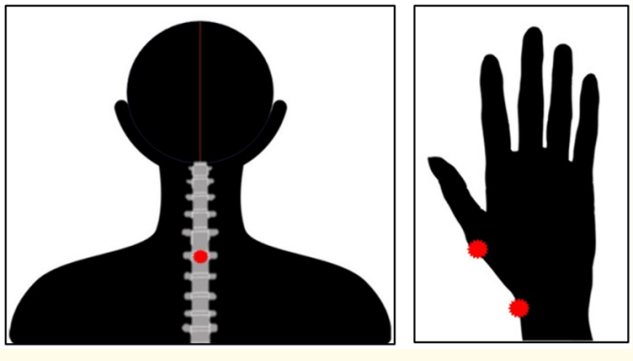

Figure 1: Common sites of pain in neck and wrist after prolong use of mobile phone.

In the closing statement, thoughtful use of a mobile phone in ergonomic positions can prevent such pains and improve functionality of the neck, wrist and thumb [8]. Additionally, active breaks such as mild stretching of neck and wrist joint muscle may also be helpful in prevention of RSI. Effect of acute aerobic exercises was assessed in mobile addiction for response inhibition (resisting

temptations) and interference control. Such exercises may prevent other hazardous effect of extreme mobile phone use such as decreased level of physical activity, increased fat deposition and cognitive impairment etc. [20]. There is a vast scope for further research in this area. Such research will be the emerging need of health care systems in upcoming years.

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