

Effect of Single/Dual Monitor Use on Behavior of Neck-Shoulder Musculature

Ashish Nimbarte (West Virginia University), Rabab AlAbdulmohsen (West Virginia University), Yun Sun (West Virginia University), Christopher Moore (West Virginia University), Mohammed Alhassan (West Virginia University)

Despite substantial increases in the use of dual monitors at workplaces, it is currently unknown as to how the working on a dual monitor video display unit (VDU) affects the behavior of neck-shoulder musculature. The purpose of this ongoing study is to compare VDU workstations with single and dual monitors by evaluating three dimensional (3D) posture of the cervical spine and the activities of major neck muscles. The 3D posture of the cervical spine was measured using a marker free autonomous motion analysis system and the activities of neck muscles were recorded using electromyography. So far, five individuals participated in this study. Each participant performed three types of tasks: (1) reading for ten minutes; (2) typing for five minutes; and (3) search and find task for ten minutes using single and dual monitors, respectively. Cervical spine posture was significantly affected by the type of VDU workstation. While working on a dual monitor workstation, on an average, 5th, 50th, and 95th percentile of cervical spine rotation increased by 11, 16, and 23 degrees, respectively. Use of dual monitor also increased the activities of upper trapezius and the sternocleidomastoid muscle by 11% and 8%, respectively.

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3577 Parkway Lane, Suite 200
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