

Cumulative Trauma Disorders: A Review of Major Influence Factors and Some Ergonomic Countermeasures

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Abstract

Cumulative trauma disorders (CTDs), also broadly referred to as work-related or musculoskeletal disorders, have increasingly become the focus of intense research over the past few years. CTDs, though known and described for close to 300 years, have only recently become a matter of urgent ergonomic concern over the past two decades, primarily as a result of rapid technological advances that have created totally new and previously unrecognised hazards in the workplace. These disorders are the cumulative results of many microtrauma that only become manifest after an extended period of time; they are considered to be primarily work-related though other non-occupational factors may be involved. Several work-related factors such as high rates of repetitive and/or forceful exertions, awkward postures of the wrist or shoulders, static muscle loading and regular use of vibration hand-held tools have been identified as prime influence or risk (as opposed to casual) factors in the etiology of CTDs. Though the exact dose/response relationship of these factors to the development of CTDs presently remains unclear, certain physical activities and job procedures have been identified that are statistically related to the occurrence of these disorders. Hence, this allows the establishment of generic and specific recommendations for the control and avoidance of conditions that may lead to cumulative trauma disorders in the workplace.