

# ASPECTS REGARDING THE MUSCULO-SKELETAL DISEASES (MSD), DUE TO THE WORKPLACE

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**Abstract:** The ergonomic characteristics of the workplace frequently quoted as risk factors for MSD (Musculo-Skeletal Diseases) are the following: fast rhythm of work and repetitive movements, strong efforts, postures of the body and vibrations. For all those, some researchers still argue for the importance of these factors, especially reported to the non-professional causes (1,10,12). For the time being, there are no standard examination techniques for most of the symptoms that are frequently reported in the study at the workplace. Usually the worker makes an auto-report and the investigator observes, but the lack of standardized values - exposure - limits the capacity of comparing the study's results (2,11).

**Cuvinte cheie:** afecțiuni musculo-scheletale, munca automatizată

**Rezumat:** Caracteristicile ergonomice ale locului de muncă citate frecvent ca fiind factori de risc pentru AMS (Afecțiuni Musculo-Scheletale) sunt următoarele: ritmul rapid de lucru și mișcarea repetitivă, eforturi puternice, posturi ale corpului și vibrații. Cu toate acestea, unii cercetători dispută încă importanța acestor factori, în special în raport cu cauzele non-profesionale (1,10,12). Deocamdată nu există tehnici standard de examinare a celor mai multe dintre simptomele care sunt frecvent raportate în studiile de la locul de muncă. De obicei muncitorul face un auto-raport și investigatorul observă, dar lipsa de valori standardizate - expunere - limitează capacitatea de a compara rezultatele studiilor (2,11).

## SCIENTIFIC ARTICLE OF BIBLIOGRAPHIC SYNTHESIS

The ergonomic characteristics of the workplace frequently quoted as risk factors for the MSD (Musculo-Skeletal diseases) are the following: fast rhythm of work and repetitive movement, strong efforts, body postures and vibrations. Although, some researchers still argue the importance of these factors, especially reported to the non-professional causes (1,10,12).

For the time being there aren't standardized techniques of examination of most of the symptoms that are frequent reported in the study from the workplace. Usually, the worker makes an auto-report and the investigator observes, but the lack of standardized values - exposure - limits the capacity of comparison of the study results (2,11).

In a rapport from 2001, NRC (The National Research Council of SUA) OIM (International Organization of Work) concluded that, the ethiological importance of the stress factors at the workplace is very big in the apparition of the MSD at the level of the cervical/lombar spinal column and of the superior limbs (8,11).

"The musculo-skeletal diseases" (MSD) include a wide range of inflammatory conditions and degenerative that affects the muscles, tendons, ligaments, joints, peripheral nerves and their blood vessels. Those include clinical syndromes such as tendinitis, tenosinovitis, epicondylite, bursitis; nervous compression problems (syndrome of carpien tunnel, sciatica) and osteoarthritis, also conditions less standardized, such as mialgias, backpains and other regional pains/syndromes, that can not be attributed to the knowed pathology until present. The

body's regions that are the most frequently implied are the lombar area and the cervical area of the spinal column, shoulder, forearm, hand, although recently the inferior extremity received more attention. The musculo - skeletal diseases (MSD) are widely prevaled in many countries, with substantial costs and impact on the life quality. Exact data regarding the incidence and prevalence of musculo-skeletal diseases are difficult to obtain, and the official statistics are hardly to compared between countries. Anyway, the MSD represents almost a third from the total of the professional diseases registrated in the United States, in the northern countries (Europe) and Japan (4,7,9,11,12). Numerous questionnaires effectuated on the active population reported an increasing with 20-30% of the symptoms at the level of the superior extremities. In the United States, Canada, Finland, Sweden, England the musculo-skeletal diseases cause absenteeism or invalidity more than any other group of diseases (3,5,6,9,11,12).

MSD appear in certain sectors and profession with a frequency between three or four times bigger than the rest. The activity sectors with the higher risk are found in the producing industry of: automobiles, furniture, electricians and electronics, textiles, clothing and footwear; in the medical field services; transport; mining sector; alimentary products manufacturing; leather tannery (11). Also, MSD at the level of the superior extremities are predominant in the professions intensively manual, such as: administrative jobs; postal service jobs, cleaning services; the procedure of industrial control and packing (1,6). MSD in the cervical and lombar areas and also at the level of the inferior limbs appear disproportionately among

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the truck drivers, workers in the warehouse, at the pilers of the plane luggage, workers in constructions, at the nurses and medicale aids, at the operators of cranes and big vehicles (1,5).

While the specialty literature presented constantly a common set of physical exposure, during the investigations at the workplace, the proportion /association differs in a significantly way between studies. The quantitative variation of the results may appear from the differences between the case definitions, the operational definitions of ergonomic exposure, the periods of exposure-dependente of latency, the correlations between the risk factors or the exposure range disponible for analyses (4,8,10).

As in the most chronic disease, MSD have multiples risk factors, professional and non-professional. Moreover, the workplace demands, other aspects from the day-by-day life, such as sport and housekeeping activity, may represent a physical stress. Sistic diseases such as artrita rheumatoid arthritis, gout, lupus and diabetes affect the muscles and the skeleton. The risk varies regarding age, sex, socio-economical status or ethnical. Other risk factors that are suspected are obesity and smoking (10).

NRC/OIM admits – more than most of the authors – that the etiology of those rabblements among the population, as a whole, is multifactorial. Not all the persons with MSD developed them as a succession of the not ergonomical exposures from the workplace, and not all the exposed workers at the workplace develop a MSD (11). Because these affections are so common among the population and are due many times to the risk factors and to the non-professional. Tanaka and its colaborators (2) estimated that almost 40% of the total population hired in the SUA has MSD of the superior extremities, due to the professional exposure, representing more than 500.000 persons affectated per year. This is an impressive number, in accordance with the estimations NRC/OIM regarding the number of MSD morbid atributed to the factors from the workplace(2).

The results of the measurements used in the specialty literature include administrative data (such as, sick leave or absenteeism), clinical exams or diagnosis exams, also auto rapport of symptoms. The data in the administrative systems are incomplete, because not all the MSD linked to the profession are compensable or declarabile; moreover it has been observed a great discrepancy in the rapped numbers and the real ones MSD from the workplace (4,9,11). Rapping to the workplace is probably affected by the differences in the pain limits, cultural influences, psychosocial, the factors from the workplace, the receptivity of the employer, the relationships at the workplace, the uncertainty of the workplace (3,9); limitations linked to the available technologies of diagnosis for MSD (6). The criteria of diagnosis are not standardized and frequently inconsequente from one examiner to another, even if there is a consens that more MSD appear at the level of the superior extremities (5). The lack of defining the standardized criteria, reflects the diagnosis, rapped to the greater variety of signs and symtomes mentioned by the affected workers. The well defined pathology, such as the syndrome of carpian tunnel (CTS) and the spinal disk herniation, represents only a small part of MSD. The auto-rapped symptoms or the functional affection may be, more informative than other available modalities of examination. On the other side, the range of symtomes auto-rapped generated substantial discussions. The symtomes vary from specifics to non-specifics; some persons suffer severe pains and invalidity, even if their constatările are not with specific entities of diagnosis, such as CTS (Syndrome of carpian tunnel) or Quervain's disease. There still aren't examination techniques, that may serve as a gold standard for

many of the symptoms that are frequently rapped in the studies effectuated at the workplace (1).

A greater prevalence of the symptoms corresponds with the frequency of the demanding of compensation of the workers during the period of the sick leave in the same places of work and in the same time, existing the prediction of asking medical services for conditions of MSD (1,6).

MSD presents symptoms often intermittent and episodic, especially in the beggining degree. Although, even when they don't correspond to the well defined clinical syndromes, they may be of major importance for the public health.

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