MANAGING MUSCULOSKELETAL DISORDERS

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This paper provides pragmatic guidance for managers to enable them to identify when their actual or potential musculoskeletal problems are sufficient to warrant concern and cost-effective approaches to managing both the physical risks to the workforce and the wider business risk from upper limb disorders and back pain.

Effective Indicators of Musculoskeletal Disorders (MSDs)

The basic indicator of MSD problems is often considered to be 'lost time through sickness', however this can be misleading. Lost time, alone, is not a reliable indicator of MSD risk:

- It is quite common for a significant portion of a company's cumulative lost time to be the result of extended lost time for a minority of the workforce. A better indicator would be the proportion of the workforce presenting with any lost time.

- Some people elect to take extended time off work even when their injury is not sufficiently disabling. A person who had a serious and painful episode of back pain could, for example, be over-cautious at returning to work in case that work causes a return of that level of pain. The injury may actually have fully recovered, however the perception of risk to that person may affect his/her willingness to work and hence be the cause of the actual disability. A person may therefore elect to behave in a way that is more limiting than the injury warrants and in effect elect to have a greater disability than is justified.

- Lost time cannot reflect changing risk from future changes in task demand from new methods, equipment, shift patterns, and even from an established workforce 'growing older'.

Complaints and concerns raised by the workforce present a potentially more accurate indicator of potential risk, however, care is required when seeking and relying upon this type of data. Complaints are essentially an indicator that people have reached their threshold of acceptance/tolerance of what they perceive as acceptable to them and what they perceive as the actual level of risk or concern. Both are easily affected by issues that are under the control of manager as well as society's tolerance of risk. Some factors that can cause an imbalance in these perceptions are:

- An increased concern over potential health risks, perhaps as a result of a recent health screening exercise.
- An increase in union activity/priority on certain health concerns.
- An increase in claim culture among some of the workforce - perhaps the result of a successful claim or union activity.
- A worsening of relations between the workforce and supervisors/managers - this will affect a person's tolerance of acceptable levels of discomfort.

Surveys of operator discomfort can be useful when redesigning workstations and work methods however discomfort is usually short lasting and should not be taken as being equivalent to injury risk.

Objective Methods of Assessing MSD Risk

There can be very significant differences in the indicated level of risk from different musculoskeletal risk assessment tools, e.g. OWAS, RULA, MAC.

- Management should therefore be cautious of relying on the results of any single indicator of risk.
- Management should satisfy themselves that a measure of MSD risk adequately reflects the overall work content of a job and is not overly influenced by a minority of 'micro risks' from a small part of this work content - after all, varying work content is accepted as a useful risk reduction measure even though the magnitude of this reduction is often difficult to quantify when relying on the ergonomic guidance and tools to assess MSD risk.

It is therefore essential that ergonomists select the most appropriate assessment tools and are able to present an overview of the whole job risk as opposed to identifying quite small proportions of tasks that, in themselves, are not ideal. The UK Ergonomics Society has a list of competent practicing ergonomists.

Controlling MSD Risk

Overall Risk Reduction

Care is needed to ensure that genuine attempts to reduce/eliminate one risk do not create or increase other risks. For example, while a company may applaud itself on reducing a HAVS risk by introducing new low-vibration tools, congratulations may be premature if these new tools increase a MSD risk because of their increased weight or because they need to be used longer to achieve the same output.

Compromise may be needed for some jobs. For example, it is acknowledged that somebody working at a bench that is too high would need to work with raised upper arms and this could result in upper arm/shoulder discomfort/pain. Conversely, somebody working with a bench that is too low would need to stoop with a subsequently likelihood of developing low back discomfort/pain. A minority of jobs will require a compromise. If, for example, an assembly job requires close visual examination of components, then these would need to be raised to provide a reduced the seeing distance but the raised assembly posture could result in upper limb or shoulder discomfort. Ergonomics techniques should be able to optimise these workstations but some residual risk may be inevitable and need to be controlled by other measures such as job rotation or alternative short, but frequent, rest intervals.

Making better use of Risk Assessments

Risk assessments require a significant commitment of time and effort of key staff, and yet even when the MSD hazard is suspected and assessed, this investment may not be as effective as it should in controlling MSD risk.

- Some MSD assessment checklists used simply omit key issues.
- Others attempt to be better than is realistically achievable in quantifying MSD risk. Checklists often rely on a cumulative sum of scores from a large number of entries and yet the scores relied upon for some issues over/under represent risk. More critical is that the likely level of risk can be largely influenced by the interaction between key issues and the resulting risk can be much greater than the sum of each score. For example, high scores for awkward posture and high forces would suggest a risk disproportionately higher than the sum of the individual checklist scores for each, however, this interaction is rarely adequately considered.
- Some good checklists fail in practice because those completing them are unable (or perhaps unwilling) to assess a level of risk to aspects of the jobs being observed. For example, a fast assembly job may be 'judged' to be 'low risk' by some assessors but 'medium risk' by others. There is often insufficient guidance to improve on the consistency of assessors.

- Some reasonable risk assessments fall down because the risks assessed assume ‘normal events’ and insufficiently address frequent events when jobs are more difficult, perhaps due to tolerance of piece parts affecting the ease of assembly, or ‘rush jobs’ extending the times that people spend on one job and when rest periods are not used.
- Risk assessments may inadequately integrate the risks from individual tasks into the likely risk for the whole job.

An alternative approach would be to assess jobs in terms of ‘high/medium/low/no’ risk for different body zones. For example, a job could be assessed as presenting a ‘high risk - coded red’ to the dominant hand/wrist and a ‘medium risk - coded amber’ to the low back. If all jobs are assessed in this way then the following benefits could arise:

- Engineers can identify those jobs with the highest residual risk in order to prioritise ergonomic improvements.
- Engineers considering such improvements should be able to look at the scoring criteria to predict the magnitude of any risk reduction that would result from alternative improvements. For example, a limited budget may reduce a ‘red’ risk to ‘amber’ whereas an un-proportional investment would be required to reduce the score to ‘low/no risk’. This limited budget could perhaps be better spent on reducing other jobs from ‘red’ to ‘amber’. This approach could therefore assist engineers developing cost-effective risk reduction strategies.
- Managers can use the information to redeploy individuals with specific problems. For example, an employee reporting discomfort in the right elbow could be considered for redeployment in any job showing a ‘low/no risk’ in that upper limb.
- Occupational health functions could use the information to help consider the likely impact of a person’s job on a specific condition. For example, a job with a ‘high - red risk’ for the dominant hand should be considered highly relevant to somebody presenting with symptoms in that hand.

Making better use of Supervision

It is generally acknowledged that manual handling risks are controlled if operators adopt a ‘good lifting technique’. It is often true that the risks of upper limb disorders are also controlled by the adoption of the approved method of working. Unfortunately, approved methods of working to reduce risks are often not documented and where they are, they are sometimes not complied with. Supervision has a potentially critical role in monitoring and correcting any significant deviations from approved methods. However, this control is rarely fully effective.

The problem is generally the result of supervisors either not being aware of approved methods or not ‘buying in’ to the importance of their operators following such methods. Supervisors who have received no training in MSD may think that telling people to “just get on with the job and stop whinging” is appropriate but this would clearly present a potentially embarrassing flaw in the company’s safety management process if this was presented in court as parts of events leading to an alleged injury. Even when a company has satisfactory policy and procedures for addressing staff showing symptoms, the actions of some individual supervisors often cause the process to fail.

Better Integration of the Occupational Health Function

Ineffective communication between the Occupational Health specialists and management often affect the potential gains that should be achievable from an effective integration of these key functions. While patient confidentiality will inevitably limit the nature of information that can be provided to management, problems are common where redeployment/work restriction advice is limited to the avoidance of certain physical activities. One supervisor in a car assembly plant, for example, interpreted medical advice that an operator should be given ‘light work’ as stacking tyres - even though this required him to repeatedly throw tyres on stacks at above head height. It is much better if

the occupation health specialists give management a list of specific duties that are considered to be within the capability of the individual concerned. This removes a key source of error by management and hence reduces the business risk if subsequent deployment is challenged as part of a claim.

Effective Programme of Continual Improvement

There is a clear requirement for managers to reduce MSD risks as far as is reasonably practicable. This is not likely to have been considered as achieved if a company only addresses jobs that are causing significant problems. As the 'bigger' problems are solved, a process is desirable that continues to identify the 'next' area of potential concern. An ongoing proactive approach is therefore desirable.

In addition to having a requirement for continual improvement, the risk assessment process should trigger action to review and reduce risk if:

- An operator experiences MSD that could be related to work
- Operators express concern or difficulty
- Exceptional parts are assembled that could affect the ease of assembly

Accountability to Support MSD Risk Reduction

Managers who are solely made accountable for meeting production and productivity targets may be less inclined to take decisions that could, at least in the short term, reduce these targets but reduce the longer-term business costs. These costs are often poorly considered but result from, for example, long-term sickness from MSDs, recruiting/retraining replacement staff and the potentially considerable cost of defending claims (estimated by one manager at about £10k each). Regular accountability meetings that take into account the longer-term costs of not sufficiently managing the MSD risk can be a positive factor in changing the management culture towards this problem.

SUMMARY

In many industries, MSDs represent a significant cost and some management may view this as an inevitable overhead and perhaps not something that they have responsibility for managing. By improving supervisors' and managers' awareness and by understanding the risk factors involved, these risks and subsequent costs can be better controlled.

Companies that place a clear responsibility on managers to control such risks are likely to succeed, however, better management training and alternative methods of assessing risks may be required.