

Task specific exposure information as a basis for production system design

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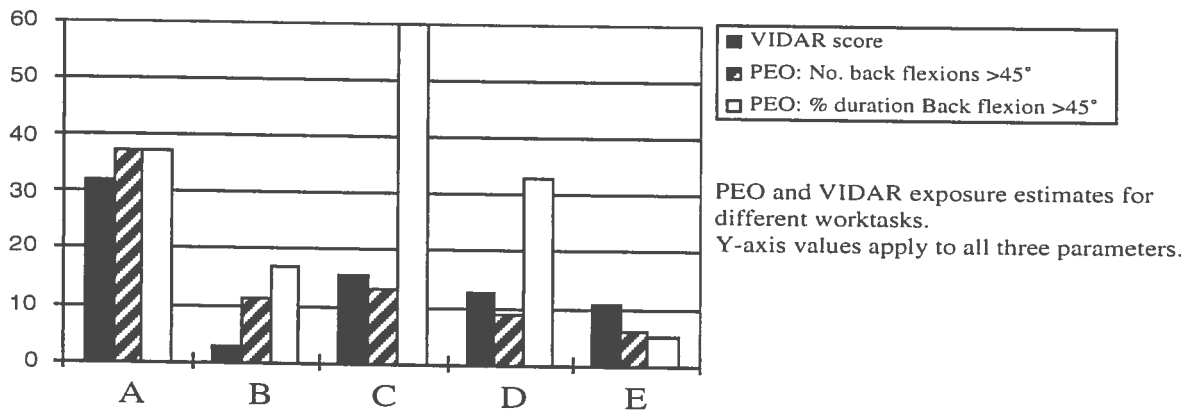
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Introduction: The Swedish intervention research program COPE (1) aims partly at creating predictive ergonomic information to be used in developing production systems. This approach includes to provide work task with specific ergonomic properties. This information may then be utilized by production engineers in development and design of production systems. This paper investigates the possibility of developing such task specific ergonomic properties.

Material and Methods: Five work tasks from an assembly industry were selected. Video recordings were used to document the work. From these recordings, mechanical exposure was estimated using two different methods: Portable Ergonomic Observation method (PEO) (2), and VIDAR, a computerized method that saves images of selected work tasks and corresponding ratings of perceived discomfort (3). Here, a VIDAR score was calculated as the number of selections times the median ratings.

Results: The figure illustrates estimations of low back exposure from PEO and VIDAR. PEO provided a range of expressions of back exposure of which 'number of back flexions > 45°' coincided in part with VIDAR score in identifying differences in exposure between work tasks. Thus, task 'A' implied high back exposure. However, only PEO was sensitive to 'percent duration of back flexions > 45°' and 'C' was pointed out as having the largest duration.



Discussion: The methods used in this study may be used in discriminating and describing specific work tasks. Information of this type may be communicated to production engineers so it may be included in development of production systems. Our goal within COPE is to expand the approach of ergonomically indexing work tasks by amending more methods in order to describe and evaluate work tasks.

References:

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