

APPUNTI DI METODO

Metodo Ocra: messa a punto di una nuova procedura per l'analisi di compiti multipli con rotazioni infrequenti

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KEY WORDS

Lavoro ripetitivo; WMSDs; indici di esposizione, compiti multipli

SUMMARY

«Ocra Method: development of a new procedure for analysis of multiple tasks subject to infrequent rotation». In the Ocra methods (Ocra index and Ocra Checklist), when computing the final indices (Ocra index or checklist score), in the case of more than one repetitive task a “traditional” procedure was already proposed, the results of which could be defined as “time-weighted average”. This approach appears to be appropriate when considering rotations among tasks that are performed very frequently, for instance almost once every hour (or for shorter periods). However, when rotation among repetitive tasks is less frequent (i.e. once every 1½ or more hours), the “time-weighted average” approach could result in an underestimation of the exposure level (as it practically flattens peaks of high exposures). For those scenarios an alternative approach based on the “most stressful task as minimum” might be more realistic. This latter approach has already been included in the NIOSH approach for multiple sequential lifting tasks and, given the recent availability in the Ocra method of more detailed duration multipliers (practically one different D_{um} for each different step of one hour of duration of the repetitive task), it is now possible to define a particular procedure to compute the complex Ocra Multitask Index (cOCRA) and the complex Checklist Score (cCHESCO) for the analysis of two or more repetitive tasks when rotations are infrequent (rotations every 1½ hours or more). The result of this approach will be at least equal to the index of the most stressful task considered for its individual daily duration and at the most equal to the index of the most stressful task when it is (only theoretically) considered as lasting for the overall daily duration of all examined repetitive tasks.

The procedure is based on the following formula:

$$\text{Complex Ocra Multitask Index} = \text{Ocra}_{1(D_{um1})} + (\Delta \text{ocra}_{1 \times K})$$

where

1,2,3,...,N=replicative tasks ordered by ocra index values (1=highest; N=lowest) computed considering respective real duration multipliers (D_{um_i})

ocra₁=ocra index of task₁, considering D_{um_1}

D_{um_i} =duration multiplier for task_i, real duration

Dum_{tot} = duration multiplier for total duration of all repetitive tasks

$\Delta ocra_1$ = highest ocra index among N tasks considering Dum_{tot} ($ocra_{i\ max}$) - ocra index of task₁ considering Dum_1

$$K = \frac{(ocra_{1\ max} * FT_1) + (ocra_{2\ max} * FT_2) + \dots + (ocra_N * FT_N)}{(ocra_{i\ max})}$$

$ocra_{1,N\ max}$ = ocra index of tasks 1 to N considering Dum_{tot}

FT_i = Fraction of Time (values from 0 to 1) of task _{i} with respect to the total repetitive time .