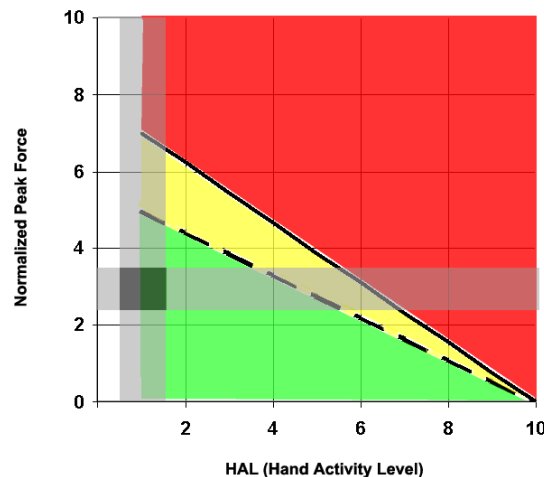


RA Werner et al. *J Occup. Rehab.* (2005) Vol.15#1 p 27 – 35

Predictors of Upper Extremity Discomfort: A Longitudinal Study of Industrial and Clerical Workers

This prospective study followed a group of workers for 5.4 years. Workers reported upper limb discomfort on a 10 point scale. Any who scored 4 or more at baseline were excluded. The follow up rate was 74% of those who could be contacted. After 5.4 years, subjects were given a physical examination including electro-diagnostic tests.

An ergonomics assessment was made of the regular work performed. American Congress of Government and Industrial Hygienist (ACGIH) criteria were used to rate jobs according to repetition and force.



The horizontal grey bar in this figure indicate a normalised peak force of 30% and the vertical grey bar a hand activity level of 1 [for example one exertion every 8 seconds and exertion for only 20% of the duty cycle]. In this case the intersection of the grey bars falls within the acceptable range. The assessment method was based on studies of fatigue.

Results table:

Table IV. Logistic Regression Model for Incident Cases of New Upper Extremity Discomfort, Odds Ratio and 95% CI

Variable	Odds ratio	p value	95% CI
Age >40	2.51	0.01	1.22, 5.14
BMI >28	1.89	0.07	0.94, 3.79
Worst discomfort at baseline	1.59	0.06	0.98, 2.58
History of wrist/hand/finger discomfort	3.14	0.005	1.41, 6.99
Hand TLV above the proposed action limit	2.14	0.05	1.01, 4.54

The high TLV rating corresponds to the red area in the above graph.

Comment

A high proportion of the cohort could not be followed up due to loss of contact. It is likely that the resident survivor population among those whose work was uncomfortable would be the healthier group. BMI and worst discomfort at baseline were not statistically significant predictors of incident discomfort. Age >40, self rated discomfort of 1,2 or 3 at baseline and work with a high risk of fatigue were significant predictors.

Upper extremity discomfort is not significant in itself but is considered by many to be the precursor to DRSI.

Prevention of fatigue would not be regarded as a requirement for meeting the civil law duty of care. It is however, the basis for much guidance from HSE and could therefore be presumed to be relevant to the prevention of injury. Measures designed for the prevention of fatigue would be compatible with a precautionary standard.