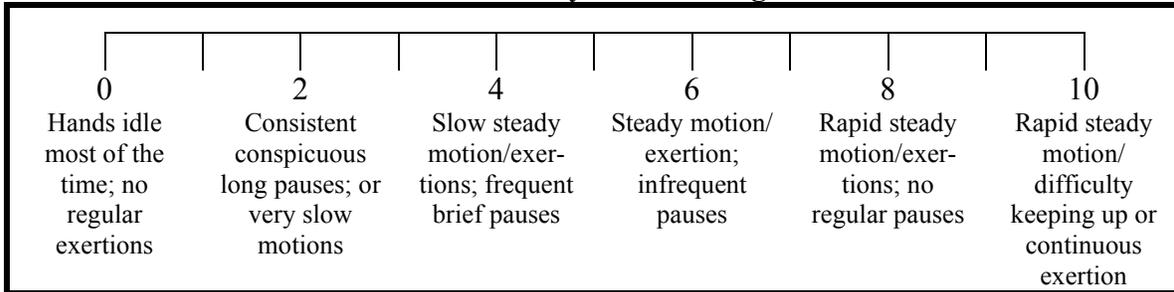


**ACGIH® TLV® for Hand Activity**

Job	Analyst	Date
	Left	Right
Hand Activity Level (HAL) (See scale below)		
Normalized Peak Force (NPF) (See table below)		
Ratio = NPF / (10-HAL)		
Determine Result  TLV = 0.78 AL = 0.56	> TLV <input type="checkbox"/> AL to TLV <input type="checkbox"/> < AL <input type="checkbox"/>	> TLV <input type="checkbox"/> AL to TLV <input type="checkbox"/> < AL <input type="checkbox"/>

**Hand Activity Level Rating**



**Estimation of Normalized Peak Force for Hand Forces**

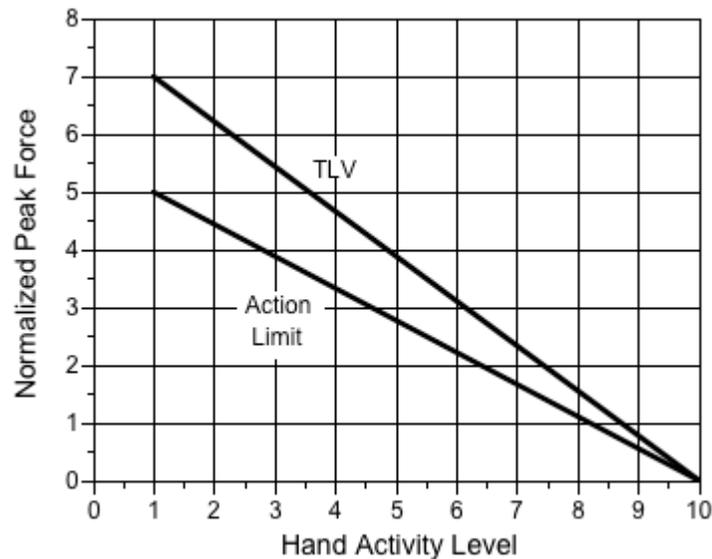
%MVC	Subjective Scale		Moore-Garg Observer Scale (Alternative Method)	NPF
	Score	Verbal Anchor		
0	0	Nothing at all		0
5	0.5	Extremely Weak (Just Noticeable)	Barely Noticeable or Relaxed Effort	0.5
10	1	Very Weak		1
20	2	Weak (Light)	Noticeable or Definite Effort	2
30	3	Moderate		3
40	4		Obvious Effort, But Unchanged Facial Expression	4
50	5	Strong (Heavy)		5
60	6		Substantial Effort with Changed Facial Expression	6
70	7	Very Strong		7
80	8			8
90	9		Uses Shoulder or Truck for Force	9
100	10	Extremely Strong (almost maximum)		10

## ACGIH® TLV® for Hand Activity

The American Conference of Governmental Industrial Hygienists (ACGIH®) Threshold Limit Value® (TLV®) for Hand Activity (2001) is offered for the evaluation of job risk factors associated with musculoskeletal disorders of the hand and wrist. The evaluation is based on an assessment of hand activity and the level of effort for a typical posture while performing a short cycle task.

The data collection form on the previous page is an adaptation that guides the gathering of information on job risk. The first step is to identify the level of hand activity on a scale of 0 to 10, where zero is virtually no activity to a level of 10 (highest imaginable hand activity). Hand activity accounts for the combined influences of effort repetition and effort duration in a qualitative assessment. The second step characterizes the effort level by noting the effort associated with a typically high force within the cycle of work. The normalized peak force (NPF) is the relative level of effort on a scale of 0 to 10 that a person of average strength would exert in the same posture required by the task. Three methods are suggested for assessing NPF: Noting the measured % of maximum voluntary contraction and a subjective report of perceived exertion (Subjective Scale) as well as an observational method borrowed from the Moore-Garg Strain Index. The third step is to locate the combination of HAL and NPF on the following TLV graph. (The worksheet on the previous page uses a ratio method instead of the graph lookup.) For more information see the TLV and associated documentation.

TLV for Hand Activity



American Conference of Governmental Industrial Hygienists (ACGIH). Threshold limit values and biological exposure indices for 2001. Cincinnati: ACGIH, 2001. See [www.acgih.org](http://www.acgih.org) for more information.