

# Maximum Acceptable Lifting Frequency of Novice and Worker for Manual Material Handling Task

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## Abstract:

A study on maximum acceptable lifting frequency during manual material handling task was conducted on 15 novices and 15 workers. A laboratory experiment with two lifting loads are considered in this study: (1) 1 kg and (2) 5 kg. Each subject adjusts his frequency of lifting using a psychophysical approach. The subjects are instructed to perform combined manual material handling task as fast as they could over a period of 30 minutes without exhausting themselves or becoming overheated. The physiological response on energy expenditure is recorded during the experimental sessions. The ratings of perceived exertion (RPE) for four body parts (forearms, upper arm, lower back and entire body) are also collected after the subjects have completed the task. The key findings of the study are the percentage difference of the MALF between novice and worker subject were 4.72% for 1 kg and 5.21% for 5 kg. The result revealed that although novice and worker did not differ significantly in MALF but a trend towards achieving significance was identified. In addition, there is a significant difference in the energy expenditure and RPE ( $p < 0.05$ ) between the novice and worker whereby the novices tend to work harder physiologically than worker. This study highlighted that the MALF study need to be experimented on the experienced worker and not on the novice to obtain a better result towards the occupational health of industrial worker.

**Keywords:** Maximum Acceptable Lifting Frequency; Manual Material Handlings Task; Novice; Worker.

## References

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