

Muscle Relief On The Road: Evaluating A Novel Armrest For Motorcyclists				
ID Number	9			
Category	Local		International	
	√			
Niche Area	Mechanical Engineering	Manufacturing Engineering	Materials Engineering	Applied Sciences
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Abstract	<p>Motorcycles are a primary mode of transportation in Malaysia, widely used for daily activities and work. The well-being of motorcyclists is crucial, especially regarding comfort during prolonged rides. This study evaluates the effectiveness of an armrest prototype in reducing muscle activity, measured by surface electromyography (sEMG), thereby alleviating discomfort. In two sessions (with and without the armrest), 102 participants rode a motorcycle for two hours using a laboratory riding simulator. The simulator projected a road scenery video, simulating daytime riding conditions. EMG signals were recorded to assess muscle activity in the right and left arms, with electrodes attached to the skin. The findings revealed a reduction in sEMG levels for both arms when using the armrest prototype for the flexor carpi radialis and flexor carpi ulnaris muscles.</p>			

	<p>Furthermore, there was a significant difference in exertion muscles levels ($X^2 (63) = 757.76, p < 0.001$) between the experimental group and the control group during the two-hour riding process. This study demonstrates that the armrest prototype can effectively reduce muscle activity and improve comfort for motorcyclists. By promoting better posture, this innovation could enhance rider safety and health, potentially reducing the risk of accidents.</p>
Keywords	armrest, muscle activity, motorcyclist, electromyography, experimental