

Researchers refute traditional measures of inducing pain in exercise experiments

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Senior lecturer Dr. Lex Mauger and PhD student Ali Astokorki of the School of Sport and Exercise Sciences at the University of Kent have showed that traditional methods of measuring pain in experiments - such as thermal, pressure or electrical stimuli - may be unsuitable for investigating the relationship between exercise and pain. They also found that people who are ready to engage in greater amounts of pain perform better in exercise activities.

The researchers examined the connection between pain [tolerance](#), the [pain threshold](#), [exercise](#)-induced pain (EIP) tolerance and cycling time performance in 32 recreationally active men and women. The data from this study could be valuable to exercise practitioners and coaches.

A number of experiments compared traditional methods of measuring pain with EIP tolerance during the participants' performance at a 16.1km cycling time trail.

Traditional measures of pain included the Cold Pressor Test, which assesses pain tolerance whilst participants hold their hands in ice cold water and rate their perceived pain on a scale. The Pain Pressure Threshold test was used to find the pain threshold as participants reported the change from a light pressure sensation to the feeling of weak pain. And for the Rating of Perceived Exertion participants had to adjust and maintain their power output on a cycle ergometer.

The researchers' findings prove their hypothesis that experimental

measures of pain are poor predictors of time trial performance, whereas EIP is a good predictor. They concluded that further studies assessing the relationship between pain and performance during exercise activities should specifically measure tolerance levels of EIP, rather than using the traditional methods of measuring pain.

This is because pain pathways are very different, as specific responses are induced depending on the stimulus. EIP is most likely felt due to a build-up of tissue damaging biochemicals combined with an increase in muscular pressure, whilst the traditional experimental measures of [pain](#) induce very different bodily responses.

More information: A. H. Y. Astokorki et al. Tolerance of exercise-induced pain at a fixed rating of perceived exertion predicts time trial cycling performance, *Scandinavian Journal of Medicine & Science in Sports* (2016). [DOI: 10.1111/sms.12659](https://doi.org/10.1111/sms.12659)

Provided by University of Kent

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