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Regular Physical Activity Improves Ability to Tolerate Pain

Individuals who lead a physically active lifestyle have better pain tolerance than their counterparts who were sedentary, suggests a study from Norway, which surveyed over 10,000 participants published May 24, 2023 in the journal *PLoS One*.¹ Those who engaged in higher levels of activity had a higher level of pain tolerance.

Arnes et al examined data of 10,732 residents from Norway from the 6th (2007-2008) and the 7th (2015-2016) rounds of the Tromsø Study. Fifty-one percent of them were women. The participants self-reported their physical activity levels (sedentary, light, moderate or vigorous) through questionnaires including their levels of pain tolerance, which was assessed by the cold-pressor test, where the participants were asked to dip their hands in cold water. Their objective was to determine if the level of physical activity and change in physical activity had any impact on pain tolerance.

Results showed that the study subjects who were physically active could tolerate pain better than those who reported a sedentary lifestyle in both rounds of the Tromsø Study. Light (6.7 s), moderate (14.1 s) and vigorous (16.3 s) physical groups had higher pain

tolerance than the sedentary group indicating that the pain tolerance was significantly higher among those reporting higher total activity levels. Those who were more active between 2015 and 2016 had higher overall levels of pain tolerance. But the association of change in level of physical activity and pain tolerance was not statistically significant in both rounds of the survey.

These findings have added yet another benefit of physical activity to the already well-established list of beneficial effects. Any change in the level of physical activity from lower to higher may be associated with higher pain tolerance than vice versa. Increasing physical activity may therefore help alleviate chronic pain by increasing pain tolerance. Whether this is a cause-and-effect association needs to be verified in further studies. Nonetheless, regular physical activity is beneficial for overall improvement in health and well-being, both physical and mental.

REFERENCE

1. Årnes AP, Nielsen CS, Stubhaug A, Fjeld MK, Johansen A, Morseth B, et al. Longitudinal relationships between habitual physical activity and pain tolerance in the general population. *PLoS One*. 2023;18(5):e0285041.

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