

Both high- and low-dose exercise therapy found to be beneficial for knee osteoarthritis

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Researchers from Karolinska Institutet have compared high dose exercise therapy versus low dose in patients with symptomatic knee osteoarthritis. The study published in the journal *Annals of Internal Medicine* show that both groups had similar results. However, high dose

exercise therapy provided superior outcomes related to function in sports and recreation in the short term, with results subsiding after six months.

Osteoarthritis of the knee joint is associated with [chronic pain](#), stiffness, impaired function and reduced quality of life. The preferred treatment is [exercise](#), but there are few studies that have investigated which exercise dose is optimal.

The hypothesis of the study was that a high dose is superior to a low dose. The study was designed as a randomized multicenter superiority trial. 189 [patients](#) at four different centers, two in Norway and two in Sweden, were included in the study.

Patients randomized to the high dose group performed eleven graded exercises lasting 70 to 90 minutes and patients randomized to the low dose group performed five graded exercises lasting 20 to 30 minutes. All patients had three treatments a week for twelve weeks.

Main results were measured using the Knee Injury and Osteoarthritis Outcome Score (KOOS) biweekly for three months and then again at six and twelve months. At all follow-up periods, KOOS scores improved in both groups, findings that did not support the authors hypothesis.

The only differences favoring [high-dose](#) exercise were in the domain of knee function during sports and recreation at the end of treatment and six months after the intervention and in the quality-of-life domain at six months.

Half of each group improved

The authors note that high-dose treatment could be preferable to low-dose treatment in the long run for people who lead active lives. However, adherence could be an issue, as those in the low-dose group had nearly

perfect adherence to the intervention, while the high-dose participants had a higher drop-out rate.

"About half of the participants in both groups improved. Pain, quality of life and [knee](#) function improved. Because our study was designed as a superior trial, meaning that even though we failed to show that high-dose treatment is better than low-dose, our results do not imply that a low dose exercise regimen is as beneficial as a high-dose regimen," says Tom Arild Torstensen, physiotherapist and affiliated researcher at the Department of Neurobiology, Care Sciences and Society at Karolinska Institutet and first author of the study

More information: Tom Arild Torstensen et al, High- Versus Low-Dose Exercise Therapy for Knee Osteoarthritis, *Annals of Internal Medicine* (2023). [DOI: 10.7326/M22-2348](https://doi.org/10.7326/M22-2348)

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