

# Exercise affects positive and negative symptoms of schizophrenia

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For patients with schizophrenia, exercise has a significant effect on

positive and negative symptoms, according to a review published online Feb. 20 in the *International Journal of Environmental Research and Public Health*.

Myoungsuk Kim, from the College of Nursing at Kangwon National University in Chuncheon, South Korea, and colleagues conducted a [systematic review](#) and [meta-analysis](#) to examine the effects of [exercise](#) on positive symptoms (such as delusions or hallucinations), negative symptoms (such as apathy, isolation, or decreased social functioning), and depression among patients with schizophrenia. Data were included from 15 studies.

The researchers identified a medium significant effect (standardized mean difference [SMD],  $-0.51$ ; 95 percent confidence interval,  $-0.72$  to  $-0.31$ ), small significant effect (SMD,  $-0.24$ ; 95 percent confidence interval,  $-0.43$  to  $-0.04$ ), and nonsignificant effect (SMD,  $-0.87$ ; 95 percent confidence interval,  $-1.84$  to  $0.10$ ) in a meta-analysis for overall exercise on negative symptoms, positive symptoms, and depression, respectively. Some of the included studies were low-quality, limiting the results.

"Our findings suggest that exercise interventions, including aerobic, multicomponent, or neuromotor exercises, can help improve clinical negative and positive symptoms," the authors write. "In particular, multicomponent exercise intervention combined with aerobic and resistance exercises had a moderate effect size in improving the positive and negative symptoms of schizophrenia."

**More information:** Myoungsuk Kim et al, Effects of Exercise on Positive Symptoms, Negative Symptoms, and Depression in Patients with Schizophrenia: A Systematic Review and Meta-Analysis, *International Journal of Environmental Research and Public Health* (2023). [DOI: 10.3390/ijerph20043719](https://doi.org/10.3390/ijerph20043719)

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