

### Abstract

#### Background

A potential approach to suicide prevention that has not been closely examined, but which holds promise in terms of widespread dissemination without major sideeffects, is physical activity (PA). This systematic review and meta-analysis set out to: (a) explore associations between PA and suicidal ideation (SI) levels, and (b) investigate the effect of PA interventions on SI.

## Methods





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#### Results

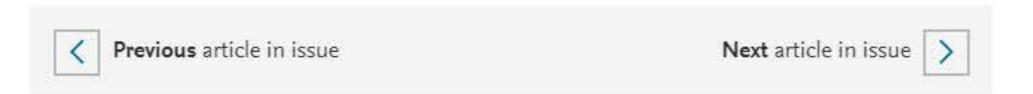
Fourteen of 21 studies in adults (67%) (n = 130,737), 7/14 (50%) in adolescents (n = 539,170) and 2/3 (67%) in older adults (n = 50,745) found a significant negative association between PA- and SI-levels. Pooled adjusted meta-analysis of 14 effect sizes over eight studies and 80,856 people found that those who were "active" versus those who were "inactive" were less likely to have SI (OR = 0.87, 95%CI = 0.76-0.98). Additionally, meeting PA guidelines conferred a significant protective effect against SI (OR = 0.91, 95%CI = 0.51-0.99, P = 0.03; N studies = 3, n people = 122,395), while not meeting guidelines was associated with increased SI (OR = 1.16, 95%CI = 1.09-1.24, P < 0.001; N = 4, n = 78,860). Data from the intervention studies (N = 3, n = 121) was mixed and limited.

### Limitations

Our findings are based mainly on cross-sectional studies, while the majority of studies did not include a rigorous physical activity assessment.

# Conclusions

The current study suggests that higher PA levels are associated with lower SI. However, the associations observed need to be confirmed in prospective observational studies and controlled trials.



## Keywords

Suicide; Mortality; Physical exercise