

## Prospectively Assessed Post-Traumatic Stress Disorder and Associated Physical Activity

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### RESEARCH HIGHLIGHTS:

- Previous research suggests that physical activity may mitigate PTSD or that exercise habits of PTSD patients may be substandard; however, these studies have been limited by a small sample size, retrospective design, and the inability to control for possible confounders.
- This study examined the link between new-onset and persistence of PTSD symptoms with physical activity in a sample of military service members.
- Engagement in physical activity, especially vigorous activity, was significantly associated with decreased odds of PTSD symptoms, while those who were unable to engage in physical activity had greater odds for both new and ongoing PTSD symptoms.

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### ABSTRACT:

**Objectives.** We examined the association of physical activity with prospectively assessed post-traumatic stress disorder (PTSD) symptoms in a military cohort.

**Methods.** Using baseline and follow-up questionnaire data from a large prospective study of U.S. service members, we applied multivariable logistic regression to examine the adjusted odds of new-onset and persistent PTSD symptoms associated with light/moderate physical activity, vigorous physical activity, and strength training at follow-up.

**Results.** Of the 38,883 participants, 89.4% reported engaging in at least 30 minutes of physical activity per week. At follow-up, those who reported proportionately less physical activity were more likely to screen positive for PTSD. Vigorous physical activity had the most consistent relationship with PTSD. Those who reported at least 20 minutes of vigorous physical activity twice weekly had significantly decreased odds for new-onset (odds ratio [OR] = 0.58, 95% confidence interval [CI] 0.49, 0.70) and persistent (OR=0.59, 95% CI 0.42, 0.83) PTSD symptoms.

**Conclusions.** Engagement in physical activity, especially vigorous activity, is significantly associated with decreased odds of PTSD symptoms among U.S. service members. While further longitudinal research is necessary, a physical activity component may be valuable to PTSD treatment and prevention programs.”

## Implications

### FOR PRACTICE

The results of this study suggest that the rigorous fitness requirements of the military service branches are essential to both the physical and mental well-being of service members. Military service members are typically more physically active due to service requirements, as service members who do not meet fitness requirements may face administrative consequences. Once discharged, service members no longer have to consider these consequences, and may be less inclined to engage in regular physical activity. Because service members in this study who were unable to exercise had an increased risk of having persistent or developing new PTSD symptoms, service members who are nearing discharge should consider ways to remain physically active after their military discharge. Because military service members who have been exposed to combat are more likely to develop PTSD, it is especially important that this population maintain high levels of physical activity upon discharge. Clinicians should discuss the importance of physical activity with their patients both before and after discharge, offering strategies to maintain their current health and levels of physical activity. Clinicians should also determine alternatives for disabled veterans with PTSD, so that they can still engage in as much physical activity as is possible. Family members and friends should consider participating in physical activity with their veteran(s) as well.

### FOR POLICY

Policy makers and military service branches should consider ways to encourage physical activity amongst individuals with physical limitations. Once discharged from a military force, the fitness requirements no longer apply unless enrolled in Reserve/National Guard; however, the health benefits of regular physical activity remain important. The Department of Veterans Affairs (VA) and other governmental agencies might consider implementing their own fitness programs for veterans. These programs should emphasize the positive mental effects associated with physical activity, and include activities for those with physical limitations due to age or disability. Military branches might consider implementing policies that would encourage service members to increase their levels of physical activity prior to and after deployment to moderate or alleviate PTSD symptoms. Policy makers should consider allocating additional funds to physical activity programs for veterans, which would have the added benefits of treatment and prevention of PTSD.

### FOR FUTURE RESEARCH

In future studies, oversampling individuals with PTSD could prove beneficial to understanding the impact that physical activity has on less common PTSD symptoms. These studies should also examine whether rigorous physical activity can prevent PTSD, or what activity levels are necessary to have a positive impact on symptoms. Physical activity was self-reported in this study, and researchers were unable to determine the degree and type of physical activity. In future studies, researchers may need to observe military service members or utilize another more objective measure of physical activity. Survey instruments that differentiate the rigor of physical activity should be developed for future research as well. Because temporary disabilities will impact levels of physical activity in a different way compared to permanent disabilities, future studies should differentiate between disability type and permanence.

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