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Exercise, Social Support, and Structure: Involvement in Sports and Non-Sport Activities and Depression, Anxiety, and Intelligence in Children

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Previous research suggests that engaging in an active lifestyle has health benefits, including reduced depressive and anxiety symptoms. Increased exercise is also positively correlated with cognition. However, these effects are often less pronounced in children, and children may experience similar health benefits by engaging in other types of organized activities that do not involve physical activity. Little research has been done to differentiate whether it is the exercise, the social support, or the structure of these activities that relates to depression and anxiety in children. To better understand the relationship of sports and non-sport activities to depression, anxiety, fluid intelligence, and crystallized intelligence in children, a nation-wide sample of 669 children ages 9-11 years completed surveys, interviews, and memory and cognition tasks. Parents of the children provided data about the child's depressive and anxiety symptoms, and the child's participation in sports and non-sport activities. Children completed the NIH Toolbox Neurocognitive Battery which measures both fluid and crystallized intelligence. Analysis of the data showed that depressive symptoms were related to involvement in sports ($p= 0.004$), but not involvement in non-sports ($p= 0.518$), even when adjusting for parental socioeconomic status and maternal education. Further, involvement in team sports, but not individual sports was related to less depression. Anxiety symptoms were not associated with involvement in any type of activity. Both crystallized intelligence and fluid intelligence are strongly related to involvement in any type of activity (sport or non-sport) ($p= <0.001$). These findings confirm a relationship between involvement in sports and lower depression. The fact that depression was related to team but not individual sports suggests that social support may be important. However, more research is needed to understand the causal relationships among these variables.