

Physical Activity: An Untapped Resource to Address Our Nation's Mental Health Crisis Among Children and Adolescents

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To study medicine is to unintentionally minor in Latin, and one of the first lessons that my family practitioner father passed down to me was the ancient Roman principle *mens sana in corpore sano*—a sound mind in a sound body.

He first shared that wisdom with me when I was in middle school, a difficult time when I was struggling with my confidence and being bullied in school. Recognizing my struggle, he not only talked to me about what was going on but also did something unexpected: he bought me a weight bench. Getting stronger physically would help me get stronger mentally, he said. It would help me build confidence in myself and, with it, confidence in my place in the world around me.

In the decades since, whenever I feel adrift, frustrated, or alone, I still find strength and peace in physical activity.

Physical activity is a critical but often overlooked tool to support both the physical and mental health of children and adolescents aged 6-17 years. We have long known the benefits of physical activity as it relates to our physical health,¹⁻³ but it is time that we give more recognition to the growing body of research pointing to its benefits for strengthening emotional and mental health.

The Syndemic of Poor Mental Health Outcomes and Physical Inactivity

Both mental health and physical inactivity have been described as worsening crises for young people.^{1,4} In 2019, more than 1 in 3 high school students reported persistent feelings of sadness or hopelessness, representing a 40% increase from 2009.⁵ From 2009 through 2019, the percentage of US high school students who made a suicide plan increased by 44%, and the percentage who attempted suicide increased by 41%.⁵

Concomitantly, during the past decade, the percentage of children and adolescents aged 6-17 years who got the recommended amount of physical activity needed to stay healthy—60 minutes or more of moderate to vigorous physical activity per



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day, including muscle- and bone-strengthening activities at least 3 days per week⁶—has declined. According to the 2019 Youth Risk Behavior Survey, only 16.5% of high school students met the aerobic and muscle-strengthening physical activity guidelines, as compared with 21.9% in 2011.⁶ Among children in elementary and middle school, approximately 25% get enough aerobic physical activity.⁷

Disparities in physical activity exist. In 2019, only 10% of high school girls got enough physical activity, as compared with 23% of high school boys.⁵ Opportunities to be physically active vary greatly by socioeconomic status. For example, in 2021, 67.7% of young people

aged 6-17 years from households with incomes $\geq 400\%$ of the federal poverty threshold participated in sports, as compared with 33.9% of young people aged 6-17 years from households with incomes $< 100\%$ of the federal poverty threshold.⁸ Similarly, in 2021, only 25.7% of young people aged 6-17 years from households with less than a high school education participated in sports, as compared with 64.8% of young people aged 6-17 years from households with a college degree or higher.⁸

The COVID-19 pandemic exacerbated these mental health and physical inactivity crises through school closures, sports cancellations, and an increased reliance on electronic devices and virtual environments.⁴ According to the Adolescent Behaviors and Experiences Survey, more than 1 in 3 high school students experienced poor mental health from January through June 2021, and nearly half of students felt persistently sad or hopeless.⁹ The mental health of racial and ethnic minority, sexual and gender minority, and marginalized young people has also been disproportionately affected during the pandemic.¹⁰ Moreover, data suggest that for many young people, physical activity rates decreased and sedentary behavior increased during the COVID-19 pandemic.^{11,12} Key contributing factors were fewer opportunities for school-related physical activity (eg, physical education, activity breaks, after-school sports) and families and caregivers not feeling safe sending their kids outdoors to play.^{11,12}

The Physical Activity Guidelines and the Benefits of Physical Activity for Mental Health

Historically, the *Physical Activity Guidelines for Americans* (hereinafter, Guidelines) has focused on long-term physical health benefits across the lifespan, such as improved bone health, weight status, or cardiorespiratory and muscular fitness and a reduction in the risk or development of many chronic diseases in adults.³ The number of benefits of physical activity continues to expand. The Centers for Disease Control and Prevention COVID-19 Task Force identified physical inactivity as a risk factor for severe COVID-19 outcomes—only the second behavioral risk factor to be reviewed after smoking—and found that people who were not physically active had an increased risk of mortality and hospitalization rates because of COVID-19.¹³

Since the first publication of the Guidelines in 2008, more evidence on the benefits of physical activity for mental health has emerged. The current edition, released in 2018, includes a discussion of physical activity and cognition and features benefits related to various brain health outcomes, from improved academic achievement among students to decreased risk of Alzheimer disease and dementia among older adults.³ Regular physical activity at any age reduces the risk of developing depression, and even a single session of physical activity can help improve cognition, including the ability to control emotions.³ Specifically among young people, physical activity can improve cognition, meaning performance on academic achievement tests, executive function, processing speed, attention, and memory.¹⁴ Physical activity also reduces the risk of depression and can reduce depressed mood.¹⁴ Although data on physical activity as a treatment modality for depression are limited among young people, physical activity has been shown to be just as effective as antidepressants in randomized controlled trials. When comparing physical activity with standard antidepressants and when physical activity was used as an adjunctive therapy with antidepressants, trials showed a net positive improvement in depression symptoms among those engaging in physical activity when compared with a control group that only took antidepressants.¹⁵

Added Benefits of Sports

Physical activity can be a way for people to get outside, try new things, have fun, and make social connections. For young people, physical activity is often obtained through participation in sports. Sports encompass many of the basic movement skills that contribute to physical literacy, including running, balancing, hopping, skipping, jumping, dodging, gliding, falling, lifting, swimming, kicking, throwing, and catching. Sports participation can provide additional psychosocial benefits beyond those of physical activity

alone.¹⁶ In addition to the benefits of general physical activity on cognition and depression, participation in sports can positively affect self-esteem, stress levels, anxiety symptoms, risk of suicide, substance use and other risky behaviors, quality of life, and well-being.¹⁶⁻¹⁸ Sports offer an excellent place for young people to build social connections and learn coping skills and for communities to create healing spaces by engaging in fun and building community spirit.¹⁹

Call to Action

Children and adolescents can achieve substantial emotional and mental health benefits from engaging in regular physical activity. As stated in the 2015 Surgeon General's Call to Action on Walking and Walkable Communities, everyone should have access to spaces and places that make it safe and easy to walk or wheelchair roll.^{20,21} Implementing solutions to increase physical activity levels among young people will require support and engagement from all sectors of society. Public health professionals play a key role in advancing the science on physical activity and mental health outcomes, disseminating available resources to create consistent messaging, and amplifying evidence-based community interventions.

Advance the Science

The government systematically reviews the science on physical activity and health outcomes and provides guidance on the amount and types of physical activity necessary to obtain and maintain health. Data are tracked and made publicly available through the Healthy People 2030 physical activity objectives.²² Public health professionals can support the government in this role by continuing to develop the evidence base.²³ The 2018 Physical Activity Guidelines Advisory Committee Scientific Report to the Secretary of Health and Human Services identified areas for further research on physical activity and brain health.¹⁴ Examples include randomized controlled trials to understand the dose-response relationship for physical activity and brain health (ie, cognition, quality of life, anxiety, depression) among children and adolescents and prospective observational studies to examine the effects of physical activity during childhood on health outcomes later in life.¹⁴

Disseminate Resources to Young People, Families, Schools, and Organizations

The US Department of Health and Human Services' Office of Disease Prevention and Health Promotion developed Move Your Way, a promotional campaign for the second edition of the Guidelines.^{3,24} The campaign includes publicly

available English and Spanish resources on Health.gov that are accessible via screen readers, alternate text, and other accessibility tools. These resources are for people of all ages and can be used by health professionals, community organizations, schools, and others who work with young people to help children and adolescents get moving.²⁴ We know that adults can positively or negatively affect physical activity among children and adolescents, which is why many of the Move Your Way materials are designed to help parents and caregivers understand the amount and types of physical activity children and adolescents need to be healthy. These resources can help parents identify time in their family's daily routine for young people to get the recommended 60 minutes of daily activity and learn more about the benefits. The campaign also has resources for children and teenagers that show relatable and fun ways that they can get the recommended amount of activity every day.

Amplify Evidence-Based Interventions to Increase Physical Activity Among Young People

In 2013, the US Department of Health and Human Services released the *Physical Activity Guidelines Midcourse Report: Strategies to Increase Physical Activity Among Youth*.²⁵ This report outlined what works to increase physical activity among our nation's young people and highlighted the myriad settings in which young people can incorporate physical activity where they live, learn, and play, including schools, preschool and childcare, community (built environment), family and home, and primary care settings.

The strongest evidence for increasing physical activity among children and adolescents is in schools, where young people spend much of their day. Public health professionals can partner with organizations that work directly with young people, including schools, churches, community centers, and others, to help increase their access to safe physical activity before, during, and after school. Initiatives include the Safe Routes to School program, classroom-based physical activity breaks, and enhanced school-based physical education, as well as parks, trails, and greenways.²⁵ Individuals working across these settings can help create positive environments for young people to get active by emphasizing fun, facilitating positive social connections, listening to young people's concerns and needs, and focusing on personal development.²⁶

A quality sports environment and experience for young people can lead to sustained physical activity behaviors that, in turn, can contribute to physical and mental well-being into adulthood.¹⁷ Many sports organizations for young people intentionally incorporate elements of positive development, leveraging sports as a tool to help young people build resilience, foster positive and supportive relationships, and build social-emotional skills, such as emotional control and

self-esteem. Many young people—especially those from underserved populations, such as girls, young people with a disability, racial or ethnic minority groups, young people living in rural areas, or young people from lower socioeconomic households—do not have the same access to sports as their peers.¹⁶ Programs can focus on removing barriers by providing free or low-cost programs or equipment and locating programs in easily accessible areas, such as schools, to help increase opportunities for all young people.¹⁶ For example, Girls on the Run is a physical activity-based positive program for girls in grades 3-8.²⁷ Participants meet after school twice a week to learn life skills through interactive lessons and running games. An independent study of Girls on the Run found that girls who were the least active when they started the program increased their overall physical activity by >40%, from completing ≥ 60 minutes of physical activity 3.0 days per week prior to participation to 4.4 days per week after participation.²⁷ Effects were sustained at 3-month follow-up. Furthermore, 97% of girls said that they learned critical life skills, including resolving conflict, helping others, or making intentional decisions, and 85% reported improvements in confidence, caring, competence, character development, or connection to others.²⁷

Conclusion

As science has advanced, our understanding of the impact of physical activity on cognition and brain health has also advanced. The evidence is clear: physical activity is effective and necessary to support the mental and physical health of our nation's young people.

Harnessing the multiple benefits of physical activity will take deliberate effort. But we have the power to do so. When we commit to making physical activity a part of our children's lives, we are making a major investment in their mental health, physical health, and social health.

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