



THE PROMISE OF ADOLESCENCE: REALIZING OPPORTUNITY FOR ALL YOUTH

A consensus study report from *The National Academies of* SCIENCES
ENGINEERING
MEDICINE

The Education System

nationalacademies.org/AdolescentDevelopment

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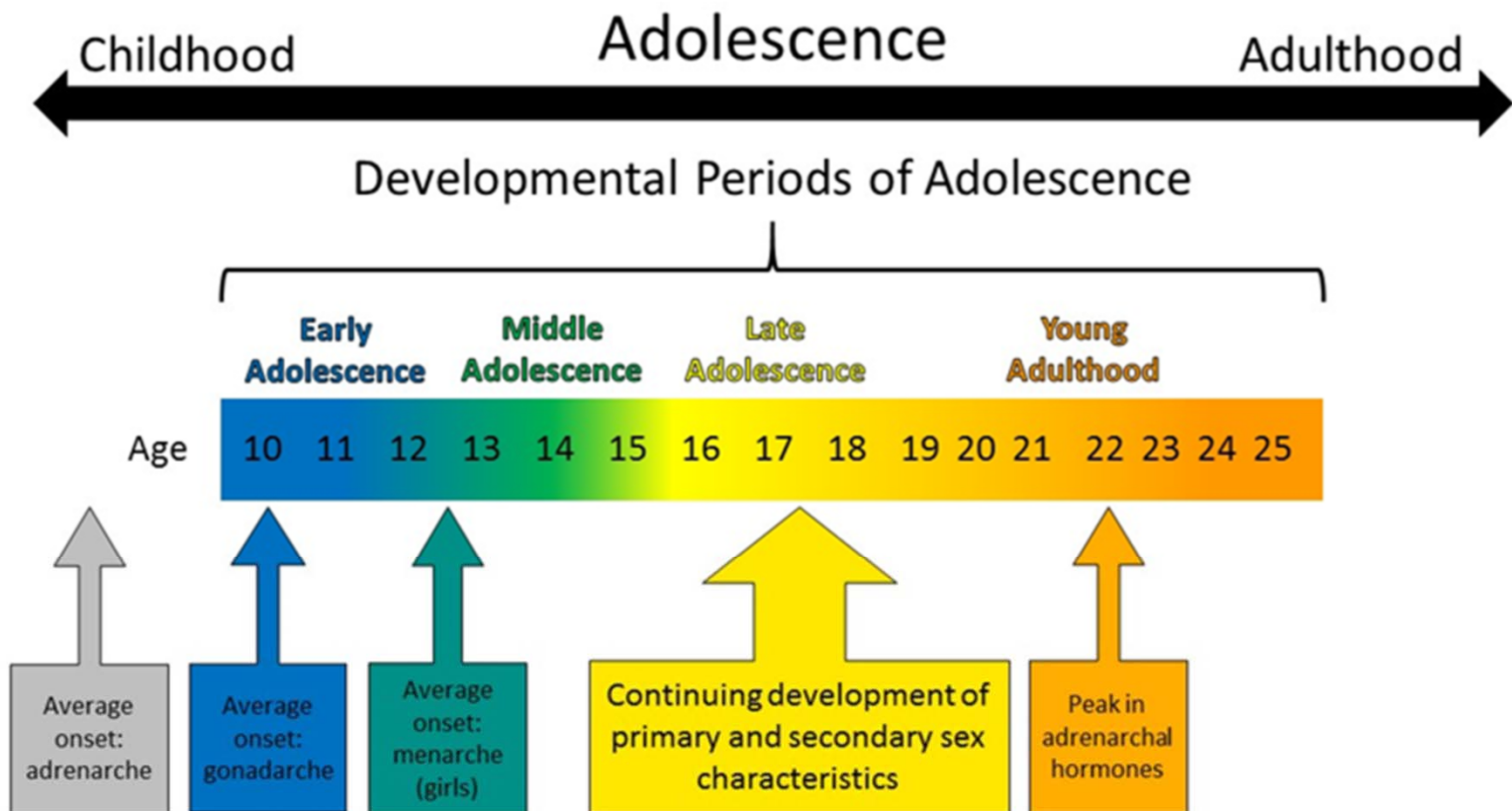
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Statement of Task

The study sponsors asked the National Academies of Sciences, Engineering, and Medicine to provide an evidence-based report that:

- Examines the neurobiological and socio-behavioral science of adolescent development, and
- Explores how this knowledge can be applied to institutions and systems so that adolescent well-being, resilience, and development are promoted and that systems address structural barriers and inequalities in opportunity and access.

Defining Adolescence



Main Messages

Adolescence is a period of *extraordinary opportunity* for learning and exploration and for *laying a strong foundation* for a successful life.

Our nation needs to commit itself to a sustained plan for *reversing the worsening inequities* of childhood disadvantage, thereby *enabling all adolescents to flourish*.




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ADOLESCENCE IS A CRITICAL PERIOD OF DEVELOPMENT.

As a society, we must harness
the promise of adolescence
so that all youth can thrive.

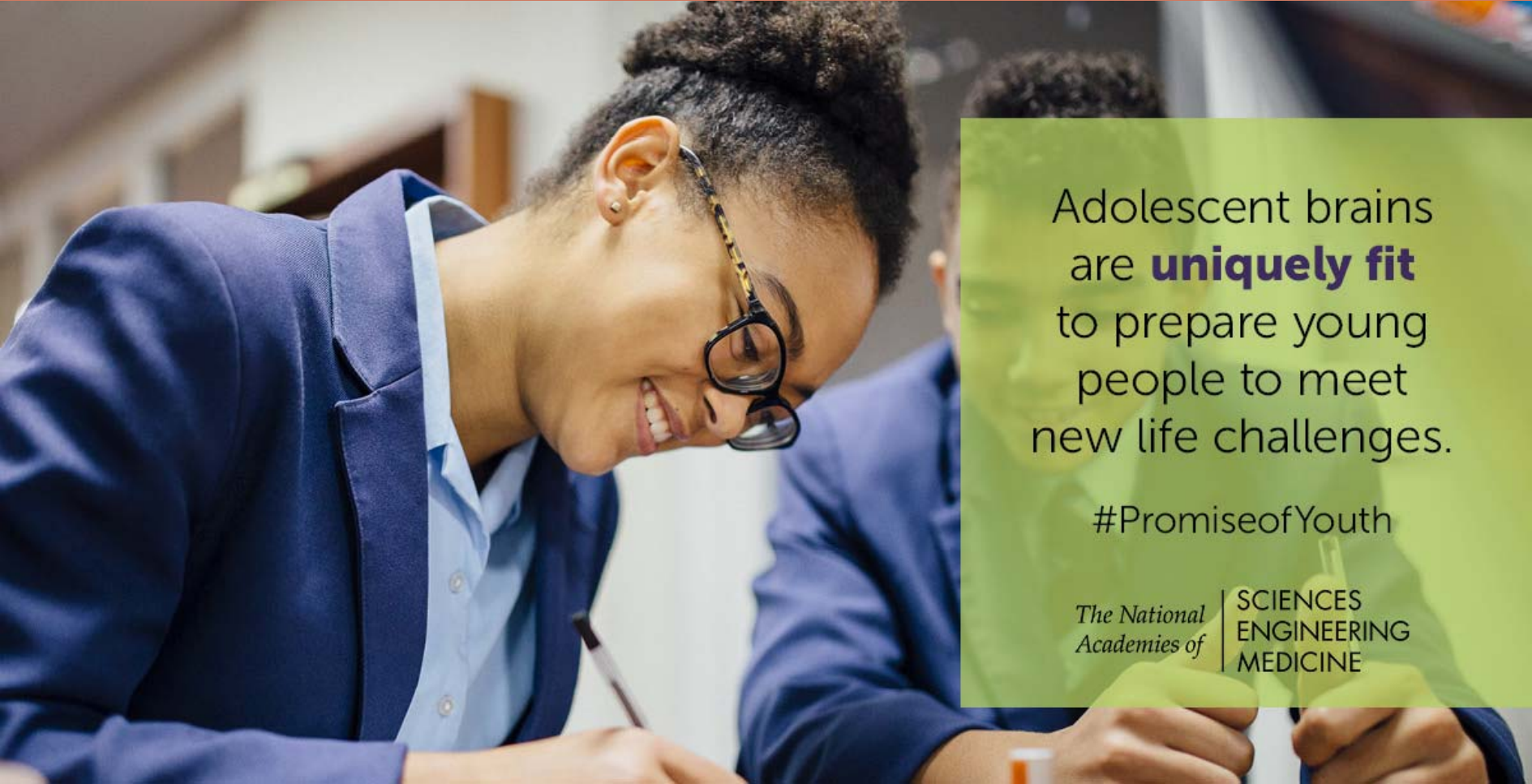


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RESEARCH HAS **FUNDAMENTALLY CHANGED
OUR UNDERSTANDING OF HOW YOUNG PEOPLE
DEVELOP, GROW, AND LEARN.**

Society must embrace this new knowledge in order to
reimagine systems so that all young people can thrive.



Adolescent brains
are **uniquely fit**
to prepare young
people to meet
new life challenges.

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Relative to young children, adolescents have **advanced decision-making skills** and can better seek solutions that are **right for them.**

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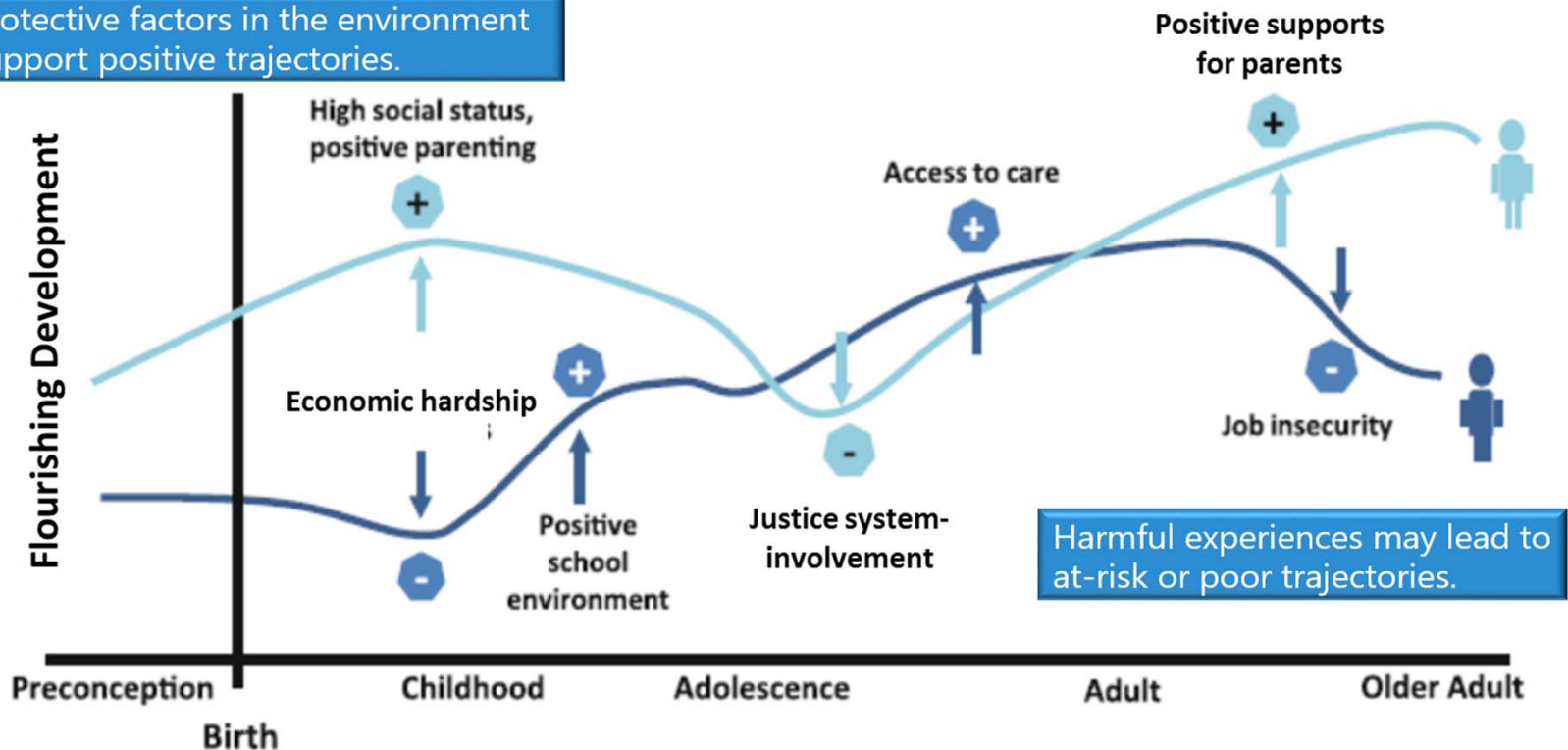


Adolescent Development: Summary

- Adolescents' brains have evolved to meet the needs of this critical stage of life.
- Developmental changes heighten curiosity and reward sensitivity and invite exploration, discovery, and an associated tendency to take risks.
- By exploring new environments, and developing new social relationships with peers and adults outside the family, adolescents build cognitive, social, and emotional skills necessary for mature relationships and productive contributions in adulthood.
- Adolescents are active participants in their own development. Their developing competencies in problem-solving, their awareness of and concern with others, and their openness to exploration and novelty make this a particularly opportune time to promote social engagement and encourage leadership.

Epigenetics: Environmental Influences that Shape Adolescent Development

Protective factors in the environment support positive trajectories.



Harmful experiences may lead to at-risk or poor trajectories.

**Adolescence is a period
of great opportunity**
to promote learning and
discovery and to address
the harmful effects of past
negative experiences.

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By intervening in adolescence, we can improve the overall well-being of young people and help them lead **meaningful, healthy, and successful lives.**

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Interplay between Biology and Environment: Summary

- Adolescents' heightened sensitivity and responsiveness to environmental influences implies creativity, adaptability, risk, and resilience.
- Adolescents have the opportunity to develop neurobiological adaptations and behaviors that leave them better equipped to handle adversities that emerge throughout the life course.
- Adolescence provides an opportunity for recovery. Because of the malleability and plasticity of the adolescent brain, redirection, recovery, and resilience are possible.
- Investments in programs and interventions that capitalize on brain plasticity during adolescence can promote beneficial changes in developmental trajectories for youth who may have faced adverse experiences earlier in life.

Inequity and Adolescence

- How do we ensure that *all* adolescents have opportunities to flourish and succeed?
- Inequalities in opportunity and access severely curtail the promise of adolescence for many youth

Inequity and Adolescence

- Striking differences in opportunity are observed. For example:
 - LGBTQ youth have much higher rates of alcohol, marijuana, and tobacco use than the general population of adolescents and higher rates of HIV infection.
 - Black youth ages 10 to 24 have mortality rates roughly 50 percent higher than White and Latinx youth, driven mainly by differences in rates of death by homicide.
 - In education, among fourth grade students that qualified for free lunch, 25% are proficient in math, compared with 57% of paid-lunch students.

Inequity and Adolescence

- Potent structural inequities and societal determinants shape adolescents' life-course trajectories in multiple ways:
 - Differences in family resources
 - Institutional sources
 - Bias and discrimination

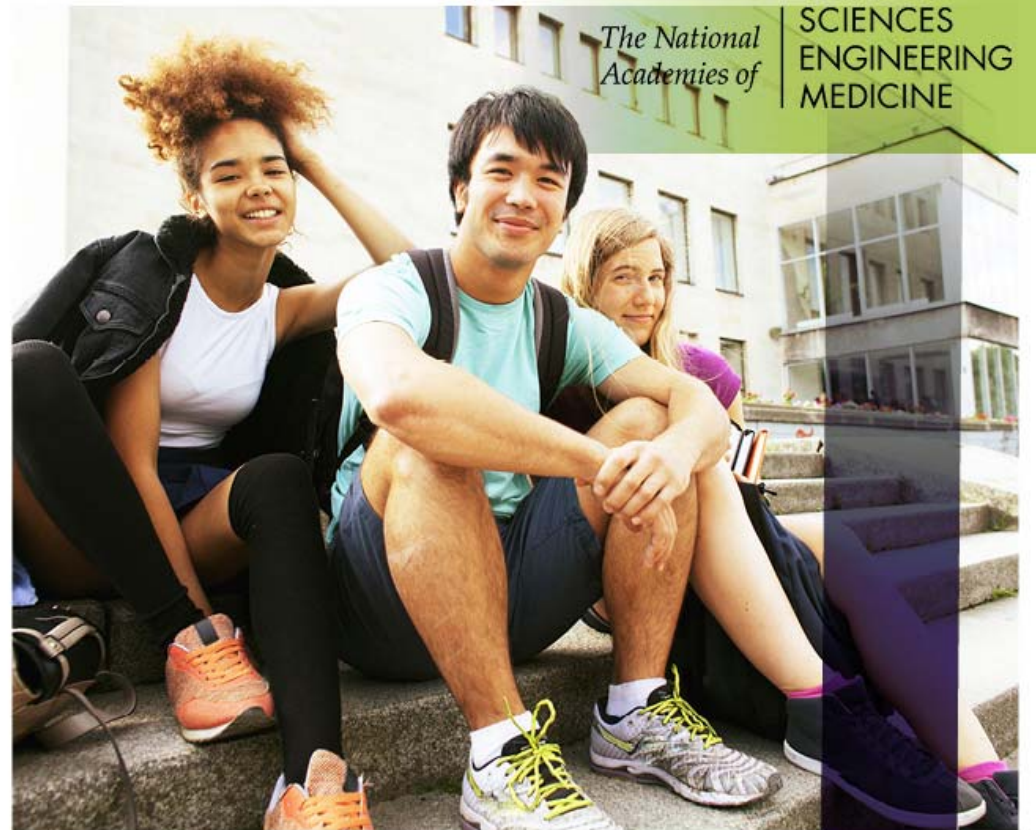
Inequity and Adolescence

- Disparities in adolescent outcomes are not immutable. They are responsive to changes in underlying conditions, and adolescents themselves show resilience and demonstrate strengths and assets that may be utilized to overcome inequities. Ending the disparities in adolescent development will also require sustained and effective system change.
- An effective strategy to reduce inequities needs to address their sources. Some promising policies and programs that attempt to tackle these disparities in opportunity include:
 - Policies and programs to reduce disparities in income, wealth, and neighborhood resources (e.g., SNAP and the Earned Income Tax Credit).
 - Trauma-informed approaches preparing adults serving youth to address exposure to violence and trauma, such as the Cognitive Behavioral Intervention for Trauma in Schools and the Sanctuary Model.
 - Emerging tools to erase or counteract bias in decision making, such as using predictive analytics for investigations and placement decisions in the child welfare system.

It's time to **reimagine and redesign the systems** and settings that adolescents most frequently encounter.

Together, we can ensure that millions of young people can impact society for the better.

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Education

- We have an education system that was designed for the United States of the early 20th century.
- Changes in our understanding of adolescence, together with major changes in the labor market, require rethinking and modernizing the education system.

Education

- The school system of the future must offer differentiated and responsive academic opportunities – including individualized instruction, tutoring, and credentialing – and incorporate the teaching of non-academic skills such as decision-making, practical knowledge, and adaptability into their mission.
- The education system will need to provide additional supports for adolescents and their families to assist them in navigating an increasingly complex sector.

Education

- The growing diversity of adolescents also requires schools to better recognize adolescents' integrated needs, become more culturally sensitive, and become adept at assisting youth with issues related to identity and social competence.
- Increasing income segregation of schools and rising income inequality suggests that adolescents from disadvantaged households likely need more resources if society is to reduce disparities in educational outcomes.

Recommendations

Recommendations for the Education System

Recommendation 6-1: Rectify disparities in resources for least-advantaged schools and students.

Recommendation 6-2: Design purposeful but flexible pathways through education.

Recommendation 6-3: Teach practical knowledge and nonacademic skills, such as decision-making, adaptability, and psychosocial skills.

Recommendation 6-4: Protect the overall health and well-being of each student.

Recommendation 6-5: Foster culturally sensitive learning environments.

Recommendation 6-6: Help adolescents and families navigate the education sector.

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Education

Recommendation 6-2: Design purposeful but flexible pathways through education.

- A. Improve school district capacity to adapt to individual students' needs.
- B. Facilitate diverse pathways and postsecondary plans for adolescents. Ensure that students have the skills and access to coursework necessary for the option to switch.
- C. Design flexible schedules for course offerings during the academic year and the summer to enable youth to easily make up classes, recover lost credits, and advance in their course work.
- D. Provide flexible and diverse opportunities for students to develop interests, talents, and dispositions to foster their general wellbeing and facilitate their civic engagement.
- E. Hire sufficient career, vocational, and college counselors who are knowledgeable about the local job markets.
- F. Local businesses and school districts should create robust relationships and program linkages.
- G. Local businesses, local colleges, and school districts should create specific internships and apprenticeship training programs.

Education

Recommendation 6-4: Protect the overall health and well-being of each student

- A. Given the importance of sleep for adolescents, researchers and policy makers should prioritize identifying ways to mitigate the potential challenges of later school start-times and fully consider the benefits of sleep for adolescents. School staff should consider the value of sleep as they plan the school day and design homework and assignments.
- B. School districts should enact policies and practices that promote supportive school climates and ensure safety for all students.
- C. States and localities should provide funding for, and direct schools to provide, increased access to mental health services for students.
- D. School districts, in coordination with their local communities, should ensure that adolescents have the time and opportunity to engage in sufficient health-promoting physical activity each day and that healthy food options are available.

Cross-Sector Approaches are Necessary

All youth-serving systems can improve to support adolescents more effectively

Common recommendations for all systems: address and rectify disparities, increase cultural responsiveness, and support families in navigating the system

To best serve adolescents, systems cannot work in silos

Pervasive inequality increases cross-sector involvement for youth in marginalized groups

The Education System has important intersections with other youth-serving systems

- A. Education and Health
- B. Education and Child Welfare
- C. Education and Juvenile Justice

Conclusion

- Society has a collective responsibility to build systems that support and promote positive adolescent development.
- Systems should reflect a rich understanding of the developmental needs of adolescents and recognition of adolescence as a time of great opportunity to promote learning and discovery and to remediate past developmental challenges.
- Until society embraces this responsibility, the promise of adolescence will remain unfulfilled for millions of youth.
- To fail to build systems that support all youth is to waste human capital, reducing economic growth and exacerbating rising income inequality.
- Creating positive impact through opportunities not only improves trajectories, but also can provide high-impact, cost effective interventions to counteract the effects of childhood stresses and deprivations and prevent negative outcomes in adulthood.

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