

# Committee on the Neurobiological and Socio-behavioral Science of Adolescent Development and its Applications

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June 18, 2019

# Study Sponsors

## The Funders for Adolescent Science Translation (FAST)

- Annie E. Casey Foundation
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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.

## Why Adolescence?

- Recent advances in neurobiology and neuroimaging have demonstrated the dramatic extent of brain maturation during adolescence.
- Adolescent brains have evolved to meet the needs of this stage of life, allowing them to explore new environments, learn and adapt to changes, and build new relationships with the world and people around them.
- The adaptability, plasticity, and heterogeneity of adolescence creates accompanying opportunities—and obligations—for society to help all adolescents flourish.

## Why Adolescence?

- Adolescence is a sensitive period of neurodevelopment that is especially affected by the environment.
- Deeply rooted, and growing, structural inequalities curtail the promise of this developmental period.

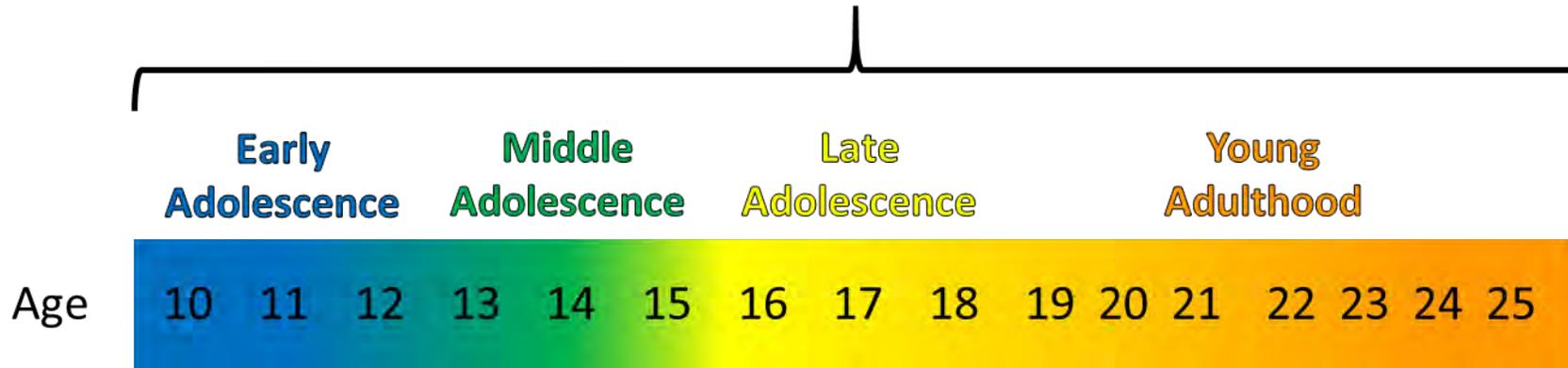
## Why Adolescence?

- Policies and practices that capitalize on the promise of adolescence and create incentives for discovery and innovation are needed, rather than those that are preoccupied with vulnerability and shielding adolescents from harm.
- The challenge is to take advantage of the developmental opportunities afforded by adolescence.

# Defining Adolescence

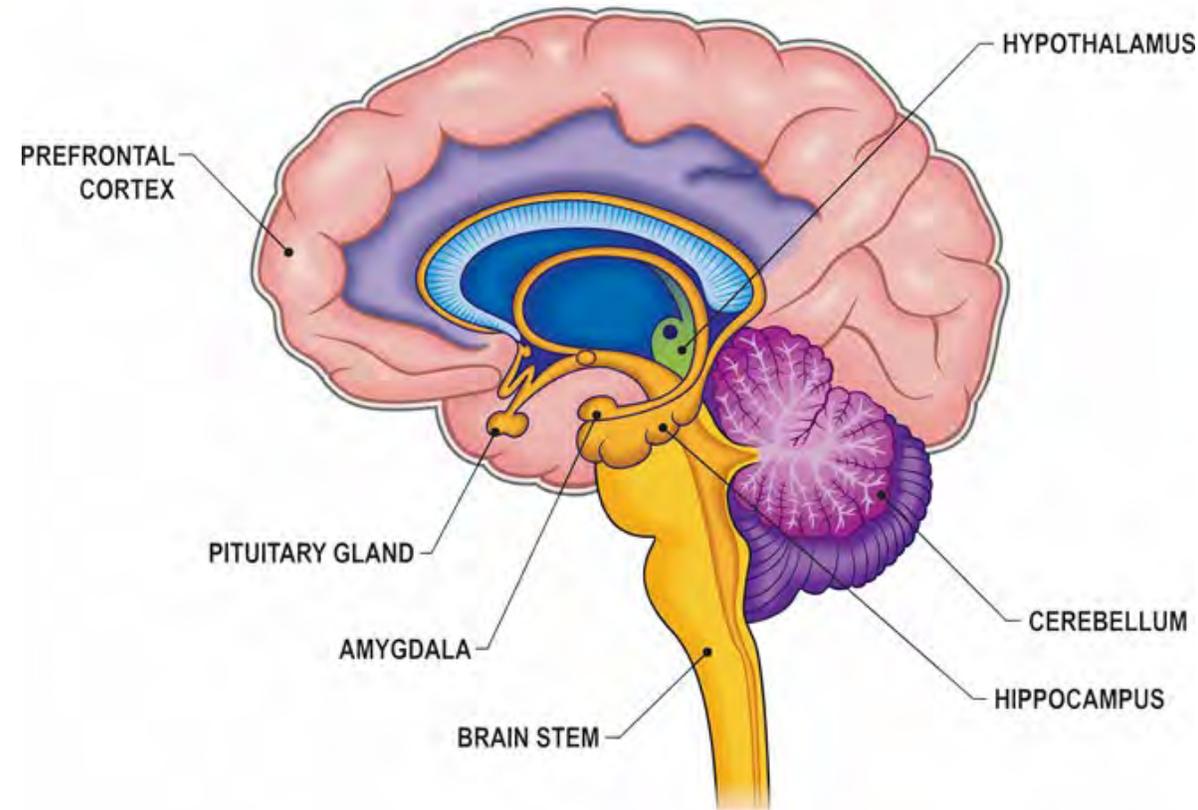


## Developmental Periods of Adolescence



# Adolescent Development: Insights from Neuroscience

- Adolescents' brains have evolved to meet the needs of this critical stage
- A unique period of heightened plasticity
  - Opportunity, but also risk
- Heightened curiosity and reward sensitivity
- Strengthening executive functions



# Adolescent Development

- 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.
- Increased cognitive abilities provide the capacity for psychosocial development, such as developing identity and capacity for self-direction.

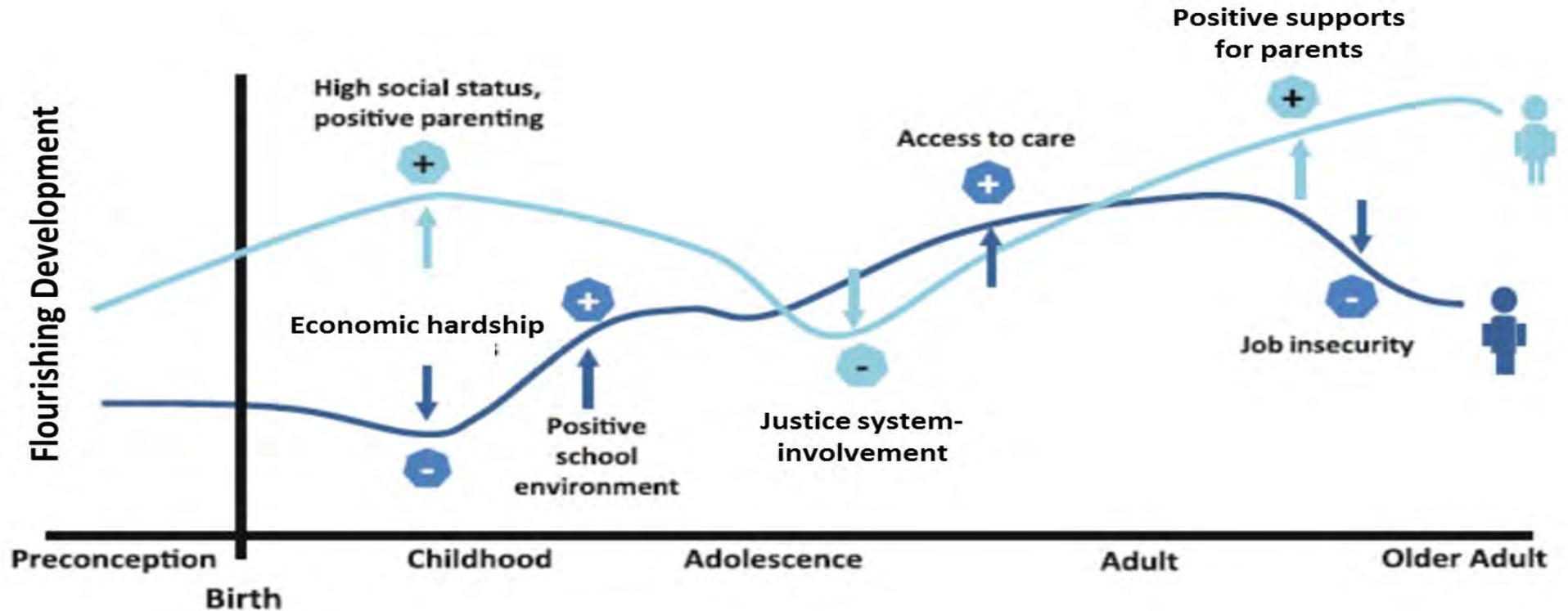
# Adolescent Development

- An adolescent's identity is an emerging reflection of one's values, beliefs, and aspirations, and it can be constructed and reconstructed over time and experience.
- Young people become increasingly aware of and attuned to their social status during adolescence, and institutions, policies, and practices may reinforce status hierarchies and stereotypes about members of groups that are nondominant or stigmatized in society.
- Adolescence is marked by a growing capacity for self-direction. Over the course of adolescence, youth gain the cognitive skills needed to reflect on complex questions about their role in the world.

# Interplay between Biology and Environment

- Genes and environment interact: The way heredity is expressed in behavior depends significantly on influences in a person's environment.
- The trajectory of an individual's life may be changed, negatively or positively, at each life stage.

# Interplay between Biology and Environment



Protective factors in the environment – such as supportive relationships with family and caretakers, and access to resources – support positive trajectories, while harmful experiences may lead to at-risk or poor trajectories.

# Interplay between Biology and Environment

- Adolescents' heightened sensitivity and responsiveness to environmental influences implies creativity, adaptability, risk, and resilience.
- 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

- Sources of Inequity in Adolescence:
  - Disparities in family and neighborhood resources and supports
  - Biased and discriminatory interactions with important social systems
  - Resulting inequalities in opportunity and access
- The result: Reduced access to opportunities and supports enjoyed by more privileged youth and exposure of less privileged youth to excess risks, stresses, and demands.

# Inequity and Adolescence

- These excess pressures “get under the skin” and adversely affect the brain and body during this critical developmental period.
- But, these inequities are not immutable. Policies & programs can address disparities at the source.

## Guiding Principles of Adolescent Development for Policy and Practice

- Adolescence is a sensitive period for discovery and learning, providing opportunities for life-long impact.
- Learning how to make decisions and to take responsibility for shaping one's own life are key developmental tasks of adolescence.

## Guiding Principles of Adolescent Development for Policy and Practice

- Forming personal identity is another central task of adolescence. The increasing diversity of U.S. adolescents and the nation as a whole requires youth-serving systems to be culturally sensitive and to be attuned to the integrated needs of each adolescent.
- Supportive familial, caregiver, and adult relationships play a significant role in fostering positive outcomes for adolescents.

## Guiding Principles of Adolescent Development for Policy and Practice

- Adolescence provides the opportunity for ameliorating harmful effects of childhood exposures.
- Disparities in family and neighborhood resources and supports, biased and discriminatory interactions with important social systems, and resulting inequalities in opportunity and access severely curtail the promise of adolescence for many youth.

## Health System

- Access to appropriate health care services is important to ensure adolescents' well-being today and for a lifetime.
- Adolescents face **unique challenges** in the health care system:
  - Less experienced in navigating the system
  - More concerned about their confidentiality, with fewer legal protections
  - More likely than adults to engage in risk-taking behaviors that could have both short- and long-term effects on their health.

# Health System

- But, there are **unique opportunities** associated with this stage of life:
  - Stronger abstract reasoning and executive function skills
  - Heightened neurobiological flexibility and resilience
- These distinct characteristics require health care delivery approaches tailored to adolescents' developmental needs.

# Health System

- Adolescence is a prime opportunity for the health care system to support optimal growth and development.
- The health care system should support adolescents through:
  - Developmentally appropriate changes to provider practices
  - Innovative care delivery systems
  - Integrated, comprehensive health services
  - Prepare youth for the changes they face
  - Support their growing autonomy
  - Culturally-informed services

# Programs & Practices

## *Health Care Setting*

- Mount Sinai Adolescent Health Center
  - Integrated and coordinated services
  - Entirely free and confidential
  - Enhanced and specialized service offerings

## *Community Setting*

- Zuni Youth Enrichment Project
  - Engages adolescents as leaders and mentors in their community
  - Encourages youth to incorporate Zuni language and culture
  - Promotes physical activity, nutrition, and cultural identity

## Recommendations for the Health System

**Recommendation 7-1:** Strengthen the financing of health care services for adolescents, including insurance coverage for uninsured or under-insured populations.

**Recommendation 7-2:** Improve access to comprehensive, integrated, coordinated health services for adolescents.

**Recommendation 7-3:** Increase access to behavioral health care and treatment services.

## Recommendations for the Health System

**Recommendation 7-4:** Improve the training and distribution and increase the number of adolescent health care providers.

**Recommendation 7-5:** Improve federal and state data collection on adolescent health and well-being, and conduct adolescent-specific health services research and disseminate the findings.

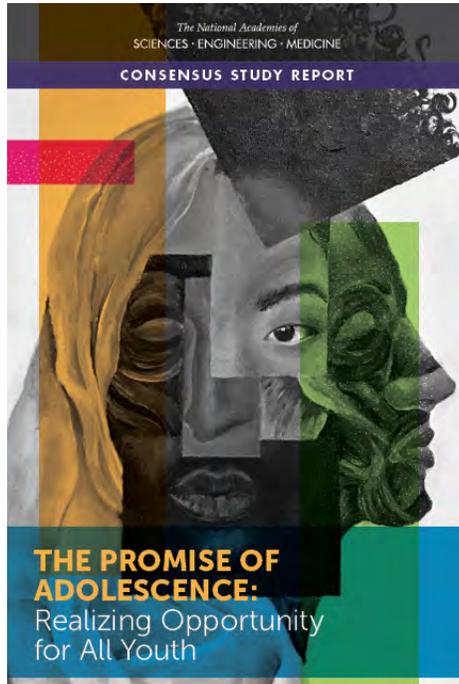
## Conclusion

- Society has a collective responsibility to build systems that support and promote positive adolescent development.
- These systems should reflect a rich understanding of the developmental needs of adolescents and a specific 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.

## Conclusion

- 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.

Thank you!



To read or download a copy of the report, please visit:

[www.nationalacademies.org/adolescentdevelopment](http://www.nationalacademies.org/adolescentdevelopment)

For more information about the study or dissemination activities, please contact:

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