Impulsivity and related neurobiology in adulthood are associated with childhood socioeconomic hardship

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Why is it important to study childhood socioeconomic hardship?

Socioeconomic hardship: limited access to basic needs

1 in 6 U.S. children face socioeconomic hardship[1]

Socioeconomic hardship can leave kids vulnerable to stress during important stages of brain development.

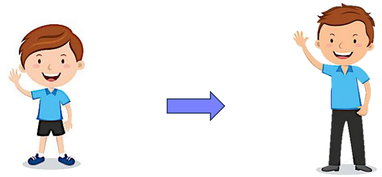
Stress could lead to changes in adult brain function and behavior[2].

What do we already know about childhood socioeconomic hardship?

Greater childhood socioeconomic hardship is related to impulsive decision-making behaviors in kids and emerging adults[3,4].

Impulsive behavior: preferring smaller, sooner rewards over larger, later rewards[5]

$17 today or $50 in a month



Primary Question: How does socioeconomic hardship in childhood affect impulsive behavior and related brain function in adulthood?

How did we test our questions?

Participant Demographics

- Total: 48
- Sex: Female, 39; Male, 9
- Average age: 38.7 years
- Race: Asian, 4; Black or African American, 3; Mixed Race, 1; White, 40
- Ethnicity: Hispanic, 11; Non-Hispanic, 37

Measurements of Childhood Socioeconomic Hardship

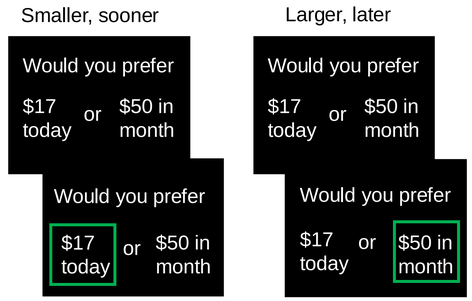
Financial Stability: *In my opinion, I had enough money for things growing up.*

Parent Education: *My parents completed high school.*

Brain Scanner

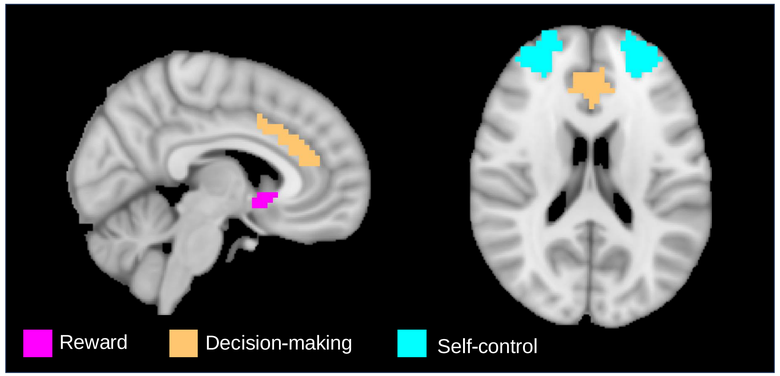
Brain Imaging Center at the University of Colorado Anschutz Medical Campus.

Impulsivity Task



Example of impulsivity task participants complete in the scanner.

Brain Areas of Interest



The brain scanner captures changes in blood flow in different brain areas to help us understand how the brain is responding when making impulsive decisions.

Conclusion

- **Lower parent education** was associated with increased **impulsive behavior (↑)** and decreased brain response in **reward-related brain regions (↓).**
- **Lower financial stability** was associated with decreased brain response in **self-control brain regions (↓)**.

Broader Implications

- Our findings that **childhood socioeconomic hardship was associated with impulsive behavior in adulthood** aligns with prior work observing this relationship in children and emerging adults.
- Socioeconomic hardship in childhood has **potential effects on brain processes involved in impulsivity and reward**, which could have implications for decision-making in adulthood.
- Additional investigation is needed to better understand how hardship may impact brain function, as **this could lead to risky behavior linked to poor health outcomes in adulthood**.

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