

How a Child's Brain is Built



The Core Story of Brain Development

All information from this presentation is available for further exploration at
www.albertafamilywellness.org



Agenda

- Grounding Ourselves: Glossary of Terms
- The Core Story of Brain Development
- Experience shapes Architecture: The Brain Game
- ACEs, Protective Factors and Your Own Personal Story



Important Terms

- Early Childhood
- Epigenetics
- Neurons
- Executive Function
- Positive, Tolerable and Toxic Stress



The Core Story of Brain Development

- Experiences Build Brain Architecture
 - Development and Pruning
- Serve and Return
 - Executive Function
- Toxic Stress

The Core Story of Brain Development

- Experience Builds Brain Architecture

[Video 1](#)





The Core Story of Brain Development

- Development and Pruning
 - Brain connections are built over time with an **OVER PRODUCTION** occurring during the early years
 - This is followed by a **PRUNING** phase (clipping away) connections that are no longer needed
 - The remaining connections then grow stronger

The Core Story of Brain Development

- Serve and Return

[Video 2](#)



The Core Story of Brain Development

- Executive Function
 - This is our AIR TRAFFIC CONTROL centre
 - These are the skills that are required to learn and to succeed



The Core Story of Brain Development

■ Toxic Stress

[Video 3](#)





Putting it all together: The Brain Game

- 10 teams of 5 - 6
- 8 rounds of the game in total
- The first 5 rounds are *early development*: build as tall and strong a brain as possible
- The last 3 rounds are the *pruning phase*: you will test the resilience of your structure



Putting it all together: The Brain Game

- How to set up your Brain:
 - Every team take 10 pipe cleaners
 - Genetics: Roll the die to determine the number of straws you get
 - Build your brain making CLOSED structures (no loose ends) and you must always be building UP
 - There will only be 5 minutes for this part, so you must storm and norm with your group quickly. Any unused materials at the end of this round will be confiscated.



Putting it all together: The Brain Game

- Life Experience Shapes Brain Development
 - Draw 3 random cards per year, starting with YEAR 1
 - Read your card to figure out what kind of stress it is (positive = :), tolerable = :| or toxic = :()
 - Be sure to record the number of events you experience in the order you receive them!



Putting it all together: The Brain Game

- Build Neural Connections (Rounds 1-5)
 - Take Building materials based on the following rules:
 - Positive stress = 1 pipe cleaner + 1 straw
 - Tolerable Stress = majority of past events rule; roll die if a tie or if your first event is tolerable stress
 - Toxic Stress = 1 pipe cleaner



Putting it all together: The Brain Game

- The Pruning Phase (Rounds 6 - 8)
 - Positive Stress = 1 pipe cleaner
 - Tolerable Stress = Majority of past events rule, roll a die if tied
 - Toxic Stress = 1 weight to hang on your brain (you must hang it on the highest point of your structure!)
 - If your structure tumbles over, keep going and building up with the new “shape”



Putting it all together:

The Brain Game: DEBRIEF

- Tell us the story of your (imaginary) child's life history
- How did the life experiences shape what happened to your brain?
- How important were early social supports (the straws)?
- Can you have a brain that withstands life stresses later in life after experiencing toxic stress early in life? At what cost?
- What were the things that you had CONTROL over? Can you relate this to a child?

Back to the Basics: The Core Story of Brain Development

- Now that we have looked at brain development, let's watch one last final video and observe if/how our understanding has changed
- [How Brains are Built](#)





ACEs, Protective Factors and Your Own Story

- There are 10 ACEs
 - Witness domestic violence
 - Separation/divorce
 - Family Member Incarceration
 - Physical Abuse
 - Emotional Abuse
 - Emotional Neglect
 - Sexual Abuse
 - Household Substance Abuse
 - Physical Neglect
 - Household Mental Illness



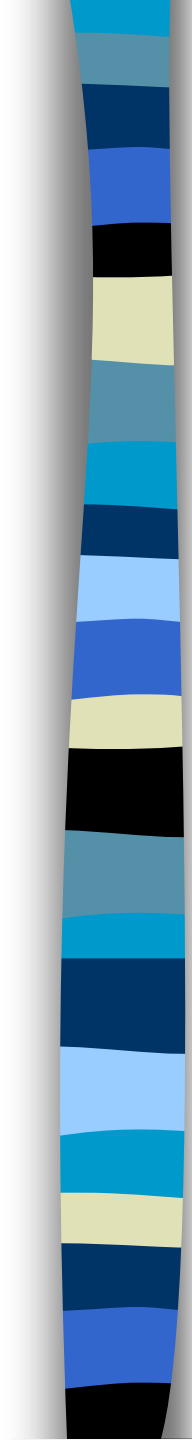
ACE's, Protective Factors and Your Personal Story

- There are 6 protective factors
 - Special relationship with an adult who was caring and nurturing
 - Somewhere other than home where they felt they belonged
 - Activities that were easy to participate in outside the home
 - Sense of mastery or feelings of success in at least one area of their lives
 - Could distance themselves from unhealthy family behavior
 - Sense of purpose/future



The Take Away

- Early Experiences shape Brain Architecture
- Serve and Return is SIMPLE and POWERFUL
- Early social supports can mitigate the effects of toxic stress
- HOPE

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- Questions? Comments? Concerns?
 - What else would you like to know?
 - Please fill out the survey!

THANK YOU!!!!