



**College of Agriculture
& Life Sciences**

Cooperative Extension

Parent-Child Interactions and Brain Function

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Who we are

- Debbie Curley
- Jennifer Argyros
- Darcy Dixon





This workshop should answer the following questions:

How do Parent-Child interactions impact brain development?

What are some tools to coach parents towards better interactions?

How do we lead them to AHA! moments?



Not Connected
Tap to transfer files

What do we know?

- ▶ What percentage of a child's brain is developed by age 5?
- ▶ What percentage of your families know that?
- ▶ Whose job is it to develop the child's brain?
- ▶ How does this happen?



Foundation for Healthy Brain Growth

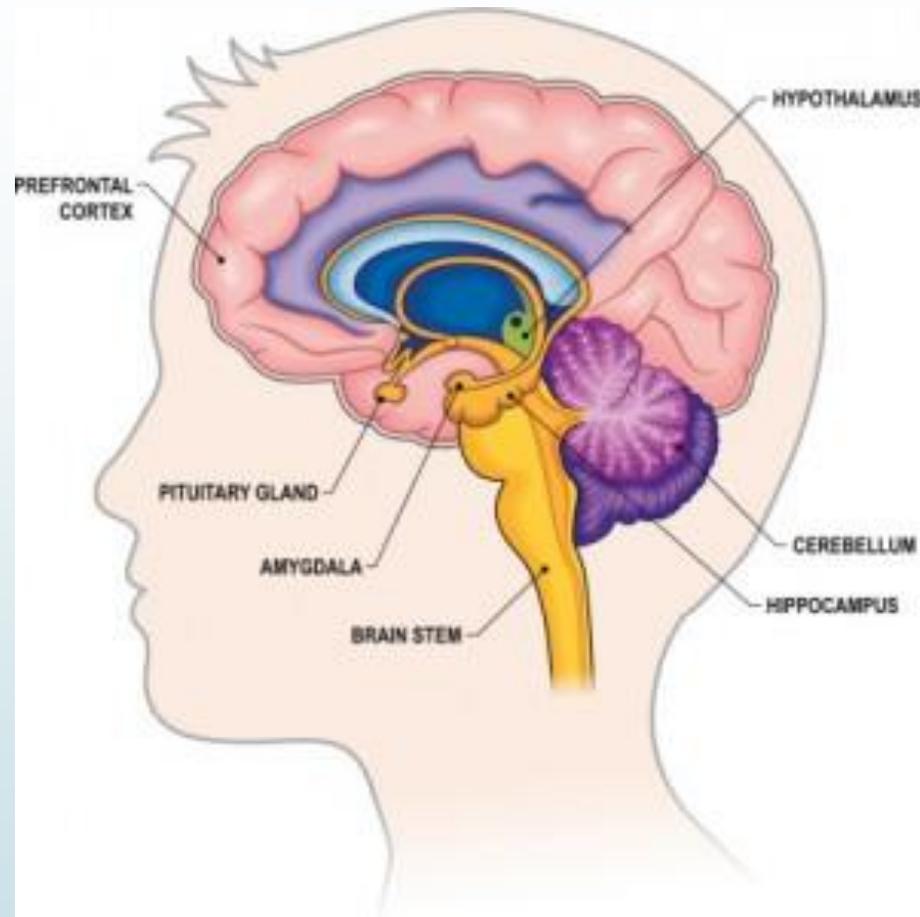
- ▶ Emotional Stability
- ▶ Growth Mindset
- ▶ Social Competence



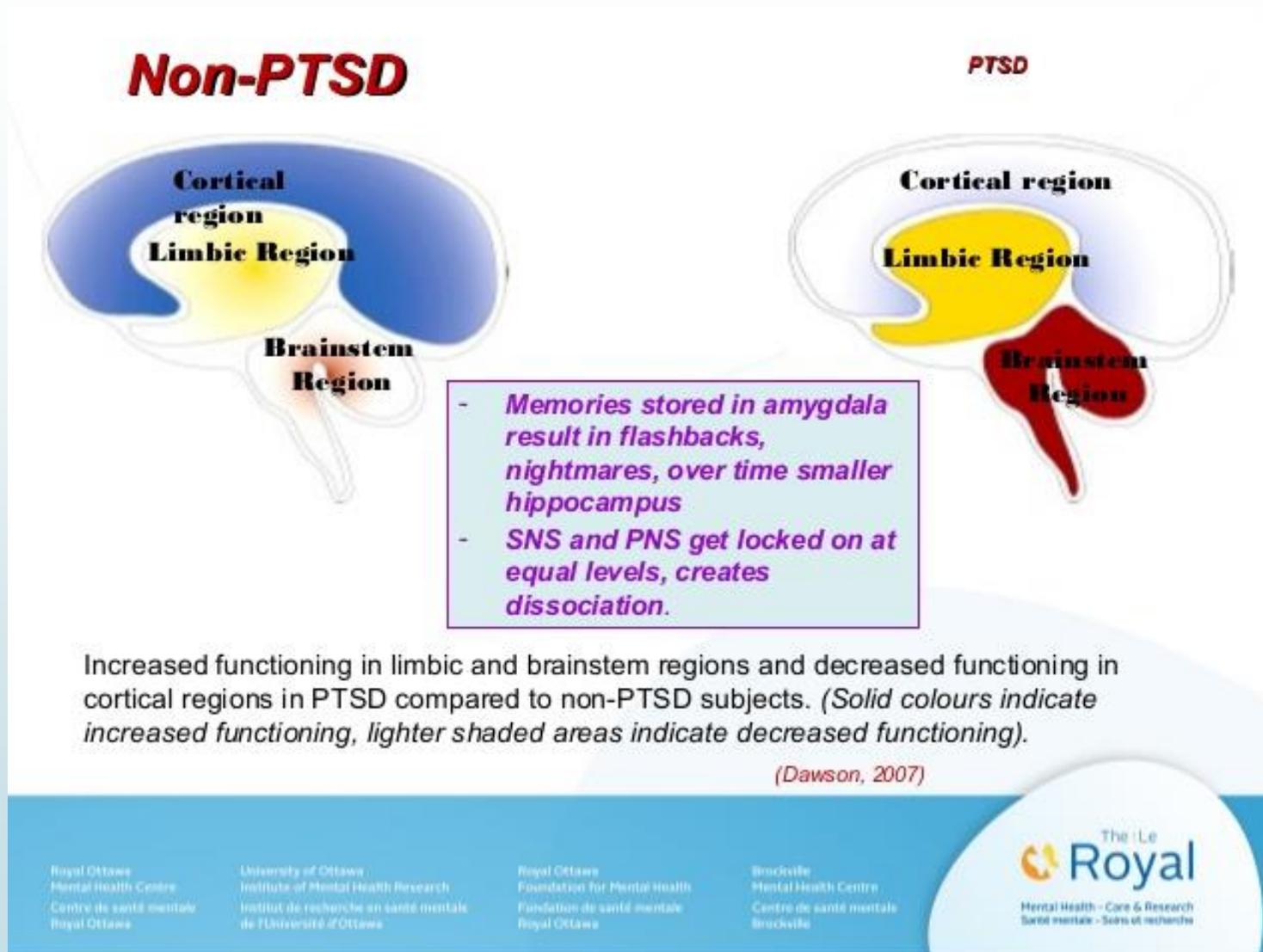
It Starts with Love



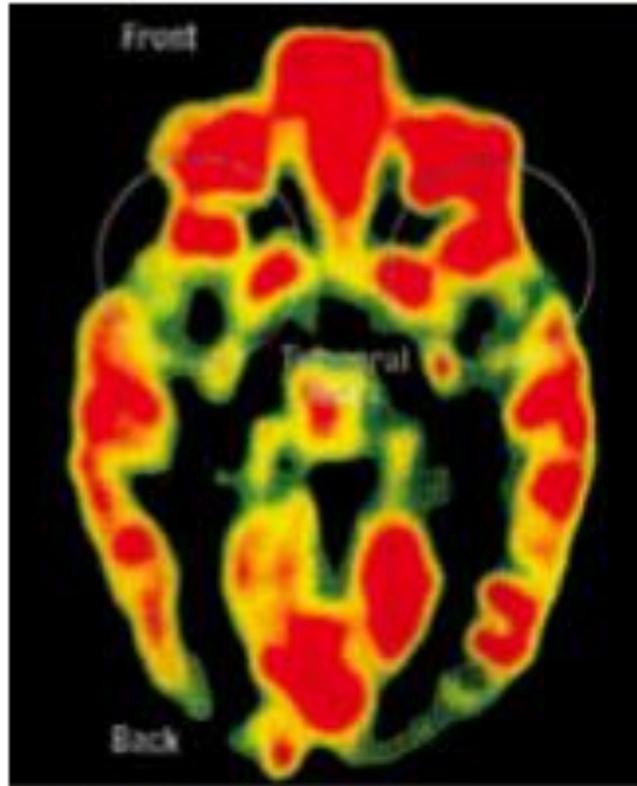
In the words of the distinguished developmental psychologist Urie Bronfenbrenner: ... *in order to develop normally, a child requires progressively more complex joint activity with one or more adults who have an irrational emotional relationship with the child. Somebody's got to be crazy about that kid. That's number one. First, last, and always.*



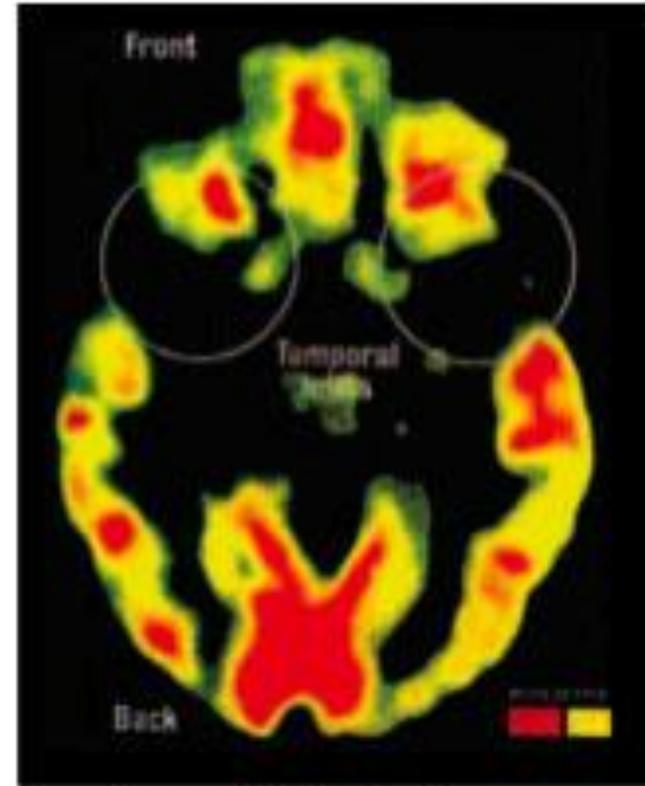
<https://www.youtube.com/watch?v=brVOYtNMmKk>



Comparison of the Developing Brain



Healthy Development



Development Affected by Environmental Stress

Source: Dr. H. T. Chugani, *Newsweek*, Spring/Summer 1997 Special Edition: "Your Child: From Birth to Three," pp 30-31.

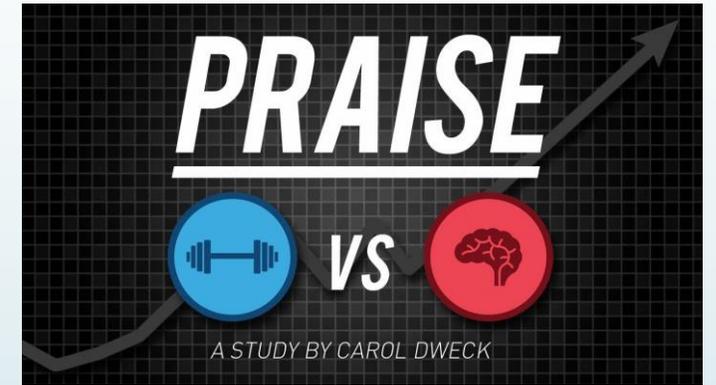
Growth Mindset

Person Praise

Entity Theory



Process Praise



Incremental Theory

<https://www.youtube.com/watch?v=NWv1VdDeoRY>; 4:51

Gunderson et al. *Parent Praise to 1- to 3-Year-Olds Predicts Children's Motivational Frameworks 5 Years Later*. *Child Development*, xxx 2013, Volume 00, Number 0, Pages 1–16.



Key Concepts

Responsivity. Quality or state of being responsive. Attending to child's needs developing consistent care.

Scaffolding - Supporting those elements of a task that are too difficult for a child until a child can do task on own.

Self-Regulation - The ability to calm yourself down or change your emotional state to stability.

Perspective Taking – Being able to understand the intentions of others.

Executive Function - Mental process that enables us to have flexibility, plan ahead, reason, filter, prioritize and control impulsivity.

At Risk Families

Families in at risk situations perform negatively on the following dimensions:

CAREGIVERS	CHILDREN
Scaffolding	Higher cortisol levels
Responsivity	Less compliant Trouble concentrating Social emotional consequences
Language Development	Language delays

Responsive Parents See More Compliance

Strong relationship with parent/caregiver →

self-regulation → better executive function →

stronger work skills later in life.



APPLICATION

EXAMPLE 3-4
NROTC COLLEGE PROGRAM APPLICATION

PRINT or TYPE. Fill in all blanks. Print "None" or just "N" in unapplicable blanks. Continue on reverse sheet if necessary. Please attach items listed in parentheses.

PROMPT STATEMENT: Under the authority of 5 USC 301, the information reported by you forms military experience and training, educational background and present personal data in requested in order to evaluate your basic qualifications and your suitability for selection in comparison with other applicants for the Reserve Component NROTC College Program. Your social security number will be used for purposes of historical identification. The information will be retained by CNET, (Code OF 832), and the NROTC Unit and will not be changed without your written authorization to advise other than Navy and Marine Corps personnel involved with the administration of the program. You are not required to provide this information; however, failure to do so will result in an inability to fairly evaluate your application and may result in an inability to process the application.

1 NAME (Last, first, middle)		3 SSN	5 RECEIPT NUMBER	6 VISA TELEPHONE NUMBER
2 CURRENT MAILING ADDRESS (Number, street, city, state, ZIP Code)		4 DATE OF BIRTH (DD/M/YY)	7 PLACE OF BIRTH (City, State, country)	
8 U.S. CITIZENSHIP <input type="checkbox"/> YES <input type="checkbox"/> NO		9 IF NATURALIZED, GIVE DATE, PLACE (CITY or JURISDICTION), AND CERTIFICATE NUMBER		
10 HOME AND ADDRESS OF FAMILY OR GUARDIAN		11 COLLEGE RELIGIOUS (SO) / Year Major or _____ Last _____ First _____ MIDDLE CORRESPONDING TO SSN (Last, first, middle)		

12. MILITARY EXPERIENCE AND TRAINING (List and describe, if any)				
DATE	SERVICE	DATES OF DUTY	RIBBONS/RAKES HELD	REMARKS

13. TRAINING				
DATE	POSITION HELD	AWARDS	REMARKS	DATE

13. EXTRACURRICULAR ACTIVITIES
 READ CAREFULLY. Identify only those activities in which you engaged during school grades 9-12. NROTC is particularly interested in identifying activities in which an applicant has participated which involve responsibility and leadership.

ELUCIDATING OFFICES HELD	EXACT POSITIONS HELD	AVERAGE NO. HOURS DEVOTED PER WEEK	CIRCLE SCHOOL YEAR OFFICE HELD

14. ATHLETIC ACTIVITIES
 READ CAREFULLY. Identify only those sports in which you participated during school grades 9-12. Circle the school year in which you received letter awards or each sport. Then circle the school year you were on varsity squads. Do not list junior varsity or "B" teams awards as varsity letter awards. Do not list recreational activity.

SPORT	LETTER AWARDS	CIRCLE SCHOOL YEAR A TEAM MEMBER	POSITION OR SPECIALTY (In which letter was earned)	SPECIAL RECOGNITION (Awards, membership in club, receipt of invitation to elite club, State, District, Conference, State or National Team) (Do not list any "B" team participation)

ACTIVITIES OTHER THAN THOSE ABOVE: List any if they involve considerable responsibility and expertise. Show positions held and average number of hours devoted per week to activity. Attach additional sheet if necessary.

CNET Form 15002 (Rev. 1-8-0)

So, how do we help parents use this information?

TIPS and Guidelines

- ▶ What tips do you give parents?
- ▶ What does your organization already do to improve parent-child interaction?
- ▶ What experiences have you had?
- ▶ How do you lead to an AHA! Moment?



VIDEO #1

- Distribute worksheets
- Watch video
- Discuss how to launch conversation
- Share feedback as a group



VIDEO #2

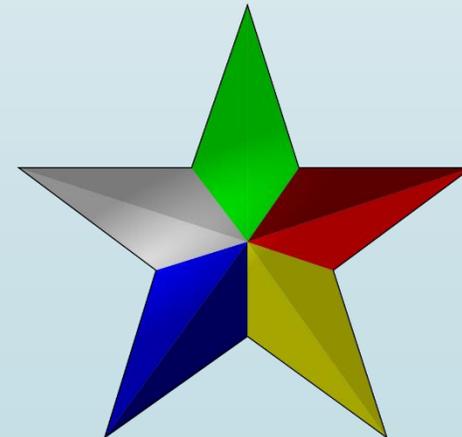
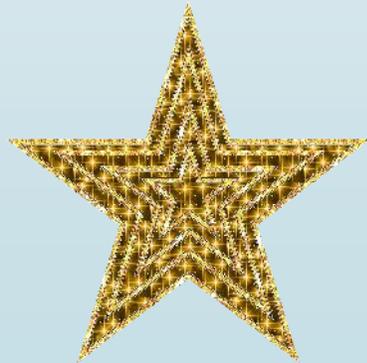
- Watch video
- Break into groups of two
- Complete worksheet
- Share findings



Star Power



What were your favorite tips and why?



Take Aways



- A secure emotional relationship with parent or caregiver is key to higher level brain function;
- Praise the process not the child;
- Social competence at a young age leads to strong work skills later in life (Everything I need to know I learned in Kindergarten!);
- Leading parents to AHA! Moments gives them tools for a lifetime.



Questions? Comments?

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- ▶ Darcy Dixon – ddixon@ag.arizona.edu



Parent-Child Interaction Checklist

- 1) **Parents Need Emotional Refueling** – Parents and caregivers need to take time for themselves because the healthier they feel emotionally the better they can take on the challenges of parenting (PIPE).

Describe your assessment of the parent's emotional state. _____

- 2) **A Loving Relationship is the Foundation for Trust and Early Learning** – A child has to feel safe and secure in their environment in order to engage in higher-level brain activities such as cognition and memory (Brain Waves, PIPE, Infant Toddler Handbook).

Do the mother and child look like they have a close relationship? Does the child look to the parent for support? Does the child look like they feel safe and secure? _____

- 3) **Encourage Rather Than Praise** - Praising a permanent trait or the product a child created can lead them to continually seek approval. Children who were encouraged for their efforts were willing to choose more challenging tasks when given a choice (Positive Discipline).

Does the caregiver praise the child – “You are so sweet” or do they encourage the effort – “I noticed how you shared your toy”? _____

- 4) **Build Language Skills** – Talk to the child one-on-one – label, turn taking, create activities around books, tell stories with picture books, narrate your day (Brain Waves, KIPS, Book Magic, PIPE).

Is there a lot of verbal interaction with the child? What does it look like? _____

- 5) **Promote personality traits** – what qualities do you want your children to have when they grow up – are you promoting that in your interactions with them? (Positive Discipline - two lists).

Do you notice the parent promoting specific personality traits with their child? _____

6) **Build Critical Thinking Skills** - This requires parents to relinquish some control – to let their children do things on their own, explore, figure things out, find new ways to do things and lead their play. (MITM)

Does the parent model curiosity? Ask open-ended questions?

7) **Respond to Your Child's Cues** - There is a class in PIPE called Tune In/Tune Out – which teaches parents and caregivers to recognize when their child is engaged or disengaged in an activity in order to promote their learning through play (PIPE, KIPS).

Does the parent recognize when the child is engaged or disengaged – to allow the child time to self-regulate?

8) **Let the Child Lead** – Children learn through play – the more they are encouraged to take charge of their own play – the stronger critical thinking skills they will build. Respond their cues, find out what they like and encourage them to explore and be creative (KIPS, PIPE, Infant Toddler Handbook, Brain Waves).

Does the parent encourage the child to do things on their own or does the parent do it for them?
