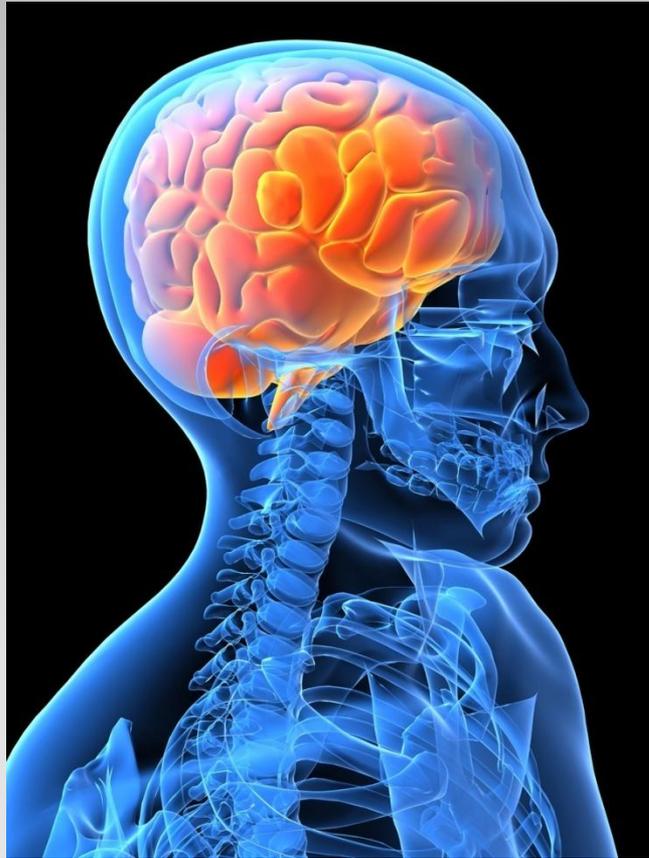


# Brain Insights For Early Educators

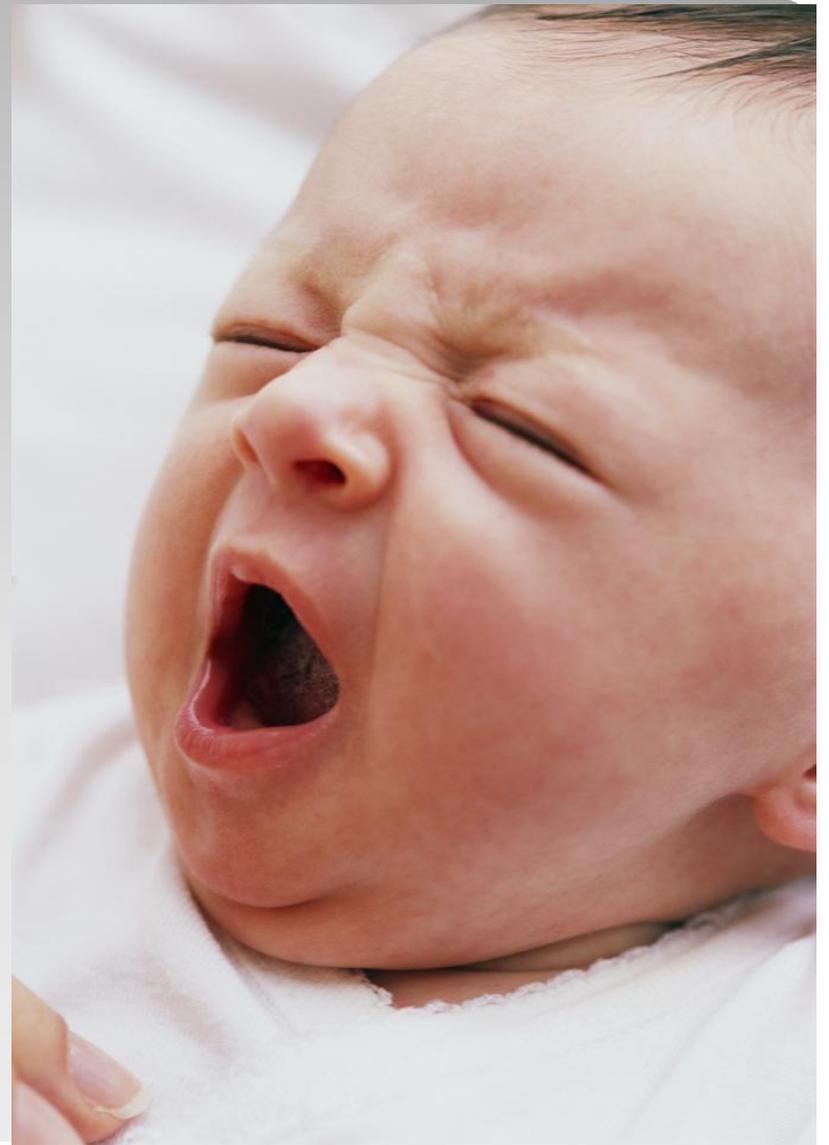
**Stimulating Brain Development in  
Your Program**





# You Are Experts

**“ I am just a newborn what is all this talk about my brain development? Can't it wait until I go to school?”**



# “Oh really...? Much of my brain development happens after birth?”

- 90% of the brain develops in the pre-school years.
- 100 billion brain cells at birth



# **“Everyone should know about how my brain develops!”**

**“...early childhood experiences exert a dramatic and precise impact, physically determining how the intricate neural circuits of the brain are wired.”**



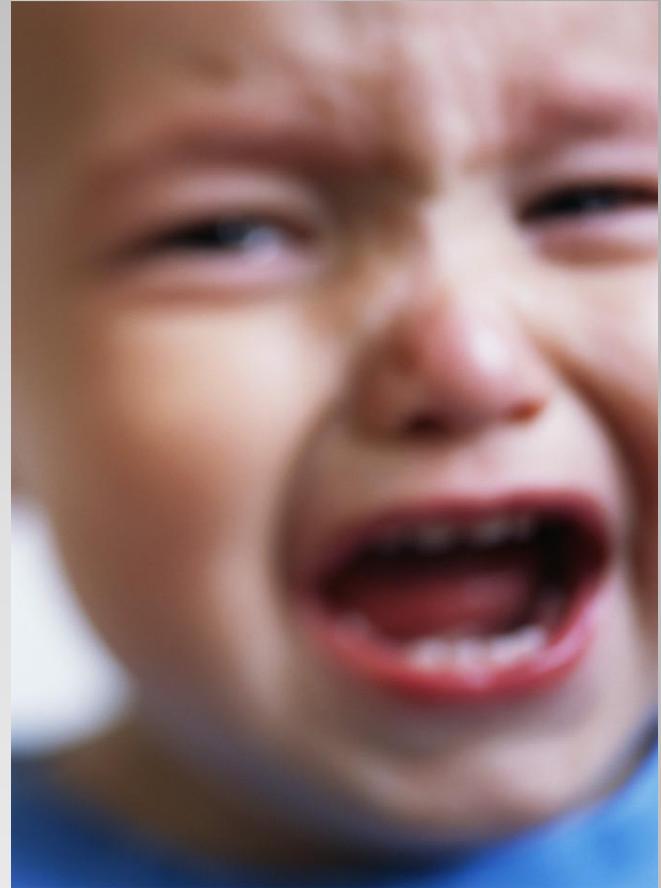
***Newsweek, Feb. 19, 1996***

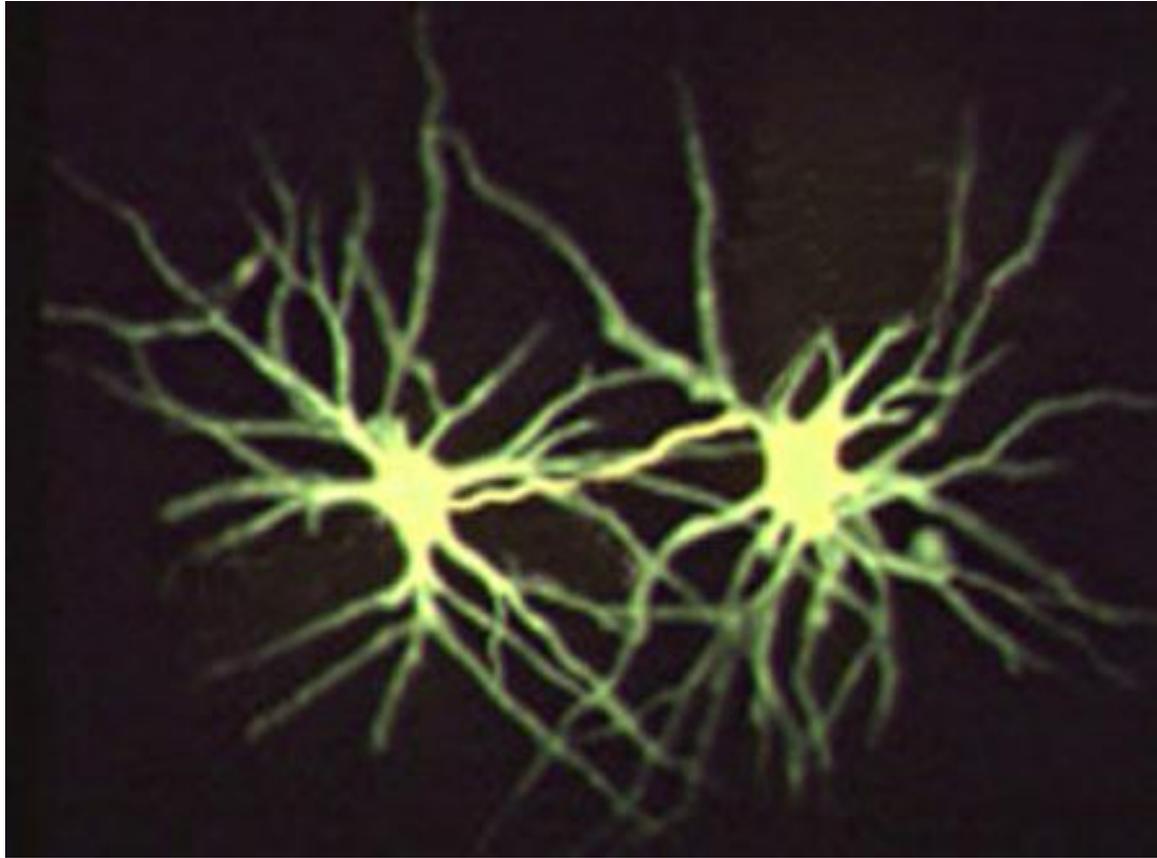
Regardless of the general environment, all children need stimulation and nurturance for healthy development.

**If these are lacking or if a child's caretakers are indifferent or hostile, the child's brain development may be impaired....**

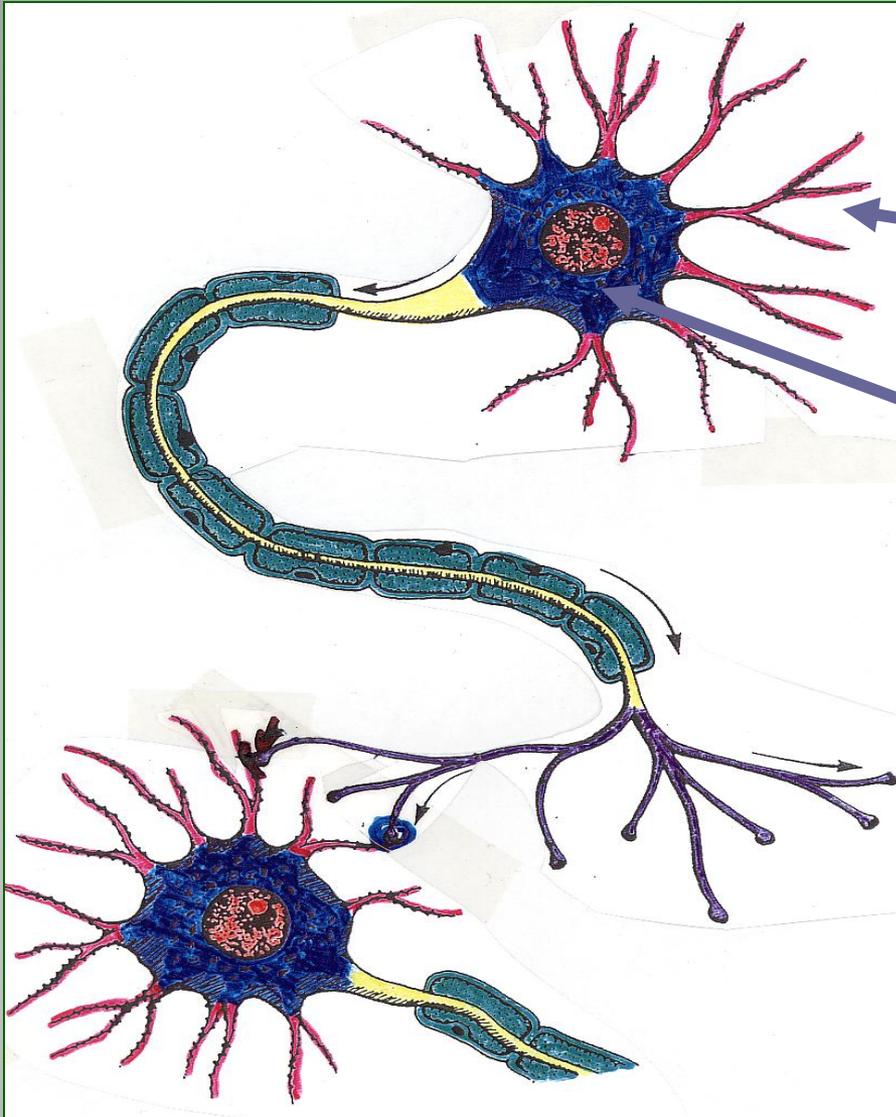
...because the brain adapts to its environment, it will **adapt to a negative environment** just as readily as it will adapt to a positive environment.

- US DHFS, Administration for Children & Families, Children's Bureau 2001





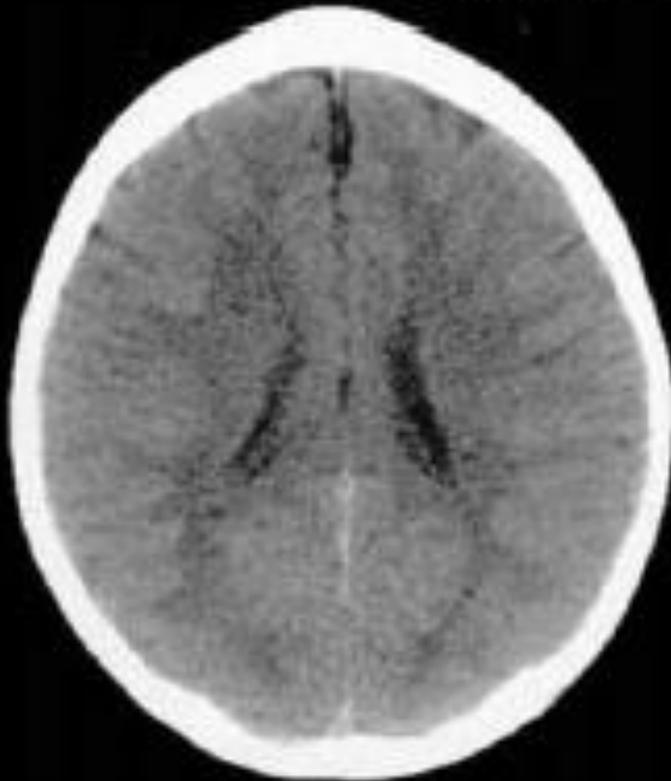
# Neurons



dendrites

cell body

## 3 Year Old Children



Normal



Extreme Neglect



Newborn



3 months



15 months



2 years

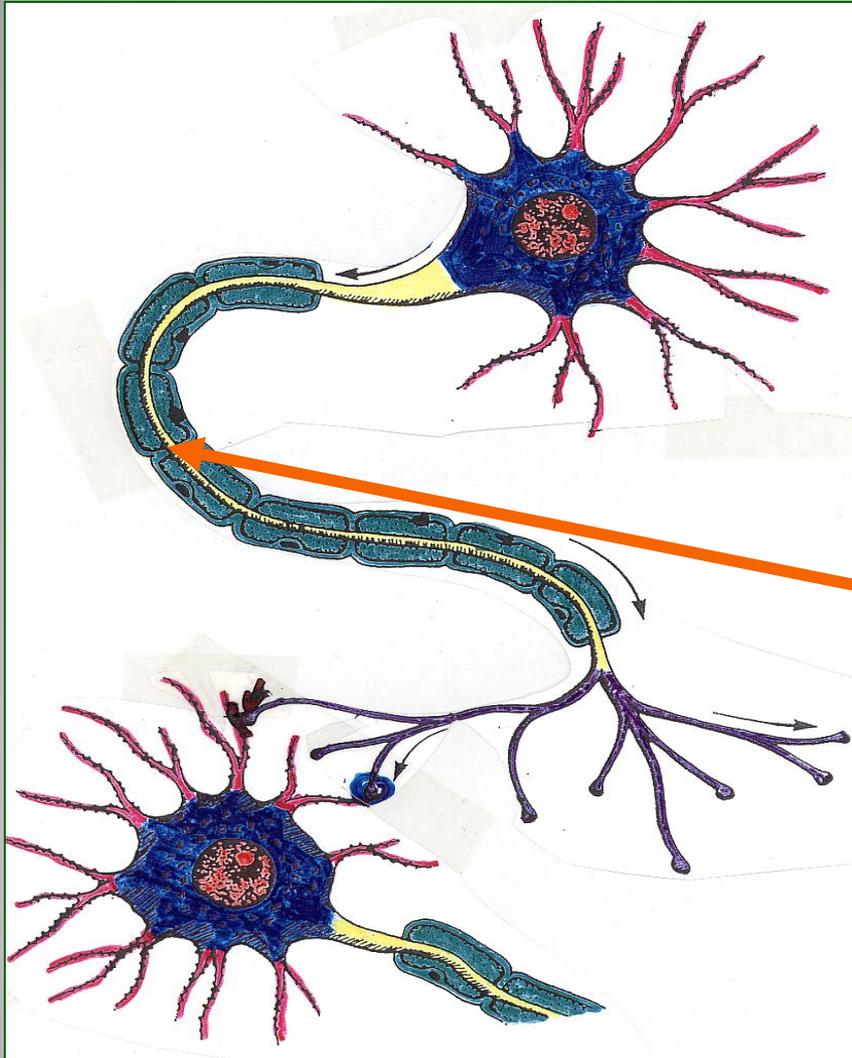


# Pruning



**Organized**

# Neurons



myelin sheath



# Pathways

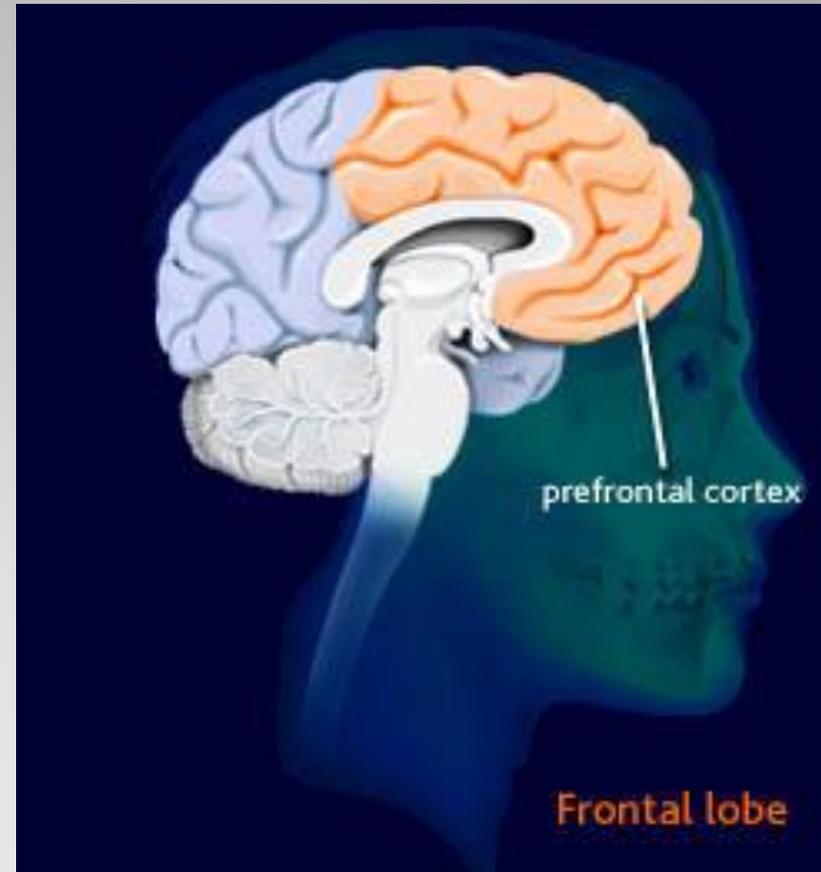
# Your Name



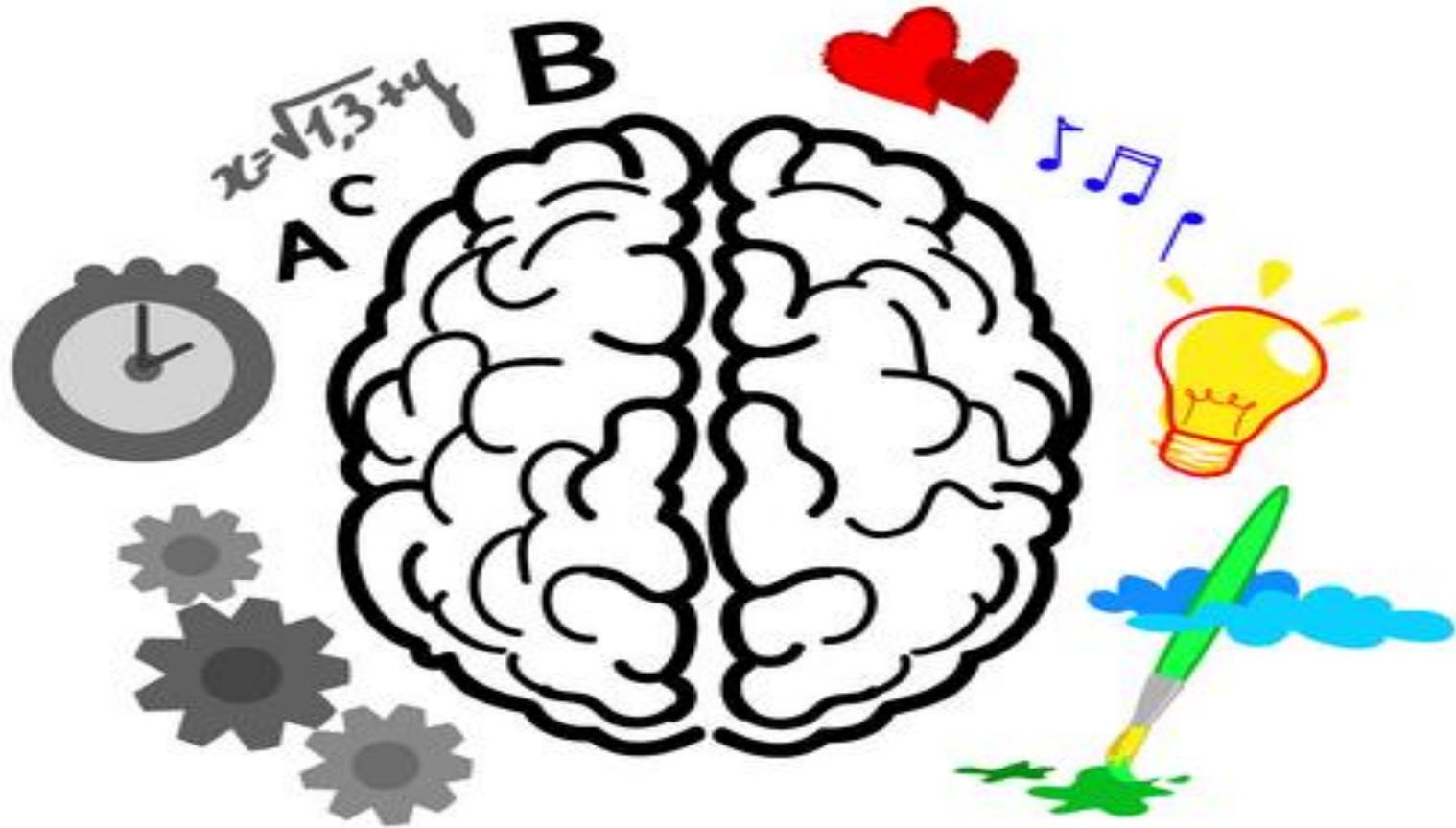
# *Repetitive experiences change a child*



- **Prioritize thoughts**
- **Ability to imagine**
- **Think in the abstract**
- **Anticipate consequences**
- **Plan**
- **Control impulses**



# The Prefrontal Cortex



**Our Amazing Brain...is constantly making new connections!**

**Each time a baby or older child explores...  
each time she directs her attention stubbornly onto something...  
the brain cells are being changed and the child is learning.**



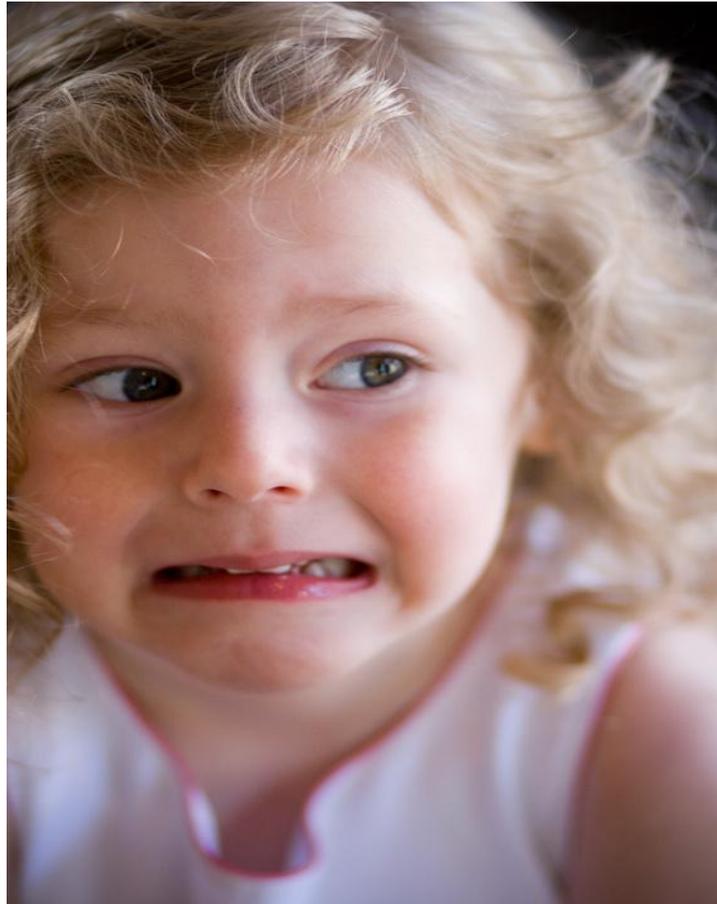


**The brain needs to verify  
that what it sees is true**



***"Wow  
repeating  
experiences  
really makes  
a difference  
to my brain!"***

# Living with Predictability





**The Brain Likes Novelty**

Selective focusing of  
attention can filter out  
distractions



**Habituation**



**Positive and consistent relationships!**

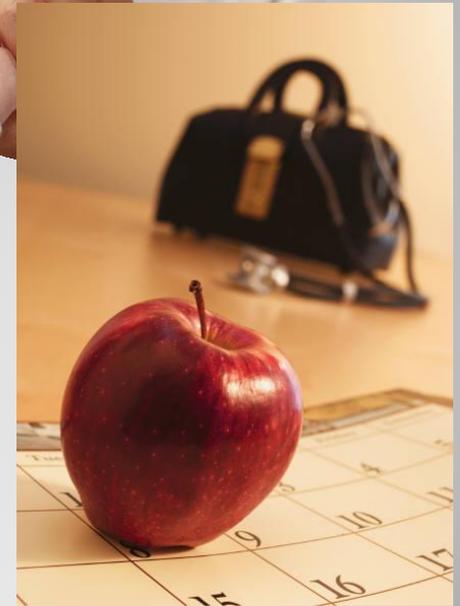
**Fun interaction with others and opportunities to make choices!**

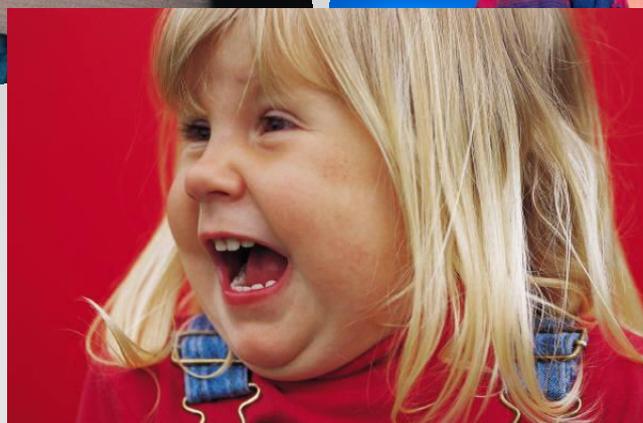


# Physical and safety needs!



**Routines  
and  
consistency!**





## Dealing With Big Emotions, Distress or Discomfort

**The brain  
does not  
like chaos**

**Organized less  
noisy  
and calmer  
environments**



**..... reduces stress  
in my brain.**

- Nature relieves stress improves memory, problem solving, and attention
- Both children and adult brains function better after being exposed to nature



## The Brain Needs Nature



**You Can Reach Parents**

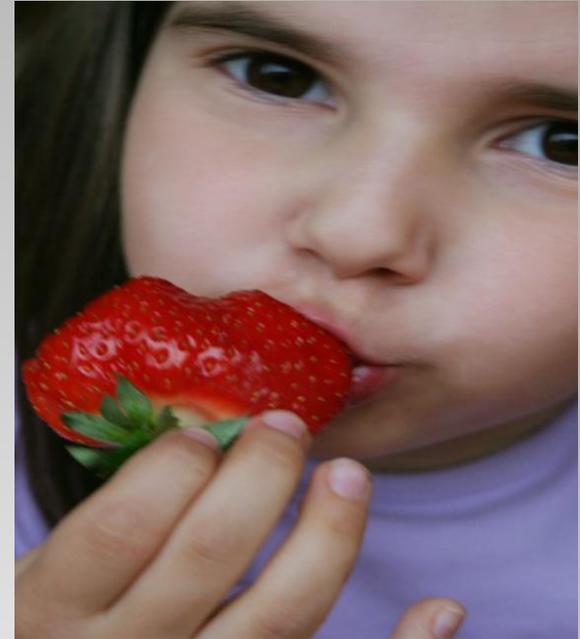
- Sleep keeps the system in balance
  - natural calming mechanisms stabilizes mood
- Short of sleep
  - calming mechanisms may no longer function well
  - putting a child into states of over arousal



The Science of Parenting by Margot Sunderland

# Sleep

- Missing breakfast
  - can result in hyperactive behavior
- A healthy breakfast
  - improves physiological well-being, and behavior



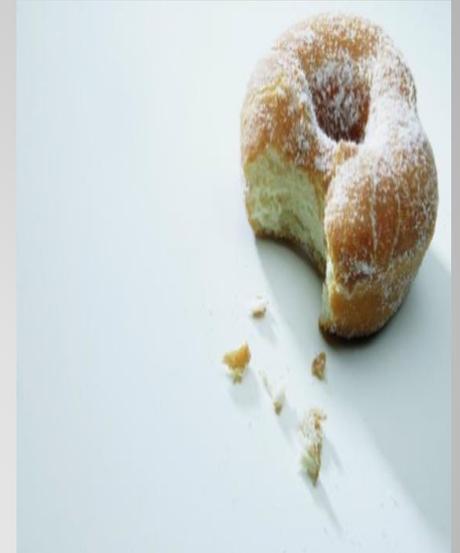
***Research has shown, when children who didn't eat breakfast started eating it, they had a far more stable mood for the rest of the day.***

The Science of Parenting by Margot Sunderland

## **Breakfast and the Brain**

- Hunger disrupts hormones.
  - Blood sugar levels too low, the body will release stress hormones to raise blood sugar levels
- The strong activation of these hormones may lead to:
  - anxiety, agitation, aggression, feelings of panic, and confusion or temper tantrums.
- Low blood sugar also deprives the brain of glucose, which can lead to out of control behavior

The Science of Parenting by Margot Sunderland



# Hunger Affects Behavior

- A child can play very well for some time if he eats a balanced meal, which boots levels of serotonin in the brain.



- Chocolate and candy eaten on an empty stomach, instead of a proper meal (or without the presence of adequate amounts of protein), send a child's sugar levels sky-high.
  - a drop in blood sugar 30 minutes later, leads to aggression, anxiety, and hyperactive behavior.

The Science of Parenting by Margot Sunderland

## Well Balanced Diet

**“Stable, caring relationships are essential for healthy development. Children develop in an environment of relationships that begin in the home and include extended family members, early care and education providers, and members of the community.”**



**-- Harvard Brief on Children's Emotional Development**

**You are making a difference!**

**You are  
developing  
young  
brains  
everyday!**



# Deborah McNelis

[deb@braininsightsonline.com](mailto:deb@braininsightsonline.com)

[www.braininsightsonline.com](http://www.braininsightsonline.com)

- <http://braininsights.blogspot.com/>

414-975-7045

5430 S. LaSalle Drive  
New Berlin, WI 53151



The logo features a stylized orange and grey circle above the text 'braininsights®' in a lowercase, sans-serif font.

***Inspiring REAL Brain Development for All Young Children!***

- **Add information to a newsletter**
- **Create a special column or insert**

# **Newsletters**

- **Create an electronic method for sharing information**
- **Regularly scheduled updates**
- **Create a section in currently used e-mails**

## **E-mail Updates**

## **CARING FAMILY NEWSLETTER**

Volume I Issue 1

March 17, 2007

### **Buying Toys With the Brain in Mind**

**Instead of buying expensive toys and programs, look instead for toys that are best for children that do any or all of the following:**

- **Provides an opportunity for direct interaction and manipulation**
- **Gives a child a chance to develop something with their hands**
- **Offers a variety of ways of using the toy or objects**
- **Sparks imagination and creativity**
- **Allows the child to repeat a process**
- **Promotes physical activity**

**Examples are: Puzzles, building blocks, building sets, crayons, balls, paints, play dough, dolls, trucks and cars, shape sorters, sand toys, bean bags, nesting cups, pretend play sets, water toys, and books!**

**Opportunities to just play, create, explore, and manipulate objects provides the best opportunities for real learning. When these activities are driven by a child's own interests this is when you will almost be able to see brain connections being made!**

# **Newsletter Example**

- **Save information in a binder**
- **Index under topics**
  - **By age**
  - **By areas of development (Motor, social-emotional, memory, etc.**
  - **By influences ( Nutrition, toxins, environment, genetics)**
  - **By gender**
  - **By resource (Websites, books, organizations, etc.)**
  - **By local services ( workshops, speakers bureau)**

## **Resource Files**

- **Section off specific area of a bulletin board for posting new information**
- **Create a bulletin board designated for brain development information**



## **Bulletin Boards**

## **Include information sharing at meetings**

- **Add brain development updates to agenda**
  - **Share pertinent information received**
  - **Create awareness of resources**
  - **Distribute information on upcoming workshops**
  - **Arrange for a speaker at meetings**
- **Include information in meeting notes or minutes following meetings**

# **Meeting Updates**

- **Share with each other**
  - **Tell about information you become aware of**
  - **Keep track of new ideas and Share techniques ideas you find work**
  - **Post on Social Networks/Join discussion groups**



# Networking



**Recognize all you do!**