


# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN


**IMPROVING BEHAVIORS IN CHILDREN:  
RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN**



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**Neuro-Genesis of the Brain**




> The Brain is Capable of:

- ❖ Repairing Injured Neurons
- ❖ Producing New Neurons

> Knowledge + Emotion = Gene Change

**WE BUILD EACH OTHER'S BRAIN**



Pincus, J and Tucker, G. Behavioral Neurology Fourth Edition. Oxford University Press, New York, 2003.

**Neuro-Genesis of the Brain**

Changes are Facilitated by:

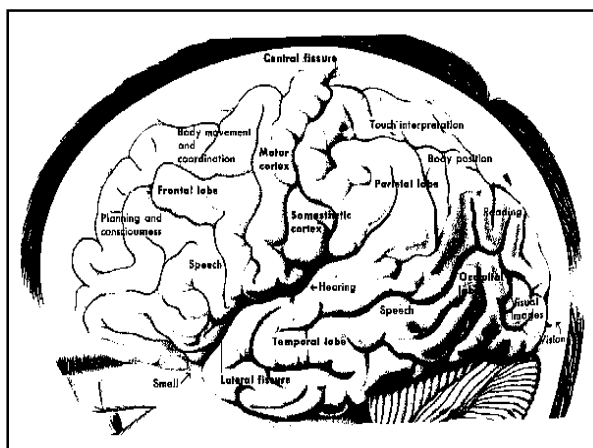
**NOVELTY**  
**ENVIRONMENTAL ENRICHMENT**  
**PHYSICAL EXERCISE**

Involves:

*Psychobiological arousal that evokes gene expression and protein synthesis leading to neurogenesis*

**Brain Function – Parts of Brain**

Thimble. "Psychopathology of Frontal Lobe Syndromes." Seminars In Neurology, Vol10, No. 3, 1990.

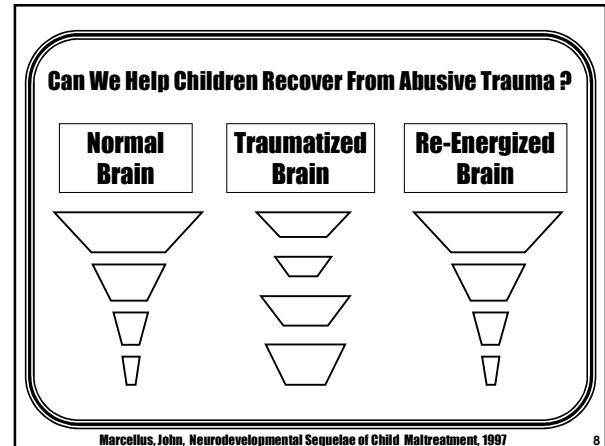
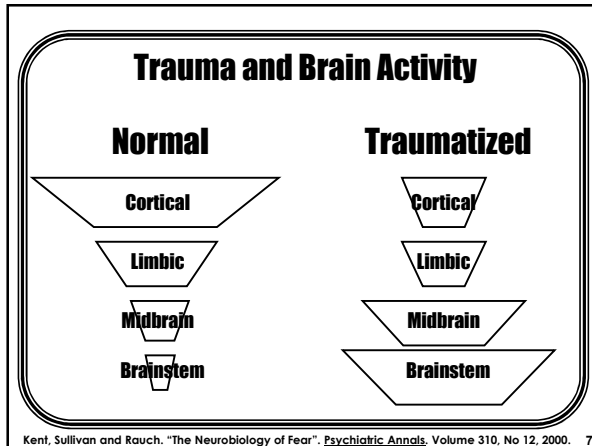


**BRAIN FUNCTIONING**

Amount of Brain Activity		Area of Functioning
Large inverted triangle	<b>Cortical</b>	Abstract Thoughts Judgment Learning
Medium inverted triangle	<b>Limbic</b>	Attachment Emotional Reactivity Sexual Behaviors
Small inverted triangle	<b>Midbrain</b>	Arousal/Wigilance Appetite/Satiety Sleep
Very small inverted triangle	<b>Brainstem</b>	Heart Rate Blood Pressure Body Temperature

Marcellus, John. Neurodevelopmental Sequelae of Child Maltreatment, 1997

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**THE BRAIN.....**

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**IS AN ASSOCIATIVE ORGAN  
(RELATED REPRESENTATIONS)**

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**Trauma and Associative Memory**

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**Continued Exposure to Traumatic Experience involving Significant Others Reinforces Associative Memory to Negative Experience to People in General**

Perry, Bruce. Violence and Trauma: Understanding and Responding to the Effects of Violence on Young Children. 1996.

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**Trauma and Associative Memory**

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**The Brain Needs to be "Short-Circuited" and "Re-Program" to Develop more Positive Associations**

*"The exciting lesson from a range of sciences is that while experience shapes who we are, we are NOT destined to repeat the traumas of our past IF we make sense of their impact on our lives."*

-Siegel

# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

## Mirror Neurons

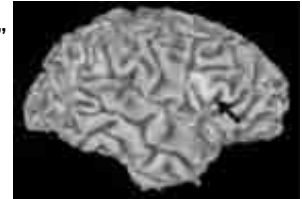
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- Hard wired system designed to allow us to perceive the mental state of another
- Found in Left and Right Hemispheres
- Involves a temporo-parieto-frontal circuit
- Bridges Perceptual part of brain with Motor part of the brain
- When visual, auditory (tone of voice), etc. sensory input is perceived by another, it is as if they are seeing and feeling what you are feeling

## Mirror Neurons

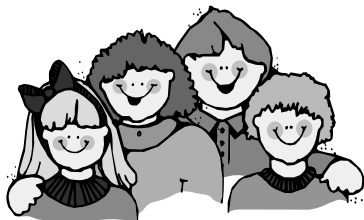
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- Evolutionary perspective-survival (e.g. A herd of cattle together perceives a predator)
- The sensation of "feeling at one" with another
- A feeling of "intuition"
- Related to:
  - ❖ TRUST
  - ❖ ATTACHMENT
  - ❖ EMPATHY



## Secured Relationships

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**A SECURE ATTACHMENT PROMOTES GROWTH OF NEURAL INTEGRATIVE FIBERS (ESPECIALLY ORBITOFRONTAL CORTEX)**

## ORBITOFRONTAL CORTEX

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- Senior Executive of the Emotional Brain
- Regulates Interpersonal and Social Behavior
- Directly Connects to All Areas of the Brain
  - ❖ Brainstem
  - ❖ Limbic System
  - ❖ Cerebral Cortex: Right Hemisphere Specializes in Inhibitory Control

Perry, Bruce. "Neurodevelopmental Factors In The 'Cycle Of Violence.'" In *Child, Youth and Violence: The Search For Solutions*, J Osofsky, Ed. Guilford Press, New York, pp124-148, 1997.

## Methods of Reenergizing the Brain



## Important Information for Re-Energizing the Brain in Children

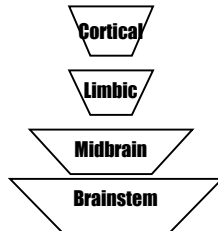
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- Limited Number of "Re-Charges"
- Each "Re-Charge" is less Effective
- Decrease Focused Energy in the Brainstem and Mid-brain Areas of the Brain
- Increase Focused Energy in the Limbic and Cortical areas of the Brain
- Establish New Associations

# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

## Decreasing Focused Energy in the Brainstem & Mid Brain Area

### Traumatized to Re-Energized Brain



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## Behavioral Manifestation of Overactive Brainstem & Mid Brain Area

- ◆ Inability to Attend to Important and Relevant Information
- ◆ Inability to Perceive Things from Different Viewpoint
- ◆ Inability to Control Impulses and Activity Level
- ◆ Hypervigilance
- ◆ Increased Aggression

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## DEVELOP ORGANIZATION SKILLS

- ◆ Develop Schedule, Routines and Rules
- ◆ Cortical Functioning Improves When Information is Organized
- ◆ Children are More Emotionally Stable and Happier when Their Environment is Organized



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## WRITE THINGS DOWN



- ◆ Memory is Better when Reinforced with Written Reminders
- ◆ More Likely to be Inconsistent without Written Rules and Expectations
- ◆ More Likely to be Consistent and Organized with Written Schedules

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## Treatment of Overactive Mid-Brain and Brainstem

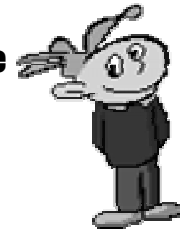
- ◆ Psychoneurological Training
  - Relaxation Training
  - Concentration Training
  - Self Regulatory Training
  - Organization Training - Cause & Effect Tasks



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## Hypervigilance

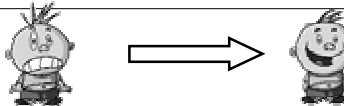
- Hypersensitive
- Anxiety-Fear Response
- Always on Edge
- Mistrust of People



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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

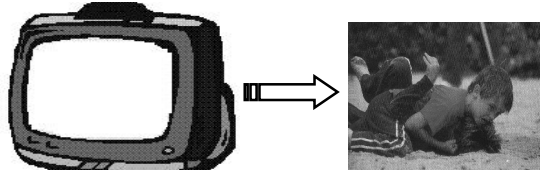
## Decreasing Hypervigilance



- **Decrease Number of Stimulation Objects**
- **Slowly Increase Activities and Stimulating Objects**
- **Provide Expectations before Events and Activities**
- **Develop a Behavioral Chart**

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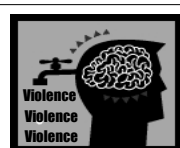
## INCREASE VIOLENCE




Observing Violence Increases the Activity in the Brainstem and Midbrain which Increase Aggressive Behaviors in Children

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## Decreasing Violence



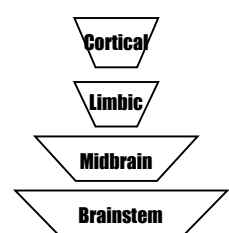
- **Drain the Violence to Decrease to Stimulation to the Mid-Brain and Brainstem**
- **Eliminate Watching Violence on Television as Much as Possible**
- **Limit Video Game Playing-Eliminate Violent Game**
- **Provide Relaxation Training**
- **Provide Opportunity to Engage in Quiet Games**



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## Increasing Focused Energy in the Limbic & Cortical Brain Area

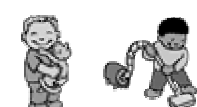
### Traumatized to Re-Energized Brain



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## Ingredients for Healthy Brain Development

- ◆ **Develop Confidence**
- ◆ **Develop Motivation**
- ◆ **Develop Responsibility**
- ◆ **Develop an Awareness of Self – Self Esteem**
- ◆ **Develop an Awareness of Others - Empathy**
- ◆ **Develop Problem Solving Skills – Increased Cortical Functioning**



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## Developing Confidence Setting up Realistic Goals

- ◆ **Assist child to evaluate their behaviors realistically**
- ◆ **Make sure that the goals are within your child's capabilities**



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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

## Developing Confidence Setting up Realistic Goals

- ◆ Unrealistic Goals Only Create Anxiety
- ◆ Results in Avoidance of Even Simple Tasks

The illustration shows a man on the left holding a shovel, standing next to a hole in the ground. An arrow points to the right, where a child is running away from a hole, looking back over their shoulder with a distressed expression.

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## Developing Self Confidence

### Develop a Set of Mastery Goals NOT Temporal Goals

### Child Must Experience Success

I know you can learn all of your multiplication by tomorrow!  
(TEMPORAL GOAL)

That's Great! You learned your multiplication table!  
(MASTERY GOAL)

The illustration shows a child standing next to a goalpost. The child is looking up at the goalpost with a determined expression.

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## Developing Self Confidence

### Develop a Set of Mastery Goals NOT Temporal Goals

### Child Must Experience Success

I know you can learn all of your multiplication by tomorrow!

The illustration shows a child sitting on a stool next to a goalpost. The child is looking up at the goalpost with a determined expression.

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## Developing Self Confidence

- Assist your Child in Realistically Evaluating Successes
  - Focus of Correct Answers, not wrong ones
  - Focus on the number of times a child did not do something wrong
  - Focus on accomplishments rather than on what the child has not yet completed

The illustration shows two glasses. The glass on the left is empty, and the glass on the right is filled with liquid.

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## Developing Self Confidence

### Focus on That One Mistake or Misbehavior and NOT On All of the Child's Other Problems

Remember yesterday you also didn't do your homework

Why didn't you do your school work today

Don't forget you hit your sister last week

And I remember you did something bad sometime in your life

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## Self Responsibility

### Avoided Using "Don't Statements"

The illustration shows a woman pointing at a child. There are several speech bubbles and thought bubbles around them. The woman's speech bubbles say "Don't Be Bad!", "Don't Be Home Late!", and "Don't be Sassy!". The child's thought bubbles say "Be BAD", "Be Home Late", and "Be Sassy".

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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

## Self Responsibility

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### Let Children Know What You Want Instead

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## Developing Motivation

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### Knowing Something and Doing It are Two Different Things

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## Improving Motivation

- **Provide Clear Expectations with Clear Consequences (Skinner & Belmont 1991)**
- **List all Sources of Resistance (In Increasing Motivation, 2003)**
- **Make sure that goals are realistic (In Increasing Motivation, 2003)**
- **Provide Support to Individual (Lumsden, 1994)**
- **Break Tasks into a Series of Smaller Goals (Lumsden 1994)**
- **Promote Mastery Learning Instead of Timed Learning (Anderman & Midgley 1998)**
- **Evaluate Progress As Soon As Possible (Strong, et al 1997)**

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## Awareness of Self (Self Esteem)

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- **Teach Children to Praise Themselves**
  - **Self Esteem and "Feeling Good About Oneself is Basically Internal"**
  - **Assist Children to First Evaluate Their Own Work**
  - **Help Personalize Their Accomplishments**

What did you draw

What do you think of your drawing

You worked very hard on that drawing. I like it too.

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## Awareness of Self (Self Esteem)

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- **Help Children Express and Understand Their Feelings**
  - **Allow Children to Feel. Don't Immediately Console Children**
  - **Listen First and Don't Always Talk and Give Advice !**

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## Awareness of Self (Self Esteem)

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### Use Feeling Charts to Explore How Children May be Feeling

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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

## Awareness of Others (Empathy)

- **Teach your Child to Praise Others (Empathy)**
  - Positive Self Esteem is also Affected by Ones Ability to Recognize and Praise the Accomplishments of Others
  - Teach Children to Accept From and Give Praise to Others
  - Discuss Feeling and Accomplishments that their Friends and Significant Others Have Made
  - Teach Children to Focus on Successes and Contributions of Others Rather than on the Failures and Problems of Others





Your friend Mary can draw very well. Don't you think so?

You paint very well also!


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## Solving Problems

Assist your Child in Realistically Evaluating "Failures"


Learning Opportunities



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## Solving Problems

Focus on Improvement and Develop a Plan that will Allow Success the Next Time



You had a hard time completing all 3 pages of your homework.


Let's work on completing one page tomorrow.

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## Sleeping Needs

- In order for the Brain to Function Properly it Needs to Rest and Regenerate
- The Brain is Impaired without Sleep
- Set Time and Develop a Sleep Schedule

I Need My Sleep



Not Enough SLEEP

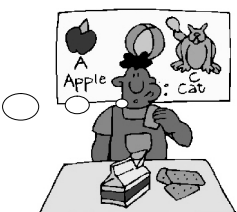


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## Eating Needs

- Adequate Nutrition is Necessary for the Brain to Develop, Re-Energize and Function Properly
- Children that Eat Breakfast Do Better in School

I'm Full. Now I can Learn





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## Physical Activities

- Physical Activity is Necessary to Change the Neuro-Genesis of the Brain
- Studying is Good but not Enough for Changes in Brain

Nerd To ?





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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

Additional Effects of Trauma  
on Brain Development



**IMPAIRMENT OF THE LIMBIC FUNCTIONING**  
*Attachment Problems*

**Traumatized Child**

- ◆ Reluctant to Trust Other Again – Develop Hypervigilance (Overactive Brainstem and Midbrain Functioning)
- ◆ Poor Overall Attachment. Avoids Relationships or Indifferent to Relationships. Minimal Empathy (Impaired Limbic Functioning)
- ◆ Poor Judgment and Reasoning (Impaired Cortical Functioning)

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**IMPAIRMENT OF THE LIMBIC FUNCTIONING**  
*Attachment Problems*

**Intervention Strategies**

- ◆ Find a Security Blanket
- ◆ Structure and Consistency
- ◆ Provide Appropriate Personal Boundaries
  - ◆ Clearly Define Appropriate Expression of Affection
  - ◆ Role Play Appropriate Expression of Affection

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**OVERACTIVE MID-BRAIN FUNCTIONING**  
*Trust and Safety Problems*

 **Lack Of Trust and Safety**

- ◆ Often Occurs with Chronic Sex Abuse Cases and Re-Abuse Cases
- ◆ Symptoms Include:
  - ◆ “Betrayal of Trust” Trauma
  - ◆ Hypervigilance and Guardedness
  - ◆ Suspiciousness and Ambivalence
  - ◆ Periods of Rage

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**OVERACTIVE MID-BRAIN FUNCTIONING**  
*Trust and Safety Problems*

 **Intervention Strategies**

- ◆ Avoid Promises You Can't Keep
- ◆ Identify and Discuss Safe Places
- ◆ Create a “Safety Box”
- ◆ Show Child that Most People can be Trusted by Following Through with an Activity you “Promised” to do with the Child

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**IMPAIRED LIMBIC AND MID-BRAIN FUNCTIONING**  
*Traumatic Memories*


 **Presentation of Symptoms**

- ◆ Most Often Present in Severe Physical and Sexual Abuse Cases
- ◆ Multiple Sensory Triggers Produce Trauma Experiences
- ◆ Excessive Anxiety and Fears
- ◆ Frequent Nightmares
- ◆ Behavior and Affect may be Erratic

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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

**TRAUMATIC MEMORIES**




## Intervention Strategies

- ◆ Observe Antecedents to Intensive Behavioral and Emotional Responses
- ◆ Provide Non-Judgmental Listening
- ◆ Play “Happy, Sad, Scary” Memory Games
- ◆ Re-Balance Experience to Increase Positive Memories

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**EFFECTS OF TRAUMA ON THE BRAIN  
GUILT AND SHAME ISSUES**




## Formation of Guilt & Shame

- ◆ Maltreated Child Often Feel Responsible for Disruption to the Family System
- ◆ Child Rather Take Responsibility for Abuse than Accept that Parent’s Hurt them
- ◆ Child Rather Have Negative Attention then no Attention at all
- ◆ Development is Hindered if Child can’t Let go of the Guilt and Shame

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**EFFECTS OF TRAUMA ON THE BRAIN  
GUILT AND SHAME ISSUES**




## Intervention Strategies

- ◆ Help Child Identify Strengths
- ◆ Discuss Your Mistakes with Child to reinforce that all people make mistakes
- ◆ Correct “Unhelpful” Thoughts.
  - ◆ Change - “I can’t do anything right.” to
  - ◆ I make some mistakes, but I also do a lot of good things!
- ◆ Avoid “Over-Praising” It may Raise Expectations for Child. Ask Child for Opinion

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**EFFECTS OF TRAUMA ON THE BRAIN  
SELF PROTECTIVE ISSUES**




## REASON FOR SELF PROTECTIVENESS

- ◆ Need To Be Protective Of Parents in Fear of Losing their Love
- ◆ Punished for Expressing Ideas and Feelings
- ◆ Lack of Trust and Safety

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**EFFECTS OF TRAUMA ON THE BRAIN  
SELF PROTECTIVE ISSUES**




## Intervention Strategies

- ◆ Identify Positive and Not so Good Qualities About yourself
- ◆ Help Child Identify Both Positive and No So Good Qualities about self
- ◆ Non-Judgmental Listening

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**EFFECTS OF TRAUMA ON THE BRAIN  
DISTORTED SELF-LABLES**



## Reasons for Distorted Self-lables

- ◆ Distorted Parental Evaluation of Child
- ◆ Frequent Criticisms
- ◆ Inconsistent Response to Child’s Emotions and Behaviors

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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

**EFFECTS OF TRAUMA ON THE BRAIN  
DISTORTED SELF-LABELS**

## Intervention Strategies

- ◆ Replace “Unhelpful” Thoughts About Self with “Helpful” Thoughts
  - ◆ Change - “I’m a Brat ” to
  - ◆ I can behave positively too!
  - ◆ Change “I’m stupid” to
  - ◆ Everyone is different. I’m a good artist.

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**EFFECTS OF TRAUMA ON THE BRAIN  
DISTORTED INTERPERSONAL RELATIONSHIPS**

## Reasons For Distortions

- ◆ Dysfunctional Past Parent-Child Relationships
- ◆ Manipulations by Parents
- ◆ Exposure to Numerous Unstable and Dysfunctional Relationships

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**EFFECTS OF TRAUMA ON THE BRAIN  
DISTORTED INTERPERSONAL RELATIONSHIPS**

## Intervention Strategies

- ◆ Replace “Unhelpful” Thoughts About Relationships with “Helpful” Thoughts
  - ◆ Change - “People are all mean” to
  - ◆ People are different. Some people are nice

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**EFFECTS OF TRAUMA ON THE BRAIN  
DISTORTED REACTIONS TO SOCIAL EXPERIENCES**

## Reason for Distorted Reaction

- ◆ Exposure to Dysfunctional Social Environment
- ◆ Development of Coping Strategies to Deal with a Dysfunctional and Abusive Social Environment
- ◆ Maintaining Bonds to these Coping Strategies in spite of Improvement

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**EFFECTS OF TRAUMA ON THE BRAIN  
DISTORTED REACTIONS TO SOCIAL EXPERIENCES**

## Intervention Strategies

- ◆ Replace “Unhelpful” Thoughts about Environment with “Helpful” Thoughts
  - ◆ Change - “Life is unfair” to
  - ◆ I can change my life and change what happens to me
- ◆ Provide Alternative Responses to Child Distorted Expected Responses

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## FORMING NEW ASSOCIATIONS

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# IMPROVING BEHAVIORS: RE-ENERGIZING THE TRAUMATIZED BRAIN IN CHILDREN

Old & New Associations in Brain Development					
PERIOD	Children's Behavior	Past Associations	Common Response	Child's Response	New Associations
INFANCY 0 - 2 YRS	Frequent Crying	Talking Equals Yelling Physical Touch Equal Physical Abuse	Carry and physically comfort the infant	May push away & increase crying	Play soft music first combined with touch.  <b>New Association</b>  Healthy Human Contact

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Old & New Associations in Brain Development					
PERIOD	Children's Behavior	Past Associations	Common Response	Child's Response	New Associations
PRESCHOOL 2 - 5 YRS	Refuse to do new things	Behaviors Criticized or Always Judged	Tell the child that he will be good at doing the new thing	Child May become more Stubborn and refuse to attempt activity	Don't present any expectation of the event to the child.  Support Child's Self-Evaluation  <b>New Association</b>  People Like You Because of You



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Old & New Associations in Brain Development					
PERIOD	Children's Behavior	Past Associations	Common Response	Child's Response	New Associations
Latency 5 - 12 YRS	Not Listening	Poor past parental consistency Remote Parenting. Verbal abuse	Keep on reminding. Ask with a louder voice	"Deaf Ear" or Aggressive Compliance	One time asking with assistance to do requested task.  <b>New Association</b>  People and you should be Respected

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Old & New Associations in Brain Development					
PERIOD	Children's Behavior	Past Associations	Common Response	Child's Response	New Associations
Adolescent 13 - 18 YRS	Chronic Runaway Behaviors	Rejected and Hurt by Significant Others	Try to get closer and immediately spend more time with them. Constantly ask them why they ran away.	Continue to runaway and avoid closeness	Allow Some Distancing. Non-judgmental Listening.  <b>New Association</b>  Secure Attachments



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Old & New Associations in Brain Development					
PERIOD	Children's Behavior	Past Associations	Common Response	Child's Response	New Associations
Adolescent 13 - 18 YRS	Joining Gangs	Minimal Affection & Attention or Rejection from Parents	Restriction and lectures	Closer to the Gangs	Increase Associations and Involvement in Positive Social Activities

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Bibliography					
<ul style="list-style-type: none"> <li>&gt; Amen, Daniel, Stubblefield, M., Thisted, R. "Brain SPECT Findings and Aggression." <i>Annual Clinical Psychiatry</i>, Vol 8, No 3, 129-137, 1996.</li> <li>&gt; Kent, Sullivan and Rauch. "The Neurobiology of Fear". <i>Psychiatric Annals</i>. Volume 310, No 12, 2000.</li> <li>&gt; Marcellus, John. <i>Neurodevelopmental Sequelae of Child Maltreatment</i>. 1997.</li> <li>&gt; Perry, Bruce. <i>Violence and Trauma: Understanding and Responding to the Effects of Violence on Young Children</i>. 1996.</li> <li>&gt; Perry, Bruce. "Neurodevelopmental Factors In The 'Cycle of Violence.'" In <i>Child, Youth and Violence: The Search for Solutions</i>. J Osofsky, Ed. Guilford Press, New York, pp124-148, 1997.</li> <li>&gt; Pincus, J and Tucker, G. <i>Behavioral Neurology Fourth Edition</i>. Oxford University Press, New York, 2003.</li> <li>&gt; Thimble. "Psychopathology of Frontal Lobe Syndromes." <i>Seminars in Neurology</i>, Vol10, No. 3, 1990.</li> </ul>					

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