

Blending Neuroscience and Creativity in Play Therapy to Address Emotional Dysregulation in Children and Adolescents

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Goals/Objectives

- (1) Understand how trauma alters the brain and leads to dysregulation.
- (2) Recognize the brain structures and neural connections involved in emotional regulation.
- (3) Conceptualize how neurobiology, creativity, play therapy, and emotional regulation are interconnected.
- (4) Select creative interventions that can be incorporated into various theoretical orientations of play therapy to bring about emotional regulation.
- (5) Determine the timing of when to integrate creative play therapy techniques to promote self-regulation and improve the play therapy process.
- (6) Develop an individualized, play therapy treatment plan, which includes sequenced creative play therapy techniques, for dysregulated children and adolescents.

► Possible Signs or Characteristics of Behavioral Disorders and Emotional Disturbance

Has problems with

- Adults
- Family Relationships
- Peers
- Social Skills

Demonstrates

- Hyperactivity
- Aggression toward self or others
- Impulsivity
- Distractibility
- Depression and unhappiness
- Suicidal tendencies
- Withdrawal into self
- Anxiety or fearfulness

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4 Presentation Types Each Requires Something Different

The Warm Up

The Cool Down

The Warm Up-Cool Down

The Cool Down-Cool Down

Brain Complexities

The diagram illustrates the complex neural circuitry of the human brain, highlighting the following structures and pathways:

- Thalamus**: A central relay station for sensory and motor information.
- Striatum**: A key component of the basal ganglia, involved in motor control and reward.
- Neocortex**: The outer layer of the cerebral cortex, responsible for higher-order processing.
- Frontal cortex**: The anterior part of the neocortex, involved in decision-making and executive functions.
- Nucleus accumbens (ventral striatum)**: A part of the basal ganglia, crucial for reward and motivation.
- Globus pallidus**: A part of the basal ganglia, involved in motor control.
- To hippocampus**: A part of the limbic system, involved in memory.
- Hypothalamic DA system**: A dopamine pathway originating in the hypothalamus.
- Substantia nigra**: A part of the midbrain, involved in motor control and dopamine production.
- Papez-mesencephalic system**: A complex of structures involved in emotion and memory.
- Rostral nigral nuclei**: A part of the substantia nigra, involved in dopamine production.
- Deep cerebellar nuclei**: A part of the cerebellum, involved in motor control.
- Cerebellar cortex**: The outer layer of the cerebellum, involved in motor control.
- Caudal nigral nuclei**: A part of the substantia nigra, involved in dopamine production.
- Amygdala**: A part of the limbic system, involved in emotion.
- Hypothalamus**: A central part of the brain, involved in many functions including hormone release and energy balance.
- Tuberoventral DA system**: A dopamine pathway originating in the hypothalamus.
- Mesolimbic and mesocortical DA system**: Dopamine pathways originating in the substantia nigra and projecting to the limbic and cortical areas.
- Ventral tegmental area**: A part of the midbrain, involved in dopamine production.
- Lateral tegmental cell system**: A part of the midbrain, involved in dopamine production.
- Locus coeruleus**: A part of the brainstem, involved in the production and release of norepinephrine.
- Spinal cord**: The lower part of the central nervous system, involved in motor control and sensory processing.

Nervous System (cont)

Sympathetic NS
Arouses
(fight-or-flight)

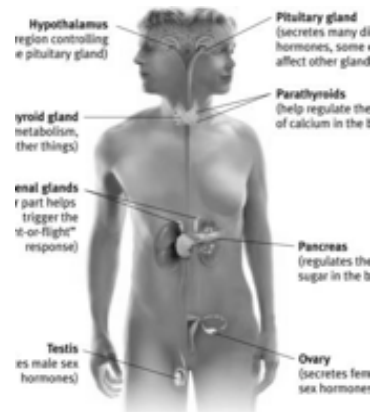
Parasympathetic NS
Calms
(rest and digest)

The diagram illustrates the human nervous system, focusing on the brain, spinal cord, and the effects of the sympathetic and parasympathetic branches. The sympathetic branch is labeled 'SYMPATHETIC NERVOUS SYSTEM (arousing)' and the parasympathetic branch is labeled 'PARASYMPATHETIC NERVOUS SYSTEM (calming)'. The brain is shown at the top, with the spinal cord running down the back. The sympathetic branch is associated with 'fight-or-flight' responses, while the parasympathetic branch is associated with 'rest and digest' responses. The diagram shows the following effects:

- Sympathetic NS (fight-or-flight):**
 - Heart: Accelerates heartbeat
 - Stomach: Inhibits digestion
 - Pancreas: Stimulates glucose release by liver
 - Liver: Stimulates secretion of epinephrine, norepinephrine
 - Adrenal gland: Stimulates secretion of epinephrine, norepinephrine
 - Kidney: Stimulates secretion of epinephrine, norepinephrine
 - Relaxes bladder
 - Stimulates ejaculation in male
- Parasympathetic NS (rest and digest):**
 - Heart: Slows heartbeat
 - Stomach: Stimulates digestion
 - Pancreas: Stimulates glucose release by liver
 - Liver: Stimulates secretion of epinephrine, norepinephrine
 - Adrenal gland: Stimulates secretion of epinephrine, norepinephrine
 - Kidney: Stimulates secretion of epinephrine, norepinephrine
 - Contracts bladder
 - Allows blood flow to sex organs

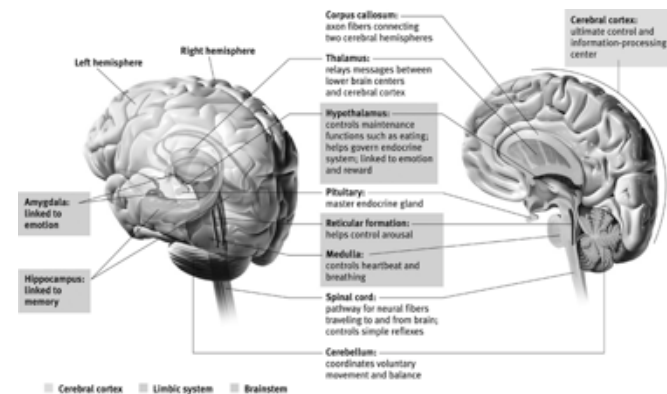
Endocrine System

The Endocrine System is the body's slow chemical communication system. Communication is carried out through hormones synthesized by a set of glands.

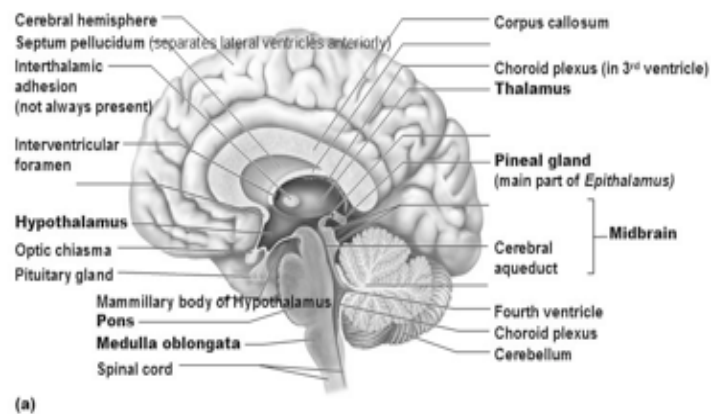


The Cerebral Cortex

The intricate fabric of interconnected neural cells that covers the cerebral hemispheres. It is the body's ultimate control and information processing center.



The Diencephalon (and Brainstem)



Brain Changes

At birth, most neurons the brain will have are present
(**approx. 100 billion neurons**)

By age 2 years, brain is 80% of adult size

What keeps growing?

Other brain cells (glia)

New neuron connections

approx. 1000 trillion connections by age 3 yrs.

Brain Changes (cont)

Overproduction of neurons and connections among neurons

Selective reduction of neurons and connections among neurons

Waves of intense branching and connecting followed by reduction in neurons

Before birth through 3-years-old

Again at 11- or 12-years-old

Brain Changes (cont)

Anatomical studies of brain development show:

- Occipital lobes show earliest pruning
- Frontal and Temporal lobes show growth of neural connections longer than other areas of the brain...through 3 years old
- Frontal and Temporal lobes show pruning of connections longer than other areas of the brain
- Greatest change between 2 years and 5 years

Brain Changes (cont)

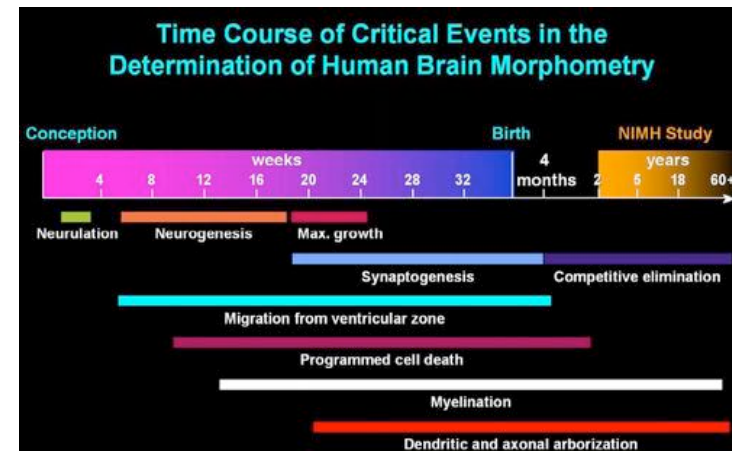
Myelin & Age Changes

Speed of connection and conductivity

Begins at birth, rapidly increases to 2-years old

Continues to increase more slowly through 30-years-old

Brain Changes - Critical Events (Toga & Mazziotta, 2000)



Brain Changes and Important Developments

Brain areas with longest periods of organization related to...

- self-regulation,
- problem-solving,
- language/communication
- Social bonding

Most vigorous growth, pruning, connecting, and activity occurs between **1-1/2 years through 3 or 4 years old.**

May be one of the most important periods for developing self-regulation, problem-solving, social-emotional, and language/communication behaviors.

Impacting Brain Development

Genes form neurons, connections among major brain regions.

Environment and experience refines the connections; enhancing some connections while eliminating others.

Brain development is “activity-dependent”

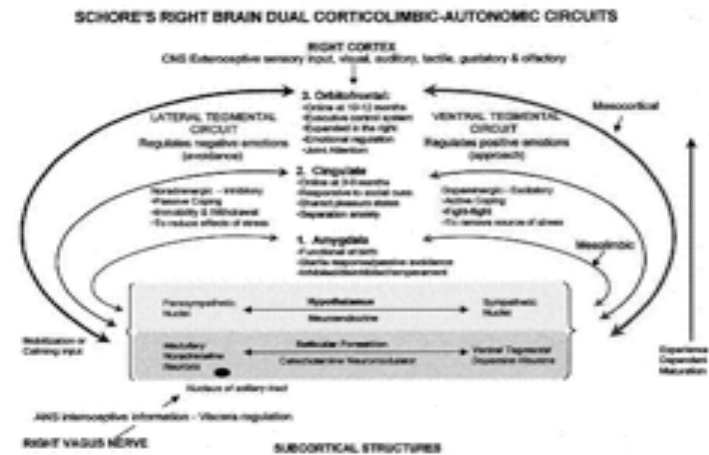
Every experience excites some neural circuits and leaves others alone.

Neural circuits used over and over strengthen, those that are not used are dropped resulting in “pruning”.

Brain Areas and Anatomical Development

- Brainstem (0-1)--Regulation of arousal, sleep, and fear
- Diencephalon (1-3)--Integration of sensory input and fine motor skills
- Limbic System (3-8)--Emotional states and emotional regulation, social language, interpretation of non-verbals
- Cortical Areas (8-adult)--Abstract cognitive functioning, integration of socio-emotional information

Adaptive Functioning (Shore, 2001, 2009)



Order of Activation

- The autonomic nervous system, providing sensory information;
- amygdala, which generates fight, flight, and freeze responses;
- cingulate, which interprets social cues;
- orbitofrontal cortex, which provides executive control.

Right Brain Development: Affect Regulation (Schoore, 2001)

- Amygdala inhibition by orbitofrontal regions
- “Amygdala hijacking” – fight response
- Hippocampus memory systems and Autonomic Nervous System (ANS)
- Consequences of Trauma
 - Poor affect regulation

The Ventral System

Schore (2000, 2009b) states, when attachment is disrupted or fails to occur (i.e., lacks appropriate stimulation), it is the ventral tegmental circuitry that is impacted by dysfunctional patterns of relating; hence, the approach process is disrupted and avoidance process goes unaffected.

Polyvagal Theory

The more primitive branch elicits immobilization behaviors (e.g., feigning death), whereas the more evolved branch is linked to social communication and self-soothing behaviors.

Polyvagal Theory

- The vagus nerve is a component of the autonomic nervous system
- Originates in the medulla
- Two (2) branches
- Associated with a different adaptive behavioral strategy
- Inhibitory in nature via the parasympathetic nervous system
- The vagal system is in opposition to the sympathetic-adrenal system, which is involved in mobilization behaviors

Polyvagal Theory

Dorsal branch

- unmyelinated
- primal survival strategies
- freezing

Ventral branch

- Myelinated
- A sophisticated system of behavioral and affective responses to an increasingly complex environment
- Regulates of the sympathetic “fight or flight”
- Social Communication, Calming, Self-soothing
- Can inhibit or disinhibit the limbic system

**Okay, So Let's Consider Dysfunction and
Dysregulation?**

The Dysregulated Brain Has a Mind of Its Own!!!!!!

What's Leads to Dysfunction?

- Abnormal Development
- Attachment Disturbances
- Direct Physical Brain Trauma

What's Functional?

3 Types of Self-Regulation

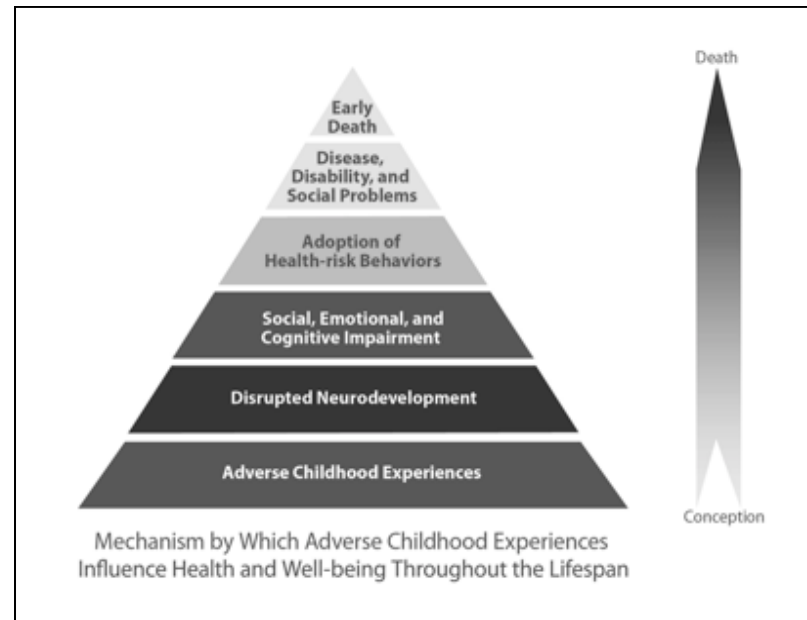
- Emotional Self-Regulation--between self and caregiver (self & other).
- Behavioral Self-Regulation--the ability to initiate/inhibit behavior appropriate to context.
- Sensory Modulation--the ability to regulate one's reactivity (responsiveness) to sensory input.

The ACE Study (Anda et al., 2005; CDC, 1998-2010; Edwards et al., 2005)

Adverse childhood experiences are the most basic cause of health risk behaviors, morbidity, disability, mortality, and healthcare costs

Traumatic events----Prolonged alarm reaction-----Altered neural systems

- Altered cardiovascular regulation
- Behavioral impulsivity
- Increased anxiety
- Increased startle response
- Sleep abnormalities



As the number of ACEs increases so does the risk for the following

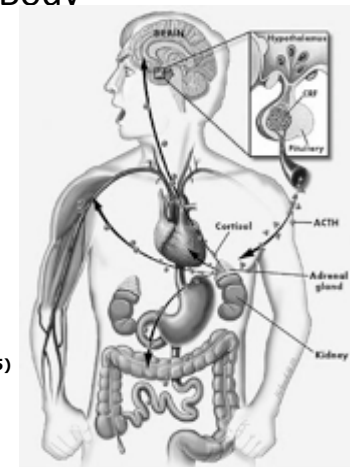
- Alcoholism and alcohol abuse
- Chronic obstructive pulmonary disease
- Depression
- Fetal death
- Health-related quality of life
- Illicit drug use
- Ischemic heart disease
- Liver disease
- Poor work performance
- Financial stress
- Risk for intimate partner violence
- Multiple sexual partners
- Sexually transmitted diseases
- Smoking
- Suicide attempts
- Unintended pregnancies
- Early initiation of smoking
- Early initiation of sexual activity
- Adolescent pregnancy
- Risk for sexual violence
- Poor academic achievement

Stress, the Brain, & the Body

Stress is the set of changes in the body and the brain that are set into motion when there are threats to physical or psychological

Under threat, the limbic system engages and the frontal lobes disengage. When safety returns, the limbic chemical reaction stops and the frontal lobes re-engage.

(van der Kolk, B., 2005)



Three Levels of Stress Response

Positive

Brief increases in heart rate,
mild elevations in stress hormone levels.

Tolerable

Serious, temporary stress responses,
buffered by supportive relationships.

Toxic

Prolonged activation of stress response systems
in the absence of protective relationships.

Center on the Developing Child  HARVARD UNIVERSITY

Early Childhood Disturbances from Trauma and Risk (ACE Study)

Regulatory disturbances

PTSD

Oppositional Defiant Disorder

Conduct Disorder

ADHD

Anxiety and Depression

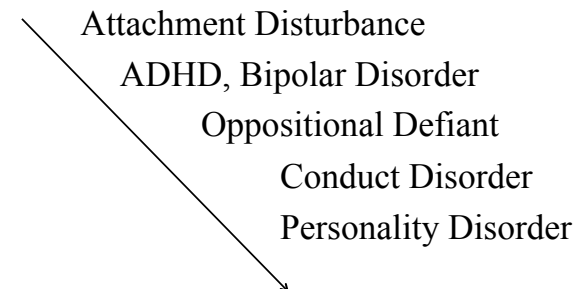
Attachment disturbances

Developmental delays

Attachment Trauma/Disturbances

- Impairments in the development of the orbitofrontal and ventral prefrontal areas.
- Lead to:
 - Attachment Disorders (Insecure/ Disorganized)
 - High risk for PTSD and relational violence
 - Chronic Disturbance in Affect Regulation (Axis 2)
 - Chronic Stress (Anxiety, Depression)

The Continuum



The Neurochemical Origins of Disruptive Behaviors

- Those related to dopamine [DA] and aggression, irritability, hyperactivity, and problems with attention and motivation;
- Those related to norepinephrine [NE] and negative emotions and withdrawal;
- Those related to serotonin [5HT] and impulsivity.
- A fourth category, gamma-aminobutyric acid [GABA], is not usually responsible for disruptive behaviors, but may be involved in regulating these behaviors.

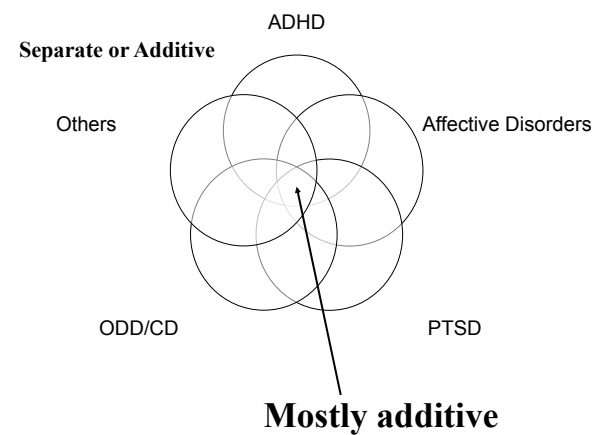
Disruptive Behaviors, Neurotransmitters, and Brain Regions

- Emotional regulation is connected to the limbic system and prefrontal cortex (Wise, 2004) and is facilitated by DA and NE pathways.
- Motivation is connected to the striatum and prefrontal cortex (Aarts, van Holstein, & Cools, 2011) and is facilitated by DA pathways.
- Attention and hyperactivity are connected to the lateral prefrontal cortex, dorsal anterior cingulate cortex, caudate, & putamen (Bush, Valera, & Seidman, 2005) and are facilitated by DA and NE pathways.

Disruptive Behaviors, Neurotransmitters, and Brain Regions (cont)

- Impulsivity is connected to the dorsolateral prefrontal cortex, orbitofrontal cortex, and anterior cingulate cortex (Adinoff et al., 2003; Royall et al., 2002) and is facilitated by DA and 5HT (Dagher & Robbins, 2009).
- Finally, the previously mentioned neurotransmitters are excitatory in nature, while GABA is inhibitory in nature and connected to all levels of the central nervous system (Levy & Degnan, 2012).

The Disorders Involved



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Differential Diagnosis

ADHD
Oppositional Defiant
Disorder
Conduct Disorder
Bipolar Disorder ?
PTSD
Anxiety and Depression
Developmental Delays
Attachment Disturbances

Comorbidities

Anxiety Disorder
Learning Disorders
Right Hemisphere Syndr
Tic Disorder/Touretted
Sleep Disorders
Drug and alcohol abuse
Very high or very low IQ
Organic Syndromes

Disruptive, Impulse Control, and Conduct Disorders

- Includes
 - Oppositional Defiant Disorder
 - Conduct Disorder
 - Intermittent Explosive Disorder
 - Antisocial Personality Disorder (this disorder is also included and criteria listed in the Personality Disorders Grouping)
 - Pyromania
 - Kleptomania
 - Other Specified and Unspecified Disorders

► Problem Behavior: Eight Critical Areas in Three Valid and Useful Indexes



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► Examples of Externalizing and Internalizing Behavior Problems

<i>Externalizing Behaviors</i>	<i>Internalizing Behaviors</i>
Violates the rights of others	Exhibits painful shyness
Violates societal norms or rules	Is teased by peers
Has Tantrums	Is neglected by peers
Causes Property damage	Is depressed
Is Hostile	Is anorexic
Argues	Is bulimic
Is defiant	Is socially withdrawn
Is physically aggressive	Tends to be suicidal
Ignores teacher's reprimands	Has unfounded fears and phobias
Steals	Tends to have low self-esteem
Damages others' property	Has excessive worries
Demonstrates obsessive/compulsive behaviors	Panics
Causes or threatens physical harm to people or animals	
Uses lewd or obscene gestures	
Is hyperactive	

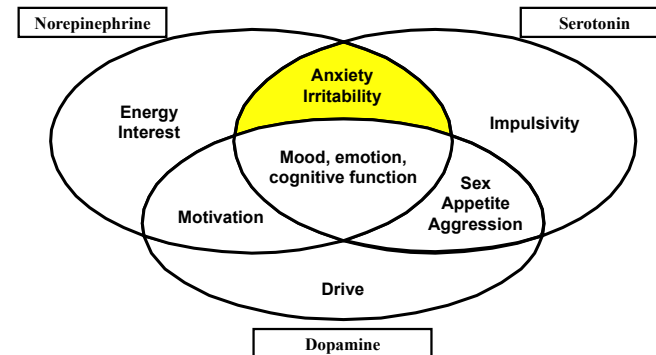
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► Criteria for Determining the Degree or Disturbance

Criteria	Degree of Disturbance		
	Mild	Moderate	Severe
Precipitating events	Highly Stressful	Moderately Stressful	Not Stressful
Destructiveness	Not Destructive	Occasionally destructive	Usually destructive
Maturational Appropriateness	Behavior typical for age	Some behavior untypical for any age	Behavior too young or too old
Personal Functioning	Cares for own needs	Usually cares for own needs	Unable to care for own needs
Social Functioning	Usually able to relate to others	Usually unable to relate to others	Not able to care for own needs
Reality Index	Usually sees events as they are	Occasionally sees events as they are	Little contact with reality
Insight Index	Aware of behavior	Usually aware of behavior	Usually not aware of behavior
Conscious control	Usually can control behavior	Occasionally can control behavior	Little control over behavior
Social responsiveness	Usually acts appropriately	Occasionally acts appropriately	Rarely acts appropriately

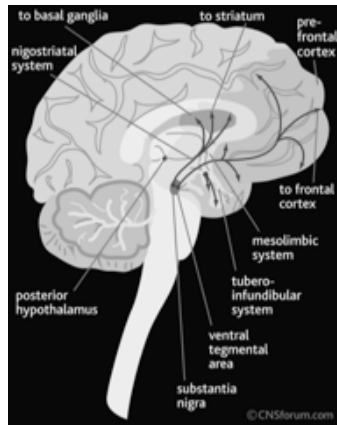
Source: Understanding and Teaching Emotionally Disturbed Children and Adolescents (2nd ed., p. 139) by P. L. Newsome, 1993, Austin TX: Pro-Ed. Copyright 1993 by Pro-Ed. Reprinted with permission.

Several Neurotransmitters Are Involved in Regulating Mood



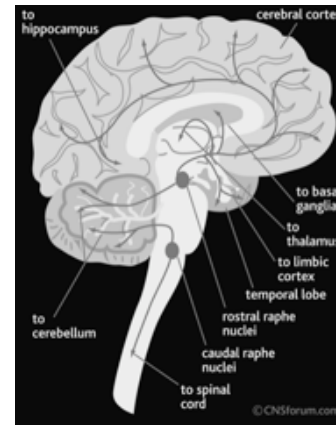
Stahl SM. *Essential Psychopharmacology: Neuroscientific Basis and Practical Applications*. 2nd ed. Cambridge, UK: Cambridge University Press; 2000:152.

Dopamine (DA)



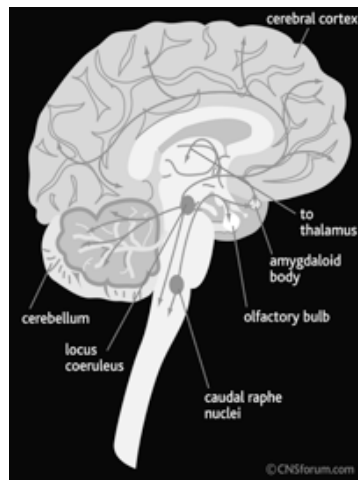
Dopamine is transmitted via three major pathways. The first extends from the substantia nigra to the caudate nucleus-putamen (neostriatum) and is concerned with sensory stimuli and movement. The second pathway projects from the ventral tegmentum to the mesolimbic forebrain and is thought to be associated with cognitive, reward and emotional behavior. The third pathway, known as the tuberoinfundibular system, is concerned with neuronal control of the hypothalamic-pituitary endocrine system.

Serotonin (5-HT)



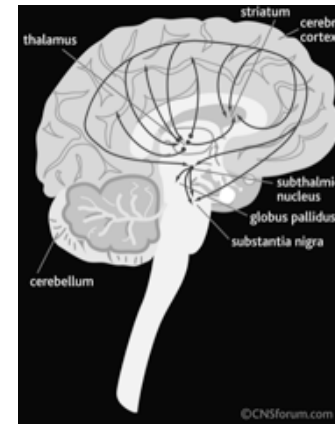
The principal centers for **serotonergic** neurons are the rostral and caudal raphe nuclei. From the rostral raphe nuclei axons ascend to the cerebral cortex, limbic regions and specifically to the basal ganglia. Serotonergic nuclei in the brain stem give rise to descending axons, some of which terminate in the medulla, while others descend the spinal cord.

Norepinephrine (NE)



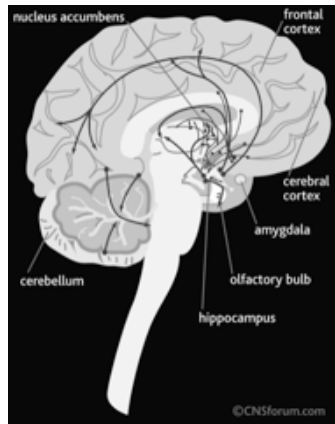
Many regions of the brain are supplied by the **noradrenergic** systems. The principal centers for noradrenergic neurons are the locus coeruleus and the caudal raphe nuclei. The ascending nerves of the locus coeruleus project to the frontal cortex, thalamus, hypothalamus and limbic system. Noradrenaline is also transmitted from the locus coeruleus to the cerebellum. Nerves projecting from the caudal raphe nuclei ascend to the amygdala and descend to the midbrain.

Glutamate



In the normal brain the prominent **glutamatergic** pathways are: the cortico-cortical pathways; the pathways between the thalamus and the cortex; and the extrapyramidal pathway (the projections between the cortex and striatum). Other glutamate projections exist between the cortex, substantia nigra, subthalamic nucleus and pallidum. Glutamate-containing neuronal terminals are ubiquitous in the central nervous system and their importance in mental activity and neurotransmission is considerable.

Gamma-aminobutyric acid (GABA)

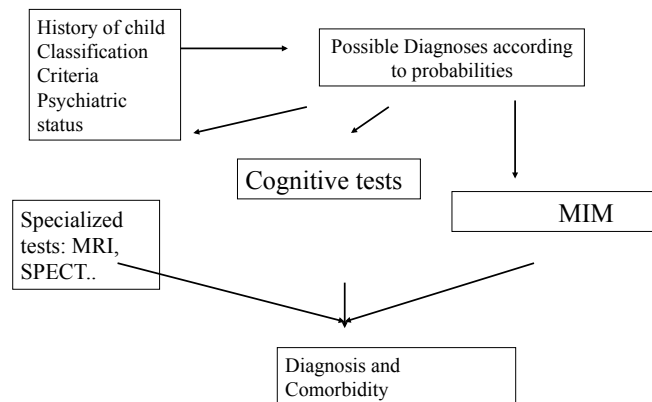


GABA is the main inhibitory neurotransmitter in the central nervous system (CNS). GABAergic inhibition is seen at all levels of the CNS, including the hypothalamus, hippocampus, cerebral cortex and cerebellar cortex. As well as the large well-established GABA pathways, GABA interneurons are abundant in the brain, with 50% of the inhibitory synapses in the brain being GABA mediated.

Initial Assessment and Approaching the Difficult Child

- What is the difficulty
- Where is the difficulty
- To whom is one difficult
- Does one feel the difficulty

Evaluation of the Difficult Child



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Assessment (Formal)

- Child Behavior Check List (CBCL)
- Connors 3
- Behavior Assessment System for Children, 2nd Edition (BASC-II)
- Early Coping Inventory
- Functional Emotional Assessment Scale
- Vineland Social-Emotional Early Childhood Scales (Vineland SEEC)
- Marschak Interaction Method (MIM)

CBCL

The 2001 revision of the CBCL/6-18, is made up of eight syndrome scales:

- anxious/depressed
- depressed
- somatic complaints
- social problems
- thought problems
- attention problems
- rule-breaking behavior
- aggressive behavior.

These group into two higher order factors—internalizing and externalizing.

The 2001 revision also added six DSM-oriented scales consistent with DSM diagnostic categories:

- affective problems
- anxiety problems
- somatic problems
- ADHD
- oppositional defiant problems
- conduct problems.

Connors-3

Scales & Forms

- General Psychopathology
- Inattention
- Hyperactivity/Impulsivity
- Learning Problems
- Executive Functioning
- Defiance/Aggression
- Peer Relations
- Family Relations
- ADHD Inattentive
- ADHD Hyperactive-Impulsive
- ADHD Combined
- Oppositional Defiant Disorder
- Conduct Disorder

BASC-II

It comprises two rating scales and forms: the Teacher Rating Scales (TRS) and the Parent Rating Scales (PRS). Teachers or other qualified observers complete the TRS to measure adaptive and problem behaviors in the preschool setting.

Similarly, the PRS measures adaptive and problem behaviors in the community and home setting, using a four-choice response format.

Results yield two functional scales (functional communication and social skills) and eight clinical scales for children ages 2 to 5. Available in both English and Spanish versions.

Early Coping Inventory

This inventory's 48 items measure behavior in three coping clusters: sensorimotor organization, reactive behavior, and self-initiated behavior. Used for intervention planning. English version only.

Functional Emotional Assessment Scale

Measures social and emotional functioning, as well as caregivers' capacity to support a child's emotional development. For this instrument, social-emotional development includes regulation and interest in the world; forming relationships; intentional two-way communication; development of a complex sense of self; representational capacity and elaboration of symbolic thinking; and emotional thinking or development and expression of thematic play. Designed to reveal need for additional clinical assessment. English version only

Vineland Social-Emotional Early Childhood Scales (Vineland SEEC)

These scales are based on the popular Vineland Adaptive Behavior Scales and measure early childhood socioemotional development.

There are three scales—

Interpersonal Relationships, Play and Leisure Time, and Coping Skills—and the Social-Emotional Composite—which assess social-emotional. Results identify strengths and weakness in specific areas of social-emotional behavior and can be used for program planning or to monitor progress and evaluate child outcomes, as well as to identify the need for further assessment.

MIM

Structure

Challenge

Engage

Nurture

For Parents of Children Ages 6–17

LEVEL 2—Somatic Symptom—Parent/Guardian of Child Age 6–17 (Patient Health Questionnaire 15 Somatic Symptom Severity Scale [PHQ-15])

LEVEL 2—Sleep Disturbance—Parent/Guardian of Child Age 6–17 (PROMIS—Sleep Disturbance—Short Form)

LEVEL 2—Inattention—Parent/Guardian of Child Age 6–17 (Swanson, Nolan, and Pelham, version IV [SNAP-IV])

LEVEL 2—Depression—Parent/Guardian of Child Age 6–17 (PROMIS Emotional Distress—Depression—Parent Item Bank)

LEVEL 2—Anger—Parent/Guardian of Child Age 6–17 (PROMIS Emotional Distress—Calibrated Anger Measure—Parent)

LEVEL 2—Irritability—Parent/Guardian of Child Age 6–17 (Affective Reactivity Index [ARI])

LEVEL 2—Mania—Parent/Guardian of Child Age 6–17 (Adapted from the Altman Self-Rating Mania Scale [ASRM])

LEVEL 2—Anxiety—Parent/Guardian of Child Age 6–17 (Adapted from PROMIS Emotional Distress—Anxiety—Parent Item Bank)

For Children Ages 11–17

LEVEL 2—Somatic Symptom—Child Age 11–17 (Patient Health Questionnaire 15 Somatic Symptom Severity Scale [PHQ-15])

LEVEL 2—Sleep Disturbance—Child Age 11–17 (PROMIS—Sleep Disturbance—Short Form)

LEVEL 2—Depression—Child Age 11–17 (PROMIS Emotional Distress—Depression—Pediatric Item Bank)

LEVEL 2—Anger—Child Age 11–17 (PROMIS Emotional Distress—Calibrated Anger Measure—Pediatric)

LEVEL 2—Irritability—Child Age 11–17 (Affective Reactivity Index [ARI])

LEVEL 2—Mania—Child Age 11–17 (Altman Self-Rating Mania Scale [ASRM])

LEVEL 2—Anxiety—Child Age 11–17 (PROMIS Emotional Distress—Anxiety—Pediatric Item Bank)

LEVEL 2—Repetitive Thoughts and Behaviors—Child Age 11–17 (Adapted from the Children’s Florida Obsessive Compulsive Inventory [C-FOCI] Severity Scale)

For Children Ages 11–17

Severity Measure for Depression—Child Age 11–17 (PHQ-9 modified for Adolescents [PHQ-A])—Adapted)

Severity Measure for Separation Anxiety Disorder—Child Age 11–17

Severity Measure for Specific Phobia—Child Age 11–17

Severity Measure for Social Anxiety Disorder (Social Phobia)—Child Age 11–17

Severity Measure for Panic Disorder—Child Age 11–17

Severity Measure for Agoraphobia—Child Age 11–17

Severity Measure for Generalized Anxiety Disorder—Child Age 11–17

Severity of Posttraumatic Stress Symptoms—Child Age 11–17 (National Stressful Events Survey PTSD Short Scale [NSESS])

Severity of Acute Stress Symptoms—Child Age 11–17 (National Stressful Events Survey Acute Stress Disorder Short Scale [NSESS])

Severity of Dissociative Symptoms—Child Age 11–17 (Brief Dissociative Experiences Scale [DES-B])

Clinician-Rated

Clinician-Rated Severity of Autism Spectrum and Social Communication Disorders

Clinician-Rated Dimensions of Psychosis Symptom Severity (also available in print book)

Clinician-Rated Severity of Somatic Symptom Disorder

Clinician-Rated Severity of Oppositional Defiant Disorder

Clinician-Rated Severity of Conduct Disorder

Clinician-Rated Severity of Nonsuicidal Self-Injury

For Children Ages 11–17

The Personality Inventory for DSM-5—Brief Form (PID-5-BF)—Child Age 11–17

The Personality Inventory for DSM-5 (PID-5)—Child Age 11–17

Early Development and Home Background

For Parents of Children Ages 6–17

Early Development and Home Background (EDHB) Form—Parent/Guardian

Clinician-Rated

Early Development and Home Background (EDHB) Form—Clinician

Underdiagnosis and Overdiagnosis

Underdiagnosis	Overdiagnosis
Quiet children	Unacceptable behavior according to societal rules
Deviant intelligence	Deviant intelligence
Severe (old Axis I) Disorders (psychosis and affective disorders)	Recoil from the more severe diagnoses
Girls	Boys
Social factors	Social factors

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Non-Verbal (Creative) Therapies

Emotional memories and sensory experiences (includes images, & body sensations) are stored in the limbic system and right hemisphere of the brain.

Non-verbal therapies are the most effective ways to access and release these “unconscious” feelings and experiences and bring them into consciousness.

“DIR” Model (Greenspan & Wieder, 1997; Willis, 2007)

Developmental bio-psychosocial model

Developmentally-based

Individual differences

Relationship focused

Neurosequential Model of Therapeutics (Bruce Perry)

A developmentally sensitive, neurobiology-informed approach to clinical problem solving.

NMT is not a specific therapeutic technique or intervention. It is an approach that integrates core principles of neurodevelopment and traumatology to inform work with children, families, and the communities in which they live.

The Neurosequential Approach has three key components – training/capacity building, assessment and then, the specific recommendations for the selection and sequencing of therapeutic, educational, and enrichment activities that match the needs and strengths of the individual.

<http://childtrauma.org/nmt-model/faqs/>

Art and Neurosequentialing

Sample Chapter: Handbook of Art Therapy, Second Edition

<http://www.guilford.com/excerpts/malchiodi2.pdf>

Left and Right Brain

LEFT BRAIN FUNCTIONS

uses logic
detail oriented
facts rule
words and language
present and past
math and science
can comprehend
knowing
acknowledges
order/pattern perception
knows object name
reality based
forms strategies
practical
safe

RIGHT BRAIN FUNCTIONS

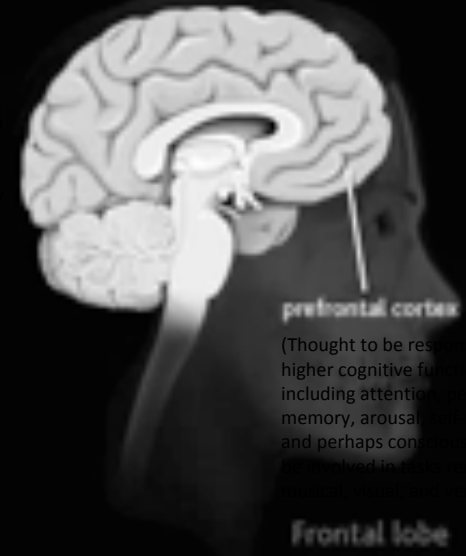
uses feeling
"big picture" oriented
imagination rules
symbols and images
present and future
philosophy & religion
can "get it" (i.e. meaning)
believes
appreciates
spatial perception
knows object function
fantasy based
presents possibilities
impetuous
risk taking

Creativity

Creativity is the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context” (Plucker et al., 2004, p. 90).

The prefrontal cortex contributes to creative thinking in three ways:

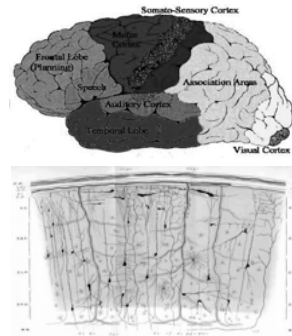
1. Necessary for judgment about a problem or solution
2. Assists with new integrations after insight occurs
3. Assists with idea implementation



(Thought to be responsible for higher cognitive functions, including attention, perception, memory, arousal, and reflection and perhaps consciousness. May be involved in thinking requiring complex, abstract, or verbal activity.

A Neural Basis of Creativity

- A human brain is a self-organizing system
- Brain centers specialized for individual functions
- The cortex contains neurons
- Communications between centers occurs via neural links
- Creative activities occur in the associative cortex
- Creative people have rich neural links in the associative cortex



Neuroscience and Creativity

Cerebellum-Observational Learning—seeing & doing, internal representations of behaviors

Dopamine—seeking novelty, risk-taking, reinforcement

Mirror Neurons—understanding the behavioral actions made by others by matching the visual description of an action with the internal motor representation of the same action in the observer.

Involves both the emotional center (Limbic lobe), memory center (temporal lobe), & cognitive center (frontal lobe).

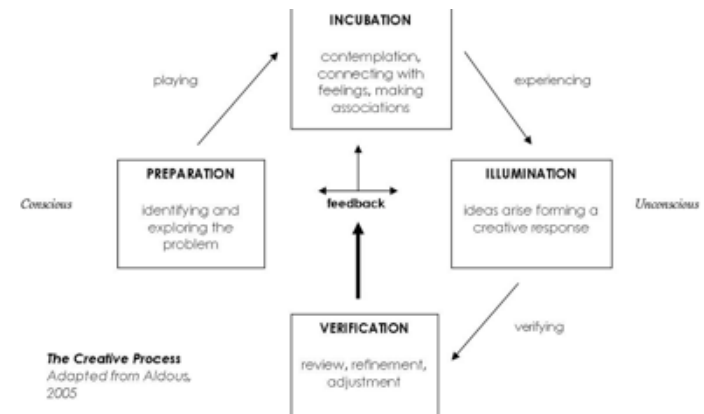
Bilateral Activations—left and right hemisphere—Whole brain

Exploring Creative Thinking Techniques

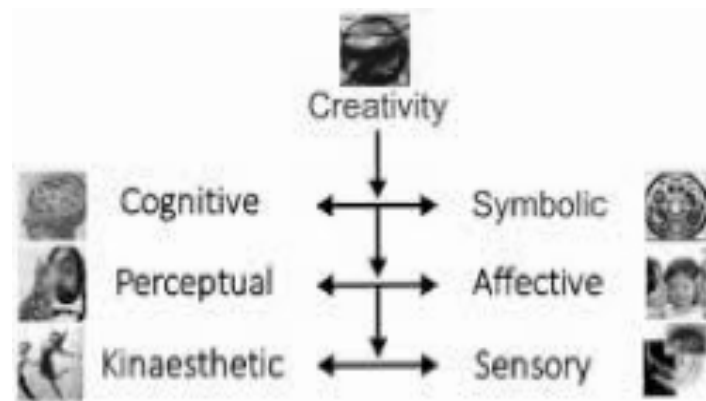
Soft Thinking: metaphor, dream, play, intuition, ambiguous, fantasy, approximate humor

Hard Thinking: logic reason, work adult, analysis, consistency, reality exact precision

Aldous, C.R. (2005). Creativity in problem solving: Uncovering the origin of new ideas. *International Education Journal*, 5(5) p43.



Expressive Therapies Continuum (Lusebrink, 2010)



Art Media (adapted from Landgarten, 1987)

- **MOST CONTROL**
- Lead Pencils
- Colored Pencils
- Crayons / Thick Felt Markers
- Puppets/ Drama
- Miniature Figures
- Model Magic/ Modeling Clay
- Dry Sand and Miniatures
- Assorted Collage Media
- Oil Pastels
- Watercolors / Chalk Pastels
- Wet Sand / Wet Clay
- **LEAST CONTROL**

Exploring Creative Thinking Techniques

Visual Thinking Activities:

Perceptual, imagery, daydreaming, metaphoric, synectics, patterns

Idea Listing Activities:

Attribute listing, morphological synthesis, second best answer, checklist, just suppose

Writing Activities:

Webbing, mapping, wet inking, reflection writing, story starters

Group Interaction Activities:

Simulation, role play, creative dramatics, six hats, fish bowl, brainstorming, reverse brainstorming

Process-Product Activities:

Problem finding, problem defining, problem-based learning

NeuroExplain

Problems requiring creative thought, the brain searches for answers (obvious & familiar—left brain-convergent thinking).

If this fails to be productive, the left hemisphere begins working with the right hemisphere (divergent thinking) scanning neural networks and searching for patterns and associations that may be relevant.

NeuroExplain

The divergent process is fairly unregulated and meaning that this part of the creative process searches through neural networks that the left hemisphere ignores.

While the right hemisphere is engaged in its divergent process, the left hemisphere engages convergent thinking, a top-down executive function.

As the right hemisphere scans through neural networks seeking new patterns and connections, the left hemisphere synthesizes, filtering irrelevant information and constructing a response.

The Four Quadrants of Attachment

- **Structure**

Safety

Organization

Regulation

- **Engagement**

Connection

Attunement

Acceptance

- **Challenge**

Support Exploration

Growth & Mastery

Competence &

Confidence

- **Nurture**

Regulation

Secure Base

Worthiness

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Play Therapy and Attachment

Safety and Consistency

- Preventing acting out
- Managing acting out
- What to use: All trust games

Aggression Management

- Build a Monster
- 'Snowball' Fight
- Balloon Portraits

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Play Therapy and Attachment

External Control

- Simon Says

Cooperation

- Blindfold Drawing
- Sack Race

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Play Therapy and Attachment

Affect Recognition & Expression

- Interpretation
 - Robot Game
 - Mirroring
 - Feeling Word Game
- (Kaduson, 1993)

Understanding Mixed Affects

- Kaleidoscope
 - Color Your Life
- Technique

Problem Solving

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Animal Pictures

(Athena Drewes)

- Pick an animal from the pictures or think of one you like
What drew you to pick this animal?
Describe the animal.
- How does this animal remind you of yourself?
How do you resemble this animal?
- What are its strengths?
What positive qualities do you share with this animal?
- What attributes do you wish you had?
What positive qualities does this animal have that you wish you had, but don't?

What keeps you from having these positive qualities?

Foamy Fun

Cover a large, low play table with shaving foam. Provide the child with droppers full of different food coloring. Have the child drop the food coloring onto the foam. Using their hands, allow the child to smear the shaving foam, making shapes and mixing colors.

Purpose: To have fun! Engages the child in a sensorimotor activity that utilizes multiple senses, movement and encourages creativity and silliness.

Magic Stones

(David Crenshaw)

Use colorful stones or ones found

Use stacking boxes

First box: When you hold the magic stone from this box you can change anything you want about your family

Second box: Change anything about school

Third box: Change anything about friends

Fourth box: Change anything about yourself

Different Hats

Purpose: To facilitate emotional expression and assessment

Discussion: People wear a lot of different hats. When we put on a different hat we might act like a different person. A fireman wears a hat to make him feel brave; a clown wears a hat to make you laugh, etc.

Materials: Different hats
Fabric paint or markers
Stickers
Jewels

Instructions: Decorate different hats to represent different feelings. Discuss decorations and how they represent each feeling. Hats may also be used with the drama or dance exercise when acting out feelings.

Power Cards

(Athena Drewes)

Using index cards, child creates power cards.

Draw the creature and on back write what powers it has.

Pick an “evil” power and name it, such as being called names (teased by bully).

Draw a competing good force that will overcome what hurts you.

Overlapping Emotions

Purpose: Facilitate emotional identification

Materials needed: Paper
Colors, markers, color pencils

Discussion: Sometimes we have a lot of different feelings at the same time. We have trouble putting feelings together and letting others know how we feel. Our feelings can feel all over the place and out of order. This activity will help the child to gain insight about feelings, how a situation may bring up more than one feeling, and can also be used as a way of assessment of the child's level of feelings and understanding of feelings.

Instructions: Create, print, and have available Venn diagrams. Ask the child to identify a color that represents a feeling. Then have the child to color the diagram with their feelings color. The more intense a feeling the more of the color they use.

Peace Shields

(Athena Drewes)

Making a
personal power
shield that
shows who we
are.

Circle, divided
into four parts

Strengths or skills

Fears

Dreams for the future

People who you can trust to help

Gestalt Puppet Interview (Adapted from Oaklander, 1988)

Instructions: This is a Gestalt activity that encourages the client to speak through the puppets:

Have an assortment of puppets available for the child. Ask the child to choose a puppet she wants to work with. Explain that she is going to be the puppet and speak for the puppet. Therapist can choose her own puppet to speak through.

Therapist can start by asking the puppet: "why did Meagan (child) choose you?"

Next, therapist asks the puppet to introduce herself and tell us about herself (with younger clients, it can be helpful to ask more specific questions like: "how old are you? What do you like to do?")

Next, the therapist can explore the characteristics of the puppet (which can be reflection of the child). E.g. If the child chose a wolf (aggression) and talks about wolf biting people, the therapist can ask: "What annoys you the most? Do you have any friends?" The therapist can connect the material being discussed to the child by asking her if she ever feels the same way as the puppet or if similar things ever happen to her.

Finally, the therapist can ask the puppet to introduce the child and tell you about her: "Tell us what you like or don't like about Meagan" (if in a group setting, the therapist can ask the puppet to tell the group about the other children in the group as well or can encourage the puppet to talk to other puppets in the group).

Purpose of activity: To help the child express herself, using the puppets as a medium. Puppets provide distance and therefore make it safer for the child to speak about problems and reveal herself.

Magic Wand

(Athena Drewes)

Create magic wand.

What would you change about your friends?

What would you change if you could?

What would you change about yourself?

What would you change about school?

How would your life be better with the change?

Worry Box

Materials:

A reclosable box, such as a shoe box, construction paper, markers, glue, and scissors.

Ask the child to decorate the box in any way they would like..

Give the child strips of paper on which to write worries.

Ask the child to put them in the box.

Feelings Hide and Seek

(Sueann Kenney-Noziska)

Materials:

Index cards and markers

Ask the child to write feelings on the index cards. The cards are hidden around the room. As each card is found, ask the child to talk about a time when he or she had that feeling.

Feel Better Bag

(adapted from Liana Lowenstein)

Materials:

A reclosable bag, paper, markers, magazines, photos, stress balls, etc.

Ask child to draw things that make them happy; cut pictures from magazines.

Ask the child to place things in the bag that make them happy.

Allow the child to take the bag home.

Encourage them to use the bag when they feel stressed, down, etc.

Heart Felt Feelings

(Scott Riviere)

Materials:

Pieces of paper with hearts drawn on them as well as the emotions Mad, Sad, Glad, and Scared listed on them with a box beside each. Markers, crayons.

Ask the child to choose a color for each emotion and color the box beside the emotion.

Ask the child to color which part of his or her heart is that color.

Build a Bridge (Group Activity)

Material:

Newspapers, tape,
a box, and a brick.

The goal is to build a
bridge that will support the
brick and allow the box to
pass under it.

Set rules!

Dance, Freeze, Dance

Similar to freeze tag or duck duck goose, the therapist plays music in session while the child dances. When the music stops the child has to freeze until the music is started again.

Purpose: Sensorimotor activity; encourages energy release and creative dance; facilitates impulse control and self-regulation.

Other Helpful Hints

Dreikurs 4 Basic Goals of Children's Misbehavior

Attention-getting,
Power,
Revenge
Display of inadequacy (or *avoidance of failure*).

These four goals, in this sequence, represent increasing degrees of behavioral disruption and discouragement in the classroom.

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4 Presentation Types Each Requires Something Different

The Warm Up

The Cool Down

The Warm Up-Cool Down

The Cool Down-Cool Down

Working with Lethargy

Slow Down

Experiential Activities

Arts and Crafts

Working with Lethargy

If you have an outdoor space:

Consider the benefits of “fresh air and natural sunlight”

Walks

Hop Scotch

Swinging

Working With Cognitive Cloudiness

Slow Down

Consider the benefits of “fresh air and natural sunlight”

Working With Cognitive Cloudiness

Simple Games (still require an attempt to focus)

Matching Games

Card Games

Working With Cognitive Cloudiness

Puzzles

Mazes

Guessing Games

Hangman

Working With Emotional

Rhythm

Music

Dance

Bibliotherapy

Working With Emotional Blunting

Emotions Tic Tac Toe

Emotions Identification

Emotion Cards—identification and act out

Facial Expressions

Working With Emotional Blunting

Art—Guided or Abstract

Jokes

Cartoons

Working with Coordination Difficulties

Practice

Use Rhythm

Increase speed/intensity

Gross Motor Skills

Involve the following :

Crafts

Finger Paints

Hula Hoops

Gross Motor Skills (cont)

Involve the following:

Things that can be manipulated, stacked, etc. but are larger.

Legos
Blocks
Dominos
Marbles
Jenga

Fine Motor Skills

Involve the following:

Things that can be manipulated, stacked, etc. but are smaller.

Pick up Sticks
Tiddlywinks
The game "Operation"
Ring Toss Games
Fishing Games

Fine Motor Skills (cont)

Crafts which include:

Beads

Macaroni/Shaped Pasta

Working with Agitation/Aggression

Consider the benefits of “fresh and Natural sun light”

Rhythm

Music

Natural Sounds

Sandtray or Sand Play

Clay Therapy (Paul White)

Bibliotherapy

References

- Aarts, E., van Holstein, M., & Cools, R. (2011). Striatal dopamine and the interference between motivation and cognition. *Frontiers in Psychology*, 2(163), 1-11.
- Adinoff, B., Devous, M. D. Sr., Cooper, D. B., Best, S. E., Chandler, P., Harris, T.,... Cullum, C. M. (2003). Resting regional cerebral blood flow and gambling task performance in cocaine-dependent subjects and healthy comparison subjects. *American Journal of Psychiatry*, 160(10), 1892-1892.
- Anda, R. F., Felitti, V. J., Walker J., Whitfield, C. L., Bremner, J. D., Perry, B. D., Dube S. R., & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neurosciences*, 56(3), 174-86.
- Bush, G., Valera, E. M., & Seidman, L. J. (2005). Functional neuroimaging of attention-deficit/hyperactivity disorder: A review and suggested future directions. *Biological Psychiatry*, 57(11), 1273-1284.
- Centers for Disease Control and Prevention. (2012). Retrieved on August 11, 2012 from http://www.cdc.gov/ace/images/ace_pyramid_home.jpg
- Colton, D. L., & Sheridan, S. M. (1998). Conjoint behavioral consultation and social skills training: Enhancing the play behaviors of boys with attention deficit hyperactivity disorder. *Journal of Educational and Psychological Consultation*, 9(1), 3-28.

References (cont)

- Dagher, A., & Robbins, T. W. (2009). Personality, addiction, dopamine: Insights from Parkinson's disease. *Neuron*, 61(4), 502-510.
- Edwards, V. J., Anda, R. F., Dube, S. R., Dong, M., Chapman, D. F., & Felitti, V. J. (2005). The wide-ranging health consequences of adverse childhood experiences. In K. Kendall-Tackett & S. Giacomoni (Eds.) *Victimization of children and youth: Patterns of abuse, response strategies*, Kingston, NJ: Civic Research Institute.
- Gogtay, N., Giedd, J. N., Lusk, L., Hayashi, K. M., Greenstein, D., Vaituzia, A. C.,...Thompson, P. M.. (2004). Dynamic mapping of human cortical development during childhood through early adulthood. *Proceedings of the National Academy of Sciences of the United States of America* (PNAS), 101, 8174-8179. Retrieved on July 5, 2011, from www.pnas.org. doi:10.1073/pnas.0402680101
- Greenspan, S. Dir/floortime. Retrieved from <http://www.icdl.com/dirFloortime/overview/documents/WhatisDIR.pdf>
- Greenspan, S. I., & Wieder, S. (1997a) 'An integrated developmental approach to interventions for young children with severe difficulties in relating and communicating', *Zero to Three National Center for Infants, Toddlers, and Families* 17(5).

References (cont)

- Greenspan, S. I., & Wieder, S. (1997b) Developmental patterns and outcomes in infants and children with disorders in relating and communication: A chart review of 200 cases of children with autistic Spectrum Disorders. *The Journal of Developmental and Learning Disorders*, 1(1), 87-141.
- Levy, L. M., & Degnan, A. J. (2012, January). GABA-based evaluation of neurological conditions: MR spectroscopy. *American Journal of Neuroradiology*, 1-6. Retrieved from <http://dx.doi.org/10.3174/ajnr.A2902>
- Robbins, T. W., & Everitt, B. J. (1995). *The cognitive neurosciences*. Cambridge, MA: MIT Press.
- Royall, D. R., Lauterbach, E. C., Cummings, J. F., Reeves, A., Rummans, T. A., Kaufer, D. I.,... Coffey, C. E. (2002). Executive control function: A review of its promise and challenges for clinical research. *Journal of Neuropsychiatry and Clinical Neurosciences*, 14(4), 377-405.
- Schore, A. N. (2001), The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, 22(1-2), 201-269. doi:10.1002/10970355(200101/04)22:1<201::AID-IMHJ8>3.0.CO;2-9

References (cont)

- Schore, A. N. (2005). Right-brain affect regulation: An essential mechanism of development, trauma, dissociation, and psychotherapy. In centers, D., Solomon, M., & Siegel, D. (Eds.), *The healing power of emotion: Integrating relationships, body and mind. A dialogue among scientists and clinicians* (pp. 112-144). New York: WW Norton.
- Schore, A. N. (2009). Relational trauma and the developing right brain. *Annals of the New York Academy of Sciences*, 1159(1), 189-2003. doi:10.1111/j.17496632.2009.04474.
- Toga, A. W., & Mazziotta, J. C. (2000). *Brain mapping: The systems*. San Diego, CA: Academic Press.
- Wieder, S., & Greenspan, S. I. (2003). Climbing the symbolic ladder in the DIR model through floor time/interactive play. *Autism*, 7(4), 425-435.
- Willis, D. W. (March 23, 2007). *Early brain development: Relational healing from risk*. Paper presented at the Substance Use and Brain Development Conference, Eugene, OR.
- Wise, R. A. (2004). Dopamine, learning, and motivation. *Nature Reviews: Neuroscience*, 5, 483-494.
- van der Kolk, B. A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of extreme stress: The empirical foundation of complex adaptation to trauma. *Journal of Traumatic Stress*, 18(5) 389-399.