

Psychological Testing The Next Generation Brain MAPPING & IMAGING For Family Law Cases Robert Gordon, JD, PhD

Forensic & Clinical Psychologist

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Sequel to "Psychological Testing"

By Mary Johanna McCurley and

Kathryn Murphy. The American

Academy of Matrimonial

Lawyers. Based Upon A

Speech Delivered at the

Advanced Family Law

Seminar in Dallas, Texas

August 8, 2005.

USA

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Psychological Testing: The Next Generation

Traditional Assessment

- **What are psychological tests?**

Psychological tests are assessment tools. They were created to help mental health professionals and teachers to assess, evaluate and diagnose individual differences among people. In 1904, the French psychologist Alfred Binet was asked by the Parisian minister of schools to identify those children who could not benefit from regular classroom instruction.



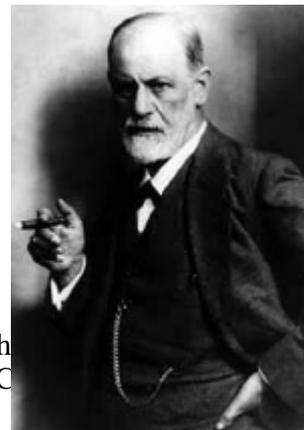
The eventual purpose of psychological tests was not limited to evaluating adults and children with reference to mental abilities. They evolved to assess personality characteristics, adaptable behaviors, academic achievement and career guidance. This became very important for understanding the needs of children, the capacities of parents and the role of the family in society.

The best use of psychological tests is their applied potential; that is to help in the treatment, remediation and guidance of adults, teenagers, and children who need help to achieve their full potential. [Aiken, Lewis. Psychological Tests and Assessment, 1997, Allyn & Bacon Publishers].

- **Who creates the tests?**

Psychologists working in universities, research centers, government, the military and for private corporations design tests. Other research scientists such as psychiatrists, social workers, counselors and educators are part of the test development team.

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These professionals are guided in designing the tests by the research standards adopted by The American Psychological Association and other international societies. [Standards for Educational and Psychological Testing, The American Psychological Association, 2002].

- **Why are the tests used?**

In family law cases, tests are used as part of the overall psychological assessment of good parenting and the needs of children. Tests also evaluate the quality of the relationships between parents and children. Psychological evaluations are routinely conducted at the request of parents, attorneys and the family law courts on an international basis. The results of these assessments, assist mental health professionals to offer thoughtful recommendations in the best interest of children to the decision makers. The goal of many family law judges is to increase valuable information that is available for addressing issues of custody, the allocation of parenting rights and duties and financial support regardless of whether they are resolved through litigation or alternative dispute resolution. The tests for adults also contribute to our understanding of a parent's readiness for collaboration and mediation.

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Family Law

- How did psychological tests enter family law cases?



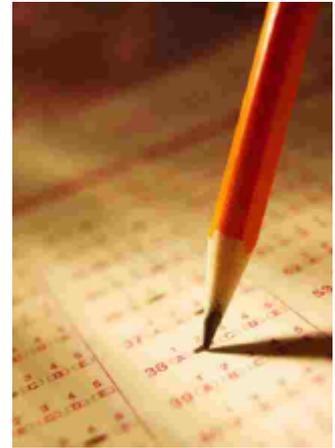
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What do Psychological Tests Measure?

Some of the most common tests which psychologists administer in family law cases are listed below.

- **To Assess Mental Abilities and Cognitive Functioning Of Parents and Children**

- Intelligence → The Wechsler Scales: Adults & Children
- Problem Solving Abilities
 - Parenting Judgments and Reasoning
 - The Capacity for wise Economic Decisions



- **To Understand A Parent's Personality**

- Mental Health Assessment
 - Objective Tests → the *MMPI -2, Millon*
 - Projective Tests → The *Rorschach Ink Blot test*



- **To Examine Special Issues in Family Law Disputes**

- The Special Needs of Children
- Parent-Child Relationships

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Test Administration

- **Who is qualified to administer psychological tests?**



Psychological testing falls under the regulation of State Licensing Boards for Psychologists in the U.S. A licensed psychologist with appropriate internship is qualified to administer the tests. The interpretation of the results as they apply to good decisions in family law cases are made by counselors, physicians, teachers, judges, mediators, arbiters and collaborative law specialists.

- **How are psychological tests administered, scored, and interpreted?**



Other tests are of the paper and pencil variety. Increasingly, others are taken on a computer.

The most important tests are administered face to face by a psychologist who is trained to give the tests and interpret them in the context of observations.

Many tests are scored by hand or by specially designed computer software. They are interpreted by mental health professionals for the benefit of the legal profession and the Courts

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Significance

- What is the *value* of psychological testing in forensic settings?

The value of testing is to give an empirical as well as a clinical basis to the judicial and extra-judicial decisions affecting the welfare of parents, adolescents and children. This includes differential diagnosis and appraisal of family circumstance but also aids in counseling, psychotherapy and remediation. [Comprehensive Textbook of Psychiatry. Eds. Sadock and Sadock. 7th Edition. 1999.]

- How do we know the tests do what they are supposed to do?

Psychologists study the foundation for psychological tests in terms of their validity and reliability. These often involve normative sample development, factor analysis and test-retest consistency. A concept called the standard error of measurement describes the likelihood that a person retaking a given test within a short period of time would receive a result close to the original test result score. [Comprehensive Textbook of Psychiatry. Eds. Sadock and Sadock. 7th Edition. 1999.]

- **Ethical Guidelines:**

Ethical guidelines for psychological tests are published by the American Psychological Association and other international professional bodies.[See Guidelines for Child Custody Evaluations. The American Psychologist 1994]. They are also published in State Licensing Regulations. [See For Example, the Psychologists Certification and Licensing Act. Texas Civil Statutes, Occupation Code, Section 501. And the Rules of the Board for Professional Practice. TSPB, Austin, Texas].

Examples of important guidelines include:

- The Best Interest of the Child Standard
- Informed Consent
- Multi Sources of Data
- Examiner- Patient Relationship

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Daubert Standards

- *Daubert v. Dow* (1993)
 - Judges are the “Gatekeepers” of scientific evidence and expert testimony. [*Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579] .
- Guidelines set out by Justice Blackman for the United States Supreme Court for the appraisal of all scientific evidence including psychological tests:
 - Valid and Testable Methods
 - Peer Review and Publication
 - Error Rate
 - General Acceptance

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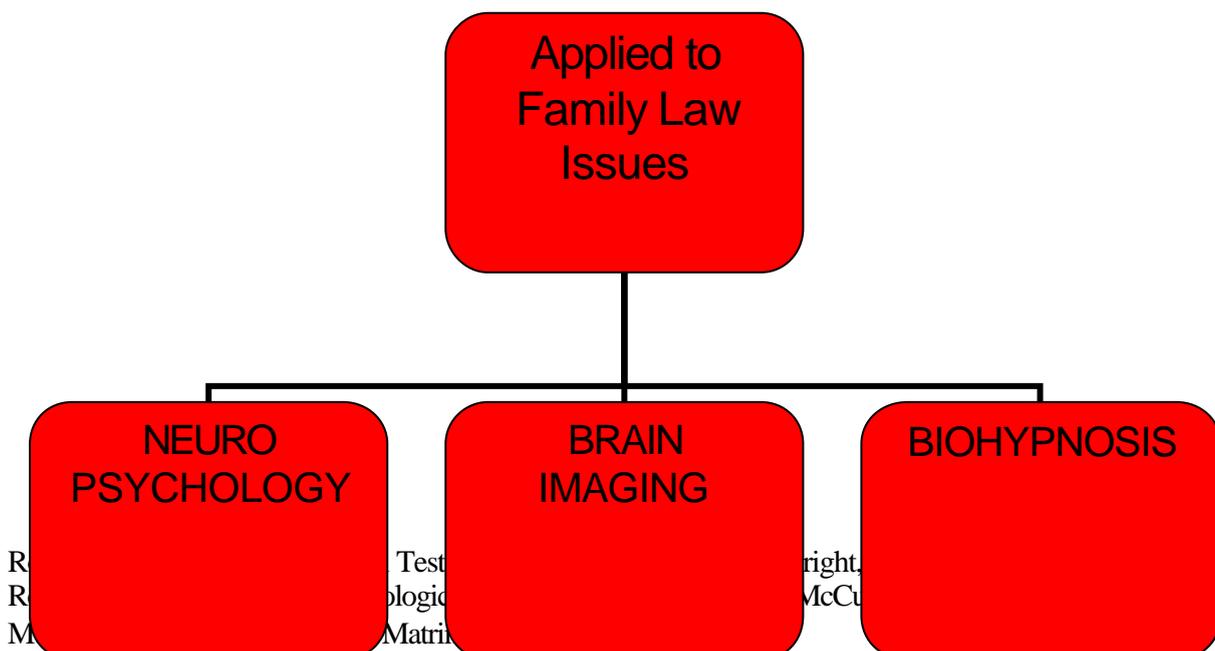
The Next Generation

- The future of psychological testing.
BRAIN MAPPING



New Testing Methods

Neuropsychological, clinical neuroscience, and biohypnosis are the new testing methods for family law issues. They provide brain mapping images that can give insight to the capacities, and mental health of parents, teens and children. Hypnoanalysis is being reinvented because of the validation of interviewing a person under hypnosis as shown by brain mapping studies.



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Matrix

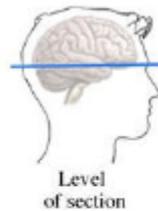
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Brain Imaging: The New Frontier

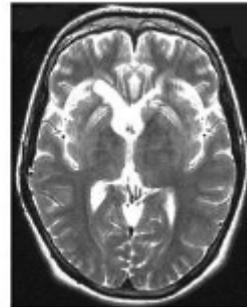
- MRI

Magnetic Resonance Imaging

A painless and safe diagnostic procedure that uses a powerful magnet and radio waves to produce images of the body without x-ray or other radiation.

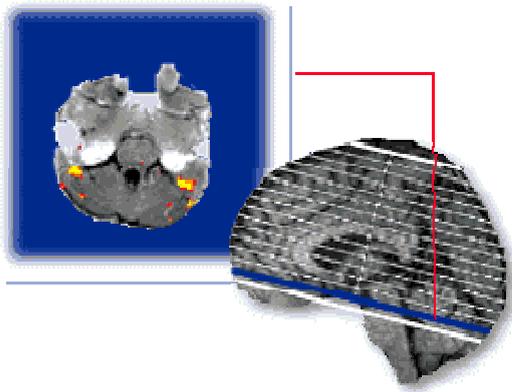


MRI of brain



- fMRI

Functional Magnetic Resonance Imaging



A modified MRI. It pinpoints areas of the brain. While scanning, the patient is asked to perform various mental tasks. The areas of the brain that correlate to these activities “light up” on the scan and create an image.

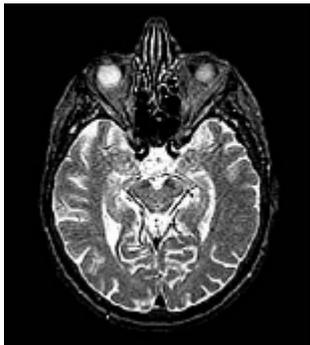
SPECT [Single Photon Emission Computed Tomography] AND PET [Positive Emission Tomography]

Two high powered imaging instruments in nuclear medicine especially suited to monitoring dynamic processes such as blood flow and cell metabolism.

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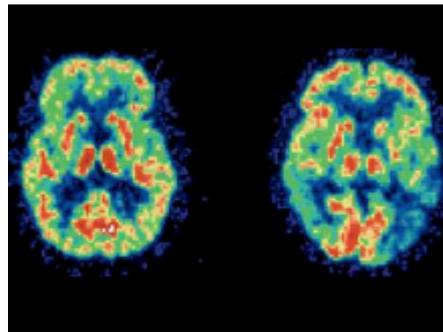
- SPECT

Single Photon Emission Computed Tomography.



- PET

Positron Emission Tomography -
An image scale that measures
The functioning of the brain by
Measuring its use of glucose.



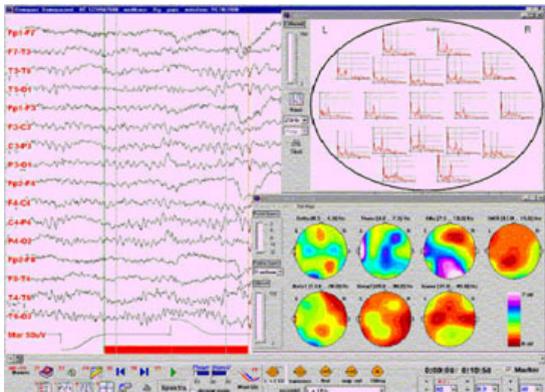
Brain Wave Measurement: Psychological Testing Services

- EEG. The EEG is a technique for studying the electrical current in the brain. Sensors are attached to the scalp. Wires attach these sensors to an apparatus that records the electrical impulses. These are shown on a computer screen or printed out. [John Demos, "Getting Started with Neurofeedback." Norton Co. 2005.]

Electroencephalogram System



- qEEG
Quantitative Electroencephalogram



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The qEEG is used in assessing mental health conditions by means of statistical and clinical evaluations of the electrical activity of the brain. The qEEG / brain maps are found to have reliability equal to or superior to many clinical tests including MRI and CAT. The procedure is affordable, safe, quick, painless and non-invasive. [Journal of Neuropsychiatry and Clinical Neurosciences; James Evans & Andrew Abarbanel, Introduction to Quantitative EEG and Neurofeedback].

How and Where?



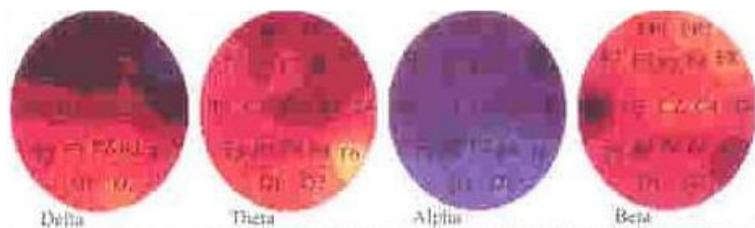
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**What Can New Methods Shed Light On? Now and in the Future
The Same Things that Traditional Psychological Tests Do, But with Greater
Precision.**

- Primary Parent Responsibilities (TFC § 153.134)
- Readiness for Collaboration (TFC § 153.0072)
 - Personality & Mental Health
 - Mental Functioning & Problem Solving
- Special Needs of Children (TFC § 153.123)
- Child's Age of Preference (TFC § 153.008)
- Special Issues - Deception.
 - Employment Status (TFC § 154.066), Disclosure of Assets, Parent Alienation, & Sex Abuse
- Relationships

Parent's Personality and Mental Health

EEG Signatures

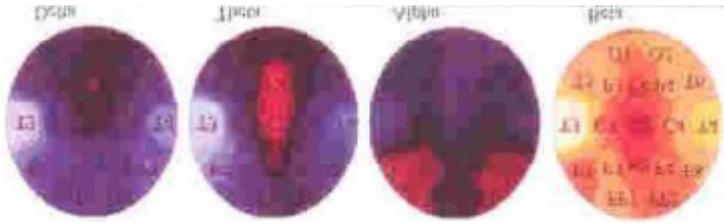


Low Alpha: Anxiety, Insomnia, Alcohol/Drug Abuse
.[John Demos, "Getting Started with Neurofeedback." Norton Co. 2005.]

Parent's Mental Functioning and Problem Solving

EEG Signatures

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Cingulate Dysfunction: Anxiety, Rumination, Obsessive Compulsive Disorder
.[John Demos, "Getting Started with Neurofeedback." Norton Co. 2005.]

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Special Needs of Children

EEG Signatures



Frontal Beta Subtype: ADHD

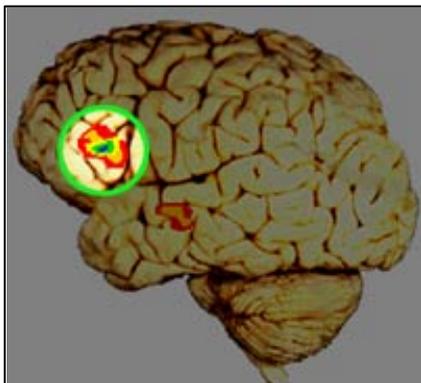
[John Demos, "Getting Started with Neurofeedback." Norton Co. 2005.]

Special Needs of Children and Age of Preference: Brain Development

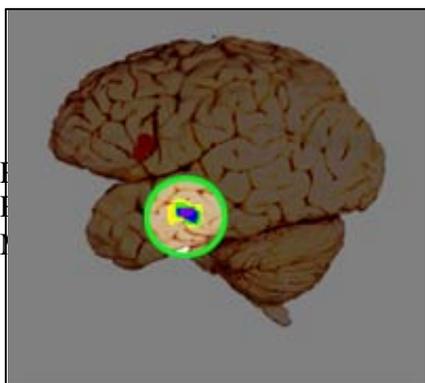
"The frontal lobe...is not always functioning fully in teenagers. That would suggest that teenagers aren't thinking about the consequences of their behaviors."

Deborah Yurgelun-Todd, PhD
McLean Hospital
Harvard Medical School Affiliate

A. Adult's Brain Activation

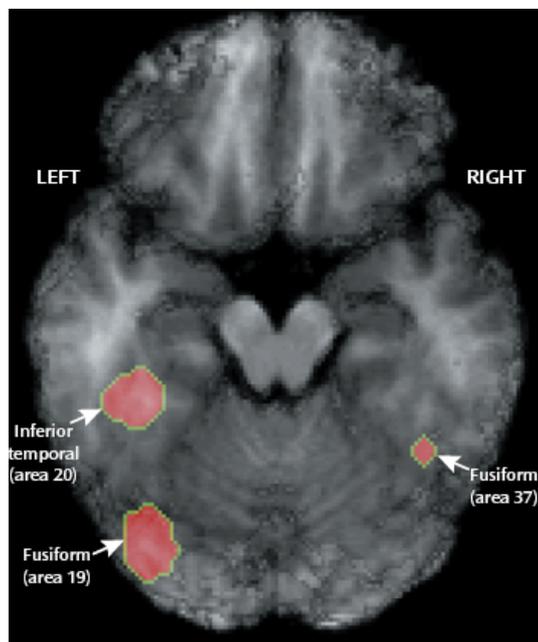
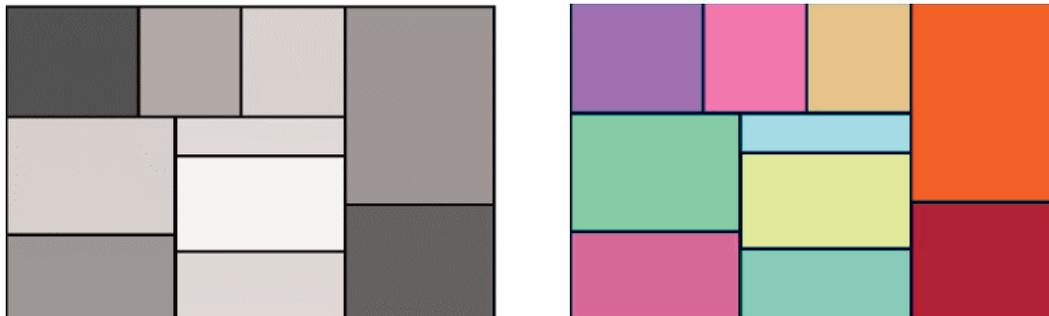


B. Adolescent's Brain Activation



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Studying Abuse, Neglect, and Alienation: Biohypnosis & Brain Activation Hypnoanalysis.



"Hypnosis *is not* simply role enactment. Consistent with other recent work...the vivid changes in subjective experience attained under...hypnotic conditions are associated with changes in brain function that are typical of differences in actual perception"

Dr. Stephen M. Kosslyn
Department of Psychology
Harvard University

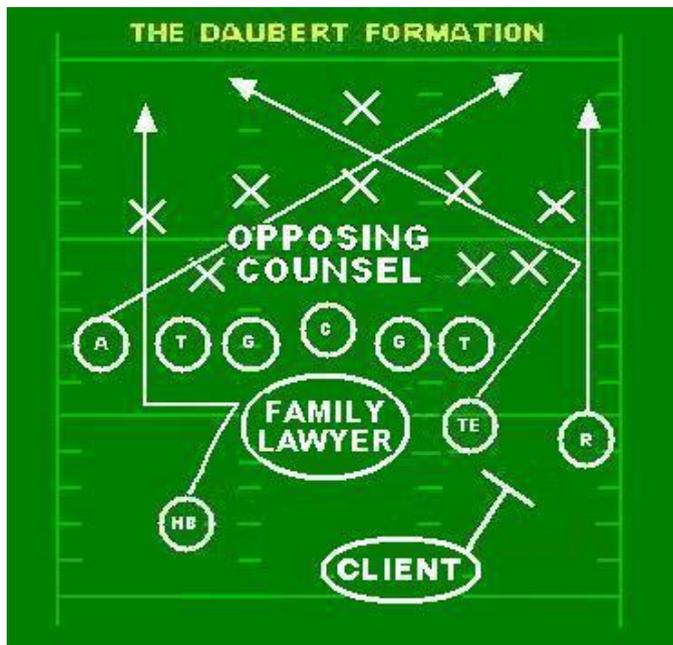
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Deception Detection – EEG



- Brainfingerprinting testing met the legal *Daubert* Standard for admissibility in court as scientific evidence.
- *Harrington v. State of Iowa*
- Iowa Supreme Court (2000)

Application of The *Daubert* Standards



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Valid & Testable

"Research using qEEG...has provided substantial evidence of a significant relationship between EEG abnormalities and various disorders of behavior, emotion, thinking, learning, and development"

Jean A. Frazier, MD
Department of Psychiatry
Harvard Medical School

Peer Review & Publication

Over 250 EEG and Biohypnosis related articles published in peer reviewed journals so far this year (2005)

General Acceptance

"Many important [clinical] trials ...have helped to establish the role of hypnosis in contemporary medicine [e.g., depression, anxiety, ADD, etc...]."

"...health care providers changed their attitudes significantly and positively when presented with information about the use of hypnosis in medicine."

James H. Stewart, MD
Mayo Clinic College of Medicine

Who Is Qualified?

Texas Civil Statutes
Psychologists' Licensing Act § 501.001

Practice of Psychology →

"includes using projective techniques, neuropsychological testing, counseling, career counseling, psychotherapy, hypnosis for health care purposes, hypnotherapy, and biofeedback"

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How to Pay for It?

SERVICE	CPT CODES Current Procedural Terminology
BIOFEEDBACK	90901
HYPNOSIS	90880

Also, the CPT codes for psychological testing also apply. Client insurance may pay for all or part of these costs.

Peer Review

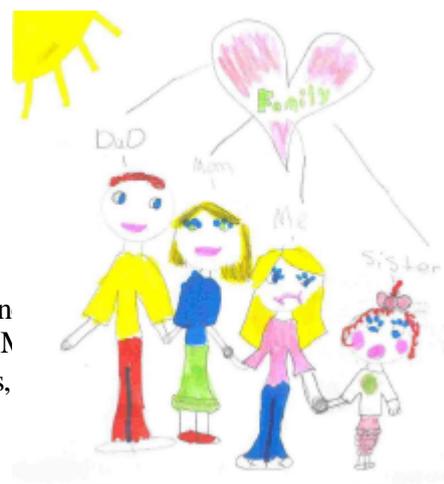
- ForSci.Net



Acknowledgements

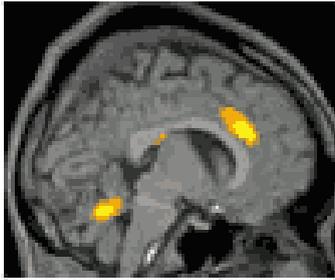
- Eugenia Bodenhamer-Davis, PhD
- Leo Borrell, MD
- Richard Davis, MS

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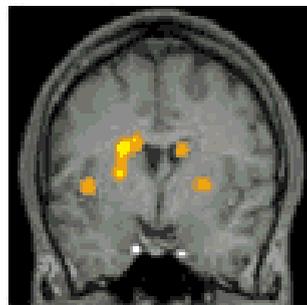


- Dan Galper, PhD
- Tanya Taylor, ABD

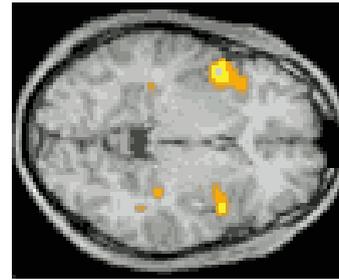
Relationships: What Does Love Look Like?



Anterior Cingulate



Putamen and Caudate Nucleus



Medial Insula

Men and women who had fallen in love during the past four to six months were shown pictures of their mates. This led to brain arousal in three locations.

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WIN Wilmington Institute Network
The NeuroScience Lab
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and
Virtually Everywhere

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