**D I F F E R E N T M E T H O D S O F S C I E N T I F I C I N V E S T I G A T I O N S**

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**I N T R O D U C T I O N**

Criminal Investigation is a subject that figures extensively in government policy, in the media and in the public imagination. In addition to fictional accounts in books, film and television, it has been the focus of many official reports and enquiries (for instance, Mallimath Committee Report). Criminal Investigation is a staple of literary fiction and other media. From Sherlock Holmes through to modern day best sellers like Ian Rankin, Patricia Cornwel and P.D. James, criminal investigation fills bookshelves across the world.1

*Investigation includes all the proceedings under the Code for collection of evidence conducted by a police officer or by any person (other than a magistrate), who is authorized by a magistrate.2*

Science and Technology has proved to be an asset to the Criminal Investigation. The Brain Mapping, Narco-analysis, DNA Fingerprinting, and Polygraph test emerged as the most powerful techniques in helping the Law Enforcement Agencies in administration of the criminal justice system. While investigating the case some criminals prove to be a hard nut to crack. In such cases, to procure evidence the investigating teams generally use to end up by adopting unfair and illegal means such as third degree torture methods. However recent



1 Tim Newburn, Tom Wiliamson and Alan Wright, *Handbook of Criminal Investigation,* Willan Publishing, Oregon, 1st Edn., 2007, p-5,6

2 Section 2(h), Code of Criminal Procedure, 1973

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addition of the advance scientific tools, have proved to be a remarkable and efficient substitute by which the investigating officer digs out the concealed information or evidence from the mind of suspects. However, there has been a lot of debate on the validity of these techniques, because these are alleged to violate accused right against self incrimination under Article 20(3) Constitution of India, and Right to privacy under Article 21 and due to lack of available provisions in law which provide for any guidelines and standards for such

Malimath Committee (2003) devotes an entire chapter to the modern techniques of investigation and it is the contention of the authors that these can help improve capabilities of the police in apprehension of criminals, curtail unnecessary arrests, reduce response time, avoid use of third degree methods in detection and interrogation, improve prospects of proof through scientific evidence etc. Some of these high-tech tools are DNA fingerprinting, cyber forensics, narcoanalysis, brain-mapping .3

3 Retrieved from <<http://www.pudr.org/index.php?option=com_docman&task=doc_view&gid=168>> accessed on: 25 September, 2010.



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# BRAIN MAPPING

* + 1. **Introduction**

It is a test that maps the brain to reveal guilty knowledge. The brain-mapping test is done to interpret the behavior of the suspect and corroborate the investigating officers observation and the suspect‘s statements. The technique is based on the resulting additional electrical activities upon the recognition of associative evidence by the brain.4 Functional and structural [neuro imaging](http://en.wikipedia.org/wiki/Neuroimaging) are at the core of the mapping aspect of Brain Mapping.5

In a nutshell, experts say the brain fingerprinting test, as the brain-mapping test is also called matches information stored in the brain with information from the crime scene. Studies have shown that an innocent suspect‘s brain would not have stored or recorded certain information, which an actual perpetrator‘s brain would have stored. The activity of the persons brain is recorded an instrument called Encephalograph and the trace thus obtained is called Electroencephalograph (EEG).6

# Process

The process of the brain mapping is simple. It is carried out in the following steps:

* + - 1. Sensors are strapped around the head in the form of a band
			2. A number of pictures (Crime- relevant/ Crime Irrelevant) are shown to the subject. The culprit‘s involvement is indicated by the electrical activity of the brain when crime related pictures are shown. The subject should show no brain electrical activities when the pictures not relating to crime are shown.



4 Dr. B.R. Sharama, *Foorensic Sciences in Criminal Investigation & Trials,* Universal Law Publishing Co., Delhi, 4th Edn., 2007, p.205

5 Retrieved from < <http://mysticsoul.blog.co.in/2008/11/16/brain-mapping-tests>> accessed on: 25 September, 2010.

6 Ibid

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* + - 1. The brain activity is picked up by the sensors and recorded in a computer in a waveform. The electrical activity changes if the subject recognizes any familiar object, action or word at the screen.7

# Instances of brain mapping

India‘s only forensic science laboratory that conducts brain-mapping or brain-wave fingerprinting test is located in Bangalore .According to Dr. S Malini, assistant director at the laboratory the accuracy rate is 99.99 per cent . In fact, brain mapping is one of the most effective ingredients of forensic sciences these days.8

For example - In *Rahul Mahajans9* drug abuse case, the special Court had granted permission to the Delhi Police for conducting Brain Mapping Test on Rahul and Sahil Zaroo. The Plea of the defence lawyer against the aforesaid tests was rejected. According to the Prosecution, some evidence in the matter was destroyed and the Court was of the view that for proper investigation the Brain Mapping Tests were necessary and the requests for the same by the prosecution was not malafide. The court rejected the objection of the Rahul that it would harm him and the Court ruled that it was a harmless test where an EEG is conducted without administering any medicine.

In Film Maker *Madhur Bhandarkar’s10* Case Preeti Jain an actress alleged that Madhur promised her film roles in exchange of sex, but refused to fulfil his promises. It was alleged by Madhur that Preeti Jain hired an assassin of a gangster turned MLA, Arun Gavali‘s gang to kill him. Hitman Naresh Pardeshi and Preeti Jain were put to Brain Mapping Tests, with other tests in conjunction, and the important information was revealed. In Abu Salem‘s case also Narcoanalysis, Polygraph and Brain Mapping Tests were conducted by Mumbai Police,

7 Dr. B.R. Sharama, *Foorensic Sciences in Criminal Investigation & Trials,* Universal Law Publishing Co., Delhi, 4th Edn., 2007, p.206

8Retrieved from <<http://mysticsoul.blog.co.in/2008/11/16/brain-mapping-tests/>> accessed on: 25 September, 2010.

9 Retrieved from <<http://www.rediff.com/news/2006/jun/22rahul.htm>>accessed on: 25 September, 2010.

10 Retrieved from <<http://www.dancewithshadows.com/madhur_bhandarkar.asp>>accessed on: 25 September, 2010

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on Abu Salem. The information revealed as a result in these cases proved to be quite fruitful.11

# POLYGRAPH TESTS

* + 1. **Introduction**

Polygraph is a lie-detection instrument which is used as one of the mode of the detection of deception. It has been concluded by these studies that there is a close relationship between mind and body. There is a psycho-physiological interaction between them. The instrumental detection of deception is based on this interaction. The instrument could record an individual‘s blood pressure, pulse-rate, respiration and electrical resistance of skin during interrogation.

In India, a beginning was made by the Central Forensic Science Laboratory, CBI, New Delhi, by providing the facility of polygraph for crime investigation purposes. A number of other institutions have since then introduced the facility. The polygraph test results do not appear to have utilized in the courts. However, there is no law, which forbids the use of lie-detector in criminal investigations. In fact, section 45 of the Indian evidence Act is wide enough to accept the polygraph evidence. The lie-detectors are in fact providing useful assistance in criminal investigation in thousands of cases. 12

A polygraph is an instrument that measures and records several physiological indices such as [blood pressure](http://en.wikipedia.org/wiki/Blood_pressure), [pulse](http://en.wikipedia.org/wiki/Pulse), [respiration](http://en.wikipedia.org/wiki/Respiration_%28physiology%29), breathing rhythms/ratios, and [skin conductivity](http://en.wikipedia.org/wiki/Galvanic_skin_response) while the subject is asked and answers a series of questions, in the belief that deceptive answers will produce physiological responses that can be differentiated from those associated with non- deceptive answers. Nonetheless, polygraphs are in some countries used as an interrogation tool with criminal suspects or candidates for sensitive public or private sector employment.

11 Retrieved from <<http://www.thehindu.com/fline/fl2409/stories/20070518002109700.htm>> accessed on: 25 September, 2010.

12Retrieved from < <http://www.rmlnlu.ac.in/content/sonakshi_verma.pdf>> accessed on: 26 September, 2010

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US federal government agencies such as the FBI and the CIA and many police departments use polygraph examinations to interrogate suspects.13

# History of Polygraphic Test.

[Sir James Mackenzie](http://en.wikipedia.org/wiki/Sir_James_Mackenzie) of [Scone, Scotland](http://en.wikipedia.org/wiki/Scone%2C_Scotland) invented an early lie detector or polygraph in the [1900s](http://en.wikipedia.org/wiki/1900s_%28decade%29). Mackenzie‘s polygraph "could be used to monitor the [cardiovascular](http://en.wikipedia.org/wiki/Circulatory_system) responses of his patients by taking their [pulse](http://en.wikipedia.org/wiki/Pulse) and [blood pressure](http://en.wikipedia.org/wiki/Blood_pressure). He had developed an early version of his device in the 1890s, but had Sebastian Shaw, a [Lancashire](http://en.wikipedia.org/wiki/Lancashire) watchmaker, improve it further. "This instrument used a clockwork mechanism for the paper-rolling and time-marker movements and it produced ink recordings of physiological functions that were easier to acquire and to interpret. Interestingly, it has been written that the modern polygraph is really a modification of Dr. Mackenzie's clinical ink polygraph."

A device recording both blood pressure and [galvanic skin response](http://en.wikipedia.org/wiki/Galvanic_skin_response) was invented in 1911 by Dr. Reginald A. Larson of the [University of California](http://en.wikipedia.org/wiki/University_of_California) and first applied in law enforcement work by the [Berkeley](http://en.wikipedia.org/wiki/Berkeley%2C_California) Police Department under its nationally renowned police chief [August](http://en.wikipedia.org/wiki/August_Vollmer) [Vollmer](http://en.wikipedia.org/wiki/August_Vollmer). Further work on this device was done by [Leonarde Keeler](http://en.wikipedia.org/wiki/Leonarde_Keeler).

A device which recorded muscular activity accompanying changes in blood pressure was developed in 1945 by John E. Reid, who claimed that greater accuracy could be obtained by making these recordings simultaneously with standard blood pressure-pulse-respiration recordings. 14

# Validity

Polygraphy has little credibility among scientists. Despite claims of 90-95% validity by polygraph advocates, critics maintain that rather than a "test", the method amounts to an inherently unstandardizable [interrogation](http://en.wikipedia.org/wiki/Interrogation) technique whose accuracy cannot be established. A 1997 survey of 421 psychologists estimated the test's average accuracy at about 61%, a little better than chance. Critics also argue that even given high estimates of the polygraph's accuracy a significant number of subjects (e.g. 10% given a 90% accuracy) will.

13 Retrieved from < <http://www.cidap.gov.in/documents/polygraph.pdf>> accessed on: 26 September, 2010.

14 Retrieved from <<http://www.santoshraut.com/forensic/forensicscinindia.htm>> accessed on: 27 September, 2010.

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In the 1998 [Supreme Court](http://en.wikipedia.org/wiki/Supreme_Court_of_the_United_States) case, [*United States v. Scheffer*](http://en.wikipedia.org/wiki/United_States_v._Scheffer)15, the majority stated that "There is simply no consensus that polygraph evidence is reliable" and "Unlike other expert witnesses who testify about factual matters outside the jurors' knowledge, such as the analysis of fingerprints, ballistics, or DNA found at a crime scene, a polygraph expert can supply the jury only with another opinion..."

Also, in 2005 the 11th Circuit Court of Appeals stated that ―polygraphy did not enjoy general acceptance from the scientific community‖. [Charles Honts](http://en.wikipedia.org/w/index.php?title=Charles_Honts&action=edit&redlink=1), a psychology professor at [Boise State University](http://en.wikipedia.org/wiki/Boise_State_University), states that polygraph interrogations give a high rate of false positives on innocent people.16

15 523 U.S. 303 (1998)

16 Retrieved from <<http://en.wikipedia.org/wiki/Polygraph>> accessed on: 27 September, 2010.

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# Admissibility of polygraphs in courts of different countries

*United States*

In 2007, polygraph testimony was admitted by stipulation in 19 states, and was subject to the discretion of the trial judge in federal court. The use of polygraph in court testimony remains controversial, although it is used extensively in post-conviction supervision, particularly of sex offenders. In *Daubert v. Merrell Dow Pharmaceuticals*,17 the old [Frye standard](http://en.wikipedia.org/wiki/Frye_standard) was lifted and all forensic evidence, including polygraph, had to meet the new [Daubert standard](http://en.wikipedia.org/wiki/Daubert_standard) in which "underlying reasoning or methodology is scientifically valid and properly can be applied to the facts at issue." While polygraph tests are commonly used in police investigations in the US, no defendant or witness can be forced to undergo the test. In [*United States v. Scheffer*](http://en.wikipedia.org/wiki/United_States_v._Scheffer),18 the [U.S. Supreme Court](http://en.wikipedia.org/wiki/Supreme_Court_of_the_United_States) left it up to individual jurisdictions whether polygraph results could be admitted as evidence in court cases. Nevertheless, it is used extensively by [prosecutors](http://en.wikipedia.org/wiki/Prosecutor), [defense attorneys](http://en.wikipedia.org/wiki/Defense_attorney), and [law enforcement agencies](http://en.wikipedia.org/wiki/Policing_in_the_United_States). In the States of [Massachusetts](http://en.wikipedia.org/wiki/Massachusetts), [Maryland](http://en.wikipedia.org/wiki/Maryland), [New](http://en.wikipedia.org/wiki/New_Jersey) [Jersey](http://en.wikipedia.org/wiki/New_Jersey), [Delaware](http://en.wikipedia.org/wiki/Delaware) and [Iowa](http://en.wikipedia.org/wiki/Iowa) it is illegal for any employer to order a polygraph either as conditions to gain employment, or if an employee has been suspected of wrongdoing. The [Employee Polygraph Protection Act](http://en.wikipedia.org/wiki/Employee_Polygraph_Protection_Act) of 1988 (EPPA) generally prevents employers from using lie detector tests, either for pre-employment screening or during the course of employment, with certain exemptions.

In the United States, the State of [New Mexico](http://en.wikipedia.org/wiki/New_Mexico) admits polygraph testing in front of [juries](http://en.wikipedia.org/wiki/Jury) under certain circumstances. In many other states, polygraph examiners are permitted to testify in front of judges in various types of [hearings](http://en.wikipedia.org/wiki/Hearing_%28law%29) ([Motion](http://en.wikipedia.org/wiki/Motion_%28legal%29) to Revoke [Probation](http://en.wikipedia.org/wiki/Probation), Motion to Adjudicate Guilt).

In 2007, in *Ohio v. Sharma19*, an Ohio trial court overruled the objections of a prosecutor and allowed a polygraph examiner to testify regarding a specific issue criminal examination. The court took the position that the prosecutors regularly used a polygraph examiner to conduct criminal tests against defendants, but only objected to the examiner's testimony when the results contradicted what they hoped to achieve. Dr. Louis Rovner , a polygraph expert from

17 509 U.S. 579 (1993)

18 523 U.S. 303 (1998)

19 Retrieved from <<http://antipolygraph.org/litigation/sharma/R1653051007.pdf>> accessed on: 27 September, 2010.

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California, tested the defendant and testified as an expert witness both at a pretrial admissibility hearing and at trial. The defendant, who had been charged with sexual battery, was acquitted.

*Europe*

In most [European](http://en.wikipedia.org/wiki/Europe) jurisdictions, polygraphs are not considered reliable evidence and are not generally used by police forces. However, in any lawsuit, an involved party can order a psychologist to write an opinion based on polygraph results to substantiate the credibility of its claims. The party must bear the expense themselves, and the court weighs the opinion like any other opinion the party has ordered. Courts themselves do not order or pay for polygraph tests. In most cases, polygraph tests are voluntarily taken by a defendant in order to substantiate his or her claims.

*Canada*

In Canada, the polygraph is regularly used as a forensic tool in the investigation of criminal acts and sometimes employed in the screening of employees for government organizations. In the 1987 decision of [*R. v. Béland*](http://en.wikipedia.org/wiki/R._v._B%C3%A9land),20 the [Supreme Court of Canada](http://en.wikipedia.org/wiki/Supreme_Court_of_Canada) rejected the use of polygraph results as evidence in court. This decision did not however affect the use of the polygraph in criminal investigations. The polygraph continues to be used as an investigative tool.

*India*

Recently an Indian court adopted the [brain electrical oscillations signature test](http://en.wikipedia.org/w/index.php?title=Brain_electrical_oscillations_signature_test&action=edit&redlink=1) as evidence to convict a woman, who was accused of murdering her fiance. It is the first time that the result of polygraph was used as evidence in court. 21

# Use with sex offenders

[Sexual offenders](http://en.wikipedia.org/wiki/Sex_offender) are now routinely polygraphed in many states of the United States and it is often a mandatory condition of [probation](http://en.wikipedia.org/wiki/Probation) or [parole](http://en.wikipedia.org/wiki/Parole). In Texas, a state [appellate court](http://en.wikipedia.org/wiki/Appellate_court) has upheld the testing of sex offenders under community supervision and has also upheld written statements given by sex offenders if they have committed a further offense with new victims.

20 [1987] 2 S.C.R. 398

21 Retrieved from <<http://www.cidap.gov.in/documents/polygraph.pdf>>> accessed on: 27 September, 2010.

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These statements are then used when a motion is filed to revoke probation and the probationer may then be sentenced to prison for having violated his or her probation.

Regular polygraph testing is sometimes also used during the rehabilitation of convicted sex offenders. Questioning the offender specifically about their inner thoughts, desires, and impulses is intended to give a general indication of their treatment progress and likelihood of future offenses. Similarly, predatory or violent offenders at some facilities may also undergo [testing](http://en.wikipedia.org/wiki/Penile_plethysmograph) for involuntary physical arousal when shown provocative images relating to their past crimes. Perhaps the most well-known example of this rehabilitation technique is practiced at [Coalinga State Hospital](http://en.wikipedia.org/wiki/Coalinga_State_Hospital) in California

A significant number of Federal appeals courts have upheld polygraph testing for Federal probationers as well. The most recent decision was by the [Second Circuit Court of Appeals](http://en.wikipedia.org/wiki/Second_Circuit_Court_of_Appeals) regarding a New York sex offender.22

# DNA FINGERPRINTING

* + 1. **Introduction**

*Dioxyribose Nuclic Acid Profiling* (also called DNA testing, DNA typing, or genetic fingerprinting) is a technique employed by [forensic scientists](http://en.wikipedia.org/wiki/Forensic_scientist) to assist in the identification of individuals on the basis of their respective [DNA](http://en.wikipedia.org/wiki/DNA) profiles. DNA profiles are encrypted sets of numbers that reflect a person's DNA makeup, which can also be used as the person's identifier. DNA profiling should not be confused with [full genome sequencing](http://en.wikipedia.org/wiki/Full_genome_sequencing). It is used in, for example, [parental testing](http://en.wikipedia.org/wiki/Parental_testing) and [rape investigation](http://en.wikipedia.org/wiki/Rape_investigation). Now *DNA Fingerprinting,* the term coined by Prof. Alec Jeffreys is often referred to as *DNA profiling* as the former has a tendency to restrict the scope of its application by creating a relation to dermatoglypic fingerprints. This is considered by certain authorities to be a misonomer in relation to DNA.23

DNA fingerprinting or DNA profiling is becoming a new method of Identification that analyses and compares the fragments of Deoxyribose Nucleic Acid from separate independent sources. It is a useful and powerful method of identification, if used with care

22 Retrieved from <<http://en.wikipedia.org/wiki/Polygraph>>> accessed on: 27 September, 2010.

23 Prof. T. D. Dogra and Lt. Colonel Abhijeet Rudra, Medical Jurisprudence and toxicology, Delhi Law House, Delhi, Eleventh Edition,2007, P 669

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and precision. DNA Evidence has been used in thousands of important cases in India. For example. Premananda Swami Case, Rajiv Gandhi Assasination Case24 and CRPF false gang rape case (Bhongir, Andhra Pradesh).

DNA tests are highly effective because every person‘s DNA is unique except identical twins. The greatest asset of DNA is that it is so specific to every individual that it cannot be tampered. DNA tests can be used to establish parentage of a child, detect crimes, and identify mutilated dead corpses. They are of immense help in criminal justice administration and in some civil disputes like succession, inheritance etc.

# History

The DNA profiling technique was first reported in 1984 by Sir [Alec Jeffreys](http://en.wikipedia.org/wiki/Alec_Jeffreys) at the [University of](http://en.wikipedia.org/wiki/University_of_Leicester) [Leicester](http://en.wikipedia.org/wiki/University_of_Leicester) in England, and is now the basis of several [national DNA databases.](http://en.wikipedia.org/wiki/National_DNA_database) Dr. Alec Jeffrey's genetic fingerprinting was made commercially available in 1987, when a chemical company, ICI, started a blood-testing center in England. DNA was discovered in 1869 by a Swiss scientist Frederick Micscher. It was first used in England by the police in the famous Enderby case involving two girls who had been raped and murdered.

# DNA family relationship analysis

DNA analysis is widely applied to determine genetic family relationships such as paternity, maternity, siblingship and other kinships. During conception, the father‘s sperm cell and the mother‘s egg cell, each containing half the amount of DNA found in other body cells, meet and fuse to form a fertilized egg, called a zygote. The zygote contains a complete set of DNA molecules, a unique combination of DNA from both parents. This zygote divides and multiplies into an embryo and later, a full human being.

DNA does not change once it is formed at conception. At each stage of development, all the cells forming the body contain the same DNA—half from the father and half from the mother. This fact allows the relationship testing to use all types of all samples including loose

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24 Prof. T. D. Dogra and Lt. Colonel Abhijeet Rudra, Medical Jurisprudence and toxicology, Delhi Law House, Delhi, Eleventh Edition,2007, P 670 - On 21st of May, 1991 former Prime Minister of India was assassinated by a human bomb. A piece of jeans was located at the scene of crime with some adherent tissues, which was collected and sent for DNA Analysis. The reference blood samples were taken from the accused‘s mother and father. It was found that the DNA isolated from the tissue was the offspring of DNA excluded from suspects parents and hence this technique was used to establish the identity of the person.

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cells from the cheeks collected using buccal swabs, blood or other types of samples. The process begins with a sample of an individual's DNA (typically called a "reference sample"). The most desirable method of collecting a reference sample is the use of a [buccal swab](http://en.wikipedia.org/wiki/Buccal_swab), as this reduces the possibility of contamination. When this is not available (e.g. because a court order may be needed and not obtainable) other methods may need to be used to collect a sample of blood, saliva, semen, or other appropriate fluid or tissue from personal items (e.g. toothbrush, razor, etc) or from stored samples. Samples obtained from blood relatives (biological relative) can provide an indication of an individual's profile, as could human remains which had been previously profiled.25 Indian courts have time and again held that the evidence for proving non-access must be strong, distinct, satisfactory and conclusive. DNA tests can be strong evidence as they are correct up to 99% if positive and 100% if negative.

* + 1. **Related Case Laws**

In *Vasu v. Santha26* 1975 (Kerala) and *Gautam Kundu v. State Of West Bengal27*, the court has laid down certain guidelines regarding DNA tests and their admissibility to prove parentage.

1. That courts in India cannot order blood test as a matter of course;
2. Wherever applications are made for such prayers in order to have roving inquiry, the prayer for blood test cannot be entertained.
3. There must be a strong prima facie case in that the husband must establish non-access in order to dispel the presumption arising under Section 112 of the Evidence Act.
4. The court must carefully examine as to what would be the consequence of ordering the blood test; whether it will have the effect of branding a child as a bastard and the mother as an unchaste woman.
5. No one can be compelled to give sample of blood for analysis.

25 Retrieved from <<http://en.wikipedia.org/wiki/DNA_profiling>> accessed on:04, 0ctober, 2010.

26 1975 KLT 533

27 (1992) 2 CALLT 130 HC

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# Legal Provisions and DNA

Though there is no specific DNA legislation enacted in India, Sec.53 and Sec. 54 of the Criminal Procedure Code, 1973 provides for DNA tests impliedly and they are extensively used in determining complex criminal problems.

Further the court in several instances laid down that the said Blood-grouping test is a useful test to determine the question of disputed paternity. It can be relied upon by courts as a circumstantial evidence, which ultimately excludes a certain individual as a father of the child. However, it requires to be carefully noted no person can be compelled to give sample of blood for analysis against his/her will and no adverse inference can be drawn against him/her for this refusal.

Sec. 53 deals with examination of the accused by medical practitioner at the request of police officer if there are reasonable grounds to believe that an examination of his person will afford evidence as to the commission of the offence.

Sec. 5428 further provides for the examination of the arrested person by the registered medical practitioner at the request of the arrested person. The law commission of India in its 37th report stated that to facilitate effective investigation, provision has been made authorizing an examination of arrested person by a medical practitioner, if from the nature of the alleged offence or the circumstances under which it is alleged to have been committed, there are reasonable grounds for believing that an examination of the person will afford evidence.

Sec. 27(1) of Prevention of Terrorism Act, 2002 says when a investigating officer request the court of CJM or the court of CMM in writing for obtaining sample of hand writing, finger prints, foot prints, photographs, blood, saliva, semen, hair, voice of any accused person, reasonable suspect to be involved in the commission of an offence under this act. It shall be lawful for the court of CJM or the court of CMM to direct that such samples shall be given by the accused person to the police officer either through a medical practitioner or otherwise as the case may be.

28 Code of Criminal Procedure, 1973.

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# NARCO ANALYSIS

* + 1. **Introduction**

The term Narco-Analysis is derived from the Greek word ―narke‖ meaning anesthesia and is used to describe a diagnostic and psychotherapeutic technique that uses psychotropic drugs, particularly barbiturates, which acts as Central Nervous System depressants, and by virtue of this, they produce a wide spectrum of effects from mild sedation to anesthesia. The term narco-analysis was coined by Horseley. Narco analysis first reached the mainstream in 1922, when Robert House, a Texas obstetrician used the drug scopolamine on two prisoners.29

Narco-Analysis tries to recall repressed materials. The therapist gives post-hypnotic suggestion to patient. Repressed material is recalled during influence of the drug and repressed conflict of the patient is located and cured.30

# Procedure of Narco-Analysis Test

The narco analysis test is conducted by mixing 3 grams of sodium penthol or sodium amytal dissolved in 3000 ml of distilled water. Experts inject a subject with hypnotics like sodium penthol or sodium amytal under controlled circumstances of the laboratory. The dose is dependent on the person‘s sex, age, health and physical condition. The subject, which is put in a state of Hypnotism, is not in a position to speak up on his own but can answer specific but simple questions after giving some suggestion. The answers are believed to be spontaneous as a semi-conscious person is unable to manipulate the answers. Wrong dose can send the subject into coma or even result in death31.

The subject is then interrogated by the investigating agencies in the presence of doctors. The revelations made during this stage are recorded both in video and audio cassettes. The report prepared by the experts is what is used in the process of collecting evidence.

29 Retrieved from <<http://www.articlesbase.com/law-articles/is-narco-analysis-a-reliable-science-the-present-> legal-scenario-in-india-334519.html> accessed on: 09, 0ctober, 2010.

30 Retrieved from <<http://www.articlesbase.com/criminal-articles/constitutional-validity-of-narco-analysis-test-> 1269836.html> accessed on: 09, 0ctober, 2010.

31 Ibid

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The procedure is conducted in government hospital after a court order is passed instructing the doctors or hospital authorities to conduct the test. Personal consent of the subject is also required.32

It is established that in of the total number of the individuals subjected for narco-analysis are found to be innocent. Therefore this technique not only helps to identify the real perpetrator of crime, conspiracies, displacement of evidentiary items etc. but also to identify the innocents within a short period.33

Development of new tools of investigation has led to the emergence of scientific tools of interrogation like the narco-analysis test. Such tests are a result of advances in science but they often raise doubts regarding basic human rights and also about their reliability. Legal questions are raised about their validity with some upholding its validity in the light of legal principles and others rejecting it as a blatant violation of constitutional provisions.34

# The Concept of Narco-Analysis in View of Human Rights

The application of Narco-analysis test involves the fundamental question pertaining to judicial matters and also to Human Rights. The legal position of applying this technique as an investigative aid raises genuine issues like encroachment of an individual‘s rights, liberties and freedom.

In case of *State Bombay v. Kathikalu35* it must be shown that the accused was compelled to make statement likely to be incriminative of himself. Compulsion means duress, which include threatening, beating or imprisonment of wife, parent or child of person. Thus where the accused makes a confession without any inducement, threat or promise article 20(3) does not apply. The privilege against self-incrimination thus enables the maintenance of human privacy and observance of civilized standards in the enforcement of criminal justice. It also goes against the maxim *Nemo Tenetur se Ipsum Accusare* that is, ‗No man, not even the accused himself can be compelled to answer any question, which may tend to prove him

32 Supra, footnote no. 34

33Retrieved from < <http://www.articlesbase.com/criminal-articles/constitutional-validity-of-narco-analysis-test-> 1269836.html> accessed on: 09, 0ctober, 2010.

34 Retrieved from <[http://www.articlesbase.com/law-articles/is-narco-analysis-a-reliable-science-the-present-](http://www.articlesbase.com/law-articles/is-narco-analysis-a-reliable-science-the-present-legal-scenario-in-india-334519.html) [legal-scenario-in-india-334519.html](http://www.articlesbase.com/law-articles/is-narco-analysis-a-reliable-science-the-present-legal-scenario-in-india-334519.html)> accessed on: 09, 0ctober, 2010.

35 AIR 1961 Cri LJ , Vol 2, 2007

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guilty of a crime, he has been accused of.‘ If the confession from the accused is derived from any physical or moral compulsion (be it under hypnotic state of mind) it should stand to be rejected by the court. The right against forced self-incrimination, widely known as the Right to Silence is enshrined in the Code of Criminal Procedure (Cr.P.C) and the Indian Constitution. In the Cr.P.C, the legislature has guarded a citizen‘s right against self- incrimination. S.161 (2) of the Code of Criminal Procedure states that every person ―is bound to answer truthfully all questions, put to him by [a police] officer, other than questions the answers to which would have a tendency to expose that person to a criminal charge, penalty or forfeiture‖. Arguments have been made that narco-analysis constitutes mental torture and thus violates the right to life under Article 21 as it deals with right to privacy. Again, law against intrusion in privacy of individual would not allow brain fingerprinting evidence to be given in court.36

It is well established that the Right to Silence has been granted to the accused by virtue of the pronouncement in the case of *Nandini Sathpathy v. P.L.Dani37* no one can forcibly extract statements from the accused, who has the right to keep silent during the course of interrogation (investigation). In USA, in the case of *Townsend v. Sain38*, it was held that the petitioner‘s confession was constitutionally inadmissible if it was adduced by the police questioning, during a period when the petitioner‘s will was overborne by a drug having the property of a truth serum. Collecting evidence and helps in investigation does not amount to testimonial compulsion. Thus it does not violate the constitutional provision regarding protection against self-incrimination.

In *M.P.Sharma v. Satish Chandra,39* the Apex Court observed that since the words used in Article 20(3) were ―to be a witness‖ and not ―to appear as a witness‖ the protection is extended to compelled evidence obtained outside the Courtroom. The term ―Right to Privacy‖ is generic term encompassing various rights recognized to be inherent concept or ordered liberty. The right to be left alone on right of a person to be free from unwarranted publicity is Right to Privacy.

36 Retrieved from <[http://www.rmlnlu.ac.in/content/sonakshi\_verma.pdf.](http://www.rmlnlu.ac.in/content/sonakshi_verma.pdf) > accessed on: 13, 0ctober, 2010

37 AIR 1978 SC 1025

38 372 US 293 (1963)

39 AIR 1954 SC 300

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# Some Notable Events & Cases of Narco Analysis in India

 In *Smt. Selvi and Ors v. State* by Koramangala 40Police Station , the Court observed that the field of criminology has expanded rapidly during the last few years, and the demand for supplemental methods of detecting deception and improving the efficiency of interrogation have increased concomitantly. Narco- analysis for criminal interrogation is a valuable technique, which would profoundly affect both the innocent and the guilty and thereby hasten the cause of justice.

 *Rojo George v. Deputy Superentendent of Police41*, the Court while allowing a Narco Analysis test observed that in present days the techniques used by the criminals for commission of crime are very sophisticated and modern. The conventional method of questioning may not yield any result at all. That is why the scientific tests like polygraph, brain mapping, narco-analysis, etc. are now used in the investigation of a case. When such tests are conducted under strict supervision of the expert, it cannot be said that there is any violation of the fundamental rights guaranteed to a citizen of India.

 In a 2006 judgment of *Dinesh Dalmia v. State*,42 the Madras High Court held that subjecting an accused to narco-analysis is not tantamount to testimony by compulsion. The court said about the accused: "he may be taken to the laboratory for such tests against his will, but the revelation during such tests is quite voluntary."

 Abdul Karim Telgi, the kingpin of the stamp paper scam, being brought to a Bangalore court in 2003. Telgi underwent narco-analysis in Bangalore. In 2004, the Bombay High Court ruled in the multi-crore-rupee fake stamp paper case that subjecting an accused to certain tests like narco-analysis does not violate the fundamental right against self-incrimination. Article 20(3) of the Constitution guarantees this: "No person accused of any offence shall be compelled to be a witness against himself." Statements made under narco analysis are not admissible in evidence.

40 2004(7)KarLJ501

41 2006(2)KLT197

42 (2007) 8 SCC 770

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 In January 24th, 2008, a bench of Chief Justice K.G. Balakrishnan reserved its ruling The Bombay High Court recently in a significant verdict in the case of, *Ramchandra Reddy and Ors. v. State of Maharashtra*,43 upheld the legality of the use of P300 or Brain finger-printing, lie-detector test and the use of truth serum or narco - analysis. The court upheld a special court order given by the special court in Pune as mentioned above, allowing the SIT to conduct scientific tests on the accused in the fake stamp paper scam including the main accused, Abdul Karim Telgi. The verdict also said that the evidence procured under the effect of truth serum is also admissible. In the course of the judgment, a distinction was drawn between ―statement‖ (made before a police officer) and ―testimony‖ (made under oath in court). The Judges, Justice Palshikar and Justice Kakade, said that the lie-detector and the brain mapping tests did not involve any ―statement‖ being made and the statement made under narco analysis was not admissible in evidence during trial. The judgment also held that these tests involve

―minimal bodily harm‖.

 A court in Kerala recently pronounced that no court order is required to do a narco analysis, Disposing of a petition filed by the CBI seeking permission of the court, the magistrate said that filing this type of a plea would only delay the investigation. The court said nobody could stand in the way of the investigating agency conducting tests recognized as effective investigation tools. When the technicalities of the test itself are not clear and uniform, it becomes difficult to accept the stand taken by the court.

 In Shashi murder case, Court allows narco-analysis. Vijaysen Yadav, the main accused in the disappearance and murder case of Faizabad law student Shashi, has gone through polygraph and narco-analysis test from January 12 to 26. Faizabad Chief Judicial Magistrate Shailesh Tiwari permitted the police on Friday to conduct the tests at the Central Forensic Laboratory in Bangalore.

 Narco-analysis of Moninder Singh Pandher, had started on Tuesday, January 09,44 The narco-analysis test of the prime accused in the Noida serial murder case Moninder Singh Pandher was conducted at the Directorate of Forensic Laboratory. Pandher and Koli have been accused of serial killing of women and children in

43 AIR 1982 SC 839

44 Retrieved from <[www.mid-day.com](http://www.mid-day.com/) › Delhi> accessed on: 14 0ctober, 2010.

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Nithari village, in Noida, Uttar Pradesh. The Nodia police had brought Pandher and his servant Surendra Koli to DFS on January 5 for forensic tests. The tests are expected to go on for approximately eight hours, the sources said.

1. Indore Institute of Law [↑](#footnote-ref-1)