**CASE STUDY ON DNA FINGERPRINTING**

**1995, Naina Sahni Murder Case**

**Congress leader Sushil Sharma killed his wife Naina Sahni and tried to burn the chopped-up body in a tandoor. DNA fingerprinting was used to prove that the burnt remains were that of Naina Sahni.**

**1995, Beant Singh Assassination Case**

**When then Punjab DGP KPS Gill suggested that the assassin could be a “human bomb”, it was initially not taken seriously. However, DNA fingerprinting of the victims showed one of them to be Babbar Khalsa operative Dilawar Singh.**

**2013,** [**Hyderabad**](https://indianexpress.com/section/cities/hyderabad/) **Blasts Case**

**In 2014, intelligence agencies raided a house in Zephyr Heights in Mangaluru in search of the alleged bombers, but found it empty. A forensic team picked up DNA samples from the house, and when the accused were finally caught,the samples matched with theirs. It helped the NIA secure convictions for all five accused.**

## **DNA Fingerprinting Steps**

**Alec Jeffreys developed this technique in which he used satellite DNAs also called** [**VNTRs**](https://byjus.com/biology/vntr/) **(Variable Number of Tandem Repeats) as a probe because it showed the high level of polymorphism.**

**Following are the steps involved in DNA fingerprinting:**

**Isolating the DNA.**

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**Digesting the DNA with the help of restriction endonuclease enzymes.**

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**Separating the digested fragments as per the fragment size by the process of electrophoresis.**

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**Blotting the separated fragments onto synthetic membranes like nylon.**

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**Hybridising the fragments using labelled VNTR probes.**

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**Analysing the hybrid fragments using autoradiography.**

## **DNA Fingerprinting Applications**

**As discussed earlier the technique of fingerprinting is used for DNA analysis in forensic tests and paternity tests. Apart from these two fields, it is also used in determining the frequency of a particular gene in a population which gives rise to diversity. In case of the change in gene frequency or** [**genetic drift**](https://byjus.com/biology/genetic-drift/)**, Fingerprinting can be used to trace the role of this change in evolution.**