

ITSI Biosciences Newsletter

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What is Sibship DNA Test?

A sibship DNA test is a type of genetic test that determines whether two or more individuals are biological siblings by sharing one or both biological parents. This test is particularly useful in situations where direct parental DNA samples are unavailable, and the individuals involved want to establish a biological relationship. The test can confirm full siblingship (same mom and dad) half-siblingship (only one parent), or exclude the possibility of a sibling relationship altogether. This newsletter will explain what a sibship DNA test is, how it works, and when you might need one.

1. Understanding Sibship DNA Testing

A sibship DNA test compares the genetic markers of two individuals to assess the likelihood that they share a biological parent. The test analyzes specific regions of the DNA to see how much genetic material is shared. Siblings who share both parents (full siblings) will have more common DNA markers than those who share only one parent (half-siblings). Half-siblings will have more genetic overlap than unrelated individuals. It is important to note that sibship tests are less straightforward than paternity or maternity tests, which provide more precise results. Sibship DNA testing involves probability. The results will indicate whether it is likely or unlikely that the two individuals are full or half-siblings based on the amount of shared DNA between the tested parties.

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2. How Does Sibship DNA Test Work

The process of a sibship DNA test is simple and non-invasive. Typically, samples are collected from the cheek using a sterile cotton swab. The swab is rubbed inside the cheek to collect cells from the inside of the mouth. These samples are then sent to a lab, where they are analyzed to determine the genetic relationship between the two individuals. The lab looks at specific markers in the DNA, called loci, and calculate the likelihood of siblingship. The results of the test will usually come in the form of a probability percentage, known as the Sibship Index. A higher index means it is more likely the individuals are full or half-siblings, while a lower index suggests they may not share a biological parent. If both parents are unavailable for testing, including another family member (such as a known sibling, aunt or uncle) during the test can improve the accuracy of the results.

3. When Do You Need A Sibship DNA Test

There are several scenarios in which a sibship DNA test may be needed:

a) **Uncertainty About Parentage:** If two individuals suspect they share a biological parent but that parent is unavailable for testing (due to death, absence, or unwillingness), a sibship DNA test can help provide clarity. This is often the case in situations where siblings were separated at birth, adopted, or raised in different families.

b) **Inheritance or Legal Matters:** Inheritance disputes, particularly those involving wills and estates, may require proof of biological relationships. A sibship DNA test can confirm whether two people are eligible to share in an inheritance if parentage is in question.

c) **Immigration Cases:** Some countries e.g. USA and UK may require proof of a biological relationship between siblings for immigration purposes, especially if they are applying for visas or citizenship based on family ties. A sibship DNA test can provide the necessary scientific evidence of a biological relationship.

d) **Adoption or Reunion Cases:** In adoption cases, individuals who were separated from their biological families may want to reconnect with siblings later in life. A sibship DNA test can confirm their shared biological parentage.



4. Accuracy and Limitations of Sibship Test

While sibship DNA tests are highly accurate, they are not as definitive as paternity or maternity tests. Full siblingship is easier to confirm because full siblings share more genetic markers. However, when testing for half-siblingship, the results are less clear-cut because half-siblings share fewer markers. Therefore, the test will provide a probability rather than an absolute answer.

The test's accuracy can improve if other family members are available to participate. For example, including one known parent, sibling, aunt or uncle can give the lab a more precise comparison and yield more reliable results.

Conclusion

A sibship DNA test is a valuable tool for determining biological relationships when parental DNA is unavailable. Whether for personal, legal, or immigration reasons, this test provides a scientific approach to confirming sibling relationships.

Though it relies on probability, the test can offer clarity in situations where family connections are unclear. If you're looking to confirm a sibling relationship and need more certainty, a sibship DNA test could be the solution.

Many service providers including ITSI-Biosciences (www.itsibio.com), the Lagos State DNA & Forensic Center (www.lsdfo.org) and Concurrent Technologies and Services (www.ctsdna.com) offer DNA testing services to help answer different questions in life. Visit their websites to take advantage of their expertise.