

# **Three Tests, One Tree: Integrating Autosomal, Y-DNA, and mtDNA Results Together**

Dave Vance  
General Manager, FamilyTreeDNA

## **HOW CAN DIFFERENT DNA RESULTS HELP ME?**

Even though DNA testing is a powerful tool for genealogy, it can be overwhelming to look for connections among thousands of matches, or sometimes you can't find the right connection to answer your most important genealogy question.

Integrating results from different types of DNA tests can help you find those connections. And one type of DNA test can give you evidence that other types can't.

## **SUMMARY OF DNA TESTING TYPES**

- Understanding the three main DNA tests
- Family Finder (Autosomal DNA)
- Y-DNA testing
- mtDNA (Mitochondrial DNA) testing

# STRENGTHS AND LIMITATIONS OF EACH TEST TYPE

## AUTOSOMAL DNA

Strengths:

- Coverage of all ancestral lines (within 5-8 generations)
- Ability to distinguish relationship degrees

Weaknesses:

- Limitations beyond 3rd cousins
- Challenges with endogamous populations and pedigree collapse

## MTDNA AND Y-DNA

Strengths:

- Deep ancestral tracing capabilities
- Immune to endogamy and pedigree collapse

Weaknesses:

- Limitations in distinguishing close relationships
- Challenges in determining precise relationships

# INTEGRATION STRATEGIES: EXAMPLES USING MATCH REPORTS

## 1. Using Autosomal Matches to Support Y-DNA Research

This example uses autosomal match reports to determine how far back a Y-DNA match is likely to be related.

## 2. Leveraging mtDNA with Autosomal Results

This example looks at mtDNA match reports to find autosomal testers who may be related on the tester's matrilineal line.

## 3. Haplogroup Analysis Techniques

This example looks at mtDNA haplogroups and Y-DNA haplogroups which are shared by some of a tester's autosomal matches (but not necessarily shared by the tester themselves) to find autosomal matches who may share patrilineal or matrilineal ancestry.

# INTEGRATION STRATEGIES: CASE STUDIES

A. Breaking Through Brick Walls Using A Different Tester's Y-DNA Haplogroup

B. Distinguishing Children of Different Spouses Using mtDNA Haplogroups

# LEARNING OUTCOMES

By the end of this presentation, participants will be able to:

- Understand the unique benefits of each DNA test type
- Effectively combine multiple test results into one analysis
- Use advanced matching reports together for DNA analysis and wider insights
- Apply integrated testing strategies to solve genealogical problems