

CONSIDERATIONS FOR DATABASE SEARCHING WITH SIBLINGS

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Since the release of CODIS v6.0 in 2008, missing persons searches performed in the software utilize pedigree trees to search for missing family members. First order relatives are requested to optimize searching, including siblings. Typically, the addition of a sibling to a single parent in a pedigree tree is beneficial for calculating kinship statistics when an association is found in CODIS. However, we have encountered situations where the addition of a sibling to a pedigree tree with a single parent has substantially reduced the statistical support of a genetic association compared to using the parent alone. It may be the case that a sample purported to be from a full sibling is actually from a half sibling, but in the scenarios we have observed, this is not the case. We intend to highlight scenarios where the addition of a sibling reference sample can have a deleterious effect on kinship analysis and database searching. The reduction of statistical value may result in candidate matches being filtered out of consideration based on statistical thresholds set in the search configuration. We will also present our current solution to address this situation. Sometimes, “less may be more” when evaluating kinship in missing persons cases involving a parent and siblings.