



DNA. MPE? OMG!: Addressing Surprises in Your DNA

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- DNA testing has the ability to break through brick walls and expand our tree, and it also has the ability to shock us and challenge our preconceived notions.
 - Sometimes, DNA can even uncover long hidden family secrets.
- Before DNA testing or asking others to DNA test, is everyone prepared for possible surprises in their results?
 - Informed consent is important; if someone isn't prepared for surprises, they shouldn't take a DNA test.
- What do we do when what was expected is not what appeared?
 - DON'T PANIC!
 - Be methodical in your next steps.
 - DNA doesn't lie, but it can be misinterpreted.
- “My ethnicity estimates don't make sense. HELP!”
 - Keep in mind these are estimates based on a site's reference population.
 - Sites may have different reference populations.
 - A child's results will not necessarily mirror the parents' exactly, unless there is phasing involved (23andme)
 - Ancestry now also projects parental inheritance from each side for ethnicity estimates, but cannot tell you from which parent you inherited each ethnicity.
 - Look at the ranges for the ethnicity (Ancestry).
 - More important to pay attention to continental level versus focusing on the specific countries.
 - Consider the history and boundary changes.
 - Examples: French and Italian; British, German, Scandinavian
 - Certain populations are exceptions, but it can also depend on the site.
- “My uncle is showing up as a first cousin. What does that mean?”
 - Unless it's parent/child, ignore the predictions provided by the testing companies.
 - Focus on the number of centimorgans.
 - Use the Shared cM Project to determine the possible relationships.
 - Outliers happen, but...
 - Check for shared matches. Does the uncle have matches to both his parents? Does the tester have matches to both grandparents?
 - Do you need more testers to corroborate your findings?
- “I don't recognize any of my matches. Could I have been switched at birth?”
 - Occam's Razor

- Despite the media sensationalizing it, switched at birth is incredibly rare.
- More likely explanations
 - Have you built your trees? It's important to build up and down AND laterally to account for unknown surnames among your DNA matches.
 - Misattributed parentage event, Adoption, Donor Conception, etc.
 - How close are your matches? Perhaps family members haven't tested yet.
- Solutions:
 - Ask family members whether they've tested.
 - Target test.
 - Don't reach out to unknown matches unless you're prepared to be blocked
 - Always take screenshots and do your own research before making contact.
- "I have an unknown close match. What do I do?"
 - Keep in mind known relatives may use initials, aliases, and usernames.
 - Based on shared matches, can you pinpoint which side of your family?
 - Does the match have a tree to explore?
 - Is it your place to solve the mystery?
- "All my matches seem to share DNA with each other." Are my parents related?!"
 - You can run the Are Your Parents Related (AYPR) tool on GEDMatch, but...
 - This is what it means to be from an endogamous population or have pedigree collapse in your tree.
 - Target DNA testing can be crucial for sorting family lines.
 - Use a chromosome browser and chromosome painting with DNA Painter.
- "I have a close match, but I know there is endogamy/pedigree collapse in my tree. Is it likely my match is more distant than the cMs are telling me?"
 - How much DNA do you share with the match?
 - Which site? Each site has different nuances for their predictions.
 - Matches that are in 2nd cousin range (around 200cMs) or closer tend to be spot on and not affected by endogamy.
 - Even more distant matches can be reflected accurately in site predictions (long segments are still important!)
 - Endogamy versus pedigree collapse
 - Endogamy doesn't usually affect close matches (population dependent), but pedigree collapse can, depending on how recent the pedigree collapse is in the tree.
- Remember: When you encounter surprising or unexpected results, don't immediately jump to any conclusions
 - Take a step back and breathe.
 - Be methodical and plan your next steps.
 - Do your research before reaching a conclusion; determine whether you're dealing with a DNA surprise, or a DNA misunderstanding/misinterpretation.