DTC Genetic Testing Companies Compared

Interested in doing a personal genetic test of your DNA? The question often arises concerning which direct-to-consumer DNA testing company is the "best". Many companies are now in the DNA testing business, and these companies are for the most part using the same SNP genotyping technology. The data obtained in each case is downloadable. Thus, the interpretations of the data reported to the user, the website platform for viewing these results, and the interests of the user are critical decision points for which company to use. Below is a comprehensive overview of the services provided by the four major US providers of direct-to-consumer DNA tests. These services are compared here primarily in the context of ancestry analysis and genealogy research. See this essay about the discovery process exploring the different options with the intent of finding the "best" test to use in support of an undergraduate seminar course.

Feature of Comparison	23andMe account settings	AncestryDNA	Family Tree DNA (FTDNA)	The Genographic Project (Geno 2.0)
Overview	Offers SNP genotyping with interpretation of paternal, maternal and overall geographic ancestry and matching to other users in their database. Option to include trait reports for physical and behavioral traits and whether you are a carrier of variants known to cause heritable genetic diseases.	Offers SNP genotyping with interpretation of geographic ancestry and matching to other users in the context of intersections between family trees.	Offers a variety of genotyping and sequencing services with interpretation of paternal, maternal and overall geographic ancestry. Test results in each analysis are used to find matches to other users in their database.	Offers SNP genotyping with interpretation of paternal, maternal and overall geographic ancestry.
Geographic Ancestry	Ancestry composition estimated in broad-scale geographic regions (e.g., European) with subregional composition (e.g., British & Irish). Different confidence levels, from Conservative to Speculative, available for the analysis. Option to view the predicted regions of ancestry distributed throughout the genome.	Ethnicity estimation in broad-scale geographic regions (e.g., Europe) with sub-regional composition (e.g., Great Britain). Summary of colonization within each sub-region and comparison with modern inhabitants.	Ethnic makeup estimated from Family Finder results in broad-scale geographic regions (e.g., European) with subregional composition (e.g., British Isles).	Ancestry composition estimated in broad-scale geographic regions (e.g., Northern European). Compositional comparison with modern inhabitants of different sub-regions (e.g., British).
Paternal Ancestry Y chromosome (males only)	Provides a summary of Y chromosome haplogroup (males only) determined from SNP genotypes. Summary of the geographic pattern of the Y haplogroup, and the placement of your branch within the larger tree of humanity.	No information provided	Specific services available for genotyping of STR and/or SNP on the Y chromosome (males only). Summarizes the historical geographic pattern of haplogroups. Join surname, haplogroup and/or regional projects managed by administrators.	Provides a summary of Y chromosome haplogroup (males only) determined from SNP genotypes. Summarizes the historical geographic pattern of this haplogroup.
Maternal Ancestry mitochondrial DNA (mtDNA)	Provides a summary of mtDNA haplogroup determined from SNP genotypes. Summary of the geographic pattern of the mtDNA haplogroup, and the placement of your branch within the larger tree of humanity.	No SNPs tested	Specific service available for sequencing of partial or full mtDNA. Summarizes the historical geographic pattern of this haplogroup. Join haplogroup and/or regional projects managed by administrators.	Provides a summary of mtDNA haplogroup determined from SNP genotypes. Summarizes the historical geographic pattern of this mtDNA haplogroup.
Hominid Ancestry	Estimate of Neanderthal ancestry. Comparison with others sharing their genome with you.	No information provided	Available at extra cost as a special analysis of Family Finder results.	Separate estimates of Neanderthal and Denisovan ancestry.
DNA Matches	DNA Relatives list with estimate of relatedness and summary of percent and number of DNA segments shared. User has option to not participate.	Match list with estimate of relatedness, measure of statistical confidence and information on the number and total amount of segments shared.	For each genetic test, matches are listed with estimate of relatedness and summary of the underlying genetic evidence.	No information provided
Genealogy Tools	Matches may have a public pedigree of direct ancestors that is viewable. Search to find matches that include a surname in their surname list. Optional genome sharing feature that enables comparisons of matching DNA segments with and among other users. Participants that have enabled open sharing are provided and are included in lists of "in common" matches. Ability to specify known relationships, and association of parent-offspring DNA tests enables some functionality.	A Hint identifies each DNA match that shares a common relative(s) with your Ancestry.com family tree. DNA matches with other users having a shared ancestor(s) are used to form DNA Circles containing descendants of the same shared relative. Search with a surname to find matches with that surname included in their Ancestry.com family tree. Other matches in common with a match are listed in the 'Shared Matches'.	Matches may have a public genealogy that is viewable. Search to find matches that include a surname in their surname list. Identify matching DNA segments with other users. The website has advanced features, such as 'in common with' searches, simultaneous comparisons among multiple individuals, and ability to specify known relationships. Join surname, haplogroup and/or regional projects managed by administrators.	None available on website. Free data transfer available to Family Tree DNA website where some SNPs for Y chromosome haplotype identification (*unclear how this would be useful without STR genotyping, or for DNA samples of a female*).
Connecting with Relatives	Messaging system for contacting matches. Most users maintain anonymity and are unresponsive to contact. Contacts can elect to share their genome to enable some of the genealogy tools.	Messaging system for contacting matches. Limited tester and account information associated with each match. The Ancestry.com tree of the match is sometimes private and not viewable without permission.	Messaging system for contacting matches. Tester information associated with each match.	Not enabled
Account Structure	DNA tests of multiple individuals can be managed within a single account. Limited test results can be shared between accounts.	DNA tests of multiple individuals can be managed within a single account. Full test results can be shared between accounts.	Unique account associated with each individual. Multiple DNA tests of a single individual managed within a single account.	Unique account associated with each individual.

Access to Raw Data	Able to browse raw data using gene names or SNP id as search terms. Download of data file available. Data can be uploaded to 3rd party sites.	Download of data file available. Able to use SNP id to search data in downloaded text file. Data can be uploaded to 3rd party sites.	Download of data file available. Able to use SNP id to search data in downloaded text file. Data can be uploaded to 3rd party sites.	Download of data file available. Able to use SNP id to search data in downloaded text file.
Delivery of Results	3-4 weeks	4-6 weeks	6-16 weeks	about 8 weeks
Overall Impression	23andMe provides a comprehensive summary of findings from their analyses and enables continued interaction with your genome data. In addition to ancestry and relative finding analyses, reports are provided on whether you are a carrier of some of the most commonly inherited disease-causing genetic variants. Predictions of genetically influenced traits affecting your appearance, such as eye and hair color, are also reported. If entertainment is your primary goal, and you want to engage with your DNA recipe, 23andMe is the 'best' option.	AncestryDNA is fully integrated with the genealogical trees with an active subscription of Ancestry.com, so linking each DNA test to an individual within an extensive public family tree available on Ancestry.com is essential to take full advantage of the DNA test results. Results from Ancestry are taken at face value because the site only provides a description of the genetic basis for a match without any ability for further investigation. If genetic genealogy is your primary interest, and you already have a well-researched family tree that you're willing to input into Ancestry.com, or you're willing to subscribe to Ancestry.com and build a family tree, AncestryDNA is the 'best' option for identifying relatives to support a family tree.	Family Tree DNA provides a site for the advanced user of genetic tests. Specialized DNA tests are available and the web site has advanced functions for exploring DNA matches. Although the FTDNA site allows users to input family trees, the DNA results are not integrated with the user trees. The Family Finder Analysis uses the same data as AncestryDNA, so FTDNA has a relatively inexpensive option to transfer AncestryDNA data into their (much smaller) database. If you're unclear about which company to use or what test to do, FTDNA is probably not the place for the beginner to start. However, FTDNA does provide the 'best' services and tools to support the advanced genetic genealogist.	The Genographic Project provides a comprehensive summary of findings from their analysis of your genetic data. If reading a summary of your genetic heritage is your only goal, and especially if you are concerned about genetic privacy issues, The Genographic Project is the 'best' option.