

HOW ARE YOU RELATED TO DNA MATCHES?

Autosomal DNA testing companies look at the amount of DNA you and a match share, measured in centimorgans (cM), to give you an estimate of your relationship. This chart expands on those estimates to help you more closely determine how you and a match are related.

Your DNA testing service provides the amount of shared cM between you and a match. In the "Average Percentage" column below, find the number nearest to your shared cM. The Relationship column shows the likely relationship(s). Other relationships are possible, though, as shown in the "Range" column. For example, if you share 900 cM with someone, possible relationships include first cousins, half-aunt/uncle and half-niece/nephew, great-grandparent/great-grandchild, and great-aunt/uncle and great-niece/nephew.

The closer the relationship, the more useful the match will be in your genealogy search. For example, second cousins share great-grandparents. If you have a second-cousin match, find the person's great-grandparents in his family tree. Then research that couple's descendants—one of them may be your birth parent.

A given relationship, such as first cousins, can share varying amounts of DNA because of the recombination, or "shuffling," that occurs at conception. You usually share about 850 cM with a first cousin, but that number could be as low as 396 or as high as 1,397 cM.

Average shared cM*	Average percentage of shared DNA**	Relationship	Range of shared cM***
3,400	50%	Parent/child	2,376–3,720
2,600	50%	Full sibling	1,613–3,488
1,700	25%	Half sibling	1,160–2,436
		Aunt/uncle/niece/nephew	1,201–2,282
		Double first cousin	2,209–3,384
		Grandparent/grandchild	984–2,462
850	12.5%	First cousin	396–1,397
		Half-aunt/half-uncle/half-niece/half-nephew	492–1,315
		Great-grandparent/great-grandchild	485–1,486
		Great-aunt/great-uncle/great-niece/great-nephew	330–1,467
425	6.25%	First cousin once removed	102–980
		Half-first cousin	156–979
		Half-great-aunt/half-great-uncle/half-great-niece/half-great-nephew	184–668
212.5	3.125%	Second cousin	41–592
		First cousin twice removed	33–71
		Half-first cousin once removed	62–469
106.25	1.56%	Second cousin once removed	14–353
		Half-second cousin	10–325
		First cousin three times removed	25–238
		Half-first cousin twice removed	16–269
53.13	0.78%	Third cousin	0–234
		Second cousin twice removed	0–244
26.56	0.391%	Third cousin once removed	0–192

*AncestryDNA, MyHeritage DNA, Living DNA and Family Tree DNA provide shared DNA in centimorgans (cM).

**23andMe and MyHeritage DNA provide shared DNA as a percentage.

***According to the Shared cM Project, a study of cMs shared by known relatives. For more information, see <www.dnainter.com/tools/sharedcmv4>.