

Genealogical method

Medical Genealogy (from Greek: γενεαλογία genealogia from γενεά genea, "generation" and λόγος logos, "knowledge"), is the study of families, family lineages and medical family history. Information about a family is obtained by oral interviews (e.g. by a clinical geneticist, any other physician or a genetic counselor), from medical and historical records, (previous) genetic analysis, and other relevant sources. The results are displayed and kinship of members of the family are commonly demonstrated in pedigrees or rarely written as narratives. Genealogy is utilized in basic research of genetic rules governing transmission of a trait and, in clinical (medical) genetics, for clinical consulting practice at follow-up of inheritance of various traits.

Pedigree

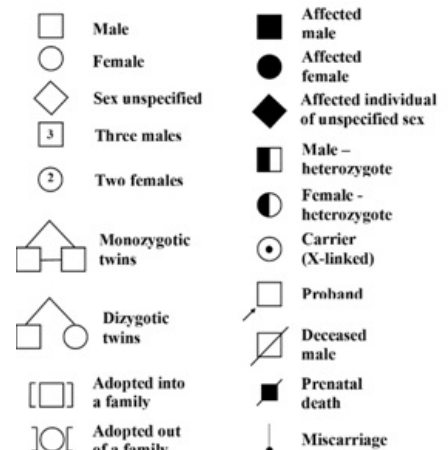
This is a graphical recording of kinship relations between persons in individual generations. It represents the foundation of genealogical method and provides basic information about the occurrence of chosen trait/phenotype. In the drawing up of a pedigree, standard symbols and lines are used (see figures below). More detailed information about the family members is indicated in the legend (e.g. under or beside the pedigree). The legend refers to individual members of family through coordinates – generations are numbered by Roman numerals and individuals in a generation by Arabic numerals (e.g. a second member of third generation is referred to as III/2).

Proband

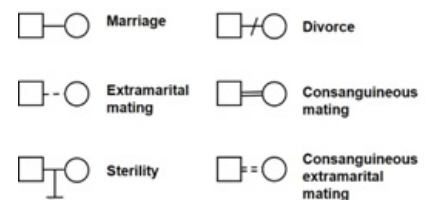
The person providing the information for construction of pedigree and being interested in evaluation/estimate of the probability (risk) of recurrence of the trait; in the pedigree, this person is labeled with an arrow.

Genealogy analysis as a method of research

From biological point of view, genealogy is considered as one of methods of genetic research. It resides in a selection of families with suitable types of crossing. Afterwards, this genealogy material is subjected to logical analysis. In individual families, the effort is made to explain the transmission of traits by schedules used in experimental phenogenetics. For examination of the type of genetic determination in genealogy, many statistical methods (and now computer programs) have been developed enabling investigation of the ratios, the penetrance of followed gene, and estimates of the heritability using a collection (databases) of pedigrees.

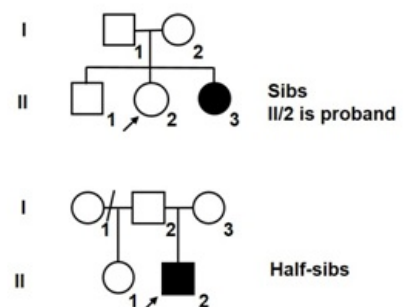


Marks used in pedigrees



Pedigree lines

Numbering of individuals in pedigrees



Numbering of individuals in pedigrees