**Genetic counseling**

**Genetic counseling** is the process by which the patients or relatives at risk of an [inherited disorder](http://en.wikipedia.org/wiki/Inherited_disorder) are advised of the consequences and nature of the disorder, the probability of developing or transmitting it, and the options open to them in management and [family planning](http://en.wikipedia.org/wiki/Family_planning). This complex process can be separated into diagnostic (the actual estimation of risk) and supportive aspects

The [National Society of Genetic Counselors](http://en.wikipedia.org/wiki/National_Society_of_Genetic_Counselors) (NSGC) officially defines genetic counseling as the understanding and adaptation to the medical, psychological and familial implications of genetic contributions to disease.[[2]](http://en.wikipedia.org/wiki/Genetic_counseling#cite_note-2) This process integrates:

* Interpretation of family and medical histories to assess the chance of disease occurrence or recurrence.
* Education about inheritance, testing, management, prevention, resources
* Counseling to promote informed choices and adaptation to the risk or condition.

**Genetic counsellors:**

A genetic counselor is an expert with a [Master of Science](http://en.wikipedia.org/wiki/Master_of_Science) degree in genetic counseling. In the United States they are certified by the American Board of Genetic Counseling. In Canada, genetic counselors are certified by the Canadian Association of Genetic Counsellors.

Genetic counselors work as members of a health care team and act as a [patient advocate](http://en.wikipedia.org/wiki/Patient_advocate) as well as a genetic resource to physicians. Genetic counselors provide information and support to families who have members with [birth defects](http://en.wikipedia.org/wiki/Birth_defect) or [genetic disorders](http://en.wikipedia.org/wiki/Genetic_disorder), and to families who may be at risk for a variety of inherited conditions. They identify families at risk, investigate the problems present in the family, interpret information about the disorder, analyze inheritance patterns and risks of recurrence, and review available [genetic testing](http://en.wikipedia.org/wiki/Genetic_testing) options with the family.

Genetic counselors are present at high risk or specialty prenatal clinics that offer [prenatal diagnosis](http://en.wikipedia.org/wiki/Prenatal_diagnosis), pediatric care centers, and adult genetic centers. Genetic counseling can occur before conception (i.e. when one or two of the parents are carriers of a certain trait) through to adulthood (for adult onset genetic conditions, such as [Huntington's disease](http://en.wikipedia.org/wiki/Huntington%27s_disease) or hereditary [cancer](http://en.wikipedia.org/wiki/Cancer) syndromes).

**Counseling session structure:**

The goals of genetic counseling are to increase understanding of [genetic diseases](http://en.wikipedia.org/wiki/Genetic_diseases), discuss disease management options, and explain the risks and benefits of testing. Counseling sessions focus on giving vital, unbiased information and non-directive assistance in the patient's decision making process. Seymour Kessler, in 1979, first categorized sessions in five phases: an intake phase, an initial contact phase, the encounter phase, the summary phase, and a follow-up phase.[[4]](http://en.wikipedia.org/wiki/Genetic_counseling#cite_note-pmid19798554-4) The intake and follow-up phases occur outside of the actual counseling session. The initial contact phase is when the counselor and families meet and build rapport. The encounter phase includes dialogue between the counselor and the client about the nature of screening and diagnostic tests. The summary phase provides all the options and decisions available for the next step. If counselees wish to go ahead with testing, an appointment is organized and the genetic counselor acts as the person to communicate the results.

**Reasons and results:**

Families or individuals may choose to attend counseling or undergo prenatal testing for a number of reasons.

* Family history of a genetic condition or chromosome abnormality
* Molecular test for [single gene disorder](http://en.wikipedia.org/wiki/Single_gene_disorder)
* Increased maternal age (35 years and older)
* Increased paternal age (40 years and older)
* Abnormal maternal serum screening results or [ultrasound](http://en.wikipedia.org/wiki/Ultrasound) findings
* Increased [nuchal translucency](http://en.wikipedia.org/wiki/Nuchal_translucency" \o "Nuchal translucency) measurements on ultrasound
* Strong family history of cancer
* Predictive testing for adult-onset conditions

The plethora of information available can be overwhelming and counselors spend a large proportion of time clarifying details. Prenatal screening was first introduced nearly four decades ago, yet gaps still exist in public knowledge about the screening program. The general public is familiar with [Down syndrome](http://en.wikipedia.org/wiki/Down_syndrome) (trisomy 21), but is not aware of more uncommon conditions such as trisomy 18 (historically known as [Edwards syndrome](http://en.wikipedia.org/wiki/Edwards_syndrome)) and trisomy 13 ([Patau syndrome](http://en.wikipedia.org/wiki/Patau_syndrome" \o "Patau syndrome)). Clients are usually aware of diagnostic testing from friends, TV/press, or because of family history.