



Paternal Age Risks

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There is some evidence that when a father is 45 years of age or older at the time of conception, there is an increased risk for dominant genetic disorders that are new to the family. The risk for these disorders does not increase dramatically at age 45, but rather the risk increases gradually each year. A precise calculation of risk for any particular dominant genetic disorder is difficult and would probably not be statistically different from the general population risk for the same disorder. However, it does appear that the risk for sporadic dominant disorders, as a group, is 4 to 5 times higher for fathers 45 and over than for fathers in their early 20's.

Examples of autosomal dominant conditions that may be associated with advanced paternal age include achondroplasia (a type of dwarfism), neurofibromatosis, Marfan syndrome, and osteogenesis imperfecta ("brittle bone" disease). Because there is such a variety of dominant genetic disorders that may be related to advanced paternal age, there is no single test available for prenatal diagnosis. An ultrasound can be performed to evaluate fetal growth and development; however, the features of many dominant genetic disorders are not detectable on ultrasound examination.

Dominant genetic disorders are disorders where only one copy of a gene has a mutation or a mistake. Our genes are made of DNA which provides instructions for how our bodies grow and develop. An individual usually has two copies of each gene, one inherited from his/her mother and one inherited from his/her father. If there is a mutation only on one gene of the two copies that leads to a genetic disorder, it is called a dominant disorder. The dominant disorders associated with increased paternal age are not inherited from one of the parents. They are disorders that occurred due to a new mutation in the child's genes.