Dominant inheritance of genes

Genetics Department

Information for Patients

Last reviewed: September 2023
Next review: September 2026
Leaflet number: 451 Version: 3

What are genes?

The body is made up of billions of cells. Contained inside each cell are our genes. The same set of genes is contained within all of our cells including our blood cells and our egg and sperm cells.

Genes are the unique set of instructions which make each of us an individual. We all have more than 22,000 genes, each carrying a different instruction. For example, genes decide things such as our eye colour, our foot size and even things like how our organs should grow and function.

If there is a mistake in the instructions of a gene, the function of the gene may be altered. A mistake in a gene is sometimes known as a variant, a mutation or an alteration. Everyone carries alterations in their genes which is why we are all unique. Sometimes, alterations in specific genes can cause an increased risk of a genetic condition or disease.

We have 2 copies of each gene. We get (inherit) 1 copy from each of our parents. When we have children, we pass on only 1 copy of each of our genes.

What does autosomal dominant inheritance mean?

Autosomal refers to all of the genes in the body that are not involved in determining our sex. Some genetic conditions are passed on in the family in a dominant way. These conditions usually affect more than 1 generation.

These conditions are caused by an alteration in 1 copy of a gene.

In dominant conditions, a person who inherits 1 altered copy of a gene and 1 normal copy of a gene will have the condition. This is because the normal copy is not able to stop the effects of the altered copy.

Both men and women can carry dominant gene alterations and can be affected by dominant conditions.

Having children

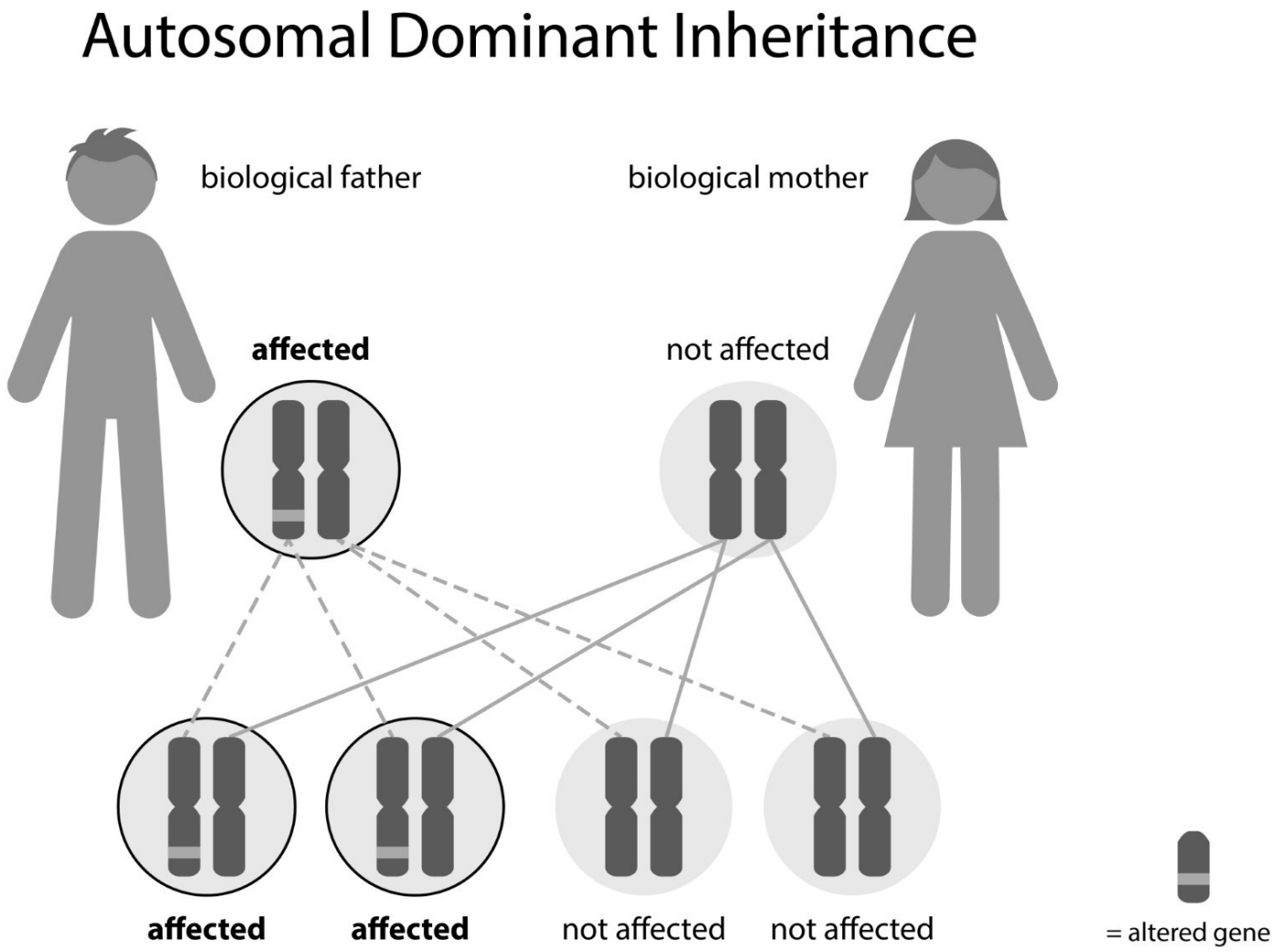
If a parent has an altered gene for a dominant condition, each of their children has a 50% (1 in 2) chance of inheriting the altered gene. The risk is the same for male and female children.

In some dominant conditions, it is possible to inherit an altered gene without showing any symptoms of the condition. Even within a family, some people may be affected by the same dominant condition in different ways.

Some dominant conditions only affect people when they are adults. These are known as “late onset disorders”.

In some families, a single case of a dominant condition may be caused by a new gene alteration (a change which happens for the first time) in either the egg or the sperm that went to make that child.

When this individual has their own children there is a 50% (1 in 2) chance that each child will be affected.



Where can I learn more?

Contact - This is a charity that gives advice and support to families with disabled children. Please feel free to have a look at their website or call their helpline, listed below.

- www.contact.org.uk
- Free helpline 0808 808 3555

The link below is to a video made by a Genomics Education England where Autosomal Dominant Inheritance is explained.

https://www.youtube.com/watch?v=2FjMjAZ-UjA

Leicester Genetics Centre:

Leicester Royal Infirmary, Leicester, LE1 5WW

Telephone: 0116 258 5736

Contact details

Please discuss with your GP if you think you need an appointment with UHL Clinical Genetics. Please note that we only accept electronic referrals (ESR).

University Hospital of Leicester Clinical Genetics (Leicester Royal Infirmary, LE1 5WW)

Please call 0116 258 5736 with any questions.

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہِ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔
على هذه المعلومات بلغةٍ أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل
જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

ਜੇ ਤੁਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਹੇਠਾਂ ਦਿੱਤੇ ਗਏ ਨੰਬਰ 'ਤੇ ਟੈਲੀਫੋਨ ਕਰੋ।
Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

Previous reference:

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