Genetic susceptibility

europeanlung.org/genetic-susceptibility/

Some people may have an increased likelihood of developing a lung disease because of the genes they inherit from their parents. Genes are short sections of DNA that determine the characteristics of each living organism.

Areas for action

- Genetic testing in lung health should focus on a number of different areas in the future, including early diagnosis, prediction of disease risk and prediction of treatment response.
- As genetic research develops, the focus should be on identifying targets for new drugs to help treat or cure lung diseases.
- EU funding programmes such as Horizon 2020 should cover research in this area.

Although the human DNA sequence is 99% identical between individuals, there is still scope for more than 10 million variations in the genetic make-up of a person.

Several genes have been linked to lung function and lung development.

More than 1,000 different mutations in one single gene (CFTR) have been identified as causing cystic fibrosis.

20% of smokers develop COPD, suggesting genetic risk factors play a role.

Several susceptibility genes are thought to be common between people with asthma and people with COPD.

A group of genes has been linked with nicotine dependence, as measured by the number of cigarettes smoked per day.