

Disease resistance may be genetic

According to a study in *Evolution*, resistance to certain infectious diseases may be passed genetically from parent to child. The genetic resistance may be beneficial to families as those with the gene are both unlikely to suffer from disease and unlikely to carry the disease home. Paul Schliekelman, author of the study, says the research was inspired by personal experience after catching stomach flus from his daughter three times over a six-month period.

Schliekelman used mathematical models to calculate the possible effect of “kin selection” on natural evolution. “Natural selection is typically seen as ‘survival of the fittest’, but in this case it might be more accurate to say ‘survival of the fittest families,’” says Schliekelman.

His research led to the following conclusions:

- There exists a strong tendency to catch infectious diseases from family members.
- If a relative has a gene that gives resistance to a disease, it would benefit other relatives because they would be less likely to catch the disease.
- Genes that offer resistance to infectious diseases will tend to cluster in families.
- Therefore, the resistance genes in a family help each other out and natural selection in their favor can be dramatically increased.

This model may prove useful in understanding the spread of deadly diseases and may alter the long-term natural selection of certain genes in a population. Studying the genetic behavior of these diseases could be an important step towards understanding the evolutionary history of infectious disease resistance.

Source: Blackwell Publishing

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