

## In the news

### MENINGITIS RISK GENES REVEALED

Why do only some individuals who become infected with the bacterium *Neisseria meningitidis* develop deadly meningococcal meningitis, whereas most people remain disease free despite carrying the bug in their throat? According to a new study published in *Nature Genetics*, susceptibility is influenced by our genes (4 Aug 2010). The findings provide “the strongest evidence so far that there are genetic factors that lead to people developing meningitis” (*Daily Mail*, 9 Aug 2010).

The team of scientists, from Imperial College London, UK, and the Genome Institute of Singapore, compared the genomes of 475 British patients who had meningococcal meningitis with the genomes of 4,700 healthy control individuals. The genome-wide scan revealed variants of the genes that encode complement factor H (CFH) and CFH-related protein 3 (CFHR3) between patients and controls (*Nature Genetics*). The same results were obtained when they carried out the comparison in two other European populations.

CFH and CFHR3 normally ensure that the complement system does not cause excessive damage to the body's own cells. *N. meningitidis* has been shown to hijack this pathway and bind to CFH, thereby protecting itself from host immune control. Study author Professor Michael Levin said that “It seems that the genetic differences in factor H between people is what determines susceptibility or resistance” (*BBC News*, 8 Aug 2010). The research team will now investigate how the genetic variants affect the activity of these proteins (*Wellcome Trust*, 10 Aug 2010).

It is hoped that the findings will be useful in developing a vaccine against the meningitis B strain, which is responsible for most bacterial meningitis cases in the UK, mainly affecting children and teenagers. Indeed, the study suggests that CFH may be an important protein to include in a vaccine (*BBC News*).

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