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News & Comments

Neanderthal Genes Affect How People Process Medicine

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Approximately 40,000 years ago, Neanderthals became extinct in Europe and parts of Asia as a subspecies of archaic humans. In terms of the evolutionary timeline, they are different from us - Homo sapiens, essentially. It is possible that some people today still contain traces of Neanderthal genes due to interbreeding between Homo sapiens and some of these other species. Modern medicine may be influenced by the results of ancient interbreeding. Scientists have discovered that Neandertals inherited two of the most important genetic variants that influence drug elimination. Twenty percent of Europeans today carry these variants. Two cytochrome P450 enzymes were found in that DNA segment inherited from Neandertals. A number of common drugs are eliminated by these enzymes, including warfarin, phenytoin, statins, and ibuprofen, a common painkiller. Drug elimination is generally less efficient with Neandertal variants of the enzymes. "In this particular case, Neandertal admixture directly impacts the clinic. Otherwise, therapeutic doses could be toxic for Neandertal gene variant carriers", says lead researcher Hugo Zeberg. Researchers have found that CYP2C8*3 is paired up with CYP2C9*2, pointing to the possibility that they might be Neanderthals. There is a long chain of DNA "bases" that separates the two gene variants, which has been observed in Neanderthals. A haplotype is a grouping of genomic variants that tend to be inherited together. Recent research has suggested that humans have more Neanderthal DNA than previously believed. The new study sheds light on how we may need to learn how much DNA we have inherited from these early humans. it could be to learn more about this DNA. The paper explained that, recently, genetic risk factors for severe Covid19 infections and a protective variant were found to be Neandertal in origin... Although this knowledge does not change clinical practice, it explains differences observed across ancestries in disease outcomes.

KEYWORDS

Drug regulation, Risk factors, neuroscience, early humans, genes, medicine, cytochrome P450, Neandertal, toxic, Homo sapiens, evolution, ancient, ancestry, CYP2C8*3, CYP2C9*2, gene variants, research, latest