

ALLERGY, GENETICS, JOKE

# DID THE NEANDERTHAL HOMINID SUFFER FROM ASTHMA?

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Maybe this is a largely irrelevant question – basically as relevant as building a [museum](#) on top of [some Neanderthal 1 bones](#) – as we can never reliably predict a complex trait just by genetics and some broken bones.

Already Virchow was wrong believing that the “Neanderthaler” was a modern human suffering from senility and malformations ... Anyway, [new research](#) wants to answer this question:

Here we show that of the 51 asthma-associated loci that we surveyed, 39 carry variants that were derived in the Neanderthal lineage. The shared sequences suggest that some asthma variants may have originated from the Neanderthal genome after admixture and subsequent introgression into the Eurasian population. Of note, one variant, rs4742170, previously linked to asthma and childhood wheezing, was shown in a recent study to disrupt glucocorticoid receptor binding to a putative IL33 enhancer, and elevate enhancer activity of this key asthma gene.

Sorry to say that [there are now >3000 variants associated with asthma](#) including at least [354 coding variants](#) while the authors used only 51 loci in their study derived from an outdated [2016 review](#). So we could already end up writing up a review here but the paper continues with omissions and misunderstandings

most of the Neanderthal-derived SNPs we identified, including those near the lead variants for the asthma GWAS signals, are in non-coding regions of the gene

Unfortunately we need to be exact here – not just “near” some variants. The SNP rs4742170 that they showed from the [EVA database](#) had indeed the [T allele](#) in the Vindija Neanderthal



[https://bioinf.eva.mpg.de/jbrowse/?loc=9%3A6242936..6242991&tracks=hg19\\_1000g%2Cvindija\\_hc\\_bam%2CAItai](https://bioinf.eva.mpg.de/jbrowse/?loc=9%3A6242936..6242991&tracks=hg19_1000g%2Cvindija_hc_bam%2CAItai)

but unfortunately when going then to dbSNP it is also found in the African genome.

Population	Group	Sample Size	Ref Allele	Alt Allele
Total	Global	133772	C=0.328880	G=0.000000, T=0.671120
European	Sub	115884	C=0.312364	G=0.000000, T=0.687636
African	Sub	5024	C=0.7082	G=0.0000, T=0.2918
African Others	Sub	190	C=0.758	G=0.000, T=0.242
African American	Sub	4834	C=0.7062	G=0.0000, T=0.2938
Asian	Sub	550	C=0.549	G=0.000, T=0.451
East Asian	Sub	438	C=0.557	G=0.000, T=0.443
Other Asian	Sub	112	C=0.518	G=0.000, T=0.482
Latin American 1	Sub	624	C=0.429	G=0.000, T=0.571
Latin American 2	Sub	5780	C=0.2604	G=0.0000, T=0.7396

<https://www.ncbi.nlm.nih.gov/snp/?term=rs4742170>

So the whole conclusion

Our findings here ... add asthma to the list of diseases that could be traced back to Neanderthals

is wrong.

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