

# Mate selection more biologically determined in some human populations

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Some human populations may rely on biological factors in addition to social factors when selecting a mate. In a recent study, published September 12 in the open-access journal *PLoS Genetics*, scientists in China, France, and the United Kingdom report genomic data showing that immunity traits may be involved in mate choice in some human populations.

In several species it has been shown that the Major Histocompatibility Complex (MHC), a large genomic region involved in immune response, influences mating selections and that this may be mediated by preferences based on body odor. Some previous studies have reported a tendency for humans to prefer MHC-dissimilar mates, encouraging heterozygosity at MHC loci in offspring and resulting in improved immune response. However, other studies, both directly in couples and also indirectly in "sweaty T-shirts" experiments, have reported conflicting results.

Adding to this debate is the recent study by Raphaëlle Chaix, Chen Cao and Peter Donnelly. The testing employed genome-wide genotype data and HLA types in a sample of African and a sample of European American couples, enabling the researchers to distinguish MHC-specific effects from genome-wide effects. The group examined whether husband-wife couples were more MHC-similar or MHC-dissimilar in comparison to random pairs of individuals.

African couples were not more MHC-similar or MHC-dissimilar,

although genome-wide they were more similar than random couples, probably as a consequence of social factors. On the other hand, European American pairs were predominantly MHC-dissimilar, and drastically so in comparison to the genome, supporting the hypothesis that the MHC influences mate choice in this population. Future studies may add to this debate of whether biological traits play a significant role beside social traits in the process of mating.

Citation: Chaix R, Cao C, Donnelly P (2008) Is Mate Choice in Humans MHC-Dependent?. PLoS Genet 4(9): e1000184.

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