

# Fifty new genes for eye colour found

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The genetics of human eye color is much more complex than previously thought, according to a new study published today.

An international team of researchers led by King's College London and Erasmus University Medical Center Rotterdam have identified 50 [new genes](#) for eye color in the largest genetic study of its kind to date. The study, published today in *Science Advances*, involved the [genetic analysis](#) of almost 195,000 people across Europe and Asia.

These findings will help to improve the understanding of eye diseases such as pigmentary glaucoma and ocular albinism, where eye pigment levels play a role.

In addition, the team found that eye color in Asians with different shades of brown is genetically similar to eye color in Europeans ranging from dark brown to light blue.

This study builds on previous research in which scientists had identified a dozen genes linked to eye color, believing there to be many more. Previously, scientists thought that variation in eye color was controlled by one or two genes only, with brown eyes dominant over [blue eyes](#).

Co-senior author Dr. Pirro Hysi, King's College London, said: "The findings are exciting because they bring us to a step closer to understanding the genes that cause one of the most striking features of the human faces, which has mystified generations throughout our history. This will improve our understanding of many diseases that we know are associated with specific pigmentation levels."

Co-senior author Dr. Manfred Kayser, Erasmus University Medical Center Rotterdam, said:

"This study delivers the genetic knowledge needed to improve eye color prediction from DNA as already applied in anthropological and forensic studies, but with limited accuracy for the non-brown and non-blue eye colors."

**More information:** Mark Simcoe et al. Genome-wide association study in almost 195,000 individuals identifies 50 previously unidentified genetic loci for eye color, *Science Advances* (2021). [DOI: 10.1126/sciadv.abd1239](https://doi.org/10.1126/sciadv.abd1239)

Provided by King's College London

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