

Taking the contraceptive pill could contribute to scarring hair loss

May 30 2024



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A new study [published](#) in *JAMA Dermatology* looks at how taking the

oral contraceptive pill could be linked to a form of hair loss, known as frontal fibrosing alopecia (FFA).

FFA is a highly distressing skin disorder, which is associated with inflammation, scarring and irreversible hair loss. The number of people, predominantly women, with FFA has continuously increased since it was first described in 1994, leading scientists and clinicians to conclude that the disease may have both environmental and genetic causes.

The study, undertaken by recent Ph.D. graduate Dr. Tuntas Rayinda, and led by Dr. Christos Tziotzios, Consultant Dermatologist & Senior Lecturer at St. John's Institute of Dermatology, and Prof Michael Simpson from the Department of Medical and Molecular Genetics, builds on the team's earlier research which identified mutations within certain genes that increase the risk of developing FFA. One of these is gene CYP1B1—a gene that codes for a metabolic enzyme that is responsible for metabolizing hormones.

An investigation of women with FFA found that those who had a specific version of the CYP1B1 gene were more likely to develop the condition when they have also taken oral contraception. Data were collected from women with FFA across the U.K. between July 2015 and September 2017, which were compared against women who did not have FFA from the UK Biobank. This supports currently existing models on the development of FFA, which results from a combination of genetic factors and environmental factors.

As well as improving our understanding of the combined genetic and [environmental factors](#) that drive FFA, the authors hope that these findings can be applied to minimize the risk of its development. The team of researchers are now working on developing and making such a

genetic test more widely available.

"Our study is the first ever gene-environment interaction study into frontal fibrosing alopecia (FFA), a lichenoid inflammatory and scarring condition affecting almost exclusively women. We have previously identified causal variation in a hormone-metabolism related gene, conferring susceptibility to this increasingly common and highly distressing disease.

"We have now demonstrated contribution of the oral contraceptive to disease manifestation via gene-environment interaction. We are very grateful to all our referring clinicians in the U.K., all clinical and research staff, our patients, and the British Skin Foundation, for financially supporting our work," says Dr. Christos Tziotzios.

More information: Tuntas Rayinda et al, Gene-Environment Interaction Between CYP1B1 and Oral Contraception on Frontal Fibrosing Alopecia, *JAMA Dermatology* (2024). [DOI: 10.1001/jamadermatol.2024.1315](https://doi.org/10.1001/jamadermatol.2024.1315)

Provided by King's College London

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