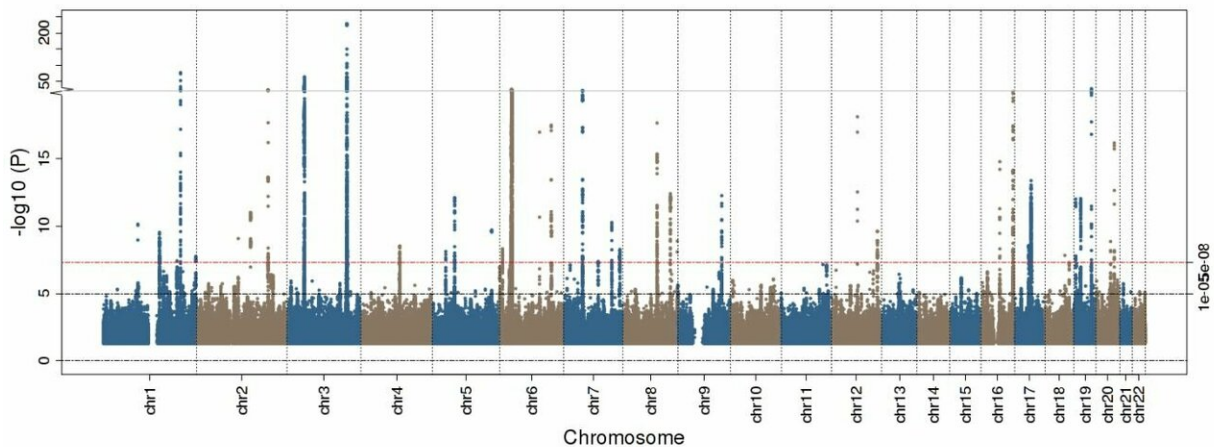


# Could genetic breakthrough finally help take the sting out of mouth ulcers?

March 5 2019



The figure (Manhattan plot) may be useful as it shows the areas of the genome which are associated with mouth ulcers. Each stream of dots going above the red line indicates an area (or several areas close together) that is associated with mouth ulcers. Credit: University of Bristol

A large breakthrough has been made in the genetic understanding of mouth ulcers which could provide potential for a new drug to prevent or heal the painful lesions. Mouth ulcers affect up to 25 per cent of young adults and a higher proportion of children. Previous research has shown that mouth ulcers are partially heritable, but until now there has been little evidence linking specific genes or genomic regions to mouth ulcers.

The study, carried out by an international team of scientists and led by researchers at the University of Bristol, attempted to pinpoint areas of the genome associated with triggering mouth ulcers by looking systematically across the DNA code. By looking at mouth ulcers in [different populations](#) in the UK, USA and Australia the researchers aimed to find genes which were consistently linked to mouth ulcers. The research is published today [Tuesday 5 March] in *Nature Communications*.

The team identified genetic variants associated with the condition by analysing [genetic data](#) derived from over 450,000 participants in the UK Biobank and replicated these findings in over 350,000 participants in USA-based data collection 23andMe. They discovered 97 common genetic variations across the genome that predispose people to mouth ulcers. The study went on to look at three further studies, including Bristol's Children of the 90s (ALSPAC) study, which showed confirmatory results. These variations are enriched in genes that have previously been linked to regulation of the body's [immune system](#).

Tom Dudding, Wellcome Trust Clinical Research Fellow in the Bristol Medical School: Population Health Sciences (PHS) and Bristol Dental School and joint-first author of the paper, said: "Currently, there are few satisfactory drug treatments for mouth ulcers as current medication options are non specific and can lead to side effects. The field has gone from very little genetic understanding of mouth ulcers to having up to 97 areas of the genome which may provide an excellent basis for future research.

"Importantly, our findings also show that several of the genes related to mouth ulcers are in pathways which are already targeted by drugs that are used to treat other diseases such as rheumatoid arthritis and psoriasis. There is the potential that drugs like these could be used to treat [mouth ulcers](#), although further work is required to demonstrate this."

**More information:** 'Genome wide analysis for mouth ulcers identifies associations at immune regulatory loci' by T. Dudding, S. Haworth et al in Nature Communications

Provided by University of Bristol

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