Face blindness runs in families

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THE genetic basis of a distressing neurological condition that prevents people from recognising faces has been pinned down. The finding may help people cope with the impairment, which may affect as many as 1 in 50 people from birth.

People with prosopagnosia or face blindness cannot easily tell faces apart, even if they belong to people they know well, and so often see their friends and family as strangers (see "Hello, stranger"). The condition is usually associated with brain damage, for example, from a stroke, but numerous anecdotal reports have suggested that it also runs in families.

Now a team led by Thomas Grüter at the Institute for Human Genetics in Münster, Germany, who has the condition himself, has found it has a genetic basis. "I realised I had prosopagnosia quite early on in school," Grüter says. He has trouble recognising faces of people he knows and sometimes thinks he recognises strangers.

The team recruited members of a prosopagnosia support group and their families into the study, plus Grüter's own relatives. Using a questionnaire to identify symptoms, the team found 38 people with prosopagnosia in seven families. By plotting the condition on family trees, the team showed that the inheritance pattern is consistent with the trait being carried by a single dominant gene: just one copy of the defective gene could make the carrier face-blind.

To confirm the diagnosis suggested by the questionnaires, the researchers tested eight of the volunteers with prosopagnosia more thoroughly with photos of faces in which identifying features such as beards and hair were missing. In one test using pictures of celebrities, they correctly recognised 9 out of 20 faces on average, compared with 14 for non-prosopagnosics. The people with prosopagnosia also failed to recognise around 30 per cent of the people in photos of their own families. The team will report their results in a forthcoming issue of the journal Cortex.

Marlene Behrmann, a psychologist at Carnegie Mellon University in Pittsburgh, Pennsylvania, says the study is a big step forward. "This is a new model for us. We've got a lot to do," she says. The next task, she says, will be to identify the faulty gene associated with face blindness and work out how it affects the brain (Trends in Cognitive Sciences, DOI: 10.1016/j.tics.2005.02.011). But she cautions that using questionnaires rather than direct tests for diagnosis is a weakness of the study.

Grüter wants to identify the gene responsible, too. Children with the condition could then be identified early, saving them from being wrongly diagnosed with other conditions such as autism. It would also help prosopagnosiac children to understand why they are different - some become shy and reclusive because of their difficulties in social situations.

And the condition may be much more common than scientists have thought up to now. Last year, Grüter distributed similar questionnaires to 576 biology students in Münster. Nearly 2 per cent reported face-blindness symptoms.

Hello, stranger

Elizabeth Hensley frequently insults her friends by snubbing them in the street.

But the 48-year-old from Florida doesn't mean any offence. She has prosopagnosia - face blindness - which means she has difficulty telling faces apart and has to use distinguishing marks to recognise people. "Beards are nice," she laughs. And she can always recognise Winston Churchill by his chin.

The condition has been a problem all her life, mainly because of social stigma and misunderstanding. "It was brutal," she says, "If I'd known about this condition when I was
young, it would have made things easier."

Other people seem to cope better with the condition. "To say I suffer would be overdramatic," says Larry Snyder from St Louis, Missouri. But it has affected his choice of profession - he's a neurobiologist.

Snyder finds watching movies a challenge. "I always have to ask my wife who the actors are," he says. But he has learned to recognise the people he knows in other ways. When he goes to the park, he recognises friends by their dogs.

And there can be benefits. Deb Kleber, a 43-year-old who lives in Portugal, says, "I often look at my husband and think: 'Wow! What a hunk!' After 23 years of marriage, this is a real blessing."