



Gaza study helps scientists establish eyes-teeth link

Mike Waites
 Health Correspondent

SCIENTISTS in Yorkshire have uncovered a previously unknown and unexpected link between the formation of eyes and teeth.

The discovery could lead to better understanding and treatments for common forms of blindness, poor teeth and bone diseases including osteoporosis.

Experts from Leeds University travelled to a village in Gaza to identify the cause of a condition in which related family members suffer loss of eyesight, almost from birth, and poorly developed teeth.

They found a single defective gene was responsible for disrupting the transport of minerals affecting sight and teeth and bone development.

Chris Inglehearn, Professor of Molecular Ophthalmology at Leeds Institute of Molecular Medicine, said: "What interested us was the idea that there might be a single process or protein essential in both teeth and eyes, not something you'd normally think of as having much in common.

"Working with colleagues in the Leeds Dental Institute, genetic changes were found that disrupt the function of a protein called CNNM4 and that are passed on from one generation to the next in these families.

"This protein is present in the cells that lay down tooth enamel and also in the various layers of the retina, the light sensitive 'film' at the back of the eye."

Prof Inglehearn said little was known about the role of the protein but it was possible that it was involved in transporting magnesium or calcium to cells in the body. Both minerals are known to be important in visual function, teeth and bone formation.

The team have named the condition Jalili syndrome after one of the researchers Ismail Jalili who travelled regularly to Gaza and trouble-spots in the West Bank to recruit families into the research until the escalation of conflict there made the trips impossible.

Although a rare condition, Jalili syndrome sufferers from France, Scotland, Iran, Bosnia and Guatemala were also studied.

Martin McKibbin, consultant ophthalmologist at St James's Hospital, Leeds, and chairman of Yorkshire Eye Research, which funded the study alongside the Wellcome Trust, said: "The findings of this research are surprising but will give doctors and scientists a greater understanding of the causes of inherited blindness and may identify novel treatments in the future."

The study has been published in the *American Journal of Human Genetics*.