In-womb birth defect treatments possible

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British-led research into cleft lip and palate might lead to babies with certain craniofacial disorders being successfully treated in the womb.

University of Manchester researchers say they have uncovered the causes behind two genetic conditions that lead to facial anomalies including clefts, where the lip and often the roof of the mouth, or palate, fail to form properly.

Working with colleagues at the University of Iowa, Manchester husband and wife team Mike and Jill Dixon and researcher Rebecca Richardson identified the role of a gene called IRF6.

The team established that mice missing the gene developed abnormal skin as well as cleft palate. Further analysis revealed IRF6 controls the development of keratinocytes -- the main type of cells in the outer layers of the skin, known as the epidermis.

"Put simply, mutations of IRF6 in Van de Woude syndrome make the skin cells too sticky, so they stick to each other and other types of cell much sooner than they should resulting in these facial anomalies," said Mike Dixon.

The findings appear in the current issue of the journal Nature Genetics.