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A team of researchers including one of Indian-origin from the University of California, Los Angeles (UCLA) have discovered that fibroblasts (scar forming cells), have the ability to become endothelial cells. The new research paves way for a new strategy to treat heart attack.

"It is well known that increasing the number of blood vessels in the injured heart following a heart attack improves its ability to heal. Our findings suggest the possibility of coaxing scar-forming cells in the heart to change their identity into blood vessel-forming cells, which could potentially be a useful approach for better heart repair," said Dr Arjun Deb, the study's senior author and an associate professor of medicine in the division of Cardiology at the David Geffen School of Medicine, UCLA.

Through experiments in mice in which scar-forming cells in the heart were genetically labelled, researchers discovered that many of the fibroblasts in the heart's injured region changed into endothelial cells and contributed directly to blood vessel formation, a phenomenon they called mesenchymal-endothelial transition or MEndoT.

Researchers identified a molecular mechanism that regulated MEndoT and found that administering a small molecule to augment MEndoT led to less scarring and allowed the heart to heal more completely.

They plan to test similar small molecules in other models to determine whether the strategy could potentially be used to benefit humans.

"There are remarkable similarities in the process of scarring in different organs after injury. Our hope is that this approach can be used to treat scar tissue in other organs as well," added Dr Deb.