

## **Inhibition of dermal scar formation by cell-based therapy using human mesenchymal stem cells**

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We have recently reported that implantation of bone marrow-derived mesenchymal stem cells significantly inhibits dermal scar formation in rats and pigs. Human mesenchymal stem cells can be isolated by aspiration of bone marrow without difficulties. Dermatoscopic analysis revealed that this novel approach ensures safety and efficacy: There was a significant decrease in the percentage of scar formation. Thus, mature scar was reduced in a quantity and distribution of scar was altered during the repair process. These results suggest that implantation of marrow-derived mesenchymal stem cells decreases visible scar formation. It is also noteworthy that usage of somatic stem cells does not have ethical problem unlike human embryonic stem cells. After approval of Institutional Review Board, we aim to perform a clinical trial of cell-based therapy using mesenchymal stem cells.