

Silicon Band-aid



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Scientist have developed a specially contoured silicone that accelerates wound healing

A research Organization has developed a new plaster that not only protects a wound from infection, it can also accelerate healing through the use of specially contoured silicone that promotes cell migration by guiding fibroblasts quickly and efficiently to where they are needed in the healing process, namely from the edges of a wound to its center. As a result, wound healing is accelerated.

This plaster has many tiny parallel grooves on its surface. In a cell culture experiment, a cell layer was wounded by scratching. When the researchers applied the plaster with its grooves parallel to the wound edges (against the direction of wound healing), the scratch healed as fast as a wound under a plaster without grooves. However, when they placed the grooves perpendicular to the wound edges (in the direction of wound healing), they could observe under the microscope that the wound closed faster, thus shows that this novel plaster does indeed speed up the healing process.

The researchers could demonstrate that the fibroblasts migrated along the grooves of the new plaster. They therefore hypothesize that these cells, which are much larger than the grooves, chose the path of least resistance by following them. Moving across the grooves would cause more friction than traveling along them.

Fibroblasts are in direct contact with the plaster, but do not connect to it. Instead, they are guided in purely mechanical fashion by the grooves. Consequently, the plaster can be removed at any time without tearing of cells or tissue.

So far they have tested their new plaster only on single-layer cell cultures. The next goal will be in vivo experiments to verify that the method also works on animals or humans.

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