

Scientists use nanoparticles to study wound scarring

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A group of scientists at Nanyang Technological University, Singapore (NTU Singapore) has developed a new way of seeing when heavy wound scars are forming, and thereby providing doctors the chance to intervene. Clinicians currently find it difficult to predict how scars will develop following surgery or after a burn wound, without resorting to invasive testing.

The new detection method uses thousands of nanoparticles called NanoFlares, which have DNA strands attached to their surfaces like a ball of spikes. These nanoparticles are applied to closed wounds using a cream. After the nanoparticles have penetrated the skin cells for 24 hours, a handheld fluorescence microscope is used to look for signals given out by the nanoparticles' interaction with target biomarkers inside the skin cells.

If fluorescence signals are detected, they indicate abnormal scarring activity and preventive action can be taken to hopefully avoid heavier scarring.

The team has filed a patent application based on this technology through NTU's innovation and commercialisation arm, NTUitive, and plan to license out the technology for commercialisation.