

Nanotech wound healing in diabetes

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People with diabetes mellitus often suffer from impaired wound healing. Now, scientists in Egypt have developed antibacterial nanofibres of cellulose acetate loaded with silver that could be used in a new type of dressing to promote tissue repair. They reveal details of the new materials and their properties in the *International Journal of Nanoparticles*.

Thanaa Ibrahim Shalaby and colleagues, Nivan Mahmoud Fekry, Amal Sobhy El Sodfy, Amel Gaber El Sheredy and Maisa El Sayed Sayed Ahmed Moustafa, at Alexandria University, prepared nanofibres from cellulose acetate, an inexpensive and easily fabricated, semisynthetic polymer used in everything from photographic film to coatings for eyeglasses and even cigarette filters. It can be spun into fibres and thus used to make an absorbent and safe [wound dressing](#). Shalaby and co-workers used various analytical techniques including scanning electron microscope (SEM) and Fourier-transform infrared (FTIR) spectroscopy to characterise their fibres in which they incorporated silver nanoparticles.

Having characterised the material the team then successfully tested its antibacterial activity against various strains of bacteria that might infect an [open wound](#). They next used the material as a dressing on skin wounds on mice with diabetes and determined how quickly the wound healed with and without the nano dressing. The dressing absorbs fluids exuded by the wound, but also protects the wound from infectious agents while being permeable to air and moisture, the team reports. The use of this dressing also promotes collagen production as the wound heals,

which helps to recreate normal skin strength and texture something that is lacking in unassisted [wound healing](#) in [diabetes mellitus](#).

More information: "Preparation and characterisation of antibacterial silver-containing nanofibres for wound healing in diabetic mice."

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