

# Light device is effective ulcer treatment

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The lamp built by the team has 32 different bulbs which emit infrared, red or ultraviolet light. Eight patients with 14 ulcers between them had the treatment. Credit: Michael Hughes

University of Manchester and Salford Royal NHS Trust scientists have developed a lamp which could treat chronic ulcers with light.

The Arthritis Research UK funded trial led by Dr. Michael Hughes tested the therapy—which combines infrared, red and [ultraviolet light](#)—on finger ulcers caused by a condition called [systemic sclerosis](#), where the immune system attacks the body's fingers and toes.

Dr. Hughes said the results were so emphatic, the device is a potential [treatment](#) for other ulcers, including diabetic and venous ulcers, a huge problem for tens of thousands of patients

People with diabetes are at risk of ulcers or open wounds that don't heal because of poor circulation, a complication of the condition.

Venous ulcers occur when blood doesn't flow from the lower legs back to the heart, causing a build-up of pressure in the veins.

The lamp built by the team has 32 different bulbs which emit infrared, red or ultraviolet [light](#). Eight patients with 14 ulcers between them had the treatment.

In the study, published in the *Journal of*

*Dermatological Treatment* today, the patients were treated using the lamp for 15-minute sessions, twice a week for three weeks.

After treatment, there was an average 83 per cent improvement in the ulcers, with no side-effects.

Scientists believe ultra-violet light, which cannot be seen by the naked eye, kill the bacteria and reduce the inflammation that prevents healing.

Red light is believed to boost blood circulation, increasing the supply of oxygen and nutrients needed for wound healing.

It is also thought to stimulate the production of the protein collagen in the skin, which provides the natural scaffolding to help new tissue grow.

And infrared light, used in TV remote controls, is associated with increasing blood flow and oxygen.

Patients having light therapy for ulcers, using lasers, are currently treated in hospital over five days and are forced to take medication which lower their blood pressure.

However, the new therapy can be administered at home and, says Dr. Hughes, with SIM card technology can even be used to monitor patients' progress remotely.

He said: "We believe this technology is a game changer; the implications are huge.

"Ulcers cause much distress to patients—and current treatments are costly to the NHS and problematic for [patients](#) who can only receive them in hospital.

"But this technology is cheap and practical- it's really a no brainer as it can be administered at home.

"There are future possibilities as well: we think this device could be easily adapted to monitor ulcers

remotely using cameras. They could also be programmed to recognise different parts of the body so that the treatment is given accurately.

"In the next 6 to 12 months we shall be refining the machine and within 12 months we hope to trialling it on diabetic [ulcers](#)."

**More information:** M Hughes et al, A Feasibility Study of a Novel Low Level Light Therapy for Digital Ulcers in Systemic Sclerosis, *Journal of Dermatological Treatment* (2018). [DOI: 10.1080/09546634.2018.1484875](#)

Provided by University of Manchester

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