

Tiny electrical sensors could signal faster MRSA diagnosis

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A simple test to identify MRSA in wounds could identify the superbug quickly and help prevent infection from spreading.

Scientists have developed the test to show whether wounds or lesions are infected with bacteria and if MRSA is present.

The test, developed at the University of Edinburgh in collaboration with NHS Lothian, works by taking swabs from a wound or sores, which are then analysed using a strip with electrical sensors that can detect MRSA.

Researchers currently process the swab samples in the laboratory to increase the amount of bacteria present before testing them, but hope to avoid the need for this in the future by improving the strip's sensitivity.

This would enable scientists to develop a test that could be used outside the laboratory, for example in GP practices or people's homes.

The ability to detect the bacteria more quickly than with conventional tests would enable more effective drugs to be given to the patient straight away.

Currently, [laboratory tests](#) to confirm whether MRSA is present in a wound can take a full day using conventional techniques.

The test was developed using swabs from diabetic foot ulcers taken from patients attending NHS Lothian's Diabetic Foot Clinic at the Royal

Infirmery of Edinburgh.

Detection of MRSA in these patients is important to prevent the spread of infection, which can lead to the [amputation](#) of limbs and increase the risk of mortality.

Dr Till Bachman, from the University of Edinburgh's Division of Pathway Medicine, will present the research behind the test today (Thursday, March 29) at the Advances in Biodetection and Biosensors conference in Edinburgh.

He said: "[Antibiotic resistance](#) is becoming a pressing issue in [modern healthcare](#) and we are in serious danger of entering a post-antibiotic era. Current tests for [MRSA](#) tend to be expensive and not very fast. By developing a rapid and cost-effective test, we would know what kind of infection is present straight away, which will improve the chance of success in treating it."

Edinburgh scientists are using similar technology to monitor signals that bacteria send to each other to spread infections, and chemicals that patients produce that indicate the wound's response to the infecting bacteria. Understanding why bacteria release certain molecules as part of this process will help scientists identify the start of an infection and so treat it promptly.

Provided by University of Edinburgh

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