

Antibiotics: On-the-spot tests reduce unnecessary prescriptions

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Fast, on-the-spot tests for bacterial infections may help to reduce excessive antibiotic use. A systematic review published in *The Cochrane Library*, found that when doctors tested for the presence of bacterial infections they prescribed fewer antibiotics.

Antibiotics treat infections caused by bacteria but not those caused by viruses. Most patients who visit their doctors with acute respiratory infections are suffering from [viral infections](#) like the common cold. However, because doctors usually have no immediate way of knowing whether an infection is bacterial or viral, they may still prescribe [antibiotics](#) for these patients. Unnecessary use of antibiotics gives bacteria more opportunities to develop resistance to the drugs, meaning that common antibiotics are increasingly powerless in treating serious bacterial infections when they do occur. One way to tackle this problem is to offer on-the-spot tests that can help [doctors](#) to better target antibiotic use in people who have bacterial infections.

The researchers looked at evidence from randomised trials on use of the C-reactive protein test, which is currently the only on-the-spot kit available to general practitioners intended to guide antibiotic prescription. It involves testing a single drop of blood collected by pricking the patient's finger and takes about three minutes. C-reactive protein acts as a so-called 'biomarker' of inflammation and low levels may effectively rule out serious [bacterial infection](#), meaning that use of antibiotics would be unnecessary.

Data on the use of the test was available from six trials involving a total of 3,284 predominantly adult patients. Overall, 631 out of the 1,685 people who took the biomarker test were prescribed antibiotics, compared to 785 out of the 1,599 people who did not take the test. Antibiotic use was 22% lower in the group who took the test. However, the results varied considerably between studies, possibly due

to differences in the way they were designed. This makes interpretation of the findings more difficult. The review found no difference between the two groups in terms of how long patients took to recover.

"These results suggest that antibiotic use in [patients](#) with [acute respiratory infections](#) could be reduced by carrying out biomarker tests in addition to routine examinations," said lead researcher Rune Aabenhus who is based at the Department of Public Health at the University of Copenhagen in Copenhagen, Denmark. "Going forward, it would be useful to see more evidence on the size of the reduction and cost-savings, as well as how these tests compare to other antibiotic-saving approaches."

The researchers conclude that the test seems to be safe in its current form. However, in one of the six trials, based on a small number of cases, those who took the biomarker test were more likely to be admitted to hospital at a later date. "This result may have been a chance finding, but it does remind us that general practitioners need to be careful about how they use these tests" said Aabenhus.

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More information: Aabenhus R, Jensen J-US, Jørgensen KJ, Hróbjartsson A, Bjerrum L. Biomarkers as point-of-care tests to guide prescription of antibiotics in patients with acute respiratory infections in primary care. *Cochrane Database of Systematic Reviews* 2012, Issue 11. Art. No.: CD010130. [DOI: 10.1002/14651858.CD010130.pub2](#)

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