

Bacteria switch form to avoid being killed by antibiotics

By Sarah Knapton SCIENCE EDITOR

THE fight against antibiotic resistance has taken a step forward after scientists discovered how bacteria hide from drugs in the body.

Public health experts are deeply concerned that the rise in resistance to medication could make even the simplest operations impossible, with the Chief Medical Officer saying it is one of the biggest threats to the world today.

Although scientists knew that bacteria adapt to evade antibiotics, they did not know how. Now, for the first time, Newcastle University has discovered that bacteria actually change form to avoid being detected.

In studying samples from 30 elderly patients with recurring urinary tract infections, they found that bacteria lost their cell wall to conceal themselves.

Dr Katarzyna Mickiewicz, lead author and researcher at Newcastle University, said: "Imagine that the wall is like the bacteria wearing a high-vis jacket. This protects them, but also makes them highly visible.

"In the presence of antibiotics, the bacteria are able to change from a regular walled form to a completely random, cell-wall deficient state - in effect, shedding the yellow jacket.

"In this form, the body can't easily recognise the bacteria so doesn't attack them - and neither do antibiotics."

The bacteria then re-forms its wall after the antibiotics are gone. Scientists believe that is why urinary tract infections return so often, because the bacteria is not actually wiped out.

The research was published in the journal *Nature Communications*.

Daily Telegraph 27.9.2019