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# Combined antibiotics found to overcome drug resistance

By Sarah Knapton

COCKTAILS of antibiotics could be the key to battling antibiotic resistance, a study has shown.

Scientists discovered thousands of drug combinations that can fight bacteria even when the bacteria have grown resistant to them individually.

Previously it was thought that the downside of combining antibiotics outweighed the benefits because of dangerous interactions. But the University of California discovered around 8,000 combinations of four and five pills that were effective, a breakthrough which researchers said could be a major step forward in protecting public health.

"I was blown away by how many effective combinations there are as we increased the number of drugs," said

Prof Van Savage, the study's joint senior author said. "People may think they know how drug combinations will interact, but they really don't."

Using eight antibiotics, the researchers analysed how every possible four and five drug combination, including with varying dosages, worked against *E-coli*.

"There is a tradition of using just one drug, maybe two," said Dr Pamela Yeh, the study's other senior author. "We're offering an alternative that looks very promising. We shouldn't limit ourselves to just single drugs or two-drug combinations in our medical toolbox. We expect several of these combinations, or more, will work much better than existing antibiotics."

The study was published in the journal *Systems Biology and Applications*.