Hope for troops as antibiotics show they could be 'exciting new treatment' for PTSD

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Asimple course of [antibiotics](http://www.telegraph.co.uk/science/2017/02/24/soaring-antibiotic-resistance-fuels-steep-rise-use-last-hope/) could dramatically reduce the distress experienced by people suffering from Post Traumatic Stress Disorder (PTSD), a new trial has found.

The discovery by University College London gives hope of better treatment for thousands of soldiers and victims of violence afflicted by the condition.

Researchers identified “matrix enzymes”, crucial for the formation of memories, and realised that a course of commonly available doxycycline could target the enzymes and reduce the fear response triggered by remembering traumatic events by as much as 60 per cent.

The NHS currently recommends psychotherapy, such as trauma-focused cognitive behavioural therapy, or antidepressants for people suffering from [PTSD](http://www.telegraph.co.uk/science/2017/03/28/tetris-can-prevent-post-traumatic-stress-disorder-oxford-university/).

While the UCL researchers acknowledge the nature of traumatic events makes it impractical to start people on antibiotics before they happen, they said the drugs could be used subsequently to lessen the “reconsolidation” of memories in the aftermath.

PTSD is thought to affect around one in three people who suffer a traumatic event, which can range from experience of war, a road accident or being diagnosed with a serious illness.

Between one in 20 and one in 25 UK veterans of the Iraq and Afghanistan wars suffer from PTSD, according to the charity Combat Stress.

While this is similar to the rate in the general population, the complexity of the disorder tends to be far greater in former servicemen and women, and also occurs alongside aggravating problems such as pain or alcohol misuse.

Professor Dominik Bach, lead author at UCL, said: “We have demonstrated a proof-of-principle for an entirely new treatment strategy for PTSD.”

His team recruited 76 healthy volunteers who were given either doxycycline or a placebo and taught to associate a certain colour with an electric shock.

A week later they were shown the colours again, accompanied by a loud sound but no shocks, and their fear responses were measured.

The fear response was 60 per cent lower in participants who had taken doxycycline in the first session compared to those who had the placebo, suggesting that the fear memory was significantly suppressed by the durg.

“When we talk about reducing fear memory, we are not talking about deleting the memory of what actually happened,” said Professor Bach.

“The participants may not forget that they received a shock when the screen was red, but they forget to be instinctively scared when they next see a red screen.”

He added that there is growing evidence that memories and associations can be changed after an event, the process called “reconsolidation”.

The team now plans to test of the effect of doxycycline on reconsolidation of fear memories.

The study was published in the journal Molecular Psychiatry.