

Antibiotics Breed Superbugs Faster Than Expected

Curious Cat Science and Engineering Blog

We continue to endanger ourselves by using antibiotics inappropriately. This is one of many things that happen when the public at large is ignorant about science and ignores scientific evidence. I don't believe people want to put other people's lives in danger. But our behavior in the face of the evidence has us doing just that. I believe because we don't value science rather than because we don't care about putting others (and ourselves) in danger. [Antibiotics Breed Superbugs Faster Than Expected](#) [1]

Bacteria don't just develop resistance to one drug at a time, but to many — and at accelerated rates. That's because antibiotics boost bacterial production of free-radical oxygen molecules that damage bacterial DNA. Repairs to the DNA cause widespread mutations, giving bacteria more chances to randomly acquire drug-resistant traits.

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Drug resistance is a serious public health concern. According to the federal Centers for Disease Control and Prevention, 70 percent of 1.7 million infections acquired in hospitals every year are resistant to at least one drug. **Those infections annually kill 99,000 Americans — more than double the number that die in car crashes.**

Drugs that once destroyed almost any bacteria now kill only a few, or don't work at all. In the case of some drugs, like Cipro, the decline is dramatic: Where in 1999 it worked against 95 percent of E. coli, it treated only 60 percent by 2006. Against lung infection-causing Acinobacter, its effectiveness fell by 70 percent in just four years.

Though drug resistance is ultimately inevitable, conventional wisdom holds that [antibiotics consumed](#) [2] at suboptimum doses hasten the process. Bugs that would have succumbed to a larger dose live to multiply, pushing the strain as a whole closer to resistance. That happens when a prescription goes unfinished, or when antibiotics used on farms enter food and water at low levels.

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[Of the 35 million pounds of antibiotics consumed annually in the United States, 80 percent goes to farm animals](#) [3]. Much of it is used to treat diseases spread by industrial husbandry practices, or simply to accelerate growth. As a result, farms have become giant petri dishes for superbugs, especially multidrug-resistant Staphylococcus aureus, or MRSA, which **kills 20,000 Americans every year** — more than AIDS.

Alarming cases of farm-based MRSA and other diseases led to a proposed Congressional law restricting the use of agricultural antibiotics. That bill, supported by the American Medical Association and American Public Health Association, is opposed by farm lobbyists and remains stuck in committee.

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Published on Electronic Component News (<http://www.ecnmag.com>)

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