

What is antibiotic resistance, and why is it a problem?

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.

I've been involved in a few discussions of late on science-based sites around yon web on antibiotic resistance and agriculture—specifically, the campaign to get fast food giant Subway to [stop using meat raised on antibiotics](#), and a graphic by CommonGround using Animal Health Institute data, suggesting that agricultural animals aren't an important source of resistant bacteria. Discussing these topics has shown me there's a lot of misunderstanding of issues in antibiotic resistance, even among those who consider themselves pretty science-savvy.

First—why is antibiotic resistance an issue?

Since the development of penicillin, we have been in an ongoing “war” with the bacteria that make us ill. Almost as quickly as antibiotics are used, bacteria are capable of developing or acquiring resistance to them. These resistance genes are often present on transmissible pieces of DNA—plasmids, transposons, phage—which allow them to move between bacterial cells, even those of completely different species, and spread that resistance. So, once it emerges, resistance is very difficult to keep under control.

In our 75-ish years of using antibiotics to treat infections, we've increasingly found ourselves losing this war. As bacterial species have evolved resistance to our drugs, we keep coming back with either brand-new drugs in different classes of antibiotics, or we've made slight tweaks to existing drugs so that they can escape the mechanisms bacteria use to get around them.

Read full, original post: [Antibiotic resistance: myths and misunderstandings](#)