Killing bacteria with antibiotics

Antibiotics are molecules made by **microbes** that kill bacteria. The first and most famous antibiotic, **penicillin**, is produced by a mold that looks a lot like the green stuff you see on old bread in your kitchen. Many other antibiotics are produced by **bacteria** that live in the **soil**.

The structures and **enzymes** that antibiotics target are unique to bacterial cells, so they have little effect on human cells.

Antibiotics worked so well after they were first discovered that people thought they'd won the war against bacteria. **Funding** for research on new antibiotics decreased because people thought they had enough **weapons** in their arsenal. But while people were celebrating their victory, the microbes continued to **evolve**. Today, humans are faced with a new microbial problem: ***antibiotic-resistant bacteria***. These bacteria can't be killed by some, or even all, of the existing antibiotics.

The conundrum modern doctors now face is that using antibiotics increases the chances that antibiotic-resistant ***strains*** of bacteria will develop.

It's purely natural selection. In other words, when antibiotics are used, the most susceptible bacteria die first, leaving the more resistant bacteria to survive. The **resistant** bacteria multiply, creating new **hordes** that are more resistant to the antibiotic than the last **horde**. Repeat this cycle a few times, and the antibiotic no longer works at all.

Every year, nearly 100,000 Americans die from hospital-acquired **infections** (called *nosocomial infections*) related to antibiotic-resistant bacteria. And that's just part of the problem. Infections that humans thought they had under control, including such **nasty diseases** as tuberculosis and bubonic plague, are rearing their ugly heads in developing countries around the world. Scientists and doctors are teaming up again to fight the threat of, **antibioticresistant** bacteria. Scientists are searching for new antibiotics and new bacteria-fighting **strategies**, while doctors are being careful about how they **prescribe** antibiotics. By saving antibiotics for when they're really needed, doctors can slow down natural.

1- **Nasty diseases :** are disorders caused by organisms such as bacteria, viruses, or parasites they can be passed from person to person through body secretions, insects or other means.

2- **Antibiotic-resistant bacteria :** are bacteria that are able to survive and even multiply in the presence of an antibiotic
3- **Infection :** is a disease caused by germs or bacteria.
4- **Evolve** : develop over successive generations as a result of natural selection.
5- **Hordes :** a large group of Bacteria
6- **Strategies :** plan of action designed to achieve an overall aim.
7- **Microbes :** a microorganism, that are found all around us. Some microbes make us sick, others are important for our health. The most common types are bacteria, viruses and fungi.
8- **Strains :** is a genetic variant, a subspecies, or a culture within a biological species.