Antibiotics
Worn out wonder drugs?

Diseases caused by microbes are the second highest cause of death in the world, so our ability to treat microbial infections is very important! Bacteria are a type of microbe that can cause some of these infections. Antibiotics are special life-saving medicines that are used to kill bacteria. Many people take antibiotics for granted, rather than seeing them as amazing medicines that we can’t do without!

What is antibiotic resistance?

Some antibiotics don’t work anymore because the bacteria they are designed to destroy learn how to fight back and become resistant to the antibiotic. By overusing or misusing antibiotics we help bacteria to win the race against antibiotics. Infections caused by these antibiotic resistant bacteria are very hard, sometimes impossible, to treat. This can be very dangerous, especially for people who have other health problems.

Fact...not fiction!

- Overuse can weaken the immune system by killing off the friendly bacteria we need to stay healthy.
- Doctors give antibiotics to patients before surgery and cancer treatment to make it safe.
- Farmers give antibiotics to animals to stop them getting sick and help them grow big and strong.
- BUT the downside of using antibiotics a lot is that they can end up in sewage and the environment, which means that more disease-causing microbes might be exposed to them.
- In the four years between 1983-1987, 16 new antibiotics were discovered, but only 2-4 new antibiotics have been discovered between 2008-2011.

Why is it important?

It has been shown that as we increase our use of antibiotics, antibiotic resistance in bacteria increases. If this continues we may run out of antibiotics.

Can’t we just make new antibiotics?

If bacteria are learning to fight back (becoming resistant) against antibiotics, shouldn’t we be making new antibiotics to replace the old ones? In fact there is very little research being carried out to find new antibiotics — WHY?

- It can take a drug company 10 years from the time of discovery to make an antibiotic available for us to use.
- The development process can cost over £800 million.
- It only takes bacteria 3 months to become resistant to a new antibiotic once we start to use it to treat infections!

This means that it is costing more and more to find and develop new antibiotics that work against the resistant bacteria and therefore fewer drug companies invest in research.

Overuse
Using antibiotics when they are not necessary, e.g. when you have a cold or the flu

Misuse
- Taking other peoples antibiotics.
- Not finishing your course of antibiotics.
- Using ‘old’ stored antibiotics

THINK!
Have you ever overused or misused antibiotics?

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