Our immune system protects us from illness. Most bacteria are not harmful and help us in many ways.

Some bacteria can make us unwell. When we are young our immune system is only just starting to get good at spotting intruders. If our white blood cells are unable to destroy an intruder fast enough, we can quickly become unwell and need help. A vaccine contains a safe form of the bacteria to encourage our body to make antibodies. Once exposed to the bacteria from the vaccine our immune system ‘remembers’. This means our body is ready to recognise the bacteria and destroy it before it can make us unwell. This means you will have immunity to this bacteria.

What is tetanus?
This bacteria (Clostridium tetani) naturally lives in soil and can make us seriously unwell. The bacteria makes a toxin that affects our nervous system leading to painful muscle contractions across the body, including jaw and neck, and interferes with being able to breathe. Known as ‘lockjaw’, this is a very serious illness. With bacteria, antibiotics can help but the best way to protect ourselves is through a vaccine to help our immune system to be prepared. In 1990 about 356,000 people worldwide died from tetanus who were mostly children. By 2015 this was down slightly to 209,000 due to more vaccines being available.

Take a look at the drawing to see the surprising beauty of tetanus which is quite distinctive. A single spore can be seen at the end of the cell giving it a drumstick-like shape. Spores are tough and can be resistant to heat and antiseptics. The line is a scale and represents a tenth of a micrometre (ten thousandths of a millimetre). About 40 tetanus bacteria cells lined up lengthwise would fit across the width of a human hair.