Report on Bacterial Resistance Evolution Under Antibiotic Pressure

This graph shows how bacteria develop resistance to antibiotics over time. The horizontal axis represents generations, or time steps, while the vertical axis shows the average resistance level of the bacteria population.

Key observations:

- At the start, the average resistance of bacteria is around 0.74 (on a scale from 0 to 1).
- Over the first 20 generations, the resistance increases slowly and with some ups and downs.
- After about generation 20, the average resistance gradually rises more steadily.
- By generation 50, the resistance reaches above 0.82, showing a clear increase from the start.

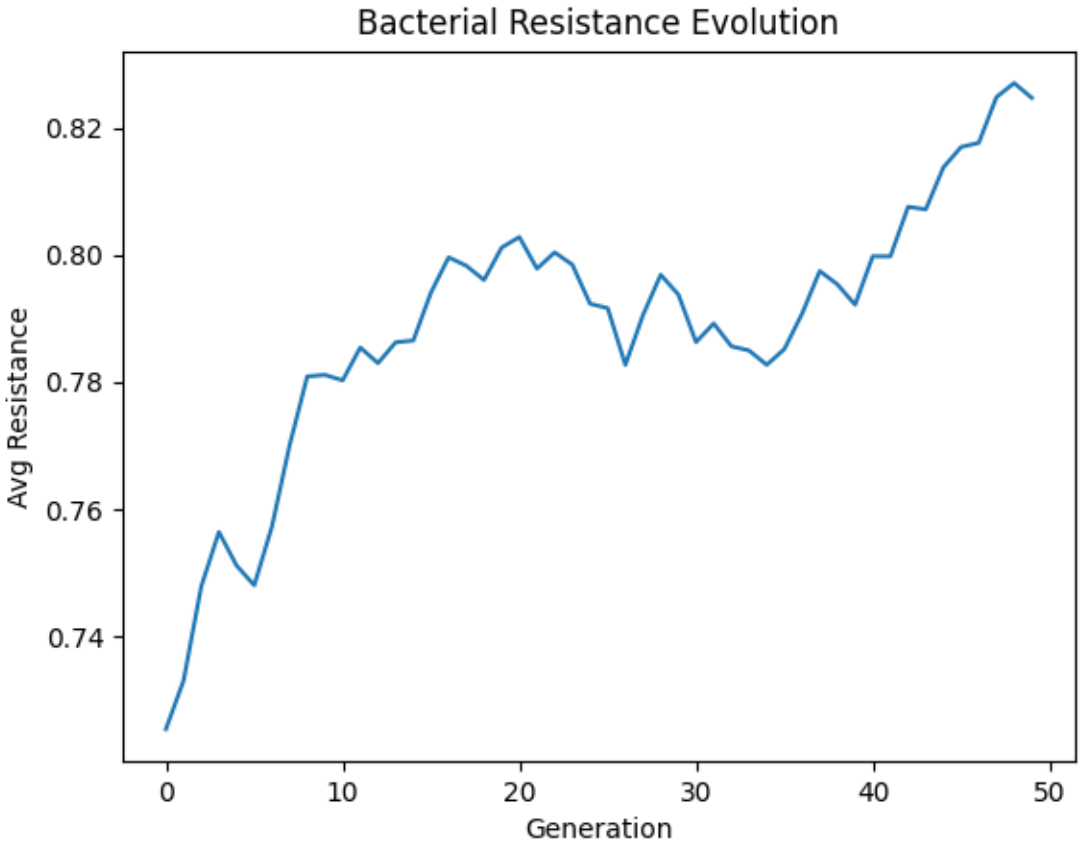
What this means:

Bacteria exposed to antibiotics adapt by becoming more resistant over time. Initially, the change is slow because only some bacteria survive and pass on their traits. As generations pass, resistant bacteria become more common, causing the overall resistance to increase faster.

This process highlights how bacteria can evolve to withstand antibiotics, making infections harder to treat. It reminds us why it is important to use antibiotics responsibly — overuse or misuse speeds up resistance development.

Takeaway for the public:

- Antibiotic resistance is a natural process driven by bacteria adapting.
- Misusing antibiotics — like not finishing a prescription or using them when not needed can help bacteria become stronger.
- To protect ourselves and future generations, antibiotics should be used carefully and only when necessary.


Bacterial Resistance Evolution
Avg Resistance
0.82
0.80
0.78
0.76
0.74
0
10
20
30
40
50
Generation