



HOW BACTERIA GROW IN FOOD

The Danger Zone is the temperature when bacteria grow fastest in potentially hazardous foods (i.e. milk, meat, and cooked rice). A potentially hazardous food is any food that has a low acid content, has a lot of protein, and is moist. The Danger Zone temperatures are between 41°F and 140°F. Some bacteria multiply or double every fifteen minutes.

For example if we take a piece of cooked turkey and leave it sitting out at room temperature (which is about 80°F) and it has one harmful bacterium, this is how the bacterium will grow:

- Fifteen minutes later, there are **2 bacteria**.
- After thirty minutes, there are **4 bacteria**.
- After forty-five minutes, there are **8 bacteria**.
- After one hour, there are **16 bacteria**.
- After two hours in the danger zone, there are **256 bacteria**.
- After three hours in the danger zone, there are **4,096 bacteria**.
- After four hours in the danger zone, there are **65,536 bacteria**.

It is unknown exactly how many bacteria it takes to make us sick. For example, some people can become ill after eating food with one bacterium, while another person does not become ill when they eat food with two million bacteria. It just depends on the general health of the person involved. People who are at higher risk for food borne illness are young children, the elderly, and people who already have problems with their immune systems.

For further information, please contact the Community Development & Planning's Health Division at 817-459-6502.