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**THE MECHANISM OF KILLING BY ANTHRAX**

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The scientists have created three-dimensional map of anthrax exotoxin that shows toxin’s way to the cells and mechanism that makes cells die. This substance works like assembly line and lets toxic ferments flow continuously through cell membranes.  
 The causative agent of this disease is bacillus that secretes a toxin. “Anthrax toxin” consists of 3 dissoluble proteins. These proteins are LF (lethal factor), EF (edema factor) and PA (protecting antigen). Ferments are linked and they get into the cells of infected organism through the endosomes. Seven or eight PA create a pore in the endosome releasing LF and EF to the cytoplasm. LF and EF have to unfold their structure for better pore penetration.  
 Scientists used cryo-electron microscopy that lets them see 3-D map of LF and PA before the start of translocation process through the pore.  
 The results showed that each molecule of LF is not only linked to the PA, but also connected with its neighbor in the clockwise direction.  
Scientists believe that interaction between LF is kept by toxins that prevent their premature unfolding. When the first molecule of LF comes to the pore, its neighbor molecule follows it, and the other proteins take place in pores, which leads to a continuous flow of matter through it.  
 The newest theory suggests that spores spontaneously sprout in the lungs and create anthrax toxin, allowing them to penetrate into tissues and reach the regional lymphatic system. When spores reach the lymph nodes, they start to secrete toxins for killing immune cells (neutrophils and monocytes). This provides a sufficient amount of time for spores to grown massively and invade vascular system. It causes death of an organism via total destruction of vessels and organs.